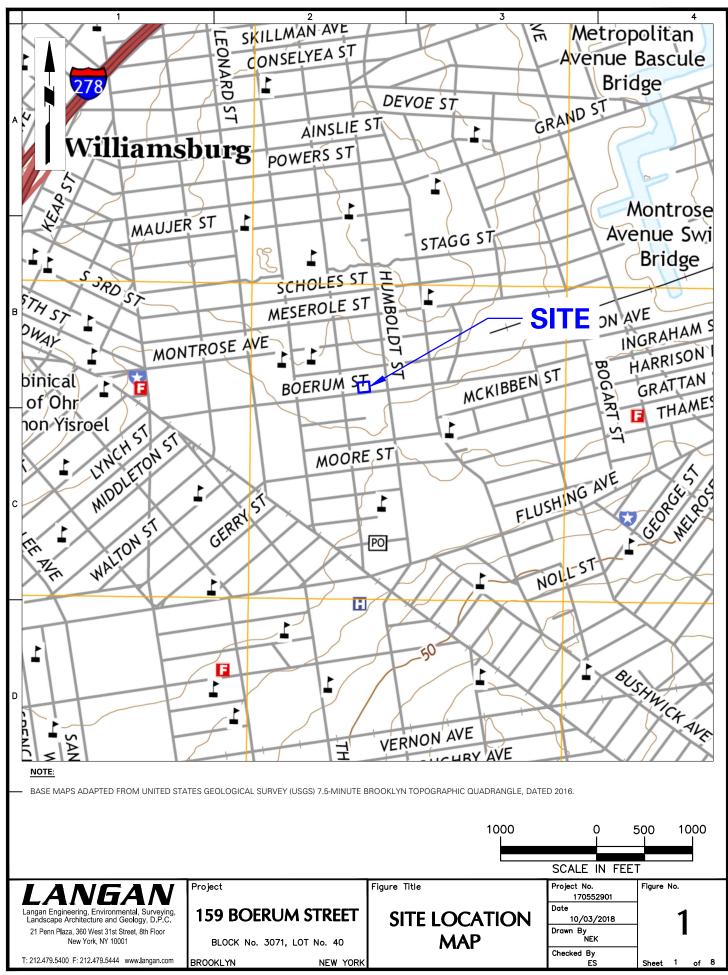
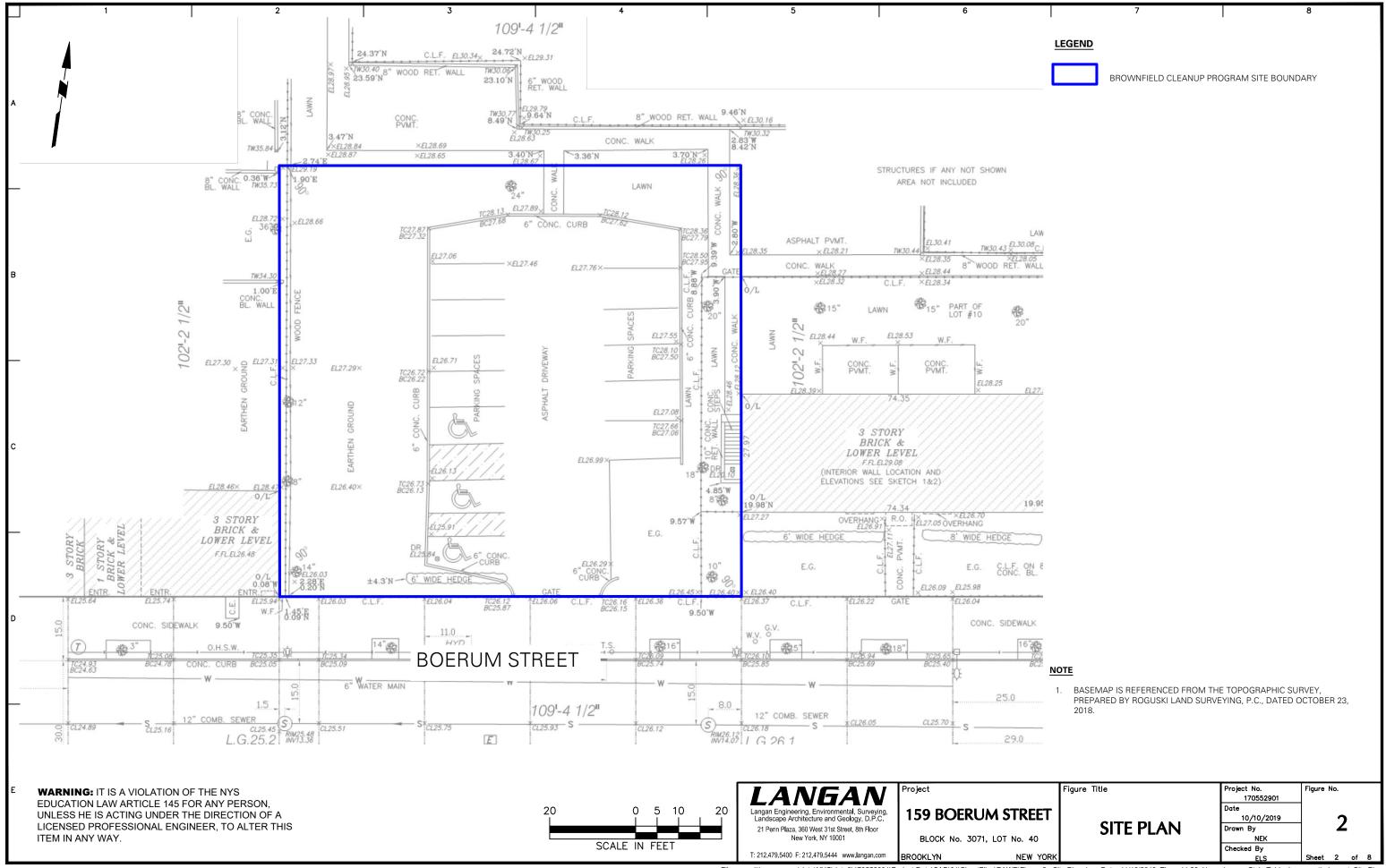
FIGURES



2018 Langs



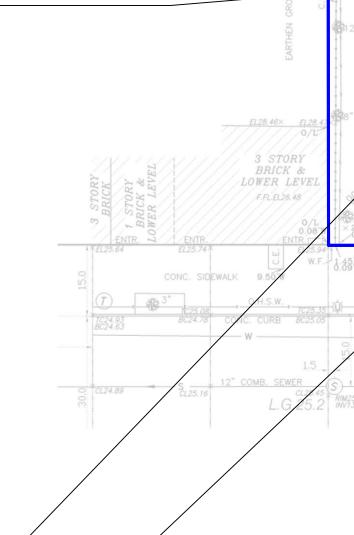
Filename: \\Langan.com\data\NYC\data9\170552901\Project Data\CAD\01\SheetFiles\RAWP\Figure 2 - Site Plan.dwg Date: 11/19/2019 Time: 11:28 User: dcasey Style Table: Langan.stb Layout: Site Plan

Sample ID	SB02_0.0-2	.0	SB02_4.0-6		SB02_18.0-2		
Sample Date	9/9/2019		9/9/2019 4-6		9/9/2019		
Sample Depth (feet bgs)		0-2			18-20		
VOCs (mg/kg)	ND		NE		NE		
SVOCs (mg/kg)	10						
Benzo(a)Anthracene	<u>16</u>		<u>2.1</u>		ND		
Benzo(a)Pyrene	16		1.9		ND		
Benzo(b)Fluoranthene	20		<u>2.6</u>		ND		
Benzo(k)Fluoranthene	5.9		NE		ND		
Chrysene	16		<u>2</u>		ND		
Dibenz(a,h)Anthracene	2.2		NE		ND		
Indeno(1,2,3-c,d)Pyrene	<u>9.8</u>		1.3		ND		
Pesticides (mg/kg)	1	<u>.</u>					
4,4'-DDD	0.0305		NE		NA		
4,4'-DDE	0.511		0.0361		NA		
4,4'-DDT	6.37		0.204	J	NA		
Herbicides (mg/kg)	ND		ND		NA		
PCBs (mg/kg)	NE		NE		ND		
Inorganics (mg/kg)							
Barium	NE		802		NE		
Lead	184		<u>722</u>		NE		
Mercury	0.265		0.592		NE		
Zinc	203		1,220		NE		
PFAS (µg/kg)							
N-ethyl perfluorooctane- sulfonamidoacetic acid	0.098	J	ND		ND		
Perfluorodecanoic acid	0.692	J	ND		ND		
Perfluorododecanoic Acid	0.34	J	ND		ND		
Perfluoroheptanoic acid	0.102	J	ND		ND		
Perfluorohexanoic Acid	0.146	J	0.077	J	ND		
Perfluorononanoic Acid	0.554	J	ND		ND		
Perfluorooctanesulfonic acid	4.05		0.329	J	ND		
Perfluorooctanoic Acid	0.769	J	0.628	J	0.532		
Perfluoropentanoic Acid	0.117	J	0.056	J	ND		
Perfluorotetradecanoic Acid	0.154	J	ND		ND		
Perfluorotridecanoic Acid	0.232	J	ND		ND		
Perfluoroundecanoic Acid	0.647	J	ND		ND		
TOTAL PFOA AND PFOS	4.82	J	0.957	J	0.532		

Sample ID Sample Date Sample Depth (feet bgs)	SB06_2-4 5/3/2019 2-4	
VOCs (mg/kg)		
1,2,4-Trimethylbenzene	8.9	L L
Ethylbenzene	6.1	J
Naphthalene	3,400	
SVOCs (mg/kg)		
3 & 4 Methylphenol (m&p Cresol)	3.9	J
Acenaphthene	60	
Anthracene	120	
Benzo(a)Anthracene	<u>200</u>	
Benzo(a)Pyrene	<u>190</u>	
Benzo(b)Fluoranthene	250	
Benzo(g,h,i)Perylene	110	
Benzo(k)Fluoranthene	70	
Chrysene	170	
Dibenz(a,h)Anthracene	26	
Dibenzofuran	42	
Fluoranthene	460	
Fluorene	70	
Indeno(1,2,3-c,d)Pyrene	100	
Naphthalene	110	
Phenanthrene	420	
Pyrene	370	
Pesticides (mg/kg)	NE	
Herbicides (mg/kg)	ND	
PCBs (mg/kg)	NE	
Inorganics (mg/kg)		
Barium	990	
Copper	78.3	
Lead	<u>721</u>	
Mercury	ND	
Zinc	665	

Sample ID	SB04_2-4
Sample Date	5/3/2019
Sample Depth (feet bgs)	2-4
VOCs (mg/kg)	NE
SVOCs (mg/kg)	NE
Pesticides (mg/kg)	NE
Herbicides (mg/kg)	ND
PCBs (mg/kg)	ND
Inorganics (mg/kg)	NE

Sample ID Sample Date Sample Depth (feet bgs)	SB09_0.0-2.0 9/9/2019 0-2		SB09_5.0-7 9/9/2019 5-7		SB09_18.0-2 9/9/2019 18-20		
VOCs (mg/kg)	ND		NE		NE		
SVOCs (mg/kg)							
Benzo(a)Anthracene	<u>1.5</u>		ND		ND		
Benzo(a)Pyrene	2.3		ND		ND		
Benzo(b)Fluoranthene	<u>3</u>		ND		ND		
Benzo(k)Fluoranthene	0.85		ND		ND		
Chrysene	<u>1.5</u>		ND		ND		
Dibenz(a,h)Anthracene	0.42		ND		ND		
Indeno(1,2,3-c,d)Pyrene	2.1		ND		ND		
Pesticides (mg/kg)							
4,4'-DDT	0.00468	-	ND		NA		
Herbicides (mg/kg)	ND		ND		NA		
PCBs (mg/kg)	NE		ND		ND		
Inorganics (mg/kg)							
Chromium, Trivalent	32		NE		NE		
Lead	116		NE		NE		
Mercury	0.233		ND		ND		
Zinc	142		NE		NE		
PFAS (μg/kg)							
Perfluorodecanoic acid	0.336	J	ND		ND		
Perfluorododecanoic Acid	0.17	J	ND		ND		
Perfluoroheptanoic acid	0.119	J	ND		ND		
Perfluorohexanoic Acid	0.196	J	0.061	J	0.054	J	
Perfluorononanoic Acid	0.263	J	ND		ND		
Perfluorooctanesulfonic acid	1.9		0.355	J	ND		
Perfluorooctanoic Acid	0.736	J	0.147	J	0.071	J	
Perfluoropentanoic Acid	0.172	J	ND		ND		
Perfluorotetradecanoic Acid	0.069	J	ND		ND		
Perfluoroundecanoic Acid	0.328	J	ND		ND		
TOTAL PFOA AND PFOS	2.64	J	0.502	J	0.071	J	



B" CONC.

8" CONC. " BL. WALL

EL27.30 G

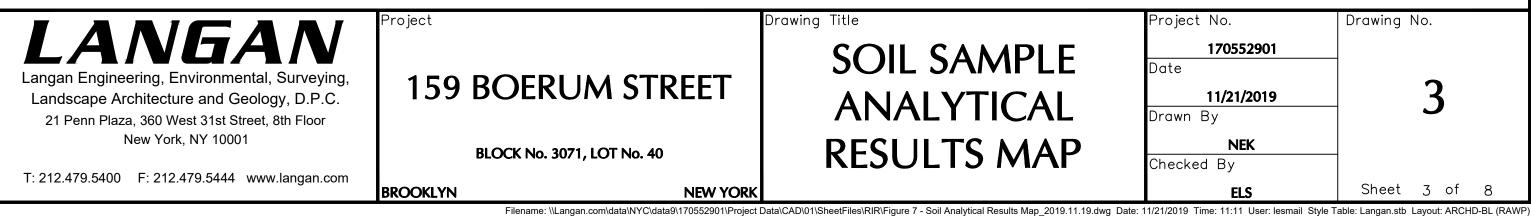
Sample Date	9/9/2019		9/9/2019		9/9/2019
Sample Depth (feet bgs)	0-2		6-8		20-22
VOCs (mg/kg)	ND		NE		NE
SVOCs (mg/kg)					
Benzo(a)Anthracene	2.4		<u>4.9</u>		ND
Benzo(a)Pyrene	2.4		5		ND
Benzo(b)Fluoranthene	3.3		<u>7.1</u>		ND
Benzo(k)Fluoranthene	0.95		2		ND
Chrysene	2.3		4.7		ND
Dibenz(a,h)Anthracene	0.38		0.86		ND
Indeno(1,2,3-c,d)Pyrene	1.8		3.9		ND
Pesticides (mg/kg)					
4,4'-DDD	0.0241		0.00872	J	NA
4,4'-DDE	0.00632	J	0.00685		NA
4,4'-DDT	0.0282		0.0416		NA
Dieldrin	0.0071		0.0113		NA
Herbicides (mg/kg)	ND		ND		NA
PCBs (mg/kg)	NE		NE		ND
Inorganics (mg/kg)					
Lead	241		2,680		NE
Mercury	0.465		0.347		ND
Zinc	197		690		NE
PFAS (µg/kg)					
Perfluorodecanoic acid	0.266	J	ND		ND
Perfluorododecanoic Acid	0.122	J	ND		ND
Perfluoroheptanoic acid	0.068	J	0.097	J	ND
Perfluorohexanoic Acid	0.122	J	0.087	J	ND
Perfluorononanoic Acid	0.218	J	ND		ND
Perfluorooctanesulfonic acid	2.15		3.04		ND
Perfluorooctanoic Acid	0.518	J	0.52	J	ND
Perfluoropentanoic Acid	0.091	J	ND		ND
Perfluoroundecanoic Acid	0.198	J	ND		ND
TOTAL PFOA AND PFOS	2.67	J	3.56	J	ND

Sample ID SB01_0.0-2.0 SB01_6.0-8.0 SB01_20.0-22.0

Sample ID	
Sample Date	
Sample Depth (feet	bgs)
VOCs (mg/kg)	
SVOCs (mg/kg)	
Benzo(a)Anthracene	
Benzo(a)Pyrene	
Benzo(b)Fluoranthene	
Chrysene	
Indeno(1,2,3-c,d)Pyrer	ıe
Pesticides (mg/kg)	
4,4'-DDD	
4,4'-DDE	
4,4'-DDT	
Dieldrin	
Herbicides (mg/kg)	
PCBs (mg/kg)	
Inorganics (mg/kg)	
Lead	
Mercury	
Zinc	
PFAS (µg/kg)	
Perfluoroheptanoic ac	id
Perfluorohexanoic Aci	

Perfluorohexanoic Acid Perfluorooctanesulfonic acid Perfluorooctanoic Acid Perfluoropentanoic Acid TOTAL PFOA AND PFOS

	I		4		I	5		6		Ι
Sample ID Sample Date Sample Depth ((feet bgs) SB06_ 9/10/ 0	/2019 9/10/	/2019	0UP01_091019 9/10/2019 14-16	SB06_18.0-20.0 9/10/2019 18-20	Sample ID Sample Date Sample Depth (feet bgs)	SB03_0.0-2.0 9/10/2019 0-2	SB03_4.0-6.0 9/10/2019 4-6	SB03_22.0-24.0 9/10/2019 22-24	Sample ID Sample Date Sample Depth VOCs (mg/kg)
VOCs (mg/kg) SVOCs (mg/kg) Pesticides (mg/	NE NE	NE ND NA		NE ND NA	NE ND NA	VOCs (mg/kg) Acetone SVOCs (mg/kg)	ND	<u>0.066 J</u>	<u>0.084 J</u>	1,2,4-Trimethyll Benzene
Herbicides (mg/ PCBs (mg/kg)	/kg) ND ND	NA NA ND		NA NA ND	NA NA ND	Benzo(a)Anthracene Benzo(a)Pyrene Benzo(b)Fluoranthene	2.6 2.6 3.3	NE NE NE	ND ND ND	Ethylbenzene Naphthalene Toluene
Inorganics (mg/ Lead Mercury	/kg) 111 0.411	J NE		NE ND	NE ND	Benzo(k)Fluoranthene Chrysene	1.2 2.7	NE NE	ND ND	Total Xylenes SVOCs (mg/kg 3 & 4 Methylph
PFAS (μg/kg) Perfluorohexanoi Perfluorooctanoi				0.053 J ND	0.052 J ND	Dibenz(a,h)Anthracene Indeno(1,2,3-c,d)Pyrene Pesticides (mg/kg)	0.47 1.8	NE NE	ND ND	Acenaphthene Anthracene
TOTAL PFOA AN				ND	ND	4,4'-DDD 4,4'-DDE 4,4'-DDT	0.0389 0.0878 0.197	NE 0.014 0.03	NA NA NA	Benzo(a)Anthra Benzo(a)Pyrene Benzo(b)Fluora
						Dieldrin Herbicides (mg/kg) PCBs (mg/kg)	0.0103 ND ND	NE ND ND	NA NA ND	Benzo(g,h,i)Per Benzo(k)Fluora Chrysene
						Inorganics (mg/kg) Barium	706	NE	NE	Dibenz(a,h)Antl Dibenzofuran Fluoranthene
						Copper Lead Mercury	53.8 J <u>511</u> 0.398 J	NE 230 0.36 J	NE NE ND	Fluorene Indeno(1,2,3-c,
						Zinc PFAS (μg/kg) Perfluorodecanoic acid	479	264	NE ND	Naphthalene Phenanthrene Phenol
						Perfluoroheptanoic acid Perfluorohexanoic Acid	0.075 J 0.138 J	0.057 J 0.119 J	ND 0.054 J	Pyrene Pesticides (mg 4,4'-DDD
						Perfluorononanoic Acid Perfluorooctanesulfonic acid Perfluorooctanoic Acid	0.128 J 1.28 0.391 J	ND 1.64 0.562 J	ND ND 0.784 J	4,4'-DDE 4,4'-DDT
						Perfluoropentanoic Acid Perfluoroundecanoic Acid Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2)	0.139 J 0.095 J ND	0.106 J ND ND	ND ND 0.174 J	Dieldrin Herbicides (m PCBs (mg/kg)
						Total PFOA and PFOS	1.67 J	2.2 J	0.774 J	Inorganics (m Barium Lead
CONC. N. MALL	CONC. PVMT.	7W30,77 8.49 N × 7W30.25		8 WOOD RET. WA	TW30.32					Lead Mercury Zinc
TW35.84	3. 77 N <u>×EL28.69</u> ×EL28.65 ×EL28.65	× W30.25 EL28.63 3.40'N~× EL28.67	CONC.	3.70'N × EL28.26	2.83 ¹ 8.42'N		Sample			0.0-2.0 SBD
0.36'W 7W35.73	SB-06	24"	- MAL	SB03/MW03	ALK %	STRUCTURES IF ANY NOT SHOW AREA NOT INCLUDED	Sample Sample VOCs (r	Depth (feet bgs)		/2019 9 -2
5802/MW EL28.72 36 3 	1C2 7.87 BC27.32	TC28.13 51.27.89 x BC27.68 4" C	8 <u>TC28.12</u> 306 CURB BC27.52	01028.36	o'w			(mg/kg) Anthracene	<u>13</u> 11	J
	BC27.32	.06 ×EL27.46	SB-07	BC27.79 TC28.50 BC27.95	ASPHAL	×EL28.21 TW30.44 × TW30.	Benzo(b Benzo(k	Fluoranthene	$ \frac{14}{4.8} \\ \frac{11}{1.7} $	<u></u>
TW34.30			EL27.76×	88°W	GATE CONTO:	×EL28.27 ×EL28.44 <el28.32 c.l.f.="" td="" ×el28.34<=""><td>Indeno(1</td><td>,h)Anthracene ,2,3-c,d)Pyrene</td><td>11 1.7 7.4</td><td>L L</td></el28.32>	Indeno(1	,h)Anthracene ,2,3-c,d)Pyrene	11 1.7 7.4	L L
LINE LINE	. 1			C. CURE	VALK VALK	TS" LAWN TS" PART OF LOT #10	Pesticid 4,4'-DDI 4,4'-DD		0.0046	
EL27.31	SB-04 SB09	171 S3		EL27.55 X X X X X X X X X X X X X	NN ONC.	28.44 W.F. EL28.53 W.F.	Herbicio PCBs (n	les (mg/kg) ng/kg)	ND	
C.L.F	EL27.29× TC26.72 BC26.22 EC26.22	SB05/MW05 Na IT		SB08	PS LA	-		i cs (mg/kg) im, Trivalent	0.236	; J
EAKTHEN	GROUND	PARKI		EL27.08 TC27.66 BC27.06		3 STORY	Copper Lead Mercury		68.7 2,360 0.454	J
	ARTHEN	SB07	EL26.99×		51 91	BRICK & LOWER LEVEL	Nickel Zinc PFAS (µ		NE 679	
<u>EL28.47</u>	EL26.40× SB01/MW01			18	.85'W 9'''''''''''''''''''''''''''''''''''	ELEVITION SEE SKETCH 1&2)	N-ethyl sulfonar	perfluorooctane- nidoacetic acid	0.113	
NRY &	A 6125	SB-	-03	SB04/MW04	EL27.27	OVERHANG XI R.O. IX 27.05 OVERHANG	Perfluor	phexanoic Acid poctanesulfonic aci poctanoic Acid	d 0.058 0.281 0.137	J C
LEVEL	DR EL25 84	6" CONC.	E 16.29 ×	E.G. 4	6' WIDE	F. F.		PFOA AND PFOS	0.418	
0/L 0.08 NTR. 7	±4.3'N - 6' MIDE	HEDGE	6" CURE	EL26.45×	₿ 9 EL 26.40×× €L 26.40	C Z C Z C Z C Z Z Z Z Z Z Z Z Z Z Z Z Z		Sample ID		SB08_0.0
W.F. 0.09 N	128.03 C.L.F. 11	14 1026.12 *EL26.0 BC25.87	06 C.L.F. TC2 16 BC26 5	€L26.36 C.L.F. 9.50'	G.V.	* <i>EL26.22</i> GATE * <i>EL26.04</i> CONC.		Sample Da Sample Da VOCs (mg	epth (feet bgs)	9/12/20 0-2
- TC25.35 Q	14" 22		EET	16	W.V. TC26.10	7C25.65 BC25.69 BC25.69 BC25.40		Acetone SVOCs (m Pesticides	g/kg)	0.062 NE
	6" WATER MAIN	"	-		W			4,4'-DDE 4,4'-DDT		0.0103 0.027
	.25.51 SX _{CL25.7}		9 ¹ -4 1/2 ¹¹ ₉₃ s —	1010010	8.0 12" COMB. SEV	VER xcl26.05 cl25.70 x s		Herbicides PCBs (mg/ Inorganics	kg)	ND NE
25.2 RW13.38	ASPHALT PVMT.	E Boerun	M STREE	Г	RIM26.12 INV14.07 L.G.26.1			Mercury Zinc PFAS (µg/		0.271 NE
								Perfluorode Perfluorohe	canoic acid xanoic Acid	0.081 0.081
									nanoic Acid tanesulfonic acid tanoic Acid	0.091 0.532 0.092
									ntanoic Acid DA AND PFOS	0.053 0.624
								Sample ID		SB04_0.0
								VOCs (mg	epth (feet bgs) /kg)	9/11/20 0-2 NE
	11/2019 9/1		07_18.0-20.0 9/11/2019 18-20					SVOCs (m Benzo(a)An Benzo(a)Py	thracene	<u>1.5</u> 1.2
N	E NE		NE					Benzo(b)Flu Chrysene	oranthene	1.4 1.6
<u>1.0</u> 1.1 <u>1.9</u>	9 2		ND ND ND					Pesticides 4,4'-DDE	3-c,d)Pyrene (mg/kg)	0.66
<u>1.0</u> 1	<u>6 1.6</u>		ND ND		Samp	e ID SB03_2-4		4,4'-DDT Herbicides PCBs (mg/		ND ND NE
NE NE	E 0.03	19	NA NA		Samp	e Date 5/3/2019 e Depth (feet bgs) 2-4		Inorganics Copper		55.7
0.00 NE	E 0.009	37	NA NA NA		SVOC Benzo	(mg/kg) NE \$ (mg/kg)		Lead Mercury Zinc		208 0.396 234
NE	E NE		ND NE		Benzo	a)Pyrene 1.9 b)Fluoranthene 2.4 k)Fluoranthene 0.81		PFAS (μg/ Perfluorode Perfluorodo		0.362
NI	E 0.34	6	ND NE		Chryse Indeno	ne 2 (1,2,3-c,d)Pyrene 1.2		Perfluorohe Perfluorohe	ptanoic acid xanoic Acid	0.06 0.112
NI 0.0	69 J 0.12	6 J	ND ND		Herbic PCBs (des (mg/kg) NE ides (mg/kg) ND mg/kg) NE		Perfluorood Perfluorood		0.086 0.491 0.137
cid 0.1 NE	81 J 3.3 D 0.62	2 6 J	ND ND ND			nics (mg/kg) 128		Perfluorope Perfluorote	intanoic Acid tradecanoic Acid decanoic Acid	0.071 0.111 0.364
	81 J 3.9		ND		Zinc	y 0.425 127			A AND PFOS	0.364



ple ID	SB07_2-4	
ple Date	5/3/2019	
ple Depth (feet bgs)	2-4	
s (mg/kg)		
Trimethylbenzene	<u>14</u>	
ene	0.66	ī
penzene	6.9	_
thalene	1,800	
ene	3.8	
Xylenes	15	
Cs (mg/kg)		
Methylphenol (m&p Cresol)	5.5	J
aphthene	83	
racene	130	
o(a)Anthracene	230	
o(a)Pyrene	210	
o(b)Fluoranthene	270	
o(g,h,i)Perylene	120	
o(k)Fluoranthene	80	
sene	210	
nz(a,h)Anthracene	29	
nzofuran	55	
anthene	530	
ene	96	
o(1,2,3-c,d)Pyrene	110	
thalene	150	
anthrene	570	
ol	3.9	J
ie	440	_
cides (mg/kg)		
DDD	ND	
DDE	ND	
DDT	ND	
rin	ND	
icides (mg/kg)	ND	
(mg/kg)	ND	
anics (mg/kg)		
m	472	
	1,580	
ury	ND	
	1,040	

SBDUP02_091019 SB05_9.0-11.0 SB05_18.0-20.0

9-11

9/10/2019

18-20 NE

ND ND

ND ND

ND

NI

NA

NΔ NA

NF

NI

ND

NF

ND

ND

ND

ND

9/12/2019

18-20

NA

NA

NA

ND

ND

NE

ND

ND

ND

0.079

ND 0.079

ND

ND

ND

ND

NA

NA

NA

NE

ND

ND

ND

ND

ND

ND

ND

0.127

ND ND ND

0.127

SB04_20.0-22.0

9/11/2019

20-22

J

SB08_11.5-13.5 | SB08_18.0-20.0

9/10/2019

1.6

1.2

0.0223

0.0522

123

788

1.47

32.4

439

ND

ND

ND

ND

9/12/2019

11.5-13.5

0.00877

0.0303

ND

255

0.089

0.068

ND

0.138

0.06

ND

0.198

NF

NE

NE

0.0215

0.0612

NE

187

0.243

267

0.069

ND

ND

0.081

0.089

0.389

0.169

ND

ND

ND

0.558

NEW YORK

SB04_6.0-8.0

9/11/2019

6-8

9/10/2019

0-2

NF

6.2

4.5

0.75

63.2

<u>494</u>

0.625

NE

696

ND

ND

0.194

0.097

SB08_0.0-2.0

9/12/2019

SB04_0.0-2.0

9/11/2019

J 0.0235

J NE

0.00833 J

J

LEGEND



BROWNFIELD CLEANUP PROGRAM SITE BOUNDARY

APPROXIMATE LOCATION OF SOIL BORING WITH OVERBURDEN MONITORING WELL

APPROXIMATE LOCATION OF SOIL BORING

SB-01

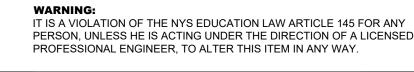
APPROXIMATE LOCATION OF SOIL BORING ADVANCED DURING THE MAY 2019 LIMITED SUBSURFACE INVESTIGATION

Analyte	CAS Number	NYSDEC Part 375 Unrestricted Use SCOs	NYSDEC Part 375 Restricted Use Restricted-Residential SCOs	NYSDEC Part 375 Restricted Use Protection of Groundwater SCOs
VOCs (mg/kg)				
1,2,4-Trimethylbenzene	95-63-6	3.6	52	3.6
Acetone	67-64-1	0.05	100	0.05
Benzene	71-43-2	0.06	4.8	0.06
Ethylbenzene	100-41-4	1	41	1
Naphthalene	91-20-3	12	100	12
Toluene	108-88-3	0.7	100	0.7
Total Xylenes	1330-20-7	0.26	100	1.6
SVOC (mg/kg)		•		
3 & 4 Methylphenol (m&p Cresol)	65794-96-9	0.33	100	~
Acenaphthene	83-32-9	20	100	98
Anthracene	120-12-7	100	100	1,000
Benzo(a)Anthracene	56-55-3	1	1	1
Benzo(a)Pyrene	50-32-8	1	1	22
Benzo(b)Fluoranthene	205-99-2	1	1	1.7
Benzo(g,h,i)Perylene	191-24-2	100	100	1,000
Benzo(k)Fluoranthene	207-08-9	0.8	3.9	1.7
Chrysene	218-01-9	1	3.9	1
Dibenz(a,h)Anthracene	53-70-3	0.33	0.33	1,000
Dibenzofuran	132-64-9	7	59	210
Fluoranthene	206-44-0	100	100	1,000
Fluorene	86-73-7	30	100	386
ndeno(1,2,3-c,d)Pyrene	193-39-5	0.5	0.5	8.2
Naphthalene	91-20-3	12	100	12
Phenanthrene	85-01-8	100	100	1,000
Phenol	108-95-2	0.33	100	0.33
Pyrene	129-00-0	100	100	1,000
Pesticides (mg/kg)	120000	1.00	100	1,000
4.4'-DDD	72-54-8	0.0033	13	14
4,4'-DDE	72-55-9	0.0033	8.9	17
4,4'-DDT	50-29-3	0.0033	7.9	136
Dieldrin	60-57-1	0.005	0.2	0.1
PCBs (mg/kg)	00-07-1	0.000	0.2	0.1
Total PCBs	1336-36-3	0.1	1	3.2
norganics (mg/kg)	1000 00-0	0.1	I '	0.2
Barium	7440-39-3	350	400	820
Chromium, Trivalent	16065-83-1	30	180	~
Copper	7440-50-8	50	270	~ 1,720
-ead	7439-92-1	63	400	450
Vercury	7439-92-1	0.18	0.81	0.73
Nickel	7440-02-0	30	310	130
		109		2,480
Zinc	7440-66-6	109	10,000	2,400

NOTES:

- 1. BASEMAP IS REFERENCED FROM THE TOPOGRAPHIC SURVEY, PREPARED BY ROGUSKI LAND SURVEYING, P.C., DATED OCTOBER 23, 2018.
- 2. SOIL SAMPLE LOCATIONS ARE APPROXIMATE AND BASED ON FIELD MEASUREMENTS.
- 3. SOIL SAMPLE ANALYTICAL RESULTS ARE COMPARED TO THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC) TITLE 6 OF THE OFFICIAL COMPILATION OF NEW YORK CODES, RULES AND REGULATIONS (NYCRR) PART 375 UNRESTRICTED USE, RESTRICTED USE -PROTECTION OF GROUNDWATER, AND RESTRICTED USE RESTRICTED -RESIDENTIAL SOIL CLEANUP OBJECTIVES (SCOs).
- 4. REGULATORY CRITERIA DOES NOT EXIST FOR PFAS AND 1,4-DIOXANE IN NEW YORK STATE. ONLY DETECTED PFAS ARE SHOWN.
- 5. ONLY COMPOUNDS DETECTED AT CONCENTRATIONS ABOVE PART 375 SCOs ARE SHOWN. 6. ANALYTES DETECTED WITH CONCENTRATIONS ABOVE UNRESTRICTED USE
- SCOs ARE BOLDED. 7. ANALYTES DETECTED WITH CONCENTRATIONS ABOVE RESTRICTED USE
- RESTRICTED RESIDENTIAL SCOs ARE SHADED. 8. ANALYTES DETECTED WITH CONCENTRATIONS ABOVE RESTRICTED USE -
- PROTECTION OF GROUNDWATER SCOs ARE UNDERLINED. 9. SAMPLE SBDUP01_091019 IS A DUPLICATE SAMPLE OF SB06_14.0-16.0 AND SAMPLE SBDUP02_091019 IS A DUPLICATE SAMPLE OF SB05_0.0-2.0.
- 10. VOC = VOLATILE ORGANIC COMPOUNDS
- 11. SVOC = SEMIVOLATILE ORGANIC COMPOUNDS
- 12. PCB = POLYCHLORINATED BIPHENYLS
- 13. PFAS = PER- AND POLY-FLUOROALKYL SUBSTANCES 14. mg/kg = MILLIGRAM PER KILOGRAM
- 15. bgs = BELOW GRADE SURFACE
- 16. NE = NO EXCEEDANCE
- 17. NA = NOT ANALYZED
- 18. ND = NOT DETECTED 19. J = THE ANALYTE WAS POSITIVELY IDENTIFIED AND THE ASSOCIATEDNUMERICAL VALUE IS THE APPROXIMATE CONCENTRATION OF THE ANALYTE

IN THE SAMPLE.

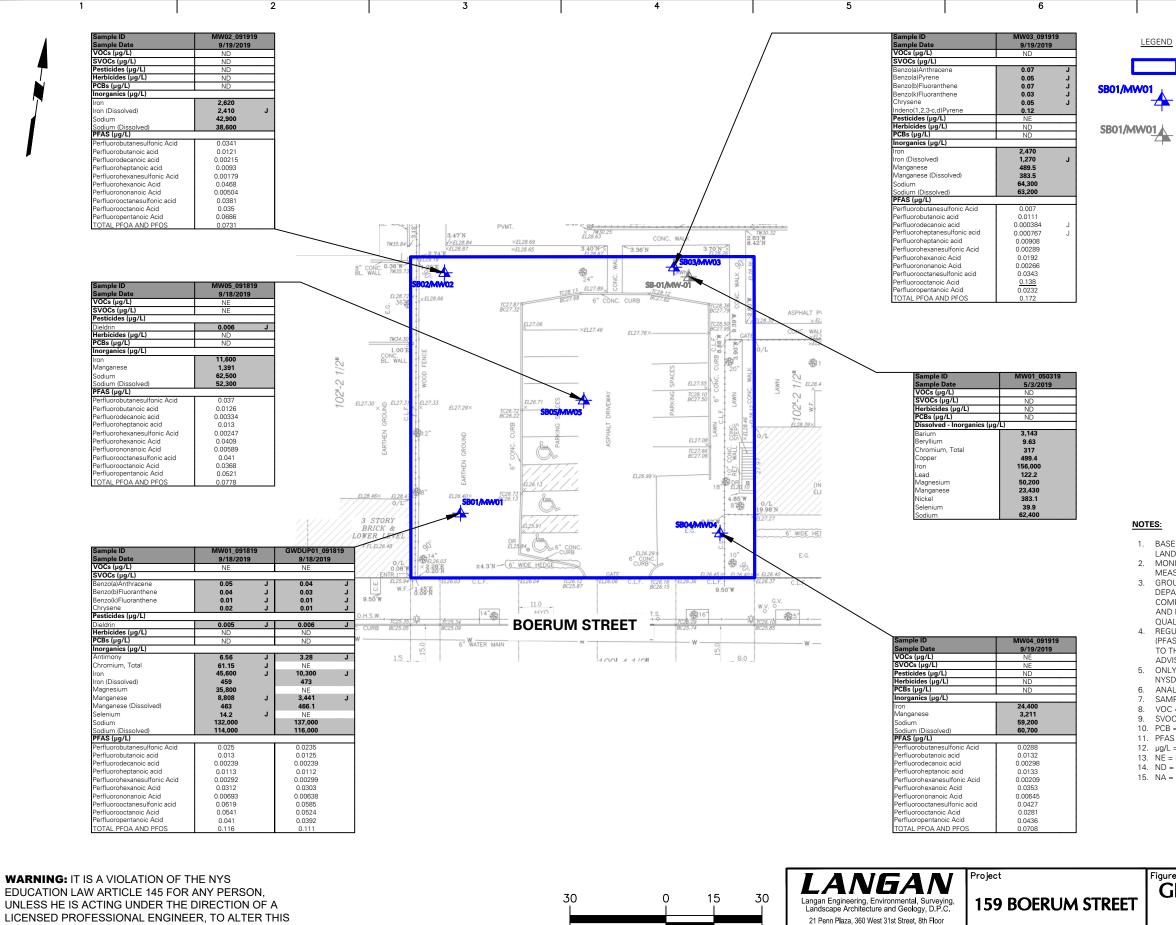


159 BOERUM STREET

BLOCK No. 3071, LOT No. 40

Drawing Title SOIL SAMPLE ANALYTICAL **RESULTS MAP**

Project No. Drawing No. 170552901 Date 7 11/21/2019 .) Drawn By NEK Checked By Sheet 3 of 8 FIS



SCALE IN FEET

LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS ITEM IN ANY WAY.



New York, NY 10001

T: 212.479.5400 F: 212.479.5444 www.langan.com



BROWNFIELD CLEANUP PROGRAM SITE BOUNDARY

APPROXIMATE LOCATION OF PERMANENT GROUNDWATER MONITORING WELL

APPROXIMATE LOCATION OF TEMPORARY GROUNDWATER MONITORING WELL INSTALLED DURING THE MAY 2019 LIMITED SUBSURFACE INVESTIGATION

Analyte	NYSDEC SGVs	USEPA Health Advisory for Emerging Contaminants
SVOCs (µg/L)		
Benzo(a)Anthracene	0.002	~
Benzo(a)Pyrene	ND	~
Benzo(b)Fluoranthene	0.002	~
Benzo(k)Fluoranthene	0.002	~
Chrysene	0.002	~
Indeno(1,2,3-c,d)Pyrene	0.002	~
Pesticides (µg/L)		
Dieldrin	0.004	~
Inorganics (µg/L)		
Antimony	3	~
Barium	1,000	~
Beryllium	3	~
Chromium, Total	50	~
Copper	200	~
Iron	300	~
Lead	25	~
Magnesium	35,000	~
Manganese	300	~
Nickel	100	~
Selenium	10	~
Sodium	20,000	~
PFAS (µg/L)		
Perfluorooctanoic Acid	~	0.07

- 1. BASEMAP IS REFERENCED FROM THE TOPOGRAPHIC SURVEY, PREPARED BY ROGUSKI LAND SURVEYING, P.C., DATED OCTOBER 23, 2018.
- MONITORING WELL LOCATIONS ARE APPROXIMATE AND BASED ON FIELD MEASUREMENTS.
- 3. GROUNDWATER SAMPLE RESULTS ARE COMPARED TO THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC) TITLE 6 OF THE OFFICIAL COMPILATION OF NEW YORK CODES. RULES. AND REGULATIONS (NYCRR) PART 703.5 AND NYSDEC TECHNICAL OPERATIONAL GUIDANCE SERIES (TOGS) 1.1.1 AMBIENT QUALITY STANDARDS AND GUIDANCE VALUES FOR CLASS GA WATER (NYSDEC SGVS).
- 4. REGULATORY CRITERIA DO NOT EXIST FOR PER- AND POLY-FLUOROALKYL SUBSTANCES (PFAS) AND 1,4-DIOXANE IN NEW YORK STATE. PFAS AND 1,4-DIOXANE ARE COMPARED TO THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (USEPA) HEALTH ADVISORY LEVEL. ONLY DETECTED PFAS ARE SHOWN.
- 5. ONLY ANALYTICAL RESULTS DETECTED AT CONCENTRATIONS ABOVE THEIR RESPECTIVE NYSDEC SGVS ARE SHOWN.
- ANALYTES DETECTED WITH CONCENTRATIONS ABOVE NYSDEC SGVS ARE SHADED.
- SAMPLE GWDUP01_101819 IS A DUPLICATE SAMPLE OF MW01_101819.
- VOC = VOLATILE ORGANIC COMPOUND SVOC = SEMIVOLATILE ORGANIC COMPOUND
- 10. PCB = POLYCHLORINATED BIPHENYL
- 11. PFAS = PER- AND POLY-FLUOROALKYL SUBSTANCES
- 12. µg/L = MICROGRAMS PER LITER 13. NE = NO EXCEEDANCE
- 14. ND = NOT DETECTED
- 15. NA = NOT ANALYZED

iect	Figure Title	Project No.	Figure No.	
	GROUNDWATER	170552901		
		Date		
59 BOERUM STREET	SAMPLE	11/21/2019	1	
		Drawn By	- 4	andan
BLOCK No. 3071, LOT No. 40	ANALYTICAL	NEK		100
	RESULTS MAP	Checked By		018
OKLYN NEW YORK		ELS	Sheet 4 of 8	©

	1 2	2	3	4	I	5	6	3		7
\mathbf{H}	J I	I	I		_	5	Ċ	-		/
1	Sample ID Sample Date	SV02_091319 9/13/2019	Sample ID Sample Date	AA01_091319 9/13/2019					LEGEND	
	Sample Type	SV	Sample Type	AA						
	VOCs (µg/m³) 1,2,4-Trimethylbenzene	2.23	VOCs (µg/m³)	6.50]					BROWNFI
	1,3,5-Trimethylbenzene (Mesitylene)	1.09	Acetone Chloromethane	6.53 0.985				s	SV01	
	1,3-Butadiene	2.83	Dichlorodifluoromethane	2.54						APPROXIN
Α	2-Hexanone Acetone	72.5 684	Ethanol Isopropanol	11 1.31					v01	APPROXIN
	Benzene	2.57	Toluene	2.78					$\mathbf{\Phi}$	AFFROAI
	Carbon Disulfide	2.41	Trichlorofluoromethane	1.52						
	Chloroform Cyclohexane	7.96 1.98 BL. CONC.	Total VOCs	26.7	8" WOOD RET. WALL 9.46'	N × EL30.16				
	Dichlorodifluoromethane	3.59	3.47'N	× TW30.25	c. walk	70/30.22 33 W 12 N				
	Ethanol	24.9 Tw35.84	✓ <u>×EL28.84</u> ×EL28.87 ×EL28.65 E	3.40'N × 3.36 N	3.70'N × EL28.26	Sample ID		SV03 091319	SVDUP01 091	319
_	_ Ethylbenzene Isopropanol	2.1 2.65 8" CONC. 0.36"W BL. WALL 7735.73	\$V02		LAWN	Sample Date		9/13/2019	9/13/2019	
	M,P-Xylene	5.99		24" NO	AMAL ALAN	Sample Type VOCs (µg/m³)		SV	SV	
	Methyl Ethyl Ketone (2-Butanone) n-Heptane	237 EL28.72 ×		13 EL27.89 8 1028	12 22	1,2,4-Trimethylbenzene		2.98 J	4.06	
	n-Hexane	5.94 8.21	TC27.87 BC27.32		1C28.0 08 BC27/19	1,3,5-Trimethylbenzene (Mesitylene)		1.35	1.93	
	o-Xylene (1,2-Dimethylbenzene)	2.55	EL27.06		7C28.50 00 €2 BC27.95 6	1,3-Butadiene 2-Hexanone		ND 77.9	0.723 86.1	
	Tert-Butyl Alcohol Tetrachloroethene (PCE)	35.2 <u>7%34.30</u> 1.48 1.00 ¹⁵			L'	Acetone		287 J	477	J
в	Toluene	1.48 1.00 E CONC. 7.08 BL. WALL			SV03	Benzene		2.21	2.82	
	Total Xylenes	8.56			ALK "0" C	Carbon Disulfide Chloroform		1.49 J 2.72	4.14 2.92	J
	Trichlorofluoromethane Total VOCs	4.86			G EL27.55 V O V V D TC28.10 N BC27.50 U D TC28.10 V D V D V V D V V V V V V V V V V V V V V V V V V	Cyclohexane		0.902 J	2.92	J
		EL27.30 × B EL27.31 EL27.33	EL27.29× TC26.72 EL26.71 Stress Control Contro	KIVEW.	BCZ7.50	Dichlorodifluoromethane		8.85	9.3	
		CT CT	8 9		28.46 I.I.I.	Ethanol Ethylbenzene		15.8 2.98 J	19.8 4.78	J
		I_091319 3/2019			EL27.08	o/L Isopropanol		1.7 J	3	J
		SV	NON COL	·	TC27.66 BC27.06	M,P-Xylene Methyl Ethyl Ketone (2-Butanone)		9.08 J 144 J	14.9 198	J
		-	6 6	EL26.99×	REJ.	Methyl Isobutyl Ketone (2-Butanone)	tanone)	2.79	2.87	5
	1,2,4-Trimethylbenzene 2.57 1,3,5-Trimethylbenzene (Mesitylene) 1.35		EL26.13	/	18 2 R 18	n-Heptane		5.45 J	9.47	J
	1,3-Butadiene 5.73	3	EL26.40× TC26.73 BC26.13		4.80	n-Hexane o-Xylene (1,2-Dimethylbenzene)		5.25 J 3.11 J	8.25 6.12	J
	2-Hexanone 63.1			5	9.57'W	Ezzi Tert-Butyl Alcohol		24.5	26.8	Ŭ
	Acetone 570 Benzene 6.2	1///// BRICK &	ÉL25.91		E.G.	Tetrachloroethene (PCE)		2.94	1.96	
с	Bromodichloromethane 3.16	6 F.E.L.26.48	EL25 84 6" CCUR	SV05 DNC	C.L.	Toluene Total Xylenes		6.78 J 12.2 J	13.9 21	J
	Carbon Disulfide 7.57		±4.3'N 6' WIDE HEDGE	B EL26.29× 6" CONC. CURB	10	Trichlorofluoromethane		14.9	15.4	Ŭ
	Chloroform 182 Cyclohexane 2.12	2 <u>EL25.74</u> [*] L: <u>EL25.94</u> [*]		GATE 12 126.06 C.L.F. TC26.1 125.87 126.06 C.L.F. TC26.1	EL26.45 × EL26.40 ×			625	917	
	Dichlorodifluoromethane 3.15	5 UC SIDEWALK 9.50 W.F. 1.45 F			9.50'W		- <u>-</u>			
	Ethanol 24.1 Ethylbenzene 2.23		SV05_09 9/13/20		stree of	wy Sample ID Sample Date	SV04_091319 9/13/2019			
	Isopropanol 2.63	3 BC24.7 Sample Type	SV	BOERU	JM STREET	Sample Type	SV			
	M,P-Xylene 6.52 Methyl Ethyl Ketone (2-Butanone) 190	2 VOCs (μg/m³)			w	VOCs (µg/m³)				
	Methyl Ethyl Ketone (2-Butanone) 190 Methyl Isobutyl Ketone (4-Methyl-2-Pentanone) 2.67		7.58 5.7		٥ <u>٩</u> 8.0	1,2,4-Trimethylbenzene 1,2-Dichlorotetrafluoroethane	1.96 6.28			
	n-Heptane 9.02	2 1,2-Dichlorotetrafluoroetha	ne 9.72			1,3-Butadiene	0.673			
	n-Hexane 11.9 o-Xylene (1,2-Dimethylbenzene) 2.74		esitylene) 2.58 98.4			2-Hexanone	41.4			
	Tert-Butyl Alcohol 23.9		839			Acetone Benzene	157 1.93			
	Tetrachloroethene (PCE) 2.56		5.81			Carbon Disulfide	0.828			
D	Toluene10.4Total Xylenes9.25		12.5 11.3			Chloroform Cyclohexane	5.08 1.03	N	OTES:	
	Trichlorofluoromethane 5.84	4 Chloroform	571			Dichlorodifluoromethane	2.93		1. BASEMAP IS	REFERENC
	Total VOCs 1,14		1.66 3.87			Ethylbenzene M,P-Xylene	1.79		LAND SURVE	YING, P.C.,
		Dichlorodifluoromethane Ethanol	33.5			Methyl Ethyl Ketone (2-Butanone)	5.26 83.2		 SOIL VAPOR SOIL VAPOR 	SAMPLE A
		Ethylbenzene	2.77			n-Heptane	4.67		SAMPLE. 4. SV = SOIL VA	DOR
		Isopropanol M,P-Xylene	3.61 7.91			n-Hexane o-Xylene (1,2-Dimethylbenzene)	5.53 2.22		5. VOC = VOLA	TILE ORGA
		Methyl Ethyl Ketone (2-But				Tert-Butyl Alcohol	13.6		 μg/m³ = MICF ND = NOT DE 	
		n-Heptane	7.83			Toluene	6.52		8. SAMPLE SVD	
		n-Hexane o-Xylene (1,2-Dimethylbenz	zene) 11 3.36			Total Xylenes Trichlorofluoromethane	7.47 3.69			
1		Tert-Butyl Alcohol	51.5			Total VOCs	346			
1		Tetrachloroethene (PCE)	5.81							
		Toluene Total Xylenes	9.46 11.3							
E		Trichlorofluoromethane	8.2				Project		Figure Title	
ľ	WARNING: IT IS A VIOLATION OF THE NYS EDUCATION LAW ARTICLE 145 FOR ANY PERSON,	Total VOCs	2,015							DIL V/
1	UNLESS HE IS ACTING UNDER THE DIRECTION OF A	A.	30	0	15 30	Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.	159 BOE	RUM STREET		
	LICENSED PROFESSIONAL ENGINEER, TO ALTER TH					21 Penn Plaza, 360 West 31st Street, 8th Floor				SAM
1	ITEM IN ANY WAY.					New York, NY 10001	BLOCK No.	3071, LOT No. 40		IALY
				SCALE IN I	FEET	T: 212.479.5400 F: 212.479.5444 www.langan.com	BROOKLYN	NEW YOR		ULT
1										

8



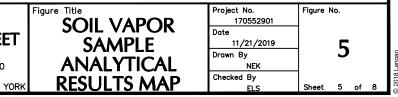
VNFIELD CLEANUP PROGRAM SITE BOUNDARY

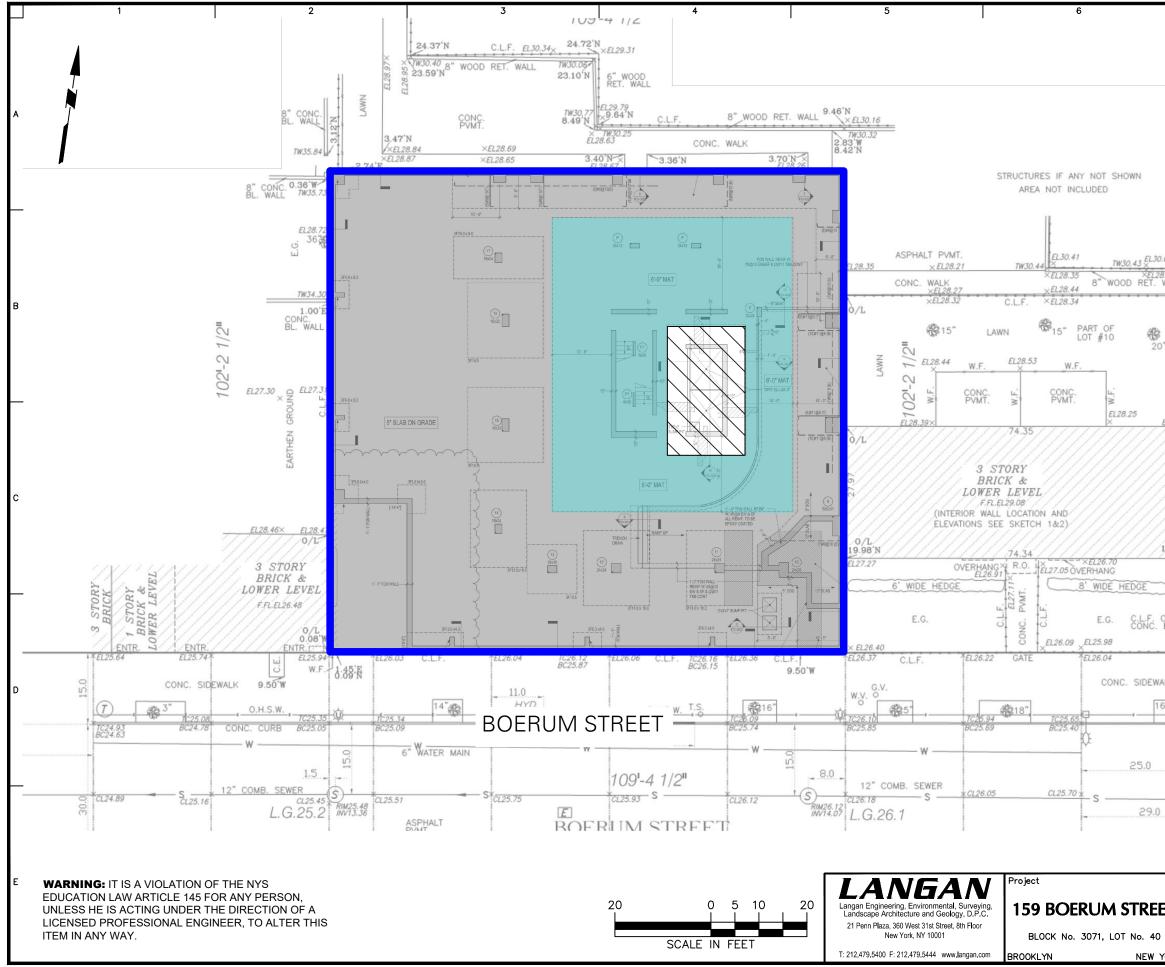
OXIMATE LOCATION OF TEMPORARY SOIL VAPOR SAMPLE

OXIMATE LOCATION OF AMBIENT AIR SAMPLE

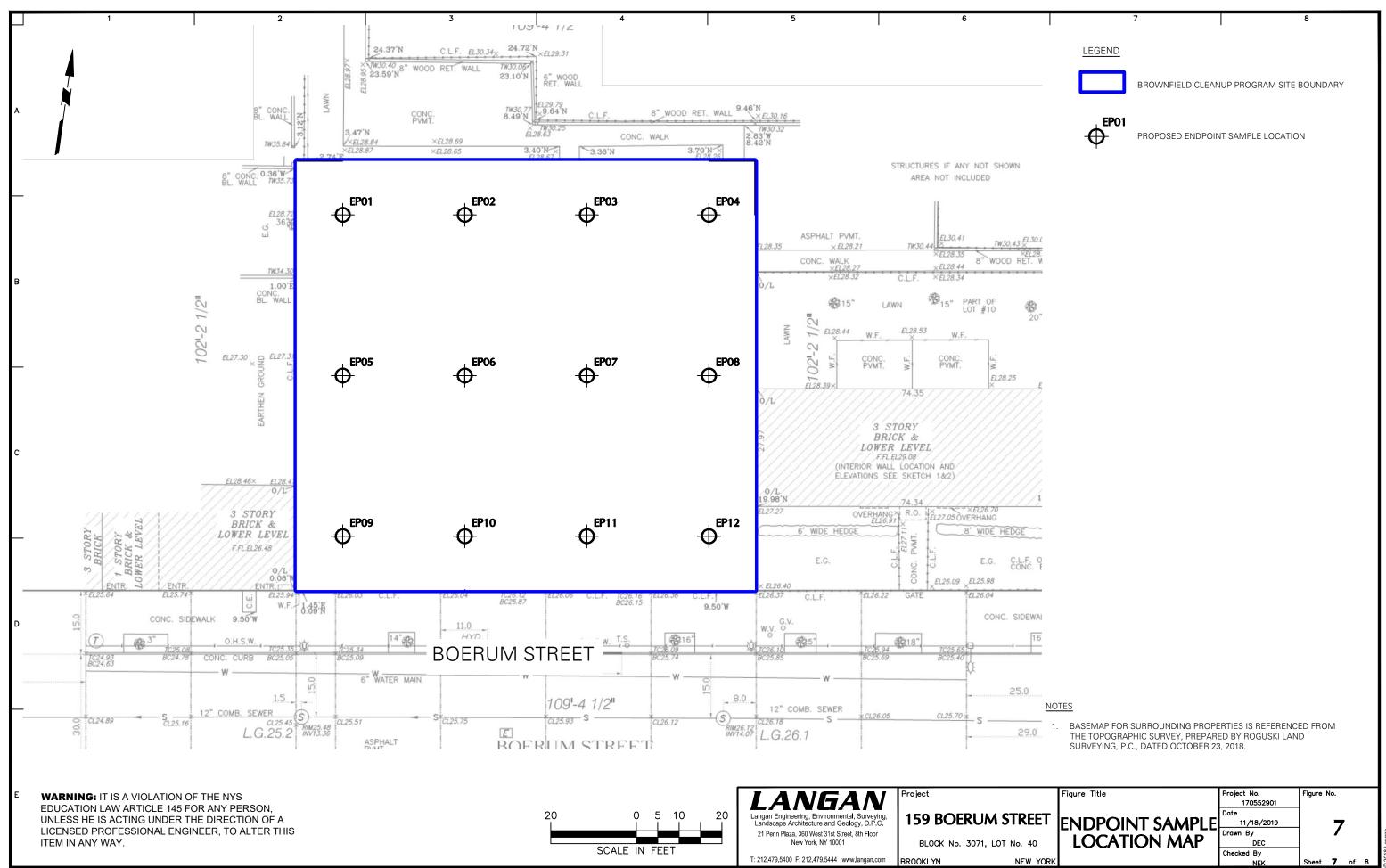
- RENCED FROM THE TOPOGRAPHIC SURVEY, PREPARED BY ROGUSKI P.C., DATED OCTOBER 23, 2018. TIONS ARE APPROXIMATE AND BASED ON FIELD MEASUREMENTS. PLE ANALYTICAL RESULTS ARE COMPARED TO THE AMBIENT AIR (AA)

- RGANIC COMPOUND
- 101319 IS A DUPLICATE OF PARENT SAMPLE SV03_101319.

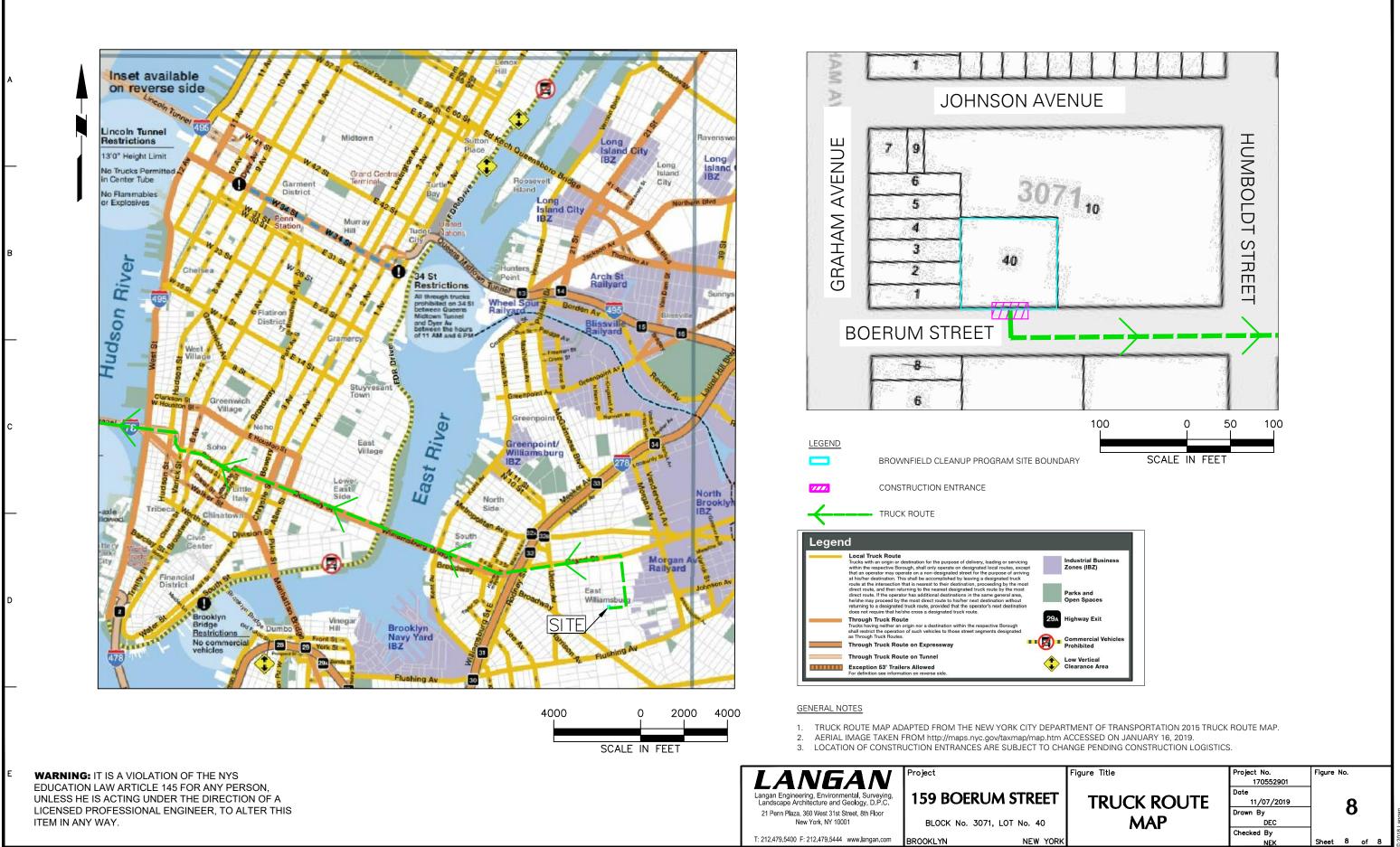




			7			8	
	LEG	END					
			BROWNFIELI	D CLEANUP P	ROGRAM SITE B	DUNDARY	
	\sim	<u>\</u> .	EXCAVATION	I TO 25 FEET I	BELOW GROUND	SURFACE	
			EXCAVATION	I TO ABOUT 2	0 FEET BELOW G	RADE SURFACE	
0.0 28. V			IMPLEMENT/ EXCAVATION	ATION OF TRA I TO ABOUT 1	6 FEET BELOW (ACK 1 (ALTERNAT 1 FEET BELOW G ACK 2 (ALTERNAT	IVE 1) CLEANUP / ROUND SURFAC	'
EVITINI							
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/AI	NOTE	<u>6</u>					
1	2. 3.	PLAN, PL 2019 AN BASEMA THE TOF SURVEY THE TRA OF THE SURFAC INCLUDE	REPARED BY A D REVISED AU AP FOR SURRO POGRAPHIC SI ING, P.C., DAT ACK 1 (ALTERN ENTIRE SITE F E. THE CONTI	AUFGANG AR JGUST 15, 20 DUNDING PRO URVEY, PREP. ED OCTOBEF JATIVE 1) CLE COOTPRINT TO NGENT TRACI DN OF THE EN	OPERTIES IS REFE ARED BY ROGUS	DATED JUNE 3, RENCED FROM KI LAND UDES EXCAVATIO / GROUND E 2) CLEANUP PL	۹N
		ure Title	, ACK 1 /		Project No. 170552901 Date	Figure No.	
ET			CK 2 CL	EANU	11/18/2019	<u> </u>	
YOF	к		PLAN	5	Checked By NEK	Sheet 6	of 8



Filename: \\langan.com\data\NY\data9\170552901\Project Data\CAD\01\SheetFiles\RAWP\Figure 7 - Endpoint Sample Location Map.dwg Date: 11/25/2019 Time: 19:53 User: nkung Style Table: Langan.stb Layout: Site Plan



Filename: \\langan.com\data\NY\data9\170552901\Project Data\CAD\01\SheetFiles\RAWP\Figure 8 - Truck Route Map.dwg Date: 11/25/2019 Time: 19:51 User: nkung Style Table: Langan.stb Layout: ANSIB-BL

TABLES

TABLE 1 ENVIRONMENTAL REMEDIATION ESTIMATE - ALTERNATIVE I 159 BOERUM STREET BROOKLYN, NEW YORK NYSDEC BCP SITE NO. C224291 LANGAN PROJECT NO. 170552901 LAST REVISED: NOVEMBER 18, 2019

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UN		ABS	OLUTE COST
CONTRAC	TOR FEES						
	Remediation Facilities, Mobilization, Demobilization, and Site Maintenance - Remediation and decontamination facilities, site fencing, trailer, truck cleaning facilities, etc.		Lump Sum			\$	50,000
2	Management and Handling of Excavated Materials (Contaminated and Hazardous Materials)	7,000	CY	\$	25	\$	175,000
3	Perimeter Support of Excavation ([SOE] Soldier Piles and Lagging)	7,000	SF	\$	100	\$	700,000
4	Off-Site Transport and Disposal of Historic Fill Material	10,000	Ton	\$	50	\$	500,000
5	Off-Site Transport and Disposal of Hazardous Lead-Impacted Historic Fill Material	50	Ton	\$	185	\$	9,250
6	Underground Storage Tank (UST) contingency (assumes registration, cleaning, removal and disposal)	2	Each	\$	10,000	\$	20,000
7	Dust, Odor, and Vapor Control	2	Months	\$	10,000	\$	20,000
	Remedial Investigation, Waste Characterization Subcontractors (Drilling Contractor, Laboratory Contractor, Geophysical Survey, etc.)		Lump Sum			\$	100,000
				CONTR	ACTOR FEES	\$	1,574,250
		(20% CONTING	SENCY OF CONTRA	CTOR FEE	SUBTOTAL)	\$	314,850
ENGINEE	RING FEES	1					
9	Waste Characterization and Hazardous Lead Delineation		Lump Sum			\$	40,000
10	Remedial Investigation, Remedial Investigation Report, Remedial Action Work Plan		Lump Sum			\$	100,000
11	Bid Support and Construction Administration		Lump Sum			\$	25,000
12	Construction Environmental Monitoring (includes community air monitoring program [CAMP] equipment rental)	2	Months	\$	40,000	\$	80,000
13	Endpoint Sampling (to document residual site conditions following source material removal)	12	Samples	\$	2,000	\$	24,000
14	Regulatory Agency Required Reporting (Final Engineering Report [FER], Data Validation & EQuIS Submittals, CPP and fact sheets)		Lump Sum			\$	100,000
			ENGINEE	RING FEE	SUBTOTAL:	\$	369,000
		(20% CONTING	ENCY OF CONTRAC	TOR FEE	SUBTOTAL):	\$	73,800
				ABSOL	ESTIMATED UTE COSTS - rounded:	\$	2,340,000

GENERAL NOTES AND ASSUMPTIONS

General Assumptions

- \cdot The density used for conversion from cubic yards (CY) to tons is 1.5 tons/CY.
- The site has a footprint of about 11,220 square feet. Assumes site-wide excavation to 16 feet below grade surface (bgs) for a total of about 7,000 cubic yards (10,000 tons) of soil/fill material removal.
- Assumes soil remaining in place meets the Unrestricted Use (UU) Soil Cleanup Objectives (SCOs).
- · Assumes site-wide dewatering will not be required.
- · Costs provided are estimates.
- This estimate has been prepared for the purposes of comparing potential remedial alternatives. The information in this cost estimate is based on the available information regarding the site and the anticipated scope of the remedial alternative. Changes in cost elements are likely to occur as a result of new information and data collected during the engineering design of the remedial alternative. This cost estimate is expected to be within -30% to +50% of the actual cost. Utilization of this cost estimate information beyond the stated purpose is not recommended. Langan is not licensed to provide financial or legal consulting services; as such, this cost estimate information is not intended to be utilized for complying with financial reporting requirements associated with liability services.
 Costs do not include new building construction.
- Estimate excludes soft costs, legal fees, insurance, general consulting, etc.
- Assumes duration of remediation oversight will be 2 months.

Item No.

- 1 Includes mobilization and demobilization of equipment and materials necessary to excavate, transport, and dispose the targeted soil per the Remedial Action Work Plan. Also includes labor and any project related permit or regulation fees (excludes potential hazardous waste fees).
- 2 Management and handling of contaminated and potentially hazardous material assumes 15% increase in labor costs for OSHA trained labor. Baseline labor fees assumes \$25 per cubic yard. Soil handling includes excavation for off-site disposal. Assumes excavation of historic contaminated fill observed from about 0 to 16 feet bgs across the site, in addition to hazardous material.
- 3 Perimeter support assumes that soldier pile and lagging and underpinning will be necessary along the Site extents where applicable. Square footage based on depth of remedial cut of 16 feet bgs. Remedial excavations along Site boundaries cannot be sloped and thus require excavation support. Assumes 33% of total estimate will count toward the BCP Tax Credits for Site Prep.
- 4-5 The estimated volumes for the differing types of materials are based on the sampling results of the September 2019 Remedial Investigation and Waste Characterization performed by Langan. Assumes excavation of historic fill in addition to hazardous material to development grade.
- 6 Based on experience in the surrounding area, there may be unknown USTs at the site. For this estimate, we assume that up to two USTs will be decommissioned.
- 7 Dust, odor and vapor control will be required throughout the duration of soil excavation. This cost estimate includes incremental costs associated with equipment and material necessary to monitor and mitigate vapor/odor emission.
- 8 Includes estimated contractor fees associated with performing the Remedial Investigation (RI): Drilling, laboratory, geophysical survey, site survey contractors.
- 9 Includes reporting of waste characterization results for disposal-related requirements.
- 10 Cost based on Langan's experience and includes engineering fees for the RI, Remedial Investigation Report (RIR), and preparation of a Remedial Action Work Plan (RAWP).
- 11 Remediation Engineer will field contractor questions related to remediation during the bidding process and support the current site owner, as necessary, during the bid leveling process. Includes submittal review, responses to Requests for Information (RFI), and coordination with development team and the architect.
- 12 Estimate includes, but is not limited to, implementation of a CAMP as required by the NYSDEC, the presence of an on-site engineer throughout remediation, remediation health and safety including purchase and maintenance of appropriate personal protective equipment (PPE), periodic office reporting to the regulatory agency and attendance of at least two site meetings per month.
- 13 Sampling frequency based on total square footage of the building area at a rate of one sample per 900 square feet of base, plus QA/QC samples, in accordance with NYSDEC DER-10 requirements.
- 14 Costs are based on Langan's experience with regulatory programs and includes the preparation of a Final Engineering Report (FER), Community Participation Plans (CPP) and periodic daily and monthly reporting.

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TABLE 2 ENVIRONMENTAL REMEDIATION ESTIMATE - ALTERNATIVE II 159 BOERUM STREET BROOKLYN, NEW YORK NYSDEC BCP SITE NO. C224291 LANGAN PROJECT NO. 170552901 LAST REVISED: NOVEMBER 18, 2019

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNI	т соѕт	ABS	OLUTE COST
CONTRAC	TOR FEES						
1	Remediation Facilities, Mobilization, Demobilization, and Site Maintenance - Remediation and decontamination facilities, site fencing, trailer, truck cleaning facilities, etc.		Lump Sum			\$	50,000
2	Management and Handling of Excavated Materials (Contaminated and Hazardous Materials)	4,500	CY	\$	25	\$	112,500
3	Perimeter Support of Excavation ([SOE] Soldier Piles and Lagging)	5,000	SF	\$	100	\$	500,000
4	Off-Site Transport and Disposal of Historic Fill Material	7,000	Ton	\$	40	\$	280,000
5	Off-Site Transport and Disposal of Hazardous Lead-Impacted Historic Fill Material	50	Ton	\$	185	\$	9,250
6	Underground Storage Tank (UST) contingency (assumes registration, cleaning, removal and disposal)	2	Each	\$	10,000	\$	20,000
7	Dust, Odor, and Vapor Control	1	Month	\$	10,000	\$	10,000
8	Remedial Investigation, Waste Characterization, and Chromium Delineation Subcontractors (Drilling Contractor, Laboratory Contractor, Geophysical Survey, etc.)		Lump Sum			\$	100,000
		•		CONTRA	CTOR FEES	\$	1,081,750
		(20% CONTINC	SENCY OF CONTRA	CTOR FEE	SUBTOTAL)	\$	216,350
ENGINEE	RING FEES	1					
9	Waste Characterization and Hazardous Lead Delineation		Lump Sum			\$	30,000
10	Remedial Investigation, Remedial Investigation Report, Remedial Action Work Plan		Lump Sum			\$	100,000
11	Bid Support and Construction Administration		Lump Sum			\$	25,000
12	Construction Environmental Monitoring (includes community air monitoring program [CAMP] equipment rental)	1	Month	\$	40,000	\$	40,000
13	Endpoint Sampling (to document residual site conditions following source material removal)	12	Samples	\$	2,000	\$	24,000
14	Regulatory Agency Required Reporting (Final Engineering Report [FER], Data Validation & EQuIS Submittals, CPP and fact sheets)		Lump Sum	ļ		\$	100,000
			ENGINE	ERING FEE	SUBTOTAL:	\$	319,000
		(20% CONTING	ENCY OF CONTRA	CTOR FEE S	UBTOTAL):	\$	63,800
					ESTIMATED JTE COSTS - rounded:	\$	1,690,000

GENERAL NOTES AND ASSUMPTIONS

General Assumptions

- \cdot The density used for conversion from cubic yards (CY) to tons is 1.5 tons/CY.
- The site has a footprint of about 11,220 square feet. Assumes site-wide excavation to 11 feet below grade surface (bgs) for a total of about 4,500 cubic yards (7,000 tons) of soil/fill material removal.
- Assumes soil remaining in place meets the Restricted Use Restricted Residential (RURR) Soil Cleanup Objectives (SCOs).
- Assumes site-wide dewatering will not be required.
- · Costs provided are estimates.
- This estimate has been prepared for the purposes of comparing potential remedial alternatives. The information in this cost estimate is based on the available information regarding the site and the anticipated scope of the remedial alternative. Changes in cost elements are likely to occur as a result of new information and data collected during the engineering design of the remedial alternative. This cost estimate is expected to be within -30% to +50% of the actual cost. Utilization of this cost estimate information beyond the stated purpose is not recommended. Langan is not licensed to provide financial or legal consulting services; as such, this cost estimate information is not intended to be utilized for complying with financial reporting requirements associated with liability services.
 Costs do not include new building construction.
- Estimate excludes soft costs, legal fees, insurance, general consulting, etc.
- Assumes duration of remediation oversight will be 1 month.

Item No.

- 1 Includes mobilization and demobilization of equipment and materials necessary to excavate, transport, and dispose the targeted soil per the Remedial Action Work Plan. Also includes labor and any project related permit or regulation fees (excludes potential hazardous waste fees).
- 2 Management and handling of contaminated and potentially hazardous material assumes 15% increase in labor costs for OSHA trained labor. Baseline labor fees assumes \$25 per cubic yard. Soil handling includes excavation for off-site disposal. Assumes excavation of historic contaminated fill observed from about 0 to 11 feet bgs across the site, in addition to hazardous material.
- 3 Perimeter support assumes that soldier pile and lagging and underpinning will be necessary along the Site extents where applicable. Square footage based on depth of remedial cut of 11 feet bgs. Remedial excavations along Site boundaries cannot be sloped and thus require excavation support. Assumes 33% of total estimate will count toward the BCP Tax Credits for Site Prep.
- 4-5 The estimated volumes for the differing types of materials are based on the sampling results of the September 2019 Remedial Investigation and Waste Characterization performed by Langan. Assumes excavation of historic fill in addition to hazardous material to development grade.
- 6 Based on experience in the surrounding area, there may be unknown USTs at the site. For this estimate, we assume that up to two USTs will be decommissioned.
- 7 Dust, odor and vapor control will be required throughout the duration of soil excavation. This cost estimate includes incremental costs associated with equipment and material necessary to monitor and mitigate vapor/odor emission.
- 8 Includes estimated contractor fees associated with performing the Remedial Investigation (RI): Drilling, laboratory, geophysical survey, site survey contractors.
- 9 Includes reporting of waste characterization results for disposal-related requirements.
- 10 Cost based on Langan's experience and includes engineering fees for the RI, Remedial Investigation Report (RIR), and preparation of a Remedial Action Work Plan (RAWP).
- 11 Remediation Engineer will field contractor questions related to remediation during the bidding process and support the current site owner, as necessary, during the bid leveling process. Includes submittal review, responses to Requests for Information (RFI), and coordination with development team and the architect.
- 12 Estimate includes, but is not limited to, implementation of a CAMP as required by the NYSDEC, the presence of an on-site engineer throughout remediation, remediation health and safety including purchase and maintenance of appropriate personal protective equipment (PPE), periodic office reporting to the regulatory agency and attendance of at least two site meetings per month.
- 13 Sampling frequency based on total square footage of the building area at a rate of one sample per 900 square feet of base, plus QA/QC samples, in accordance with NYSDEC DER-10 requirements.
- 14 Costs are based on Langan's experience with regulatory programs and includes the preparation of a Final Engineering Report (FER), Community Participation Plans (CPP) and periodic daily and monthly reporting.

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TABLE 3 TRACK 1 SOIL CLEANUP OBJECTIVES 159 BOERUM STREET BROOKLYN, NEW YORK NYSDEC BCP SITE NO. C224291 LANGAN PROJECT NO. 170552901

VOCs (mg/kg)			
1,1,1-Trichloroethane	0.68		
1,1-Dichloroethane	0.27		
1,1-Dichloroethylene	0.33		
1,2,4-Trimethylbenzene	3.6		
1,2-Dichlorobenzene	1.1		
1,2-Dichloroethane	0.02		
1,3,5-Trimethylbenzene	8.4		
1,3-Dichlorobenzene	2.4		
1,4-Dichlorobenzene	1.8		
1,4-Dioxane	0.1		
2-Butanone	0.12		
Acetone	0.05		
Benzene	0.06		
Carbon tetrachloride	0.76		
Chlorobenzene	1.1		
Chloroform	0.37		
cis-1,2-Dichloroethylene	0.25		
Ethyl Benzene	1		
Methyl tert-butyl ether (MTBE)	0.93		
Methylene chloride	0.05		
n-Butylbenzene	12		
n-Propylbenzene	3.9		
sec-Butylbenzene	11		
tert-Butylbenzene	5.9		
Tetrachloroethylene	1.3		
Toluene	0.7		
trans-1,2-Dichloroethylene	0.19		
Trichloroethylene	0.47		
Vinyl Chloride	0.02		
Xylenes, Total	0.26		

Metals (mg/kg)				
Arsenic	13			
Barium	350			
Beryllium	7.2			
Cadmium	2.5			
Chromium, hexavalent	1			
Chromium, trivalent	30			
Copper	50			
Cyanide	27			
Lead	63			
Manganese	1,600			
Mercury	0.18			
Nickel	30			
Selenium	3.9			
Silver	2			
Zinc	109			

SVOCs (mg/kg)	
Acenaphthene	20
Acenaphthylene	100
Anthracene	100
Benzo(a)anthracene	1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	1
Benzo(g,h,i)perylene	100
Benzo(k)fluoranthene	0.8
Chrysene	1
Dibenzo(a,h)anthracene	0.33
Fluoranthene	100
Fluorene	30
Indeno(1,2,3-cd)pyrene	0.5
m-Cresol	0.33
Naphthalene	12
o-Cresol	0.33
p-Cresol	0.33
Pentachlorophenol	0.8
Phenanthrene	100
Phenol	0.33
Pyrene	100

PCBs/Pesticides (mg/kg)				
2,4,5-TP Acid (Silvex)	3.8			
4,4'-DDE	0.0033			
4,4'-DDT	0.0033			
4,4'-DDD	0.0033			
Aldrin	0.005			
alpha-BHC	0.02			
beta-BHC	0.036			
Chlordane (alpha)	0.094			
delta-BHC	0.04			
Dibenzofuran	7			
Dieldrin	0.005			
Endosulfan I	2.4			
Endosulfan II	2.4			
Endosulfan sulfate	2.4			
Endrin	0.014			
Heptachlor	0.042			
Lindane	0.1			
Polychlorinated biphenyls	0.1			

Notes:

1. The above criteria are the Title 6 of the New York Codes, Rules and Regulations (6 NYCRR) Part 375 Unrestricted Use Soil Cleanup Objectives (i.e., the Track 1 soil cleanup objectives).

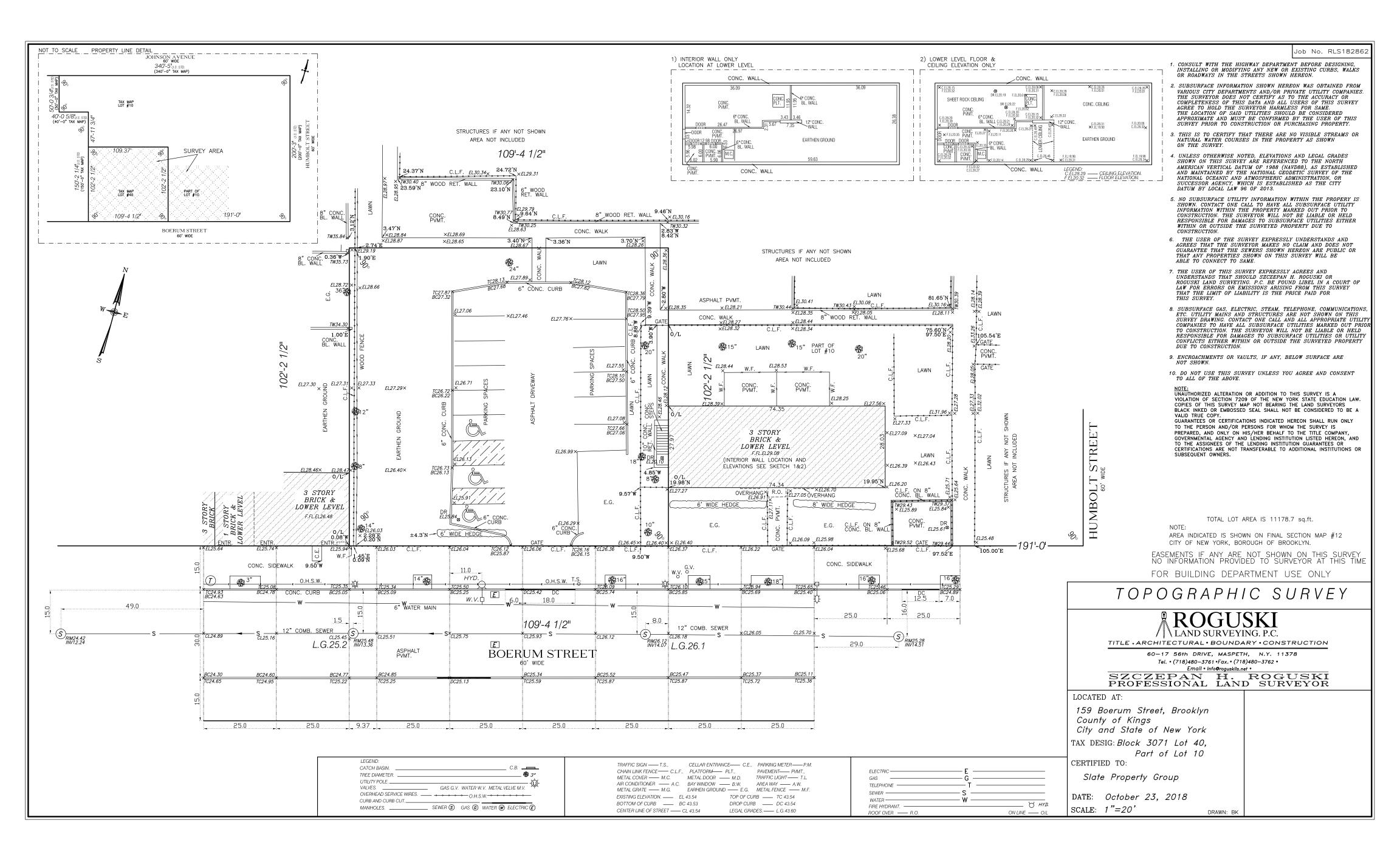
2. VOC: volatile organic compound

3. SVOC: semivolatile organic compound

4. PCBs: polychlorinated biphenyls

5. mg/kg: milligram per kilogram

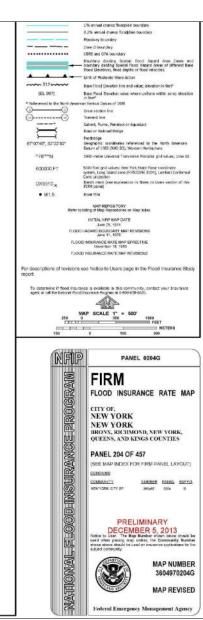
APPENDIX A BOUNDARY SURVEY



APPENDIX B PROPOSED DEVELOPMENT PLANS

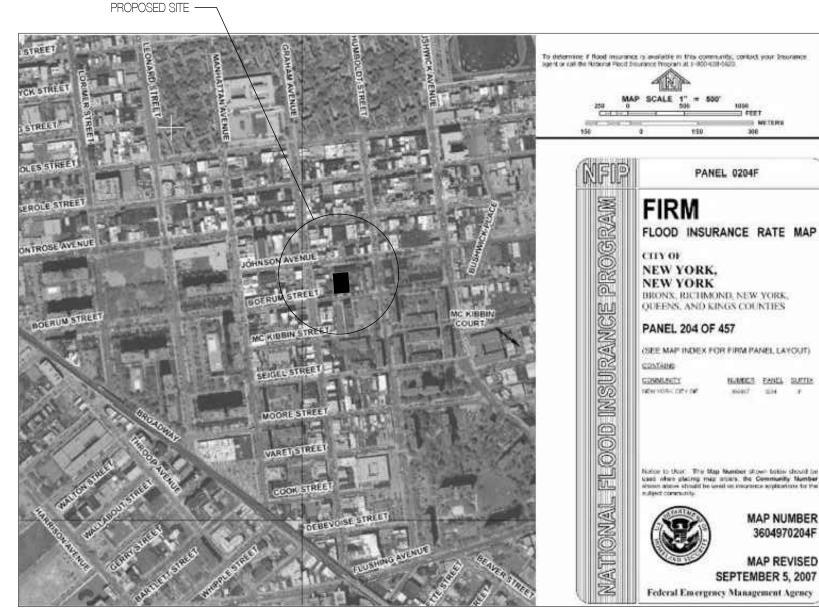
PROPOSED NEW DEVELOPMENT FOR: 159 BOERUM STREET, BROOKLYN, NY





FEMA FLOOD MAPS (2013) NOT TO SCALE

THIS SITE DOES NOT FALL UNDER A FLOOD HAZARD AS PER FLOOD INSURANCE RATE MAP #3604970204G



FEMA FLOOD MAPS (2007) NOT TO SCALE

PROPOSED SITE -

THIS SITE DOES NOT FALL UNDER A FLOOD HAZARD AS PER FLOOD INSURANCE RATE MAP #3604970204F



VICINITY MAP NOT TO SCALE

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DRAWING SCHEDULE: T-001 COVER SHEET C-001 SURVEY SCHEMATIC SITE PLAN C-002 CALCULATIONS & SCHEMATIC HEIGHT DIAGRAM Z-001 Z-002 LOT AREA AND LOT COVERAGE DIAGRAMS LOT AREA AND LOT COVERAGE DIAGRAMS Z-003 EN-001 ENERGY ANALYSIS EN-002 ENERGY ANALYSIS EN-003 ENERGY ANALYSIS EN-004 CONTINUITY DIAGRAM EN-005 STANDARD AIR SEALING DETAILS ARCHITECTURAL DRAWINGS: A-001 GENERAL NOTES A-002 ACCESSIBILITY NOTES & DIAGRAMS ACCESSIBILITY NOTES & DIAGRAMS A-003 A-004 EGRESS PLANS - CELLAR & 1ST FLOOR A-005 EGRESS PLANS - 2ND - 20TH FLOORS SIGNAGE DETAILS A-006 SIGNAGE DETAILS (2) CELLAR & IST FLOOR PLANS 2ND - 11TH FLOOR PLANS A-101 A-102 12TH - 13TH FLOOR PLANS • A-103 14TH - 16TH FLOOR PLANS A-104 17th - 19th floor plans ROOF PLAN & BULKHEAD ROOF PLAN A-105 A-150 Cellar Slab edge plan A-151 2ND - 11TH FLOOR SLAB EDGE PLANS 12TH - 13TH FLOOR SLAB EDGE PLANS **>** A-152 14TH - 16TH FLOOR SLAB EDGE PLANS A-153 A-154 17TH - 19TH FLOOR SLAB EDGE PLANS ROOF PLAN & BULKHEAD ROOF SLAB EDGE PLANS EXTERIOR ELEVATIONS EXTERIOR ELEVATIONS A-201 A-210 BUILDING CROSS SECTIONS A-300 ENLARGED ELEVATOR PLANS, SECTION & DETAILS A-301 ENLARGED STAIR PLANS A-302 ENLARGED STAIR PLANS A-303 ENLARGED STAIR SECTION & DETAILS ENLARGED COMPACTOR CHUTE PLANS, SECTION & DETAILS A-304 CROSS SECTION THROUGH RAMP SECTION A-305 TYPICAL WALL SECTION A-400 TYPICAL WALL SECTION A-401 A-410 MISC. DETAILS A-411 MISC. DETAILS A-413 MISC. DETAILS TYPICAL WINDOW ELEVATIONS A-420 TYPICAL WINDOW DETAILS A-421 A-500 ENLARGED OBR APARTMENT LAYOUTS A-501 ENLARGED OBR APARTMENT LAYOUTS A-502 ENLARGED 1BR APARTMENT LAYOUTS ENLARGED 1BR APARTMENT LAYOUTS A-503 ENLARGED 2BR APARTMENT LAYOUTS A-504 A-505 ENLARGED 2BR APARTMENT LAYOUTS A-506 ENLARGED 2BR APARTMENT LAYOUTS ENLARGED APARTMENT & PUBLIC BATHROOM LAYOUTS A-510 BATHROOM ELEVATIONS A-511 A-512 ENLARGED APARTMENT KITCHEN LAYOUTS A-513 KITCHEN ELEVATIONS A-515 PARTITION TYPE DETAILS A-520 CELLAR & 1ST FLOOR PLANS RCP 2ND - 6TH FLOOR PLANS RCP A-521 A-522 7TH - 12TH FLOOR PLANS RCP A-523 14TH - 16TH FLOOR PLANS RCP A-524 17TH - 20TH FLOOR PLANS RCP A-600 DOOR SCHEDULE A-601 WINDOW & LOUVER SCHEDULES & MAILBOX DETAILS A-602 STOREFRONT SCHEDULE & ELEVATIONS STRUCTURAL DRAWINGS: S-000 COVER SHEET GENERAL NOTES S-001 S-002 PLAN NOTES AND LEGENDS FO-100 FOUNDATION PLAN FO-101 FOUNDATION PLAN GENERAL ARRANGEMENT PLAN FO-200 TYPICAL FOOTING & SOG DETAILS I FO-201 TYPICAL FOOTING & SOG DETAILS II FO-202 TYPICAL FOUNDATION DETAILS I FO-203 TYPICAL FOUNDATION DETAILS II FO-204 MAT FOUNDATION REINFORCEMENT FO-210 REINF. DEVELOPMENT LENGTH/LAP SPLICE SCHED. FO-300 FOUNDATION SECTIONS I FO-301 FOUNDATION SECTIONS II FO-302 FOUNDATION SECTIONS III FO-303 FOUNDATION SECTIONS IV S-010 1ST FLOOR FRAMING PLAN 1ST FLOOR GENERAL ARRANGEMENT PLAN S-011 S-020 2ND FLOOR FRAMING PLAN S-021 2ND FLOOR GENERAL ARRANGEMENT PLAN S-030 3RD FLOOR FRAMING PLAN S-031 3RD FLOOR GENERAL ARRANGEMENT PLAN S-040 4TH - 6TH FLOOR FRAMING PLAN S-040 4TH - 6TH FLOOR GENERAL ARRANGEMENT PLAN 7TH - 10TH FLOOR FRAMING PLAN S-070 7TH - 10TH FLOOR GENERAL ARRANGEMENT PLAN S-070 1TH FLOOR FRAMING PLAN S-110 1TH FLOOR GENERAL ARRANGEMENT PLAN S-111 ► S-120 12TH FLOOR FRAMING PLAN S-121 12TH FLOOR GENERAL ARRANGEMENT PLAN S-130 13TH FLOOR FRAMING PLAN 13TH FLOOR GENERAL ARRANGEMENT PLAN S-131 ≻ S-140 14TH FLOOR FRAMING PLAN S-141 14TH FLOOR GENERAL ARRANGEMENT PLAN S-150 15TH FLOOR FRAMING PLAN S-151 15TH FLOOR GENERAL ARRANGEMENT PLAN 16TH FLOOR FRAMING PLAN S-160 16TH FLOOR GENERAL ARRANGEMENT PLAN • S-161 17TH FLOOR FRAMING PLAN S-170 S-171 17TH FLOOR GENERAL ARRANGEMENT PLAN 18TH - 19TH FLOOR FRAMING PLAN S-180 18TH - 19TH FLOOR GENERAL ARRANGEMENT PLAN ► S-181 S-210 ROOF FRAMING PLAN 211 ROOF GENERAL ARRANGEMENT PLAN S-915 TYPICAL COLUMN DETAILS S-916 TYPICAL COLUMN DETAILS COLUMN DETAILS S-917 S-930 TYPICAL SHEAR WALL AND LINK BEAM DETAILS I S-931 TYPICAL SHEAR WALL AND LINK BEAM DETAILS II

BOERUM STREET ELEVATION (N.T.S.)

PROPOSED NEW DEVELOPMENT

159 BOERUM ST

BROOKLYN, NY

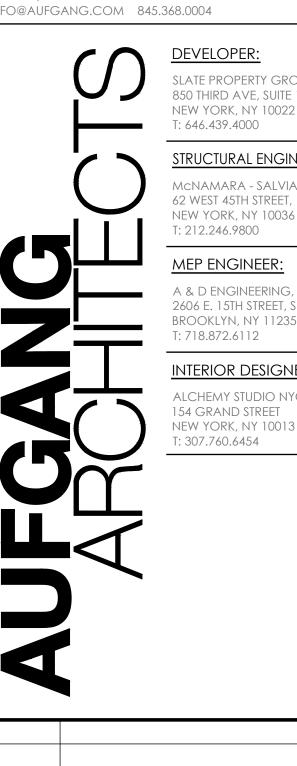
LOT:	10/40

ARCHITECT:

BLOCK: 3071

AUFGANG ARCHITECTS LLC

74 LAFAYETTE AVENUE, SUITE 301 SUFFERN, NY INFO@AUFGANG.COM 845.368.0004



08.15.19 PAA TO D.O.B.

05.31.19 BID SET

05.03.19

SHEET TITLE:

08.02.19 99% CONSTRUCTION SET

PAA TO D.O.B.

01.26.18 RE-ISSUED TO DOB FOR REVIEW AND COMMENT

11.03.17 ISSUED TO D.O.B. FOR REVIEW AND COMMENTS

COVER SHEET

DATE SUBMISSIONS / REVISIONS

07.27.18 90% PROGRESS SET

06.04.18 RE-ISSUED TO D.O.B.

SLATE PROPERTY GROUP 850 THIRD AVE, SUITE 16-B

T: 646.439.4000 STRUCTURAL ENGINEER:

McNAMARA - SALVIA 62 WEST 45TH STREET, 11TH FLOOR NEW YORK, NY 10036 T: 212.246.9800

MEP ENGINEER:

A & D ENGINEERING, PLLC 2606 E. 15TH STREET, SUITE #304 BROOKLYN, NY 11235 : 718.872.6112

INTERIOR DESIGNER:

ALCHEMY STUDIO NYC 154 GRAND STREET NEW YORK, NY 10013 T: 307.760.6454

1	5-828	SHEARWALLELEVATIONS IV
(S-939	SHEAR WALL ELEVATIONS V
\geq	S-940	TYPICAL CONCRETE DETAILS I
(S-941	TYPICAL CONCRETE DETAILS II
\geq	S-942	TYPICAL CONCRETE DETAILS III
(S-943	TYPICAL CONCRETE DETAILS IV
>	S-944	TYPICAL CONCRETE DETAILS V
(S-945	TYPICAL CONCRETE DETAILS VI
7	S-946	TYPICAL CONCRETE DETAILS VII
	S-948	TYPICAL CONCRETE DETAILS VIII
7	S-960	TYPICAL MASONRY DETAILS
	S-961	TYPICAL MASONRY DETAILS II
7	S-980	TYPICAL STAIR DETAILS I
	S-981	TYPICAL STAIR DETAILS II
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(M-101	MECHANICAL NOTES, & LEGEND
$\mathbf{\mathbf{b}}$	M-102 M-301	MECHANICAL SPECIFICATIONS MECHANICAL CELLAR LEVEL & 1ST FLOOR PLAN
(M-301 M-302	MECHANICAL CELEAR LEVEL & 13T LOOK FLAN MECHANICAL 2ND - 6TH FLOOR PLANS
\mathbf{b}	M-303	MECHANICAL 7TH - 12TH FLOOR PLANS
(M-304	MECHANICAL 13TH - 15TH FLOORS PLANS
$\left \right\rangle$	M-304 M-305	MECHANICAL 16TH - 19TH FLOOR PLANS
(M-306	MECHANICAL ROOF & BULKHEAD PLANS
\geq	M-401	MECHANICAL SEQUENCE OF OPERATION & DETAILS
(M-501	MECHANICAL RISER DIAGRAM (PART 1)
7	M-502	MECHANICAL RISER DIAGRAM (PART 2)
	M-601	MECHANICAL SCHEDULES
7		
	PLUMBING	G DRAWINGS:
7	P-101	PLUMBING NOTES, LEGEND & PLOT PLAN
	P-102	PLUMBING SPECIFICATIONS & DETAILS
(P-301	PLUMBING CELLAR LEVEL & 1ST FLOOR PLAN
7	P-302	PLUMBING 2ND - 6TH FLOOR PLANS
(P-303	PLUMBING 7TH - 12TH FLOOR PLANS
\mathbf{Y}	P-304	PLUMBING 13TH - 15TH FLOORS PLANS
(P-305	PLUMBING 16TH - 19TH FLOOR PLANS
$\boldsymbol{\boldsymbol{\lambda}}$	P-306	PLUMBING ROOF & BULKHEAD PLANS
(P-401	PLUMBING DETAILS
\geq	P-501	PLUMBING RISER DIAGRAMS-1
(P-502	PLUMBING RISER DIAGRAMS-2
\geq	P-503	PLUMBING RISER DIAGRAMS-3
(P-504	PLUMBING RISER DIAGRAMS-4
>	P-505	PLUMBING RISER DIAGRAMS-5 PLUMBING RISER DIAGRAMS-6
	P-506 P-507	PLUMBING RISER DIAGRAMS-0 PLUMBING RISER DIAGRAMS-7
7	P-508	PLUMBING RISER DIAGRAMS-7
	P-509	PLUMBING RISER DIAGRAMS-9
1	P-510	PLUMBING RISER DIAGRAMS-10
	P-511	PLUMBING RISER DIAGRAMS-11
(P-512	PLUMBING RISER DIAGRAMS-12
5		
(FIRE PROT	ECTION DRAWINGS:
\mathbf{b}	FP-101	FIRE PROTECTION NOTES, LEGEND & PLOT PLAN
(FP-102	FIRE PROTECTION SPECIFICATIONS & DETAILS
\geq	FP-301	FIRE PROTECTION CELLAR LEVEL & 1ST FLOOR PLAN
(FP-302	FIRE PROTECTION 2ND - 6TH FLOOR PLANS
\geq	FP-303	FIRE PROTECTION 7TH - 12TH FLOOR PLANS
(FP-304	FIRE PROTECTION 13TH - 15TH FLOORS PLANS
\geq	FP-305	FIRE PROTECTION 16TH - 19TH FLOOR PLANS
(FP-306	FIRE PROTECTION ROOF PLANS
>	FP-401	FIRE PROTECTION RISER DIAGRAM
7		M DRAWINGS:
	FA-001	FIRE ALARM NOTES, LEGEND & PLOT PLAN
(FA-002	FIRE ALARM RISER DIAGRAM & MATRIX
\mathbf{I}	FA-101 FA-102	FIRE ALARM CELLAR LEVEL & 1ST FLOOR PLAN FIRE ALARM 2ND - 6TH FLOOR PLANS
(FA-102 FA-103	FIRE ALARM ZND - 6TH FLOOR FLANS FIRE ALARM 7TH - 12TH FLOOR PLANS
5	FA-104	FIRE ALARM 13TH - 15TH FLOOR PLANS
(FA-105	FIRE ALARM 16TH - 19TH FLOOR PLANS
$\mathbf{\mathbf{b}}$	FA-105	FIRE ALARM ROOF & BULKHEAD PLANS
(171100	
\geq	ENERGY C	CODE:
(EN-200	ENERGY ANALYSIS MECHANICAL, PLUMBING & LIGHTING SYSTEMS
\geq	EN-201	ENERGY ANALYSIS MECHANICAL, PLUMBING & LIGHTING SYSTEMS
	EN-202	ENERGY ANALYSIS MECHANICAL, PLUMBING & LIGHTING SYSTEMS
7	EN 203	ENERGY ANALYSIS MECHANICAL, PLUMBING & LIGHTING SYSTEMS
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(E-101 E-102	ELECTRICAL 2ND - 6TH FLOOR PLANS ELECTRICAL 7TH - 12TH FLOOR PLANS
\geq	E-102 E-103	ELECTRICAL 13TH - 12TH FLOOR PLANS
(E-103 E-104	ELECTRICAL 16TH - 19TH FLOOR PLANS
\geq	E-104 E-105	ELECTRICAL ROOF & BULKHEAD PLANS
(E-300	ELECTRICAL RISER DIAGRAM
7	E-301	ELECTRICAL INTERCOM RISER DIAGRAM
	E-302	ELECTRICAL TELECOM RISER DIAGRAM
7	E-400	ELECTRICAL PANELBOARDS
\mathbf{r}	E-600	ELECTRICAL DETAILS
(
5	ARC:	
(APC-001	ARC SYSTEM NOTES, LEGEND & RISER DIAGRAM
$\boldsymbol{\boldsymbol{\lambda}}$		
(ARC-101	ARC SYSTEM CELLAR LEVEL & 1ST FLOOR PLAN
<u>۱</u>	ARC-101 ARC-102	ARC SYSTEM 2ND-9TH FLOOR PLANS
\geq	ARC-101 ARC-102 ARC-103	ARC SYSTEM 2ND-9TH FLOOR PLANS ARC SYSTEM 10TH-12TH FLOOR PLANS
$\left<\right>$	ARC-101 ARC-102 ARC-103 ARC-104	ARC SYSTEM 2ND-9TH FLOOR PLANS ARC SYSTEM 10TH-12TH FLOOR PLANS ARC SYSTEM 13TH-15TH FLOOR PLANS
$\left\langle \right\rangle$	ARC-101 ARC-102 ARC-103 ARC-104 ARC-105	ARC SYSTEM 2ND-9TH FLOOR PLANS ARC SYSTEM 10TH-12TH FLOOR PLANS ARC SYSTEM 13TH-15TH FLOOR PLANS ARC SYSTEM 16TH-19TH FLOOR PLANS
$\left\langle \right\rangle$	ARC-101 ARC-102 ARC-103 ARC-104 ARC-105 ARC-106	ARC SYSTEM 2ND-9TH FLOOR PLANS ARC SYSTEM 10TH-12TH FLOOR PLANS ARC SYSTEM 13TH-15TH FLOOR PLANS ARC SYSTEM 16TH-19TH FLOOR PLANS ARC SYSTEM ROOF PLANS
$\left\{ \right\}$	ARC-101 ARC-102 ARC-103 ARC-104 ARC-105 ARC-106	ARC SYSTEM 2ND-9TH FLOOR PLANS ARC SYSTEM 10TH-12TH FLOOR PLANS ARC SYSTEM 13TH-15TH FLOOR PLANS ARC SYSTEM 16TH-19TH FLOOR PLANS
$\left\{ \right\}$	ARC-101 ARC-102 ARC-103 ARC-104 ARC-105 ARC-106	ARC SYSTEM 2ND-9TH FLOOR PLANS ARC SYSTEM 10TH-12TH FLOOR PLANS ARC SYSTEM 13TH-15TH FLOOR PLANS ARC SYSTEM 16TH-19TH FLOOR PLANS ARC SYSTEM ROOF PLANS
$\left\{ \right\}$	ARC-101 ARC-102 ARC-103 ARC-104 ARC-105 ARC-106	ARC SYSTEM 2ND-9TH FLOOR PLANS ARC SYSTEM 10TH-12TH FLOOR PLANS ARC SYSTEM 13TH-15TH FLOOR PLANS ARC SYSTEM 16TH-19TH FLOOR PLANS ARC SYSTEM ROOF PLANS
	ARC-101 ARC-102 ARC-103 ARC-104 ARC-105 ARC-106 ARC-107	ARC SYSTEM 2ND-9TH FLOOR PLANS ARC SYSTEM 10TH-12TH FLOOR PLANS ARC SYSTEM 13TH-15TH FLOOR PLANS ARC SYSTEM 16TH-19TH FLOOR PLANS ARC SYSTEM ROOF PLANS ARC SYSTEM PRODUCT SELECTION
<pre> </pre>	ARC-101 ARC-102 ARC-103 ARC-104 ARC-105 ARC-106 ARC-107	ARC SYSTEM 2ND-9TH FLOOR PLANS ARC SYSTEM 10TH-12TH FLOOR PLANS ARC SYSTEM 13TH-15TH FLOOR PLANS ARC SYSTEM 16TH-19TH FLOOR PLANS ARC SYSTEM ROOF PLANS ARC SYSTEM PRODUCT SELECTION
	ARC-101 ARC-102 ARC-103 ARC-104 ARC-105 ARC-106 ARC-107	ARC SYSTEM 2ND-9TH FLOOR PLANS ARC SYSTEM 10TH-12TH FLOOR PLANS ARC SYSTEM 13TH-15TH FLOOR PLANS ARC SYSTEM 16TH-19TH FLOOR PLANS ARC SYSTEM ROOF PLANS ARC SYSTEM PRODUCT SELECTION
	ARC-101 ARC-102 ARC-103 ARC-104 ARC-105 ARC-106 ARC-107	ARC SYSTEM 2ND-9TH FLOOR PLANS ARC SYSTEM 10TH-12TH FLOOR PLANS ARC SYSTEM 13TH-15TH FLOOR PLANS ARC SYSTEM 16TH-19TH FLOOR PLANS ARC SYSTEM ROOF PLANS ARC SYSTEM PRODUCT SELECTION
	ARC-101 ARC-102 ARC-103 ARC-104 ARC-105 ARC-106 ARC-106 ARC-107	ARC SYSTEM 2ND-9TH FLOOR PLANS ARC SYSTEM 10TH-12TH FLOOR PLANS ARC SYSTEM 13TH-15TH FLOOR PLANS ARC SYSTEM 16TH-19TH FLOOR PLANS ARC SYSTEM ROOF PLANS ARC SYSTEM PRODUCT SELECTION

ALT, 1 NO WORK (169 BOERUM STREET) - 3213004

ALT. 1 NO WORK (161 BOERUM STREET) - 32130

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ALT. 1 NO WORK (192 JOHNSON STREET) - 3213004

SHEAR WALL REINFORCING PLAN

SHEAR WALL REINFORCING PLAN

SHEAR WALL REINFORCING PLAN

SHEAR WALL ELEVATIONS I

SHEAR WALL ELEVATIONS II

SHEAR WALL ELEVATIONS III

S-932

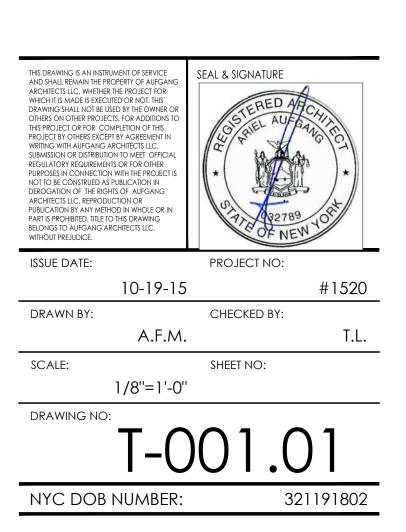
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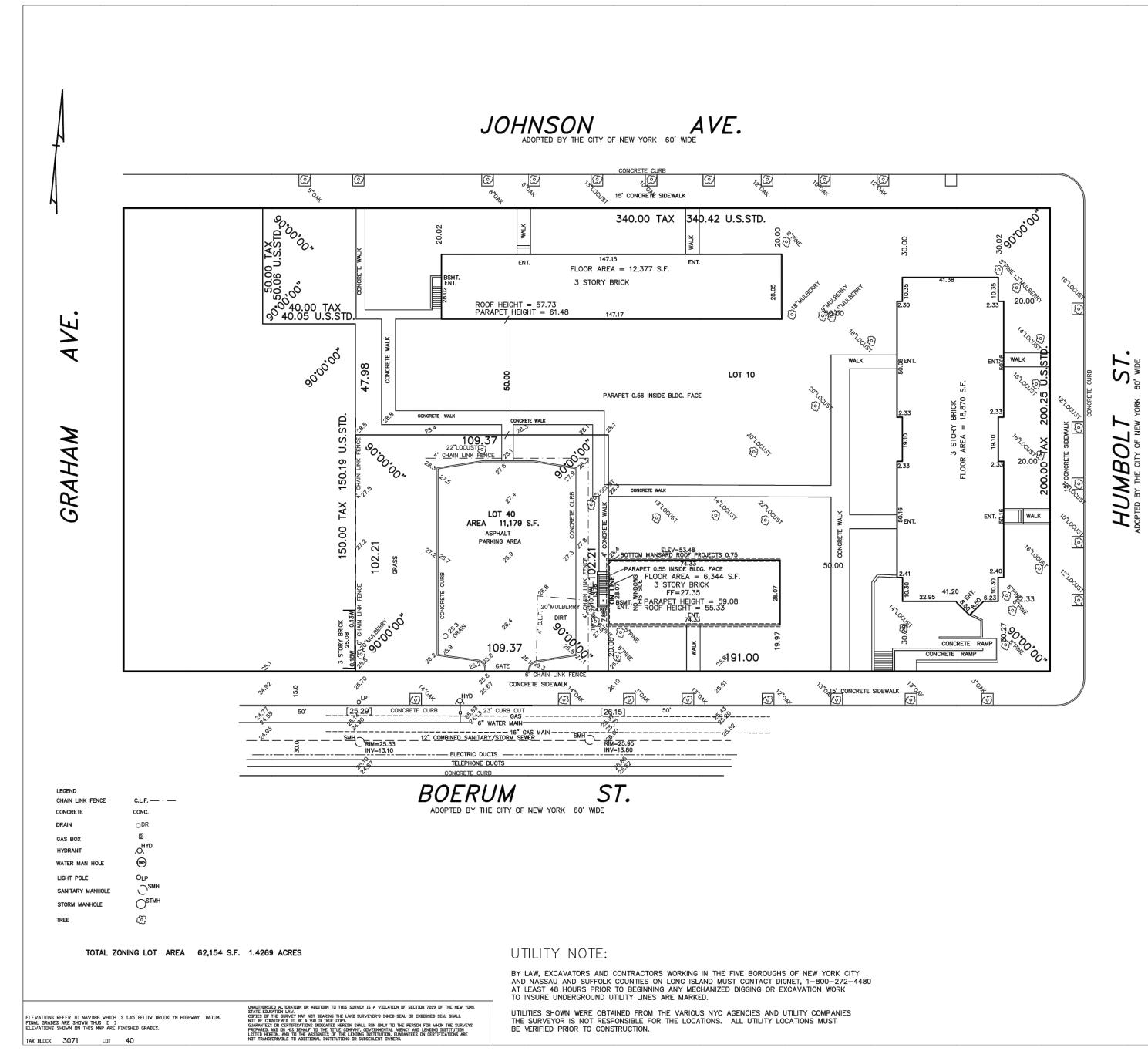
S-934

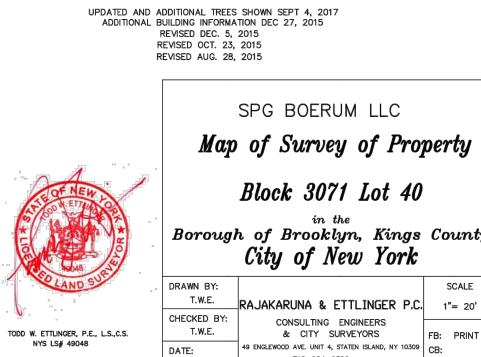
S-935

S-936

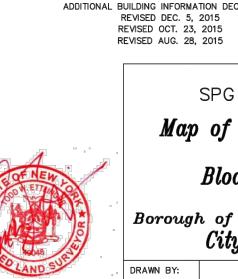
S-937







AUG. 15, 2015



PROPOSED NEW DEVELOPMENT

159 BOERUM

BROOKLYN, NY

BLOCK: 3071 ARCHITECT:

AUFGANG ARCHITECTS LLC 74 LAFAYETTE AVENUE, SUITE 301 SUFFERN, NY INFO@AUFGANG.COM 845.368.0004



DEVELOPER:

SLATE PROPERTY GROUP 850 THIRD AVE, SUITE 16-B NEW YORK, NY 10022 T: 646.439.4000

LOT: 40

STRUCTURAL ENGINEER:

McNAMARA - SALVIA 62 WEST 45TH STREET, 11TH FLOOR NEW YORK, NY 10036 T: 212.246.9800

MEP ENGINEER:

A & D ENGINEERING, PLLC 2606 E. 15TH STREET, SUITE #304 BROOKLYN, NY 11235 T: 718.872.6112

INTERIOR DESIGNER:

ALCHEMY STUDIO NYC 154 GRAND STREET NEW YORK, NY 10013 T: 307.760.6454

67056C SH 1 OF 2

Block 3071 Lot 40

^{the} tyn, Kings New York		County		
		SCALE		
ETTLIN	GER P.C.	1"= 20'		

the		
lyn,	Kings	Со
17	17 1	

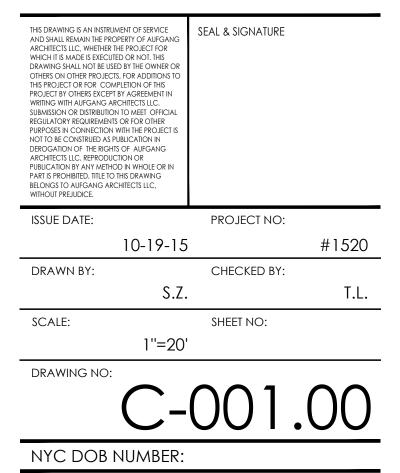
-	Kings York	Coun

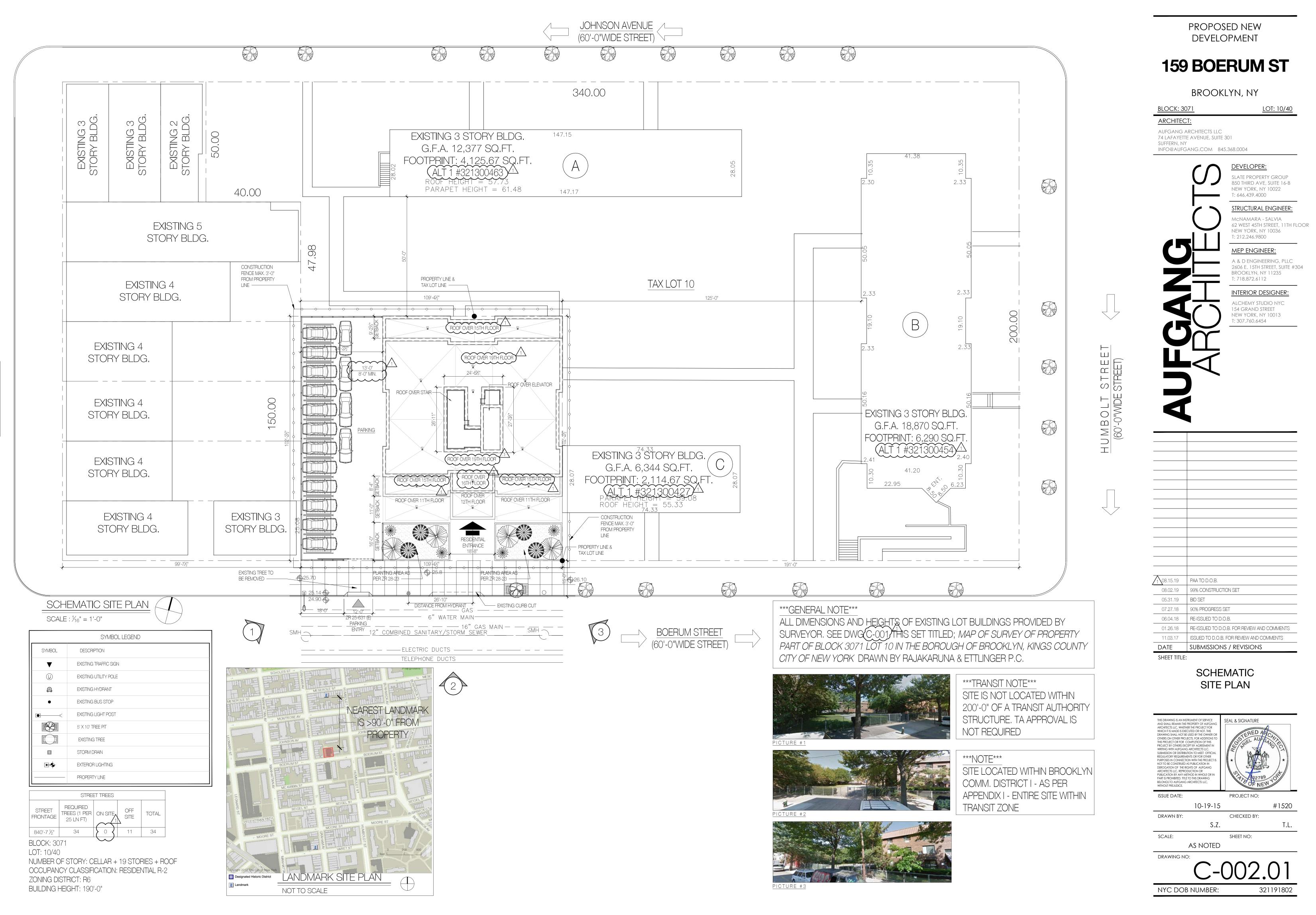
•	
	SCALE
RUNA & ETTLINGER P.C.	1"= 20'
ONSULTING ENGINEERS & CITY SURVEYORS	FB: PRINT
OD AVE. UNIT 4, STATEN ISLAND, NY 10309 718-984-9500	CB: FM:

SURVEY (1)

SHEET TITLE:

08.02.19 99% CONSTRUCTION SET 05.31.19 BID SET 07.27.18 90% PROGRESS SET 06.04.18 RE-ISSUED TO D.O.B. 01.26.18 RE-ISSUED TO D.O.B. FOR REVIEW AND COMMENTS 11.03.17 ISSUED TO D.O.B. FOR REVIEW AND COMMENTS DATE SUBMISSIONS / REVISIONS	08.15.19	PAA TO D.O.B.
07.27.1890% PROGRESS SET06.04.18RE-ISSUED TO D.O.B.01.26.18RE-ISSUED TO D.O.B. FOR REVIEW AND COMMENTS11.03.17ISSUED TO D.O.B. FOR REVIEW AND COMMENTS	08.02.19	99% CONSTRUCTION SET
06.04.18RE-ISSUED TO D.O.B.01.26.18RE-ISSUED TO D.O.B. FOR REVIEW AND COMMENTS11.03.17ISSUED TO D.O.B. FOR REVIEW AND COMMENTS	05.31.19	BID SET
01.26.18 RE-ISSUED TO D.O.B. FOR REVIEW AND COMMENTS 11.03.17 ISSUED TO D.O.B. FOR REVIEW AND COMMENTS	07.27.18	90% PROGRESS SET
11.03.17 ISSUED TO D.O.B. FOR REVIEW AND COMMENTS	06.04.18	RE-ISSUED TO D.O.B.
	01.26.18	RE-ISSUED TO D.O.B. FOR REVIEW AND COMMENTS
DATE SUBMISSIONS / REVISIONS	11.03.17	ISSUED TO D.O.B. FOR REVIEW AND COMMENTS
	DATE	SUBMISSIONS / REVISIONS



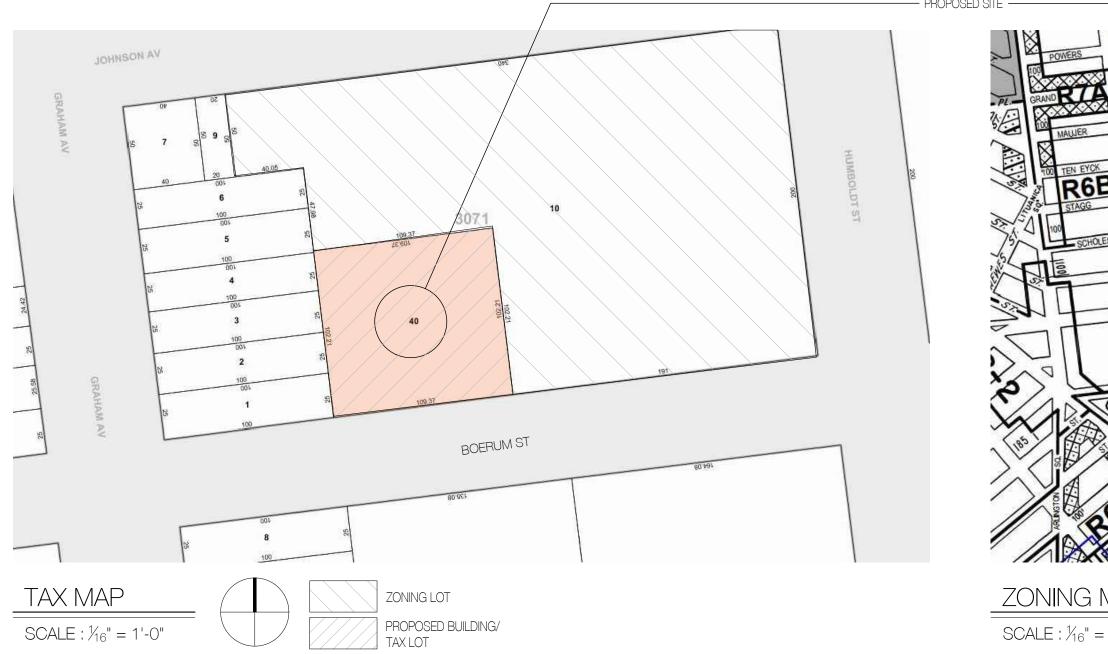


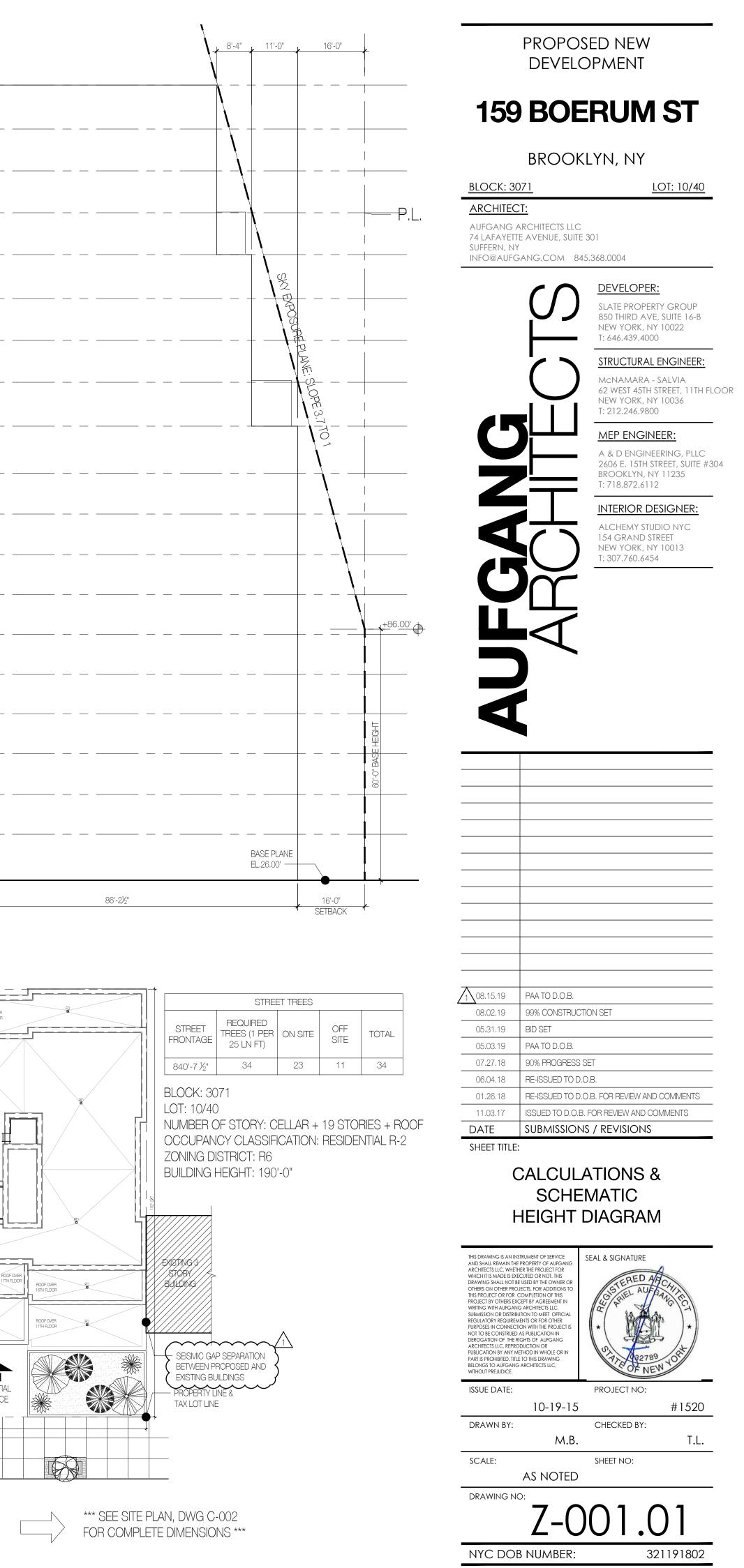
GRAHAM AVE

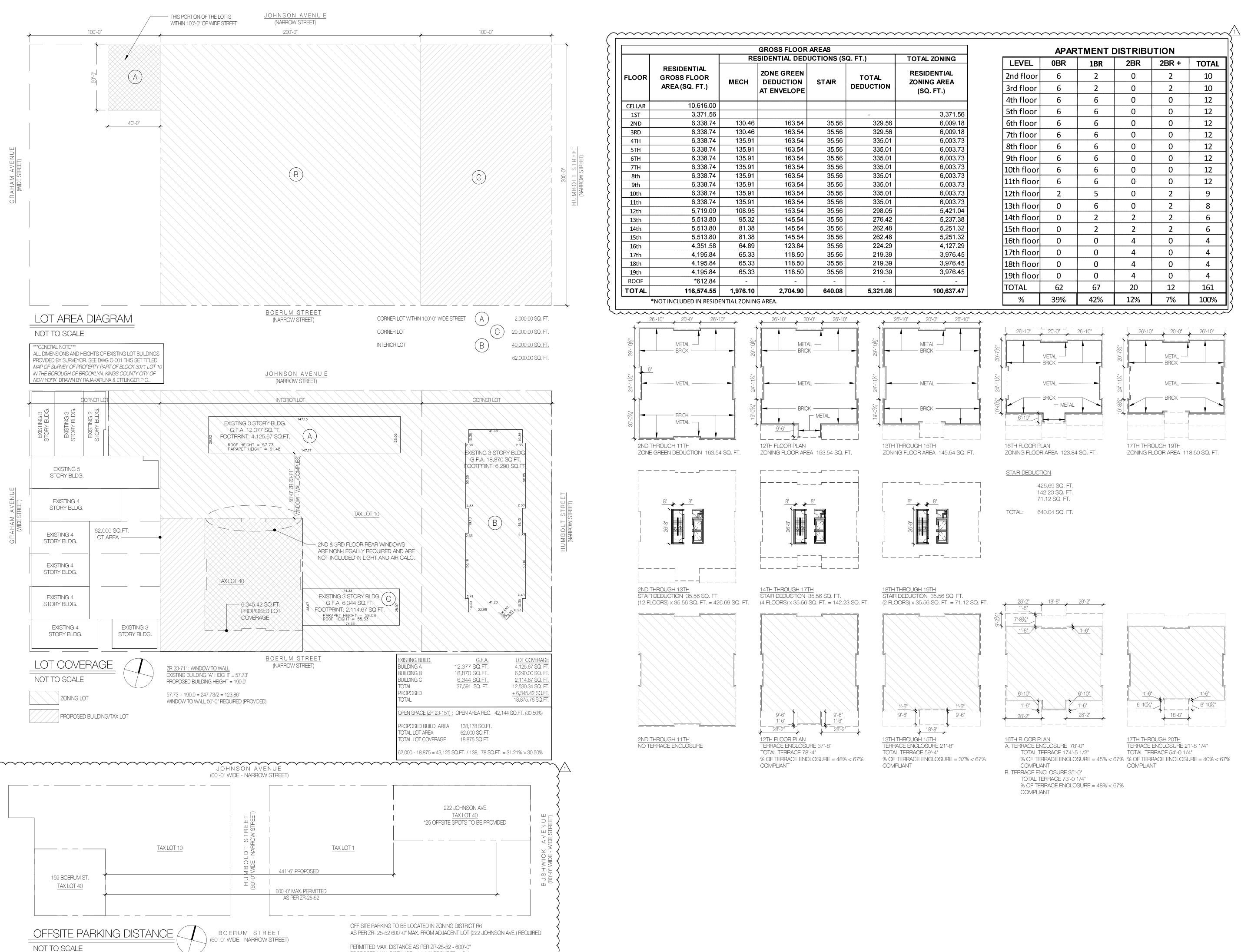
							HEIGHT FACTOR	1		
SITE DATA Block:	3071	LIST OF REQUIRED ACTIONS		CUNST	. CLASS 1-B 2HR	RATED				9'-23/4"
Lots:	40 & 10				ODE OCCUPANCY			{	SLAB EL. 216.00'	— — —
Street Address:	Boerum Street			BUILDING	TO BE FULLY SPR	RINKLERED				19
Existing Zoning: Community District:	R6 1, BROOKLYN				D BE DESIGNED P				FLOOR SLAB EL. 205.50'	
Zoning Section Map:	13b			BUILDING COD	DE PER NYC 2014 I	ENERGY CODE		}	T.O. 18TH FLOOR SLAB EL. 195.50'	18
Zoning Lot Area	62,000.00									17
ZR - Section	Title	Permitted / Required		Ex.to Remain	Proposed	Total	Compliance / Notes		T.O. 17TH FLOOR SLAB EL. 185.50'	
23-32	MIN LOT AREA	1,700								16
		CORNER LOT 42,000.00						<pre>{</pre>	EL. 175.50'	
		INTERIOR LOT 20,000.00 62,000.00					OK- SEE Z-002			15
	FAR	R6				~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		1 (FLOOR SLAB EL. 165.00'	
23-15		RESIDENTIAL 7 FACTOR 2.23	138,260.00	37,591.00	100,637.47		OK-SEE Z-001 FOR EXISTING BUILDING BREAKDOWN	<pre>}</pre>	T.O. 14TH FLOOR SLAB EL. 155.00'	
23-15	OPEN SPACE RATIO	R6	Τ						T.O. 13TH	13
23-151		Open Area Req. 7 FACTOR 30.50%	42,159.68	$-\frac{1}{2}$		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		<pre>></pre>	FLOOR SLAB EL. 145.00'	
		New Building (Covered Lot)		\sim	6,338.74	~~~~~~			т.о. 12ТН 🔤	12
		Building A (Covered Lot)		4,125.67	1 (§		FLOOR SLAB EL. 134.50'	
		Building B (Covered Lot) Building C (Covered Lot)		6,290.00 2,114.67			\$	>		11
				12,530.34			OK - SEE Z-002 FOR LOT COVERAGE		$ \begin{array}{c c} & T.O. 11TH \\ & FLOOR SLAB \\ & EL. 123.25' \\ \end{array} $	
		Open Area Provided 31.20% TOTAL DEVELOPMENT	<u> </u> <u></u>		<u>}</u>	43,130.92	DIAGRAM	- \$	T.O. 10TH FLOOR SLAB EL. 113.50'	10
		62,000.00 X FACTOR =				43,130.92	бок] }	EL. 113.50'	9
22.04	HEIGHT & SETBACKS						ok	7 (T.O. 9TH FLOOR SLAB EL. 103.75'	
23-64 23-64		BASE HEIGHT MAX BASE	60'-0" N/A		60'-0''		OK	{	EL. 103.75' – т.О. 8ТН о	8
23-64		FRONT OPEN AREA (NARROW STREET)	15'-0"		16'-0''		ОК	}	FLOOR SLAB EL. 94.25'	
23-64	DENSITY	SKY EXPOSURE PLAN (NARROW STREET)	3.7 to 1		PROVIDED	/	ЮК	- (т.о. 7тн о	7
23-22		R6 = 680	203	42	161	\sim	OK - SEE Z-001 FOR CALCULATION] {	FLOOR SLAB EL. 84.75'	
25-23	ACCESSORY OFF-STREET	RESIDENTIAL = 161 UNITS	*****			{			T.O. 6TH	6
25-251	PARKING (WITH EXISTING)	AFFORDABLE = 33 UNITS (WAIVED)(ZR 25-251) TOTAL REQ. = 128 UNITS (70%)				\$		ARE AS PER	FLOOR SLAB	5
		$128 \text{ UNITS } \times 70\% = 90 \text{ REQUIRED PARKING}$		18 (WAIVED)	90	90 }	OK - SEE Z-001 FOR CALCULATION	NAVD 88.	T.O. 5TH FLOOR SLAB EL. 65.75'	
25-80						}	 			4
25-80	BICYCLE PARKING	RESIDENTIAL 50% 81	REQ. PARKING		81	}	OK - SEE Z-001 FOR CALCULATION	<u>}</u>	T.O. 4TH FLOOR SLAB EL. 56.25'	+
		funning				·····		<u>}</u>	T.O. 3RD 5	3
			^						FLOOR SLAB EL. 46.50'	
BIKE_STORAGE:		REQUIRED PARKING:	$\sum_{i=1}^{j}$					ζ	FLOOR SLAB EL. 37.00'	+
AREA REQ PER ZR 25-80:		AREA REQ PER ZR 25-23:	\langle					///// {	T.O. 1ST	1
RESIDENTIAL = ONE BICYCLE FOR EVE 15 SQ. FT. 81 SPACES = 1200 SQ FT CALCULATION FOR NUMBER OF BICY		161 APTS : 33 AFFORDABLE, 128 MARKET RATE PARKING FOR 33 AFFORDABLE APARTMENTS: 33 UNITS/2 = 17 SPACES WAIVED (ZR 25-251) RESIDENTIAL = ONE SPACE FOR 70% MARKET RATE APTS = 128 UNITS(70%) = 90 SPACES	\langle						(RES. ENTRANCE)	
CELLAR 486.34 SQ.FT. / 81 SPA		RESIDENTIAL = ONE SPACE FOR 70% MARKET RATE APTS = 128 UNITS(70%) = 90 SPACES 18 EXISTING SPOTS WAIVED AS PER BSA DETERMINATION	$\langle $	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	$\begin{pmatrix} 1 \\ \end{pmatrix}$		W
AS PER ZR 25-83:		TOTAL SPACES REQUIRED= 90 SPACESTOTAL SPACES PROVIDED= 42 SPACES (CELLAR FLOOR) + 23 SPACES (GROUND FLOOR) +		EL:		ASE PLANE CALCULATION AVG. EL	DIST.	5	SCHEMATIC HE	IGHT DIAGRAM
G.C. SHALL PROVIDE A PLAQUE AT TH	HE EXTERIOR OF THE ENTRY TO THE BICYCLE EAST $\frac{3}{4}$ " IN HEIGHT, STATING "BICYCLE PARKING".	25 SPACES (OFFSITE AT 222 JOHNSON AVE. = 90 SPACES	25.80 + 25.89 +	25.89 = 26.00 =	51.69 / 2 51.89 / 2	= 25.85 = 25.95	X 25.00 = 646.13 X 25.00 = 648.63	ζ	SCALE : $\frac{1}{16}$ " = 1'-0"	PROPERTY LINE &
4		DENSITY CALCULATION 2,000 SQ.FT. + 20,000 SQ.FT. + 40,000 SQ.FT. = 62,000 SQ.FT.	26.00 +	26.11 =	52.11 / 2	= 26.06	X 25.00 = 651.38	5		
		62,000 SQ.FT. (TOTAL) x 2.23 (FAR) = 138,260 SQ.FT	TOTAL:	26.20 =	52.31 / 2	= 26.16	X 25.00 = 653.88 100.00 2,600.00			E ROOF
EXISTING BUILD. BUILDING A 12,377 SC	<u>A.F.A.</u> LOT COVERAGE	138,260 SQ.FT. / 680 = 203.3 PROPOSED BUILDING = 161 EXISTING BUILDING A = 12	BASE PLANE ELEV	= 2600 / 100 = 26				5		
BUILDING B 18,870 SC BUILDING C 6,344 SC	Q.FT. 6,290.00 SQ. FT. Q.FT. <u>2,114.67 SQ. FT.</u>	EXISTING BUILDING A = 12 EXISTING BUILDING B = 24 EXISTING BUILDING C = 6	(
37,591 SC	Q. FT. 12,530.34 SQ. FT.	TOTAL = 203 < 203.3 (COMPLIES)	BASE PL	AINE CALCUL						ROOF OVER BD. 20TH FLOOR
			PROPOSED SITE							
						00-1-1-1-1				
JOHNSON AV		- Obe	POW	ERS &	100 100 100 2	E E BAR	MAUJER MI-2 ST			
Q.	50		PL GRAND	C4-	4A	R6B ST.	TEN ETCE DE ST.		35-10% 30'0' MN. SETBACK	
CAHAM						PROL	MEADOW ST. A			
≥ ¹⁸ 7 8	40.05			EN FYCK		TEW EYEN ST.	66			
40	20 001 6 K		A CONTRACT	R6B	THEL WA MARTINEZ PLGQ		MIEL			NOOF OVER 20TH FLOOR
18		3071 ¹⁰	32 × 1 100	STAGG	THE REAL	TIBE	350 NG			
22	5 100 001		5AF	SCHOLES	KA KAYA	THAR			B.4.	FD ROOF OVER
	4 85					AVE				ROOF O 12TH FLO
25				MONTROS FRANCES HANBURGER	JOHNSON		The 400 - ST ST WEA			PD ROOF OVER 11TH FLOOR
52	2		N-	HAMBURGER STERNBERG PARK			-400-ML 57			
GRAH	100 004 81	191	xa>	BOERUM	MAR		MCKIBBIN			
AM AN B	100.07		XXX 1	× × ×	MCKIBBIN	57.	SEIGEL 400-			
		BOERUM ST	(h2)		SEIGEL		Towned MOORE			
	9	90.čcr			MOORE		VARET 400 - ST			
_	001		The	201 0 V	VARET	8 125 ST. R	6			•
2	8 N			XK / / 📎			BEAT METER			26-9/ DISTANCE FROM HYDRANT
								U	PARKING	
ΤΑΧΙΛΑΡ									ANI ^{1 ENTRY} ¹	BOERUM STREE
TAX MAP SCALE : 1/16" = 1'-0"	ZONING LOT PROPOSED E TAX LOT			$\frac{\text{JG MAP}}{\frac{1}{16''} = 1'-0''}$				PLOT P SCALE : ½6		BOERUM STREE (WIDE STREET)

							HEIGHT FACTOR	1		
SITE DATA Block:	3071	LIST OF REQUIRED ACTIONS		CONST	CLASS 1-B 2HR	RATED			T.O. ROOF	<u>9'-2¾"</u>
Lots:	40 & 10				DDE OCCUPANCY				► SLAB EL. 216.00' +	
Street Address: Existing Zoning:	Boerum Street R6			BUILDING T	O BE FULLY SPR	RINKLERED			T.O. 19TH FLOOR SLAB EL. 205.50'	19
Community District:	1, BROOKLYN				BE DESIGNED P E PER NYC 2014 E				- - -	18
Zoning Section Map:	13b 62,000.00								T.O. 18TH FLOOR SLAB EL. 195.50' −	·
Zoning Lot Area	02,000.00									17
ZR - Section	Title	Permitted / Required		Ex.to Remain	Proposed	Total	Compliance / Notes		FLOOR SLAB EL. 185.50'	16
23-32	MIN LOT AREA	CORNER LOT 42,000.00	SQ. FT.						T.O. 16TH ♀ FLOOR SLAB EL. 175.50'	
		INTERIOR LOT 20,000.00 62,000.00					OK- SEE Z-002		т.О. 15ТН 🗧	15
	FAR	R6					1		EL. 165.00'	
23-15		RESIDENTIAL 7 FACTOR 2.23	138,260.00	37,591.00	100,637.47	•	OK-SEE Z-001 FOR EXISTING		T.O. 14TH FLOOR SLAB EL. 155.00'	14
23-15 23-151	OPEN SPACE RATIO	R6							T.O. 13TH	13
		Open Area Req. 7 FACTOR 30.50%	42,159.68			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	1		FLOOR SLAB EL. 145.00'	12
		New Building (Covered Lot) Building A (Covered Lot)	·····	4,125.67	6,338.74				T.O. 12TH	
		Building B (Covered Lot)		6,290.00	{				EL. 134.50'	11
		Building C (Covered Lot)	$\sqrt{1}$	2,114.67 12,530.34	(6,338.74	18,869.08	OK - SEE Z-002 FOR LOT COVERAGE		T.O. 11TH FLOOR SLAB EL. 123.25'	
		Open Area Provided (31.20%)	}		{				ة الأربي الم	10
		TOTAL DEVELOPMENTConstraints62,000.00XFACTOR=	-		(43,130.92	ок		T.O. 10TH つ FLOOR SLAB EL. 113.50'	9
23-64	HEIGHT & SETBACKS	BASE HEIGHT	60'-0''		60'-0''		ОК		T.O. 9TH FLOOR SLAB EL. 103.75'	
23-64		MAX BASE	N/A				ОК			8
23-64 23-64		FRONT OPEN AREA (NARROW STREET) SKY EXPOSURE PLAN (NARROW STREET)	15'-0'' 3.7 to 1		16'-0'' PROVIDED		OK OK		T.O. 8TH FLOOR SLAB EL. 94.25'	7
	DENSITY		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	++	~~~~~~	······		1 2 4	T.O. 7TH FLOOR SLAB EL. 84.75'	
23-22 25-23	ACCESSORY OFF-STREET	R6 = 680 RESIDENTIAL = 161 UNITS	203	42	161	203 {	OK - SEE Z-001 FOR CALCULATION		т.о. 6тн о	6
25-251	PARKING (WITH EXISTING)	AFFORDABLE = 33 UNITS (WAIVED)(ZR 25-251) TOTAL REQ. = 128 UNITS (70%)				Ş		ELEVATIONS ARE AS PER	EL. 75.25'	
		TOTAL REQ. = 128 UNITS (70%) 128 UNITS x 70% = 90 REQUIRED PARKING		18 (WAIVED)	90	90	OK - SEE Z-001 FOR CALCULATION		T.O. 5TH FLOOR SLAB EL. 65.75'	
25-80	BICYCLE PARKING								T.O. 4TH 5 FLOOR SLAB EL. 56.25'	4
		RESIDENTIAL 50% 81	REQ. PARKING		81	Ś	OK - SEE Z-001 FOR CALCULATION			
			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~				T.O. 3RD FLOOR SLAB EL. 46.50'	
	· · · · · · · · · · · · · · · · · · ·		$\uparrow$						T.O. 2ND م	2
BIKE STORAGE:			`) )						FLOOR SLAB EL. 37.00'	
	RY TWO APTS= 161 APTS / 2 = 81 BICYCLES	REA REQ PER ZR 25-23; 1 APTS : 33 AFFORDABLE, 128 MARKET RATE DIVING FOR 22 AFFORDABLE, 128 MARKET RATE	)							
15 SQ. FT. 81 SPACES = 1200 SQ FT CALCULATION FOR NUMBER OF BICY(	CLES PER ZR-25-811 RES	RKING FOR 33 AFFORDABLE APARTMENTS: 33 UNITS/2 = 17 SPACES WAIVED (ZR 25-251) SIDENTIAL = ONE SPACE FOR 70% MARKET RATE APTS = 128 UNITS(70%) = 90 SPACES EXISTING SPOTS WAIVED AS PER BSA DETERMINATION		~~~~~~	~~~~~	~~~~~~			(RES. ENTRANCE) 00-0-WINDOW TO W 7D 00 711	/ VINDOW
CELLAR 486.34 SQ.FT. / 81 SPA AS PER ZR 25-83:	ACES = 6.00 SQ.FT.	)TAL SPACES REQUIRED = 90 SPACES )TAL SPACES PROVIDED = 42 SPACES (CELLAR FLOOR) + 23 SPACES (GROUND FLOOR) +	EL:	EL:		ASE PLANE CALCULATIO	N	)	ZR 23-711 SCHEMATIC	HEIGHT DIAGRAM
G.C. SHALL PROVIDE A PLAQUE AT TH	E EXTERIOR OF THE ENTRY TO THE BICYCLE 25	SPACES (OFFSITE AT 222 JOHNSON AVE. = 90 SPACES SPACES (OFFSITE AT 222 JOHNSON AVE. = 90 SPACES	$) \left\{ \begin{array}{c} -2.2 \\ 25.80 \\ 25.89 \\ + \end{array} \right.$	25.89 = 26.00 =	51.69 / 2 51.89 / 2	= 25.85 = 25.95	X 25.00 = 646.13	) =	SCALE : $\frac{1}{16}$ = 1'-0"	
		NSITY CALCULATION 00 SQ.FT. + 20,000 SQ.FT. + 40,000 SQ.FT. = 62,000 SQ.FT.	26.00 +	26.11 = 26.20 =	51.03         7 2           52.11         / 2           52.31         / 2	= 26.06 = 26.16	X 25.00 = 651.38	)		
		000 SQ.FT. (TOTAL) x 2.23 (FAR) = 138,260 SQ.FT 3,260 SQ.FT. / 680 = 203.3	TOTAL:			20.10	×         25.00         -         055.00            100.00         2,600.00			ED ROOFOVER 16TH RLOOP
EXISTING BUILD. BUILDING A 12,377 SQ BUILDING B 18,870 SQ	2.FT. 4,125.67 SQ. FT.	OPOSED BUILDING = 161 STING BUILDING A = 12	(	= 2600 / 100 = 26			< <			
BUILDING C <u>6,344 SQ</u> 37,591 SQ	2.FT. 2,114.67 SQ. FT.	STING BUILDING B = 24 STING BUILDING C = 6 TOTAL = $203 < 203.3$ (COMPLIES)	BASE PL	ANE CALCULA	ATION	~~~~~~				
·										POOF OVER A DEP 20TH FLOOR
		PF	ROPOSED SITE							
JOHNSON AV		046	POV	NERS	100 12 100 100 100 100 100 100 100 100 1	E E Kon	MANJER MI-2 ST			
GR OF	22		PL- GRAND	C4-4	100 100 100 100 100 100	R6B st	TENTENCE TOOL		35'-10% 30'-0' MIN. SETBACK	
HAM A	s e s					PROLUT FORMER TEN EVEN ST.	MEADON ST A			
< 40	20 40.05	HUMBO 200		TEN EYCK ST. 100	THELHA	E PROLING	AGG AI-			
8		71 10 51	ALL ALL	STAGG ST			A350- 4 5T.			ROOF OVER 20TH RLOOR
B	5 % <u>109.37</u> 100 <u>26.601</u>			SCHOLES	TO CAL		LONG		-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7	FD ROOF OVER 16TH FLOOR
8	4 S			MESEROLE		AVE			SE LE SE	16TH R.OOR ROOF OVER 12TH RLOOR
25	001 3 8 100 40			MON TROS	JOHNSON		The ADD THE ST ST WE		11:0' STBACK	FD ROOF OVER 11TH FLOOR
52 25	2 5	197	D'	HANBURGER Sternberg Park			MCKIBBIN HOU			
BISS	1001 1 15 109.37		Es/	BOERUM	MCKIBBIN	爵	SEIGEL ST			RESIDENTIA ENTRANC
R R	BC	OERUM ST	185		SEIGEL	ETA ST.	ANDORE GMALZ			
		80,491			MOORE		TOPELOCK			
_	001		ALMOTON DE	Cost and		TIES F	26			
	8 S						B647			
TAX MAP	ZONING LOT			NG MAP				0 PLOT PLAI	PARKING ENTRY	BOERUM STREET
SCALE : $\frac{1}{16}$ = 1'-0"	PROPOSED BUILT TAX LOT	DING/		$\frac{1}{16''} = 1' - 0''$				SCALE : $\frac{1}{16}$ = 1		(WIDE STREET)
-										

BIKE_STORAGE:	REQUIRED PARKING:			
AREA REQ PER ZR 25-80: RESIDENTIAL = ONE BICYCLE FOR EVERY TWO APTS= 161 APTS / 2 = 81 BICYCLES 15 SQ. FT. 81 SPACES = 1200 SQ FT CALCULATION FOR NUMBER OF BICYCLES PER ZR-25-811 CELLAR 486.34 SQ.FT. / 81 SPACES = 6.00 SQ.FT.	AREA REQ PER ZR 25-23: 161 APTS : 33 AFFORDABLE, 128 MARKET RATE PARKING FOR 33 AFFORDABLE APARTMENTS: 33 UNITS/2 = 17 SPACES WAIVED (ZR 25-251) RESIDENTIAL = ONE SPACE FOR 70% MARKET RATE APTS = 128 UNITS(70%) = 90 SPACES 18 EXISTING SPOTS WAIVED AS PER BSA DETERMINATION		~~~	$\sim$
$\mathbf{V} = \mathbf{U} = $	TOTAL SPACES REQUIRED = 90 SPACES			
AS PER ZR 25-83:	TOTAL SPACES PROVIDED = 42 SPACES (CELLAR FLOOR) + 23 SPACES (GROUND FLOOR) +	EL:		
G.C. SHALL PROVIDE A PLAQUE AT THE EXTERIOR OF THE ENTRY TO THE BICYCLE	25 SPACES (OFFSITE AT 222 JOHNSON AVE. = 90 SPACES	25.80	+	
PARKING AREA WITH LETTERING AT LEAST $^{3}\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!$		( 25.89	+	
	DENSITY CALCULATION	26.00	+	
<	2,000 SQ.FT. + 20,000 SQ.FT. + 40,000 SQ.FT. = 62,000 SQ.FT. 62,000 SQ.FT. (TOTAL) x 2.23 (FAR) = 138,260 SQ.FT	26.11	+	
		TOTAL:		
EXISTING BUILD.         G.F.A.         LOT COVERAGE           BUILDING A         12,377 SQ.FT.         4,125.67 SQ. FT.           BUILDING B         18,870 SQ.FT.         6,290.00 SQ. FT.           BUILDING C         6,344 SQ.FT.         2,114.67 SQ. FT.           37,591 SQ. FT.         12,530.34 SQ. FT.	138,260 SQ.FT. / 680 = 203.3         PROPOSED BUILDING = 161         EXISTING BUILDING A = 12         EXISTING BUILDING B = 24         EXISTING BUILDING C = 6         TOTAL = 203 < 203.3 (COMPLIES)		ELEV. = 20	







PROPOSED MAX. DISTANCE - 441'-6" PROVIDED = OK

PROPOSED NEW DEVELOPMENT

# **159 BOERUM ST**

## BROOKLYN, NY

### LOT: 10/40

ARCHITECT:

BLOCK: 3071

AUFGANG ARCHITECTS LLC 74 LAFAYETTE AVENUE, SUITE 301

SUFFERN, NY INFO@AUFGANG.COM 845.368.0004



### STRUCTURAL ENGINEER:

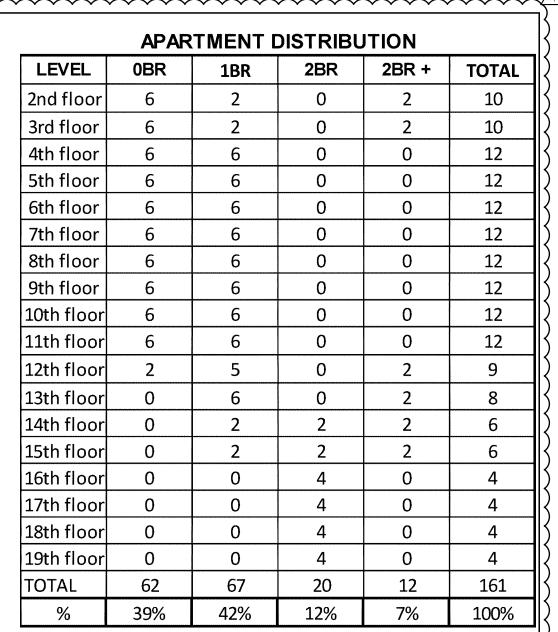
McNAMARA - SALVIA 62 WEST 45TH STREET, 11TH FLOOR NEW YORK, NY 10036 T: 212.246.9800

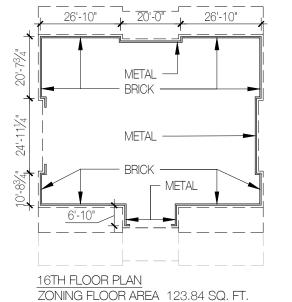
### MEP ENGINEER:

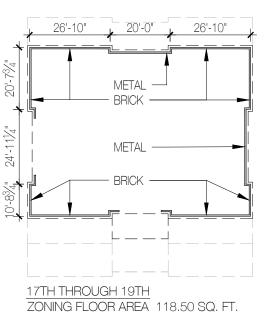
A & D ENGINEERING, PLLC 2606 E. 15TH STREET, SUITE #304 BROOKLYN, NY 11235 T: 718.872.6112

#### INTERIOR DESIGNER:

ALCHEMY STUDIO NYC 154 GRAND STREET NEW YORK, NY 10013 T: 307.760.6454



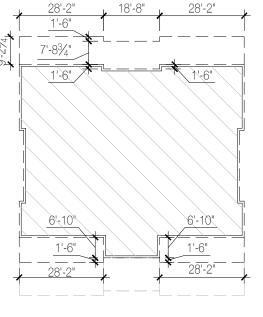




STAIR DEDUCTION

426.69 SQ. FT. 142.23 SQ. FT. 71.12 SQ. FT.

TOTAL: 640.04 SQ. FT.

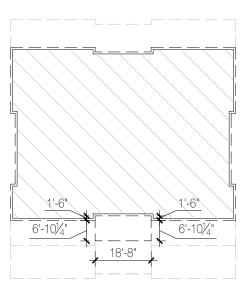


16TH FLOOR PLAN

A. TERRACE ENCLOSURE 78'-0" TOTAL TERRACE 174'-5 1/2" % OF TERRACE ENCLOSURE = 45% < 67% % OF TERRACE ENCLOSURE = 40% < 67% COMPLIANT

B. TERRACE ENCLOSURE 35'-0"

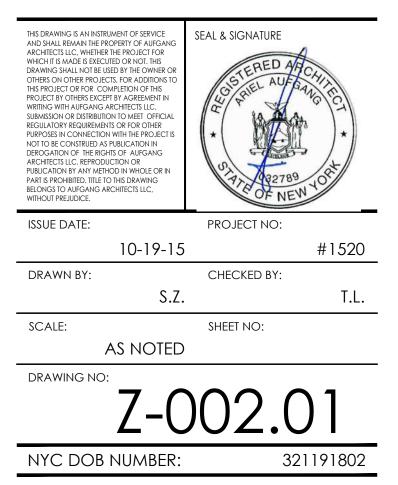
TOTAL TERRACE 73'-0 1/4" % OF TERRACE ENCLOSURE = 48% < 67% COMPLIANT

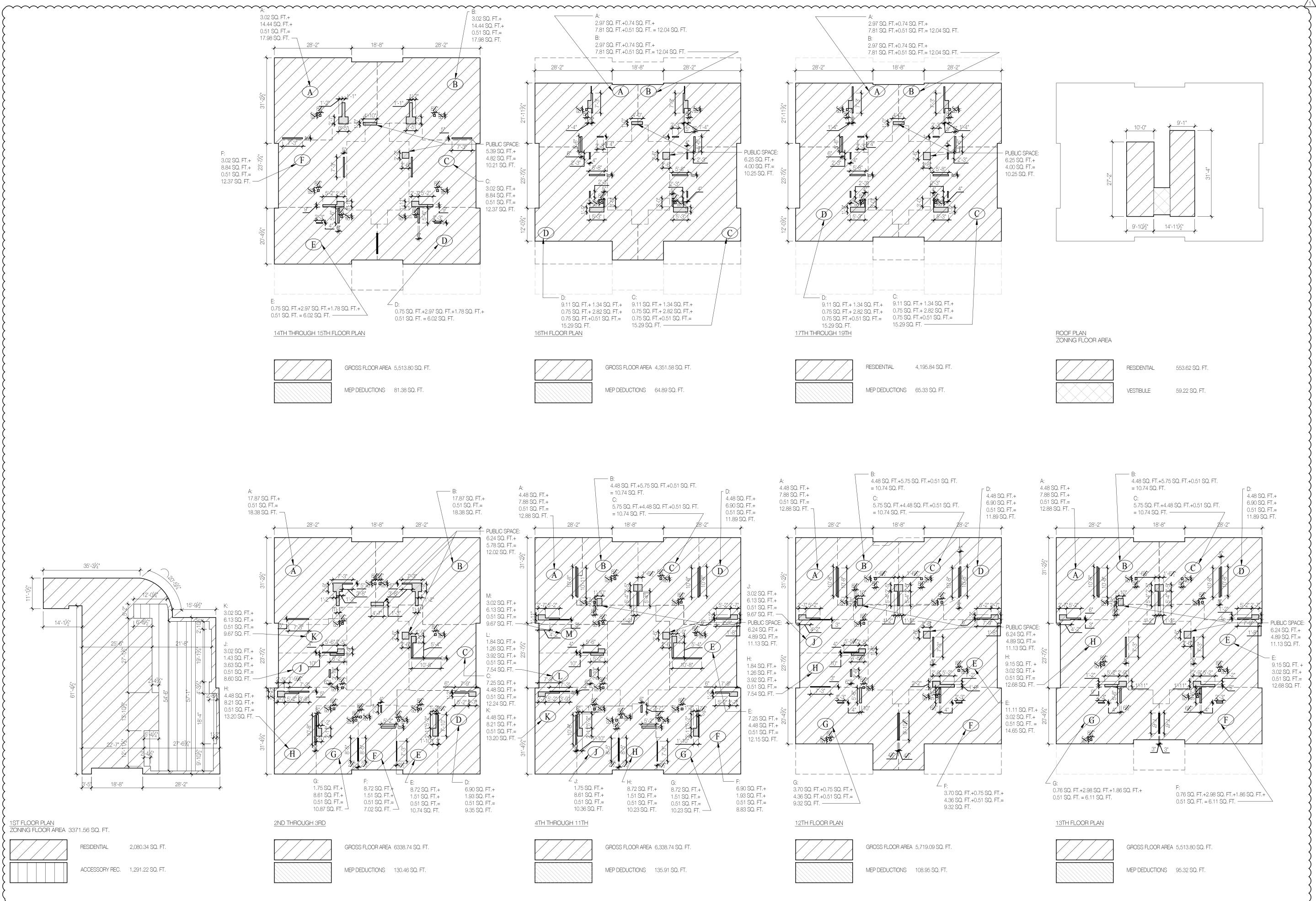


17TH THROUGH 20TH TERRACE ENCLOSURE 21'-8 1/4" TOTAL TERRACE 54'-0 1/4" COMPLIANT

Z	08.15.19	PAA TO D.O.B.
	08.02.19	99% CONSTRUCTION SET
	05.31.19	BID SET
	05.03.19	PAA TO D.O.B.
	07.27.18	90% PROGRESS SET
	06.04.18	RE-ISSUED TO D.O.B.
	01.26.18	RE-ISSUED TO D.O.B. FOR REVIEW AND COMMENTS
	11.03.17	ISSUED TO D.O.B. FOR REVIEW AND COMMENTS
	DATE	SUBMISSIONS / REVISIONS
	SHEET TITLE:	

LOT AREA & LOT COVERAGE DIAGRAMS





PROPOSED NEW DEVELOPMENT



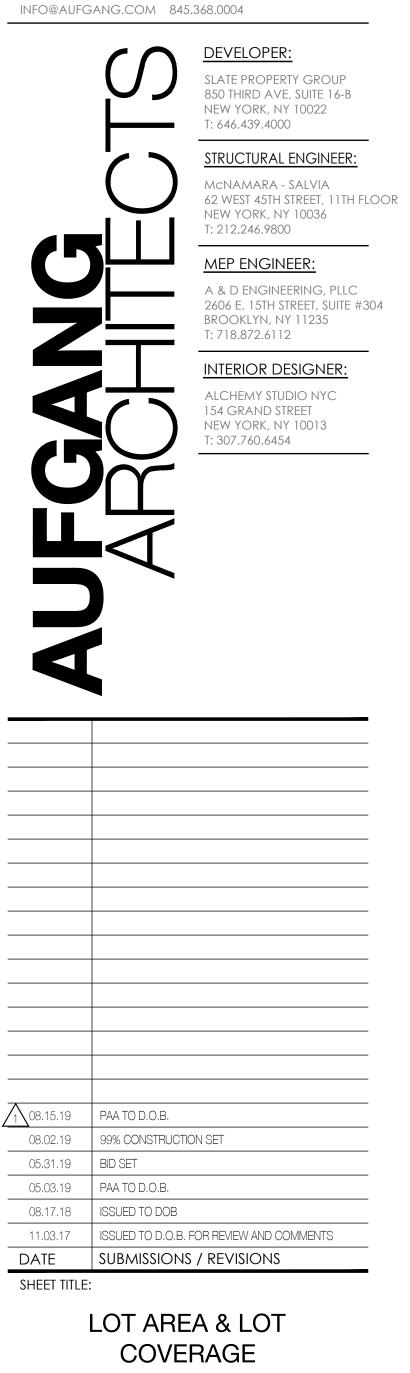
## BROOKLYN, NY

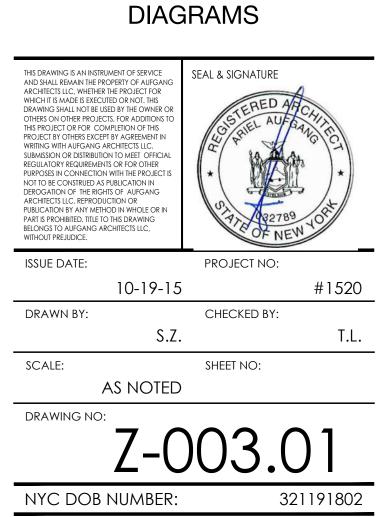
### LOT: 10/40

ARCHITECT:

BLOCK: 3071

AUFGANG ARCHITECTS LLC 74 LAFAYETTE AVENUE, SUITE 301 SUFFERN, NY





	ope Complia	nce C	ertif	cate		
Project Information						
Energy Code:	90.1 (2013) Standard					
Project Title:						
Location:	New York, New York					
Climate Zone:	4a					
Project Type:	New Construction					
/ertical Glazing / Wall Area: Performance Sim. Specs:	23% EnergyPlus 8.1.0.009 (El	DW-USA NV	Now York	aGuardia /	D 725030 TI	MV2 or
enormance oim, opecs,	EnergyPlus 6.1.0.009 (El	PW. USA_NT_	New. TOTK-	LaGuardia./	AP.725030_11	wrs.e
Construction Site: 159 Boerum Street Brooklyn, NY 11206	Owner/Agent:		Desi	gner/Contrac	tor:	
Building Area		Floor A	Area			
1-Multifamily : Residential		116	458			
Envelope Assemblies Asse	mbly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Bud Fac
RF - 1 Paved Roof - Private Terrace [Bldg. Use 1 - Multifamily]	e: Insulation Entirely Above Deck,	4334		30.0	0.032	0
RF - 2 Paved Area on Grade: Insula Use 1 - Multifamily]	ation Entirely Above Deck, [Bldg.	368		45.0	0.022	0
RF - 3 Bulkhead Roof: Insulation Er Multifamily]		1026		30.0	0.032	0
RF - 4 Green Roof: Insulation Entire Multifamily]		877		30.0	0.032	0
FL - 1 Underside of 1st Floor: Conc space), [Bldg. Use 1 - Multifamily]	rete Floor (over unconditioned	5154	1000	15.0	0.055	0
NORTH WT - 1A Brick Wall: Steel-Framed,	16" o.c., [Bldg, Use 1 - Multifamily]	12089	14.7	12.6	0.048	0
	Perf. Specs.: Product ID NA, SHGC	3445			0.380	0
Opaque Metal Door: Uninsulated Si Use 1 - Multifamily]		108			0.500	0
WT - 1B Brick Wall - Slab Edge: So Density, Furring: None, [Bldg. Use		1106	-	12.6	0.069	0
WT - 1C PTAC Louvers at WT - 1: ( Use 1 - Multifamily] (b)		418	-		0.500	0
WT - 2A 3" EIFS Wall with CMU Ba Grouted, Normal Density, Furring: N	None, [Bldg. Use 1 - Multifamily]	600		15.0	0.059	0
0.38, VT 0.41, [Bldg. Use 1 - Multifa	이지 - · · · · · · · · · · · · · · · · · ·	26			0.380	0
W1 - 3 Inactive Louvers: Metal Buil	ding Wall, Single Layer Mineral Fiber Multifamily]	398	0.0	12.6 15.0	0.074	0
(compressed at girt), [Bldg. Use 1 -	ncrete back-up: Solid Concrete:10"	197				

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U- Factor _(a)	Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget L Factor
ion Glazing: Metal Frame:Fixed, Perf. Specs.: Product ID NA, SHGC 8. VT 0.41, [Bldg. Use 1 - Multifamily] (c)	58			0.380	0.420	(compressed at girt), [Bldg. Use 1 - Multifamily]					
- 6 EIFS Bulkhead Wall with Stud wall back-up: Steel-Framed, 16"	119	14.7	12.6	0.048	0.064	WT - 5 EIFS Bulkhead Wall with Concrete back-up: Solid Concrete:10" Thickness, Normal Density, Furring: None, [Bldg. Use 1 - Multifamily]	608		15.0	0.059	0.090
, [Bldg. Use 1 - Multifamily] ST						Vision Glazing: Metal Frame:Fixed, Perf. Specs.: Product ID NA, SHGC 0.38, VT 0.41, [Bldg. Use 1 - Multifamily] (c)	80			0.380	0.420
- 1A Brick Wall: Steel-Framed, 16" o.c., [Bldg. Use 1 - Multifamily]	12604	14.7	12.6	0.048	0.064	WT - 6 EIFS Bulkhead Wall with Stud wall back-up: Steel-Framed, 16"	37	14.7	12.6	0.048	0.064
ion Glazing: Metal Frame:Fixed, Perf. Specs.: Product ID NA, SHGC 8, VT 0.41, [Bldg. Use 1 - Multifamily] (c)	2695			0.380	0.420	<ul> <li>o.c., [Bldg. Use 1 - Multifamily]</li> <li>Vision Glazing: Metal Frame: Fixed, Perf. Specs.: Product ID NA, SHGC</li> </ul>	21			0.380	0.420
aque Metal Door: Uninsulated Single-Layer Metal, Swinging, [Bldg. e 1 - Multifamily]	27			0.500	0.500	0.38, VT 0.41, [Bldg. Use 1 - Multifamily] (c) (a) Budget U-factors are used for software baseline calculations ONI	Y, and are not cod	e requireme	ints.		
- 1B Brick Wall - Slab Edge: Solid Concrete:8" Thickness, Normal nsity, Furring: None, [Bldg. Use 1 - Multifamily]	1144	0777.0	12.6	0.069	0.090	(b) 'Other' components require supporting documentation for propose (c) Fenestration product performance must be certified in accordance		equires supp	orting docum	entation.	
- 1C PTAC Louvers at WT - 1: Other Metal Building Wall, [Bldg. e 1 - Multifamily] (b)	573			0.500	0.050	Envelope PASSES: Design 1% better than code					
- 2A 3" EIFS Wall with CMU Backup: Concrete Block:8", Solid buted, Normal Density, Furring: None, [Bldg. Use 1 - Multifamily]	909		15.0	0.059	0.090	Envelope Compliance Statement					
- 2B 3" EIFS Wall with CMU Backup - Slab Edge: Solid Concrete:8" ckness, Normal Density, Furring: None, [Bldg, Use 1 - Multifamily]	55		15.0	0.060	0.090	Compliance Statement: The proposed envelope design represe specifications, and other calculations submitted with this permi	application. The	proposed	envelope sy	stems have	been
- 3 Inactive Louvers: Metal Building Wall, Single Layer Mineral Fiber mpressed at girt), [Bldg. Use 1 - Multifamily]	60	0.0	12.6	0.074	0.050	designed to meet the 90.1 (2013) Standard requirements in CO mandatory requirements listed in the Inspection Checklist.	Mcheck Version	4.1.1.0 and	to comply	with any appl	icable
- 5 EIFS Bulkhead Wall with Concrete back-up: Solid Concrete:10" ckness, Normal Density, Furring: None, [Bldg, Use 1 - Multifamily]	632		15.0	0.059	0.090	Name - Title Signature				Date	
ion Glazing: Metal Frame:Fixed, Perf. Specs.: Product ID NA, SHGC 8, VT 0.41, [Bldg. Use 1 - Multifamily] (c)	53	-		0.380	0.420	Name - Title Signature				Date	
- 6 EIFS Bulkhead Wall with Stud wall back-up: Steel-Framed, 16" , [Bldg. Use 1 - Multifamily]	58	14.7	12.6	0.048	0.064						
н											
- 1A Brick Wall: Steel-Framed, 16" o.c., [Bldg. Use 1 - Multifamily]	12097	14.7	12.6	0.048	0.064						
ion Glazing: Metal Frame:Fixed, Perf. Specs.: Product ID NA, SHGC 8, VT 0.41, [Bldg. Use 1 - Multifamily] (c)	4094			0.380	0.420						
aque Metal Door: Uninsulated Single-Layer Metal, Swinging, [Bldg. a 1 - Multifamily]	155	0.777.0		0.500	0.500						
- 1B Brick Wall - Slab Edge: Solid Concrete:8" Thickness, Normal nsity, Furring: None, [Bldg. Use 1 - Multifamily]	1151	-	12.6	0.069	0.090						
<ul> <li>IC PTAC Louvers at WT - 1: Other Metal Building Wall, [Bldg.</li> <li>I - Multifamily] (b)</li> </ul>	482			0.500	0.050						
- 3 Inactive Louvers: Metal Building Wall, Single Layer Mineral Fiber mpressed at girt), [Bldg. Use 1 - Multifamily]	459	0.0	12.6	0.074	0.050						
<ul> <li>- 4 Storefront: Metal Building Wall, Single Layer Mineral Fiber mpressed at girt), [Bldg. Use 1 - Multifamily]</li> </ul>	361	0.0	0.0	1.180	0.050						
ion Glazing: Metal Frame:Fixed, Perf. Specs.: Product ID NA, SHGC 8, VT 0.70, [Bldg. Use 1 - Multifamily] (c)	360	-		0.380	0.420						
<ul> <li>5 EIFS Bulkhead Wall with Concrete back-up: Solid Concrete:10" ckness, Normal Density, Furring: None, [Bldg. Use 1 - Multifamily]</li> </ul>	317	(	15.0	0.059	0.090						
ion Glazing: Metal Frame:Fixed, Perf. Specs.: Product ID NA, SHGC 8, VT 0.41, [Bldg. Use 1 - Multifamily] (c)	58			0.380	0.420						
<u>ST</u>					120030-0070						
- 1A Brick Wall: Steel-Framed, 16" o.c., [Bldg. Use 1 - Multifamily]	13391	14.7	12.6	0.048	0.064						
ion Glazing: Metal Frame:Fixed, Perf. Specs.: Product ID NA, SHGC 8, VT 0.41, [Bldg. Use 1 - Multifamily] (c)	3227			0.380	0.420						
aque Metal Door: Uninsulated Single-Layer Metal, Swinging, [Bldg. a 1 - Multifamily]	121			0.500	0.500						
<ul> <li>- 1B Brick Wall - Slab Edge: Solid Concrete:8" Thickness, Normal nsity, Furring: None, [Bldg. Use 1 - Multifamily]</li> </ul>	1204	0.000	12.6	0.069	0.090						
- 1C PTAC Louvers at WT - 1: Other Metal Building Wall, [Bldg. e 1 - Multifamily] (b)	676	() <del></del> ()		0.500	0.050						
- 3 Inactive Louvers: Metal Building Wall, Single Layer Mineral Fiber	79	0.0	25.2	0.038	0.050						

Section # Framing / Rough-In Inspection Plans Verified Value Value Complies? Comments/Assumptions	Section # Rough-In Electrical Inspection Complies? Comments/Assumptions	Section # & Insulation Inspection         Plans Verified Value         Field Verified Value         Complies?         Comments/Assumptions	Section #         Insulation Inspection         Plans Verified Value         Field Verified Value         Complies?         Comments/Assumptions	Section # Final Inspection Complies? Comments/Assumptions
5.4.3.2       Factory-built and site-assembled          □Complies         □Does Not         □abeled or certified as meeting air         □eakage requirements.         □Not Observable         □Not Applicable         5.4.3.4         Vestibules are installed where         □Complies         □Complies         □Does Not	8.4.2       At least 50% of all 125 volt 15- and       Complies         [EL10] ² An automatic control device.       Does Not         Image: Not Observable       Not Applicable	5.5.3.1 [IN2] ¹ Roof R-value. For some ceiling systems, verification may need to occur during Framing Inspection.       R       Complies       See the Envelope Assemblies         Metal       Metal       Metal       Not Observable         Attic       Attic       Not Applicable	5.8.1.7.1       Attics and mechanical rooms have insulation protected where adjacent to attic or equipment access.       Complies         5.8.1.7.2       Foundation vents do not interfere with insulation.       Complies	5.4.3.3       Weatherseals installed on all loading       Complies         [F11] ¹ dock cargo doors in Climate Zones 4- 8.       Does Not         Additional Comments/Assumptions:       Not Applicable
Interf     Conditioned space from the exterior, and meet exterior envelope requirements. Doors have self-closing devices, and are >=7 ft apart (>= 16 ft apart for adjoinging floor area >= 40000 so.ft.). Vestibule floor area <=7		5.8.1.2, 5.8.1.3 [IN3] ¹ Roof insulation installed per manufacturer's instructions. Blown or poured loose-fill insulation is installed only where the ceiling slope is <= 3:12.	S.8.1.8       Insulation intended to meet the roof insulation requirements cannot be installed on top of a suspended ceiling, Mark this       Complies         Insulation intended ceiling, Mark this       Does Not	
50 sq.ft. or 2 percent of the adjoining conditioned floor area.         5.5.4.3a       Vertical fenestration U-Factor.         [FR8] ¹ Vertical fenestration U-Factor.		[IN6] ¹ value.       Mass       Mass       Does Not       table for values.         Metal       Metal       Not Observable         Steel       Steel       Not Applicable         Wood       Wood	Additional Comments/Assumptions:	
Image: Section of the stration of the strate of the s		5.8.1.2 [IN7] ¹ Above-grade wall insulation installed per manufacturer's instructions.       Complies Does Not Not Observable Not Applicable         5.5.3.4       Floor insulation R-value.       R       R       Complies		
5.5.4.4.1       Vertical fenestration SHGC value.       SHGC:       Complies       See the Envelope Assemblies         [FR10] ¹ Vertical fenestration SHGC value.       SHGC:       Does Not       Does Not         [S.5.4.4.2]       Skylight SHGC value.       SHGC:       SHGC:       Complies       See the Envelope Assemblies         [FR11] ¹ SHGC:       SHGC:       Complies       See the Envelope Assemblies		[IN8] ² Mass       Mass       Does Not       Itable for values.         Steel       Steel       Not Observable       Not Applicable         5.8.1.2       Floor insulation installed per       Complies		
S.8.2.1,     Fenestration products rated (U- 5.8.2.3, factor, SHGC, and VT) in S.8.2.4,     Complies Does Not accordance with NFRC or energy S.8.2.5       S.8.2.1,     Fenestration products rated (U- factor, SHGC, and VT) in S.8.2.4,     Does Not Does Not Does Not		[IN9] ² manufacturer's instructions.       Does Not         Does Not       Not Observable         Not Applicable         5.8.1.1       Building envelope insulation is         [IN10] ² Iabeled with R-value or insulation		
[FR12] ² Image: Complex state of the complex s		certificate has been provided listing R-value and other relevant data.       INot Observable INot Applicable         5.8.1.9 [IN18] ² Building envelope insulation extends over the full area of the component at the proposed rated R or U value.       IComplies IDoes Not INot Observable		
rate has been provided by the manufacturer.       INot Applicable         5.5.3.6       U-factor of opaque doors associated with the building thermal envelope meets requirements.       U-       IComplies table for values.         IFR14]2       Sociated with the building thermal envelope meets requirements.       Nonswinging       Nonswinging       Nonswinging		5.8.1.4 [IN11] ² Eaves are baffled to deflect air to above the insulation.       Complies Does Not Not Observable Not Applicable		
5.4.3.1       Continuous air barrier is              □Complies             □poes Not             □poes Not             □poes Not             □not Observable             □Not Observable             □Not Applicable		5.8.1.5       Insulation is installed in       Complies         [IN12] ² substantial contact with the inside surface separating conditioned space from unconditional space.       Does Not         5.8.1.6       Recessed equipment installed in       Complies         UN121 ² Wilding compliance       Does Not		
Additional Comments/Assumptions:		[IN13] ² building envelope assemblies does not compress the adjacent insulation.       Does Not         Not Observable       Not Applicable		}
1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)	1     High Impact (Tier 1)     2     Medium Impact (Tier 2)     3     Low Impact (Tier 3)	1     High Impact (Tier 1)     2     Medium Impact (Tier 2)     3     Low Impact (Tier 3)	1 High Impact (Tier 1)     2 Medium Impact (Tier 2)     3 Low Impact (Tier 3)	1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)
Project Title: Report date: 07/11/19 Data filename: G:\0040970 159 Boerum Street\F15 Facades\04 Calculations\Section 3 - Page 6 of 12 ComCheck\20190711_Comcheck Update-PAA\20190712_ComCheck-DOB.cck	Project Title: Report date: 07/11/19 Data filename: G:\0040970 159 Boerum Street\F15 Facades\04 Calculations\Section 3 - Page 8 of 12 ComCheck\20190711_Comcheck Update-PAA\20190712_ComCheck-DOB.cck	Project Title: Report date: 07/11/19 Data filename: G:\0040970 159 Boerum Street\F15 Facades\04 Calculations\Section 3 - Page 9 of 12 ComCheck\20190711_Comcheck Update-PAA\20190712_ComCheck-DOB.cck	Project Title:       Report date: 07/11/19         Data filename:       G:\0040970 159 Boerum Street\F15 Facades\04 Calculations\Section 3 -       Page 10 of 12         ComCheck\20190711_Comcheck Update-PAA\20190712_ComCheck-DOB.cck       Page 10 of 12	Project Title: Report date: 07/11/19 Data filename: G:\0040970 159 Boerum Street\F15 Facades\04 Calculations\Section 3 - Page 11 of 12 ComCheck\20190711_Comcheck Update-PAA\20190712_ComCheck-DOB.cck
Lunn	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	

<b>V</b>	<b>Inspection</b>		L
	Energy Code: 90.1 (20	13) Standard	
	nents: 0.0% were addressed dire		
requireme	ent, the user certifies that a code re	quirement will be met a	<ul> <li>in the COMcheck Requirements screen. For ea ind how that is documented, or that an excepti a reference to that table is provided.</li> </ul>
Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
4.2.2, 5.4.3.1.1, 5.7 [PR1] ¹	Plans and/or specifications provide all information with which compliance can be determined for the building envelope and document where exceptions to the standard are claimed.	Complies Does Not Not Observable Not Applicable	
4.2.2, 8.4.1.1, 8.4.1.2, 8.7 [PR6] ²	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the electrical systems and equipment and document where exceptions are claimed. Feeder connectors sized in accordance with approved plans and branch circuits sized for maximum drop of 3%.	□Complies □Does Not □Not Observable □Not Applicable	
5.5.4.2.3 [PR7] ²	In buildings > 2,500 ft2, any enclosed spaces directly under a roof with ceiling heights > 15 ft and used as an office, lobby, atrium, concourse, corridor, storage (including nonrefrigerated warehouse), gymnasium, fitness/exercise area, playing area, gymnasium seating area, convention exhibit/event space, courtroom, automotive service, fire station engine room, manufacturing corridor/transition and bay areas, retail, library reading and stack areas, distribution/sorting area, transportation bagage and seating areas, or workshop, the following requirements apply: The daylight zone under skylights is >= half the floor area and (a) the skylight reate to daylight zone is >= 3 percent with a skylight VT >= 0.40 or (b) the minimum skylight effective aperture >= 1 percent. The skylights have a measured haze value > 90 percent.	□Complies □Does Not □Not Observable □Not Applicable	
Auton	al Comments/Assumptions:	2 Medium Impact (Tier	2) 3 Low Impact (Tier 3)

Section # & Req.ID	Insulation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumpt
5.5.3.1 [IN2] ¹	Roof R-value. For some ceiling systems, verification may need to occur during Framing Inspection.	R Above deck Metal Attic	R Above deck Metal Attic	□Complies □Does Not □Not Observable □Not Applicable	See the Envelope Assembl table for values.
5.8.1.2, 5.8.1.3 [IN3] ¹	Roof insulation installed per manufacturer's instructions. Blown or poured loose-fill insulation is installed only where the ceiling slope is $<=$ 3:12.		1	Complies Does Not Not Observable Not Applicable	
5.5.3.2 [IN6] ¹	Above-grade wall insulation R- value.	R   Mass   Metal   Steel   Wood	R   Mass   Metal   Steel   Wood	Complies Does Not Not Observable Not Applicable	See the Envelope Assembl table for values.
5.8.1.2 [IN7] ¹	Above-grade wall insulation installed per manufacturer's instructions.			Complies Does Not Not Observable	
5.5.3.4 [IN8] ²	Floor insulation R-value.	R Mass Steel Wood	R Mass Steel Wood	□Complies □Does Not □Not Observable □Not Applicable	See the Envelope Assembl table for values.
5.8.1.2 [IN9] ²	Floor insulation installed per manufacturer's instructions.		1	Complies Does Not Not Observable Not Applicable	1 
5.8.1.1 [IN10] ²	Building envelope insulation is labeled with R-value or insulation certificate has been provided listing R-value and other relevant data.			Complies Does Not Not Observable Not Applicable	
5.8.1.9 [IN18] ²	Building envelope insulation extends over the full area of the component at the proposed rated R or U value.			Complies Does Not Not Observable Not Applicable	
5.8.1.4 [IN11] ²	Eaves are baffled to deflect air to above the insulation.			Complies Does Not Not Observable Not Applicable	
5.8.1.5 [IN12] ²	Insulation is installed in substantial contact with the inside surface separating conditioned space from unconditional space.			Complies Does Not Not Observable Not Applicable	
5.8.1.6 [IN13] ²	Recessed equipment installed in building envelope assemblies does not compress the adjacent insulation.			Complies Does Not Not Observable Not Applicable	
	1 High Impact (Tier	1) 2 Medium	Impact (Tier 2)	3 Low Impact (Ti	er 3)
		· Real · · · · · · · · · · · ·	P (//e/ =/		

PROPOSED NEW DEVELOPMENT

# **159 BOERUM ST**

# BROOKLYN, NY

### LOT: 10/40

SLATE PROPERTY GROUP 850 THIRD AVE, SUITE 16-B NEW YORK, NY 10022 T: 646.439.4000

STRUCTURAL ENGINEER:

62 WEST 45TH STREET, 11TH FLOOR

McNAMARA - SALVIA

NEW YORK, NY 10036 T: 212.246.9800

BLOCK: 3071 ARCHITECT:

AUFGANG ARCHITECTS LLC 74 LAFAYETTE AVENUE, SUITE 301 SUFFERN, NY





Section # & Req.ID	Footing / Foundation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
5.5.3.3 [FO1] ²	Below-grade wall insulation R- value.	R	R	□Complies □Does Not □Not Observable □Not Applicable	See the Envelope Assemblies table for values.
5.5.3.5 [FO3] ²	Slab edge insulation R-value.	R Unheated Heated	R Unheated Heated	□Complies □Does Not □Not Observable □Not Applicable	See the Envelope Assemblies table for values.
5.5.3.5 [FO5] ²	Slab edge insulation depth/length.	ft	ft	Complies Does Not Not Observable Not Applicable	See the Envelope Assemblies table for values.
5.8.1.7 [FO6] ¹	Exterior insulation protected against damage, sunlight, moisture, wind, landscaping and equipment maintenance activities.			Complies Does Not Not Observable Not Applicable	
5.8.1.7.3 [FO7] ¹	Insulation in contact with the ground has <=0.3% water absorption rate per ASTM C272.			Complies Does Not Not Observable Not Applicable	
6.4.4.1.5 [FO11] ³	Bottom surface of floor structures incorporating radiant heating insulated to >=R-3.5.	R	R	Complies Does Not Not Observable Not Applicable	See the Envelope Assemblies table for values.

 1 High Impact (Tier 1)
 2 Medium Impact (Tier 2)
 3 Low Impact (Tier 3)

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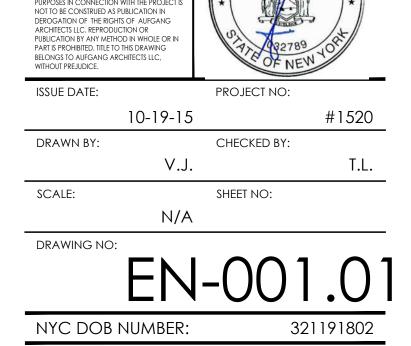
Report date: 07/11/19

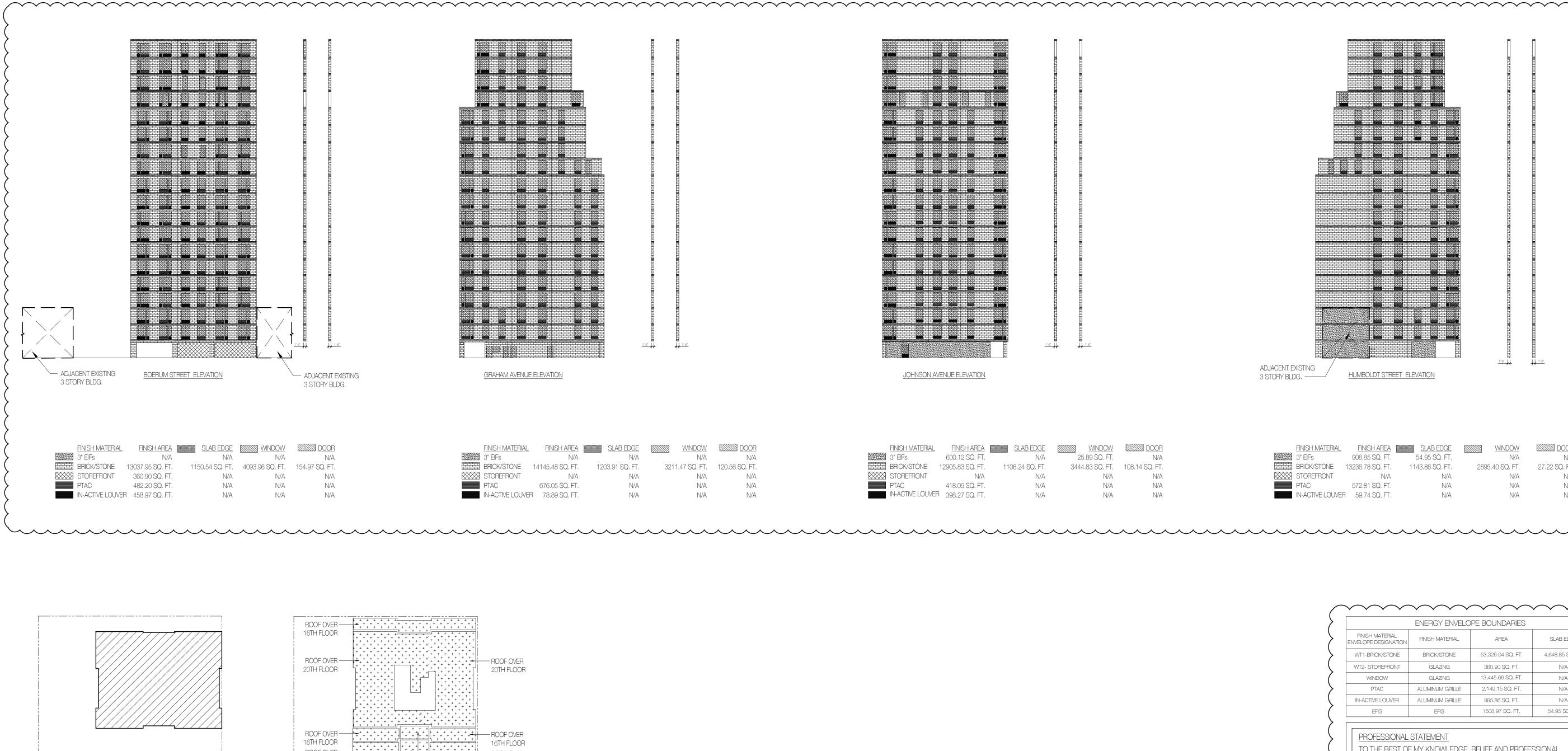
Page 5 of 12

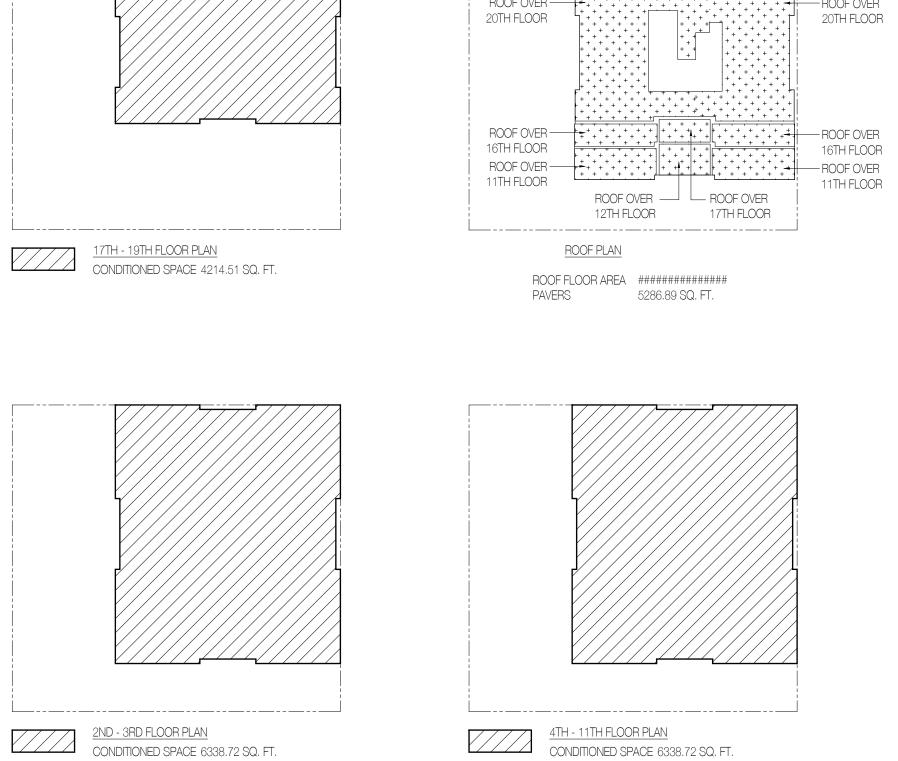
Project Title:

Section				
# & Req.ID	Final Inspection	Complies?	Comments/Assumptions	
5.4.3.3	Weatherseals installed on all loading	Complies		
[FI1] ¹	dock cargo doors in Climate Zones 4- 8.	Does Not Not Observable		
		2 Medium Impact (Tier 2	) 3 Low Impact (Tier 3)	

	MEP ENGINEER:           A & D ENGINEERING, PLLC           2606 E. 15TH STREET, SUITE #3           BROOKLYN, NY 11235           T: 718.872.6112
	INTERIOR DESIGNER: ALCHEMY STUDIO NYC 154 GRAND STREET NEW YORK, NY 10013 T: 307.760.6454
A	
08.15.19	PAA TO D.O.B.
08.02.19	99% CONSTRUCTION SET BID SET
05.03.19	PAA TO D.O.B.
07.27.18	90% PROGRESS SET
06.04.18	RE-ISSUED TO D.O.B.
05.02.18	REVISED AS PER ENERGY COMMENTS
01.26.18	RE-ISSUED TO D.O.B. FOR REVIEW AND COMMENTS
11.03.17	ISSUED TO D.O.B. FOR REVIEW AND COMMENTS
DATE	SUBMISSIONS / REVISIONS
SHEET TITLE	ENERGY ANALISYS
AND SHALL REMAIN TH ARCHITECTS LLC, WHE WHICH IT IS MADE IS EX DRAWING SHALL NOT OTHERS ON OTHER PRI THIS PROJECT OR FOR	NSTRUMENT OF SERVICE HE PROPERTY OF AUFGANG THER THE PROJECT FOR KECUTED OR NOT. THIS BE USED BY THE OWNER OR OLECTS, FOR ADDITIONS TO COMPLETION OF THIS XCEPT BY AGREEMENT IN NG ARCHITECTS LLC.







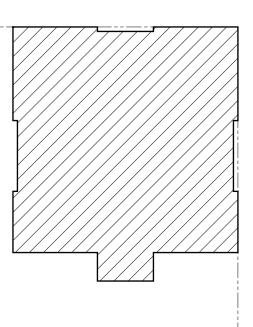
$\begin{array}{c} \mathbf{H} \\ $		
	JOHNSON AVENUE ELEVATION	ADJACENT EXIS 3 STORY BLDG.
AB EDGE WINDOW DOOR	FINISH MATERIAL FINISH AREA SLAB EDGE WINDOW	
N/A N/A N/A 91 SQ. FT. 3211.47 SQ. FT. 120.56 SQ. FT.	Image: Second state         Second	

STOREFRONT

PTAC 418.09 SQ. FT.

IN-ACTIVE LOUVER 398.27 SQ. FT.

N/A



N/A

N/A

N/A

N/A

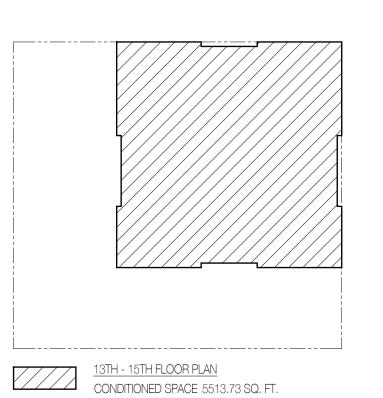
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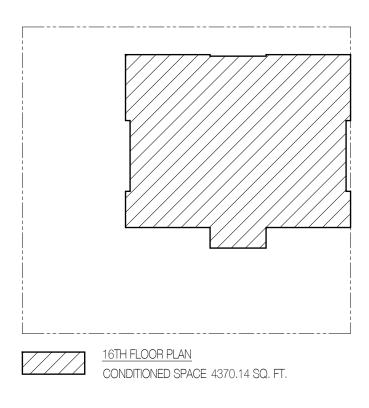
N/A

N/A

N/A

<u>12TH FLOOR PLAN</u> CONDITIONED SPACE 5719.05 SQ. FT.





PROPOSED NEW DEVELOPMENT

# **159 BOERUM ST**

## BROOKLYN, NY

### LOT: 10/40

ARCHITECT:

BLOCK: 3071

AUFGANG ARCHITECTS LLC 74 LAFAYETTE AVENUE, SUITE 301 SUFFERN, NY

INFO@AUFGANG.COM 845.368.0004



### DEVELOPER:

SLATE PROPERTY GROUP 850 THIRD AVE, SUITE 16-B NEW YORK, NY 10022 T: 646.439.4000

### STRUCTURAL ENGINEER:

McNAMARA - SALVIA 62 WEST 45TH STREET, 11TH FLOOR NEW YORK, NY 10036 T: 212.246.9800

#### MEP ENGINEER:

A & D ENGINEERING, PLLC 2606 E. 15TH STREET, SUITE #304 BROOKLYN, NY 11235 T: 718.872.6112

#### INTERIOR DESIGNER:

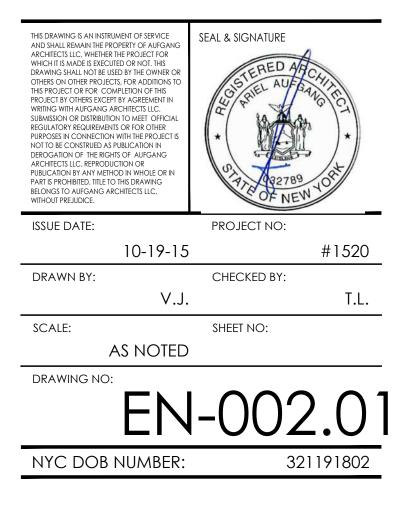
ALCHEMY STUDIO NYC 154 GRAND STREET NEW YORK, NY 10013 T: 307.760.6454

JACENT EXISTING TORY BLDG.					
STOREFRONT	FINISH AREA 908.85 SQ. FT. 13236.78 SQ. FT. N/A 572.81 SQ. FT. R 59.74 SQ. FT.	54.95 SQ. FT. 1143.86 SQ. FT. N/A N/A N/A	WINDOW N/A 2695.40 SQ. FT. N/A N/A N/A	DOOR N/A 27.22 SQ. FT. N/A N/A N/A	

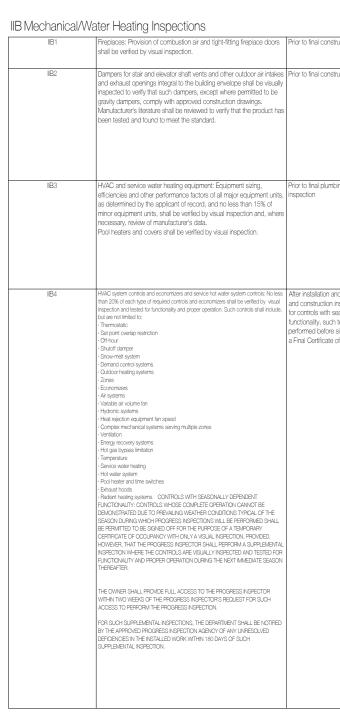
	ENERGY ENVELC	PE BOUNDARIES	
FINISH MATERIAL ENVELOPE DESIGNATION	FINISH MATERIAL	AREA	SLAB EDGE
WT1-BRICK/STONE	BRICK/STONE	53,326.04 SQ. FT.	4,648.85 SQ. F
WT2- STOREFRONT	GLAZING	360.90 SQ. FT.	N/A
WINDOW	GLAZING	13,445.66 SQ. FT.	N/A
PTAC	ALUMINUM GRILLE	2,149.15 SQ. FT.	N/A
IN-ACTIVE LOUVER	ALUMINUM GRILLE	995.86 SQ. FT.	N/A
	MY KNOWLEDGE,	1508.97 SQ. FT. BELIEF AND PROFE	SSIONAL
PROFESSIONAL TO THE BEST OF JUDGEMENT, TH	STATEMENT MY KNOWLEDGE, IESE PLANS AND S		IN COMPLIANC

08.15.19	PAA TO D.O.B.
08.02.19	99% CONSTRUCTION SET
05.31.19	BID SET
05.03.19	PAA TO D.O.B.
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11.03.17	ISSUED TO D.O.B. FOR REVIEW AND COMMENTS
DATE	SUBMISSIONS / REVISIONS

ENERGY ANALISYS



velope Ins	spections				
	Inspection/Test	Periodic (minimum)	Reference Standard or Other Criteria	EOC or Other Oitation	
IIA1	Protection of exposed foundation insulation: Insulation shall be visually inspected to verify proper protection where applied to the exterior of basement or cellar walls, crawl-space walls and/or the perimeter of slab-on-grade floors.	As required during foundation work and prior to backfill	Approved construction documents	C303.2.1; ASHRAE 90.1 - 5.8.1.7	YE
IIA2	Insulation placement and R-values: Installed insulation for each component of the conditioned space envelope and at junctions between components shall be visually inspected to ensure that the R-values are marked, that such R-values conform to the R-values identified in the construction documents and that the insulation is properly installed. Certifications for unmarked insulation shall be similarly visually inspected.	As required to verify continuous enclosure while walls, ceilings and floors are open	Approved construction documents	C303.1, C303.1.1, C303.1.2, C402.1, C402.2; ASHRAE 90.1 -5.5, 5.6 or 11; 5.8.1	YE
IA3	Fenestration U-factor and product ratings: U-factors, SHGC and VT values of installed fenestration shall be visually inspected for conformance with the U-factors, SHGC and VT values identified in the construction drawings by verifying the manufacturer's NFRC labels or, where not labeled, using the ratings in ECC Tables C303.1.3(1), (2) and (3).	As required during installation	Approved construction documents; NFRC 100, NFRC 200	C303.1, C303.1.3, C402.3; ASHRAE 90.1 -5.5; 5.6 or 11; 5.8.2	YE
IIA4	Fenestration air leakage: Windows and sliding or swinging door assemblies, except site-built windows and/or doors, shall be visually inspected to verify that installed assemblies are listed and labeled by the manufacturer to the referenced standard. For curtain wall, storefront glazing, commercial entrance doors and revolving doors, the testing reports shall be reviewed to verify that the installed assembly complies with the standard cited in the approved plans.	As required during installation; prior to final construction inspection	NFRC 400, AAMAWDMA/CSA 101/l.S.2/A440 ASTM E283; ANS/DASMA 105	C402.4.3; ASHRAE 90.1 -5.4.3.2	YE
IIA5	Fenestration areas: Dimensions of windows, doors and skylights shall be verified by visual inspection.	Prior to final construction inspection	Approved construction documents	C402.3; ASHRAE 90.1 - 5.5.4.2, 5.6 or 11	YE
NA6	Air sealing and insulation - visual inspection: Openings and penetrations in the building envelope, including site-built fenestration and doors, shall be visually inspected to verify that a continuous air barrier around the envelope forms an air-tight enclosure. The progress inspector shall visually inspect to verify that materials and/or assemblies have been tested and meet the requirements of the respective standards, or that the building is tested and meets the requirements of the standard, in accordance with the standard(s) cited in the approved plans.	As required during construction	Approved construction documents; ASTM E2178, ASTM E2357, ASTM E1677, ASTM E779, ASTM E283.	C402.4; ASHRAE 90.1 - 5.4.3.1	YE
IIA7	Projection factors: Where the energy analysis utilized a projection factor > 0, the projection dimensions of overhangs, eaves or permanently attached shading devices shall be verified for conformance with approved plans by visual inspection.	Prior to final construction inspection	Approved construction documents, including energy analysis	C402.3; ASHRAE 90.1 - 5.5.4, 5.6 or 11	NC
IIA8	Loading dock weatherseals: Weatherseals at loading docks shall be visually verified.	Prior to final construction inspection	Approved construction documents	C402.4.6; ASHRAE 90.1 - 5.4.3.3	NC
IA9	Vestibules: Required entrance vestibules shall be visually inspected for proper operation.	Prior to final construction inspection	Approved construction documents	C402.4.7; ASHRAE 90.1 - 5.4.3.4	YES

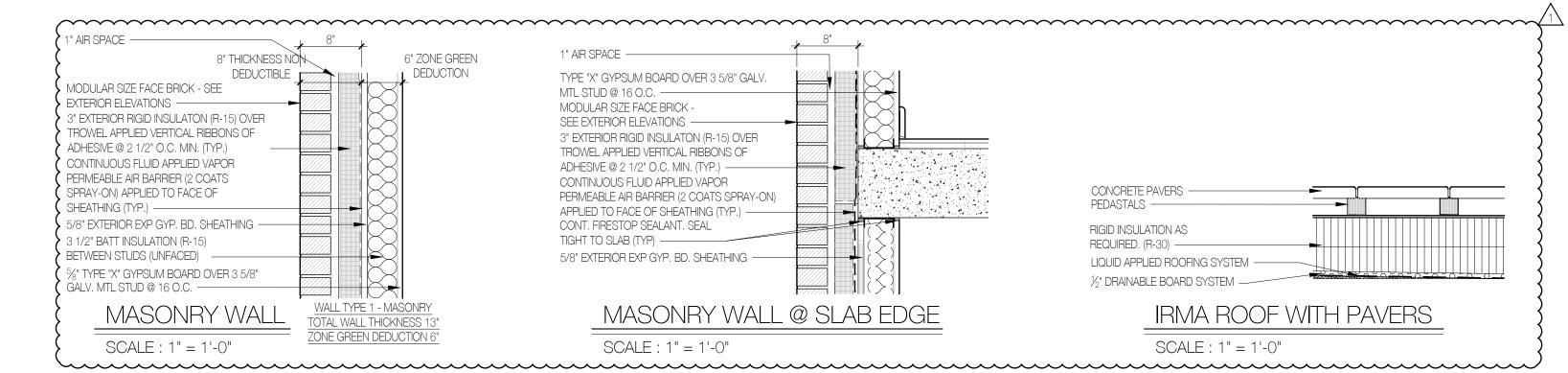


#### ENGINEERING Project No.: 159 Boerum Street Design/Check : 11-Jul-19 PAA ISSUANCE Zone Green Wall Type System Type Proposed Envelope NYECC Envelope Area (sf) U-Value Area Weighted Area (sf) U-Value Area Weighted 1742.83 36308.93 0.064 317.71 4604.55 0.090 205.45 410.89 0.500 89.03 1508.97 0.090 3.30 54.95 0.090 37.84 995.87 0.050 103.44 1753.25 0.090 10.27 214.01 0.064 Brick Wall WT-1A Stud Wall with Brick Finish 36308.93 0.048 36308.93 0.048 4604.55 0.069 410.89 0.500 1508.97 0.059 54.95 0.060 995.87 0.038 1753.25 0.059 214.01 0.048 Brick Wall WT-1B Slab Edge Brick Wall Opaque Door System " EIFS Wall with CMU Backup WT-2A 8" CMU Wall with 3" EIFS EIFS Wall with CMU Backup WT-28 Slab Edge Inactive Louvers WT-3 Finish Area EIFS Bulkhead Wall WT-5 Concrete Wall with EIFS Finish EIFS Bulkhead Wall WT-6 Stud Wall with EIFS Finish 5115.26 13461.20 0.420 9.84 25.89 0.420 137.14 360.90 0.420 94.87 249.66 0.420 7.79 20.50 0.420 Brick Wall WT-1A Vision Glazing - Fix 13461.20 0.380 25.89 0.380 360.90 0.380 249.66 0.380 20.50 0.380 IFS Wall with CMU Backup WT-2A Vision Glazing - Fixed Storefront WT-4 Glazing Storefront EIFS Bulkhead Wall WT-5 Vision Glazing - Fixed EIFS Bulkhead Wall WT-6 Vision Glazing - Fixed Fenestration to Total Wall Rat Area Weighted Average of all Above Ground Assemblies Relationship of Proposed to Prescriptive Assembly Pass ZoneGreen Target 2? 0.05 Area Weighted Average of all Above Ground Opaque Assemblies Relationship of Proposed to Prescriptive Assembly Pass ZoneGreen Target 1?

BUROHAPPOLD

#### BUROHAPPOLD ENGINEERING 159 Boerum Street

Design/Check :         Date:           AG         11-Jul-19	Design/Check : AG					Date: 16-Aug-19	
Subject: Zone Green PAA ISSUANCE	Subject: Envelope Therma	al Performance Chart					
Wall Type         ID         System Type         Proposed Envelope         NYECC Envelope	· <u>·</u> ·····						
Opaque	Wall Type	ID S	/stem Type	Component	Description	Thermal Performance Area (SF) approx.	
Brick Wall         WT-1A         Stud Wall with Brick Finish         36308.93         0.048         1742.83         36308.93         0.064         2323.77           Brick Wall         WT-1B         Slab Edge         4604.55         0.069         317.71         4604.55         0.090         414.41						Visible Light - Glazing         U - Value - Glazing         R - Value         Boerum Street         Graham Ave.         Johnson Ave.         Humbold           Transmission %         Reflectance %         SHGC -         U - Value - Glazing         R - Value         Boerum Street         Graham Ave.         Johnson Ave.         Humbold	Street TOTAL
Brick Wall         Opaque Door System         410.89         0.500         205.45         410.89         0.500         205.45           3" EIFS Wall with CMU Backup         WT-2A         8" CMU Wall with 3" EIFS         1508.97         0.059         89.03         1508.97         0.090         135.81						Int Ext Glazing Summer Winter Combined R-Cavity R-Cont. Eqi. U Value South West North Eas	
3" EIFS Wall with CMU Backup         WT-28         Slab Edge         54.95         0.060         3.30         54.95         0.090         4.95           Inactive Louvers         WT-3         Finish Area         995.87         0.038         37.84         995.87         0.050         49.79						int ext Summer Winter Combined K-Cavity K-Cont. Eqt. U Value South West North Eas	50 - 40 B
EIFS Bulkhead Wall         WT-5         Concrete Wall with EIFS Finish         1753.25         0.059         103.44         1753.25         0.090         157.79           EIFS Bulkhead Wall         WT-6         Stud Wall with EIFS Finish         214.01         0.048         10.27         214.01         0.064         13.70	ABOVE GR	RADE					
Total Opaque         45851.42         2509.87         45851.42         3305.66		WT-1A	inish Area	Brick Finish	Stud Wall with Brick Finish	3.5" of batt insulation and 3" Semi - Rigid Insulation = 14.7 + 12.6 14.7 12.6 0.048 12096.78 13390.54 12089.47 12604	.23 50181.02
Francisco		WT-1B	Slab Edge	Brick Finish	Concrete Slab with Brick Finish	3" of Semi-Rigid insulation at Slab edge = 12.6         0         12.6         0.069         1150.54         1203.91         1106.24         1143.	86 4604.55
Brick Wall         WT-1A         Vision Glazing - Fixed         13461.20         0.380         5115.26         13461.20         0.420         5653.70           3" EIFS Wall with CMU Backup         WT-2A         Vision Glazing - Fixed         25.89         0.380         9.84         25.89         0.420         10.87		0.000	ua Da ca Guatana	One and Matel Date		0.50 154.97 120.56 108.14 27.2	2 410.89
Storefront         WT-5         Vision Glazing - Fixed         249.66         0.380         94.87         249.66         0.420         151.58	Brick Wall	Opaq	ue Door System	Opaque Metal Door		0.50         154.97         120.56         108.14         27.2	2 410.69
EIFS Bulkhead Wall WT-6 Vision Glazing - Fixed 20.50 0.380 7.79 20.50 0.420 8.61		Glazing	Window System	Vision Glazing - Fixed	1" thk. IGU	41         9         7         0.38         0.28         0.29         0.38         4093.96         3227.01         3444.83         2695.	40 13461.20
Total Fenestrations         14118.15         5364.90         14118.15         5929.62		WT-1C	PTAC	Active Louvers		0 2 0.5 482.20 676.05 418.09 572.	31 2149.15
Total Area 59969.57 59969.57							
Fenestration to Total Wall Ratio 24%		WT-2A	inish Area	3" EIFS	8" CMU Wall with 3" EIFS	3" Rigid Insulation = 15.0 0 15 0.059 0.00 0.00 600.12 908.4	35 1508.97
Area Weighted Average of all Above Ground Assemblies 0.13 0.15	3" EIFS Wall with CMU Backup		Slab Edge	3" EIFS	Concrete Slab with 3" EIFS	3" Rigid Insulation = 15.0 0 15 0.060 0.00 0.00 0.00 54.9	5 54.95
Relationship of Proposed to Prescriptive Assembly 85%	СМО Васкор	and the second se	Window System	Vision Glazing - Fixed	1" thk. IGU	41 9 7 0.38 0.28 0.29 0.38 0.00 0.00 25.89 0.0	25.89
PASS PASS		-					
Area Weighted Average of all Above Ground Opaque Assemblies 0.05 0.07	Inactive Louvers	s WT-3	inish Area	Inactive Louvers		0 25.2 0.038 458.97 78.89 398.27 59.7	4 995.87
Relationship of Proposed to Prescriptive Assembly 76%		4 <u>8</u>					
Pass ZoneGreen Target 1? PASS	Storefront	WT-4 Glazing	Window System	Glazing Storefront	1" thk. Glass at Storefront System	70         9         7         0.38         0.29         0.38         0.38         360.90         0.00         0.00         0.00	360.90
		-					
	EIFS Bulkhead		inish Area	EIFS Finish	Concrete Wall with EIFS Finish	3" Rigid Insulation = 15 0 15 0.059 316.70 607.54 197.16 631.	35 1753.25
	Wall		Window System	Vision Glazing - Fixed	1" thk. IGU	41 9 7 0.38 0.28 0.29 0.38 58.37 79.94 58.21 53.1	4 249.66
	EIFS Bulkhead	WT-6	inish Area	EIFS Finish	Stud Wall with EIFS Finish	3.5" of batt insulation and 3" Rigid Insulation = 14.7 + 15 14.7 15 0.048 0.00 37.31 118.89 57.8	1 214.01
	Wall	Glazing	Window System	Vision Glazing - Fixed	1" thk. IGU	41 9 7 0.38 0.28 0.29 0.38 0.00 0.00 20.50 0.00 0.00	20.50
	Markell Theory		ystem Type	Composed	Basedation	Thermal Performance Area (SF) approx.	
	Wall Type		ystem rype	Component	Description	Vicible Links Clasher Ave Links and	Street TOTAL
						Transmission % Reflectance % SHGC - Glazing K - Value - Glazing K - Value	
						Int Ext Summer Winter Combined R - Cavity R - Cont. Eqi. U Value South West North East	r
	Roof Types	ID S	stem Type	Component	Description	Thermal Performance Area (SF) approx.           R-Value         2nd Floor         7th Floor         8th Fl	por TOTAL
	Private Terrace	RF-1	inish Area	Pedestrian Access Roof	6" Insulation above the deck	6" of Rigid insulation = 30 30	4333.91
	Paved Area	_	inish Area	2 Ply Paved area on Grade	6" Insulation above the deck and insulation below the slab	6" of Rigid insulation = 30 and 3" of spray foam         45         45	368.47
	Paved Area	RF-2			the slab	6' of Rigid insulation = 30 and 3' of spray toam 45	
		RF-2	inish Area inish Area	2 Ply Paved area on Grade Bulkhead Roof		6" of Rigid insulation = 30 and 3" of spray foam     45     45     1     1       6" of Rigid insulation = 30 and 3" of spray foam     45     45     1     1       6" of Rigid insulation = 30     5     5     5     5       6" of Rigid insulation = 30     30     1     1	368.47
	Paved Area Bulkhead Roof	RF-2	inish Area	Bulkhead Roof	the slab 6" Insulation above the deck	6° of Rigid insulation = 30 and s° of spray toam     45     45     45       6° of Rigid insulation = 30     30     45       6° of Rigid insulation = 30     30     45	1026.13
	Paved Area	RF-2			the slab	6' of Rigid insulation = 30 and 3' of spray toam 45	



Instruction inspection	Approved construction documents; ANSI Z21.60 (see also MC 904), ANSI Z21.50	C402.2.9; BC 2111; MC Chapters 7, 8, 9; FGC Chapter 6	NO	IIB5	HVAC insulation and sealing: Installed duct and piping insulation shall be visually inspected to verify proper insulation placement and values. Joints, longitudinal and transverse seams and connections in ductwork shall be visually inspected for proper sealing.	After installation and prior to closing shafts, ceilings and walls	Approved construction documents; SMACNA Duct Construction Standards, Metal and Rexible	C403.2.7, C403.2.8, C404.5, MC 603.9; ASHRAE 90.1 - 6.3, 6.4.4, 6.8.2, 6.8.3; 7.4.3	YES					
instruction inspection	Approved construction documents; AMCA 500D	C403.2.4.4; ASHRAE 90.1 - 6.4.3.4	YES											
				IB6	Duct leakage testing: For duct systems designed to operate at static pressures in excess of 3 inches w.g. (746 Pa), representative sections, as determined by the progress inspector, totaling at least 25% of the duct area, per EOC C403.2.7.1.3, shall be tested to verify that actual air leakage is below allowable amounts.		Approved construction documents; SMACNA HVAC Air Duct Leakage Test Manual	C403.2.7.1.3; ASHRAE 90.1 - 6.4.4.2.2	YES					
mbing and construction	Approved construction documents	C403.2, C404.2, C404.7, C406.2; ASHRAE	YES	IIC Electrical Pow	ver and Lighting Systems									
		90.1 - 6.3, 6.4.1, 6.4.2, 6.8; 7.4, 7.8		IIC1	Electrical energy consumption: The presence and operation of individual meters or other means of monitoring individual apartments shall be verified by visual inspection for all apartments and where required in a covered tenant space.	Prior to final electrical and construction inspection	Approved construction documents	C405.7	YES					
				IIC2	Lighting in dwelling units: Lamps in permanently installed lighting fixtures shall be visually inspected to verify compliance with high-efficacy requirements.	Prior to final electrical and construction inspection	Approved construction documents	C405.1; ASHRAE 90.1 - 9.1.1	YES					
n and prior to final electrical on inspection, except that h seasonally dependent	Approved construction documents, including control system narratives; ASHRAE Guideline 1 The HVAC Commissioning Process where	C403.2.4, C403.2.5.1, C403.2.11, C403.3, 1: C403.4, C404.3, C404.6, C404.7; ASHRAE 90.1 - 6.3, 6.4, 6.5, 7.4.4, 7.4.5	YES	IIC3	Interior lighting power: Installed lighting shall be verified for compliance with the lighting power allowance by visual inspection of fixtures, lamps, ballasts and transformers.	Prior to final electrical and construction inspection	Approved construction documents	C405.5, C406.3; ASHRAE 90.1 -9.1, 9.2, 9.5, 9.6; 1RONY §101-07(c)(3)(v)(C)4	YES					
applicable applicable applicable applicable applicable applicable ate of Occupancy									IIC4	Exterior lighting power: Installed lighting shall be verilied for compliance with source efficacy and/or the lighting power allowance by visual inspection of fixtures, lamps, ballasts and relevant transformers.	Prior to final electrical and construction inspection	Approved construction documents	C405.6; ASHRAE 90.1 - 9.4.3; 1RCNY §101-07(c)(3)(v)(C)4	YES
				IC5	Lighting controls: Each type of required lighting controls, including: - occupant sensors - insta-ual intervolution controls - light-reduction controls - automatic light systu-off - daylight zone controls - skeping unit controls - skeping unit controls - skeping triping controls shall be verified by visual inspection and tested for functionality and proper operation	Prior to final electrical and construction inspection	Approved construction documents, including control system narratives	C405.2; ASHRAE 90.1 - 9.4.1 (as modified by section ECC A102)	YES					
				IIC6	Exit signs: Installed exit signs shall be visually inspected to verify that the label indicates that they do not exceed maximum permitted wattage.	Prior to final electrical and construction inspection	Approved construction documents	C405.4; ASHRAE 90.1 - 9.4.2	YES					
				IIC7	Electric motors (including but not limited to fan motors): Where required by the construction documents for energy code compliance, motor listing or labels shall be visually inspected to verify that they comply with the respective energy requirements in the construction documents.	Prior to final electrical and construction inspection	Approved construction documents	C403.2.10; ASHRAE 90.1 - 10.4	YES					
				IID Other			I							
				IID1	Maintenance information: Maintenance manuals for mechanical, service hot water and electrical equipment and systems requiring preventive maintenance shall be reviewed for applicability to installed equipment and systems before such manuals are provided to the owner. Labels required for such equipment or systems shall be	Prior to sign-off or issuance of Final Certificate of Occupancy	Approved construction documents, including electrical drawings where applicable; ASHRAE Guideline 4: Preparation of Operating and Maintenance Documentation for Building Systems	C303.3, C408.2.5.2; ASHRAE 90.1 - 4.2.2.3, 6.7.2.2, 8.7.2, 9.7.2.2	YES					

Project No.

DNCRETE PAVERS	
IRMA ROOF WITH PAVERS	
SCALE : 1" = 1'-0"	3

PROPOSED NEW DEVELOPMENT

# **159 BOERUM ST**

## BROOKLYN, NY

#### LOT: 10/40

ARCHITECT:

BLOCK: 3071

AUFGANG ARCHITECTS LLC 74 LAFAYETTE AVENUE, SUITE 301

SUFFERN, NY INFO@AUFGANG.COM 845.368.0004

#### DEVELOPER:

SLATE PROPERTY GROUP 850 THIRD AVE, SUITE 16-B NEW YORK, NY 10022 T: 646.439.4000

#### STRUCTURAL ENGINEER:

McNAMARA - SALVIA 62 WEST 45TH STREET, 11TH FLOOR NEW YORK, NY 10036 T: 212.246.9800

#### MEP ENGINEER:

_____

A & D ENGINEERING, PLLC 2606 E. 15TH STREET, SUITE #304 BROOKLYN, NY 11235 T: 718.872.6112

#### INTERIOR DESIGNER:

ALCHEMY STUDIO NYC 154 GRAND STREET NEW YORK, NY 10013 T: 307.760.6454

### ENERGY NOTES: AS PER ASHRAE 90.1 (2013)

Compliance for continuous air barriers has been specified in the project specification as per the following:

#### AIR LEAKAGE

CONTINUOUS AIR BARRIER: The entire building envelope shall be designed and constructed with a continuous air barrier.

AIR BARRIER DESIGN: The air barrier shall be designed and noted in the following manner.

- a. All air barrier components of each building envelope assembly shall be clearly identified or otherwise noted on construction documents.
- b. The joints, interconnections, and penetrations of the air barrier components, including lighting fixtures, shall be detailed or otherwise noted. c. The continuous air barrier shall extend over all surfaces of the building envelope (at
- the lowest floor, exterior walls and ceiling or roof). d. The continuous air barrier shall be designed to resist positive and negative pressures from wind, stack effect, and mechanical ventilation.

AIR BARRIER INSTALLATION: The following areas of the continuous air barrier in the building envelope shall be wrapped, sealed, caulked, gasketed, or taped in an approved manner to minimize air leakage:

- a. Joints around fenestration and door frames (both manufactured and site-built).
- b. Junctions between walls and floors, between walls at building corners, and between walls, and roofs or ceilings.
- c. Penetrations through the air barrier in building envelope roofs, walls, and floors.
- d. Building assemblies used as ducts or plenums.
- e. Joints, seams, connections between planes, and other changes in air barrier materials.

FENESTRATION AND DOORS : Air leakage for fenestration and doors shall be determined in accordance with AAMA/WDMA/CSA 101/I.S.2/A440, NFRC 400 OR ASTM E283 as specified below. Air leakage shall not exceed:

- a. 1.0 cfm/ft² for glazed swinging entrance doors and revolving doors, tested at a pressure of at least 1.57 psf.
- b. 0.06 cfm/ft² for curtain wall and storefront glazing, tested at a pressure of at least 1.57 psf or higher in accordance with NRFC 400 or ASTM E283.

OUTDOOR AIR INTAKES AND EXHAUST OPENINGS: Stair and elevator shaft vents and other outdoor air intakes and exhaust openings integral to the building envelope shall be equipped with not less than a Class I motorized, leakage-rated damper with a maximum leakage rate of 4 cfm/ft² (6.8 L/s m2) at 1.0 inch water guage (w.g.) (1250 Pa) when tested in acordance with AMCA 500D.

• Exception: Gravity (non-motorized) dampers are permitted to be used in buildings less than three stories in height above grade.

LOADING DOCK WEATHERSEALS: In Climate Zones 4 through 8, cargo doors and loading dock doors shall be equipped with weather-seals to restrict infiltration when vehicles are parked in the doorway.

VESTIBULES: Building entrances that separate conditioned space from the exterior shall be protected with an enclosed vestibule, with all doors opening into and out of the vestibule equipped with self-closing devices. Vestibules shall be designed so that in passing through the vestibule it is not necessary for the interior and exterior doors to open at the same time. Interior and exterior doors shall have a minimum distance between them of not less than 7ft when in the closed position. The floor area of each vestibule shall not exceed the greater of 50ft² or 2% of the gross conditioned floor area for that level of the building. The exterior envelope of conditioned vestibules shall comply with the requirements for a conditioned space. The interior and exterior envelope of unconditioned vestibules shall comply with the requirements for a semi-heated space.

RECESSED LIGHTING: Recessed luminaries installed in the building thermal envelope, shall be sealed to limit air leakage between conditioned and unconditioned spaces. All recessed luminaries shall be IC rated and labeled as meeting ASTM E283 when tested at 1.57 psf (75 Pa) pressure differential with no more than 2.30 cfm (0.944 L/s) of air movement from the conditioned space to the ceiling cavity. All recessed luminaries shall be sealed with a gasket or caulk between the housing and interior wall or ceiling covering.

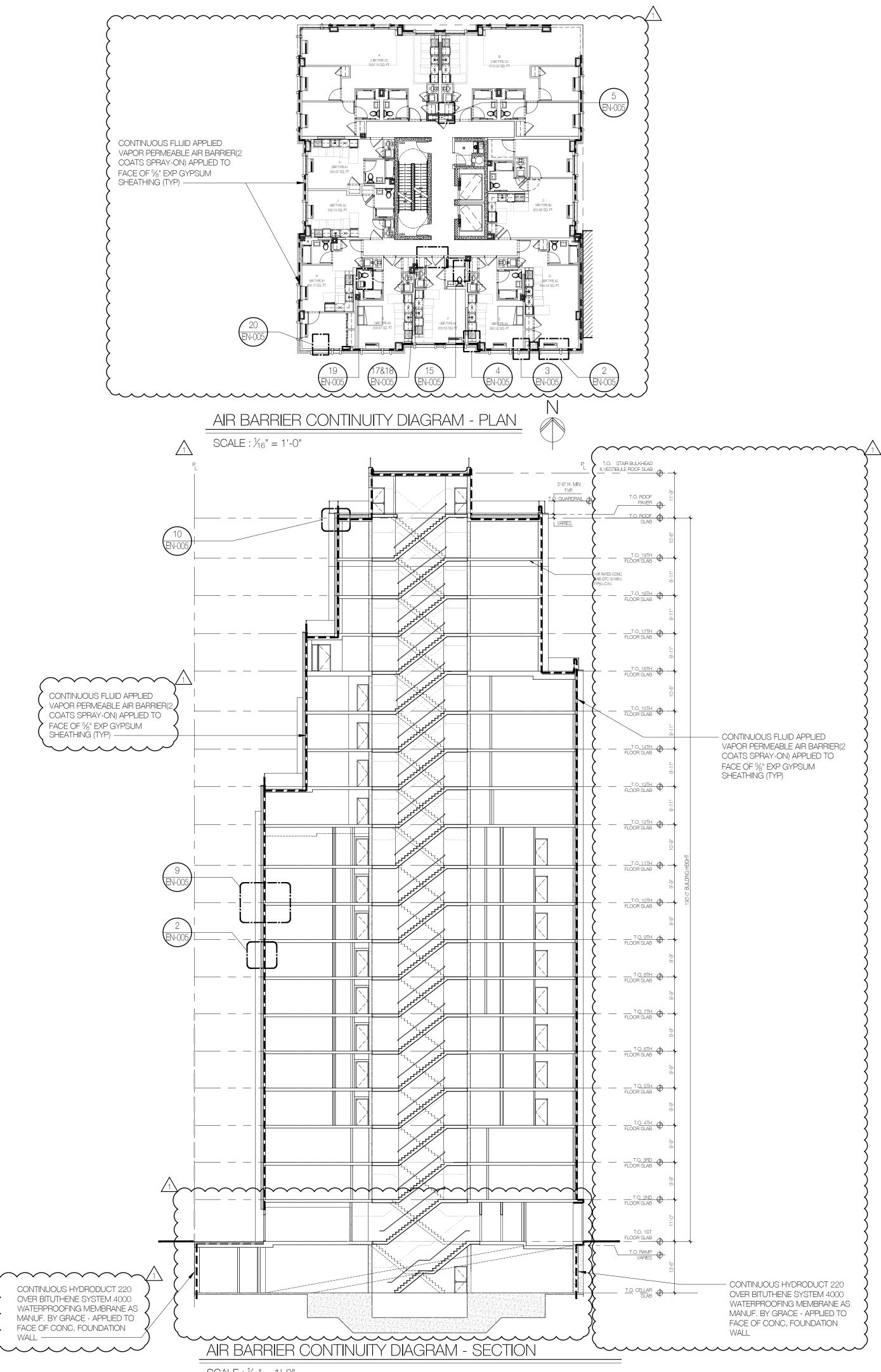


1 08.15.19	PAA TO D.O.B.
08.02.19	99% CONSTRUCTION SET
05.31.19	BID SET
05.03.19	PAA TO D.O.B.
07.27.18	90% PROGRESS SET
06.04.18	RE-ISSUED TO D.O.B.
05.02.18	REVISED AS PER ENERGY COMMENTS
01.26.18	RE-ISSUED TO D.O.B. FOR REVIEW AND COMMENTS
11.03.17	ISSUED TO D.O.B. FOR REVIEW AND COMMENTS
DATE	SUBMISSIONS / REVISIONS

SHEET TITLE:



THIS DRAWING IS AN INSTRUMENT OF SERVICE AND SHALL REMAIN THE PROPERTY OF AUFGANG ARCHITECTS LLC, WHETHER THE PROJECT FOR WHICH IT IS MADE IS EXECUTED OR NOT. THIS DRAWING SHALL NOT BE USED BY THE OWNER OR OTHERS ON OTHER PROJECTS, FOR ADDITIONS TO THIS PROJECT OR FOR COMPLETION OF THIS PROJECT BY OTHERS EXCEPT BY AGREEMENT IN WRITING WITH AUFGANG ARCHITECTS LLC. SUBMISSION OR DISTRIBUTION TO MEET OFFICIAL REGULATORY REQUIREMENTS OR FOR OTHER PURPOSES IN CONNECTION WITH THE PROJECT IS NOT TO BE CONSTRUED AS PUBLICATION IN DEROGATION OF THE RIGHTS OF AUFGANG ARCHITECTS LLC. REPRODUCTION OR PUBLICATION BY ANY METHOD IN WHOLE OR IN PART IS PROHIBITED. TTHE TO THIS DRAWING BELONGS TO AUFGANG ARCHITECTS LLC, WITHOUT PREJUDICE.	SEAL & SIGNATURE
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PROPOSED NEW DEVELOPMENT

# **159 BOERUM ST**

## BROOKLYN, NY

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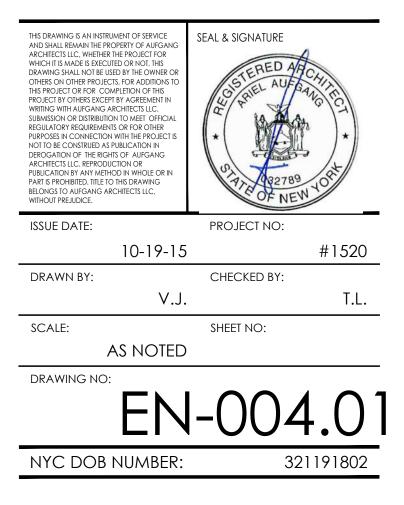
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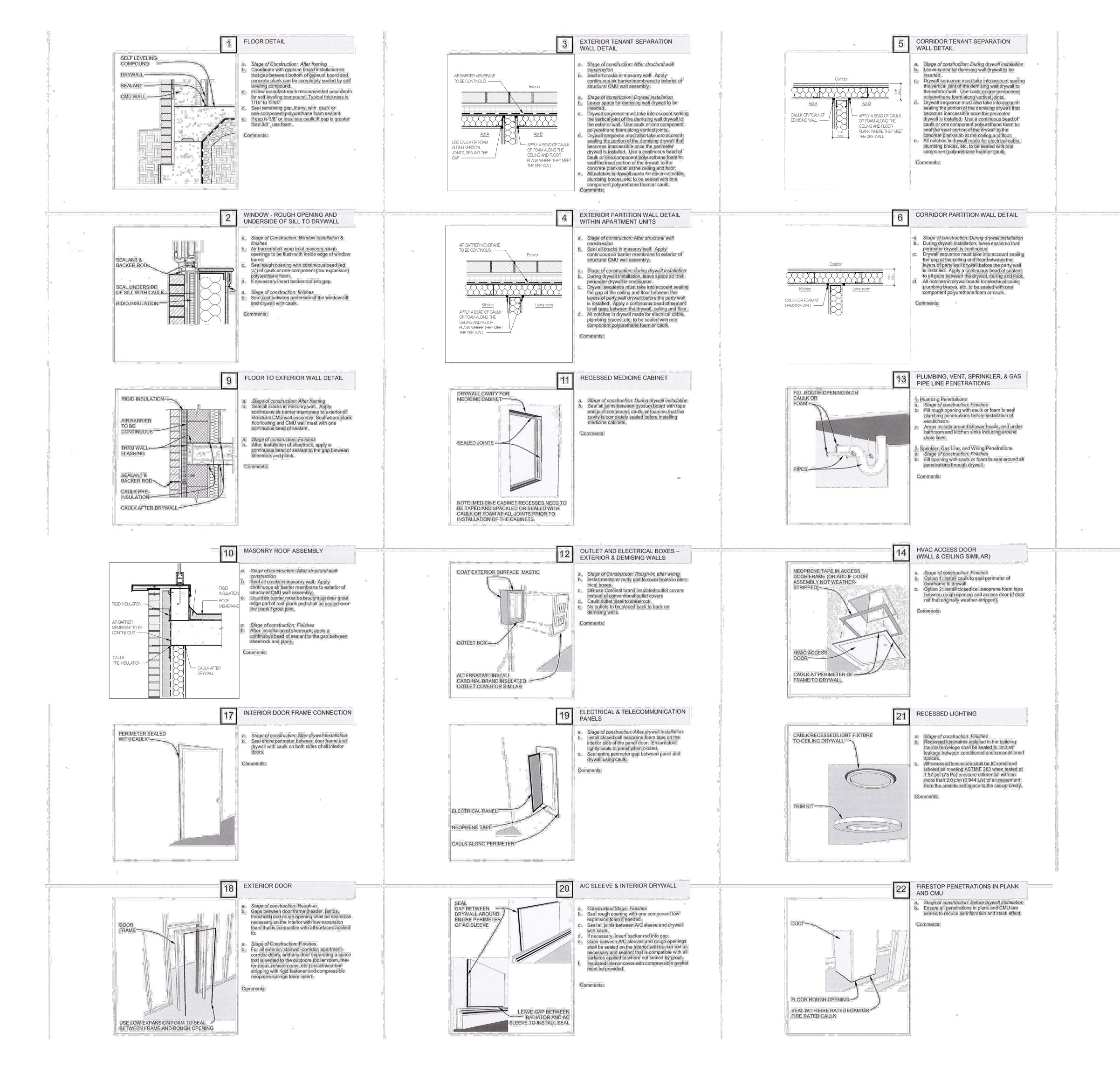
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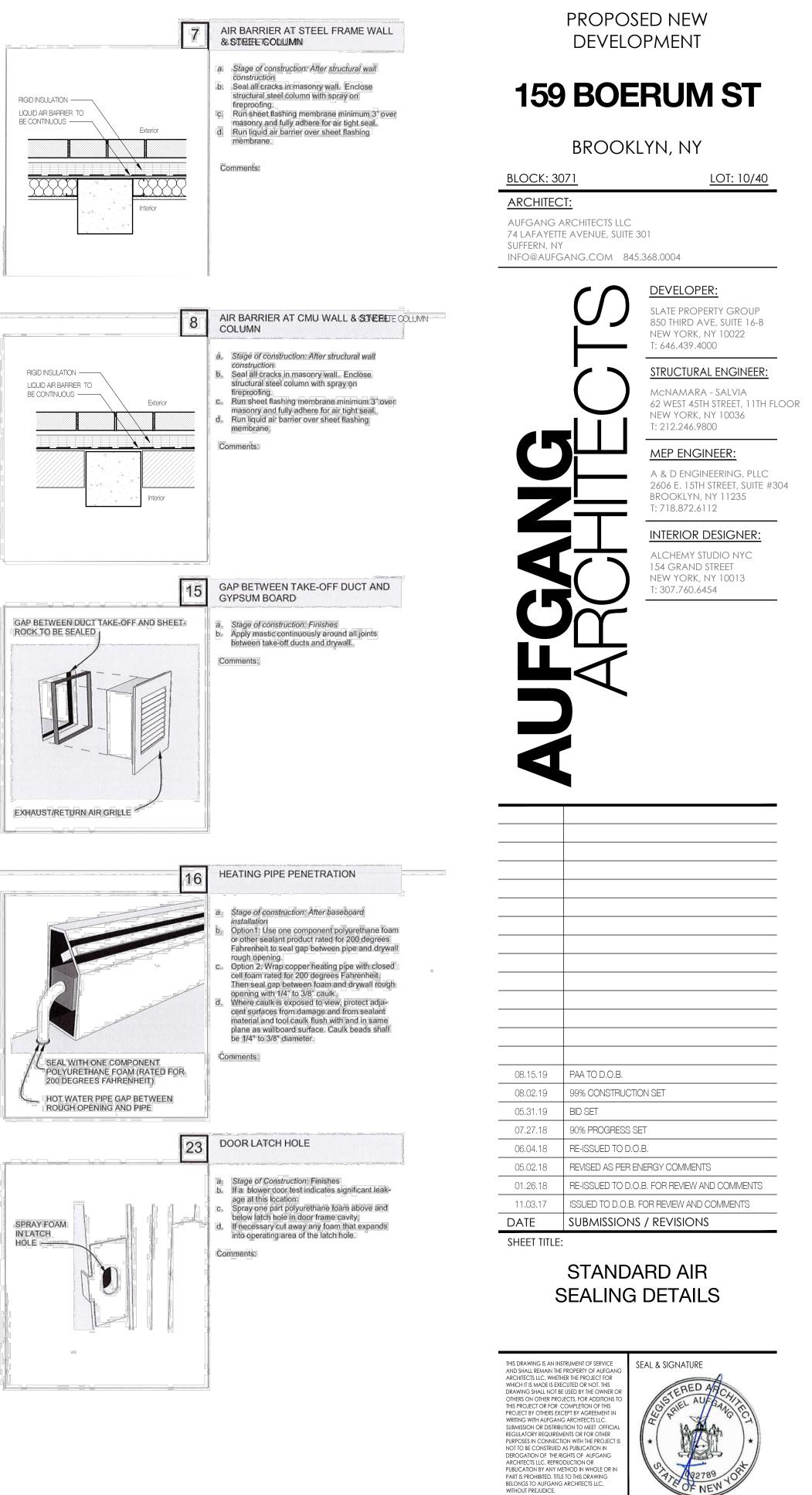
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V.J.

NTS

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SHEET NO:

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T.L.

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ABBREVIATIONS:

AND

ANCHOR BOLT

AIR CONDITIONING ACOUSTICAL TILE
AIR CONDITIONING UNIT
ADJACENT/ADJOINING ADJUSTABLE
ABOVE FINISH FLOOR AGGREGATE
AIR HANDLING UNIT
ALTERNATE ALUMINUM
APPROXIMATE ARCHITECTURAL
AUTOMATIC
AVENUE AVERAGE
BOARD
BUILDING BLOCKING
BEAM
BOTTOM BEARING
BETWEEN
CUBIC CENTIMETER CENTER TO CENTER
CEMENT
CUBIC FEET PER MINUTE CONTROL JOINT (SEE EXP JT)
CEILING CLOSET
CLEAR/CLEARANCE
CONCRETE MASONRY UNIT COLUMN
CONCRETE CONNECTION
CONSTRUCT/CONSTRUCTION
CONTINUOUS CORRIDOR
CARPET CERAMIC TILE
COLD WATER
DRINKING FOUNTAIN (SEE EWC)
DIAMETER DIMENSION
DEAD LOAD DOWN
DETAIL
DRAWING
EAST EACH
EXPANSION BOLT (SEE AB)
EXTERIOR INSULATED FINISH SYSTEM EXPANSION JOINT (SEE CJ)
ELEVATION ELECTRICAL/ELECTRIC
ELEVATOR
EMERGENCY ENCLOSURE/ENCLOSED
ENGINEER ENTRANCE
EQUAL
EQUIPMENT EXISTING
EXHAUST EXPOSED
EXPANDED/EXPANSION
EXTERIOR
FIRE ALARM FABRICATED
FLOOR DRAIN FIRE EXTINGUISHER
FIRE HOSE CABINET
FINISH FIXTURE
FLOOR/FLOORING FLOOR DRAIN
FOUNDATION FIREPROOF
FOOT/FEET
GAGE (GAUGE)
GALLON GALVANIZED
GENERAL CONTRACTOR
GLASS GALLONS PER MINUTE
GYPSUM GYPSUM WALL BOARD
HIGH HOSE BIB
HARDWARE HOLLOW METAL (STEEL)
HORIZONTAL
HIGH POINT HOUR
HEIGHT HEATING, VENTILATION
AND AIR CONDITIONING
HOT WATER HARDWOOD
INSIDE DIAMETER
INCH(ES)
INCLUDING/INCLUDED INSULATE/INSULATED/INSULATION
INTERIOR INVERTED/INVERT
JANITORS CLOSET
JOINT

	KITCHENETTE KITCHEN KNOCKOUT
	LONG/LENGTH LAMINATED LAVATORY POUND(S) LINEAR FEET LIVE LOAD
F	LOW POINT MACHINE MANUFACTURER MAXIMUM
	MECHANICAL MECHANICAL, ELECTRICAL & PLUMBING MEDIUM MEMBRANE METAL
	MEZZANINE MANHOLE MINIMUM MISCELLANEOUS MASONRY OPENING MOUNTED
	NORTH NOT IN CONTRACT NOMINAL NOT TO SCALE
	ON CENTER(S) OUTSIDE DIAMETER OPENING OPPOSITE OUNCE
	PULL BOX POUNDS PER CUBIC FOOT PLATE PLASTIC LAMINATE
	PAIR POUNDS PER SQUARE FOO POUNDS PER SQUARE INCH POINT PAINTED POINTED
	POLYVINYL CHLORIDE QUARRY TILE QUANTITY
3	RISER RADIUS REINFORCING BAR REFERENCE/ REFER TO REINFORCE/REINFORCING REQUIRED REVISION ROOM
	ROUGH OPENING RUBBER SOUTH
)	SCHEDULE SECTION SHEET SIMILAR SPECIFICATION SQUARE SQUARE FEET STAINLESS STEEL STREET SOUND TRANSMISSION CLJ
R CT	STANDARD STEEL STEEL DOOR STORAGE STRUCTURE/STRUCTURAL SUSPEND/SUSPENDED SYMMETRICAL SYSTEM
IC L	TOP OF CONCRETE TOP OF STEEL TOP OF WALL TOP AND BOTTOM TONGUE AND GROOVE
GL	TELEPHONE TEMPERATURE (IF UNLESS NOTED) TEMPERED GLASS TEMPORARY FXTURE THICK/THICKNESS TOP OF SLAB TELEVISION TYPICAL
	URINAL UNLESS OTHERWISE NOTEI UNDERWRITERS LABORATC
	VINYL COVE BASE VINYL COMPOSITION TILE VERTICAL VESTIBULE VERIFY IN FIELD VOLUME
	WEST WTH WATER CLOSET WOOD WIRE GLASS WORK LINE WORKING POINT WEIGHT
	WEIGHT WELDED WIRE FABRIC

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		FIRE DEPARTMENT REGULATIONS, UTILITY COMPANY REQUIREMENTS AND THE BEST TRADE PRACTICES.
	2.	BEFORE COMMENCING WORK, THE CONTRACTOR SHALL FILE ALL REQUIRED CERTIFICATES OF INSURANCE WITH THE DEPARTMENT OF BUILDINGS, OBTAIN ALL REQUIRED PERMITS, AND PAY ALL FEES REQUIRED BY GOVERNING NEW YORK CITY AGENCIES.
	3.	THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS IN THE FIELD PRIOR TO COMMENCING WORK, AND SHALL REPORT ANY DISCREPANCIES BETWEEN DRAWINGS AND FIELD CONDITIONS TO THE ARCHITECT IMMEDIATELY.
	4.	THE CONTRACTOR IS NOT TO SCALE DRAWINGS OR DETAILS, ONLY WRITTEN DIMENSIONS ARE TO BE USED.
	5.	THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL CONDITIONS AND MATERIALS WITHIN THE PROPOSED CONSTRUCTION AREA. THE CONTRACTOR SHALL DESIGN AND INSTALL ADEQUATE SHORING AND BRACING FOR ALL STRUCTURAL OR REMOVAL TASKS. THE CONTRACTOR SHALL HAVE SOLE RESPONSIBILITY FOR ANY DAWAGE OR INJURIES CAUSED BY OR DURING THE EXECUTION OF THE WORK.
ECTRICAL	6.	THE CONTRACTOR SHALL LAY OUT HIS OWN WORK, AND SHALL PROVIDE ALL DIMENSIONS REQUIRED FOR OTHER TRADES (PLUMBING, ELECTRICAL, ETC.).
	7.	PLUMBING AND ELECTRICAL WORK SHALL BE PERFORMED BY PERSONS LICENSED IN THEIR TRADES, WHO SHALL ARRANGE FOR AND OBTAIN INSPECTIONS AND REQUIRED SIGN-OFFS.
	8.	THE CONTRACTOR SHALL DO ALL CUTTING, PATCHING AND REPAIRING AS REQUIRED TO COMPLETE ALL OF THE WORK INDICATED ON THE DRAWINGS, AND ALL OTHER WORK THAT MAY BE REQUIRED TO COMPLETE THE JOB.
	9.	TYPES OF CONSTRUCTION SHALL COMPLY WITH THE REQUIREMENTS OF CHAPTER 6 OF N.Y.C. BLDG. CODE. AT LEAST 24 HR. WRITTEN NOTICE SHALL BE GIVEN TO THE COMMISSIONER BEFORE COMMENCEMENT OF WORK.
NG	10.	CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND SAMPLES ON ALL ITEMS SPECIFIED ON THE CONTRACT DOCUMENTS TO THE ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO PURCHASING AND INSTALLATION.
Τ	11.	ALL DEBRIS ON THE PROPERTY DUE TO CONSTRUCTION SHALL BE REMOVED.
D	12.	CONTRACTOR SHALL BE RESPONSIBLE FOR ARRANGING AND PAYING FOR ALL CONTROLLED INSPECTIONS REQUIRED BY LAW, AND FOR ARRANGING ALL CONSTRUCTION, PLUMBING, ELECTRICAL, OR OTHER INSPECTIONS RELATED TO THE PROPOSED WORK. A PROPOSED SCHEDULE OF THESE INSPECTIONS SHALL BE INCLUDED IN THE PROPOSED WORK SCHEDULE. CONTRACTOR SHALL PROVIDE INSPECTION SIGN-OFF'S TO OWNER AND ARCHITECT.
n	13.	CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS, ALSO HE SHALL NOTIFY THE ARCHITECT OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN ON THESE DRAWINGS PRIOR TO THE START OF WORK. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS.
BIC FOOT	14.	DIMENSIONS SHOWN ON FLOOR PLANS, SECTIONS, ELEVATIONS, AND DETAILS ARE TO FINISH FACE OF WALLS OR CENTER LINE OF COLUMNS TYPICALLY, UNLESS OTHERWISE NOTED.
E JARE FOOT	15.	ABBREVIATIONS THROUGHOUT THE PLANS ARE THOSE IN COMMON USE. NOTIFY THE ARCHITECT OF ANY ABBREVIATIONS IN QUESTION.
JARE INCH RIDE	16.	CVIL, ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS ARE COMPLEMENTARY. ANYTHING SHOWN ON ARCHITECTURAL DRAWINGS AND NOT SHOWN ON CVIL, STRUCTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS, OR SHOWN ON CIVIL, STRUCTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS AND NOT SHOWN ON ARCHITECTURAL DRAWINGS SHALL BE INTERPRETED AS BEING SHOWN ON ALL TRADES.
	17.	FINISH FLOOR ELEVATIONS ARE AS ESTABLISHED DATUM LINE, UNLESS OTHERWISE NOTED. THE CONTRACTOR WILL BE RESPONSIBLE FOR VERIFYING FLOOR-TO-FLOOR ELEVATIONS.
3	18.	IN THE CASE OF A CONFLICT BETWEEN THE DRAWINGS AND THE SPECIFICATIONS, SPECIFICATIONS SHALL TAKE PRECEDENCE. CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER OF ANY CONFLICT BEFORE PROCEEDING WITH THE WORK.
ER TO FORCING	19.	CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS AND EQUIPMENT AS REQUIRED TO PROPERLY AND FULLY COMPLETE THE WORK AS INDICATED BY THE DRAWINGS AND SPECIFICATIONS.
	20.	CONTRACTOR SHALL REMOVE, CUT, PATCH AND REFRAME WALLS, PARTITIONS, FLOORS, FRAMES, DOORS, MOLDINGS, PIPE FIXTURES AND CONDUIT AS REQUIRED TO PROPERLY EXECUTE THE WORK.
	21.	CONTRACTOR SHALL BE RESPONSIBLE FOR ADEQUATELY BRACING AND PROTECTING ALL WORK DURING CONSTRUCTION AGAINST DAMAGE, BREAKS, COLLAPSE, DISTORTIONS, AND OFF-ALIGNMENT ACCORDING TO APPLICABLE STANDARD CODES (INCLUDING CHAPTER 33 OF THE NYC BUILDING CODE) AND GOOD PRACTICE.
	22.	CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE VARIOUS TRADE ITEMS WITHIN THE SPACE ABOVE ALL CEILINGS (INCLUDING, BUT NOT LIMITED TO: STRUCTURAL MEMBERS, MECHANICAL DUCTS AND INSTALLATION, CONDUITS, RACEWAYS, SPRINKLER SYSTEM, LIGHT FIXTURES, CEILING SYSTEMS, AND ANY SPECIAL STRUCTURAL SUPPORTS REQUIRED) AND SHALL BE RESPONSIBLE FOR MAINTAINING THE FINISH CEILING HEIGHT ABOVE THE FINISH FLOOR AS INDICATED ON THE DRAWINGS AND THE FINISH SCHEDULE. (CEILING HEIGHT DIMENSIONS ARE TO THE FINISH SURFACE OF CEILING.)
SSION CLASS	23.	CONTRACTOR SHALL FURNISH AND INSTALL ACCESS PANELS WHERE SHOWN ON THE REFLECTED CEILING PLANS AND AS REQUIRED BY BUILDING CODE OR NORMAL GOOD PRACTICE TO PROVIDE ACCESS TO ALL MECHANICAL OR ELECTRICAL EQUIPMENT. NO ACCESS PANEL SHALL BE LOCATED, FRAMED, OR INSTALLED WITHOUT THE EXPRESSED APPROVAL OF THE ARCHITECT.
	24.	THE CONTRACTOR SHALL PROTECT ALL FINISH WORK SURFACES FROM DAMAGE DURING THE COURSE OF CONSTRUCTION AND SHALL REPLACE AND/OR REPAIR ALL DAMAGED SURFACES CAUSED BY CONTRACTOR OR SUBCONTRACTOR PERSONNEL TO THE SATISFACTION OF THE OWNER AND ARCHITECT.
JCTURAL NDED E	25.	CONTRACTOR SHALL PROPERLY PROTECT AND MAKE SAFE ADJACENT PROPERTY AS JOB CONDITIONS REQUIRE. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO ISOLATE ALL WORK AREAS AND CLEARLY DEFINE PATHS OF ACCESS TO THE WORK FOR WORKMEN IN ORDER TO INSURE MINIMIZATION OF DUST INFILTRATION TO OTHER AREAS OF THE BUILDING AND TO PREVENT DAMAGE TO FLOORS, WALLS AND CEILINGS OF PUBLIC AND/OR FREIGHT ACCESS AREAS. IF SUCH DAMAGE SHOULD OCCUR, CONTRACTOR SHALL CORRECT IT IMMEDIATELY AT HIS OWN COST.
1 DOVE	26.	ALL PRECAUTIONS ARE TO BE TAKEN TO PREVENT DIRT AND DUST FROM PERMEATING INTO OTHER PARTS OF THE BUILDING DURING THE PROGRESS OF THE WORK. MATERIALS AND RUBBISH SHALL BE PLACED IN BARRELS OR BAGS BEFORE BEING TAKEN OUT OF THE IMMEDIATE AREA OF CONSTRUCTION. ALL SUCH BARRELS, BAGS, RUBBISH, RUBBLE, DISCARDED EQUIPMENT, EMPTY PACKING CARTONS AND OTHER MATERIALS WILL BE TAKEN OUT OF THE BUILDING AND PROPERLY REMOVED FROM THE PREMISES AS PART OF THE WORK UNDER THIS CONTRACT.
)) ; JRE	27.	SPECIAL NOTICE TO CONTRACTORS: ALL CONTRACTORS PERFORMING WORK ON THE PREMISES SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING AND SUPERVISING A REASONABLE AND PRUDENT SAFETY PROGRAM INCLUDING BUT NOT LIMITED TO THE ISOLATION OF WORK AREAS AND THE PROMPT REMOVAL OF ANY DEBRIS OR TOOLS WHICH MIGHT ENDANGER VISITORS AND STAFF OF THE OWNER OR ARCHITECT.
SE NOTED	28.	IF THE CONTRACTOR ASCERTAINS AT ANY TIME THAT REQUIREMENTS OF THIS CONTRACT CONFLICT WITH, OR ARE IN VIOLATION OF, APPLICABLE LAWS, CODES, REGULATIONS AND ORDINANCES, HE SHALL NOT PROCEED WITH WORK IN QUESTION, EXCEPT AT HIS OWN RISK, UNTIL ARCHITECT HAS BEEN NOTIFIED IN WRITING AND WRITTEN DETERMINATION IS MADE BY THE ARCHITECT. WHERE COMPLETED OR PARTIALLY COMPLETED WORK IS DISCOVERED TO BE IN VIOLATION WITH APPLICABLE LAWS, CODES, REGULATIONS AND ORDINANCES, CONTRACTOR SHALL BE REQUIRED TO REMOVE THAT WORK FROM THE PROJECT AND REPLACE SUCH WORK WITH ALL NEW COMPLYING WORK AT NO ADDITIONAL COST TO THE OWNER OR ARCHITECT.
ABORATORIES	29.	ANY WORK INSTALLED IN CONFLICT WITH THE CONTRACT DOCUMENTS SHALL BE CORRECTED BY THE CONTRACTOR AT HIS EXPENSE AND AT NO ADDITIONAL EXPENSE TO THE OWNER, ARCHITECT, OR CONSULTANTS.
ON TILE	30.	CONTRACTOR SHALL COORDINATE ALL AREAS OF WORK WITH ALL SUB-CONTRACTORS AND OTHER TRADES INVOLVED WITH THE PROJECT.
	31.	COORDINATE SPACE REQUIREMENTS AND INSTALLATION OF MECHANICAL AND ELECTRICAL WORK INDICATED ON DRAWINGS. VERIFY LOCATION AND REQUIRED OPENING SIZES FOR MECHANICAL EQUIPMENT, LOCATION AND SIZES OF EQUIPMENT FOR PADS AND BASES AND REQUIREMENT, AND LOCATION OF POWER AND WATER OR DRAIN INSTALLATION WITH EQUIPMENT MANUFACTURERS BEFORE PROCEEDING WITH THE WORK.
	32.	COMPLY WITH INSTALLATION REQUIREMENTS OF MANUFACTURER'S INSTRUCTIONS AND APPROVED SHOP DRAWINGS.
	33.	CONTRACTOR SHALL ANALYZE ELECTRICAL REQUIREMENTS OF EQUIPMENT TO BE INSTALLED AND ADVISE ARCHITECT OF THE NEED, IF ANY, TO UPGRADE EXISTING POWER SUPPLY PRIOR TO PROCEEDING WITH ELECTRICAL WORK.
IRIC	34.	CONTRACTOR SHALL PROVIDE OWNER WITH ALL MANUALS, MAINTENANCE SCHEDULES, AND OTHER REQUIREMENTS NECESSARY FOR THE MAINTENANCE OF EQUIPMENT INSTALLED AS PART OF THIS CONTRACT. ALL MANUFACTURER'S WARRANTIES SHALL BE TRANSFERRED TO OWNER UPON COMPLETION OF WORK.
	35.	CONTRACTOR SHALL IDENTIFY ALL NEW EXPOSED PIPES, VALVES, AND CONDUIT WITH STAMPED METAL TAGS AND SHALL LABEL ELECTRIC PANEL BOXES WITH CIRCUIT DESIGNATIONS UPON COMPLETION OF WORK.
	36.	CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP IN THIS CONTRACT FOR A PERIOD OF ONE YEAR FOLLOWING ARCHITECT'S CERTIFICATION OF SUBSTANTIAL COMPLETION, AND SHALL REMEDY ANY DEFECTS IN SUCH WORK

GENERAL NOTES:

ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE 2014 NEW YORK CITY BUILDING CODE, ICC / ANSI A 117.1 - 2009,

	WRITTEN NOTICE SHALL BE GIVEN TO THE COMMISSIONER BEFORE COMMENCEMENT OF WORK.
	CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND SAMPLES ON ALL ITEMS SPECIFIED ON THE CONTRACT DOCUMENTS TO THE ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO PURCHASING AND INSTALLATION. ALL DEBRIS ON THE PROPERTY DUE TO CONSTRUCTION SHALL BE REMOVED.
	CONTRACTOR SHALL BE RESPONSIBLE FOR ARRANGING AND PAYING FOR ALL CONTROLLED INSPECTIONS REQUIRED BY LAW, AND FOR ARRANGING ALL CONSTRUCTION, PLUMBING, ELECTRICAL, OR OTHER INSPECTIONS RELATED TO THE PROPOSED WORK. A PROPOSED SCHEDULE OF THESE INSPECTIONS SHALL BE INCLUDED IN THE PROPOSED WORK SCHEDULE. CONTRACTOR SHALL PROVIDE INSPECTION SIGN-OFF'S TO OWNER AND ARCHITECT.
13.	CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS, ALSO HE SHALL NOTIFY THE ARCHITECT OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN ON THESE DRAWINGS PRIOR TO THE START OF WORK, WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS.
14.	DIMENSIONS SHOWN ON FLOOR PLANS, SECTIONS, ELEVATIONS, AND DETAILS ARE TO FINISH FACE OF WALLS OR CENTER LINE OF COLUMNS TYPICALLY, UNLESS OTHERWISE NOTED.
15.	ABBREVIATIONS THROUGHOUT THE PLANS ARE THOSE IN COMMON USE. NOTIFY THE ARCHITECT OF ANY ABBREVIATIONS IN QUESTION.
	CIVIL, ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS ARE COMPLEMENTARY. ANYTHING SHOWN ON ARCHITECTURAL DRAWINGS AND NOT SHOWN ON CIVIL, STRUCTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS, OR SHOWN ON CIVIL, STRUCTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS AND NOT SHOWN ON ARCHITECTURAL DRAWINGS SHALL BE INTERPRETED AS BEING SHOWN ON ALL TRADES.
	FINISH FLOOR ELEVATIONS ARE AS ESTABLISHED DATUM LINE, UNLESS OTHERWISE NOTED. THE CONTRACTOR WILL BE RESPONSIBLE FOR VERIFYING FLOOR-TO-FLOOR ELEVATIONS. IN THE CASE OF A CONFLICT BETWEEN THE DRAWINGS AND THE SPECIFICATIONS. SPECIFICATIONS SHALL TAKE PRECEDENCE.
18.	CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER OF ANY CONFLICT BEFORE PROCEEDING WITH THE WORK.
	THE WORK AS INDICATED BY THE DRAWINGS AND SPECIFICATIONS. CONTRACTOR SHALL REMOVE, CUT, PATCH AND REFRAME WALLS, PARTITIONS, FLOORS, FRAMES, DOORS, MOLDINGS, PIPE
	FIXTURES AND CONDUIT AS REQUIRED TO PROPERLY EXECUTE THE WORK.
	CONTRACTOR SHALL BE RESPONSIBLE FOR ADEQUATELY BRACING AND PROTECTING ALL WORK DURING CONSTRUCTION AGAINST DAWAGE, BREAKS, COLLAPSE, DISTORTIONS, AND OFF-ALIGNMENT ACCORDING TO APPLICABLE STANDARD CODES (INCLUDING CHAPTER 33 OF THE NYC BUILDING CODE) AND GOOD PRACTICE.
22.	CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE VARIOUS TRADE ITEMS WITHIN THE SPACE ABOVE ALL CEILINGS (INCLUDING, BUT NOT LIMITED TO: STRUCTURAL MEMBERS, MECHANICAL DUCTS AND INSTALLATION, CONDUITS, RACEWAYS, SPRINKLER SYSTEM, LIGHT FIXTURES, CEILING SYSTEMS, AND ANY SPECIAL STRUCTURAL SUPPORTS REQUIRED) AND SHALL BE RESPONSIBLE FOR MAINTAINING THE FINISH CEILING HEIGHT ABOVE THE FINISH FLOOR AS INDICATED ON THE DRAWINGS AND THE FINISH SCHEDULE. (CEILING HEIGHT DIMENSIONS ARE TO THE FINISH SURFACE OF CEILING.)
23.	CONTRACTOR SHALL FURNISH AND INSTALL ACCESS PANELS WHERE SHOWN ON THE REFLECTED CEILING PLANS AND AS REQUIRED BY BUILDING CODE OR NORMAL GOOD PRACTICE TO PROVIDE ACCESS TO ALL MECHANICAL OR ELECTRICAL EQUIPMENT. NO ACCESS PANEL SHALL BE LOCATED, FRAMED, OR INSTALLED WITHOUT THE EXPRESSED APPROVAL OF THE ARCHITECT.
24.	THE CONTRACTOR SHALL PROTECT ALL FINISH WORK SURFACES FROM DAMAGE DURING THE COURSE OF CONSTRUCTION AND SHALL REPLACE AND/OR REPAIR ALL DAMAGED SURFACES CAUSED BY CONTRACTOR OR SUBCONTRACTOR PERSONNEL TO THE SATISFACTION OF THE OWNER AND ARCHITECT.
25.	CONTRACTOR SHALL PROPERLY PROTECT AND MAKE SAFE ADJACENT PROPERTY AS JOB CONDITIONS REQUIRE. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO ISOLATE ALL WORK AREAS AND CLEARLY DEFINE PATHS OF ACCESS TO THE WORK FOR WORKMEN IN ORDER TO INSURE MINIMIZATION OF DUST INFILTRATION TO OTHER AREAS OF THE BUILDING AND TO PREVENT DAMAGE TO FLOORS, WALLS AND CELLINGS OF PUBLIC AND/OR FREIGHT ACCESS AREAS. IF SUCH DAMAGE SHOULD OCCUR, CONTRACTOR SHALL CORRECT IT IMMEDIATELY AT HIS OWN COST.
26.	ALL PRECAUTIONS ARE TO BE TAKEN TO PREVENT DIRT AND DUST FROM PERMEATING INTO OTHER PARTS OF THE BUILDING DURING THE PROGRESS OF THE WORK. MATERIALS AND RUBBISH SHALL BE PLACED IN BARRELS OR BAGS BEFORE BEING TAKEN OUT OF THE IMMEDIATE AREA OF CONSTRUCTION. ALL SUCH BARRELS, BAGS, RUBBISH, RUBBLE, DISCARDED EQUIPMENT, EMPTY PACKING CARTONS AND OTHER MATERIALS WILL BE TAKEN OUT OF THE BUILDING AND PROPERLY REMOVED FROM THE PREMISES AS PART OF THE WORK UNDER THIS CONTRACT.
27.	SPECIAL NOTICE TO CONTRACTORS: ALL CONTRACTORS PERFORMING WORK ON THE PREMISES SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING AND SUPERVISING A REASONABLE AND PRUDENT SAFETY PROGRAM INCLUDING BUT NOT LIMITED TO THE ISOLATION OF WORK AREAS AND THE PROMPT REMOVAL OF ANY DEBRIS OR TOOLS WHICH MIGHT ENDANGER VISITORS AND STAFF OF THE OWNER OR ARCHITECT.
28.	IF THE CONTRACTOR ASCERTAINS AT ANY TIME THAT REQUIREMENTS OF THIS CONTRACT CONFLICT WITH, OR ARE IN VOLATION OF, APPLICABLE LAWS, CODES, REGULATIONS AND ORDINANCES, HE SHALL NOT PROCEED WITH WORK IN QUESTION, EXCEPT AT HIS OWN RISK, UNTIL ARCHITECT HAS BEEN NOTIFIED IN WRITING AND WRITTEN DETERMINATION IS MADE BY THE ARCHITECT. WHERE COMPLETED OR PARTIALLY COMPLETED WORK IS DISCOVERED TO BE IN VIOLATION WITH APPLICABLE LAWS, CODES, REGULATIONS AND ORDINANCES, CONTRACTOR SHALL BE REQUIRED TO REMOVE THAT WORK FROM THE PROJECT AND REPLACE SUCH WORK WITH ALL NEW COMPLYING WORK AT NO ADDITIONAL COST TO THE OWNER OR ARCHITECT.
29.	ANY WORK INSTALLED IN CONFLICT WITH THE CONTRACT DOCUMENTS SHALL BE CORRECTED BY THE CONTRACTOR AT HIS EXPENSE AND AT NO ADDITIONAL EXPENSE TO THE OWNER, ARCHITECT, OR CONSULTANTS.
30.	CONTRACTOR SHALL COORDINATE ALL AREAS OF WORK WITH ALL SUB-CONTRACTORS AND OTHER TRADES INVOLVED WITH THE PROJECT.
31.	COORDINATE SPACE REQUIREMENTS AND INSTALLATION OF MECHANICAL AND ELECTRICAL WORK INDICATED ON DRAWINGS. VERIFY LOCATION AND REQUIRED OPENING SIZES FOR MECHANICAL EQUIPMENT, LOCATION AND SIZES OF EQUIPMENT FOR PADS AND BASES AND REQUIREMENT, AND LOCATION OF POWER AND WATER OR DRAIN INSTALLATION WITH EQUIPMENT MANUFACTURERS BEFORE PROCEEDING WITH THE WORK.
	COMPLY WITH INSTALLATION REQUIREMENTS OF MANUFACTURER'S INSTRUCTIONS AND APPROVED SHOP DRAWINGS.
34.	NEED, IF ANY, TO UPGRADE EXISTING POWER SUPPLY PRIOR TO PROCEEDING WITH ELECTRICAL WORK. CONTRACTOR SHALL PROVIDE OWNER WITH ALL MANUALS, MAINTENANCE SCHEDULES, AND OTHER REQUIREMENTS NECESSARY FOR THE MAINTENANCE OF EQUIPMENT INSTALLED AS PART OF THIS CONTRACT. ALL MANUFACTURER'S
35.	WARRANTIES SHALL BE TRANSFERRED TO OWNER UPON COMPLETION OF WORK. CONTRACTOR SHALL IDENTIFY ALL NEW EXPOSED PIPES, VALVES, AND CONDUIT WITH STAMPED METAL TAGS AND SHALL LABEL
36.	ELECTRIC PANEL BOXES WITH CIRCUIT DESIGNATIONS UPON COMPLETION OF WORK. CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKWANSHIP IN THIS CONTRACT FOR A PERIOD OF ONE YEAR FOLLOWING ARCHITECT'S CERTIFICATION OF SUBSTANTIAL COMPLETION, AND SHALL REMEDY ANY DEFECTS IN SUCH WORK
37.	THAT ARISES DURING THAT TIME AT NO COST TO THE OWNER. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES BELOW GRADE AND RELATED SERVICE CONNECTIONS WITH THE RESPECTIVE UTILITY COMPANIES.
38.	THE CONTRACTOR SHALL COORDINATE THE REMOVAL, ABANDONIVENT, AND/OR RELOCATION OF EXISTING UTILITIES ABOVE OR BELOW GRADE WITH THE RESPECTIVE UTILITY COMPANIES.
39.	TEMPORARY FACILITIES: A) THE CONTRACTOR SHALL PROVIDE A STAGING AND MATERIAL STORAGE AREA ADJACENT TO THE AREA OF CONTRACTOR SHALL PROVIDE A STAGING AND MATERIAL STORAGE AREA ADJACENT TO THE AREA OF
	CONSTRUCTION. LOCATION SHALL BE COORDINATED WITH THE OWNER. IN ACCORDANCE WITH CHAPTER 31 OF THE 2014 NYC BUILDING CODE. B) THE CONTRACTOR SHALL MAKE NECESSARY CONNECTIONS TO EXISTING UTILITIES FOR TEMPORARY POWER AND WATER
	SUPPLIES, AND SHALL COORDINATE SUCH USE WITH THE OWNER PRIOR TO CONNECTION. IN ACCORDANCE WITH CHAPTER 33 OF THE NYC BUILDING CODE) C) THE CONTRACTOR SHALL PROVIDE TEMPORARY BARRICADES TO SEPARATE CONSTRUCTION AREAS FOR PUBLIC SAFETY AROUND ENTIRE PERIMETER OF CONSTRUCTION AREA. IN ACCORDANCE WITH CHAPTER 31 & 33 OF THE 2014 NYC
40.	BUILDING CODE) FIRE-RATED PARTITION WALLS AND FIRE-RATED OCCUPANCY SEPARATION WALLS SHALL EXTEND FROM CONCRETE FLOOR SLABS UP TO UNDERSIDE OF STRUCTURE ABOVE. ALL OPENINGS SHALL BE PROTECTED IN ACCORDANCE WITH CHAPTER 7 OF THE 2014 NYC BUILDING CODE.
41.	ALL PENETRATIONS THRU FIRE-RATED WALLS, FLOORS AND CEILINGS SHALL BE INSTALLED WITH FIRE DAMPERS, FIRE SEAL, ETC., SO AS TO MAINTAIN THE FIRE RESISTIVE RATING AND STRUCTURAL INTEGRITY OF WALLO OR CEILING ASSEMBLY, ALL OPENINGS SHALL BE REDUCTIONED ACCOMPANIES WITH A COMPANIES AND CEILINGS SHALL BE INSTALLED WITH FIRE DAMPERS, FIRE SEAL,
42.	OPENINGS SHALL BE PROTECTED IN ACCORDANCE WITH CHAPTER 7 OF THE 2014 NYC BUILDING CODE. FINAL CLEAN UP AND DISPOSAL: REMOVE DEBRIS, RUBBISH AND WASTE MATERIAL FROM THE OWNER'S PROPERTY TO A LAWFUL DISPOSAL AREA AND PAY ALL HAULING AND DUMPING COSTS. CONFORM TO PERTAINING FEDERAL STATE AND LOCAL LAWS, REGULATIONS AND ORDERS UPON COMPLETION OF WORK, ALL CONSTRUCTION AREAS SHALL BE LEFT VACUUM-CLEAN UND REDEFINITIONS AND CROPERS UPON COMPLETION OF WORK, ALL CONSTRUCTION AREAS SHALL BE LEFT VACUUM-CLEAN
43.	AND FREE FROM DEBRIS. CLEAN ALL DUST, DIRT, STAINS, HAND MARKS, PAINT SPOTS, DROPPINGS, AND OTHER BLEMISHES FROM ALL FINISHED SURFACES. PROVIDE CONC. LINTELS ABOVE ALL MASONRY OPENINGS (TYP) U.O.N. SEE STRUCTURAL DRAWINGS FOR LINTEL SCHEDULE.
	G.C. SHALL COORDINATE SIZE & LOCATION OF ALL HVAC OPENINGS IN CONCRETE FLOOR & ROOF SLAB WITH MECHANICAL DRAWINGS & CONC. PLANK CONTRACTOR. ALL VERTICAL SHAFT WALLS ENCLOSING HVAC DUCTS SHALL BE 2-HR RATED (TYP) WHERE PENETRATES THREE STORIES OR MORE (BC 707.4) IF SHAFT EXTENDS UP TO THE UNDERSIDE OF A NON-COMBUSTIBLE
45.	ROOF AND HAVE A FLOOR AREA EXCEEDING 4 SQ.FT., PROVIDE A SMOKE VENT. ALL DWELLING UNITS ARE HANDICAP ADAPTABLE (BC 1107) (U.O.N. ON PLANS)
47.	FOR SIZE & LOCATION OF ALL REQUIRED CONCRETE PADS FOR MECHANICAL EQUIPMENT, SEE MECHANICAL & PLUMBING DRAWINGS.
48.	IF A SPRINKLER LINE IS EXPOSED IN A LIVING AREA, ENCLOSE IN A GYP. BD. SOFFIT - SEE SPRINKLER DWGS. AND ARCH SPRINKLER SOFFIT DETAIL.
49.	ALL STEEL COLUMNS & BEAMS SHALL BE FIRE PROTECTED W/ SPRAY-ON FIREPROOFING (2 HOUR RATED).
	ALL EXTERIOR WALLS, INCLUDING ROOF BULKHEADS SHALL BE 1 HR RATED.
	ALL INTERIOR BEARING WALLS, HOIST WAY, SHAFTS, VERTICAL EXITS AND EXIT PASSAGE WAYS SHALL BE 2 HOUR RATED. PROVIDE NON-COMBUSTIBLE FIRE STOPPING AT THE PERIMETER OF ALL PENETRATIONS THROUGH RATED WALLS, FLOORS,

53.	ALL EXTERIOR CONCRETE BLOCK WALLS ADJACENT TO EXISTING BUILDINGS SHALL HAVE A DRY-BLOCK ADDITIVE (INCLUDING MORTAR) "ACME SHIELD".
	PROVIDE CONTROL JOINTS IN GYP BD WALLS & CEILING @ 30'-0" O/C MAX. AS MANUF BY U.S.G. PROVIDE CONTROL JOINTS IN BRICK @ 30'-0" O.C. MAX., CONTROL JOINTS IN CMU @ 30'-0" O.C., EXPANSION JOINTS IN CMU @ 60'-0" O/C.
56.	MINIMUM ALLOWABLE CEILING HEIGHT IN APARTMENTS (BC 1208.2) * HABITABLE ROOMS _ 8'-0" * OCCUPIABLE SPACES _ (PUBLIC CORRIDORS & COMMUNITY ROOM) 7'-6" * BATHROOMS, KITCHENS, SOFFITS, APPT FOYER _ 7'-0"
	PROVIDE MIN. STC 50 RATING AT PERIMETER WALLS, FLOORS & CEILING OF RESIDENTIAL APARTMENTS (BC 1207) MECHANICAL & PLUMBING CONTRACTORS TO COORDINATE WITH G.C. & CONCRETE MANUFACTURER PENETRATION SIZE &
59.	LOCATIONS PRIOR TO DRILLING HOLES. ALL WORK TO BE PERFORMED ON THIS PROJECT SHALL BE IN A WORKMEN LIKE MANNER.
60.	ENCAPSULATED HORIZONTAL DUCTWORK WITH FYREWRAP EZ 1.5 2 HOUR RATED . NONCOMBUSTIBLE DUCT BLANKET INSULATION (SEE MECHANICAL DRAWINGS)
61. 62.	PROVIDE FIRE EXTINGUISHER PER NYC BUILDING CODE & ALL LOCAL FIRE AUTHORITIES. THIS BUILDING DOES NOT INCLUDE MODULAR CONSTRUCTION
63.	ELEVATORS SHALL BE IN COMPLIANCE WITH BC 3003.3.1 AND BE KEPT AVAILABLE FOR INMMEDIATE USE OF nycfd ALL OURS OF THE NIGHT AND DAY, INCLUDING HOLIDAYS, SATURDAY & SUNDAYS.
64.	AS PER TPPN 10/88 PROTECTION SHALL BE PROVIDED TO AVOID DAMAGE TO HISTORIC LANDMARK STRUCTURES ADJACENT TO THE PROPERTY OR WITHIN 90FEET - THERE ARE NO LANDMARK STRUCTURES WITHIN 90 FEET.
NE	W YORK CITY MULTIPLE DWELLING LAW:
1.	IN MULTIPLE DWELLINGS BUILDINGS, WALLS, FLOORS, ROOF, STAIRS AND PUBLIC HALLS SHALL BE FIRE PROOFED. (CHAPTER 7)
2. 3.	ALL PARTITIONS BETWEEN APARTMENTS SHALL BE FIRE STOPPED AS PER SECTION BC 708
	PARTITIONS AND CEILING ENCLOSING KITCHENS & KITCHENETTES SHALL BE FIRE-RETARDED AS PER CHAPTER 7 OF NYC BC & SECTION 33 OF NEW YORK STATE MULTIPLE DWELLING LAW.
5.	ALL COMBUSTIBLE MATERIALS UNDER OR WITHIN 1'-0" OF COOKING APPLIANCES SHALL BE FIRE RETARDED. THERE SHALL ALWAYS BE AT LEAST 2 FEET OF CLEAR SPACE ABOVE ANY EXPOSED COOKING SURFACES AS PER SECTION 33 OF NEW YORK STATE MULTIPLE DWELLING LAW.
6.	NUMBER OF EXITS REQUIRED ACCORDING TO TABLE 1018.1 - STAIRS SHALL EXTEND FROM THE ENTRANCE STORY UP TO THE ROOF AND BE EQUIPPED WITH FIREPROOF SELF-CLOSING DOORS GLAZED WITH WIRE GLASS AND WITHOUT TRANSOMS. THE DOORS GIVING ACCESS TO SUCH STAIRS SHALL NOT BE HELD OPEN BY ANY DEVICE WHATEVER. (CHAPTER 10).
	PROVIDE MIRROR IN SELF-SERVICE PASSENGER ELEVATORS AS PER CHAPTER 30, SECTION BC 3001.6. THE FLOOR OF EVERY BATHROOM OR PUBLIC TOILET SHALL HAVE A SMOOTH, HARD, NONABSORBENT SURFACE THAT EXTENDS UPWARD ONTO THE WALLS AT LEASE 6" OR MORE ABOVE THE FLOOR, EXCEPT AT DOORS, AS PER SECTION BC
9.	1210. EVERY BATHROOM SHALL BE PROVIDED WITH NATURAL VENTILATION IN ACCORDANCE WITH SECTION 1203.4.1.3, UNLESS PROVIDED WITH EXHAUST VENTILATION IN ACCORDANCE WITH THE NEW YORK CITY MECHANICAL CODE . (SECTION
10.	1203.4.1.3). EVERY MULTIPLE DWELLING SHALL COMPLY WITH CHAPTERS 11 & 12 (LIGHTING, GAS METERS, AND GAS APPLIANCES).
	PROVIDE USPS APPROVED MAILBOXES. PROVIDE INTERCOMMUNICATION SYSTEM IN ENTRANCE LOBBY AS PER CHAPTER 1008.4.4.
	PROVIDE INTERCOMMUNICATION STSTEIM IN ENTRANCE LOBBY AS PER CHAPTER 1008.4.4. PROVIDE AND MAINTAIN A PEEPHOLE IN THE ENTRANCE DOOR OF EACH HOUSING UNIT. SUCH PEEPHOLE SHALL BE SO LOCATED AS TO ENABLE A PERSON TO VIEW FROM INSIDE OF THE ENTRANCE DOOR.
14.	PROVIDE FRONT, INTERIOR COURT AND REAR YARD LIGHTING AS PER SECTION BC 1206.4
	PROVIDE LIGHTING AND VENTILATION OF PUBLIC HALLS AND STAIRS AS PER SECTION BC 1203 & SECTION BC 1205.
	ALL STAIRS SHALL COMPLY WITH CHAPTER 10, SECTION BC 1009.
18.	EVERY STAIR SHALL BE VENTILATED BY A WINDOW OR BY MOVABLE LOUVERS IN THE SKYLIGHT HAVING AN OPENING OF AT LEAST 3.5% OF THE MAX. SHAFT AREA AT ANY FLOOR, BUT NOT LESS THAN 72 SQ. IN. OF THE TOTAL REQUIRED VENT AREA, AT LEAST 1/3 SHALL BE CLEAR OPENING TO THE EXTERIOR 10'-0" MIN. AWAY FROM ANY OPENING)
NE	W YORK CITY HOUSING MAINTENANCE CODE:
1.	BUILDING SHALL COMPLY WITH SECTION 27-2027 - DRAINAGE OF ROOFS AND COURT YARDS.
2. 3.	BUILDING SHALL COMPLY WITH SECTION 27-2028 - CENTRAL HEATING. BUILDING SHALL COMPLY WITH SECTION 27-2031 - SUPPLY OF HOT WATER.
4.	BUILDING SHALL COMPLY WITH SECTION 27-2040 - LIGHTS NEAR ENTRANCE WAYS AND IN YARDS AND COURTS.
5. 6.	BUILDING SHALL COMPLY WITH SECTION 27-2038 & BC 1006 - LIGHTING PUBLIC HALLS AND STAIRS. BUILDING SHALL COMPLY WITH SECTION 27-2041 - PEEPHOLES IN ENTRANCE DOORS TO APARTMENTS.
7.	BUILDING SHALL COMPLY WITH SECTION 27-2047 - MAIL SERVICE.
8. 9.	BUILDING SHALL COMPLY WITH SECTION 27-2048 - FLOOR SIGNS. BUILDING SHALL COMPLY WITH SECTION 27-2049 - STREET NUMBERS.
10.	BUILDING SHALL COMPLY WITH SECTION 27-2050 - INSPECTION OF SPRINKLERS.
11. 12.	
13.	SIZES. BUILDING SHALL COMPLY WITH SECTION 27-2097 - REGISTRATION: TIME TO FILE.
14.	BUILDING SHALL COMPLY WITH SECTION 27-2104 - POSTING OF SERIAL NUMBER.
15. 16.	BUILDING SHALL COMPLY WITH SECTION 27-2105 - IDENTIFICATION OF MANAGING AGENT OR OWNER BUILDING SHALL COMPLY WITH SECTION 27-2021 - RECEPTACLES FOR WASTE MATTER.
17.	BUILDING SHALL COMPLY WITH SECTION 27-2022 - FREQUENCY OF COLLECTION OF WASTE MATTER.
18.	PROVIDE A HEAVY DUTY LATCH SET AND A HEAVY DUTY DEAD BOLT OPERABLE BY A KEY FROM THE OUTSIDE AND A THUMB-TURN FROM THE INSIDE AT EVERY APARTMENT ENTRANCE (SECTION 27-2043)
	PROVIDE FIRE EXTINGUISHERS PER NYC BUILDING CODE AND PER LOCAL FIRE AUTHORITIES.
1. 2.	INTERIOR FINISHES SHALL BE CLASSIFIED IN ACCORDANCE WITH SURFACE FLAME SPREAD RATINGS AS NOTED IN CHAPTER 8.
3. 4. 5.	ATTACHMENT AND FURRED CONSTRUCTION FOR INTERIOR FINISH SHALL BE IN ACCORDANCE WITH BC 803.4.1 NO MATERIAL OTHER THAN TEXTILES, SHALL BE USED IN ANY INTERIOR LOCATION WHICH WILL PRODUCE PRODUCTS MORE TOXI THAN THOSE GIVEN OFF BY WOOD OR PAPER WHEN DECOMPOSING OR BURNING AS PER SECTION BC 803. INSTALLATION OF ALL REQUIRED SPRAYED-ON FIRE PROTECTION SHALL BE SUBJECT TO THE SPECIAL INSPECTION REQUIREMENT
6. 7.	(BC 1704.11). FOR CONSTRUCTION CLASS I, COMBUSTIBLE FLOORING MAY BE USED WHEN IN COMPLIANCE WITH SECTION BC 804. IN ALL EXITS & EXIT PASSAGEWAYS OF ANY OCCUPANCY GROUP, FLOOR FINISHES SHALL BE OF NONCOMBUSTIBLE MATERIALS (
8.	804.5). CARPET - TYPE FLOOR COVERING ARE PERMITTED WHEN CEMENTED DIRECTLY TO THE TOP SURFACE OF APPROVED FIRE-RESISTANCE-RATED CONSTRUCTION (BC 804.4.4).
9. 10.	ALL GLASS PANELS USED IN WINDOWS, IN DOORS, AS INTERIOR PARTITIONS, ETC. SHALL BE IN COMPLIANCE WITH CHAPTER 24. EXCEPT FOR MISCELLANEOUS TRIMS, MOLDINGS, ETC. ALL WOOD USED SHALL BE FRE RETARDANT, IE., COUNTERTOPS, CABINETS, DOORS
SI	JSPENDED CEILING NOTES:
1.	NEW, NON RATED, SUSPENDED ACOUSTICAL TILE CEILINGS TO BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF APPENDIX "B".
2.	INSTALLATION OF CELING SUSPENSION SYSTEMS TO SUPPORT ACOUSTICAL PANELS WEIGHING LESS THAN 4 POUNDS PER SQ. FT., NOT CONTRIBUTING TO THE FIRE RESISTANCE RATING OF A FLOOR OR ROOF ASSEMBLY (APPENDIX R101.1).
3.	HANGER TO BE 1/4" DIAMETER GALVANIZED STEEL RODS, OR 1" X 1/8" THICK FLAT STEEL BAR. NOT TO EXCEED 4'-6" O.C., PER SECTION BC R103
4. 5.	CARRYING CHANNELS TO BE 1-1/2" COLD-ROLLED 0.475#, NOT TO EXCEED 4'-6" O.C., AS PER SECTION R103. CARRYING CHANNELS, CROSS RUNNERS, HANGERS, MAIN RUNNERS AND ALL OTHER COMPONENTS OF SUSPENSION SYSTEM TO BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF APPENDIX R102.

ROOF AND CEILINGS.

ITENANCE CODE:
27-2027 - DRAINAGE OF ROOFS AND COURT YARDS.
27-2028 - CENTRAL HEATING.
27-2031 - SUPPLY OF HOT WATER.
27-2040 - LIGHTS NEAR ENTRANCE WAYS AND IN YARDS AND COURTS.
27-2038 & BC 1006 - LIGHTING PUBLIC HALLS AND STAIRS.
27-2041 - PEEPHOLES IN ENTRANCE DOORS TO APARTMENTS.
27-2047 - MAIL SERVICE.
27-2048 - FLOOR SIGNS.
27-2049 - STREET NUMBERS.
27-2050 - INSPECTION OF SPRINKLERS.
13 - JANITORIAL SERVICES.
SIGN GUIDELINES DATED MAY 1988, REVISED AUGUST 1, 2000 FOR ROOM
27-2097 - REGISTRATION: TIME TO FILE.
27-2104 - POSTING OF SERIAL NUMBER.
27-2105 - IDENTIFICATION OF MANAGING AGENT OR OWNER
27-2021 - RECEPTACLES FOR WASTE MATTER.
27-2022 - FREQUENCY OF COLLECTION OF WASTE MATTER.
A HEAVY DUTY DEAD BOLT OPERABLE BY A KEY FROM THE OUTSIDE AND A 7 APARTMENT ENTRANCE (SECTION 27-2043)
UILDING CODE AND PER LOCAL FIRE AUTHORITIES.
IN ACCORDANCE WITH SURFACE FLAME SPREAD RATINGS AS NOTED IN CHAPTER 8.
HALL BE CLASSIFIED IN ACCORDANCE WITH ASTM E 84 AS PER SECTION BC 803.
TON FOR INTERIOR FINISH SHALL BE IN ACCORDANCE WITH BC 803.4.1
ALL BE USED IN ANY INTERIOR LOCATION WHICH WILL PRODUCE PRODUCTS MORE TOXIC APER WHEN DECOMPOSING OR BURNING AS PER SECTION BC 803.
ED-ON FIRE PROTECTION SHALL BE SUBJECT TO THE SPECIAL INSPECTION REQUIREMENT
TIBLE FLOORING MAY BE USED WHEN IN COMPLIANCE WITH SECTION BC 804.
NY OCCUPANCY GROUP, FLOOR FINISHES SHALL BE OF NONCOMBUSTIBLE MATERIALS (E
ERMITTED WHEN CEMENTED DIRECTLY TO THE TOP SURFACE OF APPROVED N IBC 804.4.4).
IN DOORS, AS INTERIOR PARTITIONS, ETC. SHALL BE IN COMPLIANCE WITH CHAPTER 24.
INGS, ETC. ALL WOOD USED SHALL BE FRE RETARDANT, IE., COUNTERTOPS, CABINETS, DOORS
ICAL TILE CEILINGS TO BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF
STEMS TO SUPPORT ACOUSTICAL PANELS WEIGHING LESS THAN 4 POUNDS PER SQ. FT., NOT VITING OF A FLOOR OR ROOF ASSEMBLY (APPENDIX R101.1).
ED STEEL RODS, OR 1° X 1/8° THICK FLAT STEEL BAR. NOT TO EXCEED 4'-6° O.C., PER
D-ROLLED 0.475#, NOT TO EXCEED 4'-6" O.C., AS PER SECTION R103.
S, HANGERS, MAIN RUNNERS AND ALL OTHER COMPONENTS OF SUSPENSION SYSTEM THE REQUIREMENTS OF APPENDIX R102.

# SECTION BC 1009.

NEW YORK CITY BUILDING CODE REQUIREMENTS:

INCIDENTAL (MECHANICAL ROOMS, LAUNDRY ROOM, JANITOR CLOSETS, STORAGE) (SAME OCCUPANCY AS BUILDING'S MAIN

PROPOSED NEW BUILDING TO COMPLY WITH CONSTRUCTION CLASSIFICATION PER SECTION BC 601: (TYPE I-B (NON-COMBUSTIBLE - 2HR. PROTECTED))

SECTION BC 601 GENERAL

TABLE 601 FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (hours)

For SI: 1 foot = 304.8 mm.
 a. Roof supports: Fire-resistance ratings of primary structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only.
 b. 1. Except in Group F-1, H, M and S-1 occupancies, fire protection of structural members shall not be required, including protection of roof framing and determing where every part of the roof construction is 20 feet or more above any floor immediately below. Fire-retardant-treated wood members shall be allowed to be used for such unprotected members.

Except in Group F occupancies subject to regulation under Sections 264(1) and 264(2) of the New York State Labor Law, and in Group 1-1, R-1, and R-2 occupancies, in Types 1 and II construction, fire-retardant-treated wood shall be allowed in buildings including girders and trusses as part of the roof construction when the building is:

Type II construction of any height; or

 Type II construction two stories or less; or when over two stories, the vertical distance from the upper floor to the roof is 20 feet or more.
 Encept in Group Foccupancies ubject to regulation under Sections 264(1) and 264(2) of the New York State Labor Law; and in Group 1-1, R-1 and R-2 occupancies, heavy timber shall be allowed where a 1-hour or less fire-resistance rating is required.

d. An approved automatic sprinkler system in accordance with Section 903.3.1.1 shall be allowed to be substituted for 1-hour fire-resistance-rated construction, provided such system is not otherwise required by other provisions of the code or used for an allowable area increase in accordance with Section 506.3 or an allowable area increase in accordance with Section 506.3 or an allowable area increase in accordance with Section 506.3 or an allowable area increase in accordance with Section 506.3 or an allowable area increase in accordance with Section 504.3 or an allowable area increase in accordance with Section 504.3 or an allowable area increase in accordance with Section 504.3 or an allowable area increase in accordance with Section 504.3 or an allowable area increase in accordance with Section 504.3 or an allowable area increase in accordance with Section 504.3 or an allowable area increase in accordance with Section 504.3 or an allowable area increase in accordance with Section 504.3 or an allowable area increase in accordance with Section 504.3 or an allowable area increase in accordance with Section 504.3 or an allowable area increase in accordance with Section 504.3 or an allowable area increase in accordance with Section 504.3 or an allowable area increase in accordance with Section 504.3 or an allowable area increase in accordance with Section 504.3 or an allowable area increased area of a section and allowable area increased area of a section allowable area increased area of a section and allowable area increased area of an allowable area increased area of an allowable area increased area of a section and allowable area increased area of a section and allowable area increased area of a section and allowable area increased area of an allowable area increased area of a section and allowable area increased area of a section and allowable area increased area of a section and an allowable area increased area of a section area of a section and allowable area increased area of a section and allowable ar

TABLE 602 FIRE-RESISTANCE RATING REQUIREMENTS FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE^{8,8,2,8}

TYPE OF CONSTRUCTION OCCUPANCY GROUP H' GROUP F-1, M, S-1^e

0

a. Load-bearing exterior walls shall also comply with the fire-resistance rating requirements of Table 601.
b. Group U when used as accessor to Group FA-3 shall not be required to have a fire-resistance rating where the fire sparsion distance is 5 See or more for fire-standing private garages is compliance with Section 401. Section 400.1 for required fire-resistance rating for extended for the fire-standing private garages is less than 5 feet refers to section 400.1 for required fire-resistance rating for extent valls.

Open parking garages complying with Section 406 shall not be required to have a fire resistance rating.
 The fire-resistance rating of an exterior wall is determined based upon the fire separation distance of the exterior wall and the story in which the wall is

TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH

THE ASHRAE 90.1 2013 AS AMENDED BY APPENDIX CA OF NEW YORK STATE, AS NOTED IN 2014 NEW YORK CITY BUILDING CODE - SECTION

F TWO OR MORE OF THESE BUILDING CODES DIFFER ON A PARTICULAR SUBJECT MATTER, THE MORE STRINGENT OF THE TWO SHALL

BUILDING ENTRANCE DOORS AND OTHER EXTERIOR EXIT DOORS WILL BE EQUIPPED WITH HEAVY DUTY LOCK SETS WITH AUXILIARY

A LIGHT OR LIGHTS SHALL BE PROVIDED AT OR NEAR THE OUTSIDE OF THE FRONT ENTRANCEWAY OF THE BUILDING PROVIDING NC LESS THAN 5 FOOT CANDLES (53.82 LUX) INTENSITY MEASURED AT THE FLOOR LEVEL FOR THE FULL WIDTH OF THE ENTRANCEWAY

DOORS TO DWELLING UNITS SHALL BE EQUIPPED WITH A HEAVY DUTY LATCH SET AND A HEAVY DUTY DEAD BOLT OPERABLE BY A KEY FORM THE OUTSIDE AND A THUMB-TURN FROM THE INSIDE AS WELL AS A CHAIN GUARD AND VIEWING DEVICE AS PER BC

BUILDINGS CONTAINING 8 OR MORE DWELLING UNITS SHALL BE PROVIDED WITH AN INTERCOMMUNICATION SYSTEM AT THE DOOR

ALL OPERABLE WINDOWS SHALL BE EQUIPPED WITH SASH LOCKS DESIGNED TO BE OPERABLE FROM THE INSIDE ONLY AS PER BC

A SIGN SHALL BE PROVIDED AT EACH FLOOR LANDING IN INTERIOR VERTICAL EXIT ENCLOSURES CONNECTING MORE THAN THREE

). ELEVATOR SHALL BE IN COMPLIANCE WITH BC 3003.3.2 AND BE KEPT AVAILABLE FOR IMMEDIATE USE BY THE FIRE DEPARTMENT ALL

WHERE A FLOOR IS SERVICED BY THREE OR FEWER ELEVATOR CARS, EVERY CALL SHALL BE KEPT AVAILABLE FOR SOLE USE BY THE

ENERGY CODE PROFESSIONAL STATEMENT: "TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS

I. A TACTILE SIGN INDICATING "EXIT" SHALL BE PROVIDED ADJACENT TO EACH DOOR TO AN EGRESS STAIR, AN EXIT PASSAGEWAY, AND

AS PER TPPN 1%8, PROTECTION SHALL BE PROVIDED TO AVOID DAMAGE TO HISTORIC LANDMARK STRUCTURES ADJACENT TO PROPERTY OR WITHIN 90 FEET

DWELLING UNITS SHALL COMPLY WITH THE 2014 BUILDING CODE AND CHAPTER 1 THROUGH 10 OF THE ICC A117.1 - 2009

3. BC 403.2.1 {2} FOR HIGH RISE BUILDINGS NOT GREATER THAN 420 FEET (128000 MM) IN BUILDING HEIGHT, AND CONSTRUCTED TO

9. BC 403.2.3 FOR ALL HIGH-RISE BUILDINGS, EXIT ENCLOSURES AND ELEVATOR HOIST WAY ENCLOSURES SHALL COMPLY WITH

20. BC 403.4.3. AN EMERGENCY VOICE / ALARM COMMUNICATION SYSYTEM SHALL BE PROVIDED IN ACCORDANCE WITH SECTION

BC 403.4.5 FIRE COMMAND. A FIRE COMMAND CENTER COMPLYING WITH SECTION 911 SHALL BE PROVIDED IN A LOCATION

5. EMERGENCY POWER SYSTEM SHALL BE DESIGNED TO SUPPORT EXIT SIGN AND MEANS OF EGRESS ILLUMINATION, EMERGENCY

/OICE COMMUNICATION, ELECTRICALLY POWERED FIRE PUMPS UNLESS ELECTRICAL POWER TO THE MOTOR IS TAKEN AHEAD OF

ELEVATOR MACHINE EQUIPMENT TO COMPLY WITH BC 3006.7 ISOLATOR PAD WITH MIN.  $\frac{1}{2}$  INCH THICK TO BE PROVIDED FOR GEAR

ADJACENT ROOFS TO BE PROTECTED AS PER BC 3309.10, PROTECTION SHALL EXTEND MINIMUM 20 FEET FROM THE EDGE OF THE

BUILDING BEING CONSTRUCTED AND MATERIAL SHALL BE 2" OF FLAME RETARDANT FOAM UNDER 2" FLAME RETARDANT PLYWOOD

30. AT LEAST ONE FIRE SERVICE ACCESS ELEVATOR IN COMPLAINCE WITH BC 3007 SHALL BE PROVIDED IN HIGH RISE BUILDINGS, WITH OCCUPIABLE FLOOR HIGHER THAN 120 FT, AS PER BC 403.6.1 STAIR SHALL BE MARKED AT THE STREET AND FLOOR LEVELS WITH A

MEET THE FIRE REISITANCE RATING REQUIREMENTS OF TYPE IB OR IIA CONSTRUCTION, THE REQUIRED FIRE-RESISTANCE RATING OF

EXITS, EXIT DISCHARGE AND PUBLIC CORRIDORS SHALL BE ILLUMINATED AT ALL TIMES AS PER BC 1006.2

area. rspetial requirements for Group H occupancies, see Section 415.3. ide the fire district, exterior load-bearing walls of Type II buildings shall have a fire-resistance rating not less than prescribed below:

h. Inside the fire district, exterior nonload-bearing walls of Type II buildings shall have a fire-resistance rating not less than prescribed below

Yot less than the interventioner statung selection is represented initiate (see labore occ), p Yot less than the fire-resistance statung as referenced in Section 704.10.
 Lises Section 712.3 for additional requirements.
 Type V construction is not permitted inside fire district encept as provided for in Section D105.1 of Appendix D. K. See Section BC 403.2.1 for additional requirements for high-rise buildings.

Others IA.IB

IIB,VB

A11

TYPE I TYPE III TYPE III TYPE IV TYPE V

A^d B A^d B HT A^d B

0 1 0 HT 1 0

1 0 2 2 2 1 0 1 0 1 0 1/HT 1 0

0 0 0 See Section 0 0

0 1 0 HT 1 0

GROUP A, B, E, F-2, I, R, S-

be 1be 0be 1be 0 HT 1be 0

601.1 Scope. The provisions of this chapter shall control the classification of buildings as to type of construction.

OCCUPANCY CLASSIFICATIONS:

S2- PARKING

R2- RESIDENTIAL (MULTI-FAMILY)

CONSTRUCTION CLASSIFICATION:

BUILDING ELEMENT

Nonbearing walls and partitions Exterior

Nonbearing walls and partitions Interior[#]

and secondary members (see Section 202)

Roof construction and secondary

members (see Section 202)

FIRE SEPARATION DISTANCE =X

 $5 \le X < 10$ 

 $1 \hspace{.1cm} 0 \hspace{.1cm} \leq X < \hspace{.1cm} 3 \hspace{.1cm} 0$ 

 $X \ge 30$ 

See Section 706.1.1 for party walls.

ENERGY CONSERVATION NOTES:

N.F.P.A. - NATIONAL FIRE PROTECTION ASSOCIATION.

LATCH BOLTS AS PER BC 1008.4.1

IS MEET ALL APPLICABLE

A.D.A - ICC/ANSI A-117.1-2009 FEDERAL FAIR HOUSING

GENERAL NOTES:

AS PER BC 1008.4.1

1008.4.2

1008.4.3

GOVERN.

2 hours 1 hour

As per table 602.

NEW YORK CITY OFFICIAL COMPILATION OF CODES, RULES AND REGULATIONS.

GWING ACCESS TO THE MAIN ENTRANCE LOBBY AS PER BC 1008.4.4

HOURS OF THE NIGHT AND DAY, INCLUDING HOLIDAYS, SATURDAYS AND SUNDAYS

16. THIS BUILDING SHALL BE DESIGNED IN COMPLIANCE WITH BC 1601 STRUCTURAL DESIGN

COLUMNS SUPPORTING FLOORS SHALL BE CONSTRUCTED TO MEET TYPE A CONSTRUCTION.

22. SMOKE PROOF ENCLOSURES TO BE PROVIDED AS PER BC 403.5 FOR BUILDINGS ABOVE 75 FEET IN HEIGHT

THE MAIN FROM THE STREET SIDE OF HOUSE SERVICE SWITCH AS PER BC 403.4.8.2

DRIVEN MACHINERY, GEARLESS MACHINERY AND MOTOR GENERSATORS

28. THIS PROJECT DOES NOT CONTAIN ANY OPEN WEB STEEL JOISTS.

29. POST FIRE SMOKE PURGE SYSTEM TO BE PROVIDED AS PER BC 403.4.6

SIGN INDICATING THAT THE STAIRWAY CONTINUES TO THE ROOF.

3. DOORS OPENING INTO INTERIOR STAIR ENCLOSURES SHALL NOT BE LOCKED FROM EITHER SIDE AS PER BC 403.5.3

4. BC 403.5.3.1 STAIRWAY COMMUNICATION SYSTEM SHALL BE PROVIDED AT NOT LESS THAN EVERY FIFTH FLOOR

AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE ASHRAE 90.1 2013 AS AMENDED BY APPENDIX CA

STORIES DESIGNATING THE FLOOR LEVEL AS PER BC 1019.1.7 8. EXIT SIGNS SHALL BE INSTALLED IN COMPLIANCE WITH BC 1011.1 . STAIRWAY DOOR OPERATION SHALL BE IN COMPLIANCE WITH BC 403.12

3. THIS PROJECT DOES NOT INCLUDE MODULAR CONSTRUCTION

FIRE DEPARTMENT AS PER BC 3003.3.2.1

EXIT DISCHARGE AREA AS PER BC 1011.3

SECTIONS 403.2.3.1 THROUGH 403.2.3.4.

APPROVED BY THE FIRE DEPARTMENT

907.5.2.2.

For SI: 1 foot = 304.8 mm.

g. Inside the fire dist  $5 \le X < 10$  $10 \le X < 30$ 

Primary structural frame^g

(see Section 202)

Floor construction

Bearing walls Exterior^{fgh}

GRAPHIC SYMBOLS

NUMBER

NUMBER

UMBER

WHERE DRAWN

WHERE DRAWN

WHERE DRAWN

WHERE DRAWN

X DRAWING TITLE

CALE : 1/8" = 1'-0"

LR/DA

TYPE-X

X BR.

<u>3K</u>

XX

X

(X)

wx

SCM

⊕ <u>3RD FLOOR</u> - ____ - ____

DRAWING NUMBER

- TRADE:

A = ARCHITECTURAL

S = STRUCTURAL

M = MECHANICAL E = ELECTRICAL P = PLUMBING

A-XXX

#### SPECIAL / PROGRESS INSPECTIONS

OF BUILDINGS THROUGH THE APPLICANT.

COLUMN REFERENCE

GRID LINE FOR

NEW STEEL

WALL SECTION KEY

BUILDING SECTION KEY

ELEVATION KEY

DETAIL KEY

DRAWING TITLE

INTERIOR ELEVATIONS

ROOM/SPACE NAME

APARTMENT

DESIGNATION

APARTMENT NUMBER

PARTITION TYPE

REVISION KEY

& CLOUD

DOOR IDENTIFICATION

TAG

WINDOW

**IDENTIFICATION** 

TAG

LOUVER IDENTIFICATION

TAG

SMOKE / CARBON MONOXIDE

ETECTOR IDENTIFICATION T

ELEVATION DESIGNATION

HANDICAP ACCESSIBLE

TAG

DRAWING NUMBERING

SYSTEM

TEST INSPECTIONS SHALL BE IN ACCORDANCE WITH THE APPLICABLE BUILDING CODE SECTIONS. SIGNED COPIES OF ALL TESTS AND INSPECTIONS REPORTS SHALL BE FILED WITH THE DEPARTMENT

THE FOLLOWING ITEMS OF WORK SHALL BE SUBJECT TO INSPECTIONS / TESTS:

SPECIAL INSPECTIONS	CODE / SECTION (REPORTS REQUIRED)	REQUIRI YES / N
FLOOD ZONE COMPLIANCE	BC G105	*
FIRE ALARM TEST	BC 907, BC 1705.15	*
PHOTOLUMINESCENCE EXIT PATH MARKINGS	BC 1024.4 (TR-7)	*
EMERGENCY POWER SYSTEMS (GENERATORS)	BC 1704.13, BC 2702	*
STRUCTURAL STEEL - WELDING	BC 1704.3.1	*
STRUCTURAL STEEL - ERECTION & BOLTING	BC 1704.3.2, BC 1704.3.3	*
STRUCTURAL STEEL - FORMED STEEL	BC 1704.3.4	*
CONCRETE - CAST-IN-PLACE	BC 1704.4	YES
CONCRETE - PRECAST	BC 1704.4	*
CONCRETE - PRESTRESSED	BC 1704.4	*
CONCRETE - TEST CYLINDERS	BC 1905.6 (TR-2)	*
CONCRETE - DESIGN MIX	BC 1905.3 (TR-3)	*
MASONRY	BC 1704.5	YES
SOILS - SITE PREPARATION	BC 1704.7.1	YES
SOILS - FILL PLACEMENT & IN-PLACE DENSITY	BC 1704.7.2, BC 1704.7.3	*
SOILS - INVESTIGATIONS (BORINGS / TEST PITS)	BC 1704.7.4 (TR-4)	*
PILE FOUNDATIONS & DRILLED PIER INSTALLATION		*
PILE FOUNDATIONS & DRILLED PIER INSTALLATION PILE FOUNDATIONS	BC 1704.8 (TR-5) BC 1704.9	*
		*
	BC 1704.9.1	*
WALL PANELS, CURTAIN WALLS, AND VENEERS	BC 1704.10	
SPRAYED FIRE-RESISTANT MATERIALS	BC 1704.11	YES
EXTERIOR INSULATION FINISH SYSTEMS (EIFS)	BC 1704.13	YES
SMOKE CONTROL SYSTEMS	BC 1704.15	YES
MECHANICAL SYSTEMS	BC 1704.16	YES
FUEL-OIL STORAGE AND FUEL-OIL PIPING SYSTEM	BC 1704.17	*
HIGH-PRESSURE STEAM PIPING (WELDING)	BC 1704.18	*
FUEL-GAS PIPING (WELDING)	BC 1704.19	
STRUCTURAL SAFETY - STRUCTURAL STABILITY	BC 1704.20	*
MECHANICAL DEMOLITION	BC 1704.20.4, BC 3306.6	YES
EXCAVATION - SHEETING, SHORING, AND BRACING	BC 1704.20.2, BC 3304.4.1	YES
SOIL PERCOLATION TEST - DRYWELL	BC 1704.21.1.2	YES
	BC 1704.21.1.2	*
SOIL STORM DRAINAGE DISPOSAL AND DETENTION SYSTEM INSTALLATION	BC 1704.21.1.2	YES
SEPTIC SYSTEM INSTALLATION	BC 1704.21.1.2	*
SPRINKLER SYSTEMS	BC 1704.23	*
STANDPIPE SYSTEMS	BC 1704.24	*
HEATING SYSTEMS	BC 1704.25	YES
CHIMNEYS	BC 1704.26	*
FIRESTOP, DRAFTSTOP, AND FIREBLOCK SYSTEMS	BC 1704.27	YES
ALUMINUM WELDING	BC 1704.28	*
SEISMIC ISOLATION SYSTEMS	BC 1707.8	*
2014 CODE PROGRESS	S INSPECTIONS	
PRELIMINARY	28-116.2.1, BC 110.2	*
FOOTING AND FOUNDATION	BC 110.3.1	YES
LOWEST FLOOR ELEVATION (ATTACH FEMA FORM)	BC 110.3.2	*
FRAME INSPECTION	BC 110.3.3	*
ENERGY CODE COMPLIANCE INSPECTIONS	BC 110.3.5	YES
FIRE-RESISTANCE RATED CONSTRUCTION	BC 110.3.4	YES
PUBLIC ASSEMBLY EMERGENCY LIGHTING	28-116.2.2	*
FINAL	28-116.2.4.2 AND	*
FII VAL	BC 110.5 AND DIRECTIVE 14 OF 1975	
BUILDING TO BE FUL		>
SPRINKLERS BEING FILED UNDER SPRINKLER APPL	ICATION	

ASSOCIATED APPLICATIONS <u>DOR #</u> 340574275 BUILDER'S PAVEMENT PLAN 340581221 SPRINKLER / STANDPIPE 321664356 FIRE ALARM 321191802 FOUNDATION PLAN

DOB APPLICATION NUMBER TO BE PROVIDED UPON APPLICATION APPROVAL

PROPOSED NEW DEVELOPMENT

# **159 BOERUM ST**

### BROOKLYN, NY

LOT: 10/40

SLATE PROPERTY GROUP

NEW YORK, NY 10022

T: 646.439.4000

850 THIRD AVE, SUITE 16-B

STRUCTURAL ENGINEER:

62 WEST 45TH STREET, 11TH FLOOR

McNAMARA - SALVIA

NEW YORK, NY 10036

T: 212.246.9800

MEP ENGINEER:

ARCHITECT:

BLOCK: 3071

AUFGANG ARCHITECTS LLC 74 LAFAYETTE AVENUE, SUITE 301 SUFFERN, NY

INFO@AUFGANG.COM 845.368.0004 **DEVELOPER:** 



INTERIOR DESIGNER: ALCHEMY STUDIO NYC 154 GRAND STREET NEW YORK, NY 10013

BROOKLYN, NY 11235

T: 718.872.6112

T: 307.760.6454

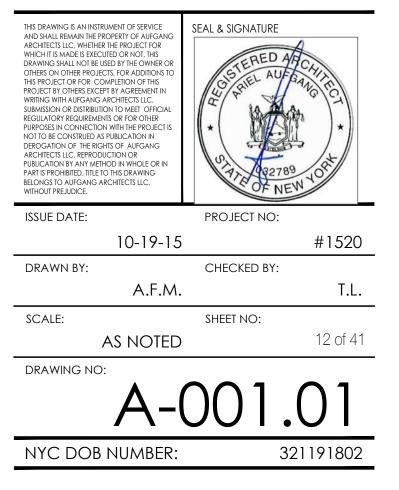
A & D ENGINEERING, PLLC

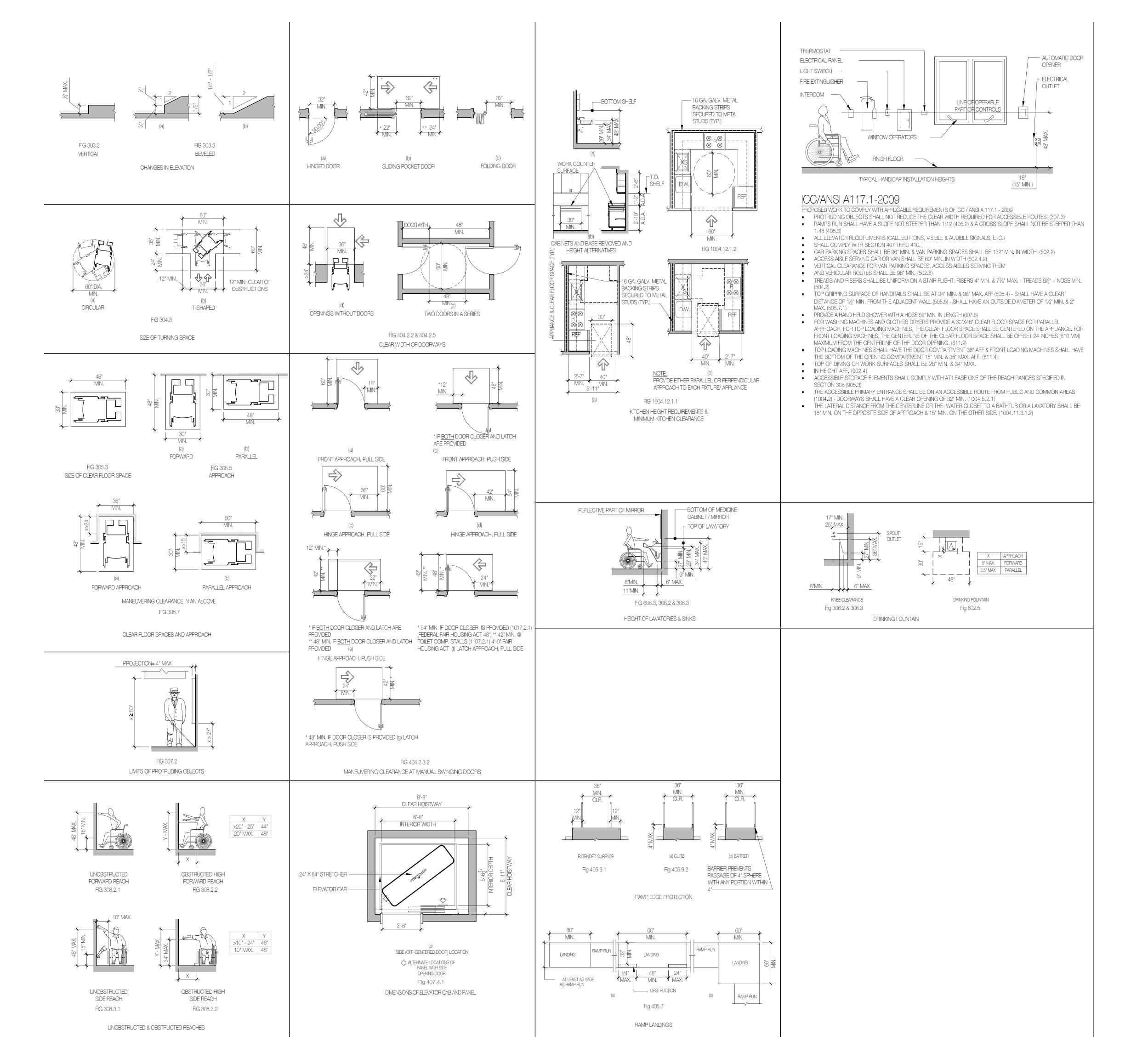
2606 E. 15TH STREET, SUITE #304

DATE	SUBMISSIONS / REVISIONS
11.03.17	ISSUED TO D.O.B. FOR REVIEW AND COMMENTS
01.26.18	RE-ISSUED TO D.O.B. FOR REVIEW AND COMMENTS
06.04.18	RE-ISSUED TO D.O.B.
07.27.18	90% PROGRESS SET
05.31.19	BID SET
08.02.19	99% CONSTRUCTION SET
08.15.19	PAA TO D.O.B.

SHEET TITLE:

GENERAL NOTES





PROPOSED NEW DEVELOPMENT

# **159 BOERUM ST**

## BROOKLYN, NY

# BLOCK: 3071

LOT: 10/40

DEVELOPER:

ARCHITECT: AUFGANG ARCHITECTS LLC

74 LAFAYETTE AVENUE, SUITE 301 SUFFERN, NY INFO@AUFGANG.COM 845.368.0004



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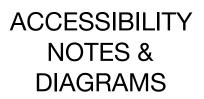
#### INTERIOR DESIGNER:

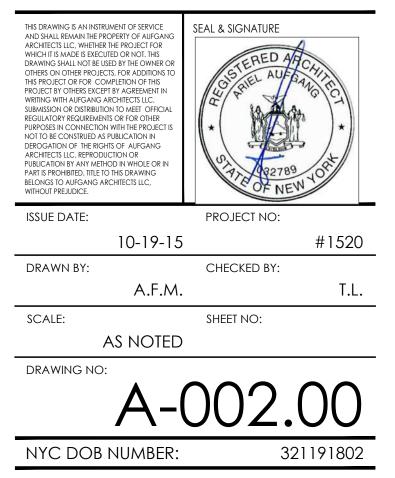
ALCHEMY STUDIO NYC 154 GRAND STREET NEW YORK, NY 10013 T: 307.760.6454

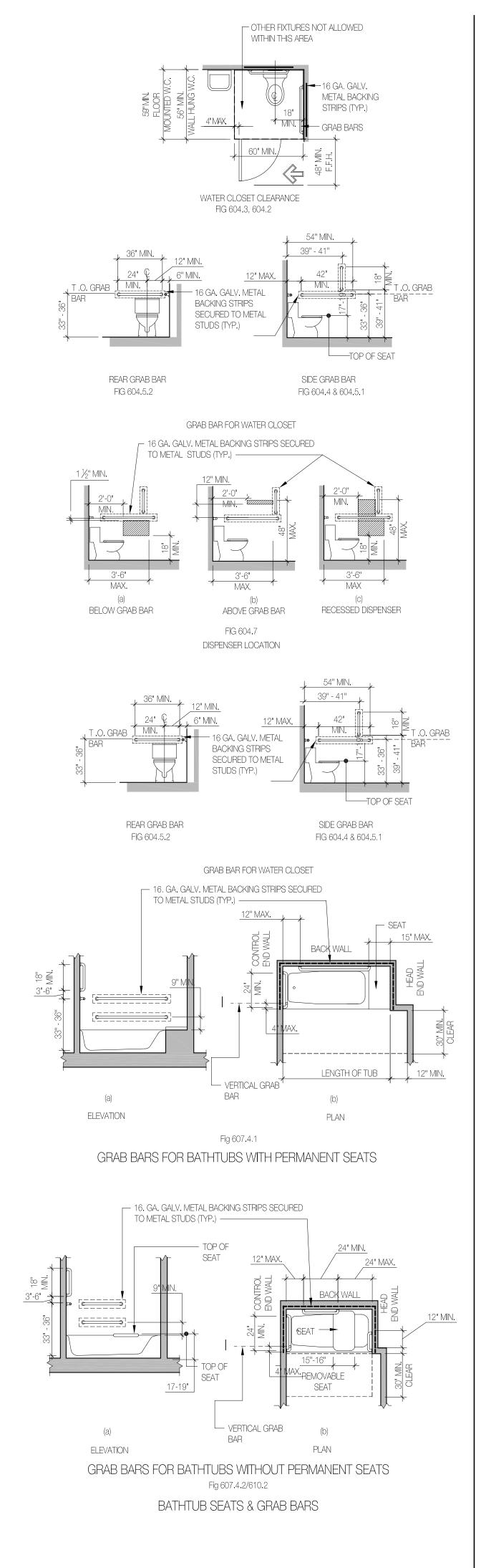
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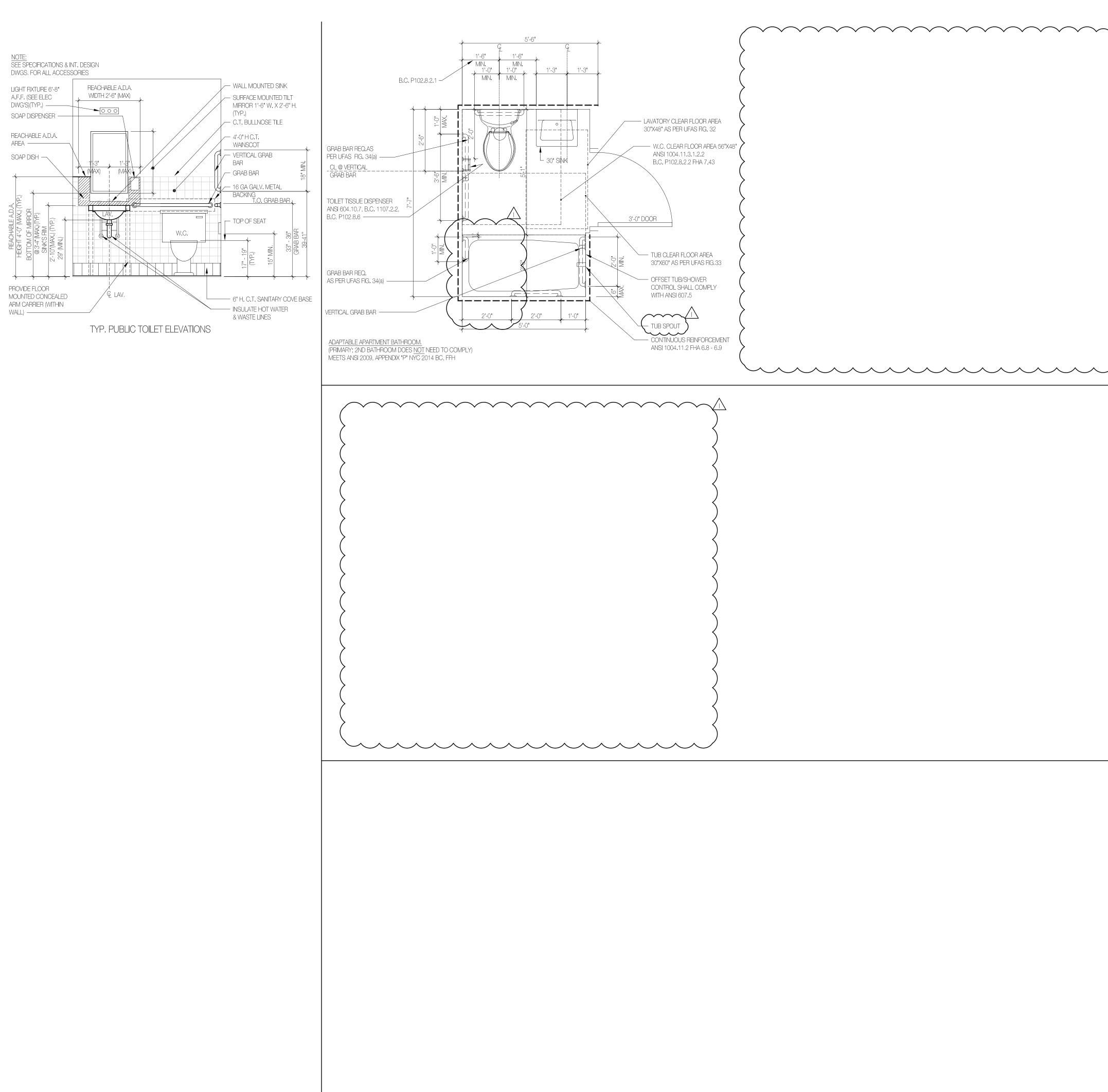
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SHEET TITLE:









PROPOSED NEW DEVELOPMENT

# **159 BOERUM ST**

## BROOKLYN, NY

# BLOCK: 3071

<u>LOT: 10/40</u>

ARCHITECT: AUFGANG ARCHITECTS LLC 74 LAFAYETTE AVENUE, SUITE 301 SUFFERN, NY

INFO@AUFGANG.COM 845.368.0004

DEVELOPER:

SLATE PROPERTY GROUP 850 THIRD AVE, SUITE 16-B NEW YORK, NY 10022 T: 646.439.4000

### STRUCTURAL ENGINEER:

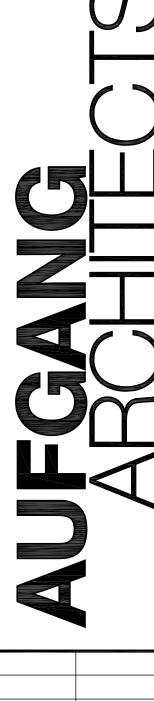
McNAMARA - SALVIA 62 WEST 45TH STREET, 11TH FLOOR NEW YORK, NY 10036 T: 212.246.9800

#### MEP ENGINEER:

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#### INTERIOR DESIGNER:

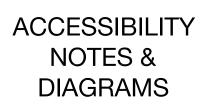
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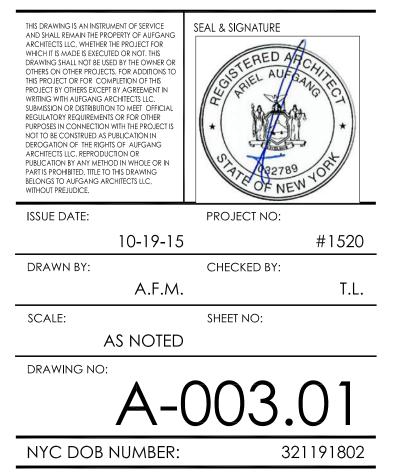


08.15.19

PAA TO D.O.B. 08.02.19 99% CONSTRUCTION SET 05.31.19 BID SET 07.27.18 90% PROGRESS SET 06.04.18 RE-ISSUED TO D.O.B. 01.26.18 RE-ISSUED TO D.O.B. FOR REVIEW AND COMMENTS 11.03.17 ISSUED TO D.O.B. FOR REVIEW AND COMMENTS DATE SUBMISSIONS / REVISIONS

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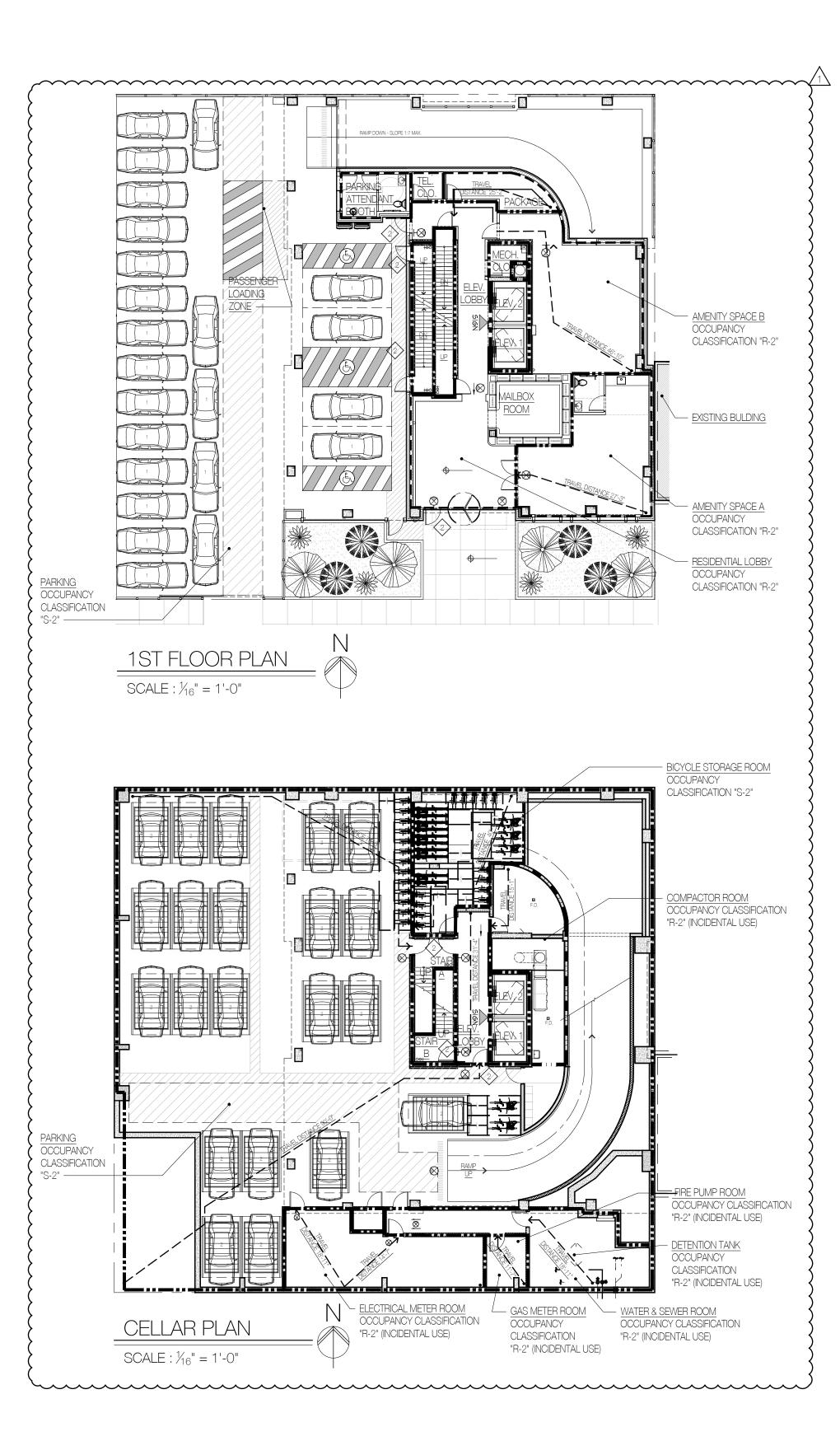




#### BUILDING IS FULLY SPRINKLERED AND EQUIPPED WITH AN ALTERNATIVE FIRE EXTINGUISHING SYSTEM, A STAND PIPE SYSTEM, SMOKE VENTS, A FIRE ALARM AND DETECTION SYSTEM & A FIRE COMMAND CENTER. IN COMPLIANCE WITH THE NYC BUILDING CODE (2014), NYC FIRE CODE & LOCAL FIRE DEPARTMENT REQUIREMENTS .

EGRESS NOTES: CHAPTER 10

- 1. MEANS OF EGRESS SHALL HAVE A CEILING HEIGHT NOT LESS THAN 7'-6" (BC 1003.2).
- 2. OCCUPANT LOAD AS DETERMINED ON TABLE 1004.1.1
- 3. EXIT AND ACCESS REQUIREMENTS ARE TO BE CALCULATED AS PER TABLE 1005.1 AS PER SECTION BC 1005.
- 4. EXITS, EXIT DISCHARGES AND PUBLIC COREF. RM.IDORS SHALL BE ILLUMINATED AT ALL TIMES. AS PER BC 1006.
- 4.A. PUBLIC COREF. RM.IDORS AND EXITS SHALL BE PROVIDED WITH ARTIFICIAL LIGHT FIXTURES SUPPLYING AT LEAST TWO FOOT CANDLES MEASURED AT THE FLOOR LEVEL, TO BE MAINTAINED CONTINUOUSLY THROUGHOUT EXITS AND THEIR ACCESS FACILITIES FOR THEIR FULL LENGTH (BC 1006.2).
- 4.B. EXIT LIGHTING, EXIT SIGNS & THE PORTION OF THE EXTERIOR EXIT DISCHARGE IMMEDIATELY ADJACENT TO EXIT DISCHARGE DOORWAYS SHALL BE CONNECTED TO AN EMERGENCY POWER SYSTEM FOR A DURATION NOT LESS THAN 90 MINUTES & SHALL CONSIST OF STORAGE BATTERIES, UNIT EQUIPMENT OR AN ON-SITE GENERATOR. (BC 1006.3).
- 5. ALL EXITS SHALL BE KEPT READILY ACCESSIBLE AND UNOBSTRUCTED AT ALL TIMES AS PER SECTION BC 1007.
- 6. DOORS ARE TO COMPLY WITH ALL APPLICABLE REQUIREMENTS OF SECTION BC 1008 INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:
- 6.A. CLEAR OPENING OF 32"(MIN.) IS REQUIRED AND SHALL BE MEASURED BETWEEN THE FACE OF THE DOOR AND THE STOP, WITH THE DOOR OPEN 90 DEGREES. (SECTION BC 1008.1.1).
- 6.B. DOOR HEIGHT NOT TO BE LESS THAN 6'-8" (BC 1008.1.1.3).
- 6.C. ALL EXIT DOORS ARE TO OPEN IN THE DIRECTION OF EGRESS (1008.1.2.2) FLOOR LEVELS ON BOTH SIDES OF ALL EXIT AND COREF. RM.IDOR DOORS ARE TO BE LEVEL AND AT THE SAME ELEVATION FOR A DISTANCE AT LEAST EQUAL TO THE WIDTH OF THE DOOR (1008.1.5).
- 6.D. EXIT DOORS SHALL BE READILY OPENABLE AT ALL TIMES FROM THE SIDE FROM WHICH EGRESS IS TO BE MADE. DOORS OPENING ONTO INTERIOR ENCLOSED STAIRS SHALL NOT BE LOCKED FROM EITHER SIDE EXCEPT THAT DOORS MAY BE LOCKED TO PREVENT ACCESS TO THE STAIR FROM THE OUTSIDE AT STREET LEVEL AS PER SECTION 1008.1.9.10
- 6.E. PANIC AND FIRE EXIT HARDWARE SHALL BE INSTALLED ON ALL EGRESS DOORS FROM OCCUPANCY GROUP "A" OR "E" HAVING AN OCCUPANT LOAD OF 50 PEOPLE OR MORE AS PER SECTION 1008.1.10.
- 6.F. REQUIRED EXITS & SMOKE DOORS ARE TO BE SELF-CLOSING (BC 715.4) WITH A 1-1/2 HOUR FIRE PROTECTION RATING (TABLE 715.4), EXCEPT IN THE FIRST STORY OF EXTERIOR WALLS FACING A STREET THAT HAVE A FIRE SEPARATION DISTANCE OF GREATER THAN 15'-0" (BC 704.8.2) THEN DOORS NEED NOT TO BE RATED.
- 6.G. BUILDING ENTRANCE DOORS AND OTHER EXTERIOR EXIT DOORS SHOULD BE EQUIPPED WITH HEAVY DUTY LOCK SET WITH AUXILIARY LATCH BOLTS (BC 1008.4.1)
- 6.H. LIGHTS SHALL BE PROVIDED AT OR NEAR THE OUTSIDE OF THE FRONT ENTRYWAY OF THE BUILDING PROVIDING NOT LESS THAT 5 FOOT CANDLES (53.82 lux) INTENSITY MEASURED AT THE FLOOR LEVEL FOR THE FULL WIDTH OF THE ENTRANCES WAY AS PER BC 1008.4.1
- 7. STAIRWAYS SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS STATED IN SECTIONS BC 1009 & 1019 INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:
- 7.A. STAIR WIDTH SHALL BE DETERMINED AS SPECIFIED IN SECTION 1005.1, BUT SUCH WIDTH SHALL NOT BE LESS THAN 44" (BC 1009.1) OR 36" (BC 1009.1.1.2).
- 7.B. AREA OF RESCUE ASSISTANCE SHALL BE 30" X 48" FOR EACH 200 OCCUPANTS. AS PER SECTION 1007.6.1.
- 7.C. THE CLEAR HEADROOM SHALL BE AT LEAST 6'-8" MINIMUM, AS SPECIFIED IN SECTION 1009.2.1 (R-2 OCCUPANCY).
- 7.D. LANDINGS AND PLATFORMS PROVIDED AT THE HEAD AND FOOT OF EACH FLIGHT OF STAIRS SHALL HAVE A MINIMUM WIDTH, PERPENDICULAR TO THE DIRECTION OF TRAVEL, OF AT LEAST THE WIDTH OF THE STAIR. IN STRAIGHT RUN STAIRS, THE DISTANCE BETWEEN STAIRS WITHIN THE RUN SHALL NEED NOT BE MORE THAN 48". NO DOOR SHALL SWING ONTO A LANDING AND REDUCE THE EGRESS REQUIRED CLEAR WIDTH OF THE STAIR OR STAIR PLATFORM TO BE LESS THAN 75% OF THE REQUIRED WIDTH. OR WHEN FULLY OPEN, THE DOOR SHALL NOT PROJECT MORE THAN 7" INTO THE LANDING AS PER SECTION 1009.1.6.
- 7.E. RISERS, TREADS, STRINGERS, LANDINGS, PLATFORMS AND GUARDS EXCLUSIVE OF HANDRAILS, SHALL BE BUILT OF NONCOMBUSTIBLE MATERIALS. WHEN TWO STAIRS ARE CONTAINED WITHIN THE SAME ENCLOSURE, EACH STAIR SHALL BE SEPARATED FROM THE OTHER BY NONCOMBUSTIBLE CONSTRUCTION HAVING A FIRE RESISTANCE RATING EQUAL TO THAT REQUIRED FOR THE STAIR ENCLOSURE (BC 1009.4).
- 7.F. STAIRS SHALL HAVE HANDRAILS ON EACH SIDE (EXCEPT STAIRS LESS THAN 44" IN WIDTH) HAVING FINGER CLEARANCE OF 1-1/2" MIN., PROJECTING NOT MORE THAN 4-1/2" INTO THE REQUIRED STAIR WIDTH. HEIGHT OF HANDRAIL SHALL BE UNIFORM, NOT LESS THAN 34" AND NOT MORE THAN 38" MEASURED ABOVE THE STAIR TREAD NOSING. HANDRAILS SHALL BE DESIGNED IN COMPLIANCE WITH SECTION 1009.12.
- 7.G. THE MAXIMUM VERTICAL RISE OF A SINGLE FLIGHT OF STAIRS BETWEEN FLOORS IS NOT TO EXCEED 12' (SECTION 1009.7).
- 7.H. ALL INTERIOR STAIRS SHALL EXTEND UP TO THE ROOF (BC 1009.13).
- 7.1. INTERIOR REQUIRED STAIRS EXTENDING TO THE ROOF SHALL BE VENTED AS PER THE REQUIREMENTS OF SECTION 910.4.
- 7.J. STAIR EXIT DOORS SHALL BE PLACED A DISTANCE APART EQUAL TO NO LESS THAN 15'-0' IN R2 OCCUPANCY (SECTION 1015.2.1.3).
- 7.K. A SIGN SHALL BE PROVIDED AT EACH FLOOR LANDING INDICATING LEVEL SHALL BE PROVIDED BC1022.8.2
- 7.L. STAIRWAY DOOR OPERATION SHALL BE IN COMPLIANCE WITH BC403.5.3
- 7.M. A TACTILE SIGN INDICATIONG "EXIT" SHALL BE PROVIDED ADJACENT TO EACH DOOR TO AN EGRESS STAIR, AN EXIT PASSAGEWAY AND EXIT DISCHARGE AREA AS PER BC1011.3
- 8. EGRESS COREF. RM.IDORS SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS STATED IN SECTIONS BC 1011, 1013 THRU 1018, 1020 THRU 1023, 1024 & 1026 INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
- 8.A. PROTRUDING OBJECTS ARE PERMITTED TO EXTEND BELOW THE MIN. CEILING HEIGHT REQUIRED PROVIDE THAT A MIN. HEADROOM OF 7'-0" IN HEIGHT IS REQUIRED OVER ANY WALKING SURFACE NOT MORE THAN 50% OF THE CEILING AREA CAN BE REDUCED IN HEIGHT BY PROTRUDING OBJECTS SO AS TO OBSTRUCT FULL VIEW OF EXIT SIGNS. (SECTION 1003.3.1).
- 8.B. COREF. RM.IDOR WIDTH SHALL BE DETERMINED AS PER SECTION 1005.1, BUT NOT LESS THAN 44".
- 8.C. DEAD END COREF. RM.IDORS SHALL NOT EXCEEDED 80'-0" IN LENGTH (BC 1018.4).
- 8.D. DOORS WHEN THEY FULLY OPEN & HANDRAILS SHALL NOT REDUCE THE REQUIRED WIDTH BY MORE THAN 7". DOORS IN ANY POSITION SHALL NOT REDUCE THE REQUIRED WIDTH BY MORE THAN 1/2. OTHER NONSTRUCTURAL PROJECTIONS ARE PERMITTED TO PROJECT INTO THE REQUIRED WIDTH 1.5" ON EACH SIDE (BC 1020.2).
- 8.E. THE FINISHES IN ALL EXITS SHALL BE OF NONCOMBUSTIBLE MATERIALS AS PER CHAPTER 8 AND SUB-SECTION 1003.4 OF SECTION BC 1003.
- 8.F. THE LOCATION OF EVERY EXIT ON EVERY FLOOR SHALL BE CLEARLY INDICATED BY EXIT SIGNS, (SECTION BC 1011) EXIT SIGN SHALL BE PLACED APART, SO THAT NO POINT IN THE EXIT COREF. RM.IDOR IS MORE THAN 100'-0"
- 8.G. EXIT SIGN SHALL BE INSTALLED IN COMPLIANCE WITH BC1011.4



PROPOSED NEW DEVELOPMENT

# **159 BOERUM ST**

# BROOKLYN, NY

### BLOCK: 3071 ARCHITECT:

LOT: 10/40

AUFGANG ARCHITECTS LLC 74 LAFAYETTE AVENUE, SUITE 301 SUFFERN, NY

INFO@AUFGANG.COM 845.368.0004



# DEVELOPER:

SLATE PROPERTY GROUP 850 THIRD AVE, SUITE 16-B NEW YORK, NY 10022 T: 646.439.4000

### STRUCTURAL ENGINEER:

McNAMARA - SALVIA 62 WEST 45TH STREET, 11TH FLOOR NEW YORK, NY 10036 T: 212.246.9800

### MEP ENGINEER:

A & D ENGINEERING, PLLC 2606 E. 15TH STREET, SUITE #304 BROOKLYN, NY 11235 T: 718.872.6112

### **INTERIOR DESIGNER:**

ALCHEMY STUDIO NYC 154 GRAND STREET NEW YORK, NY 10013 T: 307.760.6454

	SYMBOL LEGEND
	3 HR RATED WALL
	2 HR RATED WALL
	1 HR RATED WALL
$\otimes$	CEILING MOUNTED EXIT SIGN
H⊗	WALL MOUNTED EXIT SIGN
SIGN	SIGN AT ELEVATOR LANDING
	3'-0" WIDE DOOR (2 LEAFS) EXIT CAPACITY = 68" / 0.2 = 340
2	3'-0" WIDE DOOR (1 LEAF) EXIT CAPACITY = 34" / 0.2 = 170
S	SMOKE DETECTOR
H	HEAT DETECTOR
SCM	SMOKE / CARBON MONOXIDE DETECTOR

MAXIMUM TRAVEL DISTANCE (W/ SPRINKLERS) TABLE 1016.1 (*)				
OCCUPANCY GROUP MAX. PERMITTED (Ft.) PROVIDED (Ft.)				
RESIDENTIAL	R-2	200'-0"	65'-8"	
STORAGE (PARKING)	S-2	250'-0"	100'-0"	
ASSEMBLY	A-3	250'-0"	33'-0"	

* DEAD END IN R-2 OCCUPANCY SHALL NOT EXCEED 80' ALL FLOORS COMPLY - BC 1016.3

MINIMUM WIDTH OF EGRESS					
NYC BUILDING CODE MIN. REQUIRED PROVIDED SECTION (in.) (in.)					
STAIRWAYS	1009.1	44"	44"		
COREF. RM.IDOR	1018.2	44"	60"		

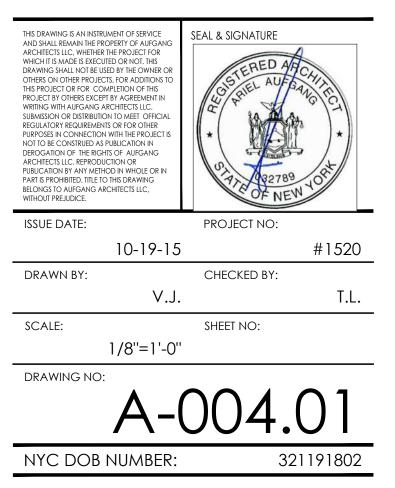
	SPACES WITH ONE MEANS OF EGRESS TABLE 1015.1					
OCCUPANCY (	GROUP	MAXIMUM OCCUPANT LOAD	PROPOSED OCCUPANCY LOAD	REMARKS		
ASSEMBLY	A-3	74	133	(2) M.O.E. HAS BEEN PROVIDED		
RESIDENTIAL	R-2	20	28	(2) M.O.E. HAS BEEN PROVIDED		
STORAGE	S-2	29	35	(2) M.O.E. HAS BEEN PROVIDED		
ASSEMBLY	A-3	74	131	(2) M.O.E. HAS BEEN PROVIDED		

MAXIMUM BUILDING OCCUPANCY TABLE 1004.1.1						
FLOOR	OCCUPANCY GROUP		FLOOR AREA PER OCCUPANT (Sq.Ft.)	FLOOR AREA (Sq.Ft.)	MAX. NUMBER OF OCCUPANTS	
$\sum$	PARKING	S-2	200 GROSS	10,988.85	55	ħ
	GAS METER RM	R-2	300 GROSS	96 SQ. FT.	1	<
	WATER & SEWER RM	R-2	300 GROSS	148 SQ. FT.	1	
CELLAR	ELECTRIC METER RM	R-2	300 GROSS	433 SQ. FT.	1	
	FIRE PUMP RM	R-2	300 GROSS	249 SQ. FT.	1	
	COMPACTOR RM	R-2	300 GROSS	383 SQ. FT.	1	
	BICYCLE STORAGE	S-2	200 GROSS	486.34 SQ. FT.	2	
1.04	AMENITY SPACE A	R-2	15 NET	596.58 SQ. FT.	40	
1st	AMENITY SPACE B	R-2	15 NET	626.35 SQ. FT.	42	
	PACKAGE	S-2	200 GROSS	133.84 SQ. FT.	1	
	RESIDENTIAL LOBBY	R-2	200 GROSS	390.96 SQ. FT.	1	
2nd - 3rd	RESIDENTIAL	R-2	200 GROSS	6338.74 SQ. FT.	32	
4th - 6th	RESIDENTIAL	R-2	200 GROSS	6338.74 SQ. FT.	32	
7th - 11th	RESIDENTIAL	R-2	200 GROSS	6338.74 SQ. FT.	32	
12th	RESIDENTIAL	R-2	200 GROSS	5719.09 SQ. FT.	29	
13th	RESIDENTIAL	R-2	200 GROSS	5513.80 SQ. FT.	28	
14th - 15th	RESIDENTIAL	R-2	200 GROSS	5513.80 SQ. FT.	28	
16th	RESIDENTIAL	R-2	200 GROSS	4351.58 SQ. FT.	22	
17th - 19th	RESIDENTIAL	R-2	200 GROSS	4195.84 SQ. FT.	21	
ROOF	OUTDOOR REC.	R-2	200 GROSS	2584.08 SQ. FT.	13	.

08.15.19 PAA TO D.O.B. 08.02.19 99% CONSTRUCTION SET 05.31.19 BID SET 1 05.03.19 PAA TO D.O.B. 07.27.18 90% PROGRESS SET 06.04.18 RE-ISSUED TO D.O.B. 01.26.18 RE-ISSUED TO D.O.B. FOR REVIEW AND COMMENTS 11.03.17 ISSUED TO D.O.B. FOR REVIEW AND COMMENTS DATE SUBMISSIONS / REVISIONS

SHEET TITLE:

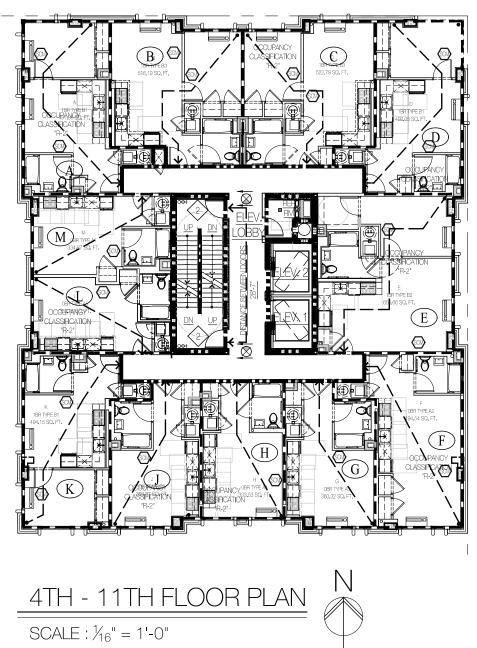
# EGRESS PLANS **CELLAR AND 1ST** FLOOR



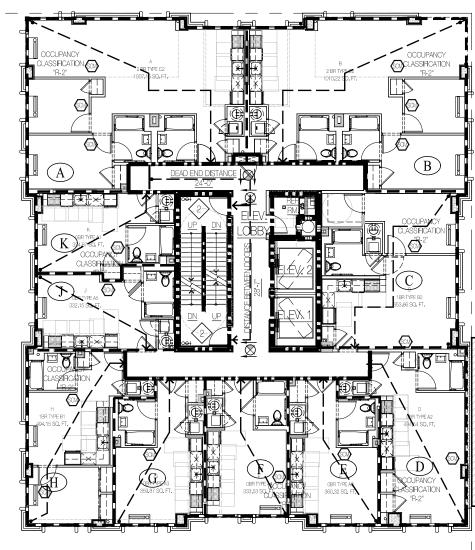
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APARTMENTS TRAVEL DISTANCE 12TH FLOOR PLAN				
APT. DESIGNATION	DISTANCES (FT) MAX. 75'-0"			
12 A	33'-11"			
12 B	29'-11"			
12 C	29'-11"			
12 D	33'-11"			
12 E	38'-7"			
12 F	39'-8"			
12 G	36'-0"			
12 H	22'-11"			
12 J	22'-11"			

12TH FLOOR PLAN SCALE :  $\frac{1}{16}$ " = 1'-0"



APARTMENTS TRAVEL DISTANCE 4TH - 11TH FLOOR PLAN				
APT. DESIGNATION	DISTANCES (FT) MAX. 75'-0"			
4 - 11 A	33'-11"			
4 - 11 B	29'-11"			
4 - 11 C	29'-11"			
4 - 11 D	33'-11"			
4 - 11 E	40'-2"			
4 - 11 F	32'-4"			
4 - 11 G	26'-10"			
4 - 11 H	24'-9"			
4 - 11 J	25'-11"			
4 - 11 K	33'-3"			
4 - 11 L	22'-11"			
4 - 11 M	22'-11"			

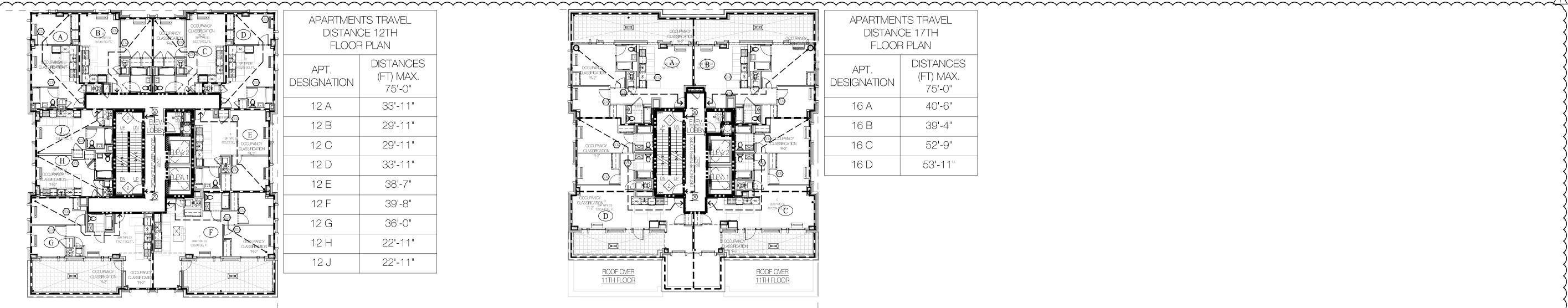


2ND - 3RD FLOOR PLAN

SCALE :  $\frac{1}{16}$ " = 1'-0"

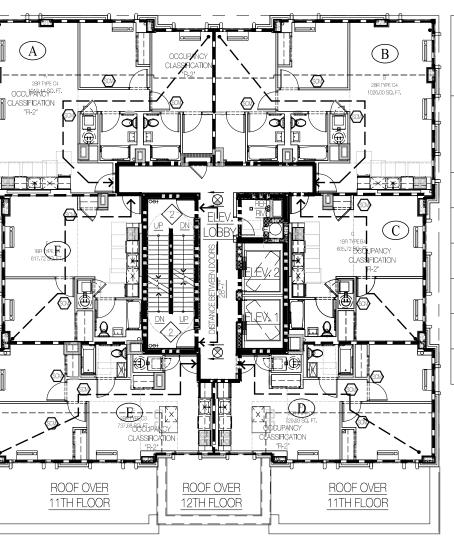
APARTMENTS TRAVEL DISTANCE 2ND - 3RD FLOOR PLAN DISTANCES APT. (FT) MAX. DESIGNATION 75'-0" 2 - 3 A 47'-0" 2 - 3 B 47'-0" 2-3C 39'-0" 2 - 3 D 32'-4" 2 - 3 E 26'-10" 2 - 3 F 24'-9" 2 - 3 G 25'-11" 33'-3" 2 - 3 H 20'-1" 2 - 3 J 2 - 3 K 20'-1"

MOST REMOTE TRAVEL DISTANCE + DEAD END UNITS "I" 47'-0" + 24'-0" = 71'-0"

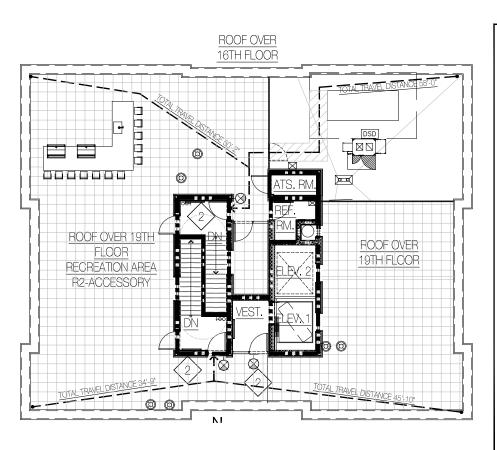


APARTMENTS TRAVEL DISTANCE 17TH FLOOR PLAN				
APT. DESIGNATION	DISTANCES (FT) MAX. 75'-0"			
16 A	40'-6"			
16 B	39'-4"			
16 C	52'-9"			
16 D	53'-11"			

16TH FLOOR PLAN SCALE :  $\frac{1}{16}$ " = 1'-0"

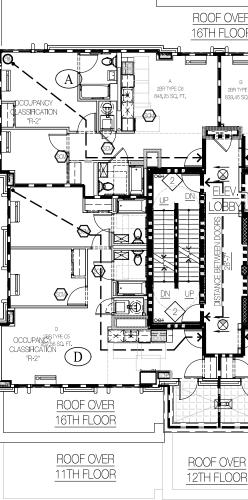


DISTANCE	NTS TRAVEL 14TH - 15TH R PLAN
APT. DESIGNATION	DISTANCES (FT) MAX. 75'-0"
14-15 A	48'-9"
14-15 B	48'-9"
14-15 C	38'-7"
14-15 D	39'-8"
14-15 E	39'-8"
14-15 F	39'-1"



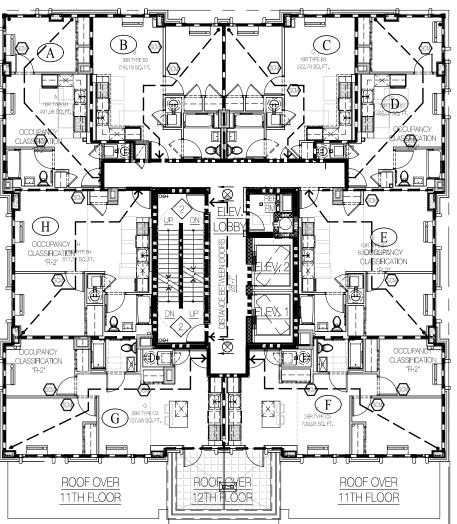
 $\frac{\text{ROOF PLAN}}{\text{SCALE}: \frac{1}{16}" = 1'-0"}$ 





17TH - 19TH FLOOR PLAN SCALE :  $\frac{1}{16}$ " = 1'-0"

$$\frac{14\text{TH} - 15\text{TH FLOOR PLAN}}{\text{SCALE} : \frac{1}{16}" = 1'-0"}$$



APARTMENTS TRAVEL DISTANCE 16TH FLOOR PLAN DISTANCES APT. (FT) MAX. DESIGNATION 75'-0" 13 A 33'-11" 13 B 29'-11" 13 C 29'-11" 13 D 33'-11" 13 E 43'-3" 13 F 41'-1" 13 G 43'-3" 13 H 37'-7"

# 13TH FLOOR PLAN SCALE : $\frac{1}{16}$ " = 1'-0"



## PROPOSED NEW DEVELOPMENT

# **159 BOERUM ST**

# BROOKLYN, NY

### BLOCK: 3071 ARCHITECT:

LOT: 10/40

AUFGANG ARCHITECTS LLC 74 LAFAYETTE AVENUE, SUITE 301

SUFFERN, NY INFO@AUFGANG.COM 845.368.0004

DEVELOPER:



A & D ENGINEERING, PLLC 2606 E. 15TH STREET, SUITE #304 BROOKLYN, NY 11235 T: 718.872.6112 INTERIOR DESIGNER:

SLATE PROPERTY GROUP 850 THIRD AVE, SUITE 16-B

STRUCTURAL ENGINEER:

62 WEST 45TH STREET, 11TH FLOOR

McNAMARA - SALVIA

NEW YORK, NY 10036 T: 212.246.9800

MEP ENGINEER:

NEW YORK, NY 10022 T: 646.439.4000

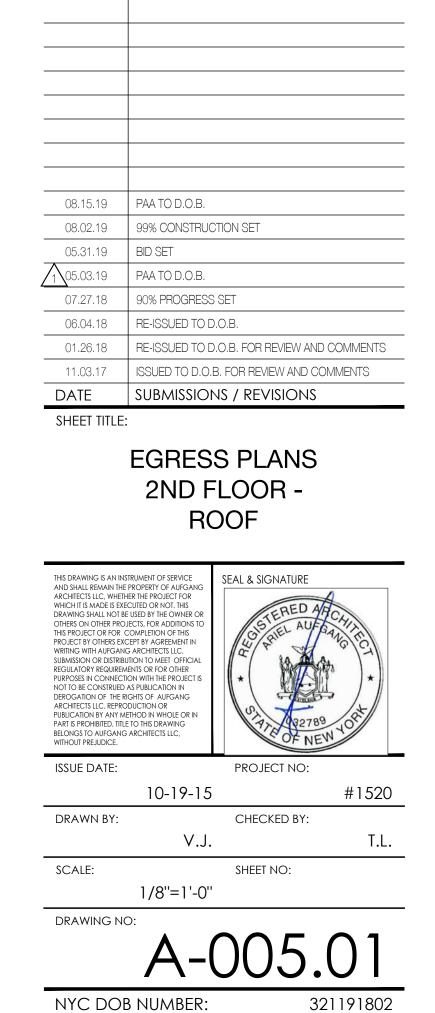
# ALCHEMY STUDIO NYC

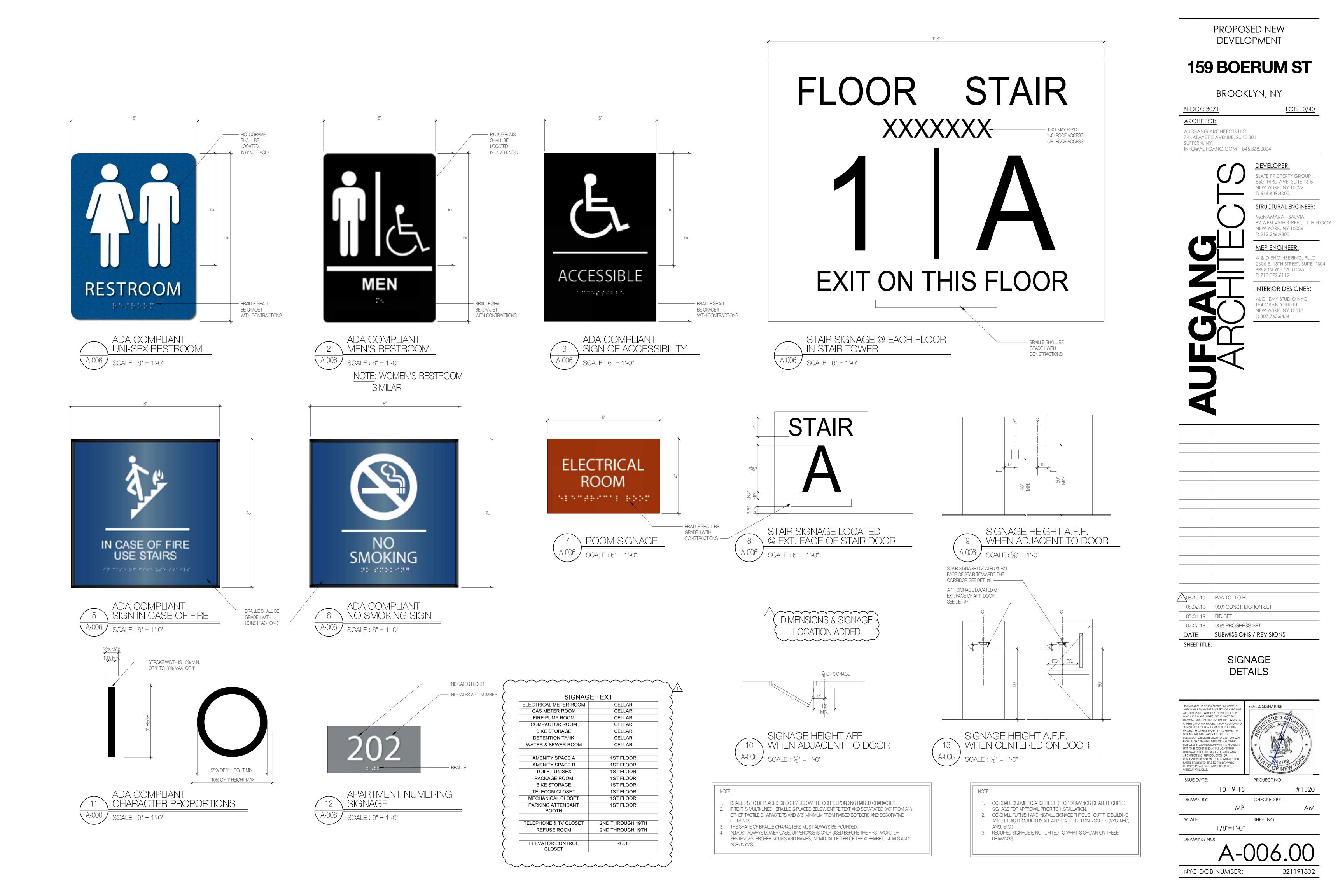
154 GRAND STREET NEW YORK, NY 10013 T: 307.760.6454

	SYMBOL LEGEND
	3 HR RATED WALL
	2 HR RATED WALL
	1 HR RATED WALL
$\otimes$	CEILING MOUNTED EXIT SIGN
НØ	WALL MOUNTED EXIT SIGN
SIGN	SIGN AT ELEVATOR LANDING
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$\langle 2 \rangle$	3'-0" WIDE DOOR (1 LEAF) EXIT CAPACITY = 34" / 0.2 = 170
S	SMOKE DETECTOR
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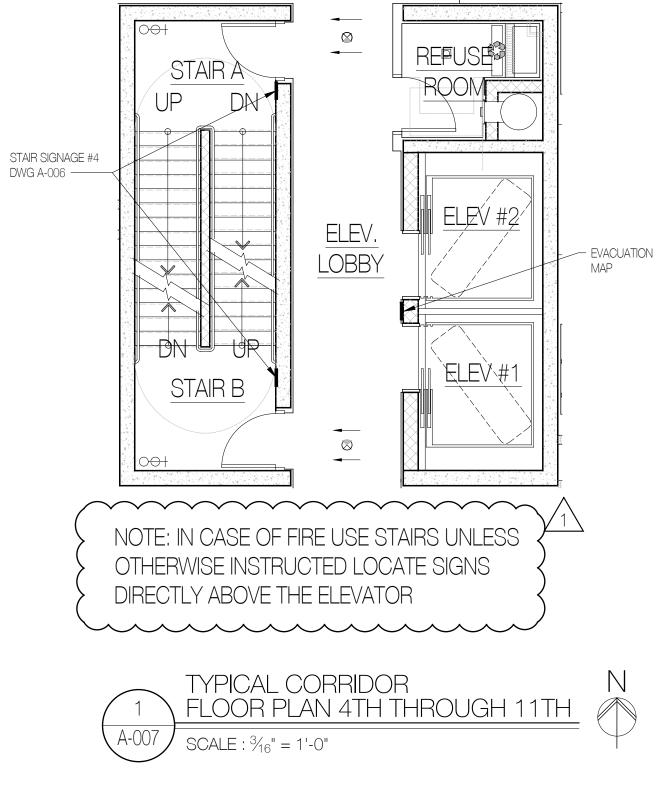
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3 17FE C6 SQ. FT.		
	C C C C C C C C C C C C C C C C C C C	
	ROOF OVER 16TH FLOOR	
R R	ROOF OVER 11TH FLOOR	
	I	

APARTMENTS TRAVEL DISTANCE 18TH - 20TH FLOOR PLAN		
APT. DESIGNATION	DISTANCES (FT) MAX. 75'-0"	
17 - 19 A	41'-6"	
17 - 19 B	39'-10"	
17 - 19 C	53'-4"	
17 - 19 D	53'-11"	



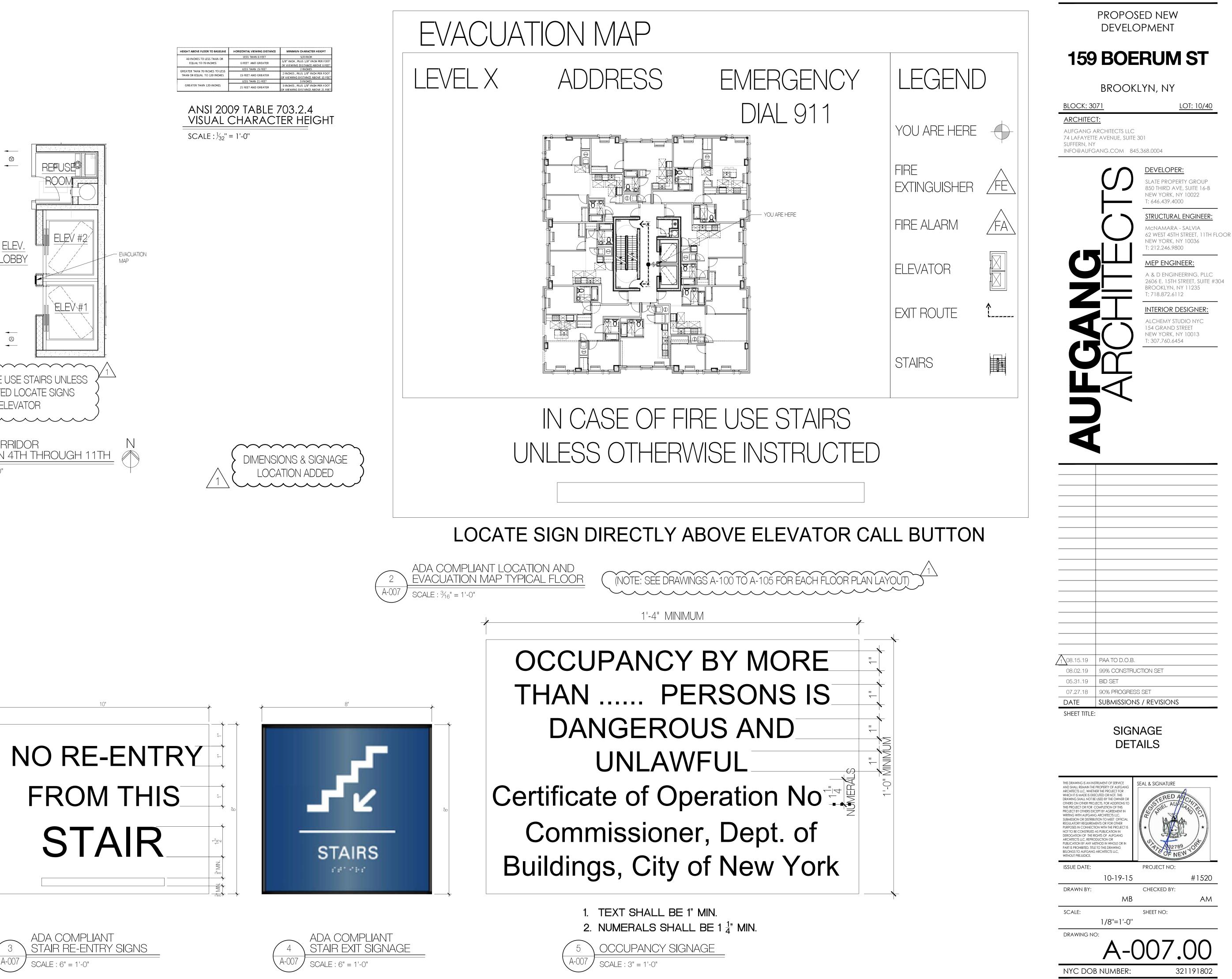


HEIGHT ABOVE FLOOR TO BASELINE	HORIZO
40 INCHES TO LESS THAN OR EQUAL TO 70 INCHES	
	6
GREATER THAN 70 INCHES TO LESS THAN OR EQUAL TO 120 INCHES	
	15
GREATER THAN 120 INCHES	
	21

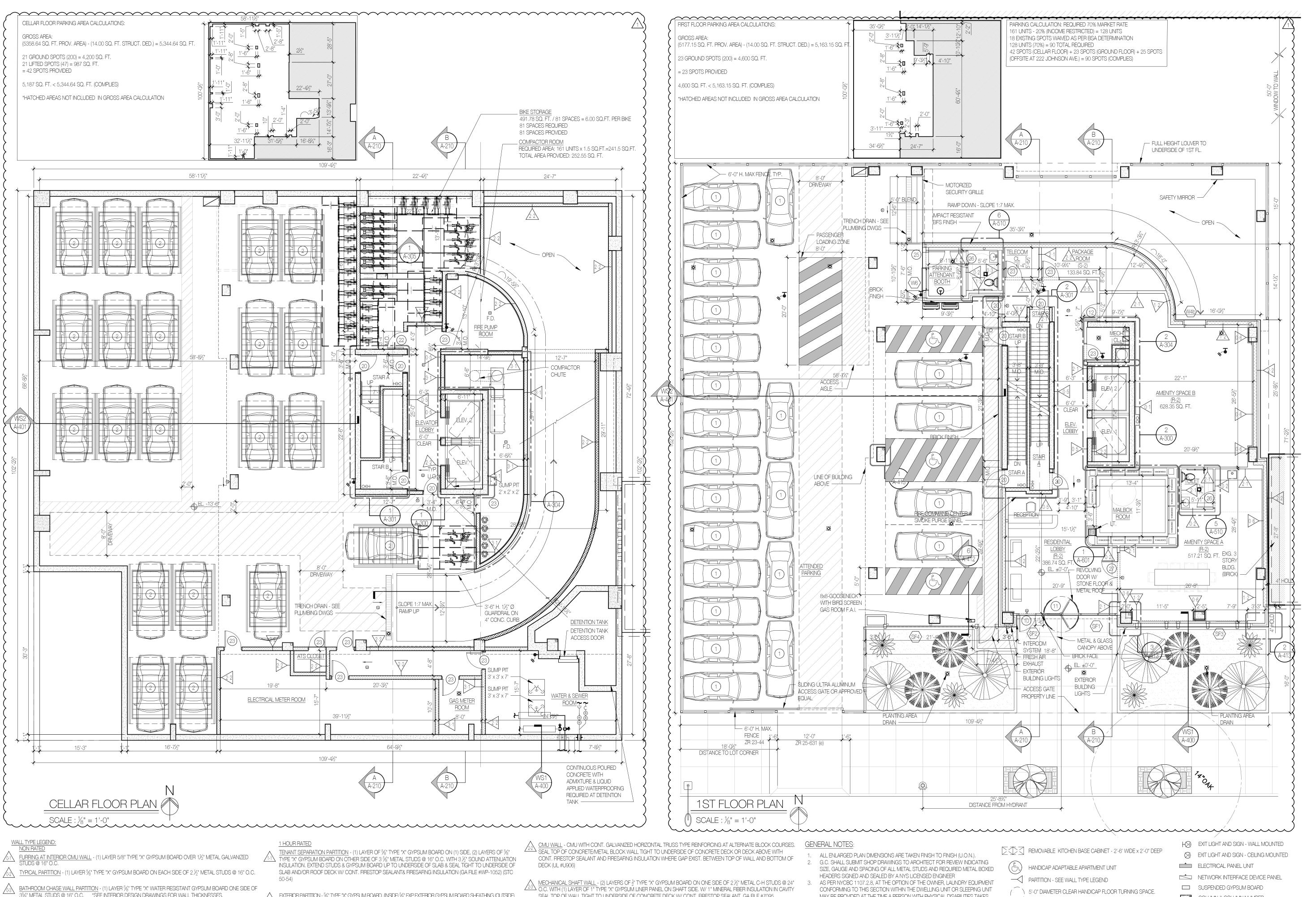


ADDITIONAL SIGNAGE WORDING	
RE- ENTRY ON THIS FLOOR	
NO RE-ENTRY FROM THIS STAIR	
EXCEPT DURING FIRE EMERGENCY	
NO RE-ENTRY , NEAREST RE-ENTRY	
ON THEAND FLOORS	

ADDITIONAL SIGNAGE	
EMERGENCY GAS SHUTOFF	
SPRINKLER SHUT OFF VALVE BOXFEET FROM THIS SIGN ( INCLUDE DIRECTIONAL ARROW)	
SIAMESE CONNECTION	







- 35/8" METAL STUDS @ 16" O.C. *SEE INTERIOR DESIGN DRAWINGS FOR WALL THICKNESSES.
- <u>APARTITION</u> (1) LAYER OF 5%" TYPE "X" GYPSUM BOARD, ON EACH SIDE OF 3 5%" METAL STUDS @ 16" O.C. (@ APARTMENT ELECTRICAL PANEL/ NETWORK INTERFACE DEVICE PANEL)
- <u>FURRING AT INTERIOR CMU WALL (PUBLIC CORRIDOR SIDE)</u> (1) LAYER ⁵/₈" TYPE "X" GYPSUM BOARD OVER ⁷/₈" GALV. METAL STUDS @ 16 O.C.
- $\underbrace{ \frac{\text{FURRING AT EXTERIOR CMU WALL}_{10} (1) \text{ LAYER } \frac{5}{8} \text{"TYPE "X" GYPSUM BOARD ON 1} \frac{1}{2} \text{" GALV. METAL Z}_{10} \text{ FURRING } \frac{16 \text{ O.C. W}}{16 \text{ O.C. W}} \frac{1}{2} \text{"SEMI-RIGID INSULATION (R7.5) UNFACED }$
- EXTERIOR PARTITION 5/1" TYPE "X" GYPSUM BOARD, (INSIDE) 5/1" EXP EXTERIOR GYPSUM BOARD SHEATHING (OUTSIDE)  $\mathbb{Z}^{1:\mathbb{Z}}$  OVER  $3^{5}_{8}$ " METAL STUDS @ 16" O.C. WITH  $3^{1}_{2}$ " BATT INSULATION (UNFACED) (R-15) (UL #U419)
- $\frac{1}{13} \frac{1}{2\sqrt{2}} \frac{1}{2} \frac{1}{2}$ SLAB. SEAL TIGHT TO SLAB WITH CONT. FIRESTOP SEALANT. SEAL ALL PENETRATIONS THRU CHASE WALL WITH FIRESAFING INSULATION AND CONT. FIRESTOP SEALANT AS REQ. PROVIDE HORIZONTAL 21/3"MTL STUD BRACING @ 48" O.C. MAX. (UL#V442) PROVIDE INSULATION AS REQUIRED TO ACHIEVE A MIN. STC RATNG OF 50)
- INTERIOR PARTITION (2) LAYERS 5/8" TYPE "X" GYPSUM BOARD ON EACH SIDE 3 5/8" METAL STUDS @ 16" D.C. WITH 31/2" SOUND ATTENUATION INSULATION. EXTEND GYPSUM BOARD & STUDS UP TO UNDERSIDE OF FLOOR DECK OR ROOF DECK. SEAL TIGHT TO DECK W/ CONT. FIRESTOP SEALANT & FIRESAFING. (GA FILE #WP-1522 STC 55-59).

SEAL TOP OF WALL TIGHT TO UNDERSIDE OF CONCRETE DECK W/ CONT. FIRESTOP SEALANT. GA FILE #7095 (STC-45-49)

PLUMBING CHASE WALL - (2) ROWS OF (2) LAYERS  $\frac{5}{8}$ " TYPE "X" GYPSUM BOARD ON ONE SIDE OF 2½"METAL STUDS @ " O.C. EXTEND GYPSUM BOARD & STUD UP TO UNDERSIDE OF CONCRETE SLAB. SEAL TIGHT TO SLAB WITH CONTINUOUS FIRESTOP SEALANT. SEAL ALL PENETRATIONS THRU CHASE WALL WITH FIRESAFING INSULATION AND CONTINUOUS FIRESTOP SEALANT AS REQUIRED PROVIDE HORIZONTAL 21/2" MTL. STUD BRACING @ 48" O.C. MAX (UL #V442) (PROVIDED INSULATION AS REQUIRED TO ACHIEVE A MIN. STC RATING OF 50)

) LAYER  $\frac{1}{2}$ " TYPE "X" GYPSUM BOARD OVER  $\frac{7}{8}$ " METAL HAT CHANNELS @ 24" O.C. OVER 2 HR RATED CONCRETE  $\mathbb{Z}^{3,1}$  block wall with cont. Galvanized horizontal truss type reinforcing at alternate courses. Seal top OF CONCRETE BLOCK WALL TIGHT TO UNDERSIDE OF SLAB ABOVE WITH CONT. FIRESTOP SEALANT AND FIRESAFING INSULATION WHERE A GAP EXISTS BETWEEN TOP OF WALL AND BOTTOM OF CONCRETE DECK (UL #U914) (PROVIDE STC RATING OF 50-54 AT COMPACTOR CHUTE ENCLOSURE ADJACENT TO DWELLING UNITS)

- MAY BE PROVIDED AT THE TIME A PERSON WITH PHYSICAL DISABILITIES TAKES OCCUPANCY OF THE UNIT, OR WITHIN 10 DAYS OF THE DATE THE REQUEST IS MADE BY A PERSON WITH PHYSICAL DISABILITIES, WHICHEVER IS LATER, AT THE OWNER'S EXPENSE
- WATER CURTAIN TYPE SPRINKLER HEADS PROVIDED ON ALL FLOORS ALL FURNITURE IS FOR REFERENCE ONLY. PLEASE SEE ID DRAWINGS FOR MORE INFORMATION.
- 6. 6'-6" MIN. CLEAR OPENING UNDER SMOKESTOP

#### LEGEND:

- CONCRETE FOUNDATION WALL
- CONCRETE BLOCK WALL 2HR FIRE RATED GYPSUM BOARD PARTITION - SEE PLAN FOR SIZE.

**PROPOSED NEW** DEVELOPMENT

# **159 BOERUM ST**

# BROOKLYN, NY

### LOT: 10/40

ARCHITECT:

BLOCK: 3071

AUFGANG ARCHITECTS LLC 74 LAFAYETTE AVENUE, SUITE 301 SUFFERN, NY

INFO@AUFGANG.COM 845.368.0004



1 08.15.19 PAA TO D.O.B.

05.31.19 BID SET

11.03.17

SHEET TITLE:

DATE

05.03.19 PAA TO D.O.B.

07.27.18 90% PROGRESS SET

06.04.18 RE-ISSUED TO D.O.B

01.26.18 REISSUED TO D.O.B.

ISSUED TO D.O.B. FOR REVIEW AND COMMENTS

SUBMISSIONS / REVISIONS

CELLAR & 1ST

FLOOR PLAN

08.02.19 99% CONSTRUCTION SET

NEW YORK, NY 10036 T: 212.246.9800 MEP ENGINEER: A & D ENGINEERING, PLLC

**DEVELOPER:** 

SLATE PROPERTY GROUP

850 THIRD AVE, SUITE 16-B

STRUCTURAL ENGINEER:

62 WEST 45TH STREET, 11TH FLOOR

McNAMARA - SALVIA

NEW YORK, NY 10022 T: 646.439.4000

2606 E. 15TH STREET, SUITE #304 BROOKLYN, NY 11235 T: 718.872.6112

# INTERIOR DESIGNER:

ALCHEMY STUDIO NYC 154 GRAND STREET NEW YORK, NY 10013 T: 307.760.6454

, "T" FLOOR TURNING SPACE

30" x 48" CLEAR FLOOR SPACE

FIRE RATED SHAFT WALL.

 $\langle W \rangle$  WINDOW - SEE WINDOW SCHEDULE ON DWG. A-601

(X) DOOR & FRAME - SEE DOOR SCHEDULE DRAWING A-600 HARDWIRED CARBON MONOXIDE DETECTOR (BC 907) NO MORE THAN 15FT AWAY FROM BEDROOM DOORS

COLUMN & COLUMN NUMBER

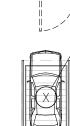


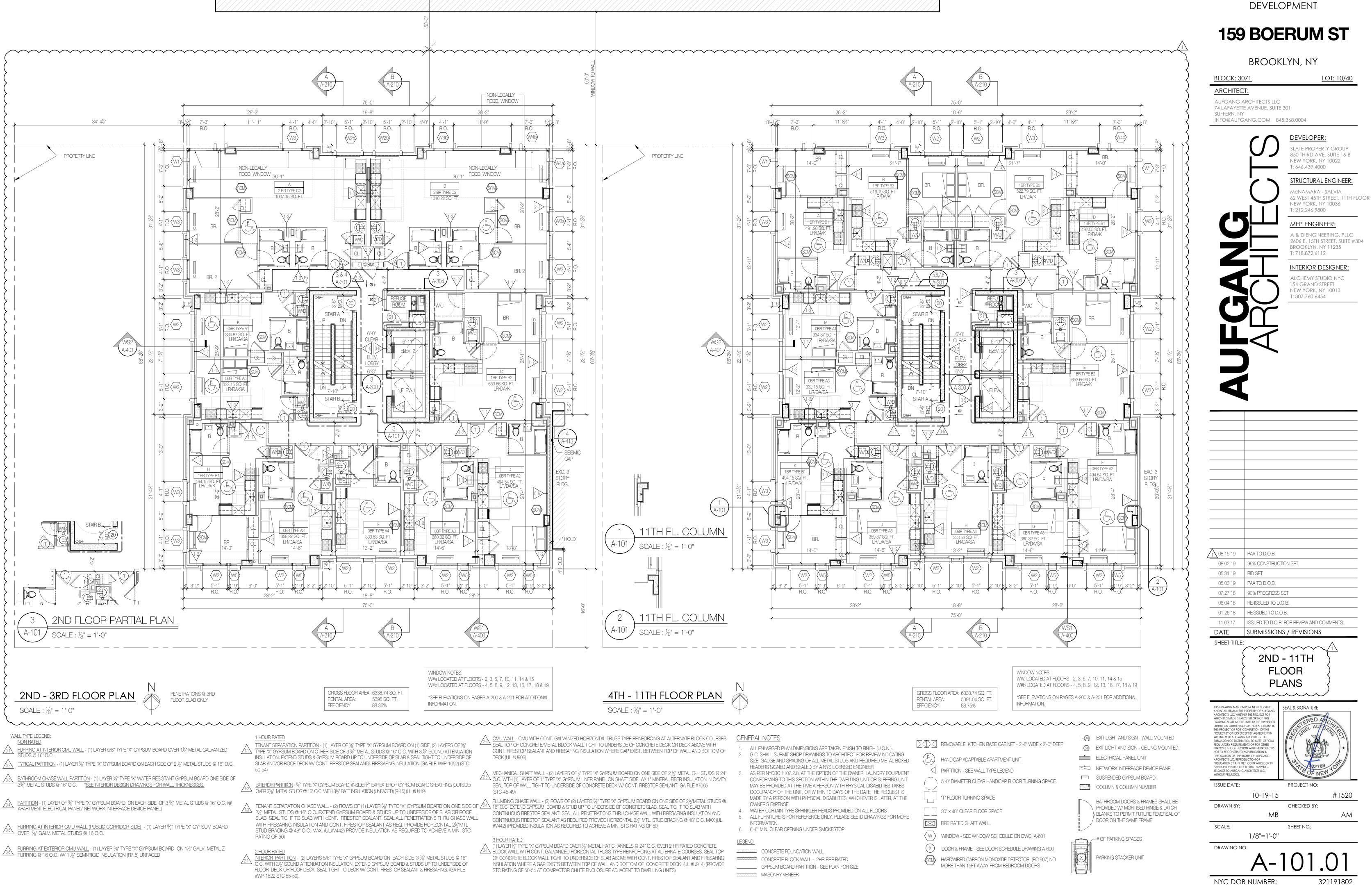
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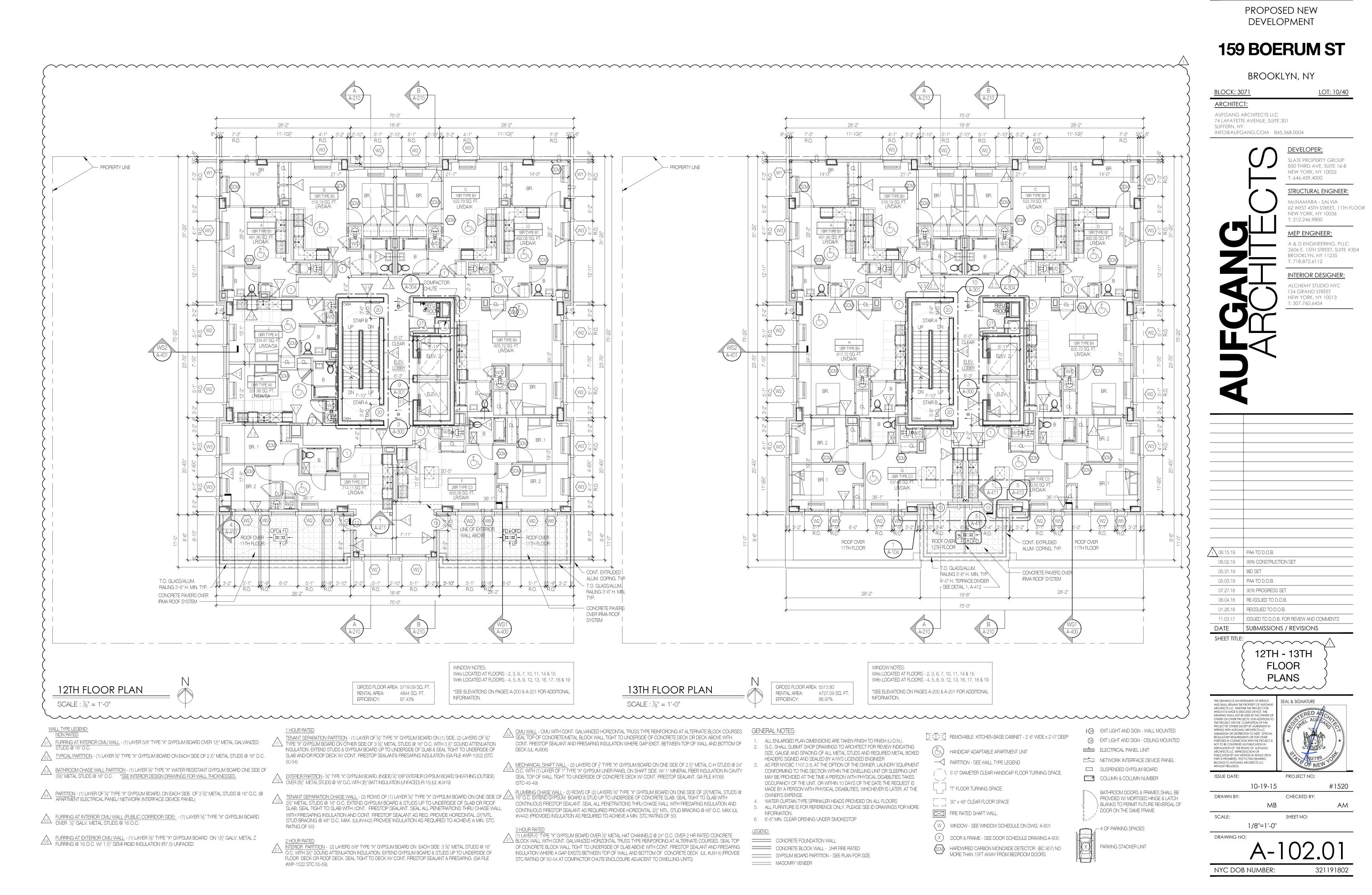
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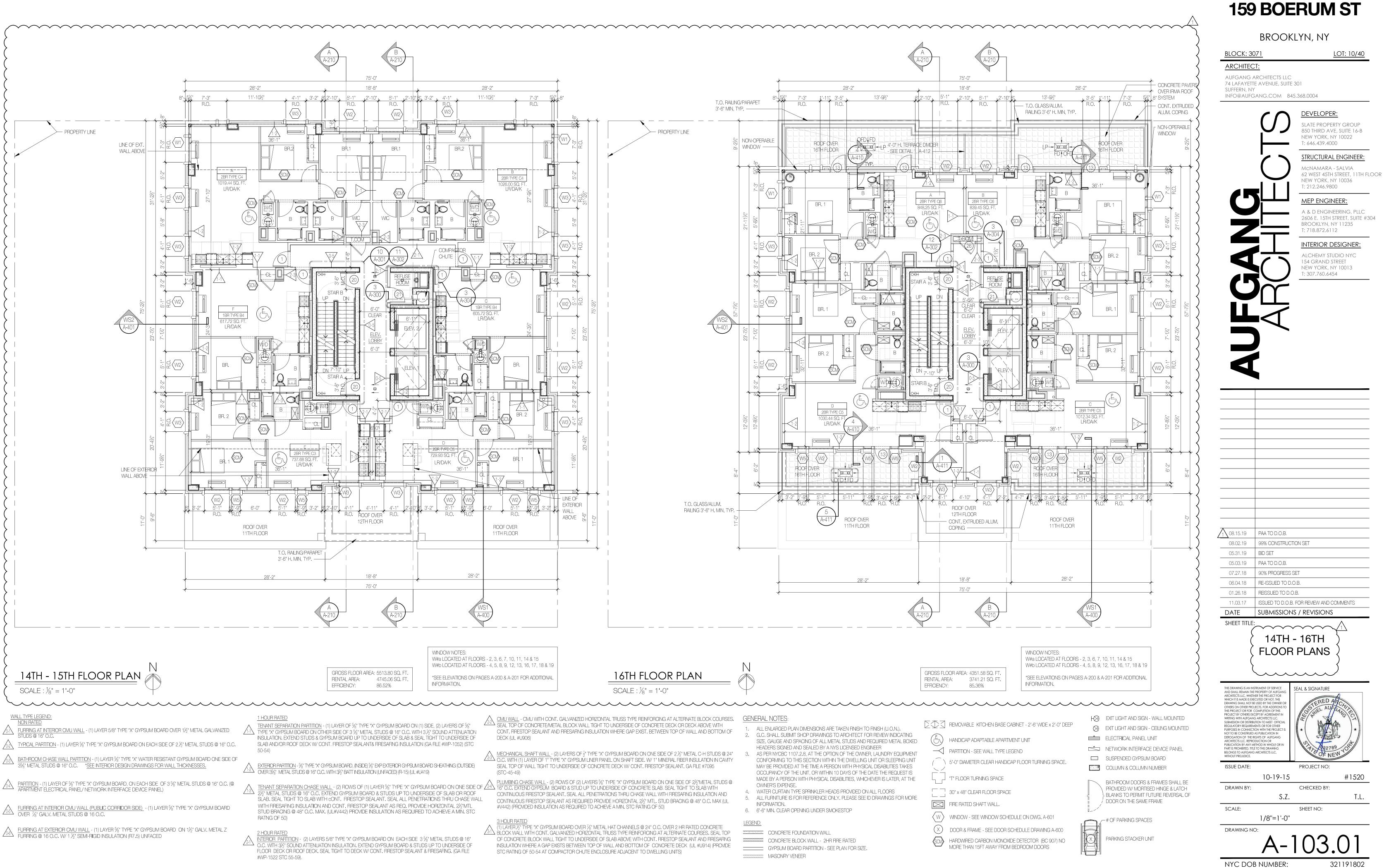
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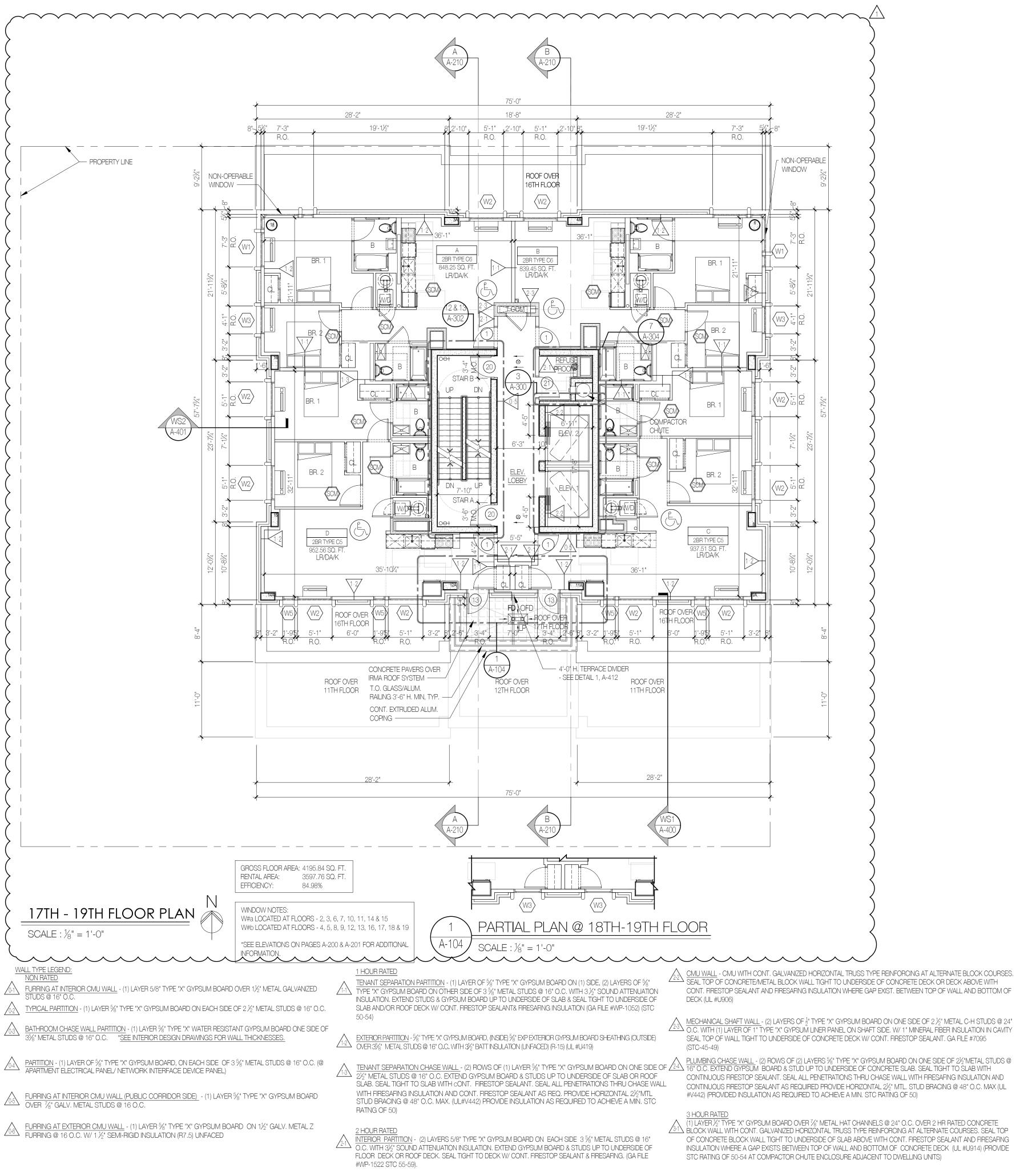




PROPOSED NEW







CMU WALL - CMU WITH CONT. GALVANIZED HORIZONTAL TRUSS TYPE REINFORCING AT ALTERNATE BLOCK COURSES. GENERAL NOTES: SEAL TOP OF CONCRETE/METAL BLOCK WALL TIGHT TO UNDERSIDE OF CONCRETE DECK OR DECK ABOVE WITH CONT. FIRESTOP SEALANT AND FIRESAFING INSULATION WHERE GAP EXIST. BETWEEN TOP OF WALL AND BOTTOM OF

 $\frac{1}{2\cdot 3} \frac{\text{MECHANICAL SHAFT WALL}}{\text{O.C. WITH (1) LAYER OF 1" TYPE "X" GYPSUM BOARD ON ONE SIDE OF 2½" METAL C-H STUDS @ 24" 3. 0. 0. WITH (1) LAYER OF 1" TYPE "X" GYPSUM LINER PANEL ON SHAFT SIDE. W/ 1" MINERAL FIBER INSULATION IN CAVITY$ SEAL TOP OF WALL TIGHT TO UNDERSIDE OF CONCRETE DECK W/ CONT. FIRESTOP SEALANT. GA FILE #7095

CONTINUOUS FIRESTOP SEALANT AS REQUIRED PROVIDE HORIZONTAL 21/2" MTL. STUD BRACING @ 48" O.C. MAX (UL #V442) (PROVIDED INSULATION AS REQUIRED TO ACHIEVE A MIN. STC RATING OF 50)

) LAYER 1/2" TYPE "X" GYPSUM BOARD OVER 7/8" METAL HAT CHANNELS @ 24" O.C. OVER 2 HR RATED CONCRETE  $\mathbb{Z}^{3,1}$  block wall with cont. Galvanized horizontal truss type reinforcing at alternate courses. Seal top OF CONCRETE BLOCK WALL TIGHT TO UNDERSIDE OF SLAB ABOVE WITH CONT. FIRESTOP SEALANT AND FIRESAFING INSULATION WHERE A GAP EXISTS BETWEEN TOP OF WALL AND BOTTOM OF CONCRETE DECK (UL #U914) (PROVIDE STC RATING OF 50-54 AT COMPACTOR CHUTE ENCLOSURE ADJACENT TO DWELLING UNITS)

- ALL ENLARGED PLAN DIMENSIONS ARE TAKEN FINISH TO FINISH (U.O.N.). 2. G.C. SHALL SUBMIT SHOP DRAWINGS TO ARCHITECT FOR REVIEW INDICATING SIZE, GAUGE AND SPACING OF ALL METAL STUDS AND REQUIRED METAL BOXED
- HEADERS SIGNED AND SEALED BY A NYS LICENSED ENGINEER AS PER NYCBC 1107.2.8, AT THE OPTION OF THE OWNER, LAUNDRY EQUIPMENT CONFORMING TO THIS SECTION WITHIN THE DWELLING UNIT OR SLEEPING UNIT MAY BE PROVIDED AT THE TIME A PERSON WITH PHYSICAL DISABILITIES TAKES OCCUPANCY OF THE UNIT, OR WITHIN 10 DAYS OF THE DATE THE REQUEST IS MADE BY A PERSON WITH PHYSICAL DISABILITIES, WHICHEVER IS LATER, AT THE OWNER'S EXPENSE
- WATER CURTAIN TYPE SPRINKLER HEADS PROVIDED ON ALL FLOORS ALL FURNITURE IS FOR REFERENCE ONLY. PLEASE SEE ID DRAWINGS FOR MORE
- INFORMATION. 6. 6'-6" MIN. CLEAR OPENING UNDER SMOKESTOP

LEGEND:

- CONCRETE FOUNDATION WALL
- CONCRETE BLOCK WALL 2HR FIRE RATED GYPSUM BOARD PARTITION - SEE PLAN FOR SIZE.

REMOVABLE KITCHEN BASE CABINET - 2'-6' WIDE x 2'-0" DEEP

MORE THAN 15FT AWAY FROM BEDROOM DOORS

PROPOSED NEW DEVELOPMENT

# **159 BOERUM ST**

# BROOKLYN, NY

# BLOCK: 3071

LOT: 10/40

INFO@AUFGANG.COM 845.368.0004

DEVELOPER:

SLATE PROPERTY GROUP 850 THIRD AVE, SUITE 16-B NEW YORK, NY 10022 T: 646.439.4000

#### STRUCTURAL ENGINEER:

McNAMARA - SALVIA 62 WEST 45TH STREET, 11TH FLOOR NEW YORK, NY 10036 T: 212.246.9800

#### MEP ENGINEER:

A & D ENGINEERING, PLLC 2606 E. 15TH STREET, SUITE #304 BROOKLYN, NY 11235 T: 718.872.6112

#### INTERIOR DESIGNER:

ALCHEMY STUDIO NYC 154 GRAND STREET NEW YORK, NY 10013 T: 307.760.6454

ARCHITECT: AUFGANG ARCHITECTS LLC 74 LAFAYETTE AVENUE, SUITE 301 SUFFERN, NY



1 08.15.19 PAA TO D.O.B. 08.02.19 99% CONSTRUCTION SET 05.31.19 BID SET 05.03.19 PAA TO D.O.B. 07.27.18 90% PROGRESS SET 06.04.18 RE-ISSUED TO D.O.B. 01.26.18 REISSUED TO D.O.B. ISSUED TO D.O.B. FOR REVIEW AND COMMENTS 11.03.17 DATE SUBMISSIONS / REVISIONS SHEET TITLE:  $\underbrace{}$ 17TH - 19TH **FLOOR PLANS**  $\sim$ 

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10-19-15

1/8"=1'-0"

S.Z.

BELONGS TO AUFGANG ARCHITECTS LLC, WITHOUT PREJUDICE.

ISSUE DATE:

DRAWN BY:

DRAWING NO:

NYC DOB NUMBER:

SCALE:

SEAL & SIGNATURE

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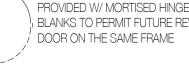
SHEET NO:

#1520

321191802

T.L.

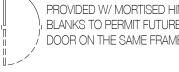
BATHROOM DOORS & FRAMES SHALL BE PROVIDED W/ MORTISED HINGE & LATCH , BLANKS TO PERMIT FUTURE REVERSAL OF / DOOR ON THE SAME FRAME



₩ EXIT LIGHT AND SIGN - WALL MOUNTED

NETWORK INTERFACE DEVICE PANEL

EXIT LIGHT AND SIGN - CEILING MOUNTED



ELECTRICAL PANEL UNIT

SUSPENDED GYPSUM BOARD

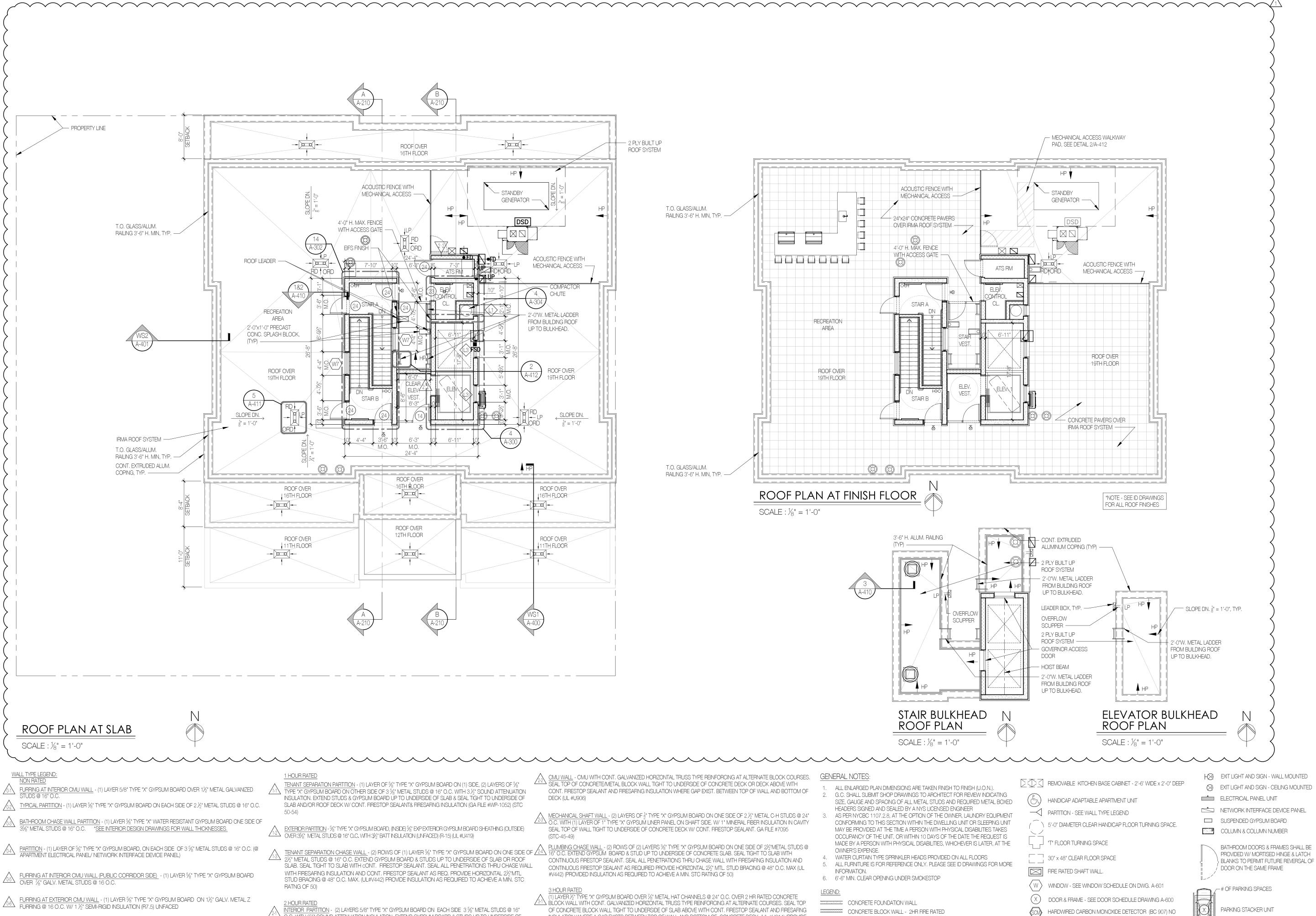
COLUMN & COLUMN NUMBER





PARKING STACKER UNIT

| ( X )



C. WITH 3½" SOUND ATTENUATION INSULATION, EXTEND GYPSUM BOARD & STUDS UP TO UNDERSIDE OF FLOOR DECK OR ROOF DECK. SEAL TIGHT TO DECK W/ CONT. FIRESTOP SEALANT & FIRESAFING. (GA FILE #WP-1522 STC 55-59).

INSULATION WHERE A GAP EXISTS BETWEEN TOP OF WALL AND BOTTOM OF CONCRETE DECK (UL #U914) (PROVIDE STC RATING OF 50-54 AT COMPACTOR CHUTE ENCLOSURE ADJACENT TO DWELLING UNITS)

- GYPSUM BOARD PARTITION SEE PLAN FOR SIZE.

PROPOSED NEW DEVELOPMENT

# **159 BOERUM ST**

# BROOKLYN, NY

#### LOT: 10/40

ARCHITECT:

BLOCK: 3071

AUFGANG ARCHITECTS LLC 74 LAFAYETTE AVENUE, SUITE 301 SUFFERN, NY INFO@AUFGANG.COM 845.368.0004

**DEVELOPER:** SLATE PROPERTY GROUP 850 THIRD AVE, SUITE 16-B NEW YORK, NY 10022



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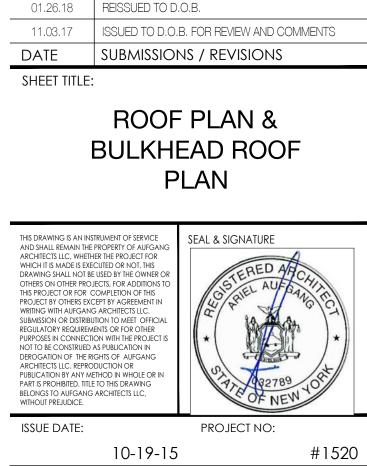
#### MEP ENGINEER:

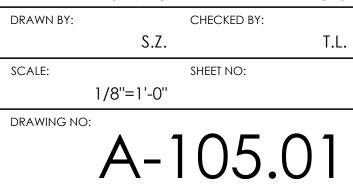
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#### INTERIOR DESIGNER:

ALCHEMY STUDIO NYC 154 GRAND STREET NEW YORK, NY 10013 T: 307.760.6454

Kom HARDWIRED CARBON MONOXIDE DETECTOR (BC 907) NO MORE THAN 15FT AWAY FROM BEDROOM DOORS





321191802

NYC DOB NUMBER:

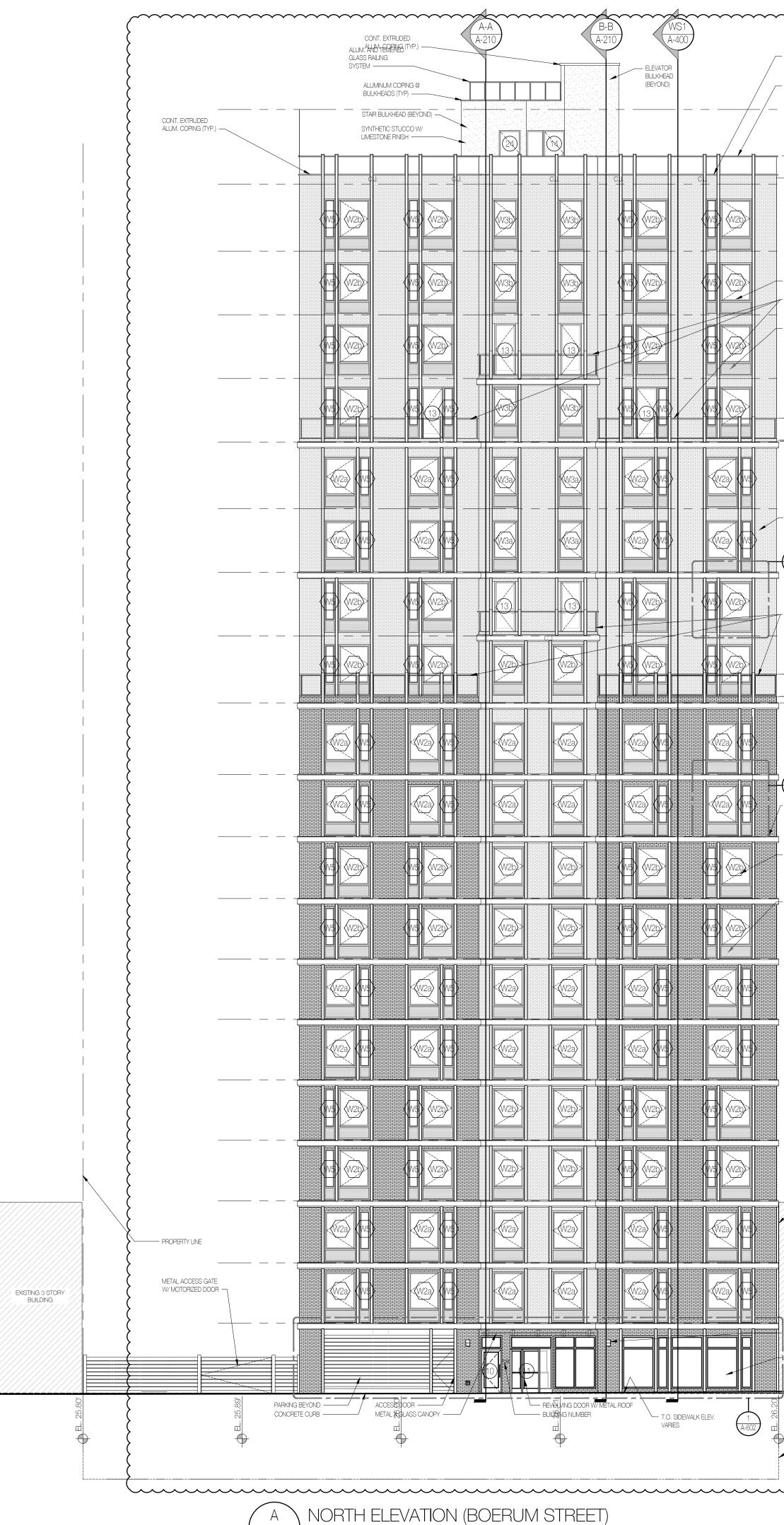
1 08.15.19 PAA TO D.O.B.

05.31.19 BID SET

08.02.19 99% CONSTRUCTION SET

07.27.18 90% PROGRESS SET

06.04.18 RE-ISSUED TO D.O.B.



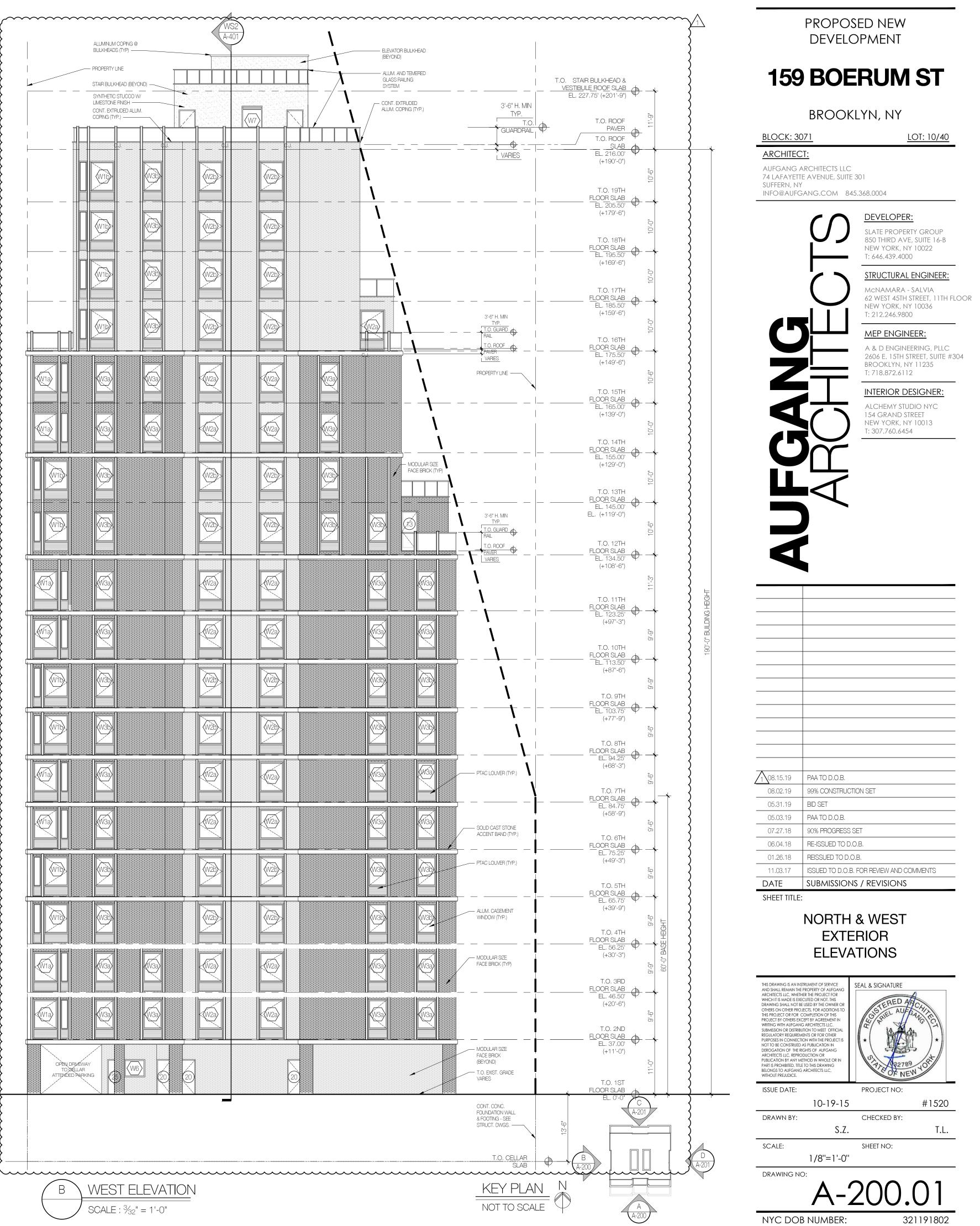
SCALE :  $\frac{3}{32}$ " = 1'-0"

XONT. EXTRUDED LUM. COPING (TYP.)					$\left\{ \right\}$
LUM. AND TEMERED	.O. STAIR BULKHEAD &				Ş
YSTEM	<u>VESTIBULE ROOF</u> SLAB EL. 227.75' (+201'-9")	¢		-	Ş
TYP. T.O. GUARDRAIL	T.O. ROOF PAVER	•	11'-9"		Ş
🛓	T.O. ROOF SLAB EL. 216.00'	⊕ ⊕			$\left\{ \right\}$
VARIES	(+190'-0")	I	10'-6"		Ş
	T.O. 19TH FLOOR SLAB	φ	10		Ş
	EL. 205.50' (+179'-6")	Ψ	=0	-	$\left\{ \right\}$
LUN, GAOLINEN VINDOW (TYP.) LUM, & GLASS GUARDRAIL (TYP.)	T.O. 18TH FLOOR SLAB	4	10'-0"		$\left\{ \right.$
TAC LOUVER (TYP.)	EL. 195.50' (+169'-6")	<del>-</del>	_	-	Ş
	т.о. 17тн		10'-0"		$\left\{ \right\}$
	<u>FLOOR SLAB</u> EL. 185.50' (+159'-6")	0	_	-	$\left\{ \right\}$
T.O. GUARD RAIL	T.O. 16TH		10'-0"		Ş
T.O. ROOF PAVERS — — — — VARIES	<u>FLOOR SLAB</u> EL. 175.50' (+149'-6")	¢	-	-	Ş
			10'-6"		$\left\{ \right\}$
	T.O. 15TH <u>FLOOR SLAB</u> EL. 165.00' (+139'-0")	$\oplus$	_	-	Ş
ACE BRICK (TYP)			10'-0"		Ş
<u>2</u> A-420	T.O. 14TH FLOOR SLAB EL. 155.00'	$\oplus$	$\rightarrow$	_	}
ALUM. & GLASS	(+129'-0")		10'-0"		}
LUM. & GLASS GUARDRAIL (TYP.) 	T.O. 13TH FLOOR SLAB EL. 145.00'	$\oplus$	_	-	Ş
3'-6" H. MIN TYP. T.O. GUARD	EL. (+119'-0")		10'-6"		3
T.O. ROOF PAVERS	T.O. 12TH FLOOR SLAB	<b>_</b>	Ţ	-	}
VARIES	EL. 134.50' (+108'-6")	¥	_ ا		Ş
	T.O. 11TH		11-3"		3
1 A-420	EL. 123.25' EL. 123.25' (+97'-3")	¢	$\rightarrow$	-	$\left\{ \right\}$
SOLID CAST STONE ACCENT BAND (TYP.)	T.O. 10TH		9-9"		Ş
	FLOOR SLAB EL. 113.50' (+87'-6")	¢	$\rightarrow$	-	Ş
NINDOW (TYP.)	Т.О. 9ТН		9-9"		}
TÃC LOUVER (TYP.)	FLOOR SLAB EL. 103.75' (+77'-9")	0	$\rightarrow$	-	}
	т.о. 8тн		9-6		Ş
	FLOOR SLAB EL. 94.25' (+68'-3")	0	$\rightarrow$	-	3
	т.о. 7тн		9-0"		$\left\{ \right. \right\}$
	<u>FLOOR SLAB</u> EL. 84.75' (+58'-9")	0	$\rightarrow$	-	Ş
	т.о. 6тн		9-6"		Ş
	FLOOR SLAB EL. 75.25' (+49'-3")	¢		-	$\left\{ \right\}$
	т.о. 5тн		9-6"		}
	<u>FLOOR SLAB</u> EL. 65.75' (+39'-9")	0		-	Ş
EXPANSION JOINT COVER TO MATCH ADJACENT FINISH	т.о. 4тн		9-6	EIGHT	3
	FLOOR SLAB EL. 56.25' (+30'-3")	¢	$\rightarrow$	60'-0" BASE HEIGH	}
	T.O. 3RD		9-9"	60'-0	Ş
	FLOOR SLAB EL. 46.50' (+20'-6")	0	$\rightarrow$	-	3
EXISTING 3 STORY BUILDING			90"		$\left\{ \right. \right\}$
JGHT FXTURE SEE	T.O. 2ND FLOOR SLAB EL. 37.00' (+11'-0")	0	$\rightarrow$	-	Ş
ILÉC, DWGS. ILUM, 8, GLASS ITOREFRONT (TYP.)	(+11-0")		11'-0"		$\left\{ \right\}$
	T.O. 1ST FLOOR SLAB EL. 0'-0"	<del>-</del>			<u>}</u>
BASE PLANE EL. 26.00' CONT. CONC. FOUNDATION WALL &		·			Ş
FOUNDATION WALL & FOOTING - SEE STRUCT. DWGS.	13-6 -				Ş

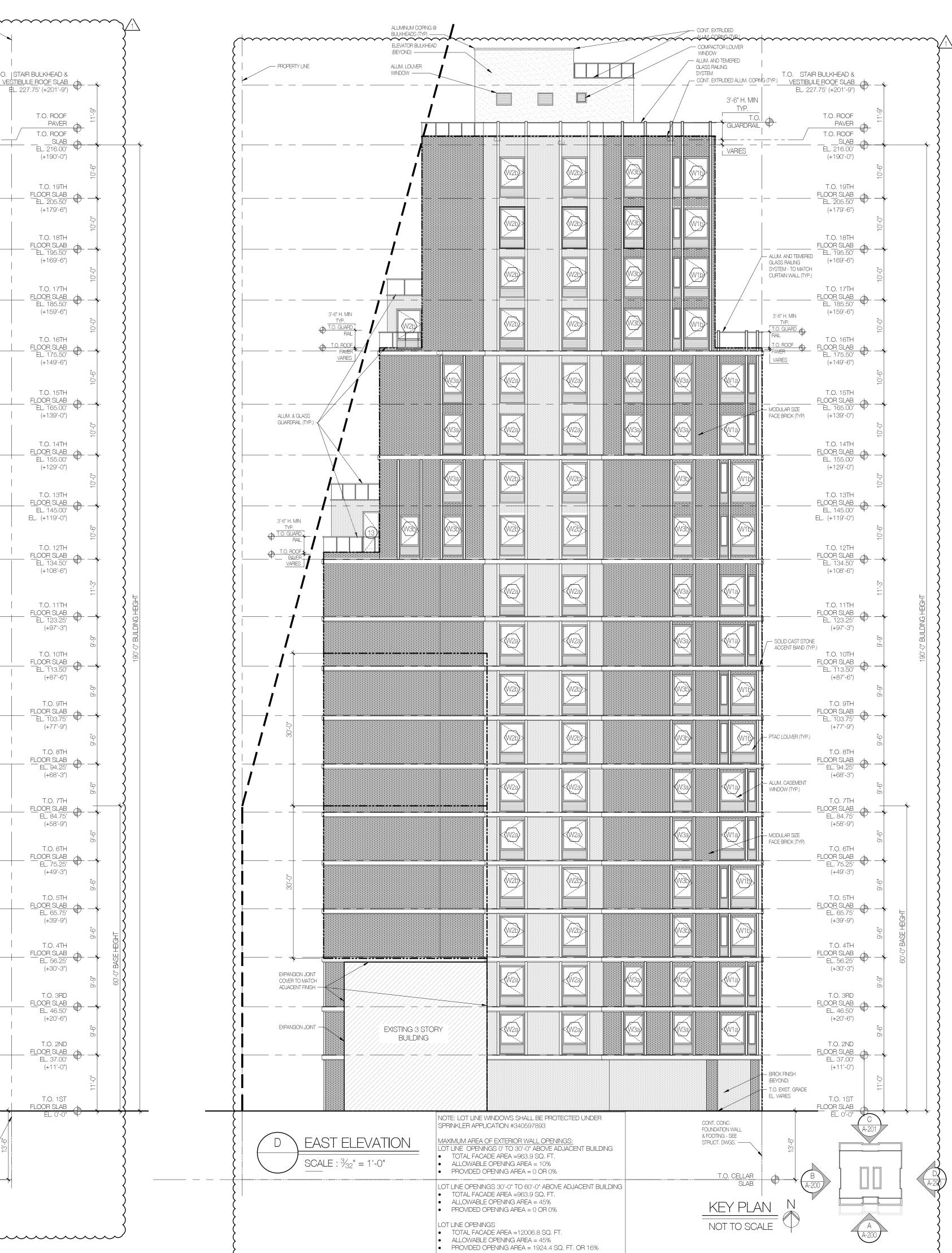
	SYNTHETIC STUC LIMESTONE FINISH CONT. EXTRUDED COPING (TYP.) —	ALUM.		<u>\</u> /
			GJ.	
OPEN DF TO XE ATTEMDED				

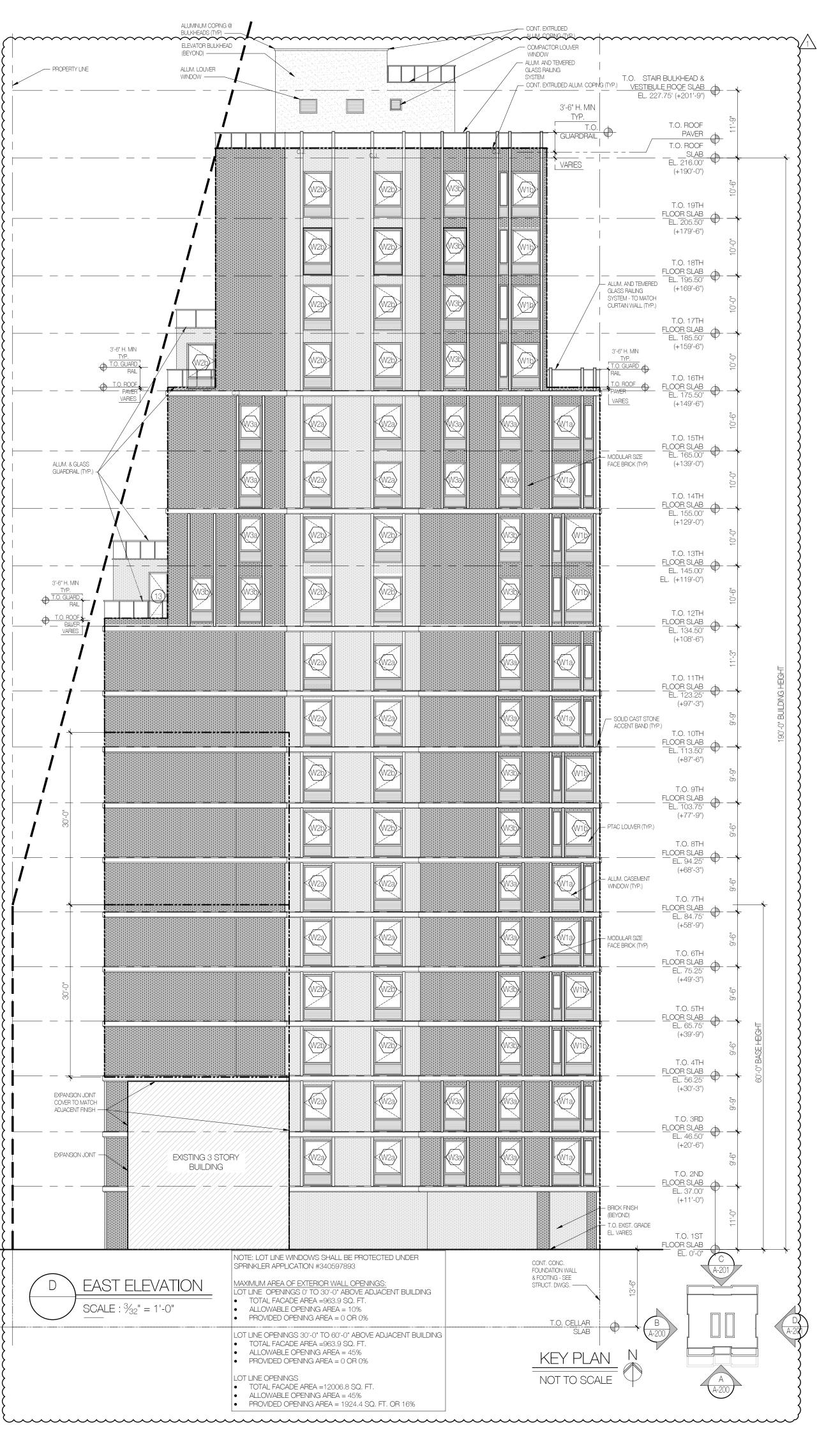
WEST ELEVATION SCALE :  $\frac{3}{32}$ " = 1'-0"

В



	ALUMINUM COPING BULKHEADS (TYP) – ELEVATOR BULKHEA		BUI ROC ABC - SE	"W. METAL LADDER FROM LDING ROOF UP TO BULKHEAD. DF HANDRAIL TO EXTEND 3'-6" DVE TOP OF LADDER. (TYP.) IE DETAIL 2/A-412 JM. AND TEMERED	PROPERTY LINE	~~~~
	(BEYOND)	EYOND)	ALL STA	ASS RAILING MEMEXTRUDED 	T.O.  STAIR BULKHEAD & <u>VESTIBULE ROOF SLAB</u> EL. 227.75' (+201'-9") 3'-6" H. MIN TYP.	· •
				M. COPING (TYP.)	T.O. ROOF GUARDRAIL T.O. ROOF T.O. ROOF T.O. ROOF T.O. ROOF SLAB EL. 216.00'	- 11-0
					(+190'-0") T.O. 19TH FLOOR SLAB EL. 205.50' (+179'-6")	- <del>-</del> -
					T.O. 18TH FLOOR SLAB EL. 195.50' (+169'-6")	0-0" + 10'-0'
				CLASS RAILING GLASS RAILING SYSTEM 3'-6" MIN TYP. T.O. GUARD RAIL	T.O. 17TH <u>FLOOR SLAB</u> EL. 185.50' (+159'-6")	10-0"
				HAIL T.O. ROOF PAVER VARIES	T.O. 16TH <u>FLOOR SLAB</u> EL. 175.50' (+149'-6")	<b>4</b>
					T.O. 15TH FLOOR SLAB EL. 165.00' (+139'-0")	10'-0"
				A MODULAR SIZE FACE BRICK (TYP)	T.O. 14TH <u>FLOOR SLAB</u> EL. 155.00' (+129'-0")	·
						10-6" · 1
						+
				SOLD CAST STONE ACCENT BAND (TYP.)	T.O. 10TH FLOOR SLAB EL. 113.50' (+87'-6")	0- -0
				ALUM. CASEMENT WINDOW (TYP.)	T.O. 9TH FLOOR SLAB EL. 103.75' (+77'-9")	
					T.O. 6TH <u>FLOOR SLAB</u> EL. 75.25' (+49'-3")	0 - -
					T.O. 5TH <u>FLOOR SLAB</u> EL. 65.75' (+39'-9")	0 - - -
EXPANSION JOINT COVER TO MATCH ADJACENT FINISH					T.O. 4TH FLOOR SLAB EL. 56.25' (+30'-3")	1-9" 9'-6"
					T.O. 3RD <u>FLOOR SLAB</u> EL. 46.50' (+20'-6")	
ING 3 STORY 3UILDING				BRICK FINISH (BEYOND) CONCRETE COLUMN	T.O. 2ND FLOOR SLAB EL. 37.00' (+11'-0")	
				T.O. EXIST. GRADE VARIES	T.O. 1ST FLOOR SLAB EL. 0'-0" CONT. CONC.	-11-0
		$\frac{\text{JTH ELEVATION}}{\text{E}: \frac{3}{32}" = 1'-0"}$	NOTE: LOT LINE WINDOWS SHA SPRINKLER APPLICATION #3405 MAXIMUM AREA OF EXTERIOR V SET BACK OPENINGS • TOTAL FACADE AREA = 30 • ALLOWABLE OPENING AREA • PROVIDED OPENING AREA	597893 VALL OPENINGS: 57.6 SQ. FT. EA = 45%	FOUNDATION WALL & FOOTING - SEE STRUCT. DWGS. GREEN ROOF SYSTEM T.O. CELLAR SLAB	
			LOT LINE OPENINGS • TOTAL FACADE AREA = 11: • ALLOWABLE OPENING AREA • PROVIDED OPENING AREA	EA = 45% = 2032.7 SQ. FT. OR 18.1%		





# **159 BOERUM ST**

# BROOKLYN, NY

# BLOCK: 3071

<u>LOT: 10/40</u>

DEVELOPER:

ARCHITECT: AUFGANG ARCHITECTS LLC 74 LAFAYETTE AVENUE, SUITE 301

SUFFERN, NY INFO@AUFGANG.COM 845.368.0004



850 THIRD AVE, SUITE 16-B NEW YORK, NY 10022 T: 646.439.4000

SLATE PROPERTY GROUP

## STRUCTURAL ENGINEER:

McNAMARA - SALVIA 62 WEST 45TH STREET, 11TH FLOOR NEW YORK, NY 10036 T: 212.246.9800

#### MEP ENGINEER:

A & D ENGINEERING, PLLC 2606 E. 15TH STREET, SUITE #304 BROOKLYN, NY 11235 T: 718.872.6112

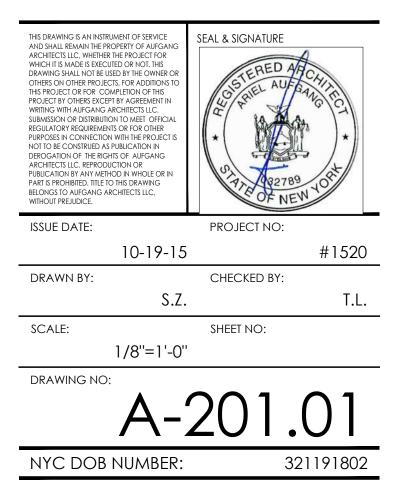
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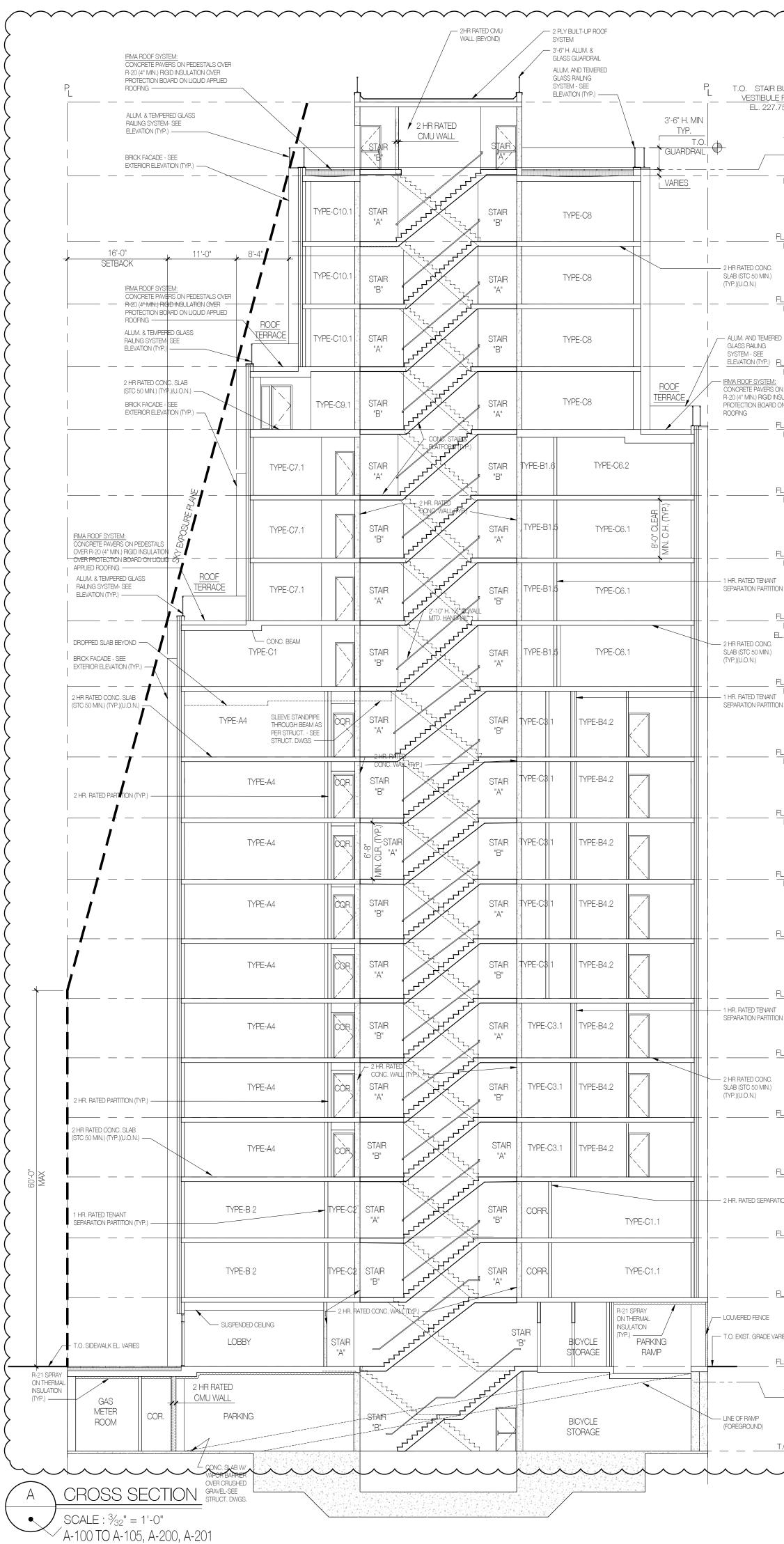
ALCHEMY STUDIO NYC 154 GRAND STREET NEW YORK, NY 10013 T: 307.760.6454

08.02.19	99% CONSTRUCTION SET
05.31.19	BID SET
05.03.19	PAA TO D.O.B.
07.27.18	90% PROGRESS SET
06.04.18	RE-ISSUED TO D.O.B.
01.26.18	REISSUED TO D.O.B.
11.03.17	ISSUED TO D.O.B. FOR REVIEW AND COMMENTS
DATE	SUBMISSIONS / REVISIONS
SHEET TITLE	:

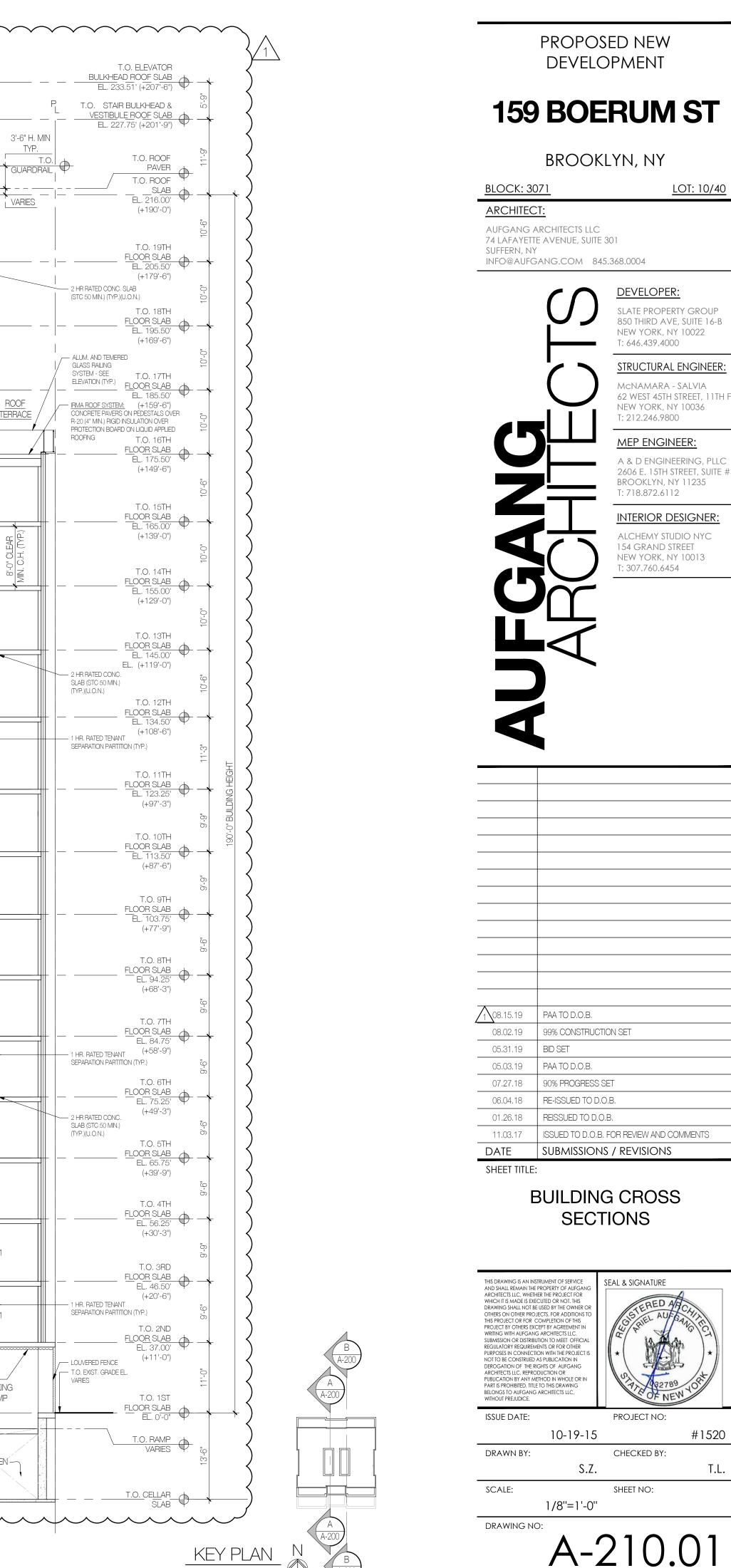
<u>1</u>08.15.19 PAA TO D.O.B.

# SOUTH & EAST EXTERIOR ELEVATIONS





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	TYPE-C8
	TYPE-C8
	TYPE-C8
	TYPE-C8
	TYPE-C6.2
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Contract     Contr	φ ω
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FL. 113.50 (H97-67)       TYPE-A3       TY	TYPE-B4.2
T.O. 9TH LOOR SLAB EL 103, 75 (+77'-9) TO, 8TH LOOR SLAB EL 94, 25' (+68'-3) TO, 7TH LOOR SLAB EL 94, 25' (+68'-3) TO, 7TH LOOR SLAB EL 94, 25' (+68'-3) TO, 7TH LOOR SLAB EL 94, 75' TO, 7TH LOOR SLAB EL 94, 75' TO, 6TH LOOR SLAB EL 76, 25' TO, 6TH LOOR SLAB CL 76' TO, 77' TO, 77' T	TYPE-B4.2
T.O. 8TH LOR SLAB EL. 94.25 (H68'-3") TO. 7TH LOR SLAB EL. 94.25 (H68'-3") TO. 7TH EL. 95.25 (H49'-3") TO. 7TH EL. 75.25 (H49'-3") TO. 7TH EL. 7TH	
EL 94.25' (+68'-3') COR SLAB EL 84.75' T.O. 6TH LOOR SLAB EL 75.25' (+49'-3') COR SLAB EL 75.25' COR SLAB COR SLAB EL 75.25' COR SLAB COR S	TYPE-B4.2
T.O. 7TH FLOOR SLAB EL. 84.75' T.O. 6TH FLOOR SLAB EL. 75.25' (+49'-3") TYPE-A3	TYPE-B4.2
T.O. 6TH LOOR SLAB EL. 75.25' (+49'-3") TYPE-A3 TYPE-A3 TYPE-A3 TYPE-C4.2 TYPE-C4.2 TYPE-C4.2 TYPE-C4.2 TYPE-C4.2 TYPE-C4.2 TYPE-C4.2 TYPE-C4.2 TYPE-C4.2 TYPE-C4.2	
(+49'-3")	TYPE-B4.2
	TYPE-B4.2
LOOR SLAB EL. 65.75' (+39'-9")	
T.O. 4TH EL. 56.25' THE AG	TYPE-B4.2
(+30'-3") TON WALL TON WALL TON WALL TYPE-B 2 TYPE-B 3 TYPE-B 1 TYPE-C1.2 REFUSE ROMM TYPE-B 1 TYPE-C1.2	TYPE-A1
	TYPE-A1
T.O. SIDEWALK EL. VARIES	E ON THERMAL INSULATION (TYP.) PARKING
T.O. 1ST LOOR SLAB EL. 0 ¹ -0" R-21 SPRAY ON THERMAL INSULATION R-21 SPRAY ON THERMAL INSULATION THERMAL INSULATION	
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B CROSS SECTION CROSS SECTION SCALE : ³ / ₃₂ " = 1'-0"	



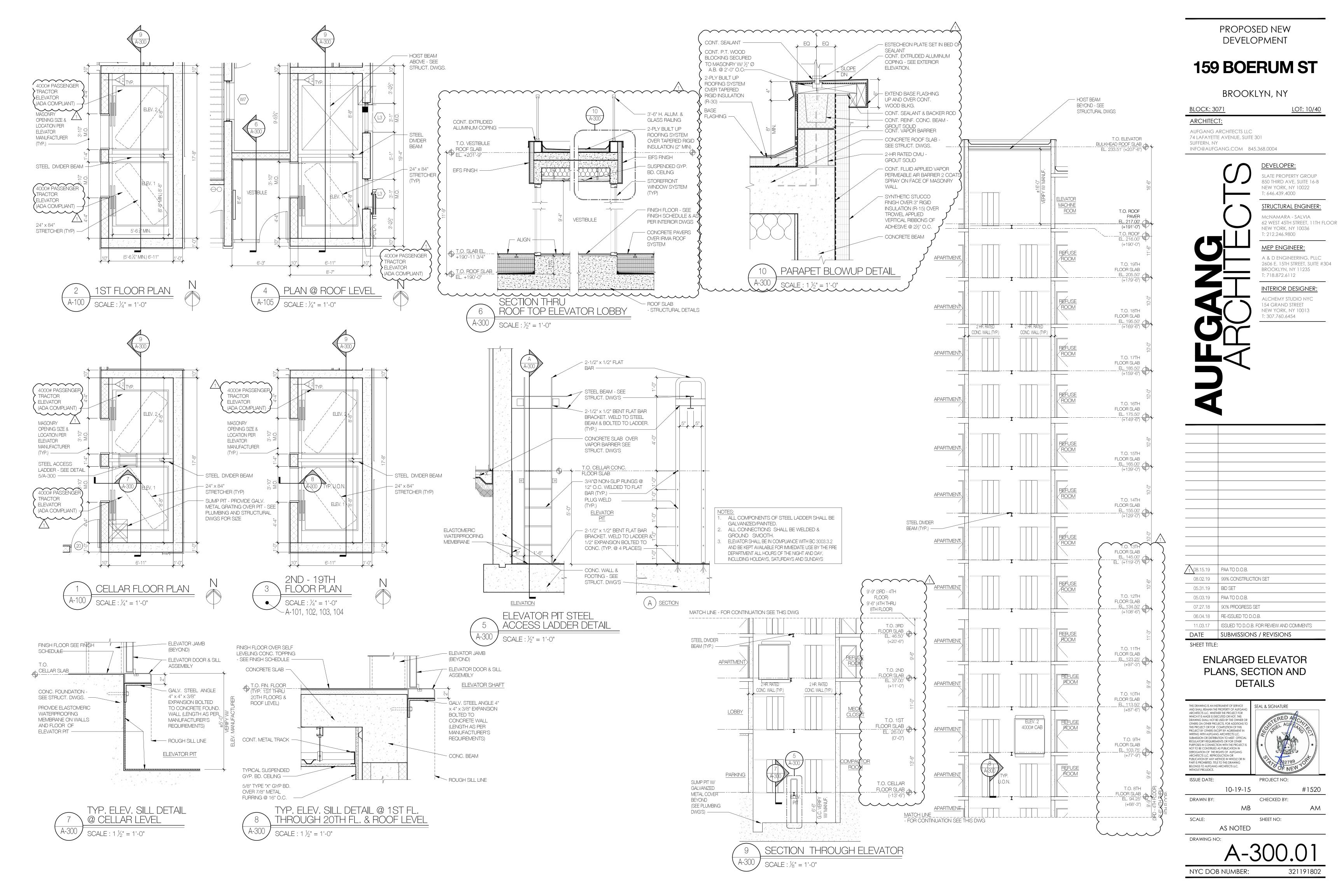
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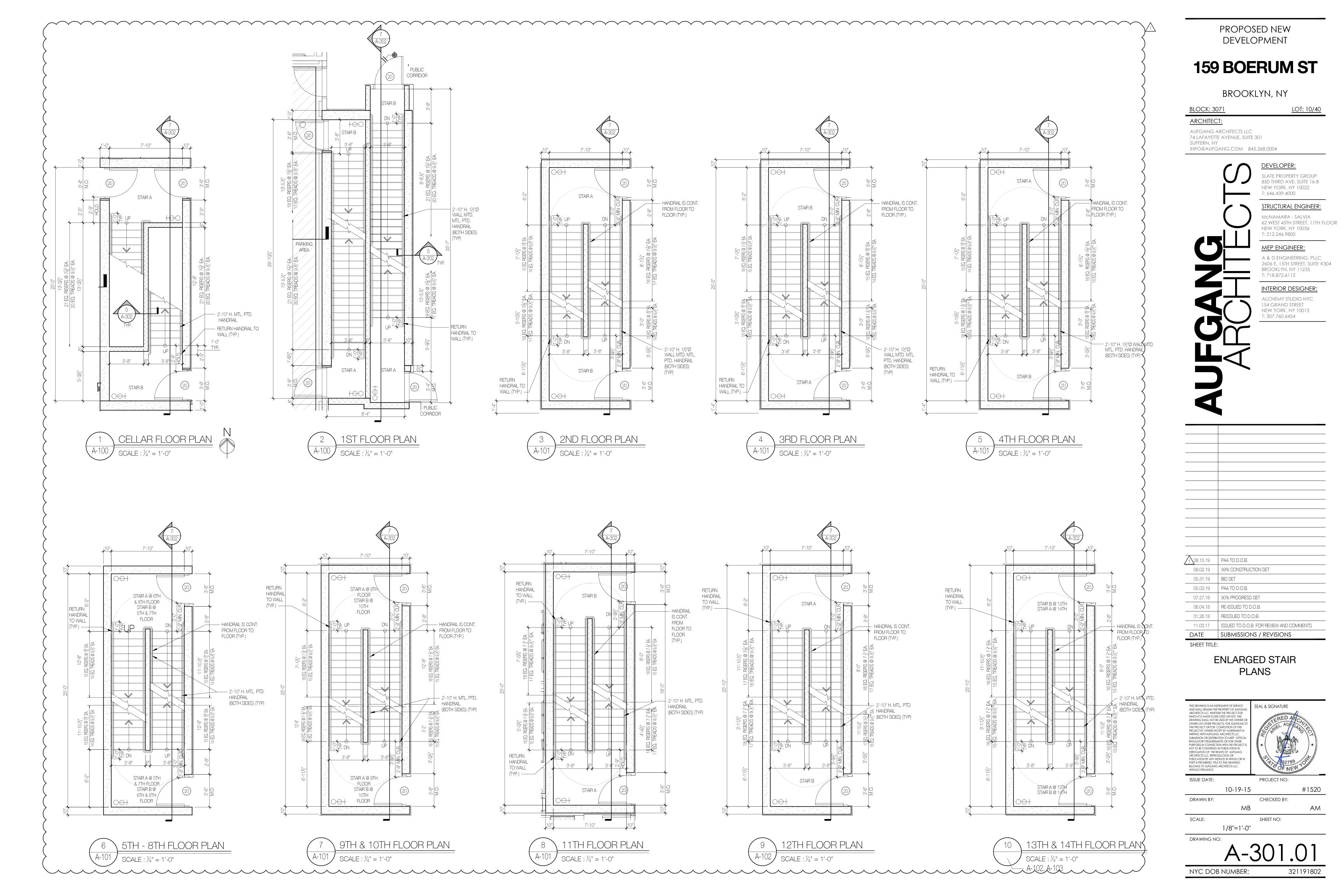
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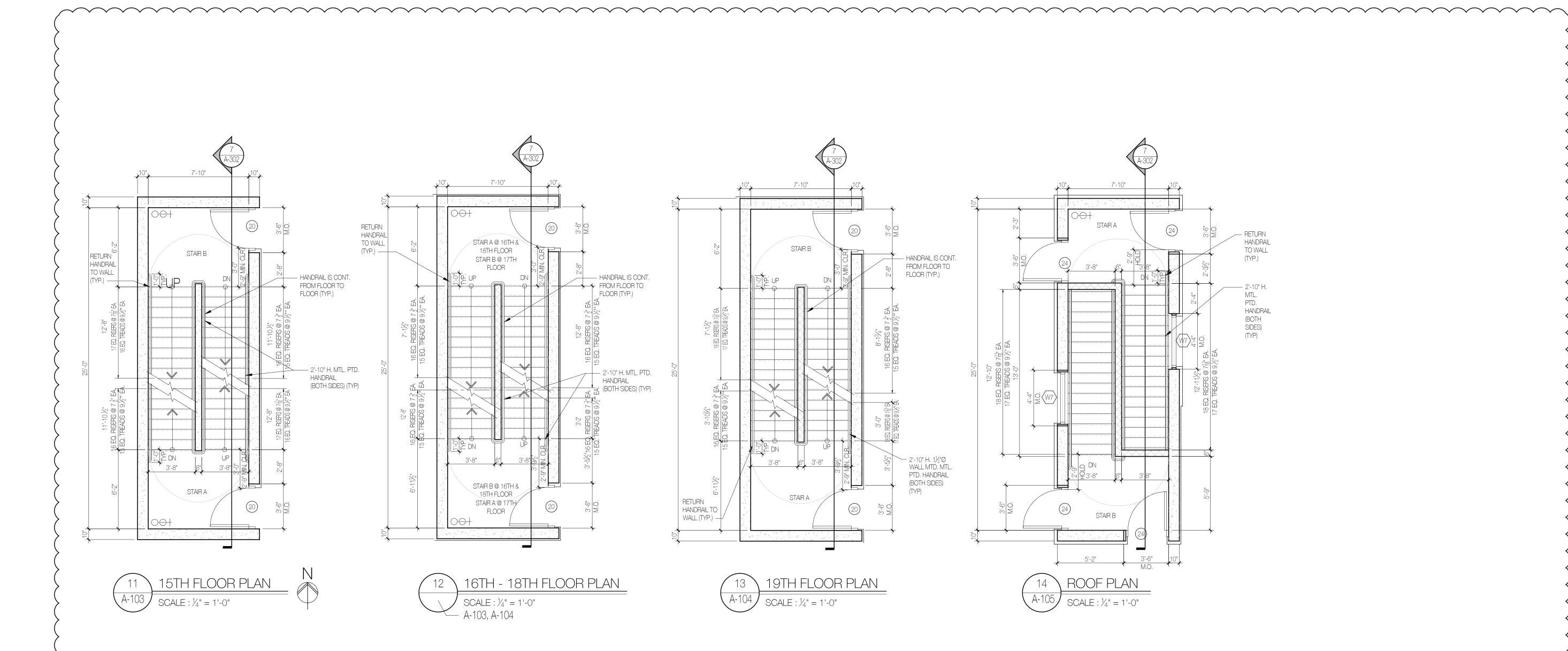
321191802

62 WEST 45TH STREET, 11TH FLOOR

A & D ENGINEERING, PLLC 2606 E. 15TH STREET, SUITE #304







## PROPOSED NEW DEVELOPMENT

# **159 BOERUM ST**

# BROOKLYN, NY

#### BLOCK: 3071 ARCHITECT:

<u>LOT: 10/40</u>

AUFGANG ARCHITECTS LLC 74 LAFAYETTE AVENUE, SUITE 301 SUFFERN, NY INFO@AUFGANG.COM 845.368.0004

DEVELOPER:



2108.15.19 PAA TO D.O.B.

05.31.19 BID SET

05.03.19 PAA TO D.O.B.

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10-19-15

1/8''=1'-0''

MB

A-302

ISSUE DATE:

DRAWN BY:

SCALE:

DRAWING NO:

NYC DOB NUMBER:

THIS DRAWING IS AN INSTRUMENT OF SERVICE

07.27.18 90% PROGRESS SET 06.04.18 RE-ISSUED TO D.O.B. 01.26.18 REISSUED TO D.O.B.

11.03.17 ISSUED TO D.O.B. FOR REVIEW AND COMMENTS

**ENLARGED STAIR** 

PLANS

SEAL & SIGNATURE

PROJECT NO:

CHECKED BY:

SHEET NO:

#1520

321191802

AM

DATE SUBMISSIONS / REVISIONS

08.02.19 99% CONSTRUCTION SET

NEW YORK, NY 10036 T: 212.246.9800 MEP ENGINEER:

SLATE PROPERTY GROUP

850 THIRD AVE, SUITE 16-B

STRUCTURAL ENGINEER:

62 WEST 45TH STREET, 11TH FLOOR

McNAMARA - SALVIA

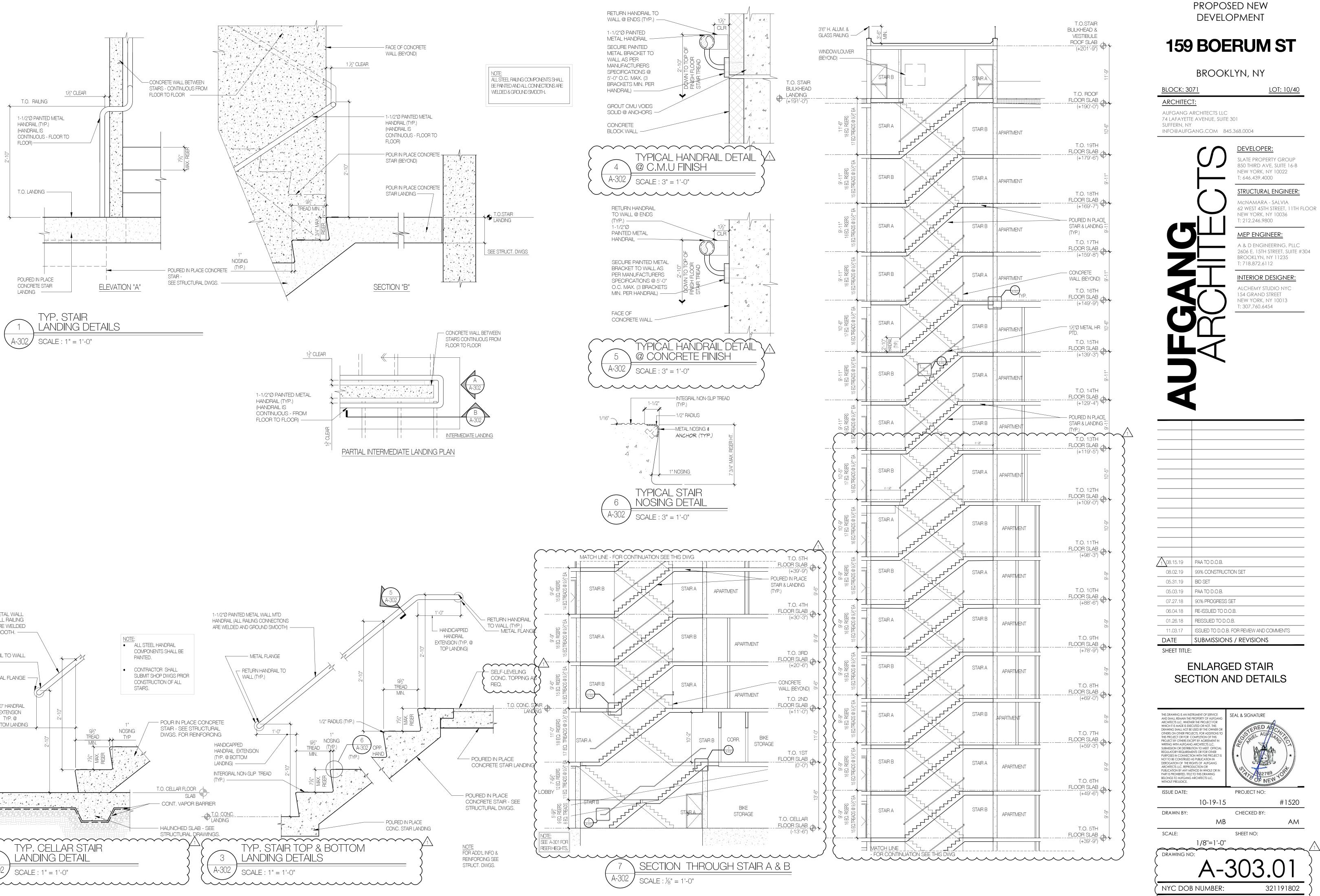
NEW YORK, NY 10022

T: 646.439.4000

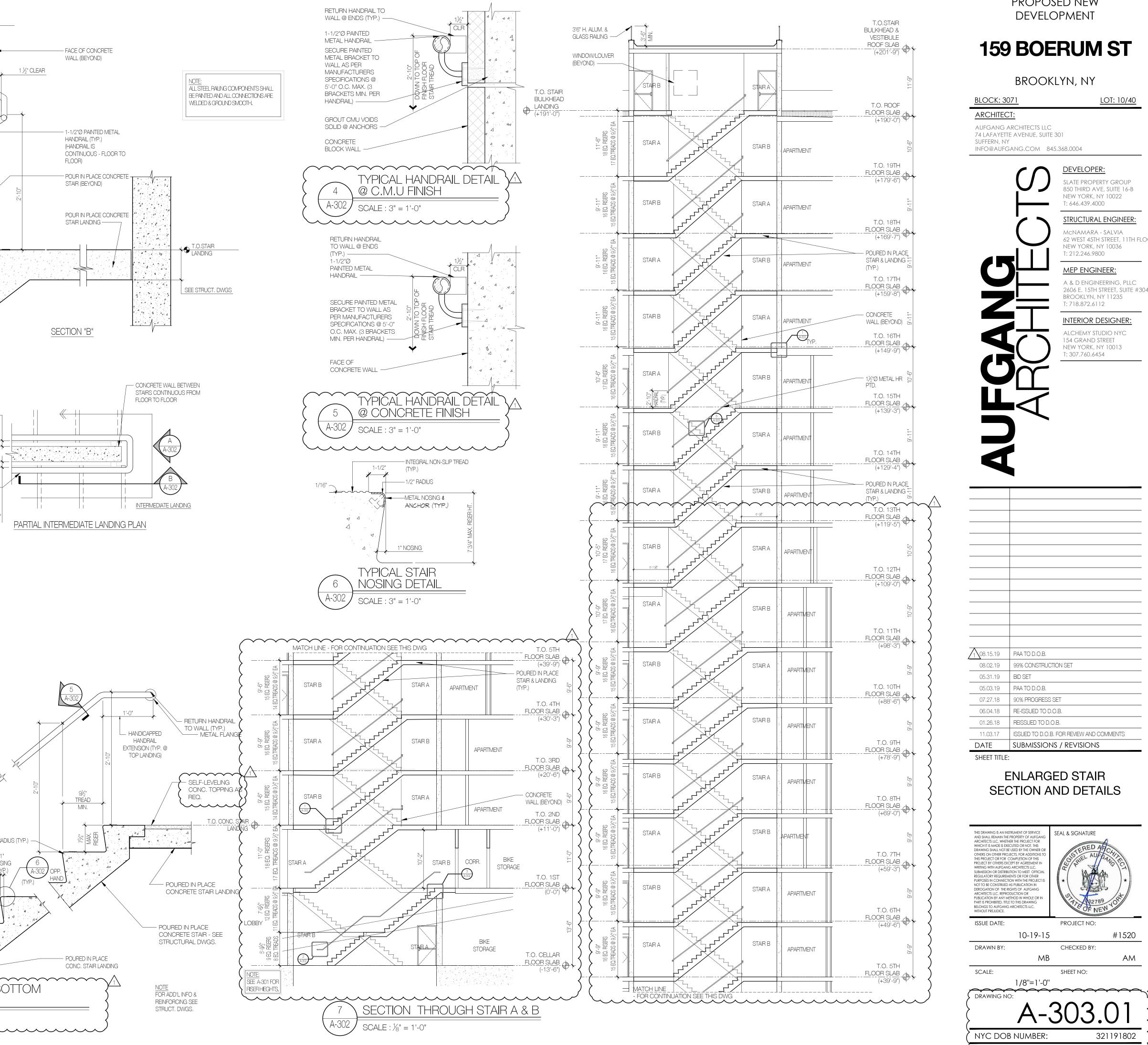
A & D ENGINEERING, PLLC 2606 E. 15TH STREET, SUITE #304 BROOKLYN, NY 11235 T: 718.872.6112

#### INTERIOR DESIGNER:

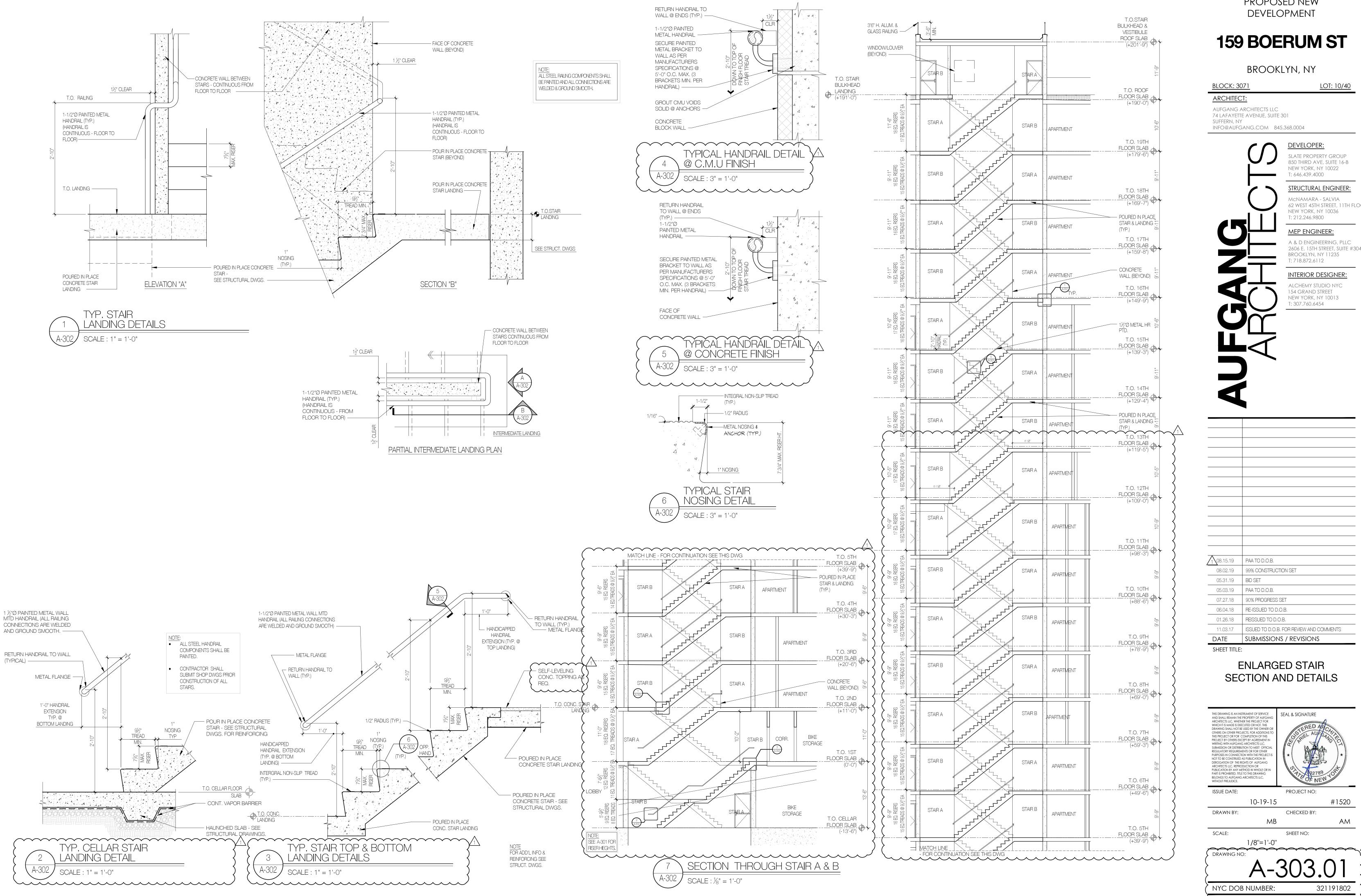
ALCHEMY STUDIO NYC 154 GRAND STREET NEW YORK, NY 10013 T: 307.760.6454

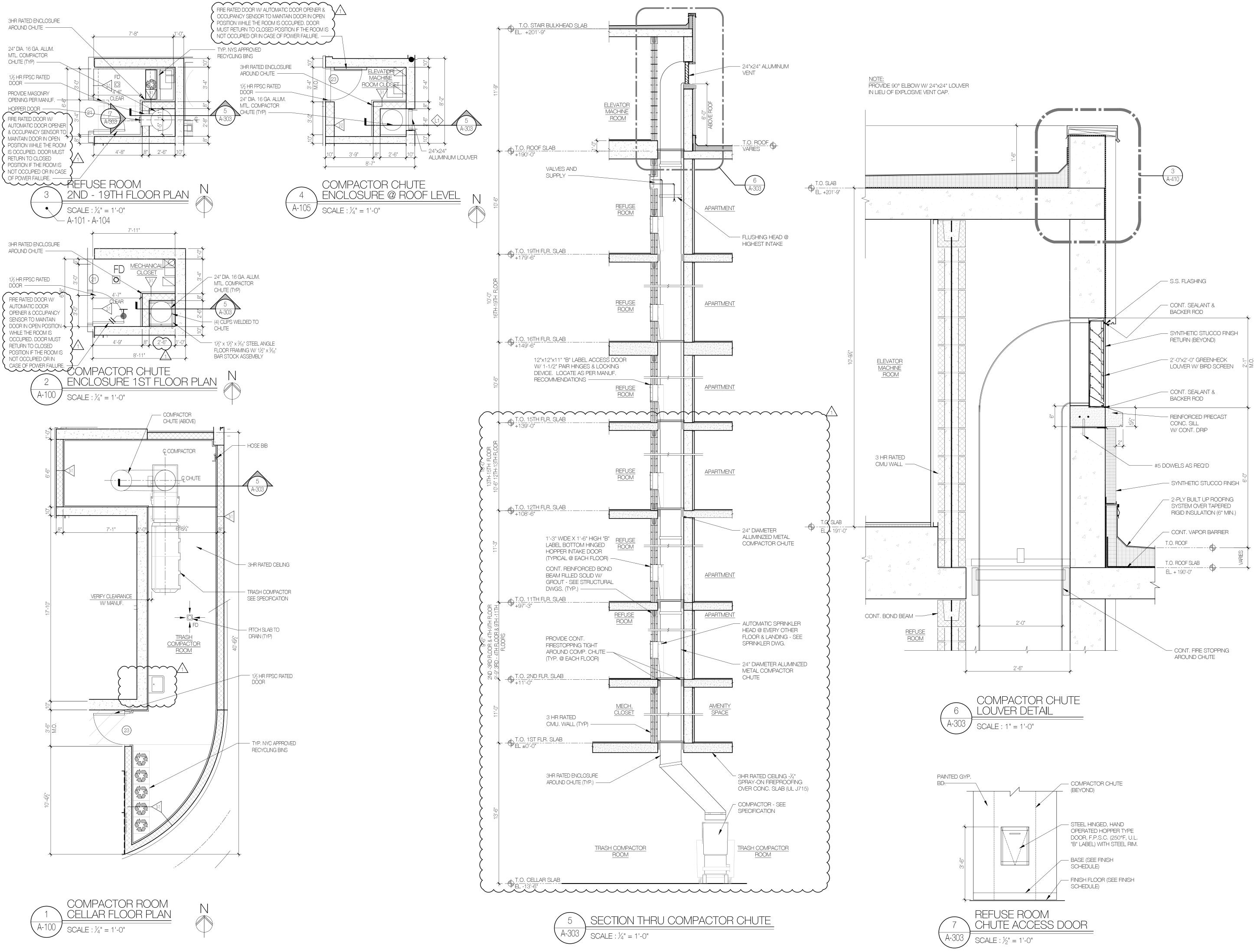






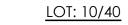
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# **159 BOERUM ST**

# BROOKLYN, NY



ARCHITECT:

BLOCK: 3071

AUFGANG ARCHITECTS LLC 74 LAFAYETTE AVENUE, SUITE 301 SUFFERN, NY INFO@AUFGANG.COM 845.368.0004





T: 646.439.4000

# STRUCTURAL ENGINEER:

McNAMARA - SALVIA 62 WEST 45TH STREET, 11TH FLOOR NEW YORK, NY 10036 T: 212.246.9800

#### MEP ENGINEER:

A & D ENGINEERING, PLLC 2606 E. 15TH STREET, SUITE #304 BROOKLYN, NY 11235 T: 718.872.6112

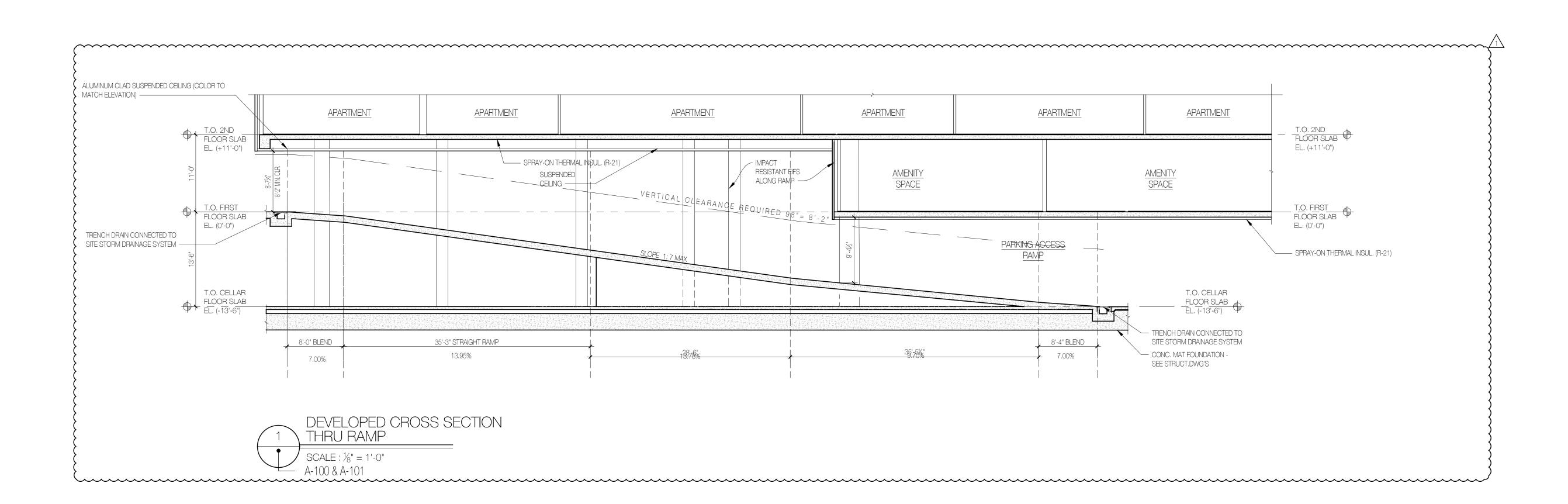
#### INTERIOR DESIGNER:

ALCHEMY STUDIO NYC 154 GRAND STREET NEW YORK, NY 10013 T: 307.760.6454

1_08.15.19	PAA TO D.O.B.		
08.02.19	99% CONSTRUC	TION SET	
05.31.19	BID SET		
05.03.19	PAA TO D.O.B.		
07.27.18	90% PROGRESS		
06.04.18	RE-ISSUED TO D		
	REISSUED TO D.		
01.26.18			
11.03.17 DATE SHEET THTLE ENL		B. FOR REVIEW AND COMMENTS	~ ~
11.03.17 DATE SHEET THTLE ENL	ISSUED TO D.O.E SUBMISSION	B. FOR REVIEW AND COMMENTS	
11.03.17 DATE SHEET HTUE ENL CHU	ISSUED TO D.O.E SUBMISSION	B. FOR REVIEW AND COMMENTS VS / REVISIONS COMPACTOR NS, SECTION DETAILS	
11.03.17 DATE SHEET, JHTLE ENLL CHU CHU THIS DRAWING IS AN II AND SHALL REMAIN TH ARCHITECTS LLC, WHE WHICH IT IS MADE IS ED DRAWING SHALL NOT OTHERS ON OTHER FE WRITING WITH AUFGAI SUBMISSION OR DISTRI REGULATORY REQUIRE PURPOSES IN CONNEC NOT TO BE CONSTRUEL DEROGATION OF THE ARCHITECTS LLC. REPR	ISSUED TO D.O.E SUBMISSION	B. FOR REVIEW AND COMMENTS	
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NYC DOB NUMBER:

321191802



# **159 BOERUM ST**

## BROOKLYN, NY

### BLOCK: 3071 ARCHITECT:

LOT: 10/40

AUFGANG ARCHITECTS LLC 74 LAFAYETTE AVENUE, SUITE 301 SUFFERN, NY

INFO@AUFGANG.COM 845.368.0004



SLATE PROPERTY GROUP 850 THIRD AVE, SUITE 16-B NEW YORK, NY 10022 T: 646.439.4000

#### STRUCTURAL ENGINEER:

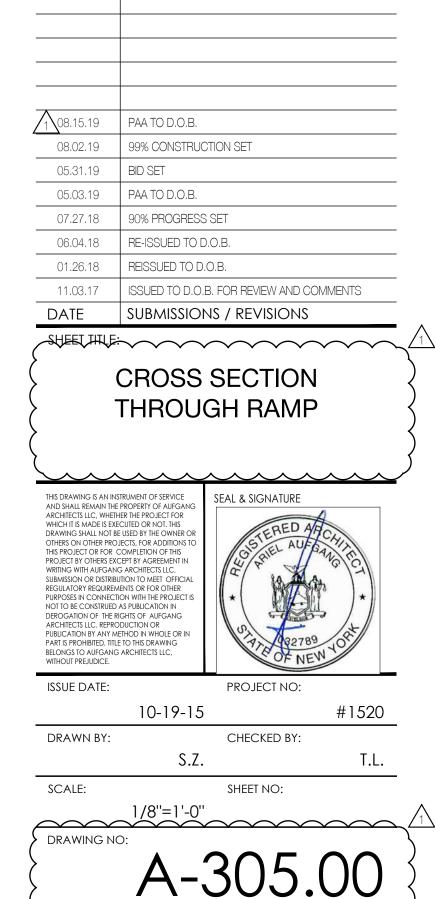
McNAMARA - SALVIA 62 WEST 45TH STREET, 11TH FLOOR NEW YORK, NY 10036 T: 212.246.9800

#### MEP ENGINEER:

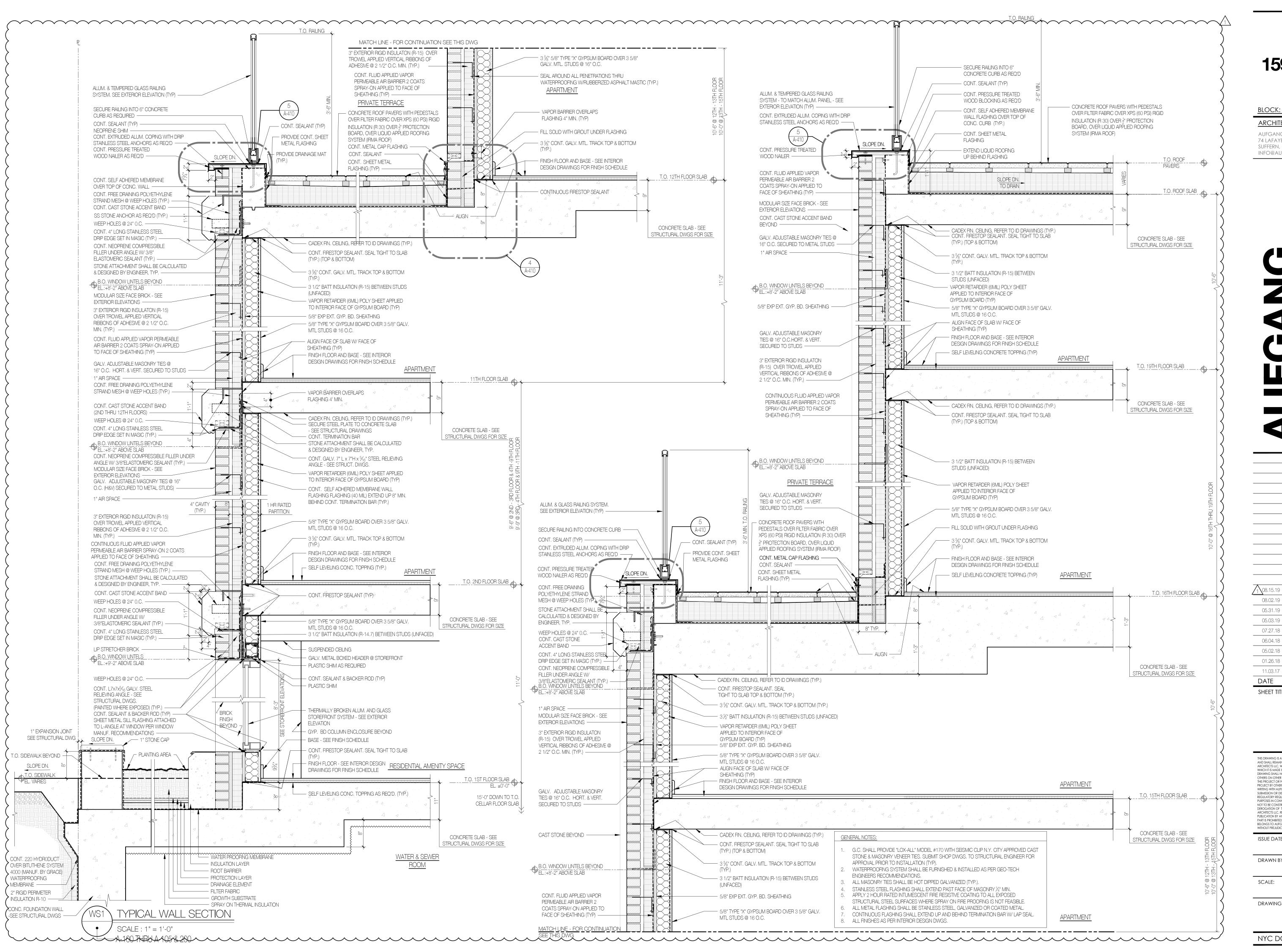
A & D ENGINEERING, PLLC 2606 E. 15TH STREET, SUITE #304 BROOKLYN, NY 11235 T: 718.872.6112

#### INTERIOR DESIGNER:

ALCHEMY STUDIO NYC 154 GRAND STREET NEW YORK, NY 10013 T: 307.760.6454



NYC DOB NUMBER: 321191802 



# **159 BOERUM ST**

# BROOKLYN, NY

LOT: 10/40

ARCHITECT:

BLOCK: 3071

AUFGANG ARCHITECTS LLC 74 LAFAYETTE AVENUE, SUITE 301 SUFFERN, NY INFO@AUFGANG.COM 845.368.0004

> SLATE PROPERTY GROUP 850 THIRD AVE, SUITE 16-B NEW YORK, NY 10022 T: 646.439.4000 STRUCTURAL ENGINEER: McNAMARA - SALVIA 62 WEST 45TH STREET, 11TH FLOOR NEW YORK, NY 10036 T: 212.246.9800 MEP ENGINEER: A & D ENGINEERING, PLLC

**DEVELOPER:** 

2606 E. 15TH STREET, SUITE #304 BROOKLYN, NY 11235 T: 718.872.6112

### **INTERIOR DESIGNER:**

ALCHEMY STUDIO NYC 154 GRAND STREET NEW YORK, NY 10013 T: 307.760.6454

06.04.18 RE-ISSUED TO D.O.B 05.02.18 REVISED AS PER ENERGY COMMENTS 01.26.18 REISSUED TO D.O.B. 11.03.17 ISSUED TO D.O.B. FOR REVIEW AND COMMENTS DATE SUBMISSIONS / REVISIONS SHEET TITLE: **TYPICAL WALL** 

**SECTION** 

PAA TO D.O.B.

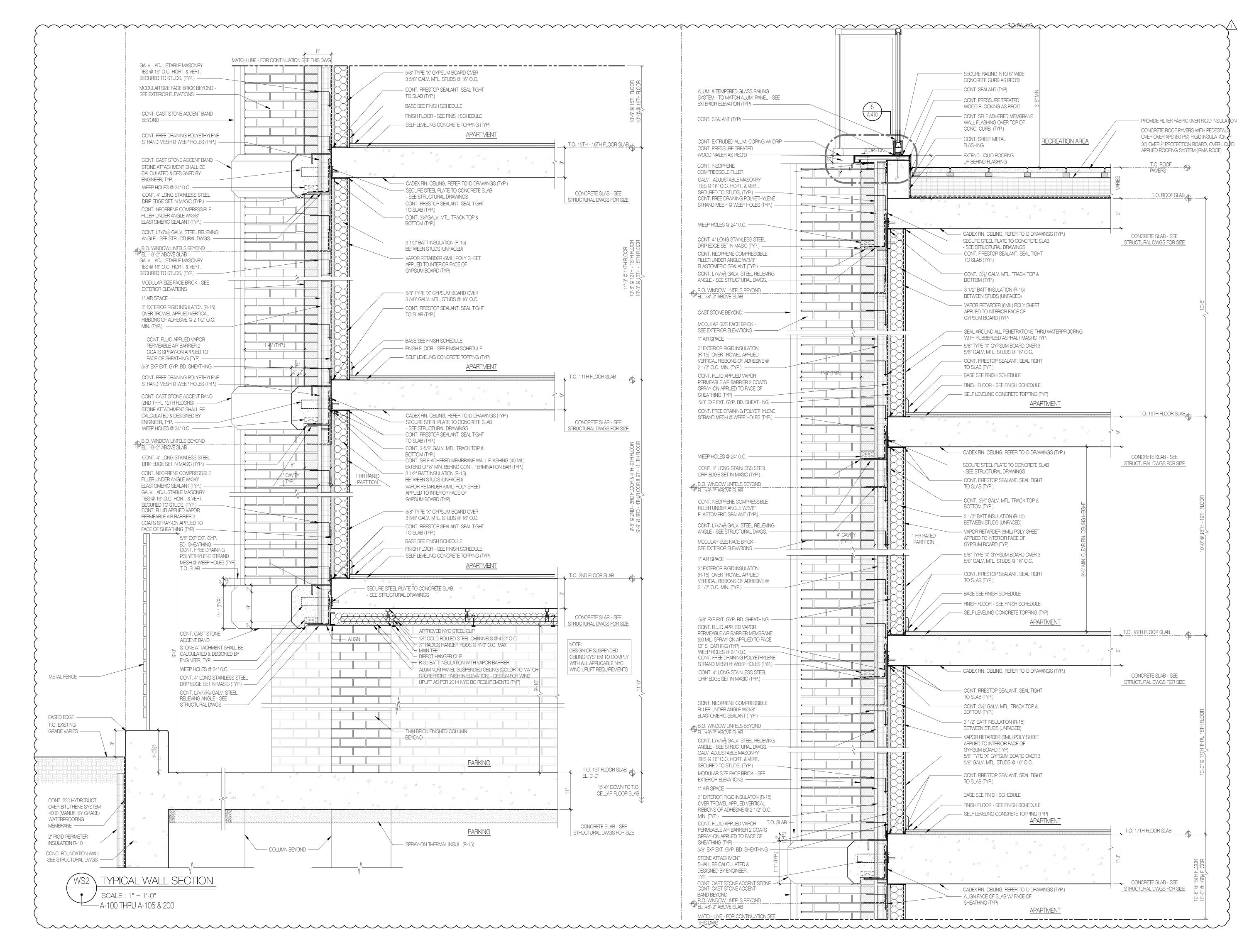
08.02.19 99% CONSTRUCTION SET

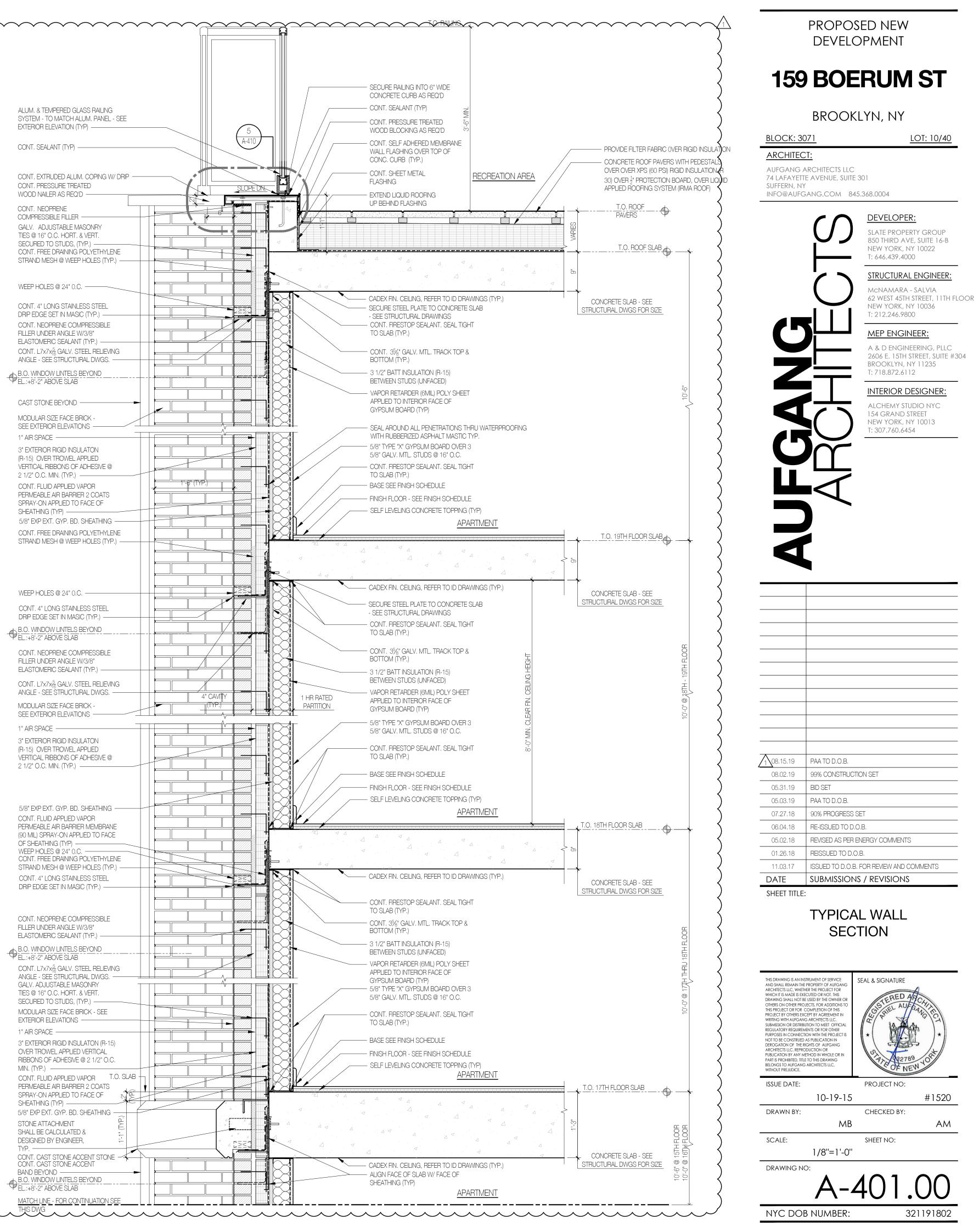
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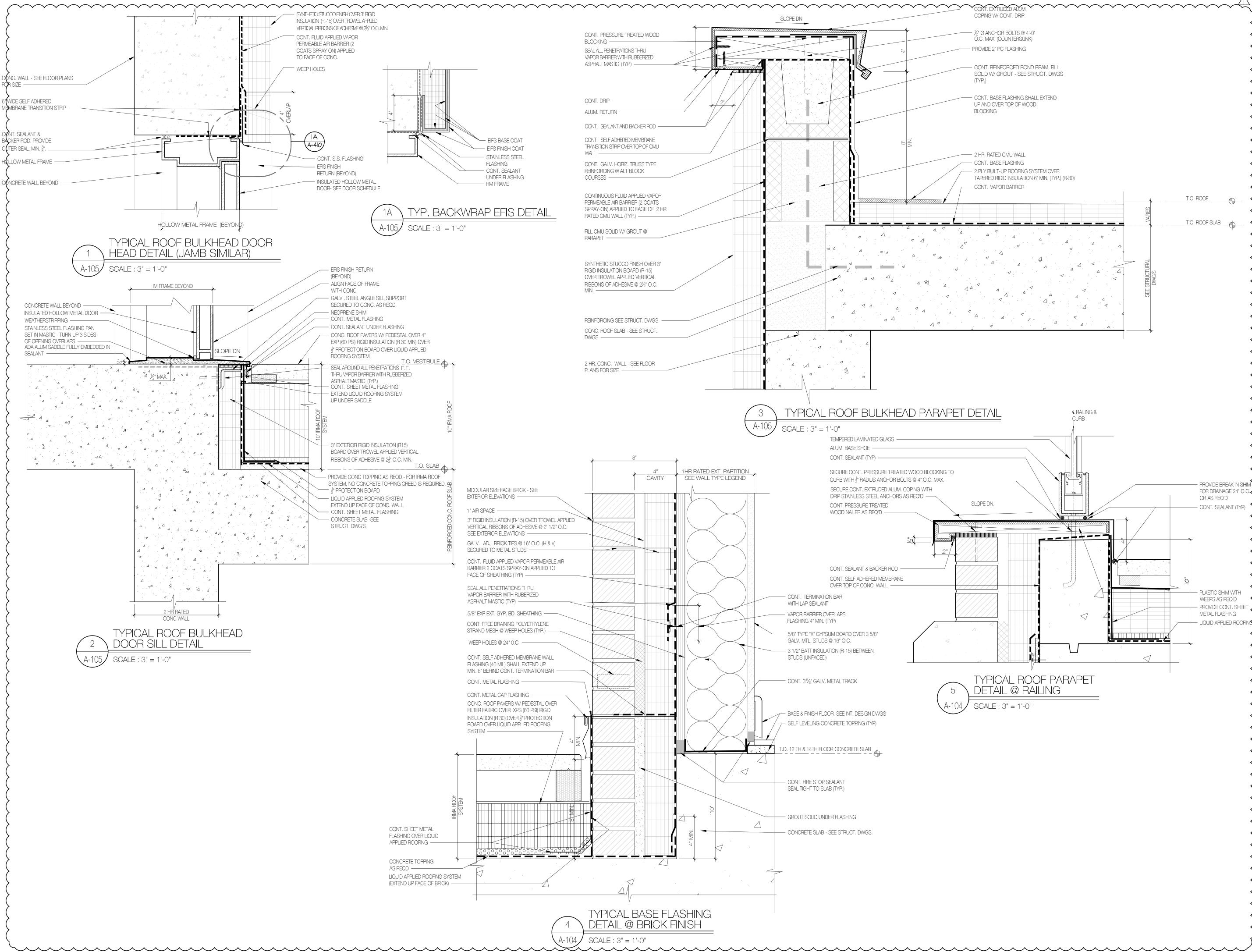
05.03.19 PAA TO D.O.B.

07.27.18 90% PROGRESS SET

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# **159 BOERUM ST**

# BROOKLYN, NY

LOT: 10/40

ARCHITECT:

BLOCK: 3071

AUFGANG ARCHITECTS LLC 74 LAFAYETTE AVENUE, SUITE 301

SUFFERN, NY INFO@AUFGANG.COM 845.368.0004

DEVELOPER:

SLATE PROPERTY GROUP

850 THIRD AVE, SUITE 16-B

STRUCTURAL ENGINEER:

62 WEST 45TH STREET, 11TH FLOOR

McNAMARA - SALVIA

NEW YORK, NY 10036

T: 212.246.9800

T: 718.872.6112

NEW YORK, NY 10022

T: 646.439.4000



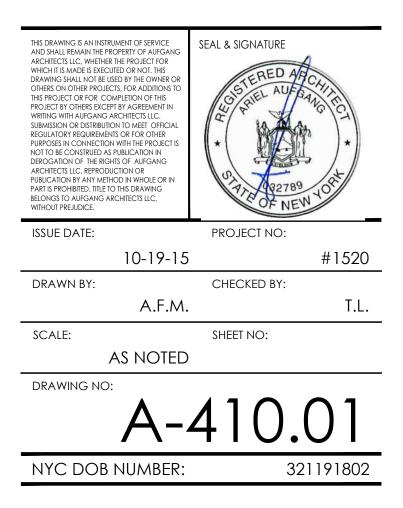
MEP ENGINEER: A & D ENGINEERING, PLLC 2606 E. 15TH STREET, SUITE #304 BROOKLYN, NY 11235

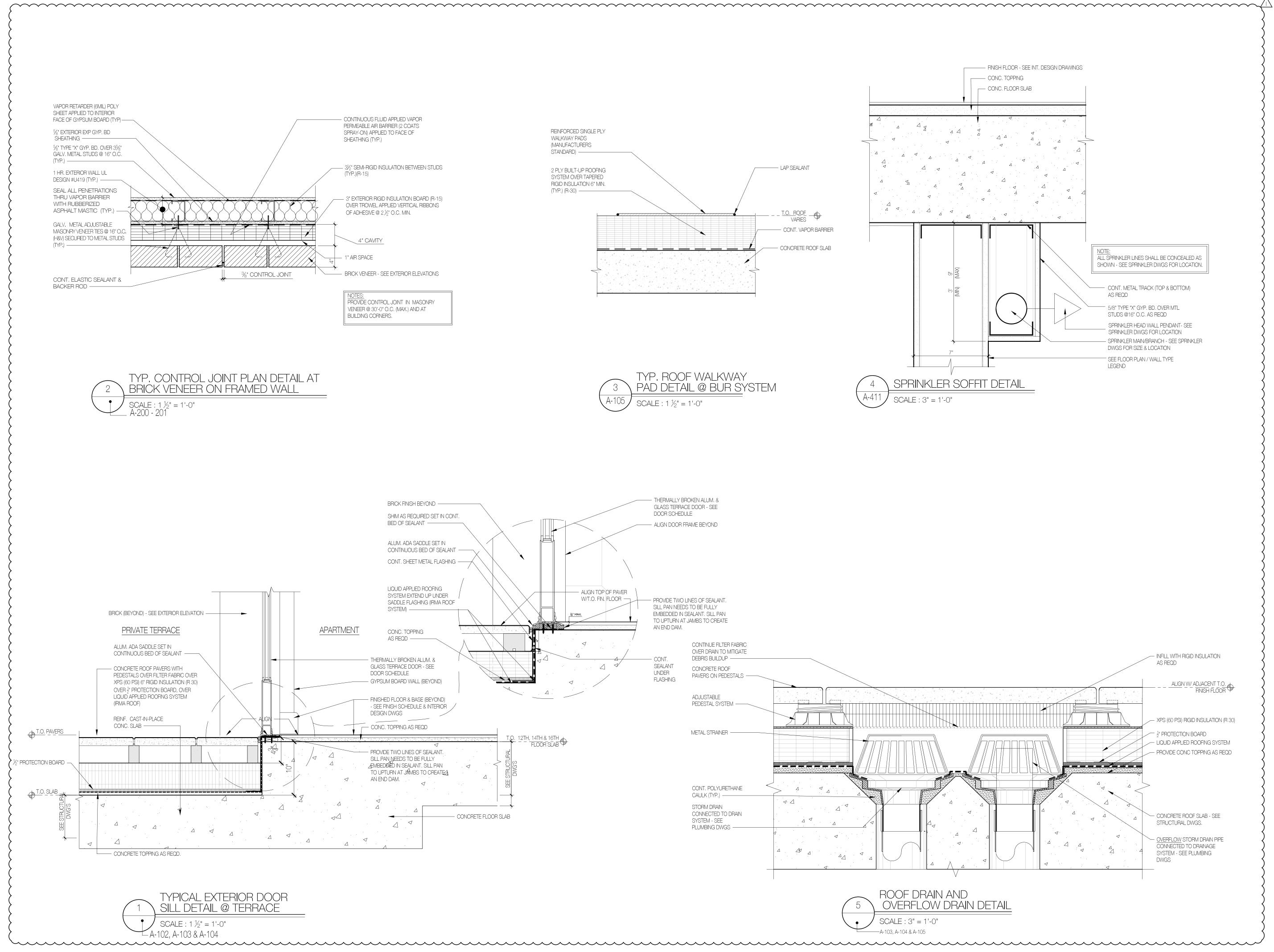
#### INTERIOR DESIGNER:

ALCHEMY STUDIO NYC 154 GRAND STREET NEW YORK, NY 10013 T: 307.760.6454

08.15.19	PAA TO D.O.B.
08.02.19	99% CONSTRUCTION SET
05.31.19	BID SET
05.03.19	PAA TO D.O.B.
07.27.18	90% PROGRESS SET
06.04.18	RE-ISSUED TO D.O.B.
09.29.17	REVISED AS PER DOB COMMENTS
09.15.17	80% PROGRESS SET
DATE	SUBMISSIONS / REVISIONS
SHEET TITLE	

MISC. DETAILS





# DEVELOPMENT

# **159 BOERUM ST**

PROPOSED NEW

# BROOKLYN, NY

#### BLOCK: 3071 ARCHITECT:

LOT: 10/40

AUFGANG ARCHITECTS LLC 74 LAFAYETTE AVENUE, SUITE 301 SUFFERN, NY INFO@AUFGANG.COM 845.368.0004

**DEVELOPER:** 



MEP ENGINEER: A & D ENGINEERING, PLLC 2606 E. 15TH STREET, SUITE #304 BROOKLYN, NY 11235 T: 718.872.6112

SLATE PROPERTY GROUP

850 THIRD AVE, SUITE 16-B

STRUCTURAL ENGINEER:

62 WEST 45TH STREET, 11TH FLOOR

McNAMARA - SALVIA

NEW YORK, NY 10036

T: 212.246.9800

NEW YORK, NY 10022

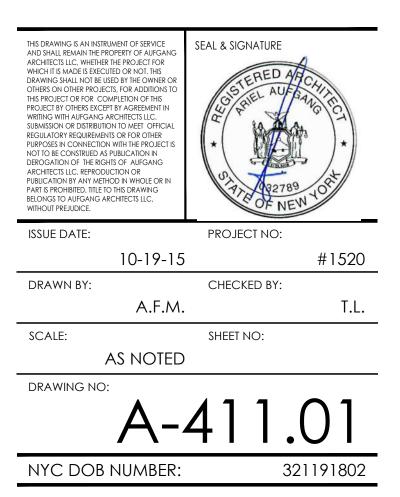
T: 646.439.4000

### INTERIOR DESIGNER:

ALCHEMY STUDIO NYC 154 GRAND STREET NEW YORK, NY 10013 T: 307.760.6454

08.15.19	PAA TO D.O.B.
08.02.19	99% CONSTRUCTION SET
05.31.19	BID SET
05.03.19	PAA TO D.O.B.
07.27.18	90% PROGRESS SET
06.04.18	RE-ISSUED TO D.O.B.
09.29.17	REVISED AS PER DOB COMMENTS
09.15.17	80% PROGRESS SET
DATE	SUBMISSIONS / REVISIONS

# MISC. DETAILS

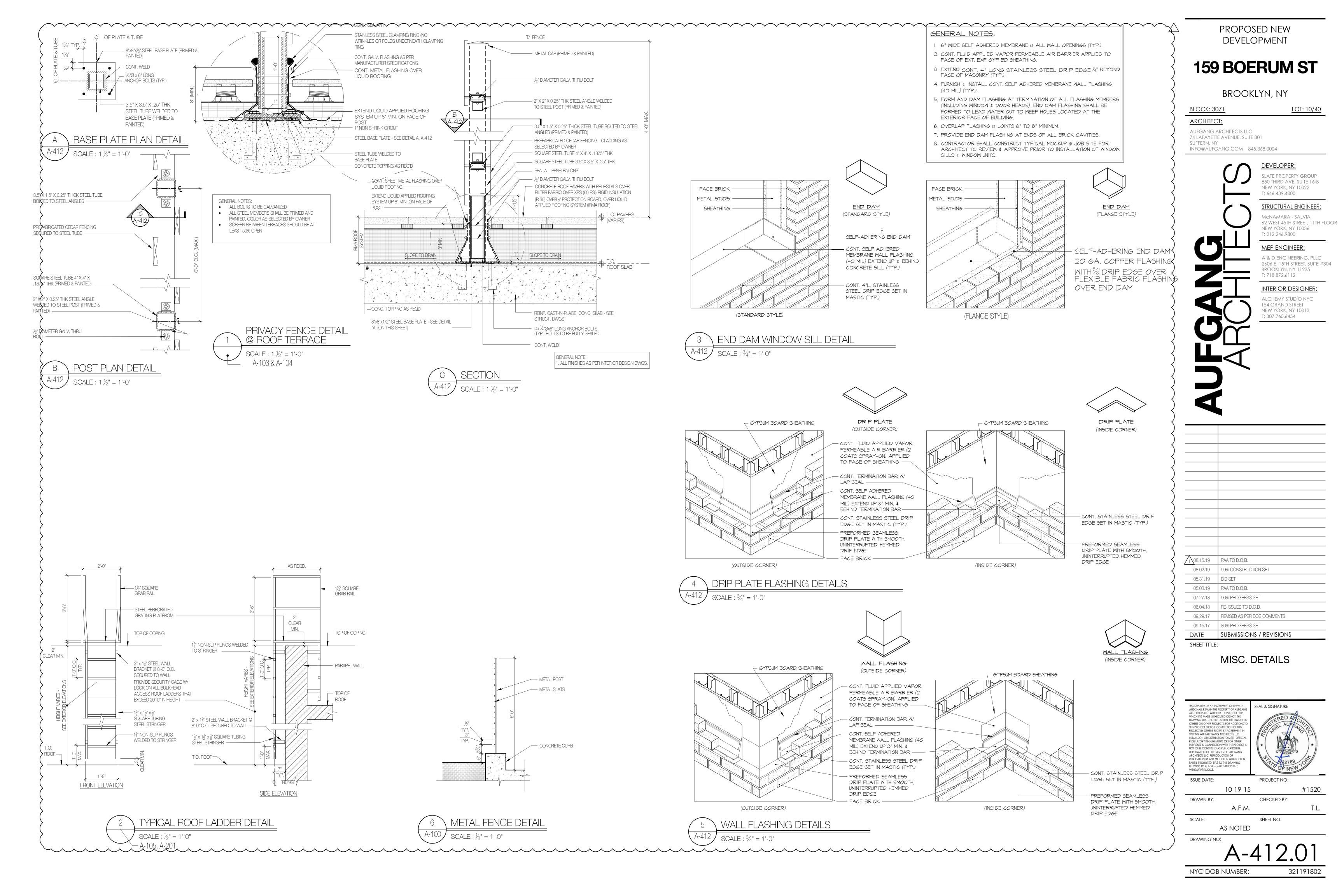


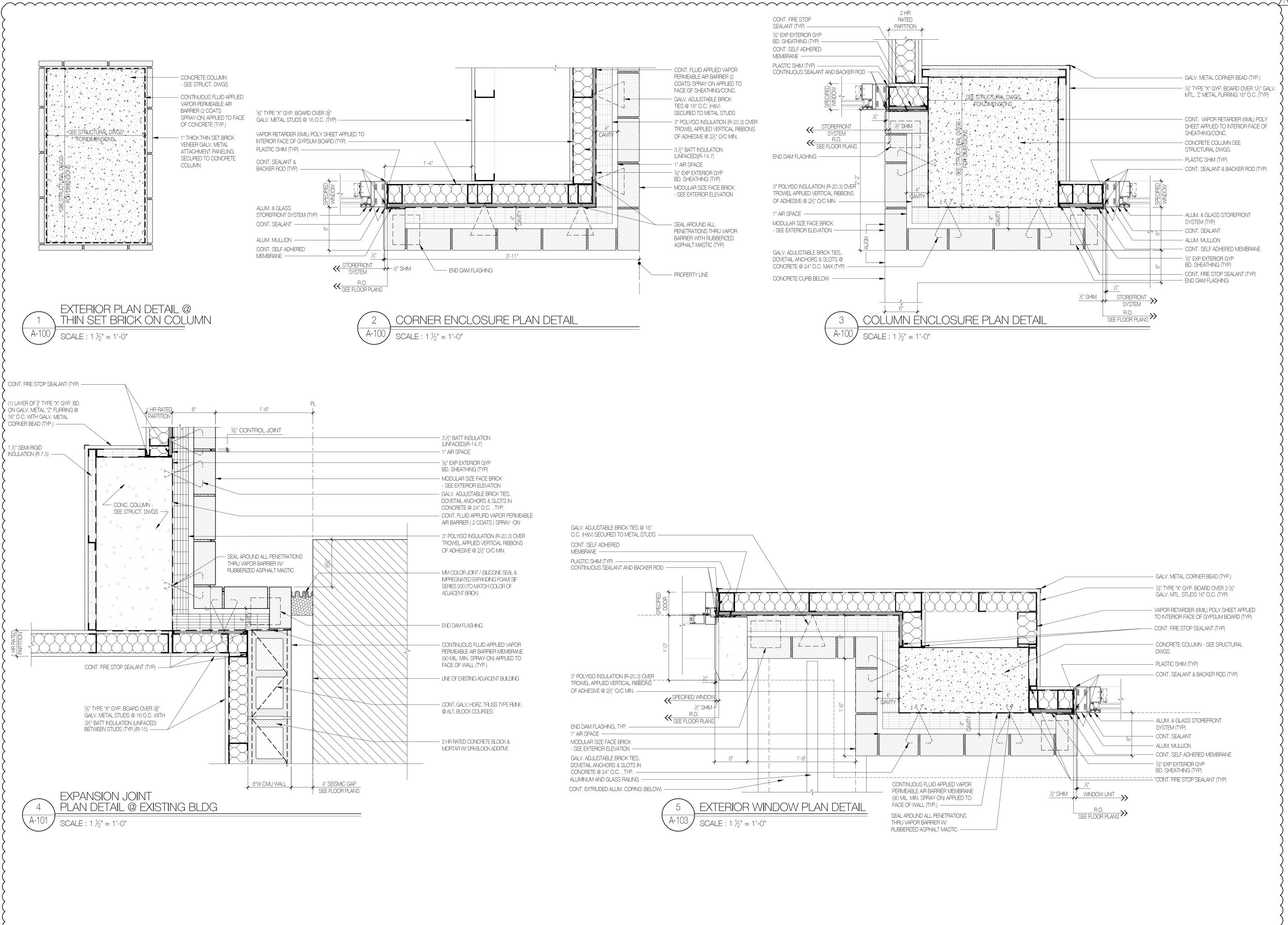
# - INFILL WITH RIGID INSULATION

- ¹/₂" PROTECTION BOARD
- LIQUID APPLIED ROOFING SYSTEM - PROVIDE CONC TOPPING AS REQD

- CONCRETE ROOF SLAB - SEE

- OVERFLOW STORM DRAIN PIPE CONNECTED TO DRAINAGE





#### PROPOSED NEW DEVELOPMENT **159 BOERUM ST** BROOKLYN, NY - GALV. METAL CORNER BEAD (TYP.) 5/3" TYPE "X" GYP. BOARD OVER 11/2" GALV <u>BLOCK:</u> 3071 MTL. 'Z' METAL FURRING 16" O.C. (TYP) ARCHITECT: - CONT. VAPOR RETARDER (6MIL) POLY AUFGANG ARCHITECTS LLC SHEET APPLIED TO INTERIOR FACE OF 74 LAFAYETTE AVENUE, SUITE 301 SHEATHING/CONC. SUFFERN, NY

- CONT. SEALANT & BACKER ROD (TYP) END DAM FLASHING

- CONCRETE COLUMN SEE STRUCTURAL DWGS. - PLASTIC SHIM (TYP)

- ALUM. & GLASS STOREFRONT SYSTEM (TYP) - CONT. SEALANT - ALUM. MULLION - CONT. SELF ADHERED MEMBRANE 5/8" EXP EXTERIOR GYP BD. SHEATHING (TYP) – CONT. FIRE STOP SEALANT (TYP)

## LOT: 10/40

INFO@AUFGANG.COM 845.368.0004



SLATE PROPERTY GROUP 850 THIRD AVE, SUITE 16-B NEW YORK, NY 10022 T: 646.439.4000

## STRUCTURAL ENGINEER:

McNAMARA - SALVIA 62 WEST 45TH STREET, 11TH FLOOR NEW YORK, NY 10036 T: 212.246.9800

### MEP ENGINEER:

A & D ENGINEERING, PLLC 2606 E. 15TH STREET, SUITE #304 BROOKLYN, NY 11235 T: 718.872.6112

### INTERIOR DESIGNER:

ALCHEMY STUDIO NYC 154 GRAND STREET NEW YORK, NY 10013 T: 307.760.6454

- GALV. METAL CORNER BEAD (TYP.) - 5%" TYPE "X" GYP. BOARD OVER 3 5%" GALV. MTL. STUDS 16" O.C. (TYP)

VAPOR RETARDER (6MIL) POLY SHEET APPLIED TO INTERIOR FACE OF GYPSUM BOARD (TYP) - CONT. FIRE STOP SEALANT (TYP)

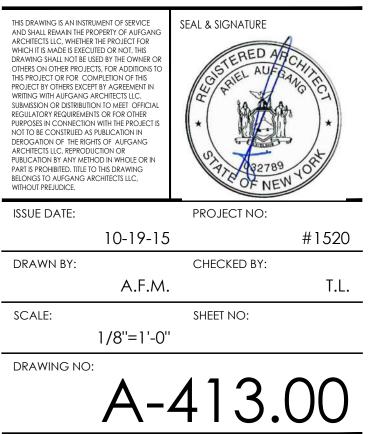
- CONCRETE COLUMN - SEE SRUCTURAL DWGS

- PLASTIC SHIM (TYP) - CONT. SEALANT & BACKER ROD (TYP)

- ALUM. & GLASS STOREFRONT SYSTEM (TYP) – CONT. SEALANT - ALUM. MULLION - CONT. SELF ADHERED MEMBRANE · 5/8" EXP EXTERIOR GYP BD. SHEATHING (TYP) 

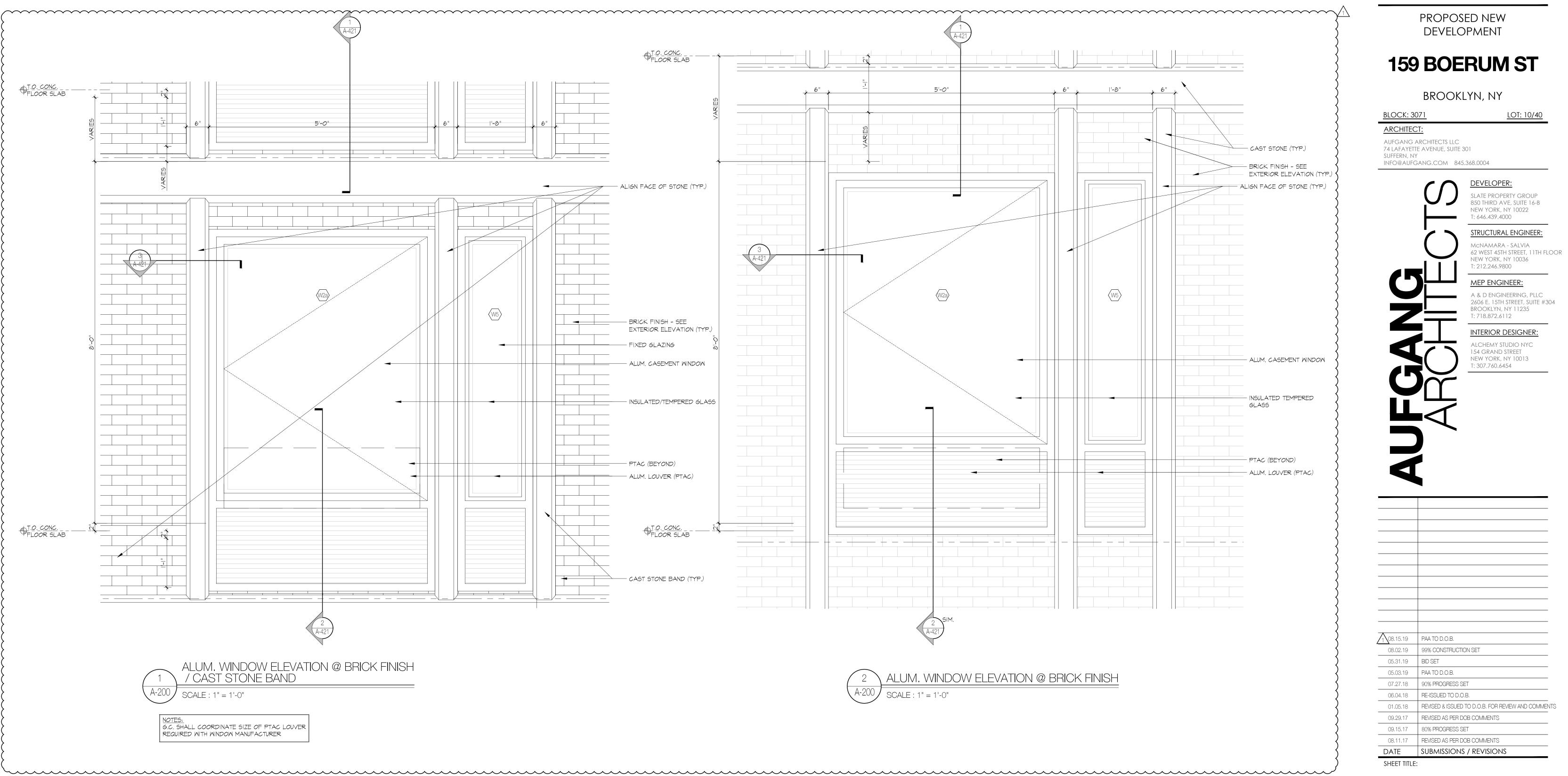
# 08.15.19 PAA TO D.O.B. 08.02.19 99% CONSTRUCTION SET 05.31.19 BID SET 05.03.19 PAA TO D.O.B. DATE SUBMISSIONS / REVISIONS SHEET TITLE:

# MISC. DETAILS



321191802

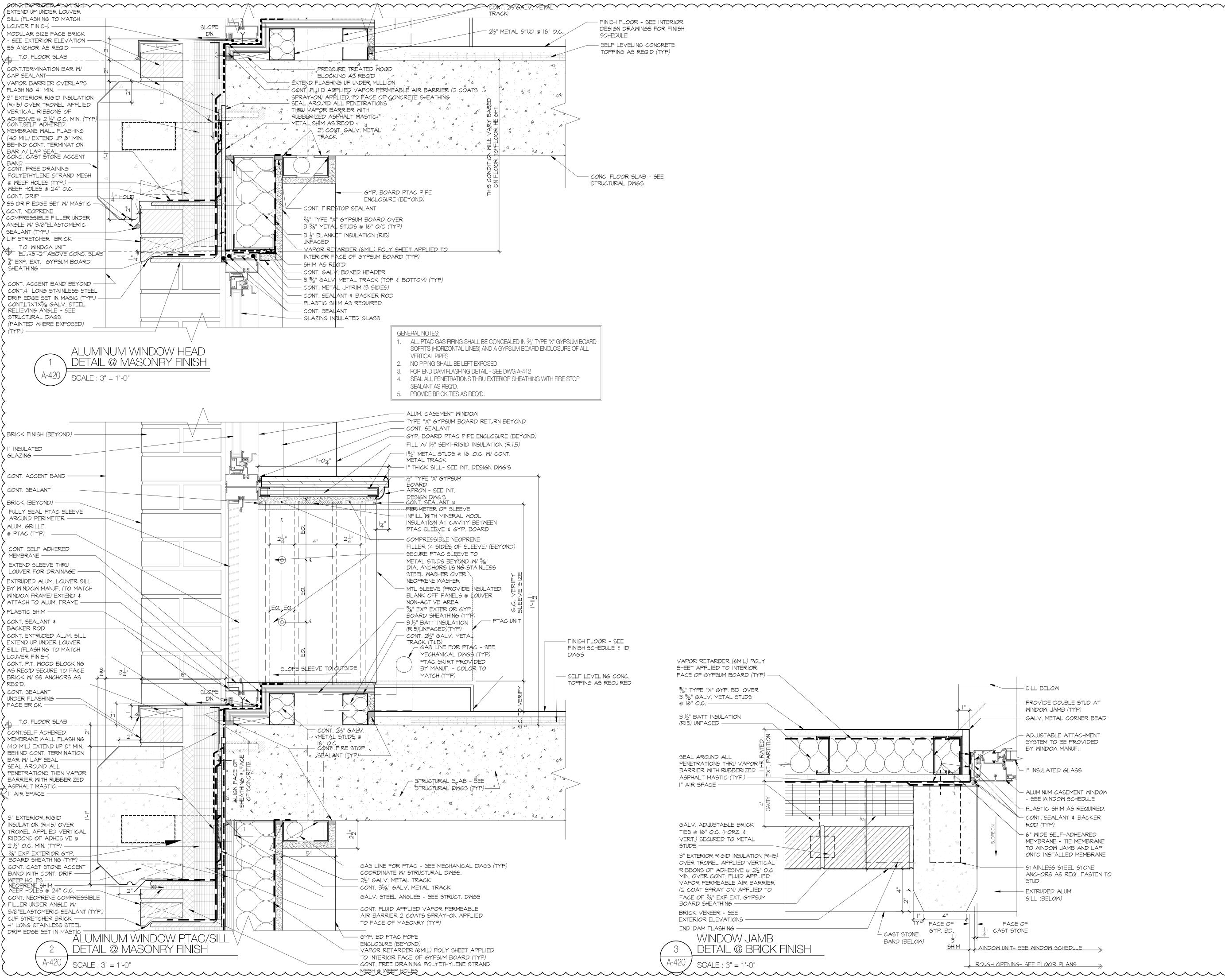
NYC DOB NUMBER:



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ISSUE DATE:	PROJECT NO:
10-19-15	5 #1520
DRAWN BY:	CHECKED BY:
A.F.M	. T.L.
SCALE:	SHEET NO:
AS NOTED	)
DRAWING NO:	
A-	420.01
NYC DOB NUMBER:	321191802

TYPICAL WINDOW

ELEVATIONS



# **159 BOERUM ST**

# BROOKLYN, NY

#### BLOCK: 3071 ARCHITECT:

LOT: 10/40

**DEVELOPER:** 

AUFGANG ARCHITECTS LLC 74 LAFAYETTE AVENUE, SUITE 301 SUFFERN, NY INFO@AUFGANG.COM 845.368.0004



T: 646.439.4000 STRUCTURAL ENGINEER: McNAMARA - SALVIA

SLATE PROPERTY GROUP

850 THIRD AVE, SUITE 16-B

NEW YORK, NY 10022

62 WEST 45TH STREET, 11TH FLOOR NEW YORK, NY 10036 T: 212.246.9800

#### MEP ENGINEER:

A & D ENGINEERING, PLLC 2606 E. 15TH STREET, SUITE #304 BROOKLYN, NY 11235 T: 718.872.6112

#### **INTERIOR DESIGNER:**

ALCHEMY STUDIO NYC 154 GRAND STREET NEW YORK, NY 10013 T: 307.760.6454

- SILL BELOW

- PROVIDE DOUBLE STUD AT WINDOW JAMB (TYP) - GALV. METAL CORNER BEAD

ADJUSTABLE ATTACHMENT SYSTEM TO BE PROVIDED BY WINDOW MANUF.

INSULATED GLASS

ALUMINUM CASEMENT WINDOW - SEE WINDOW SCHEDULE - PLASTIC SHIM AS REQUIRED. - CONT. SEALANT & BACKER ROD (TYP)

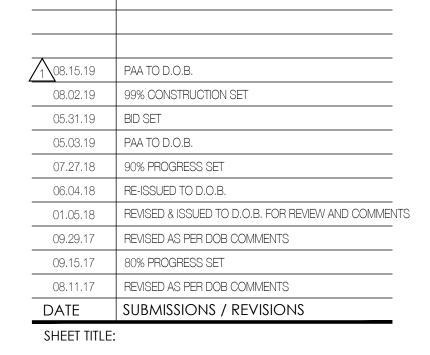
- 6" WIDE SELF-ADHEARED MEMBRANE - TIE MEMBRANE TO WINDOW JAMB AND LAP ONTO INSTALLED MEMBRANE

- STAINLESS STEEL STONE ANCHORS AS REQ'. FASTEN TO STUD. 

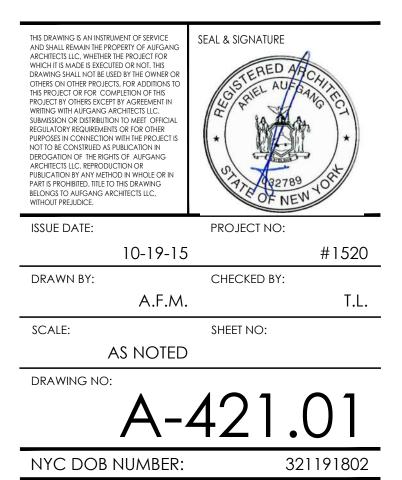
SILL (BELOW)

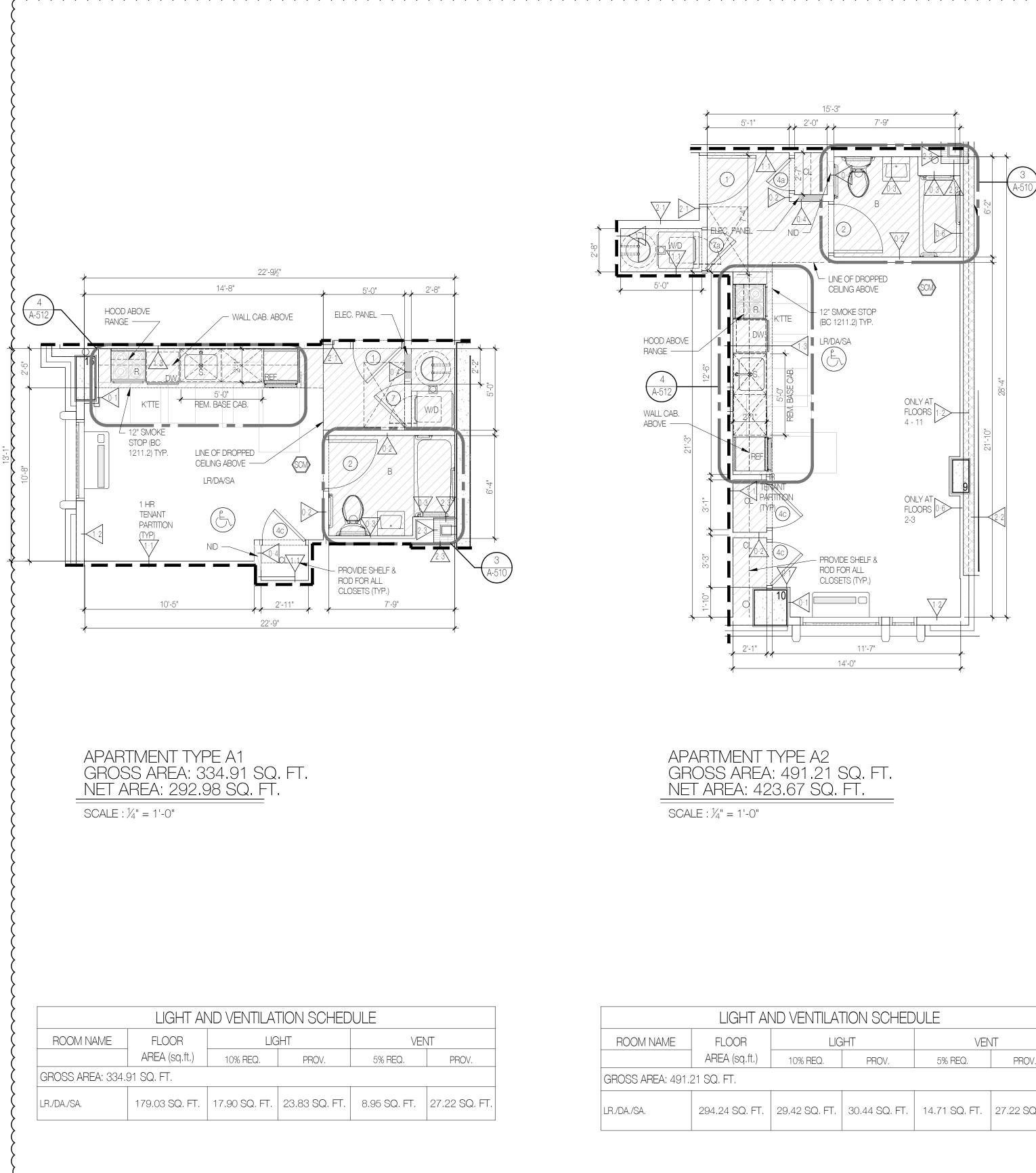
WINDOW UNIT- SEE WINDOW SCHEDULE

ROUGH OPENING- SEE FLOOR PLANS



**TYPICAL WINDOW** DETAILS





WALL TYPE LEGEND: NON RATED

- FURRING AT INTERIOR CMU WALL (1) LAYER 5/8" TYPE "X" GYPSUM BOARD OVER 1½" METAL GALVANIZED STUDS @ 16" O.C.  $\sqrt{0.2}$  <u>TYPICAL PARTITION</u> - (1) LAYER 5/8" TYPE "X" GYPSUM BOARD ON EACH SIDE OF 2 1/2" METAL STUDS @ 16" O.C.
- $\sqrt{3}$  BATHROOM CHASE WALL PARTITION (1) LAYER  $\frac{5}{3}$ " TYPE "X" WATER RESISTANT GYPSUM BOARD ONE SIDE OF 35/8" METAL STUDS @ 16" O.C. *SEE INTERIOR DESIGN DRAWINGS FOR WALL THICKNESSES.
- PARTITION (1) LAYER OF 5%" TYPE "X" GYPSUM BOARD, ON EACH SIDE OF 3 5%" METAL STUDS @ 16" O.C. (@ APARTMENT ELECTRICAL PANEL/ NETWORK INTERFACE DEVICE PANEL)
- Image: Second stateFURRING AT INTERIOR CMU WALL (PUBLIC CORRIDOR SIDE)- (1) LAYER %" TYPE "X" GYPSUM BOARDOVER 7/8" GALV. METAL STUDS @ 16 O.C.
- FURRING AT EXTERIOR CMU WALL- (1) LAYER %" TYPE "X" GYPSUM BOARD ON 1½" GALV. METAL ZFURRING @ 16 O.C. W/ 1½" SEMI-RIGID INSULATION (R7.5) UNFACED

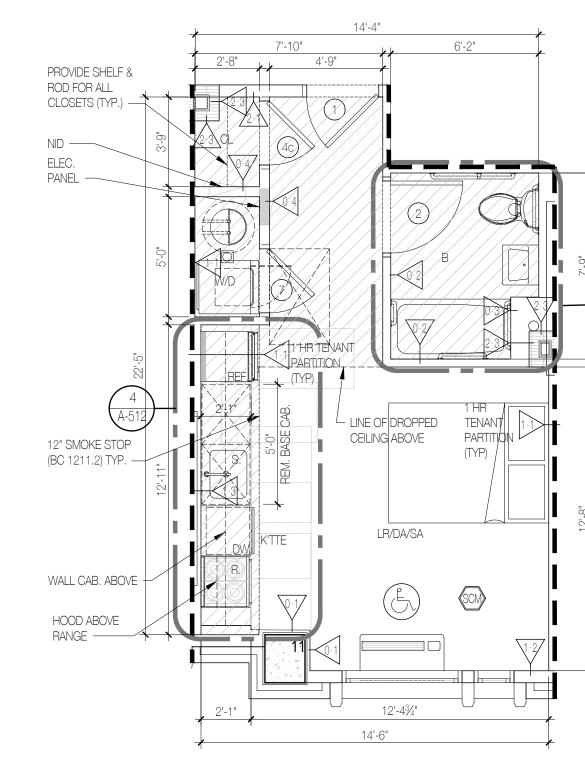
I HOUR RATED

TENANT SEPARATION PARTITION - (1) LAYER OF  $\frac{5}{8}$ " TYPE "X" GYPSUM BOARD ON (1) SIDE, (2) LAYERS OF  $\frac{5}{8}$ "  $\frac{1.1}{1.1}$  Type "X" GYPSUM BOARD ON OTHER SIDE OF 3  $\frac{5}{8}$ " METAL STUDS @ 16" O.C. WITH 3  $\frac{1}{2}$ " SOUND ATTENUATION INSULATION. EXTEND STUDS & GYPSUM BOARD UP TO UNDERSIDE OF SLAB & SEAL TIGHT TO UNDERSIDE OF SLAB AND/OR ROOF DECK W/ CONT. FIRESTOP SEALANT& FIRESAFING INSULATION (GA FILE #WP-1052) (STC 50-54)

EXTERIOR PARTITION - 5%" TYPE "X" GYPSUM BOARD, (INSIDE) 5%" EXP EXTERIOR GYPSUM BOARD SHEATHING (OUTSIDE)  $2^{1-2}$  OVER  $35_{8}^{+}$  METAL STUDS @ 16" O.C. WITH  $32_{2}^{+}$  BATT INSULATION (UNFACED) (R-15) (UL #U419)

TENANT SEPARATION CHASE WALL - (2) ROWS OF (1) LAYER %" TYPE "X" GYPSUM BOARD ON ONE SIDE OF SLAB OR ROOF 2/2" METAL STUDS @ 16" O.C. EXTEND GYPSUM BOARD & STUDS UP TO UNDERSIDE OF SLAB OR ROOF SLAB. SEAL TIGHT TO SLAB WITH CONT. FIRESTOP SEALANT. SEAL ALL PENETRATIONS THRU CHASE WALL WITH FIRESAFING INSULATION AND CONT. FIRESTOP SEALANT AS REQ. PROVIDE HORIZONTAL 2%"MTL STUD BRACING @ 48" O.C. MAX. (UL#V442) PROVIDE INSULATION AS REQUIRED TO ACHIEVE A MIN. STC RATNG OF 50)

2 HOUR RATE INTERIOR PARTITION - (2) LAYERS 5/8" TYPE "X" GYPSUM BOARD ON EACH SIDE 3 5/8" METAL STUDS @ 16" C, WITH 3½" SOUND ATTENUATION INSULATION, EXTEND GYPSUM BOARD & STUDS UP TO UNDERSIDE OF FLOOR DECK OR ROOF DECK. SEAL TIGHT TO DECK W/ CONT. FIRESTOP SEALANT & FIRESAFING. (GA FILE #WP-1522 STC 55-59).



=	1	'-	0"	
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GHT AND VENTI	ATION SCHEDI	

OOR	LIG	ίΗT	VENT			
A (sq.ft.)	10% REQ.	PROV.	5% REQ.	PROV.		
-T,						
4 SQ. FT.	29.42 SQ. FT.	30.44 SQ. FT.	14.71 SQ. FT.	27.22 SQ. FT.		

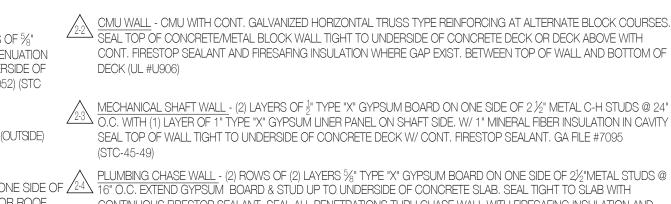
	LIGHT AND VENTILATION SCHEDULE							
ROOM NAME	FLOOR	FLOOR LIGHT						
	AREA (sq.ft.)	10% REQ.	PROV.	5% REQ.				
GROSS AREA: 359.	GROSS AREA: 359.27 SQ. FT.							
LR./DA./SA.	203.02 SQ. FT.	20.30 SQ. FT.	30.44 SQ. FT.	10.15 SQ. F				

APARTMENT TYPE A3

SCALE :  $\frac{1}{4}$ " = 1'-0"

NET AREA: 321.38 SQ. FT

GROSS AREA: 359.27 SQ. FT.



 $\bigwedge$   $\underline{}$  <u>CMU WALL</u> - CMU WITH CONT. GALVANIZED HORIZONTAL TRUSS TYPE REINFORCING AT ALTERNATE BLOCK COURSES. GENERAL NOTES: SEAL TOP OF CONCRETE/METAL BLOCK WALL TIGHT TO UNDERSIDE OF CONCRETE DECK OR DECK ABOVE WITH CONT. FIRESTOP SEALANT AND FIRESAFING INSULATION WHERE GAP EXIST. BETWEEN TOP OF WALL AND BOTTOM OF

 $\underbrace{ \frac{2}{2}}_{2:3} \underbrace{ \frac{\text{Mechanical Shaft Wall}_{2}}{\text{O.C. WITH (1) LAYER OF 1" TYPE "X" GYPSUM BOARD ON ONE SIDE OF 2½" METAL C-H STUDS @ 24" 3. \\ \underbrace{ \frac{2}{2}}_{2:3} \underbrace{ \frac{2}{2}}_{3:2} \underbrace{ \frac$ SEAL TOP OF WALL TIGHT TO UNDERSIDE OF CONCRETE DECK W/ CONT. FIRESTOP SEALANT. GA FILE #7095

CONTINUOUS FIRESTOP SEALANT. SEAL ALL PENETRATIONS THRU CHASE WALL WITH FIRESAFING INSULATION AND CONTINUOUS FIRESTOP SEALANT AS REQUIRED PROVIDE HORIZONTAL 2½" MTL. STUD BRACING @ 48" O.C. MAX (UL #V442) (PROVIDED INSULATION AS REQUIRED TO ACHIEVE A MIN. STC RATING OF 50)

**3 HOUR RATED** 

(1) LAYER ½" TYPE "X" GYPSUM BOARD OVER ½" METAL HAT CHANNELS @ 24" O.C. OVER 2 HR RATED CONCRETE BLOCK WALL WITH CONT. GALVANIZED HORIZONTAL TRUSS TYPE REINFORCING AT ALTERNATE COURSES. SEAL TOP OF CONCRETE BLOCK WALL TIGHT TO UNDERSIDE OF SLAB ABOVE WITH CONT. FIRESTOP SEALANT AND FIRESAFING INSULATION WHERE A GAP EXISTS BETWEEN TOP OF WALL AND BOTTOM OF CONCRETE DECK (UL #U914) (PROVIDE STC RATING OF 50-54 AT COMPACTOR CHUTE ENCLOSURE ADJACENT TO DWELLING UNITS)

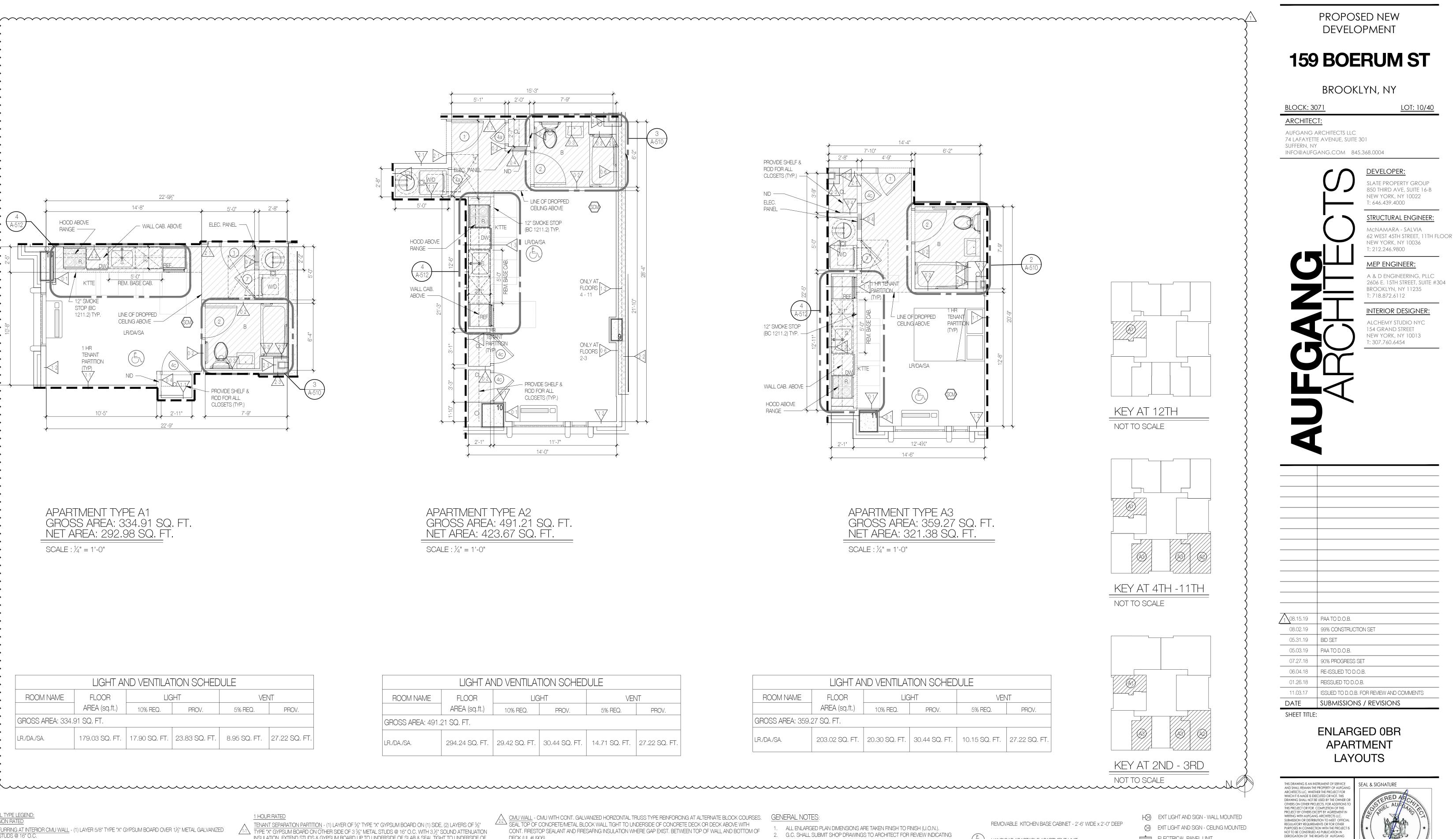
- ALL ENLARGED PLAN DIMENSIONS ARE TAKEN FINISH TO FINISH (U.O.N.). 2. G.C. SHALL SUBMIT SHOP DRAWINGS TO ARCHITECT FOR REVIEW INDICATING SIZE, GAUGE AND SPACING OF ALL METAL STUDS AND REQUIRED METAL BOXED
- HEADERS SIGNED AND SEALED BY A NYS LICENSED ENGINEER AS PER NYCBC 1107.2.8, AT THE OPTION OF THE OWNER, LAUNDRY EQUIPMENT CONFORMING TO THIS SECTION WITHIN THE DWELLING UNIT OR SLEEPING UNIT MAY BE PROVIDED AT THE TIME A PERSON WITH PHYSICAL DISABILITIES TAKES OCCUPANCY OF THE UNIT, OR WITHIN 10 DAYS OF THE DATE THE REQUEST IS MADE BY A PERSON WITH PHYSICAL DISABILITIES, WHICHEVER IS LATER, AT THE
- OWNER'S EXPENSE. WATER CURTAIN TYPE SPRINKLER HEADS PROVIDED ON ALL FLOORS ALL FURNITURE IS FOR REFERENCE ONLY. PLEASE SEE ID DRAWINGS FOR MORE INFORMATION.

6. 6'-6" MIN. CLEAR OPENING UNDER SMOKESTOP

LEGEND:

- CONCRETE FOUNDATION WALL
- CONCRETE BLOCK WALL 2HR FIRE RATED GYPSUM BOARD PARTITION - SEE PLAN FOR SIZE.





- (L) HANDICAP ADAPTABLE APARTMENT UNIT
- PARTITION SEE WALL TYPE LEGEND
- 5'-0" DIAMETER CLEAR HANDICAP FLOOR TURNING SPACE.
- "T" FLOOR TURNING SPACE
- 30" x 48" CLEAR FLOOR SPACE
- FIRE RATED SHAFT WALL.
- (X) DOOR & FRAME SEE DOOR SCHEDULE DRAWING A-600
- KOM HARDWIRED CARBON MONOXIDE DETECTOR (BC 907) NO MORE THAN 15FT AWAY FROM BEDROOM DOORS



EXIT LIGHT AND SIGN - CEILING MOUNTED

ARCHITECTS LLC. REPRODUCTION OR PUBLICATION BY ANY METHOD IN WHOLE OR IN PART IS PROHIBITED. TITLE TO THIS DRAWING

10-19-15

1/4"=1'-0"

M.B.

PROJECT NO:

CHECKED BY:

SHEET NO:

A-500

#1520

A.F.M. / T.L.

321191802

BELONGS TO AUFGANG ARCHITECTS LLC, WITHOUT PREJUDICE.

ISSUE DATE:

DRAWN BY:

DRAWING NO:

NYC DOB NUMBER:

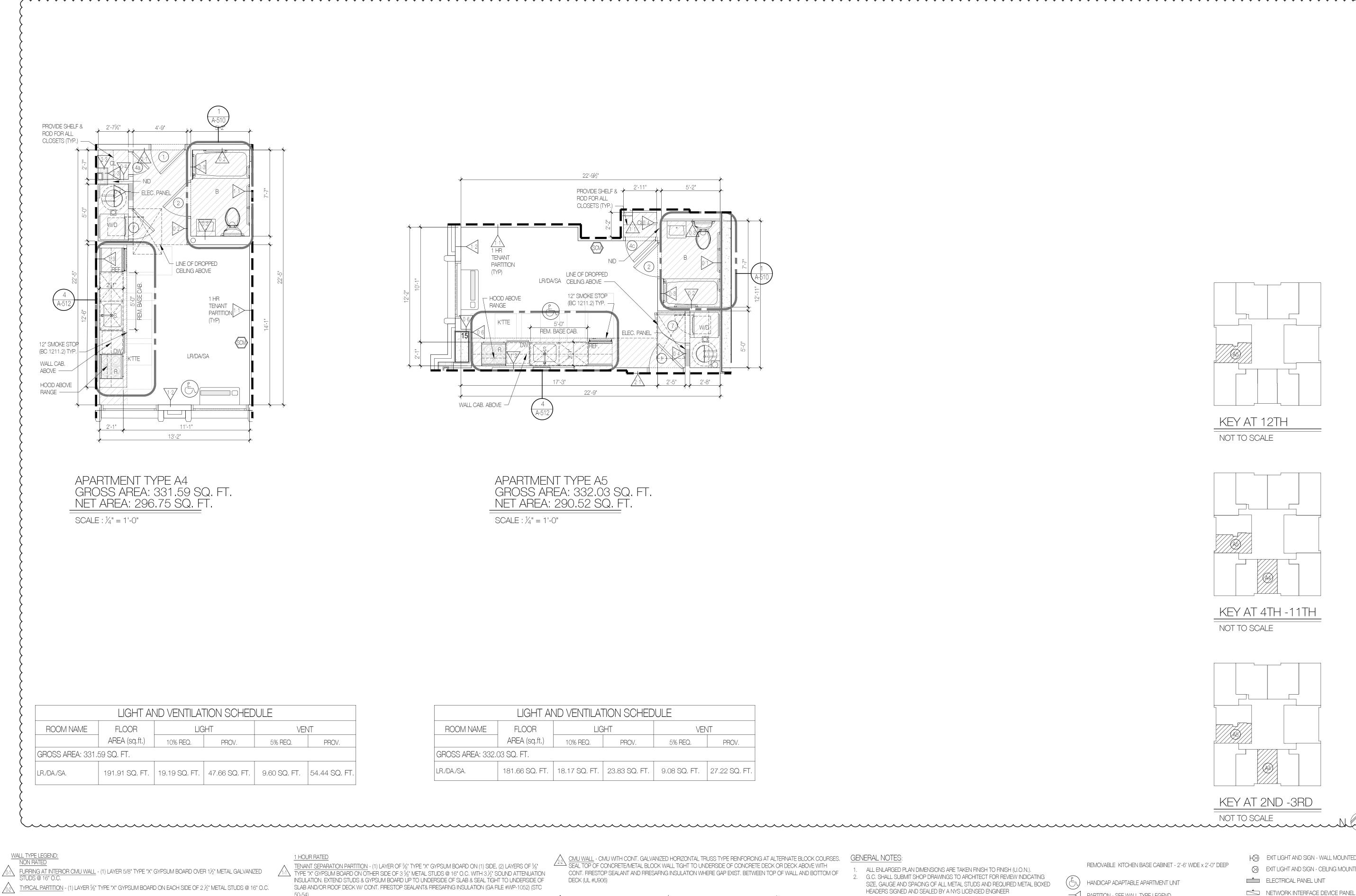
SCALE:

- ELECTRICAL PANEL UNIT
- NETWORK INTERFACE DEVICE PANEL
- SUSPENDED GYPSUM BOARD
- COLUMN & COLUMN NUMBER

#### BATHROOM DOORS & FRAMES SHALL BE PROVIDED W/ MORTISED HINGE & LATCH BLANKS TO PERMIT FUTURE REVERSAL OF / DOOR ON THE SAME FRAME

PARKING STACKER UNIT

 $(\mathbf{x})$ 



- BATHROOM CHASE WALL PARTITION (1) LAYER  $\frac{5}{8}$ " TYPE "X" WATER RESISTANT GYPSUM BOARD ONE SIDE OF 35%" METAL STUDS @ 16" O.C. *<u>SEE INTERIOR DESIGN DRAWINGS FOR WALL THICKNESSES.</u>
- A PARTITION (1) LAYER OF 5%" TYPE "X" GYPSUM BOARD, ON EACH SIDE OF 3 5%" METAL STUDS @ 16" O.C. (@ APARTMENT ÉLECTRICAL PANEL/ NETWORK INTERFACE DEVICE PANEL)
- Image: Description of the second systemImage: Description of the second system</
- 50-54)
- EXTERIOR PARTITION 5%" TYPE "X" GYPSUM BOARD, (INSIDE) 5%" EXP EXTERIOR GYPSUM BOARD SHEATHING (OUTSIDE)  $2^{1-2}$  OVER  $3\frac{5}{8}$ " METAL STUDS @ 16" O.C. WITH  $3\frac{1}{2}$ " BATT INSULATION (UNFACED) (R-15) (UL #U419)
- TENANT SEPARATION CHASE WALL (2) ROWS OF (1) LAYER 5%" TYPE "X" GYPSUM BOARD ON ONE SIDE OF 2/2" METAL STUDS @ 16" O.C. EXTEND GYPSUM BOARD & STUDS UP TO UNDERSIDE OF SLAB OR ROOF SLAB. SEAL TIGHT TO SLAB WITH CONT. FIRESTOP SEAL AND SLAB. SEAL TIGHT TO SLAB WITH CONT. FIRESTOP SEALANT. SEAL ALL PENETRATIONS THRU CHASE WALL WITH FIRESAFING INSULATION AND CONT. FIRESTOP SEALANT AS REQ. PROVIDE HORIZONTAL 21/11/11 STUD BRACING @ 48" O.C. MAX. (UL#V442) PROVIDE INSULATION AS REQUIRED TO ACHIEVE A MIN. STC RATNG OF 50)
- HOUR BATE INTERIOR PARTITION - (2) LAYERS 5/8" TYPE "X" GYPSUM BOARD ON EACH SIDE 3 5/6" METAL STUDS @ 16" .C. WITH 3½" SOUND ATTENUATION INSULATION, EXTEND GYPSUM BOARD & STUDS UP TO UNDERSIDE OF FLOOR DECK OR ROOF DECK. SEAL TIGHT TO DECK W/ CONT. FIRESTOP SEALANT & FIRESAFING. (GA FILE #WP-1522 STC 55-59).

LIGHT AND VENTILATION SCHEDULE							
LOOR	LIG	ίΗT	VENT				
EA (sq.ft.)	10% REQ.	PROV.	5% REQ.	PROV.			

FT. 66 SQ. FT. 18.17 SQ. FT. 23.83 SQ. FT. 9.08 SQ. FT. 27.22 SQ. FT.	EA (sq.ft.)	10% REQ.	PROV.	5% REQ.	PROV.
66 SQ. FT. 18.17 SQ. FT. 23.83 SQ. FT. 9.08 SQ. FT. 27.22 SQ. FT.	FT.				
	36 SQ. FT.	18.17 SQ. FT.	23.83 SQ. FT.	9.08 SQ. FT.	27.22 SQ. FT.

CMU WALL - CMU WITH CONT. GALVANIZED HORIZONTAL TRUSS TYPE REINFORCING AT ALTERNATE BLOCK COURSES. SEAL TOP OF CONCRETE/METAL BLOCK WALL TIGHT TO UNDERSIDE OF CONCRETE DECK OR DECK ABOVE WITH CONT. FIRESTOP SEALANT AND FIRESAFING INSULATION WHERE GAP EXIST. BETWEEN TOP OF WALL AND BOTTOM OF

 $\frac{1}{2\cdot 3} \frac{\text{MECHANICAL SHAFT WALL}}{\text{O.C. WITH (1) LAYER OF 1" TYPE "X" GYPSUM BOARD ON ONE SIDE OF 2½" METAL C-H STUDS @ 24" 3. 0. 0. WITH (1) LAYER OF 1" TYPE "X" GYPSUM LINER PANEL ON SHAFT SIDE. W/ 1" MINERAL FIBER INSULATION IN CAVITY$ SEAL TOP OF WALL TIGHT TO UNDERSIDE OF CONCRETE DECK W/ CONT. FIRESTOP SEALANT. GA FILE #7095 (STC-45-49)

CONTINUOUS FIRESTOP SEALANT AS REQUIRED PROVIDE HORIZONTAL 21/2" MTL. STUD BRACING @ 48" O.C. MAX (UL #V442) (PROVIDED INSULATION AS REQUIRED TO ACHIEVE A MIN. STC RATING OF 50) **3 HOUR RATE** ) LAYER 1/2" TYPE "X" GYPSUM BOARD OVER 7/8" METAL HAT CHANNELS @ 24" O.C. OVER 2 HR RATED CONCRETE

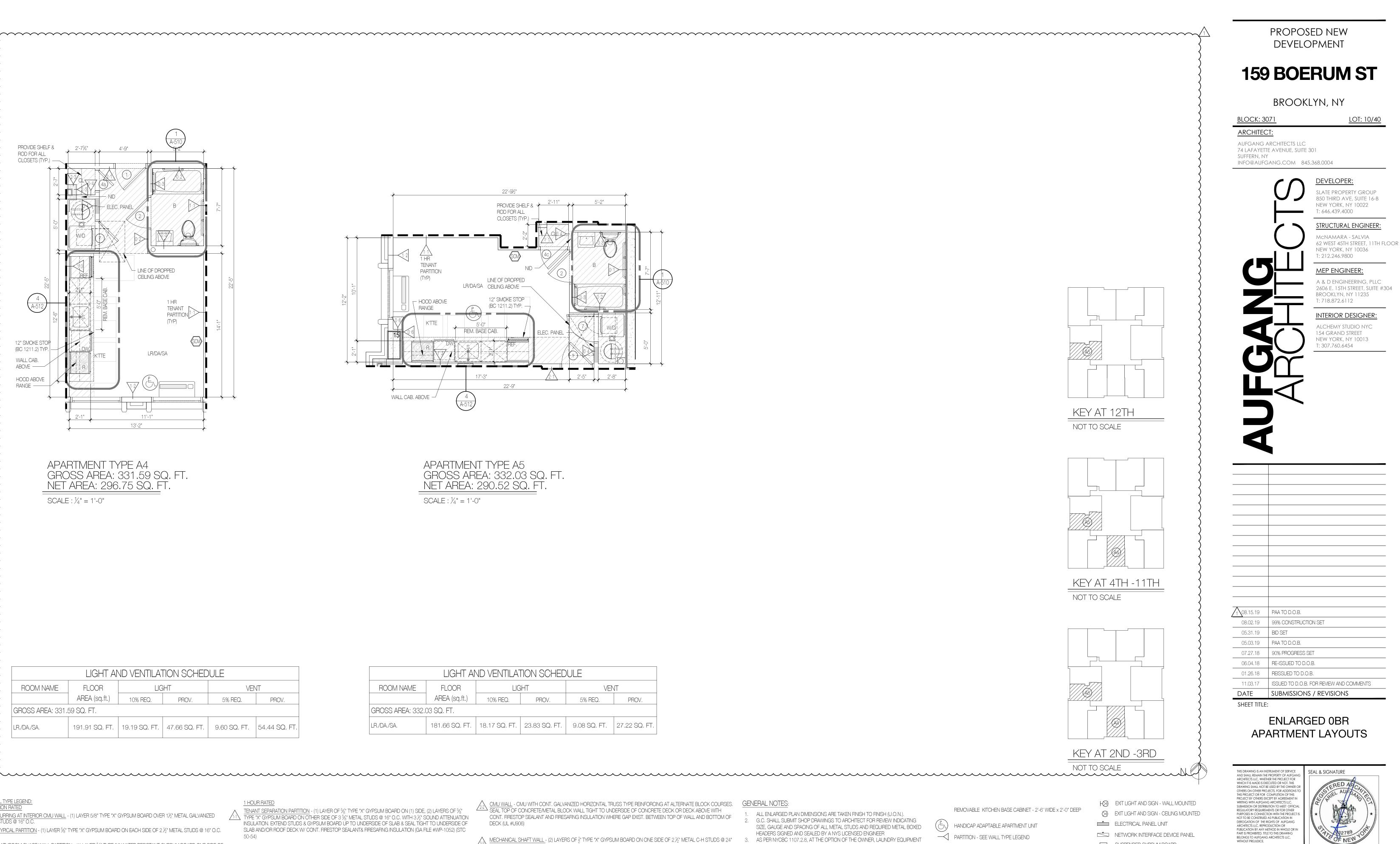
 $\mathbb{Z}^{3,1}$  block wall with cont. Galvanized horizontal truss type reinforcing at alternate courses. Seal top OF CONCRETE BLOCK WALL TIGHT TO UNDERSIDE OF SLAB ABOVE WITH CONT. FIRESTOP SEALANT AND FIRESAFING INSULATION WHERE A GAP EXISTS BETWEEN TOP OF WALL AND BOTTOM OF CONCRETE DECK (UL #U914) (PROVIDE STC RATING OF 50-54 AT COMPACTOR CHUTE ENCLOSURE ADJACENT TO DWELLING UNITS)

GENERAL NOTES:

- ALL ENLARGED PLAN DIMENSIONS ARE TAKEN FINISH TO FINISH (U.O.N.). 2. G.C. SHALL SUBMIT SHOP DRAWINGS TO ARCHITECT FOR REVIEW INDICATING SIZE, GAUGE AND SPACING OF ALL METAL STUDS AND REQUIRED METAL BOXED
- HEADERS SIGNED AND SEALED BY A NYS LICENSED ENGINEER AS PER NYCBC 1107.2.8, AT THE OPTION OF THE OWNER, LAUNDRY EQUIPMENT CONFORMING TO THIS SECTION WITHIN THE DWELLING UNIT OR SLEEPING UNIT MAY BE PROVIDED AT THE TIME A PERSON WITH PHYSICAL DISABILITIES TAKES OCCUPANCY OF THE UNIT, OR WITHIN 10 DAYS OF THE DATE THE REQUEST IS MADE BY A PERSON WITH PHYSICAL DISABILITIES, WHICHEVER IS LATER, AT THE OWNER'S EXPENSE.
- WATER CURTAIN TYPE SPRINKLER HEADS PROVIDED ON ALL FLOORS ALL FURNITURE IS FOR REFERENCE ONLY. PLEASE SEE ID DRAWINGS FOR MORE
- INFORMATION. 6. 6'-6" MIN. CLEAR OPENING UNDER SMOKESTOP

LEGEND:

- CONCRETE FOUNDATION WALL
- CONCRETE BLOCK WALL 2HR FIRE RATED
- GYPSUM BOARD PARTITION SEE PLAN FOR SIZE.



- 5'-0" DIAMETER CLEAR HANDICAP FLOOR TURNING SPACE.
- "T" FLOOR TURNING SPACE
- 30" x 48" CLEAR FLOOR SPACE
- FIRE RATED SHAFT WALL.
- ⟨W⟩ WINDOW SEE WINDOW SCHEDULE ON DWG. A-601
- (X) DOOR & FRAME SEE DOOR SCHEDULE DRAWING A-600 HARDWIRED CARBON MONOXIDE DETECTOR (BC 907) NO MORE THAN 15FT AWAY FROM BEDROOM DOORS
- SUSPENDED GYPSUM BOARD

- COLUMN & COLUMN NUMBER

ISSUE DATE:

DRAWN BY:

DRAWING NO:

NYC DOB NUMBER:

SCALE:

10-19-15

1/4"=1'-0"

M.B.

PROJECT NO:

CHECKED BY:

SHEET NO:

#1520

A.F.M. / T.L.

321191802

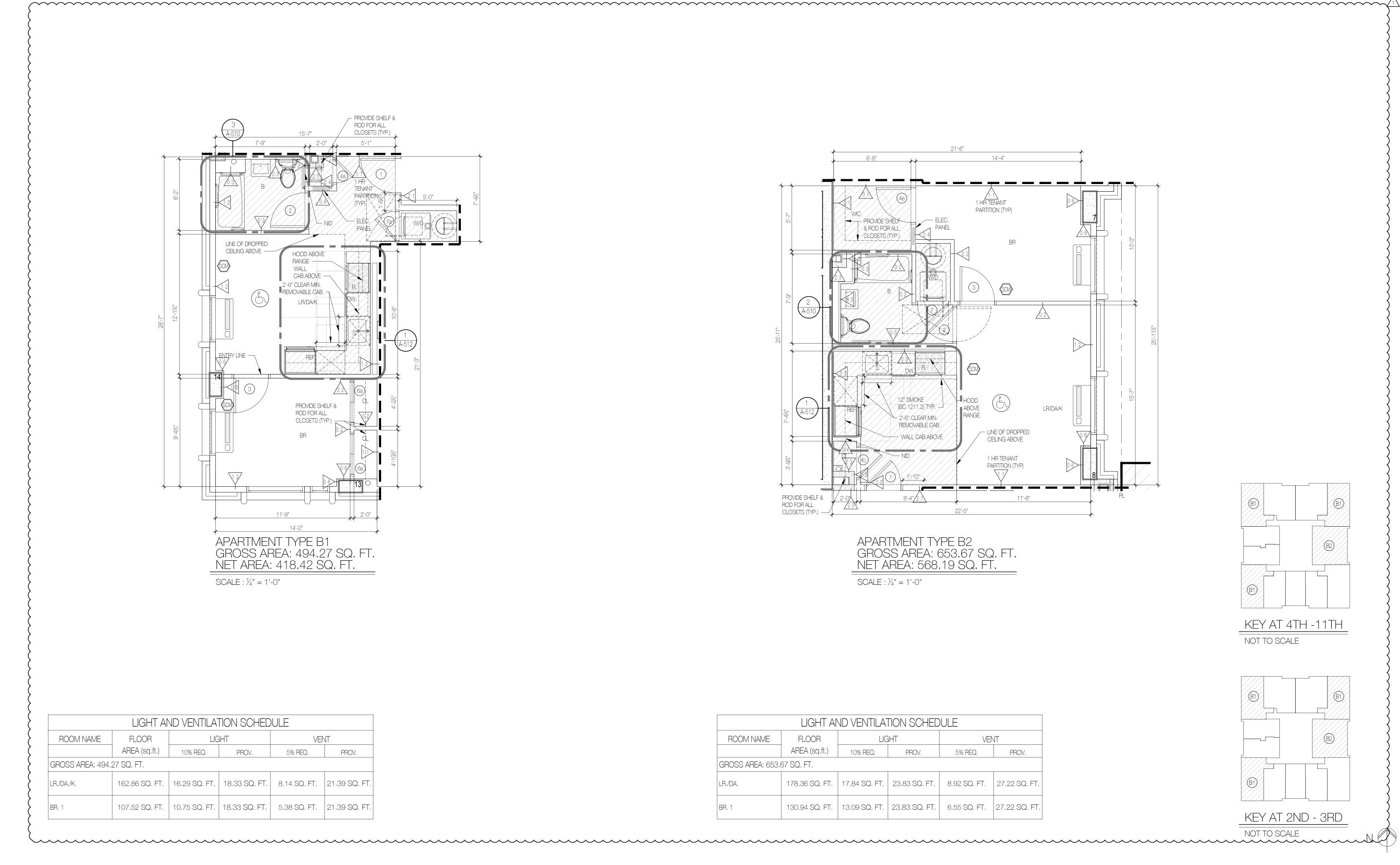
- BATHROOM DOORS & FRAMES SHALL BE
- PROVIDED W/ MORTISED HINGE & LATCH , BLANKS TO PERMIT FUTURE REVERSAL OF

/ DOOR ON THE SAME FRAME

- /--- # OF PARKING SPACES

(X)

PARKING STACKER UNIT

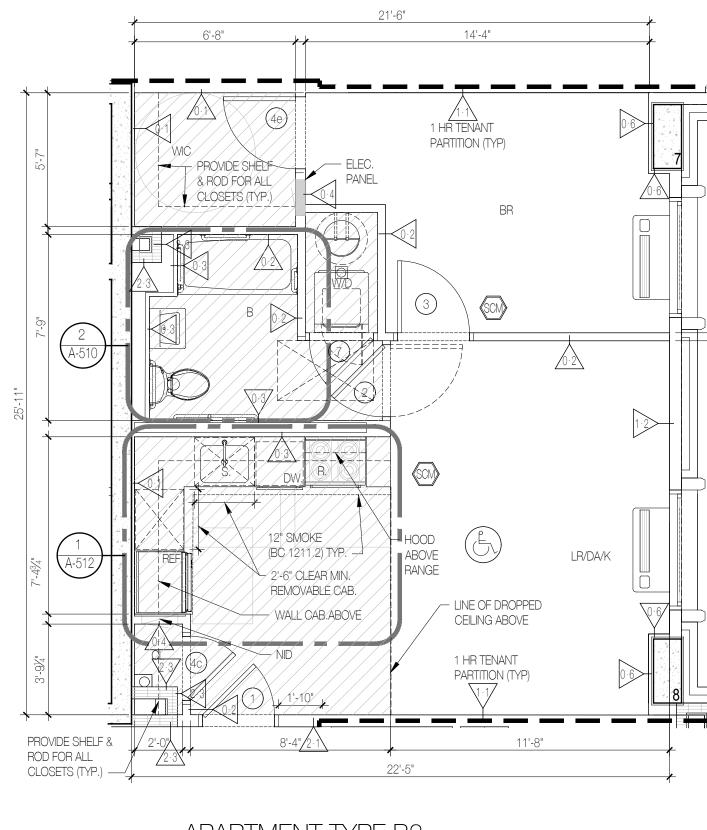


WALL TYPE LEGEND: NON RATED

- <u>FURRING AT INTERIOR CMU WALL</u> (1) LAYER 5/8" TYPE "X" GYPSUM BOARD OVER 1½" METAL GALVANIZED STUDS @ 16" O.C.
- $\sqrt{0.2}$  <u>TYPICAL PARTITION</u> (1) LAYER  $\frac{5}{8}$ " TYPE "X" GYPSUM BOARD ON EACH SIDE OF 2  $\frac{1}{2}$ " METAL STUDS @ 16" O.C.
- BATHROOM CHASE WALL PARTITION (1) LAYER 5/8" TYPE "X" WATER RESISTANT GYPSUM BOARD ONE SIDE OF 35/1" METAL STUDS @ 16" O.C. *SEE INTERIOR DESIGN DRAWINGS FOR WALL THICKNESSES.
- <u>PARTITION</u> (1) LAYER OF 5%" TYPE "X" GYPSUM BOARD, ON EACH SIDE OF 3 5%" METAL STUDS @ 16" O.C. (@ APARTMENT ELECTRICAL PANEL/ NETWORK INTERFACE DEVICE PANEL)
- Length Line 100 ContractionFURRING AT INTERIOR CMU WALL (PUBLIC CORRIDOR SIDE)- (1) LAYER %" TYPE "X" GYPSUM BOARDOVER 7/8" GALV. METAL STUDS @ 16 O.C.

#### 1 HOUR RATED

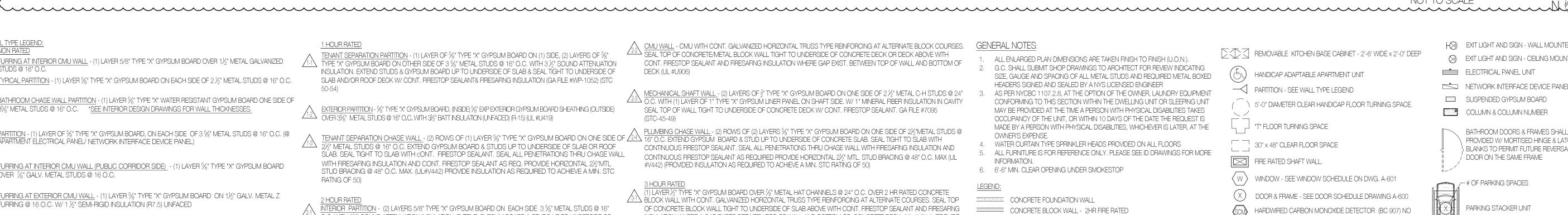
- TENANT SEPARATION PARTITION (1) LAYER OF %" TYPE "X" GYPSUM BOARD ON (1) SIDE, (2) LAYERS OF %" -TYPE "X" GYPSUM BOARD ON OTHER SIDE OF 3 %" METAL STUDS @ 16" O.C. WITH 3 ½" SOUND ATTENUATION INSULATION. EXTEND STUDS & GYPSUM BOARD UP TO UNDERSIDE OF SLAB & SEAL TIGHT TO UNDERSIDE OF SLAB AND/OR ROOF DECK W/ CONT. FIRESTOP SEALANT& FIRESAFING INSULATION (GA FILE #WP-1052) (STC 50-54)
- EXTERIOR PARTITION %" TYPE "X" GYPSUM BOARD, (INSIDE) %" EXP EXTERIOR GYPSUM BOARD SHEATHING (OUTSIDE)  $2^{1-2\Delta}$  OVER 35/8" METAL STUDS @ 16" O.C. WITH 31/2" BATT INSULATION (UNFACED) (R-15) (UL #U419)
- SLAB. SEAL TIGHT TO SLAB WITH CONT. FIRESTOP SEALANT. SEAL ALL PENETRATIONS THRU CHASE WALL WITH FIRESAFING INSULATION AND CONT. FIRESTOP SEALANT AS REQ. PROVIDE HORIZONTAL 2½"MTL STUD BRACING @ 48" O.C. MAX. (UL#V442) PROVIDE INSULATION AS REQUIRED TO ACHIEVE A MIN. STC RATNG OF 50)
- HOUR BATE INTERIOR PARTITION - (2) LAYERS 5/8" TYPE "X" GYPSUM BOARD ON EACH SIDE 3 5/6" METAL STUDS @ 16" .C. WITH 31/2" SOUND ATTENUATION INSULATION. EXTEND GYPSUM BOARD & STUDS UP TO UNDERSIDE OF FLOOR DECK OR ROOF DECK. SEAL TIGHT TO DECK W/ CONT. FIRESTOP SEALANT & FIRESAFING. (GA FILE #WP-1522 STC 55-59).



APARTMENT TYPE B2 GROSS AREA: 653.67 SQ. FT. NET AREA: 568.19 SQ. FT.

CALE	1/4"	=	1	'-	0'

LIGHT AND VENTILATION SCHEDULE							
ROOM NAME	FLOOR	LIGHT		VEN	JT.		
	AREA (sq.ft.)	10% REQ.	PROV.	5% REQ.	PROV.		
GROSS AREA: 653.	67 SQ. FT.						
LR./DA.	178.36 SQ. FT.	17.84 SQ. FT.	23.83 SQ. FT.	8.92 SQ. FT.	27.22 SQ. FT.		
BR. 1	130.94 SQ. FT.	13.09 SQ. FT.	23.83 SQ. FT.	6.55 SQ. FT.	27.22 SQ. FT.		



STC RATING OF 50-54 AT COMPACTOR CHUTE ENCLOSURE ADJACENT TO DWELLING UNITS)

INSULATION WHERE A GAP EXISTS BETWEEN TOP OF WALL AND BOTTOM OF CONCRETE DECK (UL #U914) (PROVIDE GYPSUM BOARD PARTITION - SEE PLAN FOR SIZE.

### **PROPOSED NEW** DEVELOPMENT

# **159 BOERUM ST**

# BROOKLYN, NY

#### BLOCK: 3071 ARCHITECT:

AUFGANG ARCHITECTS LLC 74 LAFAYETTE AVENUE, SUITE 301 SUFFERN, NY





### STRUCTURAL ENGINEER: McNAMARA - SALVIA

NEW YORK, NY 10022

T: 646.439.4000

62 WEST 45TH STREET, 11TH FLOOR NEW YORK, NY 10036 T: 212.246.9800

LOT: 10/40

#### MEP ENGINEER:

A & D ENGINEERING, PLLC 2606 E. 15TH STREET, SUITE #304 BROOKLYN, NY 11235 : 718.872.6112

#### INTERIOR DESIGNER:

ALCHEMY STUDIO NYC 154 GRAND STREET NEW YORK, NY 10013 T: 307.760.6454

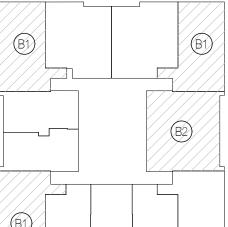


KEY AT 4TH -11TH

NOT TO SCALE

NOT TO SCALE

| **(** X )



1 08.15.19 PAA TO D.O.B. 08.02.19 99% CONSTRUCTION SET 05.31.19 BID SET 05.03.19 PAA TO D.O.B. 07.27.18 90% PROGRESS SET 06.04.18 RE-ISSUED TO D.O.B 01.26.18 REISSUED TO D.O.B. ISSUED TO D.O.B. FOR REVIEW AND COMMENTS 11.03.17 DATE SUBMISSIONS / REVISIONS SHEET TITLE:

**ENLARGED 1BR** 

APARTMENT LAYOUTS

SEAL & SIGNATURE

PROJECT NO:

CHECKED BY:

SHEET NO:

A-502 01

#1520

A.F.M. / T.L.

321191802

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10-19-15

1/4"=1'-0"

M.B.

BELONGS TO AUFGANG ARCHITECTS LLC, WITHOUT PREJUDICE.

ISSUE DATE:

DRAWN BY:

DRAWING NO:

NYC DOB NUMBER:

SCALE:

B	B1
	82
B	
KEY AT 2	2ND - 3RD

REMOVABLE KITCHEN BASE CABINET - 2'-6' WIDE x 2'-0" DEEP

- (L) HANDICAP ADAPTABLE APARTMENT UNIT
- 5'-0" DIAMETER CLEAR HANDICAP FLOOR TURNING SPACE.
- L J "T" FLOOR TURNING SPACE
- 30" x 48" CLEAR FLOOR SPACE
- FIRE RATED SHAFT WALL.  $\langle W \rangle$  WINDOW - SEE WINDOW SCHEDULE ON DWG. A-601
- (X) DOOR & FRAME SEE DOOR SCHEDULE DRAWING A-600
- HARDWIRED CARBON MONOXIDE DETECTOR (BC 907) NO MORE THAN 15FT AWAY FROM BEDROOM DOORS



ELECTRICAL PANEL UNIT

SUSPENDED GYPSUM BOARD

COLUMN & COLUMN NUMBER

PARKING STACKER UNIT

/ DOOR ON THE SAME FRAME

₩ EXIT LIGHT AND SIGN - WALL MOUNTED

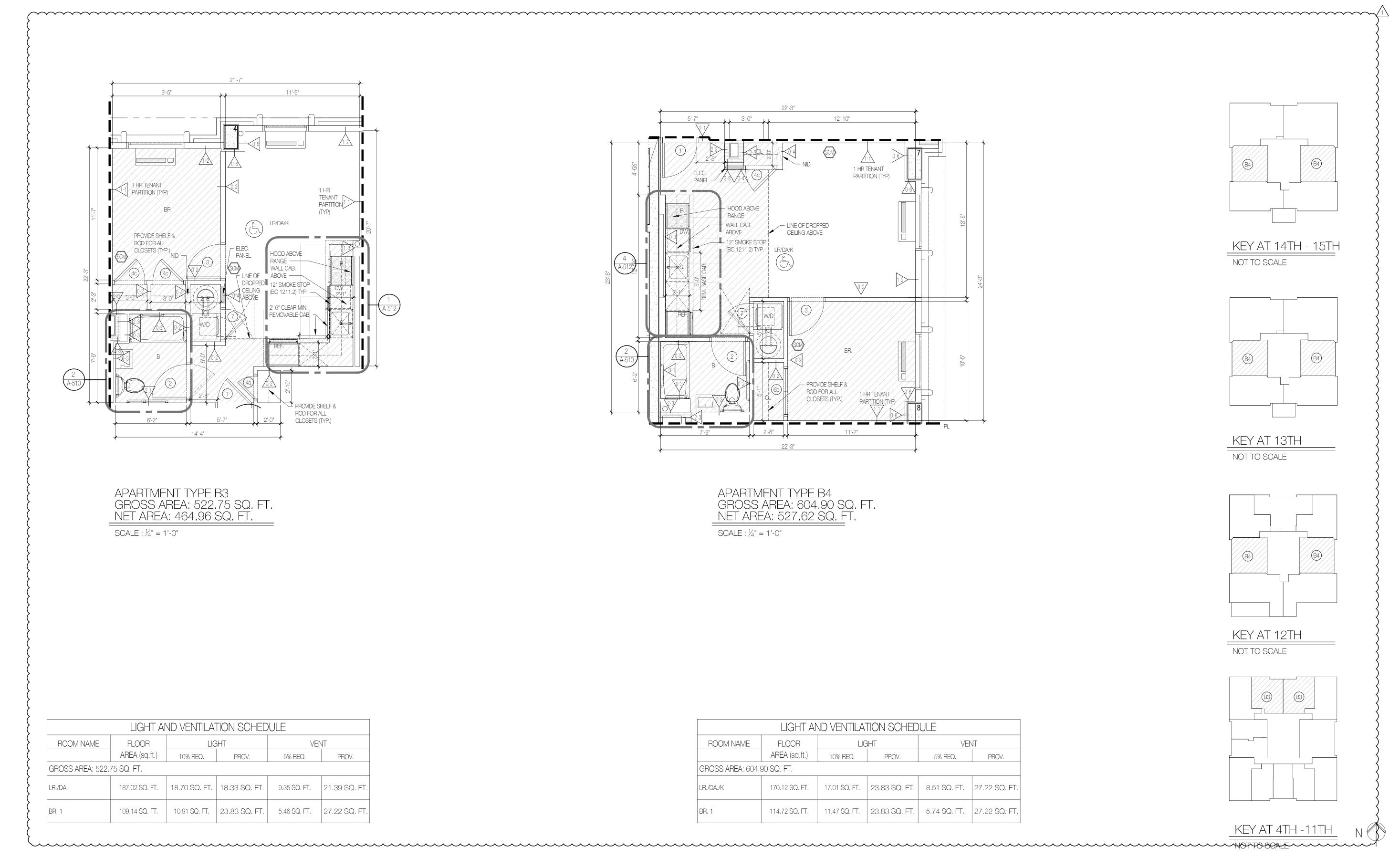
NETWORK INTERFACE DEVICE PANEL

EXIT LIGHT AND SIGN - CEILING MOUNTED

BATHROOM DOORS & FRAMES SHALL BE

PROVIDED W/ MORTISED HINGE & LATCH

, BLANKS TO PERMIT FUTURE REVERSAL OF

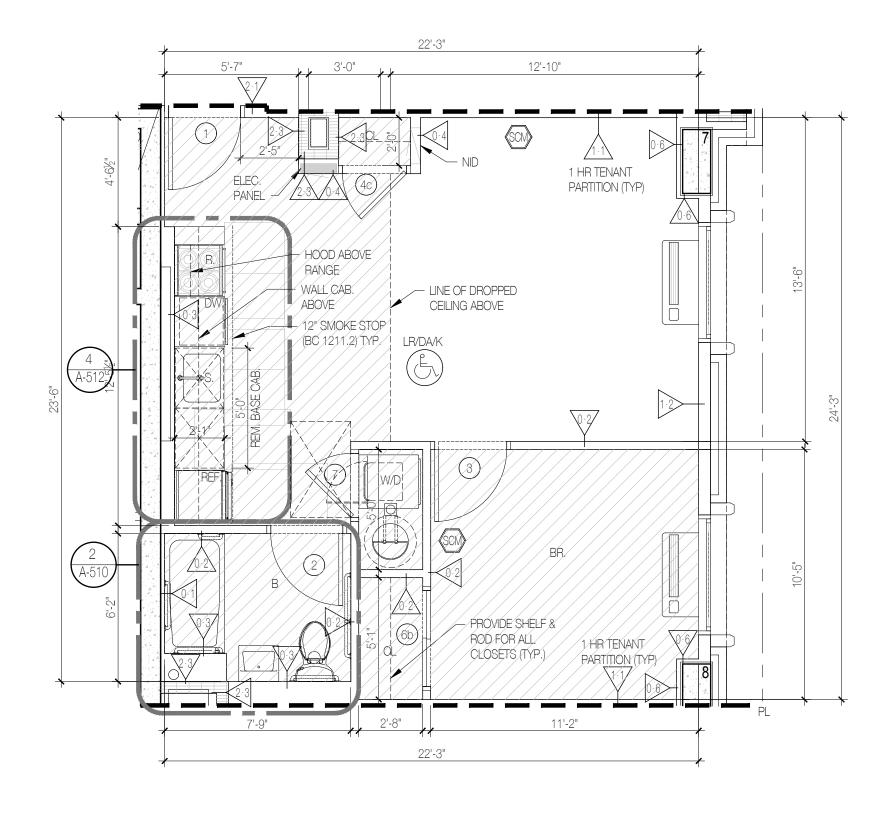


# NALL TYPE LEGEND: NON RATED

- <u>FURRING AT INTERIOR CMU WALL</u> (1) LAYER 5/8" TYPE "X" GYPSUM BOARD OVER 1½" METAL GALVANIZED STUDS @ 16" O.C.
- $\sqrt{0.2}$  <u>TYPICAL PARTITION</u> (1) LAYER  $\frac{5}{6}$ " TYPE "X" GYPSUM BOARD ON EACH SIDE OF 2  $\frac{1}{2}$ " METAL STUDS @ 16" O.C.
- BATHROOM CHASE WALL PARTITION (1) LAYER 5/8" TYPE "X" WATER RESISTANT GYPSUM BOARD ONE SIDE OF 35/1" METAL STUDS @ 16" O.C. *SEE INTERIOR DESIGN DRAWINGS FOR WALL THICKNESSES.
- <u>PARTITION</u> (1) LAYER OF 5%" TYPE "X" GYPSUM BOARD, ON EACH SIDE OF 3 5%" METAL STUDS @ 16" O.C. (@ APARTMENT ELECTRICAL PANEL/ NETWORK INTERFACE DEVICE PANEL)
- Image: Description of the second stateFURRING AT INTERIOR CMU WALL (PUBLIC CORRIDOR SIDE)- (1) LAYER %" TYPE "X" GYPSUM BOARDOVER 7/8" GALV. METAL STUDS @ 16 O.C.

#### 1 HOUR RATED

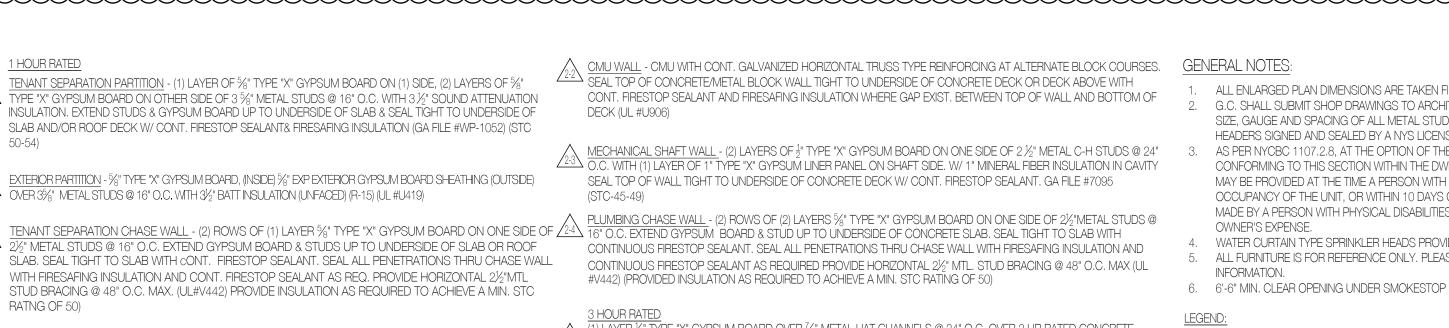
- TENANT SEPARATION PARTITION (1) LAYER OF  $5\!\!\!/$ " TYPE "X" GYPSUM BOARD ON (1) SIDE, (2) LAYERS OF  $5\!\!\!/$ " TYPE "X" GYPSUM BOARD ON OTHER SIDE OF 3 5/1" METAL STUDS @ 16" O.C. WITH 3 5/1" SOUND ATTENUATION INSULATION. EXTEND STUDS & GYPSUM BOARD UP TO UNDERSIDE OF SLAB & SEAL TIGHT TO UNDERSIDE OF SLAB AND/OR ROOF DECK W/ CONT. FIRESTOP SEALANT& FIRESAFING INSULATION (GA FILE #WP-1052) (STC 50-54)
- EXTERIOR PARTITION 5/" TYPE "X" GYPSUM BOARD, (INSIDE) 5/" EXP EXTERIOR GYPSUM BOARD SHEATHING (OUTSIDE)  $2^{1-2\Delta}$  OVER 35/8" METAL STUDS @ 16" O.C. WITH 31/2" BATT INSULATION (UNFACED) (R-15) (UL #U419)
- 13 <u>TENAINT SEPARATION OF ADD WALL</u> (2) NOW OF (1) DIVELY, WE AND SHOP OF SLAB OR ROOF SLAB. SEAL TIGHT TO SLAB WITH CONT. FIRESTOP SEALANT. SEAL ALL PENETRATIONS THRU CHASE WALL WITH FIRESAFING INSULATION AND CONT. FIRESTOP SEALANT AS REQ. PROVIDE HORIZONTAL 2½"MTL STUD BRACING @ 48" O.C. MAX. (UL#V442) PROVIDE INSULATION AS REQUIRED TO ACHIEVE A MIN. STC RATNG OF 50)
- HOUR BATE INTERIOR PARTITION - (2) LAYERS 5/8" TYPE "X" GYPSUM BOARD ON EACH SIDE 3 5/8" METAL STUDS @ 16" C. WITH 3½" SOUND ATTENUATION INSULATION. EXTEND GYPSUM BOARD & STUDS UP TO UNDERSIDE OF FLOOR DECK OR ROOF DECK. SEAL TIGHT TO DECK W/ CONT. FIRESTOP SEALANT & FIRESAFING. (GA FILE #WP-1522 STC 55-59).



APARTMENT TYPE B4 GROSS AREA: 604.90 SQ. FT. NET AREA: 527.62 SQ. FT.

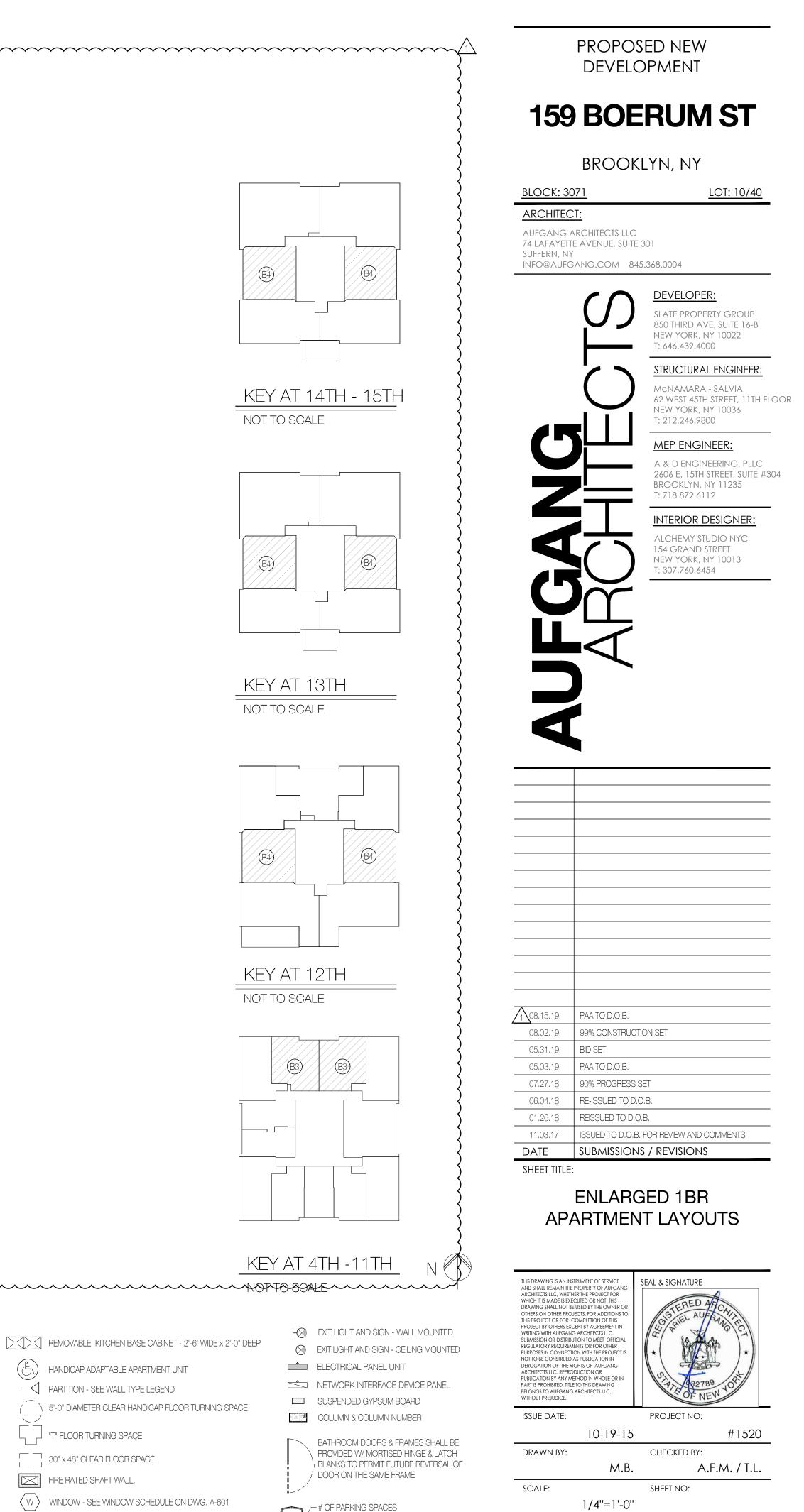
SCALE :  $\frac{1}{4}$ " = 1'-0"

LIGHT AND VENTILATION SCHEDULE							
ROOM NAME	FLOOR	LIGHT		VEN	NT		
	AREA (sq.ft.)	10% REQ.	PROV.	5% REQ.	PROV.		
GROSS AREA: 604.90 SQ. FT.							
LR./DA./K	170.12 SQ. FT.	17.01 SQ. FT.	23.83 SQ. FT.	8.51 SQ. FT.	27.22 SQ. FT.		
BR. 1	114.72 SQ. FT.	11.47 SQ. FT.	23.83 SQ. FT.	5.74 SQ. FT.	27.22 SQ. FT.		



(1) LAYER  $\frac{1}{2}$ " TYPE "X" GYPSUM BOARD OVER  $\frac{7}{6}$ " METAL HAT CHANNELS @ 24" O.C. OVER 2 HR RATED CONCRETE 23.1 BLOCK WALL WITH CONT. GALVANIZED HORIZONTAL TRUSS TYPE REINFORCING AT ALTERNATE COURSES. SEAL TOP -OF CONCRETE BLOCK WALL TIGHT TO UNDERSIDE OF SLAB ABOVE WITH CONT. FIRESTOP SEALANT AND FIRESAFING INSULATION WHERE A GAP EXISTS BETWEEN TOP OF WALL AND BOTTOM OF CONCRETE DECK (UL #U914) (PROVIDE STC RATING OF 50-54 AT COMPACTOR CHUTE ENCLOSURE ADJACENT TO DWELLING UNITS)

- ALL ENLARGED PLAN DIMENSIONS ARE TAKEN FINISH TO FINISH (U.O.N.). G.C. SHALL SUBMIT SHOP DRAWINGS TO ARCHITECT FOR REVIEW INDICATING SIZE, GAUGE AND SPACING OF ALL METAL STUDS AND REQUIRED METAL BOXED HEADERS SIGNED AND SEALED BY A NYS LICENSED ENGINEER
- AS PER NYCBC 1107.2.8, AT THE OPTION OF THE OWNER, LAUNDRY EQUIPMENT CONFORMING TO THIS SECTION WITHIN THE DWELLING UNIT OR SLEEPING UNIT MAY BE PROVIDED AT THE TIME A PERSON WITH PHYSICAL DISABILITIES TAKES OCCUPANCY OF THE UNIT, OR WITHIN 10 DAYS OF THE DATE THE REQUEST IS MADE BY A PERSON WITH PHYSICAL DISABILITIES, WHICHEVER IS LATER, AT THE
- WATER CURTAIN TYPE SPRINKLER HEADS PROVIDED ON ALL FLOORS ALL FURNITURE IS FOR REFERENCE ONLY. PLEASE SEE ID DRAWINGS FOR MORE
- CONCRETE FOUNDATION WALL CONCRETE BLOCK WALL - 2HR FIRE RATED
- GYPSUM BOARD PARTITION SEE PLAN FOR SIZE.



(X) DOOR & FRAME - SEE DOOR SCHEDULE DRAWING A-600

KOM HARDWIRED CARBON MONOXIDE DETECTOR (BC 907) NO MORE THAN 15FT AWAY FROM BEDROOM DOORS

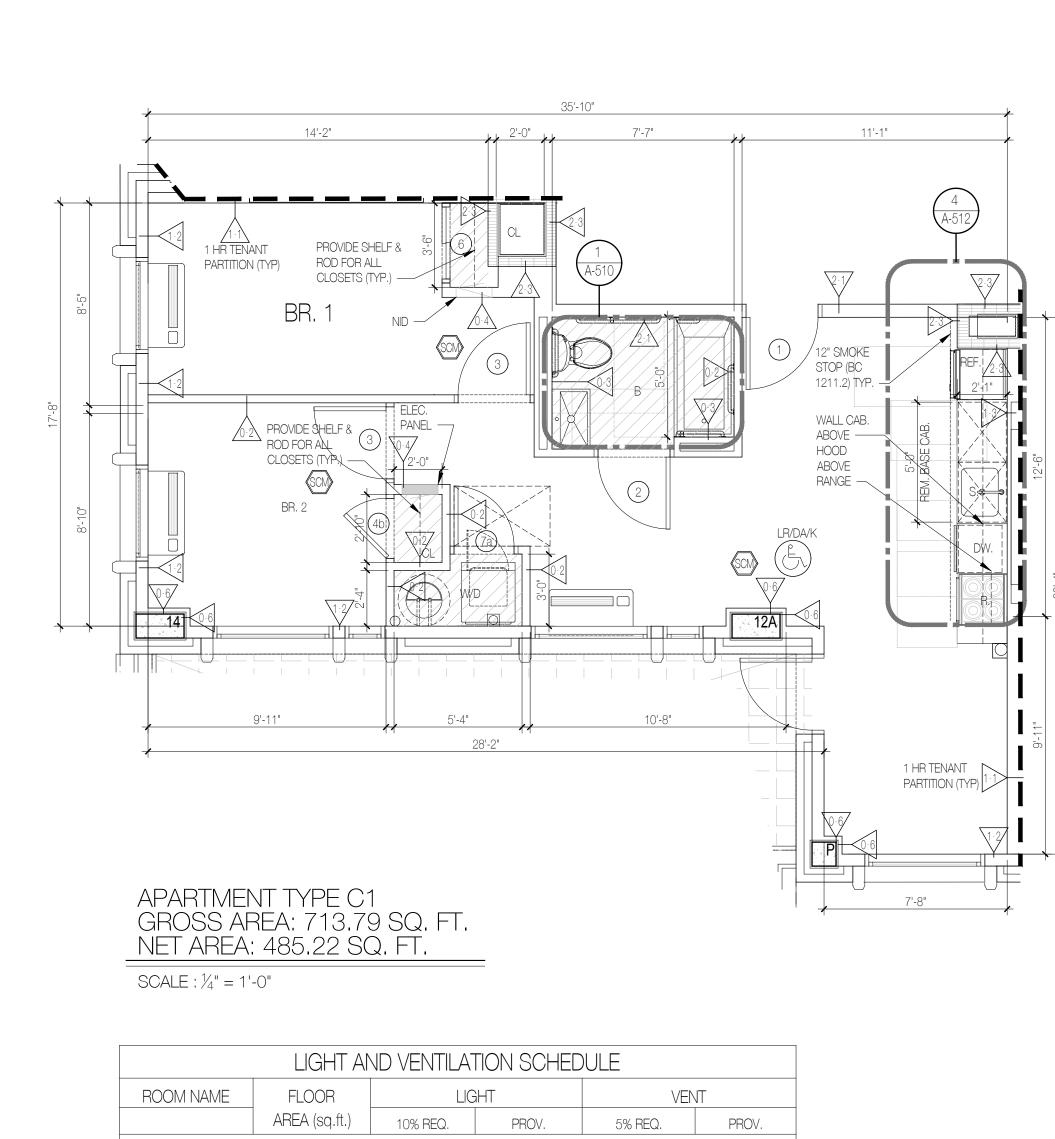
PARKING STACKER UNIT

| ( X )

NYC DOB NUMBER:

321191802

DRAWING NO:

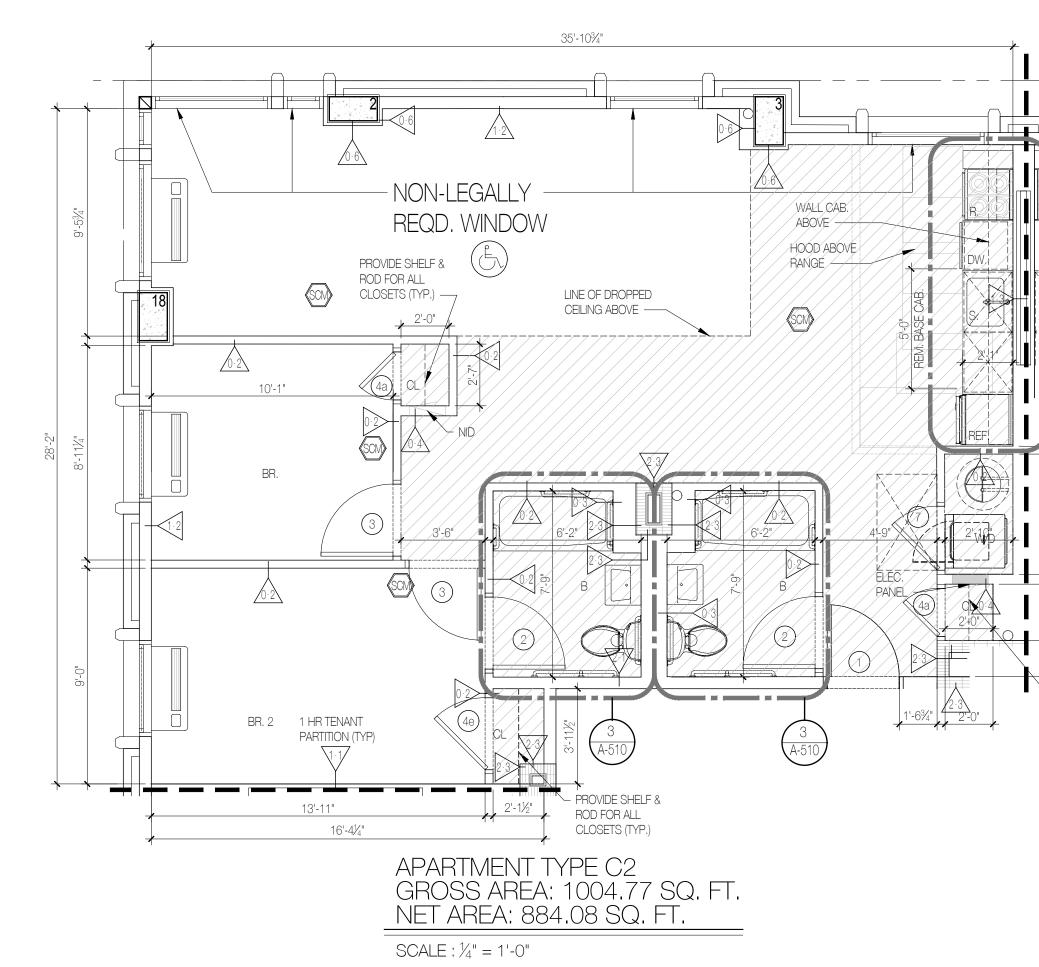


		LIGITI		VLINI				
	AREA (sq.ft.)	10% REQ.	PROV.	5% REQ.	PROV.			
GROSS AREA: 713.79 SQ. FT.								
LR./DA./K	302.56 SQ. FT.	30.26 SQ. FT.	54.28 SQ. FT.	15.13 SQ. FT.	54.44 SQ. FT.			
BR. 1	114.12 SQ. FT.	11.41 SQ. FT.	18.33 SQ. FT.	5.71 SQ. FT.	21.39 SQ. FT.			
BR. 2	90.94 SQ. FT.	9.09 SQ. FT.	48.78 SQ. FT.	4.55 SQ. FT.	48.61 SQ. FT.			

WALL TYPE LEGEND: NON RATED

- FURRING AT INTERIOR CMU WALL (1) LAYER 5/8" TYPE "X" GYPSUM BOARD OVER 1½" METAL GALVANIZED STUDS @ 16" O.C.
- $\underbrace{10}{2} \underline{12} \underline$
- BATHROOM CHASE WALL PARTITION (1) LAYER %" TYPE "X" WATER RESISTANT GYPSUM BOARD ONE SIDE OF 35%" METAL STUDS @ 16" O.C. *SEE INTERIOR DESIGN DRAWINGS FOR WALL THICKNESSES.
- APARTITION (1) LAYER OF 5%" TYPE "X" GYPSUM BOARD, ON EACH SIDE OF 3 5%" METAL STUDS @ 16" O.C. (@ APARTMENT ELECTRICAL PANEL/ NETWORK INTERFACE DEVICE PANEL)
- Image: Description of the second stateFURRING AT INTERIOR CMU WALL (PUBLIC CORRIDOR SIDE)- (1) LAYER %" TYPE "X" GYPSUM BOARDOVER 7/8" GALV. METAL STUDS @ 16 O.C.
- <u>
   FURRING AT EXTERIOR CMU WALL</u> (1) LAYER ⁵/₈" TYPE "X" GYPSUM BOARD ON 1¹/₂" GALV. METAL Z
   FURRING @ 16 O.C. W/ 1 ¹/₂" SEMI-RIGID INSULATION (R7.5) UNFACED

- TENANT SEPARATION PARTITION (1) LAYER OF  $\frac{5}{8}$ " TYPE "X" GYPSUM BOARD ON (1) SIDE, (2) LAYERS ( TYPE "X" GYPSUM BOARD ON OTHER SIDE OF 3 %" METAL STUDS @ 16" O.C. WITH 3 %" SOUND ATTE INSULATION. EXTEND STUDS & GYPSUM BOARD UP TO UNDERSIDE OF SLAB & SEAL TIGHT TO UNDEF SLAB AND/OR ROOF DECK W/ CONT. FIRESTOP SEALANT& FIRESAFING INSULATION (GA FILE #WP-105) 50-54)
- EXTERIOR PARTITION  $\frac{5}{8}$ " TYPE "X" GYPSUM BOARD, (INSIDE)  $\frac{5}{8}$ " EXP EXTERIOR GYPSUM BOARD SHEATHING (O 21-23 OVER 3%" METAL STUDS @ 16" O.C. WITH 3½" BATT INSULATION (UNFACED) (R-15) (UL #U419)
- TENANT SEPARATION CHASE WALL (2) ROWS OF (1) LAYER  $\frac{5}{8}$ " TYPE "X" GYPSUM BOARD ON Of 13 TENANT SEPARATION OF AGE VALLE (2) HOW OF OF (1) EVENUE OF OUNDERSIDE OF SLAB O SLAB. SEAL TIGHT TO SLAB WITH CONT. FIRESTOP SEALANT. SEAL ALL PENETRATIONS THRU CH WITH FIRESAFING INSULATION AND CONT. FIRESTOP SEALANT AS REQ. PROVIDE HORIZONTAL 2 STUD BRACING @ 48" O.C. MAX. (UL#V442) PROVIDE INSULATION AS REQUIRED TO ACHIEVE A M RATNG OF 50)



LIGHT AND VENTILATION SCHEDULE							
ROOM NAME	FLOOR	LIC	ЭНТ	VENT			
	AREA (sq.ft.)	10% REQ.	PROV.	5% REQ.	PROV		
GROSS AREA: 1004	1.77 SQ. FT.		-				
LR./DA./K.	384.40 SQ. FT.	38.44 SQ. FT.	103.06 SQ. FT.	19.22 SQ. FT.	75.83 SC		
BR. 1	90.76 SQ. FT.	9.08 SQ. FT.	18.33 SQ. FT.	4.54 SQ. FT.	21.39 SC		
BR. 2	125.15 SQ. FT.	12.51 SQ. FT.	18.33 SQ. FT.	6.26 SQ. FT.	21.39 SC		

				$\sim$
L TYPE LEGEND: NON RATED SURRING AT INTERIOR CMU WALL - (1) LAYER 5/8" TYPE "X" GYPSUM BOARD OVER $1\frac{1}{2}$ " METAL GALVANIZED STUDS @ 16" O.C. YPICAL PARTITION - (1) LAYER $\frac{5}{8}$ " TYPE "X" GYPSUM BOARD ON EACH SIDE OF $2\frac{1}{2}$ " METAL STUDS @ 16" O.C. BATHROOM CHASE WALL PARTITION - (1) LAYER $\frac{5}{8}$ " TYPE "X" WATER RESISTANT GYPSUM BOARD ONE SIDE OF $\frac{5}{8}$ " METAL STUDS @ 16" O.C. *SEE INTERIOR DESIGN DRAWINGS FOR WALL THICKNESSES. PARTITION - (1) LAYER OF $\frac{5}{8}$ " TYPE "X" GYPSUM BOARD, ON EACH SIDE OF 3 $\frac{5}{8}$ " METAL STUDS @ 16" O.C. (@ ARTITION - (1) LAYER OF $\frac{5}{8}$ " TYPE "X" GYPSUM BOARD, ON EACH SIDE OF 3 $\frac{5}{8}$ " METAL STUDS @ 16" O.C. (@ ARTITION - (1) LAYER OF $\frac{5}{8}$ " TYPE "X" GYPSUM BOARD, ON EACH SIDE OF 3 $\frac{5}{8}$ " METAL STUDS @ 16" O.C. (@ ARTITION - (1) LAYER OF PANEL/ NETWORK INTERFACE DEVICE PANEL)	A:2       EXTERIOR PARTITION - 5%" TYPE "X" GYPSUM BOARD, (INSIDE) %" EXP EXTERIOR GYPSUM BOARD SHEATHING (OUTSIDE)         OVER 3%" METAL STUDS @ 16" O.C. WITH 3½" BATT INSULATION (UNFACED) (R-15) (UL #U419)         A:3       TENANT SEPARATION CHASE WALL - (2) ROWS OF (1) LAYER 5%" TYPE "X" GYPSUM BOARD ON ONE SIDE OF 2½" METAL STUDS @ 16" O.C. EXTEND GYPSUM BOARD & STUDS UP TO UNDERSIDE OF SLAB OR ROOF SLAB. SEAL TIGHT TO SLAB WITH CONT. FIRESTOP SEALANT. SEAL ALL PENETRATIONS THRU CHASE WALL	<ul> <li><u>A</u>22 <u>CMU WALL</u> - CMU WITH CONT. GALVANIZED HORIZONTAL TRUSS TYPE REINFORCING AT ALTERNATE BLOCK COURSES. SEAL TOP OF CONCRETE/METAL BLOCK WALL TIGHT TO UNDERSIDE OF CONCRETE DECK OR DECK ABOVE WITH CONT. FIRESTOP SEALANT AND FIRESAFING INSULATION WHERE GAP EXIST. BETWEEN TOP OF WALL AND BOTTOM OF DECK (UL #U906)</li> <li><u>MECHANICAL SHAFT WALL</u> - (2) LAYERS OF ¹/₂" TYPE "X" GYPSUM BOARD ON ONE SIDE OF 2 ½" METAL C-H STUDS @ 24" O.C. WITH (1) LAYER OF 1" TYPE "X" GYPSUM LINER PANEL ON SHAFT SIDE. W/ 1" MINERAL FIBER INSULATION IN CAVITY SEAL TOP OF WALL TIGHT TO UNDERSIDE OF CONCRETE DECK W/ CONT. FIRESTOP SEALANT. GA FILE #7095 (STC-45-49)</li> <li><u>PLUMBING CHASE WALL</u> - (2) ROWS OF (2) LAYERS ⁵/₈" TYPE "X" GYPSUM BOARD ON ONE SIDE OF 2½" METAL STUDS @ 16" O.C. EXTEND GYPSUM BOARD &amp; STUD UP TO UNDERSIDE OF CONCRETE SLAB. SEAL TIGHT TO SLAB WITH CONTINUOUS FIRESTOP SEALANT. SEAL ALL PENETRATIONS THRU CHASE WALL WITH FIRESAFING INSULATION AND CONTINUOUS FIRESTOP SEALANT AS REQUIRED PROVIDE HORIZONTAL 2½" MTL. STUD BRACING @ 48" O.C. MAX (UL</li> </ul>	<ol> <li>ALL EINLANGED PLAIN DIMENSIONS ARE TAKEN FINISH TO FINISH (0.0.N.).</li> <li>G.C. SHALL SUBMIT SHOP DRAWINGS TO ARCHITECT FOR REVIEW INDICATING SIZE, GAUGE AND SPACING OF ALL METAL STUDS AND REQUIRED METAL BOXED HEADERS SIGNED AND SEALED BY A NYS LICENSED ENGINEER</li> <li>AS PER NYCBC 1107.2.8, AT THE OPTION OF THE OWNER, LAUNDRY EQUIPMENT CONFORMING TO THIS SECTION WITHIN THE DWELLING UNIT OR SLEEPING UNIT MAY BE PROVIDED AT THE TIME A PERSON WITH PHYSICAL DISABILITIES TAKES OCCUPANCY OF THE UNIT, OR WITHIN 10 DAYS OF THE DATE THE REQUEST IS MADE BY A PERSON WITH PHYSICAL DISABILITIES, WHICHEVER IS LATER, AT THE OWNER'S EXPENSE.</li> <li>WATER CURTAIN TYPE SPRINKLER HEADS PROVIDED ON ALL FLOORS</li> <li>ALL FURNITURE IS FOR REFERENCE ONLY. PLEASE SEE ID DRAWINGS FOR MORE</li> </ol>	
FURRING AT INTERIOR CMU WALL (PUBLIC CORRIDOR SIDE) - (1) LAYER 5/8" TYPE "X" GYPSUM BOARD DVER $\frac{7}{8}$ " GALV. METAL STUDS @ 16 O.C.	WITH FIRESAFING INSULATION AND CONT. FIRESTOP SEALANT AS REQ. PROVIDE HORIZONTAL $2\frac{1}{2}$ "MTL STUD BRACING @ 48" O.C. MAX. (UL#V442) PROVIDE INSULATION AS REQUIRED TO ACHIEVE A MIN. STC RATNG OF 50)	#V442) (PROVIDED INSULATION AS REQUIRED TO ACHIEVE A MIN. STC RATING OF 50)	INFORMATION. 6. 6'-6" MIN. CLEAR OPENING UNDER SMOKESTOP LEGEND:	
EURRING AT EXTERIOR CMU WALL - (1) LAYER 5/8" TYPE "X" GYPSUM BOARD ON 1½" GALV. METAL Z EURRING @ 16 O.C. W/ 1 ½" SEMI-RIGID INSULATION (R7.5) UNFACED	2 HOUR RATED <u>INTERIOR PARTITION</u> - (2) LAYERS 5/8" TYPE "X" GYPSUM BOARD ON EACH SIDE 3 %" METAL STUDS @ 16" O.C. WITH 3½" SOUND ATTENUATION INSULATION. EXTEND GYPSUM BOARD & STUDS UP TO UNDERSIDE OF FLOOR DECK OR ROOF DECK. SEAL TIGHT TO DECK W/ CONT. FIRESTOP SEALANT & FIRESAFING. (GA FILE #WP-1522 STC 55-59).	(1) LAYER ½" TYPE "X" GYPSUM BOARD OVER %" METAL HAT CHANNELS @ 24" O.C. OVER 2 HR RATED CONCRETE BLOCK WALL WITH CONT. GALVANIZED HORIZONTAL TRUSS TYPE REINFORCING AT ALTERNATE COURSES. SEAL TOP OF CONCRETE BLOCK WALL TIGHT TO UNDERSIDE OF SLAB ABOVE WITH CONT. FIRESTOP SEALANT AND FIRESAFING INSULATION WHERE A GAP EXISTS BETWEEN TOP OF WALL AND BOTTOM OF CONCRETE DECK (UL #U914) (PROVIDE STC RATING OF 50-54 AT COMPACTOR CHUTE ENCLOSURE ADJACENT TO DWELLING UNITS)	CONCRETE FOUNDATION WALL         CONCRETE BLOCK WALL - 2HR FIRE RATED         GYPSUM BOARD PARTITION - SEE PLAN FOR SIZE.         ZZZZZZZZZZ         MASONRY VENEER	(X (SCI

PROPOSED NEW DEVELOPMENT

# **159 BOERUM ST**

## BROOKLYN, NY

#### BLOCK: 3071 ARCHITECT:

AUFGANG ARCHITECTS LLC 74 LAFAYETTE AVENUE, SUITE 301 SUFFERN, NY INFO@AUFGANG.COM 845.368.0004



108.15.19 PAA TO D.O.B.

05.31.19 BID SET

SHEET TITLE:

05.03.19 PAA TO D.O.B.

07.27.18 90% PROGRESS SET 06.04.18 RE-ISSUED TO D.O.B.

01.26.18 REISSUED TO D.O.B.

08.02.19 99% CONSTRUCTION SET

SLATE PROPERTY GROUP 850 THIRD AVE, SUITE 16-B NEW YORK, NY 10022

T: 646.439.4000

**DEVELOPER:** 

# STRUCTURAL ENGINEER:

McNAMARA - SALVIA 62 WEST 45TH STREET, 11TH FLOOR NEW YORK, NY 10036 T: 212.246.9800

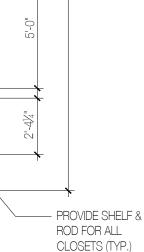
LOT: 10/40

### MEP ENGINEER:

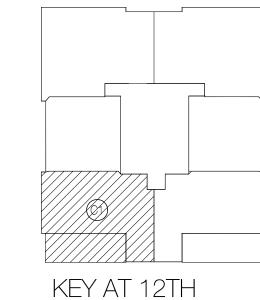
A & D ENGINEERING, PLLC 2606 E. 15TH STREET, SUITE #304 BROOKLYN, NY 11235 : 718.872.6112

### INTERIOR DESIGNER:

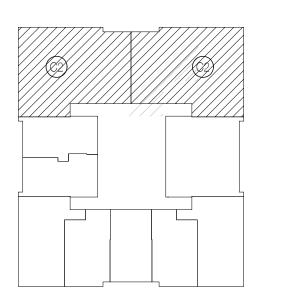
ALCHEMY STUDIO NYC 154 GRAND STREET NEW YORK, NY 10013 T: 307.760.6454



Q. FT. SQ. FT. SQ. FT.



NOT TO SCALE



KEY AT 2ND - 3RD NOT TO SCALE 

REMOVABLE KITCHEN BASE CABINET - 2'-6' WIDE x 2'-0" DEEP

- HANDICAP ADAPTABLE APARTMENT UNIT
- PARTITION SEE WALL TYPE LEGEND
- $\uparrow$  5'-0" DIAMETER CLEAR HANDICAP FLOOR TURNING SPACE.
- "T" FLOOR TURNING SPACE
- 30" x 48" CLEAR FLOOR SPACE
- FIRE RATED SHAFT WALL.
- WINDOW SEE WINDOW SCHEDULE ON DWG. A-601 DOOR & FRAME - SEE DOOR SCHEDULE DRAWING A-600
- HARDWIRED CARBON MONOXIDE DETECTOR (BC 907) NO MORE THAN 15FT AWAY FROM BEDROOM DOORS

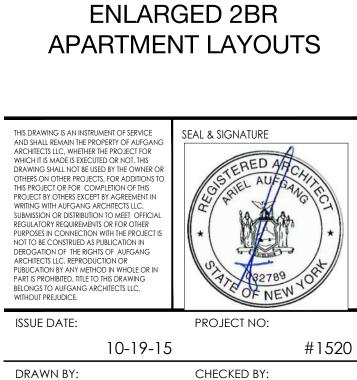
- HO EXIT LIGHT AND SIGN WALL MOUNTED
- EXIT LIGHT AND SIGN CEILING MOUNTED

- BATHROOM DOORS & FRAMES SHALL BE PROVIDED W/ MORTISED HINGE & LATCH , BLANKS TO PERMIT FUTURE REVERSAL OF

/ DOOR ON THE SAME FRAME

PARKING STACKER UNIT

(X)



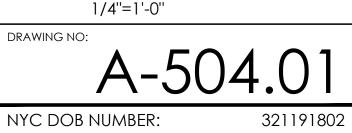
11.03.17 ISSUED TO D.O.B. FOR REVIEW AND COMMENTS

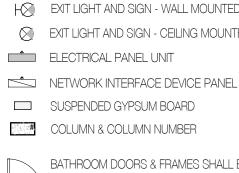
DATE SUBMISSIONS / REVISIONS

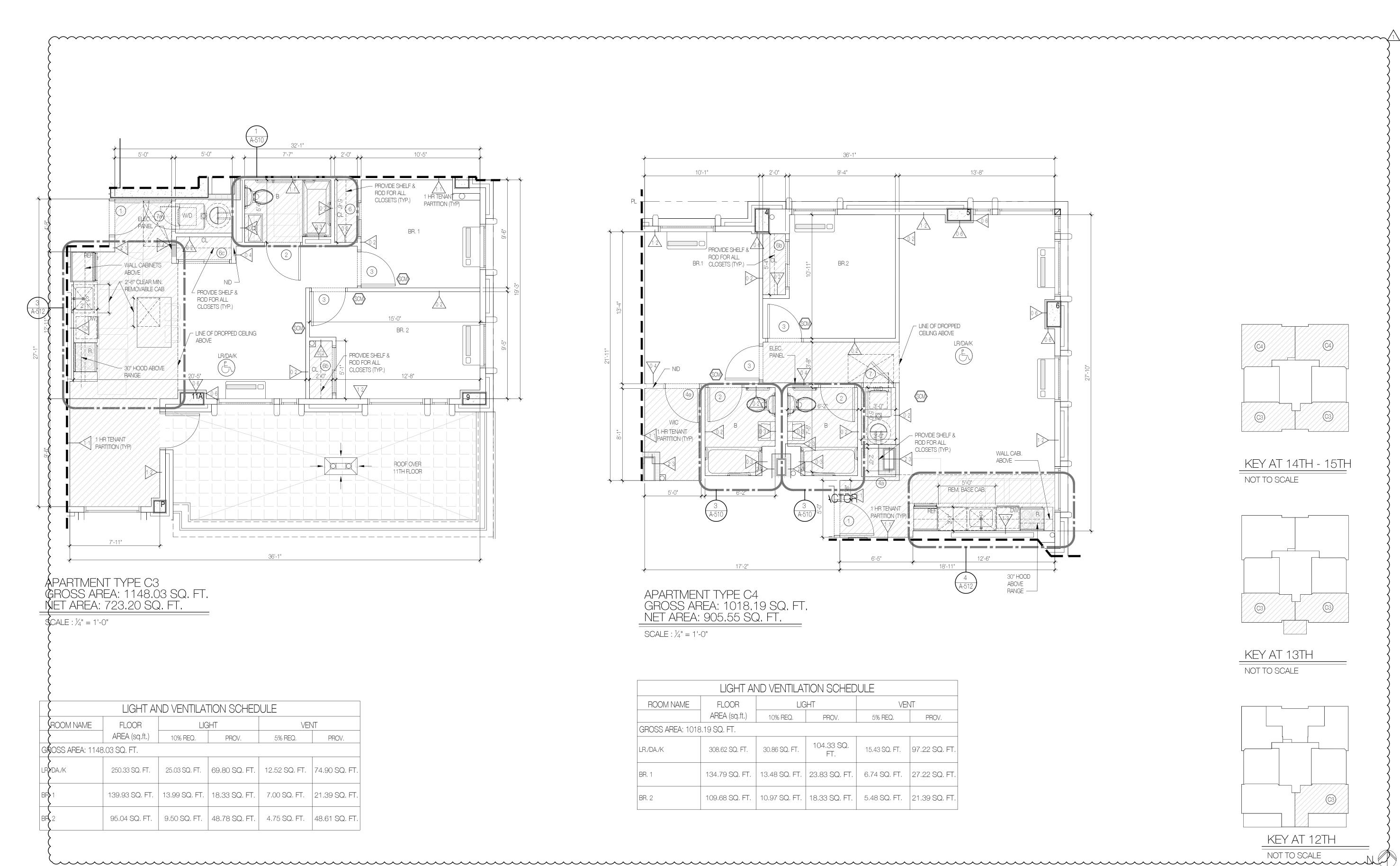
M.B. A.F.M. / T.L. SHEET NO:

DRAWING NO:

SCALE:







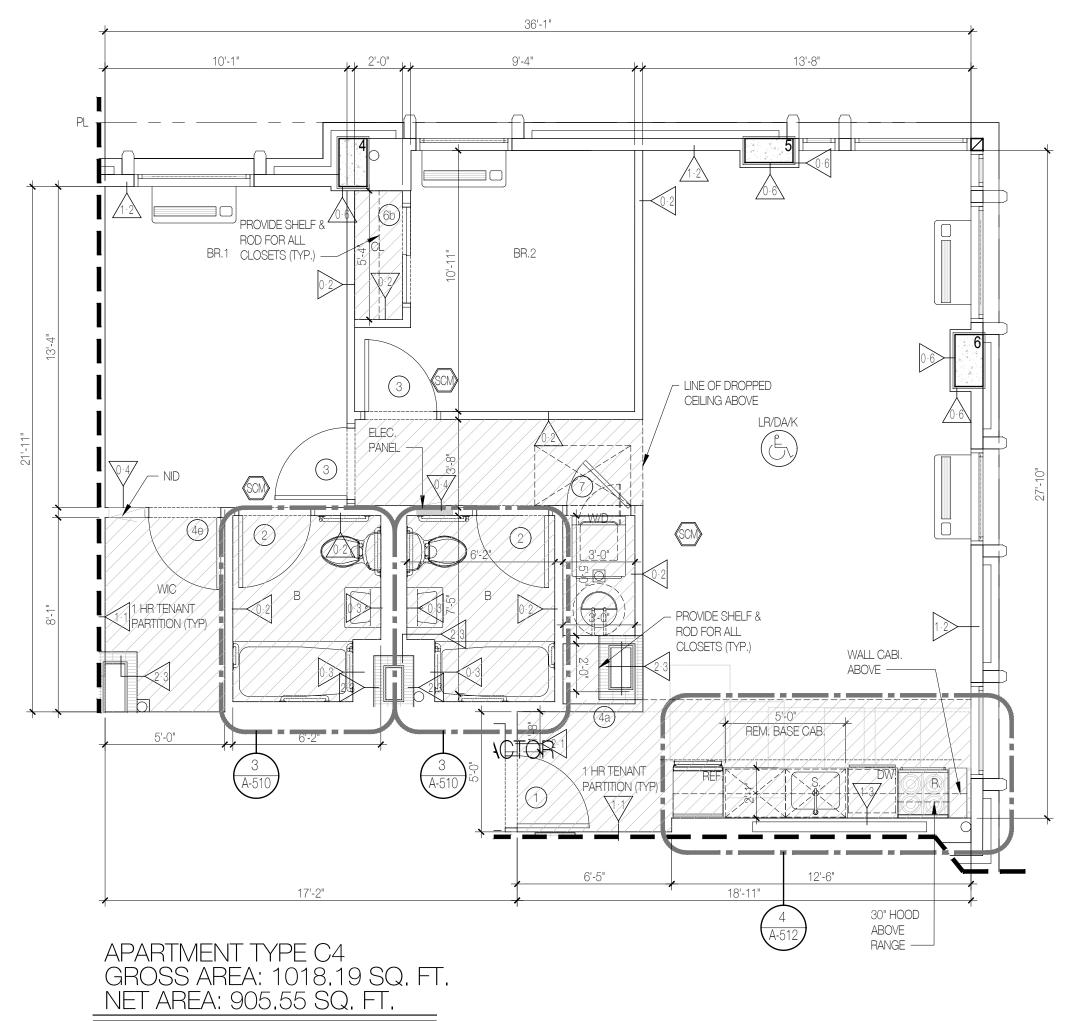
WALL TYPE LEGEND: NON RATED

- <u>FURRING AT INTERIOR CMU WALL</u> (1) LAYER 5/8" TYPE "X" GYPSUM BOARD OVER 1½" METAL GALVANIZED STUDS @ 16" O.C.
- $\sqrt{0.2}$  <u>TYPICAL PARTITION</u> (1) LAYER  $\frac{5}{8}$ " TYPE "X" GYPSUM BOARD ON EACH SIDE OF 2  $\frac{1}{2}$ " METAL STUDS @ 16" O.C.
- BATHROOM CHASE WALL PARTITION (1) LAYER 5/8" TYPE "X" WATER RESISTANT GYPSUM BOARD ONE SIDE OF 35/1" METAL STUDS @ 16" O.C. *SEE INTERIOR DESIGN DRAWINGS FOR WALL THICKNESSES.
- <u>PARTITION</u> (1) LAYER OF 5%" TYPE "X" GYPSUM BOARD, ON EACH SIDE OF 3 5%" METAL STUDS @ 16" O.C. (@ APARTMENT ELECTRICAL PANEL/ NETWORK INTERFACE DEVICE PANEL)
- <u>FURRING AT INTERIOR CMU WALL (PUBLIC CORRIDOR SIDE)</u> (1) LAYER ⁵/₈" TYPE "X" GYPSUM BOARD OVER ⁷/₈" GALV. METAL STUDS @ 16 O.C.

#### 1 HOUR RATED

- TENANT SEPARATION PARTITION (1) LAYER OF  $5\!\!/\!\!/$ " TYPE "X" GYPSUM BOARD ON (1) SIDE, (2) LAYERS OF  $5\!\!/\!\!/$ " TYPE "X" GYPSUM BOARD ON OTHER SIDE OF 3 ½" METAL STUDS @ 16" O.C. WITH 3 ½" SOUND ATTENUATION INSULATION. EXTEND STUDS & GYPSUM BOARD UP TO UNDERSIDE OF SLAB & SEAL TIGHT TO UNDERSIDE OF SLAB AND/OR ROOF DECK W/ CONT. FIRESTOP SEALANT& FIRESAFING INSULATION (GA FILE #WP-1052) (STC 50-54)
- EXTERIOR PARTITION 5/" TYPE "X" GYPSUM BOARD, (INSIDE) 5/" EXP EXTERIOR GYPSUM BOARD SHEATHING (OUTSIDE)  $2^{1-2\Delta}$  OVER 35/8" METAL STUDS @ 16" O.C. WITH 31/2" BATT INSULATION (UNFACED) (R-15) (UL #U419)
- 13 <u>TENANT SEPARATION OF ADD WALL</u> (2) NOW OF (1) DIVERSIDE OF SLAB OR ROOF 2½" METAL STUDS @ 16" O.C. EXTEND GYPSUM BOARD & STUDS UP TO UNDERSIDE OF SLAB OR ROOF SLAB. SEAL TIGHT TO SLAB WITH CONT. FIRESTOP SEALANT. SEAL ALL PENETRATIONS THRU CHASE WALL WITH FIRESAFING INSULATION AND CONT. FIRESTOP SEALANT AS REQ. PROVIDE HORIZONTAL 2½"MTL STUD BRACING @ 48" O.C. MAX. (UL#V442) PROVIDE INSULATION AS REQUIRED TO ACHIEVE A MIN. STC RATNG OF 50)

HOUR BATE INTERIOR PARTITION - (2) LAYERS 5/8" TYPE "X" GYPSUM BOARD ON EACH SIDE 3 5/8" METAL STUDS @ 16" C. WITH 3½" SOUND ATTENUATION INSULATION. EXTEND GYPSUM BOARD & STUDS UP TO UNDERSIDE OF FLOOR DECK OR ROOF DECK. SEAL TIGHT TO DECK W/ CONT. FIRESTOP SEALANT & FIRESAFING. (GA FILE #WP-1522 STC 55-59).



SCALE :  $\frac{1}{4}$ " = 1'-0"

LIGHT AND VENTILATION SCHEDULE							
ROOM NAME	FLOOR	LIG	ЗНТ	VEN	JT		
	AREA (sq.ft.)	10% REQ.	PROV.	5% REQ.	PROV.		
GROSS AREA: 1018	3.19 SQ. FT.						
LR./DA./K	308.62 SQ. FT.	30.86 SQ. FT.	104.33 SQ. FT.	15.43 SQ. FT.	97.22 SQ. FT.		
BR. 1	134.79 SQ. FT.	13.48 SQ. FT.	23.83 SQ. FT.	6.74 SQ. FT.	27.22 SQ. FT.		
BR. 2	109.68 SQ. FT.	10.97 SQ. FT.	18.33 SQ. FT.	5.48 SQ. FT.	21.39 SQ. FT.		



 $\Delta$  <u>CMU WALL</u> - CMU WITH CONT. GALVANIZED HORIZONTAL TRUSS TYPE REINFORCING AT ALTERNATE BLOCK COURSES. GENERAL NOTES: ZEZ SEAL TOP OF CONCRETE/METAL BLOCK WALL TIGHT TO UNDERSIDE OF CONCRETE DECK OR DECK ABOVE WITH CONT. FIRESTOP SEALANT AND FIRESAFING INSULATION WHERE GAP EXIST. BETWEEN TOP OF WALL AND BOTTOM OF DECK (UL #U906)

 $\underbrace{ \frac{1}{23}}_{0.C. \text{ WITH (1) LAYER OF 1" TYPE "X" GYPSUM BOARD ON ONE SIDE OF 2½" METAL C-H STUDS @ 24" 3. \\ \hline 0.C. WITH (1) LAYER OF 1" TYPE "X" GYPSUM LINER PANEL ON SHAFT SIDE. W/ 1" MINERAL FIBER INSULATION IN CAVITY 3. \\ \hline 0.C. WITH (1) LAYER OF 1" TYPE "X" GYPSUM LINER PANEL ON SHAFT SIDE. W/ 1" MINERAL FIBER INSULATION IN CAVITY 3. \\ \hline 0.C. WITH (1) LAYER OF 1" TYPE "X" GYPSUM LINER PANEL ON SHAFT SIDE. W/ 1" MINERAL FIBER INSULATION IN CAVITY 3. \\ \hline 0.C. WITH (1) LAYER OF 1" TYPE "X" GYPSUM LINER PANEL ON SHAFT SIDE. W/ 1" MINERAL FIBER INSULATION IN CAVITY 3. \\ \hline 0.C. WITH (1) LAYER OF 1" TYPE "X" GYPSUM LINER PANEL ON SHAFT SIDE. W/ 1" MINERAL FIBER INSULATION IN CAVITY 3. \\ \hline 0.C. WITH (1) LAYER OF 1" TYPE "X" GYPSUM LINER PANEL ON SHAFT SIDE. W/ 1" MINERAL FIBER INSULATION IN CAVITY 3. \\ \hline 0.C. WITH (1) LAYER OF 1" TYPE "X" GYPSUM LINER PANEL ON SHAFT SIDE. W/ 1" MINERAL FIBER INSULATION IN CAVITY 3. \\ \hline 0.C. WITH (1) LAYER OF 1" TYPE "X" GYPSUM LINER PANEL ON SHAFT SIDE. W/ 1" MINERAL FIBER INSULATION IN CAVITY 3. \\ \hline 0.C. WITH (1) LAYER OF 1" TYPE "X" GYPSUM LINER PANEL ON SHAFT SIDE. W/ 1" MINERAL FIBER INSULATION IN CAVITY 3. \\ \hline 0.C. WITH (1) LAYER OF 1" TYPE "X" GYPSUM LINER PANEL ON SHAFT SIDE. W/ 1" MINERAL FIBER INSULATION IN CAVITY 3. \\ \hline 0.C. WITH (1) LAYER OF 1" TYPE "X" GYPSUM LINER PANEL ON SHAFT SIDE (1) TYPE "X" GYPSUM BOARD ON CAVITY 3. \\ \hline 0.C. WITH (1) LAYER OF 1" TYPE "X" GYPSUM BOARD ON CAVITY 3. \\ \hline 0.C. WITH (1) LAYER OF 1" TYPE "X" GYPSUM BOARD ON CAVITY 3. \\ \hline 0.C. WITH (1) LAYER OF 1" TYPE "X" GYPSUM BOARD ON CAVITY 3. \\ \hline 0.C. WITH (1) LAYER OF 1" TYPE "X" GYPSUM BOARD ON CAVITY 3. \\ \hline 0.C. WITH (1) LAYER OF 1" TYPE "X" GYPSUM BOARD ON CAVITY 3. \\ \hline 0.C. WITH (1) LAYER OF 1" TYPE "X" GYPSUM BOARD ON CAVITY 3. \\ \hline 0.C. WITH (1) LAYER OF 1" TYPE "X" GYPSUM BOARD ON CAVITY 3. \\ \hline 0.C. WITH (1) LAYER OF 1" TYPE "X" GYPSUM BOARD ON CAVITY 3. \\ \hline 0.C. WITH (1) LAYER OF 1" TYPE "X" GYPSUM BOARD ON CAVITY 3. \\ \hline 0.C. WITH (1) LAYER OF 1" TYPE "X" GYPSUM BOARD ON CAVITY 3. \\ \hline$ SEAL TOP OF WALL TIGHT TO UNDERSIDE OF CONCRETE DECK W/ CONT. FIRESTOP SEALANT. GA FILE #7095 (STC-45-49)

TENANT SEPARATION CHASE WALL - (2) ROWS OF (1) LAYER 5%" TYPE "X" GYPSUM BOARD ON ONE SIDE OF 2½"METAL STUDS @ 16" O.C. EXTEND GYPSUM BOARD & STUD UP TO UNDERSIDE OF CONCRETE SLAB, SEAL TIGHT TO SLAB WITH CONTINUOUS FIRESTOP SEALANT. SEAL ALL PENETRATIONS THRU CHASE WALL WITH FIRESAFING INSULATION AND CONTINUOUS FIRESTOP SEALANT AS REQUIRED PROVIDE HORIZONTAL 2½" MTL. STUD BRACING @ 48" O.C. MAX (UL #V442) (PROVIDED INSULATION AS REQUIRED TO ACHIEVE A MIN. STC RATING OF 50)

> **3 HOUR RATED** (1) LAYER  $\frac{1}{2}$ " TYPE "X" GYPSUM BOARD OVER  $\frac{7}{6}$ " METAL HAT CHANNELS @ 24" O.C. OVER 2 HR RATED CONCRETE 23.1 BLOCK WALL WITH CONT. GALVANIZED HORIZONTAL TRUSS TYPE REINFORCING AT ALTERNATE COURSES. SEAL TOP -OF CONCRETE BLOCK WALL TIGHT TO UNDERSIDE OF SLAB ABOVE WITH CONT. FIRESTOP SEALANT AND FIRESAFING INSULATION WHERE A GAP EXISTS BETWEEN TOP OF WALL AND BOTTOM OF CONCRETE DECK (UL #U914) (PROVIDE STC RATING OF 50-54 AT COMPACTOR CHUTE ENCLOSURE ADJACENT TO DWELLING UNITS)

- ALL ENLARGED PLAN DIMENSIONS ARE TAKEN FINISH TO FINISH (U.O.N.). G.C. SHALL SUBMIT SHOP DRAWINGS TO ARCHITECT FOR REVIEW INDICATING SIZE, GAUGE AND SPACING OF ALL METAL STUDS AND REQUIRED METAL BOXED HEADERS SIGNED AND SEALED BY A NYS LICENSED ENGINEER
- AS PER NYCBC 1107.2.8, AT THE OPTION OF THE OWNER, LAUNDRY EQUIPMENT CONFORMING TO THIS SECTION WITHIN THE DWELLING UNIT OR SLEEPING UNIT MAY BE PROVIDED AT THE TIME A PERSON WITH PHYSICAL DISABILITIES TAKES OCCUPANCY OF THE UNIT, OR WITHIN 10 DAYS OF THE DATE THE REQUEST IS MADE BY A PERSON WITH PHYSICAL DISABILITIES, WHICHEVER IS LATER, AT THE OWNER'S EXPENSE.
- WATER CURTAIN TYPE SPRINKLER HEADS PROVIDED ON ALL FLOORS ALL FURNITURE IS FOR REFERENCE ONLY. PLEASE SEE ID DRAWINGS FOR MORE INFORMATION.

LEGEND:

CONCRETE FOUNDATION WALL CONCRETE BLOCK WALL - 2HR FIRE RATED

6. 6'-6" MIN. CLEAR OPENING UNDER SMOKESTOP

- GYPSUM BOARD PARTITION SEE PLAN FOR SIZE.



## PROPOSED NEW DEVELOPMENT

# **159 BOERUM ST**

# BROOKLYN, NY

#### BLOCK: 3071 ARCHITECT:

LOT: 10/40

AUFGANG ARCHITECTS LLC 74 LAFAYETTE AVENUE, SUITE 301 SUFFERN, NY INFO@AUFGANG.COM 845.368.0004



/1\08.15.19 PAA TO D.O.B.

05.31.19 BID SET

11.03.17

SHEET TITLE:

THIS DRAWING IS AN INSTRUMENT OF SERVIC

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10-19-15

1/4"=1'-0"

M.B.

BELONGS TO AUFGANG ARCHITECTS LLC, WITHOUT PREJUDICE.

ISSUE DATE:

DRAWN BY:

DRAWING NO:

NYC DOB NUMBER:

SCALE:

DEROGATION OF THE RIGHTS OF AUFGANG

DATE

05.03.19 PAA TO D.O.B.

07.27.18 90% PROGRESS SET

06.04.18 RE-ISSUED TO D.O.B

01.26.18 REISSUED TO D.O.B.

ISSUED TO D.O.B. FOR REVIEW AND COMMENTS

SEAL & SIGNATURE

PROJECT NO:

CHECKED BY:

SHEET NO:

A-505 01

#1520

A.F.M. / T.L.

321191802

SUBMISSIONS / REVISIONS

**ENLARGED 2BR** 

APARTMENT LAYOUTS

08.02.19 99% CONSTRUCTION SET

# MEP ENGINEER: A & D ENGINEERING, PLLC

2606 E. 15TH STREET, SUITE #304 BROOKLYN, NY 11235 : 718.872.6112

### INTERIOR DESIGNER:

ALCHEMY STUDIO NYC 154 GRAND STREET NEW YORK, NY 10013 T: 307.760.6454

# 64) (C4) $\bigcirc$ (63) KEY AT 14TH - 15TH NOT TO SCALE 3 (C3) KEY AT 13TH NOT TO SCALE (3)

REMOVABLE KITCHEN BASE CABINET - 2'-6' WIDE x 2'-0" DEEP

- (L) HANDICAP ADAPTABLE APARTMENT UNIT
- 5'-0" DIAMETER CLEAR HANDICAP FLOOR TURNING SPACE.
- , J "T" FLOOR TURNING SPACE
- 30" x 48" CLEAR FLOOR SPACE
- FIRE RATED SHAFT WALL.
- $\langle W \rangle$  WINDOW SEE WINDOW SCHEDULE ON DWG. A-601
- (X) DOOR & FRAME SEE DOOR SCHEDULE DRAWING A-600 Kom HARDWIRED CARBON MONOXIDE DETECTOR (BC 907) NO MORE THAN 15FT AWAY FROM BEDROOM DOORS



ELECTRICAL PANEL UNIT

SUSPENDED GYPSUM BOARD

COLUMN & COLUMN NUMBER

/ DOOR ON THE SAME FRAME

₩ EXIT LIGHT AND SIGN - WALL MOUNTED

NETWORK INTERFACE DEVICE PANEL

EXIT LIGHT AND SIGN - CEILING MOUNTED

BATHROOM DOORS & FRAMES SHALL BE

PROVIDED W/ MORTISED HINGE & LATCH

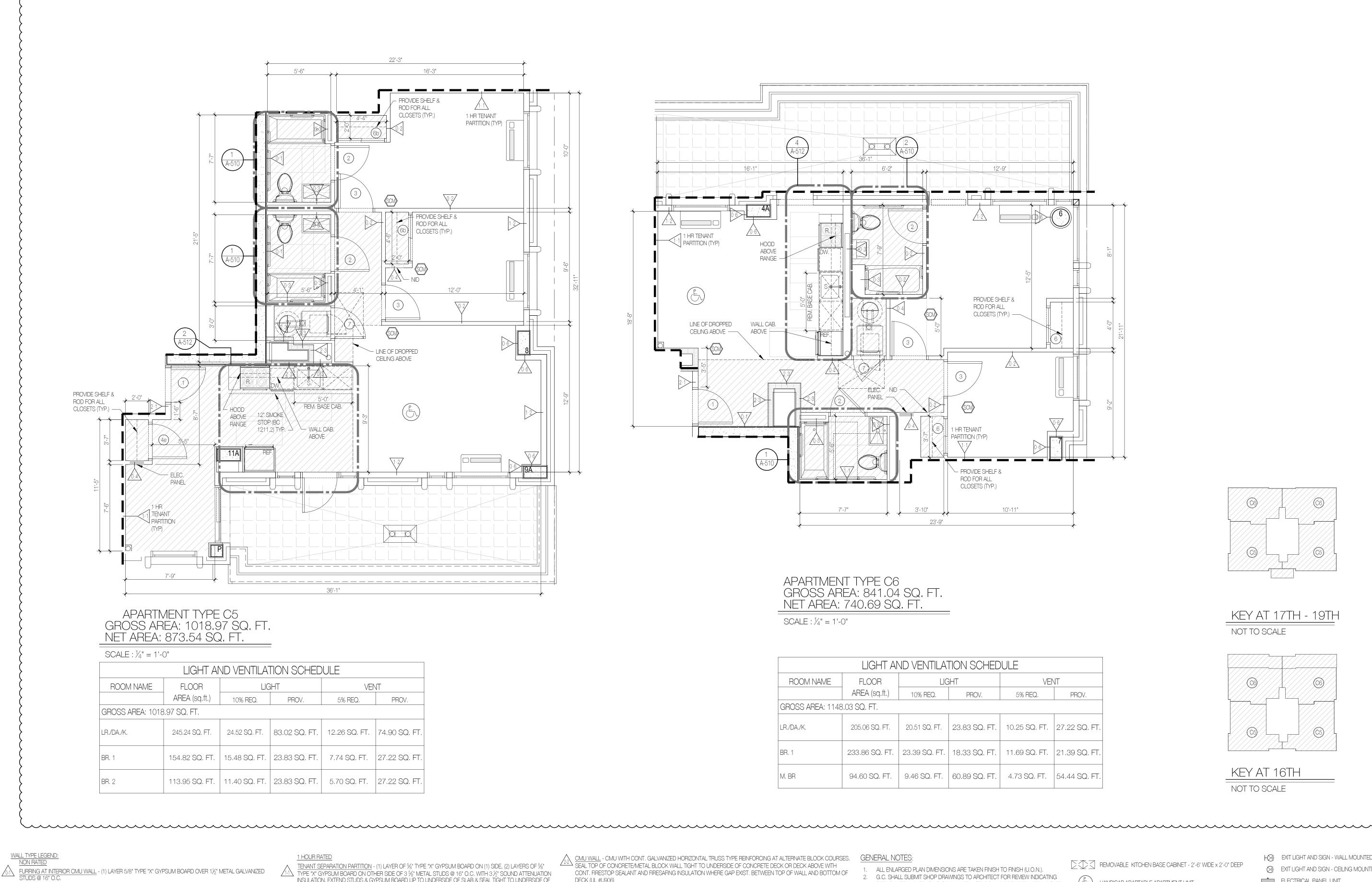
, BLANKS TO PERMIT FUTURE REVERSAL OF

| ( X )

KEY AT 12TH

NOT TO SCALE

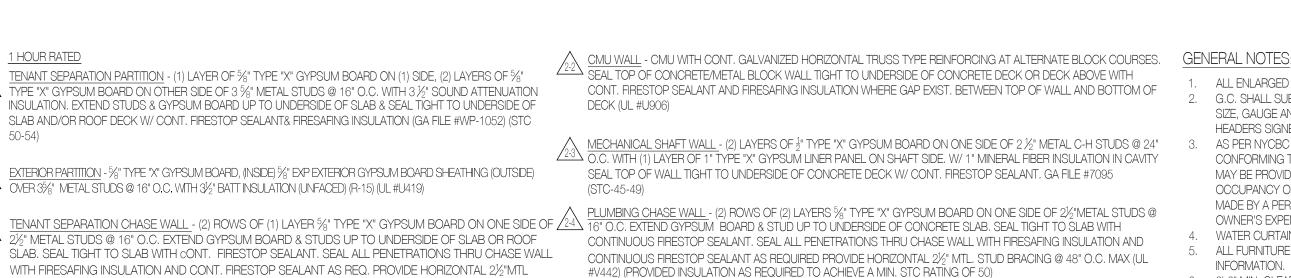
PARKING STACKER UNIT



- $\sqrt{0.2}$  <u>TYPICAL PARTITION</u> (1) LAYER  $\frac{5}{6}$ " TYPE "X" GYPSUM BOARD ON EACH SIDE OF 2  $\frac{1}{2}$ " METAL STUDS @ 16" O.C.
- BATHROOM CHASE WALL PARTITION (1) LAYER 5/8" TYPE "X" WATER RESISTANT GYPSUM BOARD ONE SIDE OF 35/1" METAL STUDS @ 16" O.C. *SEE INTERIOR DESIGN DRAWINGS FOR WALL THICKNESSES.
- <u>PARTITION</u> (1) LAYER OF 5%" TYPE "X" GYPSUM BOARD, ON EACH SIDE OF 3 5%" METAL STUDS @ 16" O.C. (@ APARTMENT ELECTRICAL PANEL/ NETWORK INTERFACE DEVICE PANEL)
- Image: Description of the second stateFURRING AT INTERIOR CMU WALL (PUBLIC CORRIDOR SIDE)- (1) LAYER %" TYPE "X" GYPSUM BOARDOVER 7/8" GALV. METAL STUDS @ 16 O.C.
- TYPE "X" GYPSUM BOARD ON OTHER SIDE OF 3 5/1" METAL STUDS @ 16" O.C. WITH 3 5/1" SOUND ATTENUATION INSULATION. EXTEND STUDS & GYPSUM BOARD UP TO UNDERSIDE OF SLAB & SEAL TIGHT TO UNDERSIDE OF SLAB AND/OR ROOF DECK W/ CONT. FIRESTOP SEALANT& FIRESAFING INSULATION (GA FILE #WP-1052) (STC 50-54)
- EXTERIOR PARTITION 5/" TYPE "X" GYPSUM BOARD, (INSIDE) 5/" EXP EXTERIOR GYPSUM BOARD SHEATHING (OUTSIDE)  $2^{1-2\Delta}$  OVER 35/8" METAL STUDS @ 16" O.C. WITH 31/2" BATT INSULATION (UNFACED) (R-15) (UL #U419)
- 13 <u>TENAINT SEPARATION OF ADD WALL</u> (2) NOW OF (1) DIVELY, WE AND SHOP OF SLAB OR ROOF SLAB. SEAL TIGHT TO SLAB WITH CONT. FIRESTOP SEALANT. SEAL ALL PENETRATIONS THRU CHASE WALL WITH FIRESAFING INSULATION AND CONT. FIRESTOP SEALANT AS REQ. PROVIDE HORIZONTAL 2½"MTL STUD BRACING @ 48" O.C. MAX. (UL#V442) PROVIDE INSULATION AS REQUIRED TO ACHIEVE A MIN. STC RATNG OF 50)

HOUR BATE INTERIOR PARTITION - (2) LAYERS 5/8" TYPE "X" GYPSUM BOARD ON EACH SIDE 3 5/6" METAL STUDS @ 16" C. WITH 3½" SOUND ATTENUATION INSULATION. EXTEND GYPSUM BOARD & STUDS UP TO UNDERSIDE OF FLOOR DECK OR ROOF DECK. SEAL TIGHT TO DECK W/ CONT. FIRESTOP SEALANT & FIRESAFING. (GA FILE #WP-1522 STC 55-59).

	LIGHT AN	ND VENTILA	TION SCHED	ULE	
ROOM NAME	FLOOR	LIG	ίНТ	VEN	JT
	AREA (sq.ft.)	10% REQ.	PROV.	5% REQ.	PROV.
GROSS AREA: 1148	3.03 SQ. FT.				
LR./DA./K.	205.06 SQ. FT.	20.51 SQ. FT.	23.83 SQ. FT.	10.25 SQ. FT.	27.22 SQ. FT.
BR. 1	233.86 SQ. FT.	23.39 SQ. FT.	18.33 SQ. FT.	11.69 SQ. FT.	21.39 SQ. FT.
M. BR	94.60 SQ. FT.	9.46 SQ. FT.	60.89 SQ. FT.	4.73 SQ. FT.	54.44 SQ. FT.



3 HOUR RATED (1) LAYER  $\frac{1}{2}$ " TYPE "X" GYPSUM BOARD OVER  $\frac{7}{6}$ " METAL HAT CHANNELS @ 24" O.C. OVER 2 HR RATED CONCRETE 23.1 BLOCK WALL WITH CONT. GALVANIZED HORIZONTAL TRUSS TYPE REINFORCING AT ALTERNATE COURSES. SEAL TOP -OF CONCRETE BLOCK WALL TIGHT TO UNDERSIDE OF SLAB ABOVE WITH CONT. FIRESTOP SEALANT AND FIRESAFING INSULATION WHERE A GAP EXISTS BETWEEN TOP OF WALL AND BOTTOM OF CONCRETE DECK (UL #U914) (PROVIDE STC RATING OF 50-54 AT COMPACTOR CHUTE ENCLOSURE ADJACENT TO DWELLING UNITS)

- G.C. SHALL SUBMIT SHOP DRAWINGS TO ARCHITECT FOR REVIEW INDICATING SIZE, GAUGE AND SPACING OF ALL METAL STUDS AND REQUIRED METAL BOXED HEADERS SIGNED AND SEALED BY A NYS LICENSED ENGINEER
- AS PER NYCBC 1107.2.8, AT THE OPTION OF THE OWNER, LAUNDRY EQUIPMENT CONFORMING TO THIS SECTION WITHIN THE DWELLING UNIT OR SLEEPING UNIT MAY BE PROVIDED AT THE TIME A PERSON WITH PHYSICAL DISABILITIES TAKES OCCUPANCY OF THE UNIT, OR WITHIN 10 DAYS OF THE DATE THE REQUEST IS MADE BY A PERSON WITH PHYSICAL DISABILITIES, WHICHEVER IS LATER, AT THE OWNER'S EXPENSE.
- WATER CURTAIN TYPE SPRINKLER HEADS PROVIDED ON ALL FLOORS ALL FURNITURE IS FOR REFERENCE ONLY. PLEASE SEE ID DRAWINGS FOR MORE INFORMATION.
- 6. 6'-6" MIN. CLEAR OPENING UNDER SMOKESTOP

### LEGEND:

- CONCRETE FOUNDATION WALL CONCRETE BLOCK WALL - 2HR FIRE RATED
- GYPSUM BOARD PARTITION SEE PLAN FOR SIZE.



## PROPOSED NEW DEVELOPMENT

# **159 BOERUM ST**

# BROOKLYN, NY

#### BLOCK: 3071 ARCHITECT:

AUFGANG ARCHITECTS LLC 74 LAFAYETTE AVENUE, SUITE 301 SUFFERN, NY INFO@AUFGANG.COM 845.368.0004

**DEVELOPER:** 



T: 646.439.4000 STRUCTURAL ENGINEER: McNAMARA - SALVIA 62 WEST 45TH STREET, 11TH FLOOR NEW YORK, NY 10036

SLATE PROPERTY GROUP 850 THIRD AVE, SUITE 16-B NEW YORK, NY 10022

LOT: 10/40

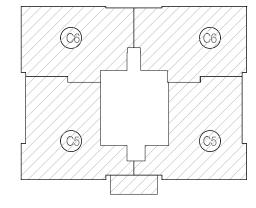
# MEP ENGINEER:

T: 212.246.9800

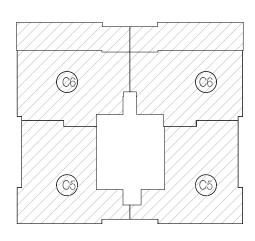
A & D ENGINEERING, PLLC 2606 E. 15TH STREET, SUITE #304 BROOKLYN, NY 11235 T: 718.872.6112

### INTERIOR DESIGNER:

ALCHEMY STUDIO NYC 154 GRAND STREET NEW YORK, NY 10013 T: 307.760.6454



KEY AT 17TH - 19TH NOT TO SCALE



KEY AT 16TH NOT TO SCALE

REMOVABLE KITCHEN BASE CABINET - 2'-6' WIDE x 2'-0" DEEP

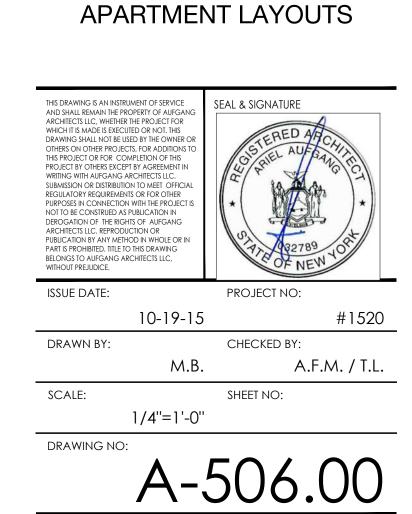
- (L) HANDICAP ADAPTABLE APARTMENT UNIT
- PARTITION SEE WALL TYPE LEGEND
- 5'-0" DIAMETER CLEAR HANDICAP FLOOR TURNING SPACE.
- , J "T" FLOOR TURNING SPACE
- 30" x 48" CLEAR FLOOR SPACE
- $\langle W \rangle$  WINDOW SEE WINDOW SCHEDULE ON DWG. A-601
- (X) DOOR & FRAME SEE DOOR SCHEDULE DRAWING A-600
- KOM HARDWIRED CARBON MONOXIDE DETECTOR (BC 907) NO MORE THAN 15FT AWAY FROM BEDROOM DOORS

- ₩ EXIT LIGHT AND SIGN WALL MOUNTED
- EXIT LIGHT AND SIGN CEILING MOUNTED ELECTRICAL PANEL UNIT
- NETWORK INTERFACE DEVICE PANEL
- SUSPENDED GYPSUM BOARD
- COLUMN & COLUMN NUMBER



PARKING STACKER UNIT

| ( X )



321191802

SUBMISSIONS / REVISIONS

**ENLARGED 2BR** 

NYC DOB NUMBER:

/1\08.15.19 PAA TO D.O.B.

05.31.19 BID SET

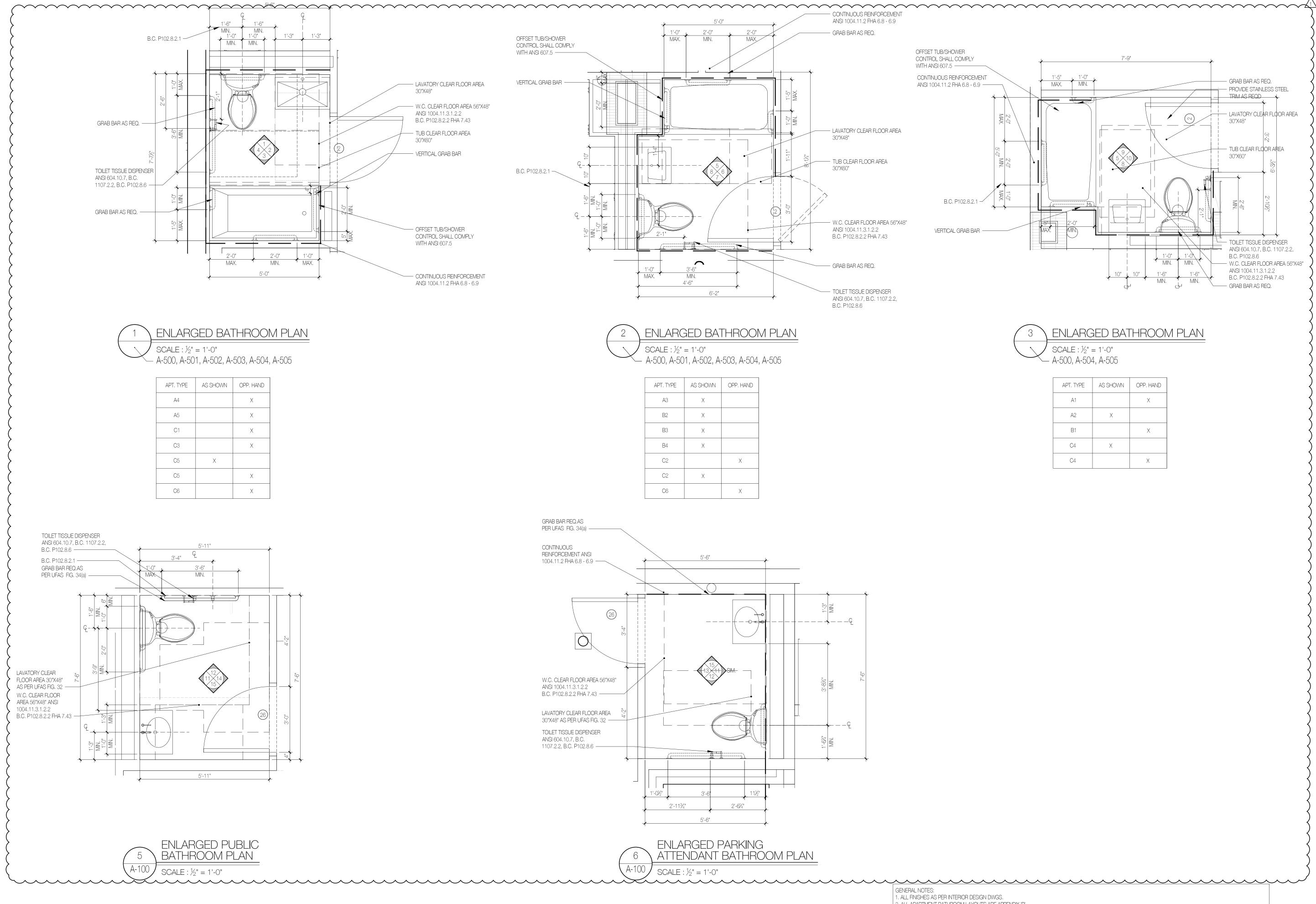
DATE

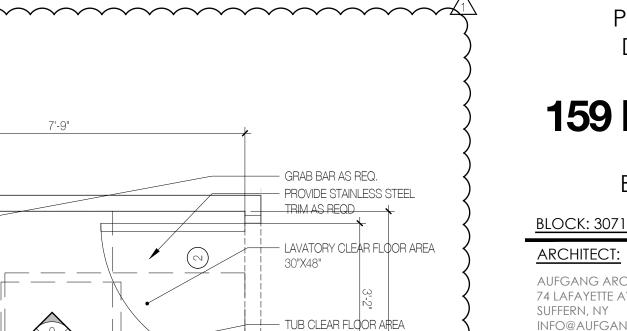
SHEET TITLE:

05.03.19 PAA TO D.O.B.

07.27.18 90% PROGRESS SET

08.02.19 99% CONSTRUCTION SET





1'-0" 1'-0 MIN. MIN. 1'-6" MIN. MIN. ىلى

# 30"X60" - TOILET TISSUE DISPENSER ANSI 604.10.7, B.C. 1107.2.2, B.C. P102.8.6 ANSI 1004.11.3.1.2.2 B.C. P102.8.2.2 FHA 7.43 GRAB BAR AS REQ.

# ENLARGED BATHROOM PLAN

SCALE :  $\frac{1}{2}$ " = 1'-0" A-500, A-504, A-505

1'-5" 1'-0" MAX. MIN.

~

APT. TYPE	AS SHOWN	OPP. HAND
A1		Х
A2	Х	
B1		Х
C4	Х	
C4		Х

6. REFER TO LATEST ELECTRICAL CODE FOR ELECTRICAL REQUIREMENTS, INCLUDING HEIGHT AND SPACING OF OUTLETS. COORDINATE WITH ELECTRICAL DRAWINGS. 7. GC SHALL VERIFY AND COORDINATE ANCHORING REQUIREMENTS FOR WALL MOUNTED LAVATORY, TOILET PAPER DISPENSER, FUTURE ADJUSTABLE HAND SHOWER, PROPOSED NEW DEVELOPMENT

# **159 BOERUM ST**

# BROOKLYN, NY

LOT: 10/40

AUFGANG ARCHITECTS LLC 74 LAFAYETTE AVENUE, SUITE 301 INFO@AUFGANG.COM 845.368.0004

**DEVELOPER:** 

SLATE PROPERTY GROUP 850 THIRD AVE, SUITE 16-B NEW YORK, NY 10022 T: 646.439.4000

## STRUCTURAL ENGINEER:

McNAMARA - SALVIA 62 WEST 45TH STREET, 11TH FLOOR NEW YORK, NY 10036 T: 212.246.9800

### MEP ENGINEER:

A & D ENGINEERING, PLLC 2606 E. 15TH STREET, SUITE #304 BROOKLYN, NY 11235 T: 718.872.6112

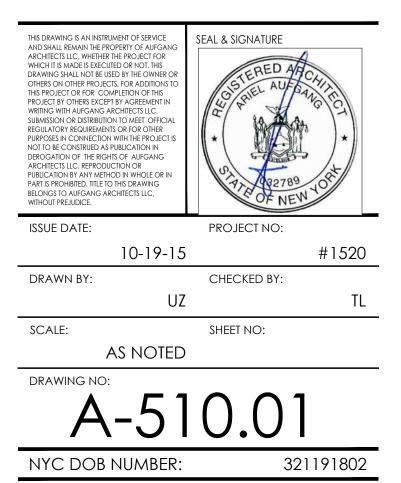
## INTERIOR DESIGNER:

ALCHEMY STUDIO NYC 154 GRAND STREET NEW YORK, NY 10013 T: 307.760.6454

108.15.19	PAA TO D.O.B.
08.02.19	99% CONSTRUCTION SET
05.31.19	BID SET
05.03.19	PAA TO D.O.B.
07.27.18	90% PROGRESS SET
06.04.18	RE-ISSUED TO D.O.B.
01.28.18	REISSUED TO D.O.B.
11.03.17	ISSUED TO D.O.B. FOR REVIEW AND COMMENTS
DATE	SUBMISSIONS / REVISIONS
SHEET TITLE	

SHEET TITLE:

# ENLARGED **APARTMENT & PUBLIC** BATHROOM LAYOUTS

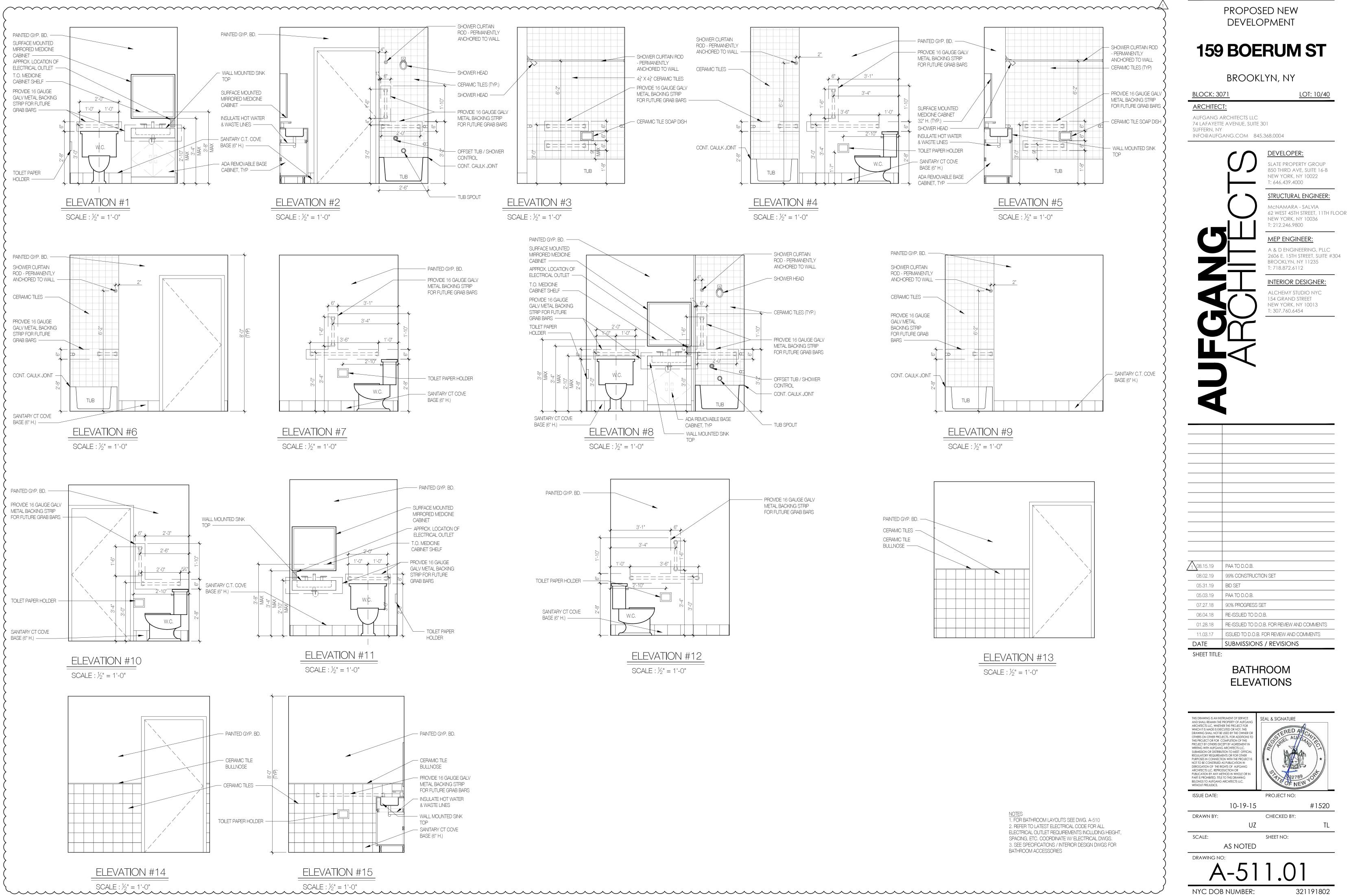


^{2.} ALL APARTMENT BATHROOM LAYOUTS ARE APPENDIX 'P' 3. REFER TO BATHROOM ELEVATIONS SEE DWG A-511

^{4.} ALL ACCESSORIES AND ELECTRICAL CONTROLS SHALL BE LOCATED WITHIN ACCESSIBLE REACH RANGE IN ACCORDANCE WITH ANSI 308.

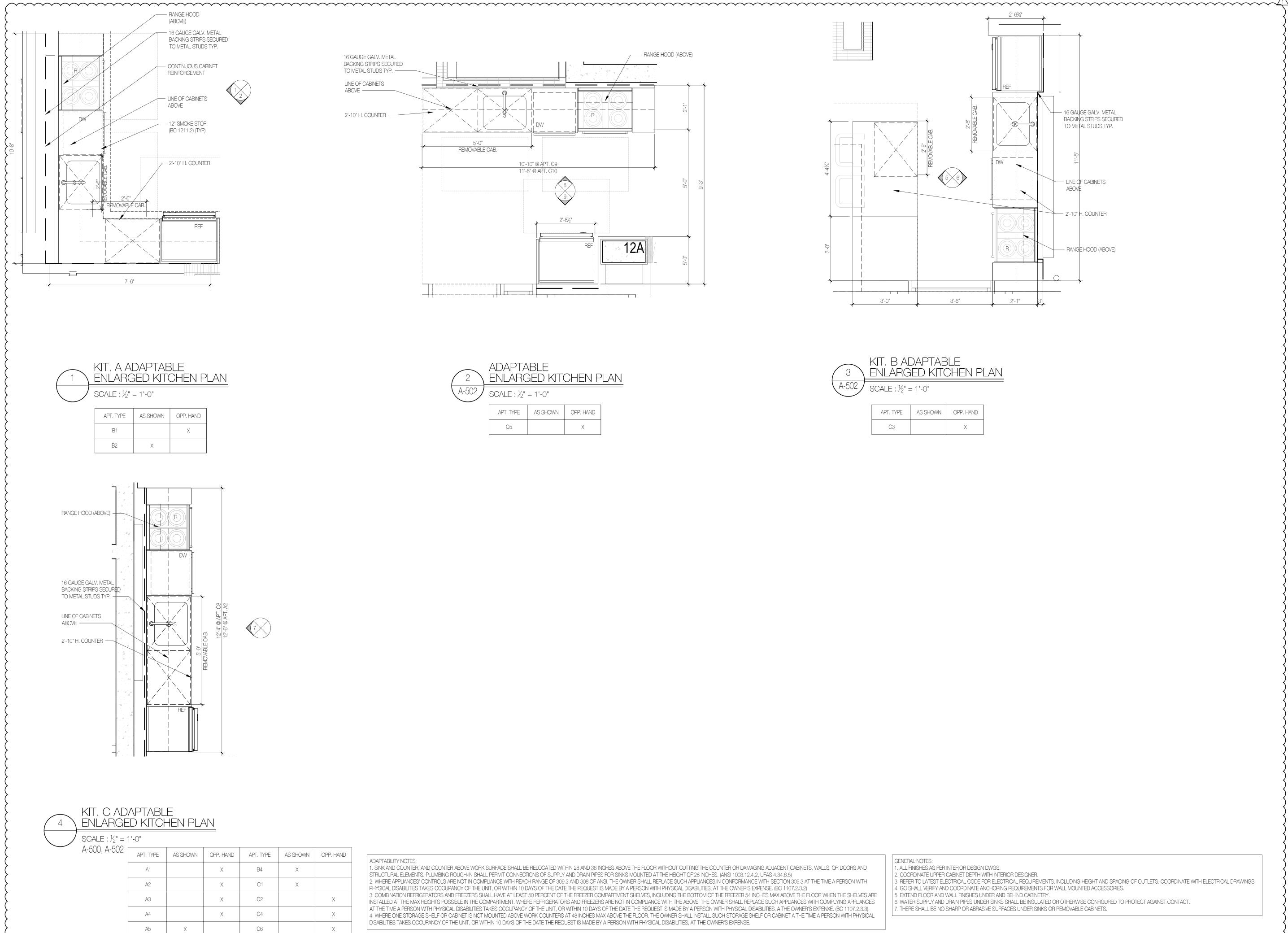
^{5.} ACCESSORIES AND CONTROLS SHALL NOT INTERRUPT GRAB BAR REINFORCEMENT.

MEDICINE CABINET, AND ALL ACCESSORIES.

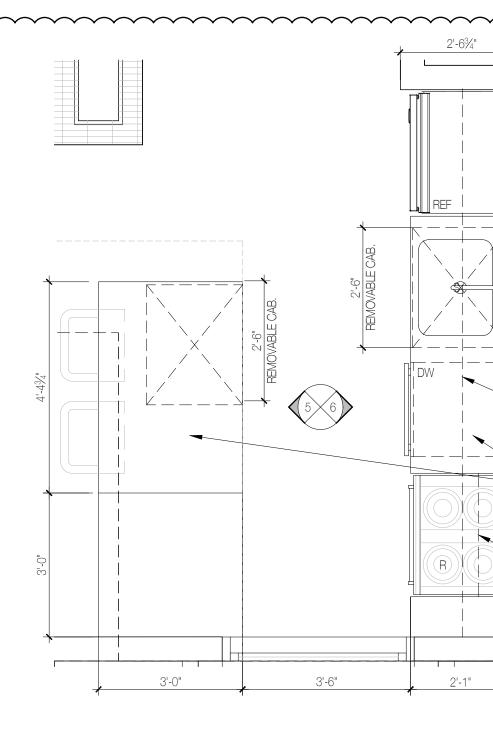


LOT: 10/40

#1520



# KITCHEN PLANS



SCALE : $\frac{1}{2}$ = 1'-0"		
APT. TYPE	AS SHOWN	OPP. HAND
C5		Х

	KIT. B AI ENLARG			LAN
A-502	SCALE : $\frac{1}{2}$ " =	= 1'-0"		
	APT. TYPE	AS SHOWN	OPP. HAND	
	C3		Х	

1. SINK AND COUNTER, AND COUNTER ABOVE WORK SURFACE SHALL BE RELOCATED WITHIN 28 AND 36 INCHES ABOVE THE FLOOR WITHOUT CUTTING THE COUNTER OR DAMAGING ADJACENT CABINETS, WALLS, OR DOORS AND 2. WHERE APPLIANCES' CONTROLS ARE NOT IN COMPLIANCE WITH REACH RANGE OF 309.3 AND 308 OF ANSI, THE OWNER SHALL REPLACE SUCH APPLIANCES IN CONFORMANCE WITH SECTION 309.3 AT THE TIME A PERSON WITH 3. COMBINATION REFRIGERATORS AND FREEZERS SHALL HAVE AT LEAST 50 PERCENT OF THE FREEZER COMPARTMENT SHELVES, INCLUDING THE BOTTOM OF THE FREEZER 54 INCHES MAX ABOVE THE FLOOR WHEN THE SHELVES ARE INSTALLED AT THE MAX HEIGHTS POSSIBLE IN THE COMPARTMENT. WHERE REFRIGERATORS AND FREEZERS ARE NOT IN COMPLIANCE WITH THE ABOVE, THE OWNER SHALL REPLACE SUCH APPLIANCES WITH COMPLYING APPLIANCES AT THE TIME A PERSON WITH PHYSICAL DISABILITIES TAKES OCCUPANCY OF THE UNIT, OR WITHIN 10 DAYS OF THE DATE THE REQUEST IS MADE BY A PERSON WITH PHYSICAL DISABILITIES, A THE OWNER'S EXPENXE. (BC 1107.2.3.3). 4. WHERE ONE STORAGE SHELF OR CABINET IS NOT MOUNTED ABOVE WORK COUNTERS AT 48 INCHES MAX ABOVE THE FLOOR, THE OWNER SHALL INSTALL SUCH STORAGE SHELF OR CABINET A THE TIME A PERSON WITH PHYSICAL

GENERAL NOTES:

- 1. ALL FINISHES AS PER INTERIOR DESIGN DWGS. 2. COORDINATE UPPER CABINET DEPTH WITH INTERIOR DESIGNER.
- 4. GC SHALL VERIFY AND COORDINATE ANCHORING REQUIREMENTS FOR WALL MOUNTED ACCESSORIES.
- 5. EXTEND FLOOR AND WALL FINISHES UNDER AND BEHIND CABINETRY.

7. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER SINKS OR REMOVABLE CABINETS.

## PROPOSED NEW DEVELOPMENT



## BROOKLYN, NY

### LOT: 10/40

ARCHITECT:

BLOCK: 3071

AUFGANG ARCHITECTS LLC 74 LAFAYETTE AVENUE, SUITE 301 SUFFERN, NY

INFO@AUFGANG.COM 845.368.0004



NEW YORK, NY 10022 T: 646.439.4000 STRUCTURAL ENGINEER:

SLATE PROPERTY GROUP

850 THIRD AVE, SUITE 16-B

**DEVELOPER:** 

McNAMARA - SALVIA 62 WEST 45TH STREET, 11TH FLOOR NEW YORK, NY 10036 T: 212.246.9800

#### MEP ENGINEER:

A & D ENGINEERING, PLLC 2606 E. 15TH STREET, SUITE #304 BROOKLYN, NY 11235 T: 718.872.6112

#### INTERIOR DESIGNER:

ALCHEMY STUDIO NYC 154 GRAND STREET NEW YORK, NY 10013 T: 307.760.6454

3. REFER TO LATEST ELECTRICAL CODE FOR ELECTRICAL REQUIREMENTS, INCLUDING HEIGHT AND SPACING OF OUTLETS. COORDINATE WITH ELECTRICAL DRAWINGS. 6. WATER SUPPLY AND DRAIN PIPES UNDER SINKS SHALL BE INSULATED OR OTHERWISE CONFIGURED TO PROTECT AGAINST CONTACT.

- 16 GAUGE GALV. METAL

TO METAL STUDS TYP.

– LINE OF CABINETS

2'-10" H. COUNTER

- RANGE HOOD (ABOVE)

ABOVE

BACKING STRIPS SECURED

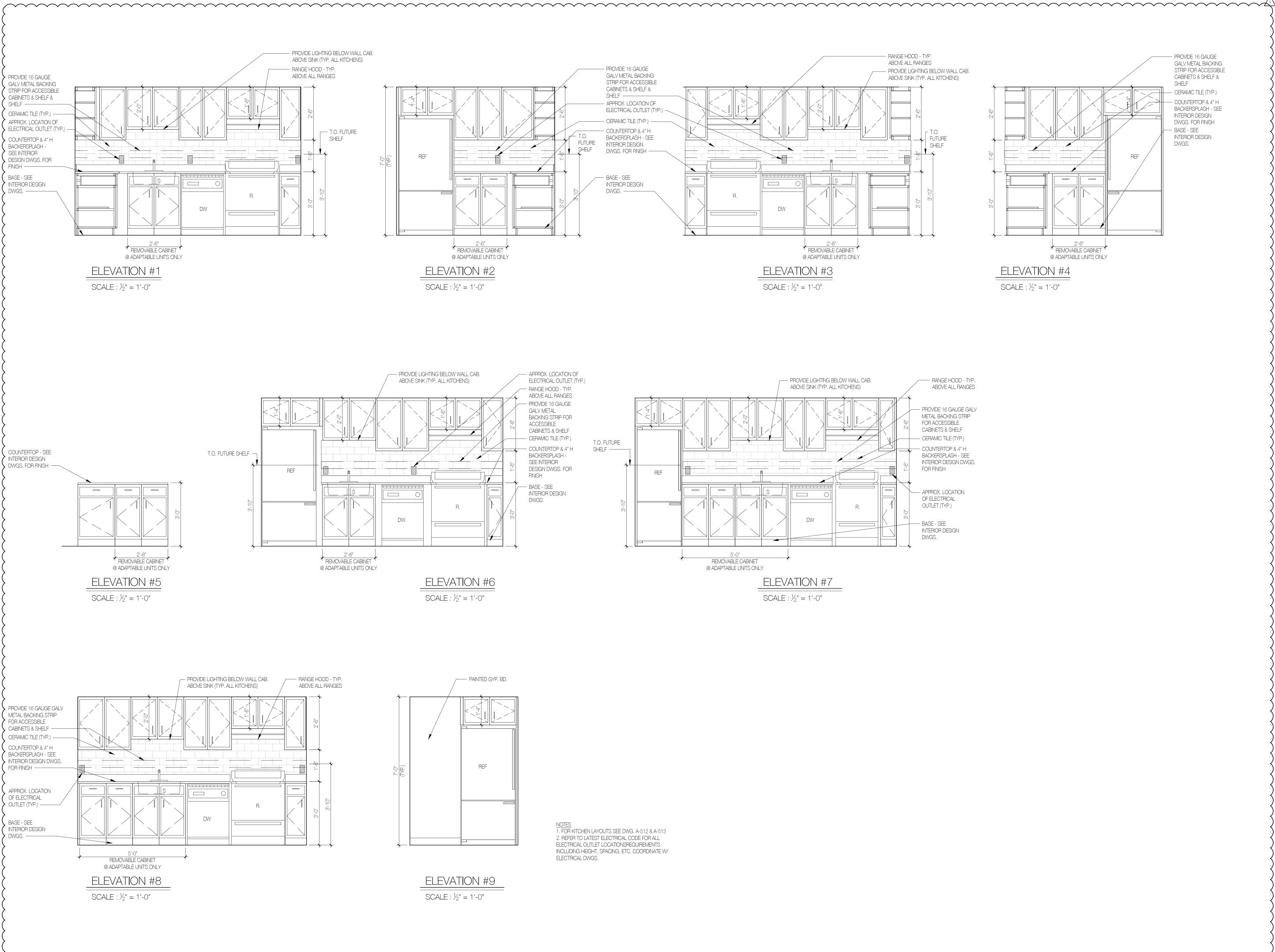
2108.15.19 PAA TO D.O.B. 08.02.19 99% CONSTRUCTION SET 05.31.19 BID SET 05.03.19 PAA TO D.O.B. 07.27.18 90% PROGRESS SET 06.04.18 RE-ISSUED TO D.O.B.

SHEET TITLE:	
DATE	SUBMISSIONS / REVISIONS
11.03.17	ISSUED TO D.O.B. FOR REVIEW AND COMMENTS
01.28.18	RE-ISSUED TO D.O.B. FOR REVIEW AND COMMENTS

# ENLARGED APARTMENT ADAPTABLE KITCHEN LAYOUTS

DATE

THIS DRAWING IS AN INSTRUMENT OF SERVIC THIS DRAWING IS AN INSTRUMENT OF SERVICE AND SHALL REMAIN THE PROPERTY OF AUFGANC ARCHIECTS LLC, WHETHER THE PROJECT FOR WHICH IT IS MADE IS EXECUTED OR NOT. THIS DRAWING SHALL NOT BE USED BY THE OWNER OI OTHERS ON OTHER PROJECTS, FOR ADDITIONS TT THIS PROJECT OR FOR COMPLETION OF THIS PROJECT BY OTHERS EXCEPT BY AGREEMENT IN WRITING WITH AUFGANG ARCHIECTS LLC. SUBMISSION OR DISTRIBUTION TO MEET OFFICIAL REGULATORY REQUIREMENTS OR FOR OTHER PURPOSES IN CONNECTION WITH THE PROJECT IS NOT TO BE CONSTRUED AS PUBLICATION IN DEROGATION OF THE RIGHTS OF AUFGANG ARCHIECTS LLC. REPRODUCTION OR SEAL & SIGNATURE DEROGATION OF THE RIGHTS OF AUFOANING ARCHITECTS LLC. REPRODUCTION OR PUBLICATION BY ANY METHOD IN WHOLE OR PART IS PROHIBITED. TITLE TO THIS DRAWING BELONGS TO AUFGANG ARCHITECTS LLC, WITHOUT PREJUDICE. ISSUE DATE: PROJECT NO: 10-19-15 #1520 DRAWN BY: CHECKED BY: UZ SCALE: SHEET NO: AS NOTED DRAWING NO: A-512.01 NYC DOB NUMBER: 321191802



## PROPOSED NEW DEVELOPMENT

- PROVIDE 16 GAUGE GALV METAL BACKING STRIP FOR ACCESSIBLE CABINETS & SHELF & SHELF - CERAMIC TILE (TYP.) - COUNTERTOP & 4" H BACKERSPLASH - SEE

INTERIOR DESIGN DWGS. FOR FINISH – BASE - SEE INTERIOR DESIGN DWGS.

# **159 BOERUM ST**

# BROOKLYN, NY

### LOT: 10/40

SLATE PROPERTY GROUP

850 THIRD AVE, SUITE 16-B

STRUCTURAL ENGINEER:

62 WEST 45TH STREET, 11TH FLOOR

McNAMARA - SALVIA

NEW YORK, NY 10036 T: 212.246.9800

NEW YORK, NY 10022

T: 646.439.4000

ARCHITECT:

BLOCK: 3071

AUFGANG ARCHITECTS LLC 74 LAFAYETTE AVENUE, SUITE 301 SUFFERN, NY INFO@AUFGANG.COM 845.368.0004

**DEVELOPER:** 



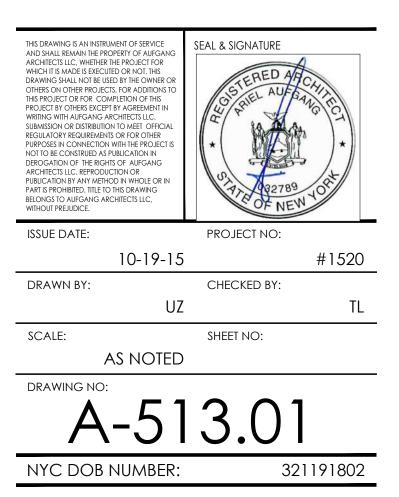
MEP ENGINEER: A & D ENGINEERING, PLLC 2606 E. 15TH STREET, SUITE #304 BROOKLYN, NY 11235 T: 718.872.6112

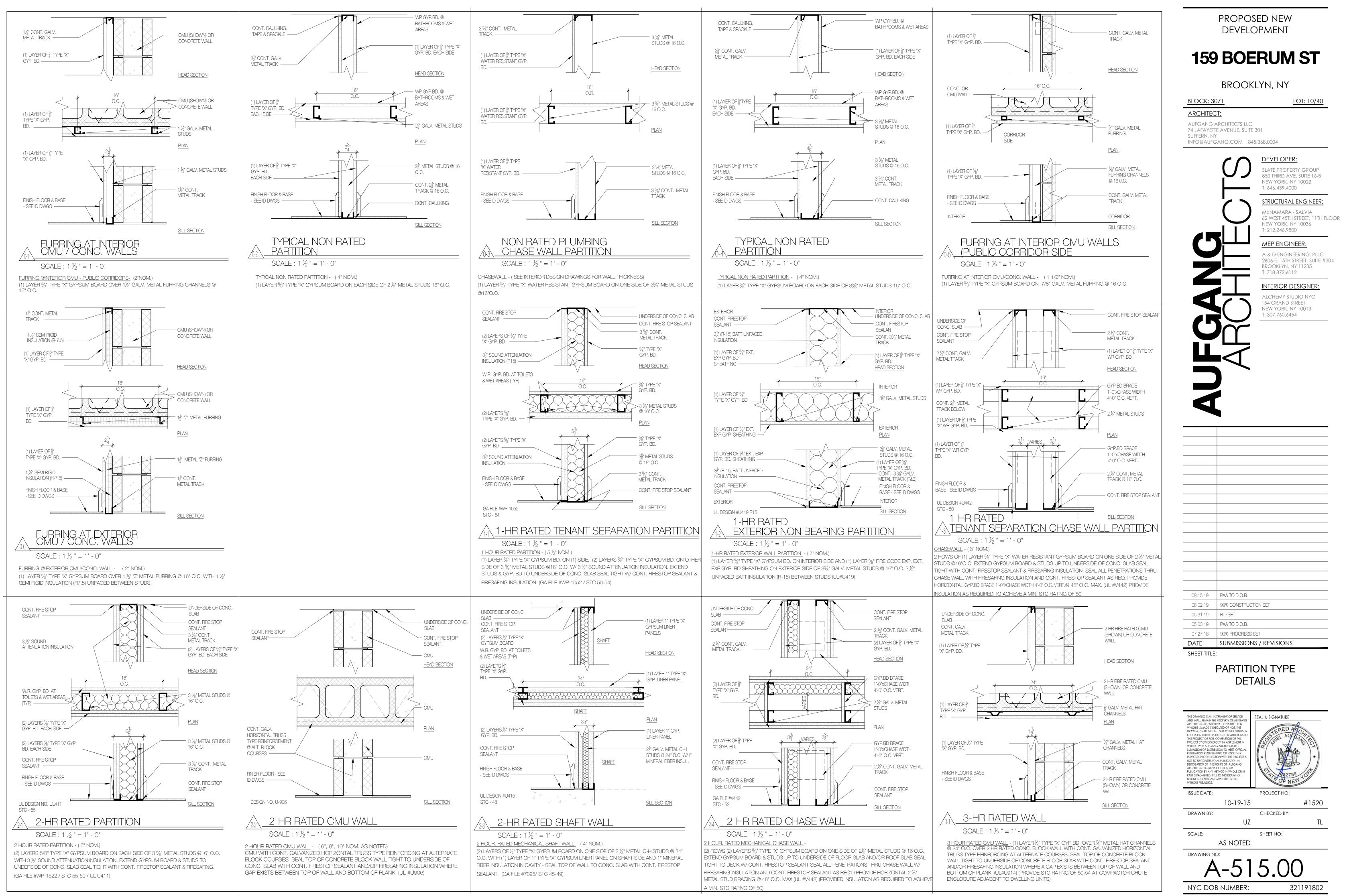
#### INTERIOR DESIGNER:

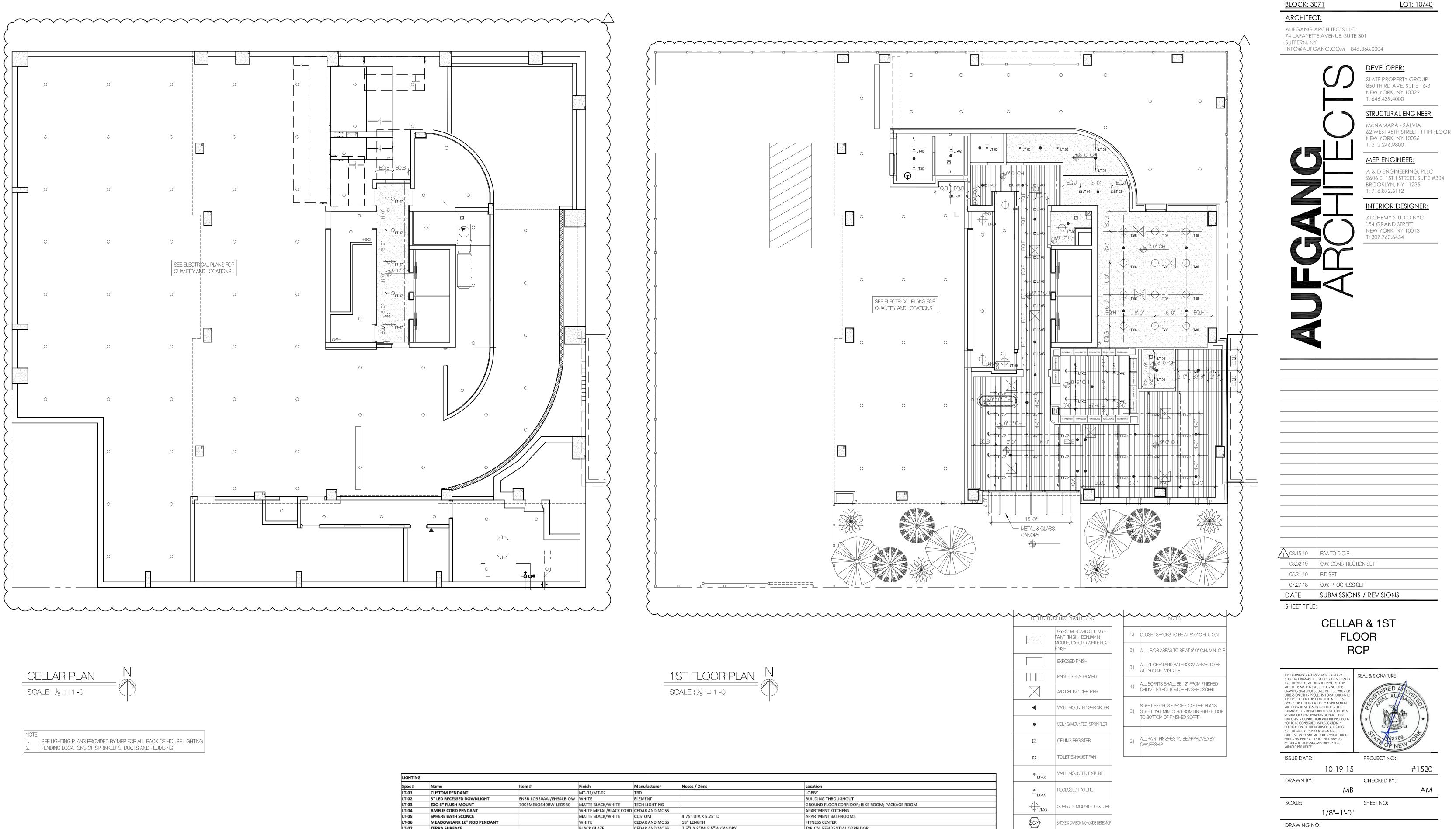
ALCHEMY STUDIO NYC 154 GRAND STREET NEW YORK, NY 10013 T: 307.760.6454

^	
1 08.15.19	PAA TO D.O.B.
08.02.19	99% CONSTRUCTION SET
05.31.19	BID SET
05.03.19	PAA TO D.O.B.
07.27.18	90% PROGRESS SET
06.04.18	RE-ISSUED TO D.O.B.
01.28.18	RE-ISSUED TO D.O.B. FOR REVIEW AND COMMENTS
11.03.17	ISSUED TO D.O.B. FOR REVIEW AND COMMENTS
DATE	SUBMISSIONS / REVISIONS

KITCHEN **ELEVATIONS** 







LT-07 TERRA SURFACE

1ST FLOOR PLAN	N
SCALE : ¹ / ₈ " = 1'-0"	

ltem#	Finish	Manufacturer	Notes / Dims	Location
	MT-01/MT-02	TBD		LOBBY
EN3R-LO930AAI/EN34LB-OW	WHITE	ELEMENT		BUILDING THROUGHOUT
700FMEXO640BW-LED930	MATTE BLACK/WHITE	TECH LIGHTING		GROUND FLOOR CORRIDOR; BIKE ROOM; PACKAGE ROOM
	WHITE METAL/BLACK CORD	CEDAR AND MOSS		APARTMENT KITCHENS
	MATTE BLACK/WHITE	CUSTOM	4.75" DIA X 5.25" D	APARTMENT BATHROOMS
	WHITE	CEDAR AND MOSS	18" LENGTH	FITNESS CENTER
	BLACK GLAZE	CEDAR AND MOSS	7.5"L X 8"W; 5.5"W CANOPY	TYPICAL RESIDENTIAL CORRIDOR
ł	EN3R-LO930AAI/EN34LB-OW 700FMEXO640BW-LED930	MT-01/MT-02 EN3R-L0930AAI/EN34LB-OW WHITE 700FMEXO640BW-LED930 MATTE BLACK/WHITE WHITE METAL/BLACK CORD MATTE BLACK/WHITE WHITE	MT-01/MT-02     TBD       EN3R-L0930AAI/EN34LB-OW     WHITE     ELEMENT       700FMEXO640BW-LED930     MATTE BLACK/WHITE     TECH LIGHTING       WHITE METAL/BLACK CORD     CEDAR AND MOSS       MATTE BLACK/WHITE     CUSTOM       WHITE     WHITE	MT-01/MT-02     TBD       EN3R-L0930AAI/EN34LB-OW     WHITE     ELEMENT       700FMEXO640BW-LED930     MATTE BLACK/WHITE     TECH LIGHTING       WHITE METAL/BLACK CORD     CEDAR AND MOSS       MATTE BLACK/WHITE     CUSTOM     4.75" DIA X 5.25" D       WHITE     CEDAR AND MOSS     18" LENGTH

PROPOSED NEW DEVELOPMENT

# **159 BOERUM ST**

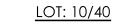
# BROOKLYN, NY

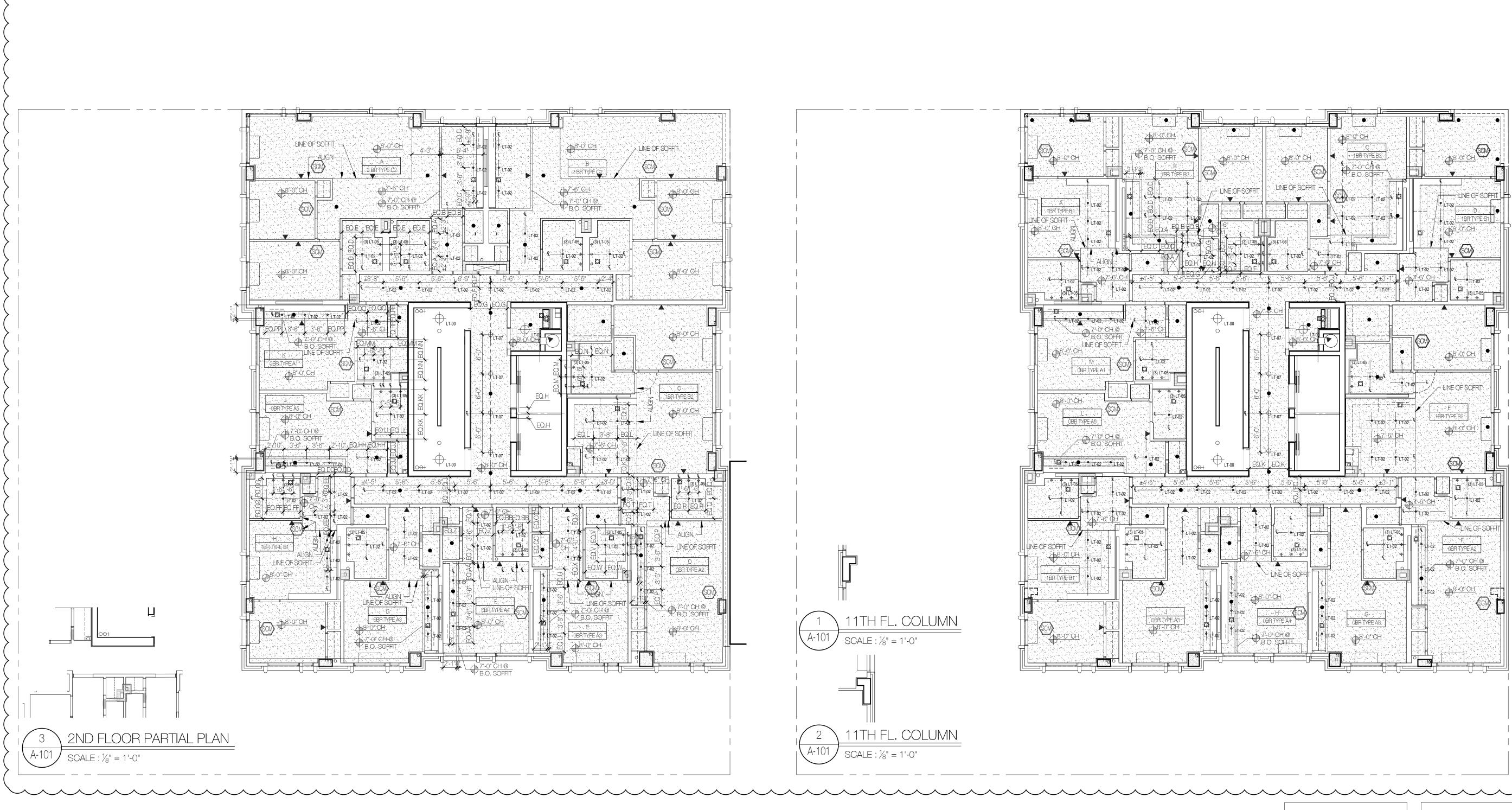
A-520

NYC DOB NUMBER:

.00

321191802





2ND - 3RD FLOOR PLAN
SCALE : ¹ / ₈ " = 1'-0"
N
NOTE: 1. SEE LIGHTING PLANS PROVIDED BY MEP FOR ALL BACK OF HOUSE LIGHTING

PENDING LOCATIONS OF SPRINKLERS, DUCTS AND PLUMBING

Ν

 $\langle h \rangle$ 

PROPOSED NEW DEVELOPMENT

# **159 BOERUM ST**

# BROOKLYN, NY

## LOT: 10/40

ARCHITECT: AUFGANG ARCHITECTS LLC 74 LAFAYETTE AVENUE, SUITE 301 SUFFERN, NY INFO@AUFGANG.COM 845.368.0004

BLOCK: 3071

DEVELOPER: SLATE PROPERTY GROUP 850 THIRD AVE, SUITE 16-B



08.15.19 PAA TO D.O.B.

05.31.19 BID SET

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BELONGS TO AUFGANG ARCHITECTS LLC WITHOUT PREJUDICE.

10-19-15

1/8''=1'-0''

MB

A-521

ISSUE DATE:

DRAWN BY:

DRAWING NO:

NYC DOB NUMBER:

SCALE:

DATE

SHEET TITLE:

08.02.19 99% CONSTRUCTION SET

07.27.18 90% PROGRESS SET

SUBMISSIONS / REVISIONS

2ND - 11TH

FLOOR

RCP

SEAL & SIGNATURE

PROJECT NO:

CHECKED BY:

SHEET NO:

#1520

.00

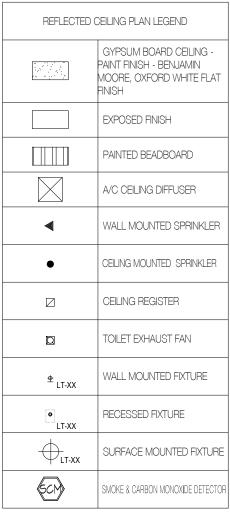
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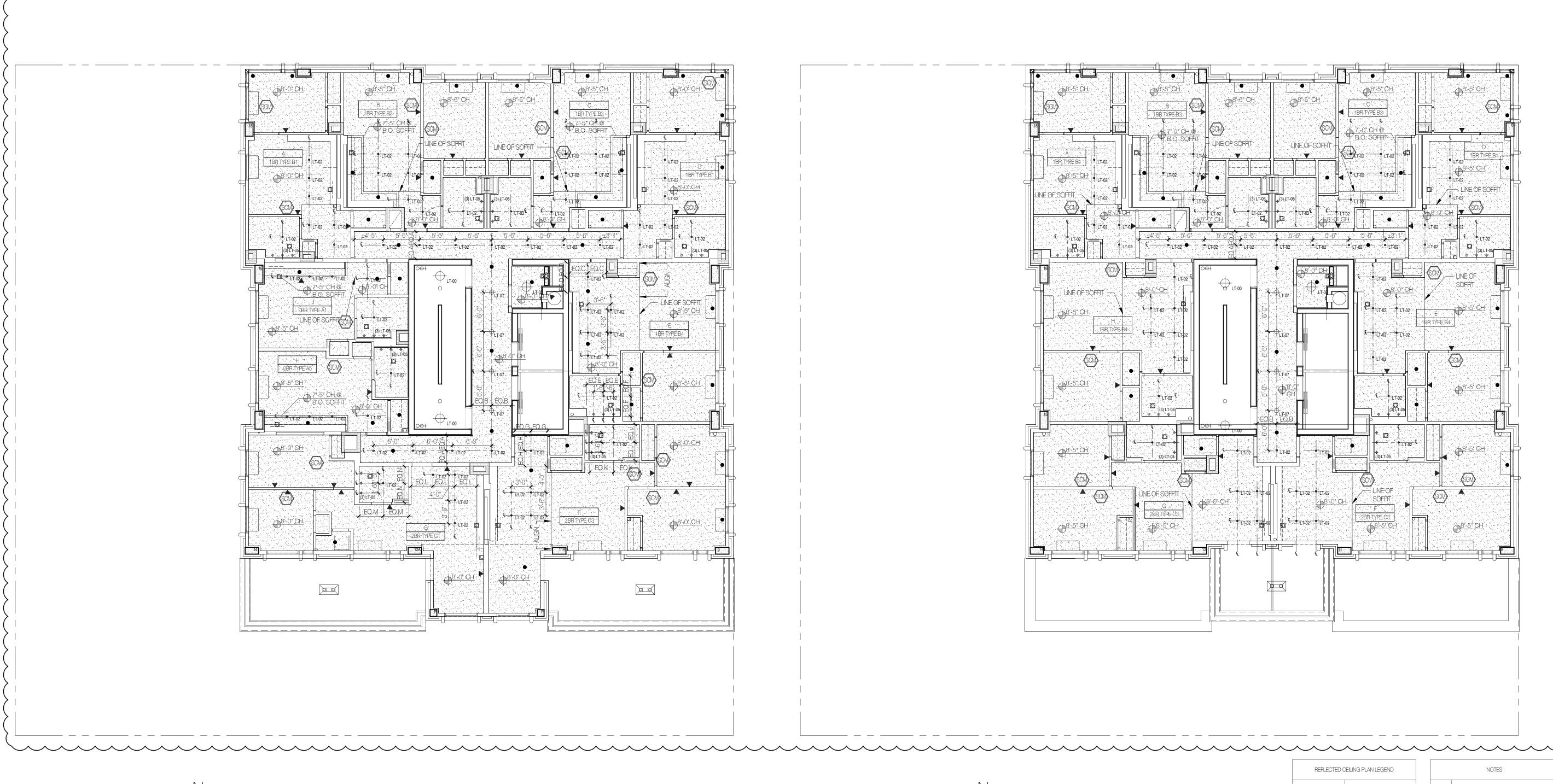
MEP ENGINEER: A & D ENGINEERING, PLLC 2606 E. 15TH STREET, SUITE #304 BROOKLYN, NY 11235 T: 718.872.6112

## INTERIOR DESIGNER:

ALCHEMY STUDIO NYC 154 GRAND STREET NEW YORK, NY 10013 T: 307.760.6454



	NOTES
1.)	CLOSET SPACES TO BE AT 8'-0" C.H. U.O.N.
2.)	ALL LR/DR AREAS TO BE AT 8'-0" C.H. MIN. CLR.
3.)	ALL KITCHEN AND BATHROOM AREAS TO BE AT 7'-6" C.H. MIN. CLR.
4.)	ALL SOFFITS SHALL BE 12" FROM FINISHED CEILING TO BOTTOM OF FINISHED SOFFIT
ō.)	SOFFIT HEIGHTS SPECIFIED AS PER PLANS. SOFFIT 6'-6" MIN. CLR. FROM FINISHED FLOOR TO BOTTOM OF FINISHED SOFFIT.
3.)	ALL PAINT FINISHES TO BE APPROVED BY OWNERSHIP
	<u> </u>



**12TH FLOOR PLAN** SCALE : ¹/₈" = 1'-0"



PROPOSED NEW DEVELOPMENT

# **159 BOERUM ST**

# BROOKLYN, NY

LOT: 10/40

ARCHITECT: AUFGANG ARCHITECTS LLC 74 LAFAYETTE AVENUE, SUITE 301 SUFFERN, NY

BLOCK: 3071

SUFFERN, NY INFO@AUFGANG.COM 845.368.0004



MEP ENGINEER: A & D ENGINEERING, PLLC 2606 E. 15TH STREET, SUITE #304 BROOKLYN, NY 11235

SLATE PROPERTY GROUP

850 THIRD AVE, SUITE 16-B

STRUCTURAL ENGINEER:

62 WEST 45TH STREET, 11TH FLOOR

McNAMARA - SALVIA

NEW YORK, NY 10036

T: 212.246.9800

T: 718.872.6112

_____

NEW YORK, NY 10022

T: 646.439.4000

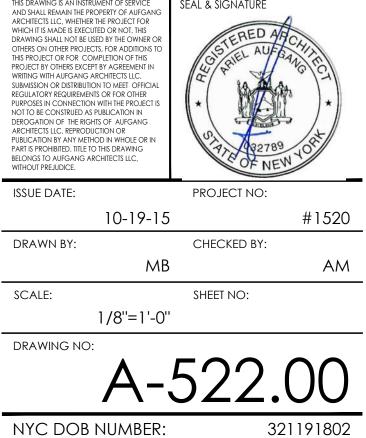
#### INTERIOR DESIGNER:

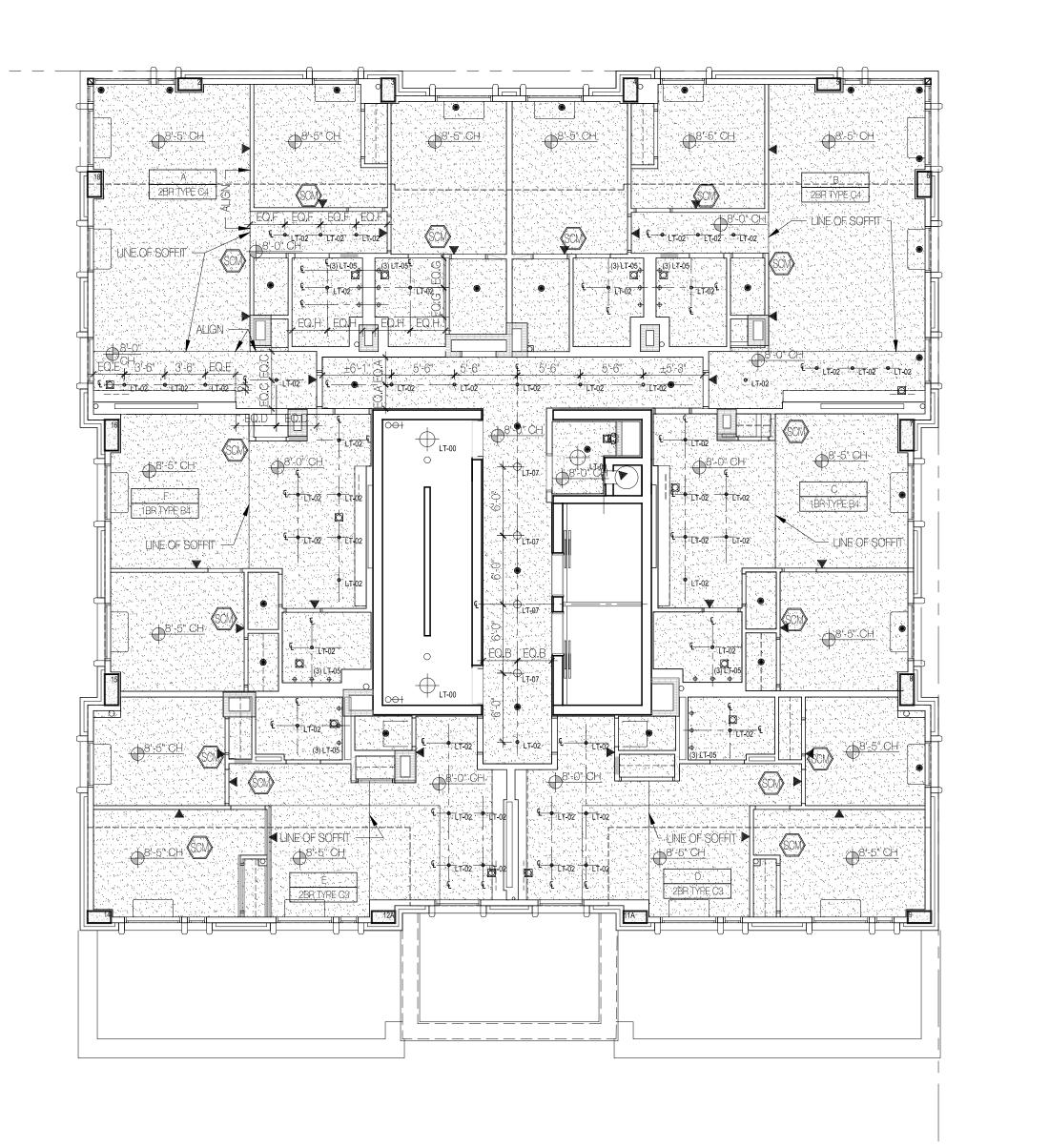
ALCHEMY STUDIO NYC 154 GRAND STREET NEW YORK, NY 10013 T: 307.760.6454

REFLECTED (	CEILING PLAN LEGEND
	GYPSUM BOARD CEILING - PAINT FINISH - BENJAMIN MOORE, OXFORD WHITE FLAT FINISH
	EXPOSED FINISH
	PAINTED BEADBOARD
	A/C CEILING DIFFUSER
•	WALL MOUNTED SPRINKLER
•	CEILING MOUNTED SPRINKLER
	CEILING REGISTER
	TOILET EXHAUST FAN
[⊉] LT-XX	WALL MOUNTED FIXTURE
LT-XX	RECESSED FIXTURE
- LT-XX	SURFACE MOUNTED FIXTURE
(SCM)	SMOKE & CARBON MONOXIDE DETECTOR

	NOTES
1.) CLOS	SET SPACES TO BE AT 8'-0" C.H. U.O.N.
2.) ALL L	R/DR AREAS TO BE AT 8'-0" C.H. MIN. CLR
31	ATCHEN AND BATHROOM AREAS TO BE -6" C.H. MIN. CLR.
4)	SOFFITS SHALL BE 12" FROM FINISHED NG TO BOTTOM OF FINISHED SOFFIT
5.) SOFF	IT HEIGHTS SPECIFIED AS PER PLANS. IT 6'-6" MIN. CLR. FROM FINISHED FLOOR OTTOM OF FINISHED SOFFIT.
6)	PAINT FINISHES TO BE APPROVED BY ERSHIP

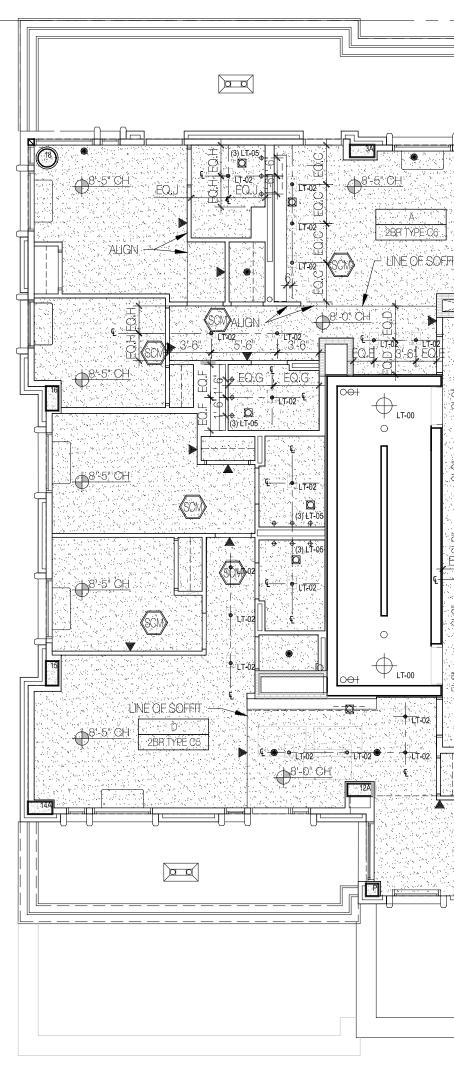
08.15.19	PAA TO D.O.B.	
08.02.19	99% CONSTRUCTION SET	
05.31.19	BID SET	
07.27.18	90% PROGRESS SET	
DATE	SUBMISSIONS / REVISIONS	
SHEET TITLE:		
	FL	I - 13TH .OOR RCP
THIS DRAWING IS AN INSTRUMENT OF SERVICE SEAL & SIGNATURE		
AND SHALL REMAIN TH ARCHITECTS LLC, WHE WHICH IT IS MADE IS EX	ECUTED OR NOT. THIS	CRED AHO







NOTE: SEE LIGHTING PLANS PROVIDED BY MEP FOR ALL BACK OF HOUSE LIGHTING PENDING LOCATIONS OF SPRINKLERS, DUCTS AND PLUMBING



## 16TH FLOOR PLAN SCALE : $\frac{1}{8}$ " = 1'-0"



PROPOSED NEW DEVELOPMENT

# **159 BOERUM ST**

## BROOKLYN, NY

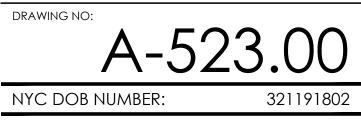


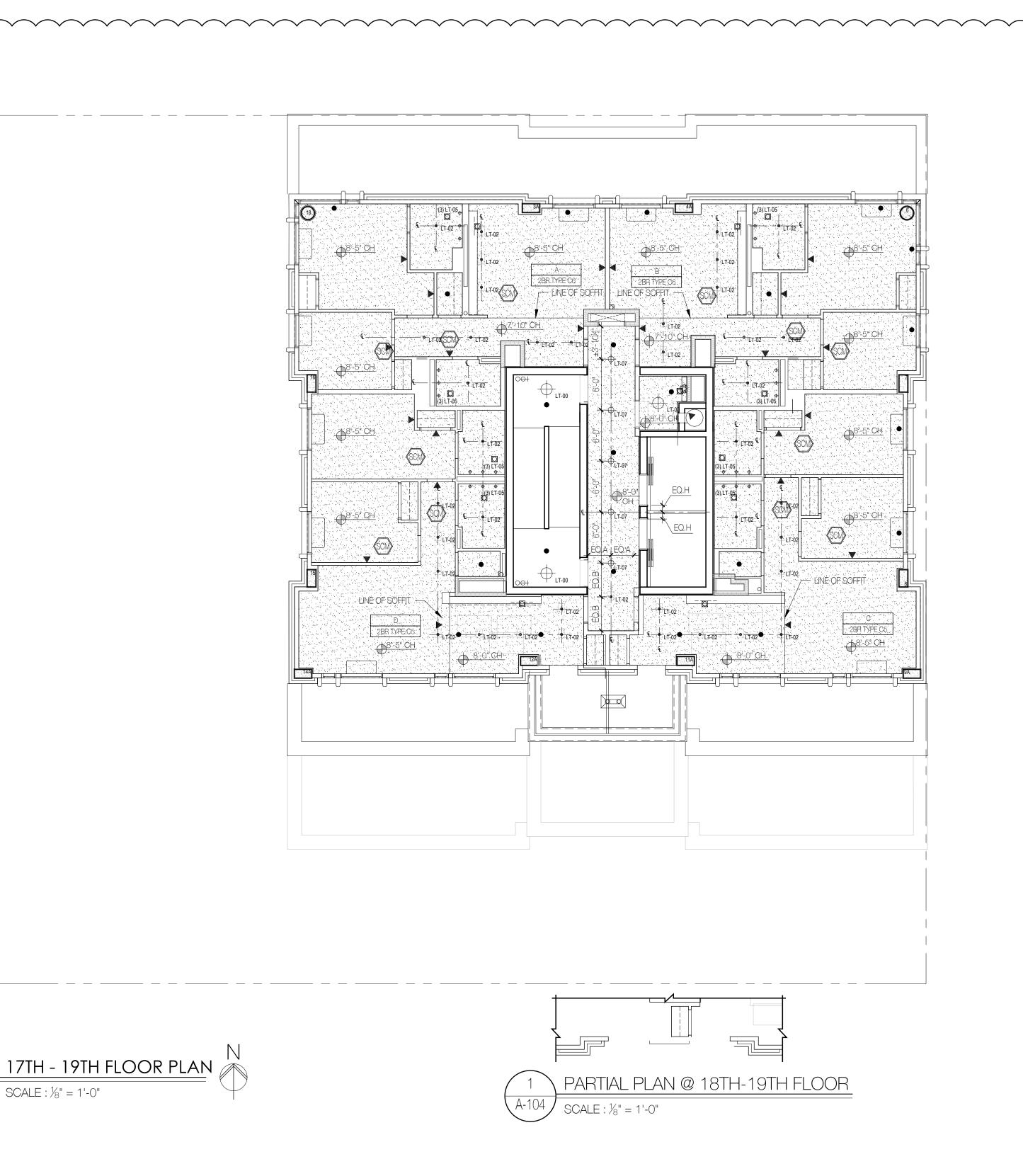
BLOCK: 3071 ARCHITECT: AUFGANG ARCHITECTS LLC 74 LAFAYETTE AVENUE, SUITE 301 SUFFERN, NY INFO@AUFGANG.COM 845.368.0004 DEVELOPER: SLATE PROPERTY GROUP 850 THIRD AVE, SUITE 16-B NEW YORK, NY 10022 T: 646.439.4000 STRUCTURAL ENGINEER: McNAMARA - SALVIA 62 WEST 45TH STREET, 11TH FLOOR ⊕⁽³⁾ LT-05 NEW YORK, NY 10036 ⊕^{8'-5".}CH T: 212.246.9800 68-5" CH B 2BR TYPE-C6 MEP ENGINEER: A & D ENGINEERING, PLLC 2606 E. 15TH STREET, SUITE #304 BROOKLYN, NY 11235 T: 718.872.6112 INTERIOR DESIGNER: SCIV <u>•</u>LT 02 • LT 02 € ALCHEMY STUDIO NYC 154 GRAND STREET ₩CM <u>8'-5" CH</u> NEW YORK, NY 10013 T: 307.760.6454 Ø (3) LT 05 ____8_-6" .CH. SCM €_____ ● LT 02 08-5" CH 8 LT 02 **∲** LT-02 9 3'-6" <u>3'-6</u>" <u>3'-6</u>" <u>4</u> 3'-6" 2BR TYPE C5 - <del>A</del>8-0" UNE OF SOFFIT ALL 9A 08.15.19 PAA TO D.O.B. 08.02.19 99% CONSTRUCTION SET 05.31.19 BID SET 07.27.18 90% PROGRESS SET DATE SUBMISSIONS / REVISIONS SHEET TITLE: 14TH - 16TH FLOOR REFLECTED CEILING PLAN LEGEND NOTES RCP GYPSUM BOARD CEILING -CLOSET SPACES TO BE AT 8'-0" C.H. U.O.N. PAINT FINISH - BENJAMIN MOORE, OXFORD WHITE FLAT FINISH ALL LR/DR AREAS TO BE AT 8'-0" C.H. MIN. CLR THIS DRAWING IS AN INSTRUMENT OF SERVICE AND SHALL REMAIN THE PROPERTY OF AUFGANG ARCHITECTS LLC, WHETHER THE PROJECT FOR WHICH IT IS MADE IS EXECUTED OR NOT. THIS DRAWING SHALL NOT BE USED BY THE OWNER OR OTHERS ON OTHER PROJECTS, FOR ADDITIONS TO THIS PROJECT OR FOR COMPLETION OF THIS PROJECT BY OTHERS EXCEPT BY AGREEMENT IN WRITING WITH AUFGANG ARCHITECTS LLC. SUBMISSION OR DISTRIBUTION TO MEET OFFICIAL REGULATORY REQUIREMENTS OR FOR OTHER PURPOSES IN CONNECTION WITH THE PROJECT IS NOT TO BE CONSTRUED AS PUBLICATION IN DEROGATION OF THE RIGHTS OF AUFGANG ARCHITECTS LLC. REPRODUCTION OR PUBLICATION BY ANY METHOD IN WHOLE OR IN PART IS PROHIBITED. TITLE TO THIS DRAWING BELONGS TO AUFGANG ARCHITECTS LLC, WITHOUT PREJUDICE. THIS DRAWING IS AN INSTRUMENT OF SERVICE SEAL & SIGNATURE EXPOSED FINISH ALL KITCHEN AND BATHROOM AREAS TO BE AT 7'-6" C.H. MIN. CLR. PAINTED BEADBOARD ALL SOFFITS SHALL BE 12" FROM FINISHED CEILING TO BOTTOM OF FINISHED SOFFIT A/C CEILING DIFFUSER  $\square$ SOFFIT HEIGHTS SPECIFIED AS PER PLANS.  $\triangleleft$ WALL MOUNTED SPRINKLER SOFFIT 6'-6" MIN. CLR. FROM FINISHED FLOOR TO BOTTOM OF FINISHED SOFFIT. CEILING MOUNTED SPRINKLEF ۲ ISSUE DATE: PROJECT NO: ALL PAINT FINISHES TO BE APPROVED BY CEILING REGISTER  $\square$ 10-19-15 OWNERSHIP #1520 TOILET EXHAUST FAN DRAWN BY: CHECKED BY: Ø S.Z. T.L. WALL MOUNTED FIXTURE [⊉] LT-XX SCALE: SHEET NO: 1/8"=1'-0" RECESSED FIXTURE LT-XX

(SCM)

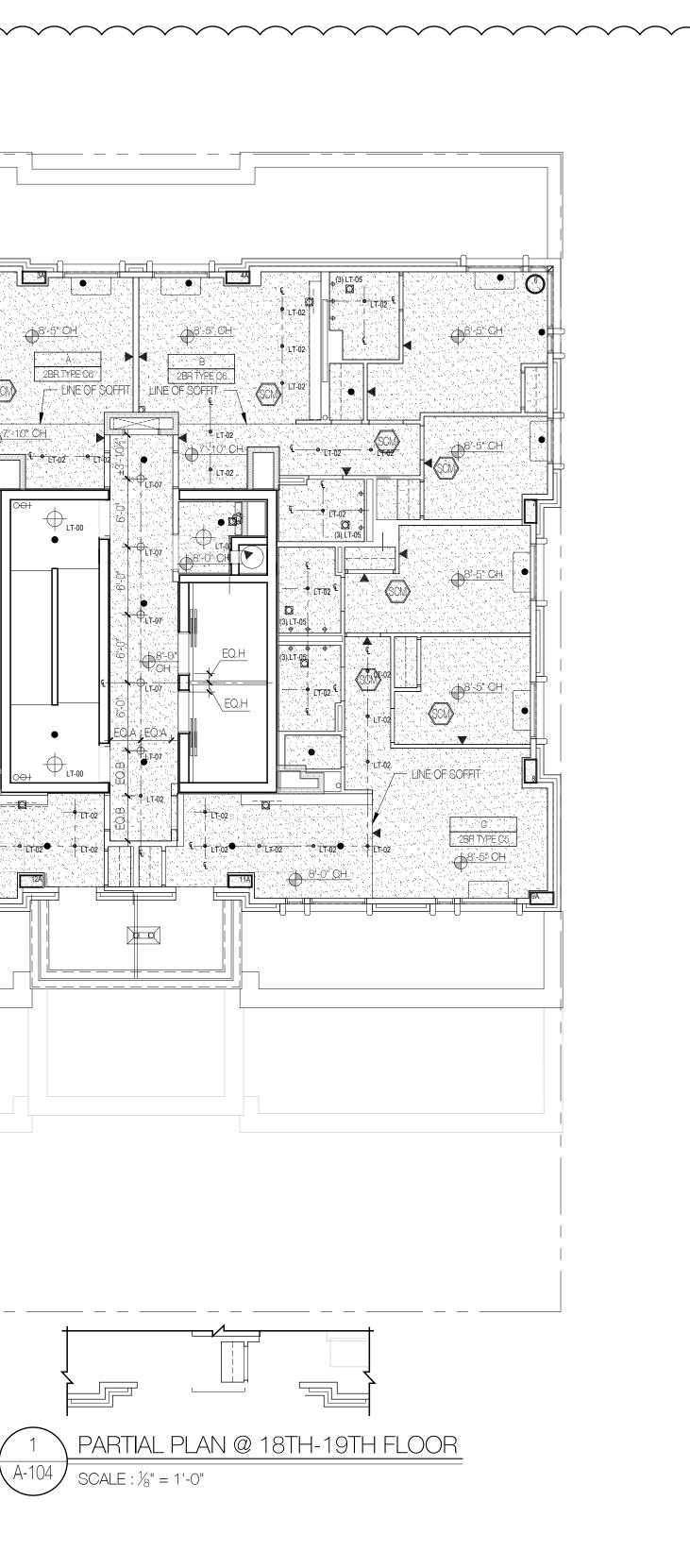
SURFACE MOUNTED FIXTURE

SMOKE & CARBON MONOXIDE DETECTOR









PROPOSED NEW DEVELOPMENT

# **159 BOERUM ST**

## BROOKLYN, NY

## BLOCK: 3071

LOT: 10/40

ARCHITECT: AUFGANG ARCHITECTS LLC 74 LAFAYETTE AVENUE, SUITE 301

SUFFERN, NY INFO@AUFGANG.COM 845.368.0004

DEVELOPER:

SLATE PROPERTY GROUP 850 THIRD AVE, SUITE 16-B NEW YORK, NY 10022 T: 646.439.4000

### STRUCTURAL ENGINEER:

McNAMARA - SALVIA 62 WEST 45TH STREET, 11TH FLOOR NEW YORK, NY 10036 T: 212.246.9800

#### MEP ENGINEER:

_____

A & D ENGINEERING, PLLC 2606 E. 15TH STREET, SUITE #304 BROOKLYN, NY 11235 T: 718.872.6112

#### INTERIOR DESIGNER:

ALCHEMY STUDIO NYC 154 GRAND STREET NEW YORK, NY 10013 T: 307.760.6454

REFLECTED CEILING PLAN LEGEND GYPSUM BOARD CEILING -PAINT FINISH - BENJAMIN MOORE, OXFORD WHITE FLAT FINISH EXPOSED FINISH PAINTED BEADBOARD A/C CEILING DIFFUSER  $\checkmark$ WALL MOUNTED SPRINKLER CEILING MOUNTED SPRINKLER ٠ CEILING REGISTER  $\square$ TOILET EXHAUST FAN Q WALL MOUNTED FIXTURE [⊕] LT-XX ● LT-XX RECESSED FIXTURE

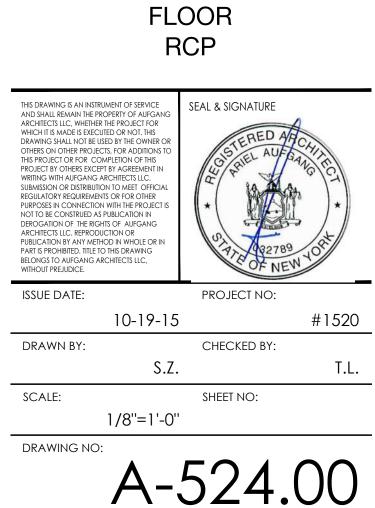
SURFACE MOUNTED FIXTURE

SMOKE & CARBON MONOXIDE DETECTOR

+ LT-XX

(CM)

	NOTES
1.)	CLOSET SPACES TO BE AT 8'-0" C.H. U.O.N.
2.)	ALL LR/DR AREAS TO BE AT 8'-0" C.H. MIN. CLR.
3.)	ALL KITCHEN AND BATHROOM AREAS TO BE AT 7'-6" C.H. MIN. CLR.
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5.)	SOFFIT HEIGHTS SPECIFIED AS PER PLANS. SOFFIT 6'-6" MIN. CLR. FROM FINISHED FLOOR TO BOTTOM OF FINISHED SOFFIT.
6.)	ALL PAINT FINISHES TO BE APPROVED BY OWNERSHIP



321191802

NYC DOB NUMBER:

08.15.19 PAA TO D.O.B.

05.31.19 BID SET

SHEET TITLE:

08.02.19 99% CONSTRUCTION SET

DATE SUBMISSIONS / REVISIONS

17TH - 19TH

07.27.18 90% PROGRESS SET

/	SCHEDULE	$\sim$	$\frown$		$\sim$	$\sim$	$\sim$	$\sim$			$\sim$	$\sim$	$\sim$	$\overline{}$			
	SONLDOLL																<ul> <li>DOOR NOTES:</li> <li>1. FOR DOOR HARDWARE SCHEDULE SEE SPECIFICATIONS &amp; INTERIOR DESIGN DWGS.</li> <li>2. ALL HARDWARE SHALL BE LEVER HANDLE AS PER A.D.A. REQUIREMENTS (U.O.N.).</li> </ul>
<u>}</u>	LIST OF ABBREVIATIONS				DOOF	)						FRA			ENERG		<ol> <li>FOR DOOR HEAD, JAMB AND SILL DETAILS SEE DWG. A-600</li> <li>PROVIDE MARBLE ADA SADDLES AT ALL FLOOR TO TILE TRANSITIONS (U.O.N.)</li> </ol>
ALUM ALUI FL FLUS GL GLAS H.C HOLI H.M HOLI K.D KNO MAR MAR RTD PAIN	IMINUM STL STEEL SH PANEL TEMP TEMPERED ISS W.G WIRE GLASS LOW CORE WD WOOD LOW METAL OCK DOWN FRAME RBLE SADDLE	<b>NATION</b>	ATION				RIAL		RATING	ATING	RIAL		ATING	WARE SET	HO A	NOTE : FOR ADITIONAL INFO SEE INTERIOR DESIGN DWG	<ol> <li>ALL EXTERIOR DOORS SHALL BE INSULATED AND PROVIDED WITH WEATHER STRIPPING AT ALL SIDES &amp; BOTTOM OF DOOR.</li> <li>ALL EXIT ACCESS DOORS SHALL BE PROVIDED WITH SELF CLOSER AND ADA SMOKE PROOF SADDLE.</li> <li>ALL EXIT AND EXIT DISCHARGE DOORS SHALL BE PROVIDED WITH PANIC HARDWARE, SELF CLOSER, AND ADA SMOKE PROOF SADDLE.</li> <li>ALL FIRE RESISTANT RATED DOORS SHALL SELF CLOSING.</li> <li>ALL DOORS IN WINDOW WALL SHALL BE COORDINATED WITH MANUFACTURER.</li> <li><u>APARTMENT ENTRY DOORS:</u> PROVIDE HEAVY DUTY LATCH SET &amp; HEAVY DUTY DEAD BOLT OPERABLE BY KEY FROM THE OUTSIDE AND A THUMB-TURN FROM THE INSIDE AS WELL AS CHAIN GUARD AND VIEWING DEVICE AS PER BC 1008.4.1</li> <li>DOORS THAT LEAD TO AREAS THAT MIGHT PROVE HAZARDOUS TO A PERSON WHO IS BLIND, INCLUDING, BUT NOT LIMITED TO, DOORS TO LEADING PLATFORMS, BOILER ROOMS, AND STAGES, SHALL BE MADE IDENTIFIABLE TO THE TOUCH BY A TEXTURED SURFACE ON THE DOOR HANDLE, KNOB, PULL OR OTHER OPERATIN HARDWARE. BC1109.9.5</li> <li>BATHROOM DOORS TO BE A WIDTH OF 3'-0". G.C. TO PROVIDE MOCK UP TO VERIFY DOOR CLEARANCE (MIN. CLEARANCE IS 32") SEE DOOR SWING DETAIL</li> </ol>
(	ROOM DESIGNATION	DESIG	ELEVA				MATE	FINISH	FIRE	STC F	MATE		SADD	HARD	-FACT	REMARKS	<ol> <li>G.C. TO COORDINATE APT. LAUNDRY ROOM SIZE WITH WASHER AND DRYER SIZE PROVIDED BY INTERIOR DESIGNER</li> <li>BATHROOM DOORS AND FRAMES SHALL BE PROVIDED WITH MORTISED HINGE AND LATCH TO PERMIT FUTURE REVERSAL OF DOOR - SEE PLANS FOR LOCATION</li> <li>THE MAXIMUM FORCE TO OPEN AN EXTERIOR DOOR IS 8.5 LB</li> </ol>
5	APARTMENT ENTRY	1	A S	3'-0" 7'-	'-0" 1	38" FL.	STL.	PTD.	1 ¹ / ₂ HR.		STL. PTI	). $1\frac{1}{2}$	HR. ALUM.			NOTE 10	16. THE MAXIMUM FORCE TO OPEN AN EXTERIOR DOOR IS 5 LB
Ś	BATHROOM BEDROOM	2 3				3/8         FL./H.C           3/8         FL./H.C		PTD. PTD.	-		H.M. PTI H.M. PTI		- MAR -			NOTE 12 & 13	
>	CLOSET CLOSET	4 4a				3/8         FL./H.C           3/8         FL./H.C	C. WD. C. WD.		-		H.M. PTI H.M. PTI		· -				
VTS	CLOSET CLOSET	4b 4c				3n/8         FL./H.C           3n/8         FL./H.C			-		H.M. PTI H.M. PTI		· -				2'-8" CL.
	CLOSET CLOSET	4d 4e			-	3/8         FL./H.C           3/8         FL./H.C			-		H.M. PTI H.M. PTI		. <u> </u>				
APAR	CLOSET	6	D (2	?) 1'-6" 7'-	'-0" 1	3" FL./H.C	C. WD.	PTD.	-	-	H.M. PTI	).				SLIDING DOORS	
$\langle \rangle$	CLOSET CLOSET	6a 6b	D (2	!) 2'-0" 7'·	'-0" 1	3/8         FL./H.C           3/8         FL./H.C	C. WD.	PTD.	-	-	H.M. PTI H.M. PTI	).	· -			SLIDING DOORS       SLIDING DOORS	
$\left\{ \right.$	CLOSET CLOSET	6c 6d				3/8         FL./H.C           3/8         FL./H.C			-		H.M. PTI H.M. PTI		· -			SLIDING DOORS       SLIDING DOORS	
	CLOSET LAUNDRY CLOSET	6e 7				3"         FL./H.C           3"         FL./H.C			-		H.M. PTI H.M. PTI		· -			SLIDING DOOR	
Ś	LAUNDRY CLOSET	7a				3" FL./H.C			-	-	H.M. PTI	).				OPENING TO ACCOMMODATE 24" WIDE COMPACT W/D	
(	BUILDING ENTRY & VESTIBULE	10 11		3'-0" 7'- 3'-0" 7'-	-0" 1 -0" 1		S ALUM		1 ¹ / ₂ HR. 1 ¹ / ₂ HR.		ALUM PTE		HR. ALUM.		0.50	SEE NOTE #8	
PUBLC	BUILDING ENTRY & VESTIBULE AMENITY SPACE	12	G 3	3'-0" 7'-	-0" 1	34" GLASS	6 ALUM 6 ALUM	PTD.	$1\frac{1}{2}$ HR.	- /	ALUM PTE	). $1\frac{1}{2}$	HR. ALUM.		0.50	SEE NOTE #8       SEE NOTE #8	
( T 5	APARTMENT TERRACE VESTIBULE AT ROOF	13 14		3'-0" 8'- 3'-0" 7'-	-0" 1 -0" 1	0	S ALUM S ALUM		- 1 ¹ / ₂ HR.		ALUM PTE ALUM PTE		HR. ALUM.		0.50	SEE NOTE #8	
{	PUBLIC RESTROOM AMENITY SPACE	26 27		3'-0" 7'- ) 3'-0" 9'-		3/4         FL./H.C           3/4         GLASS	C. HM S ALUM		- 1 ¹ / ₂ HR.		H.M. PTI ALUM PTI		HR. ALUM.			SEE NOTE #8 - S.S. KICKPLATE         SEE NOTE #8 - FIRE RATED ASSEMBLY AS NOTED OR SPRINKLER CURTAIN PROVIDED BY ENGINEER	
$\langle$	STAIR A, B PARKING AREA	20 20		3'-0" 7'- 3'-0" 7'-		3/4         FL.           3/4         FL.	STL STL	PTD. PTD.	1 ¹ / ₂ HR. 1 ¹ / ₂ HR.		STL PTI STL PTI		HR. ALUM. HR. ALUM.			SEE NOTE #8 SEE NOTE #8	
( v	REFUSE ROOM / PCKG ROOM	21	F S	3'-0" 7'-	-0" 1	3" FL.	STL	PTD.	1 ¹ / ₂ HR.	-	STL PTI	). $1\frac{1}{2}$	HR. ALUM.			SEE NOTE #8	TYP. SWINGING DOOR
V V	BICYCLE STORAGE MECH. AREAS / COMPACTOR ROOM/MECH. ROOF	22 23	F S	3'-0" 7'-	-0" 1	3/4         FL.           3/4         FL.	STL STL			-	STL PTI STL PTI	). $1\frac{1}{2}$	HR. ALUM. HR. ALUM.			SEE NOTE #8         SEE NOTE #8 , #11 - PROVIDE PANIC HARDWARE @ ELECTRICAL ROOM	ADA DETAIL
	STAIR @ ROOF PARKING BOOTH	24 25		3'-0" 7'- 3'-0" 7'-		3 ₁ FL.           3 ₁ FL.	STL STL	PTD. PTD.			STL PTI STL PTI		HR. ALUM. HR. ALUM.			SEE NOTE #8         SEE NOTE #8, INSULATED DOOR	
SERV	ELECTRICAL CLOSET	28	C 2	?'-10" 7'-	-0" 1	³ / ₄ FL.	STL	PTD.	1 ¹ / ₂ HR.	-	STL PTI	). $1\frac{1}{2}$	HR. ALUM.			SEE NOTE #8 - DOOR MUST OPEN 180 DEGREES	NOTES:
Ś																	<ol> <li>USE WOOD SLEEPERS TO LEVEL WOOD FLOORING (NON-FLOATING WOOD FLOOR SYSTEMS).</li> <li>USE CONC. TOPPING OVER CONCRETE SLABS IN ORDER TO PROVIDE LEVEL SUBSTRATE TO RECEIVE FLOATING</li> </ol>
<u>}</u>																	<ul> <li>WOOD FLOOR SYSTEM.</li> <li>3. PROVIDE ¼" CEMENTITIOUS BOARD AS A SUBSTRATE FOR SURFACES TO RECEIVE A TILE FINISH IN SHOWER AREAS. THIS IS IN ADDITION TO THE NUMBER OF GYP. BD. LAYERS INDICATED ON THE WALL TYPE LEGEND.</li> </ul>
$\left\langle \right\rangle$																	
>							IND	OVIDE SIGNA NCATING RC NCTION -	IAGE DOM 7				_			$\frac{3' \cdot 4''}{3' \cdot 0''}$	
>		+	VARIES		+	VARIES	<b>_</b>	VARIES	/ <b>x</b>							$\frac{1}{1}$ $\frac{1}$	MOTORIZED     9'-4"       ROLL-DOWN     + 1'-8"     3'-0"     1'-8"       GRILLE HOUSE     + 4     + 4     + 4
$\sum$	PEEP HOLE AND CHIME												ſ		TEMP.		NSLUCENT FIXED TEMPERED
				=		2			=						GLASS		(P) INSULATED GLASS
	7-'-(	-				۲ ۲			)-,2								
									,    _ <b>+</b>							SEE FLOOR PLANS	
$\left\langle \begin{array}{c} & & \\ & & \underline{E} \end{array} \right\rangle$	$\underline{ELEV}, \underline{A} \qquad \underline{ELEV}, \underline{B}$	+	ELEV. D			LEV. E	-+ □ 	LEV. F	<u>→</u> _ <b>+</b> ` <b>+</b>		ELEV. H		EMP.TRANSLU	ELEV. I	<u> </u>	$\underbrace{ELEV. J}$	ELEV. M
$\mathbf{X}$	DOOR ELEVATIONS		LIDING DO			<u>TUSED</u>	<b>.</b> .	<b>.</b> .	A -		<b>.</b> .	0	ILASS (TYP)				
~~~		$\sim$	$\sim$	$\sim$	$\sim$			$\sim$	$\sim$	$\sim$	$\sim$	$\sim$	$\sim$	$\sim$	$\sim$		
	CONCRETE BLOCK WALL	CONC BLOCK	CRETE < MALL						CONC BLOCK					CONCRET LOCK WA		2 HR RATED	
	SEE PLAN FOR SIZE	_	PLAN SIZE						SEE	١.			+	SEE PLA		PARTITION, %" TYPE "X" GYP. BOARD	VARES VARES VARES VARES VARES DOOR JAMB DM. UNDERCUT WHERE CALLED FOR CALLED FOR IN REMARKS
-					TYPE X						/ TRUSS 1 REINFO	YPE RCEMENT	RIZONTAL	FOR SIZE	5/	(2) VERT. METAL STUDS TYPE X AT JAMB (SEE WALL (2) VERT. METAL STUDS AT JAMB (SEE WALL (1) (2) VERT. METAL STUDS	LINE OF FIN. FLOOR FOR SADDLE
	CONC. LINTEL-SEE STRUCT. DWGS. FOR REINEORCEMENT			7⁄8" M	SUM BOA 1ETAL Z		MASONRY ANCHORS SIDE @ 7'-(STRAP (3 PER)" HIGH							78	PSUM BOARD TYPE LEGEND FOR TYPE LEGEND FOR SIZE)	
	CONT. CAULKING ALL		이 가지 않는 데 비슷하는 것이 없다.		RING @ 16		DOOR) _				FILL SC GROUT MIN. I'-4	AT JAM	H 35		FL		1 A ALUMINUM 2 A ALUMINUM 3 A ALUMINUM 3 A ALUMINUM 1 A SADDLE 3 A ALUMINUM 3 A ALUMINUM 3 A ALUMINUM
_	AROUND BOTH SIDES. (COLOR TO MATCH FRAME)			TRAC				<u> </u>			OPENIN CONT. (S CAULKING	<u> </u>			GALV. METAL GK JAMB ANCHORS. (3 PER SIDE) ALUM. SADDLE (BELOW) JAMB ANCHORS. (3 PER SIDE) JAMB ANCHORS. (3 PER SIDE) (4 PER SIDE) (5 PE	
	HOLLOW METAL			HOLL	. BD. BE _OW ME1			NING (M.C 3 SIZE		노기	3 SIDES	6 (COLO CH FRA	र _ू			NT. CAULKING IDES (COLOR H.M. DOOR & FRAME. SEE DOOR SCHEDULE IDES (COLOR SEE DOOR SCHEDULE	WRIES ATTACH SADDLE WIT SOREWS ONLY ON THE SDE OF THE ESPANSION JOINT. WRIES 8 1/2" UNLESS OTHERWSE NOTED DOOR JANE DIM. JOINT. JOINT.
	HOLLOW METAL FRAME (BEYOND)				ME LOW ME1 ME (BEY			NRY OPE LANS FOF			H.M. FR	AME - S SCHEDUL			ТС	MATCH FRAME) '-16 '-16 '-16 '-16 '-16 '-16 '-16 '-16	CARPETING DOOR SADOLE DOOR SADOLE LINE OF FLUSH SADOLE LINE OF FLUSH SADOLE LINE OF FLUSH SADOLE LINE OF FLUSH SADOLE
-	HOLLOW METAL DOOR				OW MET		GROUT SC					OR - SE SCHEDUL				DNRY STRAP FRAME WIDTH VARIES FRAME WIDTH VARIES DEPENDING ON WALL DEPENDING ON WALL HORS (3 PER THICKNESS (SEE MALL)	
										L		6MOKE F E (BELO	N)		DC		4 A ALUMINUM SADDLE • EXP. JOIN



SCALE : $1\frac{1}{2}$ " = 1'-0"

HEAD DETAIL @ GYP. BD./C.M.U. WALL SCALE : $1\frac{1}{2}$ " = 1'-0"

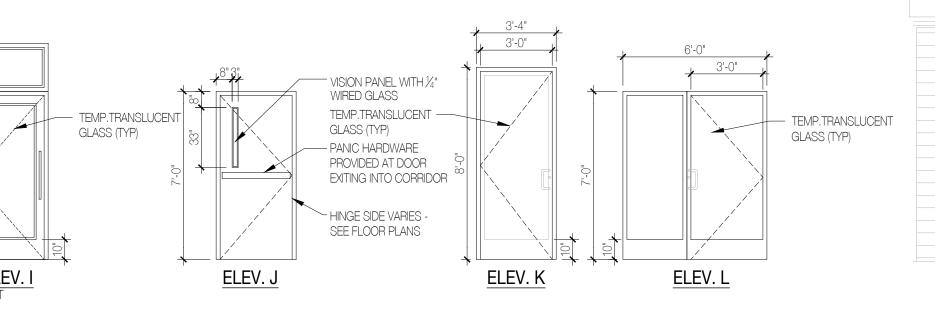
SCALE : $1\frac{1}{2}$ " = 1'-0"

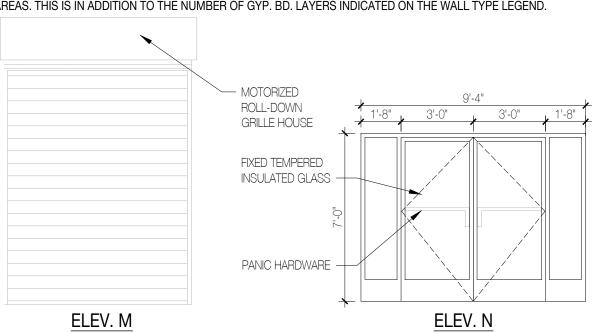
JAMB DETAIL @ MASONRY WALL

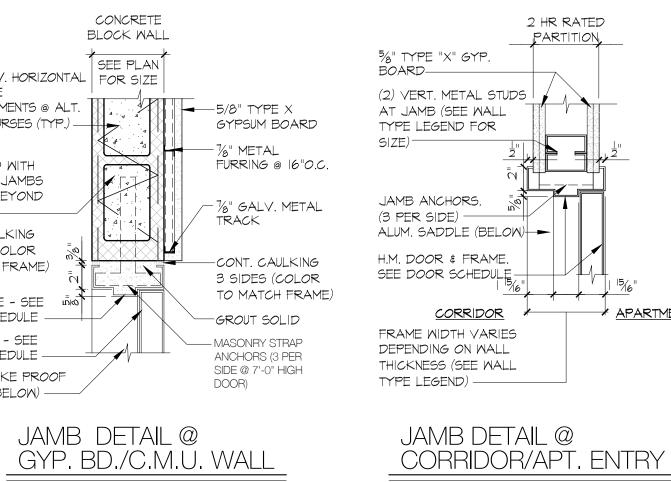
SCALE : $1\frac{1}{2}$ " = 1'-0"

res:

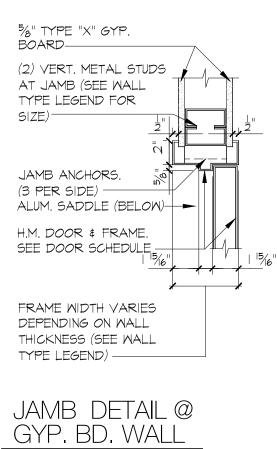
- R HARDWARE SCHEDULE SEE SPECIFICATIONS & INTERIOR DESIGN DWGS. WARE SHALL BE LEVER HANDLE AS PER A.D.A. REQUIREMENTS (U.O.N.). R HEAD, JAMB AND SILL DETAILS SEE DWG. A-600 MARBLE ADA SADDLES AT ALL FLOOR TO TILE TRANSITIONS (U.O.N.)
- ACCESS DOORS SHALL BE PROVIDED WITH SELF CLOSER AND ADA SMOKE PROOF SADDLE.
- RESISTANT RATED DOORS SHALL SELF CLOSING. IS IN WINDOW WALL SHALL BE COORDINATED WITH MANUFACTURER.
- WELL AS CHAIN GUARD AND VIEWING DEVICE AS PER BC 1008.4.1
- E. BC1109.9.5
- OORDINATE APT. LAUNDRY ROOM SIZE WITH WASHER AND DRYER SIZE PROVIDED BY INTERIOR DESIGNER MUM FORCE TO OPEN AN EXTERIOR DOOR IS 8.5 LB MUM FORCE TO OPEN AN INTERIOR DOOR IS 5 LB



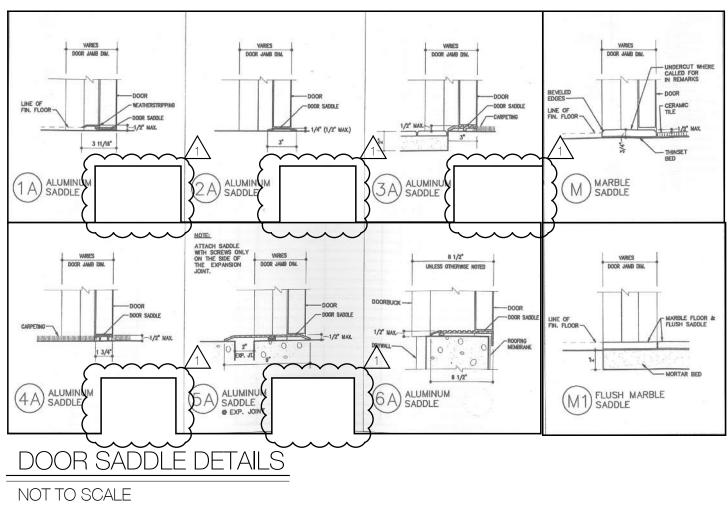


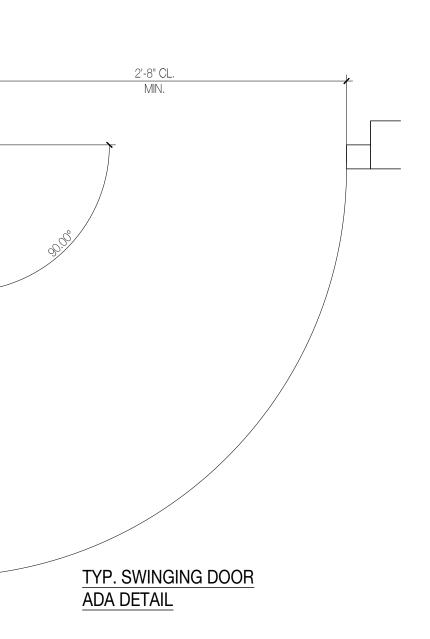


SCALE : $1\frac{1}{2}$ " = 1'-0"



SCALE : $1\frac{1}{2}$ " = 1'-0"





PROPOSED NEW DEVELOPMENT

159 BOERUM ST

BROOKLYN, NY

LOT: 10/40

ARCHITECT:

BLOCK: 3071

AUFGANG ARCHITECTS LLC 74 LAFAYETTE AVENUE, SUITE 301 SUFFERN, NY

INFO@AUFGANG.COM 845.368.0004



DEVELOPER:

SLATE PROPERTY GROUP 850 THIRD AVE, SUITE 16-B NEW YORK, NY 10022 T: 646.439.4000

STRUCTURAL ENGINEER:

McNAMARA - SALVIA 62 WEST 45TH STREET, 11TH FLOOR NEW YORK, NY 10036 T: 212.246.9800

MEP ENGINEER:

A & D ENGINEERING, PLLC 2606 E. 15TH STREET, SUITE #304 BROOKLYN, NY 11235 T: 718.872.6112

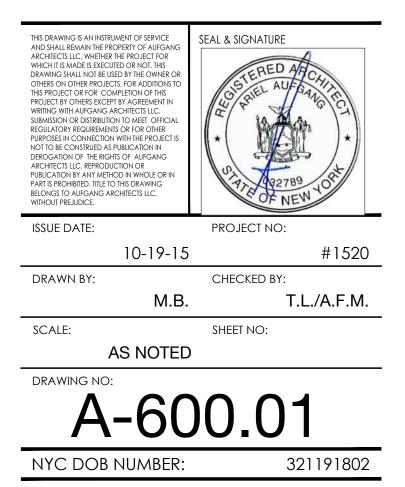
INTERIOR DESIGNER:

ALCHEMY STUDIO NYC 154 GRAND STREET NEW YORK, NY 10013 T: 307.760.6454

DATE	SUBMISSIONS / REVISIONS
11.03.17	ISSUED TO D.O.B. FOR REVIEW AND COMMENTS
01.26.18	REISSUED TO D.O.B.
06.04.18	RE-ISSUED TO D.O.B.
07.27.18	90% PROGRESS SET
05.03.19	PAA TO D.O.B.
05.31.19	BID SET
08.02.19	99% CONSTRUCTION SET
108.15.19	PAA TO D.O.B.

SHEET TITLE:

DOOR SCHEDULE & MISCELLANEOUS DETAILS



(WINDOW SCHEDULE

	-												
LIST OF ABBREVIATIONS		WI	NDOW	//FRA	ME		ROL OPE			3103 Pell	rgy Q.		
ALUM. - ALUMINUM S.C. - SOLID CORE FL. - FLUSH PANEL STL. - STEEL GL. - GLASS TEMP. - TEMPERED H.C. - HOLLOW CORE W.G. - WIRE GLASS H.M. - HOLLOW METAL WD. - WOOD K.D. - KNOCK DOWN FRAME FG. - MTL FRAME & GLASS MAR. - MARBLE SADDLE AN - ANODIZED ALUMINUM PTD. - PAINTED - - -	DESIGNATION	r width	r height	ME MATERIAL	SH	E RATING (HOUR)	RATING	TH	ЭНТ	ECT SCREEN	U-FACTOR	G.C.	
WINDOW TYPE	DESI	UNIT	UNIT	FRAME	FINISH	FIRE	STC	WIDTH	HEIGHT	INSECT	U-F/	S.H.	REMARKS
CASEMENT / FIXED WINDOW ASSEMBLY WITH LOUVERS	W1a	7'-2"	8'-0"	ALUM.	AN	-	35	7'-3"	8'-1"	YES	0.42	0.38	SEE NOTE #1 TO 10
CASEMENT / FIXED WINDOW ASSEMBLY WITH LOUVERS	W1b	7'-2"	8'-0"	ALUM.	AN		35	7'-3"	8'-1"	YES	0.42	0.38	SEE NOTE #1 TO 10
CASEMENT WITH LOUVER	W2	5'-0"	8'-0"	ALUM.	AN		35	5'-1"	8'-1"	YES	0.42	0.38	SEE NOTE #1 TO 10
CASEMENT WITH LOUVER	W3	4'-0"	8'-0"	ALUM.	AN	-	35	4'-1"	8'-1"	YES	0.42	0.38	SEE NOTE #1 TO 10
CASEMENT WITH LOUVER	W4	4'-0"	7'-6"	ALUM.	AN	81	35	4'-1"	7'-7"	YES	0.42	0.38	SEE NOTE #1 TO 10
FIXED WITH LOUVER	W5	1'-8"	8°-0"	ALUM.	AN		35	1'-9"	8'-1"	YES	0.42	0.38	SEE NOTE #1 TO 10
SLIDING WINDOW (PARKING BOOTH)	W6	4'-2"	3'-6"	ALUM.	AN	10	35	4'-3"	3'-7"	NO	0.42	0.38	SEE NOTE #1 TO 10
FIXED WINDOW @ STAIR BULKHEAD	W7	4'-1"	4'-4"	ALUM.	AN	1 1/2	35	4'-2"	4'-5"	NO	0.42	0.38	SEE NOTE #1 TO 10

*NOTE: W#(a/b) DIRECTION OF DESIGNATED WINDOW OPERATION.

WINDOW ENERGY PERFORMANCE NOTES ASHRAE 90.1 (2013):

FENESTRATION AND DOORS : Air leakage for fenestration and doors shall be determined in accordance with AAMA/WDMA/CSA 101/I.S.2/A440, NFRC 400 OR ASTM E283 as specified below. Air leakage shall not exceed:

a. 1.0 cfm/ft² for glazed swinging entrance doors and revolving doors, tested at a pressure of at least 1.57 psf.

b. 0.06 cfm/ft² for storefront glazing, tested at a pressure of at least 1.57 psf or higher in accordance with NRFC 400 or ASTM E283.

VESTIBULES: Building entrances that separate conditioned space from the exterior shall be protected with an enclosed vestibule, with all doors opening into and out of the vestibule equipped with self-closing devices. Vestibules shall be designed so that in passing through the vestibule it is not necessary for the interior and exterior doors to open at the same time. Interior and exterior doors shall have a minimum distance between them of not less than 7ft when in the closed position. The floor area of each vestibule shall not exceed the greater of 50ft² or 2% of the gross conditioned floor area for that level of the building. The exterior envelope of conditioned vestibules shall comply with the requirements for a conditioned space. The interior and exterior envelope of unconditioned vestibules shall comply with the requirements for a semi-heated space.

LOUVER SCHEDULE

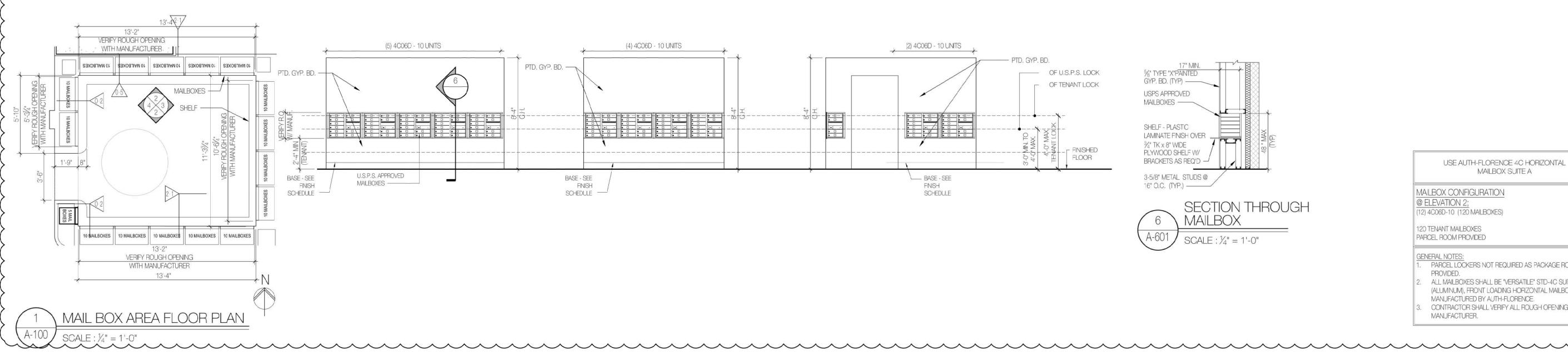
LIST OF ABBREVIATIONS ALUM ALUMINUM S.C SOLID CORE FL - FLUSH PANEL STL, - STEEL	LOUVER DESIGNATION		FINISH	LO	UVER S	SIZE	MASC OPEI DI	NING	HEAD HT. (A.F.F.)		
GL. - GLASS TEMP. - TEMPERED H.C. - HOLLOW CORE W.G. - WIRE GLASS H.M. - HOLLOW METAL WD. - WOOD K.D. - KNOCK DOWN FRAME FG. - MTL FRAME & GLASS MAR. - MARBLE SADDLE AN - ANODIZED ALUMINUM PTD. - PAINTED - - -		MATERIAL		Ŧ	H	THICKNESS	н	F		CT SCREEN	
LOUVER LOCATION		MATE		WIDTH	HEIGHT	THICH	WIDTH	HEIGHT		INSECT	REMARKS
COMPACTOR CHUTE	L-1	ALUM.	AN.	2'-0"	2'-0"	V.I.F.	2'-1"	2'-1"	V.I.F.	YES	
STAIRS	L-2	ALUM.	AN.	4'-1"	0'-9"	V.I.F.	4'-2"	0'-10"	8'-10 1/2'	YES	
ELEVATOR SHAFT	L-3	ALUM.	AN.	3'-0"	2'-6"	V.I.F.	3'-1	2'-7"	6'-0"	YES	
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}											
<u>}</u>											

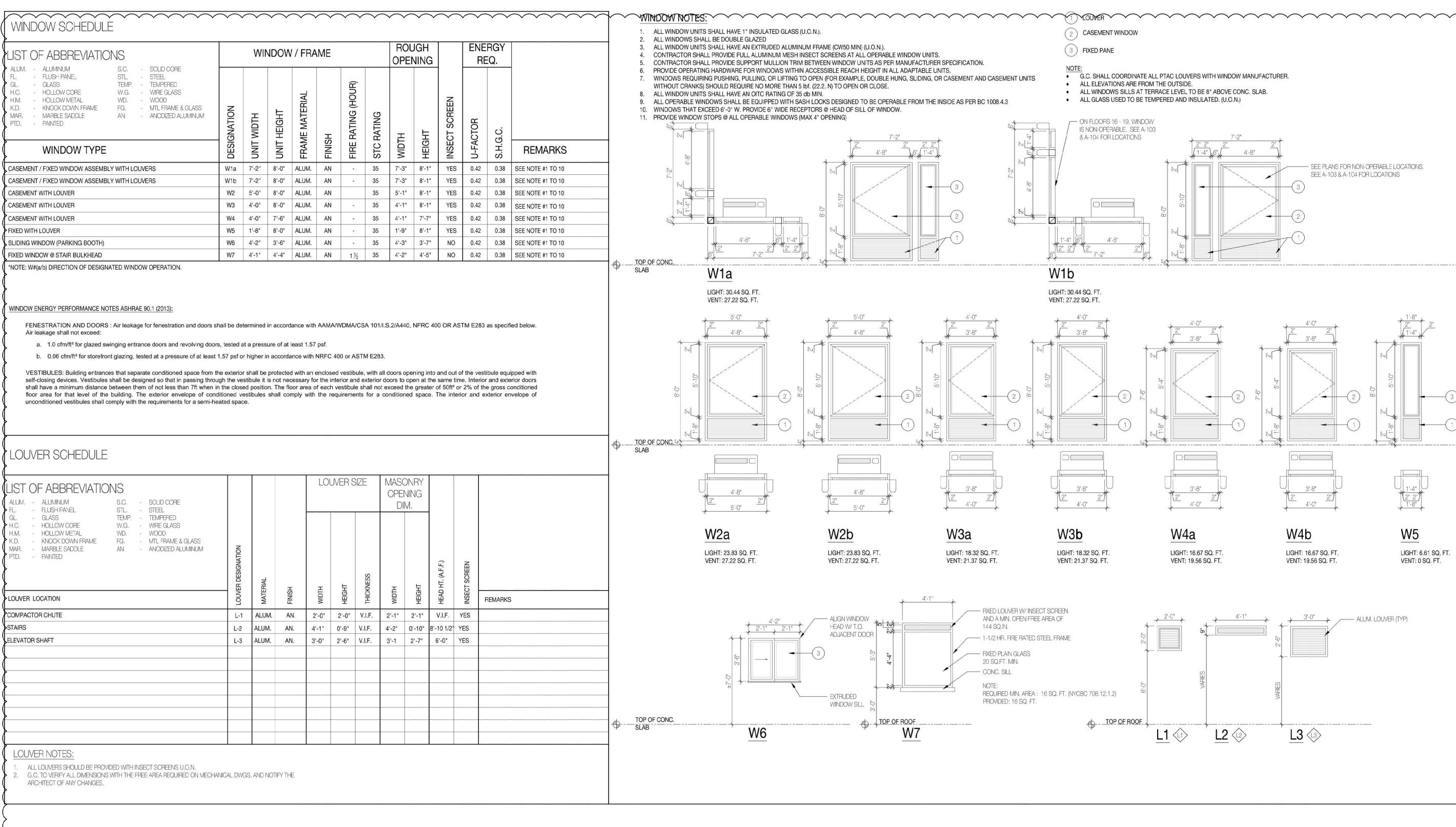
LOUVER NOTES:

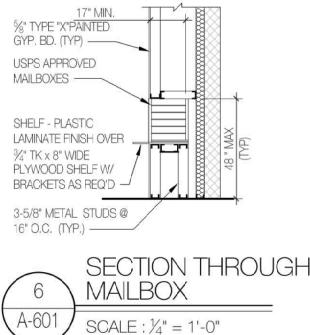
ALL LOUVERS SHOULD BE PROVIDED WITH INSECT SCREENS U.O.N.

G.C. TO VERIFY ALL DIMENSIONS WITH THE FREE AREA REQUIRED ON MECHANICAL DWGS. AND NOTIFY THE

ARCHITECT OF ANY CHANGES.



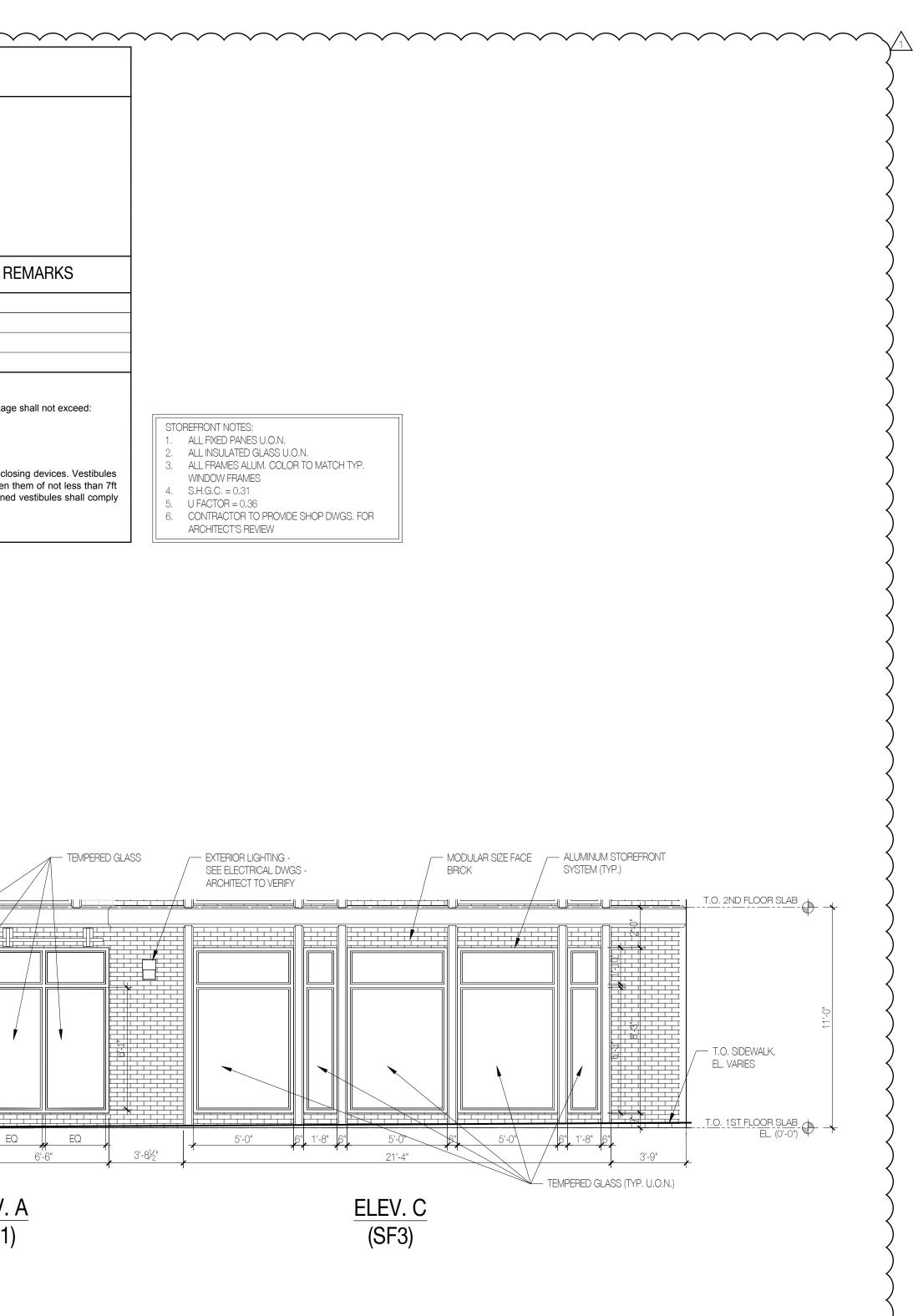




PROPOSED NEW DEVELOPMENT **159 BOERUM ST** BROOKLYN, NY BLOCK: 3071 LOT: 10/40 ARCHITECT: AUFGANG ARCHITECTS LLC SEE PLANS FOR NON-OPERABLE LOCATIONS. 74 LAFAYETTE AVENUE, SUITE 301 SEE A-103 & A-104 FOR LOCATIONS SUFFERN, NY INFO@AUFGANG.COM 845.368.0004 DEVELOPER: SLATE PROPERTY GROUP 850 THIRD AVE, SUITE 16-B NEW YORK, NY 10022 T: 646.439.4000 STRUCTURAL ENGINEER: MCNAMARA - SALVIA 62 WEST 45TH STREET, 11TH FLOOR NEW YORK, NY 10036 T: 212.246.9800 MEP ENGINEER: A & D ENGINEERING, PLLC 2606 E. 15TH STREET, SUITE #304 BROOKLYN, NY 11235 T: 718.872.6112 INTERIOR DESIGNER: ALCHEMY STUDIO NYC 154 GRAND STREET ____3 NEW YORK, NY 10013 **-**(2) (2) T: 307.760.6454 -- $\bigcup_{1'-4''}$ 3'-8' 2" 2") 1'-8" 4'-0" 4'-0" W4b W5 LIGHT: 16.67 SQ. FT. LIGHT: 16.67 SQ. FT. LIGHT: 6.61 SQ. FT. VENT: 19.56 SQ. FT. VENT: 19.56 SQ. FT. VENT: 0 SQ. FT. → 3'-0" → ALUM. LOUVER (TYP) 108.15.19 PAA TO D.O.B. 08.02.19 99% CONSTRUCTION SET 05.31.19 BID SET L2 🕑 <u>L3</u> 🐵 05.03.19 PAA TO D.O.B 04.29.19 PAA TO D.O.B. 07.27.18 90% PROGRESS SET 06.04.18 RE-ISSUED TO D.O.B. 05.02.18 REVISED AS PER ENERGY COMMENTS 01.26.18 REISSUED TO D.O.B. 11.03.17 ISSUED TO D.O.B. FOR REVIEW AND COMMENTS DATE SUBMISSIONS / REVISIONS SHEET TITLE: WINDOW & LOUVER SCHEDULES & MAILBOX DETAILS THIS DRAWING IS AN INSTRUMENT OF SERVICE AND SHALL REMAIN THE PROPERTY OF AUFGAN ARCHITECTS LLC, WHETHER THE PROJECT FOR SEAL & SIGNATURE WHICH IT IS MADE IS EXECUTED OR NOT. THIS DRAWING SHALL NOT BE USED BY THE OWNER OTHERS ON OTHER PROJECTS, FOR ADDITIONS THIS PROJECT OR FOR COMPLETION OF THIS PROJECT BY OTHERS EXCEPT BY AGREEMENT IN WRITING WITH AUFGANG ARCHITECTS LLC. SUBMISSION OR DISTRIBUTION TO MEET OFFICIA REGULATORY REQUIREMENTS OR FOR OTHER PURPOSES IN CONNECTION WITH THE PROJECT IS NOT TO BE CONSTRUED AS PUBLICATION IN DEROGATION OF THE RIGHTS OF AUFGANG USE AUTH-FLORENCE 4C HORIZONTAL MAILBOX SUITE A ARCHITECTS LLC. REPRODUCTION OR PUBLICATION BY ANY METHOD IN WHOLE OR PART IS PROHIBITED. TITLE TO THIS DRAWING MAILBOX CONFIGURATION BELONGS TO AUFGANG ARCHITECTS LLC WITHOUT PREJUDICE. @ ELEVATION 2; (12) 4C06D-10 (120 MAILBOXES) SSUE DATE: PROJECT NO: 120 TENANT MAILBOXES 10-19-15 #1520 PARCEL ROOM PROVIDED DRAWN BY: CHECKED BY: M.B. T.L./A.F.M. GENERAL NOTES: PARCEL LOCKERS NOT REQUIRED AS PACKAGE ROOM SCALE: SHEET NO: PROVIDED. ALL MAILBOXES SHALL BE "VERSATILE" STD-4C SUITE A AS NOTED (ALUMINUM), FRONT LOADING HORIZONTAL MAILBOX AS MANUFACTURED BY AUTH-FLORENCE. DRAWING NO: CONTRACTOR SHALL VERIFY ALL ROUGH OPENINGS WITH A-601.01 MANUFACTURER.

NYC DOB NUMBER: 321191802

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STOREFRONT SCHEDULE																
			WINDOW	V / FRA	ME			UGH NING		ENE RE	ERGY EQ.					
ALUM. - ALUMINUM S.C. - SOLID CORE FL. - FLUSH PANEL STL. - STEEL GL. - GLASS TEMP. - TEMPERED H.C. - HOLLOW CORE W.G. - WIRE GLASS H.M. - HOLLOW METAL WD. - WOOD K.D. - KNOCK DOWN FRAME FG. - MTL FRAME & GLASS MAR. - MARBLE SADDLE AN - ANODIZED ALUMINUM PTD. - PAINTED - - -	DESIGNATION	ELEVATION UNIT WIDTH	UNIT HEIGHT	1e Material		Rating (Hour) Rating	Ξ	H	CT SCREEN	U-FACTOR	i.C.					
STOREFRONT TYPE	DESIG	ELEV/	UNIT	FRAME	FINISH	STC F	WIDTH	HEIGHT	INSECT	U-FA(S.H.G.C.	REMARKS				
STOREFRONT 1	SF1	A 11'-		ALUM.	AN	- 35		9'-1"	NO	0.36	-					
STOREFRONT 2	SF2	B 3'-4		ALUM.	AN	- 35	5'-11"		NO	0.36	0.31		_			
STOREFRONT 3 STOREFRONT 4	SF3 SF4	C 21'- D 21'-		ALUM.	AN AN	- 35 - 35	20'-7" 20'-7"	8'-4" 8'-4"	NO NO	0.36	0.31		_			
WINDOW ENERGY PERFORMANCE NOTES ASHRAE 90.1 (2013):	514		4 0-3	ALOWI.		- 35	20-7	0 -4	NO	0.50	0.01	<u> </u>				
FENESTRATION AND DOORS : Air leakage for fenestration and doors s	shall be dete	ermined in acco	rdance with A		A/CSA 101/	1 S 2/A440 NF	RC 400 O)R ASTM F	-283 as :	specified b	helow Air	leakage shall not exceed.				
a. 1.0 cfm/ft ² for glazed swinging entrance doors and revolving door						1.0.2/A440, NI	110 400 0		200 03	specified b		leakage shail not exceed.		STOREFRONT NOTES:		
b. 0.06 cfm/ft ² for curtain wall and storefront glazing, tested at a pre					th NRFC 40	00 or ASTM E2	83.							 ALL FIXED PANES U.O.N. ALL INSULATED GLASS U.O.N. 		
VESTIBULES: Building entrances that separate conditioned space from	the exterior	r shall be prote	cted with an e	nclosed ves	stibule, with	all doors oper	ning into a	and out of t	the vesti	ibule equip	oped with	self-closing devices. Vestibules		3. ALL FRAMES ALUM. COLOR TO MATCH TYP. WINDOW FRAMES		
shall be designed so that in passing through the vestibule it is not neces when in the closed position. The floor area of each vestibule shall not ex	exceed the g	reater of 50ft ² of	or 2% of the g	ross conditi	ioned floor	area for that le	vel of the	building. T	nave a m The exter	ninimum di rior envelo	istance be ope of con	tween them of not less than 7ft ditioned vestibules shall comply		 S.H.G.C. = 0.31 U FACTOR = 0.36 		
with the requirements for a conditioned space. The interior and exterior e	envelope of	unconditioned v	estibules shal	l comply wit	th the requi	rements for a s	emi-heate	ed space.						 CONTRACTOR TO PROVIDE SHOP DWGS. FOR ARCHITECT'S REVIEW 		
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												TEMPERED GLAS	ASS	/ EXTERIOR LIGHTING -		ALUMINUM STOREFRONT
														ARCHITECT TO VERIFY	BRICK	SYSTEM (TYP.)
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				3'-4"		<u>+</u>						EQ EQ		5'-0" 6" 1'-8" 6"	'-0" <u>6</u> " <u>5</u> '-0"	6" 1'-8" 6"
3'-5"	21'-4"			1	3'-8,	2" 3	-4"	1'-4"		6'-7¼" VING DOOR		6'-6"	3'-8½"	1 1 1 1 1 1	<u>1'-4"</u>	
\rangle	PF	RIVACY LOUVER -	ACCES	S GATE —					NEVUL	VII VG DOUH	I					- TEMPERED GLASS (TYP. U.O.N.)
> ELE\	V. D					ELE	EV. B				EL	EV. A		ELE	V. C	
>(SF							F2)					SF1)		 (SI		
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A-200 SCALE : 1/4" = 1'-0"																
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PROPOSED NEW DEVELOPMENT

159 BOERUM ST

BROOKLYN, NY

BLOCK: 3071

<u>LOT: 10/40</u>

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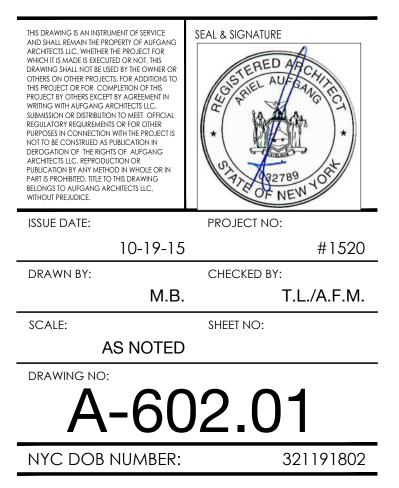
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SHEET TITLE:

STOREFRONT SCHEDULE & ELEVATIONS



APPENDIX C PREVIOUS ENVIRONMENTAL REPORTS

SEPARATE ATTACHMENT

APPENDIX D CONSTRUCTION HEALTH AND SAFETY PLAN

CONSTRUCTION HEALTH AND SAFETY PLAN

FOR

159 BOERUM STREET BROOKLYN, NEW YORK Brooklyn Borough Tax Map Block 3071, Lot 40

Prepared For

SPG Boerum LLC c/o Slate Property Group 38 East 29th Street, 9th Floor New York, New York

Prepared By:

Langan Engineering, Environmental, Surveying Landscape Architecture and Geology D.P.C. 21 Penn Plaza 360 West 31st Street, 8th Floor New York, New York 10001

> October 2019 Langan Project No. 170552901



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1.0 INTRODUCTION

1.1 General

This HEALTH AND SAFETY PLAN (HASP) was developed to address disturbance of known and reasonably anticipated subsurface contaminants and comply with Occupational Safety and Health Administration (OSHA) Standard 29 CFR 1910.120(b) (4), *Hazardous Waste Operations and Emergency Response* during anticipated site work at 159 Boerum Street, in the borough of Brooklyn, New York (Brooklyn Borough Tax Map Block 3071, Lot 40) ("the site"). This HASP provides the minimum requirements for implementing site operations during environmental investigation activities. All contractors performing work on this site shall implement their own Health and Safety Plans that, at a minimum, adhere to this HASP. The contractor is solely responsible for their own health and safety and that of their subcontractors. Langan personnel will implement this HASP while on-site.

The management of the day-to-day site activities and implementation of this HASP in the field is the responsibility of the site Langan Field Team Leader (FTL). Assistance in the implementation of this HASP can also be obtained from the site Langan Health and Safety Officer (HSO) and the Langan Health and Safety Manager (HSM). Contractors operating on the Site shall designate their own FTL, HSO and HSM. The content of this HASP may change or undergo revision based upon additional information made available to health and safety personnel, monitoring results, or changes in the work plan.

1.2 Site Location and Background

The Site is located at 159 Boerum Street and is identified on New York City Kings County tax maps as Block 3071, Lot 40. The about 11,180-square-foot site is situated on the south-central part of the tax block and is occupied by an open air asphalt parking lot surrounded by landscaped areas to the north and south within the property. The tax block is bound to the north by Johnson Avenue, to the east by Humboldt Street, to the south by Boerum Street, and to the west by Avenue of Puerto Rico (Graham Avenue). A site location map is included as Figure 1.

Environmental investigations detected the presence of semi-volatile organic compounds (SVOCs), pesticides, polychlorinated biphenyls (PCBs), and metals, consistent with historic fill. Investigations also note the presence of a New York State Department of Environmental Conservation Superfund (chlorinated solvents) site at 152 Graham Avenue approximately 200 feet north of the site.

1.3 Summary of Work Tasks

1.3.1 Excavation and Soil Screening

Langan personnel will screen excavated material for visual, olfactory, and instrumental indicators suggestive of a potential chemical or petroleum release. Instrument screening for the presence of volatile organic compounds (VOCs) may be performed with a duly calibrated Photoionization detector (PID). Contractors will excavate for utilities, foundation components and potential grading using heavy equipment and hand tools. Contractors will notify Langan personnel if they identify indications suggestive of a potential chemical or petroleum release. Contaminated material shall be handled and property disposed in accordance with federal, state and city regulations, criteria and guidelines.

1.3.2 Soil Screening

As part of future excavation activities, the Langan personnel will report when they have observed visual and olfactory indications of possible soil impact. Langan personnel will also report concentrations of VOCs above background when using a properly calibrated hand held PID, or equivalent.

1.3.3 Soil Sampling

Soil samples (waste characterization, excavation endpoint, delineation, or quality assurance/quality control [QA/QC]) may be collected during construction, as required. Langan personnel will coordinate with the contractor in sampling soil (in accordance with the SMP, where applicable). If stockpile soil sampling is required from above ground level, suitable excavation equipment (i.e., excavator, front end loader) should be used to collect the sample.

Soil samples excavation endpoint or delineation sampling (along with QA/QC samples) may be collected and subsequently submitted to a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP)-certified laboratory and analyzed in accordance with work plan specifications.

1.3.4 Stockpiling

As part of future excavation activities, potentially impacted soil may be stockpiled pending laboratory analysis and determining proper off-site disposal. Visibly contaminated soil, if encountered, shall be segregated and stockpiled on at least 10 millimeters of plastic sheeting; reusable soil and fill shall be segregated and stockpiled separately from unusable fill, concrete and other debris; the stockpiles shall be kept covered with 6 millimeters thick plastic sheeting; the plastic sheeting covering the stockpiles shall be anchored firmly in place by weights, stakes,

or both; the Contractor shall maintain the plastic sheeting.

1.3.5 Characterization of Excavated Material

When required by the work plan, Langan personnel will characterize excavated soil or clean backfill in accordance with Langan standards.

1.3.6 Excavation Backfill

Areas of the site that were over-excavated may be backfilled to development grade (i.e., the grade required to complete construction of the foundation and sidewalk extension). Imported material will consist of clean fill that meets the 6 New York Codes, Rules and Regulations (NYCRR) Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives (UU SCOs) or other acceptable fill material such as virgin stone from a permitted mine or quarry or recycled concrete aggregate (RCA), from a New York State Department of Environmental Conservation (NYSDEC)-registered facility in compliance with 6 NYCRR Part 360 registration and permitting requirements for the period of RCA acquisition. Imported RCA must be derived from recognizable and uncontaminated concrete. RCA is not acceptable for, and will not be used as, site cover or drainage material.

1.3.7 Decommissioning and Removal of Underground Storage Tank

If an underground storage tank (UST) is encountered, a UST decommissioning and removal contractor shall furnish all labor and materials, equipment and incidentals required for the proper decontamination, removal and closure of any UST in accordance with federal, state and local regulations. Langan personnel will monitor VOCs with a calibrated PID downwind from the UST excavation and record the PID readings.

1.3.8 Construction Dewatering

Construction dewatering may be required, the dewatering contractor shall be responsible for handling contaminated dewatering fluids in accordance with federal, state and local regulations. Dewatering fluids are likely to be discharged to the local sanitary sewer system after treatment and under approved regulatory permit. Alternatively, the contractor may provide containerized storage to allow for testing of groundwater prior to, and after, treatment and before disposal. If required, Langan field personnel may sample dewatering treatment system liquids from either a discharge standpipe or a storage tank. Dewatering samples will be submitted to an ELAP-certified laboratory for analysis.

1.3.9 Construction Activity Inspections and Observations

Langan will observe construction activities including the composite cover performed by the contractor in accordance with the construction documents, RAWP, and special inspection requirements administered by the New York City Department of Buildings. Materials used for construction will be inspected by Langan for conformance to the design documents.

1.3.10 Equipment Decontamination

Before the start of the day's sampling and after sampling each run, sampling equipment will be decontaminated by the decontamination process outlined Attachment B - Decontamination Procedures. Decontamination wastes and purge water will be temporarily stored on site pending analytical results.

1.3.11 Management of Investigative-Derived Waste

The investigative-derived waste (IDW) generated during this investigation may stockpiled as defined under section **1.3.4** or contained in DOT-approved 55-gallon drums. The drums will be temporarily stored on the site or as directed by the client representative. All drums will be filled between to two-thirds full to allow easy maneuvering during drum pickup and disposal. Drum labels are to be provided by Langan (Environmental Closet). All drums will be labeled as "IDW Pending Analysis" until sample data are reported from the laboratory. Drum labels will include date filled and locations where waste was generated along with the standard information required by the labels in accordance with the Langan SOP09, Drum Labeling..

Closed top drums are to be used to store liquids. Debris, including plastic sheeting, polyethylene tubing, personal protection equipment (PPE), decontamination debris, etc. will be segregated from and disposed in large heavy duty garbage bags and disposed of at the site. Excess unused glassware should be returned to the lab along with the last day of collection samples.

1.3.12 Drum Sampling

Excess or impacted soil and water that is drummed during the remedial action activities must be labeled in accordance with the Langan Drum Labeling Standard Operating Procedure (SOP-#9). Langan personnel will collect drum samples, as required, prior to off-site drum disposal. Samples will be placed into laboratory-supplied batch-certified clean glassware and submitted to a NYSDOH ELAP-certified laboratory.

2.0 IDENTIFICATION OF KEY PERSONNEL/HEALTH AND SAFETY PERSONNEL

The following briefly describes the health and safety (H&S) designations and general

responsibilities that may be employed for this site. The titles have been established to accommodate the project needs and requirements and ensure the safe conduct of site activities. The H&S personnel requirements for a given work location are based upon the proposed site activities.

2.1 Langan Project Manager

The Langan Environmental Project Manager (PM) is Emily Snead, her responsibilities include:

- Ensuring that this CHASP is developed, current, and approved prior to on-site activities.
- Ensuring that all the tasks in the project are performed in a manner consistent with Langan's comprehensive *Health and Safety Program for Hazardous Waste Operations* and this CHASP.

2.2 Langan Corporate Health and Safety Manager

The Langan Corporate Health and Safety Manager (HSM) is Tony Moffa. His responsibilities include:

- Updating the Health and Safety Program for Hazardous Waste Operations.
- Assisting the site Health and Safety Officer (HSO) with development of the HASP, updating HASP as dictated by changing conditions, jobsite inspection results, etc. and approving changes to this HASP.
- Assisting the HSO in the implementation of this HASP and conducting Jobsite Safety Inspections and assisting with communication of results and correction of shortcomings found.
- Maintaining records on personnel (medical evaluation results, training and certifications, accident investigation results, etc.).

2.3 Langan Site Health & Safety Officer

The Langan site HSO is William Bohrer. His responsibilities include:

- Participating in the development and implementation of this CHASP.
- When on-site, assisting the Langan Field Team Leader in conducting Tailgate Safety Meetings and Jobsite Safety Inspections and correcting any shortcomings in a timely manner.
- Ensuring that proper PPE is available, worn by employees, and properly stored and maintained.
- Controlling entry into and exit from the site contaminated areas or zones.
- Monitoring employees for signs of stress, such as heat stress, fatigue, and cold exposure.

- Monitoring site hazards and conditions.
- Knowing (and ensuring that all site personnel also know) emergency procedures, evacuation routes, and the telephone numbers of the ambulance, local hospital, poison control center, fire department, and police department.
- Resolving conflicts that may arise concerning safety requirements and working conditions.
- Reporting all incidents, injuries and near misses to the Langan Incident/Injury Hotline immediately and the client representative.

2.4 Langan Field Team Leader Responsibilities

The Langan Field Team Leader (FTL) is to be determined prior to the start of the start of field activities. The Field Team Leader's responsibilities include:

- The management of the day-to-day site activities and implementation of this CHASP in the field.
- Participating in and/or conducting Tailgate Safety Meetings and Jobsite Safety Inspections and correcting any shortcomings in a timely manner.
- When a Community Air Monitoring Operating Program (CAMP) is part of the scope, the FTL will set up and maintaining community air monitoring activities and instructing the responsible contractor to implement organic vapor or dust mitigation when necessary.
- Overseeing the implementation of activities specified in the work plan.

2.5 Contractor Responsibilities

The contractor shall develop and implement their own CHASP for their employees, lower-tier subcontractors, and consultants. The contractor is responsible for their own health and safety and that of their subcontractors. Contractors operating on the site shall designate their own FTL, HSO and HSM. The contractor's CHASP will be at least as stringent as this Langan CHASP. The contractor must be familiar with and abide by the requirements outlined in their own CHASP. A contractor may elect to adopt Langan's CHASP as its own provided that it has given written notification to Langan, but where Langan's CHASP excludes provisions pertinent to the contractor's work (i.e., confined space entry); the contractor must provide written addendums to this CHASP. Additionally, the contractor must:

- Ensure their employees are trained in the use of all appropriate personal protection equipment (PPE) for the tasks involved;
- Notify Langan of any hazardous material brought onto the job site or site related area, the hazards associated with the material, and must provide a material safety data sheet (MSDS) or safety data sheet (SDS) for the material;

- Have knowledge of, understand, and abide by all current federal, state, and local health and safety regulations pertinent to the work;
- Ensure their employees handling hazardous materials, if identified at the Site, have received current training in the appropriate levels of 29 CFR 1910.120, *Hazardous Waste Operations and Emergency Response* (HAZWOPER) if hazardous waste is identified at the Site;
- Ensure their employees handling hazardous materials, if identified at the Site, have been fit-tested within the year on the type respirator they will wear; and
- Ensure all air monitoring is in place pertaining to the health and safety of their employees as required by OSHA 1910.120; and
- All contractors must adherer to all federal, state, and local regulatory requirements.

3.0 TASK/OPERATION SAFETY AND HEALTH RISK ANALYSES

A Task-Hazard Analysis (Table 1) was completed for general construction hazards that may be encountered at the Site. The potential contaminants that might be encountered during the field activities and the exposure limits are listed in Table 2 complete inventory of MSDS/SDS for chemical products used on site is included as Attachment E.

3.1 Specific Task Safety Analysis

3.1.1 Soil Screening and Sampling

Sampling the soil requires the donning of chemical resistant gloves in addition to the standard PPE. Langan personnel are not to operate drilling or excavation equipment nor open sampling devices (acetate liners, sonic sample bags, etc.). These tasks are to be completed by the driller or excavation contractor.

3.1.2 Soil Screening and Sampling

Sampling the soil requires the donning of chemical resistant gloves in addition to the standard PPE. Langan personnel are not to operate drilling or excavation equipment nor open sampling devices (acetate liners, sonic sample bags, etc.). These tasks are to be completed by the driller or excavation contractor.

3.1.3 Stockpile Sampling

The Langan personnel are not to scale or otherwise climb stockpiles. If the soil sampling plan requires sampling from the stockpile above ground level, samples are to be obtained using suitable excavation equipment operated by the contractor (i.e. front end loader).

3.1.4 Indoor Drilling and Excavation

The work scope may require indoor work or work in locations where there may not be adequate ventilation sufficient to safely operate any rig or excavation equipment powered by an internal combustion engine. Where possible, all such work should be done by equipment powered by electricity. If such equipment is used and must be directly wired to the buildings electrical system or to an independent system, this work must be completed by a licensed electrician in accordance with all electrical codes applicable to the work.

Indoor work which is to be completed with equipment powered by an internal combustion engine must incorporate air monitoring of carbon monoxide (CO) using calibrated air monitoring equipment (MultiRAE or equivalent). In addition, the work plan should incorporate mitigation for venting engine exhaust fumes directly to the outdoors and for circulating fresh air into the work area.

The OSHA Time Weighted Average (TWA) Permissible Exposure Limit (PEL) for CO from 50 to 35 parts per million (ppm). Langan will monitor CO with a suitable monitoring device. If CO levels exceed 5 ppm, Langan will instruct contractors to begin mitigation measures. These measures are at a minimum:

- Increase air circulation using industrial size fans to bring additional fresh air into the building or vent exhaust to the outside;
- Modify the passive exhaust method being used to increase venting circulation by using wider diameter tubing or sealing tubing connections; or
- Modify the work schedule where the rig is turned off to allow time for CO levels to fall back to background

All work must cease if CO levels reach 35 ppm. The Langan engineer is to report to the PM and H&S officer when an action level is reached.

3.1.5 Stockpile Sampling

The Langan personnel are not to scale or otherwise climb stockpiles. If the soil sampling plan requires sampling from the stockpile above ground level, samples are to be obtained using suitable excavation equipment operated by the contractor (i.e. front end loader).

3.1.6 Construction Dewatering

If required, Langan may sample dewatering treatment system liquids from either the direct discharge standpipe or from a sample port or valve built into the storage tank, Langan will don the necessary PPE including nitrile gloves and if necessary, facial splash guard. Sample ports

and valves may only be sampled if they are accessible at ground level. Sampling from heights over 6 feet is prohibited unless Langan field personnel are fully accredited in fall protection and is wearing approved fall protection safety apparatus. The discharge samples will be submitted to an ELAP-certified laboratory for analysis in accordance with the work plan.

3.1.7 Removal of Underground Storage Tank

If UST excavation and removal activity is initiated, Langan personnel will conduct air monitoring for lower explosion limit (LEL) conditions within the UST excavation itself. This task is to be performed using calibrated air monitoring equipment designed to sound an audio alarm when atmospheric concentrations of VOC are within 10% of the LEL. In normal atmospheric oxygen concentrations, the LEL monitoring may be done with a Wheatstone bridge/catalytic bead type sensor (i.e. MultiRAE). However in oxygen depleted atmospheres (confined space), only an LEL designed to work in low oxygen environments may be used. Best practices require that the LEL monitoring unit be equipped with a long sniffer tube to allow the LEL unit to remain outside the UST excavation. Langan personnel are not to enter the UST excavation nor enter an excavated UST.

In addition to monitoring LEL, Langan personnel will monitor atmospheric VOC concentrations directly downwind of the UST excavation in accordance with standard CAMP procedures using calibrated air monitoring equipment.

3.1.8 Backfilling of Excavated Areas to Development Grade

The backfilling contractor will provide their employees with equivalent PPE to protect them from the specific hazards likely to be encountered on-site. Selection of the appropriate PPE must take into consideration: (1) identification of the hazards or suspected hazards; (2) potential exposure routes; and, (3) the performance of the PPE construction (materials and seams) in providing a barrier to these hazards. Langan personnel may survey backfilling material with a calibrated PID; however, as they are not permitted to climb the material delivery truck, the contractor must provide samples from each truck as required.

3.1.9 Construction Activity Inspection

Langan personnel will conduct inspections and observe repairs to the Engineering Controls installed as the site at part of the remedy. Inspect work will be conducted in accordance with specification in the SMP. Repairs will be conducted in accordance with work plans drawn to address the repairs. Langan may record the data the work plan requires. All future repair work to the engineering controls will be done exclusively by the contractor following their own health and safety specifications outlined in their HASPs. Other activities assigned to Langan as part of

work activities are limited to inspection and observations as specified in the SMP or future work pans. Langan personnel are not to operate or assist in the operation of equipment used in construction activities unless defined as part of an inspection or observation in the work plan.

3.1.10 Support of Excavation

Langan engineers may complete additional tasks following the work plan specifications for support of excavation (SOE) actives. These tasks are to be completed donning standard PPE. Langan engineers should compile a job safety analysis for specific tasks as necessary.

3.1.11 Drum Sampling

Drilling fluid, rinse water, grossly-contaminated soils samples and cuttings may be containerized in 55-gallon drums for transport and disposal off site. Each drum must be labeled in accordance with the Langan Drum Labeling Standard Operating Procedure (SOP-#9). Langan may collect drum samples, as required, prior to off-site drum disposal. Samples will be placed into laboratory-supplied batch-certified clean glassware and submitted to a NYSDOH ELAP-certified laboratory.

Langan employees and contractors are not to move or open any orphaned (unlabeled) drum found on the site without approval of the project manager.

3.2 Radiation Hazards

No radiation hazards are known or expected at the site.

3.3 Physical Hazards

Physical hazards, which may be encountered during site operations for this project, are detailed in Table 1.

3.3.1 Explosion

No explosion hazards are expected for the scope of work at this site.

3.3.2 Heat Stress

The use of Level C protective equipment, or greater, may create heat stress. Monitoring of personnel wearing personal protective clothing should commence when the ambient temperature is 72°F or above. Table 6 presents the suggested frequency for such monitoring. Monitoring frequency should increase as ambient temperature increases or as slow recovery rates are observed. Refer to the Table 7 to assist in assessing when the risk for heat related

illness is likely. To use this table, the ambient temperature and relative humidity must be obtained (a regional weather report should suffice). Heat stress monitoring should be performed by the HSO or the FTL, who shall be able to recognize symptoms related to heat stress.

To monitor the workers, be familiar with the following heat-related disorders and their symptoms:

- Heat Cramps: Painful spasm of arm, leg or abdominal muscles, during or after work
- **Heat Exhaustion:** Headache, nausea, dizziness; cool, clammy, moist skin; heavy sweating; weak, fast pulse; shallow respiration, normal temperature
- **Heat Stroke**: Headache, nausea, weakness, hot dry skin, fever, rapid strong pulse, rapid deep respirations, loss of consciousness, convulsions, coma. <u>This is a life threatening</u> <u>condition</u>.

<u>Do not</u> permit a worker to wear a semi-permeable or impermeable garment when they are showing signs or symptoms of heat-related illness.

To monitor the worker, measure:

- Heart rate: Count the radial pulse during a 30-second period as early as possible in the rest period. If the heart rate exceeds 100 beats per minute at the beginning of the rest period, shorten the next work cycle by one-third and keep the rest period the same. If the heart rate still exceeds 100 beats per minute at the next rest period, shorten the following work cycle by one-third. A worker cannot return to work after a rest period until their heart rate is below 100 beats per minute.
- Oral temperature: Use a clinical thermometer (3 minutes under the tongue) or similar device to measure the oral temperature at the end of the work period (before drinking). If oral temperature exceeds 99.6°F (37.6°C), shorten the next work cycle by one-third without changing the rest period. A worker cannot return to work after a rest period until their oral temperature is below 99.6°F. If oral temperature still exceeds 99.6°F (37.6°C) at the beginning of the next rest period, shorten the following cycle by one-third. Do not permit a worker to wear a semi-permeable or impermeable garment when oral temperature exceeds 100.6°F (38.1°C).

<u>Prevention of Heat Stress</u> - Proper training and preventative measures will aid in averting loss of worker productivity and serious illness. Heat stress prevention is particularly important because once a person suffers from heat stroke or heat exhaustion, that person may be predisposed to additional heat related illness. To avoid heat stress the following steps should be taken:

- Adjust work schedules.
- Mandate work slowdowns as needed.

- Perform work during cooler hours of the day if possible or at night if adequate lighting can be provided.
- Provide shelter (air-conditioned, if possible) or shaded areas to protect personnel during rest periods.
- Maintain worker's body fluids at normal levels. This is necessary to ensure that the cardiovascular system functions adequately. Daily fluid intake must approximately equal the amount of water lost in sweat, id., eight fluid ounces (0.23 liters) of water must be ingested for approximately every eight ounces (0.23 kg) of weight lost. The normal thirst mechanism is not sensitive enough to ensure that enough water will be drunk to replace lost sweat. When heavy sweating occurs, encourage the worker to drink more. The following strategies may be useful:
 - Maintain water temperature 50° to 60°F (10° to 16.6°C).
 - Provide small disposal cups that hold about four ounces (0.1 liter).
 - Have workers drink 16 ounces (0.5 liters) of fluid (preferably water or dilute drinks) before beginning work.
 - Urge workers to drink a cup or two every 15 to 20 minutes, or at each monitoring break. A total of 1 to 1.6 gallons (4 to 6 liters) of fluid per day are recommended, but more may be necessary to maintain body weight.
 - Train workers to recognize the symptoms of heat related illness.

3.3.3 Cold-Related Illness

If work on this project begins in the winter months, thermal injury due to cold exposure can become a problem for field personnel. Systemic cold exposure is referred to as hypothermia. Local cold exposure is generally called frostbite.

- **Hypothermia** Hypothermia is defined as a decrease in the patient core temperature below 96°F. The body temperature is normally maintained by a combination of central (brain and spinal cord) and peripheral (skin and muscle) activity. Interference with any of these mechanisms can result in hypothermia, even in the absence of what normally is considered a "cold" ambient temperature. Symptoms of hypothermia include: shivering, apathy, listlessness, sleepiness, and unconsciousness.
- Frostbite Frostbite is both a general and medical term given to areas of local cold injury. Unlike systemic hypothermia, frostbite rarely occurs unless the ambient temperatures are less than freezing and usually less than 20^oF. Symptoms of frostbite are: a sudden blanching or whitening of the skin; the skin has a waxy or white appearance and is firm to the touch; tissues are cold, pale, and solid.

<u>Prevention of Cold-Related Illness</u> - To prevent cold-related illness:

• Educate workers to recognize the symptoms of frostbite and hypothermia

- Identify and limit known risk factors:
- Assure the availability of enclosed, heated environment on or adjacent to the site.
- Assure the availability of dry changes of clothing.
- Assure the availability of warm drinks.
- Start (oral) temperature recording at the job site:
- At the FSO or Field Team Leader's discretion when suspicion is based on changes in a worker's performance or mental status.
- At a worker's request.
- As a screening measure, two times per shift, under unusually hazardous conditions (e.g., wind-chill less than 20°F, or wind-chill less than 30°F with precipitation).
- As a screening measure whenever anyone worker on the site develops hypothermia.

Any person developing moderate hypothermia (a core temperature of 92°F) cannot return to work for 48 hours.

3.3.4 Noise

Work activities during the proposed activities may be conducted at locations with high noise levels from the operation of equipment. Hearing protection will be used as necessary.

3.3.5 Hand and Power Tools

The use of hand and power tools can present a variety of hazards, including physical harm from being struck by flying objects, being cut or struck by the tool, fire, and electrocution. All hand and power tools should be inspected for health and safety hazards prior to use. If deemed unserviceable/un-operable, notify supervisor and tag equipment out of service. Ground Fault Circuit Interrupters (GFCIs) are required for all power tools requiring direct electrical service.

3.3.6 Slips, Trips and Fall Hazards

Care should be exercised when walking at the site, especially when carrying equipment. The presence of surface debris, uneven surfaces, pits, facility equipment, and soil piles contribute to tripping hazards and fall hazards. To the extent possible, all hazards should be identified and marked on the site, with hazards communicated to all workers in the area.

3.3.7 Utilities (Electrocution and Fire Hazards)

3.3.7.1 Utility Clearance

The possibility of encountering underground utilities poses fire, explosion, and electrocution

hazards. All excavation work will be preceded by review of available utility drawings and by notification of the subsurface work to the N.Y. One –Call–Center.

3.3.7.2 Lockout-Tagout

The potential adverse effects of electrical hazards include burns and electrocution, which could result in death. Therefore, there is a procedure that establishes the requirements for the lockout/tagout (LOTO) of energy isolating devices in accordance with the OSHA electrical lockout and tagging requirements as specified in 29 CFR 1926.417. This procedure will be used to ensure that all machines and equipment are isolated from potentially hazardous energy. If possible, equipment that could cause injury due to unexpected energizing, start-up, or release of stored energy will be locked/tagged, before field personnel perform work activities.

Depending upon the specific work task involved, Langan's SSC or FTL will serve as the authorized lockout/tagout coordinator, implement the lockout/tagout procedure and will be responsible to locate, lock and tag valves, switches, etc.

SPECIAL NOTE: Project personnel will assume that all electrical equipment at surface, subsurface and overhead locations is energized, until equipment has been designated and confirmed as de-energized by a utility company representative. Langan will notify the designated utility representative prior to working adjacent to this equipment and will verify that the equipment is energized or de-energized in the vicinity of the work location.

No project work shall be performed by Langan personnel or subcontractors on or near energized electrical lines or equipment unless hazard assessments are completed in writing, reviewed by Langan's SSHO, and clearly communicated to the field personnel.

The FTL shall conduct a survey to locate and identify all energy isolating devices. They shall be certain which switches, valves or other isolating devices apply to the equipment. The lockout/tagout procedure involves, but is not limited to, electricity, motors, steam, natural gas, compressed air, hydraulic systems, digesters, sewers, etc.

3.3.8 Physical Hazard Considerations for Material Handling

There are moderate to severe risks associated with moving heavy objects at the Site. The following physical hazards should be considered when handling materials at the Site:

- Heavy objects will be lifted and moved by mechanical devices rather than manual effort whenever possible.
- The mechanical devices will be appropriate for the lifting of moving task and will be operated only by trained and authorized personnel.

- Objects that require special handling or rigging will only be moved under the guidance of a person who has been specifically trained to move such objects.
- Lifting devices will be inspected, certified, and labeled to confirm their weight capacities. Defective equipment will be taken out of service immediately and repaired or destroyed.
- The wheels of any trucks being loaded or unloaded will be chocked to prevent movement. Outriggers will be fully extended on a flat, firm surface during operation.
- Personnel will not pass under a raised load, nor will a suspended load be left unattended.
- Personnel will not be carried on lifting equipment, unless it is specifically designed to carry passengers.
- All reciprocating, rotating, or other moving parts will be guarded at all times.
- Accessible fire extinguishers, currently (monthly) inspected, will be available in all mechanical lifting devices.
- Verify all loads/materials are secure before transportation.

Material handling tasks that are unusual or require specific guidance will need a written addendum to this CHASP. The addendum must identify the lifting protocols before the tasks are performed. Upon approval, the plan must be reviewed with all affected employees and documented. Any deviation from a written plan will require approval by the Langan HSM.

3.3.9 Hearing Conservation

Under the construction industry standard, the maximum permissible occupational noise exposure is 90 dbA (8-hour TWA), and noise levels in excess of 90 dbA must be reduced through feasible administrative and engineering controls. (20 CFR 1926.52). Hearing protection is required when working within 15 feet of vacuum extraction equipment and drill rigs.

3.3.9 Open Water

Employees working over or near water, where the danger of drowning exists, shall be provided with U.S. Coast Guard-approved life jackets or buoyant work vests. Prior to and after each use, the buoyant work vests or life preservers shall be inspected for defects which would alter their strength or buoyancy. Defective units shall not be used.

And should a worker fall into the water, OSHA requires (29 CFR 1926.106(c)) that ring buoys with at least 90 feet of line shall be provided and readily available for emergency rescue operations. The distance between ring buoys shall not exceed 200 feet. Another remedial action required by OSHA (29 CFR 1926.106(d)) is the use of lifesaving skiffs.

OSHA requires that at least one lifesaving skiff shall be immediately available at locations where employees are working over or adjacent to water and must include the following provisions.

- The skiff must be in the water or capable of being quickly launched by one person.
- At least one person must be present and specifically designated to respond to water emergencies and operate the skiff at all times when there are employees above water.
- When the operator is on break another operator must be designated to provide requisite coverage when there are employees above water.
- The designated operator must either have the skiff staffed at all times or have someone remain in the immediate area such that the operator can quickly reach the skiff and perform rescue services.
- The skiff operator maybe assigned other tasks provided the tasks do not interfere with the operator's ability to quickly reach the skiff.
- A communication system, such as a walkie-talkie, must be used to inform the skiff operator of an emergency and to inform the skiff operator where the skiff is needed.
- The skiff must be equipped with both a motor and oars.

With regard to the number of skiffs required and the appropriate maximum response time, the following factors must be evaluated:

- The number of work locations where there is a danger of falling into water;
- The distance to each of those locations;
- Water temperature and currents;
- Other hazards such as, but not limited to, rapids, dams, and water intakes;

Other regulations that present S&H practices and PPE for work on or near water include: 29 CFR 1910, Subpart T (401 – 440)

3.4 Biological Hazards

3.4.1 Animals

There is a possibility of encountering wildlife including reptiles, rodents and other small and medium size mammals. The Langan personnel is to avoid interacting with any wildlife.

3.4.2 Insects

Ticks and other biting or stinging insects may to be encountered during site operations. Langan personnel should take necessary precautions including donning long sleeve shirts and insecticide to prevent bites and stings. After field work, Langan personnel should perform a complete visual inspection of their clothing to insure they are not inadvertently harboring ticks. If they do observe a tick bite, they are to contact the HSM or HSO and report the event.

3.4.3 Plants

Poisonous plants may to be encountered during site operations. Langan personnel should take necessary precautions including donning long sleeve shirts and applying preventative poison lvy/Sumac lotion to prevent or limit effects of exposure. If after field work, Langan employees do observe a reaction to poisonous plant exposure, they are to contact the HSM or HSO and report the event.

3.5 Additional Safety Analysis

3.5.1 Presence of Non-Aqueous Phase Liquids (NAPL)

There is potential for exposure to NAPL at this site. Special care and PPE should be considered when NAPL is observed as NAPL is a typically flammable fluid and releases VOCs known to be toxic and/or carcinogenic. If NAPL is present in a monitoring well, vapors from the well casing may contaminate the work area breathing zone with concentrations of VOCs potentially exceeding health and safety action levels. In addition, all equipment used to monitor or sample NAPL (or ground water from wells containing NAPL) must be intrinsically safe. Equipment that directly contacts NAPL must also be resistant to organic solvents.

At a minimum, a PID should be used to monitor for VOCs when NAPL is observed. If NAPL is expected to be observed in an excavation or enclosed area, air monitoring must be started using calibrated air monitoring equipment designed to sound an audio alarm when atmospheric concentrations of VOC are within 10% of the LEL. In normal atmospheric oxygen concentrations, the LEL monitoring may be done with a Wheatstone bridge/catalytic bead type sensor (i.e. MultiRAE). However in oxygen depleted atmospheres (confined space), only an LEL designed to work in low oxygen environments may be used. Best practices require that the LEL monitoring unit be equipped with a long sniffer tube to allow the LEL unit to remain outside the UST excavation.

When NAPL is present, Langan personnel are required to use disposable nitrile gloves at all times to prevent skin contact with contaminated materials. They should also consider having available a respirator and protective clothing (Tyvek® overalls), especially if NAPL is in abundance and there are high concentrations of VOCs.

All contaminated disposables including PPE and sampling equipment must be properly disposed of in labeled 55-gallong drums

3.6 Job Safety Analysis

A Job Safety Analysis (JSA) is a process to identify existing and potential hazards associated with each job or task so these hazards can be eliminated, controlled or minimized. A JSA will be performed at the beginning of each work day, and additionally whenever an employee begins a new task or moves to a new location. All JSAs must be developed and reviewed by all parties involved. A blank JSA form and documentation of completed JSAs are in Attachment G.

4.0 PERSONNEL TRAINING

4.1 Basic Training

Completion of an initial 40-hour HAZWOPER training program as detailed in OSHA's 29 CFR 1910.120(e) is required for all employees working on a site engaged in hazardous substance removal or other activities which expose or potentially expose workers to hazardous substances, health hazards, or safety hazards as defined by 29 CFR 1910.120(a). Annual 8-hour refresher training is also required to maintain competencies to ensure a safe work environment. In addition to these training requirements, all employees must complete the OSHA 10 hour Construction Safety and Health training and supervisory personnel must also receive eight additional hours of specialized management training. Training records are maintained by the HSM.

4.2 Initial Site-Specific Training

Training will be provided to specifically address the activities, procedures, monitoring, and equipment for site operations at the beginning of each field mobilization and the beginning of each discrete phase of work. The training will include the site and facility layout, hazards, and emergency services at the site, and will detail all the provisions contained within this CHASP. For a HAZWOPER operation, training on the site must be for a minimum of 3 days. Specific issues that will be addressed include the hazards described in Section 3.0.

4.3 Tailgate Safety Briefings

Before starting work each day or as needed, the Langan HSO will conduct a brief tailgate safety meeting to assist site personnel in conducting their activities safely. Tailgate meetings will be documented in Attachment H. Briefings will include the following:

- Work plan for the day;
- Review of safety information relevant to planned tasks and environmental conditions;
- New activities/task being conducted;
- Results of Jobsite Safety Inspection Checklist;
- Changes in work practices;
- Safe work practices; and

• Discussion and remedies for noted or observed deficiencies.

5.0 MEDICAL SURVEILLANCE

All personnel who will be performing field work involving potential exposure to toxic and hazardous substances (defined by 29 CFR 1910.120(a)) will be required to have passed an initial baseline medical examination, with follow-up medical exams thereafter, consistent with 29 CFR 1910.120(f). Medical evaluations will be performed by, or under the direction of, a physician board-certified in occupational medicine.

Additionally, personnel who may be required to perform work while wearing a respirator must receive medical clearance as required under CFR 1910.134(e), *Respiratory Protection*. Medical evaluations will be performed by, or under the direction of, a physician board-certified in occupational medicine. Results of medical evaluations are maintained by the HSM.

5.1 Mercury Monitoring

Langan includes medical monitoring for mercury during the initial baseline and annual physical.

6.0 PERSONAL PROTECTIVE EQUIPMENT

6.1 Levels of Protection

Langan will provide PPE to Langan employees to protect them from the specific hazards they are likely to encounter on-site. Direct hired contractors will provide their employees with equivalent PPE to protect them from the specific hazards likely to be encountered on-site. Selection of the appropriate PPE must take into consideration: (1) identification of the hazards or suspected hazards; (2) potential exposure routes; and, (3) the performance of the PPE construction (materials and seams) in providing a barrier to these hazards.

Based on anticipated site conditions and the proposed work activities to be performed at the site, Level D protection will be used. The upgrading/downgrading of the level of protection will be based on continuous air monitoring results as described in Section 6.0 (when applicable). The decision to modify standard PPE will be made by the site HSO or FTL after conferring with the PM. The levels of protection are described below.

Level D Protection (as needed)

- Safety glasses with side shields or chemical splash goggles
- Safety boots/shoes
- Coveralls (Tyvek[®] or equivalent)

- Hard hat
- Long sleeve work shirt and work pants
- Nitrile gloves
- Hearing protection
- Reflective safety vest

Level D Protection (Modified, as needed)

- Safety glasses with sideshields or chemical splash goggles
- Safety boots/shoes (toe-protected)
- Disposable chemical-resistant boot covers
- Coveralls (polycoated Tyvek or equivalent to be worn when contact with wet contaminated soil, groundwater, or non-aqueous phase liquids is anticipated)
- Hard hat
- Long sleeve work shirt and work pants
- Nitrile gloves
- Hearing protection (as needed)
- Personal floatation device (for work within 5 ft of the water)
- Reflective traffic vest

Level C Protection (as needed)

- Full or Half face, air-purifying respirator, with NIOSH approved HEPA filter
- Inner (latex) and outer (nitrile) chemical-resistant gloves
- Safety glasses with side shields or chemical splash goggles
- Chemical-resistant safety boots/shoes
- Hard hat
- Long sleeve work shirt and work pants
- Coveralls (Tyvek[®] or equivalent)
- Hearing protection (as needed)
- Reflective safety vest

The action levels used in determining the necessary levels of respiratory protection and upgrading to Level C are summarized in Table 4. The written Respiratory Protection Program is maintained by the HSM and is available if needed. The monitoring procedures and equipment are outlined in Section 6.0 (when applicable).

6.2 Respirator Fit-Test

All Langan employees who may be exposed to hazardous substances at the work site are in

possession of a full or half face-piece, air-purifying respirator and have been successfully fit-tested within the past year. Fit-test records are maintained by the HSM.

6.3 Respirator Cartridge Change-Out Schedule

Respiratory protection is required to be worn when certain action levels (table 2) are reached. A respirator cartridge change-out schedule has been developed in order to comply with 29 CFR 1910.134. The respirator cartridge change-out schedule for this project is as follows:

- Cartridges shall be removed and disposed of at the end of each shift, when cartridges become wet or wearer experiences breakthrough, whichever occurs first.
- If the humidity exceeds 85%, then cartridges shall be removed and disposed of after 4 hours of use.

Respirators shall not be stored at the end of the shift with contaminated cartridges left on. Cartridges shall not be worn on the second day, no matter how short the time period was the previous day they were used.

7.0 AIR QUALITY MONITORING AND ACTIONS LEVELS

7.1 Monitoring During Site Operations

Atmospheric air monitoring results may be collected and used to provide data to determine when exclusion zones need to be established and when certain levels of personal protective equipment are required. For all instruments there are Site-specific action level criteria which are used in making field health and safety determinations. Other data, such as the visible presence of contamination or the steady state nature of air contaminant concentration, are also used in making field health and safety decisions. Therefore, the HSO may establish an exclusion zone or require a person to wear a respirator even though atmospheric air contaminant concentrations are below established CHASP action levels.

During site work involving disturbance of petroleum-impacted or fill material, real time air monitoring may be conducted for volatile organic compounds (VOCs). A photoionization detector (PID) and/or flame ionization detector (FID) will be used to monitor concentrations of VOCs at personnel breathing-zone height. Air monitoring will be the responsibility of the HSO or designee. Air monitoring may be conducted during intrusive activities associated with the completion of excavation, debris removal, and soil grading. All manufacturers' instructions for instrumentation and calibration will be available onsite.

Subcontractors' air monitoring plans must be equal or more stringent as the Langan plan.

An air monitoring calibration log is provided in Attachment D of this CHASP.

7.1.1 Volatile Organic Compounds

Monitoring with a PID, such as a MiniRAE 2000 (10.6v) or equivalent may occur during intrusive work in the AOCs. Colormetric Indicator Tubes for benzene may be used as backup for the PID, if measurements remain above background monitor every 2 hours. The HSO will monitor the employee breathing zone <u>at least</u> every 30 minutes, or whenever there is any indication that concentrations may have changed (odors, visible gases, etc.) since the last measurement. If VOC levels are observed above 5 ppm for longer than 5 minutes or if the site PPE is upgraded to Level C, the HSO will begin monitoring the site perimeter at a location downwind of the AOC every 30 minutes in addition to the employee breathing zone. Instrument action levels for monitored gases are provided in Table 4.

7.1.2 Metals

Based upon the site historical fill, there is a potential for the soils to contain PAHs and metals. During invasive procedures which have the potential for creating airborne dust, such as excavation of dry soils, a real time airborne dust monitor such as a Mini-Ram may be used to monitor for air particulates. The HSO will monitor the employee breathing zone <u>at least</u> every 30 minutes, or whenever there is any indication that concentrations may have changed (appearance of visible dust) since the last measurement. If dust levels are observed to be greater than 0.100 mg/m³ or visible dust is observed for longer than 15 minutes or if the site PPE is upgraded to Level C, the HSO will begin monitoring the site perimeter at a location downwind of the AOC every 30 minutes in addition to the employee breathing zone. Instrument action levels for dust monitoring are provided in Table 4.

7.2 Monitoring Equipment Calibration and Maintenance

Instrument calibration shall be documented and included in a dedicated safety and health logbook or on separate calibration pages of the field book. All instruments shall be calibrated before and after each shift. Calibration checks may be used during the day to confirm instrument accuracy. Duplicate readings may be taken to confirm individual instrument response.

All instruments shall be operated in accordance with the manufacturers' specifications. Manufacturers' literature, including an operations manual for each piece of monitoring equipment will be maintained on site by the HSO for reference.

7.3 Determination of Background Levels

Background (BKD) levels for VOCs and dust will be established prior to intrusive activities within the AOC at an upwind location. A notation of BKD levels will be referenced in the daily monitoring log. BKD levels are a function of prevailing conditions. BKD levels will be taken in an appropriate upwind location as determined by the HSO.

Table 4 lists the instrument action levels.

8.0 COMMUNITY AIR MONITORING PROGRAM

Community air monitoring may be conducted in compliance with the NYSDOH Generic CAMP outlined below:

Monitoring for dust and odors will be conducted during all ground intrusive activities by the FTL. Continuous monitoring on the perimeter of the work zones for odor, VOCs, and dust may be required for all ground intrusive activities such as soil excavation and handling activities. The work zone is defined as the general area in which machinery is operating in support of remediation activities. A portable PID will be used to monitor the work zone and for periodic monitoring for VOCs during activities such as soil and groundwater sampling and .soil excavation. The site perimeter will be monitored for fugitive dust emissions by visual observations as well as instrumentation measurements (if required). When required, particulate or dust will be monitored continuously with real-time field instrumentation that will meet, at a minimum, the performance standards from DER-10 Appendix 1B.

If VOC monitoring is required, the following actions will be taken based on VOC levels measured:

- If total VOC levels exceed 5 ppm above background for the 15-minute average at the perimeter, work activities will be temporarily halted and monitoring continued. If levels readily decrease (per instantaneous readings) below 5 ppm above background, work activities will resume with continued monitoring.
- If total VOC levels at the downwind perimeter of the hot zone persist at levels in excess
 of 5 ppm above background but less than 25 ppm, work activities will be halted, the
 source of vapors identified, corrective actions taken to abate emissions, and monitoring
 continued. After these steps work activities will resume provided that the total organic
 vapor level 200 feet downwind of the hot 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 above background for the 15-minute average.
- If the total VOC level is above 25 ppm at the perimeter of the hot zone, activities will be shut down.

If dust monitoring with field instrumentation is required, the following actions will be taken based on instrumentation measurements:

- If the downwind particulate level is 100 micrograms per cubic meter (µg/m³) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression must be employed. Work may continue with dust suppression techniques provided that downwind PM10 levels do not exceed 150 µg/m³ above the background level and provided that no visible dust is migrating from the work area.
- If, after implementation of dust suppression techniques, downwind PM10 levels are greater than 150 µg/m³ above the background level, work must be stopped and a reevaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM10 concentration to within 150 µg/m³ of the upwind level and in preventing visible dust migration.

8.1 Vapor Emission Response Plan

This section applies if VOC monitoring is required. If the ambient air concentration of organic vapors exceeds 5 ppm above background at the perimeter of the hot zone, boring and well installation, and excavation activities will be halted or odor controls will be employed, and monitoring continued. When work shut-down occurs, downwind air monitoring as directed by the HSO or FTL will be implemented to ensure that vapor emission does not impact the nearest residential or commercial structure at levels exceeding those specified in the Major Vapor Emission section.

If the organic vapor level decreases below 5 ppm above background, sampling and boring and well installation can resume, provided:

- The organic vapor level 200 feet downwind of the hot zone or half the distance to the nearest residential or commercial structure, whichever is less, is below 1 ppm over background, and
- More frequent intervals of monitoring, as directed by the HSO or FTL, are conducted.

8.2 Major Vapor Emission

This section applies if VOC monitoring is required. If any organic levels greater than 5 ppm over background are identified 200 feet downwind from the work site, or half the distance to the nearest residential or commercial property, whichever is less, all work activities must be halted or odor controls must be implemented.

If, following the cessation of the work activities, or as the result of an emergency, organic levels persist above 5 ppm above background 200 feet downwind or half the distance to the nearest residential or commercial property from the hot zone, then the air quality must be monitored within 20 feet of the perimeter of the nearest residential or commercial structure (20 Foot Zone).

If either of the following criteria is exceeded in the 20 Foot Zone, then the Major Vapor Emission Response Plan shall automatically be implemented.

- Sustained organic vapor levels approaching 5 ppm above background for a period of more than 30 minutes, or
- Organic vapor levels greater than 5 ppm above background for any time period.

8.3 Major Vapor Emission Response Plan

Upon activation, the following activities will be undertaken:

- The local police authorities will immediately be contacted by the HSO or FTL and advised of the situation;
- Frequent air monitoring will be conducted at 30-minute intervals within the 20 Foot Zone. If two successive readings below action levels are measured, air monitoring may be halted or modified by the HSO or FTL; and
- All Emergency contacts will go into effect as appropriate.

8.4 Dust Suppression Techniques

Preventative measures for dust generation may include wetting site fill and soil, construction of an engineered construction entrance with gravel pad, a truck wash area, covering soils with tarps, and limiting vehicle speeds to five miles per hour.

Work practices to minimize odors and vapors include limiting the time that the excavations remain open, minimizing stockpiling of contaminated-source soil, and minimizing the handling of contaminated material. Offending odor and organic vapor controls may include the application of foam suppressants or tarps over the odor or VOC source areas. Foam suppressants may include biodegradable foams applied over the source material for short-term control of the odor and VOCs.

If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will include: direct load-out of soils to trucks for off-site disposal; use of chemical odorants in spray or misting systems; and, 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 by sheltering excavation and handling areas under tented containment structures equipped with appropriate air venting/filtering systems.

9.0 WORK ZONES AND DECONTAMINATION

9.1 Site Control

Work zones are intended to control the potential spread of contamination throughout the site and to assure that only authorized individuals are permitted into potentially hazardous areas.

Any person working in an area where the potential for exposure to site contaminants exists will only be allowed access after providing the HSO with proper training and medical documentation.

Exclusion Zone (EZ) - All activities which may involve exposure to site contaminants, hazardous materials and/or conditions should be considered an EZ. Decontamination of field equipment will also be conducted in the Contaminant Reduction Zone (CRZ) which will be located on the perimeter of the EZ. The EZ and the CRZ will be clearly delineated by cones, tapes or other means. The HSO may establish more than one EZ where different levels of protection may be employed or different hazards exist. The size of the EZ shall be determined by the HSO allowing adequate space for the activity to be completed, field members and emergency equipment.

9.2 Contamination Zone

9.2.1 Personnel Decontamination Station

Personal hygiene, coupled with diligent decontamination, will significantly reduce the potential for exposure.

9.2.2 Minimization of Contact with Contaminants

During completion of all site activities, personnel should attempt to minimize the chance of contact with contaminated materials. This involves a conscientious effort to keep "clean" during site activities. All personnel should minimize kneeling, splash generation, and other physical contact with contamination as PPE is intended to minimize accidental contact. This may ultimately minimize the degree of decontamination required and the generation of waste materials from site operations.

Field procedures will be developed to control over spray and runoff and to ensure that

unprotected personnel working nearby are not affected.

9.2.3 Personnel Decontamination Sequence

Decontamination may be performed by removing all PPE used in EZ and placing it in drums/trash cans at the CRZ. Baby wipes should be available for wiping hands and face. Drums/trash canswill be labeled by the field crews in accordance with all local, state, and federal requirements. Management plans for contaminated PPE, and tools are provided below.

9.2.4 Emergency Decontamination

If circumstances dictate that contaminated clothing cannot be readily removed, then remove gross contamination and wrap injured personnel with clean garments/blankets to avoid contaminating other personnel or transporting equipment. If the injured person can be moved, he/she will be decontaminated by site personnel as described above before emergency responders handle the victim. If the person cannot be moved because of the extent of the injury (a back or neck injury), provisions shall be made to ensure that emergency response personnel will be able to respond to the victim without being exposed to potentially hazardous atmospheric conditions. If the potential for inhalation hazards exist, such as with open excavation, this area will be covered with polyethylene sheeting to eliminate any potential inhalation hazards. All emergency personnel are to be immediately informed of the injured person's condition, potential contaminants, and provided with all pertinent data.

9.2.5 Hand-Held Equipment Decontamination

Hand-held equipment includes all monitoring instruments as stated earlier, samples, hand tools, and notebooks. The hand-held equipment is dropped at the first decontamination station to be decontaminated by one of the decontamination team members. These items must be decontaminated or discarded as waste prior to removal from the CRZ.

To aid in decontamination, monitoring instruments can be sealed in plastic bags or wrapped in polyethylene. This will also protect the instruments against contaminants. The instruments will be wiped clean using wipes or paper towels if contamination is visually evident. Sampling equipment, hand tools, etc. will be cleaned with non-phosphorous soap to remove any potentially contaminated soil, and rinsed with deionized water. All decontamination fluids will be containerized and stored on-site pending waste characterization sampling and appropriate off-site disposal.

9.2.6 Heavy Equipment Decontamination

All heavy equipment and vehicles arriving at the work site will be free from contamination from offsite sources. Any vehicles arriving to work that are suspected of being impacted will not be permitted on the work site. Potentially contaminated heavy equipment will not be permitted to leave the EZ unless it has been thoroughly decontaminated and visually inspected by the HSO or his designee.

9.3 Support Zone

The support zone or cold zone will include the remaining areas of the job site. Break areas and support facilities (include equipment storage and maintenance areas) will be located in this zone. No equipment or personnel will be permitted to enter the cold zone from the hot zone without passing through the decontamination station in the warm zone (if necessitated). Eating, smoking, and drinking will be allowed only in this area.

9.4 Communications

The following communications equipment will be utilized as appropriate.

- Telephones A cellular telephone will be located with the HSO for communication with the HSM and emergency support services/facilities.
- Hand Signals Hand signals shall be used by field teams, along with the buddy system. The entire field team shall know them before operations commence and their use covered during site-specific training. Typical hand signals are the following:

Hand Signal	Meaning
Hand gripping throat	Out of air; cannot breathe
Grip partners wrists or place both hands around	Leave immediately without
waist	debate
Hands on top of head	Need assistance
Thumbs up	OK; I'm alright; I understand
Thumbs down	No; negative
Simulated "stick" break with fists	Take a break; stop work

9.5 The Buddy System

When working in teams of two or more, workers will use the "buddy system" for all work activities to ensure that rapid assistance can be provided in the event of an emergency. This requires work groups to be organized such that workers can remain close together and maintain visual contact with one another. Workers using the "buddy system" have the following responsibilities:

- Provide his/her partner with assistance.
- Observe his/her partner for signs of chemical or heat exposure.
- Periodically check the integrity of his/her partner's PPE.
- Notify the HSO or other site personnel if emergency service is needed.

10.0 NEAREST MEDICAL ASSISTANCE

The address and telephone number of the nearest hospital:

NYC Health and Hospitals - Woodhull 760 Broadway Brooklyn, New York 718-963-8000

Map with directions to the hospital are shown in Figure 2. This information will either be posted prominently at the site or will be available to all personnel all of the time. Further, all field personnel, including the HSO & FTL, will know the directions to the hospital.

11.0 STANDING ORDERS/SAFE WORK PRACTICES

The standing orders, which consist of a description of safe work practices that must always be followed while on-site by Langan employees and contractors, are shown in Attachment A. The site HSO and FTL each have the responsibility for enforcing these practices. The standing orders will be posted prominently at the site, or are made available to all personnel at all times. Those who do not abide by these safe work practices will be removed from the site.

12.0 SITE SECURITY

No unauthorized personnel shall be permitted access to the work areas.

13.0 UNDERGROUND UTILITIES

As provided in Langan's Underground Utility Clearance Guidelines, the following safe work practices should be followed by Langan personnel and the contractor before and during subsurface work in accordance with federal, state and local regulations:

- Obtain available utility drawings from the property owner/client or operator.
- Provide utility drawings to the project team.
- In the field, mark the proposed area of subsurface disturbance (when possible).
- Ensure that the utility clearance system has been notified.
- Ensure that utilities are marked before beginning subsurface work.

- Discuss subsurface work locations with the owner/client and contractors.
- Obtain approval from the owner/client and operators for proposed subsurface work locations.
- Use safe digging procedures when applicable.
- Stay at least 10 feet from all equipment performing subsurface work.

14.0 SITE SAFETY INSPECTION

The Langan HSO or alternate will check the work area daily, at the beginning and end of each work shift or more frequently to ensure safe work conditions. The HSO or alternate must complete the Jobsite Safety Inspection Checklist, found in Attachment F. Any deficiencies shall be shared with the FTL, HSM and PM and will be discussed at the daily tailgate meeting.

15.0 HAND AND POWER TOOLS

All hand- and electric-power tools and similar equipment shall be maintained in a safe operating condition. All electric-power tools must be inspected before initial use. Damaged tools shall be removed immediately from service or repaired. Tools shall be used only for the purpose for which they were designed. All users must be properly trained in their safe operation.

16.0 EMERGENCY RESPONSE

16.1 General

This section establishes procedures and provides information for use during a project emergency. Emergencies happen unexpectedly and quickly, and require an immediate response; therefore, contingency planning and advanced training of staff is essential. Specific elements of emergency support procedures that are addressed in the following subsections include communications, local emergency support units, and preparation for medical emergencies, first aid for injuries incurred on site, record keeping, and emergency site evacuation procedures. In case of emergency, in addition to 911, call *Incident Intervention®* at 1-888-479-7787 to report their injuries. For all other communications, contact the Langan Incident Hotline at **(800) 9-LANGAN** (800-952-6426) extension 4699 as soon as possible.

Should outside assistance be needed for accidents, fire, or release of hazardous substances, the emergency numbers will be available and posted at the site (Table 5) where a readily accessible telephone is made available for emergency use.

Also, in the event of an incident where a team member becomes exposed or suffers from an acute symptom from contact with site materials and has to be taken to a hospital, a short medical data sheet (Attachment T) for that individual will be made available to the attending physician.

The medical data sheet will include the following:

- Name, address, home phone
- Age, height, weight
- Name of person to be notified in case of an accident
- Allergies
- Particular sensitivities
- Does he/she wear contact lenses
- Short checklist of previous illness
- Name of personal physician and phone
- Name of company physician and phone
- Prescription and non-prescription medications currently used.

A sample medical data sheet is included in Attachment T.

16.2 Responsibilities

16.2.1 Health and Safety Officer (HSO)

The HSO is responsible for ensuring that all personnel are evacuated safely and that machinery and processes are shut down or stabilized in the event of a stop work order or evacuation. The HSO is responsible for ensuring the HSM are notified of all incidents, all injuries, near misses, fires, spills, releases or equipment damage. The HSO is required to immediately notify the HSM of any fatalities or catastrophes (three or more workers injured and hospitalized) so that the HSM can notify OSHA within the required time frame.

16.2.2 Emergency Coordinator

The HSO or their designated alternate will serve as the Emergency Coordinator. The Emergency Coordinator is responsible for ensuring that all personnel are evacuated safely and that machinery and processes are shut down or stabilized in the event of a stop work order or evacuation. They are also responsible for ensuring the HSM are notified of all incidents, all injuries, near misses, fires, spills, releases or equipment damage. The Emergency Coordinator is required to immediately notify the HSM of any fatalities or catastrophes (three or more workers injured and hospitalized.

The Emergency Coordinator shall locate emergency phone numbers and identify hospital routes prior to beginning work on the sites. The Emergency Coordinator shall make necessary arrangements to be prepared for any emergencies that could occur.

The Emergency Coordinator is responsible for implementing the Emergency Response Plan.

16.2.3 Site Personnel

Project site personnel are responsible for knowing the Emergency Response Plan and the procedures contained herein. Personnel are expected to notify the Emergency Coordinator of situations that could constitute a site emergency. Project site personnel, including all subcontractors will be trained in the Emergency Response Plan.

16.3 Communications

Once an emergency situation has been stabilized, or as soon as practically, the injured Langan personnel should contact <u>Incident Intervention</u> at 1-888-479-7787 to report their injuries. For all other communications, contact the Langan Incident Hotline at **(800) 9-LANGAN** (800-952-6426) extension 4699 as soon as possible.

16.4 Local Emergency Support Units

In order to be able to deal with any emergency that might occur during investigative activities at the site, the Emergency Notification Numbers (Table 5) will be posted and provided to all personnel conducting work within the EZ.

Figure 2 shows the hospital route map. Outside emergency number 911 and local ambulance should be relied on for response to medical emergencies and transport to emergency rooms. Always contact first responders when there are serious or life threatening emergencies on the site. Project personnel are instructed not to drive injured personnel to the Hospital. In the event of an injury, provide first aid and keep the injured party calm and protected from the elements and treat for shock when necessary.

16.5 **Pre-Emergency Planning**

Langan will communicate directly with administrative personnel from the emergency room at the hospital in order to determine whether the hospital has the facilities and personnel needed to treat cases of trauma resulting from any of the contaminants expected to be found on the site. Instructions for finding the hospital will be posted conspicuously in the site office and in each site vehicle.

16.6 Emergency Medical Treatment

The procedures and rules in this CHASP are designed to prevent employee injury. However, should an injury occur, no matter how slight, it will be reported to the HSO immediately. First-aid equipment will be available on site at the following locations:

- First Aid Kit: Contractor Vehicles
- Emergency Eye Wash: Contractor Vehicles

During the site safety briefing, project personnel will be informed of the location of the first aid station(s) that has been set up. Some injuries, such as severe cuts and lacerations or burns, may require immediate treatment. Any first aid instructions that can be obtained from doctors or paramedics, before an emergency-response squad arrives at the site or before the injured person can be transported to the hospital, will be followed closely.

16.7 Personnel with current first aid and CPR certification will be identified.

Only in non-emergency situations may an injured person be transported to an urgent care facility. Due to hazards that may be present at the site and the conditions under which operations are conducted, it is possible that an emergency situation may develop. Emergency situations can be characterized as injury or acute chemical exposure to personnel, fire or explosion, environmental release, or hazardous weather conditions.

16.8 Emergency Site Evacuation Routes and Procedures

All project personnel will be instructed on proper emergency response procedures and locations of emergency telephone numbers during the initial site safety meeting. If an emergency occurs as a result of the site investigation activities, including but not limited to fire, explosion or significant release of toxic gas into the atmosphere, the Langan Project Manager will be verbally notified immediately. All heavy equipment will be shut down and all personnel will evacuate the work areas and assemble at the nearest intersection to be accounted for and to receive further instructions.

In the event that an emergency situation arises, the FTL will implement an immediate evacuation of all project personnel due to immediate or impending danger. The FTL will also immediately communicate with the contractor to coordinate any needed evacuation of the property.

The FTL or Site Supervisor will give necessary instructions until the Designated Incident Commander (IC) assumes control. After the emergency has been resolved, the FTL or Site Supervisor will coordinate with the IC and indicate when staff should resume their normal duties. If dangers are present for those at the designated assembly point, another designated location of assembly will be established.

It will be the responsibility of the FTL or Site Supervisor to report a fire or emergency, assess the seriousness of the situation, and initiate emergency measures until the arrival of the local fire fighters or other first responders, should they be necessary. The FTL, working with emergency responders, may also order the closure of the Site for an indefinite period as long as it is deemed necessary.

Under no circumstances will incoming visitors be allowed to proceed to the area of concern, once

an emergency evacuation has been implemented. Visitors or other persons present in the area of the emergency shall be instructed to evacuate the area. The FTL will ensure that access roads are not obstructed and will remain on-site to provide stand-by assistance upon arrival of emergency personnel.

If it is necessary to temporarily control traffic in the event of an emergency, those persons controlling traffic will wear proper reflection warning vests until the arrival of police or fire personnel.

16.8.1 Designated Assembly Locations

All personnel will evacuate the site and assemble at a designated assembly location. The assembly location will be designated by Langan personnel and discussed during each shift's prejob safety briefing.

16.8.2 Accounting for Personnel

All contractor and subcontractor supervisors are responsible for the accounting of all personnel assembled at the designed assembly area. The Designated Incident Commander shall be notified if personnel are not found.

16.9 Fire Prevention and Protection

In the event of a fire or explosion, procedures will include immediately evacuating the site and notification of the Langan Project Manager of the investigation activities. Portable fire extinguishers will be provided at the work zone. The extinguishers located in the various locations should also be identified prior to the start of work. No personnel will fight a fire beyond the stage where it can be put out with a portable extinguisher (incipient stage).

16.9.1 Fire Prevention

Fires will be prevented by adhering to the following precautions:

- Good housekeeping and storage of materials.
- Storage of flammable liquids and gases away from oxidizers.
- Shutting off engines to refuel.
- Grounding and bonding metal containers during transfer of flammable liquids.
- Use of UL approved flammable storage cans.
- Fire extinguishers rated at least 10 pounds ABC located on all heavy equipment, in all trailers and near all hot work activities.

The person responsible for the control of fuel source hazards and the maintenance of fire prevention and/or control equipment is the HSO.

16.10 Significant Vapor Release

Based on the proposed tasks, the potential for a significant vapor release is low. However, if a release occurs, the following steps will be taken:

- Move all personnel to an upwind location. All non-essential personnel shall evacuate.
- Upgrade to Level C Respiratory Protection.
- Downwind perimeter locations shall be monitored for volatile organics.
- If the release poses a potential threat to human health or the environment in the community, the Emergency Coordinator shall notify the Langan Project Manager.
- Local emergency response coordinators will be notified.

16.11 Overt Chemical Exposure

The following are standard procedures to treat chemical exposures. Other, specific procedures detailed on the Material Safety Data Sheet (MSDS) will be followed, when necessary.

SKIN AND EYE: Use copious amounts of soap and water from eye-wash kits and portable hand wash stations.

CONTACT: Wash/rinse affected areas thoroughly, then provide appropriate medical attention. Skin shall also be rinsed for 15 minutes if contact with caustics, acids or hydrogen peroxide occurs. Affected items of clothing shall also be removed from contact with skin.

Providing wash water and soap will be the responsibility of each individual contractor or subcontractor on-site.

16.12 Decontamination during Medical Emergencies

If emergency life-saving first aid and/or medical treatment is required, normal decontamination procedures may need to be abbreviated or omitted. The HSO or designee will accompany contaminated victims to the medical facility to advice on matters involving decontamination when necessary. The outer garments can be removed if they do not cause delays, interfere with treatment or aggravate the problem. Respiratory equipment must always be removed. Protective clothing can be cut away. If the outer contaminated garments cannot be safely removed on site, a plastic barrier placed between the injured individual and clean surfaces should be used to help prevent contamination of the inside of ambulances and/or medical personnel. Outer garments may then be removed at the medical facility. No attempt will be made to wash or rinse the victim if his/her injuries are life threatening, unless it is known that the individual has been contaminated with an extremely toxic or corrosive material which could also cause severe injury or loss of life

to emergency response personnel. For minor medical problems or injuries, the normal decontamination procedures will be followed.

16.13 Adverse Weather Conditions

In the event of adverse weather conditions, the HSO will determine if work will continue without potentially risking the safety of all field workers. Some of the items to be considered prior to determining if work should continue are:

- Potential for heat stress and heat-related injuries.
- Potential for cold stress and cold-related injuries.
- Treacherous weather-related working conditions (hail, rain, snow, ice, high winds).
- Limited visibility (fog).
- Potential for electrical storms.
- Earthquakes.
- Other major incidents.

Site activities will be limited to daylight hours, or when suitable artificial light is provided, and acceptable weather conditions prevail. The HSO will determine the need to cease field operations or observe daily weather reports and evacuate, if necessary, in case of severe inclement weather conditions.

16.14 Spill Control and Response

All small spills/environmental releases shall be contained as close to the source as possible. Whenever possible, the MSDS will be consulted to assist in determining proper waste characterization and the best means of containment and cleanup. For small spills, sorbent materials such as sand, sawdust or commercial sorbents should be placed directly on the substance to contain the spill and aid recovery. Any acid spills should be diluted or neutralized carefully prior to attempting recovery. Berms of earthen or sorbent materials can be used to contain the leading edge of the spills. All spill containment materials will be properly disposed. An exclusion zone of 50 to 100 feet around the spill area should be established depending on the size of the spill.

All contractor vehicles shall have spill kits on them with enough material to contain and absorb the worst-case spill from that vehicle. All vehicles and equipment shall be inspected prior to be admitted on site. Any vehicle or piece of equipment that develops a leak will be taken out of service and removed from the job site.

The following seven steps shall be taken by the Emergency Coordinator:

- 1. Determine the nature, identity and amounts of major spills.
- 2. Make sure all unnecessary persons are removed from the spill area.

- 3. Notify the HSO immediately.
- 4. Use proper PPE in consultation with the HSO.
- 5. If a flammable liquid, gas or vapor is involved, remove all ignition sources and use non-sparking and/or explosion-proof equipment to contain or clean up the spill (diesel-only vehicles, air-operated pumps, etc.)
- 6. If possible, try to stop the leak with appropriate material.
- 7. Remove all surrounding materials that can react or compound with the spill.

In addition to the spill control and response procedures described in this CHASP, Langan personnel will coordinate with the designated project manager relative to spill response and control actions. Notification to the Project Manager must be immediate and, to the extent possible, include the following information:

- Time and location of the spill.
- Type and nature of the material spilled.
- Amount spilled.
- Whether the spill has affected or has a potential to affect a waterway or sewer.
- A brief description of affected areas/equipment.
- Whether the spill has been contained.
- Expected time of cleanup completion. If spill cleanup cannot be handled by Langan's on-site personnel alone, such fact must be conveyed to the Project Manager immediately.

Langan shall not make any notification of spills to outside agencies. The client will notify regulatory agencies as per their reporting procedures.

16.15 Emergency Equipment

The following minimum emergency equipment shall be kept and maintained on site:

- Industrial first aid kit.
- Fire extinguishers (one per site).

16.16 Restoration and Salvage

After an emergency, prompt restoration of utilities, fire protection equipment, medical supplies and other equipment will reduce the possibility of further losses. Some of the items that may need to be addressed are:

- Refilling fire extinguishers.
- Refilling medical supplies.
- Recharging eyewashes and/or showers.
- Replenishing spill control supplies.

16.17 Documentation

Immediately following an incident or near miss, unless emergency medical treatment is required, either the employee or a coworker must contact the Langan Incident/Injury Hotline at 1-(800)-9-LANGAN (ext. #4699) and the client representative to report the incident or near miss. For emergencies involving personnel injury and/or exposure, the HSO and affected employee will complete and submit an Employee Exposure/Injury Incident Report (Attachment C) to the Langan Corporate Health and Safety Manager as soon as possible following the incident.

17.0 SPECIAL CONDITIONS

This guideline contains information and requirements for special conditions that may not be routinely encountered.

17.1 Scope

The guideline applies to the specific projects identified within this document. Additional provisions will be addressed in each Site-Specific Construction Health and Safety Plan (CHASP), as needed.

17.2 Responsibilities

Site Personnel - All site personnel must be alert to safety hazards on work sites and take action to minimize such hazards. Personnel must utilize the buddy system, watch for inappropriate behavior, and be alert to changes in site conditions.

Health and Safety Officer (HSO) - The HSO is responsible for considering these procedures in the development of site specific CHASPs. The HSO shall schedule frequent "tail gate" safety briefings to enhance safety awareness and discuss potential problems.

17.3 Procedures

The procedures outlined below shall be followed when such conditions are encountered.

17.3.1 Ladders

Langan safety procedures shall be used to ensure employee safety when using ladders in the office or work sites. All ladders shall be coated or repaired to prevent injury to the employee from punctures or lacerations and to prevent snagging or clothing. Any wood ladders used must have an opaque covering except for identification or warning labels, which may be placed on one face only of a side rail.

17.3.1.1 Ladder Use

Employees shall only use ladders for the purposes, which they were designed and shall not be used as scaffolding. Ladders will be maintained and inspected prior to use for slip hazards including oil and grease. Employees shall use ladders only on stable and level surfaces unless the ladder is secured to prevent possible displacement. Ladders should not be used on slippery surfaces unless secured or provided with slip resistant feet to prevent accidental displacement. Ladders should not be used in locations where they could be displaced by workplace activities or traffic. Ladder rungs, cleats and steps shall be parallel, level and uniformly spaced when the ladder is in the use position.

Employees should not be carrying anything including equipment that could cause injury if there was a fall while utilizing the ladder. The top and bottom of the ladder area must remain clear while in use. When ascending and descending the ladder, employees must face the ladder.

Ladders shall not be loaded beyond the maximum intended load for which they were built or the manufacturer's rated capacity.

17.3.1.2 Portable Ladders

Rungs, cleats and steps for portable ladders and fixed ladders shall be spaced not less than 10 inches apart, nor more than 14 inches apart, as measured between center lines of the rungs, cleats and steps. When used to access an upper landing surface, the ladder side rails must extend at least three feet above the upper landing surface to which the ladder is used to gain access. If this is not possible, due to the ladders length, then the top of the ladder shall be secured at its top to a rigid support.

17.3.1.3 Step Stools

Rungs, cleats and steps of step stools shall not be less than 8 inches apart, nor more than 12 inches apart, as measured between center lines of the rungs, cleats and steps.

17.3.1.4 Extension Ladders

Rungs, cleats and steps of the base section of extension trestle ladders shall be spaced not less than 8 inches apart, nor more than 18 inches apart, as measured between center lines of the rungs, cleats and steps. The rung spacing on the extension section of the extension trestle ladder shall not be less than 6 inches nor more than 12 inches, as measured between center lines of the rungs, cleats and steps. 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).

17.3.1.5 Inspection

Ladders will be inspected for visible detects periodically, prior to utilization or after any occurrence that could have negatively affected the ladder. Portable ladders with defects including broken or missing rungs, cleats, or steps, broken or split rails, corroded components or other faulty or defective components shall not be used. The ladder will be immediately marked as defective, tagged as "Do Not Use" or blocked from being used and removed from service until repaired.

17.3.2 First Aid/Cardiopulmonary Resuscitation (CPR)

Langan field and office personnel will be encouraged to be trained in First Aid and Cardiopulmonary Resuscitation (CPR). Training will be provided free of charge by Langan to all employees. Employees will receive a training certificate that will be kept on file with the Health & Safety Coordinator (HSC). Training and certification will be provided by a credited provider such as American Red Cross or equivalent.

17.3.2.1 Emergency Procedures

Prior to work at sites the Langan employees certified in first aid and CPR will be identified in the site specific CHASP. Langan will endear to have at least one employee at a job site trained and able to render first aid and CPR. The site specific CHASP will contain first aid information on both potential chemical and physical hazards. Emergency procedures to be followed are in case of injury or illnesses are provided in the CHASP. The CHASP will include emergency contact information including local police and fire departments, hospital emergency rooms, ambulance services, on-site medical personnel and physicians. The CHASP will also include directions and contact information to the nearest emergency facility in case immediate medical attention is required. The emergency contact information will be conspicuously posted at the worksite. Employees that are injured and require immediate medical attention shall call either 911 or the local posted emergency contacts. Employees should use ambulatory services to transport injured workers to the nearest facility for emergency medical care. In areas where 911 is not available, the telephone numbers of the physicians, hospitals, or ambulances shall be conspicuously posted.

17.3.2.2 First Aid Supplies

First aid supplies are readily available to all Langan employees when required. First aid kits are located in each Langan office. Portable first aid kits are available for employees to use at work sites. First aid kits should consist of items needed to treat employees for potential chemical and

physical injuries. At a minimum, first aid kits should contain items to allow basic first aid to be rendered. Where the eyes or body of an employee may be exposed to corrosive materials, suitable facilities for quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use including eye wash.

First aid kits will be weatherproof with individual sealed packages of each item. All portable first aid kits shall be inspected by Langan employees before and after use to ensure all used items are replaced. When out in the field, employees shall check first aid kits weekly to ensure used items are replaced.

17.3.3 Hydrogen Sulfide

Langan employees with the potential to be exposed to hydrogen sulfide while at work sites shall have training in hydrogen sulfide awareness. The training will include identification of areas where employees could be exposed to hydrogen sulfide, health effects, permissible exposure limits, first aid procedures and personnel protective equipment. Langan employees could be exposed to hydrogen sulfide while at job sites including petroleum refineries, hazardous waste treatment, storage and disposal facilities, uncontrolled hazardous waste sites and remediation projects.

17.3.3.1 Characteristics

Hydrogen sulfide is a colorless gas with a strong odor of rotten eggs that is soluble in water. Hydrogen sulfide is used to test and make other chemicals. It is also found as a by-product of chemical reactions, such as in sewer treatment. It is a highly flammable gas and a dangerous fire hazard. Poisonous gases are produced in fires including sulfur oxides. Hydrogen sulfide is not listed as a carcinogen.

17.3.3.2 Health Effects

Hydrogen Sulfide can affect employees if inhaled or through contact with skin or eyes. Acute (or short term) health effects of hydrogen sulfide exposure include irritation of the nose and throat, dizziness, confusion, headache and trouble sleeping. Inhalation of hydrogen sulfide can irritate the lungs causing coughing and/or shortness of breath. Higher levels of exposure can cause build-up of fluid in the lungs (pulmonary edema), a medical emergency, with severe shortness of breath.

Chronic (or long term) health effects of low levels of exposure to hydrogen sulfide can cause pain and redness of the eyes with blurred vision. Repeated exposure may cause bronchitis with cough, phlegm and shortness of breath.

17.3.3.3 Protective Clothing and Equipment

Respirators are required for those operations in which employees will be exposed to hydrogen sulfide above OSHA permissible exposure level. The maximum OSHA permissible exposure limit (PEL) for hydrogen sulfide is 20 parts of hydrogen sulfide vapor per million parts of air (20 ppm) for an 8-hour workday and the maximum short-term exposure limit (STEL) is 10 ppm for any 10-minute period.

Where employees are exposed to levels up to 100 parts of hydrogen sulfide vapor per million parts of air (100 ppm), the following types of respiratory protection are allowed:

- Any powered, air purifying respirator with cartridge(s);
- Any air purifying, full-facepiece respirator (gas mask) with a chin style, front- or backmounted canister;
- Any supplied air system with escape self-contained breathing apparatus, if applicable; and,
- Any self-contained breathing apparatus with a full facepiece.

Respirators used by employees must have joint Mine Safety and Health Administration and the National Institute for Occupational Safety and Health (NIOSH) seal of approval. Cartridges or canisters must be replaced before the end of their service life, or the end of the shift, whichever occurs first. Langan employees that have the potential to be exposed to hydrogen sulfide will be trained in the proper use of respirators. Respirator training is discussed under– Langan's Respiratory Protection Program.

Employees with potential exposure to hydrogen sulfide, or when required by the client, will wear a portable hydrogen sulfide gas detector. The detector should have an audible, visual and vibrating alarm. The detector may also provide detection for carbon monoxide, sulfur dioxide and oxygen deficient atmospheres. The hydrogen sulfide monitor will, at a minimum, be calibrated to detect hydrogen sulfide at a level of 20 parts of hydrogen sulfide vapor per million parts of air (20 ppm). Many portable gas detectors will have factory defaults with a low level alarm at 10 ppm and a high level alarm at 15 ppm. Langan employees shall consult clients to determine if any site specific threshold levels exist.

If the hydrogen sulfide gas detector sounds and employees are not wearing appropriate respiratory protection, employees must immediately vacate the area and meet at the assigned emergency location. Langan employees may not re- enter the site without proper respiratory protection and approval from the client or property owner, if needed.

Employees shall wear PPE to prevent eye and skin contact with hydrogen sulfide. Employees

must wear appropriate protective clothing including boots, gloves, sleeves and aprons, over any parts of their body that could be exposed to hydrogen sulfide. Non-vented, impact resistant goggles should be worn when working with or exposed to hydrogen sulfide.

17.3.3.4 Emergency and First Aid Procedures

Eye and Face Exposure

If hydrogen sulfide comes in contact with eyes, it should be washed out immediately with large amounts of water for 30 minutes, occasionally lifting the lower and upper eye lids. Seek medical attention immediately.

Skin Exposure

If hydrogen sulfide contaminates clothing or skin, remove the contaminated clothing immediately and wash the exposed skin with large amounts of water and soap. Seek medical attention immediately. Contaminated clothing should either be disposed of or washed before wearing again.

Breathing

If a Langan employee or other personnel breathe in hydrogen sulfide, immediately get the exposed person to fresh air. If breathing has stopped, artificial respiration should be started. Call for medical assistance or a doctor as soon as possible.

Safety Precautions

Hydrogen sulfide is a highly flammable gas and a dangerous fire hazard. Containers of hydrogen sulfide may explode in a fire situation. Poisonous gases are produced during fires.

Langan employees should contact property owners and operators prior to conducting work onsite to be aware of any site specific contingency plans, identify where hydrogen sulfide is used at the facility and be informed about additional safety rules or procedures.

19.3.4 Fire Protection/Extinguishers

Langan field personnel that have been provided with portable fire extinguishers for use at worksites will be trained to familiarize employees with general principles of fire extinguisher use and hazards associated with the incipient stage of firefighting. Training will be provided prior to initial assignment for field work and annually thereafter.

Portable fire extinguishers shall be visually inspected monthly and subjected to an annual maintenance check. Langan shall retain records of the annual maintenance date.

17.3.5 Overhead lines

When field work is performed near overhead lines, the lines shall be deenergized and grounded, or other protective measures shall be provided before the work shall commence. If overhead lines are to be deenergized, arrangements shall be made with the client, property owner or organization that operates or controls the electric circuits involved to deenergize and ground them. If protective measures, such as guarding, isolating, or insulating, are provided, these precautions shall prevent employees from contacting such lines directly with any part of their body or indirectly through conductive materials, tools, or equipment.

When unqualified Langan personnel are working in an elevated position near overhead lines, the location shall be such that the person and the longest conductive object they may contact cannot come closer to any unguarded, energized overhead line than the following distances:

- 1. For voltages to ground 50kV or below 10 feet; and
- 2. For voltages to ground over 50kV 10 feet, plus 4 inches for every 10kV over 50kV.

As previously indicated, Langan does not retain qualified employees to perform work on energized equipment.

17.3.5.1 Vehicle and Equipment Clearance

Any vehicle or mechanical equipment capable of having parts of its structure elevated near energized overhead lines shall be operated so that a clearance of 10 feet is maintained. If the voltage of the overhead lines is higher than 50kV, the clearance shall be increased 4 inches for every 10kV over that voltage.

If any of the following discussed conditions occur, the clearance may be reduced.

- If the vehicle is in transit with its structure lowered, the clearance may be reduced to 4 ft. If the voltage is higher than 50kV, the clearance shall be increased 4 in. for every 10 kV over that voltage.
- If insulating barriers are installed to prevent contact with the lines, and if the barriers are rated for the voltage of the line being guarded and are not a part of or an attachment to the vehicle or its raised structure, the clearance may be reduced to a distance within the designed working dimensions of the insulating barrier.

Employees standing on the ground may not contact the vehicle or mechanical equipment or any

of its attachments, unless the employee is using protective equipment rated for the voltage; or the equipment is located so that no uninsulated part of its structure (that portion of the structure that provides a conductive path to employees on the ground) can come closer to the overhead line than permitted.

If any vehicle or mechanical equipment capable of having parts of its structure elevated near energized overhead lines is intentionally grounded, employees working on the ground near the point of grounding may not stand at the grounding location whenever there is a possibility of overhead line contact. Additional precautions, such as the use of barricades or insulation, shall be taken to protect employees from hazardous ground potentials, depending on earth resistivity and fault currents, which can develop within the first few feet or more outward from the grounding point.

17.3.6 Trade Secret

Langan employees could potentially be provided trade secret information by the client or property owner when site specific information is provided about highly hazardous chemicals. Trade secret means any confidential formula, pattern, process, device, information or compilation of information that is used in an employer's business, and that gives the employer an opportunity to obtain an advantage over competitors who do not know or use it. Langan employees understand that this information should be kept confident and if required, may enter into a confidentially agreement with the client.

17.3.7 Bloodborne Pathogens

Langan employees that can reasonably anticipate exposure to blood or other potentially infectious material while at work sites shall have training in bloodborne pathogens. Applicable employees would include those trained in first aid and serving a designated role as an emergency medical care provider. Bloodborne pathogens are pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus and human immunodeficiency virus.

17.3.7.1 Training

Langan employees with potential occupational exposure to blood or other potentially infectious material must participate in a training program. Training must be conducted prior to initial assignment where there would be potential for exposure and annually thereafter within one year of previous training. The training program will be provided to Langan employees at no cost to them and during working hours.

Langan will ensure the training program shall consist of the following:

- An accessible copy of the regulatory text of 29 CFR 1910.1030 and an explanation of its contents;
- A general explanation of the epidemiology and symptoms of bloodborne diseases;
- An explanation of the modes of transmission of bloodborne pathogens;
- An explanation of Langan's exposure control plan and the means by which the employee can obtain a copy of the written plan;
- An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials;
- An explanation of the use and limitations of personal protective
 - o equipment (PPE) to prevent and reduce exposure;
 - Information on the types, proper use, location, removal, handling and disposal of PPE;
 - An explanation of the basis for selection of PPE;
 - Information on the hepatitis B vaccine, including information on its efficacy, safety, method of administration, the benefits of being vaccinated, and that the vaccine and vaccination will be offered free of charge;
 - Information on the appropriate actions to take and persons to contact in an emergency involving blood or other potentially infectious materials;
 - An explanation of the procedure to follow if an exposure incident occurs, including the method of reporting the incident and the medical follow-up that will be made available;
 - o Information on the post-exposure evaluation and follow-up that the
 - employer is required to provide for the employee following an exposure incident;
 - An explanation of the signs and labels and/or color coding required by paragraph 29 CFR 1910.1030(g)(1); and
 - An opportunity for interactive questions and answers with the person conducting the training session.

Langan will develop and implement a written Exposure Control Plan, which will be designed to eliminate or minimize employee exposure to bloodborne pathogens. The Exposure Control Plan will contain the following elements:

- An exposure determination for employees;
- The schedule and method of implementation for Methods of Compliance (29 CFR 191.1030(d)), Hepatitis B Vaccination and Post-Exposure Evaluation and Follow-up (29 CFR 1910.1030(f)), Communication of Hazards to Employees (29 CFR 1910.1030(g)) and (h) Recordkeeping (29 CFR 1910.1030(h));
- The procedure for the evaluation of circumstances surrounding exposure incidents;
- Ensure a copy of the Exposure Control Plan will be accessible to employees; and,
- The Exposure Control Plan shall be reviewed and updated at least annually.

Langan employees with occupational exposure to bloodborne pathogens include any employees trained in first aid that would be expected to provide emergency medical care. This determination is made without regards to the use of PPE, which could eliminate or minimize exposure.

Universal precautions shall be observed to prevent contact with blood or other potentially infectious materials. According to the concept of Universal Precautions, all human blood and certain human body fluids are treated as if known to be infectious for bloodborne pathogens. Under circumstances in which differentiation between body fluid types is difficult or impossible, all body fluids shall be considered potentially infectious materials.

Work practice controls shall be used to eliminate or minimize employee exposure, if applicable. Since Langan employees will have occupational exposure only during rendering of first aid, personnel protective equipment will be utilized to reduce or minimize exposure. PPE that could be available to Langan personnel when administering first aid includes safety glasses, gloves, and Tyvek suits or sleeves. PPE and first aid kits will be provided to employees at no cost to them.

Langan employees that render first aid in office areas will have access to hand washing facilities or restrooms. For first aid rendered at field locations, first aid kits will contain an appropriate antiseptic hand cleanser and clean cloth/paper towels or antiseptic towelettes. After using antiseptic hand cleansers or towelettes, employees shall wash their hands with soap and running water as soon as feasible.

After administering first aid, potentially infectious materials, including towels, personnel protective equipment, clothes and bandages, shall be placed in a container, which prevents leakage during collection, handling, processing, storage, transport, or shipping. All PPE will be dispose of after use. Any equipment or working surfaces which was been exposed to blood or potentially infectious materials due to an injury, will be decontaminated prior to reuse.

Langan will make available the hepatitis B vaccine and vaccination series to all employees who have occupational exposure, and post-exposure evaluation and follow-up to all employees who have had an exposure incident. These services will be available to the employee at no cost to them through a medical provider.

17.3.7.2 Recordkeeping

Langan will maintain training and medical records for each employee with occupational exposure to blood or potentially infectious materials. Medical and training records will be maintained by Langan's H&S Department.

Training records will include the following:

- Dates of the training sessions;
- Contents or a summary of the training sessions;
- Names and qualifications of persons conducting the training; and
- Names and job titles of all persons attending the training sessions.

Training records shall be maintained for 3 years from the date on which the training occurred. Medical records will be will be preserved and maintained for the duration of employment plus 30 years.

All records will be made available upon request to employees, the Assistant Secretary of Labor for Occupational Safety and Health, and Director of National Institute for Occupational Safety and Health Director of OSHA for examination and copying. Medical records must have written consent from employee before releasing.

If Langan ceases to do business, all records shall be transferred to the successor employer. The successor employer shall receive and maintain these records.

If there will not be a successor, Langan will notify current employees of their rights to access records at least three months prior to the cessation of business.

18.0 RECORDKEEPING

The following is a summary of required health and safety logs, reports and recordkeeping.

18.1 Field Change Authorization Request

Any changes to the work to be performed that is not included in the CHASP will require an addendum that is approved by the Langan project manager and Langan HSM to be prepared. Approved changes will be reviewed with all field personnel at a safety briefing.

18.2 Medical and Training Records

Copies or verification of training (40-hour, 8-hour, supervisor, site-specific training, documentation of three-day OJT, and respirator fit-test records) and medical clearance for site work and respirator use will be maintained in the office and available upon request. Records for all subcontractor employees must also be available upon request. All employee medical records will be maintained by the HSM.

18.3 Onsite Log

A log of personnel on site each day will be kept by the HSO or designee.

18.4 Daily Safety Meetings ("Tailgate Talks")

Completed safety briefing forms will be maintained by the HSO.

18.5 Exposure Records

All personal monitoring results, laboratory reports, calculations and air sampling data sheets are part of an employee exposure record. These records will be maintained by the HSO during site work. At the end of the project they will be maintained according to 29 CFR 1910.1020.

18.6 Hazard Communication Program/MSDS-SDS

Material safety data sheets (MSDS) of Safety Data Sheets (SDS) have been obtained for applicable substances and are included in this CHASP (Attachment D). Langan's written hazard communication program, in compliance with 29 CFR 1910.1200, is maintained by the HSM.

18.7 Documentation

Immediately following an incident or near miss, unless emergency medical treatment is required, either the employee or a coworker must contact the Langan incident/injury hotline at 1-800-952-6426, extension 4699 and the Project Manager to report the incident or near miss. The Project Manager will contact the client or client representative. A written report must be completed and submitted HSM within 24 hours of the incident. For emergencies involving personnel injury and/or exposure, employee will complete and submit the Langan incident/injury report to the Langan corporate health and safety manager as soon as possible following the incident. Accidents will be investigated in-depth to identify all causes and to recommend hazard control measures.

18.7.1 Accident and Injury Report Forms

18.7.1.1 Accident/Incident Report

All injuries, no matter how slight, shall be reported to the FTL and the PM immediately. The accident/incident report forms, attached in Attachment U and Attachment V will be filled out on all accidents by the applicable contractor supervision personnel, the FTL, or the HSO. Copies of all accident/incident reports shall be kept on-site and available for review. Project personnel will be instructed on the location of the first aid station, hospital, and doctor and ambulance service near the job. The emergency telephone numbers will be conspicuously posted in site vehicles near the work zone. First aid supplies will be centrally located and conspicuously posted between restricted and non-restricted areas to be readily accessible to all on the site.

18.7.1.2 First Aid Treatment Record

The forms in will be used for recording all non-lost time injuries treated by the project first-aid attendant, the local physician or hospital will be entered in detail on this record. "Minor" treatment of scratches, cuts, etc. will receive the same recording attention as treatment of more severe injuries.

18.7.1.3 OSHA Form 300

An OSHA Form 300 will be kept at the Langan Corporate Office in Parsippany, New Jersey. All recordable injuries or illnesses will be recorded on this form. Subcontractor employers must also meet the requirements of maintaining an OSHA 300 form. The Incident Report form used to capture the details of work-related injuries/illnesses meets the requirements of the OSHA Form 301 (supplemental record) and must be maintained with the OSHA Form 300 for all recordable injuries or illnesses. Forms for recording OSHA work-related injuries and illnesses are included in Attachment U and Attachment V.

19.0 CONFINED SPACE ENTRY

Confined spaces are not anticipated at the Site during planned construction activities. If confined spaces are identified, the contractor must implement their own confined space program that all applicable federal, state and local regulations. Confined spaces **will not** be entered by Langan personnel.

20.0 CHASP ACKNOWLEDGEMENT FORM

All Langan personnel and contractors will sign this CHASP Compliance Agreement indicating that they have become familiar with this CHASP and that they understand it and agree to abide by it.

Printed Name	Signature	Company	Date

Printed Name	Signature	Company	Date

Printed Name	Signature	Company	Date

Printed Name	Signature	Company	Date

Printed Name	Signature	Company	Date

Printed Name	Signature	Company	Date

TABLES

TABLE 1TASK HAZARD ANALYSES

Task	Hazard	Description	Control Measures	First Aid
1.3.1 – 1.3.12	Contaminated Soil or Groundwater- Dermal Contact	See Table 2, seek medical attention as required		
1.3.1 – 1.3.12	Lacerations, abrasions, punctures	Cutting bailer twine, pump tubing, acetate liners, etc. with knife; cuts from sharp site objects or previously cut piles, tanks, etc.; Using tools in tight spaces	Clean wound, apply pressure and/or bandages; seek medical attention as required.	
1.3.1 – 1.3.12	Contaminated Media Inhalation	Opening drums, tanks, wells; vapors for non-aqueous phase liquids or other contaminated site media; dust inhalation during excavation; vapor accumulation in excavation	Follow air monitoring plan; have quick access to respirator, do not move or open unlabeled drums found at the site, maintain safe distance from construction activities	See Table 2, seek medical attention as required
1.3.1 – 1.3.12	Lifting	Improper lifting/carrying of equipment and materials causing strains	Follow safe lifting techniques; Langan employees are not to carry contractor equipment or materials	Rest, ice, compression, elevation; seek medical attention as required
1.3.1 – 1.3.12	Slips, trips, and falls	Slips, trips and falls due to uneven surfaces, cords, steep slopes, debris and equipment in work areas	Good housekeeping at site; constant awareness and focus on the task; avoid climbing on stockpiles; maintain safe distance from construction activities and excavations; avoid elevated areas over six feet unless fully accredited in fall protection and wearing an approved fall protection safety apparatus	Rest, ice, compression, elevation; seek medical attention as required
1.3.1 – 1.3.12	Noise	Excavation equipment, hand tools, drilling equipment.	Wear hearing protection; maintain safe distance from construction activities	Seek medical attention as required
1.3.1 – 1.3.12	Falling objects	Soil material, tools, etc. dropping from drill rigs, front-end loaders, etc.	Hard hats to be worn at all times while in work zones; maintain safe distance from construction activities and excavations	Seek medical attention as required
1.3.1 – 1.3.12	Underground/ overhead utilities	Excavation equipment, drill rig auger makes contact with underground object; boom touches overhead utility	"One Call" before dig; follow safe practices; confirm utility locations with contractor; wear proper PPE; maintain safe distance from construction activities and excavations	Seek medical attention as required
1.3.1 – 1.3.12	Insects (bees, wasps, hornet, mosquitoes, and spider)	Sings, bites	Insect Repellent; wear proper protective clothing (work boots, socks and light colored pants);field personnel who may have insect allergies (e.g., bee sting) should provide this information to the HSO or FSO prior to commencing work, and will have allergy medication on site.	Seek medical attention as required
1.3.1 – 1.3.12	Vehicle traffic / Heavy Equipment Operation	Vehicles unable to see workers on site, operation of heavy equipment in tight spaces, equipment failure, malfunctioning alarms	Wear proper PPE, especially visibility vest; use a buddy system to look for traffic; rope off area of work with cones and caution tape or devices at points of hazard, maintain safe distance from construction activities and equipment	Seek medical attention as required

TABLE 2CONTAMINANT HAZARDS OF CONCERN

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.12	1,1'-Biphenyl 1,1-Biphenyl Biphenyl Phenyl benzene Diphenyl	92-52-4	None	1 mg/m [,] 100 mg/m [,]	Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, throat; headache, nausea, lassitude (weakness, exhaustion), numb limbs; liver damage	Eye: Irrigate immediately Skin: Water flush immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	1,2,4,5-Tetramethylbenzene	95-93-2	NA	None None	Groundwater Soil	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat, respiratory system; bronchitis; hypochromic anemia; headache, drowsiness, lassitude (weakness, exhaustion), dizziness, nausea, incoordination; vomiting, confusion; chemical pneumonitis (aspiration liquid)	Eye: Irrigate immediately Skin: Soap flush immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	1,2,4-Trimethylbenzene	95-63-6	PID	None None	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat, respiratory system; bronchitis; hypochromic anemia; headache, drowsiness, lassitude (weakness, exhaustion), dizziness, nausea, incoordination; vomiting, confusion; chemical pneumonitis (aspiration liquid)	Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.12	1,2-Dichloroethene 1,2-Dichloroethylene 1,2-DCE Total 1,2-Dichloroethene cis-1,2-Dichloroethylene mixture of cis and trans Acetylene dichloride cis-Acetylene dichloride sym-Dichloroethylene cis- 1,2-Dichloroethene cDCE 1,1-dimethyl-;dimethyl1,1- cyclohexane	156-59-2 540-59-0	PID	200 ppm 4000 ppm	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	Irritant to eyes, skin, mucous membranes and respiratory system. May be harmful by ingestion, skin absorption and inhalation	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	1,2-Dichlorotetrafluoroethane Dichlorotetrafluorethane 1,2-Dichloro-1,1,2,2- tetrafluoroethane Freon® 114 Genetron® 114 Halon® 242 Refrigerant 114 1,2-Dichloro-1,1,2,2- tetrafluorethane	76-14-2	PID	1000 ppm 15000 ppm	Groundwater Soil Vapor	inhalation, skin and/or eye contact (liquid)	irritation respiratory system; asphyxia; cardiac arrhythmias, cardiac arrest; liquid: frostbite	Eye: Frostbite Skin: Frostbite Breathing: Respiratory support
1.3.1 – 1.3.12	1,3,5-Trimethylbenzene Mesitylene sym-Trimethylbenzene	108-67-8	PID	None None	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat, respiratory system; bronchitis; hypochromic anemia; headache, drowsiness, lassitude (weakness, exhaustion), dizziness, nausea, incoordination; vomiting, confusion; chemical pneumonitis (aspiration liquid)	Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.12	1,3-Butadiene Biethylene Bivinyl Butadiene Divinyl Erythrene Vinylethylene	106-99-0	PID	1 ppm 2000 ppm	Vapor	inhalation, skin and/or eye contact (liquid)	irritation to the eyes, nose, throat; drowsiness, dizziness; liquid: frostbite; teratogenic, reproductive effects; [potential occupational carcinogen]	Eye: Frostbite Skin: Frostbite Breathing: Respiratory support
1.3.1 – 1.3.12	1,4-Dioxane 1,4-Dioxacyclohexane [1,4]Dioxane p-Dioxane [6]-crown-2 Diethylene dioxide Diethylene ether Dioxan Dioxane 1,4-Dioxane	123-91-1	PID	100 ppm 500 ppm	Groundwater Soil Vapor	Inhalation, ingestion, skin and/or eye contact	Irritant to eyes, skin, mucous membranes and respiratory system. May be harmful by ingestion, skin absorption and inhalation	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	1H,1H,2H,2H.Perfluorooctanes ulfonic Acid (6:2FTS) Sodium 1H,1H, 2H, 2H- Perfluorooctane Sulfonate (6:2)(6:2FTS) 6:2 Fluorinated Telomer Sulfonates (6:2FTS) Sodium 1H,1H,2H,2H- Perfluorooctane Sulfonate (6:2)	27619- 97-2	NA	NA NA	Groundwater	inhalation, skin or eye contact, ingestion	irritation to eyes with possible eye damage, skin causing rash, redness or burning, irritation to nose, throat and lungs	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	2-Butanone Ethyl methyl ketone MEK Methyl acetone Methyl ethyl ketone	78-93-3	PID	200 ppm 3000 ppm	Soil Groundwater Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose; headache; dizziness; vomiting; dermatitis	Eye: Irrigate immediately Skin: Water wash immediately Breathing: Fresh air Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.12	2-Hexanone Butyl methyl ketone MBK Methyl butyl ketone Methyl n-butyl ketone	591-78-6	PID	100 ppm 1600 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, nose; peripheral neuropathy: lassitude (weakness, exhaustion), paresthesia; dermatitis; headache, drowsiness	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	2-Methylnaphthalene β-methylnaphthalene	91-57-6	PID	NA NA	Groundwater Soil Vapor	inhalation, ingestion or skin absorption, eye contact	irritation to the skin, eyes, mucous membranes and upper respiratory tract. It may also cause headaches, nausea, vomiting, diarrhea, anemia, jaundice, euphoria, dermatitis, visual disturbances, convulsions and comatose	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	4,4'-DDD Dichlorodiphenyldichloroethan e 1,1'-(2,2-Dichloroethylidene)bis (4-chlorobenzene)	72-54-8	None	NA NA	Groundwater Soil	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin; paresthesia tongue, lips, face; tremor; anxiety, dizziness, confusion, malaise (vague feeling of discomfort), headache, lassitude (weakness, exhaustion); convulsions; paresis hands; vomiting; [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.12	4-Isopropyltoulene 1-Methyl-4-(1- methylethyl)benzene 4-Isopropyltoluene; 4-Methylcumene; 1-Methyl-4-isopropylbenzene Dolcymene Camphogen Paracymene Cymene p-Cymene p-Isopropyltoluene	99-87-6	PID	NA NA	Soil Groundwater Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, mucous membrane; dermatitis; headache, narcosis, coma	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	4-Methyl-2-pentanone Hexone Isobutyl methyl ketone Methyl isobutyl ketone MIBK	108-10-1	PID	100 ppm 500 ppm	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, mucous membrane; headache, narcosis, coma; dermatitis; in animals: liver, kidney damage	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Acenaphthene 1,2-Dihydroacenaphthylene 1,8-Ethylenenaphthalene peri-Ethylenenaphthalene Naphthyleneethylene Tricyclododecapentaene	83-32-9	PID	NA NA	Soil	inhalation, ingestion, skin and/or eye contact,	irritation to the skin, eyes, mucous membranes and upper respiratory tract; If ingested, it can cause vomiting	Eye: Irrigate immediately Skin: Soap wash immediately, if redness or irritation develop, seek medical attention immediately Breathing: Move to fresh air Swallow: do not induce vomiting, seek medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.12	Acenaphthylene Cycopental(de)naphthalene, Acenaphthalene	208-96-8	PID	NA NA	Soil	inhalation, ingestion, skin and/or eye contact	irritation to the skin, eyes, mucous membranes and upper respiratory tract	Eye: Irrigate immediately, seek medical attention immediately, Skin: Soap wash immediately, if redness or irritation develop, seek medical attention immediately Breathing: Move to fresh air Swallow: do not induce vomiting, seek medical attention immediately
1.3.1 – 1.3.12	Acetone Dimethyl ketone Ketone propane 2-Propanone	67-64-1	PID	1000 ppm 2500 ppm	Groundwater Soil	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, nose, throat; headache, dizziness, central nervous system depression; dermatitis	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.12	Acetophenone 1-phenylethanone Methyl phenyl ketone Phenylethanone	98-86-2	None	NA NA	Groundwater Soil	inhalation, ingestion, skin and/or eye contact	irritation to the skin, eyes, mucous membranes and upper respiratory tract	Eye: Irrigate immediately, seek medical attention immediately, Skin: Soap wash immediately, if redness or irritation develop, seek medical attention immediately Breathing: Move to fresh air Swallow: do not induce vomiting, seek medical attention immediately
1.3.1 – 1.3.12	Aluminum	7429-90- 5	None	0.5 mg/m3 50 mg/m3	Soil	inhalation, skin and/or eye contact	irritation to the eyes, skin, respiratory system	Eye: Irrigate immediately Breathing: Fresh air
1.3.1 – 1.3.12	Anthracene	120-12-7	PID	0.2 mg/m [,] 80 mg/m [,] (Coal Pitch Tar)	Soil	inhalation, skin or eye contact, ingestion	irritation to the skin, eyes, mucous membranes and upper respiratory tract, abdominal pain if ingested.	Eye: Irrigate immediately, seek medical attention immediately, Skin: Soap wash immediately, Breathing: Move to fresh air, refer to medical attention; Swallow: refer to medical attention

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 <i>–</i> 1.3.12	Antimony	7440-36- 0	None	0.5 mg/m [,] 50 mg/m [,]	Groundwater Soil	inhalation, ingestion, skin and/or eye contact	irritation skin, possible dermatitis; resp distress; diarrhea; muscle tremor, convulsions; possible gastrointestinal tract	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Aroclor 1248	12672- 26-6	None	0.5 mg/m [,] 5 mg/m [,]	Groundwater Soil	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, chloracne	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Aroclor 1254	11097- 69-1	None	0.5 mg/m [,] 5 mg/m [,]	Groundwater Soil	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, chloracne	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Aroclor 1260	11096- 82-5	None	0.5 mg/m [,] 5 mg/m [,]	Groundwater Soil	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, chloracne	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.12	Aroclor 1268	11100- 14-4	None	0.5 mg/m [,] 5 mg/m [,]	Groundwater Soil	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, chloracne	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Arsenic	NA	None	0.5 mg/m [,] NA	Groundwater Soil	inhalation, ingestion, skin and/or eye contact	irritation skin, possible dermatitis; resp distress; diarrhea; muscle tremor, convulsions; possible gastrointestinal tract	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Barium	10022- 31-8	None	0.5 mg/m [,] 50 mg/m [,]	Groundwater Soil	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, upper respiratory system; skin burns; gastroenteritis; muscle spasm; slow pulse	Eye: Irrigate immediately Skin: Water flush immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Benzene Benzol Phenyl hydride	71-43-2	PID	3.19 mg/m [,] 1,595 mg/mg [,]	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, respiratory system; dizziness; headache, nausea, staggered gait; lassitude (weakness, exhaustion) [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.12	Benzo(a)anthracene Benzanthracene Benzanthrene 1,2-Benzanthracene Benzo[b]phenanthrene Tetraphene	56-55-3	PID	0.2 mg/m [,] 80 mg/m [,] (Coal Pitch Tar)	Groundwater Soil	inhalation, skin or eye contact, ingestion	dermatitis, bronchitis, [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Benzo(a)pyrene	50-32-8	PID	0.2 mg/m [,] 80 mg/m [,] (Coal Pitch Tar)	Soil	inhalation, skin or eye contact, ingestion	dermatitis, bronchitis, [potential occupational carcinogen]	Eye: Irrigate immediately, seek medical attention Skin: Soap wash immediately; Breathing: move to fresh air; Swallow: Induce vomiting if conscious, seek medical attention immediately
1.3.1 – 1.3.12	Benzo(b)fluoranthene	205-99-2	PID	0.2 mg/m ⁻ 80 mg/m ⁻ (Coal Pitch Tar)	Soil	inhalation, skin or eye contact, ingestion	irritation to eyes and skin, respiratory irritation(dizziness, weakness, fatigue, nausea, headache)	Eye: Irrigate immediately, refer to medical attention Skin: Soap wash immediately Breathing: move to fresh air Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 <i>–</i> 1.3.12	Benzo(g,h,i)perylene Benzo(ghi)perylene	191-24-2	PID	0.2 mg/m [,] 80 mg/m [,] (Coal Pitch Tar)	Soil	inhalation, skin or eye contact, ingestion	NA	Eye: Irrigate immediately, refer to medical attention Skin: Soap wash immediately Breathing: move to fresh air Swallow: Medical attention immediately
1.3.1 – 1.3.12	Benzo(k)fluoranthene	207-08-9	PID	0.2 mg/m [,] 80 mg/m [,] (Coal Pitch Tar)	Soil	inhalation, skin or eye contact, ingestion	irritation to eyes and skin, respiratory irritation (dizziness, weakness, fatigue, nausea, headache)	Eye: Irrigate immediately, refer to medical attention Skin: Soap wash immediately Breathing: move to fresh air Swallow: Medical attention immediately
1.3.1 – 1.3.12	Benzyl butyl phthalate Butyl benzyl phthalate Butylbenzylphthalate	86-66-7	None	NA NA	Groundwater Soil Vapor	inhalation, skin or eye contact, ingestion	irritation to eyes and skin, respiratory irritation (dizziness, weakness, fatigue, nausea, headache	Eye: Irrigate immediately, refer to medical attention Skin: Soap wash immediately Breathing: move to fresh air Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.12	Beryllium	7440-41- 7	None	0.002 mg/m [;] 4 mg/m [;]	Soil	inhalation, skin and/or eye contact	berylliosis (chronic exposure): anorexia, weight loss, lassitude (weakness, exhaustion), chest pain, cough, clubbing of fingers, cyanosis, pulmonary insufficiency; irritation to the eyes; dermatitis; [potential occupational carcinogen]	Eye: Irrigate immediately Breathing: Fresh air
1.3.1 – 1.3.12	Bis(2-ethylhexyl)phthalate Bis(2-Ethylhexyl) Phthalate Di-sec octyl phthalate DEHP Di(2-ethylhexyl)phthalate Octyl phthalate bis(2-ethylexyl)phthalate Bis(2-Ethylhexyl) Phthalate	117-81-7	None	5 mg/m [,] 5000 mg/m [,]	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, mucous membrane; in animals: liver damage; teratogenic effects; [potential occupational carcinogen	Eye: Irrigate immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Bromodichloromethane dichlorobromomethane	75-27-4	None	NA NA	Groundwater Soil Vapor	inhalation, skin or eye contact, ingestion	irritation of the skin, eyes, mucous membranes and respiratory tract, narcosis, nausea, dizziness and headache	Eye: Irrigate immediately (liquid) Skin: Water flush immediately (liquid) Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 <i>–</i> 1.3.12	Cadmium	7440-43- 9	None	0.005 mg/m [.] 9 mg/m [.]	Soil	inhalation, ingestion	pulmonary edema, dyspnea (breathing difficulty), cough, chest tightness, substernal (occurring beneath the sternum) pain; headache; chills, muscle aches; nausea, vomiting, diarrhea; anosmia (loss of the sense of smell), emphysema, proteinuria, mild anemia; [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Calcium	7440-70- 2	None	NA	Groundwater Soil	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, upper resp tract; ulcer, perforation nasal septum; pneumonitis; dermatitis	Eye: Irrigate immediately Skin: Water flush immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Carbazole 9-azafluorene Dibenzopyrrole Diphenylenimine diphenyleneimide	86-74-8	None	NA NA	Soil	inhalation, skin absorption (liquid), skin and/or eye contact	irritation to eyes and skin, respiratory irritation	Eye: Irrigate immediately, refer to medical attention Skin: Soap wash immediately Breathing: move to fresh air Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.12	Carbon disulfide	75-15-0	PID	20 ppm 500 ppm	Soil Groundwater Vapor	inhalation, skin or eye contact, ingestion	irritation to the eyes, skin, respiratory system	Eye: Irrigate immediately (liquid) Skin: Water flush immediately (liquid) Breathing: Respiratory support
1.3.1 – 1.3.12	Chloroform Methane trichloride Trichloromethane Chloro-3-methyl phenol	67-66-3	None	50 ppm 500 ppm	Groundwater Soil	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin; dizziness, mental dullness, nausea, confusion; headache, lassitude (weakness, exhaustion); anesthesia; enlarged liver; [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Chromium Total Chromium Chromium, Total	7440-47- 3	None	1.0 mg/m [,] 250 mg/m [,]	Groundwater Soil	inhalation absorption ingestion	irritation to eye, skin, and respiratory	Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Chrysene Benzo[a]phenanthrene 1,2-Benzphenanthrene	218-01-9	PID	0.2 mg/m [,] 80 mg/m [,] (Coal Pitch Tar)	Groundwater Soil	inhalation, absorption, ingestion, consumption	irritation to eye, skin, and respiratory, gastrointestinal irritation nausea, vomit, diarrhea [potential occupational carcinogen]	Eyes: Irrigate immediately Skin: Soap wash promptly. Breath: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.12	Cis-Chlordane Cic-Chlordane a-Chlordane alpha Chlordane cis-Chlordane cis-Chlordan CIS-CHLORDANE Chlordane cis-;Chlordane cis;ALPHA-CHLORDAN Chlordan, cis-ALPHA-CHLORDANE alpha(cis)-chlordane α-chlordane solution	5102-71- 9	None	0.5 mg/m [,] 100 mg/m [,]	Groundwater Soil	inhalation, skin absorption, ingestion, skin and/or eye contact	Blurred vision; confusion; ataxia, delirium; cough; abdominal pain, nausea, vomiting, diarrhea; irritability, tremor, convulsions; anuria	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Cobalt	7440-48- 4	None	0.1mg/m , 20 mg/m [,]	Soil	inhalation, ingestion, skin and/or eye contact	Cough, dyspnea (breathing difficulty), wheezing, decreased pulmonary function; weight loss; dermatitis; diffuse nodular fibrosis; resp hypersensitivity, asthma	Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Copper	7440-50- 8	None	1.0 mg/m [,] 100 mg/m [,]	Groundwater Soil	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, nose, metallic taste; dermatitis; anemia	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.12	Cumene Cumol Isopropylbenzene 2-Phenyl propane	98-82-8	PID	50 ppm 900 ppm	Groundwater Soil	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, mucous membrane; dermatitis; headache, narcosis, coma	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Cyanide	57-12-5	None	5 mg/m [,] 25 mg/m [,]	Groundwater Soil	inhalation, ingestion, skin and/or eye contact	Exposure to cyanide can cause weakness, headaches, confusion, dizziness, fatigue, anxiety, sleepiness, nausea and vomiting. Breathing can speed up then become slow and gasping. Coma and convulsions also occur. If large amounts of cyanide have been absorbed by the body, the person usually collapses and death can occur very quickly. Long-term exposure to lower levels of cyanide can cause skin and nose irritation, itching, rashes and thyroid changes.	Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.12	Cyclohexane Benzene hexahydride Hexahydrobenzene Hexamethylene Hexanaphthene	110-82-7	PID	300 ppm 1300 ppm	Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, respiratory system; drowsiness; dermatitis; narcosis, coma	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	DDE 4,4-DDE 4,4'-DDE 1,1-bis-(4-chlorophenyl)-2,2- dichloroethene Dichlorodiphenyldichloroethyle ne	72-55-9	None	NA NA	Soil	inhalation, skin absorption, ingestion, skin and/or eye contact	Oral ingestion of food is the primary source of exposure for the general population. Acute and chronic ingestion may cause nausea, vomiting, diarrhea, stomach pain, headache, dizziness, disorientation, tingling sensation, kidney damage, liver damage, convulsions, coma, and death. 4,4' DDE may cross the placenta and can be excreted in breast milk	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	DDT 4,4-DDT 4,4'-DDT p,p'-DDT Dichlorodiphenyltrichloroethan e 1,1,1-Trichloro-2,2-bis(p- chlorophenyl)ethane	50-29-3	None	1 mg/m [,] 500 mg/m [,]	Groundwater Soil	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin; paresthesia tongue, lips, face; tremor; anxiety, dizziness, confusion, malaise (vague feeling of discomfort), headache, lassitude (weakness, exhaustion); convulsions; paresis hands; vomiting; [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.12	Dibenz(a,h)anthracene Dibenzo(a,h)anthracene	53-70-3	PID	0.2 mg/m [,] 80 mg/m [,] (Coal Pitch Tar)	Groundwater Soil	inhalation, absorption, ingestion, consumption	irritation to eyes, skin, respiratory, and digestion [potential occupational carcinogen]	Eyes: Irrigate immediately Skin: Soap wash promptly. Breath: Respiratory support PID Swallow: Medical attention immediately
1.3.1 – 1.3.12	Dibenzofuran	132-64-9	None	NA NA	Soil	inhalation, absorption	irritation to eyes, and skin	Eyes: Irrigate immediately Skin: Soap wash promptly.
1.3.1 – 1.3.12	Dibutyl phthalate Di-n-butyl phthalate Butyl phthalate n-Butyl phthalate 1,2-Benzenedicarboxylic acid dibutyl ester o-Benzenedicarboxylic acid dibutyl ester DBP Palatinol C, Elaol Dibutyl-1,2-benzene- dicarboxylate Di-n-butylphthalate	84-74-2	None	5 mg/m [,] 4000 mg/m [,]	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, upper respiratory system, stomach	Eye: Irrigate immediately Skin: Wash regularly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Dichlorodifluoromethane Difluorodichloromethane, Fluorocarbon 12 Freon 12 Freon® 12 Genetron® 12 Halon® 122 Propellant 12 Refrigerant 12 Dichlorodifluromethane	75-71-8	None	1000 pp, 15,000 ppm	Groundwater Soil Vapor	inhalation, skin and/or eye contact (liquid)	dizziness, tremor, asphyxia, unconsciousness, cardiac arrhythmias, cardiac arrest; liquid: frostbite	Eye: Frostbite Skin: Frostbite Breathing: Respiratory support

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.12	Dieldrin HEOD 1,2,3,4,10,10-Hexachloro-6,7- epoxy-1,4,4a,5,6,7,8,8a- octahydro-1,4-endo exo-5,8-dimethanonaphthalene	60-57-1	PID	0.25 mg/m [,] 50 mg/m [,]	Groundwater Soil Water	inhalation, skin absorption, ingestion, skin and/or eye contact	headache, dizziness; nausea, vomiting, malaise (vague feeling of discomfort), sweating; myoclonic limb jerks; clonic, tonic convulsions; coma; [potential occupational carcinogen]; in animals: liver, kidney damage	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Diesel Fuel automotive diesel fuel oil No. 2 distillate diesoline diesel oil diesel oil light diesel oil No. 1-D summer diesel	68334- 30-5	PID	NA NA	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat; burning sensation in chest; headache, nausea, lassitude (weakness, exhaustion), restlessness, incoordination, confusion, drowsiness; vomiting, diarrhea; dermatitis; chemical pneumonitis (aspiration liquid)	Eye: Irrigate immediately Skin: Soap flush immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Endosulfan I Alpha Endosulfan	959-98-8	None	NA NA	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation skin; nausea, confusion, agitation, flushing, dry mouth, tremor, convulsions, headache; in animals: kidney, liver injury; decreased testis weight	Eye: Irrigate immediately Skin: Soap flush immediately Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.12	Ethanol Absolute alcohol Alcohol cologne spirit drinking alcohol ethane monoxide ethylic alcohol EtOH ethyl alcohol ethyl hydrate ethyl hydrate ethylol grain alcohol hydroxyethane methylcarbinol	64-17-5	PID	1000 ppm 3300 ppm	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose; headache, drowsiness, lassitude (weakness, exhaustion), narcosis; cough; liver damage; anemia; reproductive, teratogenic effects	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Fresh air Swallow: Medical attention immediately
1.3.1 – 1.3.12	Ethyl benzene Ethylbenzene Ethylbenzol Phenylethane	100-40-4	PID	435 mg/m [,] 3,472 mg/m [,]	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, mucous membrane; headache; dermatitis; narcosis, coma	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Fluoranthene Benzo(j, k)fluorene	206-44-0	PID	0.2 mg/m ⁻ 80 mg/m ⁻ (Coal Pitch Tar)	Groundwater Soil	inhalation, skin or eye contact, ingestion	irritation to eyes and skin, respiratory irritation(dizziness, weakness, fatigue, nausea, headache)	Eye: Irrigate immediately, refer to medical attention Skin: Soap wash immediately Breathing: move to fresh air Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.12	Fluorene	86-73-7	PID	0.2 mg/m [,] 80 mg/m [,] (Coal Pitch Tar)	Soil	inhalation, skin or eye contact, ingestion	irritation to eyes and skin, respiratory irritation(dizziness, weakness, fatigue, nausea, headache)	Eye: Irrigate immediately, refer to medical attention Skin: Soap wash immediately Breathing: move to fresh air Swallow: Medical attenti
1.3.1 <i>–</i> 1.3.12	Fuel Oil No. 2	68476- 30-2	PID	NA NA	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat; burning sensation in chest; headache, nausea, lassitude (weakness, exhaustion), restlessness, incoordination, confusion, drowsiness; vomiting, diarrhea; dermatitis; chemical pneumonitis (aspiration liquid)	Eye: Irrigate immediately Skin: Soap flush immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	gamma-Chlordane Gamma Chlordane	5566-34- 7	None	0.5 mg/m [,] 100 mg/m [,]	Groundwater Soil	inhalation, skin absorption, ingestion, skin and/or eye contact	Blurred vision; confusion; ataxia, delirium; cough; abdominal pain, nausea, vomiting, diarrhea; irritability, tremor, convulsions; anuria	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.12	Gasoline	8006-61- 9	PID	NA NA	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, mucous membrane; dermatitis; headache, lassitude (weakness, exhaustion), blurred vision, dizziness, slurred speech, confusion, convulsions; chemical pneumonitis (aspiration liquid)	Eye: Irrigate immediately Skin: Soap flush immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Helium	7440-59- 7	Helium Detector	NA NA	NA	inhalation	dizziness, headache, and nausea	Breathing: Respiratory support
1.3.1 – 1.3.12	Heptachlor	76-44-8	None	0.5 mg/m [,] 35 mg/m [,]	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	In animals: tremor, convulsions; liver damage; [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Heptachlor epoxide 1,4,5,6,7,8,8-Heptachloro- 3a,4,7,7a-tetrahydro-4,7- methano-1H-indene	1024-57- 3	None	0.5 mg/m [,] 35 mg/m [,]	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	In animals: tremor, convulsions; liver damage; [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.12	Heptane n-Heptane	142-82-5	PID	500 ppm 750 ppm	Goundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	dizziness, stupor, incoordination; loss of appetite, nausea; dermatitis; chemical pneumonitis (aspiration liquid); unconsciousness	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Hexavalent Chromium Chromium VI Chromium, Hexavalent	18540- 29-9	None	1.0 mg/m [,] 250 mg/m [,]	Groundwater Soil	inhalation absorption ingestion	irritation to eye, skin, and respiratory	Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Indeno(1,2,3-cd)pyrene Indeno(1,2,3-c,d)Pyrene Indeno(1,2,3-cd)Pyrene	193-39-5	None	0.2 mg/m [,] 80 mg/m [,] (Coal Pitch Tar)	Groundwater Soil	inhalation, absorption, ingestion, consumption	irritation to eyes, skin, respiratory, and digestion [potential occupational carcinogen]	Eyes: Irrigate immediately Skin: Soap wash promptly. Breath: Respiratory support Swallow: Medical attention immediately, wash mouth with water
1.3.1 – 1.3.12	Iron	7439-89- 6	None	10 mg/m [,] NA	Groundwater Soil	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, mucous membrane; abdominal pain, diarrhea, vomiting	Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.12	Isopropyl alcohol Iso-Propyl Alcohol Carbinol IPA Isopropanol 2-Propanol sec-Propyl alcohol Rubbing alcohol Isopropylalcohol	67-63-0	PID	400 ppm 2000 ppm	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, nose, throat; drowsiness, dizziness, headache; dry cracking skin; in animals: narcosis	Eye: Irrigate immediately Skin: Water flush Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Lead	7439-92-	None	0.050 mg/m [,] 100 mg/m [,]	Groundwater Soil	inhalation, ingestion, skin and/or eye contact	lassitude (weakness, exhaustion), insomnia; facial pallor; anorexia, weight loss, malnutrition; constipation, abdominal pain, colic; anemia; gingival lead line; tremor; paralysis wrist, ankles; encephalopathy; kidney disease; irritation to the eyes; hypertension	Eye: Irrigate immediately Skin: Soap flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Magnesium	7439-95- 4	None	15 mg/m [,] NA	Soil	inhalation, skin and/or eye contact	irritation to the eyes, skin, respiratory system; cough	Eye: Irrigate immediately Breathing: Fresh air
1.3.1 – 1.3.12	Manganese	7439-96- 5	None	5 mg/m [,] 500 mg/m [,]	Groundwater Soil	inhalation, ingestion	aerosol is irritating to the respiratory tract	Eye: Irrigate immediately Skin: Soap flush promptly Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.12	m-Cresol meta-Cresol 3-Cresol m-Cresylic acid 1-Hydroxy-3-methylbenzene 3-Hydroxytoluene 3-Methylphenol	108-39-4	PID	5 ppm 250 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, mucous membrane; central nervous system effects: confusion, depression, resp failure; dyspnea (breathing difficulty), irreg rapid resp, weak pulse; eye, skin burns; dermatitis; lung, liver, kidney, pancreas damage	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Mercury	7439-97- 6	None	0.1 mg/m [,] 10 mg/m [,]	Groundwater Soil	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin; cough, chest pain, dyspnea (breathing difficulty), bronchitis, pneumonitis; tremor, insomnia, irritability, headache, lassitude (weakness, exhaustion); stomatitis, salivation; gastrointestinal disturbance, anorexia, weight loss; proteinuria	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Methyl Acetate	79-20-9	PID	200 ppm 3100 ppm	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat; headache, drowsiness; optic nerve atrophy; chest tightness; in animals: narcosis	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.12	Methyl Chloride Chloromethane Monochloromethane Refrigerant-40 R-40	74-87-3	NA	100 ppm 2000 ppm	Groundwater Soil	inhalation, skin and/or eye contact	dizziness, nausea, vomiting; visual disturbance, stagger, slurred speech, convulsions, coma; liver, kidney damage; liquid: frostbite; reproductive, teratogenic effects; [potential occupational carcinogen]	Eye: Frostbite Skin: Frostbite Breathing: Respiratory support
1.3.1 – 1.3.12	Methyl chloroform Chlorothene 1,1,1-Trichloroethane 1,1,1-Trichloroethane- (stabilized) 1,1,1-TCA	71-55-6	PID	350 ppm 700 ppm	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin; headache, lassitude (weakness, exhaustion), central nervous system depression, poor equilibrium; dermatitis; cardiac arrhythmias; liver damage	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention
1.3.1 – 1.3.12	Methyl <i>tert</i> -butyl ether MTBE Methyl tertiary-butyl ether Methyl t-butyl ether tert-Butyl methyl ether tBME tert-BuOMe Methyl tert butyl ether	1634-04- 4	PID	NA NA	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat; burning sensation in chest; headache, nausea, lassitude (weakness, exhaustion), restlessness, incoordination, confusion, drowsiness; vomiting, diarrhea; dermatitis; chemical pneumonitis (aspiration liquid)	Eye: Irrigate immediately Skin: Soap flush immediately Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.12	m-Xylenes 1,3-Dimethylbenzene m-Xylol Metaxylene	108-38-3	PID	100 ppm 900 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat; dizziness, excitement, drowsiness, incoordination, staggering gait; corneal vacuolization; nausea, vomiting, abdominal pain; dermatitis	Eye: Irrigate immediately Skin: Soap flush immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Naphthalene Naphthalin Tar camphor White tar	91-20-3	PID	50 mg/m [,] 250 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes; headache, confusion, excitement, malaise (vague feeling of discomfort); nausea, vomiting, abdominal pain; irritation bladder; profuse sweating; hematuria (blood in the urine); dermatitis, optical neuritis	Eye: Irrigate immediately Skin: Molten flush immediately/solid- liquid soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	n-Butylbenzene Butylbenzene 1-phenylbutane	104-51-8	PID	NA NA	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin; dry nose, throat; headache; low blood pressure, tachycardia, abnormal cardiovascular system stress; central nervous system, hematopoietic depression; metallic taste; liver, kidney injury	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.12	N-ethyl perfluorooctane- sulfonamidoacetic acid NEtFOSAA	2991-50- 6	NA	None None	Groundwater	inhalation, skin or eye contact, ingestion	irritation to eyes with possible eye damage, skin causing rash, redness or burning, irritation to nose, throat and lungs	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	n-Hexane Hexane, Hexyl hydride, normal-Hexane	110-54-3	PID	500 ppm 1100 ppm	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, nose; nausea, headache; peripheral neuropathy: numb extremities, muscle weak; dermatitis; dizziness; chemical pneumonitis (aspiration liquid)	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Nickel	7440-02- 0	None	NA 10 mg/m [,]	Groundwater Soil	ion, ingestion, skin and/or eye contact	sensitization dermatitis, allergic asthma, pneumonitis; [potential occupational carcinogen]	Skin: Water flush immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Non-Flammable Gas Mixture CALGAS (Equipment Calibration Gas : Oxygen Methane Hydrogen Sulfide Carbon Monoxide Nitrogen	7782-44- 7 74-82-8 7783-08- 4 830-08-0 7727-37- 9	Multi-Gas PID	NA/NA NA/NA 10/100 ppm 50/1200 ppm NA/NA	NA	inhalation	dizziness, headache, and nausea	Breathing: Respiratory support

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.12	Non-Flammable Gas Mixture CALGAS (Equipment Calibration Gas : Oxygen Isobutylene Nitrogen	7782-44- 7 115-11-7 7727-37- 9	PID	NA/NA NA/NA NA/NA	NA	inhalation	dizziness, headache, and nausea	Breathing: Respiratory support
1.3.1 – 1.3.12	n-Propylbenzene Isocumene Propylbenzene 1-Phenylpropane 1-Propylbenzene Phenylpropane	103-65-1	PID	NA NA	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin; dry nose, throat; headache; low blood pressure, tachycardia, abnormal cardiovascular system stress; central nervous system, hematopoietic depression; metallic taste; liver, kidney injury	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	o-Xylenes 1,2-Dimethylbenzene ortho-Xylene o-Xylol	95-47-6	PID	100 ppm 900 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat; dizziness, excitement, drowsiness, incoordination, staggering gait; corneal vacuolization; nausea, vomiting, abdominal pain; dermatitis	Eye: Irrigate immediately Skin: Soap flush immediately Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.12	p-Cresol para-Cresol 4-Cresol p-Cresylic acid 1-Hydroxy-4-methylbenzene 4-Hydroxytoluene 4-Methylphenol	106-44-5	PID	5 ppm 250 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, mucous membrane; central nervous system effects: confusion, depression, resp failure; dyspnea (breathing difficulty), irreg rapid resp, weak pulse; eye, skin burns; dermatitis; lung, liver, kidney, pancreas damage	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	p-Dichlorobenzene p-DCB 1,4-Dichlorobenzene para-Dichlorobenzene Dichlorocide	106-46-7	PID	75 ppm 150 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, swelling periorbital (situated around the eye); profuse rhinitis; headache, anorexia, nausea, vomiting; weight loss, jaundice, cirrhosis; in animals: liver, kidney injury; [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	p-Diethylbenzene 1,4-Diethylbenzene 1,4-Diethyl benzene	105-05-5	PID	None None	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, respiratory system; skin burns; in animals: central nervous system depression	Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.12	Perfluorobutanesulfonic acid FC-98 Nonaflate Nonafluorobutanesulphonic acid Perfluorobutanesulfonic Acid Perfluorobutane sulfonate PFBS	375-73-5	NA	None None	Groundwater	inhalation, skin or eye contact, ingestion	irritation to eyes with possible eye damage, skin causing rash, redness or burning, irritation to nose, throat and lungs	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Perfluorobutanoic Acid Heptafluorobutyric acid Heptafluorobutanoic acid Perfluorobutyric acid PFBA	375-22-4	NA	None None	Groundwater	inhalation, skin or eye contact, ingestion	irritation to eyes with possible eye damage, skin causing rash, redness or burning, irritation to nose, throat and lungs	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Perfluorodecanoic acid PFDA	335-76-2	NA	None None	Groundwater	inhalation, skin or eye contact, ingestion	irritation to eyes with possible eye damage, skin causing rash, redness or burning, irritation to nose, throat and lungs	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Perfluorododecanoic acid Perfluoralauric acid Tricosafluorododecanoic acid PFDoA	307-55-1	NA	None None	Groundwater	inhalation, skin or eye contact, ingestion	irritation to eyes with possible eye damage, skin causing rash, redness or burning, irritation to nose, throat and lungs	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.12	Perfluoroheptanoic acid Perfluoroheptanoic acid Tridecafluoroheptanoic acid PFHpA	375-85-9	NA	None None	Groundwater	inhalation, skin or eye contact, ingestion	irritation to eyes with possible eye damage, skin causing rash, redness or burning, irritation to nose, throat and lungs	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 <i>–</i> 1.3.12	Perfluorohexanesulfonic Acid perfluorohexanesulfonate perfluorohexanesulfonic acid PFHxS	355-46-4	NA	None None	Groundwater	inhalation, skin or eye contact, ingestion	irritation to eyes with possible eye damage, skin causing rash, redness or burning, irritation to nose, throat and lungs	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 <i>–</i> 1.3.12	Perfluorohexanoic Acid PFHxA	307-24-4	NA	None None	Groundwater	inhalation, skin or eye contact, ingestion	irritation to eyes with possible eye damage, skin causing rash, redness or burning, irritation to nose, throat and lungs	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 <i>–</i> 1.3.12	Perfluoronoanoic Acid Perfluorononanoic Acid PFNA perfluoro-n-nonanoic acid perfluorononanoate	375-95-1	NA	None None	Groundwater	Groundwater	inhalation, skin or eye contact, ingestion; strong acid	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.12	Perfluorooctanesulfonamide Erfluorooctane sulfonamide Perfluorooctane sulfonamide Heptadecafluorooctanesulphon amide Perfluorooctanesulfonic acid amide Deethylsulfluramid FC-99 PFOSA FOSA	754-91-6	NA	NA NA	Groundwater	inhalation, skin or eye contact, ingestion	irritation to eyes with possible eye damage, skin causing rash, redness or burning, irritation to nose, throat and lungs	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Perfluorooctanesulfonic Acid PFOS	1763-23- 1	NA	None None	Groundwater	inhalation, skin or eye contact, ingestion	irritation to eyes with possible eye damage, skin causing rash, redness or burning, irritation to nose, throat and lungs	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Perfluorooctanoic Acid PFOA pentadecafluorooctanoic acid perfluorooctanoate perfluorocaprylic acid	335-67-1	NA	None None	Groundwater	inhalation, skin or eye contact, ingestion	irritation to eyes with possible eye damage, skin causing rash, redness or burning, irritation to nose, throat and lungs	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Perfluoropentanoic Acid PFPeA	2706-90- 3	NA	None None	Groundwater	inhalation, skin or eye contact, ingestion	irritation to eyes with possible eye damage, skin causing rash, redness or burning, irritation to nose, throat and lungs	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.12	Perfluorotetradecanoic Acid PFTA	376-06-7	NA	None None	Groundwater	inhalation, skin or eye contact, ingestion	irritation to eyes with possible eye damage, skin causing rash, redness or burning, irritation to nose, throat and lungs	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Perfluorotridecanoic Acid PFTrDA Sodium 1H,1H,2H,2H- Perfluorodecane Sulfonate (8:2) (8:2FTS)	72629- 94-8	NA	None None	Groundwater	inhalation, skin or eye contact, ingestion	irritation to eyes with possible eye damage, skin causing rash, redness or burning, irritation to nose, throat and lungs	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Perfluoroundecanoic Acid PFUnA PFUnDA Perfluoroundecanoic Acid Henicosafluoroundecanoic Acid	4234-23- 5	NA	None None	Groundwater	inhalation, skin or eye contact, ingestion	irritation to eyes with possible eye damage, skin causing rash, redness or burning, irritation to nose, throat and lungs	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	p-Ethyltoluene 4-Ethyltoluene 1-ethyl-4-methyl-benzene 1-methyl-4-ethylbenzene	622-96-8	NA	NA NA	Soil	ingestion, skin and/or eye contact	irritation to the eyes, skin, mucous membrane; headache; dermatitis; narcosis, coma	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.12	Phenanthrene	85-01-8	PID	0.2 mg/m [,] 80 mg/m [,] (Coal Pitch Tar)	Groundwater Soil	inhalation, skin or eye contact, ingestion	irritation to eyes and skin, respiratory irritation(dizziness, weakness, fatigue, nausea, headache)	Eye: Irrigate immediately, refer to medical attention Skin: Soap wash immediately Breathing: move to fresh air Swallow: Medical attention immediately
1.3.1 – 1.3.12	Phenol Carbolic acid Hydroxybenzene, Monohydroxybenzene Phenyl alcohol Phenyl hydroxide	108-95-2	PID	5 ppm 250 ppm	Groundwater Soil	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, nose, throat; anorexia, weight loss; lassitude (weakness, exhaustion), muscle ache, pain; dark urine, skin burns; dermatitis; tremor, convulsions, twitching	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.12	Potassium	7440-09-7	None	NA NA	Soil	inhalation, skin absorption, ingestion, skin and/or eye contact inhalation, ingestion, skin and/or eye contact	eye: Causes eye burns. Skin: Causes skin burns. Reacts with moisture in the skin to form potassium hydroxide and hydrogen with much heat. ingestion: Causes gastrointestinal tract burns. inhalation: May cause irritation of the respiratory tract with burning pain in the nose and throat, coughing, wheezing, shortness of breath and pulmonary edema. Causes chemical burns to the respiratory tract. inhalation may be fatal as a result of spasm, inflammation, edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema.	Eyes: Get medical aid immediately Skin: Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Ingestion: If victim is conscious and alert, give 2-4 full cups of milk or water. Get medical aid immediately. inhalation: Get medical aid immediately.
1.3.1 – 1.3.12	p-Xylenes 1,4-Dimethylbenzene para-Xylene p-Xylol	106-42-3	PID	100 ppm 900 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat; dizziness, excitement, drowsiness, incoordination, staggering gait; corneal vacuolization; nausea, vomiting, abdominal pain; dermatitis	Eye: Irrigate immediately Skin: Soap flush immediately Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 <i>–</i> 1.3.12	Pyrene benzo[def]phenanthrene	129-00-0	PID	0.2 mg/m [,] 80 mg/m [,] (Coal Pitch Tar)	Groundwater Soil	inhalation, skin or eye contact, ingestion	irritation to eyes and skin, respiratory irritation(dizziness, weakness, fatigue, nausea, headache)	Eye: Irrigate immediately, refer to medical attention Skin: Soap wash immediately Breathing: move to fresh air Swallow: Medical attention immediately
1.3.1 – 1.3.12	sec-Butylbenzene	135-98-8	PID	10 ppm 100 ppm	Groundwater Soil	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, nose, throat; inhalation: nausea or vomiting	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Selenium	7782-49-2	None	1 mg/m [,] 0.2 mg/m [,]	Soil	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat; visual disturbance; headache; chills, fever; dyspnea (breathing difficulty), bronchitis; metallic taste, garlic breath, gastrointestinal disturbance; dermatitis; eye, skin burns; in animals: anemia; liver necrosis, cirrhosis; kidney, spleen damage	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.12	Silver	7440-22- 4	None	0.01mg/ m [,] 10 mg/m [,]	Soil	inhalation, ingestion, skin and/or eye contact	blue-gray eyes, nasal septum, throat, skin; irritation, ulceration skin; gastrointestinal disturbance	Eye: Irrigate immediately Skin: Water flush Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Sodium	7440-23- 5	None	NA NA	Groundwater Soil	ion, ingestion, skin and/or eye contact	sensitization dermatitis, allergic asthma, pneumonitis; [potential occupational carcinogen]	Skin: Water flush immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Tert-Butyl Alcohol Tertiary Butyl Alcohol Tert-Butanol Butyl alcohol 2-Methyl-2-propanol Trimethyl carbinol TBA	75-65-0	PID	100 ppm 1600 ppm	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat; drowsiness, narcosis	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Tetrachloroethylene Perchloroethylene PCE Perk Tetrachlorethylene Tetrachloroethene	127-18-4	PID	100 ppm 150 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat, respiratory system; nausea; flush face, neck; dizziness, incoordination; headache, drowsiness; skin erythema (skin redness); liver damage; [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.12	Thallium	7440-28- 0	None	0.1 mg/m [,] 15 mg/m [,]	Groundwater Soil	inhalation, skin absorption, ingestion, skin and/or eye contact	nausea, diarrhea, abdominal pain, vomiting; ptosis, strabismus; peri neuritis, tremor; retrosternal (occurring behind the sternum) tightness, chest pain, pulmonary edema; convulsions, chorea, psychosis; liver, kidney damage; alopecia; paresthesia legs	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Toluene Methyl benzene Methyl benzol Phenyl methane Toluol	108-88-3	PID	200 ppm 500 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, nose; lassitude (weakness, exhaustion), confusion, euphoria, dizziness, headache; dilated pupils, lacrimation (discharge of tears); anxiety, muscle fatigue, paresthesia; dermatitis	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Total PCBs Chlorodiphenyl (42% chlorine) Aroclor® 1242 PCB Polychlorinated biphenyl	53469- 21-9	None	0.5 mg/m [,] 5 mg/m [,]	Groundwater Soil	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, chloracne	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.12	Total Xylenes Dimethylbenzene Xylol	1330-20- 7	PID	100 ppm 900 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat; dizziness, excitement, drowsiness, incoordination, staggering gait; corneal vacuolization; nausea, vomiting, abdominal pain; dermatitis	Eye: Irrigate immediately Skin: Soap flush immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Trans-1,2-Dichloroethene trans-1,2-Dichloroethylene tDEC trans-Acetylene dichloride	156-60-5	PID	200 ppm 4000 ppm	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	Irritant to eyes, skin, mucous membranes and respiratory system. May be harmful by ingestion, skin absorption and inhalation	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Trichlorofluoromethane Fluorotrichloromethane Freon® 11 Monofluorotrichloromethane Refrigerant 11 Trichloromonofluoromethane	75-69-4	PID	1000 ppm 2000 ppm	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	incoordination, tremor; dermatitis; cardiac arrhythmias, cardiac arrest; asphyxia; liquid: frostbite	Eye: Irrigate immediately Skin: Water flush immediately Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.12	Trivalent Chromium Chromium III Chromium, Trivalent	NA	None	1.0 mg/m [,] 250 mg/m [,]	Groundwater Soil	inhalation absorption ingestion	irritation to eye, skin, and respiratory	Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Vanadium	7440-62-2	None	0.1 mg/m3 15 mg/m3	Groundwater Soil	inhalation, skin absorption, ingestion, skin and/or eye contact	nausea, diarrhea, abdominal pain, vomiting; ptosis, strabismus; peri neuritis, tremor; retrosternal (occurring behind the sternum) tightness, chest pain, pulmonary edema; convulsions, chorea, psychosis; liver, kidney damage; alopecia; paresthesia legs	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.12	Zinc	7440-62-2	None	15 mg/m [,] 500 mg/m [,]	Groundwater Soil	inhalation	chills, muscle ache, nausea, fever, dry throat, cough; lassitude (weakness, exhaustion); metallic taste; headache; blurred vision; low back pain; vomiting; malaise (vague feeling of discomfort); chest tightness; dyspnea (breathing difficulty), rales, decreased pulmonary function	Breathing: Respiratory support`

EXPLANATION OF ABBREVIATIONS

PID = Photoionization Detector

PEL = Permissible Exposure Limit (8-hour Time Weighted Average)

IDLH = Immediately Dangerous to Life and Health ppm = part per million mg/m³ = milligrams per cubic meter 500 mg/m³

TABLE 3 Summary of Monitoring Equipment

Instrument	Operation Parameters
Photoionization	Hazard Monitored: Many organic and some inorganic gases and vapors.
Detector (PID)	Application: Detects total concentration of many organic and some inorganic gases and
	vapors. Some identification of compounds is possible if more than one probe is measured.
	Detection Method: Ionizes molecules using UV radiation; produces a current that is
	proportional to the number of ions.
	General Care/Maintenance: Recharge or replace battery. Regularly clean lamp window.
	Regularly clean and maintain the instrument and accessories.
	Typical Operating Time: 10 hours. 5 hours with strip chart recorder.
Oxygen Meter	Hazard Monitored: Oxygen (O ₂).
	Application: Measures the percentage of O ₂ in the air.
	Detection Method: Uses an electrochemical sensor to measure the partial pressure of
	O_2 in the air, and converts the reading to O_2 concentration.
	General Care/Maintenance: Replace detector cell according to manufacturer's
	recommendations. Recharge or replace batteries prior to explanation of the specified
	interval. If the ambient air is less than 0.5% C O_2 , replace the detector cell frequently.
	Typical Operating Time: 8 – 12 hours.
	needed, based on site conditions)
Combustible Gas	Hazard Monitored: Combustible gases and vapors.
Indicator (CGI)	Application: Measures the concentration of combustible gas or vapor.
	Detection Method: A filament, usually made of platinum, is heated by burning the
	combustible gas or vapor. The increase in heat is measured. Gases and vapors are ionized
	in a flame. A current is produced in proportion to the number of carbon atoms present.
	General Care/Maintenance: Recharge or replace battery. Calibrate immediately before
	use.
	Typical Operating Time: Can be used for as long as the battery lasts, or for the
	recommended interval between calibrations, whichever is less.
Flame Ionization	Hazard Monitored: Many organic gases and vapors (approved areas only).
Detector (FID) with	Application: In survey mode, detects the concentration of many organic gases and
Gas Chromatography	vapors. In gas chromatography (GC) mode, identifies and measures specific compounds.
Option	In survey mode, all the organic compounds are ionized and detected at the same time. In
(i.e., Foxboro Organic	GC mode, volatile species are separated.
Vapor Analyzer (OVA))	General Care/Maintenance: Recharge or replace battery. Monitor fuel and/or
	combustion air supply gauges. Perform routine maintenance as described in the manual.
	Check for leaks.
	Typical Operating Time: 8 hours; 3 hours with strip chart recorder.
Potable Infrared (IR)	Hazard Monitored: Many gases and vapors.
Spectrophotometer	Application: Measures concentration of many gases and vapors in air. Designed to
	quantify one or two component mixtures.
	Detection Method: Passes different frequencies of IR through the sample. The
	frequencies absorbed are specific for each compound.
	General Care/Maintenance: As specified by the manufacturer.

Instrument	Operation Parameters						
Direct Reading	Hazard Monitored: Specific gas and vapors.						
Colorimetric Indicator	Application: Measures concentration of specific gases and vapors.						
Tube	Detection Method: The compound reacts with the indicator chemical in the tube,						
	producing a stain whose length or color change is proportional to the compound's						
	concentration.						
	General Care/Maintenance: Do not use a previously opened tube even if the indicator						
	chemical is not stained. Check pump for leaks before and after use. Refrigerate before						
	use to maintain a shelf life of about 2 years. Check expiration dates of tubes. Calibrate						
	pump volume at least quarterly. Avoid rough handling which may cause channeling.						
Aerosol Monitor	Hazard Monitored: Airborne particulate (dust, mist, fume) concentrations						
	Application: Measures total concentration of semi-volatile organic compounds, PCBs, and						
	metals.						
	Detection Method: Based on light-scattering properties of particulate matter. Using an						
	internal pump, air sample is drawn into the sensing volume where near infrared light						
	scattering is used to detect particles.						
	General Care/Maintenance: As specified by the mfr. Also, the instrument must be						
	calibrated with particulates of a size and refractive index similar to those to be measured						
	in the ambient air.						
Monitox	Hazard Monitored: Gases and vapors.						
	Application: Measures specific gases and vapors.						
	Detection Method: Electrochemical sensor relatively specific for the chemical species in						
	question.						
	General Care/Maintenance: Moisten sponge before use; check the function switch;						
	change the battery when needed.						
Gamma Radiation	Hazard Monitored: Gamma Radiation.						
Survey Instrument	Application: Environmental radiation monitor.						
	Detection Method: Scintillation detector.						
	General Care/Maintenance: Must be calibrated annually at a specialized facility.						
	Typical Operating Time: Can be used for as long as the battery lasts, or for the						
	recommended interval between calibrations, whichever is less.						

TABLE 4INSTRUMENTATION ACTION LEVELS

Photoionization Detector Action Levels	Action Required				
Background to 5 ppm	No respirator; no further action required				
> 1 ppm but < 5 ppm for > 5 minutes	 Temporarily discontinue all activities and evaluate potential causes of the excessive readings. If these levels persist and cannot be mitigated (i.e., by slowing drilling or excavation activities), contact HSO to review conditions and determine source and appropriate response action. If PID readings remain above 1 ppm, temporarily discontinue work and upgrade to Level C protection. If sustained PID readings fall below 1 ppm, downgrading to Level D protection may be permitted. 				
> 5 ppm but < 150 ppm for > 5 minutes	 Discontinue all work; all workers shall move to an area upwind of the jobsite. Evaluate potential causes of the excessive readings and allow work area to vent until VOC concentrations fall below 5 ppm. Level C protection will continue to be used until PID readings fall below 1 ppm. 				
> 150 ppm	Evacuate the work area				
Notes: 1. 1 ppm level based on OSHA Permissible Exposure Limit (PEL) for benzene.					

- 1 ppm level based on OSHA Permissible Exposure Limit (PEL) for benzene.
 5 ppm level based on OSHA Short Term Exposure Limit (STEL) maximum exposure for benzene for any 15 minute period.
- 3. 150 ppm level based on NIOSH Immediately Dangerous to Life and Health (IDLH) for tetrachloroethylene.

TABLE 5EMERGENCY NOTIFICATION LIST

ORGANIZATION	CONTACT	TELEPHONE
Local Police Department	NYPD	911
Local Fire Department	NYFD	911
Ambulance/Rescue Squad	NYFD	911
Hospital	NYC Health and Hospitals - Woodhull	911 or 718-963-8000
Langan Incident Hotline		800-952-6426 ex 4699
Medical Treatment Hotline	Incident Intervention	888-449-7787
Langan Environmental Project Manager	Emily Snead	508-918-8558 (cell)
Langan Health and Safety Manager (HSM)	Tony Moffa	215-756-2523 (cell)
Langan Health & Safety Officer (HSO)	William Bohrer	410-984-3068 (cell)
Langan Field Team Leader (FTL)	To Be Determined	
Client's Representative	David Schwartz	646-762-1429
National Response Center (NRC)		800-424-8802
Chemical Transportation Emergency Center (Chemtrec)		800-424-9300
Center for Disease Control (CDC)		404-639-3534
EPA (RCRA Superfund Hotline)		800-424-9346
TSCA Hotline		202-554-1404
Poison Control Center		800-222-1222

Immediately following an injury, unless immediate emergency medical treatment is required, the injured employee must contact <u>Incident</u> <u>Intervention®</u> at 888-449-7787.

For all other incidents or near misses, unless emergency response is required, either the employee or a coworker must contact the Langan Incident Hotline at 1-(800)-9-LANGAN (ext. #4699).

TABLE 6SUGGESTED FREQUENCY OF PHYSIOLOGICAL MONITORINGFOR FIT AND ACCLIMATED WORKERS^A

Adjusted	Normal Work	Impermeable
Temperature ^b	Ensemble ^c	Ensemble
90°F or above	After each 45 min.	After each 15 min.
(32.2°C) or above	of work	of work
87.5°F	After each 60 min.	After each 30 min.
(30.8°-32.2°C)	of work	of work
82.5°-87.5°F	After each 90 min.	After each 60 min.
(28.1°-30.8°C)	of work	of work
77.5°-82.5°F	After each 120 min.	After each 90 min.
(25.3°-28.1°C)	of work	of work
72.5°-77.5°F	After each 150 min.	After each 120 min.
(22.5°-25.3°C)	of work	of work

a For work levels of 250 kilocalories/hour.

b Calculate the adjusted air temperature (ta adj) by using this equation: ta adj OF = ta OF + (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.

TABLE 7

HEAT INDEX

			ENVI	RONMENT	AL TEMPE	RATURE (F	ahrenheit)				
	70	75	80	85	90	95	100	105	110	115	120
RELATIVE HUMIDITY		APPARENT TEMPERATURE*									
0%	64	69	73	78	83	87	91	95	99	103	107
10%	65	70	75	80	85	90	95	100	105	111	116
20%	66	72	77	82	87	93	99	105	112	120	130
30%	67	73	78	84	90	96	104	113	123	135	148
40%	68	74	79	86	93	101	110	123	137	151	
50%	69	75	81	88	96	107	120	135	150		
60%	70	76	82	90	100	114	132	149			
70%	70	77	85	93	106	124	144				
80%	71	78	86	97	113	136					
90%	71	79	88	102	122						
100%	72	80	91	108							

*Combined Index of Heat and Humidity...what it "feels like" to the body Source: National Oceanic and Atmospheric Administration

How to use Heat Index:

- 1. Across top locate Environmental Temperature
- 2. Down left side locate Relative Humidity
- 3. Follow across and down to find Apparent Temperature
- 4. Determine Heat Stress Risk on chart at right

Note: Exposure to full sunshine can increase Heat Index values by up to 15 degrees F.

Apparent Temperature	Heat Stress Risk with Physical Activity and/or Prolonged Exposure
90-105	Heat Cramps or Heat Exhaustion Possible
105-130	Heat Cramps or Heat Exhaustion Likely, Heat Stroke Possible
>130	Heatstroke Highly Likely

FIGURES

FIGURE 1

Site Location Map

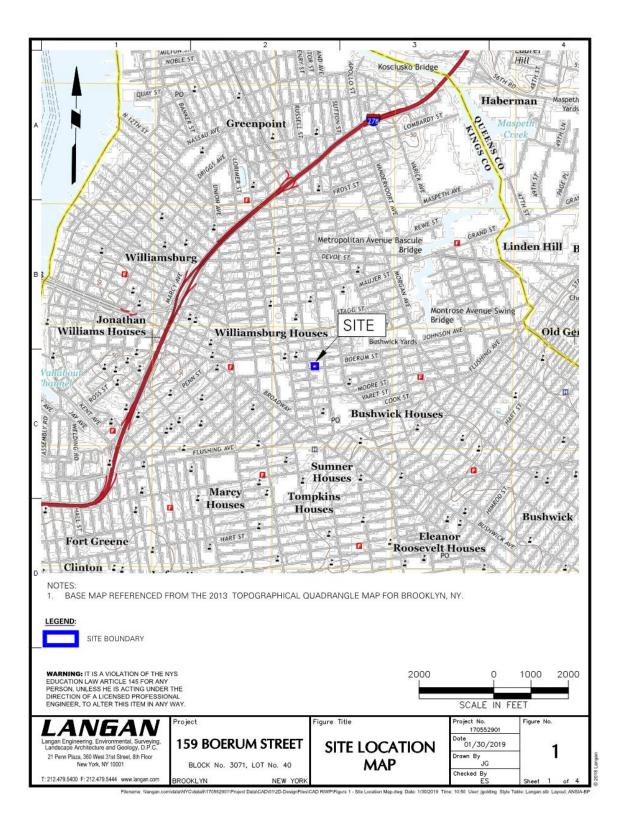


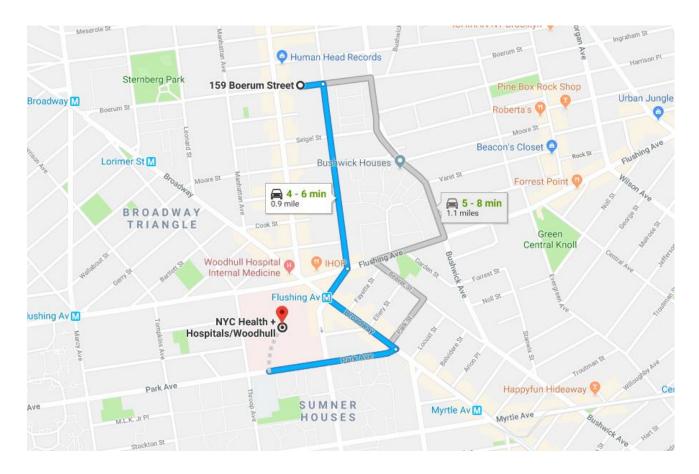
FIGURE 2 HOSPITAL ROUTE PLAN

Hospital Location: NYC Health and Hospitals - Woodhull 760 Broadway Brooklyn, New York 718-963-8000

START: 159 Boerum Street, Brooklyn, NY

- 1. Head east on Boerum Street toward Humboldt Street
- 2. Turn right at the 1st cross street onto Humboldt Street
- 3. Continue straight onto Broadway
- 4. Turn right onto Park Avenue

END: Health and Hospitals – Woodhull, 760 Broadway, Brooklyn, NY



ATTACHMENT A

STANDING ORDERS

STANDING ORDERS

GENERAL

- No smoking, eating, or drinking in this work zone.
- Upon leaving the work zone, personnel will thoroughly wash their hands and face.
- Minimize contact with contaminated materials through proper planning of work areas and decontamination areas, and by following proper procedures. Do not place equipment on the ground. Do not sit on contaminated materials.
- No open flames in the work zone.
- Only properly trained and equipped personnel are permitted to work in potentially contaminated areas.
- Always use the appropriate level of personal protective equipment (PPE).
- Maintain close contact with your buddy in the work zone
- Contaminated material will be contained in the Exclusion Zone (EZ).
- Report any unusual conditions.
- Work areas will be kept clear and uncluttered. Debris and other slip, trip, and fall hazards will be removed as frequently as possible.
- The number of personnel and equipment in the work zone will be kept to an essential minimum.
- Be alert to the symptoms of fatigue and heat/cold stress, and their effects on the normal caution and judgment of personnel.
- Conflicting situations which may arise concerning safety requirements and working conditions must be addressed and resolved quickly by the site HSO.

TOOLS AND HEAVY EQUIPMENT

- Do not, under any circumstances, enter or ride in or on any backhoe bucket, materials hoist, or any other device not specifically designed to carrying passengers.
- Loose-fitting clothing or loose long hair is prohibited around moving machinery.
- Ensure that heavy equipment operators and all other personnel in the work zone are using the same hand signals to communicate.
- Drilling/excavating within 10 feet in any direction of overhead power lines is prohibited.
- The locations of all underground utilities must be identified and marked out prior to initiating any subsurface activities.
- Check to insure that the equipment operator has lowered all blades and buckets to the ground before shutting off the vehicle.
- If the equipment has an emergency stop device, have the operator show all personnel its location and how to activate it.
- Help the operator ensure adequate clearances when the equipment must negotiate in tight quarters; serve as a signalman to direct backing as necessary.
- Ensure that all heavy equipment that is used in the Exclusion Zone is kept in that zone until the job is done, and that such equipment is completely decontaminated before moving it into the clean area of the work zone.
- Samplers must not reach into or get near rotating equipment such as the drill rig. If personnel must work near any tools that could rotate, the equipment operator must completely shut down the rig prior to initiating such work. It may be necessary to use a remote sampling device.

ATTACHMENT B

DECONTAMINATION PROCEDURES

Station 1:	Equipment Drop	 Deposit equipment used on-site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths. Segregation at the drop reduces the probability of cross contamination. During hot weather operations, cool down stations may be set up within this area.
Station 2:	Outer Garment, Boots, and Gloves Wash and Rinse	 Scrub outer boots, outer gloves and chemical-re- sistant splash suit with decon solution or detergent and water. Rinse off using copious amounts of water.
Station 3:	Outer Boot and Glove Removal	3. Remove outer boots and gloves. Deposit in container with plastic liner.
Station 4:	Canister or Mask Change	 If worker leaves Exclusion Zone to change canister (or mask), this is the last step in the decontamination procedure. Worker's canister is exchanged, new outer gloves and boot covers donned, joints taped, and worker returns to duty.
Station 5:	Boot, Gloves and Outer Garment Removal	 Boots, chemical-resistant splash suit, inner gloves removed and deposited in separate containers lined with plastic.
Station 6:	Face piece Removal	6. Face piece is removed (avoid touching face with fingers). Face piece deposited on plastic sheets.
Station 7:	Field Wash	7. Hands and face are thoroughly washed. Shower as soon as possible.

LEVEL C DECONTAMINATION

LEVEL **D** DECONTAMINATION

Station 1:	Equipment Drop	 Deposit equipment used on-site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths. Segregation at the drop reduces the probability of cross contamination. During hot weather operations, cool down stations may be set up within this area.
Station 2:	Outer Garment, Boots, and Gloves Wash and Rinse	 Scrub outer boots, outer gloves and chemical-re- sistant splash suit with decon solution or detergent and water. Rinse off using copious amounts of water.
Station 3:	Outer Boot and Glove Removal	3. Remove outer boots and gloves. Deposit in container with plastic liner.
Station 4:	Boot, Gloves and Outer Garment Removal	 Boots, chemical-resistant splash suit, inner gloves removed and deposited in separate containers lined with plastic.
Station 5:	Field Wash	 Hands and face are thoroughly washed. Shower as soon as possible.

EQUIPMENT DECONTAMINATION

GENERAL:

Equipment to be decontaminated during the project may include tools, monitoring equipment, respirators, sampling containers, laboratory equipment and drilling equipment.

All decontamination will be done by personnel in protective gear, appropriate for the level of decontamination, as determined by the site HSO. The decontamination work tasks will be split or rotated among support and work crews.

Depending on site conditions, backhoe and pumps may be decontaminated over a portable decontamination pad to contain wash water; or, wash water may be allowed to run off into a storm sewer system. Equipment needed may include a steam generator with high-pressure water, empty drums, screens, screen support structures, and shovels. Drums will be used to hold contaminated wash water pumped from the lined pit. These drums will be labeled as such.

Miscellaneous tools and equipment will be dropped into a plastic pail, tub, or other container. They will be brushed off and rinsed with a detergent solution, and finally rinsed with clean water.

MONITORING EQUIPMENT:

Monitoring equipment will be protected as much as possible from contamination by draping, masking, or otherwise covering as much of the instruments as possible with plastic without hindering the operation of the unit. The PID, HNu or OVA meter, for example, can be placed in a clear plastic bag, which allows reading of the scale and operation of knobs. The probes can be partially wrapped keeping the sensor tip and discharge port clear.

The contaminated equipment will be taken from the drop area and the protective coverings removed and disposed in the appropriate containers. Any dirt or obvious contamination will be brushed or wiped with a disposable paper wipe.

RESPIRATORS:

Respirators will be cleaned and disinfected after every use. Taken from the drop area, the masks (with the cartridges removed and disposed of with other used disposable gear) will be immersed in a cleaning solution and scrubbed gently with a soft brush, followed by a rinse in plain warm water, and then allowed to air dry. In the morning, new cartridges will be installed. Personnel will inspect their own masks for serviceability prior to donning them. And, once the mask is on, the wearer will check the respirator for leakage using the negative and positive pressure fit check techniques.

ATTACHMENT C

EMPLOYEE EXPOSURE/ INJURY INCIDENT REPORT

EMPLOYEE INCIDENT/INJURY REPORT LANGAN ENGINEERING & ENVIRONMENTAL SERVICES

(Complete and return to Tony Moffa in the Doylestown Office)

Affected Employee				Da	te:			
ncident type:		Injury Near Miss		Report Onl		ury		
MPLOYEE INFOR	RMATION	(Person comp	leting Form)					
mployee Name: _ lo:					En	nployee		
itle:					fice			Location:
ength o	f	time	employed	or		date	of	hire:
<i>l</i> ailing								address:
ex: M 🗌 F 🗌 Business phone &					sidence,	/cell		phone:
ACCIDENT INFOR				_				
Project:					Pro	oject		#:
Date & time of inci	dent:			Time	work	started	&	ended:
								location:

Names incident:		of	person(s			who		witne	essed	the
Exact		le	ocation			incid	ent			occurred:
Describe done:				- -	vork					being
Describe	what	affected	employee	was	doing	prior	to	the	incident	occurring:
Describe occurred:		in	detai	il		how		the		incident
Nature affected):	of	the	incident	(List	t	he	parts	of	the	body
Person(s)	to	whom	incident	: w	/as	report	ed	(Time	and	Date):

List the names of other persons affected during this incident:

Possible	e causes	of	the	incident	(equipme	ent, ı	unsafe	work	practice	es, la	ck of	PPE,	etc.):
Weather incident:						condit	ions						during
MEDICA	AL CARE I	NFOF	RMATI	ION									
Did affe	cted empl	oyee ı	receive	e medical o	care?		Yes 🗌		No 🗌				
				when	and		whe	re	was		medica	I	care
	Provide		nam	e	of	faci	lity	(h	nospital,		clinic,		etc.):
	Length			of	sta	ıy		at		the		f	acility?
Did the e	employee	miss	any w	ork time?	Yes 🗌	No 🗌] Ur	ndeterm	nined 🗌				
							D	ate	emplo	yee	retu	irned	to
Has the	employee	e retur	ned to	work?	Yes 🗌	No 🗌							
Does the	e employe	e hav	e any	work limita	ations or re	estrictio	ons fror	n the ir	njury? :	Yes]	No 🗌]
	lf			Yes				plea	se			de	scribe:
Did the e	exposure/	injury	result	in perman	ent disabil	ity?	Yes 🗌		No 🗌		Unkno	wn 🗌	
	lf			Yes	,			plea	se			de	scribe:

HEALTH & SAFETY INFORMATION

Was the op	peration bei	ng conducted under an established site specif	c CONSTRUCTION HEALTH AND SAFETY
PLAN?			
Yes 🗌	No 🗌	Not Applicable: 🗌	

Describe protective equipment and clothing used by the employee:

Did any limitations in safety equipment or protective clothing contribute to or affect exposure / injury? If so, explain:

Employee Signature

Date

Date

ATTACHMENT D

PROJECT:_____

Date & Time	lnst Type	Inst #	Media	Initial Reading	Span #	Calibrat. Reading	Performed By:
		-					
	1						

PROJECT:_____

Date & Time	Inst Type	Inst #	Media	Initial Reading	Span #	Calibrat. Reading	Performed By:

PROJECT:_____

Date & Time	lnst Type	Inst #	Media	Initial Reading	Span #	Calibrat. Reading	Performed By:
		-					
		-					
	1						

PROJECT:_____

Date & Time	Inst Type	Inst #	Media	Initial Reading	Span #	Calibrat. Reading	Performed By:

ATTACHMENT E

MATERIAL SAFETY DATA SHEETS

SAFETY DATA SHEETS

All Langan Field Personnel Completing This Work Plan Are To Have Real Time Accessibility To Material Safety Data Sheet (MSDs) or Safety Data Sheet (SDSs) Through Their Smart Phone.

The link is <u>http://www.msds.com/</u> The login name is "drapehead" The password is "2angan987"

If You Are Unable To Use the Smart Phone App, You Are To Bring Printed Copies of the MSDs/SDSs to the Site

ATTACHMENT F

JOBSITE SAFETY INSPECTION CHECKLIST

Jobsite Safety Inspection Checklist

Date:	Inspecto	ed By:
Location:	Project	#:

Check one of the following: A: Acceptable NA: Not Applicable D: Deficiency

	Α	NA	D	Remark
1. CHASP available onsite for inspection?				
2. Health & Safety Compliance agreement (in CHASP)				
appropriately signed by Langan employees and				
contractors?				
3. Hospital route map with directions posted on site?				
4. Emergency Notification List posted on site?				
5. First Aid kit available and properly stocked?				
6. Personnel trained in CPR/First Aid on site?				
7. MSDSs readily available, and all workers				
knowledgeable about the specific chemicals and				
compounds to which they may be exposed?				
8 Appropriate PPE being worn by Langan employees and				
contractors?				
9. Project site safe practices ("Standing Orders") posted?				
10. Project staff have 40-hr./8-hr./Supervisor HAZWOPER				
training?				
11. Project staff medically cleared to work in hazardous				
waste sites and fit-tested to wear respirators, if needed?				
12. Respiratory protection readily available?				
13. Health & Safety Incident Report forms available?				
14. Air monitoring instruments calibrated daily and results				
recorded on the Daily Instrument Calibration check				
sheet?				
15. Air monitoring readings recorded on the air monitoring				
data sheet/field log book?				
16. Subcontract workers have received 40-hr./8-hr./Spvsr.				
HAZWOPER training, as appropriate?				
17. Subcontract workers medically cleared to work on				
site, and fit-tested for respirator wear?				
18. Subcontract workers have respirators readily				
available?				
19. Mark outs of underground utilities done prior to				
initiating any subsurface activities?				
20. Decontamination procedures being followed as				
outlined in CHASP?				
21. Are tools in good condition and properly used?				
22. Drilling performed in areas free from underground objects including utilities?				
		I		

23. Adequate size/type fire extinguisher supplied?	
24. Equipment at least 20 feet from overhead	
powerlines?	
25. Evidence that drilling operator is responsible for the	
safety of his rig.	
26. Trench sides shored, layer back, or boxed?	
27. Underground utilities located and authorities	
contacted before digging?	
28. Ladders in trench (25-foot spacing)?	
29. Excavated material placed more than 2 feet away	
from excavation edge?	
30. Public protected from exposure to open excavation?	
31. People entering the excavation regarding it as a	
permit-required confined space and following appropriate procedures?	
32. Confined space entry permit is completed and	
posted?	
33. All persons knowledgeable about the conditions and	
characteristics of the confined space?	
34. All persons engaged in confined space operations	
have been trained in safe entry and rescue (non-entry)?	
35. Full body harnesses, lifelines, and hoisting apparatus	
available for rescue needs?	
36. Attendant and/or supervisor certified in basic first aid	
and CPR?	
37. Confined space atmosphere checked before entry	
and continuously while the work is going on?	
38. Results of confined space atmosphere testing	
recorded?	
39. Evidence of coordination with off-site rescue services	
to perform entry rescue, if needed?	
40. Are extension cords rated for this work being used	
and are they properly maintained?	
41. Are GFCIs provided and being used?	

Unsafe Acts:

Notes:

ATTACHMENT G

JOB SAFETY ANALYSIS FORM

LANGAN	Health	Job Safety Analysis (JSA) Health and Safety						
JSA TITLE:	CF	E CREATED: REATED BY:						
JSA NUMBER:		REVISION DATE: REVISED BY:						
Langan employees must review and revise the Job Safety Analysis (JSA) as needed to address the any site specific hazards not identified. Employees must provide their signatures on the last page of the JSA indicating they have review the JSA and are aware the potential hazards associated with this work and will follow the provided preventive or corrective measures.								
PERSONAL PROTECTIVE EQUIPMENT REQ	UIRED: (PPE): Required As N	leeded						
□ Steel-toed boots	□ Nitrile gloves	Dermal Protection (Specify)						
□ Long-sleeved shirt	Leather/ Cut-resistant gloves	□ High visibility vest/clothing						
□ Safety glasses	□Face Shield	□ Hard hat						
ADDITIONAL PERSONAL PROTECTIVE EQU	JIPMENT NEEDED (Provide specific type(s) or a	descriptions)						
☐ Air Monitoring:	□ Respirators:	□ Other:						
JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE OR CORRECTIVE ACTION						
1.	1.	1a. 1b.						
	2.	2a. 2b.						
2.	1.	1						
Additional items identified in the field.								
Additional Items.								
If additional items are identifie about the change and docume	d during daily work activities, ple nt on this JSA.	ease notify all relevant personnel						

LANGAN

Job Safety Analysis (JSA) Health and Safety

JSA Title: General Construction Activities

JSA Number: JSA010-01

A Job Safety Analysis (JSA) must identify all job steps required to complete the task, the potential hazards employees could be exposed to while performing the job step and the preventative/corrective actions required to reduce/mitigate the identified potential hazards. Employees must certify that they have either prepared the JSA or have reviewed the JSA and are aware of the potential hazards associated with this task and will follow the provided preventive/corrective actions.

PERSONAL PROTECTIVE EQUIPMENT (Required or to be worn as needed):								
Safety Shoes	☑ Long Sleeves	Safety Vest (Class 2)		Hard Hat	Hearing Protection			
Safety Glasses	Safety Goggles	Face Shield		☑ Nitrile Gloves	PVC Gloves			
Leather Gloves	Cut Resist. Gloves	Fall Protection		Fire Resistant Clothing	Rubber Boots			
Insect/Animal Repellent	Ivy Blocker/Cleaner	Traffic Cones/Signs		Life Vest/Jacket				
Other:								
JOB STEPS	POTENTIAL HAZA	ZARDS		PREVENTATIVE / CORRECTIVE ACTION				
1. Transport equipment to	1. Back Strain	1.	. Use proper lifting techniques / Use wheeled transport					
work area	2. Slips/ Trips/ Falls	2.	. Minimize distance to work area / Have unobstructed path to work area /					
	3. Traffic		Follow good housekeeping procedures					
	4. Cuts/abrasions from equipme							
	5. Contusions from dropped equ			r proper PPE (leather gloves, long sleeves)				
		5. Wear proper PPE (safety shoes)						
2. Installation of piping from	1. Pinch fingers when connecting							
vapor wells to skid	2. Slips/ Trips/ Falls	2.	2. Be aware of potential trip hazards / Practice good housekeeping					
connections and from	3. Machinery Hazards		procedures / Mark significant below-grade hazards (i.e. holes, trenches)					
discharge piping to effluent			with safety cones or spray paint					
stack		3.	 Wear proper PPE (safety vest) / Maintain safe distance from operating machinery 					
3. Remediation equipment	1. Back strain when lifting heavy	,			led transport / Minimize distance			
installation	2. Slips/ Trips/ Falls	- 1	to vehicle					
	3. Traffic	2.	. Be aware of potential trip hazards / Practice good housekeeping					
			procedures / Mark significant below-grade hazards (i.e. holes, trenches)					
			with sa	fety cones or spray pain	, i i i i i i i i i i i i i i i i i i i			
		3.		roper PPE (safety vest)				
4. All activities	1. Slips/ Trips/ Falls		. Be aware of potential trip hazards / Follow good housekeeping					
	2. Hand injuries, cuts or laceration		procedures/ Mark significant hazards					
	handling of materials	2.	2. Inspect for jagged/sharp edges, and rough or slippery surfaces / Keep					
	3. Foot injuries		fingers away from pinch points / Wipe off greasy, wet, slippery or dirty					
	4. Back injuries		objects before handling / Wear leather/ cut-resistant gloves					
	5. Traffic		Wear Langan approved safety shoes					
	6. Wildlife: Stray dogs, Mice/rats	Vectors (i.e. 4.	4. Use proper lifting techniques / Consider load location, task repetition, and					
	mosquitoes, bees, etc.)		load weigh when evaluating what is safe or unsafe to lift / Obtain					
	7. High Noise levels		assistance when possible					

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
4. All activities (cont'd)	 8. Overhead hazards 9. Heat Stress/ Cold Stress 10. Eye Injuries 	 Wear high visibility clothing & vest / Use cones or signs to designate work area Be aware of surroundings at all times, including the presence of wildlife/ Do not approach stray dogs / Carry/use dog/animal repellant / Use bug spray when needed Wear hearing protection Wear hard hat / Avoid areas were overhead hazards exist. Wear proper attire for weather conditions (sunscreen or protective clothing in sunlight, layers for cold weather) / Drink plenty of fluids to avoid dehydration / Takes breaks as necessary to avoid heat/cold stress Wear safety glasses
Additional items.		
Additional Items identified while in the field.		
(Delete row if not needed.)		

Print Name	Sign Name	Date			
Prepared by:	Prepared by:				
Reviewed by:					

Job Safety Analysis (JSA) Health and Safety

JSA Title: Subsurface Investigation

JSA Number: JSA030-01

PERSONAL PROTECTIVE EQUIPMENT (Required or to be worn as needed):				
Safety Shoes	🛛 Long Sleeves	Safety Vest (Class 2)	🛛 Hard Hat	Hearing Protection
Safety Glasses	Safety Goggles	Face Shield	Nitrile Gloves	PVC Gloves
☑ Leather Gloves	🛛 Cut Resist. Gloves	Fall Protection	Fire Resistant Clothing	Rubber Boots
Insect/Animal Repellent	Ivy Blocker/Cleaner	Traffic Cones/Signs	Life Vest/Jacket	
Other: Dielectric Overshoes, Sun Block				

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
5. Transport equipment to work area	 Back/strain Slip/Trip/Falls Traffic Cuts/abrasions/contusions from equipment Accidents due to vehicle operations 	 Use proper lifting techniques/Use wheeled transport Minimize distance to work area/unobstructed path to work area/follow good housekeeping procedures Wear proper PPE (high visibility vest or clothing) Wear proper PPE (leather gloves, long sleeves, Langan approved safety shoes) Observe posted speed limits/ Wear seat belts at all times
6. Traffic	1. Hit by moving vehicle	1. Use traffic cones and signage/ Use High visibility traffic vests and clothing/ Caution tape when working near active roadways.
7. Field Work (drilling, resistivity testing, and inspection)	 Biological Hazards: insects, rats, snakes, poisonous plants, and other animals Heat stress/injuries Cold Stress/injuries High Energy Transmission Lines Underground Utilities Electrical (soil resistivity testing) 	 Inspect work area to identify biological hazards. Wear light colored long sleeve shirt and long pants/ Use insect repellant as necessary/ Beware of tall grass, bushes, woods and other areas where ticks may live/ Avoid leaving garbage on site to prevent attracting animals/ Identify and avoid contact with poisonous plants/Beware of rats, snakes, or stray animals. Wear proper clothing (light colored)/ drink plenty of water/ take regular breaks/use sun block Wear proper clothing/ dress in layers/ take regular breaks. Avoid direct contact with high energy transmission lines/ position equipment at least 15 feet or as required by PSE&G from the transmission lines/ wear proper PPE (dielectric overshoes 15 kV minimum rating). Call one-call service before performing intrusive field work/ Review utility mark-outs and available utility drawings (with respect to proposed work locations)/ Follow Underground Utility Guidelines

8. All activities 11. Slips/ Trips/ Falls 17. Be aware of potential trip hazards / Follow good housekeeping procedures/ Mark significant hazards 12. Hand injuries, uturing manual handling of materials 13. Foot injuries 18. Inspect for jagged/sharp edges, and rough or slippery surfaces / Keep fingers away from pinch points / Wipe off greasy, wet, slippery or dirty objects before handling / Wear leather/ cut-resistant gloves 15. Traffic 16. Wiidlife: Stray dogs, Mice/rats, Vectors (i.e. mosquitoes, bees, etc.) 17. High Noise levels 18. Overhead hazards 18. Overhead hazards 20. Use proper lifting techniques / Consider load location, task repetition, and load weigh when evaluating what is safe or unsafe to lift / Obtain assistance when possible 20. Eye Injuries 20. Eye Injuries 21. Wear high visibility clothing & vest / Use cones or signs to designate work area 22. Be aware of surroundings at all times, including the presence of wildlife/ Do not approach stray dogs / Carry/use dog/animal repellant / Use bug spray when needed 23. Wear proper hearing protection 24. Wear hard hat / Avoid areas were overhead hazards exist.	JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
12. Hand injuries, cuts or lacerations during manual handling of materials 13. Foot injuries 13. Foot injuries 13. Foot injuries 14. Back injuries 15. Fraffic 14. Back injuries 15. Traffic 18. Inspect for pinch points / Vipe off greasy, wet, slippery or dirty objects before handling / Wear leather/ cut-resistant gloves 15. Traffic 10. Wildlife: Stray dogs, Mice/rats, Vectors (i.e. mosquitoes, bees, etc.) 17. High Noise levels 18. Overhead hazards 20. Use proper lifting techniques / Consider load location, task repetition, and load weigh when evaluating what is safe or unsafe to lift / Obtain assistance when possible 20. Eye Injuries 20. Use proper lifting a vest / Use cones or signs to designate work area 20. Eye Injuries 20. Wear and bazards 20. Eye Injuries 21. Wear roper lifting a vest / Use cones or signs to designate work area 20. Eye Injuries 22. Be aware of surroundings at all times, including the presence of wildlife/ Do n approach stray dogs / Carry/use dog/animal repellant / Use bug spray when needed 23. Wear proper attire for weather conditions (sunscreen or protective clothing in sunlight, layers for cold weather) / Drink plenty of fluids to avoid dehydration / Takes breaks as necessary to avoid heat/cold stress 26. Wear safety glasses 26. Wear safety glasses			16. See AGI Sting R1 operating manual for specific concerns during operating instrument
Additional items. Additional Items identified while in the field.	8. All activities	 Hand injuries, cuts or lacerations during manual handling of materials Foot injuries Back injuries Traffic Wildlife: Stray dogs, Mice/rats, Vectors (i.e. mosquitoes, bees, etc.) High Noise levels Overhead hazards Heat Stress/ Cold Stress 	 procedures/ Mark significant hazards 18. Inspect for jagged/sharp edges, and rough or slippery surfaces / Keep fingers away from pinch points / Wipe off greasy, wet, slippery or dirty objects before handling / Wear leather/ cut-resistant gloves 19. Wear Langan approved safety shoes 20. Use proper lifting techniques / Consider load location, task repetition, and load weigh when evaluating what is safe or unsafe to lift / Obtain assistance when possible 21. Wear high visibility clothing & vest / Use cones or signs to designate work area 22. Be aware of surroundings at all times, including the presence of wildlife/ Do not approach stray dogs / Carry/use dog/animal repellant / Use bug spray when needed 23. Wear proper hearing protection 24. Wear hard hat / Avoid areas were overhead hazards exist. 25. Wear proper attire for weather conditions (sunscreen or protective clothing in sunlight, layers for cold weather) / Drink plenty of fluids to avoid dehydration / Takes breaks as necessary to avoid heat/cold stress
field.	Additional items.		
(Delete row if not needed.)			
	(Delete row if not needed.)		

Print Name	Sign Name	Date
Prepared by:		
<u>Reviewed by:</u>		

	LANGAN				y Analysis (JSA) n and Safety
JSA Title: Excavation O JSA Number: JSA041-01	versight			S T	<u>S</u> – Stop, what has changed?
potential hazards employees preventative/corrective action Employees must certify that the are aware of the potential has	must identify all job steps req could be exposed to while pe is required to reduce/mitigate t ney have either prepared the JS azards associated with this tas . Prior to the start of any work	erforming the job st he identified potenti A or have reviewed t sk and will follow th	ep and the al hazards. he JSA and e provided	TAKE 5	 I – Think about the task E – Evaluate potential hazards P – Plan safe approach <u>S</u> - Start task / Stop & regroup
PERSONAL PROTECTIVE EQ	UIPMENT (Required or to be wo	orn as needed):			
Safety Shoes	🛛 Long Sleeves	Safety Vest (Cla	ass 2)	Hard Hat	Hearing Protection
Safety Glasses	Safety Goggles	Face Shield		Nitrile Gloves	PVC Gloves
Leather Gloves	🛛 Cut Resist. Gloves	Fall Protection		Fire Resistant Clothing	Rubber Boots
Insect/Animal Repellent	Ivy Blocker/Cleaner	Traffic Cones/S	igns	Life Vest/Jacket	
JOB STEPS 9. Transport equipment to	POTENTIAL HAZ	ZARDS	6. Us	PREVENTATIVE / COR se proper lifting techniques / U	
work area	 Back Strain Slips/Trips/Falls Traffic Cuts/abrasions/contusions from equipment 		7. Mi are 8. W		Have unobstructed path to work g procedures vest or clothing)
10.Earth Moving Equipment	1. Equipment running over en	nployee	behind e	ou have direct line of sight wit quipment; maintain a safe dist oper PPE (high vis vest/clothin	
11.Excavation	 4. Excavation collapse 5. Confined space 6. Soil 		situate inspect 2. Langar 3. Soil an	d in excavation; no water in ex ted excavation prior to allow er n employees are not authorized d equipment is kept atleast 2 f	d to enter a confined space; eet from edge of excavation
12.Excavated soil	1. Hazardous substances 1.		levels do no	ot exceed PEL's for contamina	
13. All activities	 Slips/ Trips/ Falls Hand injuries, cuts or lacel manual handling of materia Foot injuries Back injuries 		proced 28. Inspect fingers		ough or slippery surfaces / Keep e off greasy, wet, slippery or dirty

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
	 26. Wildlife: Stray dogs, Mice/rats, Vectors (i.e. mosquitoes, bees, etc.) 27. High Noise levels 28. Overhead hazards 29. Heat Stress/ Cold Stress 30. Eye Injuries 	 30. Use proper lifting techniques / Consider load location, task repetition, and load weigh when evaluating what is safe or unsafe to lift / Obtain assistance when possible 31. Wear high visibility clothing & vest / Use cones or signs to designate work area 32. Be aware of surroundings at all times, including the presence of wildlife/ Do not approach stray dogs / Carry/use dog/animal repellant / Use bug spray when needed 33. Wear hearing protection 34. Wear hard hat / Avoid areas were overhead hazards exist. 35. Wear proper attire for weather conditions (sunscreen or protective clothing in sunlight, layers for cold weather) / Drink plenty of fluids to avoid dehydration / Takes breaks as necessary to avoid heat/cold stress 36. Wear safety glasses
Additional items.		
Additional Items identified while in the field. (Delete row if not needed.)		

Print Name	Sign Name	Date			
Prepared by:	Prepared by:				
Reviewed by:					

Job Safety Analysis (JSA) Health and Safety

JSA Title: Field Sampling

JSA Number: JSA022-01

PERSONAL PROTECTIVE EQUIPMENT (Required or to be worn as needed):				
Safety Shoes	☑ Long Sleeves	Safety Vest (Class 2)	🛛 Hard Hat	Hearing Protection
Safety Glasses	Safety Goggles	Face Shield	☑ Nitrile Gloves	PVC Gloves
Leather Gloves	Cut Resist. Gloves	Fall Protection	Fire Resistant Clothing	Rubber Boots
Insect/Animal Repellent	Ivy Blocker/Cleaner	Traffic Cones/Signs	Life Vest/Jacket	
Other:				

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
14.Unpack/Transport equipment to work area.	10.Back Strains11.Slip/Trips/Falls12.Cuts/Abrasions from equipment13.Contusions from dropped equipment	 Use proper lifting techniques/Use wheeled transport Minimize distance to work area/Unobstructed path to work area/follow good housekeeping procedures. Mark slip/trip/fall hazards with orange safety cones. Wear proper PPE (leather gloves, long sleeves). Wear proper PPE (Langan approved safety shoes).
15.Initial Site Arrival-Site Assessment	2. Traffic	3. Situational awareness (be alert of your surroundings). Secure area from through traffic.
16.Surface Water Sampling	 Contaminated media. Skin/eye contact with biological agents and/or chemicals. 	 Wear appropriate PPE (Safety glasses, appropriate gloves). Review (M)SDS for all chemicals being.
17.Sampling from bridges	1. Struck by vehicles	1. Wear appropriate PPE (Safety Vest). Use buddy system and orange safety cones.
 Icing of Samples/ Transporting coolers/equipment from work area. 	 Back Strains Slips/Trips/Falls Cuts/Abrasions from equipment Pinch/Crushing Hazards. 	 37. Drain coolers of water. Use proper lifting techniques. Use wheeled transport. 38. Have unobstructed path from work area. Aware of surroundings. 39. Wear proper PPE (Leather gloves, long sleeves) 40. Wear proper PPE (Leather gloves, long sleeves)
19. Site Departure	1. Contaminated PPE/Vehicle	1. Contaminated PPE should be disposed of on-site. Remove boots and soiled clothing for secure storage in trunk. Wash hands promptly.
20. All activities	 Slips/ Trips/ Falls Hand injuries, cuts or lacerations during manual handling of materials 	1. Be aware of potential trip hazards / Follow good housekeeping procedures/ Mark significant hazards

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
Additional items.	 Foot injuries Back injuries Traffic Wildlife: Stray dogs, Mice/rats, Vectors (i.e. mosquitoes, bees, etc.) High Noise levels Overhead hazards Heat Stress/ Cold Stress Eye Injuries 	 Inspect for jagged/sharp edges, and rough or slippery surfaces / Keep fingers away from pinch points / Wipe off greasy, wet, slippery or dirty objects before handling / Wear leather/ cut-resistant gloves Wear Langan approved safety shoes Use proper lifting techniques / Consider load location, task repetition, and load weigh when evaluating what is safe or unsafe to lift / Obtain assistance when possible Wear high visibility clothing & vest / Use cones or signs to designate work area Be aware of surroundings at all times, including the presence of wildlife/ Do not approach stray dogs / Carry/use dog/animal repellant / Use bug spray when needed Wear hard hat / Avoid areas were overhead hazards exist. Wear proper attire for weather conditions (sunscreen or protective clothing in sunlight, layers for cold weather) / Drink plenty of fluids to avoid dehydration / Takes breaks as necessary to avoid heat/cold stress Wear safety glasses
Additional Items identified while in the field.		
(Delete row if not needed.)		

Print Name	Sign Name	Date			
Prepared by:	·				
Reviewed by:	Reviewed by:				

Job Safety Analysis (JSA) Health and Safety

JSA Title: Equipment Transportation and Set-Up

JSA Number: JSA012-01

PERSONAL PROTECTIVE EQUIPMENT (Required or to be worn as needed):				
Safety Shoes	☑ Long Sleeves	Safety Vest (Class 2)	🛛 Hard Hat	Hearing Protection
☑ Safety Glasses	Safety Goggles	Face Shield	Nitrile Gloves	PVC Gloves
☑ Leather Gloves	Cut Resist. Gloves	Fall Protection	Fire Resistant Clothing	Rubber Boots
Insect/Animal Repellent	Ivy Blocker/Cleaner	Traffic Cones/Signs	Life Vest/Jacket	
Other:				

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
21.Transport equipment to work area	14.Back Strain 15.Slips/ Trips/ Falls 16.Traffic 17.Cuts/abrasions from equipment 18.Contusions from dropped equipment	 Use proper lifting techniques / Use wheeled transport Minimize distance to work area / Have unobstructed path to work area / Follow good housekeeping procedures Wear proper PPE (high visibility vest or clothing) Wear proper PPE (leather gloves, long sleeves) Wear proper PPE (safety shoes)
22.Moving equipment to its planned location	 Pinch Hazard Slips/ Trips/ Falls 	 Wear proper PPE (leather gloves) Wear proper PPE (leather gloves) Be aware of potential trip hazards / Practice good housekeeping procedures / Mark significant below-grade hazards (i.e. holes, trenches) with safety cones or spray paint
23.Equipment Set-up	 8. Pinch Hazard 9. Cuts/abrasions to knuckles/hands 10. Back Strain 	 Wear proper PPE (leather gloves) Wear proper PPE (leather gloves) Use proper lifting techniques / Use wheeled transport
24. All activities	 41. Slips/ Trips/ Falls 42. Hand injuries, cuts or lacerations during manual handling of materials 43. Foot injuries 44. Back injuries 45. Traffic 46. Wildlife: Stray dogs, Mice/rats, Vectors (i.e. mosquitoes, bees, etc.) 47. High Noise levels 48. Overhead hazards 49. Heat Stress/ Cold Stress 	 47. Be aware of potential trip hazards / Follow good housekeeping procedures/ Mark significant hazards 48. Inspect for jagged/sharp edges, and rough or slippery surfaces / Keep fingers away from pinch points / Wipe off greasy, wet, slippery or dirty objects before handling / Wear leather/ cut-resistant gloves 49. Wear Langan approved safety shoes 50. Use proper lifting techniques / Consider load location, task repetition, and load weigh when evaluating what is safe or unsafe to lift / Obtain assistance when possible 51. Wear high visibility clothing & vest / Use cones or signs to designate work area

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
7. All activities (cont'd)	50. Eye Injuries	 52. Be aware of surroundings at all times, including the presence of wildlife/ Do not approach stray dogs / Carry/use dog/animal repellant / Use bug spray when needed 53. Wear hearing protection 54. Wear hard hat / Avoid areas were overhead hazards exist. 55. Wear proper attire for weather conditions (sunscreen or protective clothing in sunlight, layers for cold weather) / Drink plenty of fluids to avoid dehydration / Takes breaks as necessary to avoid heat/cold stress 56. Wear safety glasses
Additional items.		
Additional Items identified while in the field.		
(Delete row if not needed.)		

Print Name	Sign Name	Date		
Prepared by:				
Reviewed by:				

Job Safety Analysis (JSA) Health and Safety

JSA Title: 55-gallon Drum Sampling

JSA Number: JSA043-01

PERSONAL PROTECTIVE EQUIPMENT (Required or to be worn as needed):				
Safety Shoes	☑ Long Sleeves	Safety Vest (Class 2)	Hard Hat	Hearing Protection
☑ Safety Glasses	☑ Safety Goggles	🛛 Face Shield	☑ Nitrile Gloves	PVC Gloves
Leather Gloves	Cut Resist. Gloves	Fall Protection	Fire Resistant Clothing	Rubber Boots
Insect/Animal Repellent	Ivy Blocker/Cleaner	Traffic Cones/Signs	Life Vest/Jacket	
Other: All Drums are required to be labeled. Langan employees do not open or move undocumented drums or unlabeled drums without proper project manager authorization.				

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
25.Unpack/Transport equipment to work area.	 19.Back Strains 20.Slip/Trips/Falls 21.Cuts/Abrasions from equipment 4. Contusions from dropped equipment 	 Use proper lifting techniques/Use wheeled transport Minimize distance to work area/Unobstructed path to work area/follow good housekeeping procedures. Mark slip/trip/fall hazards with orange safety cones. Wear proper PPE (leather gloves, long sleeves). Wear proper PPE (Langan approved safety shoes).
26.Open Drums	 Hand Injuries, cuts or lacerations when untightening drum locking bolt, removing drum lid strap, or removing lid. Pressure from drums. 	 Inspect for jagged/sharp edges, and rough or slippery surfaces / Keep fingers away from pinch points / Wipe off greasy, wet, slippery or dirty objects before handling / Wear leather/ cut-resistant gloves. Use non- metallic mallet and non-sparking tools/wrenches. Open drum slowly to relieve pressure. Wear proper PPE: face shield and goggles; correct gloves; and over garments.
27.Collecting Soil/Fluid Sample	 Irritation to eye from vapor, soil dust, or splashing Irritation to exposed skin 	 4. Wear proper eye protection including safety glasses/ face shield/googles and when necessary, splash guard. If dust or vapor phase is present, wear appropriate safety breathing gear (1/2 mask or full face mask with correct filter) 5. Wear proper skin protection including nitrile gloves.
28.Closing Drums	1. Hand Injuries, cuts or lacerations when untightening drum locking bolt, removing drum lid strap, or removing lid.	5. Inspect for jagged/sharp edges, and rough or slippery surfaces / Keep fingers away from pinch points / Wipe off greasy, wet, slippery or dirty objects before handling / Wear leather/ cut-resistant gloves. Use non- metallic mallet and non-sparking tools/wrenches.
29.Moving Drums	 Hand Injuries, cuts or lacerations when untightening drum locking bolt, removing drum lid strap, or removing lid. Back Strains 	 Inspect for jagged/sharp edges, and rough or slippery surfaces / Keep fingers away from pinch points / Wipe off greasy, wet, slippery or dirty objects before handling / Wear leather/ cut-resistant gloves. Use non-metallic mallet and non-sparking tools/wrenches. Use proper lifting techniques/Use wheeled transport

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
30. All activities	 51. Slips/ Trips/ Falls 52. Hand injuries, cuts or lacerations during manual handling of materials 53. Foot injuries 54. Back injuries 55. Traffic 56. Wildlife: Stray dogs, Mice/rats, Vectors (i.e. mosquitoes, bees, etc.) 57. High Noise levels 58. Overhead hazards 59. Heat Stress/ Cold Stress 60. Eye Injuries 	 57. Be aware of potential trip hazards / Follow good housekeeping procedures/ Mark significant hazards 58. Inspect for jagged/sharp edges, and rough or slippery surfaces / Keep fingers away from pinch points / Wipe off greasy, wet, slippery or dirty objects before handling / Wear leather/ cut-resistant gloves 59. Wear Langan approved safety shoes 60. Use proper lifting techniques / Consider load location, task repetition, and load weigh when evaluating what is safe or unsafe to lift / Obtain assistance when possible 61. Wear high visibility clothing & vest / Use cones or signs to designate work area 62. Be aware of surroundings at all times, including the presence of wildlife/ Do not approach stray dogs / Carry/use dog/animal repellant / Use bug spray when needed 63. Wear hard hat / Avoid areas were overhead hazards exist. 65. Wear proper attire for weather conditions (sunscreen or protective clothing in sunlight, layers for cold weather) / Drink plenty of fluids to avoid dehydration / Takes breaks as necessary to avoid heat/cold stress 66. Wear safety glasses
Additional items.		
Additional Items identified while in the field.		
(Delete row if not needed.)		

Print Name	Sign Name	Date			
Prepared by:					
Reviewed by:	Reviewed by:				

Job Safety Analysis (JSA) Health and Safety

JSA Title: Site Inspection

JSA Number: JSA024-01

PERSONAL PROTECTIVE EQ	UIPMENT (Required or to be wor	n as needed):			
Safety Shoes	☑ Long Sleeves	Safety Vest (Cl	ass 2)	🛛 Hard Hat	Hearing Protection
Safety Glasses	Safety Goggles	Face Shield		☑ Nitrile Gloves	PVC Gloves
Leather Gloves	Cut Resist. Gloves	Fall Protection		Fire Resistant Clothing	Rubber Boots
Insect/Animal Repellent	Ivy Blocker/Cleaner	Traffic Cones/S	igns	Life Vest/Jacket	
Other:					
JOB STEPS	POTENTIAL HAZ	ARDS		PREVENTATIVE / CORR	ECTIVE ACTION
31.Jobsite Pre-briefing	22.None			eview JSA, SOP's, and discuss h neasures for present hazards wh	nazards that may be present and ile on-site.
2. Working near railroads	1. Passing Trains. 2. Slip/Trips/Falls.	1. Wear reflective vest/ Stay away from tracks/ Do not cross track ft. of train car or when there is a train within view/listen for train ho 2. Be aware of tripping hazards/ Follow good housekeeping proce significant hazards with spray paint or cones.		view/listen for train horn. d housekeeping procedures/ Mark	
3. Walking around site	 Uneven terrain Wildlife: Stray animals, mice/i mosquitoes, bees, etc.) Weather: Heat/cold stress Slip/Trips/Falls Foot injuries Eye injuries 	 4. Pay attention to surrounding area (puddles, wet, f Mark with cones or spray paint. 5. Use bug spray/ Avoid stray animals/Use repellant 		repellant when needed. se sunscreen or protective r/ Drink plenty of fluids/ Take d housekeeping procedures/ Mark s. ety shoes)/ Change wet socks es).	
4. Working near road	 Passing vehicles Slip/Trips/Falls 		 Wear reflective vest/ Stay away from roadway/ Use buddy system/ Pl signage or cones when needed. Be aware of tripping hazards/ Follow good housekeeping procedures, Mark significant hazards with spray paint or cones. 		od housekeeping procedures/ cones.
5. All activities	 61. Slips/ Trips/ Falls 62. Hand injuries, cuts or lacerations during manual handling of materials 63. Foot injuries 64. Back injuries 65. Traffic 		67. Be awa proced 68. Inspect fingers objects	re of potential trip hazards / Follo ures/ Mark significant hazards for jagged/sharp edges, and rou away from pinch points / Wipe o before handling / Wear leather/ angan approved safety shoes	ow good housekeeping gh or slippery surfaces / Keep off greasy, wet, slippery or dirty

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
	 66. Wildlife: Stray dogs, Mice/rats, Vectors (i.e. mosquitoes, bees, etc.) 67. High Noise levels 68. Overhead hazards 69. Heat Stress/ Cold Stress 70. Eye Injuries 	 70. Use proper lifting techniques / Consider load location, task repetition, and load weigh when evaluating what is safe or unsafe to lift / Obtain assistance when possible 71. Wear high visibility clothing & vest / Use cones or signs to designate work area 72. Be aware of surroundings at all times, including the presence of wildlife/ Do not approach stray dogs / Carry/use dog/animal repellant / Use bug spray when needed 73. Wear hearing protection 74. Wear hard hat / Avoid areas were overhead hazards exist. 75. Wear proper attire for weather conditions (sunscreen or protective clothing in sunlight, layers for cold weather) / Drink plenty of fluids to avoid dehydration / Takes breaks as necessary to avoid heat/cold stress 76. Wear safety glasses
Additional items.		
Additional Items identified while in the field. (Delete row if not needed.)		

Print Name	Sign Name	Date
Prepared by:		
Reviewed by:		

ATTACHMENT H

TAILGATE SAFETY BRIEFING FORM

LANGAN TAILGATE SAFETY BRIEFING

Date:	Time:
Leader:	Location:
Work Task:	
	provide some detail of discussion points)
Chemical Exposure Hazards and Contro	bl:
Physical Hazards and Control:	
Air Monitoring:	
PPE:	
Communications:	
Safe Work Practices:	
Emergency Response:	
Hospital/Medical Center Location:	
Phone Nos.:	
Other:	
	(the issues, responsibilities, due dates, etc.)

ATTENDEES

PRINT NAME	COMPANY	SIGNATURE

APPENDIX E CITIZEN PARTICIPATION PLAN



Department of Environmental Conservation

Brownfield Cleanup Program

Citizen Participation Plan for 159 Boerum Street

August 14, 2019

BCP Site No. C224291 159 Boerum Street Brooklyn, NY 11206

www.dec.ny.gov

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* * * * *

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: SPG Boerum LLC ("Applicant") Site Name: 159 Boerum Street ("Site") Site Address: 159 Boerum Street, Brooklyn, NY, 11206 Site County: Kings Site Number: C224291

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 http://www.dec.ny.gov/chemical/61092.html.

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.

Citizen Participation 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 extent of contamination related to the site and nature 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, the significant threat determination for the site had not yet been made.

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 <u>http://www.dec.ny.gov/regulations/2590.html</u>

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:				
Prepare site contact listEstablish document repository(ies)	At time of preparation of application to participate in the BCP.			
 Publish notice in Environmental Notice Bulletin (ENB) announcing receipt of application and 30-day public comment period Publish above ENB content in local newspaper Mail above ENB content to site contact list Conduct 30-day public comment period 	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 Note: Applicant must submit CP Plan to NYSDEC for review and approval within 20 days of the effective date of the BCA.			
Before NYSDEC Approves Remedial Investigation (RI) Work Plan:				
 Distribute fact sheet to site contact list about proposed RI activities and announcing 30-day public comment period about draft RI Work Plan Conduct 30-day public comment period 	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 Completes 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):				
 Distribute fact sheet to site contact list about draft RWP and announcing 45-day public comment period Public meeting by NYSDEC about proposed RWP (if requested by affected community or at discretion of NYSDEC project manager) 	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.			
Conduct 45-day public comment period	ria Classium Action.			
Before Applicant Sta	1			
Distribute fact sheet to site contact list that describes upcoming cleanup action	Before the start of cleanup action.			
After Applicant Completes 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. Note: 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.

After a review of previous environmental reports, the following potential issues of public concern were identified: air quality, health of the community, nuisance odors, noise, and construction-related traffic. These issues are of the most concern to adjacent property businesses and residents. These issues will be addressed in the Remedial Action Work Plan (RAWP), a Community Air Monitoring Program (CAMP), and a site-specific Health and Safety Plan (HASP) for the project, to be approved by NYSDEC prior to work.

The site was developed as early as 1887 with four multi-story commercial/residential buildings (labeled as tailor shop, synagogue, candy packaging, and warehouse), parking, and residential dwellings around 1974, and the site was used as an open-air parking lot as early as 1981. Test pits excavated on-site revealed buried solid waste, including glass, organic fibers, fabric, plastic, automobile tires, coal, ceramics, metal, brick, and concrete as deep as 7.5 feet below grade surface, suggesting that undocumented dumping occurred at some point after the buildings were demolished in 1974.

Contaminants of concern at the property, discussed in more detail in Section 4, include Semi-volatile Organic Compounds (SVOC), polychlorinated biphenyls (PCBs), and metals. The contaminants will be remediated to support the redevelopment of the site for restricted residential use under a NYSDEC-approved RAWP.

Site information is available through Project Contacts mentioned in Section 2 and detailed in Appendix A. The BCP Application, which includes the previous investigations at the site and future reports prepared for NYSDEC, will be available in the document repository discussed above in Section 2 and detailed in Appendix A. The RAWP will include schedules for the planned work to make Citizen Participation Plans (CPPs) as consistent as possible with DER's CP Handbook, Region 2.

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 is located in an area with a large Hispanic-American population nearby. Therefore, all future fact sheets will be translated into Spanish. For additional information, visit: <u>https://statisticalatlas.com/tract/New-York/Kings-County/049300/Race-and-Ethnicity</u>.

4. Site Information

Appendix C contains a map identifying the location of the site.

Site Description

The site is located at 159 Boerum Street, in the East Williamsburg neighborhood of Brooklyn, NY, and is identified as Tax Block 3071, Lot 40 on the Brooklyn Borough Tax Map. A site location map is provided as Figure 1. The site encompasses an area of about 11,180 square-feet (0.26 acres) and is occupied by occupied by an open air asphalt parking lot surrounded by landscaped areas to the north and south. The site is situated on the south-central part of the tax block and is bound by Johnson Avenue to the north, Humboldt Street to the east, Boerum Street to the south, and Graham Avenue (Avenue of Puerto Rico) to the west. A site plan is provided as Appendix C.

History of Site Use, Investigation, and Cleanup

The site encompasses an area of about 11,180 square-feet (0.26 acres) and is occupied by occupied by an open air asphalt parking lot surrounded by landscaped areas to the north and south within the property.

Prior to entry into the BCP, the site was the subject of three environmental investigations, which are documented in the following reports:

- May 22, 2015 Phase I Environmental Site Assessment (ESA), prepared by Hydro Tech Environmental, Corp. (Hydro Tech)
- October 5, 2018 Test Pit Sampling Test Pit Location Plan and Analytical Results, prepared by Langan
- January 2019 Phase I Environmental Site Assessment, prepared by Langan
- May 3, 2019 Limited Subsurface Investigation and Analytical Results, prepared by Langan

Below is a summary of each report:

May 22, 2015 Phase I ESA, prepared by Hydro Tech Environmental, Corp. (Hydro Tech)

Hydro Tech prepared a Phase I ESA in April 2015 in general conformance with ASTM International's Standard Practice for Environmental Site Assessments E1527-13 and the USEPA AAI Rule, for the purpose of identifying RECs in connection with the site. The Phase I ESA was prepared for two parking lots associated with 198 Johnson Avenue (Block 3072, Lot 1) and 157 Boerum Street (Block 3071, Lot 10).

The following REC was identified in the Phase I:

<u>REC 1 – Historic Heating Oil Tanks</u>: A review of available NYC Department of Business (NYCDOB) records identified oil burner permits associated with Block 3071, Lot 10. The suspect presence of heating oil tanks may indicate an adverse environmental impact.

Following further review of the May 22, 2015 Phase I ESA and NYCDOB online query system, the suspected heating oil tanks are likely associated with the properties adjoining the site to the north and east (Block 3071, Lot 10).

October 5, 2018 Test Pit Sampling – Test Pit Location Plan and Analytical Results, prepared by Langan

Langan completed a limited sampling event to investigate soil quality in conjunction with a geotechnical investigation. The investigation was conducted on October 5, 2018, and included excavation of two test pits to about 8 feet below grade surface (bgs) and collection of soil samples. A total of five soil samples were collected from the test pits. Field observations and laboratory analytical results are summarized below:

- <u>Site Geology and Hydrogeology</u>: Beneath the landscaped areas observed throughout the west and northern portions of the site, fill material consisting of buried solid waste within a brown, fine to medium sand and gravel matrix was identified. Solid waste material was heterogeneous and consisted of random distributions of glass, organic fibers, fabric, plastic, automobile tires, coal, ceramics, metal, brick and concrete was observed from surface grade to about 7.5 feet bgs. Groundwater was not encountered during the test pit excavation,but was identified between about 7 to 10 feet bgs at a property located 400 feet southeast of the site during a subsurface investigation performed by Langan.
- <u>Soil</u>: Metals including barium, cadmium, mercury, lead, and zinc were detected at concentrations above Title 6 New York Codes, Rules, and Regulations (NYCRR) Part 375 Unrestricted Use (UU) Soil Cleanup Objectives (SCOs) in soil, with barium, cadmium, lead and mercury exceeding the Restricted Use Restricted-Residential (RRU) SCOs. Barium concentrations also exceeded the Commercial Use SCOs in three soil samples collected from Test Pit 1.

Several semi-volatile organic compounds (SVOC) exceeded the RRU and UU SCOs in soil samples collected from surface grade to 7.5 feet bgs in Test Pit 1. In addition, concentrations of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene were detected in Test Pit 1 at concentrations exceeding both Commercial and Industrial Use SCOs from about 4 to 7.5 feet bgs.

Total polychlorinated biphenyls (PCBs) in two samples collected from shallow fill (Test Pit 1) exceeded UU SCOs. In addition, several pesticides exceeded the UU SCOs in all soil samples collected from the two test pits.

While these detected contaminants are typical of historic fill material, the concentrations at which they were detected are not. The source of contaminant concentrations identified within the soil appears to be the buried solid waste.

January 2019 Phase I Environmental Site Assessment, prepared by Langan

Langan completed a Phase I ESA in January 2019 in general conformance with ASTM International's Standard Practice for Environmental Site Assessments E1527-13 and the USEPA AAI Rule, for the purpose of identifying RECs in connection with the site. The Phase I ESA was prepared 159 Boerum Street (Block 3071, Lot 40).

The following RECs were identified in the Phase I:

REC 1 – SVOC-Impacted Fill at the Subject Property

Langan's October 2018 test pit sampling within the western part of the Subject Property identified fill material consisting of buried solid waste within a brown, fine to medium sand and gravel matrix. Solid waste material was heterogeneous and consisted of random distributions of glass, organic fibers, fabric, plastic, automobile tires, coal, ceramics, metal, brick and concrete. The fill contained SVOCs, pesticides, PCBs, and metals at concentrations above the NYSDEC Part 375 UU and RRU SCOs.

REC 2 – Historical Use of Surrounding Properties

One dry cleaner, Top Hat Cleaners, was identified as a New York State Hazardous Waste Site (SHWS) about 200 feet north and hydraulically upgradient of the Subject Property. The site previously operated as a dry-cleaning facility from as early as 1969. Chlorinated volatile organic compounds (CVOCs) were identified in soil and groundwater at the site and in sub-slab soil vapor samples collected at an off-site property. Impacted groundwater and/or soil vapor may have migrated to the Subject Property.

May 3, 2019 Limited Subsurface Investigation and Analytical Results, prepared by Langan

Langan completed a limited subsurface sampling event to investigate potential soil and groundwater impacts present at the site. The investigation was conducted on May 3, 2019, and included the advancement of 10 soil boings to depths ranging between 12 and 32 feet bgs, installation of one temporary monitoring well at soil boring SB-01, and

collection of soil and groundwater samples. A total of four soil samples and one groundwater sample were submitted for laboratory analysis to Alpha Analytical Inc., an NYSDOH Environmental Laboratory Approval Program (ELAP)-certified laboratory located in Westborough, Massachusetts. Field observations and laboratory analytical results are summarized below:

- <u>Site Geology and Hydrogeology</u>: Historic fill material was encountered beneath the site cover consisting of landscaped areas and/or asphalt and extends to depths varying from about 5 to 9 feet bgs. The historic fill material predominantly consists of gray, black, and brown to dark brown, fine to medium sand with varying amounts of brick, concrete, and silt. The fill layer is underlain by native soils typically consisting of tan to brown, fine- to coarse-grained sand with varying amounts of silt. Organic-like odors and elevated photoionization detector (PID) readings (maximum 72.1 parts per million [ppm]) were observed in SB-06 from 1.5 to 2 feet bgs. Groundwater was encountered in soil boring SB-01 at about 23.5 feet bgs in the northeast portion of the site.
- <u>Soil</u>: Metals including barium, copper, lead, mercury, and zinc were detected at concentrations above UU SCOs in soil samples collected from historic fill, with barium and lead exceeding the RRU SCOs. Barium and lead concentrations also exceeded the Commercial Use SCOs in two samples collected from SB-06 and SB-07. Several SVOCs exceeded the RRU and UU SCOs in soil samples collected from 2 to 4 feet bgs in borings SB-03, SB-06 and SB-07. Concentrations of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene exceeded both the Commercial and Industrial Use SCOs from about 2 to 4 feet bgs. In addition, benzo(k)fluoranthene, fluoranthene, and phenanthrene were detected at concentrations exceeding Commercial Use SCOs from about 2 to 4 feet bgs.

VOCs including 1,2,4-trimethylbenzene, benzene, ethylbenzene, naphthalene, toluene, and total xylenes exceeded the UU SCOs in soil samples collected from shallow fill (2 to 4 feet bgs) in the northern portion of the site. Concentrations of naphthalene were detected in borings SB-06 and SB-07 (maximum concentration of 3,400 mg/kg in SB-06) above the Commercial and Industrial Use SCOs from about 2 to 4 feet bgs. While these detected contaminants are typical of historic fill material, the concentrations at which they were detected are not. The source of contaminant concentrations identified within the soil are indicative of contamination from historic site uses and/or buried solid waste.

 <u>Groundwater Quality</u>: Dissolved metals including barium, beryllium, chromium, copper, iron, lead, magnesium, manganese, nickel, selenium, and sodium were detected at concentrations above the NYSDEC Title 6 of the Official Part 703.5 and the NYSDEC Technical Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values for Class GA Water (NYSDEC SGV).

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 investigation and 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.

Investigation

The Applicant will conduct an investigation of the site officially called a "remedial investigation" (RI). This investigation will be performed with NYSDEC oversight.

The site investigation has several goals:

- 1) Define the nature and extent of contamination in soil, surface water, groundwater and any other parts of the environment that may be affected;
- 2) Identify the source(s) of the contamination;
- 3) Assess the impact of the contamination on public health and the environment; and
- 4) Provide information to support the development of a proposed remedy to address the contamination or the determination that cleanup is not necessary.

The Applicant has submitted a draft "Remedial Investigation Work Plan" to NYSDEC for review and approval. NYSDEC made the draft plan available to the public review during a 30-day public comment period.

When the investigation is complete, a Remedial Investigation Report (RIR) will be

prepared and submitted to NYSDEC, which will determine if the investigation goals and requirements of the BCP have been met or if additional work is needed before a remedy can be selected. This report also will recommend whether cleanup action is needed to address site-related contamination. The investigation report is subject to review and approval by NYSDEC.

NYSDEC will use the information in the RIR 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.

or

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.

When the Applicant submits a draft Remedial Work Plan for approval, NYSDEC would announce the availability of the draft plan for public review during a 45-day public comment period.

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 (FER) 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 FER. 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):

Rafi Alam Project Manager NYSDEC Section A, Remedial Bureau B Division of Environmental Remediation 625 Broadway Albany, New York 12233 Phone: (518)-402-8606 Email: Rafi.Alam@dec.ny.gov

New York State Department of Health (NYSDOH):

Mark S Sergott Project Manager NYSDOH Empire State Plaza Corning Tower Room 1787 Albany, NY 12237 Phone: (518) 402-7860 Email: beei@health.ny.gov

Remedial Engineer and Volunteer's Representative

Jason Hayes, P.E. Langan Engineering 21 Penn Plaza 360 W 31st Street, 8th Floor New York, New York 10001 Phone: 212-479-5427 Email: jahayes@langan.com

Locations of Reports and Information

The facilities identified below are being used to provide the public with convenient access to important project documents:

Brooklyn Public Library - Bushwick Branch

340 Bushwick Avenue Brooklyn, NY 11206 (718) 602-1348

<u>Hours</u>

Monday, Tuesday, and Friday:	10 AM – 6 PM
Wednesday:	10 AM – 8 PM
Thursday:	1 PM – 8 PM
Saturday:	10 AM – 5 PM

Brooklyn Community Board 1

435 Graham Avenue Brooklyn, NY 11211 (718) 389-0009 Email: bk01@cb.nyc.gov Website: www.nyc.gov/html/bkncb1

Appendix B - Site Contact List

Chief Executive Officer

Mayor Bill de Blasio City Hall 260 Broadway Avenue New York, NY 10007

NYC Comptroller

Hon. Scott Stringer NYC Comptroller 1 Centre Street New York, NY 10007

NYC Public Advocate

Hon. Jumaane Williams 1 Centre Street New York, NY 10007

NYC Council

Hon. Antonio Reynoso NYC Councilmember 244 Union Avenue Brooklyn, NY 11211

NYS Senator

Hon. Julia Salazaar NYS Senator 249 South 1st Street Brooklyn, NY 11237

NYS Assembly Member

Hon. Maritza Davila NYS Assembly Member 249 Wilson Avenue Brooklyn, NY 11237

U.S. Senators

Hon. Charles Schumer 780 Third Avenue, Suite 2301 New York, NY 10017

Hon. Kirsten Gillibrand U.S. Senator 780 Third Avenue, Suite 2601 New York, NY 10017

U.S. House of Representative

Hon. Nydia Velazquez 266 Broadway, Suite 201 Brooklyn, NY 11211

New York City Planning Commission

Marisa Lago, Commissioner NYC Department of City Planning 120 Broadway, 31st Floor New York, NY 10271

Borough of Brooklyn, Borough President

Hon. Eric L. Adams 209 Joralemon Street Brooklyn, NY 11201 (718) 802-3700

Borough of Brooklyn, Department of City Planning

16 Court Street, 7th Floor Brooklyn, NY 11241 (718) 780-8280

NYC Office of Environmental Remediation

Mark McIntyre, Director 100 Gold Street – 2nd Floor New York, NY 10038

NYC Department of Environmental Protection

Julie Stein Office of Environmental Assessment & Planning NYC Dept. of Environmental Protection 96-05 Horace Harding Expressway Flushing. NY 11373

Brooklyn Community Board 1 Dealice Fuller, Chairperson 435 Graham Avenue Brooklyn, NY 11211 (718) 389-0009 Email: <u>bk01@cb.nyc.gov</u>

Nancy T. Sunshine Kings County Clerk 360 Adams Street – Room 189 Brooklyn, NY 11201

Local news media from which the community typically obtains information:

The Brooklyn Paper 1 Metrotech Center, Suite 1001 Brooklyn, NY 11201 (718) 260-2500

New York Daily News 4 New York Plaza New York, NY 10004 (212) 210-2100 NY 1 Spectrum News 75 Ninth Avenue New York, NY 10011 (212) 379-3311 New York Post 1211 Avenue of the Americas New York, NY 10036

Courier-Life Publications 1 Metrotech Center #10T Brooklyn, NY 11201

Brooklyn Daily Eagle 16 Court Street, Suite 1208 Brooklyn, NY 11241

The Brooklyn Papers 1 Metrotech Center, Suite 1001 Brooklyn, NY 11201

The public water supplier which services the area in which the property is located:

The responsibility for supplying water in New York City is shared between the NYCDEP, the Municipal Water Finance Authority, and the New York City Water Board: NYCDEP – Public Water Supplier Vincent Sapienza, Commissioner 59-17 Junction Boulevard Flushing, NY 11373

New York City Municipal Water Finance Authority 255 Greenwich Street, 6th Floor New York, NY 10007

New York City Water Board NYC Department of Environmental Protection 59-17 Junction Boulevard, 8th Floor Flushing, NY 11373

Any person who has requested to be placed on the contact list:

No requests have been made by individuals for inclusion on the contact list.

Local Daycare Facilities and Schools:

P.S. 147 Isaac Remsen (about 0.2 miles east of the site) Sandra Noyola, Principal 325 Bushwick Avenue Brooklyn, NY 11206 (718) 497-0326

P.S. 250 George H. Lyndsay(about 0.2 miles northwest of the site)Roseann Lacioppa, Principal108 Montrose AvenueBrooklyn, NY 11206(718) 384-0889

The Williamsburg High School of Art and Technology (about 0.3 miles north of the site) Cara Tait, Principal 223 Graham Avenue Brooklyn, NY 11206 (718) 599-1207

East Williamsburg Academy (about 0.5 miles northeast of the site) Rosemary Vega, Principal 850 Grand Street Brooklyn, NY 11211 (718) 387-2800

The High School for Enterprise, Business and Technology (about 0.5 miles northeast of the site) Holger Carillo, Principal 850 Grand Street P.S. 257 John F. Hylan
(about 0.1 miles southeast of the site)
Brian De Vale, Principal
60 Cook Street
Brooklyn, NY 11206
(718) 384-7128

P.S. 196 Ten Eyck (about 0.2 miles east of the site) Janine Santaromita, Principal 207 Bushwick Avenue Brooklyn, NY 11206 (718) 497-0139

PROGRESS High School for Professional Careers (about 0.5 miles northeast of the site) Jasmin Pena, Principal 850 Grand Street Brooklyn, NY 11211 (718) 387-0228

P.S. 018 Edward Bush
(about 0.5 miles northwest of the site)
Alison Alexander, Principal
101 Maujer Street
Brooklyn, NY 11206
(718) 387-3241

The Brooklyn Latin School (about 0.3 miles northwest of the site) Gina Mautschke, Principal 223 Graham Avenue Brooklyn, NY 11206 Brooklyn, NY 11211 (718) 387-2800

P.S. 120 Carlos Tapia
(about 0.4 miles southeast of the site)
Lizabeth Caraballo, Principal
18 Beaver Street
Brooklyn, NY 11206
(718) 455-1000

Bushwick United HDFC 9 (about 0.4 miles south of the site) 741 Flushing Avenue Brooklyn, NY 11206 (347) 497-3676

Stagg Street Center for Children (about 0.3 miles northwest of the site) Ms. Webb, Executive Director 77 Stagg Street Brooklyn, NY 11206 (718) 338-1395

Creative Academy of NY LLC (about 0.3 miles northeast of the site) 228 Bushwick Avenue Brooklyn, NY 11206 (347) 689-2222

Graham Child Care Center (about 0.3 miles north of the site) 222 Graham Avenue Brooklyn, NY 11206 (718) 387-9482

Young Women's Leadership School of Brooklyn (about 0.2 miles east of the site)

(718) 366-0154

Lyons Community School (about 0.3 miles north of the site) Karon Onishi, Principal 223 Graham Avenue Brooklyn, NY 11206 (718) 782-0918

Bushwick United HDFC 4 (about 0.4 miles north of the site) 178 Leonard Street Brooklyn, NY 11206 (347) 331-0470

Williamsburg Charter High School (about 0.4 miles southeast of the site) Tanisha Williams, Principal 198 Varet Street Brooklyn, NY 11206 (718) 782-9830

Young Garden Day Care (about 0.5 miles west of the site) 11 Meserole Street Brooklyn, NY 11206 (347) 987-4720

I.S. 318 Eugenio Maria De Hostos
(about 0.4 miles southwest of the site)
Leander Windley, Principal
101 Walton Street
Brooklyn, NY 11206
(718) 782-0589

Tender Tots Day Care, Preschool & After School Programs (about 0.4 miles south of the site) Catherine Mitchell, Principal 325 Bushwick Avenue Brooklyn, NY 11206 (718) 387-5641

M.S. 582 (about 0.2 miles northeast of the site) Jeffrey Merced, Principal 207 Bushwick Avenue Brooklyn, NY 11206 (718) 456-8218

Central Brooklyn Seventh Day Adventist School (about 0.07 miles west of the site) Berlin Pena, Pastor 130 Boerum Street Brooklyn, NY 11206 (718) 388-9338 Jenny Nearchou, Director 810 Flushing Avenue Brooklyn, NY 11206 (718) 298-3944

Acorn Community High School (about 0.35 miles north of the site) Andrea Piper, Principal 561 Grand Street Brooklyn, NY 11211 (718) 455-4635

BWCCS2 Middle School (about 0.25 miles southwest of the site) Joan Walrond, Chair 11 Bartlett Street Brooklyn, NY 11206 (718) 302-7700

Residents, owners, and occupants of the site:

The site is located at 159 Boerum Street and is identified on New York City Kings County tax maps as Block 3071, Lot 40. The about 11,180-square-foot site is situated on the south-central part of the tax block and is occupied by an open air asphalt parking lot owned by LB II Associates LLC and is surrounded by landscaped areas to the north and south within the property. The Applicant, SPG Boerum LLC, operates the site.

Adjacent properties include:

132 Graham Realty Corp.Jenny Yoo131 Graham Avenue134 Graham AvenueBrooklyn, NY 11206Brooklyn, NY 11206Domenech NickomedesDev Realty, LLC136 Graham Avenue138 Graham AvenueBrooklyn, NY 11206Brooklyn, NY 11206

Lindsay Bushwick Association 170 Johnson Avenue Brooklyn, NY 11206

NYC Housing Authority 125 Humboldt Street Brooklyn, NY 11206

SURCE Corporation 140 Graham Avenue Brooklyn, NY 11206 64 Pulaski Equities LLC 130 Graham Avenue Brooklyn, NY 11206

NYC Housing Authority 160 Boerum Street Brooklyn, NY 11206

64 Pulaski Equities LLC 130 Graham Avenue Brooklyn, NY 11206

Community, Civic, Religious and Other Environmental Organizations:

Eastern District YMCA 125 Humboldt St Brooklyn, NY 11206

Central Brooklyn Spanish SDA Church 130 Boerum St Brooklyn, NY 11206

Antonia Yuille - Director Consolidated Edison Corporate Affairs 30 Flatbush Avenue Brooklyn, NY 11217

Raquel Queme - President 90th Police Precinct 211 Union Avenue Brooklyn, NY 11211

St Nicholas NPC 108 Montrose Ave Brooklyn, NY 11206

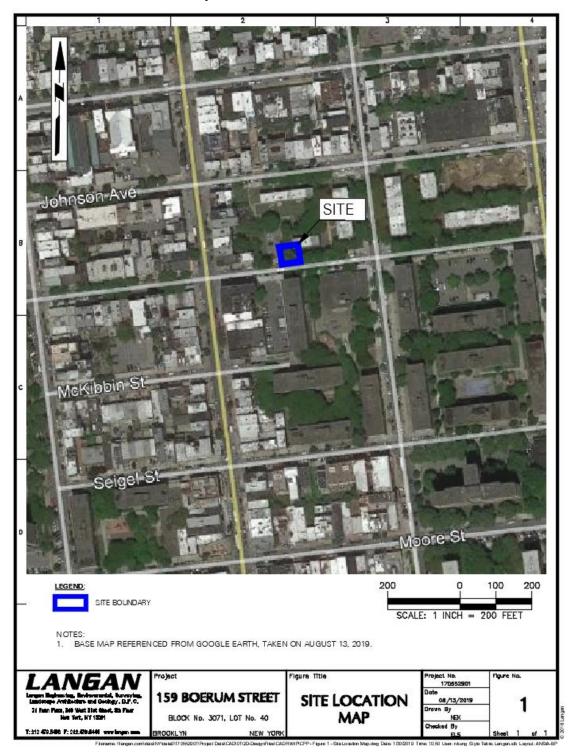
Battalion 35 Engine 216 Ladder 108 187 UNION AVENUE Brooklyn, NY 11211 NYCHA Borinquen II Management Development Office 130 Humboldt Street Brooklyn, NY 11206

NYCHA Borinquen II President – Resident Association 130 Humboldt Street Brooklyn, NY 11206

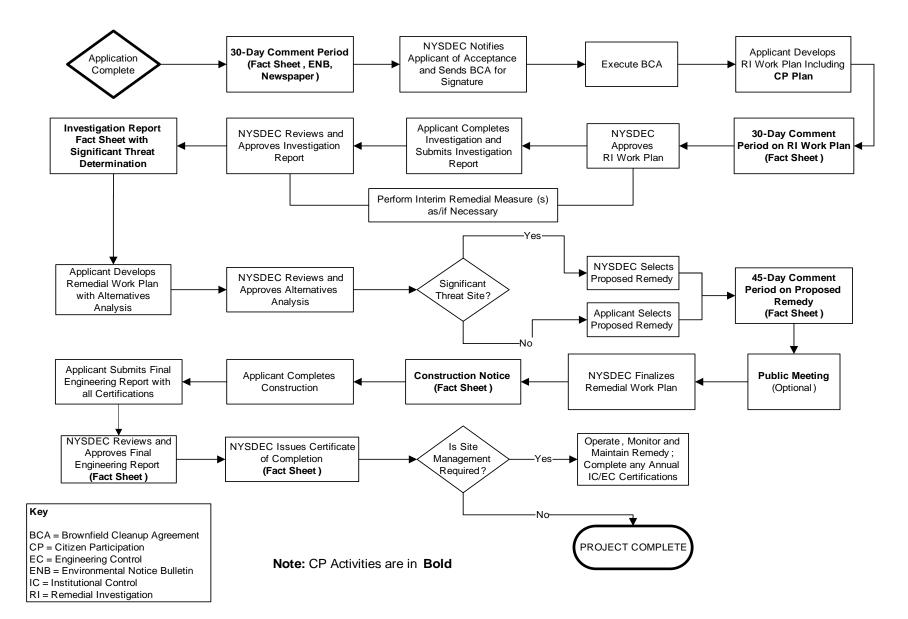
Eastern District YMCA Attn: Executive Director 125 Humboldt St Brooklyn, NY 11206

Lindsay Park Housing Corp 202 Union Ave Brooklyn, NY 11211

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: 159 Boerum Street

Site Number: C224291

Site Address and County: 159 Boerum Street, Brooklyn, NY, 11206

Remedial Party(ies): SPG Boerum 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.

After a review of previous environmental reports, potential issues of environmental and public concern were identified as: air quality, soil quality, health of workers and community, nuisance odors, noise, and construction-related traffic. These issues will be addressed in the Remedial Action Work Plan (RAWP), a Community Air Monitoring Program (CAMP) and/or a site-specific Health and Safety Plan (HASP) for the project to be approved by the New York State Department of Environmental Conservation (NYSDEC) prior to work. Air monitoring and site controls will be in place, in accordance with NYSDEC and NYSDOH regulations, to minimize the environmental impacts referenced above. In order to inform the public of ongoing environmental investigation and remediation efforts and to help alleviate associated environmental and public health concerns, all reports issued in relation to this project will be stored in the two document repositories for easy public access.

How were these issues and/or information needs identified?

The site was subject to limited-scope environmental investigations in October 2018. The investigations identified soil contamination, including historic fill and metals-impacted soil. Other concerns, such as worker and community health and safety, nuisance odors, noise and construction-related traffic, are predicted to be of concern during remediation of the site.

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. *No additional information is needed from the community at this time.*

How were these information needs identified? $\ensuremath{\text{N/A}}$

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.

The community has been and will continue to be made aware of the following issues and information:

- Contaminants of concern related to historic site use;
- Project contacts and ways to get information;
- Components of the selected remedy;

- Progress and major project milestones; and
- Remediation and construction schedule.

Information will be communicated to the public as outlined in the Citizen Participation Plan. NYSDEC and NYSDOH contacts are provided in this CPP. Two repositories exist for the public to review documentation.

How were these issues and/or information needs identified?

They were identified through a review of media coverage, public concerns that arose during the BCP application process, available project information, and experience on similar projects.

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/zoning at and around site: Residential Agricultural Recreational Commercial Industrial
 b. Residential type around site: Irban I Suburban I Rural
 c. Population density around site: ☑ High □ Medium □ Low
 d. Water supply of nearby residences: Public
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: *Not required*

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**: All future fact sheets will be translated into Spanish.

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: See Contact List

☑ Local Officials: See Contact List

- Media: See Contact List
- Business/Commercial Interests: See Contact List
- □ Labor Group(s)/Employees: Click here to enter text.
- □ Indian Nation: Click here to enter text.
- ☑ Citizens/Community Group(s): See Contact List
- **Environmental Justice Group(s):** Click here to enter text.
- **Environmental Group(s):** Click here to enter text.
- ☑ Civic Group(s): See Contact List
- **Recreational Group(s):** Click here to enter text.
- **Other(s):** Click here to enter text.

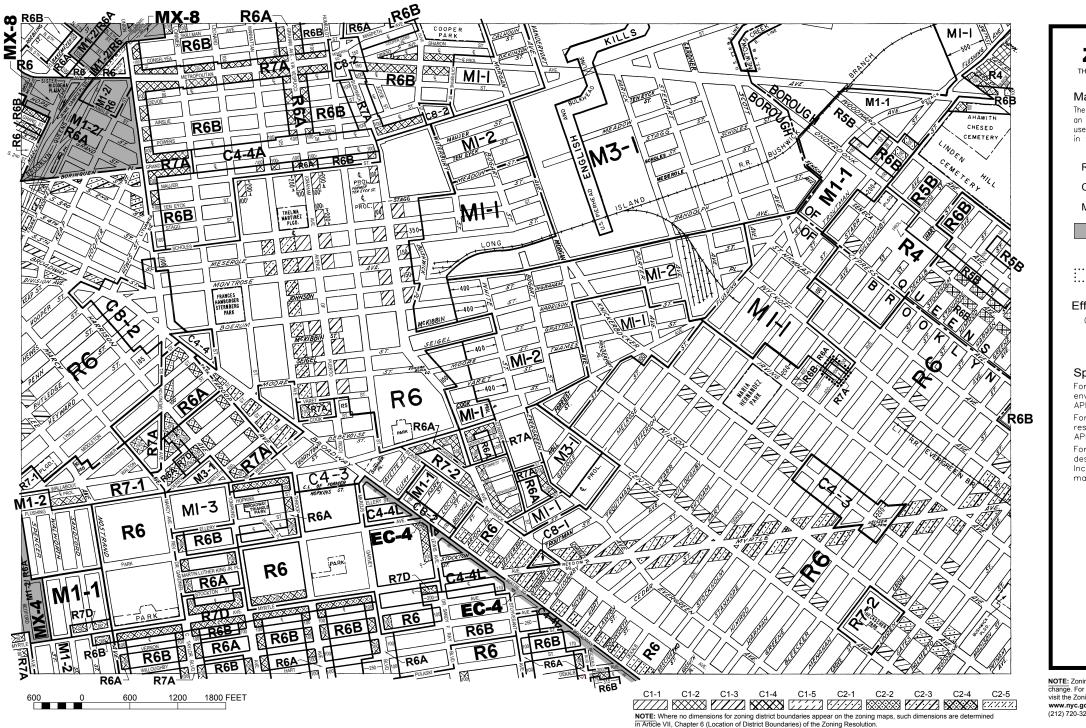
Prepared/Updated By: Langan Engineering, Environmental,	Date: July 24, 2019
Surveying, Landscape Architecture and Geology, D.P.C	

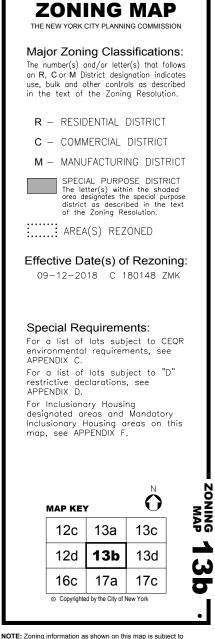
Date: 8-12-19

Reviewed/Approved By: Thomas V. Panzone

APPENDIX F

New York City Planning Commission Zoning Map





NOTE: Zoning information as shown on this map is subject to Change. For the most up-to-date zoning information for this map, visit the Zoning section of the Department of City Planning website: www.nyc.gov/planning or contact the Zoning Information Desk at (212) 720-3291.

APPENDIX G PROJECT PERSONNEL RESUMES

JASON J. HAYES, PE, LEED AP

PRINCIPAL/VICE PRESIDENT ENVIRONMENTAL ENGINEERING

Mr. Hayes has experience in New York, New Jersey, Washington D.C., California, Washington, Oregon, Alaska, and Internationally. His experience includes Environmental Protection Agency (EPA), New York State (NYS) Brownfields applications, investigation, and remediation; New York City Department of Environmental Protection (NYCDEP) and New York City Office of Environmental Remediation (OER) E-designated site applications, investigations, and remediation. His expertise also includes Phase I and II Environmental Site Investigations and Assessments; contaminated building cleanup and demolition; Underground Storage Tank (UST) permitting, removal specifications, and closure reporting; soil vapor intrusion investigation and mitigation system design (depressurization systems, etc.); development of groundwater contaminant plume migration models; environmental analysis; and oversight, design and specification generation for remediation operations with contaminants of concern to include polychlorinated biphenyls (PCBs), solvents, mercury, arsenic, petroleum products, asbestos, mold and lead.

SELECTED PROJECTS

- Confidential Location (Remediation for Mercury-Contaminated Site), New York, NY
- Confidential Location (Phase II ESI and Remedial Design for Mercury Impacted Site), Brooklyn, NY
- NYC School Construction Authority (PCB Remediation), Various Locations, New York, NY
- 28-29 High Line (Phase I ESA, Phase II ESI, and Environmental Remediation), New York, NY
- Georgetown Heating Plant (Phase II ESI and Remedial Design for Mercury Impacted Site), Washington D.C.
- 268 West Street (BCP Application, RI and RIWP), New York, NY
- Confidential Multiple Mixed-Use Tower Location (BCP Application, RI, Phase I ESA, and Phase II ESI), New York, NY
- Dock 72 at Brooklyn Navy Yard, (NYS Voluntary Cleanup Program), Brooklyn, NY
- 27-21 44th Drive (BCP Application, Remedial Investigation Phase I ESA, and Phase II ESI), Long Island City, NY
- Purves Street Development, BCP Application, RAWP, and Phase II ESI, Long Island City, NY
- 267-273 West 87th Street (BCP Application, Remedial Investigation, RIWP, RAWP), New York, NY
- New York Aquarium, Shark Tank and Animal Care Facility (Environmental Remediation), Coney Island, NY
- International Leadership Charter School (Environmental Remediation), Bronx, NY
- West & Watts (BCP Application), New York, NY
- Hudson Yards Redevelopment (Phase I ESA and Phase II ESI), New York, NY



EDUCATION

M.S., Environmental Engineering Columbia University

B.S., Chemistry, Environmental Toxicology Humboldt State University

Business Administration (minor) Humboldt State University

PROFESSIONAL REGISTRATION

Professional Engineer (PE) in NY

LEED Accredited Professional (LEED AP)

Troxler Certification for Nuclear Densometer Training

CPR and First Aid Certification

OSHA 40-Hour HAZWOPER

OSHA HAZWOPER Site Supervisor

AFFILIATIONS

US Green Building Council, NYC Chapter (USGBC), Communications Committee



- 627 Smith Street (RI and Report), Brooklyn, NY
- Gateway Center II Retail (Phase I ESA and Phase II ESI), Brooklyn, NY
- 261 Hudson Street (Phase I ESA, Phase II ESI, BCP, and RAWP), New York, NY
- Riverside Center, Building 2 (BCP, Phase I ESA and Phase II ESI), New York, NY
- New York Police Academy, (Sub-Slab Depressurization and Vapor Barrier System), College Point, NY
- Bronx Terminal Market (BCP, RIWP, RAWP, Phase I ESA and Phase II ESI), Bronx, NY
- Jacob Javits Convention Center (Phase I ESA and Phase II ESI), New York, NY
- Yankee Stadium Development Waterfront Park (NYSDEC Spill Sites), Bronx, NY
- Bushwick Inlet Park (Phase I ESA, Approvals for NYC E-Designation), Brooklyn, NY
- Silvercup West (BCP, RIWP, RIR, RAWP, and RAA), Long Island City, NY
- 29 Flatbush, Tall Residential Building (Groundwater Studies, RIR and RAWP), Brooklyn, NY
- Gowanus Village I (BCP, RIWP and RIR), Brooklyn, NY
- Sullivan Street Hotel (Site Characterization Study and Owner Representation), New York, NY
- Riker's Island Co-Generation Plant (Soil and Soil Vapor Quality Investigations), Bronx, NY
- The Shops at Atlas Park (Sub-Slab Depressurization and Vapor Barrier Design), Glendale, NY
- Memorial Sloan-Kettering Cancer Center (Subsurface and Soil Vapor Intrusion Investigations), New York, NY
- Element West 59th Street (Oversight and Monitoring of Sub-Slab Depressurization and Vapor Barrier Systems), New York, NY
- Teterboro Airport (Delineation and Remedial Oversight of Petroleum-Contaminated Soils), Teterboro, NJ
- Proposed New York JETS Stadium (Phase I ESA), New York, NY
- Former Con Edison Manufactured Gas Plant Sites (Research Reports), New York, NY
- 7 World Trade Center (Endpoint Sampling and Final Closure Report), New York, NY
- Peter Cooper Village, Environmental Subsurface Investigations, New York, NY

SELECTED PUBLICATIONS, REPORTS, AND PRESENTATIONS

NYC Mayor's Office of Environmental Remediation – Big Apple Brownfield Workshop – Presented on Soil Vapor Intrusion Remedies (e.g., SSD Systems, Vapor Barriers, Modified HVAC)

New York City Brownfield Partnership – Presented on environmental considerations and complications of the Hudson Yards Development

Urban Land Institute (ULI), member

Commercial Real Estate Development Associations (NAIOP), member

NYC Brownfield Partnership, member Waterfront Development Technical Course – Presented on Impacted Waterfront Planning Considerations

MICHAEL D. BURKE, PG, CHMM, LEED AP

PRINCIPAL/VICE PRESIDENT

ENVIRONMENTAL ENGINEERING AND REMEDIATION

Mr. Burke is a geologist/environmental scientist whose practice involves site investigation and remediation, transactional due diligence, environmental site assessments, in-situ remedial technology, and manufactured gas plant (MGP) site characterization and remediation. His additional services include multi-media compliance audits, sub-slab depressurization system design, non-hazardous and hazardous waste management, emergency response, community air monitoring programs, environmental and geotechnical site investigations, and health and safety monitoring. He has experience with projects in the New York State Department of Environmental Conservation (NYSDEC) and New York State Brownfield Cleanup (NYS BCP) Programs; Inactive Hazardous Waste, and Spill Programs, and New York City Office of Environmental Remediation (OER) e-designated and New York City Voluntary Cleanup Program (NYC VCP) sites.

SELECTED PROJECTS

- 227-14 North Conduit Avenue, Industrial Wastewater Compliance, Jamaica, NY
- 420 Kent Avenue, NYS Brownfield Cleanup Program, Brooklyn, NY
- 572 Eleventh Avenue, NYC VCP, New York, NY
- Monian Site A, OER E-Designated Site, New York, NY
- 537 Sackett Street, Gowanus Canal Due Diligence/MGP Site, Brooklyn, NY
- ABC Blocks 25, 26 and 27, NYS Brownfield Cleanup Program Sites, Long Island City, NY
- 432 Rodney Street, NYS Brownfield Cleanup Program, Petroleum and Chlorinated Volatile Organic Compound Investigation and Remediation, Brooklyn, NY
- 787 Eleventh Avenue, NYS Brownfield Cleanup Program Site, New York, NY
- President Street at Gowanus Canal, NYS Brownfield Cleanup Program Site, Brooklyn, NY
- 22-36 Second Avenue at Gowanus Canal, NYS Brownfield Cleanup Program Site, Brooklyn, NY
- 563 Sacket Street, NYS Brownfield Cleanup Program Site, MGP Investigation, and Remediation, Brooklyn, NY
- 156-162 Perry Street, NYS Brownfield Cleanup Program Site, New York, NY
- Christopher and Weehawken Streets, NYS Brownfield Cleanup Program, New York, NY
- Phelps Dodge Block 2529 (Lots 40, 50, and 45), Inactive Hazardous Waste Disposal Site, Maspeth NY
- 42-50 24th Street, NYS Brownfield Cleanup Program Site, Long Island City, NY
- Storage Deluxe (163 6th Street), OER E-Designation Site, New York, NY



EDUCATION

M.S., Environmental Geology Rutgers University

B.S., Geological Sciences Rutgers University

B.S., Environmental Science Rutgers University

PROFESSIONAL REGISTRATION

Professional Geologist (PG) in NY

Certified Hazardous Materials Manager – CHMM No. 15998

LEED Accredited Professional (LEED AP)

OSHA Certification for Hazardous Waste Site Supervisor

OSHA 29 CFR 1910.120 Certification for Hazardous Waste Operations and Emergency Response

NJDEP Certification for Community Noise Enforcement

Troxler Certification for Nuclear Densometer Training



- Prospect Park Redevelopment, Landfill Reclamation, Prospect Park, NJ
- 431 Carroll Street, Gowanus Canal Due Diligence, Brooklyn, NY
- 76 4th Street Property, Gowanus Due Diligence, Brooklyn, NY
- Foxgate/MREC, Due Diligence and Solid Waste Compliance, Central Islip, NY
- 175-225 3rd Street at Gowanus Canal, NYS Brownfield Cleanup Program, Brooklyn, NY
- New York University Tandon School of Engineering, Spill Investigation/Remediation Dual Phase Recovery, and Laser Fluorescence Investigation, Brooklyn, NY
- 2420-2430 Amsterdam Avenue, NYS Brownfield Cleanup Program/Board of Standards and Appeals Variance, New York, NY
- 170 Amsterdam Avenue, NYC VCP, New York, NY
- 538-540 Hudson Street, NYS Brownfield Cleanup Program (Former Gas Station), New York, NY
- 234 Butler Street, Gowanus Canal Due Diligence, Brooklyn, NY
- 550 Clinton Street, NYS Brownfield Cleanup Program E-Designation, Brooklyn, NY
- 111 Leroy Street, OER E-Designation Site, New York, NY
- 335 Bond Street, NYS Brownfield Cleanup Program, New York, NY
- Gowanus Canal Northside, NYS BCP Former Fuel Oil Terminal, Brooklyn, NY
- Multiple Buildings, Major Oil Storage Facility, Gowanus Canal Location, Brooklyn, NY
- 197-205 Smith Street at Gowanus Canal, MGP Due Diligence, Brooklyn, NY
- 450 Union Street at Gowanus Canal, NYS Brownfield Cleanup Program, Brooklyn, NY
- 86 Fleet Place, NYC VCP E-Designation, Brooklyn, NY
- New York University College of Nursing at 433 1st Avenue, NYS BCP, Bronx, NY
- Retail Building at 225 3rd Street, Brooklyn, NY
- 29-37 41st Avenue, NYS Brownfield Cleanup Program, Long Island City, NY
- 43-01 22nd Street, NYS Brownfield Cleanup Program, Long Island City, NY
- Compliance Audit for NYU at Washington Square Park, New York, NY
- Former Watermark Locations, NYS Brownfield Cleanup Program, Chlorinated Volatile Organic Compound Investigation and Remediation; AS/SVE, Brooklyn, NY
- Former Gas Station (1525 Bedford Avenue), Brooklyn, NY
- NYS Brownfield Cleanup Program at 514 West 24th Street, New York, NY
- Gowanus Canal Due Diligence at 76 4th Street, Brooklyn, NY
- Urban Health Plan, Medical Building, NYS Brownfield Cleanup Program CVOC Investigation and Remediation, Bronx, NY
- 420 East 54th Street, NYS Spill Closure, New York, NY
- Equity Residential at 160 Riverside Boulevard, NYS Spill Closure, New York, NY
- 357-359 West Street and 156 Leroy Street, NYC VCP, New York, NY
- Emergency Spill Response at 322 West 57th Street, Investigation and Closure, New York, NY

- Hurricane Sandy, Emergency Response at 21 West Street, New York, NY
- Hurricane Sandy, Emergency Response at 71 Pine Street, New York, NY
- Greenpoint Landing, NYC E-Designation, Brooklyn, NY
- 23-01 42nd Road, NYS Brownfield Cleanup Program, Long Island City, NY
- Greenpoint Waterfront Development, NYS Brownfield Cleanup Program, Brooklyn, NY
- 125th Street and Lenox Avenue, NYC VCP, New York, NY
- Whitehead Realty Solvent Site, Inactive Hazardous Waste site, CVOC
 - Investigation and Remediation, Brooklyn, NY
- SunCap Property Group Environmental On-Call Consulting, Various Locations, Nationwide
- Consolidated Edison Company of New York, Underground Storage Tank On-Call Contract, Five Boroughs of New York City, NY
- Consolidated Edison Company of New York, Appendix B Spill Sites
 On-Call Contract, Five Boroughs of New York City, NY
- Meeker Avenue Plume Trackdown Site, Brooklyn, NY
- Distribution Facility, Superfund Redevelopment, Long Island City, NY
- Edison Properties, West 17th Street Development Site (Former MGP Site), New York, NY
- Con Edison on Governors Island, Dielectric Fluid Spill, Investigation and Remediation, New York, NY
- 144-150 Barrow Street, NYS Brownfield Cleanup Program, New York, NY
- West 17th Street Development, NYS Brownfield Cleanup Program, MGP Investigation and Remediation, New York, NY
- Montefiore Medical Center, Emergency Response, PCB Remediation, Bronx, NY
- New York University, 4 Washington Square Village Fuel Oil Remediation, New York, NY
- NYCSCA, Proposed New York City School Construction Sites, Five Boroughs of New York City, NY
- Con Edison, East 60th Street Generating Station, New York, NY
- Residential Building at 82 Irving Place, Environmental Remediation, New York, NY
- 1113 York Avenue, Storage Tank Closures, New York, NY
- Peter Cooper Village/Stuyvesant Town, Phase I ESA, New York, NY
- Superior Ink, Waste Characterization and Remedial Action Plans, New York, NY
- Bronx Mental Health Redevelopment Project, Phase I ESA, Bronx, NY
- 2950 Atlantic Avenue, Site Characterization Investigation, Brooklyn, NY
- Con Edison, East 74th Street Generating Station, Sediment Investigation, New York, NY
- Con Edison, First Avenue Properties, New York, NY
- Queens West Development Corp. Stage II, Long Island City, NY
- Article X Project Environmental Reviews, Various New York State Electrical Generation Sites, NY
- Poletti Generating Station, Astoria, NY
- Arthur Kill Generating Station, Staten Island, NY

- Distribution Facility, Phase I & Phase II ESA and Regulatory Compliance, Bohemia, NY
- Huntington Station Superfund Due Diligence, Huntington Station, NY
- Garvies Point Bulkhead, Glen Cove, NY
- Johnson & Hoffman Metal Stamping Facility, Environmental Compliance, Carle Place, NY
- Floral Park Storage Facility, Phase I and Phase II ESA
- Garden City Phase I ESAs at two sites, including part of a Superfund Site, Garden City, NY
- Huntington Station Storage Facility, Phase I and II ESA, Huntington Station, NY

BRIAN GOCHENAUR, QEP

SENIOR PROJECT MANAGER ENVIRONMENTAL SCIENTIST

Mr. Gochenaur is an environmental project manager whose experience includes environmental due diligence, site investigation and remediation, fuel oil storage tank investigation and removal, soil vapor intrusion assessments, in-situ remedial technology, spill closure, vapor barrier and sub-slab depressurization system design and construction, emergency response, environmental and geotechnical site investigations, and health and safety monitoring. He has extensive experience with the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup, Voluntary Cleanup and Spill Programs and New York City Department of Environmental Protection (NYCDEP) "E" Designated and New York City Voluntary Cleanup Program (BCP) sites. His areas of expertise include Phase I Environmental Site Assessments, Phase II Site Investigations, and environmental consulting and oversight on large scale construction projects.

SELECTED PROJECTS

- 440 Washington Street, E-Designated services, New York, NY
- 3514 Surf Avenue, Tall Residential and Retail Building, Brooklyn, NY
- ARO 242 West 53, Tall Residential Building, New York, NY
- NY Aquarium Shark Exhibit, Soil Characterization and Excavation Oversight, Coney Island Neighborhood, Brooklyn, NY
- 60 West Street, Site Investigation and Redevelopment, Brooklyn, NY
- 535 4th Avenue, BCP Auto Repair Cleanup and Redevelopment, Brooklyn, NY
- 1525 Bedford Avenue, BCP Gas Station Cleanup and Redevelopment, Brooklyn, NY
- 220 Eleventh Avenue, Residential Building, New York, NY
- 432 Rodney Street, Residential Building, Brooklyn, NY
- 563 Sackett Street, Brooklyn, NY
- 362 West 125th Street, Residential Building, New York, NY
- Bedford Armory Redevelopment, Brooklyn, NY
- 268 West Street, BCP Redevelopment of Former Commercial and Industrial Site, New York, NY
- 110 125th Street, Soil Excavation and Remediation, New York, NY
- Former Roseland Ballroom Redevelopment, Soil Characterization and Excavation Oversight, New York, NY
- 42 Crosby Street, "E" Designated Site Investigation and Remediation, New York, NY
- New York School Construction Authority, Various Locations, In-House Environmental Consulting, Five Boroughs of New York City
- EZ Serve Portfolio, GE Capital, Various Phase II Site Investigations, FL, GA, LA, and MS
- Beth Elohim Child Daycare Center, Lead Based Paint Abatement, Brooklyn, NY
- Price Battery, Environmental Protection Agency (EPA) Lead Fallout Superfund Site, Hamburg, PA



EDUCATION

B.S., Environmental Science University of Florida

PROFESSIONAL REGISTRATION

Qualified Environmental Professional (QEP) certified by the Institute of Professional Environmental Practice

40-Hour OSHA (HAZWOPER)

- Clark Portfolio, GE Capital, Various Phase II Locations, MI, IL, ID, and OH
- Tops Plaza Portfolio, Prudential Real Estate Investors, Various Phase II Locations, NY
- Cingular Wireless Portfolio, Cingular Wireless, Various Locations Phase I and II Locations, WA
- Queens Center Mall Expansion, Remedial Oversight, Elmhurst, NY
- Soka Gakkai International-USA, Cultural Center, Brooklyn, NY

WILLIAM BOHRER, PG

PROJECT GEOLOGIST GEOLOGIST

Mr. Bohrer is an experienced geologist responsible for managing Langan's environmental standards and Health and Safety compliance for projects throughout New York City. His services include dissemination of environmental protocols, troubleshooting at project sites, in-house/field training, and maintenance of quality standards across the environmental discipline. Mr. Bohrer has a diverse and extensive background in geophysics, hydrogeology, mining and petroleum, and geotechnical engineering. He has developed conceptual site models for public, industrial and commercial facilities nationwide.

SELECTED PROJECTS

- NYU Poly 122 Johnson Street, Brooklyn, NY
- Con Edison of New York at Governor's Island, NY, NY
- 535 4th Avenue, Brooklyn, NY
- 27 Wooster Street, New York, NY
- 42 West Street, Brooklyn, NY
- 455 West 19th Street, New York, NY
- Kings Plaza Mall, Brooklyn, NY
- Hudson Yards "Terra Firma", New York, NY
- Hudson Yards, Platform Special Inspection, New York, NY
- PSAC II, Bronx, NY
- 595-647 Smith Street, Brooklyn, NY
- New York University, 7-13 Washington Square North Investigation, New York, NY
- NYU 4 Washington Square Village, New York, NY
- 125th Street and Lenox Avenue, New York, NY
- Sullivan Street Development, New York, NY
- Hudson Crossing II, New York, NY
- New York Aquarium, Shark Tank & Animal Care Facility, Brooklyn, NY
- 209-219 Sullivan Street, New York, NY
- 261 Hudson Street, New York, NY
- 460 Washington Street, New York, NY
- 552 West 24th Street, New York, NY
- Brooklyn Bridge Park Pier 1, New York, NY
- International Leadership Bronx Charter School, Bronx, NY
- 203 East 92nd Street, New York, NY
- HighLine 28-29, New York, NY
- 539 Smith Street Bulkhead, Brooklyn, NY
- Willets Point, Corona, NY
- Plume Migration and Fracture Flow Aquifer Investigation, Brunswick, MD
- Plume Migration and Fracture Flow Aquifer Investigation, Fallston, MD
- Emergency Response Site Investigation & Remediation, Wappingers Falls, NY
- Emergency Response Site Investigation & Remediation, Allentown, PA



EDUCATION

Post Graduate Studies in Geophysics Cornell University

B.S., Geology Tufts University

PROFESSIONAL REGISTRATION

Professional Geologist (PG) in NY

40 Hour OSHA HazWOPER

OSHA Construction Safety & Health

OSHA Supervisory Certification Credential (TWIC)

Transportation Worker Identification

NYS DEC- Protecting New York's Natural Resources with Better Construction Site Management

AFFILIATIONS

American Association of Petroleum Geologists

National Groundwater Association

Geological Society of America



- Emergency Response Site Investigation & Remediation, Shamokin, PA
- Bermuda International Airport, Jet Fuel Release Investigation, Bermuda
- Little Missouri River Basin, Geotechnical Site Evaluation (Horizontal Drilling Pipeline Install), ND
- Seismic Susceptibility Evaluation (Class 2 Injection Wells), Litchfield, OH
- Bedrock Mapping, Bradford and Sullivan Counties, PA
- Soil Solidification, Carteret, NJ

PA Council of Professional Geologists

EMILY L. SNEAD, PG

PROJECT SCIENTIST ENVIRONMENTAL ENGINEERING

Ms. Snead brings field experience and technical expertise to environmental investigations and remediation projects. She has independently performed Phase I and Phase II assessments and investigations, UST removals and closures, remedial excavations, vapor extractions, and ISCO injections. She excels at project research, environmental sampling, remedial oversight, proposal and report preparation. Her projects have included hospital centers, day care facilities, residential buildings, chemical plants, and commercial/industrial sites throughout New York City and the Tri-State area. Prior to her career in Environmental Consulting, Ms. Snead conducted research with NASA and performed construction oversight management in the Cayman Islands.

SELECTED PROJECTS

- Silvercup West, Brownfield Cleanup Site, Long Island City, NY
- Highline 28-29 Development, PCE-Contaminated Soil Delineation and Implementation of Bioaugmentation Remediation, New York, NY
- 295 Locust Avenue, Soil Excavation/Trucking, Monitoring Well Decommissioning, Groundwater Sampling and SMP inspections, Bronx, NY
- Hotel Trades Union (620 Fulton Street), Hazardous Lead Soil removal, UST closure and Soil Management Report Brooklyn, NY
- 743 Fifth Avenue, Soil Management Report, New York, NY
- Suncap Facility, UST Investigations and Test Pit Explorations, Yonkers, NY
- New York University (383 Lafayette Street), Hazardous Lead Soil Removal and UST Closure New York, NY
- 601 Washington Street, Remedial Excavation, Groundwater ISCO Treatment, and Installation of an Active SMD System, New York, NY
- NYC OER E-Designated site (50 Hudson Yards/2 Hudson Boulevard), Remedial Investigation, Remedial Excavation Oversight, and Closure Reporting, New York, NY
- Riverside Center Parcel 1, VCP Site Remedial Excavation, UST Closure, Spill Investigation and Closure, and Reporting, New York, NY
- Riverside Center Parcels 3 and 4, VCP Site Remedial Excavation, UST Closure, New York, NY
- Bronx Terminal Market, Triennial SMP Reporting and Annual Inspections, Bronx, NY
- 616 First Avenue, VCP Program Includes Remedial Excavation Oversight, SMP Annual Inspections, Reporting, New York, NY
- Luxury Car Dealership (787 Eleventh Avenue), Spill Investigation and UST Closure, New York, NY
- 335 Bold Street, Phase II and BCP Application, Brooklyn, NY
- President Street Properties, Phase II Investigation and BCP Application, Brooklyn, NY
- 38-01 Queens Boulevard Due Diligence, Long Island City, NY



EDUCATION

B.S., Environmental Science & Geology Northeastern University

PROFESSIONAL REGISTRATION

Professional Geologist (PG) in NY

40-Hour OSHA HAZWOPER

8-Hour OSHA HAZWOPER Refresher

10-Hour OSHA Construction Safety Training

DOT Hazardous Materials Shipping Training

First Aid/ CPR Training

AFFILIATIONS

NAIOP New York City Chapter, member

Urban Land Institute (ULI), Member

- 250 Water Street, Phase II Investigation, New York, NY
- 139 East 56th Street, Joint Geotechnical and Environmental Waste Characterization, New York, NY
- Le Soleil d'Or Boutique Hotel, Cayman Brac, Cayman Islands
- Columbia University Medical Center, Phase I and II Environmental Site Investigation Nursing School, New York, NY
- Consolidated Edison of NY, Remedial Investigation and RIR Investigation, New York, NY
- 11-09 Borden Avenue, MTA Bridges and Tunnels/Borden Avenue ISCO Remediation, Disposal of Petroleum-Impacted Soil, Long Island City, NY
- Columbia University Medical Center, Removal of a 1,000-gal UST and Closure Report, New York, NY
- Children's Aid Society (910 East 172nd Street), Oversight of the VEFR and Collection of Groundwater Samples New York, NY
- New York City Housing Authority, Community Air Monitoring Program and Environmental Oversight, Bronx, NY
- YRC Freight Newtown Creek EPA RFI, Brooklyn, NY
- 522-532 West 29th Street Redevelopment, Phase II Site Investigation and RAWP New York, NY
- Memorial Sloan-Kettering Cancer Center Ambulatory Surgery Building, Community Air Monitoring Program, New York, NY
- Keith Hilltop Terrace Apartments, Phase I and II Environmental Site Assessment, Altoona, PA
- Southern Boulevard Phase II ESA, Bronx, NY
- Former Auto Dealership, Remedial Investigation and Delineation of Polycyclic Aromatic Hydrocarbons (PAHs), Paramus, NJ
- 711 11th Avenue, Former Auto Dealership, Chrysler Group LLC, Phase I and Limited Phase II Due Diligence Investigation, New York, NY
- 37-14 36th Street, Field Investigations Silver Star-Mercedes Benz, Long Island City, NY
- Otto Pehle Park, Bergen County Health Department, Groundwater Sampling and Ecological Surveys, Paramus, NJ
- Bay Park Brownfield Redevelopment, Installation of Sub-Slab Depressurization System, Coney Island, Brooklyn, NY
- PQ Corporation, Oversight of Remedial Action Field Activities, Rahway, NJ
- Post-Graduate Center for Mental Health (304 Echo Place), Phase I and Limited Phase II Due Diligence Investigation, Bronx, NY
- Air Quality Monitoring, Sweeny & Conroy, Inc., New York, NY
- Former Auto Dealership, Chrysler Group LLC, Phase I and Limited Phase II Due Diligence Investigation, New York, NY
- New York Life Investment Management, Phase II Environmental Site Assessment, Jessup, MD
- 366 Broadway, Former Brunswick Hospital Campus, 25,000-Gallon UST Removal, Amityville, NY

LANGAN

EMILY G. STRAKE PROJECT CHEMIST / RISK ASSESSOR ENVIRONMENTAL ENGINEERING

Ms. Strake has 17 years of environmental chemistry, risk assessment, auditing, and quality assurance experience. Most recently, she has focused her efforts on human health risk assessment, and has been the primary author or key contributor of risk assessment reports and screening evaluations for projects governed under RCRA, CERCLA, NJDEP, DNREC, SWRCB, DTSC, PADEP, CTDEEP, ODEQ, NYSDEC and MDE. She has experience in site-specific strategy development, which has enabled her to perform assessments to focus areas of investigation and identify risk-based alternatives for reducing remediation costs. Ms. Strake is a member of the Interstate Technology and Regulatory Council Risk Assessment Team responsible for the development and review of organizational risk assessment for the organization.

Ms. Strake has extensive experience in environmental data validation, focused on ensuring laboratory deliverables follow specific guidelines as described by regulatory agencies and the analytical methods employed. In addition, she has experience in EQuIS chemical database management. She also has a broad range of environmental field experience and maintains current OSHA HAZWOPER certification. Ms. Strake is experienced in auditing laboratory and field-sampling activities for compliance with Quality Assurance Project Plans (QAPPs), the National Environmental Laboratory Accreditation Conference Standards Quality Systems manual, and applicable USEPA Guidance. Ms. Strake has also audited on-site laboratories in support of groundwater treatment operations and implemented corrective actions. Her responsibilities include writing reports on the value of laboratory work, writing/editing QAPPs for clients and project-specific sites, peer reviewing colleague's work, and mentoring staff within the office. She has also served as the Quality Assurance officer for several long-term projects, responsible for the achievement of all forms of Quality Control/Quality Assurance by onsite personnel relating to sampling, analysis, and data evaluation.

SELECTED PROJECTS

- Sunoco Refineries, Various Locations
- PECO/Exelon, Various Locations
- Avon, Rye, NY
- Honeywell, Highland Park, NJ
- Delaware City Refinery, DE
- Major League Soccer's San Jose Earthquakes Stadium, Santa Clara, CA
- DuPont, Waynesboro, VA
- Texas Instruments, San Francisco, CA
- Regency, Philadelphia, PA
- Veteran's Affairs, Palo Alto, CA
- DOW Chemical, Various Locations
- Golden Gate National Parks Conservancy, San Francisco, CA
- Occidental Chemical, Bakersfield, CA



EDUCATION

MBA The University of Scranton

B.S., Chemistry Cedar Crest College

PROFESSIONAL REGISTRATION

Board Certified Environmental Professional (CEP)

TRAINING

40 HR OSHA HAZWOPER Training/Nov 2002

8 HR HAZWOPER Supervisor/June 2004

8 HR OSHA HAZWOPER Refresher/2013

AFFILIATIONS

The Society for Risk Analysis

Interstate Technology and Regulatory Council



- Floreffe Terminal, Pittsburgh, PA •
- Ryder, Hartford, CTRohm and Haas, Philadelphia, PA

Anthony Moffa, Jr., ASP, CHMM, COSS

Associate/Corporate Health and Safety Manager

20 years in the industry

Mr. Moffa is Langan's Corporate Health & Safety Manager and is responsible for managing health and safety compliance in all Langan office locations. He has over 20 years' experience in the health and safety field. He is responsible for ensuring compliance with all federal and state occupational health and safety laws and development and implementation of corporate health and safety policies. Responsibilities include reviewing and updating Langan's Corporate Health and Safety Program and assisting employees in the development of site specific Health & Safety Plans. He maintains and manages health and safety records for employees in all Langan office locations including medical evaluations, respirator fit testing, and Hazardous Waste Operations and Emergency Response training. He is also responsible for documentation and investigation of work-related injuries and incidents and sharing this information with employees to assist in the prevention of future incidents. He is also the chairman of the Corporate Health & Safety Committee and Health & Safety Leadership Team that meet periodically throughout the year. He is responsible for coordinating and providing health and safe training to Langan employees. He was formerly the Environmental, Health and Safety Coordinator at a chemical manufacturer. His experience included employee hazard communications, development of material safety data sheets for developed products, respirator fit testing and conducting required Occupational Health & Safety Association and Department of Transportation training.

Selected Projects

Verizon - Pennsylvania, Inc. Philadelphia Naval Yard, PA Confidential Client, Philadelphia, PA Penn Color, Doylestown, PA Verizon - Pennsylvania, Inc., Phase I Environmental Assessment, Lansdowne, PA Verizon - Pennsylvania, Inc. (formerly Bell Atlantic Corporation), Various Locations, PA Kinder Morgan Bulk Terminals, Inc. Fairless Hills, PA PP&L – Martins Creek, Bangor, PA Concord Beverage Company, Concordville, PA Penn Color, Hatfield, PA National Starch & Chemical Company, Bloomfield, NJ Air Products and Chemicals, Inc.., Middlesex, NJ PSEG Services Corporation, Jersey City, NJ Sampson Coatings, Richmond, VA Custom Chemicals Corporation, Elmwood Park, NJ



Education

B.S., Physics West Chester University

Professional Registration

Associate Safety Professional (ASP)

Certified Hazardous Material Manager (CHMM)

Certified Occupational Safety Specialist (COSS)

Affiliations

Pennsylvania Chamber of Business & Industry

Chemical Council of New Jersey

New Jersey Business & Industry Association

Geoprofessional Business Association

Certifications and Training

Hazardous Waste Operations and Emergency Response Training

OSHA Site Supervisor Training

10 & 30-Hour Construction Safety & Health Training

30-Hour Construction Safety & Health Training

10-Hour Industry Safety & Health Training

Confined Space Awareness & Entry

Competent Person in Excavations

Hazard Communications

Defensive Driving Training



APPENDIX H QUALITY ASSURANCE PROJECT PLAN

QUALITY ASSURANCE PROJECT PLAN

159 Boerum Street

Brooklyn, New York

Prepared For:

SPG Boerum LLC

c/o Slate Property Group 38 East 29th Street, 9th Floor New York, New York

Prepared By:

Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. 21 Penn Plaza 360 West 31st Street, 8th Floor New York, New York 10001



November 8, 2019 Langan Project No. 170552901

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 Pennsylvania
 Connecticut
 Florida
 Abu Dhabi
 Athens
 Doha
 Dubai
 Istanbul

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Résumés
Laboratory Reporting Limits and Method Detection Limits
Analytical Methods/Quality Assurance Summary Table
Sample Nomenclature Standard Operating Procedure

1.0 **PROJECT DESCRIPTION**

1.1 INTRODUCTION

This Quality Assurance Project Plan (QAPP) is for the property located at 159 Boerum Street in the East Williamsburg neighborhood of Brooklyn, New York (the site), and is identified as Tax Block 3071, Lot 40, on the Brooklyn Borough Tax Map . The about 11,180-square-foot subject property is situated on the south-central part of the tax block and is occupied by an open air asphalt parking lot surrounded by landscaped areas to the north and south within the property. The tax block is bound by Johnson Avenue to the north, Humboldt Street to the east, Boerum Street to the south, and Avenue of Puerto Rico (Graham Avenue) to the west. Additional site information, including site maps, is provided in the NYSDEC-approved August 29, 2019 Remedial Investigation Work Plan (RIWP) and Remedial Action Work Plan (RAWP).

This QAPP specifies analytical methods to be used to ensure that data from the proposed Remedial Action (RA) at the Site are precise, accurate, representative, comparable, and complete.

1.2 **PROJECT OBJECTIVES**

The environmental objectives of this RAWP are to achieve a Track 1 cleanup under the New York State Brownfield Cleanup Program which includes the following:

- Excavation as described herein and off-site disposal of soil/fill to about 16 feet below grade surface (bgs) site-wide and disposal of a hazardous lead hot-spot area.
- Prevent ingestion and direct contact with contaminated soil.
- Prevent impacts to biota from ingestion and direct contact with the contaminated soil.

These objectives have been established in order to protect public health and the environment for the anticipated residential use development at the Site.

1.3 SCOPE OF WORK

Implementation of the Remedial Action (RA) is described in detail in the RAWP. All remedial work will be overseen by Langan on behalf of SPG Boerum, LLC. The Proposed RA consists of the following:

- Development and implementation of a Construction Health and Safety Plan (CHASP) and Community Air Monitoring Plan (CAMP) for the protection of on-site workers, community/residents, and environment during remediation and construction activities.
- Construction of the support of excavation (SOE) system to facilitate the Track 1 remediation.
- Implementation of soil erosion, pollution and sediment control measures in compliance with applicable laws and regulations.
- Excavation, stockpiling, off-site transport, and disposal of about 7,000 cubic yards of historic fill and native soil that exceeds Unrestricted Use (UU) Soil Cleanup Objectives (SCOs) as defined by 6 NYCRR Part 375-6.8.
- Excavation and disposal of lead chromium hotspot, to a depth of up to eight feet bgs. This area covers a roughly 18-foot by 15-foot area.
- Removal of any encountered USTs and/or associated appurtenances (e.g., fill lines, vent line, and electrical conduit) and decommissioning/ disposal off-site during site redevelopment in accordance with DER-10, 6 NYCRR Part 613.9, NYSDEC CP-51, and other applicable NYSDEC UST closure requirements.
- Screening for indications of contamination (by visual means, odor, and monitoring PIDs) of excavated material during intrusive site work.
- Appropriate off-site disposal of material removed from the site in accordance with federal, state and local rules and regulations for handling, transport, and disposal.
- Backfilling of remediated areas to development sub-grade with certified-clean material (i.e., material meeting UU SCOs), virgin stone, or recycled concrete aggregate (RCA).
- Collection and analysis of documentation soil samples in accordance with DER-10 to confirm a Track 1 remedy was achieved; over-excavation would be required as necessary to meet Track SCOs.
- Development and execution of plans for the protection of on-site workers, the community, and the environment during the remediation phase of development.

2.0 DATA QUALITY OBJECTIVES AND PROCESS

Data Quality Objectives (DQOs) are qualitative and quantitative statements to help ensure that data of known and appropriate quality are obtained during the project. The quality of the data must be sufficient to fulfill the overall objective of the RA.

The DQO process is an iterative process where various options for implementing a project are explored, dissected, and recombined. The feasibility and costs of various options are estimated, and then the most advantageous option is selected and developed into project work plans that will be implemented.

DQOs for sampling activities are determined by evaluating five factors:

- Data needs and uses: The types of data required and how the data will be used after it is obtained.
- Parameters of Interest: The types of chemical or physical parameters required for the intended use.
- Level of Concern: Levels of constituents, which may require remedial actions or further investigations, based on comparison to Title 6 of the Official Compilation of New York Codes, Rules and Regulations Part 375 NYSDEC Unrestricted Use Soil Cleanup Objectives for soil samples and to the October 2006 (updated in May 2017) New York State Department of Health (NYSDOH) Guidance for Evaluating Soil Vapor Intrusion in the State of New York Air Guideline Values and Decision Matrices for soil vapor samples.
- Required Analytical Level: The level of data quality, data precision, and QA/QC documentation required for chemical analysis.
- Required Detection Limits: The detection limits necessary based on the above information.

The investigation will be evaluated using the DQO process on an individual, task-specific basis. DQOs and the required level of review will be determined during this process.

3.0 **PROJECT ORGANIZATION**

Lagan will arrange data analysis and reporting tasks related to the site sampling. The analytical services will be performed by an Environmental Laboratory Approval Program (ELAP)-certified laboratory. Data validation services will be performed by approved data validation contractor(s).

The required sampling will be conducted by Langan; the analytical services will be performed by Alpha Analytical, Inc. of Westborough, Massachusetts (NYSDOH ELAP certification number 11148). Data validation services will be performed by Emily Strake of Langan.

Resumes for Langan personnel can be found in Attachment A; key contacts for this project are as follows:

SPG Boerum LLC	Jeff Knecht, P.E. Telephone: (646) 439-4000 x207						
Langan Project Manager:	Brian Gochenaur, QEP Telephone: (212) 479-5479						
Langan Field Team Leader:	Emily Snead, P.G. Telephone: (212) 479-5432						
Langan Health & Safety Officer:	Tony Moffa, CHMM Telephone: (215) 491-6500						
Langan Quality Assurance Manager:	Michael Burke, PG, CHMM Telephone: (212) 479-5413						
Langan Data Validator:	Emily Strake, CEP Telephone: (215) 491-6526						
Laboratory Representative:	Alpha Analytical, Inc. Ben Rao Telephone: (201) 812-2633						

4.0 QUALITY ASSURANCE OBJECTIVES FOR COLLECTION OF DATA

The overall quality assurance objective is to develop and implement procedures for sampling, laboratory analysis, field measurements, and reporting that will provide data of sufficient quality to evaluate the engineering controls on the Site. The sample set, chemical analysis results, and interpretations must be based on data that meet or exceed quality assurance objectives established for the Site. Quality assurance objectives are usually expressed in terms of precision, accuracy or bias, representativeness, completeness, comparability, and sensitivity of analysis. Variances from the quality assurance objectives at any stage of the investigation will result in the implementation of appropriate corrective measures and an assessment of the impact of corrective measures on the usability of the data.

4.1 PRECISION

Precision is a measure of the degree to which two or more measurements are in agreement. Field precision is assessed through the collection and measurement of field duplicates. Laboratory precision and sample heterogeneity also contribute to the uncertainty of field duplicate measurements. This uncertainty is taken into account during the data assessment process. The following field duplicate precision criteria will be applied:

Soil Samples

- Results greater than 5 times the laboratory RL must have a RPD \leq 50%.
- Results less than 5 times the RL must have an absolute difference $\leq 2 \times \pm RL$.

RLs and method detection limits (MDL) are provided in Attachment B.

Laboratory precision is assessed through the analysis of matrix spike/matrix spike duplicates (MS/MSD), laboratory control sample/laboratory control sample duplicates (LCS/LCSD) and subsequent calculation of RPD. For outliers, if additional sample volume is present, the MS/MSD should be reanalyzed and the RPD recomputed. If additional volume is not present, an evaluation will be performed to determine the extent of potential matrix interference.

4.2 ACCURACY

Accuracy is the measurement of the reproducibility of the sampling and analytical methodology. It should be noted that precise data may not be accurate data. For the purpose of this QAPP, bias is defined as the constant or systematic distortion of a measurement process, which manifests itself as a persistent positive or negative deviation from the known or true value. This may be due to (but not limited to) improper sample collection, sample matrix, poorly calibrated analytical or sampling equipment, or limitations or errors in analytical methods and techniques.

Accuracy in the field is assessed through the use of field and trip blanks and through compliance to all sample handling, preservation, and holding time requirements. All field and trip blanks should be non-detect when analyzed by the laboratory. Any contaminant detected in an associated field blank will be evaluated against laboratory blanks (preparation or method) and evaluated against field samples collected on the same day to determine potential for bias.

Laboratory accuracy is assessed by evaluating the percent recoveries of MS/MSD samples, LCS/LCSD, surrogate compound recoveries, internal standard area counts, initial and continuing calibrations, and the results of method, initial and continuing calibration blanks. MS/MSD, LCS/LCSD, and surrogate percent recoveries will be compared to either method-specific control limits or laboratory-derived control limits. Sample volume permitting, samples displaying outliers should be reanalyzed. All associated method blanks should be non-detect when analyzed by the laboratory.

4.3 **REPRESENTATIVENESS**

Representativeness expresses the degree to which data accurately and precisely represents a characteristic of a population, parameter variations at a sampling point, a process condition, or an environmental condition within a defined spatial and/or temporal boundary. Representativeness is dependent upon the adequate design of the sampling program and will be satisfied by ensuring that the scope of work is followed and that specified sampling and analysis techniques are used. This is performed by following applicable standard operating procedures (SOPs) and this QAPP. All field technicians will be given copies of appropriate documents prior to sampling events and are required to read, understand, and follow each document as it pertains to the tasks at hand.

Representativeness in the laboratory is ensured by compliance with nationally-recognized analytical methods, meeting sample holding times, and maintaining sample integrity while the samples are in the laboratory's possession. This is performed by following all applicable analytical methods, laboratory-issued SOPs, the laboratory's Quality Assurance Manual, and this QAPP. The laboratory is required to be properly certified and accredited.

4.4 COMPLETENESS

Laboratory completeness is the ratio of total number of samples analyzed and verified as acceptable compared to the number of samples submitted to the fixed-base laboratory for analysis, expressed as a percent. Three measures of completeness are defined:

- Sampling completeness, defined as the number of valid samples collected relative to the number of samples planned for collection;
- Analytical completeness, defined as the number of valid sample measurements relative to the number of valid samples collected; and

• Overall completeness, defined as the number of valid sample measurements relative to the number of samples planned for collection.

Soil data will meet a 90% completeness criterion. If the criterion is not met, sample results will be evaluated for trends in rejected and unusable data. The effect of unusable data required for a determination of compliance will also be evaluated.

4.5 COMPARABILITY

Comparability is an expression of the confidence with which one data set can be compared to another. Comparability is dependent upon the proper design of the sampling program and will be satisfied by ensuring that the sampling plan is followed and that sampling is performed according to the SOPs or other project-specific procedures. Analytical data will be comparable when similar sampling and analytical methods are used as documented in the QAPP. Comparability will be controlled by requiring the use of specific nationally-recognized analytical methods and requiring consistent method performance criteria. Comparability is also dependent on similar quality assurance objectives. Previously collected data will be evaluated to determine whether they may be combined with contemporary data sets.

4.6 SENSITIVITY

Sensitivity is the ability of the instrument or method to detect target analytes at the levels of interest. The project manager will select, with input from the laboratory and QA personnel, sampling and analytical procedures that achieve the required levels of detection and QC acceptance limits that meet established performance criteria. Concurrently, the project manager will select the level of data assessment to ensure that only data meeting the project DQOs are used in decision-making.

Field equipment will be used that can achieve the required levels of detection for analytical measurements in the field. In addition, the field sampling staff will collect and submit full volumes of samples as required by the laboratory for analysis, whenever possible. Full volume aliquots will help ensure achievement of the required limits of detection and allow for reanalysis if necessary.

Analytical methods and quality assurance parameters associated with the sampling program are presented in Attachment C. The frequency of associated field blanks, trip blanks and duplicate samples will be based on the recommendations listed in DER-10, and as described in Section 5.3.

Site-specific MS and MSD samples will be prepared and analyzed by the analytical laboratory by spiking an aliquot of submitted sample volume with analytes of interest. An MS/MSD analysis

will be analyzed at a rate of 1 out of every 20 samples, or one per analytical batch. MS/MSD samples are only required for soil samples.

5.0 SAMPLE COLLECTION AND FIELD DATA ACQUISITION PROCEDURES

Soil sampling will be conducted in accordance with the established NYSDEC protocols contained in DER-10/Technical Guidance for Site Investigation and Remediation (May 2010). Soil vapor sampling will be conducted in accordance with NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (October 2006). The following sections describe procedures to be followed for specific tasks.

5.1 FIELD DOCUMENTATION PROCEDURES

Field documentation procedures will include summarizing field data in field books and proper sample labeling. These procedures are described in the following sections.

5.1.1 Field Data and Notes

Field notebooks contain the documentary evidence regarding procedures conducted by field personnel. Hard cover, bound field notebooks will be used because of their compact size, durability, and secure page binding. The pages of the notebook will not be removed.

Entries will be made in waterproof, permanent blue or black ink. No erasures will be allowed. If an incorrect entry is made, the information will be crossed out with a single strike mark and the change initialed and dated by the team member making the change. Each entry will be dated. Entries will be legible and contain accurate and complete documentation of the individual or sampling team's activities or observations made. The level of detail will be sufficient to explain and reconstruct the activity conducted. Each entry will be signed by the person(s) making the entry.

The following types of information will be provided for each sampling task, as appropriate:

- Project name and number
- Reasons for being on-site or taking the sample(s)
- Date and time of activity
- Sample identification number(s)
- Geographical location of sampling points with references to the Site, other facilities or a map coordinate system; sketches will be made in the field logbook when appropriate
- Physical location of sampling locations such as depth below ground surface

- Description of the method of sampling including procedures followed, equipment used and any departure from the specified procedures
- Description of the sample including physical characteristics, odor, etc.
- Readings obtained from health and safety equipment
- Weather conditions at the time of sampling and previous meteorological events that may affect the representative nature of a sample
- Photographic information including a brief description of what was photographed, the date and time, the compass direction of the picture and the number of the picture on the camera
- Other pertinent observations such as the presence of other persons on the Site, actions by others that may affect performance of site tasks, etc.
- Names of sampling personnel and signature of persons making entries

Field records will also be collected on field data sheets including boring logs, which will be used for geologic and drilling data during soil boring activities. Field data sheets will include the projectspecific number and stored in the field project files when not in use. At the completion of the field activities, the field data sheets will be maintained in the central project file.

5.1.2 Sample Labeling

Each sample collected will be assigned a unique identification number in accordance with the sample nomenclature guidance included in Attachment D, and placed in an appropriate sample container. Each sample container will have a sample label affixed to the outside with the date and time of sample collection and project name. In addition, the label will contain the sample identification number, analysis required and chemical preservatives added, if any. All documentation will be completed in waterproof ink.

5.2 EQUIPMENT CALIBRATION AND PREVENTATIVE MAINTENANCE

A PID will be used during the sampling activities to evaluate work zone action levels, screen soil samples, and collect monitoring well headspace readings. Field calibration and/or field checking of the PID will be the responsibility of the field team leader and the Site Health & Safety Officer, and will be accomplished by following the procedures outlined in the operating manual for the instrument. At a minimum, field calibration and/or field equipment checking will be performed once daily, prior to use. Field calibration will be documented in the field notebook. Entries made into the logbook regarding the status of field equipment will include the following information:

- Date and time of calibration
- Type of equipment serviced and identification number (such as serial number)
- Reference standard used for calibration
- Calibration and/or maintenance procedure used
- Other pertinent information

Equipment that fails calibration or becomes inoperable during use will be removed from service and segregated to prevent inadvertent utilization. The equipment will be properly tagged to indicate that it is out of calibration. Such equipment will be repaired and recalibrated to the manufacturer's specifications by qualified personnel. Equipment that cannot be repaired will be replaced.

Off-site calibration and maintenance of field instruments will be conducted as appropriate throughout the duration of project activities. All field instrumentation, sampling equipment and accessories will be maintained in accordance with the manufacturer's recommendations and specifications and established field equipment practice. Off-site calibration and maintenance will be performed by qualified personnel. A logbook will be kept to document that established calibration and maintenance procedures have been followed. Documentation will include both scheduled and unscheduled maintenance.

5.3 SAMPLE COLLECTION

Soil Samples

Soil samples will be visually classified and field screened using a PID to assess potential impacts from VOCs and for health and safety monitoring. Soil samples collected for analysis of VOCs will be collected using either En Core[®] or Terra Core[®] sampling equipment. For analysis of non-volatile parameters, samples will be homogenized and placed into glass jars. Samples will be collected with unused sterile sampling scoops or spoons and homogenized in unused sterile polyethylene zipper bags. After collection, all sample jars will be capped and securely tightened, and placed in iced coolers and maintained at $4^{\circ}C \pm 2^{\circ}C$ until they are transferred to the laboratory for analysis, in accordance with the procedures outlined in Sections 5.4 and 5.6. Analysis and/or extraction and digestion of collected soil samples will meet the holding times required for each analyte as specified in Attachment C. In addition, analysis of collected soil samples will meet all quality assurance criteria set forth by this QAPP and DER-10.

Sample Field Blanks, Trip Blanks and Duplicates

Field blanks will be collected for quality assurance purposes at a rate of one per 20 investigative samples per matrix (soil only). Field blanks will be obtained by pouring laboratory-demonstrated analyte-free water on or through a decontaminated sampling device following use and implementation of decontamination protocols. The water will be collected off of the sampling device into a laboratory-provided sample container for analysis. Field blank samples will be analyzed for the complete list of analytes on the day of sampling. To assess contamination resulting from sample transport, trip blanks will be collected at a rate of one per day if soil samples are analyzed for VOCs during that day.

Duplicate soil samples will be collected and analyzed for quality assurance purposes. Duplicate samples will be collected at a frequency of 1 per 20 investigative samples per matrix and will be submitted to the laboratory as "blind" samples. If less than 20 samples are collected during a particular sampling event, one duplicate sample will be collected.

5.4 SAMPLE CONTAINERS AND HANDLING

Certified, commercially clean sample containers will be obtained from the analytical laboratory. If soil samples are being collected, the laboratory will also prepare and supply the required trip blanks and field blank sample containers and reagent preservatives. Sample bottle containers, including the field blank containers, will be placed into plastic coolers by the laboratory. These coolers will be received by the field sampling team within 24 hours of their preparation in the laboratory. Prior to the commencement of field work, Langan field personnel will fill the plastic coolers with ice in Ziploc® bags (or equivalent) to maintain a temperature of $4^{\circ} \pm 2^{\circ}$ C.

Soil samples collected in the field for laboratory analysis will be placed directly into the laboratorysupplied sample containers. Samples will then be placed and stored on-ice in laboratory provided coolers until shipment to the laboratory. The temperature in the coolers containing samples and associated field blanks will be maintained at a temperature of 4°±2°C while on-site and during sample shipment to the analytical laboratory.

Possession of samples collected in the field will be traceable from the time of collection until they are analyzed by the analytical laboratory or are properly disposed. Chain-of-custody procedures, described in Section 5.9, will be followed to maintain and document sample possession. Samples will be packaged and shipped as described in Section 5.6.

5.5 SAMPLE PRESERVATION

Sample preservation measures will be used in an attempt to prevent sample decomposition by contamination, degradation, biological transformation, chemical interactions and other factors during the time between sample collection and analysis. Preservation will commence at the time

of sample collection and will continue until analyses are performed. Should chemical preservation be required, the analytical laboratory will add the preservatives to the appropriate sample containers before shipment to the office or field. Samples will be preserved according to the requirements of the specific analytical method selected, as shown in Attachment C.

5.6 SAMPLE SHIPMENT

5.6.1 Packaging

Soil sample containers will be placed in plastic coolers. Ice in Ziploc[®] bags (or equivalent) will be placed around sample containers. Cushioning material will be added around the sample containers if necessary. Chains-of-custody and other paperwork will be placed in a Ziploc[®] bag (or equivalent) and placed inside the cooler. The cooler will be taped closed and custody seals will be affixed to one side of the cooler at a minimum. If the samples are being shipped by an express delivery company (e.g. FedEx) then laboratory address labels will be placed on top of the cooler.

5.6.2 Shipping

Standard procedures to be followed for shipping environmental samples to the analytical laboratory are outlined below.

- All environmental samples will be transported to the laboratory by a laboratory-provided courier under the chain-of-custody protocols described in Section 5.9.
- Prior notice will be provided to the laboratory regarding when to expect shipped samples. If the number, type or date of shipment changes due to site constraints or program changes, the laboratory will be informed.

5.7 DECONTAMINATION PROCEDURES

Decontamination procedures will be used for non-dedicated sampling equipment. Decontamination of field personnel is discussed in the site-specific sample Health and Safety Plan (HASP) included in Appendix A of the RIWP. Field sampling equipment that is to be reused will be decontaminated in the field in accordance with the following procedures:

- 1. Laboratory-grade glassware detergent and tap water scrub to remove visual contamination
- 2. Generous tap water rinse
- 3. Distilled/de-ionized water rinse

5.8 **RESIDUALS MANAGEMENT**

Debris (e.g., paper, plastic and disposable personal protective equipment) will be collected in plastic garbage bags and disposed of as non-hazardous industrial waste. Soil cuttings with no apparent staining, odors, or elevated PID readings will be used to backfill boring holes. Soil to be disposed off-site will be placed in 55-gallon, UN/Department of Transportation (DOT) approved drums. All drums will be properly labeled, sealed, and characterized as necessary. It is anticipated that all drummed material will be transported off-site and disposed of at a permitted facility.

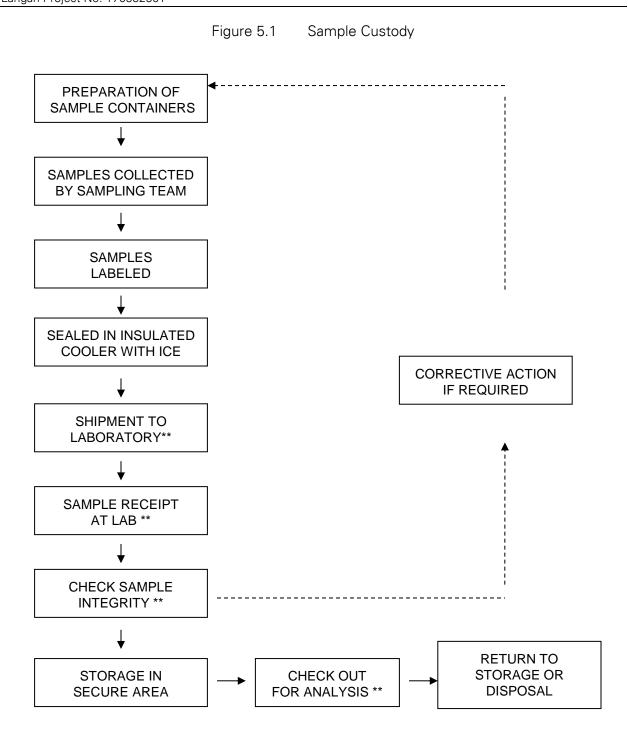
5.9 CHAIN OF CUSTODY PROCEDURES

A chain-of-custody protocol has been established for collected samples that will be followed during sample handling activities in both field and laboratory operations. The primary purpose of the chain-of-custody procedures is to document the possession of the samples from collection through shipping, storage and analysis to data reporting and disposal. Chain-of-custody refers to actual possession of the samples. Samples are considered to be in custody if they are within sight of the individual responsible for their security or locked in a secure location. Each person who takes possession of the samples, except the shipping courier, is responsible for sample integrity and safe keeping. Chain-of-custody procedures are provided below:

- Chain-of-custody will be initiated by the laboratory supplying the pre-cleaned and prepared sample containers. Chain-of-custody forms will accompany the sample containers.
- Following sample collection, the chain-of-custody form will be completed for the sample collected. The sample identification number, date and time of sample collection, analysis requested and other pertinent information (e.g., preservatives) will be recorded on the form. All entries will be made in waterproof, permanent blue or black ink.
- Langan field personnel will be responsible for the care and custody of the samples collected until the samples are transferred to another party, dispatched to the laboratory, or disposed. The sampling team leader will be responsible for enforcing chain-of-custody procedures during field work.
- When the form is full or when all samples have been collected that will fit in a single cooler, the sampling team leader will check the form for possible errors and sign the chain-of-custody form. Any necessary corrections will be made to the record with a single strike mark, dated, and initialed.

When soil samples are collected, sample coolers will be accompanied by the chain-of-custody form, sealed in a Ziploc[®] bag (or equivalent) and placed on top of the samples or taped to the inside of the cooler lid. If applicable, a shipping bill will be completed for each cooler and the shipping bill number recorded on the chain-of-custody form.

Samples will be packaged for shipment to the laboratory with the appropriate chain-of-custody form. A copy of the form will be retained by the sampling team for the project file and the original will be sent to the laboratory with the samples. Bills of lading will also be retained as part of the documentation for the chain-of-custody records, if applicable. When transferring custody of the samples, the individuals relinquishing and receiving custody of the samples will verify sample numbers and condition and will document the sample acquisition and transfer by signing and dating the chain-of-custody form. This process documents sample custody transfer from the sampler to the analytical laboratory. A flow chart showing a sample custody process is included as Figure 5.1, and an example chain-of-custody form for soil samples is included as Figure 5.2.



** REQUIRES SIGN-OFF ON CHAIN-OF-CUSTODY FORM

Figure 5.2 Sample Chain-of-Custody Form – Soil Samples

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ALPHA	CHAIN OF				0	f		.ab						ALPHA Job #			
Annual Contractory	CUSTODY	Tonawanda, NY 14150: 275 Cooper Ave, Suite 105															
Westborough, MA 01581 8 Walkup Dr.	Mansfield, MA 02048 320 Forbes Blvd	Project Information [Deliverables							Billing Information				
TEL: 508-898-9220 TEL: 508-822-9300 Project Name: FAX: 508-898-9193 FAX: 508-822-3288			ASP-A ASP-B						Same as Client Info								
FAX: 508-696-9193	Project Location:				EQuIS (1 File) EQuIS (4 File)						le)	PO#					
Client Information		Project #						Other									
Client:		(Use Project name as Pr	oject #)				Regula	tory	Requirement			ment Disposal Site		Disposal Site Information			
Address:		Project Manager:	- 18 - -					IY TO	GS			NY Part 375 Please identify below location			Please identify below location of		
	ALPHAQuote #: AWQ Standards NY CP-51							applicable disposal facilities.									
Phone: Turn-Around Time			NY Restricted Use Other						Disposal Facility:								
Fax:		Standard		Due Date:	5	\$	NY Unrestricted Use										
Email:		Rush (only if pre approved		# of Days:			NYC Sewer Discharge							Other:			
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B = HCI	A = Amber Glass	Mansfield: Certification N	lo: MA015			20					_				and completely. Samples can		
$C = HNO_3$ $D = H_2SO_4$	V = Vial G = Glass		Preservative												not be logged in and turnaround time clock will not		
E = NaOH	B = Bacteria Cup	110501741170													start until any ambiguities are		
F = MeOH	C = Cube O = Other	Relinquished By: Date/Time F					Receive	d By	1		Date/Time				resolved. BY EXECUTING		
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K/E = Zn Ac/NaOH	D = BOD Bottle														TO BE BOUND BY ALPHA'S		
O = Other															TERMS & CONDITIONS.		
Form No: 01-25 HC (rev. 3	30-Sept-2013)					1									(See reverse side.)		

Laboratory chain-of-custody will be maintained throughout the analytical processes as described in the laboratory's Quality Assurance Manual. The analytical laboratory will provide a copy of the chain-of-custody in the analytical data deliverable package. The chain-of-custody becomes the permanent record of sample handling and shipment.

5.10 LABORATORY SAMPLE STORAGE PROCEDURES

The subcontracted laboratory will use a laboratory information management system to track and schedule samples upon receipt by the analytical laboratories. Any sample anomalies identified during sample log-in must be evaluated on individual merit for the impact upon the results and the data quality objectives of the project. When irregularities do exist, the environmental consultant must be notified to discuss recommended courses of action and documentation of the issue must be included in the project file.

For samples requiring thermal preservation, the temperature of each cooler will be immediately recorded. Each sample and container will be will be assigned a unique laboratory identification number and secured within the custody room walk-in coolers designated for new samples. Samples will be, as soon as practical, disbursed in a manner that is functional for the operational team. The temperature of all coolers and freezers will be monitored and recorded using a certified temperature sensor. Any temperature excursions outside of acceptance criteria (i.e., below 2°C or above 6°C) will initiate an investigation to determine whether any samples may have been affected. Samples for VOCs will be maintained in satellite storage areas within the VOC laboratory. Following analysis, the laboratory's specific procedures for retention and disposal will be followed as specified in the laboratory's SOPs and/or QA manual.

6.0 DATA REDUCTION, VALIDATION, AND REPORTING

6.1 INTRODUCTION

Data collected during the field investigation will be reduced and reviewed by the laboratory QA personnel, and a report on the findings will be tabulated in a standard format. The criteria used to identify and quantify the analytes will be those specified for the applicable methods in the USEPA SW-846 and subsequent updates. The data package provided by the laboratory will contain all items specified in the USEPA SW-846 methodology appropriate for the analyses to be performed, and be reported in standard format.

The completed copies of the chain-of-custody records (both external and internal) accompanying each sample from time of initial bottle preparation to completion of analysis shall be attached to the analytical reports.

6.2 DATA REDUCTION

The Analytical Services Protocol (ASP) Category B data packages and an electronic data deliverable (EDD) will be provided by the laboratory after receipt of a complete sample delivery group. The Project Manager will immediately arrange for archiving the results and preparation of result tables. These tables will form the database for assessment of the site contamination condition.

Each EDD deliverable must be formatted using a Microsoft Windows operating system and the NYSDEC data deliverable format for EQuIS. To avoid transcription errors, data will be loaded directly into the ASCII format from the laboratory information management system. If this cannot be accomplished, the consultant should be notified via letter of transmittal indicating that manual entry of data is required for a particular method of analysis. All EDDs must also undergo a QC check by the laboratory before delivery. The original data, tabulations, and electronic media are stored in a secure and retrievable fashion.

The Project Manager or Task Manager will maintain close contact with the QA reviewer to ensure all non-conformance issues are acted upon prior to data manipulation and assessment routines. Once the QA review has been completed, the Project Manager may direct the Team Leaders or others to initiate and finalize the analytical data assessment.

6.3 DATA VALIDATION

Data validation will be performed in accordance with the USEPA Region 2 validation guidelines for organic and inorganic data review. Validation will include the following:

- Verification of the QC sample results;
- Verification of the identification of sample results (both positive hits and non-detects);
- Recalculation of 10% of all investigative sample results; and
- Preparation of Data Usability Summary Reports (DUSR).

A DUSR will be prepared by the data validator and reviewed by the QAM before issuance. The DUSR will present the results of data validation, including a summary assessment of laboratory data packages, sample preservation and chain-of-custody procedures, and a summary assessment of precision, accuracy, representativeness, comparability, and completeness for each analytical method. A detailed assessment of each sample delivery group will follow. For each of the organic analytical methods, the following will be assessed:

- Holding times;
- Instrument tuning;
- Instrument calibrations;
- Blank results;
- System monitoring compounds or surrogate recovery compounds (as applicable);
- Internal standard area counts (if applicable);
- MS and MSD recoveries and RPDs
- LCS and LCSD recoveries and RPDs
- Endrin/DDT Breakdown (if applicable);
- Dual Column Analysis (if applicable);
- Isotope Dilution Recoveries (if applicable)
- Target compound identification;
- Chromatogram quality;
- Pesticide cleanup (if applicable);
- Compound quantitation and reported detection limits;
- Overall system performance; and

• Results verification.

For each of the inorganic compounds, the following will be assessed:

- Holding times;
- Calibrations;
- Blank results;
- Interference check sample;
- Laboratory control samples;
- Laboratory Duplicates;
- Matrix Spike;
- Furnace atomic absorption analysis QC;
- Contract Required Detection Limit standards;
- ICP serial dilutions; and
- Results verification and reported detection limits.

Based on the results of data validation, the validated analytical results reported by the laboratory will be assigned one of the following usability flags:

- "U" Not detected. The associated number indicates the approximate sample concentration necessary to be detected significantly greater than the level of the highest associated blank;
- "UJ" Not detected. Quantitation limit may be inaccurate or imprecise;
- "J" Analyte is present. Reported value may be associated with a higher level of uncertainty than is normally expected with the analytical method
- "R" Unreliable result; data is rejected or unusable. Analyte may or may not be present in the sample; and
- No Flag Result accepted without qualification.

7.0 QUALITY ASSURANCE PERFORMANCE AUDITS AND SYSTEM AUDITS

7.1 INTRODUCTION

Quality assurance audits may be performed by the project quality assurance group under the direction and approval of the Quality Assurance Manager (QAM). These audits will be implemented to evaluate the capability and performance of project and subcontractor personnel, items, activities, and documentation of the measurement system(s). Functioning as an independent body and reporting directly to corporate quality assurance management, the QAM may plan, schedule, and approve system and performance audits based upon procedures customized to the project requirements. At times, the QAM may request additional personnel with specific expertise from company and/or project groups to assist in conducting performance audits. However, these personnel will not have responsibility for the project work associated with the performance audit.

7.2 SYSTEM AUDITS

System audits may be performed by the QAM or designated auditors, and encompass a qualitative evaluation of measurement system components to ascertain their appropriate selection and application. In addition, field and laboratory quality control procedures and associated documentation may be system audited. These audits may be performed once during the performance of the project. Additional audits may occur if conditions adverse to quality are detected or at the request of the Project Manager.

7.3 PERFORMANCE AUDITS

The laboratory may be required to conduct an analysis of Performance Evaluation samples or provide proof that Performance Evaluation samples submitted by USEPA or a state agency have been analyzed within the past twelve months.

7.4 FORMAL AUDITS

Formal audits refer to any system or performance audit that is documented and implemented by the QA group. These audits encompass documented activities performed by qualified lead auditors to a written procedure or checklists to objectively verify that quality assurance requirements have been developed, documented, and instituted in accordance with contractual and project criteria. Formal audits may be performed on project and subcontractor work at various locations.

Audit reports will be written by auditors who have performed the site audit after gathering and evaluating all data. Items, activities, and documents determined by lead auditors to be in noncompliance shall be identified at exit interviews conducted with the involved management.

Non-compliances will be logged, and documented through audit findings, which are attached to and are a part of the integral audit report. These audit-finding forms are directed to management to satisfactorily resolve the noncompliance in a specified and timely manner.

The Project Manager has overall responsibility to ensure that all corrective actions necessary to resolve audit findings are acted upon promptly and satisfactorily. Audit reports must be submitted to the Project Manager within fifteen days of completion of the audit. Serious deficiencies will be reported to the Project Manager within 24 hours. All audit checklists, audit reports, audit findings, and acceptable resolutions are approved by the QAM prior to issue. Verification of acceptable resolutions may be determined by re-audit or documented surveillance of the item or activity. Upon verification acceptance, the QAM will close out the audit report and findings.

8.0 CORRECTIVE ACTION

8.1 INTRODUCTION

The following procedures have been established to ensure that conditions adverse to quality, such as malfunctions, deficiencies, deviations, and errors, are promptly investigated, documented, evaluated, and corrected.

8.2 **PROCEDURE DESCRIPTION**

When a significant condition adverse to quality is noted at a site, laboratory, or subcontractor location, the cause of the condition will be determined and corrective action will be taken to preclude repetition. Condition identification, cause, reference documents, and corrective action planned to be taken will be documented and reported to the QAM, Project Manager, Field Team Leader and involved contractor management, at a minimum. Implementation of corrective action is verified by documented follow-up action.

All project personnel have the responsibility, as part of the normal work duties, to promptly identify, solicit approved correction, and report conditions adverse to quality. Corrective actions will be initiated as follows:

- When predetermined acceptance standards are not attained;
- When procedure or data compiled are determined to be deficient;
- When equipment or instrumentation is found to be faulty;
- When samples and analytical test results are not clearly traceable;
- When quality assurance requirements have been violated;
- When designated approvals have been circumvented;
- As a result of system and performance audits;
- As a result of a management assessment;
- As a result of laboratory/field comparison studies; and
- As required by USEPA SW-846, and subsequent updates, or by the NYSDEC ASP.

Project management personnel, field investigation teams, remedial response planning personnel, and laboratory groups monitor ongoing work performance during the normal course of daily responsibilities. Work may be audited at project sites, laboratories, or contractor locations. Activities, or documents ascertained to be noncompliant with quality assurance requirements will be documented. Corrective actions will be mandated through audit finding sheets attached to the audit report. Audit findings are logged, maintained, and controlled by the Task Manager.

Personnel assigned to quality assurance functions will have the responsibility to issue and control Corrective Action Request (CAR) Forms (Figure 8.1 or similar by email). The CAR identifies the out-of-compliance condition, reference document(s), and recommended corrective action(s) to be administered. The CAR is issued to the personnel responsible for the affected item or activity. A copy is also submitted to the Project Manager. The individual to whom the CAR is addressed returns the requested response promptly to the QA personnel, affixing his/her signature and date to the corrective action block, after stating the cause of the conditions and corrective action to be taken. The QA personnel maintain the log for status of CARs, confirms the adequacy of the intended corrective action, and verifies its implementation. CARs will be retained in the project file for the records.

Any project personnel may identify noncompliance issues; however, the designated QA personnel are responsible for documenting, numbering, logging, and verifying the close out action. The Project Manager will be responsible for ensuring that all recommended corrective actions are implemented, documented, and approved.

Figure 8.1 Corrective Action Request

CORRECTIVE ACTION REQUEST								
Number: Date:								
TO: You are hereby requested to take corrective actions indicated below and as otherwise determined by you to (a) resolve the noted condition and (b) to prevent it from recurring. Your written response is to be returned to the project quality assurance manager by								
CONDITION:								
REFERENCE DOCUMENTS:								
RECOMMENDED CORRECTIVE ACTIONS:								
Originator Date Approval Date Approval Date								
RESPONSE								
CAUSE OF CONDITION								
CORRECTIVE ACTION								
(A) RESOLUTION								
(B) PREVENTION								
(C) AFFECTED DOCUMENTS								
C.A. FOLLOWUP:								
CORRECTIVE ACTION VERIFIED BY: DATE:								

9.0 REFERENCES

- NYSDEC. Division of Environmental Remediation. DER-10/Technical Guidance for Site Investigation and Remediation, dated May 3, 2010.
- USEPA, 2016. Low/Medium Volatile Data Validation. SOP No. HW-33A, Revision 1, dated September 2016. USEPA Region II.
- USEPA, 2015. PCB Aroclor Data Validation. SOP No. HW-37A, Revision 0, dated July 2015. USEPA Region II.
- USEPA, 2016. ICP-AES Data Validation. SOP No. HW-3a, Revision 1, dated September 2016. USEPA Region II.
- USEPA, 2016. Mercury and Cyanide Data Validation. SOP No. HW-3c, Revision 1, dated September 2016. USEPA Region II.
- USEPA, 2016. Pesticide Data Validation. SOP No. HW-36A, Revision 1, dated October 2016. USEPA Region II.
- USEPA, 2016. Semivolatile Data Validation. SOP No. HW-35A, Revision 1, dated September 2016. USEPA Region II.
- USEPA, 2016. Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15, Revision 6, dated September 2016. USEPA Region II.
- USEPA 2017. National Functional Guidelines for Superfund Organic Methods Data Review, Office of Superfund Remediation and Technology Innovation, EPA-540-R-2017-002, January 2017.
- USEPA 2017b. National Functional Guidelines for Superfund Inorganic Methods Data Review, Office of Superfund Remediation and Technology Innovation, EPA-540-R-201 7-001, January 2017.

ATTACHMENT A

RESUMES

MICHAEL D. BURKE, PG, CHMM, LEED AP

PRINCIPAL/VICE PRESIDENT

ENVIRONMENTAL ENGINEERING AND REMEDIATION

Mr. Burke is a geologist/environmental scientist whose practice involves site investigation and remediation, transactional due diligence, environmental site assessments, in-situ remedial technology, and manufactured gas plant (MGP) site characterization and remediation. His additional services include multi-media compliance audits, sub-slab depressurization system design, non-hazardous and hazardous waste management, emergency response, community air monitoring programs, environmental and geotechnical site investigations, and health and safety monitoring. He has experience with projects in the New York State Department of Environmental Conservation (NYSDEC) and New York State Brownfield Cleanup (NYS BCP) Programs; Inactive Hazardous Waste, and Spill Programs, and New York City Office of Environmental Remediation (OER) e-designated and New York City Voluntary Cleanup Program (NYC VCP) sites.

SELECTED PROJECTS

227-14 North Conduit Avenue, Industrial Wastewater Compliance,	Rut
 Jamaica, NY 420 Kent Avenue, NYS Brownfield Cleanup Program, Brooklyn, NY 572 Eleventh Avenue, NYC VCP, New York, NY 	B.S Scie Rut
 Monian Site A, OER E-Designated Site, New York, NY 537 Sackett Street, Gowanus Canal Due Diligence/MGP Site, Brooklyn, NY ABC Blocks 25, 26 and 27, NYS Brownfield Cleanup Program Sites, 	PR RE
 ADC Diccks 23, 20 and 27, NTO Drownleid Cleanup Trogram Cites, Long Island City, NY 432 Rodney Street, NYS Brownfield Cleanup Program, Petroleum 	Pro (PC
and Chlorinated Volatile Organic Compound Investigation and Remediation, Brooklyn, NY	Cer
 787 Eleventh Avenue, NYS Brownfield Cleanup Program Site, New York, NY 	Mat CHI
 President Street at Gowanus Canal, NYS Brownfield Cleanup Program Site, Brooklyn, NY 22-36 Second Avenue at Gowanus Canal, NYS Brownfield Cleanup 	LEE Pro (LE
 Program Site, Brooklyn, NY 563 Sacket Street, NYS Brownfield Cleanup Program Site, MGP Investigation, and Remediation, Brooklyn, NY 	OS Haz Wa
• 156-162 Perry Street, NYS Brownfield Cleanup Program Site, New York, NY	OSI Cer
Christopher and Weehawken Streets, NYS Brownfield Cleanup Program, New York, NY	Wa Em
Phelps Dodge Block 2529 (Lots 40, 50, and 45), Inactive Hazardous Waste Disposal Site, Maspeth NY A2 50 24th Street NYS Brownfield Cleanup Brogram Site	NJE Cor
 42-50 24th Street, NYS Brownfield Cleanup Program Site, Long Island City, NY Storage Deluxe (163 6th Street), OER E-Designation Site, 	Enf
New York, NY	Tro: Nuc Trai



EDUCATION

M.S., Environmental Geology Rutgers University

B.S., Geological Sciences itgers University

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S., Environmental ience Itgers University

ROFESSIONAL EGISTRATION

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ertified Hazardous aterials Manager – HMM No. 15998 · · · · ·

ED Accredited ofessional EED AP) EED AP)

SHA Certification for azardous aste Site Supervisor

SHA 29 CFR 1910.120 ertification for Hazardous aste Operations and nergency Response IDEP Certification for ommunity Noise forcement oxler Certification for

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- Prospect Park Redevelopment, Landfill Reclamation, Prospect Park, NJ
- 431 Carroll Street, Gowanus Canal Due Diligence, Brooklyn, NY
- 76 4th Street Property, Gowanus Due Diligence, Brooklyn, NY
- Foxgate/MREC, Due Diligence and Solid Waste Compliance, Central Islip, NY
- 175-225 3rd Street at Gowanus Canal, NYS Brownfield Cleanup Program, Brooklyn, NY
- New York University Tandon School of Engineering, Spill Investigation/Remediation Dual Phase Recovery, and Laser Fluorescence Investigation, Brooklyn, NY
- 2420-2430 Amsterdam Avenue, NYS Brownfield Cleanup Program/Board of Standards and Appeals Variance, New York, NY
- 170 Amsterdam Avenue, NYC VCP, New York, NY
- 538-540 Hudson Street, NYS Brownfield Cleanup Program (Former Gas Station), New York, NY
- 234 Butler Street, Gowanus Canal Due Diligence, Brooklyn, NY
- 550 Clinton Street, NYS Brownfield Cleanup Program E-Designation, Brooklyn, NY
- 111 Leroy Street, OER E-Designation Site, New York, NY
- 335 Bond Street, NYS Brownfield Cleanup Program, New York, NY
- Gowanus Canal Northside, NYS BCP Former Fuel Oil Terminal, Brooklyn, NY
- Multiple Buildings, Major Oil Storage Facility, Gowanus Canal Location, Brooklyn, NY
- 197-205 Smith Street at Gowanus Canal, MGP Due Diligence, Brooklyn, NY
- 450 Union Street at Gowanus Canal, NYS Brownfield Cleanup Program, Brooklyn, NY
- 86 Fleet Place, NYC VCP E-Designation, Brooklyn, NY
- New York University College of Nursing at 433 1st Avenue, NYS BCP, Bronx, NY
- Retail Building at 225 3rd Street, Brooklyn, NY
- 29-37 41st Avenue, NYS Brownfield Cleanup Program, Long Island City, NY
- 43-01 22nd Street, NYS Brownfield Cleanup Program, Long Island City, NY
- Compliance Audit for NYU at Washington Square Park, New York, NY
- Former Watermark Locations, NYS Brownfield Cleanup Program, Chlorinated Volatile Organic Compound Investigation and Remediation; AS/SVE, Brooklyn, NY
- Former Gas Station (1525 Bedford Avenue), Brooklyn, NY
- NYS Brownfield Cleanup Program at 514 West 24th Street, New York, NY
- Gowanus Canal Due Diligence at 76 4th Street, Brooklyn, NY
- Urban Health Plan, Medical Building, NYS Brownfield Cleanup Program CVOC Investigation and Remediation, Bronx, NY
- 420 East 54th Street, NYS Spill Closure, New York, NY
- Equity Residential at 160 Riverside Boulevard, NYS Spill Closure, New York, NY
- 357-359 West Street and 156 Leroy Street, NYC VCP, New York, NY
- Emergency Spill Response at 322 West 57th Street, Investigation and Closure, New York, NY

- Hurricane Sandy, Emergency Response at 21 West Street, New York, NY
- Hurricane Sandy, Emergency Response at 71 Pine Street, New York, NY
- Greenpoint Landing, NYC E-Designation, Brooklyn, NY
- 23-01 42nd Road, NYS Brownfield Cleanup Program, Long Island City, NY
- Greenpoint Waterfront Development, NYS Brownfield Cleanup Program, Brooklyn, NY
- 125th Street and Lenox Avenue, NYC VCP, New York, NY
- Whitehead Realty Solvent Site, Inactive Hazardous Waste site, CVOC
 - Investigation and Remediation, Brooklyn, NY
- SunCap Property Group Environmental On-Call Consulting, Various Locations, Nationwide
- Consolidated Edison Company of New York, Underground Storage Tank On-Call Contract, Five Boroughs of New York City, NY
- Consolidated Edison Company of New York, Appendix B Spill Sites On-Call Contract, Five Boroughs of New York City, NY
- Meeker Avenue Plume Trackdown Site, Brooklyn, NY
- Distribution Facility, Superfund Redevelopment, Long Island City, NY
- Edison Properties, West 17th Street Development Site (Former MGP Site), New York, NY
- Con Edison on Governors Island, Dielectric Fluid Spill, Investigation and Remediation, New York, NY
- 144-150 Barrow Street, NYS Brownfield Cleanup Program, New York, NY
- West 17th Street Development, NYS Brownfield Cleanup Program, MGP Investigation and Remediation, New York, NY
- Montefiore Medical Center, Emergency Response, PCB Remediation, Bronx, NY
- New York University, 4 Washington Square Village Fuel Oil Remediation, New York, NY
- NYCSCA, Proposed New York City School Construction Sites, Five Boroughs of New York City, NY
- Con Edison, East 60th Street Generating Station, New York, NY
- Residential Building at 82 Irving Place, Environmental Remediation, New York, NY
- 1113 York Avenue, Storage Tank Closures, New York, NY
- Peter Cooper Village/Stuyvesant Town, Phase I ESA, New York, NY
- Superior Ink, Waste Characterization and Remedial Action Plans, New York, NY
- Bronx Mental Health Redevelopment Project, Phase I ESA, Bronx, NY
- 2950 Atlantic Avenue, Site Characterization Investigation, Brooklyn, NY
- Con Edison, East 74th Street Generating Station, Sediment Investigation, New York, NY
- Con Edison, First Avenue Properties, New York, NY
- Queens West Development Corp. Stage II, Long Island City, NY
- Article X Project Environmental Reviews, Various New York State Electrical Generation Sites, NY
- Poletti Generating Station, Astoria, NY
- Arthur Kill Generating Station, Staten Island, NY

- Distribution Facility, Phase I & Phase II ESA and Regulatory Compliance, Bohemia, NY
- Huntington Station Superfund Due Diligence, Huntington Station, NY
- Garvies Point Bulkhead, Glen Cove, NY
- Johnson & Hoffman Metal Stamping Facility, Environmental Compliance, Carle Place, NY
- Floral Park Storage Facility, Phase I and Phase II ESA
- Garden City Phase I ESAs at two sites, including part of a Superfund Site, Garden City, NY
- Huntington Station Storage Facility, Phase I and II ESA, Huntington Station, NY

BRIAN GOCHENAUR, QEP

SENIOR PROJECT MANAGER **ENVIRONMENTAL SCIENTIST**

EDUCATION

Science

B.S., Environmental

University of Florida

Mr. Gochenaur is an environmental project manager whose experience includes environmental due diligence, site investigation and remediation, fuel oil storage tank investigation and removal, soil vapor intrusion assessments, in-situ remedial technology, spill closure, vapor barrier and sub-slab depressurization system design and construction, emergency response, environmental and geotechnical site investigations, and health and safety monitoring. He has extensive experience with the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup, Voluntary Cleanup and Spill Programs and New York City Department of Environmental Protection (NYCDEP) "E" Designated and New York City Voluntary Cleanup Program (BCP) sites. His areas of expertise include Phase I Environmental Site Assessments, Phase II Site Investigations, and environmental consulting and oversight on large scale construction projects.

SELECTED PROJECTS

 3514 Surf A ARO 242 V NY Aquari Oversight, 60 West St 535 4th A Brooklyn, N 1525 Bedfor Brooklyn, N 220 Eleven 432 Rodne 563 Sacket 362 West Bedford Ar 268 West Industrial S 110 125th S Former Roi Excavation 42 Crosby New York, New York, New York, Environme EZ Serve F FL, GA, LA Beth Elohi Brooklyn, N 	ord Avenue, BCP Gas Station Cleanup and Redevelopm NY inth Avenue, Residential Building, New York, NY sy Street, Residential Building, Brooklyn, NY tt Street, Brooklyn, NY 125 th Street, Residential Building, New York, NY mory Redevelopment, Brooklyn, NY Street, BCP Redevelopment of Former Commercial Site, New York, NY Street, Soil Excavation and Remediation, New York, NY seland Ballroom Redevelopment, Soil Characterization i Oversight, New York, NY Street, "E" Designated Site Investigation and Remedia NY School Construction Authority, Various Locations, In-Ho ntal Consulting, Five Boroughs of New York City Portfolio, GE Capital, Various Phase II Site Investigati A, and MS im Child Daycare Center, Lead Based Paint Abatem NY	ation Qualified Environmental Professional (QEP) certified by the Institute of Professional Environmental Practice 40-Hour OSHA (HAZWOPER) and and tion, puse ons, ient,	
Superfund	Site, Hamburg, PA		· · · · · · · · · · · · · · · · · · ·
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- Clark Portfolio, GE Capital, Various Phase II Locations, MI, IL, ID, and OH
- Tops Plaza Portfolio, Prudential Real Estate Investors, Various Phase II Locations, NY
- Cingular Wireless Portfolio, Cingular Wireless, Various Locations Phase I and II Locations, WA
- Queens Center Mall Expansion, Remedial Oversight, Elmhurst, NY
- Soka Gakkai International-USA, Cultural Center, Brooklyn, NY

EMILY L. SNEAD, PG

PROJECT SCIENTIST ENVIRONMENTAL ENGINEERING

Ms. Snead brings field experience and technical expertise to environmental investigations and remediation projects. She has independently performed Phase I and Phase II assessments and investigations. UST removals and closures, remedial excavations, vapor extractions, and ISCO injections. She excels at project research, environmental sampling, remedial oversight, proposal and report preparation. Her projects have included hospital centers, day care facilities, residential buildings, chemical plants, and commercial/industrial sites throughout New York City and the Tri-State area. Prior to her career in Environmental Consulting, Ms. Snead conducted research with NASA and performed construction oversight management in the Cayman Islands.

SELECTED PROJECTS

•	Silvercu	p West,	Brownfield	Cleanup	Site,	Long	Island	City,	NY
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- Highline 28-29 Development, PCE-Contaminated Soil Delineation and Implementation of Bioaugmentation Remediation, New York, NY
- 295 Locust Avenue, Soil Excavation/Trucking, Monitoring Well Decommissioning, Groundwater Sampling and SMP inspections, Bronx, NY
- Hotel Trades Union (620 Fulton Street), Hazardous Lead Soil removal, UST closure and Soil Management Report Brooklyn, NY • 743 Fifth Avenue, Soil Management Report, New York, NY
- Suncap Facility, UST Investigations and Test Pit Explorations. .**.**. ' Yonkers, NY New York University (383 Lafayette Street), Hazardous Lead Soil
- Removal and UST Closure New York, NY •· · 601 Washington Street, Remedial Excavation, Groundwater ISCO
- Treatment, and Installation of an Active SMD System, New York, NY NYC OER E-Designated site (50 Hudson Yards/2 Hudson
- Boulevard), Remedial Investigation, Remedial Excavation Oversight, Shipping Training and Closure Reporting, New York. NY and Closure Reporting, New York, NY
 Riverside Center Parcel 1, VCP Site Remedial Excavation, UST
 First Aid/ CPR Training
 Closure, Spill Investigation and Closure, and Reporting, New York,
- AFFILIATIONS NY
- Riverside Center Parcels 3 and 4, VCP Site Remedial Excavation, UST Closure, New York, NY NAIOP New York City Bronx Terminal Market, Triennial SMP Reporting and Annual Chapter, member
- Inspections, Bronx, NY Urban Land Institute (ULI), 616 First Avenue, VCP Program Includes Remedial Excavation Member Oversight, SMP Annual Inspections, Reporting, New York, NY Luxury Car Dealership (787 Eleventh Avenue), Spill Investigation and UST Člosure, New York, NY
- 335 Bold Street, Phase II and BCP Application, Brooklyn, NY • President Street Properties, Phase II Investigation and BCP. Application, Brooklyn, NY

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38-01 Queens Boulevard Due Diligence, Long Island City, NY



EDUCATION

B.S., Environmental Science & Geology Northeastern University

PROFESSIONAL REGISTRATION

Professional Geologist (PG) in NY

40-Hour OSHA HAZWOPER

8-Hour OSHA HAZWOPER Refresher

10-Hour OSHA Construction Safety Training

Shipping Training

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- 250 Water Street, Phase II Investigation, New York, NY
- 139 East 56th Street, Joint Geotechnical and Environmental Waste Characterization, New York, NY
- Le Soleil d'Or Boutique Hotel, Cayman Brac, Cayman Islands
- Columbia University Medical Center, Phase I and II Environmental Site Investigation Nursing School, New York, NY
- Consolidated Edison of NY, Remedial Investigation and RIR Investigation, New York, NY
- 11-09 Borden Avenue, MTA Bridges and Tunnels/Borden Avenue ISCO Remediation, Disposal of Petroleum-Impacted Soil, Long Island City, NY
- Columbia University Medical Center, Removal of a 1,000-gal UST and Closure Report, New York, NY
- Children's Aid Society (910 East 172nd Street), Oversight of the VEFR and Collection of Groundwater Samples New York, NY
- New York City Housing Authority, Community Air Monitoring Program and Environmental Oversight, Bronx, NY
- YRC Freight Newtown Creek EPA RFI, Brooklyn, NY
- 522-532 West 29th Street Redevelopment, Phase II Site Investigation and RAWP New York, NY
- Memorial Sloan-Kettering Cancer Center Ambulatory Surgery Building, Community Air Monitoring Program, New York, NY
- Keith Hilltop Terrace Apartments, Phase I and II Environmental Site Assessment, Altoona, PA
- Southern Boulevard Phase II ESA, Bronx, NY
- Former Auto Dealership, Remedial Investigation and Delineation of Polycyclic Aromatic Hydrocarbons (PAHs), Paramus, NJ
- 711 11th Avenue, Former Auto Dealership, Chrysler Group LLC, Phase I and Limited Phase II Due Diligence Investigation, New York, NY
- 37-14 36th Street, Field Investigations Silver Star-Mercedes Benz, Long Island City, NY
- Otto Pehle Park, Bergen County Health Department, Groundwater Sampling and Ecological Surveys, Paramus, NJ
- Bay Park Brownfield Redevelopment, Installation of Sub-Slab Depressurization System, Coney Island, Brooklyn, NY
- PQ Corporation, Oversight of Remedial Action Field Activities, Rahway, NJ
- Post-Graduate Center for Mental Health (304 Echo Place), Phase I and Limited Phase II Due Diligence Investigation, Bronx, NY
- Air Quality Monitoring, Sweeny & Conroy, Inc., New York, NY
- Former Auto Dealership, Chrysler Group LLC, Phase I and Limited Phase II Due Diligence Investigation, New York, NY
- New York Life Investment Management, Phase II Environmental Site Assessment, Jessup, MD
- 366 Broadway, Former Brunswick Hospital Campus, 25,000-Gallon UST Removal, Amityville, NY

Emily G. Strake

Project Chemist/ Risk Assessor Human Health Risk Assessment Chemical Data Validation

15 years in the industry ~ 2 years with Langan

Ms. Strake has fifteen years of environmental chemistry, risk assessment, auditing, and quality assurance experience. Most recently, she has focused her efforts on human health risk assessment, and has been the primary author or key contributor of risk assessment reports and screening evaluations for projects governed under RCRA, CERCLA, SWRCB, DTSC, DNREC, PADEP, NJDEP, CTDEEP, ODEQ, NYSDEC and MDE. She has experience in site-specific strategy development, which has enabled her to perform assessments to focus areas of investigation and identify risk-based alternatives for reducing remediation costs. Ms. Strake is a member of the Interstate Technology and Regulatory Council Risk Assessment Team responsible for the development and review of organizational risk assessment guidance documents and serves as a National Trainer in risk assessment for the organization.

Ms. Strake has over nine years of experience assessing potential adverse health effect to humans from exposure to hazardous contaminants in soil, sediment, groundwater, surface water, ambient and indoor air, and various types of animal, fish, and plant materials. She understands and applies environmental cleanup guidance and policies associated with multiple federal and state agencies. Additionally, she has broad experience in the development of preliminary remediation goals and site-specific action levels. She is proficient with the USEPA and Cal/EPA Johnson and Ettinger Model for Subsurface Vapor Intrusion into Buildings, USEPA's Adult Lead Methodology, DTSC's Leadspread 7 and 8, and statistical evaluation of data using USEPA's ProUCL software.

Ms. Strake has extensive experience in environmental data validation, focused on ensuring laboratory deliverables follow specific guidelines as described by regulatory agencies and the analytical methods employed. In addition, she has experience in EQuIS chemical database management. She also has a broad range of environmental field experience and maintains current OSHA HAZWOPER certification.

Ms. Strake is experienced in auditing laboratory and field-sampling activities for compliance with Quality Assurance Project Plans (QAPPs), the National Environmental Laboratory Accreditation Conference Standards Quality Systems manual, and applicable USEPA Guidance. Ms. Strake has also audited on-site laboratories in support of groundwater treatment operations and implemented corrective actions. Her responsibilities include writing reports on the value of laboratory work, writing/editing QAPPs for clients and project-specific sites, peer reviewing colleague's work, and mentoring staff within the office. She has also served as the Quality Assurance officer for several long-term projects, responsible for the achievement of all forms of Quality Control/Quality Assurance by onsite personnel relating to sampling, analysis, and data evaluation.

Ms. Strake has several years' experience analyzing investigative samples, writing laboratory Standard Operating Procedures (SOPs), and managing all



Education

M.B.A., Business Administration The University of Scranton

B.S., Chemistry Cedar Crest College

Memberships

Interstate Technology and Regulatory Council

Society for Risk Analysis

Training

Candidate, Certified Industrial Environmental Toxicologist. National Registry of Environmental Professionals.

40 hr. OSHA HAZWOPER Training/Nov 2002

8 hr. HAZWOPER Supervisor/June 2004

8 hr. OSHA HAZWOPER Refresher/Oct 2012

American Red Cross First Aid & CPR certified

Publications/Presentations

Decision Making at Contaminated Sites: Issues and Options in Human Health Risk Assessment. Interstate Technology and Regulatory Council

Alternate Approaches for Act 2 Risk Assessments Using Site-Specific Information. Pennsylvania Brownfields Conference

Tools from NJDEP's Attainment Guidance to Support Site Closure LSRP Summit V

EPA Region IX Vapor Intrusion Policy for Silicon Valley 2014 Environmental Workshop



aspects of procedures and analyses for Optical Emission Spectrometry, X-Ray Fluorescence, Ignition analysis, and Atomic Absorption. Her experience also includes operating and performing routine instrument maintenance for GC/MS and IR. Ms. Strake has worked extensively on developing rapid soil characterization programs for PCB and pesticide analyses utilizing enzymelinked immunosorbent assays, and was also involved in efforts to develop new instrumentation to quantify microbial nitrification of ammonium.

Selected Project Experience

Human Health Risk Assessment

- Major League Soccer's San Jose Earthquakes Stadium Utilized the Johnson and Ettinger advanced soil gas model to calculate risk and hazard associated with inhalation of chlorinated solvents for the redevelopment of a public soccer stadium. Soil gas data was modeled assuming three soil stratum and site-specific soil, building, and exposure parameters. The Earthquakes' stadium is set to open in 2015.
- Exelon Developed a human health risk assessment for a utilityowned former Manufactured Gas Plant (MGP) site in Pennsylvania, under Pennsylvania's Act 2 Program. Used ProUCL 4.0 statistical software to determine upper limits for full data sets and non-detect data. Conducted vapor intrusion modeling (via the Johnson & Ettinger model) and prepared vapor intrusion reports showing that risks to volatile organic compounds in soils and groundwater were not impacting indoor air quality.
- Texas Instruments Participated in a collaboration with Robert Ettinger and Geosyntec Consulting to develop comments to USEPA Region IX and the San Francisco Regional Water Quality Control Board regarding vapor intrusion at South Bay Superfund Sites. The focus of the response was to outline scientific and policy objections to EPA's recommended TCE interim short-term indoor air response action levels and guidelines, and to clarify the use of California-modified indoor air screening levels for assessing and responding to TCE and PCE subsurface vapor intrusion into indoor air.
- DuPont Worked as a key participant in the human health risk evaluation of mercury associated with legacy contamination of the South River located in Waynesboro, Virginia.
- Veteran's Affairs Completed a human health risk evaluation of the potential future risk associated with inhalation of indoor air for the Veteran's Administration. Soil, soil gas, and groundwater samples were collected as part of the site characterization. Achieved DTSC approval of the risk assessment approach and conclusions.
- Santa Clara Landfill Developed a human health risk assessment to characterize risk associated with exposure to landfill gas at the Santa Clara All Purpose Landfill. The risk assessment evaluated specific compounds in landfill gas, their concentrations, spatial patterns, and extent throughout the site, and assessed the potential for vapor intrusion associated with a proposed future redevelopment.
- Avon Completed a human health risk assessment in accordance with NYSDEC guidance for a redevelopment property located in Rye, New York. The objective of the evaluation was to characterize the risks associated with potential future human



exposures to soil and groundwater affected by a release from the Site's former No. 2 fuel oil UST. The intended future use of the Site was a playground to be utilized by the general public for open play on commercial recreational equipment.

- Golden Gate National Parks Conservancy Peer reviewed a Preliminary Endangerment Assessment Report for the Battery East Trail. The assessment included a human health risk evaluation that estimated carcinogenic risk from exposure to PAHs and dioxin/furans in soil using toxic equivalency to benzo(a)pyrene and 2,3,7,8-TCDD.
- Sunoco Refineries Derived site-specific soil PRGs for lead using the EPA's adult lead model for two former Sunoco refineries. Completed receptor evaluations in accordance with USEPA risk assessment guidance to develop exposure parameters under current and reasonably anticipated future land use scenarios.
- Honeywell Completed a focused human health risk evaluation of PAH contaminants for under NJDEP's Site Remediation Program. Applied a blended approach of qualitative risk characterization and quantitative risk calculation to propose closure of AOCs following the remedial investigation.
- Delaware City Refinery Performed comprehensive human health risk assessment for a petroleum refinery in Delaware City, Delaware. The risk assessment was the basis for a thorough characterization and assessment of potential risks posed by sitespecific conditions. Developed various human exposure scenarios by using both Federal and State-Specific guidance for soil, groundwater, and surface water exposure.
- Occidental Chemical Completed multiple AOC-specific risk assessments utilizing and applying the guidance set forth by the DTSC's Human Health Risk Assessment Note 1 (Default Exposure Factors for Use in Risk Assessment), Note 3 (Recommended Methodology for Use of USEPA Regional Screening Levels, and Note 4 (Screening Level Human Health Risk Assessments).
- Floreffe Terminal Performed human health risk assessment for contamination resulting from a 3.9 million gallon diesel oil tank collapse along the Monongahela River. Evaluated potential impacts to human health via exposure to soil, groundwater, and surface water. Calculated site-specific standards for soil remediation.
- DOW Chemical Calculated Medium Specific Concentrations (MSCs) for unregulated contaminants using the PADEP protocols to assist in the clean-up of a monomer tank explosion in Bristol, Pennsylvania. Selected appropriate surrogate toxicity data and evaluated novel on-site constituents by analogy.
- Ryder Developed Alternative Direct Exposure Criteria for PAHimpacted fill material at a commercial facility. Site-specific soil screening levels for incidental ingestion of soil were calculated following a forward risk evaluation for current on-site receptors.
- Rohm and Haas Prepared an Act 2 site-specific human health risk assessment for the oldest industrial facility in the United States, located in southeast Philadelphia. The objective of the risk assessment was to determine achievable possible future land-use options under Pennsylvania's Land Recycling Program. The risk assessment included evolution of multiple site-COPCs and constituent suites: VOCs, SVOCs, PCBs, pesticides, and metals



(including lead). Evaluated the potential for indoor air inhalation through J&E modeling of soil gas and groundwater.

• Regency - Conducted vapor intrusion modeling for a dry cleaning facility in the Philadelphia area. Predictive modeling using the Johnson and Ettinger approach indicated that estimated contaminant levels would not adversely affect human receptors.

Chemical Data Quality

- Audited multiple accredited laboratories in New Jersey and Pennsylvania on behalf of clients using USEPA Guidance on Technical Audits and Related Assessments for Environmental Data Operations. The audits included full-suite USEPA and SW-846 methodology; and included reviewing staff experience and training records, equipment and facilities, policies, practices, procedures, and documentation for sample receipt, analysis, instrument maintenance, standard preparation, calibration and traceability, control charting, corrective actions, data reduction and review, report generation, and waste disposal.
- Reviewed and validated data packages for RCRA Facilities Investigation at a Philadelphia-area chemical site; issued data validation reports to project personnel and regulatory agencies. The reviews included evaluation of quarterly groundwater, soil, and soil vapor matrices. Participated in RCRA groundwater sampling, developed and executed the investigation's QAPP, and coordinated with the laboratory to schedule and perform fieldsampling events.
- Completed Data Usability Summary Reports in accordance with NYSDEC DER-10 guidance for soil, groundwater, sediment surface water, soil gas, ambient air and indoor air analytical results.
- Acted as the Quality Assurance Officer for several long-term projects in Pennsylvania, Maryland, and New Jersey, Delaware, responsible for the achievement of all forms of QA/QC as it related to sampling, analysis, and data evaluation.
- Participated in a CERCLA site investigation; assessed the usability of sample results for numerous matrices including dust, sediment, soils, and various aqueous matrices for a remedial investigation under the Contract Laboratory Program. Implemented an on-site pesticide immunoassay program to delineate soil contamination in real-time.
- EQuIS data manager for database migration of historical groundwater results associated with remediation activities; assisted with natural attenuation data evaluation and gained experience in geochemical trends associated with intrinsic biodegradation.
- Coordinated the collection of fish tissue samples and determined the validity of the analytical results associated with CERCLA and RCRA site characterizations. Assessed duck blood analytical results for the Connecticut Department of Energy and Environmental Protection Bureau of Natural Resources.

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Anthony Moffa Jr, CHMM

Corporate Health and Safety Manager Health & Safety Coordinator, Contingency Planning, Compliance Auditing

19 years in the industry ~ 12 years with Langan

Mr. Moffa has over nineteen years experience in providing environmental compliance assistance to both commercial and industrial facilities. His compliance auditing experience includes facility and process specific including the areas of waste management, stormwater and wastewater issues and air emissions. He has an extensive background in the areas of hazardous, non-hazardous and universal waste management. His level of experience includes working with federal, state and local authorities to ensure clients environmental compliance status on all levels. His compliance reporting includes federal and state specific reports. Completed federal reports include the Tier II, Toxic Chemical Release Inventories under SARA Title III and Biennial Hazardous Waste Reporting. Completed state specific reporting includes the Pennsylvania Form 26R and the New Jersey Release Pollution Prevention Report. He is experienced in the preparation, submittal and compliance monitoring of NPDES & stormwater applications and permits. He has developed site specific contingency plans for both industrial and commercial facilities for facilities throughout Pennsylvania and New Jersey.

Selected Projects

Verizon - Pennsylvania, Inc. Philadelphia Naval Yard, PA Confidential Client, Philadelphia, PA Penn Color, Doylestown, PA Verizon - Pennsylvania, Inc., Phase I Environmental Assessment, Lansdowne, PA Verizon - Pennsylvania, Inc. (formerly Bell Atlantic Corporation), Various Locations, PA Kinder Morgan Bulk Terminals, Inc. Fairless Hills, PA PP&L – Martins Creek, Bangor, PA Concord Beverage Company, Concordville, PA Penn Color, Hatfield, PA National Starch & Chemical Company, Bloomfield, NJ Air Products and Chemicals, Inc., Middlesex, NJ PSEG Services Corporation, Jersey City, NJ Sampson Coatings, Richmond, VA Custom Chemicals Corporation, Elmwood Park, NJ



Education

M.E., Science Penn State University

B.S., Physics West Chester University

Professional Registration

Certified Hazardous Material Manager (CHMM)

Professional Affiliations

Pennsylvania Chamber of Business & Industry

Chemical Council of New Jersey

New Jersey Business & Industry Association

Professional Training

OSHA 40-Hour Hazardous Waste Site Training Course

National Safety Council – CPR, Bloodborne Pathogen and First Aid Training

Steel Tank Institute Certified AST Inspector

PADEP Pollution Prevention & Energy Efficiency Qualified Assessor



ATTACHMENT B

LABORATORY REPORTING LIMITS AND METHOD DETECTION LIMITS



Langan Engineering & Environmental

TCL Volatiles - EPA 8260C/5035 High&Low (SOIL)

Holding Time: 14 days Container/Sample Preservation: 1 - 1 Vial MeOH/2 Vial Water

					LCS		MS		Duplicate	Surrogate	
Analyte	CAS #	RL	MDL	Units	Criteria	LCS RPD	Criteria	MS RPD	RPD	Criteria	
Methylene chloride	75-09-2	5	2.29	ug/kg	70-130	30	70-130	30	30		
1,1-Dichloroethane	75-34-3	1	0.145	ug/kg	70-130	30	70-130	30	30		
Chloroform	67-66-3	1.5	0.14	ug/kg	70-130	30	70-130	30	30		
Carbon tetrachloride	56-23-5	1	0.23	ug/kg	70-130	30	70-130	30	30		
1,2-Dichloropropane	78-87-5	1	0.125	ug/kg	70-130	30	70-130	30	30		
Dibromochloromethane	124-48-1	1	0.14	ug/kg	70-130	30	70-130	30	30		
1,1,2-Trichloroethane	79-00-5	1	0.267	ug/kg	70-130	30	70-130	30	30		
Tetrachloroethene	127-18-4	0.5	0.196	ug/kg	70-130	30	70-130	30	30		
Chlorobenzene	108-90-7	0.5	0.127	ug/kg	70-130	30	70-130	30	30		
Trichlorofluoromethane	75-69-4	4	0.695	ug/kg	70-139	30	70-139	30	30		
1,2-Dichloroethane	107-06-2	1	0.257	ug/kg	70-130	30	70-130	30	30		
1,1,1-Trichloroethane	71-55-6	0.5	0.167	ug/kg	70-130	30	70-130	30	30		
Bromodichloromethane	75-27-4	0.5	0.109	ug/kg	70-130	30	70-130	30	30		
trans-1,3-Dichloropropene	10061-02-6	1	0.273	ug/kg	70-130	30	70-130	30	30		
cis-1,3-Dichloropropene	10061-01-5	0.5	0.158	ug/kg	70-130	30	70-130	30	30		
1,3-Dichloropropene, Total	542-75-6	0.5	0.158	ug/kg				30	30		
1,3-Dichloropropene, Total	542-75-6	0.5	0.158	ug/kg				30	30		
1,1-Dichloropropene	563-58-6	0.5	0.159	ug/kg	70-130	30	70-130	30	30		
Bromoform	75-25-2	4	0.246	ug/kg	70-130	30	70-130	30	30		
1,1,2,2-Tetrachloroethane	79-34-5	0.5	0.166	ug/kg	70-130	30	70-130	30	30		
Benzene	71-43-2	0.5	0.166	ug/kg	70-130	30	70-130	30	30		
Toluene	108-88-3	1	0.543	ug/kg	70-130	30	70-130	30	30		
Ethylbenzene	100-41-4	1	0.141	ug/kg	70-130	30	70-130	30	30		
Chloromethane	74-87-3	4	0.932	ug/kg	52-130	30	52-130	30	30		
Bromomethane	74-83-9	2	0.581	ug/kg	57-147	30	57-147	30	30		
Vinyl chloride	75-01-4	1	0.335	ug/kg	67-130	30	67-130	30	30		
Chloroethane	75-00-3	2	0.452	ug/kg	50-151	30	50-151	30	30		
1,1-Dichloroethene	75-35-4	1	0.238	ug/kg	65-135	30	65-135	30	30		
trans-1,2-Dichloroethene	156-60-5	1.5	0.137	ug/kg	70-130	30	70-130	30	30		
Trichloroethene	79-01-6	0.5	0.137	ug/kg	70-130	30	70-130	30	30		
1,2-Dichlorobenzene	95-50-1	2	0.144	ug/kg	70-130	30	70-130	30	30		
1,3-Dichlorobenzene	541-73-1	2	0.148	ug/kg	70-130	30	70-130	30	30		
1,4-Dichlorobenzene	106-46-7	2	0.171	ug/kg	70-130	30	70-130	30	30		
Methyl tert butyl ether	1634-04-4	2	0.201	ug/kg	66-130	30	66-130	30	30		
p/m-Xylene	179601-23-1	2	0.56	ug/kg	70-130	30	70-130	30	30		
o-Xylene	95-47-6	1	0.291	ug/kg	70-130	30	70-130	30	30		
Xylene (Total)	1330-20-7	1	0.291	ug/kg				30	30		
Xylene (Total)	1330-20-7	1	0.291	ug/kg				30	30		
cis-1,2-Dichloroethene	156-59-2	1	0.175	ug/kg	70-130	30	70-130	30	30		
1,2-Dichloroethene (total)	540-59-0	1	0.137	ug/kg				30	30		
1,2-Dichloroethene (total)	540-59-0	1	0.137	ug/kg				30	30		
Dibromomethane	74-95-3	2	0.238	ug/kg	70-130	30	70-130	30	30		

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Langan Engineering & Environmental

TCL Volatiles - EPA 8260C/5035 High&Low (SOIL)

Holding Time: 14 days Container/Sample Preservation: 1 - 1 Vial MeOH/2 Vial Water

					LCS		MS		Duplicate	Surrogate	
Analyte	CAS #	RL	MDL	Units	Criteria	LCS RPD	Criteria	MS RPD	RPD	Criteria	
Styrene	100-42-5	1	0.196	ug/kg	70-130	30	70-130	30	30		
Dichlorodifluoromethane	75-71-8	10	0.915	ug/kg	30-146	30	30-146	30	30		
Acetone	67-64-1	10	4.811	ug/kg	54-140	30	54-140	30	30		
Carbon disulfide	75-15-0	10	4.55	ug/kg	59-130	30	59-130	30	30		
2-Butanone	78-93-3	10	2.22	ug/kg	70-130	30	70-130	30	30		
Vinyl acetate	108-05-4	10	2.15	ug/kg	70-130	30	70-130	30	30		
4-Methyl-2-pentanone	108-10-1	10	1.28	ug/kg	70-130	30	70-130	30	30		
1,2,3-Trichloropropane	96-18-4	2	0.127	ug/kg	68-130	30	68-130	30	30		
2-Hexanone	591-78-6	10	1.18	ug/kg	70-130	30	70-130	30	30		
Bromochloromethane	74-97-5	2	0.205	ug/kg	70-130	30	70-130	30	30		
2,2-Dichloropropane	594-20-7	2	0.202	ug/kg	70-130	30	70-130	30	30		
1,2-Dibromoethane	106-93-4	1	0.279	ug/kg	70-130	30	70-130	30	30		
1,3-Dichloropropane	142-28-9	2	0.167	ug/kg	69-130	30	69-130	30	30		
1,1,1,2-Tetrachloroethane	630-20-6	0.5	0.132	ug/kg	70-130	30	70-130	30	30		
Bromobenzene	108-86-1	2	0.145	ug/kg	70-130	30	70-130	30	30		
n-Butylbenzene	104-51-8	1	0.167	ug/kg	70-130	30	70-130	30	30		
sec-Butylbenzene	135-98-8	1	0.146	ug/kg	70-130	30	70-130	30	30		
tert-Butylbenzene	98-06-6	2	0.118	ug/kg	70-130	30	70-130	30	30		
o-Chlorotoluene	95-49-8	2	0.191	ug/kg	70-130	30	70-130	30	30		
p-Chlorotoluene	106-43-4	2	0.108	ug/kg	70-130	30	70-130	30	30		
1,2-Dibromo-3-chloropropane	96-12-8	3	0.998	ug/kg	68-130	30	68-130	30	30		
Hexachlorobutadiene	87-68-3	4	0.169	ug/kg	67-130	30	67-130	30	30		
Isopropylbenzene	98-82-8	1	0.109	ug/kg	70-130	30	70-130	30	30		
p-Isopropyltoluene	99-87-6	1	0.109	ug/kg	70-130	30	70-130	30	30		
Naphthalene	91-20-3	4	0.65	ug/kg	70-130	30	70-130	30	30		
Acrylonitrile	107-13-1	4	1.15	ug/kg	70-130	30	70-130	30	30		
n-Propylbenzene	103-65-1	1	0.171	ug/kg	70-130	30	70-130	30	30		
1,2,3-Trichlorobenzene	87-61-6	2	0.322	ug/kg	70-130	30	70-130	30	30		
1,2,4-Trichlorobenzene	120-82-1	2	0.272	ug/kg	70-130	30	70-130	30	30		
1,3,5-Trimethylbenzene	108-67-8	2	0.193	ug/kg	70-130	30	70-130	30	30		
1,2,4-Trimethylbenzene	95-63-6	2	0.334	ug/kg	70-130	30	70-130	30	30		
1,4-Dioxane	123-91-1	100	35.1	ug/kg	65-136	30	65-136	30	30		
1,4-Diethylbenzene	105-05-5	2	0.177	ug/kg	70-130	30	70-130	30	30		
4-Ethyltoluene	622-96-8	2	0.384	ug/kg	70-130	30	70-130	30	30		
1,2,4,5-Tetramethylbenzene	95-93-2	2	0.191	ug/kg	70-130	30	70-130	30	30		
Ethyl ether	60-29-7	2	0.341	ug/kg	67-130	30	67-130	30	30		
trans-1,4-Dichloro-2-butene	110-57-6	5	1.42	ug/kg	70-130	30	70-130	30	30		
1,2-Dichloroethane-d4	17060-07-0									70-130	
2-Chloroethoxyethane											
Toluene-d8	2037-26-5									70-130	
4-Bromofluorobenzene	460-00-4									70-130	
Dibromofluoromethane	1868-53-7									70-130	

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NYTCL Semivolatiles - EPA 8270D (SOIL)

Holding Time: 14 days Container/Sample Preservation: 1 - Glass 250ml/8oz unpreserved

					LCS		MS	T T	Duplicate	Surrogate	T
Analyte	CAS #	RL	MDL	Units	Criteria	LCS RPD	Criteria	MS RPD	RPD	Criteria	
Acenaphthene	83-32-9	133.6	17.3012	ug/kg	31-137	50	31-137	50	50		1
1,2,4-Trichlorobenzene	120-82-1	167	19.1048	ug/kg	38-107	50	38-107	50	50		1
Hexachlorobenzene	118-74-1	100.2	18.704	ug/kg	40-140	50	40-140	50	50		1
Bis(2-chloroethyl)ether	111-44-4	150.3	22.6452	ug/kg	40-140	50	40-140	50	50		1
2-Chloronaphthalene	91-58-7	167	16.5664	ug/kg	40-140	50	40-140	50	50		1
1,2-Dichlorobenzene	95-50-1	167	29.9932	ug/kg	40-140	50	40-140	50	50		1
1,3-Dichlorobenzene	541-73-1	167	28.724	ug/kg	40-140	50	40-140	50	50		1
1,4-Dichlorobenzene	106-46-7	167	29.1582	ug/kg	28-104	50	28-104	50	50		1
3,3'-Dichlorobenzidine	91-94-1	167	44.422	ug/kg	40-140	50	40-140	50	50		1
2,4-Dinitrotoluene	121-14-2	167	33.4	ug/kg	40-132	50	40-132	50	50		
2,6-Dinitrotoluene	606-20-2	167	28.6572	ug/kg	40-140	50	40-140	50	50		1
Fluoranthene	206-44-0	100.2	19.1716	ug/kg	40-140	50	40-140	50	50		1
4-Chlorophenyl phenyl ether	7005-72-3	167	17.869	ug/kg	40-140	50	40-140	50	50		1
4-Bromophenyl phenyl ether	101-55-3	167	25.4842	ug/kg	40-140	50	40-140	50	50		1
Bis(2-chloroisopropyl)ether	108-60-1	200.4	28.5236	ug/kg	40-140	50	40-140	50	50		1
Bis(2-chloroethoxy)methane	111-91-1	180.36	16.7334	ug/kg	40-117	50	40-117	50	50		1
Hexachlorobutadiene	87-68-3	167	24.4488	ug/kg	40-140	50	40-140	50	50		1
Hexachlorocyclopentadiene	77-47-4	477.62	151.302	ug/kg	40-140	50	40-140	50	50		1
Hexachloroethane	67-72-1	133.6	27.0206	ug/kg	40-140	50	40-140	50	50		1
Isophorone	78-59-1	150.3	21.6766	ug/kg	40-140	50	40-140	50	50		1
Naphthalene	91-20-3	167	20.3406	ug/kg	40-140	50	40-140	50	50		1
Nitrobenzene	98-95-3	150.3	24.716	ug/kg	40-140	50	40-140	50	50		1
NitrosoDiPhenylAmine(NDPA)/DPA	86-30-6	133.6	19.0046	ug/kg	36-157	50	36-157	50	50		1
n-Nitrosodi-n-propylamine	621-64-7	167	25.7848	ug/kg	32-121	50	32-121	50	50		1
Bis(2-Ethylhexyl)phthalate	117-81-7	167	57.782	ug/kg	40-140	50	40-140	50	50		1
Butyl benzyl phthalate	85-68-7	167	42.084	ug/kg	40-140	50	40-140	50	50		1
Di-n-butylphthalate	84-74-2	167	31.6632	ug/kg	40-140	50	40-140	50	50		1
Di-n-octylphthalate	117-84-0	167	56.78	ug/kg	40-140	50	40-140	50	50		1
Diethyl phthalate	84-66-2	167	15.4642	ug/kg	40-140	50	40-140	50	50		1
Dimethyl phthalate	131-11-3	167	35.07	ug/kg	40-140	50	40-140	50	50		1
Benzo(a)anthracene	56-55-3	100.2	18.8042	ug/kg	40-140	50	40-140	50	50		1
Benzo(a)pyrene	50-32-8	133.6	40.748	ug/kg	40-140	50	40-140	50	50		1
Benzo(b)fluoranthene	205-99-2	100.2	28.1228	ug/kg	40-140	50	40-140	50	50		1
Benzo(k)fluoranthene	207-08-9	100.2	26.72	ug/kg	40-140	50	40-140	50	50		1
Chrysene	218-01-9	100.2	17.368	ug/kg	40-140	50	40-140	50	50		1
Acenaphthylene	208-96-8	133.6	25.7848	ug/kg	40-140	50	40-140	50	50		
Anthracene	120-12-7	100.2	32.565	ug/kg	40-140	50	40-140	50	50		
Benzo(ghi)perylene	191-24-2	133.6	19.6392	ug/kg	40-140	50	40-140	50	50		1
Fluorene	86-73-7	167	16.2324	ug/kg	40-140	50	40-140	50	50		1
Phenanthrene	85-01-8	100.2	20.3072	ug/kg	40-140	50	40-140	50	50		1
Dibenzo(a,h)anthracene	53-70-3	100.2	19.3052	ug/kg	40-140	50	40-140	50	50		
Indeno(1,2,3-cd)Pyrene	193-39-5	133.6	23.2798	ug/kg	40-140	50	40-140	50	50		

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Langan Engineering & Environmental

NYTCL Semivolatiles - EPA 8270D (SOIL)

Holding Time: 14 days Container/Sample Preservation: 1 - Glass 250ml/8oz unpreserved

					LCS		MS		Duplicate	Surrogate		· · · · · · · · · · · · · · · · · · ·
Analyte	CAS #	RL	MDL	Units	Criteria	LCS RPD	Criteria	MS RPD	RPD	Criteria		
Pyrene	129-00-0	100.2	16.5998	ug/kg	35-142	50	35-142	50	50	0.1100.10		
Biphenyl	92-52-4	380.76	38.744	ug/kg	54-104	50	54-104	50	50			
4-Chloroaniline	106-47-8	167	30.394	ug/kg	40-140	50	40-140	50	50			
2-Nitroaniline	88-74-4	167	32.1976	ug/kg	47-134	50	47-134	50	50			
3-Nitroaniline	99-09-2	167	31.4962	ug/kg	26-129	50	26-129	50	50			
4-Nitroaniline	100-01-6	167	69.138	ug/kg	41-125	50	41-125	50	50			
Dibenzofuran	132-64-9	167	15.7982	ug/kg	40-140	50	40-140	50	50			
2-Methylnaphthalene	91-57-6	200.4	20.1736	ug/kg	40-140	50	40-140	50	50			
Acetophenone	98-86-2	167	20.6746	ug/kg	14-144	50	14-144	50	50			
2,4,6-Trichlorophenol	88-06-2	100.2	31.6632	ug/kg	30-130	50	30-130	50	50			
P-Chloro-M-Cresol	59-50-7	167	24.883	ug/kg	26-103	50	26-103	50	50			
2-Chlorophenol	95-57-8	167	19.7394	ug/kg	25-102	50	25-102	50	50			
2,4-Dichlorophenol	120-83-2	150.3	26.8536	ug/kg	30-130	50	30-130	50	50			
2,4-Dimethylphenol	105-67-9	167	55.11	ug/kg	30-130	50	30-130	50	50			
2-Nitrophenol	88-75-5	360.72	62.792	ug/kg	30-130	50	30-130	50	50			
4-Nitrophenol	100-02-7	233.8	68.136	ug/kg	11-114	50	11-114	50	50			
2,4-Dinitrophenol	51-28-5	801.6	77.822	ug/kg	4-130	50	4-130	50	50			
4,6-Dinitro-o-cresol	534-52-1	434.2	80.16	ug/kg	10-130	50	10-130	50	50			
Pentachlorophenol	87-86-5	133.6	36.74	ug/kg	17-109	50	17-109	50	50			
Phenol	108-95-2	167	25.217	ug/kg	26-90	50	26-90	50	50			
2-Methylphenol	95-48-7	167	25.885	ug/kg	30-130.	50	30-130.	50	50			
3-Methylphenol/4-Methylphenol	106-44-5	240.48	26.1522	ug/kg	30-130	50	30-130	50	50			
2,4,5-Trichlorophenol	95-95-4	167	31.9972	ug/kg	30-130	50	30-130	50	50			
Benzoic Acid	65-85-0	541.08	169.004	ug/kg	10-110	50	10-110	50	50			
Benzyl Alcohol	100-51-6	167	51.102	ug/kg	40-140	50	40-140	50	50			
Carbazole	86-74-8	167	16.2324	ug/kg	54-128	50	54-128	50	50			
2-Fluorophenol	367-12-4									25-120		
Phenol-d6	13127-88-3									10-120		
Nitrobenzene-d5	4165-60-0									23-120		
2-Fluorobiphenyl	321-60-8									30-120		
2,4,6-Tribromophenol	118-79-6									10-136		
4-Terphenyl-d14	1718-51-0									18-120		
												-

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Langan Engineering & Environmental

TCL Pesticides - EPA 8081B (SOIL)

Holding Time: 14 days Container/Sample Preservation: 1 - Glass 250ml/8oz unpreserved

		1	1		LCS		MS	1	Duplicate	Surrogate	
Analyte	CAS #	RL	MDL	Units	Criteria	LCS RPD	Criteria	MS RPD	RPD	Criteria	
Delta-BHC	319-86-8	7.992	1.5651	ug/kg	30-150	30	30-150	50	50		
Lindane	58-89-9	3.33	1.48851	ug/kg	30-150	30	30-150	50	50		
Alpha-BHC	319-84-6	3.33	0.94572	ug/kg	30-150	30	30-150	50	50		
Beta-BHC	319-85-7	7.992	3.0303	ug/kg	30-150	30	30-150	50	50		
Heptachlor	76-44-8	3.996	1.79154	ug/kg	30-150	30	30-150	50	50		
Aldrin	309-00-2	7.992	2.81385	ug/kg	30-150	30	30-150	50	50		
Heptachlor epoxide	1024-57-3	14.985	4.4955	ug/kg	30-150	30	30-150	50	50		
Endrin	72-20-8	3.33	1.3653	ug/kg	30-150	30	30-150	50	50		
Endrin aldehyde	7421-93-4	9.99	3.4965	ug/kg	30-150	30	30-150	50	50		
Endrin ketone	53494-70-5	7.992	2.05794	ug/kg	30-150	30	30-150	50	50		
Dieldrin	60-57-1	4.995	2.4975	ug/kg	30-150	30	30-150	50	50		
4,4'-DDE	72-55-9	7.992	1.84815	ug/kg	30-150	30	30-150	50	50		
4,4'-DDD	72-54-8	7.992	2.85048	ug/kg	30-150	30	30-150	50	50		
4,4'-DDT	50-29-3	14.985	6.4269	ug/kg	30-150	30	30-150	50	50		
Endosulfan I	959-98-8	7.992	1.88811	ug/kg	30-150	30	30-150	50	50		
Endosulfan II	33213-65-9	7.992	2.67066	ug/kg	30-150	30	30-150	50	50		
Endosulfan sulfate	1031-07-8	3.33	1.58508	ug/kg	30-150	30	30-150	50	50		
Methoxychlor	72-43-5	14.985	4.662	ug/kg	30-150	30	30-150	50	50		
Toxaphene	8001-35-2	149.85	41.958	ug/kg	30-150	30	30-150	50	50		
cis-Chlordane	5103-71-9	9.99	2.78388	ug/kg	30-150	30	30-150	50	50		
trans-Chlordane	5103-74-2	9.99	2.63736	ug/kg	30-150	30	30-150	50	50		
Chlordane	57-74-9	64.935	26.4735	ug/kg	30-150	30	30-150	50	50		
2,4,5,6-Tetrachloro-m-xylene	877-09-8									30-150	
Decachlorobiphenyl	2051-24-3									30-150	

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Langan Engineering & Environmental

Herbicides -EPA 8151A (SOIL)

Holding Time: 14 days Container/Sample Preservation: 1 - Glass 250ml/8oz unpreserved

					LCS		MS	<u>г</u>	Duplicate	Surrogate	
Analyte	CAS #	RL	MDL	Units	Criteria	LCS RPD	Criteria	MS RPD	RPD	Surrogate Criteria	
2,4-D 2,4,5-T 2,4,5-TP (Silvex)	CAS # 94-75-7	RL 0.1665	0.0104895	ma/ka	30-150 30-150 30-150	30	30-150	30	30		
2,4,5-T	93-76-5	0.1665	0.0051615	mg/kg mg/kg mg/kg	30-150	30 30 30	30-150	30	30		
2,4,5-TP (Silvex)	93-72-1	0.1665	0.0044289	mg/kg	30-150	30	30-150	30	30 30		
DCAA	19719-28-9			5, 5						30-150	
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Langan Engineering & Environmental

TCL PCBs - EPA 8082A (SOIL)

Holding Time: 14 days Container/Sample Preservation: 1 - Glass 250ml/8oz unpreserved

					LCS		MS		Duplicate	Surrogate	
Analyte	CAS #	RL	MDL	Units	Criteria	LCS RPD	Criteria	MS RPD	RPD	Criteria	
Aroclor 1016	12674-11-2	33.5	3.7989	ug/kg	40-140	50	40-140	50	50		
Aroclor 1221	11104-28-2	33.5	5.0987	ug/kg	40-140	50	40-140	50	50		
Aroclor 1232	11141-16-5	33.5	3.2964	ug/kg	40-140	50	40-140	50	50		
Aroclor 1242	53469-21-9	33.5	4.1004	ug/kg	40-140	50	40-140	50	50		
Aroclor 1248	12672-29-6	33.5	3.7587	ug/kg	40-140	50	40-140	50	50		
Aroclor 1254	11097-69-1	33.5	2.7336	ug/kg	40-140	50	40-140	50	50		
Aroclor 1260	11096-82-5	33.5	3.4974	ug/kg	40-140	50	40-140	50	50		
Aroclor 1262	37324-23-5	33.5	2.7537	ug/kg	40-140	50	40-140	50	50		
Aroclor 1268	11100-14-4	33.5	2.3718	ug/kg	40-140	50	40-140	50	50		
PCBs, Total	1336-36-3	33.5	1.541	ug/kg				50	50		
PCBs, Total	1336-36-3	33.5	1.541	ug/kg				50	50		
2,4,5,6-Tetrachloro-m-xylene	877-09-8		1		1	1	1	1		30-150	
Decachlorobiphenyl	2051-24-3									30-150	
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Langan Engineering & Environmental

METALS by 6010D (SOIL)

					LCS		MS		Duplicate	Surrogate	Holding	Container/Sample
Analyte	CAS #	RL	MDL	Units	Criteria	LCS RPD	Criteria	MS RPD	RPD	Criteria	Time	Preservation
Aluminum, Total	7429-90-5	4	1.08	mg/kg	48-151	1	75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserve
Antimony, Total	7440-36-0	2	0.152	mg/kg	1-208		75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserve
Arsenic, Total	7440-38-2	0.4	0.0832	mg/kg	79-121		75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserve
Barium, Total	7440-39-3	0.4	0.0696	mg/kg	83-117		75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserve
Beryllium, Total	7440-41-7	0.2	0.0132	mg/kg	83-117		75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserve
Cadmium, Total	7440-43-9	0.4	0.0392	mg/kg	83-117		75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserve
Calcium, Total	7440-70-2	4	1.4	mg/kg	81-119		75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserve
Chromium, Total	7440-47-3	0.4	0.0384	mg/kg	80-120		75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserve
Cobalt, Total	7440-48-4	0.8	0.0664	mg/kg	84-115		75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserve
Copper, Total	7440-50-8	0.4	0.1032	mg/kg	81-118		75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserve
Iron, Total	7439-89-6	2	0.3612	mg/kg	45-155		75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserve
Lead, Total	7439-92-1	2	0.1072	mg/kg	81-117		75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserve
Magnesium, Total	7439-95-4	4	0.616	mg/kg	76-124		75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserve
Manganese, Total	7439-96-5	0.4	0.0636	mg/kg	81-117		75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserve
Nickel, Total	7440-02-0	1	0.0968	mg/kg	83-117		75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserve
Potassium, Total	7440-09-7	100	5.76	mg/kg	71-129		75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserve
Selenium, Total	7782-49-2	0.8	0.1032	mg/kg	78-122		75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserve
Silver, Total	7440-22-4	0.4	0.1132	mg/kg	75-124		75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserve
Sodium, Total	7440-23-5	80	1.26	mg/kg	72-127		75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserve
Thallium, Total	7440-28-0	0.8	0.126	mg/kg	80-120		75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserve
Vanadium, Total	7440-62-2	0.4	0.0812	mg/kg	78-122		75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserve
Zinc, Total	7440-66-6	2	0.1172	mg/kg	82-118		75-125	20	20		180 days	Metals Only-Glass 60mL/2oz unpreserve
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METALS by 7471B (SOIL)

					LCS		MS		Duplicate	Surrogate	Holding	Container/Sample Preservation
Analyte	CAS #	RL	MDL	Units	Criteria	LCS RPD	Criteria	MS RPD	RPD	Surrogate Criteria	Time	Preservation
Mercury, Total	7439-97-6	0.08	0.016896	mg/kg	72-128		80-120	20	20		28 days	Metals Only-Glass 60mL/2oz unpreserv
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WETCHEM (SOIL)

					LCS		MS	1	Duplicate		Holding	Container/Sample
Analyte	CAS #	RL	MDL	Units		LCS RPD	Criteria	MS RPD	RPD	Method	Time	Preservation
Cyanide, Reactive	57-12-5	10	10	mg/kg	30-125	40	ententa	40	40	7.3	14 days	1 - Glass 250ml/8oz unpreserved
Sulfide, Reactive	NONE	10	10	mg/kg	60-125	40		40	40	7.3	14 days	1 - Glass 250ml/8oz unpreserved
Chromium, Hexavalent	18540-29-9	0.8	0.16	mg/kg	80-120	20	75-125	20	20	7196A	30 days	1 - Glass 120ml/4oz unpreserved
Cyanide, Total	57-12-5	1	0.212	mg/kg	80-120	35	75-125	35	35	9010C/9012B	14 days	1 - Glass 250ml/8oz unpreserved
pH	12408-02-5	0		SU	99-101			5	5	9045D	24 hours	1 - Glass 250ml/8oz unpreserved
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Langan Engineering & Environmental

TPH by GC-FID Quantitation Only (SOIL)

Holding Time: 14 days Container/Sample Preservation: 1 - Glass 250ml/8oz unpreserved

					LCS		MS		Dunlicate	Surrogate	
Analyte	CAS #	RL	MDL	Units	Criteria	LCS RPD	Criteria	MS RPD	RPD	Surrogate Criteria	
ТРН	NONE	33350	3835.25		40-140	40	40-140	40	40		
Total Petroleum Hydrocarbons (C9-C44)	NONE	33350	MDL 3835.25 3341.67	ug/kg ug/kg	40-140	40	40-140	40	40		
o-Terphenyl	84-15-1			- 3/ - 3						40-140	
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Langan Engineering & Environmental

TPH - Gasoline Range Organics (SOIL)

Holding Time: 14 days Container/Sample Preservation: 1 - Vial MeOH preserved

					LCS		MS	1	Duplicate	Surrogate	
Analyte	CAS #	RL	MDL	Units	Criteria	LCS RPD	Criteria	MS RPD	RPD	Surrogate Criteria	
Gasoline Range Organics	NONE	2500	48.15	ug/kg	80-120	20	80-120	20	20		
1,1,1-Trifluorotoluene	98-08-8			·),		-				70-130	
4-Bromofluorobenzene	460-00-4									70-130	
								1			

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Langan Engineering & Environmental

TCL Volatiles - EPA 8260C (WATER)

Holding Time: 14 days Container/Sample Preservation: 3 - Vial HCl preserved

	1				LCS		MS	1 1	Duplicate	Surrogate	
Analyte	CAS #	RL	MDL	Units	Criteria	LCS RPD	Criteria	MS RPD	RPD	Criteria	
Methylene chloride	75-09-2	2.5	0.7	ug/l	70-130	20	70-130	20	20		
1,1-Dichloroethane	75-34-3	2.5	0.7	ug/l	70-130	20	70-130	20	20		
Chloroform	67-66-3	2.5	0.7	ua/l	70-130	20	70-130	20	20		
Carbon tetrachloride	56-23-5	0.5	0.134	ug/l	63-132	20	63-132	20	20		
1,2-Dichloropropane	78-87-5	1	0.137	ug/l	70-130	20	70-130	20	20		
Dibromochloromethane	124-48-1	0.5	0.149	ua/l	63-130	20	63-130	20	20		
1,1,2-Trichloroethane	79-00-5	1.5	0.5	ug/l	70-130	20	70-130	20	20		
Tetrachloroethene	127-18-4	0.5	0.181	ug/l	70-130	20	70-130	20	20		
Chlorobenzene	108-90-7	2.5	0.7	ug/l	75-130	20	75-130	20	20		
Trichlorofluoromethane	75-69-4	2.5	0.7	ug/l	62-150	20	62-150	20	20		
1,2-Dichloroethane	107-06-2	0.5	0.132	ug/l	70-130	20	70-130	20	20		
1,1,1-Trichloroethane	71-55-6	2.5	0.7	ug/l	67-130	20	67-130	20	20		
Bromodichloromethane	75-27-4	0.5	0.192	ug/l	67-130	20	67-130	20	20		
trans-1,3-Dichloropropene	10061-02-6	0.5	0.164	ug/l	70-130	20	70-130	20	20		
cis-1,3-Dichloropropene	10061-01-5	0.5	0.144	ug/l	70-130	20	70-130	20	20		
1,3-Dichloropropene, Total	542-75-6	0.5	0.144	ug/l				20	20		
1,3-Dichloropropene, Total	542-75-6	0.5	0.144	ug/l				20	20		
1,1-Dichloropropene	563-58-6	2.5	0.7	ug/l	70-130	20	70-130	20	20		
Bromoform	75-25-2	2	0.65	ug/l	54-136	20	54-136	20	20		
1,1,2,2-Tetrachloroethane	79-34-5	0.5	0.167	ug/l	67-130	20	67-130	20	20		
Benzene	71-43-2	0.5	0.159	ug/l	70-130	20	70-130	20	20		
Toluene	108-88-3	2.5	0.7	ug/l	70-130	20	70-130	20	20		
Ethylbenzene	100-41-4	2.5	0.7	ug/l	70-130	20	70-130	20	20		
Chloromethane	74-87-3	2.5	0.7	ug/l	64-130	20	64-130	20	20		
Bromomethane	74-83-9	2.5	0.7	ug/l	39-139	20	39-139	20	20		
Vinyl chloride	75-01-4	1	0.0714	ug/l	55-140	20	55-140	20	20		
Chloroethane	75-00-3	2.5	0.7	ug/l	55-138	20	55-138	20	20		
1,1-Dichloroethene	75-35-4	0.5	0.169	ug/l	61-145	20	61-145	20	20		
trans-1,2-Dichloroethene	156-60-5	2.5	0.7	ug/l	70-130	20	70-130	20	20		
Trichloroethene	79-01-6	0.5	0.175	ug/l	70-130	20	70-130	20	20		
1,2-Dichlorobenzene	95-50-1	2.5	0.7	ug/l	70-130	20	70-130	20	20		
1,3-Dichlorobenzene	541-73-1	2.5	0.7	ug/l	70-130	20	70-130	20	20		
1,4-Dichlorobenzene	106-46-7	2.5	0.7	ug/l	70-130	20	70-130	20	20		
Methyl tert butyl ether	1634-04-4	2.5	0.7	ug/l	63-130	20	63-130	20	20		
p/m-Xylene	179601-23-1	2.5	0.7	ug/l	70-130	20	70-130	20	20		
o-Xylene	95-47-6	2.5	0.7	ug/l	70-130	20	70-130	20	20		
Xylene (Total)	1330-20-7	2.5	0.7	ug/l				20	20		
Xylene (Total)	1330-20-7	2.5	0.7	ug/l				20	20		
cis-1,2-Dichloroethene	156-59-2	2.5	0.7	ug/l	70-130	20	70-130	20	20		
1,2-Dichloroethene (total)	540-59-0	2.5	0.7	ug/l				20	20		
1,2-Dichloroethene (total)	540-59-0	2.5	0.7	ug/l				20	20		
Dibromomethane	74-95-3	5	1	ug/l	70-130	20	70-130	20	20		

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ATTACHMENT C

ANALYTICAL METHODS/ QUALITY ASSURANCE SUMMARY TABLE

ATTACHMENT C

ANALYTICAL METHODS/QUALITY ASSURANCE SUMMARY TABLE

Matrix Type	Field Parameters	Laboratory Parameters	Analytical Methods	Sample Preservation	Sample Container Volume and Type	Sample Hold Time	Field Duplicate Samples	Field Blank Samples	Trip Blank Samples	Ambient Air Samples	MS/MSD Samples
Soil Total VOCs via PI	Total VOCs via PID	Part 375 + TCL VOCs	EPA 8260C	Cool to 4°C	Two 40-ml VOC vials with 5ml H ₂ O, one with MeOH or 3 En Core Samplers (separate container for % solids)	14 days if froze to -7 C° or extruded into methanol (vials); 48 hours otherwise (En Cores)			1 per Shipment of VOC samples		
		Part 375 + TCL SVOCs	EPA 8270D	Cool to 4°C	4 oz. amber glass jar	14 days extract, 40 days after extraction to analysis				NA	
		Part 375 + TAL Metals	EPA 6010D, EPA 7471B, EPA 7196A	Cool to 4°C	2 oz. amber glass jar	6 months, except mercury 28 days	1 00 1				
		Hexavalent Chromium	EPA 7196A	Cool to 4°C	4 oz. amber glass jar	30 days	1 per 20 samples (minimum 1)	1 per 20 samples (minimum 1)			1 per 20 samples
		Cyanide	EPA 9010C/9012B	Cool to 4°C	8 oz. amber glass jar	14 days			NA		
		Part 375 + TCL Pesticides EPA 8081		Cool to 4°C	4 oz. amber glass jar	14 days extract, 40 days after extraction to analysis					
		Part 375 + TCL Herbicides EPA 8151A Cool to 4°C 8 oz. amber 9	8 oz. amber glass jar	14 days							
		Part 375 + TCL PCBs	EPA 8082A	Cool to 4°C	4 oz. amber glass jar	14 days extract, 40 days after extraction to analysis					

Notes:

1. PID - Photoionization Detector

2. VOC - Volatile organic compound

3. EPA - Environmental Protection Agency

4. TCL - Target compound list5. TAL - Target analyte list6. NA - Not applicable

ATTACHMENT D

SAMPLE NOMENCLATURE STANDARD OPERATING PROCEDURE



SOP #01 – Sample Nomenclature

INTRODUCTION

The Langan Environmental Group conducts an assortment of site investigations where samples (Vapor, Solids, and Aqueous) are collected and submitted to analytical laboratories for analysis. The results of which are then evaluated and entered into a data base allowing quick submittal to the state regulatory authority (New York State Division of Environmental Conservation [NYSDEC]). In addition, Langan is linking their data management system to graphic and analytical software to enable efficient evaluation of the data as well as creating client-ready presentational material.

SCOPE AND APPLICATION

This Standard Operating Procedure (SOP) is applicable to the general framework for labeling vapor, solid (soil) and aqueous (groundwater) samples that will be submitted for laboratory analysis. The nomenclature being introduced is designed to meet the NYSDEC EQuIS standard and has been incorporated into Langan software scripts to assist project personnel in processing the data. While this SOP is applicable to all site investigation; unanticipated conditions may arise which may require considerable flexibility in complying with this SOP. Therefore, guidance provided in this SOP is presented in terms of general steps and strategies that should be applied; but deviation from this SOP must be reported to the Project Manager (PM) immediately.

GENERAL SAMPLE IDENTIFICATION CONSIDERATIONS

Sample Labels

All sample ware must have a label. Recall that when you are using the Encore[™] samples (see below); they are delivered in plastic lined foil bags. You are to label the bags¹:



All other samples containers including Terra Cores[™] must be labeled with laboratory provided selfadhesive labels.

Quick Breakdown of Sample Format

The general format for sample nomenclature is:

¹Both Alpha and York laboratories permit the combining of the three Encore[™] into a single bag. This may not be appropriate for all laboratories so please confirm with the labs themselves Page 1 of 4

LLNN_ID

Where

LL is a grouping of two (2) to four (4) letters signifying the sample media source. In older nomenclature SOPs this portion of the sample identification is commonly referred to as the *Sample Investigation Code*

 \pmb{NN} represents a two digit number identifying the specific sample location or sample sequence number

_ **(underscore)** is required between the sample lettering and numeric identification and additional modifying data that determines the date of sampling or the depth of the sample interval

ID is a modifier specific to the sample type media (depth of soil sample or date of groundwater sample)

LL – Sample Investigation Code

Langan has devised a list of two to four letters to insure a quick ability to identify the sample investigation.

Code	Investigation
AA	Ambient Air
DS	Drum
EPB	Endpoint Location - Bottom (Excavation)
EPSW	Endpoint Location - Sidewall (Excavation)
FP	Free Product
IA	Indoor Air
IDW	Investigation Derived Waste (Soil Pile)
MW	Monitoring Well (Permanent)
SB	Soil Boring
SG	Staff Gauge (Stream Gauging)
SL	Sludge
SV	Soil Vapor Point
SVE	Soil Vapor Extraction Well
SW	Surface Water
TMW	Temporary Monitoring Well
TP	Test Pit (Excavated Material from Test Pit Not Associated With Sidewall or Bottom Samples)
WC	Waste Characterization Boring
COMP	Composite Sample
ТВ	Trip Blank (QA/QC Sampling – All Investigations)
FB	Field Blank (QA/QC Sampling – All Investigations)
DUP	Duplicate (QA/QC Sampling – All Investigations)

NN – Numeric Identifier

The two digit number that follows the sample investigation code (LL) identifies the specific sample based on the soil boring, monitoring well, endpoint or other location identification. For a subset of samples Page 2 of 4

LANGAN

where there is no specific location identifier, the two digit number is the sequence number for the sample submitted. For example, an aqueous sample from a monitoring well identified as MW-1 would have the sample investigation code of MW and the numeric identifier as 01. Note there is no hyphen. The same can be done for soil borings, a soil sample collected from soil boring 9 (SB-9) would be have the LLNN identification of SB09 (again, no hyphen).

Note however that there is a subset of samples related to laboratory analytical quality assurance, among these includes TB, FB, and DUP. On many investigations, the Scope will require multiple collections of these types of samples, therefore the numerical number represents the sequence sample count where the first sample is 01, the second sample is 02, and the third sample is 03 and so on.

_ Underscore

The underscore is required. It separates the investigation code and numeric identifier from the modifier specific to the sample itself. Note that every effort should be made to insure that the underscore is clear on the sample label and chain of custody (COC).

ID – Modifier Specific to Type Media

Each sample investigation code and numeric identifier is further modified by an ID specific to the sample type media. In general, soil samples (soil borings or endpoint samples) use an ID that indicates the depth at which the sample was taken. Aqueous samples (groundwater or surface water samples) are identified by the date the sample was collected. Other types of samples including quality control (TB, FB, and DUP), Vapor samples (AA, IA, SV or SVE), other soil type samples (IDW, sludge, free product, drum, and others) are also identified by a date. The following rules apply to the ID when using sample depth or sample date.

Sample Depth

The sample depth must be whole numbers (no fractions) separated by a hyphen. Thus for a soil sample collected from the soil boring SB-1 from a depth of 6 feet to 8 feet, the sample would be identified as:

SB01_6-8

Unfortunately, the NYSDEC EQuIS system does not accept fractions. Therefore, if your sample interval is a fraction of a foot (6.5-7.5), round up to the larger interval (6-8).

Sample Date

The sample date is always in the format of MMDDYY. Note that the year is two digits. Thus for a groundwater sample collected on July 1, 2015 from the monitoring well MW-1, the sample would be identified as:

MW01_070115

Special Cases

There are a couple of specific sample types that require further explanation.

Endpoint Sampling

End point sidewall samples are sometimes modified by magnetic direction (N, S, E, and W). For example, the first sidewall endpoint sample from the north wall of an excavation at a depth of 5 feet would be written as:

EPSW01_N_5

Again, note that the N in the identification refers to north and is separated from the prefix investigation code/numeric identifier and ID modifier suffix by underscores.

LANGAN

Vapor Extraction Well Sample

As with the sidewall endpoint samples, the sample name is altered by inserting a middle modifier between the prefix and suffix of the sample name. The middle modifier is used to identify the source of the sample (inlet sample port, midpoint sample port or outlet sample port). For example the midpoint port of the vapor extraction well number 1 sampled on July 1, 2015 would be written as;

SVE01_MID_070115

Matrix Spike and Matrix Spike Duplicate

On occasion, a Langan investigation will collect a sample to be used to provide the lab with a site specific medium to spike to determine the quality of the analytical method. This special case of sampling requires additional information to be used in the sample name, specifically, a suffix specifying whether the sample is the matrix spike (MS) or the matrix spike duplicate (MSD). In the following example, the sample is collected from soil boring number 1 at a depth of 2-4 feet. For the matrix spike sample:

SB01_2-4_MS

and for the matrix spike duplicate sample:

SB01_2-4_MSD

Multiple Interval Groundwater Sampling

Although not currently a common practice, low flow sampling facilitates stratigraphic sampling of a monitoring well. If the scope requires stratigraphic sampling then groundwater samples will be labeled with a lower case letter following the well number. For example, placing the pump or sampling tube at 10 feet below surface in MW01 on July 1, 2015 would require the sample to be labeled as:

MW01a_070115

While a second sample where the pump or tubing intake is placed at 20 feet would be labeled as:

MW01b_070115

Note that it is important that you record what depth the intake for each sample represents in your field notes; as this information is going to be critical to interpreting the results.

APPENDIX I REMEDIAL ACTION CONSTRUCTION SCHEDULE

Appendix I **Remediation Schedule**

159 Boerum Street Brooklyn, NY BCP Site No. C224291 Langan Project No. 170552901

			2019					2020						2021				
Estimated Project Schedule		ZBZ	H Y	z _	D d	<u>- 2 0</u>	z	FEB MAR	- 7 z	AUG	4 5		zм	AR R	≿ z	ц р	4 L 2	: 0
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1	Design, Investigation, and Permitting																	
2	NYSDEC Review of BCP RAWP																	
3	45-Day Public Comment Period for RAWP and Issuance of Decision Document																	
4	Implementation of RAWP with Engineering Oversight																	
5	Preparation of an Environmental Easement, FER, and SMP (if required)																	
6	NYSDEC & NYSDOH Review of FER (and SMP, if required)																	
7	NYSDEC Issues COC (10/31/2021)																	

Notes:

This is an estimated schedule; all items are subject to change. a)

b) Completion of Item 4 refers to the completion of remediation and not the end of overall construction.

BCP = Brownfield Cleanup Program C)

d) NYSDEC = New York State Department of Environmental Conservation

e) NYSDOH = New York State Department of Health

RAWP = Remedial Action Work Plan FER = Final Engineering Report f)

g)

SMP = Site Management Plan ĥ)

COC = Certificate of Completion i)