NYC DEPARTMENT OF ENVIRONMENTAL PROTECTION

BUREAU OF ENVIRONMENTAL PLANNING AND ANALYSIS

GREEN INFRASTRUCTURE

PROCEDURE GOVERNING

LIMITED SURVEY

FOR

GREEN INFRASTRUCTURE

AUGUST 2019

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Limited Survey

1 General

Prior to commencing design for Green Infrastructure, a Limited ROW GI Survey (GI Survey) is required to gather information on topography, surface/subsurface features, trees, utilities, and vaults within the defined survey area.

A licensed New York State Land Surveyor shall carry out the GI Survey and prepare, stamp, and sign the GI Survey Drawings for submittal to BEPA GI.

2 Limits of Survey

GI Survey limits are defined by the following guidelines:

For ROWBs, ROWRGs, and ROWIBs:

The survey area extends 10 horizontal feet in all directions beyond the perimeter of each ROW Practice (see Appendix A: ROWB, ROWRG, and ROWIB Limits of Survey).

For ROWSGSs, ROWPPs, and ROWSBs:

The survey area will be determined on a site-specific basis. The surveyor must coordinate with BEPA GI, DPR, and DOT to establish the boundaries for the GI Survey.

All GI Surveys must also show the following which may be outside of the survey area defined above:

- Distance from the nearest property line to the ROW Practice limits.
- Distance from the building line adjacent to the ROW Practice limits, if any, including locations of all entrances (e.g. doors and gates) that fall within the projection of the survey of the ROW Practice (see Appendix A).
- Street width (property line to property line).
- Roadway width (curb line to curb line).
- Boring and Permeability Test locations

3 Required Survey Information

3.1 Topographic Information

The GI Survey must collect and show the required following information:

- All existing elevations, including high and low points, within the defined survey area (as per **Section 2**). All elevations shall be shown in feet (ft) and referenced as per **Section 4 Requirement for GI Survey Drawings**.
- Contours lines, drawn at 0.5 ft-intervals
- Northing and Easting coordinates at the upstream curb-side corner of each ROW Practice with the exception of ROWSB, where the coordinates should be taken from the center of the practice.

3.2 Surface Features

The GI Survey will identify and show the following features within the survey area (defined in **Section 2**):

- North direction
- Zoning district
- Street names
- Legal right-of-way width of the street
- Roadway width (curb to curb)
- Elevations and Street Grades
- Distances to intersections
- Common surface features:
    - Utility castings and overhead utility lines (including but not limited to manholes, fire hydrants, catch basins, etc.)
    - Curb reveal (top of curb/bottom of curb elevations)
    - Curb material
    - Curb condition
    - Existing street furniture (including but not limited to fences, sign poles and text on sign, traffic signals, light and utility poles, guy wires, muni meters, bike racks, newsstands, etc.)
    - Tree centerline, diameter at breast height (DBH) and Critical root zones (minimum and maximum)
    - Tree stump centerline and diameter
    - Tree pit extents
    - Driveways, curb cuts, crosswalks, ramps, and stairwells
        - Drop curbs must be marked at top (sidewalk elevation), not bottom (street elevation)
    - Existing buildings and structures
    - Building doors, doorways, gates, and building/property entrances
    - Bus stops, bus stop shelters and signs

- Subway entrances and exits
- Sidewalk and roadway surface materials
- Pavement markings, stop bars, and speed bumps

3.3 Sub-surface Features and Utilities

The GI Survey will provide sub-surface information to the maximum extent practicable. This information includes vertical alignment, horizontal alignment, dimensions, type, and cover for utilities, including but not limited to gas lines, electric lines, material communication lines, etc.

Water service tap cards and sewer house connections cards must be requested from the appropriate agency. These records are to be provided to the construction contractors.

3.4 Vaults

A vault or protruded basement investigation shall include the locations and limits of vaults or protruded basements within the survey area. Sub-surface vaults may include utility vaults, basements, basement extensions, etc.

For ROW GI practices sited 7 ft - 10 ft from a building, a vault investigation must be performed. Vault investigation shall consist of a visual inspection and at a minimum captures the following information:

- Basement information (width, depth of slab below street or sidewalk grade, extension into sidewalk beyond building line, etc.).
- Visual signs on walls and slab of existing water damage (especially on the wall adjacent to the street/sidewalk).
- Note regarding presence of and location of a sump pump.
- Location of where service lines enter/exit (includes but not limited to water service, house connection, gas, electrical, etc.).
- A recommendation whether to proceed or reject the GI Practice based on information available.
    - An HDPE barrier installed as per DEP Standards for Green Infrastructure with a 1.0 ft toe, must be installed at the back of the ROW GI (between ROW GI and Building Line).
        - Bioswale is within 7’-10’ of the building line -> vault survey -> no water damage -> use HDPE
    - Bioswale is within 7’-10’ of the building line -> vault survey -> water damage -> REJECT

4 Requirement for GI Survey Drawings

The GI Survey drawings must:

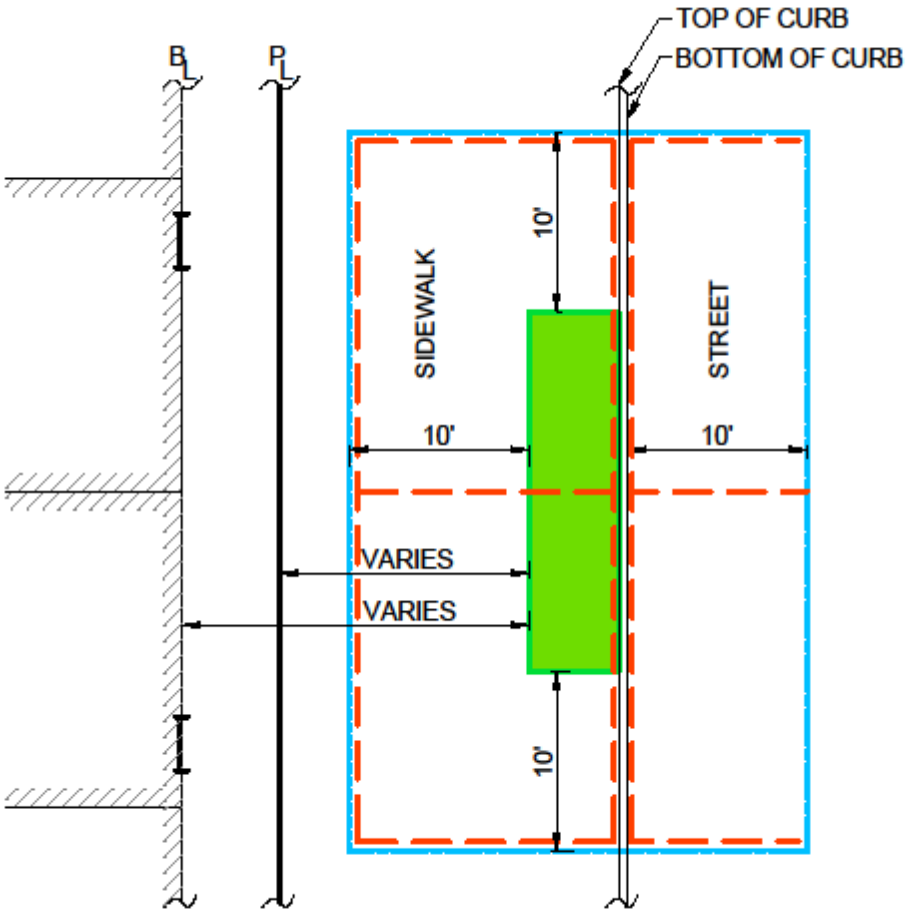
- Include all information from **Section 3**

- Display all information using the symbols in Appendix B: GI Drawing Legend
- Use North America Vertical Datum of 1988 (NAVD 88) for vertical data
- Use NAD 1983 State Plane New York, Long Island FIPS 3104 Feet for horizontal data
- Clearly indicate the datum used and provide a conversion to the local Borough Sewer datum on the contract plans.

All survey drawings must be stamped and signed by a licensed New York State Land Surveyor and submitted to BEPA GI in the two following formats:

- AutoCAD 2008 or higher
- 22” x 34” Mylar (3 mil thick)

Appendix A: ROWB, ROWRG, and ROWIB Limits of Survey



LEGEND

- LIMITS OF SURVEY
- ROWB OR ROWRG
- SPOT ELEVATION TRACK LINES
- PL PROPERTY LINE
- BL BUILDING LINE
- ENTRANCE

Appendix B: GI Drawing Legend

ABBREVIATIONS

ABANDONED	ABDN.
APARTMENT	APT.
ASPHALT	ASPH.
BASEMENT	BSMT.
BITUMINOUS	BIT.
BLOCK	BLK.
BLUESTONE	B.S.
BLUESTONE CURB	B.S.C.
BLUESTONE WALK	B.S.W.
BOTTOM OF CURB	B.C.
BRICK	BRK.
BUILDING	BLDG.
BUILT	BLT.
CALIPER	CAL.
CAST IRON	C.I.
CENTER LINE	C.L.
CHAIN LINK FENCE	C.L.F.
CHAMBER	CH.
CLASS NUMBER	CL. #
COMBINED	COMB.
COMMERCIAL	COMM.
CONCRETE	CONC.
CONCRETE CURB	C.C.
CONCRETE WALK	C.W.
DIAMETER	DIA.
DOUBLE BARREL	D.B.
DOWN	DN.
DRAWING	DWG.
DUCTILE IRON PIPE	D.I.P.
EXISTING	EXIST.
EXTRA STRENGTH VITRIFIED PIPE	E.S.V.P.
FIRE ALARM	F.A.
FIRE DEPARTMENT	F.D.
FLAT TOP REINFORCED CONCRETE	F.T.R.C.
FRAME	FR.
GRANITE	GRAN.
GRANITE CURB	GRAN. C.
INTERCEPTOR	INT.
INVERT ELEVATION	INV.
IRREGULAR	IRR.
MANHOLE	MH
NOT IN CONTRACT	N.I.C.
NOT TO SCALE	N.T.S.
PAVEMENT	PVMT.
POINT OF CURVATURE	P.C.
POINT OF INTERSECTION	P.I.
POINT OF TANGENCY	P.T.
PRECAST REINFORCED CONCRETE	P.R.C.
RADIUS	R
REINFORCED CONCRETE PIPE	R.C.P.
ROADWAY	RDWY.
SANITARY	SAN.
SEWER	SWR.
SIDEWALK	SW.
STANDARD	STD.
STEAM	ST.
STEEL	STL.
STEEL FACED CURB	SFC
STEEL NOSED CURB	S.N.C.
STONE	STN.
STORM	STM.
STORY	STY.
TOP OF CURB	T.C.
TRAFFIC SIGN	T.S.
VACANT	VAC.
WORKING POINT	W.P.

LEGEND

	EXISTING	PROPOSED
MANHOLES		
ELECTRIC	(E)	E
CABLE TV	C	
TELEPHONE	T	
TRAFFIC	Tf	
NYC MH	NYC	
GAS	G	
WATER	W	
FIRE DEPT.	F	
SUBWAY	SU	
COAL CHUTE	CC	
STORM SEWER	STM	STM
COMBINED SEWER	COMB	COMB
SANITARY SEWER	SAN	SAN
INTERCEPTOR SEWER	INT	INT
UNIDENTIFIED MANHOLE (NO RECORD AVAILABLE)	MH	
BUILT MANHOLE REPLACED BY NEW MANHOLE		
RECORD MANHOLE	S	
HARDWARE RIM EL. & INV. EL. (SEWER, ETC.)	61.23 INV.47.89	
INLETS/OUTLETS		
STORMWATER INLET		INLET
ROWB, ROWG, ROWSGS INLET		
ROWB, ROWG, ROWSGS OUTLET		OUTLET
CATCH BASINS		
CATCH BASIN WITH CURB PIECE - TYPE 1	1	1
CATCH BASIN WITHOUT CURB PIECE - TYPE 2	2	2
CATCH BASIN WITHOUT CURB PIECE - TYPE 3	3	3
EXISTING CATCH BASIN TO BE REMOVED		
TO BE ABANDONED		A
TO BE MODIFIED		M
TO BE ADJUSTED		A
CATCH BASIN - NON-STANDARD		N
NEW CATCH BASIN TO BE CONSTRUCTED IN SAME LOCATION AS OLD BASIN		
INLET		
SEEPAGE BASIN	SB	SB
HYDRANTS		
LOW PRESSURE HYDRANT		
HIGH PRESSURE HYDRANT		
LOW PRESSURE HYDRANT TO BE RELOCATED		R
HIGH PRESSURE HYDRANT TO BE RELOCATED		R
LOW PRESSURE HYDRANT TO BE ADJUSTED (VERTICALLY)		A
HIGH PRESSURE HYDRANT TO BE ADJUSTED (VERTICALLY)		A
SIAMESE CONNECTION		
STREET LIGHTING AND TRAFFIC SIGNALS		
WOOD UTILITY POLE		
WOOD UTILITY POLE WITH STREET LIGHT		
WOOD UTILITY POLE WITH TRAFFIC SIGNAL		T
WOOD UTILITY POLE WITH STREET LIGHT AND FIRE ALARM BOX		F
WOOD UTILITY POLE WITH FIRE ALARM BOX		F
WOOD UTILITY POLE WITH PEDESTRIAN SIGNAL		PS
WOOD UTILITY POLE WITH TRAFFIC AND PEDESTRIAN SIGNAL		TPS
WOOD UTILITY POLE WITH STREET LIGHT AND TRAFFIC AND PEDESTRIAN SIGNAL		TPS
WOOD UTILITY POLE WITH STREET LIGHT AND PEDESTRIAN SIGNAL		PS
STREET LIGHT (METAL POLE)		
STREET LIGHT AND TRAFFIC SIGNAL		T
STREET LIGHT AND TRAFFIC SIGNAL WITH PEDESTRIAN SIGNAL		TPS
STREET LIGHT WITH PEDESTRIAN SIGNAL		PS
STREET LIGHT WITH FIRE ALARM BRACKET		F
TRAFFIC SIGNAL POST		T
TRAFFIC SIGNAL CONTROL BOX		
STANCHION WITH TRAFFIC SIGNAL		T
STANCHION W/PEDESTRIAN SIGNAL		TPS
TRAFFIC SIGNAL POST W/PEDESTRIAN SIGNAL		TPS
VALVE BOXES		
GAS		G
WATER		W
STEAM		St

LEGEND

	EXISTING	PROPOSED
TREES		
EXISTING TREE (SIZE AS LABELED)		
MAX/MIN CRZ		
EXISTING TREE TO BE REMOVED		
NEW TREE TO BE PLANTED		
SHRUB		
HEDGE (HEIGHT AS LABELED)		
MISCELLANEOUS		
VAULT (SIDEWALK)	V	
CELLAR WINDOW GRATING		
CELLAR DOOR	CD	
SUBWAY GRATING		
STORMWATER RUNOFF	FLOW	
TRAFFIC DIRECTION		
PARKING METER		
OIL FILL CAP OR OIL VENT	OR OFILL	
FIRE ALARM BOX	F	
POLICE CALL BOX	P	
MAIL BOX, PUBLIC PHONE	MB TEL.	
COLUMN - FOUNDATION (OF ELEVATED STRUCTURES)	OR	
HEADER		
AREA OF ADJUSTMENT		
LIMIT OF NEW PAVEMENT		
BUS PAD		
SIGN (GROUND MOUNTED)		
SIGN (OVERHEAD)		
TRAIN STATION ENTRANCE	DOWN	
SHAFT TO BUILDING BASEMENT	SH	
PEDESTRIAN RAMP		
CURB (CONCRETE UNLESS OTHERWISE INDICATED)		
CURB WITH DROP CURB (DRIVEWAY)	DC	DC
EDGE OF PAVEMENT WITHOUT CURB		
PROPOSED CONSTRUCTION (TOP OF CURB) ELEVATION AND STATION		T.C. 13.8 STA. 26+33
ROCK OUTCROP		
NORTH ARROW		
SURVEY MARKER		
BARRIERS		
BEAM TYPE MALL BARRIER		
PORTABLE PRECAST CONCRETE BARRIER		
CAST IN PLACE CONCRETE BARRIER		
RETAINING WALL (W/TYPE)		RW (STN.)
RAILROAD/TROLLEY TRACK		
FENCE (WITH HEIGHT AND TYPE)		
CHAIN LINK FENCE		6'
IRON PICKET FENCE		5'
WIRE FENCE		5'
IRON ON CONCRETE COPING		
WOOD PICKET FENCE		4'
GUARD POST		GP
BUILDINGS		
HOUSE INFORMATION (HOUSE NUMBER, BLDG TYPE, FIRST FLOOR ELEV., (CE) CELLAR ENTR., (GE) GARAGE ENTR.)		95-02 2-STY.FR. ▼ FF 25.3 G.E.17.5 CE
STAIRS OR STOOPS		
CANOPY		CANOPY
ENTRANCE**		
GEOTECHNICAL		
BORING LOCATION		B
PERMEABILITY TEST LOCATION		PT

LEGEND

	EXISTING	PROPOSED
CONDUITS		
6" WATER MAIN	6" WATER	
8" WATER MAIN	8" WATER	
12" WATER MAIN	12" WATER	
16" WATER MAIN*	16" WATER	
20" WATER MAIN*	20" WATER	
24" WATER MAIN*	24" WATER	
30" WATER MAIN*	30" WATER	
36" WATER MAIN*	36" WATER	
42" WATER MAIN*	42" WATER	
48" WATER MAIN*	48" WATER	
54" WATER MAIN*	54" WATER	
60" WATER MAIN*	60" WATER	
66" WATER MAIN*	66" WATER	
72" WATER MAIN*	72" WATER	
84" WATER MAIN*	84" WATER	
96" WATER MAIN*	96" WATER	
STORM SEWER (WITH SIZE - LESS THAN 24")	15" STM. SEWER	15" STM. SEWER
STORM SEWER (WITH SIZE - 24" AND GREATER)*	24" STM. SEWER	24" STM. SEWER
SANITARY SEWER (WITH SIZE - LESS THAN 24")	15" SAN. SEWER	15" SAN. SEWER
SANITARY SEWER (WITH SIZE - 24" AND GREATER)*	24" SAN. SEWER	24" SAN. SEWER
COMBINED SEWER (WITH SIZE - LESS THAN 24")	15" COMB. SEWER	15" COMB. SEWER
COMBINED (WITH SIZE - 24" AND GREATER)*	24" COMB. SEWER	24" COMB. SEWER
INTERCEPTOR SEWER (WITH SIZE - LESS THAN 24")	15" INTERCEPTOR SEWER	15" INTERCEPTOR SEWER
INTERCEPTOR SEWER (WITH SIZE - 24" AND GREATER)*	24" INTERCEPTOR SEWER	24" INTERCEPTOR SEWER
CATCH BASIN CONNECTION		
GAS LINE (WITH SIZE)	4" GAS	
STEAM (WITH SIZE)	16" STEAM	
ELECTRIC	ELECTRIC	
TELEPHONE	TELEPHONE	
CABLE	CABLE	
FIRE ALARM	FIRE ALARM	
OVERHEAD (AERIAL) UTILITY LINE	A/E,T,F	
TA SUBWAY CONDUIT		
LEGAL DATA		
LOT & BLOCK NUMBER	39 BLOCK 2109	
ESTABLISHED/LEGAL GRADE	0.00	
ANGLE	86°30'48"	
BLOCK LENGTH	167.01' (65.75 m)	
INTERPOLATED/CALCULATED ANGLE OR LENGTH	[86°30'48"] [167.01'(65.75 m)]	
MAPPED PROPERTY LINE (RIGHT-OF-WAY LINE)	PL	
LOT LINE		
SURVEY MONUMENT (CITY) - IDENTIFY BY TOPO NUMBER	M#	
BENCH MARK (LABEL)	BM#	
SURVEY CONTROLS		
CONTROL SURVEY TRAVERSE		
CENTER LINE BASE LINE	10+00 10+50	

* LINE SPACING IN SYMBOL TO BE SCALED TO CONDUIT SIZE
** WIDTH OF ENTRANCE SYMBOL SHALL BE TO SCALE

NO.	DATE	ISSUED FOR	BY

DESIGNED XXX
DRAWN XXX
CHECKED XXX
PROJ.ENGR. XXX

THE SCALE BAR SHOWN BELOW MEASURES ONE INCH LONG ON THE ORIGINAL DRAWING.

ENGINEER'S SEAL

DESIGN FIRM LOGO

NYC Environmental Protection

CITY OF NEW YORK
ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL PLANNING AND ANALYSIS
GREEN INFRASTRUCTURE DESIGN AND CONSTRUCTION
NYCDEP CAPITAL PROJECT ########
<AGENCY> CAPITAL PROJECT ########

RIGHT-OF-WAY GREEN INFRASTRUCTURE <CONTRACT #>
<WATERBODY> - <OUTFALL NO.> - <BOROUGH>
LEGEND

DATE PROJECT DATE
PAGE ## OF ##
SHEET I-3

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