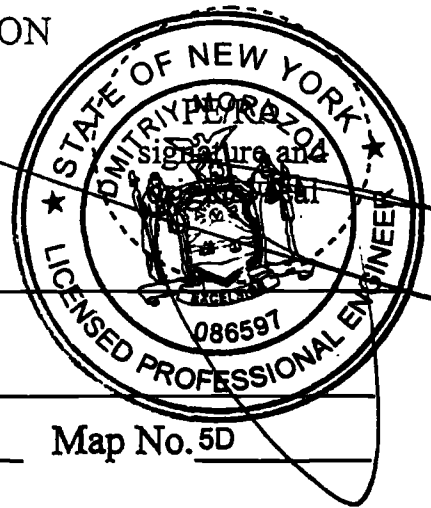


DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER & SEWER OPERATIONS

SITE CONNECTION PROPOSAL FORM
VALID FOR TWO (2) YEARS

ID # 6686

[SC /]



A. PROJECT DATA:

Borough of Manhattan Building Dept. No (s) 121275707
Tax Block 1239 Lot (s) 110 Zoning C4-6A Map No. 5D
Project Location 2461 Broadway
Applicant Dmitry Morozov, P.E.
Address 175 Varick Street, 8th Floor, New York, NY Zip 10014 Phone (212) 330-7634
Owner Robert Rosenthal, the owner's representative of 2461 Broadway LLC
Address 2329 Nostrand Avenue, Brooklyn NY Zip 11210 Phone (718) 692-4181

B. PROJECT USE:

TYPE: ☐ 1, 2, 3, Family ☒ Multiple Dwelling ☒ Commercial 15-Story apartment building with retail space in the ground floor
Number of Buildings 1 Total Number of Dwelling Units 33
Ownership: ☒ Fee Simple ☐ Condominium ☐ Home Owner Association ☐ Other.....

C. SITE CONNECTIONS REQUESTED:

Total Developed Site Storm Flow 0.6963 cfs
Allow. Storm Flow to the Sewers 0.4398 cfs

☒ Detention ☐ Retention

ROOF

	Sanitary	Storm	Comb.	Drywells
No. Requested	<u>-</u>	<u>-</u>	<u>1</u>	<u>XXXXXX</u>
Size	<u>-</u>	<u>-</u>	<u>8"</u>	<u>XXXXXX</u>
Material (s)	<u>-</u>	<u>-</u>	<u>XHCI</u>	<u>XXXXXX</u>
Total Q (s)	<u>0.0898 CFS</u>	<u>0.2224 CFS</u>	<u>0.3122 CFS</u>	

Note: The property owner is responsible for plugging all inactive pre-existing sewer connections

D. CONNECTION INFO:

- ☐ Connection to exist:
☐ Spur ☐ Riser ☐ Curb Connection
- ☐ Proposed New Riser
- ☐ Fold Spur in
- ☒ Drill in
- ☐ M.H. Conn. ☐ Exist. ☐ Prop.
- ☐ Reuse Plugged Connections



E. PRIVATE SEWER/DRAIN DATA:

- P.D. Plan No. N.A. Date Approved N.A. Expiration Date N.A.
- Date Construction Permit Was Issued N.A.
- Date Sewer Was Accepted By DEP N.A.
- Sanitary Discharge Tributary to:

		Location
Private Sewage Treatment Plant	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	
Private Pumping Station	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	
Private Sewer	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	

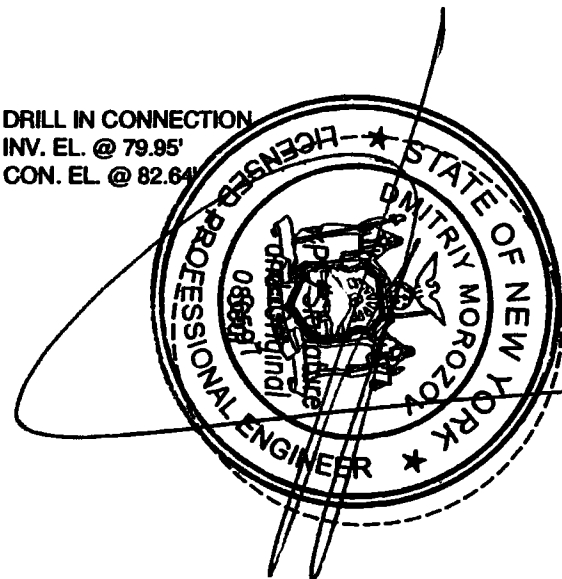
F. LOCATION PLAN:

- ☐ As Shown Below ☒ See Attached Location Plan Attachment "F" (8 1/2 x 14 Size)

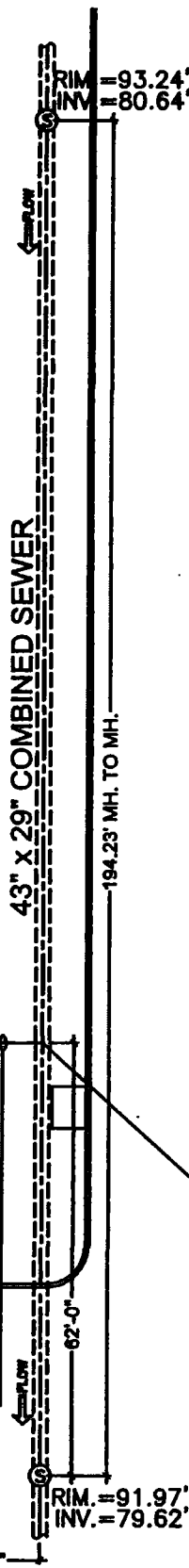
Roof flow of 0.6076 CFS will be restricted to 0.2139 CFS by means of roof detention and controlled flow devices.

F. LOCATION PLAN: (Attachment "F")

BROADWAY
(EDIM .051)
(150' WIDE)



DRILL IN CONNECTION
INV. EL. @ 79.95'
CON. EL. @ 82.64'



OWNER:

ROBERT ROSENTHAL,
OWNER'S REPRESENTATIVE OF
2461 BROADWAY LLC,
2329 NOSTRAND AVENUE
BROOKLYN, NY 11210
TEL: (718) 692-4181

LOCATION:

2461 BROADWAY;
NEW YORK, NY 10025;
TAX BLOCK NO.: 1239;
TAX LOT NO.: 110;
ZONING: C4-6A;
ZONING MAP NUMBER: 5D;
DOB NUMBER #: 121275707

NOTES:

1. ALL PIPING TO BE EHCI PITCHED AT 10% FOR COMBINED SEWER BEDDED ON BROKEN STONES.
2. ROOF FLOW OF 0.2121 CFS WILL RESTRICTED TO 0.0802 CFS BY MEANS OF ROOF DETENTION AND CONTROLLED FLOW DEVICES.
3. ALL EXISTING LOT LINE GRADES TO REMAIN.
4. ELEVATIONS AND LEGAL GRADES SHOWN REFER TO THE BOROUGH OF MANHATTAN SEWER DATUM AND NAVD 88 DATUM WHICH IS 1.635' ABOVE SEA LEVEL AS ESTABLISHED BY THE U.S. COAST AND GEODETIC SURVEY DATUM.
5. EXACT LOCATION OF C.F.R.D. TO BE COORDINATED WITH ARCHITECTURAL DRAWINGS.
6. INDUSTRIAL WASTE - PENDING.

PROPOSED 15-STORY BUILDING
2461 BROADWAY;
NEW YORK, NY 10025;
TAX BLOCK NO.: 1239;
TAX LOT NO.: 110;
ZONING: C4-6A;
ZONING MAP NUMBER: 5D;
DOB NUMBER #: 121275707
TOTAL AREA OF SITE: 5,368.75 SQ.FT.

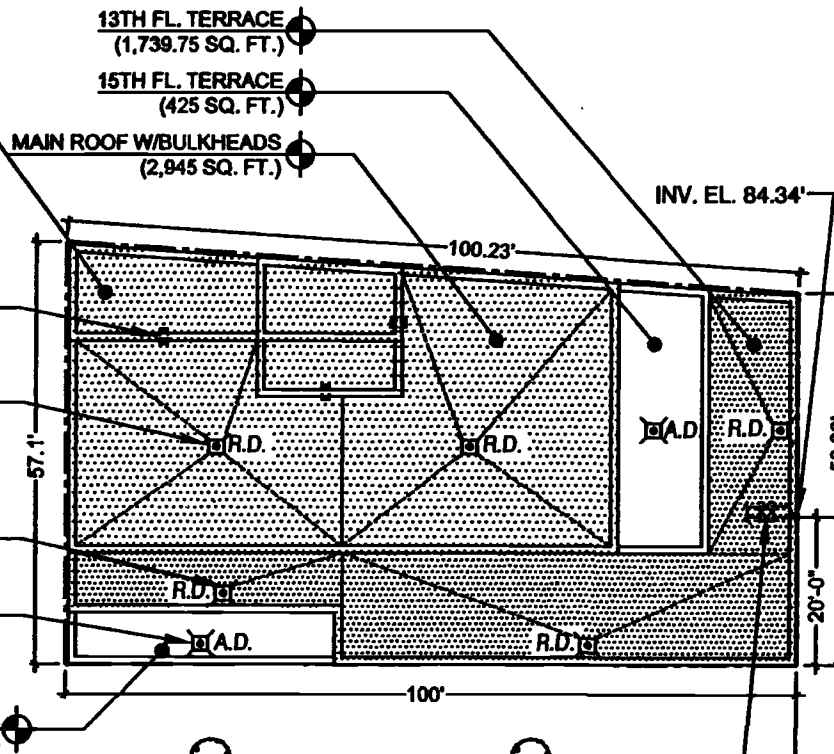
SCUPPER DRAIN SPILLS
ONTO MAIN ROOF (TYP. FOR 3)

MAIN RF. W/BULKHEADS DETAINED AREA
(CONTROLLED R.D. 12 GPM. (TYP. FOR 2))

13TH FLOOR TERRACE DETAINED AREA
(CONTROLLED R.D. 12 GPM. (TYP. FOR 3))

CONVENTIONAL A.D.
(TYP. FOR 2))

12TH FL. TERRACE
(259 SQ. FT.)



BUILDING SANITARY AND
STORM HOUSE TRAPS IN THE
CELLAR FLOOR LEVEL

NEW 8\"/>

WEST 91ST STREET
(60' WIDE)

THIS CERTIFICATION IS VALID
FOR TWO (2) YEARS ONLY

BUREAU OF WATER & SEWER OPERATIONS
DIVISION OF SEWERS
REGULATION AND CONTROL

SEWER REGULATION AND CONTROL

OCT 25 2017

DATE

PERMIT CONTROL SECTION

09/27/2017 - RE-ISSUED FOR DEP APPROVAL
06/22/2017 - ISSUED FOR DEP APPROVAL

ID # 6686

SITE UTILITY PLAN

SCALE: 1" = 30'

JOB NO: 2017-04

DATE: 05/17/17

2461 BROADWAY
NEW YORK, NY 10027
BLOCK: 1239 LOT: 110

Dmitry Morozov, PE
MOROZOV ENGINEERING DPC
175 VARICK STREET, 4TH FLOOR
NEW YORK, NY 10014
TEL: 212-330-7634
email: info@morozov.nyc
www.morozov.nyc

HYDRAULIC CALCULATIONS

- SITE INFORMATION:**
 5481 BROADWAY
 NEW YORK, NY 10005;
 TAX BLOCK NO.: 1289;
 TAX LOT NO.: 110;
 ZONING: O4-B4;
 ZONING MAP NUMBER: 82;
 DDC NUMBER: 12-129507;
 TOTAL AREA OF SITE: 5,881.75 SQ.FT. = 0.1332 ACRES;
 TRIBUTARY SITE AREA TO BROADWAY CORAL SENIOR: 5,881.75 SQ.FT. = 0.1332 ACRES;
2. **SANITARY DRAINAGE TO BROADWAY CORAL SENIOR COMBINED SEWER:**
~~1.3147 FL~~
 TOTAL AREA OF SITE: ~~5,881.75~~ SQ.FT. = 0.1332 ACRES;
 ZONING: O4-B4;
 POPULATION DENSITY = 785 PEOPLE PER ACRE
 PICK SANITARY FLOW FROM THE SITE:
 $Q = \text{POPULATION DENSITY} \times \text{AREA} \times 100 \times 4$
 $7.85 \times 88,450$
 $Q = 785 \times 0.1332 \times 100 \times 4$
 0.41357
 $Q = 0.0088 \text{ CFS} = \text{PEAK SANITARY FLOW}$
3. **ALLOWABLE STORM FLOW INTO COMBINED SEWER UNDER BROADWAY:**
 (17 FEET OF PROPERTY LINE TO 45'W/OF COMBINED SEWER)
 $Q_{ALL} = C \times I \times A$
 WHERE: $C = 0.85$ RUN OFF COEFFICIENT
 $I = 0.85$ INCHES PER HOUR
 $A(T) =$ TRIBUTARY SITE AREA IN ACRES
 $Q_{ALL} = (0.85 \times 0.85 \times 0.1332) = 0.0988 \text{ CFS} > 0.05 \text{ CFS}$
 $Q_{ALL} = 0.05 \text{ CFS}$ RESTRICTED FLOW RATE, REQUIRED BY THE DEP
4. **DEVELOPED STORM FLOW GENERATED FROM THE SITE:**
 TOTAL AREA OF SITE: 5,881.75 SQ.FT. = 0.1332 ACRES;
 WITH BUILDING AREA: 5,881.75 SQ.FT. = 0.1332 ACRES;
 13TH FLOOR TERRACE AREA: 1,728.75 SQ.FT. = 0.0398 ACRES;
 SUMMARY OF NOT DETAINED TERRACE AREA: 881 SQ.FT. = 0.0207 ACRES;
 $Q_{DET} = Q_{RAIN ROOF} + Q_{15 FL. TER.} + Q_{SUM. OF NOT DETAINED TER.}$
 $Q_{RAIN ROOF} = 0.85 \times 0.85 \times 0.0578 = 0.0381 \text{ CFS}$ (DETERMINED BY CONTROLLED FLOW R.D.)
 $Q_{15 FL. TER.} = 0.85 \times 0.85 \times 0.0398 = 0.0286 \text{ CFS}$ (DETERMINED BY CONTROLLED FLOW R.D.)
 $Q_{SUM. OF NOT DETAINED TER.} = 0.85 \times 0.85 \times 0.0167 = 0.0087 \text{ CFS}$ (DISCHARGED INTO SEWER)
 $Q_{DET} = 0.0381 + 0.0286 + 0.0087 = 0.0754 \text{ CFS}$
5. **DISTRIBUTION SYSTEM CALCULATIONS CONTROLLED FLOW ROOF DRAINAGE:**
 TOTAL ROOF DETENTION AREA = 4,884.75 SQ.FT. AREA AVAILABLE FOR DETENTION = 4,012.75 SQ.FT.
 WITH 60 DRAIN FOR MAIN ROOF = 2,945 SQ.FT./2 = 1,472.5 SQ.FT. PER DRAIN
 22 FT SPACED, 1% SLOPE 10 YEARS STORM AND 24 HOURS MAXIMUM RETENTION ALLOWED (1) MODEL "FROST INDUSTRIES" 35-FUNCTIONAL R.D." (SERIES 180CA-CFW) WITH 1 CONTROL FLOW UTILIZED AND ALLOW 12 SQ.FT. FOR 1,472.5 SQ.FT. CONSEQUENTLY IN LESS THAN 24 HRS. 60 DRAINS TO BE UTILIZED AT ROOFED AREA STORM FLOW FOR TOTAL OF 60 GPM
TOTAL CALCULATED RESTRICTED FLOW:
 $Q_{P25} = 60 \text{ GPM} \times (\text{ROOF/WATER} \times 1/7) \text{ (CALCULATION)}$
 $Q_{P25} = 60/90 \times 7.48 = 50/45 \times 8 = 8.887 \text{ CFS}$
 $Q_{STORM} = Q_{P25} + Q_{SUM. OF NOT DET. TER.} = 0.1357 + 0.0087 = 0.0084 \text{ CFS}$
 $Q_{STORM} = 0.0084 \text{ CFS} < 0.05 \text{ CFS}$ THEREFORE, THEREFORE IS OK

- EVAPORATION IN MINUTES FOR ROOF DETAINED VOLUME
- $$T_v (\text{in min.}) = 0.27(0.0004(PF.DET)(Q)PDS-16 = 0.27(0.0004)(884.76)(1.937 - 16 = 94.3$$
- MINIMUM REQUIRED ROOF DETENTION DESIGN VOLUME
- $$V_v = 0.18(884.76)(PF.DET)(T_v + 15) = 450.00 \text{ CU FT.}$$

$$V_v = 0.18(884.76)(0.75)(94.3 + 15) = 450.1197 \text{ } \approx 94.3 = \underline{450 \text{ CU FT.}}$$

PROPOSED VOLUME OF STORM WATER ON THE DETAINED ROOF

BI-DIRECTIONAL ROOF SLOPE = 1% DIST. ARCHING DRAINAGE = 8% AMOUNT OF DRAINAGE & 4% DIST. ARCHING DRAINAGE: 36.3' Dst = 884.76 SQ. FT.; Dppr = 26.35' / 16.67 = 1.58'; Dmax = 8'

$$V_{\text{dist}}(\text{dist.}) = 4.912576 \text{ SQ. FT.}$$

$$V_{\text{dist.}} = (Dmax + Dppr)(8 + (Dst - Dppr) \times Dmax) (DIST. + Dmax) (Dppr \times 4) (DIST)(12)$$

$$V_{\text{dist.}} = 36.3' \times 1.28888 + (1.89 - 1.28888)(884.76)(8 + 26.35)(4 + (8 - 1.28888)(16.67)(12)$$

$$V_{\text{dist.}} = \underline{450 \text{ CU FT.}} > \underline{450 \text{ CU FT. (MINIMUM REQ. CV)}}$$

AS PER DSD GUIDELINES THE VOLUME PROVIDED IS GREATER THAN 450 CU FT. AND THE ACTUAL RELEASE RATE FROM THE DETAINED AREA COULDN'T EXCEED 0.1357 CFS

4.

7. COMBINED SITE COMBINATION INTO SECONDARY STORM DRAINAGE:

TOTAL STORM WATER DRAINAGE FLOW = 0.0294 CFS

TOTAL BASTINARY DRAINAGE FLOW = 0.0088 CFS

TOTAL COMBINED FLOW = 0.0294 CFS + 0.0088 CFS = 0.0382 CFS

CONCLUSION:

ROOF FLOW OF 0.0275 CFS WILL BE RESTRICTED TO 0.1357 CFS BY MEANS OF ROOF DETENTION AND CONTROLLED FLOW DEVICES. PROVIDE EIGHT (8) CONTROLLED FLOW DEVICES 12 GPM EACH (MODELS "FRIGID INDUSTRIES" BI-FUNCTIONAL R4) (SERIES 10004-CFWS).

NOTES:

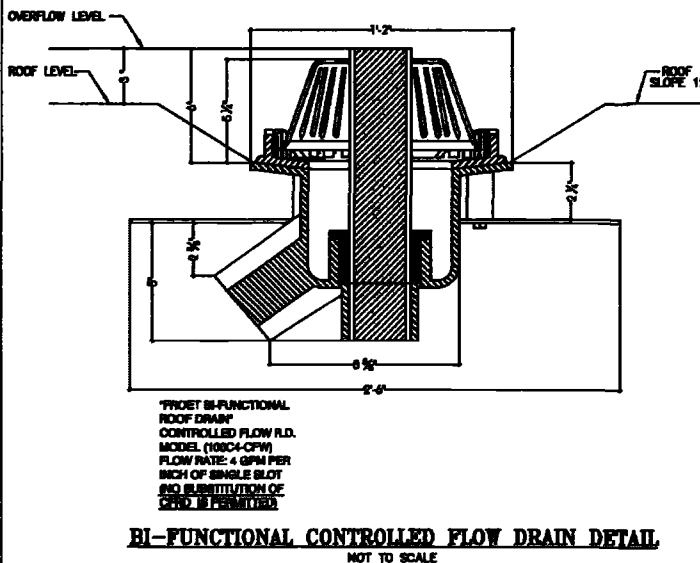
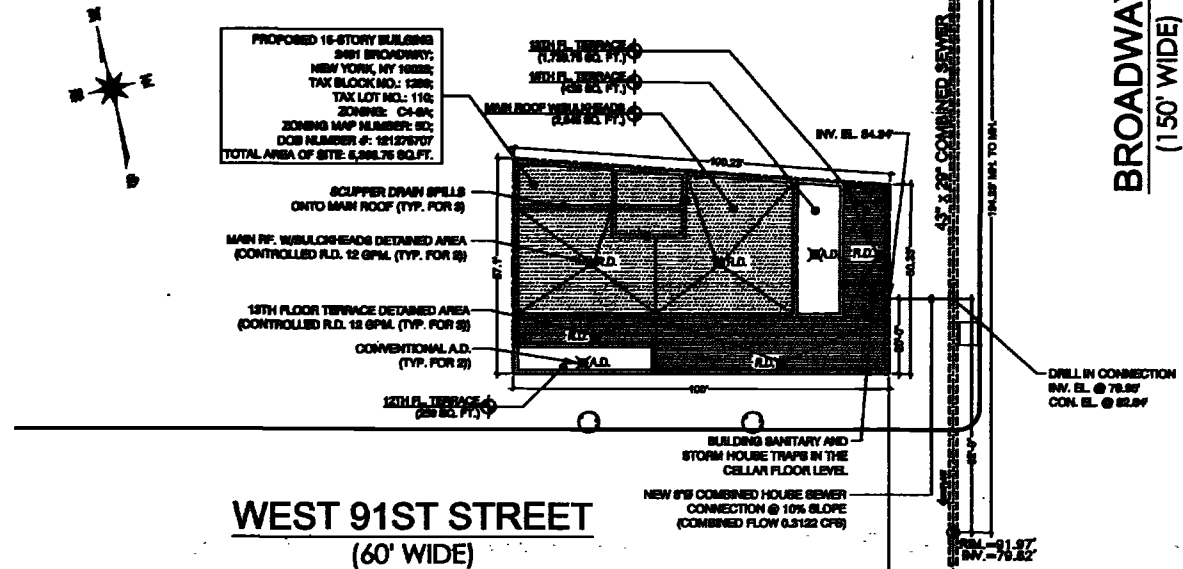
1. ALL PIPING TO BE EXIST PITCHED AT 1% FOR COMBINED SEWER BEDDED ON BROKEN STONES.
2. ROOF DRAIN OF 6.5" x 1" CFS WILL BE RESTRICTED TO 0.0025 CFS BY MEANS OF REDUCED INLET AND CONTROLLED FLOW DEVICES.
3. ALL EXISTING LOT LINE BRACKERS TO REMAIN.
4. ELEVATIONS AND LEGAL GRADES SHOWN HEREIN TO BE THE BENCHMARK OF MANHATTAN SEWER DRAIN AND RAIN DRAIN DATUM WHICH IS 1.600' ABOVE SEA LEVEL, AS ESTABLISHED BY THE U.S. COAST AND GEODETIC SURVEY DATA.
5. EXACT LOCATIONS OF PIPING TO BE COORDINATED WITH ARCHITECTURAL DRAWINGS.
6. INDUSTRIAL WASTE - FIBERING.

LOCATION:

5491 BROADWAY;
 NEW YORK, NY 10022;
 TAX BLOCK NO.: 1228;
 TAX LOT NO.: 110;
 ZONING: C4-8A;
 ZONING MAP NUMBER: 80;
 DOB NUMBER #: 12127670

OWNER:

**ROBERT ROSENTHAL,
OWNERS REPRESENTATIVE OF
2481 BROADWAY LLC,
2328 NOSTRAND AVENUE
BROOKLYN, NY 11210
TEL: (718) 686-4181**



SITE UTILITY PLAN

ALL EXISTING INVERT ELEVATIONS OF MANHOLES AND SIZE OF THE COMBINED SEWER SHOWN AS PER ARCHITECTURAL SURVEY

ALL EXISTING CONNECTIONS SHALL BE PLUGGED AS PER DEP REQUIREMENTS.

**THIS CERTIFICATION IS VALID
FOR TWO (2) YEARS ONLY**

BUREAU OF WATER DIVISION
REGULATORY DIVISION
SEWER DIVISION
OCT 25 2017
DATE SECTION

ID # 6686

Dmitriy Morozov, PE
MOROZOV ENGINEERING, DPC

175 VARICK STREET, 4TH FLOOR
NEW YORK, NY 10014
TEL: (212) 330-7634

email: info@morozov.nyc
www.morozov.nyc

No.	Date	Revisions/Issues/Others
1	08/22/2017	ISSUED FOR DEP APPROVAL
2	09/27/2017	RE-ISSUED FOR DEP APPROVAL

Drawing Title

SITE UTILITY PLAN

Project Name
2461 BROADWAY
NEW YORK, NY 10025
BLOCK: 1239 LOT: 110



Project #: 2017-04

Date _____

05/17/2017

Drawn By
A MIL MAN

	Scale
--	--------------

1° = 30'

Checked By
A. McVEETS

[illegible]

Drawing No.
SU-101