STANDARD DESIGNS AND GUIDELINES FOR GREEN INFRASTRUCTURE PRACTICES

JUNE 2020
## TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>SHEET</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>GI-100</td>
<td>STANDARDS FOR RIGHT-OF-WAY GREEN INFRASTRUCTURE PRACTICES</td>
</tr>
<tr>
<td>GI-101</td>
<td>STANDARD FOR 20'X5' R.O.W. BIOSWALE TYPE 1</td>
</tr>
<tr>
<td>GI-102</td>
<td>STANDARD FOR 20'X5' R.O.W. BIOSWALE TYPE 1</td>
</tr>
<tr>
<td>GI-103</td>
<td>STANDARD FOR 20'X5' R.O.W. BIOSWALE TYPE 1A - WITH STONE COLUMNS</td>
</tr>
<tr>
<td>GI-104</td>
<td>STANDARD FOR 20'X5' R.O.W. BIOSWALE TYPE 1A - WITH STONE COLUMNS</td>
</tr>
<tr>
<td>GI-105</td>
<td>STANDARD FOR 20'X5' R.O.W. BIOSWALE TYPE 1B - WITH STORMWATER INLET</td>
</tr>
<tr>
<td>GI-106</td>
<td>STANDARD FOR 20'X5' R.O.W. BIOSWALE TYPE 1B - WITH STORMWATER INLET</td>
</tr>
<tr>
<td>GI-107</td>
<td>STANDARD FOR 20'X5' R.O.W. BIOSWALE TYPE 1C - WITH STORMWATER INLET</td>
</tr>
<tr>
<td>GI-108</td>
<td>STANDARD FOR 20'X5' R.O.W. BIOSWALE TYPE 1C - WITH STORMWATER CHAMBER</td>
</tr>
<tr>
<td>GI-109</td>
<td>STANDARD FOR 15'X5' R.O.W. BIOSWALE TYPE 2</td>
</tr>
<tr>
<td>GI-110</td>
<td>STANDARD FOR 15'X5' R.O.W. BIOSWALE TYPE 2</td>
</tr>
<tr>
<td>GI-111</td>
<td>STANDARD FOR 15'X5' R.O.W. BIOSWALE TYPE 2A - WITH STONE COLUMNS</td>
</tr>
<tr>
<td>GI-112</td>
<td>STANDARD FOR 15'X5' R.O.W. BIOSWALE TYPE 2A - WITH STONE COLUMNS</td>
</tr>
<tr>
<td>GI-113</td>
<td>STANDARD FOR 15'X5' R.O.W. BIOSWALE TYPE 2B - WITH STORMWATER INLET</td>
</tr>
<tr>
<td>GI-114</td>
<td>STANDARD FOR 15'X5' R.O.W. BIOSWALE TYPE 2B - WITH STORMWATER INLET</td>
</tr>
<tr>
<td>GI-115</td>
<td>STANDARD FOR 15'X5' R.O.W. BIOSWALE TYPE 2C - WITH STORMWATER CHAMBER</td>
</tr>
<tr>
<td>GI-116</td>
<td>STANDARD FOR 15'X5' R.O.W. BIOSWALE TYPE 2C - WITH STORMWATER CHAMBER</td>
</tr>
<tr>
<td>GI-117</td>
<td>STANDARD FOR 10'X5' R.O.W. BIOSWALE TYPE 3</td>
</tr>
<tr>
<td>GI-118</td>
<td>STANDARD FOR 10'X5' R.O.W. BIOSWALE TYPE 3</td>
</tr>
<tr>
<td>GI-119</td>
<td>STANDARD FOR 10'X5' R.O.W. BIOSWALE TYPE 3A - WITH STONE COLUMNS</td>
</tr>
<tr>
<td>GI-120</td>
<td>STANDARD FOR 10'X5' R.O.W. BIOSWALE TYPE 3A - WITH STONE COLUMNS</td>
</tr>
<tr>
<td>GI-121</td>
<td>STANDARD FOR R.O.W. RAIN GARDEN TYPE 1, TYPE 2, AND TYPE 3</td>
</tr>
<tr>
<td>GI-122</td>
<td>DIMENSION SCHEDULE FOR VARIABLE SIZE R.O.W. BIOSWALE AND R.O.W. RAIN GARDEN</td>
</tr>
<tr>
<td>GI-123</td>
<td>STONE COLUMN SCHEDULE FOR VARIABLE SIZE R.O.W. BIOSWALE</td>
</tr>
<tr>
<td>GI-124</td>
<td>SURFACE GRADING PLANS FOR R.O.W. BIOSWALE AND R.O.W. RAIN GARDENS</td>
</tr>
<tr>
<td>GI-125</td>
<td>STANDARD FOR HYDRAULICALLY CONNECTED R.O.W.</td>
</tr>
<tr>
<td>GI-125A</td>
<td>STANDARD FOR HYDRAULICALLY CONNECTED R.O.W.</td>
</tr>
<tr>
<td>GI-126</td>
<td>STANDARD FOR 20'X3' R.O.W. GEENSTRIP TYPE 1</td>
</tr>
<tr>
<td>GI-127</td>
<td>STANDARD FOR 20'X3' R.O.W. GEENSTRIP TYPE 1</td>
</tr>
<tr>
<td>GI-128</td>
<td>STANDARD FOR 15'X3' R.O.W. GEENSTRIP TYPE 2</td>
</tr>
<tr>
<td>GI-129</td>
<td>STANDARD FOR 15'X3' R.O.W. GEENSTRIP TYPE 2</td>
</tr>
<tr>
<td>GI-130</td>
<td>STANDARD FOR 10'X3' R.O.W. GEENSTRIP TYPE 3</td>
</tr>
<tr>
<td>GI-131</td>
<td>STANDARD FOR 10'X3' R.O.W. GEENSTRIP TYPE 3</td>
</tr>
<tr>
<td>GI-132</td>
<td>SURFACE GRADING &amp; DIMENSION SCHEDULE PLANS FOR R.O.W. GREENSTRIPS</td>
</tr>
<tr>
<td>GI-133</td>
<td>STANDARD FOR HYDRAULICALLY CONNECTED R.O.W. GREENSTRIPS</td>
</tr>
<tr>
<td>GI-134</td>
<td>INTENTIONALLY LEFT BLANK</td>
</tr>
<tr>
<td>GI-135</td>
<td>STANDARD FOR R.O.W. STORMWATER SEEPAGE BASIN WITH TYPE 2 CATCH BASIN</td>
</tr>
<tr>
<td>GI-136</td>
<td>STANDARD FOR 20'X5' R.O.W. INFILTRATION BASIN WITH CONCRETE TOP TYPE 1</td>
</tr>
<tr>
<td>GI-137</td>
<td>STANDARD FOR 20'X5' R.O.W. INFILTRATION BASIN WITH CONCRETE TOP TYPE 1</td>
</tr>
<tr>
<td>GI-138</td>
<td>STANDARD FOR 20'X5' R.O.W. INFILTRATION BASIN WITH CONCRETE TOP TYPE 1A - WITH STONE COLUMNS</td>
</tr>
<tr>
<td>GI-139</td>
<td>STANDARD FOR 20'X5' R.O.W. INFILTRATION BASIN WITH CONCRETE TOP TYPE 1A - WITH STONE COLUMNS</td>
</tr>
<tr>
<td>GI-140</td>
<td>STANDARD FOR 20'X5' R.O.W. INFILTRATION BASIN WITH CONCRETE TOP TYPE 1C - WITH STORMWATER CHAMBER</td>
</tr>
<tr>
<td>GI-141</td>
<td>STANDARD FOR 20'X5' R.O.W. INFILTRATION BASIN WITH CONCRETE TOP TYPE 1C - WITH STORMWATER CHAMBER</td>
</tr>
<tr>
<td>GI-142</td>
<td>STANDARD FOR 15'X5' R.O.W. INFILTRATION BASIN WITH CONCRETE TOP TYPE 2</td>
</tr>
<tr>
<td>GI-143</td>
<td>STANDARD FOR 15'X5' R.O.W. INFILTRATION BASIN WITH CONCRETE TOP TYPE 2</td>
</tr>
<tr>
<td>GI-144</td>
<td>STANDARD FOR 15'X5' R.O.W. INFILTRATION BASIN WITH CONCRETE TOP TYPE 2A - WITH STONE COLUMNS</td>
</tr>
<tr>
<td>GI-145</td>
<td>STANDARD FOR 15'X5' R.O.W. INFILTRATION BASIN WITH CONCRETE TOP TYPE 2A - WITH STONE COLUMNS</td>
</tr>
<tr>
<td>GI-146</td>
<td>STANDARD FOR 15'X5' R.O.W. INFILTRATION BASIN WITH CONCRETE TOP TYPE 2C - WITH STORMWATER CHAMBER</td>
</tr>
<tr>
<td>GI-147</td>
<td>STANDARD FOR 15'X5' R.O.W. INFILTRATION BASIN WITH CONCRETE TOP TYPE 2C - WITH STORMWATER CHAMBER</td>
</tr>
<tr>
<td>GI-148</td>
<td>STANDARD FOR 10'X5' R.O.W. INFILTRATION BASIN WITH CONCRETE TOP TYPE 3</td>
</tr>
<tr>
<td>GI-149</td>
<td>STANDARD FOR 10'X5' R.O.W. INFILTRATION BASIN WITH CONCRETE TOP TYPE 3</td>
</tr>
<tr>
<td>GI-150</td>
<td>STANDARD FOR 10'X5' R.O.W. INFILTRATION BASIN WITH CONCRETE TOP TYPE 3A - WITH STONE COLUMN</td>
</tr>
<tr>
<td>GI-151</td>
<td>STANDARD FOR 10'X5' R.O.W. INFILTRATION BASIN WITH CONCRETE TOP TYPE 3A - WITH STONE COLUMN</td>
</tr>
<tr>
<td>GI-152</td>
<td>STANDARD FOR 20'X5' R.O.W. INFILTRATION BASIN WITH GRASS TOP TYPE 1</td>
</tr>
<tr>
<td>GI-153</td>
<td>STANDARD FOR 20'X5' R.O.W. INFILTRATION BASIN WITH GRASS TOP TYPE 1</td>
</tr>
<tr>
<td>GI-154</td>
<td>STANDARD FOR 20'X5' R.O.W. INFILTRATION BASIN WITH GRASS TOP TYPE 1A - WITH STONE COLUMNS</td>
</tr>
<tr>
<td>GI-155</td>
<td>STANDARD FOR 20'X5' R.O.W. INFILTRATION BASIN WITH GRASS TOP TYPE 1A - WITH STONE COLUMNS</td>
</tr>
<tr>
<td>GI-156</td>
<td>STANDARD FOR 20'X5' R.O.W. INFILTRATION BASIN WITH GRASS TOP TYPE 1C - WITH STORMWATER CHAMBER</td>
</tr>
<tr>
<td>GI-157</td>
<td>STANDARD FOR 20'X5' R.O.W. INFILTRATION BASIN WITH GRASS TOP TYPE 1C - WITH STORMWATER CHAMBER</td>
</tr>
<tr>
<td>GI-158</td>
<td>STANDARD FOR 15'X5' R.O.W. INFILTRATION BASIN WITH GRASS TOP TYPE 2</td>
</tr>
<tr>
<td>GI-159</td>
<td>STANDARD FOR 15'X5' R.O.W. INFILTRATION BASIN WITH GRASS TOP TYPE 2</td>
</tr>
<tr>
<td>GI-160</td>
<td>STANDARD FOR 15'X5' R.O.W. INFILTRATION BASIN WITH GRASS TOP TYPE 2A - WITH STONE COLUMNS</td>
</tr>
<tr>
<td>GI-161</td>
<td>STANDARD FOR 15'X5' R.O.W. INFILTRATION BASIN WITH GRASS TOP TYPE 2A - WITH STONE COLUMNS</td>
</tr>
<tr>
<td>GI-162</td>
<td>STANDARD FOR 15'X5' R.O.W. INFILTRATION BASIN WITH GRASS TOP TYPE 2C - WITH STORMWATER CHAMBER</td>
</tr>
<tr>
<td>GI-163</td>
<td>STANDARD FOR 15'X5' R.O.W. INFILTRATION BASIN WITH GRASS TOP TYPE 2C - WITH STORMWATER CHAMBER</td>
</tr>
<tr>
<td>GI-164</td>
<td>STANDARD FOR 10'X5' R.O.W. INFILTRATION BASIN WITH GRASS TOP TYPE 3</td>
</tr>
<tr>
<td>GI-165</td>
<td>STANDARD FOR 10'X5' R.O.W. INFILTRATION BASIN WITH GRASS TOP TYPE 3</td>
</tr>
<tr>
<td>GI-166</td>
<td>STANDARD FOR 10'X5' R.O.W. INFILTRATION BASIN WITH GRASS TOP TYPE 3A - WITH STONE COLUMN</td>
</tr>
<tr>
<td>GI-167</td>
<td>STANDARD FOR 10'X5' R.O.W. INFILTRATION BASIN WITH GRASS TOP TYPE 3A - WITH STONE COLUMN</td>
</tr>
<tr>
<td>GI-168</td>
<td>STANDARD FOR R.O.W. INFILTRATION BASIN WITH COMBINATION OF CONCRETE &amp; GRASS TOP</td>
</tr>
<tr>
<td>GI-169</td>
<td>STANDARD FOR R.O.W. INFILTRATION BASIN WITH COMBINATION OF CONCRETE &amp; GRASS TOP</td>
</tr>
<tr>
<td>GI-170</td>
<td>R.O.W. INFILTRATION BASIN INLET DETAILS</td>
</tr>
<tr>
<td>GI-171</td>
<td>R.O.W. INFILTRATION BASIN INLET DETAILS</td>
</tr>
<tr>
<td>GI-172</td>
<td>DIMENSION SCHEDULE FOR VARIABLE SIZE R.O.W. INFILTRATION BASINS</td>
</tr>
<tr>
<td>GI-173</td>
<td>GREENSTRIP SCHEDULE FOR VARIABLE SIZE R.O.W. GREENSTRIPS</td>
</tr>
<tr>
<td>GI-174</td>
<td>STANDARD FOR 20'X5' R.O.W. BIOSWALE TYPE 1D</td>
</tr>
<tr>
<td>GI-175</td>
<td>STANDARD FOR 20'X5' R.O.W. BIOSWALE TYPE 1A - WITH STONE COLUMNS</td>
</tr>
<tr>
<td>GI-176</td>
<td>STANDARD FOR 20'X5' R.O.W. BIOSWALE TYPE 1A - WITH STONE COLUMNS</td>
</tr>
</tbody>
</table>
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>SHEET</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>GI-177</td>
<td>STANDARD FOR 15’X5’ R.O.W. BIOSWALE TYPE 2D</td>
</tr>
<tr>
<td>GI-178</td>
<td>STANDARD FOR 15’X5’ R.O.W. BIOSWALE TYPE 2D</td>
</tr>
<tr>
<td>GI-179</td>
<td>STANDARD FOR 15’X5’ R.O.W. BIOSWALE TYPE 2DA - WITH STONE COLUMNS</td>
</tr>
<tr>
<td>GI-180</td>
<td>STANDARD FOR 15’X5’ R.O.W. BIOSWALE TYPE 2DA - WITH STONE COLUMNS</td>
</tr>
<tr>
<td>GI-181</td>
<td>STANDARD FOR 10’X5’ R.O.W. BIOSWALE TYPE 3D</td>
</tr>
<tr>
<td>GI-182</td>
<td>STANDARD FOR 10’X5’ R.O.W. BIOSWALE TYPE 3D</td>
</tr>
<tr>
<td>GI-183</td>
<td>STANDARD FOR 10’X5’ R.O.W. BIOSWALE TYPE 3DA - WITH STONE COLUMNS</td>
</tr>
<tr>
<td>GI-184</td>
<td>STANDARD FOR 10’X5’ R.O.W. BIOSWALE TYPE 3DA - WITH STONE COLUMNS</td>
</tr>
<tr>
<td>GI-185</td>
<td>R.O.W. BIOSWALE TYPE D STORMWATER INLET DETAILS</td>
</tr>
<tr>
<td>GI-186</td>
<td>DIMENSION SCHEDULE FOR VARIABLE SIZE R.O.W. BIOSWALE TYPE D</td>
</tr>
<tr>
<td>GI-200</td>
<td>MISCELLANEOUS DETAILS FOR RIGHT-OF-WAY GREEN INFRASTRUCTURE PRACTICES</td>
</tr>
<tr>
<td>GI-201</td>
<td>STANDARD ROWB/ROWSGS/ROWRG INLET</td>
</tr>
<tr>
<td>GI-202</td>
<td>STANDARD FOR STORMWATER INLET</td>
</tr>
<tr>
<td>GI-203</td>
<td>STANDARD FOR PRECAST STORMWATER INLET</td>
</tr>
<tr>
<td>GI-204</td>
<td>STANDARD R.O.W. SECTIONS AND DETAILS</td>
</tr>
<tr>
<td>GI-205</td>
<td>STANDARD R.O.W. SECTIONS AND DETAILS</td>
</tr>
<tr>
<td>GI-206</td>
<td>STANDARD DETAILS FOR R.O.W. STORMWATER SEEPAGE BASIN</td>
</tr>
<tr>
<td>GI-207</td>
<td>STANDARD R.O.W. SECTIONS AND DETAILS - GABION LAYOUT</td>
</tr>
<tr>
<td>GI-208</td>
<td>STANDARD FOR R.O.W INфиLTRAITION BASIN INLET WITH PRECAST CONCRETE CHAMBER</td>
</tr>
<tr>
<td>GI-209</td>
<td>R.O.W. INфиLTRAITION BASIN STEEL GRATE DETAILS - CONCRETE TOP</td>
</tr>
<tr>
<td>GI-209A</td>
<td>R.O.W. INфиLTRAITION BASIN STEEL GRATE DETAILS - GRASS TOP</td>
</tr>
<tr>
<td>GI-210</td>
<td>R.O.W. INфиLTRAITION BASIN OBSERVATION WELL</td>
</tr>
<tr>
<td>GI-211</td>
<td>R.O.W. INфиLTRAITION BASIN DEBRIS SCREEN</td>
</tr>
<tr>
<td>GI-212</td>
<td>R.O.W. INфиLTRAITION BASIN INLET STREET BOX</td>
</tr>
<tr>
<td>GI-213</td>
<td>STANDARD FOR R.O.W. BIOSWALE TYPE D OBSERVATION WELL</td>
</tr>
<tr>
<td>GI-300</td>
<td>SUGGESTED GUIDELINES FOR RIGHT-OF-WAY STORMWATER GREENSTREET LAYOUT</td>
</tr>
<tr>
<td>GI-301</td>
<td>R.O.W. STORMWATER GREENSTREET (ROWSGS) TYPE 1 LAYOUT</td>
</tr>
<tr>
<td>GI-302</td>
<td>R.O.W. STORMWATER GREENSTREET (ROWSGS) TYPE 1 LAYOUT</td>
</tr>
<tr>
<td>GI-303</td>
<td>R.O.W. STORMWATER GREENSTREET (ROWSGS) TYPE 1A-WITH STONE COLUMNS LAYOUT</td>
</tr>
<tr>
<td>GI-304</td>
<td>R.O.W. STORMWATER GREENSTREET (ROWSGS) TYPE 1A-WITH STONE COLUMNS LAYOUT</td>
</tr>
<tr>
<td>GI-305</td>
<td>R.O.W. STORMWATER GREENSTREET (ROWSGS) TYPE 2 LAYOUT</td>
</tr>
<tr>
<td>GI-306</td>
<td>R.O.W. STORMWATER GREENSTREET (ROWSGS) TYPE 2 LAYOUT</td>
</tr>
<tr>
<td>GI-307</td>
<td>R.O.W. STORMWATER GREENSTREET (ROWSGS) TYPE 2A-WITH STONE COLUMNS LAYOUT</td>
</tr>
<tr>
<td>GI-308</td>
<td>R.O.W. STORMWATER GREENSTREET (ROWSGS) TYPE 2A-WITH STONE COLUMNS LAYOUT</td>
</tr>
<tr>
<td>GI-309</td>
<td>R.O.W. STORMWATER GREENSTREET (ROWSGS) TYPE 3 LAYOUT</td>
</tr>
<tr>
<td>GI-310</td>
<td>R.O.W. STORMWATER GREENSTREET (ROWSGS) BIOFILTER INLET LAYOUT</td>
</tr>
<tr>
<td>GI-311</td>
<td>R.O.W. STORMWATER GREENSTREET (ROWSGS) MEDIAN BIOFILTER INLET LAYOUT</td>
</tr>
<tr>
<td>GI-312</td>
<td>R.O.W. STORMWATER GREENSTREET (ROWSGS) CONCRETE AND GRADE PEDESTRIAN PATHWAYS</td>
</tr>
<tr>
<td>GI-400</td>
<td>RIGHT-OF-WAY POROUS PAVEMENT GREEN INFRASTRUCTURE GUIDELINES</td>
</tr>
<tr>
<td>GI-401</td>
<td>GUIDELINE FOR R.O.W. PRECAST POROUS CONCRETE PAVEMENT</td>
</tr>
<tr>
<td>GI-500</td>
<td>PLANTING PLANS FOR RIGHT-OF-WAY GREEN INFRASTRUCTURE PRACTICES</td>
</tr>
<tr>
<td>GI-501A</td>
<td>STANDARD PLANTING LAYOUT FOR R.O.W. BIOSWALES AND R.O.W. RAIN GARDENS</td>
</tr>
<tr>
<td>GI-501B</td>
<td>STANDARD PLANTING SCHEDULE FOR WET AND DRY R.O.W. BIOSWALES AND R.O.W. RAIN GARDENS</td>
</tr>
<tr>
<td>GI-501C</td>
<td>STANDARD PLANTING SCHEDULE FOR R.O.W. COMBINATION WET/DRY BIOSWALES AND R.O.W. RAIN GARDENS</td>
</tr>
<tr>
<td>GI-502</td>
<td>STANDARD PLANTING LAYOUT AND LAYOUT FOR R.O.W. TYPE 1, TYPE 2 AND TYPE 3 GREENSTRIPS</td>
</tr>
<tr>
<td>GI-503A</td>
<td>STANDARD PLANTING LAYOUT FOR TYPE D R.O.W. INDUSTRIAL BIOSWALES</td>
</tr>
<tr>
<td>GI-503B</td>
<td>STANDARD PLANTING LAYOUT FOR TYPE D R.O.W. RESIDENTIAL BIOSWALES</td>
</tr>
<tr>
<td>GI-503C</td>
<td>STANDARD PLANTING SCHEDULE FOR TYPE D R.O.W. INDUSTRIAL BIOSWALES</td>
</tr>
<tr>
<td>GI-503D</td>
<td>STANDARD PLANTING SCHEDULE FOR TYPE D R.O.W. INDUSTRIAL BIOSWALES</td>
</tr>
<tr>
<td>GI-503E</td>
<td>STANDARD PLANTING SCHEDULE FOR TYPE D R.O.W. RESIDENTIAL BIOSWALES</td>
</tr>
<tr>
<td>GI-503F</td>
<td>STANDARD PLANTING SCHEDULE FOR TYPE D R.O.W. RESIDENTIAL BIOSWALES</td>
</tr>
<tr>
<td>GI-600</td>
<td>STEEL GUARDS STANDARDS FOR RIGHT-OF-WAY GREEN INFRASTRUCTURE PRACTICES</td>
</tr>
<tr>
<td>GI-601</td>
<td>STANDARD FOR R.O.W. BIOSWALES - TYPE 'B' STEEL GUARD</td>
</tr>
<tr>
<td>GI-602</td>
<td>STANDARD FOR R.O.W. BIOSWALES - TYPE 'B-1' STEEL GUARD WITH BOLTED PANELS</td>
</tr>
<tr>
<td>GI-603</td>
<td>STANDARD DETAILS FOR R.O.W. BIOSWALES - TYPE 'B-1' STEEL GUARD WITH BOLTED PANELS</td>
</tr>
<tr>
<td>GI-604</td>
<td>STEEL TREE GUARD MOUNT &amp; EDUCATIONAL SIGN</td>
</tr>
<tr>
<td>GI-605</td>
<td>STEEL TREE GUARD MOUNT &amp; EDUCATIONAL SIGN</td>
</tr>
</tbody>
</table>
GENERAL GREEN INFRASTRUCTURE NOTES

1. CONTRACTOR TO REFER TO STANDARDS FOR GREEN INFRASTRUCTURE DETAILS FOR THE CONSTRUCTION OF ALL RIGHT-OF-WAY GI PRACTICES.

2. CONTRACTOR SHALL STAKE LOCATION OF RIGHT-OF-WAY GI PRACTICES FOR APPROVAL BY ENGINEER PRIOR TO EXCAVATION WORK.

3. NO CHANGES SHALL BE MADE TO THE DESIGN OR LAYOUT WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER. LAYOUT THE WORK AS PER NORTHING AND EASTING COORDINATES AND GI PRACTICE DIMENSIONS SHOWN ON PLANS AND FIELD VERIFY. WRITTEN ASSET DIMENSIONS SHALL GOVERN. DO NOT SCALE DISTANCES OR ASSET DIMENSIONS FOR LAYOUT PURPOSES.

4. CONTRACTOR SHALL REMOVE SIDEWALK FLAGS AS SPECIFIED BY THE ENGINEER, WHICH SHALL TYPICALLY EXTEND TO THE OUTERMOST EDGE OF ANY FLAGS IMPACTED BY CONSTRUCTION. CONTRACTOR SHALL REPLACE ALL REMOVED SIDEWALK OUTSIDE THE ASSET'S HEADER.

5. CONSTRUCTION JOINTS TO MATCH EXISTING SIDEWALK AS MUCH AS POSSIBLE.

6. DO NOT SCORE WITHIN 18" OF HEADERS OR INLET/OUTLET SURFACE OPENINGS

7. EXPANSION JOINTS AND FILLER PER NYC DOT HIGHWAY SPECIFICATIONS

8. THE CONTRACTOR SHALL BE PREPARED TO CUT, CAP AND/OR REROUTE IRRIGATION LINES FOUND IN THE FIELD AS REQUIRED TO SUIT THE INSTALLATION OF GREEN INFRASTRUCTURE.


10. AUTHORIZED PARKING - FOR ANY GREEN INFRASTRUCTURE PRACTICE THAT WILL IMPACT AUTHORIZED PARKING SPACES TO THE CONSTRUCTION OF GREEN INFRASTRUCTURE PRACTICES, THE CONTRACTOR SHALL CONTACT AND COORDINATE WITH THE DEPARTMENT OF TRANSPORTATION (NYCDOT) AUTHORIZED PARKING AND SPECIAL USE UNIT AT LEAST TWO WEEKS IN ADVANCE OF CONSTRUCTION. CONTACT PERSON: MERISA GILMAN, SENIOR PROGRAM MANAGER, 212-839-3240, MGILMAN@DOT.NYC.GOV

11. TREES (WHEN APPLICABLE):
   a. THE CONTRACTOR SHALL OBTAIN THE NECESSARY TREE PLANTING PERMIT FROM THE NYC DEPARTMENT OF PARKS AND RECREATION (DPR) PRIOR TO THE START OF WORK. ALL NECESSARY TREE PLANTING SHALL BE SUPERVISED BY CERTIFIED ARBORISTS.
   b. NO TREE SHALL BE REMOVED BY THE CONTRACTOR UNTIL SPECIFICALLY ORDERED IN WRITING TO DO SO BY THE ENGINEER AND WITH APPROVAL FROM DPR.
   c. TREES SHALL BE STAKED AS PER DPR STANDARD DETAILS OF CONSTRUCTION. TREE STAKES ARE TO BE REMOVED BY THE CONTRACTOR NOT LESS THAN ONE YEAR AFTER PLANTING.
   d. REPLACEMENT TREES SHALL BE PLANTED WITHIN THE PROJECT AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH STANDARD HIGHWAY SPECIFICATIONS.

4. THE CONTRACTOR SHALL NOT BE PERMITTED TO OPERATE AUXILIARY EQUIPMENT WHICH GENERATES EXHAUST OR OTHER HEAT UPWARD (E.G., GENERATORS AND COMPRESSORS), UNDER THE BRANCHES OF TREES WHERE THE BRANCHES ARE LESS THAN 25' ABOVE THE GROUND, UNLESS APPROVED BY THE ENGINEER IN CONSULTATION WITH THE CERTIFIED ARBORIST.

5. THE CONTRACTOR SHALL NOT BE PERMITTED TO STORE, STOCKPILE, OR LAY DOWN, ANY CONSTRUCTION MATERIAL INCLUDING, BUT NOT LIMITED TO, LUMBER, FUEL, AND OIL CONTAINERS, PIPES, AND/OR PIPE FITTINGS, BARRICADES, HAND TOOLS, HOSES, RECEPTACLES, AND ASPHALT WITHIN ANY EXISTING TREE PIT OR R.O.W. GI PRACTICE.
GI-100
STANDARDS FOR
RIGHT-OF-WAY GREEN INFRASTRUCTURE PRACTICES
FLOW 20'-0" LOCATION OF BIOSWALE VARIES 5'-0" OR AS SHOWN PLAN A EXISTING SIDEWALK EXISTING CATCH BASIN FLOW 20'-0" LOCATION OF BIOSWALE VARIES 5'-0" OR AS SHOWN PLAN A EXISTING SIDEWALK EXISTING CATCH BASIN

NOTE:
1. CAST-IN-PLACE CONCRETE STRIP REQUIRES IMPERMEABLE LINER UNDERNEATH
2. ALL INLET AND OUTLET COMPONENTS INCLUDING TAPERS TO BE CAST-IN-PLACE

SECTION A-A AT BIOSWALE INLET
12"x5" CONCRETE STRIP WITH 1% - 2% CONTINUOUS CROSS SLOPE TOWARDS PLANTED AREA
DROP CURB [OUTLET]
12" WIDE GABION FILLED WITH CLEAN OPEN-GRADED STONE WRAP GABION IN GEOTEXTILE (TOP AND SIDES ONLY)

SECTION B-B AT MIDSECTION [LOWEST POINT]
12"x5" CONCRETE STRIP 3"-THICK LEVELING COURSE (TYP.)
ROADWAY 3-SIDED STEEL TREE GUARD, SEE GI-401, GI-402 & GI-403
8" THICK CAST-IN-PLACE REINFORCED CONCRETE APRON
12" WIDE GABION FILLED WITH CLEAN OPEN-GRADED STONE
WRAP GABION IN GEOTEXTILE (TOP AND SIDES ONLY)

SECTION C-C AT BIOSWALE OUTLET
8" THICK CAST-IN-PLACE REINFORCED CONCRETE APRON
12" WIDE GABION FILLED WITH CLEAN OPEN-GRADED STONE WRAP GABION IN GEOTEXTILE (TOP AND SIDES ONLY)

DEPTH SCHEDULE
ROW A B C
8" THICK 6" 2'-6" 1'-6"
9" THICK 7" 2'-0" 1'-0"
10" THICK 8" 1'-6" 0'-0"

REVIEWED:
Roopeshwar P.E.
MANAGING DIRECTOR
GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION
06-17-2020
EXISTING ASPHALT PAVEMENT

LOW POINT

SET 2" BELOW
OUTLET INVERT

NEW CURB TYPE TO
MATCH CONTRACT PLANS

EXISTING CURB TO REMAIN

1'-6"

15% - 20%

PITCH

TO MATCH EXISTING ROADWAY

8"-THICK CONCRETE STRIP

SIDEWALK

CONCRETE TAPER TO
FOLLOW CURB LINE (TYP.)

NEW CURB TYPE TO MATCH
CONTRACT PLANS

REINFORCED CONCRETE APRON

EXISTING CURB TO REMAIN

PLAIN TEXT
**CITY OF NEW YORK**

**DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**BUREAU OF ENVIRONMENTAL PLANNING & ANALYSIS - GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION**

**STANDARD FOR 20'X5' R.O.W. BIOSWALE TYPE 1A - WITH STONE COLUMNS**

**- NO CONNECTION TO SEWERS**

---

**SECTION A-A**

**At Bioswale Stone Column**

- **Concrete Strip Taper to Follow Curb Taper**
- **Top of Curb**
- **Drop Curb [Inlet]**
- **Top of Gutter [Beyond]**
- **See Apron Pitch Schedule**

**SECTION B-B**

- **Erosion Control Matting**
- **Grade to Allow for 3" Deep Depression, See Drawing GI-124**
- **Stone Column Cap Shall Be Perforated and Placed Under the Geotextile Fabric (Typ.)**
- **Concrete Strip Taper to Follow Curb Taper**
- **Top of Curb**
- **Drop Curb [Inlet]**
- **Top of Gutter [Beyond]**
- **See Apron Pitch Schedule**

**Depth Schedule**

<table>
<thead>
<tr>
<th>DEPTH SCHEDULE</th>
<th>ROWB</th>
<th>ROWC</th>
</tr>
</thead>
<tbody>
<tr>
<td>5'-0&quot;</td>
<td>1'-3&quot;</td>
<td>9&quot;</td>
</tr>
<tr>
<td>3'-0&quot;</td>
<td>1'-6&quot;</td>
<td>9&quot;</td>
</tr>
<tr>
<td>2'-0&quot;</td>
<td>2'-6&quot;</td>
<td>NO TREE</td>
</tr>
</tbody>
</table>

**NOTE:**

1. **Cast-In-Place Concrete Strip Requires Impermeable Liner Underneath**
2. **All Inlet and Outlet Components Including Tapers to Be Cast-In-Place**

---

**MANAGING DIRECTOR,**

**GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION**

**06-17-2020**

**P.E.**

**DATE**
STANDARD FOR 20'x5' R.O.W. BIOSWALE TYPE 1A - WITH STONE COLUMNS

- NO CONNECTION TO SEWERS

PLAN

SECTION D-D
STANDARD FOR 20'X5' R.O.W. BIOSWALE TYPE 1B - WITH STORMWATER INLET

- NO CONNECTION TO SEWERS

NOTES:
1. NO STAKE SHALL BE DRIVEN INTO HDPE DUAL WALL PIPE
2. CAST-IN-PLACE CONCRETE STRIP REQUIRES IMPERVIOUS LINER UNDERNEATH
3. ALL INLET AND OUTLET COMPONENTS INCLUDING TAPERS TO BE CAST-IN-PLACE
EXISTING ASPHALT PAVEMENT

NEW CURB TYPE TO MATCH CONTRACT PLANS

EXISTING CURB TO REMAIN

18"-WIDE CONCRETE GUTTER, TOP FLUSH WITH APRONS

REINFORCED CONCRETE APRON

SECTION D-D

PLAN

EXISTING CURB TO REMAIN

L-SHAPED EDGING WITH MINIMUM 9" STAKES

SEE DRAWING GI-204

SURFACE GRADING AS PER DRAWING GI-124

CONCRETE HEADER

STEEL TREE GUARD (3-SIDES TYP.) SEE DRAWING GI-601, GI-602 & GI-603

FOR SEDIMENT CONTROL DEVICE AT INLET, REFER TO GI-501C

SOLID PIPE TO STORMWATER INLET, SEE PLANS AND DETAILS

EXPANSION JOINT

LIMIT OF NEW CURB TO EXTEND BEYOND THE ROWS AS DETERMINED BY FIELD CONDITIONS AND SITE ENGINEER

CAST-IN-PLACE REINFORCED CONCRETE APRON

REINFORCED CONCRETE APRON

HEADER (BEYOND)

HEIGHT OF ADJACENT ASPHALT PAVEMENT FLUSH WITH CONCRETE APRON

EXTENT OF NEW CURB VARIES PER FIELD CONDITIONS

SECTION D-D

MANAGING DIRECTOR,
GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION

P.E.
06-17-2020
NOTE:
1. CAST-IN-PLACE CONCRETE STRIP REQUIRES IMPERMEABLE LINER UNDERNEATH
2. ALL INLET AND OUTLET COMPONENTS INCLUDING TAPERS TO BE CAST-IN-PLACE
EXISTING ASPHALT PAVEMENT

SIDEWALK

EXISTING CURB TO REMAIN

CONCRETE TAPER TO FOLLOW CURB LINE (TYP.)

NEW CURB TYPE TO MATCH CONTRACT PLANS

EXISTING CURB TO REMAIN

15% - 20% PITCH

8"-THICK REINFORCED CONCRETE GUTTER

NEW CURB TYPE TO MATCH CONTRACT PLANS

REINFORCED CONCRETE APRON

L-SHAPED EDGING WITH MINIMUM 5" STAKES

SEE DRAWING GI-204

18" STORMWATER CHAMBER CAPPED AT BOTH ENDS; SEE SCHEDULE ON GI-204

EXPANSION JOINT (TYP.)

CONCRETE HEADER

STEEL TREE GUARD

(3 SIDES TYP.) SEE DRAWING GI-601, GI-602 & GI-603

FOR SEDIMENT CONTROL DEVICE AT INLET, REFER TO GI-501C

STORMWATER CHAMBER CAPPED AT BOTH ENDS, SEE SCHEDULE ON GI-204

LIMIT OF NEW CURB TO EXTEND BEYOND THE ROW AS DETERMINED BY FIELD CONDITIONS AND SITE ENGINEER

EXPANSION JOINT

CAST-IN-PLACE REINFORCED CONCRETE APRON

HEIGHT OF ADJACENT ASPHALT PAVEMENT FLUSH WITH CONCRETE APRON

EXTENT OF NEW CURB VARIES PER FIELD CONDITIONS

HEADER (BEYOND)

SECTION D-D

EXPANSION JOINT (TYP.)

ADJACENT 8"-THICK, 18"-WIDE CONCRETE GUTTER, TOP Flush WITH APRONS

REINFORCED CONCRETE APRON

HEADER (BEYOND)

EXTENT OF NEW CURB VARIES PER FIELD CONDITION

CONCRETE APRON

CAST-IN-PLACE REINFORCED CONCRETE APRON

BOTTOM OF CURB

WMM 6x6-W8xW8

ADJACENT 8"-THICK, 18"-WIDE CONCRETE GUTTER, TOP Flush WITH APRONS

CAST-IN-PLACE REINFORCED CONCRETE APRON

BOTTOM OF CURB

WMM 6x6-W8xW8

HEADER (BEYOND)

10"

EXPANSION JOINT (TYP.)

CITY OF NEW YORK DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF ENVIRONMENTAL PLANNING & ANALYSIS - GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION STANDARD FOR 20'x5' R.O.W. BIOSWALE TYPE 1C - WITH STORMWATER CHAMBER - NO CONNECTION TO SEWERS

LOW POINT + SET 3" BELOW OUTLET INVERT

NEW CURB TYPE TO MATCH CONTRACT PLANS

OUTLET INVERT

TO MATCH EXISTING ROADWAY

FLOW

TO HEADER

EXTENT OF NEW CURB

HEADER (BEYOND)

HEIGHT OF ADJACENT ASPHALT PAVEMENT FLUSH WITH CONCRETE APRON

CAST-IN-PLACE REINFORCED CONCRETE APRON

BOTTOM OF CURB

WMM 6x6-W8xW8

SECTION D-D

PLAN

LOW POINT + SET 3" BELOW OUTLET INVERT

NEW CURB TYPE TO MATCH CONTRACT PLANS

OUTLET INVERT

TO MATCH EXISTING ROADWAY

FLOW

TO HEADER

EXTENT OF NEW CURB Varies PER FIELD CONDITIONS

HEADER (BEYOND)

HEIGHT OF ADJACENT ASPHALT PAVEMENT FLUSH WITH CONCRETE APRON

CAST-IN-PLACE REINFORCED CONCRETE APRON

BOTTOM OF CURB

WMM 6x6-W8xW8

SECTION D-D

PLAN

LOW POINT + SET 3" BELOW OUTLET INVERT

NEW CURB TYPE TO MATCH CONTRACT PLANS

OUTLET INVERT

TO MATCH EXISTING ROADWAY

FLOW

TO HEADER

EXTENT OF NEW CURB Varies PER FIELD CONDITIONS

HEADER (BEYOND)

HEIGHT OF ADJACENT ASPHALT PAVEMENT FLUSH WITH CONCRETE APRON

CAST-IN-PLACE REINFORCED CONCRETE APRON

BOTTOM OF CURB

WMM 6x6-W8xW8

SECTION D-D

PLAN

LOW POINT + SET 3" BELOW OUTLET INVERT

NEW CURB TYPE TO MATCH CONTRACT PLANS

OUTLET INVERT

TO MATCH EXISTING ROADWAY

FLOW

TO HEADER

EXTENT OF NEW CURB Varies PER FIELD CONDITIONS

HEADER (BEYOND)

HEIGHT OF ADJACENT ASPHALT PAVEMENT FLUSH WITH CONCRETE APRON

CAST-IN-PLACE REINFORCED CONCRETE APRON

BOTTOM OF CURB

WMM 6x6-W8xW8

SECTION D-D

PLAN

LOW POINT + SET 3" BELOW OUTLET INVERT

NEW CURB TYPE TO MATCH CONTRACT PLANS

OUTLET INVERT

TO MATCH EXISTING ROADWAY

FLOW

TO HEADER

EXTENT OF NEW CURB Varies PER FIELD CONDITIONS

HEADER (BEYOND)

HEIGHT OF ADJACENT ASPHALT PAVEMENT FLUSH WITH CONCRETE APRON

CAST-IN-PLACE REINFORCED CONCRETE APRON

BOTTOM OF CURB

WMM 6x6-W8xW8

SECTION D-D

PLAN

LOW POINT + SET 3" BELOW OUTLET INVERT

NEW CURB TYPE TO MATCH CONTRACT PLANS

OUTLET INVERT

TO MATCH EXISTING ROADWAY

FLOW

TO HEADER

EXTENT OF NEW CURB Varies PER FIELD CONDITIONS

HEADER (BEYOND)

HEIGHT OF ADJACENT ASPHALT PAVEMENT FLUSH WITH CONCRETE APRON

CAST-IN-PLACE REINFORCED CONCRETE APRON

BOTTOM OF CURB

STEEL TREE GUARD (3 SIDES TYP.) SEE DRAWING GI-601, GI-602 & GI-603

FOR SEDIMENT CONTROL DEVICE AT INLET, REFER TO GI-501C

STORMWATER CHAMBER CAPPED AT BOTH ENDS, SEE SCHEDULE ON GI-204

EXPANSION JOINT

CONCRETE HEADER

STEEL TREE GUARD

(3 SIDES TYP.) SEE DRAWING GI-601, GI-602 & GI-603

FOR SEDIMENT CONTROL DEVICE AT INLET, REFER TO GI-501C

STORMWATER CHAMBER CAPPED AT BOTH ENDS, SEE SCHEDULE ON GI-204

LIMIT OF NEW CURB TO EXTEND BEYOND THE ROW AS DETERMINED BY FIELD CONDITIONS AND SITE ENGINEER

EXPANSION JOINT

CAST-IN-PLACE REINFORCED CONCRETE APRON

HEIGHT OF ADJACENT ASPHALT PAVEMENT FLUSH WITH CONCRETE APRON

EXTENT OF NEW CURB Varies PER FIELD CONDITIONS

HEADER (BEYOND)

SECTION D-D

PLAN

LOW POINT + SET 3" BELOW OUTLET INVERT

NEW CURB TYPE TO MATCH CONTRACT PLANS

OUTLET INVERT

TO MATCH EXISTING ROADWAY

FLOW

TO HEADER

EXTENT OF NEW CURB Varies PER FIELD CONDITIONS

HEADER (BEYOND)

HEIGHT OF ADJACENT ASPHALT PAVEMENT FLUSH WITH CONCRETE APRON

CAST-IN-PLACE REINFORCED CONCRETE APRON

BOTTOM OF CURB

WMM 6x6-W8xW8
FLOW
15'-0"
LOCATION OF BIOSWALE VARIES
5'-0" OR AS SHOWN
A
B
C
PLANT
EXISTING SIDEWALK
EXISTING CATCH BASIN
BIOSWALE INLET
BIOSWALE OUTLET
FLOW
15'-0"
SEE DRAWING GI-501A, B & C FOR TYPICAL PLANTING PLANS
REFER TO DETAILS ON THIS AND NEXT PAGE
SEE DRAWING GI-501A, B & C FOR TYPICAL PLANTING PLANS
NOTE:
1. CAST-IN-PLACE CONCRETE STRIP REQUIRES IMPERMEABLE LINER UNDERNEATH
2. ALL INLET AND OUTLET COMPONENTS INCLUDING TAPERS TO BE CAST-IN-PLACE
PLAN
EXISTING CURB TO REMAIN
PITCH LIMIT OF NEW CURB TO EXTEND BEYOND THE ROWB AS DETERMINED BY FIELD CONDITIONS AND SITE ENGINEER
NEW CURB TYPE TO MATCH CONTRACT PLANS
REINFORCED CONCRETE APRON
8"-THICK REINFORCED CONCRETE GUTTER
5"-THICK CONCRETE STRIP
FLOW TO MATCH EXISTING ROADWAY
1'-0"
15'-0" OR AS SHOWN
10"
18"
15% - 20% PITCH
PLACE EXPANSION JOINT AT MID-SPAN
EXPANSION JOINT (TYP.)
SURFACE GRADING AS PER DRAWING GI-124
CONCRETE HEADER
STEEL TREE GUARDS (3-SIDES TYP.) SEE GI-601, GI-602 & GI-603
L-SHAPED EDGING WITH MINIMUM 9" STAKES SEE DRAWING GI-204
EXPANSION JOINT (TYP.)
LOW POINT SET 3" BELOW OUTLET INVERT FOR SEDIMENT CONTROL DEVICE AT INLET, REFER TO GI-501C
SECTION D-D
EXTENT OF NEW CURB VARIES PER FIELD CONDITIONS
HEIGHT OF ADJACENT ASPHALT PAVEMENT FLUSH WITH CONCRETE APRON
REINFORCED CONCRETE APRON
HEADER (BEYOND)
CAST-IN-PLACE REINFORCED CONCRETE APRON
BOTTOM OF CURB
WWM 6x6-W8xW8
CAST-IN-PLACE REINFORCED CONCRETE APRON
18"-WIDE CONCRETE GUTTER, TOP Flush WITH APRONS
ADJACENT 8"-THICK
EXPANSION JOINT (TYP.)
EXPANSION JOINT (TYP.)
TO HEADER
HEADER (BEYOND)
HEIGHT OF ADJACENT ASPHALT PAVEMENT FLUSH WITH CONCRETE APRON
EXTENT OF NEW CURB VARIES PER FIELD CONDITION
DATE
MANAGING DIRECTOR, GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION
06-17-2020
STANDARD FOR 15'X5' R.O.W. BIOSWALE TYPE 2A - WITH STONE COLUMNS

- NO CONNECTION TO SEWERS

**Location of Bioswale**

- Location of bioswale varies
- See drawing GI-501A, B & C for typical planting plans
- Refer to details on this and next page

**Plan**

- 3-sided steel tree guard, see GI-601, GI-602 & GI-603
- Clean open-graded stone base wrapped with geotextile (top and sides only)

**Section B-B**

- Stone filled perforated 12" diameter PVC pipe wrapped all around with geotextile fabric (typ.)
- Open bottom (typ.)

**Depth Schedule**

- **Core**
  - 6" - 9" with tree
  - 12" - 3' with tree
  - 1' - 1' no tree

**Note:**

1. Cast-in-place concrete strip requires impermeable liner underneath
2. All inlet and outlet components including tapers to be cast-in-place

**SECTION A-A**

- At bioswale stone column
- Stone filled perforated 12" diameter PVC pipe wrapped all around with geotextile fabric

**Additional Details**

- See APRON PITCH SCHEDULE
- Pitch to allow for 3" deep depression, see drawing GI-124
- Clean open-graded stone base wrapped with geotextile (top and sides only)

**General Information**

- 1% - 2% continuous cross slope towards planted area
- Erosion control matting
- Expansion joint and filler (typ.)
- Undisturbed soil
- Permeable soil
- Clean open-graded stone base wrapped in geotextile, top and sides only

**Section A-A**

- Clean open-graded stone
- Bottom of column to be open
PLAN
EXISTING CURB TO REMAIN
PITCH
LIMIT OF NEW CURB TO EXTEND BEYOND THE ROWB AS DETERMINED BY FIELD CONDITIONS AND SITE ENGINEER

NEW CURB TYPE TO MATCH CONTRACT PLANS

REINFORCED CONCRETE APRON

OUTLET

INLET

CONCRETE TAPER TO FOLLOW CURB LINE (TYP.)

CONCRETE STRIP, SEE GI-207

CONCRETE HEADER

LOW POINT

SET 3" BELOW
OUTLET INVERT

FOR SEDIMENT CONTROL DEVICE AT INLET, REFER TO GI-501C

5'-THICK CONCRETE APRON

GABION WALL BELOW CONCRETE STRIP, SEE GI-207

CONCRETE TAPER TO FOLLOW CURB LINE (TYP.)

NEW CURB TYPE TO MATCH CONTRACT PLANS

EXISTING CURB TO REMAIN

REINFORCEMENT FOR TYPICAL PLANTING PLANS

SEE GI-122 FOR DIMENSIONS SCHEDULE

SEE GI-501A, B & C FOR TYPICAL PLANTING PLANS

PLACE EXPANSION JOINT AT MID-SPAN

EXPANSION JOINT (TYP.)

SURFACE GRADING AS PER DRAWING GI-124

CONCRETE HEADER

STEEL TREE GUARDS (3-SIDES TYP.) SEE GI-601, GI-602 & GI-603

L-SHAPED EDGING WITH MINIMUM 9" STAKES

SEE DRAWING GI-204

EXPANSION JOINT

EXISTING CURB TO REMAIN

LIMIT OF NEW CURB TO EXTEND BEYOND THE ROWB AS DETERMINED BY FIELD CONDITIONS AND SITE ENGINEER

WWM 6x6-W8xW8

BOTTOM OF CURB

SECTION D-D

EXTENT OF NEW CURB VARIES PER FIELD CONDITIONS

HEADER (BEYOND)

HEIGHT OF ADJACENT ASPHALT PAVEMENT FLUSH WITH CONCRETE APRON

CAST-IN-PLACE REINFORCED CONCRETE APRON

CAST-IN-PLACE REINFORCED CONCRETE APRON

MINIMUM 9" STAKES

SEE DRAWING GI-204

EXPANSION JOINT

EXISTING CURB TO REMAIN

LIMIT OF NEW CURB TO EXTEND BEYOND THE ROWB AS DETERMINED BY FIELD CONDITIONS AND SITE ENGINEER

15'-0" OR AS SHOWN

FLOW

GABION WALL BELOW CONCRETE STRIP, SEE GI-207

CONCRETE TAPER TO FOLLOW CURB LINE (TYP.)

NEW CURB TYPE TO MATCH CONTRACT PLANS

EXISTING CURB TO REMAIN

REINFORCEMENT FOR TYPICAL PLANTING PLANS

SEE GI-122 FOR DIMENSIONS SCHEDULE

SEE GI-501A, B & C FOR TYPICAL PLANTING PLANS

PLACE EXPANSION JOINT AT MID-SPAN

EXPANSION JOINT (TYP.)

SURFACE GRADING AS PER DRAWING GI-124

CONCRETE HEADER

STEEL TREE GUARDS (3-SIDES TYP.) SEE GI-601, GI-602 & GI-603

L-SHAPED EDGING WITH MINIMUM 9" STAKES

SEE DRAWING GI-204

EXPANSION JOINT

EXISTING CURB TO REMAIN

LIMIT OF NEW CURB TO EXTEND BEYOND THE ROWB AS DETERMINED BY FIELD CONDITIONS AND SITE ENGINEER
NOTES:
1. NO STAKE SHALL BE DRIVEN INTO HDPE DUAL WALL PIPE.
2. CAST-IN-PLACE CONCRETE STRIP REQUIRES IMPERMEABLE LINER UNDERNEATH.
3. ALL INLET AND OUTLET COMPONENTS INCLUDING TAPERS TO BE CAST-IN-PLACE.

P.E. 06-17-2020
NOTE:
1. CAST-IN-PLACE CONCRETE STRIP REQUIRES IMPERMEABLE LINER UNDERNEATH
2. ALL INLET AND OUTLET COMPONENTS INCLUDING TAPERS TO BE CAST-IN-PLACE

CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL PLANNING & ANALYSIS - GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION

STANDARD FOR 15'x5' R.O.W. BIOSWALE TYPE 2C - WITH STORMWATER CHAMBER
- NO CONNECTION TO SEWERS

DETAILED DEPICTION OF BIOSWALE INSTALLATION AND COMPONENTS

1. CONCRETE STRIP TO FOLLOW CURB TAPER
2. TOP OF CURB DROP CURB [INLET]
3. TOP OF GUTTER [BEYOND]
4. SEE APRON PITCH SCHEDULE

MANAGING DIRECTOR,
GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION
06-17-2020
**CITY OF NEW YORK**

**DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**BUREAU OF ENVIRONMENTAL PLANNING & ANALYSIS - GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION**

**STANDARD FOR 15'x5' R.O.W. BIOSWALE TYPE 2C - WITH STORMWATER CHAMBER**

- NO CONNECTION TO SEWERS

15'0" OR AS SHOWN

---

**PLAN**

**EXISTING CURB TO REMAIN**

**PICTURE**

**LIMIT OF NEW CURB TO EXTEND BEYOND THE ROWB AS DETERMINED BY FIELD CONDITIONS AND SITE ENGINEER**

**NEW CURB TYPE TO MATCH CONTRACT PLANS**

**REINFORCED CONCRETE APRON**

**8"-THICK REINFORCED CONCRETE GUTTER**

**5'-0" CONCRETE STRIP**

**FLOW TO MATCH EXISTING ROADWAY**

1'-0" 10" 18"

**15% - 20% PITCH**

**PLACE EXPANSION JOINT AT MID-SPAN**

**EXPANSION JOINT (TYP.)**

**STORMWATER CHAMBER CAPPED AT BOTH ENDS; SEE SCHEDULE ON GI-204**

**SURFACE GRADING AS PER DRAWING GI-124**

**CONCRETE HEADER**

**STEEL TREE GUARDS (3-SIDES TYP.) SEE GI-501, GI-602 & GI-603**

**L-SHAPED EDGING WITH MINIMUM 9" STAKES SEE DRAWING GI-204**

---

**SECTION D-D**

- **EXTENT OF NEW CURB VARIES PER FIELD CONDITIONS**
- **HEADER (BEYOND)**
- **HEIGHT OF ADJACENT ASPHALT PAVEMENT FLUSH WITH CONCRETE APRON**
- **CAST-IN-PLACE REINFORCED CONCRETE APRON**
- **BOTTOM OF CURB**

**OUTLET INVERT**

**INLET**

**FLOW**

- **D**
- **D**

---

**DATE 06-17-2020**

**P.E. MANAGING DIRECTOR, GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION**
LOCATION OF BIOSWALE VARIES 5'-0" OR AS SHOWN
EXISTING SIDEWALK
EXISTING CATCH BASIN

SEE DRAWING GI-501A, B & C FOR TYPICAL PLANTING PLANS
REFER TO DETAILS ON THIS AND NEXT PAGE

EXISTING CURB
EXISTING SIDEWALK
PROPERTY LINE
CURB LINE

FLOW

SECTION B-B
AT MIDSECTION (LOWEST POINT)

SECTION C-C
AT BIOSWALE OUTLET

SECTION A-A
AT BIOSWALE INLET

DEPTH SCHEDULE

P.E. 06-17-2020
MANAGING DIRECTOR,
GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION

NOTE:
1. CAST-IN-PLACE CONCRETE STRIP REQUIRES IMPERMEABLE LINER UNDERNEATH.
2. ALL INLET AND OUTLET COMPONENTS INCLUDING TAPERS TO BE CAST-IN-PLACE.
STANDARD FOR 10'x5' R.O.W. BIOSWALE TYPE 3

- NO CONNECTION TO SEWERS

10'-0" OR AS SHOWN

1'-0"

LOW POINT
SET 3" BELOW OUTLET INVERT

1'-6"
PITCH TO MATCH EXISTING ROADWAY

EXISTING ASPHALT PAVEMENT

CAST-IN-PLACE REINFORCED CONCRETE APRON

LIMIT OF NEW CURB TO EXTEND BEYOND THE ROWD AS DETERMINED BY FIELD CONDITIONS AND SITE ENGINEER

HEIGHT OF ADJACENT ASPHALT PAVEMENT FLUSH WITH CONCRETE APRON

EXTENT OF NEW CURB VARIES PER FIELD CONDITIONS

HEADER (BEYOND)

HEIGHT OF ADJACENT ASPHALT PAVEMENT FLUSH WITH CONCRETE APRON

EXTENT OF NEW CURB TO REMAIN

8"-THICK CONCRETE APRON

PLAN

SECTION D-D

LOW POINT
SET 3" BELOW OUTLET INVERT

8"-THICK CONCRETE APRON

CONCRETE TAPER TO FOLLOW CURB LINE (TYP.)

NEW CURB TYPE TO MATCH CONTRACT PLANS

EXISTING CURB TO REMAIN

TOP OF CURB, BEYOND JOINT (TYP.)

8"-THICK CONCRETE APRON

TO HEADER

WWM 6x6-W8xW8 BOTTOM OF CURB

CAST-IN-PLACE REINFORCED CONCRETE APRON

CONCRETE TAPER TO FOLLOW CURB LINE (TYP.)

NEW CURB TYPE TO MATCH CONTRACT PLANS

EXISTING CURB TO REMAIN

TOP OF CURB, BEYOND JOINT (TYP.)

8"-THICK CONCRETE APRON

TO HEADER

WWM 6x6-W8xW8 BOTTOM OF CURB

CAST-IN-PLACE REINFORCED CONCRETE APRON

LIMIT OF NEW CURB TO EXTEND BEYOND THE ROWD AS DETERMINED BY FIELD CONDITIONS AND SITE ENGINEER

HEIGHT OF ADJACENT ASPHALT PAVEMENT FLUSH WITH CONCRETE APRON

EXTENT OF NEW CURB VARIES PER FIELD CONDITIONS

HEADER (BEYOND)

HEIGHT OF ADJACENT ASPHALT PAVEMENT FLUSH WITH CONCRETE APRON

CAST-IN-PLACE REINFORCED CONCRETE APRON

WWM 6x6-W8xW8 BOTTOM OF CURB

CONCRETE TAPER TO FOLLOW CURB LINE (TYP.)

NEW CURB TYPE TO MATCH CONTRACT PLANS

EXISTING CURB TO REMAIN

TOP OF CURB, BEYOND JOINT (TYP.)

8"-THICK CONCRETE APRON

TO HEADER

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CAST-IN-PLACE REINFORCED CONCRETE APRON

LIMIT OF NEW CURB TO EXTEND BEYOND THE ROWD AS DETERMINED BY FIELD CONDITIONS AND SITE ENGINEER

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EXTENT OF NEW CURB VARIES PER FIELD CONDITIONS

HEADER (BEYOND)

HEIGHT OF ADJACENT ASPHALT PAVEMENT FLUSH WITH CONCRETE APRON

CAST-IN-PLACE REINFORCED CONCRETE APRON

WWM 6x6-W8xW8 BOTTOM OF CURB

CONCRETE TAPER TO FOLLOW CURB LINE (TYP.)

NEW CURB TYPE TO MATCH CONTRACT PLANS

EXISTING CURB TO REMAIN

TOP OF CURB, BEYOND JOINT (TYP.)

8"-THICK CONCRETE APRON

TO HEADER

WWM 6x6-W8xW8 BOTTOM OF CURB

CAST-IN-PLACE REINFORCED CONCRETE APRON

LIMIT OF NEW CURB TO EXTEND BEYOND THE ROWD AS DETERMINED BY FIELD CONDITIONS AND SITE ENGINEER

HEIGHT OF ADJACENT ASPHALT PAVEMENT FLUSH WITH CONCRETE APRON

EXTENT OF NEW CURB VARIES PER FIELD CONDITIONS

HEADER (BEYOND)

HEIGHT OF ADJACENT ASPHALT PAVEMENT FLUSH WITH CONCRETE APRON

CAST-IN-PLACE REINFORCED CONCRETE APRON

WWM 6x6-W8xW8 BOTTOM OF CURB

CONCRETE TAPER TO FOLLOW CURB LINE (TYP.)

NEW CURB TYPE TO MATCH CONTRACT PLANS

EXISTING CURB TO REMAIN

TOP OF CURB, BEYOND JOINT (TYP.)

8"-THICK CONCRETE APRON

TO HEADER

WWM 6x6-W8xW8 BOTTOM OF CURB

CAST-IN-PLACE REINFORCED CONCRETE APRON

LIMIT OF NEW CURB TO EXTEND BEYOND THE ROWD AS DETERMINED BY FIELD CONDITIONS AND SITE ENGINEER

HEIGHT OF ADJACENT ASPHALT PAVEMENT FLUSH WITH CONCRETE APRON

EXTENT OF NEW CURB VARIES PER FIELD CONDITIONS

HEADER (BEYOND)

HEIGHT OF ADJACENT ASPHALT PAVEMENT FLUSH WITH CONCRETE APRON

CAST-IN-PLACE REINFORCED CONCRETE APRON

WWM 6x6-W8xW8 BOTTOM OF CURB
STANDARD FOR 10'x5' R.O.W. BIOSWALE TYPE 3A - WITH STONE COLUMN
- NO CONNECTION TO SEwers

EXPANSION JOINT
(TYP.)
SURFACE GRADING AS PER
DRAWING GI-124
CONCRETE HEADER
STEEL TREE PIT GUARDS
(3-SIDES TYP.) SEE DRAWING
GI-601A, B, C & GI-602A
FOR SEDIMENT CONTROL DEVICE
AT INLET, REFER TO GI-601C
L-SHAPED EDGING
WITH MINIMUM 9" STAKES
SEE DRAWING GI-204
REINFORCED CONCRETE
INLET APRON
EXPANSION JOINT
LIMIT OF NEW CURB TO EXTEND
BEYOND THE ROWS AS DETERMINED
BY FIELD CONDITIONS AND SITE
ENGINEER

STOUSE COLUMN
SIDEWALK
GABION WALL BELOW
CONCRETE STRIP. SEE GI-207
CONCRETE TAPER TO
FOLLOW CURB LINE (TYP.)
NEW CURB TYPE TO MATCH
CONTRACT PLANS
EXISTING CURB TO REMAIN

EXISTING ASPHALT
PAVEMENT
8"-THICK CONCRETE
APRON
CAST-IN-PLACE REINFORCED
CONCRETE APRON
WWM 6x6-W8xW8
BOTTOM OF CURB

LOW POINT
SET 3" BELOW
OUTLET INVERT
0"-THICK CONCRETE STRIP

NEW CURB TYPE TO MATCH CONTRACT
PLANS
OUTLET INVERT

TOP OF CURB, BEYOND
JOINT (TYP.)
TO HEADER
HEIGHT OF ADJACENT
ASPHALT PAVEMENT FLUSH
WITH CONCRETE APRON

EXTENT OF NEW CURB
VARIES PER FIELD
CONDITION
HEADER (BEYOND)
HEIGHT OF ADJACENT
ASPHALT PAVEMENT FLUSH WITH CONCRETE APRON

EXTENT OF NEW CURB
VARIES PER FIELD
CONDITION
HEADER (BEYOND)
HEIGHT OF ADJACENT
ASPHALT PAVEMENT FLUSH WITH CONCRETE APRON

MANAGING DIRECTOR,
GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION
06-17-2020

DATE
FLOW
L
W
LOCATION OF R.O.W.
RAIN GARDEN VARIES
EXISTING SIDEWALK
EXISTING CATCH BASIN
R.O.W.
INLET
R.O.W.
OUTLET
PROPERTY LINE
CURB LINE
LOW POINT
SECTION C-C
AT R.O.W. OUTLET
SECTION B-B
AT MIDSECTION (LOWEST POINT)
SECTION A-A
AT R.O.W. INLET
PLANTING AREA, SEE
PLANTING PLANS (NO
TREE PERMITTED)
PLANTED AREA, SEE
PLANTING PLANS NO
TREE PERMITTED)
CONCRETE STRIP TO
FOLLOW CURB TAPER
TOP OF CURB
DROP CURB [INLET]
TOP OF GUTTER
[BEYOND]
SEE APRON PITCH
SCHEDULE
ROADWAY
EPWM 6x6-W8xW8 (TYP.)
8" THICK CAST-IN-PLACE
REINFORCED CONCRETE APRON
12" WIDE GABION FILLED
WITH CLEAN OPEN-GRADED STONE
WRAP GABION IN
GEOTEXTILE (TOP AND SIDES ONLY)
WRAP STONE IN
GEOTEXTILE (TOP AND SIDES ONLY)
12"x5" CONCRETE STRIP
WITH 1% - 2% CONTINUOUS CROSS
SLOPE TOWARDS PLANTED AREA
DROP CURB (OUTLET)
ROADWAY
8" THICK CAST-IN-PLACE
REINFORCED CONCRETE APRON
ENGINEERED SOIL
OPEN-GRADED STONE BASE
WRAP GABION IN
GEOTEXTILE (TOP AND SIDES ONLY)
3-SIDED STEEL TREE
GUARD, SEE GI-601,
GI-602 & GI-603
8'-6" TO CURB
1'-6"
1'-3"
12" WIDE GABION FILLED
WITH CLEAN OPEN-GRAD
STONE BASE
CLEAN OPEN-GRAD STONE BASE
ENGINEERED SOIL
PLANTED AREA
SIDEWALK
EXPANSION JOINT AND
FILLER (TYP.)
SIDEWALK
CONCRETE HEADER (3) SIDES (TYP.)
UNDISTURBED SOIL
STEEL SPAKE IN 4" DIA.
CONCRETE ENCASEMENT PLACED
IN ENGINEERED SOIL (TYP.)
ROADWAY
8" THICK CAST-IN-PLACE
REINFORCED CONCRETE APRON
12" WIDE GABION FILLED WITH CLEAN OPEN-GRAD STONE (TYP.) SEE GI-204
L-SHAPED EDGING WITH MIN. 9" STAKES (TYP.) SEE GI-204
CONCRETE STRIP TO FOLLOW CURB TAPER
TOP OF CURB
DROP CURB [INLET]
TOP OF GUTTER [BEYOND]
8" THICK CAST-IN-PLACE REINFORCED CONCRETE APRON
ENGINEERED SOIL
OPEN-GRADED STONE BASE
WRAP GABION IN
GEOTEXTILE (TOP AND SIDES ONLY)
12"x5" CONCRETE STRIP WITH 1% - 2% CONTINUOUS CROSS SLOPE TOWARDS PLANTED AREA
ROADWAY
3" THICK LEVELING COURSE (TYP.)
ROADWAY
WWM 6x6-W8xW8 (TYP.)
8" THICK CAST-IN-PLACE REINFORCED CONCRETE APRON
ENGINEERED SOIL
OPEN-GRADED STONE BASE
WRAP GABION IN GEOTEXTILE (TOP AND SIDES ONLY)
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ENGINEERED SOIL
OPEN-GRADED STONE BASE
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ENGINEERED SOIL
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ROADWAY
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ENGINEERED SOIL
OPEN-GRADED STONE BASE
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ENGINEERED SOIL
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ROADWAY
WWM 6x6-W8xW8 (TYP.)
8" THICK CAST-IN-PLACE REINFORCED CONCRETE APRON
ENGINEERED SOIL
OPEN-GRADED STONE BASE
WRAP GABION IN GEOTEXTILE (TOP AND SIDES ONLY)
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ROADWAY
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ENGINEERED SOIL
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WRAP GABION IN GEOTEXTILE (TOP AND SIDES ONLY)
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WWM 6x6-W8xW8 (TYP.)
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ENGINEERED SOIL
OPEN-GRADED STONE BASE
WRAP GABION IN GEOTEXTILE (TOP AND SIDES ONLY)
12"x5" CONCRETE STRIP WITH 1% - 2% CONTINUOUS CROSS SLOPE TOWARDS PLANTED AREA
ROADWAY
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ROADWAY
WWM 6x6-W8xW8 (TYP.)
8" THICK CAST-IN-PLACE REINFORCED CONCRETE APRON
ENGINEERED SOIL
OPEN-GRADED STONE BASE
WRAP GABION IN GEOTEXTILE (TOP AND SIDES ONLY)
### R.O.W. Bioswale or Rain Garden Details

<table>
<thead>
<tr>
<th>Length (L)</th>
<th>Width (W)</th>
<th>Type</th>
<th>Planting Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>17' ≤ L ≤ 20'</td>
<td>4'-0&quot; to 6'-0&quot;</td>
<td>TYPE 1</td>
<td>GI-501A-C</td>
</tr>
<tr>
<td>13' ≤ L ≤ 16'</td>
<td>4'-0&quot; to 6'-0&quot;</td>
<td>TYPE 2</td>
<td></td>
</tr>
<tr>
<td>10' ≤ L ≤ 12'</td>
<td>4'-0&quot; to 6'-0&quot;</td>
<td>TYPE 3</td>
<td></td>
</tr>
</tbody>
</table>

### Dimension and Planting Plan Schedule

1. Standard cross-sectional details and notes as per the R.O.W. bioswale or R.O.W. rain garden type specified.
2. Prior to construction, the contractor will confirm the levels of the R.O.W. bioswale or R.O.W. rain garden to prevent flooding.
3. DOT approval required for all widths greater than 5'.
4. Planting quantities and plans for variable width R.O.W. bioswaless and R.O.W. rain gardens as per the page numbers specified, distributed evenly.
5. Trees species as directed by DPR. Trees are only permitted in R.O.W. bioswaless with an engineered soil layer 24" deep.
STONE COLUMN SCHEDULE FOR VARIABLE SIZE R.O.W. BIOSWALE

- NO CONNECTION TO SEWERS

**R.O.W. BIOSWALE DETAILS**

<table>
<thead>
<tr>
<th>LENGTH (L)</th>
<th>WIDTH (W)</th>
<th>TYPE</th>
<th>NUMBER OF COLUMNS</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>17' ≤ L ≤ 20'</td>
<td>4'-0&quot; TO 6'-0&quot;</td>
<td>TYPE 1</td>
<td>3</td>
<td>4'-4&quot;</td>
</tr>
<tr>
<td>13' ≤ L ≤ 16'</td>
<td>4'-0&quot; TO 6'-0&quot;</td>
<td>TYPE 2</td>
<td>2</td>
<td>3'-6&quot;</td>
</tr>
<tr>
<td>10' ≤ L ≤ 12'</td>
<td>4'-0&quot; TO 6'-0&quot;</td>
<td>TYPE 3</td>
<td>1</td>
<td>1'-6&quot;</td>
</tr>
</tbody>
</table>

**TYPE 1/TYPE 2**

**TYPE 3**

NOTES:

1. STANDARD STONE COLUMN CROSS SECTIONAL DETAILS AS SPECIFIED.
2. THIRD COLUMN LOCATED IN CENTER OF ROWB.
3. ROWB WITH THREE COLUMNS WILL NOT CONTAIN A TREE.
4. TOP OF STONE COLUMN COVER BELOW INTERFACE OF ENGINEERED SOIL AND STONE BASE.
5. DEPTH OF BOTTOM OF STONE COLUMNS SHALL BE MEASURED FROM SURFACE GRADE.
1. ALL SURFACE GRADING TO TAPER TOWARDS THE LOW POINT.
2. CONTOUR LINES SHOWN ON THIS DRAWING ARE SCHEMATIC ONLY AND DEPEND ON THE STREET GRADE.

NOTES:

- SET 3" BELOW OUTLET INVERT

FOR SEDIMENT CONTROL DEVICE AT INLET, REFER TO GI-502

FOR SEDIMENT CONTROL DEVICE AT INLET, REFER TO GI-502
NOTE:
1. CAST-IN-PLACE CONCRETE STRIP REQUIRES IMPERMEABLE LINER UNDERNEATH
2. ALL INLET AND OUTLET COMPONENTS INCLUDING TAPERS TO BE CAST-IN-PLACE
NOTE:
1. CAST-IN-PLACE CONCRETE STRIP REQUIRES IMPERMEABLE LINER UNDERNEATH.
2. ALL INLET AND OUTLET COMPONENTS INCLUDING TAPERS TO BE CAST-IN-PLACE.
EXISTING ASPHALT PAVEMENT

CONCRETE TAPER TO FOLLOW CURB LINE (TYP.)
GABION WALL BELOW CONCRETE STRIP, SEE GI-207
EXISTING CURB TO REMAIN

FLOW TO MATCH EXISTING ROADWAY

LOW POINT 3" BELOW OUTLET INVERT
FOR SEDIMENT CONTROL DEVICE AT INLET, REFER TO GI-502

2'-0" 10"
2'-2"
8"-THICK REINFORCED CONCRETE GUTTER

REINFORCED CONCRETE INLET APRON

EXCESSIVE CURB TO REMAIN

EXPANSION JOINT (TYP.)
SURFACE GRADING AS PER DRAWING GI-132
CONCRETE HEADER
STEEL TREE GUARD (3 SIDES TYP.) SEE GI-401, GI-602 & GI-603
L-SHAPED EDGING WITH MINIMUM 9" STAKES SEE DRAWING GI-254.

NEW CURB TYPE TO MATCH CONTRACT PLANS

EXTENT OF NEW CURB VARIES PER FIELD CONDITIONS
HEADER (BEYOND)
HEIGHT OF ADJACENT ASPHALT PAVEMENT FLUSH WITH CONCRETE APRON

WWM 6x6-W8xW8 BOTTOM OF CURB
CAST-IN-PLACE REINFORCED CONCRETE APRON

WWM 6x6-W8xW8 BOTTOM OF CURB
CAST-IN-PLACE REINFORCED CONCRETE APRON

SECTION D-D

DATE 06-17-2020

MANAGING DIRECTOR,
GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION

MANAGING DIRECTOR,
GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION
NOTE:
1. CAST-IN-PLACE CONCRETE STRIP REQUIRES IMPERMEABLE LINER UNDERNEATH.
2. ALL INLET AND OUTLET COMPONENTS INCLUDING TAPERS TO BE CAST-IN-PLACE.
STANDARD FOR 10'x3'-6" R.O.W. GREENSTRIP TYPE 3
- NO CONNECTION TO SEWERS

- CONCRETE HEADER
- EXPANSION JOINT
- SURFACE GRADING AS PER DRAWING GI-132
- FOR SEDIMENT CONTROL DEVICE AT INLET, REFER TO GI-502
- STEEL TREE GUARD (3 SIDES TYP.) SEE GI-601, GI-602 & GI-603
- L-SHAPED EDGING WITH MINIMUM 9" STAKES SEE DRAWING GI-204
- D'x12" CONCRETE STRIP (TYP.)
- NEW CURB TYPE TO MATCH CONTRACT PLANS
- 5"x12" CONCRETE STRIP (TYP.)
- EXISTING CURB TO REMAIN
- SEE GI-132 FOR DIMENSIONS SCHEDULE
- SEE GI-502 FOR TYPICAL PLANTING PLANS
- SIDEWALK
- CONCRETE TAPER TO FOLLOW CURB LINE (TYP.)
- GABION WALL BELOW CONCRETE STRIP, SEE GI-207
- CONCRETE HEADER APRON
- LOW POINT SET 3" BELOW OUTLET INVERT
- PLAIN PITCH D-1.75
- CONCRETE INLET APRON
- SECTION D-D
- BOTTOM OF CURB, BEYOND JOINT (TYP.)
- TO HEADER
- EXTENT OF NEW CURB VARIES PER FIELD CONDITION
- HEADER (BEYOND)
- HEIGHT OF ADJACENT ASPHALT PAVEMENT FLUSH WITH CONCRETE APRON
- WWM 6x6-W8xW8 BOTTOM OF CURB
- CAST-IN-PLACE REINFORCED CONCRETE APRON
- CAST-IN-PLACE REINFORCED CONCRETE INLET APRON
- EXTENT OF NEW CURB VARIES PER FIELD CONDITION
- HEADER (BEYOND)
- HEIGHT OF ADJACENT ASPHALT PAVEMENT FLUSH WITH CONCRETE APRON
- WWM 6x6-W8xW8 BOTTOM OF CURB
EXISTING ASPHALT PAVEMENT

FLOW

SIDEWALK

LENGTH (L), 1FT. INCREMENT | WIDTH | TYPE | PAGE NUMBER
--- | --- | --- | ---
17' ≤ L ≤ 20' | 3'-6" | TYPE 1 | GI-502
13' ≤ L ≤ 16' | TYPE 2 | GI-502
11' ≤ L ≤ 12' | TYPE 3 | GI-502

DIMENSION AND PLANTING PLAN SCHEDULE

DIMENSION AND PLANTING NOTES:
1. STANDARD CROSS-SECTIONAL DETAILS AND NOTES AS PER THE R.O.W. GREENSTRIP TYPE SPECIFIED.
NOTE:
1. CAST-IN-PLACE CONCRETE REQUIRES IMPERMEABLE LINER UNDERNEATH
2. ALL INLET AND OUTLET COMPONENTS INCLUDING TAPERS TO BE CAST-IN-PLACE

3'-6"  3'-0"  1'-4"

DETAIL C

SECTION B-B
AT PEDESTRIAN PATHWAY

0" THICK PRECAST CONCRETE HEADER (3 SIDES)
CONCRETE STRIP
CONCRETE APRON (TYP.)

PROPERTY LINE
CURB LINE
EXISTING
CATCH Basin

EXISTING SIDEWALK

SECTION A-A

PITCH

3"  5"  8"

LEVELING COURSE

REINFORCED CONCRETE CULVERT
OPEN GRADED STONE BASE
WRAP STONE IN GEOTEXTILE (TOP AND SIDES ONLY)

P.E. 06-17-2020
MANAGING DIRECTOR,
GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION
STANDARD FOR R.O.W. STORMWATER SEEPAGE BASIN WITH TYPE 2 CATCH BASIN

- NO CONNECTION TO SEWERS

**ELEVATION**

**SECTION**

**NOTES:**

1. THE LOCATION OF THE ROW SEEPAGE BASIN SHALL BE SUCH THAT THE OPENING IN THE TOP SLAB TOGETHER WITH FRAME AND COVER SHALL BE ENTIRELY IN THE ROADWAY AREA OR ENTIRELY IN THE SIDEWALK AREA.

2. ALL SLABS AND RINGS SHALL BE PLACED ON A ONE HALF (1/2) INCH THICK FULL BED OF FRESH MORTAR.

3. SEEPAGE BASIN SOLID RING AND SEEPAGE RING REINFORCING COMPLIES WITH AREA REQUIREMENTS OF ASTM C478. EXCEPT THAT ALL WALL SECTIONS SHALL BE REINFORCED WITH WWM 6x12 W0.8xW0.4 PLACED IN CENTER OF WALL. IN SOLID RING 1-#4 HOOP SHALL BE PLACED AROUND ALL CAST PIPE OPENINGS. (THE 1-#4 HOOP WILL BE REQUIRED AT CORED OPENINGS FOR BASIN CONNECTIONS IN SOLID RINGS.) (ALL VALUES OF AREA OF STEEL (AS) ARE IN SQUARE INCHES AND ARE A MINIMUM.)

4. PRECAST PIPE OPENINGS AND CORED OPENINGS FOR CATCH BASIN CONNECTION WILL BE PLACED IN SOLID RING ONLY. NO CORED OPENING WILL BE ALLOWED IN SEEPAGE RINGS.

5. CORED OPENINGS IN SOLID RING WILL BE PERMITTED FOR UP TO 12" DIA. DUCTILE IRON CATCH BASIN CONNECTION ONLY.

6. PIPE OPENINGS WILL NOT BE PERMITTED THROUGH JOINTS. DISTANCE FROM TOP OR BOTTOM OF ANY SOLID RING SECTION SHALL BE A MINIMUM OF 6" FOR CORED OPENINGS FOR BASIN CONNECTIONS.

7. CONCRETE DESIGN MIX = 5,000 PSI (MIN. 28 DAY STRENGTH=4,000 PSI; MAX. W/C=0.47). REBARS - FS = 60,000 PSI. WWM - FS=65,000 PSI.

8. OPENINGS FOR SPACING AND HANDLING WILL BE ALLOWED IN UPPER PORTION OF SOLID RING. HOWEVER, THE CONTRACTOR SHALL FILL ALL SUCH OPENINGS WITH NON SHRINK GROUT IMMEDIATELY AFTER INSTALLATION.

9. IN NO CASE SHALL THE AREA OF THE DRAIN OPENING BE LESS THAN 3.0 SQ. IN.

10. THE CONTRACTOR SHALL HAND COMPACT THE OPEN GRADED STONE BENEATH THE CIRCULAR FOOTING PRIOR TO SETTING THE FOOTING IN PLACE.

**MANAGING DIRECTOR, GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION**

**DATE** 06-17-2020
NOTES:
1. THE CONTRACTOR SHALL HAND-COMPACT 1'-0" IN DEPTH OF OPEN GRADED STONE STARTING AT THE BASE OF THE INFILTRATION BASIN PRIOR TO ADDING ADDITIONAL OPEN GRADED STONE.
2. FOR STEEL FACE OPENING DIMENSIONS AND STEEL REBAR DETAILS SEE GI-170 & 171
3. CAST IN PLACE CONCRETE TOP REQUIRES AN IMPERMEABLE LINER. SEE SPECIFICATIONS FOR IMPERMEABLE LINER REQUIREMENTS.
**CONCRETE APRON PITCH SCHEDULE**

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<thead>
<tr>
<th>CURB REVEAL (INCHES)</th>
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<td>2.5 TO &lt; 3</td>
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</tr>
<tr>
<td>&gt; 4.5</td>
<td>10%</td>
</tr>
<tr>
<td>LONGITUDINAL STREET SLOPE</td>
<td></td>
</tr>
<tr>
<td>5.5%</td>
<td>10% MIN</td>
</tr>
<tr>
<td>≥ 5%</td>
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</table>

2" MINIMUM OPENING TO BE MAINTAINED UNLESS ADDITIONAL DIRECTION SHOWN ON DETAILED CONSTRUCTION DRAWINGS.

---

**TOP OF STEEL GRATE FLUSH WITH TOP OF SURFACE SIDEWALK**

- E-CLIP FASTENER
  - FLUSH WITH TOP OF METAL GRATE SEE GI-209 & GI-209B
- 8" INSIDE DIAMETER PERFORATED HDPE PIPE (TYP.)
- L2"X2"X1/4" BELOW METAL GRATE ANCHORED TO CHAMBER WALLS (TYP.)
- OPENING FOR 8" INSIDE DIAMETER PERFORATED PIPE (TYP.)
- WWM 6x6-W8xW8
- TYPICAL PERFORATED DEBRIS SCREEN FOR 8" INSIDE DIA PIPE, SEE GI-211

---

**SECTION E-E**

- G-CLIP FASTENER...
- 8" DIAMETER DUAL WALL HDPE FABRICATED 90° TEE (TO BE PERFORATED IN FIELD)
- STEEL FACE CURB COVER OPENING, SEE GI-170 & GI-171

---

**EXISTING CURB TO REMAIN**

- PRECAST CONCRETE CHAMBER
- STEEL GRATE, SEE GI-209 & GI-209B
- STEEL FACE CURB, SEE GI-170 & GI-171

---

**SIDEWALK**

- 8" INSIDE DIAMETER PERFORATED HDPE PIPE (TYP.)
- CONCRETE HEADER
- CONCRETE APRON
- REINFORCED CONCRETE APRON

---

**EXISTING ASPHALT PAVEMENT**

- STEEL GRATE, SEE GI-209 & GI-209B

---

**PLATE**

- 5'-THICK CONCRETE TOP
- OBSERVATION WELL FLUSH WITH THE SURFACE, SEE GI-210
- EXPANSION JOINT (TYP.)
- EXPANSION JOINT AT MID-SPAN
- PLACE EXPANSION JOINT AT MID-SPAN

---

**TOP OF STEEL GRATE FLUSH WITH TOP OF SURFACE SIDEWALK**

- 5'-THICK CONCRETE TOP
- CONCRETE HEADER
- REINFORCED CONCRETE APRON

---

**DEPARTMENTS OF ENVIRONMENTAL PROTECTION**

- MANAGING DIRECTOR, GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION
  - P.E. 06-17-2020
BUREAU OF ENVIRONMENTAL PLANNING & ANALYSIS - GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION

STANDARD FOR 20'X5' R.O.W. INFILTRATION BASIN WITH CONCRETE TOP

TYPE 1C - WITH STORMWATER CHAMBER

- NO CONNECTION TO SEWERS

NOTES:

1. THE CONTRACTOR SHALL HAND-COMPACT 1'-0" IN DEPTH OF OPEN GRADED STONE STARTING AT THE BASE OF THE INFILTRATION BASIN PRIOR TO ADDING ADDITIONAL OPEN GRADED STONE.

2. FOR STEEL FACE OPENING DIMENSIONS AND STEEL REBAR DETAILS SEE GI-170 & GI-171

3. CAST IN PLACE CONCRETE TOP REQUIRES AN IMPERMEABLE LINER. SEE SPECIFICATIONS FOR IMPERMEABLE LINER REQUIREMENTS.

4. USE SMALLEST HDPE STORMWATER CHAMBER SIZE PER GI-204
STANDARD FOR 15'X5' R.O.W. INFILTRATION BASIN WITH CONCRETE TOP TYPE 2

- NO CONNECTION TO SEWERS

NOTES:

1. THE CONTRACTOR SHALL HAND-COMPACT 1'-0" IN DEPTH OF OPEN GRADED STONE STARTING AT THE BASE OF THE INFILTRATION BASIN PRIOR TO ADDING ADDITIONAL OPEN GRADED STONE.

2. FOR STEEL FACE OPENING DIMENSIONS AND STEEL REBAR DETAILS SEE GI-170 & GI-171

3. CAST IN PLACE CONCRETE TOP REQUIRE AN IMPERMEABLE LINER. SEE SPECIFICATIONS FOR IMPERMEABLE LINER REQUIREMENTS.
REINFORCED CONCRETE APRON

CONCRETE HEADER

EXPANSION JOINT (TYP.)

EXISTING ASPHALT PAVEMENT

SIDEWALK

FLOW

36"

2'-0"

2'-10"

2'-0"

13"

2'-4"

8" INSIDE DIAMETER PERFORATED HDPE PIPE (TYP.)

CLEANOUT, TYP.

EXPANSION JOINT, EXISTING CURB TO REMAIN

EXTEND THE NEW STEEL FACE 24" MIN. BEYOND THE INFILTRATION BASIN. THE LIMIT OF THE NEW CONCRETE CURB AS DETERMINED BY FIELD CONDITIONS AND SITE ENGINEER

1'-6"

1'-0"

8" INSIDE DIAMETER PERFORATED HDPE PIPE, PRECAST CONCRETE CHAMBER

TOP OF STEEL GRATE FLUSH WITH TOP OF SURFACE SIDEWALK

G-CLIP FASTENER FLUSH WITH TOP OF METAL GRATE SEE GI-209 & GI-209B

5'-THICK CONCRETE TOP

IMPERMEABLE LINER

3" THICK LEVELING COURSE

8" INSIDE DIAMETER PERFORATED PIPE, PRECAST CONCRETE CHAMBER

TOP OF OPENING FOR 8" INSIDE DIAMETER PERFORATED PIPE (TYP.)

WWW 6x6-W8xW8

OPENING FOR 8" INSIDE DIAMETER PERFORATED PIPE (TYP.)

TYPICAL PERFORATED DEBRIS SCREEN FOR 8" INSIDE DIA PIPE, SEE GI-211

4'-3"

2'-10"

1'-6"

4"x4"

4'-10"

1'-8"

8" DIAMETER DUAL WALL HDPE FABRICATED 90° BEND

2" MINIMUM OPENING TO BE MAINTAINED UNLESS ADDITIONAL DIRECTION SHOWN ON DETAILED CONSTRUCTION DRAWINGS.

EXISTING CURB TO REMAIN

PRECAST CONCRETE CHAMBER

STEEL GRATE, SEE GI-209 & GI-209B

STEEL FACE OPENING, SEE GI-170 & GI-171

OBSERVATION WELL FLUSH WITH THE SURFACE, SEE GI-210

CONCRETE HEADER

STEEL FACE CURB COVER

EXPANSION JOINT (TYP.)

PLACE EXPANSION JOINT AT MID-SPAN 5'-THICK CONCRETE TOP

SEE GI-172 FOR DIMENSION SCHEDULE

15'-0" OR AS SHOWN

FLOW

REINFORCED CONCRETE APRON

13" 3'-6"

5'-0" OR AS SHOWN

FLOW

8" INSIDE DIAMETER PERFORATED HDPE PIPE (TYP.)

DUAL WALL HDPE 8" DIAMETER FABRICATED 90° BEND (TO BE PERFORATED IN FIELD)

DUAL WALL HDPE 8" DIAMETER FABRICATED 90° TEE (TO BE PERFORATED IN FIELD)

8" INSIDE DIAMETER PERFORATED HDPE PIPE, PRECAST CONCRETE CHAMBER

LEVELING COURSE

CLEAN OPEN-GRADED STONE

IMPERMEABLE LINER

3" THICK LEVELING COURSE

4"x4" G-CLIP FASTENER FLUSH WITH TOP OF METAL GRATE SEE GI-209 & GI-209B

5'-THICK CONCRETE TOP

LONGITUDINAL STREET SLOPE

APRON PITCH

APRON PITCH SCHEDULE

CURB REVEAL (INCHES) APRON PITCH

2.5 TO < 3 20% TO ≥ 17%

3 TO < 3.5 17% TO ≥ 14%

3.5 TO < 4 14% TO ≥ 11%

4 TO 4.5 11% TO ≥ 10%

> 4.5 10%

10% MIN

L2"x2"x1/4" BELOW METAL GRATE ANCHORED TO CHAMBER WALLS (TYP.) OPENING FOR 8" INSIDE DIAMETER PERFORATED PIPE (TYP.)

STANDARD FOR 15'X5' R.O.W. INFILTRATION BASIN WITH CONCRETE TOP TYPE 2 - NO CONNECTION TO SEWERS

- 2" MINIMUM OPENING TO BE MAINTAINED UNLESS ADDITIONAL DIRECTION SHOWN ON DETAILED CONSTRUCTION DRAWINGS.

- 10% -20% PITCH INLET

- 5" TO < 3

- 20% TO ≥ 17%

- 3 TO < 3.5

- 17% TO ≥ 14%

- 3.5 TO < 4

- 14% TO ≥ 11%

- 11% TO ≥ 10%

- > 4.5

- 10%

- ≥ 5%

- 12% MIN

- ≤ 5%

- 10% MIN

- MANAGING DIRECTOR,

GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION

MANAGING DIRECTOR,

GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION

MANAGING DIRECTOR,

GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION

06-17-2020
STANDARD FOR 15'X5' R.O.W. INFILTRATION BASIN WITH CONCRETE TOP
TYPE 2A - WITH STONE COLUMNS
- NO CONNECTION TO SEWERS

**CONCRETE APRON PITCH SCHEDULE**

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2" MINIMUM OPENING TO BE MAINTAINED UNLESS ADDITIONAL DIRECTION SHOWN ON DETAILED CONSTRUCTION DRAWINGS.
STANDARD FOR 15'X5' R.O.W. INFILTRATION BASIN WITH CONCRETE TOP
TYPE 2C - WITH STORMWATER CHAMBER
- NO CONNECTION TO SEWERS

SEE GI-209 & GI-209B FOR STEEL GRATE AND 
FASTENER DETAILS
4" CURB PIECE AND 
#4 REBAR ACROSS 
OPENING, SEE 
GI-170 & GI-171
TOP OF ROAD BEYOND 
10% MIN - 20% MAX PITCH 
ROADWAY

NOTES:
1. THE CONTRACTOR SHALL HAND-COMPACT 1'-0" IN DEPTH OF OPEN GRADED STONE STARTING AT THE BASE OF THE 
INFILTRATION BASIN PRIOR TO ADDING ADDITIONAL OPEN GRADED STONE.
2. FOR STEEL FACE OPENING DIMENSIONS AND STEEL REBAR DETAILS SEE GI-170 & 171
3. CAST IN PLACE CONCRETE TOP REQUIRES AN IMPERMEABLE LINER. SEE SPECIFICATIONS FOR IMPERMEABLE LINER 
REQUIREMENTS.
4. USE SMALLEST HDPE STORMWATER CHAMBER SIZE PER GI-204
FLOW

5'-0" OR AS SHOWN

EXISTING SIDEWALK

LOCATION VARIES

PLAN

SECTION C-C
AT INLET

SECTION B-B
AT MIDSSECTION

SECTION A-A
AT UPSTREAM SECTION

NOTES:
1. THE CONTRACTOR SHALL HAND-COMPACT 1'-0" IN DEPTH OF OPEN GRADED STONE STARTING AT THE BASE OF THE INFILTRATION BASIN PRIOR TO ADDING ADDITIONAL OPEN GRADED STONE.
2. FOR STEEL FACE OPENING DIMENSIONS AND STEEL REBAR DETAILS SEE GI-170 & GI-171
3. CAST IN PLACE CONCRETE TOP REQUIRE AN IMPERMEABLE LINER. SEE SPECIFICATIONS FOR IMPERMEABLE LINER REQUIREMENTS.

STANDARD FOR 10'X5' R.O.W. INFILTRATION BASIN WITH CONCRETE TOP TYPE 3
- NO CONNECTION TO SEWERS
8"-THICK REINFORCED CONCRETE GUTTER

EXISTING ASPHALT PAVEMENT

SIDEWALK

EXISTING CURB TO REMAIN

EXISTING CURB TO REMAIN

EXTEND THE NEW STEEL FACE 2'-0" BEYOND THE INFILTRATION BASIN, THE LIMIT OF THE NEW CONCRETE CURB AS DETERMINED BY FIELD CONDITIONS AND SITE ENGINEER

8"-THICK REINFORCED CONCRETE APRON

PRECAST CONCRETE CHAMBER

STEEL GRATE, SEE GI-209 & GI-209B

STEEL FACE OPENING, SEE GI-170 & GI-171

8" DIA PERFORATED HDPE PIPE (TYP.)

8" INSIDE DIA PERFORATED HDPE PIPE (TYP.)

1'-0" OPENING FOR 8" INSIDE DIAMETER PERFORATED PIPE (TYP.)

WWM 6x6-W8xW8

G-CLIP FASTENER

FLUSH WITH TOP OF METAL GRATE SEE GI-209 & GI-209B

5'-0" THICK CONCRETE TOP

IMPERMEABLE LINER

3'-0" THICK LEVELING COURSE

8" INSIDE DIAMETER PERFORATED PIPE

PRECAST CONCRETE CHAMBER

CLEAN OUT, TYP.

8" DIA WALL HDPE FABRICATED 90° BEND (TO BE PERFORATED IN FIELD)

8" DIA WALL HDPE FABRICATED 90° TEE (TO BE PERFORATED IN FIELD)

8" INSIDE DIA PERFORATED HDPE PIPE (TYP.)

CLEANOUT, TYP.

2" MINIMUM OPENING TO BE MAINTAINED UNLESS ADDITIONAL DIRECTION SHOWN ON DETAILED CONSTRUCTION DRAWINGS.

CONCRETE APRON PITCH SCHEDULE

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LONGITUDINAL STREET SLOPE

<table>
<thead>
<tr>
<th>SLOPE</th>
<th>APRON PITCH</th>
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<tbody>
<tr>
<td>5%</td>
<td>10% MIN</td>
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<td>2.5%</td>
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- NO CONNECTION TO SEWERS

STANDARD FOR 10'X5' R.O.W. INFILTRATION BASIN WITH CONCRETE TOP TYPE 3

MANAGING DIRECTOR:
GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION

P.E. 06-17-2020 DATE
STANDARD FOR 10'X5' R.O.W. INFILTRATION BASIN WITH CONCRETE TOP
TYPE 3A - WITH STONE COLUMNS
- NO CONNECTION TO SEWERS

FLOW
LOCATION VARIES
10'-0" EQ
5'-0" OR AS SHOWN INLET PLAN
EXISTING SIDEWALK
PROPERTY LINE
CURB LINE
EXISTING CATCH BASIN

PLAN

SECTION B-B

TOP OF STEEL GRATE FLUSH WITH TOP OF SURFACE DEBRIS SCREEN. ADJUST PIPE TO ALLOW FOR SCREEN (TYP.)
8" INSIDE DIAM. PERFORATED HDPE PIPE, MAINTAIN CONSTANT SLOPE TOWARDS CHAMBER
3"-THICK LEVELING COURSE
1'-6" PENETRATION INTO PERMEABLE SOIL LAYER

UNDISTURBED SOIL
PERFORATED DEBRIS SCREEN, SEE GI-211
WWM 6x6-W8xW8

CAST IRON CLEANOUT, SEE GI-204
MORTAR AROUND PIPE
PRECAST CONCRETE CHAMBER
CLEAN OPEN-GRADED STONE BASE

CONCRETE HEADER (3) SIDES
1/2" EXPANSION JOINT AND FILLER PER NYC DOT HIGHWAY SPEC. SECTION 2.15 (TYP.)

WMM 6X6-W8XW8
REINFORCED CONCRETE APRON
DROP CURB (INLET), SLOPE POURED IN PLACE, CURBS TO MEET PRECAST CHAMBER
INLET SCREEN BOX SUPPORT BRACKET, SEE GI-212
PERFORATED DEBRIS SCREEN, SEE GI-211
OPENING FOR 8" INSIDE DIAMETER PIPE WWM 6X6-W8XW8 LEVELING COURSE

STONE FILLED PERFORATED 12" DIAMETER PVC PIPE WRAPPED ALL AROUND WITH GEOTEXTILE FABRIC.

PERMEABLE SOIL
TEMPORARY, 10" MAXIMUM DIAMETER CASING TO MINIMUM 5'-0" AUGERED INTO PERMEABLE LAYER

OPEN-GRADED STONE BOTTOM OF COLUMN TO BE OPEN

SECTION A-A
AT INFILTRATION BASIN VERTICAL DRAIN

PERMEABLE SOIL LAYER
STONE FILLED PERFORATED 12" DIAMETER PVC PIPE WRAPPED ALL AROUND WITH GEOTEXTILE FABRIC (TYP.)
OPEN BOTTOM

REFERENCES
SEE GI-209 & GI-209B FOR STEEL GRATE AND FASTENER DETAILS
MORTAR AROUND PIPE
4" CURB PIECE AND #4 REBAR ACROSS OPENING, SEE GI-170 & GI-171
TOP OF GUTTER BEYOND 10% MIN - 20% MAX PITCH

ROADWAY
3'-6"
10% MIN - 20% MAX PITCH
10' GUTTER BEYOND
1/2" EXPANSION JOINT AND FILLER PER NYC DOT HIGHWAY SPEC. SECTION 2.15 (TYP.)

WMM 6x6-W8xW8 LEVELING COURSE
PERFORATED DEBRIS SCREEN, SEE GI-211
OPENING FOR 8" INSIDE DIAMETER PIPE

STONE COLUMN CAP TO BE PERFORATED

REINFORCED CONCRETE APRON
DROP CURB (INLET), SLOPE POURED IN PLACE, CURBS TO MEET PRECAST CHAMBER
INLET SCREEN BOX SUPPORT BRACKET, SEE GI-212
PERFORATED DEBRIS SCREEN, SEE GI-211
OPENING FOR 8" INSIDE DIAMETER PIPE

WMM 6X6-W8XW8 LEVELING COURSE

STONE FILLED PERFORATED 12" DIAMETER PVC PIPE WRAPPED ALL AROUND WITH GEOTEXTILE FABRIC.

PERMEABLE SOIL LAYER
STONE FILLED PERFORATED 12" DIAMETER PVC PIPE WRAPPED ALL AROUND WITH GEOTEXTILE FABRIC (TYP.)
OPEN BOTTOM

SECTION B-B REFERENCE TO DETAILS ON THIS AND NEXT PAGE

EXISTING SIDEWALK

MANAGING DIRECTOR,
GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION
06-17-2020
P.E.
DATE
8" DIAMETER DUAL WALL HDPE FABRICATED 90° BEND (TO BE PERFORATED IN FIELD)

8" DIAMETER DUAL WALL HDPE FABRICATED 90° TEE (TO BE PERFORATED IN FIELD)

8" INSIDE DIA. PERFORATED HDPE PIPE (TYP.)

1'-0" CLEANOUT, TYP.

3'-6" SIDEWALK, SEE GI-209 & GI-209B

2'-10" STEEL FACE CURB COVER

1'-8" REINFORCED CONCRETE APRON

4" 5'-0" LENGTH OF INFILTRATION BASIN 10'-0"

8" INSIDE DIA. PERFORATED HDPE PIPE (TYP.)

3'-0" INLET 3" THICK LEVELING COURSE

2'-4" STEEL GRATE, SEE GI-209 & GI-209B

4" 5"-THICK CONCRETE TOP

4" OBSERVATION WELL FLUSH WITH THE SURFACE, SEE GI-210

G-CLIP FASTENER FLUSH WITH TOP OF METAL GRATE SEE GI-209 & GI-209B

5" THICK CONCRETE TOP

IMPERMEABLE LINER

3" THICK LEVELING COURSE

8" INSIDE DIAMETER PERFORATED PIPE (TYP.)

WEATHERING SALT WSM 6"x6"xW8

TYPICAL PERFORATED DEBRIS SCREEN FOR 8" INSIDE DIA PIPE, SEE GI-211

L2"x2"x1/4" BELOW METAL GRATE ANCHORED TO CHAMBER WALLS (TYP.) OPENING FOR 8" INSIDE DIAMETER PERFORATED PIPE (TYP.)

1'-6" STONE COLUMN

2" MINIMUM OPENING TO BE MAINTAINED UNLESS ADDITIONAL DIRECTION SHOWN ON DETAILED CONSTRUCTION DRAWINGS.

CONCRETE APRON PITCH SCHEDULE

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LONGITUDINAL STREET SLOPE

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EXPANSION JOINT (TYP.)

5'-0" END OF INFILTRATION BASIN, THE LIMIT OF THE NEW CONCRETE CURB AS DETERMINED BY FIELD CONDITIONS AND SITE ENGINEER

EXISTING CURB TO REMAIN

EXISTING ASPHALT PAVEMENT

SIDEWALK

8" DIAMETER DUAL WALL HDPE FABRICATED 90° BEND (TO BE PERFORATED IN FIELD)

8" DIAMETER DUAL WALL HDPE FABRICATED 90° TEE (TO BE PERFORATED IN FIELD)

REINFORCED CONCRETE APRON

1'-0" EXPANSION JOINT. EXISTING CURB TO REMAIN

PLAN

SECTION E-E

5" THICK CONCRETE TOP

IMPERMEABLE LINER

3" THICK LEVELING COURSE

WEATHERING SALT WSM 6"x6"xW8

TYPICAL PERFORATED DEBRIS SCREEN FOR 8" INSIDE DIA PIPE, SEE GI-211

L2"x2"x1/4" BELOW METAL GRATE ANCHORED TO CHAMBER WALLS (TYP.) OPENING FOR 8" INSIDE DIAMETER PERFORATED PIPE (TYP.)

MANAGING DIRECTOR,
GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION

06-17-2020

DATE

P.E.
STANDARD FOR 20'X5' R.O.W. INFILTRATION BASIN WITH GRASS TOP TYPE 1
- NO CONNECTION TO SEWERS

**NOTES:**

1. THE CONTRACTOR SHALL HAND-COMPACT 1'-0" IN DEPTH OF OPEN GRADED STONE STARTING AT THE BASE OF THE INFILTRATION BASIN PRIOR TO ADDING ADDITIONAL OPEN GRADED STONE.

2. FOR STEEL FACE OPENING DIMENSIONS AND STEEL REBAR DETAILS SEE GI-170 & 171
STANDARD FOR 20'X5' R.O.W. INFILTRATION BASIN WITH GRASS TOP TYPE 1

- NO CONNECTION TO SEWERS

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**LONGITUDINAL STREET SLOPE**

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<th>7.5%</th>
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2" MINIMUM OPENING TO BE MAINTAINED UNLESS ADDITIONAL DIRECTION SHOWN ON DETAILED CONSTRUCTION DRAWINGS.
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2" MINIMUM OPENING TO BE MAINTAINED UNLESS ADDITIONAL DIRECTION SHOWN ON DETAILED CONSTRUCTION DRAWINGS.
FLOW

LOCATION VARIES

EXISTING SIDEWALK

EXISTING CATCH BASIN

PROPERTY LINE

CURB LINE

REFERENCES:

SEE GI-204 & GI-209B
FOR STEEL GRADE AND
FASTENER DETAILS
4" CURB PIECE AND
#4 REBAR ACROSS
OPENING, SEE
GI-170 & GI-171
TOP OF ROAD BEYOND
10% MIN - 20% MAX PITCH
ROADWAY

8" REINFORCED
CONCRETE GUTTER
UNDISTURBED
SOIL

TOPSOIL

8" INSIDE DIAMETER
PERFORATED HDPE
PIPE (TYP.)

CONCRETE
COLLAR, 3"x3" TYP.

SIDEWALK

CAST IRON CLEANOUT -
TOP OF COVER FLUSH
WITH TOP OF SURFACE
8" SOLID HDPE PIPE

SIDEWALK

ROADWAY

ROADWAY

ROADWAY

ROADWAY

TOPSOIL

UNDISTURBED SOIL

8" INSIDE DIAMETER
PERFORATED HDPE
PIPE (TYP.)

R.H.P. APRON

STANDARD FOR 20'X5' R.O.W. INFILTRATION BASIN WITH GRASS TOP
TYPE 1C - WITH STORMWATER CHAMBER
- NO CONNECTION TO SEWERS

NOTES:

1. THE CONTRACTOR SHALL HAND-COMPACT 1'-0" IN DEPTH OF OPEN GRADED STONE STARTING AT THE BASE OF THE INFILTRATION BASIN PRIOR TO ADDING ADDITIONAL OPEN GRADED STONE.
2. FOR STEEL FACE OPENING DIMENSIONS AND STEEL REBAR DETAILS SEE GI-170 & 171
3. USE SMALLEST HDPE STORMWATER CHAMBER SIZE PER GI-204
STANDARD FOR 20'X5' R.O.W. INFILTRATION BASIN WITH GRASS TOP
TYPE 1C - WITH STORMWATER CHAMBER
- NO CONNECTION TO SEWERS

**CONCRETE APRON PITCH SCHEDULE**

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2" MINIMUM OPENING TO BE MAINTAINED UNLESS ADDITIONAL DIRECTION SHOWN ON DETAILED CONSTRUCTION DRAWINGS.
CITY OF NEW YORK

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BUREAU OF ENVIRONMENTAL PLANNING & ANALYSIS - GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION

STANDARD FOR 15'X5' R.O.W. INFILTRATION BASIN WITH GRASS TOP TYPE 2

- NO CONNECTION TO SEWERS

NOTES:

1. THE CONTRACTOR SHALL HAND-COMPACT 1'-0" IN DEPTH OF OPEN GRADED STONE STARTING AT THE BASE OF THE INFILTRATION BASIN PRIOR TO ADDING ADDITIONAL OPEN GRADED STONE.

2. FOR STEEL FACE OPENING DIMENSIONS AND STEEL REBAR DETAILS SEE GI-170 & 171

MANAGING DIRECTOR,
GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION

P.E. 06-17-2020 DATE
TOP OF STEEL GRATE FLUSH WITH TOP OF SURFACE 3'-6"

SIDEWALK 8" INSIDE DIAMETER PERFORATED PIPE.

PRECAST CONCRETE CHAMBER

GRASS

SECTION E-E

OPEN-GRADED STONE TOPSOIL

PERFORATED DEBRIS SCREEN FOR 8" INSIDE DIA PIPE, SEE GI-211

G-CLIP FASTENER FLUSH WITH TOP OF METAL GRATE, SEE GI-209A & GI-209B

LEVELING COURSE

REINFORCED CONCRETE APRON PITCH SCHEDULE

CURB REVEAL (INCHES) APRON PITCH

2.5 TO < 3 20% TO ≥ 17%

3 TO < 3.5 17% TO ≥ 14%

3.5 TO < 4 14% TO ≥ 11%

4 TO 4.5 11% TO ≥ 10%

> 4.5 10% STREET SLOPE

≥ 5% 10% MIN

≥ 5% 12% MIN

* 2" MINIMUM OPENING TO BE MAINTAINED UNLESS ADDITIONAL DIRECTION SHOWN ON DETAILED CONSTRUCTION DRAWINGS.
STANDARD FOR 15'X5' R.O.W. INFILTRATION BASIN WITH GRASS TOP
TYPE 2A - WITH STONE COLUMNS
- NO CONNECTION TO SEWERS
**DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**STANDARD FOR 15'X5' R.O.W. INFILTRATION BASIN WITH GRASS TOP**

**TYPE 2A - WITH STONE COLUMNS**

- NO CONNECTION TO SEWERS

---

**PLAN**

- 8" INSIDE DIAMETER PERFORATED HDPE PIPE (TYP.)
- 8" DIAMETER DUAL WALL HDPE FABRICATED 90° BEND
- 8" DIAMETER DUAL WALL HDPE FABRICATED 90° TEE (TO BE PERFORATED IN FIELD)
- 8" INSIDE DIAMETER PERFORATED PIPE (TYP.)
- OPEN-GRADED STONE
- PRECAST CONCRETE CHAMBER
- OBSERVATION WELL FLUSH WITH THE SURFACE, SEE GI-210
- CONCRETE HEADER
- EXPANSION JOINT (TYP.)
- CLEANOUT, TYP.
- EXTEND THE NEW STEEL FACE 24" MIN. BEYOND THE INFILTRATION BASIN, THE LIMIT OF THE NEW CONCRETE CURB AS DETERMINED BY FIELD CONDITIONS AND SITE ENGINEER

---

**SECTION E-E**

- TOP OF STEEL GRATE FLUSH WITH TOP OF METAL GRATE, SEE GI-209A & GI-209B
- PRECAST CONCRETE CHAMBER
- OPEN-GRATED STONE
- LEVELING COURSE
- 8" INSIDE DIAMETER PERFORATED PIPE.
- PERFORATED DEBRIS SCREEN FOR 8" INSIDE DIA PIPE, SEE GI-211
- GI-172 FOR DIMENSION SCHEDULE
- GI-170 & GI-171
- GI-210
- GI-211
- GI-210

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**CONCRETE APRON PITCH SCHEDULE**

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* 2" MINIMUM OPENING TO BE MAINTAINED UNLESS ADDITIONAL DIRECTION SHOWN ON DETAILED CONSTRUCTION DRAWINGS.

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**DATE**

- 06-17-2020

**MANAGING DIRECTOR, GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION**

- GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION
NOTES:
1. THE CONTRACTOR SHALL HAND-COMPACT 1'-0" IN DEPTH OF OPEN GRADED STONE STARTING AT THE BASE OF THE INFILTRATION BASIN PRIOR TO ADDING ADDITIONAL OPEN GRADED STONE.
2. FOR STEEL FACE OPENING DIMENSIONS AND STEEL REBAR DETAILS SEE GI-170 & GI-171.
3. USE SMALLEST HDPE STORMWATER CHAMBER SIZE PER GI-204.
SECTION E-E

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STREET SLOPE

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2" MINIMUM OPENING TO BE MAINTAINED UNLESS ADDITIONAL DIRECTION SHOWN ON DETAILED CONSTRUCTION DRAWINGS.
1. The Contractor shall hand-compact 1'-0" in depth of open-graded stone starting at the base of the infiltration basin prior to adding additional open-graded stone.

2. For steel face opening dimensions and steel rebar details see GI-170 & 171

**SECTION B-B**
- Clean open-graded stone base
- Reinforced concrete gutter
- Undisturbed soil
- Perforated HDPE pipe (TYP.)
- Wrap stone in geotextile (TOP and SIDES ONLY)

**SECTION C-C**
- Clean open-graded stone base
- Reinforced concrete gutter
- Undisturbed soil
- Perforated HDPE pipe (TYP.)
- Wrap stone in geotextile (TOP and SIDES ONLY)

**SECTION A-A**
- Clean open-graded stone base
- Reinforced concrete gutter
- Undisturbed soil
- Perforated HDPE pipe (TYP.)
- Wrap stone in geotextile (TOP and SIDES ONLY)

**NOTES:**

**MANAGING DIRECTOR, GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION**

**P.E. 06-17-2020**

**DEPARTMENT OF ENVIRONMENTAL PROTECTION**
**BUREAU OF ENVIRONMENTAL PLANNING & ANALYSIS - GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION**

**STANDARD FOR 10'X5' R.O.W. INFILTRATION BASIN WITH GRASS TOP TYPE 3**

- No connection to sewers

**PLAN**

**SECTION**

**C-C**

**B-B**

**A-A**

**LOCATION VARIES**

**EXISTING SIDEWALK**

**EXISTING CATCH BASIN**

**FLOW**

**PROPERTY LINE**

**CURB LINE**

**REFRER TO DETAILS ON THIS AND NEXT PAGE**
FLOW
LOCATION VARIES
10'-0" EQ
5'-0" OR AS SHOWN INLET PLAN
EXISTING SIDEWALK
EXISTING CATCH BASIN
PENETRATION INTO PERMEABLE SOIL LAYER
3'-6" 3'-0"
1'-6"
UNDISTURBED SOIL
OPEN-GRADED STONE BASE WRAPPED WITH GEOTEXTILE (TOP AND SIDES ONLY)
CAST IRON CLEANOUT, SEE GI-204
TOP OF STEEL GRATE FLUSH WITH TOP OF SURFACE
PERFORATED DEBRIS SCREEN ADJUST PIPE TO ALLOW FOR SCREEN (TYP.)
STONE COLUMN CAP TO BE PERFORATED
STONE FILLED PERFORATED 12" DIAMETER PVC PIPE WRAPPED ALL AROUND WITH GEOTEXTILE FABRIC.
UNEQUAL SLOPE MORTAR AROUND PIPE PRECAST CONCRETE CHAMBER
PERMEABLE SOIL LAYER
STONE FILLED PERFORATED 12" DIAMETER PVC PIPE WRAPPED ALL AROUND WITH GEOTEXTILE FABRIC (TYP.)
OPEN BOTTOM (TYP.)
SECTION B-B
SECTION A-A
AT INFILTRATION BASIN VERTICAL DRAIN
1/2" EXPANSION JOINT AND FILLER PER NYC DOT HIGHWAY SPEC. SECTION 2.15 (TYP.)
WRAP STONE IN GEOTEXTILE (TOP AND SIDES ONLY)
8" DIAMETER PERFORATED HOPE PIPE (TYP.)
STONE FILLED PERFORATED 12" DIAMETER PVC PIPE WRAPPED ALL AROUND WITH GEOTEXTILE FABRIC.
CONCRETE HEADER (3) SIDES
12" TOPSOIL
SIDEWALK
OPENING FOR 8" INSIDE DIAMETER PIPE
WRAP STONE IN GEOTEXTILE (TOP AND SIDES ONLY)
PERMEABLE SOIL LAYER
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CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL PLANNING & ANALYSIS – GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION

STANDARD FOR 10'X5' R.O.W. INFILTRATION BASIN WITH GRASS TOP
TYPE 3A - WITH STONE COLUMN
- NO CONNECTION TO SEWERS

---

8" DIAMETER DUAL WALL HDPE FABRICATED 90° TEE (TO BE PERFORATED IN FIELD)
8" DIAMETER DUAL WALL HDPE FABRICATED 90° BEND (TO BE PERFORATED IN FIELD)

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REINFORCED CONCRETE APRON

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CONCRETE APRON PITCH SCHEDULE

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8" INSIDE DIAM. PERFORATED PIPE, SEE GI-211
PPM 6X6-W8xW8
PERFORATED DEBRIS SCREEN FOR 8" INSIDE DIA PIPE, SEE GI-211

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SECTION E-E

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MANAGING DIRECTOR,
GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION

06-17-2020

P.E.
NOTES:
1. THE CONTRACTOR SHALL HAND-COMPACT 1'-0" IN DEPTH OF OPEN GRADED STONE STARTING AT THE BASE OF THE INFILTRATION BASKET PRIOR TO ADDING ADDITIONAL OPEN GRADED STONE.
2. FOR STEEL FACE OPENING DIMENSIONS AND STEEL REBAR DETAILS SEE GI-170 & 171
3. CAST IN PLACE CONCRETE TOP REQUIRES AN IMPERMEABLE LINER. SEE SPECIFICATIONS FOR IMPERMEABLE LINER REQUIREMENTS

1. THE CONTRACTOR SHALL HAND-COMPACT 1'-0" IN DEPTH OF OPEN GRADED STONE STARTING AT THE BASE OF THE INFILTRATION BASKET PRIOR TO ADDING ADDITIONAL OPEN GRADED STONE.
2. FOR STEEL FACE OPENING DIMENSIONS AND STEEL REBAR DETAILS SEE GI-170 & 171
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<tr>
<td>≥ 5%</td>
<td>12% MIN</td>
</tr>
</tbody>
</table>

* 2" MINIMUM OPENING TO BE MAINTAINED UNLESS ADDITIONAL DIRECTION SHOWN ON DETAILED CONSTRUCTION DRAWINGS.

TOP OF STEEL GRATE FLUSH WITH TOP OF SURFACE SIDEWALK

LEVELING COURSE

WASHINGTON MACHINERY WWM 6"x6-W8xW8

OPEN-GRADED DEBRIS SCREEN FOR 8" INSIDE DIA PIPE, SEE GI-211
NOTES:

1. STANDARD CROSS-SECTIONAL DETAILS AND NOTES AS PER THE R.O.W.
   INFILTRATION BASIN TYPE SPECIFIED.
2. DOT APPROVAL REQUIRED FOR ALL WIDTHS GREATER THAN 5'.
3. REBAR NOT REQUIRED FOR OPENING LESS THAN 2".

NEW STEEL FACING CURB WITH 4" MIN. REVEAL
EXISTING CURB TO REMAIN

SECTION A-A

SEE REBAR DETAIL

STREET SLOPE

#4 REBAR ACROSS STEEL FACE OPENING, SEE NOTE 3

REBAR DETAIL

#4 REBAR ACROSS STEEL FACE OPENING

CONCRETE APRON

TOP OF CURB

EXPANSION JOINT

STREET SLOPE

2'-0"

EXPANSION JOINT

SIDEWALK

EXISTING CURB TO REMAIN

EXISTING ASPHALT PAVEMENT

FLOW

PLAN

SURFACE TYPE PER CONTRACT PLANS

NEW STEEL FACING CURB

WMM 6x6 - W8xW8 (TYP.)

CONCRETE APRON

8" THICK CONCRETE GUTTER (TYP.)

BOTTOM OF CURB

STREET SLOPE

FLOW

EXISTING CURB TO REMAIN

NEW ASPHALT PAVEMENT

SIDEWALK

FLOW

DOB 2020-4-1

P.E. 06-17-2020

MANAGING DIRECTOR,
GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION

06-17-2020

DATE

STREET SLOPE

TWO #6 REBARS WITHIN 4" CURB PIECE

1'-0"

6"

2'-0"

3'-0"

2'-0"

3'-0"

2'-0"

3'-0"

2'-0"

3'-0"

2'-0"

3'-0"

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3'-0"

2'-0"

3'-0"

2'-0"

3'-0"

2'-0"

3'-0"
NOTES:
1. 1/2" DIAMETER x 5" HEADED ANCHOR STUDS (GRANULAR OR SOLID FLUX FILLED) SHALL BE PLACED AT 1'-0" MAXIMUM, CENTER TO CENTER, STAGGERED AS PER NYCDOT STANDARD DETAIL H-1010 ALONG FULL LENGTH OF STEEL FACING, EXCEPT FOR CURB OPENING.
2. STRUCTURAL STEEL SHALL BE ASTM DESIGNATION A36.
3. SURFACE TO BE CLEANED AND PAINTED AS PER NYCDOT STANDARD HIGHWAY SPECIFICATIONS, SECTION 2.13. COLOR OF TOP COAT SHALL BE GRAY AS APPROVED BY ENGINEER.
4. 1/2" DIAMETER x 5" HEADED ANCHOR STUD (GRANULAR OR SOLID FLUX FILLED) SHALL BE PLACED AT EACH END OF L6x4x3/8", OFFSET 4" FROM INLET.
5. 1/2" DIAMETER x 2 1/2" HEADED ANCHOR STUD (GRANULAR OR SOLID FLUX FILLED) SHALL BE PLACED ON L6x4x3/8" ABOVE CURB OPENING.

P.E. 06-17-2020
DIMENSIONS SCHEDULE FOR VARIABLE SIZE R.O.W. INFILTRATION BASINS
- NO CONNECTION TO SEWERS

R.O.W. INFILTRATION BASIN DIMENSIONS

<table>
<thead>
<tr>
<th>LENGTH (L), 1 FT. INCREMENT</th>
<th>WIDTH (W), 6 IN. INCREMENT</th>
<th>TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>17' ≤ L ≤ 20'</td>
<td>4'-0&quot; TO 6'-0&quot;</td>
<td>TYPE 1</td>
</tr>
<tr>
<td>13' ≤ L ≤ 16'</td>
<td>4'-0&quot; TO 6'-0&quot;</td>
<td>TYPE 2</td>
</tr>
<tr>
<td>10' ≤ L ≤ 12'</td>
<td>4'-0&quot; TO 6'-0&quot;</td>
<td>TYPE 3</td>
</tr>
</tbody>
</table>

NOTES:
1. STANDARD CROSS-SECTIONAL DETAILS AND NOTES AS PER THE R.O.W. INFILTRATION BASIN TYPE SPECIFIED.
2. DOT APPROVAL REQUIRED FOR ALL WIDTHS GREATER THAN 5'.
EXISTING CATCH BASIN
PROPERTY LINE
LOCATION OF BIOSWALE
VAMAS: SEE PLAN
OR AS SHOWN
20'-0"
FLOW
EXISTING SIDEWALK
CURB LINE
EXISTING
CATCH BASIN

2'-0"

SECTION A-A

2'-0" OR AS SHOWN

SECTION B-B

RENDER TO DETAILS ON THIS AND NEXT PAGE

NOTE:
CAST-IN-PLACE CONCRETE STRIP REQUIRES IMPERMEABLE LINER UNDERNEATH

DEPTH SCHEDULE
ROA

WITH TREE: 2'-0" 2'-0"
NO TREE: 2'-6" 2'-6"

MANAGING DIRECTOR,
GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION
06-17-2020

NOTE:
CAST-IN-PLACE CONCRETE STRIP REQUIRES IMPERMEABLE LINER UNDERNEATH
EXISTING ASPHALT PAVEMENT

EXPANSION JOINT AT MID-SPAN

GABION WALL BELOW CONCRETE STRIP, SEE GI-207

NEW CURB TYPE TO MATCH CONTRACT PLANS

EXISTING CURB TO REMAIN

SEE GI-186 FOR DIMENSION SCHEDULE

SIDEBWALK

8" INSIDE DIAMETER PERFORATED PIPE

STORMWATER INLET, SEE GI-185

FLOW

EXISTING CURB TO REMAIN

LIMIT OF NEW CURB TO EXTEND BEYOND THE ROWS AS DETERMINED BY FIELD CONDITIONS AND SITE ENGINEER

PLAN

CONCRETE STRIP, SEE GI-207

SEE GI-503A, B, C, D, E & F FOR TYPICAL PLANTING PLANS

SEE GI-601, GI-602 & GI-603

STEEL TREE GUARD (3-SIDES TYP.)

EXPANSION JOINT (TYP.)

CONCRETE HEADER

OBSERVATION WELL, SEE GI-213

PERFORATED PIPE

CLEANOUT, REFER TO DETAILS GI-204

20'-0" OR AS SHOWN

FOLLOW 5'-0" OR AS SHOWN

20'-0" OR AS SHOWN

EXISTING CURB TO REMAIN

NEW CURB TYPE TO MATCH CONTRACT PLANS

SEE GI-186 FOR DIMENSION SCHEDULE

SIDEBWALK

GABION WALL BELOW CONCRETE STRIP, SEE GI-207

NEW CURB TYPE TO MATCH CONTRACT PLANS

EXISTING CURB TO REMAIN

SEE GI-186 FOR DIMENSION SCHEDULE

SIDEBWALK

GABION WALL BELOW CONCRETE STRIP, SEE GI-207

NEW CURB TYPE TO MATCH CONTRACT PLANS

EXISTING CURB TO REMAIN

SEE GI-186 FOR DIMENSION SCHEDULE

SIDEBWALK

GABION WALL BELOW CONCRETE STRIP, SEE GI-207

NEW CURB TYPE TO MATCH CONTRACT PLANS

EXISTING CURB TO REMAIN

SEE GI-186 FOR DIMENSION SCHEDULE

SIDEBWALK

GABION WALL BELOW CONCRETE STRIP, SEE GI-207

NEW CURB TYPE TO MATCH CONTRACT PLANS

EXISTING CURB TO REMAIN

SEE GI-186 FOR DIMENSION SCHEDULE

SIDEBWALK

GABION WALL BELOW CONCRETE STRIP, SEE GI-207

NEW CURB TYPE TO MATCH CONTRACT PLANS

EXISTING CURB TO REMAIN

SEE GI-186 FOR DIMENSION SCHEDULE

SIDEBWALK

GABION WALL BELOW CONCRETE STRIP, SEE GI-207

NEW CURB TYPE TO MATCH CONTRACT PLANS

EXISTING CURB TO REMAIN

SEE GI-186 FOR DIMENSION SCHEDULE

SIDEBWALK

GABION WALL BELOW CONCRETE STRIP, SEE GI-207

NEW CURB TYPE TO MATCH CONTRACT PLANS

EXISTING CURB TO REMAIN

SEE GI-186 FOR DIMENSION SCHEDULE

SIDEBWALK

GABION WALL BELOW CONCRETE STRIP, SEE GI-207

NEW CURB TYPE TO MATCH CONTRACT PLANS

EXISTING CURB TO REMAIN

SEE GI-186 FOR DIMENSION SCHEDULE

SIDEBWALK

GABION WALL BELOW CONCRETE STRIP, SEE GI-207

NEW CURB TYPE TO MATCH CONTRACT PLANS

EXISTING CURB TO REMAIN

SEE GI-186 FOR DIMENSION SCHEDULE

SIDEBWALK

GABION WALL BELOW CONCRETE STRIP, SEE GI-207

NEW CURB TYPE TO MATCH CONTRACT PLANS

EXISTING CURB TO REMAIN

SEE GI-186 FOR DIMENSION SCHEDULE

SIDEBWALK

GABION WALL BELOW CONCRETE STRIP, SEE GI-207

NEW CURB TYPE TO MATCH CONTRACT PLANS

EXISTING CURB TO REMAIN

SEE GI-186 FOR DIMENSION SCHEDULE

SIDEBWALK

GABION WALL BELOW CONCRETE STRIP, SEE GI-207

NEW CURB TYPE TO MATCH CONTRACT PLANS

EXISTING CURB TO REMAIN

SEE GI-186 FOR DIMENSION SCHEDULE

SIDEBWALK

GABION WALL BELOW CONCRETE STRIP, SEE GI-207

NEW CURB TYPE TO MATCH CONTRACT PLANS

EXISTING CURB TO REMAIN

SEE GI-186 FOR DIMENSION SCHEDULE

SIDEBWALK

GABION WALL BELOW CONCRETE STRIP, SEE GI-207

NEW CURB TYPE TO MATCH CONTRACT PLANS

EXISTING CURB TO REMAIN

SEE GI-186 FOR DIMENSION SCHEDULE

SIDEBWALK

GABION WALL BELOW CONCRETE STRIP, SEE GI-207

NEW CURB TYPE TO MATCH CONTRACT PLANS

EXISTING CURB TO REMAIN

SEE GI-186 FOR DIMENSION SCHEDULE

SIDEBWALK

GABION WALL BELOW CONCRETE STRIP, SEE GI-207

NEW CURB TYPE TO MATCH CONTRACT PLANS

EXISTING CURB TO REMAIN

SEE GI-186 FOR DIMENSION SCHEDULE

SIDEBWALK

GABION WALL BELOW CONCRETE STRIP, SEE GI-207

NEW CURB TYPE TO MATCH CONTRACT PLANS

EXISTING CURB TO REMAIN

SEE GI-186 FOR DIMENSION SCHEDULE

SIDEBWAL
STANDARD FOR 20'x5' R.O.W. BIOSWALE TYPE 1DA - WITH STONE COLUMNS
- NO CONNECTION TO SEwers

NOTE:
CAST-IN-PLACE CONCRETE STRIP REQUIRES IMPERMEABLE LINER UNDERNEATH
EXISTING ASPHALT PAVEMENT

SIDEWALK

GABION WALL BELOW CONCRETE STRIP, SEE GI-207

NEW CURB TYPE TO MATCH CONTRACT PLANS

EXISTING CURB TO REMAIN

PLAN

FLOW

STORMWATER INLET, SEE GI-165

EXPANSION JOINT (TYP.)

OBSERVATION WELL, SEE GI-213

CONCRETE HEADER

STEEL TREE GUARD (3-SIDES TYP.) SEE GI-601, GI-602 & GI-603

SEE GI-503A, B, C, D, E & F FOR TYPICAL PLANTING PLANS

12"x4" CONCRETE STRIP

STONE COLUMN EQ

STONE COLUMN

CLEANOUT REFER TO DETAILS GI-204

8" INSIDE DIAMETER PERFORATED PIPE

PLACE EXPANSION JOINT AT MID-SPAN

20'-0" OR AS SHOWN

EXPANSION JOINT

LIMIT OF NEW CURB TO EXTEND BEYOND THE ROWS AS DETERMINED BY FIELD CONDITIONS AND SITE ENGINEER

STORMWATER INLET, SEE GI-185

SEE GI-186 FOR DIMENSION SCHEDULE

8" INSIDE DIAMETER PERFORATED PIPE

1'-0" 12"x5" CONCRETE STRIP

STANDARD FOR 20'X5' R.O.W. BIOSWALE TYPE 1DA - WITH STONE COLUMNS

- NO CONNECTION TO SEWERS

06-17-2020
CITY OF NEW YORK

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BUREAU OF ENVIRONMENTAL PLANNING AND ANALYSIS - GREEN INFRASTRUCTURE

STANDARD FOR 15'x5' R.O.W. BIOSWALE TYPE 2D

- NO CONNECTION TO SEWERS

MANAGING DIRECTOR,
GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION

NOTE:
CAST-IN-PLACE CONCRETE STRIP REQUIRES IMPERMEABLE LINER UNDERNEATH

06-17-2020
EXISTING ASPHALT PAVEMENT

8" INSIDE DIAMETER PERFORATED PIPE

STORMWATER INLET SEE GI-185

CONCRETE STRIP SEE GI-207

NEW CURB TYPE TO MATCH CONTRACT PLANS

EXISTING CURB TO REMAIN

GABION WALL BELOW CONCRETE STRIP SEE GI-207

EXPANSION JOINT (TYP.)

OBSERVATION WELL, SEE GI-213

CONCRETE HEADER

STEEL TREE GUARD (3-SIDES TYP.) SEE GI-601, GI-602 & GI-603

SEE GI-503A, B, C, D, E & F FOR TYPICAL PLANTING PLANS

LIMIT OF NEW CURB TO EXTEND BEYOND THE ROWD AS DETERMINED BY FIELD CONDITIONS AND SITE ENGINEER

FLOW

EXISTING CURB TO REMAIN

PLACE EXPANSION JOINT AT MID-SPAN

19'-0" OR AS SHOWN

PLACEMENT JOINT AT MID-SPAN

SEE GI-186 FOR DIMENSION SCHEDULE

CLEANOUT; REFER TO DETAILS GI-204

12"x5" CONCRETE STRIP

1'-0"
PLAN

EXISTING CATCH BASIN

CURB LINE

LOCATION OF BIOSWALE

VARIES

DEPT AS SHOWN

15'-0"

3'-6"

3'-6"

LOCATION OF BIOSWALE

VARIES

DEPT AS SHOWN

15'-0"

3'-6"

3'-6"

OR AS SHOWN

INLET

FLOW

REfer to details on this and next page

STANDARD FOR 15'x5' R.O.W. BIOSWALE TYPE 2DA - WITH STONE COLUMNS

- NO CONNECTION TO SEWERS

NOTE:
CAST-IN-PLACE CONCRETE STRIP REQUIRES IMPERMEABLE LINER UNDERNEATH

PERMEABLE SOIL LAYER

PENETRATION INTO PERMEABLE SOIL LAYER

DEPTH SCHEDULE

ROW K

A

B

TOP LAYER, 2"-3" MULCH
CLEANOUT, SEE GI-204
EXPANSION JOINT AND FILLER (TYP.)

TOP OF STONE COLUMN WITH PERFORATED CAP (TYP.)

STONE FILLED PERFORATED 12" DIAMETER PVC PIPE WRAPPED ALL AROUND WITH GEOTEXTILE FABRIC.

OPEN-GRATED STONE FILLED PERFORATED 12" DIAMETER PVC PIPE WRAPPED ALL AROUND WITH GEOTEXTILE FABRIC.

STANDARD FOR 15'x5' R.O.W. BIOSWALE TYPE 2DA - WITH STONE COLUMNS

- NO CONNECTION TO SEWERS

NOTE:
CAST-IN-PLACE CONCRETE STRIP REQUIRES IMPERMEABLE LINER UNDERNEATH

PERMEABLE SOIL LAYER

PENETRATION INTO PERMEABLE SOIL LAYER

DEPTH SCHEDULE

ROW K

A

B

TOP LAYER, 2"-3" MULCH
CLEANOUT, SEE GI-204
EXPANSION JOINT AND FILLER (TYP.)

TOP OF STONE COLUMN WITH PERFORATED CAP (TYP.)

STONE FILLED PERFORATED 12" DIAMETER PVC PIPE WRAPPED ALL AROUND WITH GEOTEXTILE FABRIC.

OPEN-GRATED STONE FILLED PERFORATED 12" DIAMETER PVC PIPE WRAPPED ALL AROUND WITH GEOTEXTILE FABRIC.

PERMEABLE SOIL LAYER

PENETRATION INTO PERMEABLE SOIL LAYER

DEPTH SCHEDULE

ROW K

A

B

TOP LAYER, 2"-3" MULCH
CLEANOUT, SEE GI-204
EXPANSION JOINT AND FILLER (TYP.)

TOP OF STONE COLUMN WITH PERFORATED CAP (TYP.)

STONE FILLED PERFORATED 12" DIAMETER PVC PIPE WRAPPED ALL AROUND WITH GEOTEXTILE FABRIC.

OPEN-GRATED STONE FILLED PERFORATED 12" DIAMETER PVC PIPE WRAPPED ALL AROUND WITH GEOTEXTILE FABRIC.
EXISTING ASPHALT PAVEMENT

EXISTING CURB TO REMAIN

NEW CURB TYPE TO MATCH CONTRACT PLANS

STEEL TREE GUARD (3-SIDES TYP.) SEE GI-601, GI-602 & GI-603

STORMWATER INLET SEE GI-185

CONCRETE STRIP SEE GI-207

SEE GI-503A, B, C, D, E & F FOR TYPICAL PLANTING PLANS

EXPANSION JOINT (TYP.)

PLACE EXPANSION JOINT AT MID-SPAN

15'-0" OR AS SHOWN

1'-0" OR AS SHOWN

STORMWATER INLET

12"x5" CONCRETE STRIP

GABION WALL BELOW CONCRETE STRIP SEE GI-207

SEE GI-186 FOR DIMENSION SCHEDULE

CLEANOUT; REFER TO DETAILS GI-204

12" INSIDE DIAMETER PERFORATED PIPE

EXPANSION JOINT

LIMIT OF NEW CURB TO EXTEND BEYOND THE ROWB AS DETERMINED BY FIELD CONDITIONS AND SITE ENGINEER

EXISTING CURB TO REMAIN

PLAN

FLOW

8" INSIDE DIAMETER PERFORATED PIPE

STANDARD FOR 15'x5' R.O.W. BIOSWALE TYPE 2DA - WITH STONE COLUMNS

- NO CONNECTION TO SEwers

MANAGING DIRECTOR,
GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION

DATE

06-17-2020
**PLAN**

**EXISTING CATCH BASIN**

**CURB LINE**

**10'-0" LOCATION OF BIOSWALE**

**VARIES OR AS SHOWN**

**NOTE:**
- CAST-IN-PLACE CONCRETE STRIP REQUIRES IMPERMEABLE LINER UNDERNEATH

**SECTION A-A**

**DEPT E**

- **TOPSOIL**
- **12½" CONCRETE STRIP**
- **BRICK BASE - AS REQUIRED**
- **LEVELING COURSE AS REQUIRED**
- **SLOPE TO FRAME**
- **C.I. FRAME AND GRATING (WITHOUT CURB PIECE), SEE DEP STANDARDS SE58A & SE59A**
- **ROADWAY**

**TOPSOIL**

- **12" CONCRETE STRIP**
- **TOP LAYER 2¾" MULCH**
- **STEEL TREE GUARD (3-SIDES TYP.) SEE GI-601, GI-602 & GI-603**

**FLOW**

- **LOCATION OF BIOSWALE 10'-0"**
- **DEP ART. 8" INSIDE DIAMETER PERFORATED HDPE PIPE**
- **UNDISTURBED SOIL**
- **TOP LAYER, 2¾" MULCH**
- **CONCRETE HEADER (3-SIDES TYP.) SEE GI-601, GI-602 & GI-603**

**SECTION B-B**

- **TOPSOIL**
- **12" CONCRETE STRIP**
- **3" THICK LEVELING COURSE (TYP.) ROADWAY CURB**

- **UNDISTURBED SOIL**
- **L-SHAPED EDGING WITH MINIMUM 9" STAKES, SEE DRAWING GI-204**
- **-wrap Gabion Wall in Geotextile (Top and Sides Only)**
- **12" Wide Gabion Wall filled with Clean Open-Graded Stone**

**NOTE:**
- CLEAN OUT, SEE GI-204
- TOP LAYER, 2¾" MULCH
- CONCRETE HEADER - SIDEWALK

**TOPSOIL**

- **12"" CONCRETE STRIP**
- **TOP LAYER, 2¾" MULCH**
- **CONCRETE HEADER (3-SIDES TYP.) SEE GI-601, GI-602 & GI-603**

**ROADWAY**

- **UNDISTURBED SOIL**
- **TOP SOIL**
- **SIDEWALK**

**NOTE:**
- CLEAN OPEN-GRADED STONE BASE WRAPPED IN GEOTEXTILE, TOP AND SIDES ONLY

**MANAGING DIRECTOR, GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION**

P.E. 06-17-2020
EXISTING ASPHALT PAVEMENT

SIDEWALK

EXISTING CURB TO REMAIN

STEEL TREE GUARD (3-SIDES TYP.) SEE GI-601, GI-602 & GI-603

CONCRETE HEADER EXPANSION JOINT (TYP.)

EXPANSION JOINT (TYP.)

STORMWATER INLET SEE GI-185

12"x5" CONCRETE STRIP

FLOW

10'-0" OR AS SHOWN

8" INSIDE DIAMETER PERFORATED PIPE

CLEANOUT; REFER TO DETAILS GI-204

SEE GI-186 FOR DIMENSION SCHEDULE

OBSERVATION WELL, SEE GI-213

CONCRETE STRIP, See GI-207

NEW CURB TYPE TO MATCH CONTRACT PLANS

EXISTING CURB TO REMAIN

GABION WALL BELOW

LIMIT OF NEW CURB TO EXTEND BEYOND THE ROWB AS DETERMINED BY FIELD CONDITIONS AND SITE ENGINEER

1'-0"

1'-0"

12"x5" CONCRETE STRIP

PLAN
STANDARD FOR 10'X5' R.O.W. BIOSWALE TYPE 3DA - WITH STONE COLUMN
- NO CONNECTION TO SEWERS

SECTION A-A
STONE FILLED PERFORATED 12" DIAMETER PVC PIPE WRAPPED ALL AROUND WITH GEOTEXTILE FABRIC.

AT BIOSWALE STONE COLUMN DEPTH OF PVC PIPE PER DESIGN PLANS
OPEN-GRADED STONE 12"
TEMPORARY 18" MAXIMUM DIAMETER CASING AUGERED INTO PERMEABLE LAYER PERMEABLE SOIL
CLEAN OPEN-GRADED STONE BASE WRAPPED IN GEOTEXTILE (TOP AND SIDES ONLY)
12" WIDE GABION WALL FILLED WITH OPEN-GRADED STONE

PENETRATION INTO PERMEABLE SOIL LAYER SIDEWALK TOP LAYER, 2"-3" MULCH CLEANOUT, SEE GI-204 EXPANSION JOINT AND FILLER (TYP.)
SIDEWALK TOP OF STONE COLUMN WITH PERFORATED CAP (TYP.)
ROADWAY CONCRETE HEADER (3 SIDES)
PLANTED AREA CONCRETE ENCASEMENT PLACED IN SOIL LAYER (TYP.)

SECTION B-B
UNDISTURBED SOIL L-SHAPED EDGING WITH MINIMUM 9" STAKES, SEE DRAWING GI-204
WRAP GABION WALL IN GEOTEXTILE (TOP AND SIDES ONLY)
12" WIDE GABION WALL FILLED WITH OPEN-GRADED STONE

PENETRATION INTO PERMEABLE SOIL LAYER

EXISTING CATCH BASIN
LOCATION OF BIOSWALE VARIES

NOTE: CAST-IN-PLACE CONCRETE STRIP REQUIRES IMPERMEABLE LINER UNDERNEATH

MANAGING DIRECTOR, GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION 06-17-2020
EXISTING ASPHALT PAVEMENT

SIDWALK

EXISTING CURB TO REMAIN

NEW CURB TYPE TO MATCH CONTRACT PLANS

EXISTING CURB TO REMAIN

5'-0" OR AS SHOWN

FLOW

STORMWATER INLET, SEE GI-185

1'-0" CONCRETE STRIP, SEE GI-207

STEEL TREE GUARD (3-SIDES TYP.) SEE GI-601, GI-602 & GI-603

CONCRETE HEADER EXPANSION JOINT (TYP.)

OBSERVATION WELL, SEE GI-213

EXPANSION JOINT

LIMIT OF NEW CURB TO EXTEND BEYOND THE ROWS AS DETERMINED BY FIELD CONDITIONS AND SITE ENGINEER

FLOW

12"x5" CONCRETE STRIP

GABION WALL BELOW CONCRETE STRIP, SEE GI-207

NEW CURB TYPE TO MATCH CONTRACT PLANS

EXISTING CURB TO REMAIN

8" INSIDE DIAMETER PERFORATED PIPE

12'-0" OR AS SHOWN

EXPANSION JOINT

STORMWATER INLET, SEE GI-185

1'-6" STONE COLUMN

1'-2" STONE COLUMN

1'-0" STONE COLUMN

1'-0" CONCRETE STRIP

CONCRETE STRIP, SEE GI-207

SEE GI-503A, B, C, D, E & F FOR TYPICAL PLANTING PLANS

MANAGING DIRECTOR, GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION

P.E. 06-17-2020

DATE

CITY OF NEW YORK

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BUREAU OF ENVIRONMENTAL PLANNING AND ANALYSIS – GREEN INFRASTRUCTURE

STANDARD FOR 10'X5' R.O.W. BIOSWALE TYPE 3DA - WITH STONE COLUMN

- NO CONNECTION TO SEWERS
EXISTING ASPHALT PAVEMENT

NEW CURB TYPE TO MATCH CONTRACT PLANS
EXISTING CURB TO REMAIN

STEEL TREE GUARD (3-SIDES TYP.)
SEE GI-601, GI-602 & GI-603

CONCRETE HEADER
LIMIT OF NEW CURB TO EXTEND BEYOND THE ROW AS DETERMINED BY FIELD CONDITIONS AND SITE ENGINEER

EXPANSION JOINT; REFER TO DETAILS GI-204

STORMWATER INLET (ALTERNATE LOCATION PER DEP APPROVAL)

5" THICK CONCRETE STRIP

LEVELING COURSE

GABION FILLED WITH OPEN-GRADED STONE

OPENING FOR 8" INSIDE DIAMETER PIPE WITH PERFORATED COVER

8" INSIDE DIA. HDPE PIPE
MORTAR AROUND PIPE EXISTING SOIL

LEVELING COURSE

SECTION C-C

PLAN [WITH CASTING]
SECTION E-E

PLAN [WITH REINFORCEMENT]
SECTION F-F

GABION WALL UNDER CONCRETE STRIP, SEE GI-207

NEW CURB TYPE TO MATCH CONTRACT PLANS
EXISTING CURB TO REMAIN

8" INSIDE DIAMETER PERFORATED PIPE. SEE CORRESPONDING ROW TYPE FOR CORRECT PIPE PLACEMENT WITHIN THE PRACTICE

5'-4" FACE OF ROADWAY CURB

CONCRETE HEADER

STORMWATER INLET (BRICK COURSE ABOVE NOT SHOWN FOR CLARITY)

LEVELING COURSE

GABION WALL

SECTION F-F

R.O.W. BIOSWALE TYPE D STORMWATER INLET SECTIONS & DETAILS
- NO CONNECTION TO SEWERS

C.I. HOOD, SEE DEP STANDARDS SE60

CAST IRON FRAME (WITHOUT CURB PIECE) AND GRATING , SEE DEP STANDARDS SE68A & SE66A

FACE OF ROADWAY CURB

PLAN [WITH REINFORCEMENT]

MANAGING DIRECTOR,
GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION

P.E. 06-17-2020
DATE

DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL PLANNING AND ANALYSIS - GREEN INFRASTRUCTURE
EXISTING ASPHALT PAVEMENT

EXISTING CURB TO REMAIN

EXISTING ASPHALT PAVEMENT

FLOW

FLOW

DIMENSION SCHEDULE FOR VARIABLE SIZE R.O.W. BIOSWALE TYPE D
- NO CONNECTION TO SEWERS

R.O.W.B TYPE D DIMENSIONS

<table>
<thead>
<tr>
<th>LENGTH (L), 1FT. INCREMENT</th>
<th>WIDTH (W), 6 IN. INCREMENT</th>
<th>TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>17' ≤ L ≤ 20'</td>
<td>4'-0&quot; TO 6'-0&quot;</td>
<td>TYPE 1</td>
</tr>
<tr>
<td>13' ≤ L ≤ 16'</td>
<td>4'-0&quot; TO 6'-0&quot;</td>
<td>TYPE 2</td>
</tr>
<tr>
<td>10' ≤ L ≤ 12'</td>
<td>4'-0&quot; TO 6'-0&quot;</td>
<td>TYPE 3</td>
</tr>
</tbody>
</table>

NOTE: DOT APPROVAL REQUIRED FOR ALL WIDTHS GREATER THAN 5'.

MANAGING DIRECTOR,
GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION

DATE 06-17-2020
GI-200
MISCELLANEOUS DETAILS FOR RIGHT-OF-WAY GREEN INFRASTRUCTURE PRACTICES
**DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**BUREAU OF ENVIRONMENTAL PLANNING & ANALYSIS - GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION**

**STANDARD FOR ROWB/ROWGS/ROWRG INLET & OUTLET**

---

**PLAN**

- **NEW CURB (TYP)**
- **TAPERED SURFACES WITH BRUSHED FINISH (TYP)**
- **DROP CURB INLET ELEVATION**
- **CAST-IN-PLACE CONCRETE INLET APRON WITH 15% - 20% PITCH (TYP)**
- **CAST-IN-PLACE CONCRETE STRIP**
- **CONCRETE GUTTER (TYP)**
- **LEVELING COURSE**

**ISOMETRIC VIEW INLET**

- **L-SHAPED EDGING**
- **LEVELING COURSE**

**SECTION A-A**

- **CAST-IN-PLACE REINFORCED CONCRETE APRON**
- **WWM 6x6-W8xW8**
- **BOTTOM OF CURB**
- **CAST-IN-PLACE CONCRETE STRIP**
- **NEW CURB (TYP)**
- **HEADER (TYP)**
- **LEVELING COURSE**

---

**EDGE**

- **LOW POINT**
- **SET 3" BELOW OUTLET INVERT**
- **GABION BELOW CONCRETE STRIP**
- **6"-THICK REINFORCED CONCRETE GUTTER**

**LOW POINT**

- **SET 3" BELOW OUTLET INVERT**
- **GABION BELOW CONCRETE STRIP**
- **6"-THICK REINFORCED CONCRETE GUTTER**

**LOW POINT**

- **SET 3" BELOW OUTLET INVERT**
- **GABION BELOW CONCRETE STRIP**
- **6"-THICK REINFORCED CONCRETE GUTTER**

---

**ISOMETRIC VIEW OUTLET**

- **N.T.S.**
- **EXTENT OF NEW CURB VARIES PER FIELD CONDITION**
- **HEADER BEYOND**
- **HEADING HEIGHT OF ADJACENT ASPHALT PAVEMENT FLUSH WITH CONCRETE APRON**
- **TYPICAL EXPANSION JOINT**
- **ADJACENT 6"-THICK, 18"-WIDE REINF. CONCRETE GUTTER, TOP FLUSH WITH APRON**
- **WWM 6x6-W8xW8**
- **BOTTOM OF CURB**

---

**CONCRETE APRON**

- **LEVELING COURSE**
- **L-SHAPED EDGING**

---

**CAST-IN-PLACE CONCRETE INLET APRON WITH 15% - 20% PITCH (TYP)**

- **LOW POINT**
- **SET 3" BELOW OUTLET INVERT**
- **GABION BELOW CONCRETE STRIP**
- **6"-THICK REINFORCED CONCRETE GUTTER**

---

**CONCRETE STRIP**

- **L-SHAPED EDGING**
- **CONCRETE GUTTER (TYP)**
- **TAPERED SURFACES WITH BRUSHED FINISH (TYP)**

---

**LEVELING COURSE**

- **L-SHAPED EDGING**

---

**CONCRETE APRON**

- **LEVELING COURSE**
- **L-SHAPED EDGING**
NOTES:
(1) LOCATION OF CURB SHALL BE AS SHOWN UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
(2) LOCATION AND ANGLE OF 8" HDPE OUTLET PIPE MAY BE VARIED TO SUIT FIELD CONDITIONS.
(3) KEYED CONSTRUCTION JOINTS ARE REQUIRED BETWEEN ANY SUCCESSIVE POURS.
(4) CONCRETE IS TO BE CLASS 40. REBARS-GRADE 60.

CAST IRON FRAME [WITHOUT CURB PIECE] AND [GRATING], SEE DEP STANDARDS SE56A & SE56B

CURB AS PER HWY. STDS.
SLOPE PAVEMENT TO CASTING

EXIST. RDWY.

WELDED HANDLE ON MODIFIED C.I. HOOD, SEE DEP STANDARDS SE60

8" SOLID DUAL WALL HDPE PIPE
MORTAR AROUND PIPE OUTLET

6" L. HOOK, SEE DEP STANDARDS SE60

WELDED HANDLE ON MODIFIED C.I. HOOD, SEE DEP STANDARDS SE60

CAST IRON FRAME [WITHOUT CURB PIECE] AND [GRATING], SEE DEP STANDARDS SE58A & SE59B

BRICK SINGLE LAYER

SLOPE PAVEMENT TO CASTING

EXISTING ROADWAY

BRICK SINGLE LAYER

PLAN [WITH CASTING]

PLAN [WITH REINFORCEMENTS]
STANDARD FOR PRECAST STORMWATER INLET

FOR R.O.W. BIOSWALE TYPE 1B AND 2B - NO CONNECTION TO SEwers

NOTES:
1. LOCATION OF OPENING SHALL BE DETERMINED PRIOR TO THE MANUFACTURING OF BASIN BY FIELD MEASUREMENTS.
2. LOCATION OF CURB SHALL BE AS SHOWN UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
3. LOCATION AND ANGLE OF 8" HDPE OUTLET PIPE MAY BE VARIED TO SUIT FIELD CONDITIONS.
4. LIFTING HOOKS SHALL BE LOCATED IN THE SECTION AS PER MANUFACTURERS RECOMMENDATIONS AND GROUTED PRIOR TO BACKFILLING. (FOUR (4) LIFTING HOOKS SHALL BE PROVIDED FOR EACH SECTION AND SHALL BE PLACED SYMMETRICALLY AND IN SUCH A MANNER AS TO PROVIDE FOR THE EVEN LIFTING OF THE SECTION.)
5. LIFTING BAR TO BE CUT FLUSH TO SURFACE AFTER PLACEMENT OF PRECAST TYPE 2 SLAB.
6. CONCRETE IS TO BE CLASS 40 AND 5% AIR ENTRAINED. REBARS-GRADE 60. WWM-F = +65,000 PSI.
7. MODIFY STANDARD CAST IRON HOOD AND HOOKS [SE60] AS PER DRAWING

MANAGING DIRECTOR, GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION
P.E. 06-17-2020
DATE
**HDPE STORMWATER CHAMBER**

- **DRAINAGE HOLES (OPTIONAL)**
- **9" STAKE (TYP.)**
- **OPEN GRADED STONE LAYER**
- **GEOTEXTILE FABRIC**
- **FROM INLET**
- **FLOW**
- **WYE FITTING**
- **PERFORATED END PLUG**
- **CONCRETE POUR COLLAR, 3"x3" (TYP.)**
- **45° BEND**
- **PERFORATED (TYP.)**
- **SOLID DRAIN BODY**
- **GRADE**
- **COVER**
- **CAST IRON CLEANOUT COVER (TYP.) WITH CAMLOCK LOCKING MECHANISM**
- **TO BE FLUSH WITH CONCRETE SURFACE**

**CLEAN-OUT DETAIL - TYPE D - HDPE PIPE**

- **N.T.S.**
- **FLOW FROM INLET**
- **OPEN GRADED STONE LAYER**
- **FROM INLET**
- **FLOW**
- **OPENED GRADED STONE**

**CLEAN-OUT DETAIL - ROW INFILTRATION BASIN - HDPE PIPE**

- **CAST IRON CLEANOUT COVER (TYP.)**
- **PERFORATED END PLUG**
- **WYE FITTING**
- **PERFORATED PIPE**
- **OPEN GRADED STONE LAYER**
- **FROM INLET**
- **FLOW**

**NOTES FOR INFILTRATION BASINS:**
1. SET THE TOP OF THE SOLID CLEANOUT COVER FLUSH WITH THE SURFACE OR GRADE.
2. THE VERTICAL DRAIN BODY SHALL BE SOLID.
3. CAST IRON CLEANOUTS TO BE PAINTED WITH RUST RESISTANT PAINT.

**ROW GI WIDTH**

<table>
<thead>
<tr>
<th>W</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>40'-51&quot;</td>
<td>25'-30&quot;</td>
</tr>
<tr>
<td>34'-36&quot;</td>
<td>16'-20.5&quot;</td>
</tr>
</tbody>
</table>

**CROSS-SECTION AT MIDSECTION [LOWEST POINT]**

- **SIDEWALK**
- **80 MIL HDPE BARRIER; LENGTH OF GI PRACTICE**
- **HDPE BARRIER WITH 12" TOE**
- **CONCRETE HEADER**
- **7 1/2"**
- **12"**

**SIDE VIEW**

- **LENGTH AS SPECIFIED**
- **WIDTH**
- **HEIGHT**

**END VIEW**

- **CONCRETE HEADER**
- **SIDEWALK**
- **80 MIL HDPE BARRIER; LENGTH OF GI PRACTICE**
- **HDPE BARRIER WITH 12" TOE**

**CLEAN-OUT DETAIL - TYPE B - HDPE PIPE**

- **FLOW**
- **OPEN GRADED STONE**
- **90° BEND**
- **CONCRETE POUR COLLAR, 3"x3" (TYP.)**
- **45° BEND**
- **PERFORATED END PLUG**
- **CONCRETE POUR COLLAR, 3"x3" (TYP.)**
- **GRADE**
- **COVER**
- **CAST IRON CLEANOUT COVER (TYP.)**
- **TO BE FLUSH WITH CONCRETE SURFACE**

**NOTES:**
1. SET THE TOP OF THE SOLID CLEANOUT COVER FLUSH WITH THE SURFACE OR GRADE.
2. THE VERTICAL DRAIN BODY SHALL BE SOLID.
3. CAST IRON CLEANOUTS TO BE PAINTED WITH RUST RESISTANT PAINT.

**HDPE BARRIER DETAILS AGAINST SIDEWALK (ONLY IF DIRECTED)**

- **N.T.S.**
- **ROW GI WIDTH**
- **≥ 5'**
- **5" MIN. STONE BEDDING**
- **8" INSIDE DIA. PERFORATED HDPE PIPE**
- **2% SLOPE**
- **OPEN GRADED STONE FROM INLET**
- **3" - 4" TYP.**
- **2" - 3" TYP.**
- **6" (± 0.25")**
- **6" (± 0.25")**
- **0.15"**

**L-SHAPED EDGING**

- **N.T.S.**
- **DRAINAGE HOLES (OPTIONAL)**
- **9" STAKE (TYP.)**
- **OPEN GRADED STONE**

**CLEAN-OUT DETAIL - HDPE PIPE**

- **FLOW**
- **OPEN GRADED STONE**
- **9" INSIDE DIA. PERFORATED HDPE PIPE**
- **22 1/2° ELBOW**
- **CONCRETE POUR COLLAR**
- **GRADING**
- **COVER**
- **CAST IRON CLEANOUT COVER (TYP.)**
- **TO BE FLUSH WITH CONCRETE SURFACE**

**SOLID 45° BEND**

- **8" INSIDE DIAMETER PIPE WITH CLASS II PERFORATIONS**
- **PERFORATED COVER (TYP.)**
- **STORMWATER INLET**

**TYPE D TYPICAL PIPE/STORMWATER INLET CONNECTION**

- **GRADE**
- **COVER**
- **SOLID CLEANOUT COVER (TYP.)**
- **CAST IRON CLEANOUT COVER (TYP.) WITH CAMLOCK LOCKING MECHANISM**
- **TO BE FLUSH WITH CONCRETE SURFACE**
- **CONCRETE POUR COLLAR, 3"x3" (TYP.)**
- **45° BEND**
- **PERFORATED END PLUG**
- **WYE FITTING**
- **OPEN GRADED STONE LAYER**
- **FLOW FROM INLET**

**MANAGING DIRECTOR, GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION**

- **06-17-2020**
NOTES:
1. HDPE Barrier to be installed when there is an utility crossing and/or when there is less than 10' from the asset to the building line.
2. Any seams in the HDPE barrier must have a 1'-0" overlap and be sealed with watertight sealant.
3. Additional sleeve shall be PVC pipe and extend outward as shown above.
4. Split PVC pipe shall be used to sleeve the existing water service line and solid PVC pipe shall be used for the spare sleeve.

WATERTIGHT EXPANDING FOAM SEALANT BETWEEN UTILITY AND PVC SPLIT SLEEVE (THROUGH ENTIRE SLEEVE)

SOLID PVC PIPE TO BE CAPPED AT BOTH ENDS.
LOCATION TO BE MARKED ON CONCRETE HEADER, SEE ABOVE.

SPLIT PVC PIPE

WATER UTILITY DUCT

SOLID PVC PIPE FOR FUTURE WATER SERVICE

CONCRETE STRIP

PLANTED AREA

ENGINEERED SOIL

CONCRETE COLLAR (TYP.)

WRAP STONES IN GEOTEXTILE (TOP AND SIDES ONLY)
GABION (BEYOND), PARTIALLY SHOWN FOR CLARITY, SEE GI-207

SECTION

HOPE BARRIER TO BE INSTALLED WHEN THERE IS AN UTILITY CROSSING AND/OR WHEN THERE IS LESS THAN 10' FROM THE ASSET TO THE BUILDING LINE.

ANY SEAMS IN THE HOPE BARRIER MUST HAVE A 1'-0" OVERLAP AND BE SEALED WITH WATERTIGHT SEALANT.

ADDITIONAL SLEEVE SHALL BE PVC PIPE AND EXTEND OUTWARD AS SHOWN ABOVE.

SPLIT PVC PIPE SHALL BE USED TO SLEEVE THE EXISTING WATER SERVICE LINE AND SOLID PVC PIPE SHALL BE USED FOR THE SPARE SLEEVE.

INTERFACE BETWEEN COLLAR AND HOPE BARRIER TO BE SEALED WITH WATERPROOF SEALANT. SEE NOTES
80 MIL HOPE BARRIER; LENGTH OF GI PRACTICE WITH 12" TOE. SEE NOTES

WATER UTILITY WATERTIGHT EXPANDING FOAM SEALANT BETWEEN UTILITY AND PVC SPLIT SLEEVE (THROUGH ENTIRE SLEEVE)

CLASS B CONCRETE COLLAR

CROSS SECTION A-A

WATER UTILITY CROSSING DETAIL

N.T.S.

NOTES:
1. HDPE Barrier to be installed when there is an utility crossing and/or when there is less than 10' from the asset to the building line.
2. Any seams in the HOPE Barrier must have a 1'-0" overlap and be sealed with watertight sealant.
3. Additional sleeve shall be PVC pipe and extend outward as shown above.
4. Split PVC pipe shall be used to sleeve the existing water service line and solid PVC pipe shall be used for the spare sleeve.

WATERTIGHT EXPANDING FOAM SEALANT IN SPLIT PVC SLEEVE (THROUGH ENTIRE SLEEVE)

SIDEWALK

SURVEY MARKER

PLANTED AREA

ENGINEERED SOIL

CONCRETE COLLAR (TYP.)

WRAP STONES IN GEOTEXTILE (TOP AND SIDES ONLY)
GABION (BEYOND), PARTIALLY SHOWN FOR CLARITY, SEE GI-207

SECTION

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80 MIL HOPE BARRIER; LENGTH OF GI PRACTICE WITH 12" TOE. SEE NOTES

WATER UTILITY WATERTIGHT EXPANDING FOAM SEALANT BETWEEN UTILITY AND PVC SPLIT SLEEVE (THROUGH ENTIRE SLEEVE)

CLASS B CONCRETE COLLAR

CROSS SECTION A-A

UTILITY CROSSING DETAIL

N.T.S.

NOTES:
1. HDPE Barrier to be installed when there is an utility crossing and/or when there is less than 10' from the asset to the building line.
2. Any seams in the HOPE Barrier must have a 1'-0" overlap and be sealed with watertight sealant.
3. Additional sleeve shall be PVC pipe and extend outward as shown above.
4. Split PVC pipe shall be used to sleeve the existing water service line and solid PVC pipe shall be used for the spare sleeve.

WATERTIGHT EXPANDING FOAM SEALANT IN SPLIT PVC SLEEVE (THROUGH ENTIRE SLEEVE)

SIDEWALK

SURVEY MARKER

PLANTED AREA

ENGINEERED SOIL

CONCRETE COLLAR (TYP.)

WRAP STONES IN GEOTEXTILE (TOP AND SIDES ONLY)
GABION (BEYOND), PARTIALLY SHOWN FOR CLARITY, SEE GI-207

SECTION

HOPE BARRIER TO BE INSTALLED WHEN THERE IS AN UTILITY CROSSING AND/OR WHEN THERE IS LESS THAN 10' FROM THE ASSET TO THE BUILDING LINE.

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80 MIL HOPE BARRIER; LENGTH OF GI PRACTICE WITH 12" TOE. SEE NOTES

WATER UTILITY WATERTIGHT EXPANDING FOAM SEALANT BETWEEN UTILITY AND PVC SPLIT SLEEVE (THROUGH ENTIRE SLEEVE)

CLASS B CONCRETE COLLAR

CROSS SECTION A-A

UTILITY CROSSING DETAIL

N.T.S.
PRECAST SEEPAGE BASIN SCHEDULE

<table>
<thead>
<tr>
<th>PRECAST RING TYPE</th>
<th>HEIGHT</th>
<th>VOLUME, CF</th>
<th>VOLUME, GAL</th>
<th>Im. In</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOLID</td>
<td>2'-0&quot;</td>
<td>17.4</td>
<td>130</td>
<td>4&quot;</td>
</tr>
<tr>
<td>PERFORATED*</td>
<td>3'-0&quot;</td>
<td>26.2</td>
<td>195</td>
<td>4&quot;</td>
</tr>
<tr>
<td>SOLID</td>
<td>3'-0&quot;</td>
<td>45.0</td>
<td>337</td>
<td>4&quot;</td>
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<tr>
<td>D = 4'-0&quot; O.D.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PERFORATED*</td>
<td>4'-0&quot;</td>
<td>67.3</td>
<td>496</td>
<td>4&quot;</td>
</tr>
<tr>
<td>SOLID</td>
<td>4'-0&quot;</td>
<td>84.4</td>
<td>631</td>
<td>4&quot;</td>
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<td>D = 5'-0&quot; O.D.</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PERFORATED*</td>
<td>5'-0&quot;</td>
<td>126.7</td>
<td>947</td>
<td>4&quot;</td>
</tr>
</tbody>
</table>

* REFER TO THE MANUFACTURER'S SPECIFICATIONS FOR OPENING DETAILS

NOTE: IN NO CASE SHALL "d" BE LESS THAN THE OUTSIDE DIAMETER OF THE INFILTRATION BASIN

CIRCULAR SLAB AND FOOTING SCHEDULE

MANAGING DIRECTOR, GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION

DATE 06-17-2020
TYPICAL GABION LAYOUT

- **Concrete Strip:**
  - Outlet
  - Inlet

- **3"-Thick Leveling Stone**
  - Concrete Strip
  - Concrete Curb

- **Gabion Below Concrete Strip**
  - Gabion Placed Below Concrete Strip

- **Utility Crossing,** *(Location May Vary)*
  - 3" Max.
  - Engineered Soil

**SECTION A-A**

**TYPICAL GABION LAYOUT**

**SECTION A-A**

**GABION LAYOUT WITH UTILITY CROSSINGS**
FLOW PLAN - CONCRETE TOP

SEE PART PLAN

STEEL GRATE NOT SHOWN FOR CLARITY

INLET
INVERT

L2"x2"x1/4" BELOW STEEL GRATE ANCHORED TO CHAMBER WALLS (TYP)

G-CLIP FASTENER OR APPROVED EQUAL FLUSH WITH TOP OF GRATE

PRECAST CONCRETE CHAMBER WITH STEEL GRATE COVER

STEEL GRATE COVER

LZ"x2"x1/4" BELOW STEEL GRATE APPROVED EQUAL FLUSH WITH TOP OF GRATE

GRAATING FASTENER WITH RECESSED BOLT (TYP.)

3/8" x 4" PLAIN STUD WELDED TO STEEL ANGLE

CONCRETE TOP STEEL BAR GRATE BRACING

PART PLAN - CONCRETE TOP
STEEL GRATE, LIFTING POINTS AND FASTENER DETAIL

1" x 3/16" BEARING BAR
1" x 3/16" CROSS BAR

DETAIL A-A
CONCRETE TOP STEEL BAR GRATE BRACING
INLET INVERT

L2"x2"x1/4" BELOW STEEL GRATE ANCHORED TO CHAMBER WALLS (TYP)

G-CLIP FASTENER OR APPROVED EQUAL, FLUSH WITH TOP OF GRATE

NYCDEP GRASS TOP

PART PLAN - GRASS TOP STEEL GRATE, LIFTING POINTS AND FASTENER DETAIL

PRECAST CONCRETE CHAMBER WITH STEEL GRATE COVER

STEEL GRATE COVER

GRASS TOP L2"x2"x1/4" BELOW STEEL GRATE ANCHORED TO CHAMBER WALLS (TYP)

G-CLIP FASTENER OR APPROVED EQUAL, FLUSH WITH TOP OF GRATE

10% - 20% PITCH

PRECAST CONCRETE CHAMBER WITH STEEL GRATE COVER

STEEL GRATE COVER

GRASS TOP L2"x2"x1/4" BELOW STEEL GRATE ANCHORED TO CHAMBER WALLS (TYP)

G-CLIP FASTENER OR APPROVED EQUAL, FLUSH WITH TOP OF GRATE

NYCDEP GRASS TOP

PART PLAN - GRASS TOP STEEL GRATE, LIFTING POINTS AND FASTENER DETAIL

1" x 3/16" BEARING BAR 1" x 3/16" CROSS BAR

L2" x 2" x 1/4" GRASS TOP

GRATING FASTENERS WITH RECESSED BOLTS 3/8" x 4" PLAIN STEEL STUD WELDED TO STEEL ANGLE

3/8" x 4" PLAIN STEEL STUD WELDED TO STEEL ANGLE

1" x 3/16" BEARING BAR 1" x 3/16" CROSS BAR

L2" x 2" x 1/4" GRASS TOP

GRATING FASTENER WITH RECESSED BOLT

1" x 3/16" BEARING BAR 1" x 3/16" CROSS BAR

L2" x 2" x 1/4" GRASS TOP

GRATING FASTENER WITH RECESSED BOLT

STEEL BAR GRATE BRACING (PRECAST CONCRETE CHAMBER FOR CONCRETE TOP IB)

L-SHAPED EDGING, TOP FLUSH WITH SURFACE, DIMENSIONS PER GI-204

STAKES SHALL NOT PUNCTURE THE GIDTEXTILE FABRIC

MANAGING DIRECTOR, GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION 06-17-2020
R.O.W. INFILTRATION BASIN STEEL GRATE DETAILS

**SECTION A-A**
- 1 1/2" x 5 1/2" x 1/8" plate welded to bars and 1/8" embossed letters
- Lift point, 3/4" pipe, schedule 40

**SECTION B-B**
- Bearing bar
- Cross bar
- Lifting point detail, 3/4" pipe, schedule 40

**SECTION C-C**
- G-clip fastener or approved equal
- Bearing bar
- Cross bar

**SECTION D-D**
- 1" O.D. stainless steel washer flush with top of steel grate
- Stainless steel 3/8" dia bolt

**DETAIL E**
- 1" letters x 1/8" embossed
- 1 1/2" x 5 1/2" x 1/8" plate welded to bars

**PLATE WITH DEP LOGO**
- NYC DEP
- 1" letters x 1/8" embossed

**CROSS BARS OF 1" X 3/16"**
- Bearing bars of 1" x 3/16"

**TOP OF STEEL GRATE**
- 3/4" pipe schedule 40 shop welded to steel grate bars

**LIFTING POINT DETAIL**
- Weld and flush smoothly

**MANAGING DIRECTOR, GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION**
- 06-17-2020

**P.E.**
- Date
NOTES:
1. WEIGHT (EMPTY): 25 LBS. MAX.
2. MATERIAL: WELDED ALUMINUM CONSTRUCTION.
3. MOUNTING HARDWARE PROVIDED BY MANUFACTURER
4. PERFORMANCE CHARACTERISTICS (TYP):
   a. DEBRIS CAPACITY: 0.88 CU-FT
   b. FILTERED FLOW RATE: 770 GPM (1.7 CFS)
   c. BYPASS FLOW RATE: 385 GPM (0.86 CFS)

MANAGING DIRECTOR,
GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION
06-17-2020
12" WRAP STONE IN GEOTEXTILE (TOP AND SIDES ONLY)
STEEL TREE GUARD (3-SIDES TYP.) SEE GI-601, GI-602 & GI-603
PLANTED AREA 8" INSIDE DIAMETER HDPE PIPE BEYOND UNDISTURBED SOIL

SECTION A-A

REMOVABLE OBSERVATION WELL COVER
TOPSOIL 12"x5" CONCRETE STRIP

PLANTED AREA
TOP LAYER 2"-3" MULCH
STEEL TREE GUARD (3-SIDES TYP.) SEE GI-601, GI-602 & GI-603

PLAN

UNDISTURBED SOIL
4" PVC SCHEDULE 40 PIPE
4" PVC SLOTTED WELL SCREEN 0.01 SLOT SIZE WITH PVC CAP WRAP STONE IN GEOTEXTILE (TOP AND SIDES ONLY)

PVC CAP WITH PRIMER AND SOLVENT CEMENT
OPEN-GRADED STONE BASE 8" INSIDE DIAMETER HDPE PIPE BEYOND

DEPTCH SCHEDULE
ROW B
WITH TREE  3'-0"  2'-0"
NO TREE  3'-6"  3'-6"

MANAGING DIRECTOR, GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION
P.E. 06-17-2020

- NO CONNECTION TO SEWERS
GI-300  
STORMWATER GREENSTREETS  
SUGGESTED LAYOUT GUIDELINES FOR  
RIGHT-OF-WAY GREEN INFRASTRUCTURE  
PRACTICES
NOTES:
1. DEPTH OF SOIL AND STONE SHALL BE DIMENSIONED IN ACCORDANCE WITH STORMWATER GREENSTREET CALCULATIONS.
2. ENGINEERED SOIL DEPTH TO BE 18", AND 24" IF TREE IS PRESENT. STONE DEPTH VARIES. TOTAL DEPTH NOT TO EXCEED 60".
3. DEPTH AND MATERIALS MAY CHANGE DUE TO FIELD CONDITIONS UNDER THE DIRECTION OF THE ENGINEER.
4. IF DEEPER LOW POINT (LP) IS REQUIRED, DEP APPROVAL WILL BE REQUIRED.
5. PEDESTRIAN PATHWAY WHEN REQUIRED.
6. WHERE (EL___) IS INDICATED, ELEVATION TO BE SHOWN IN CONTRACT PLANS.
7. HEADER NOTCHES ARE PLACED EQUALLY SPACED 4' TO 7' APART.
NOTES:
1. DEPTH OF SOIL AND STONE SHALL BE DIMENSIONED IN ACCORDANCE WITH STORMWATER GREENSTREET CALCULATIONS.
2. IMPERVIOUS ROW AREA IS CALCULATED IN TDA ANALYSIS SPREADSHEET.
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EXISTING CATCH BASINS

PROPERTY LINE

CURB LINE

EXISTING CONCRETE SIDEWALK

OUTLET - SEE ROWB TYPE 1 STANDARDS FOR DETAILS

TAPER UP TO 4' ABOVE SIDEWALK GRADE

LOW POINT SET 3'-6" BELOW OUTLET INVERT

(TYP.) EXPANSION JOINT EVERY 10" (MAX.)

L-SHAPED EDGING WITH MINIMUM 9" STAKES SEE DRAWING GI-204

4" x 4" NOTCHES (TYP.) - SEE GI-304 FOR DETAILS

CONCRETE PATHWAY SEE DRAWING GI-312 FOR DETAILS

STEEL TREE PIT GUARDS (TYP.) SEE DRAWING GI-601, GI-602 FOR DETAILS

STONE COLUMN - SEE GI-103 DETAILS

BIOPRELTER INLET - SEE DRAWING GI-310 FOR DETAILS

CONCRETE HEADER - 4" ABOVE SIDEWALK GRADE

TRANSITION SECTIOI - EXISTING CURB TO NEW HEADER

LOW POINT SET 3'-6" BELOW OUTLET INVERT

EXISTING CURB

CONCRETE HEADER - 4" ABOVE SIDEWALK GRADE

4" x 4" NOTCHES (TYP.) - SEE GI-304 FOR DETAILS

REINFORCED CONCRETE CULVERT

LP (EL___)

WEIR (EL___)

SGS BIOFILTER INLET INVERT (EL___)

 SG INLET INVERT (EL___)

 CONCRETE CULVERT OUTLET INVERT (EL___)

 LP (EL___)

 CLEAN OPEN-GRADED STONE BASE

STONE COLUMN (TYP.)

CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF GREEN INFRASTRUCTURE

R.O.W. STORMWATER GREENSTREET (ROWSGS) TYPE 1A-WITH STONE COLUMNS LAYOUT
- NO CONNECTION TO SEWERS

NOTES:
1. DEPTH OF SOIL AND STONE SHALL BE DIMENSIONED IN ACCORDANCE WITH STORMWATER GREENSTREET CALCULATIONS.
2. ENGINEERED SOIL DEPTH TO BE 18", AND 24" IF TREE IS PRESENT. STONE DEPTH VARIES. TOTAL DEPTH NOT TO EXCEED 60".
3. DEPTH AND MATERIALS MAY CHANGE DUE TO FIELD CONDITIONS UNDER THE DIRECTION OF THE ENGINEER.
4. IF DEEPER LOW POINT (LP) IS REQUIRED, DEP APPROVAL WILL BE REQUIRED.
5. STONE COLUMN AND/OR PEDESTRIAN PATHWAY WHEN REQUIRED.
6. WHERE (EL___) IS INDICATED, ELEVATION TO BE SHOWN IN CONTRACT PLANS.
7. HEADER NOTCHES ARE PLACED EQUALLY SPACED 4' TO 7' APART.
8. 5' (MIN.) DISTANCE BETWEEN STONE COLUMNS; NUMBER OF STONE COLUMNS AS REQUIRED BY DEP.
NOTES:
1. DEPTH OF SOIL AND STONE SHALL BE DIMENSIONED IN ACCORDANCE WITH STORMWATER GREENSTREET CALCULATIONS.
2. IMPERVIOUS ROW AREA IS CALCULATED IN TDA ANALYSIS SPREADSHEET.
3. ENGINEERED SOIL DEPTH TO BE 18", AND 24" IF TREE IS PRESENT. STONE DEPTH VARIES. TOTAL DEPTH NOT TO EXCEED 60".
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5. IF DEEPER LOW POINT (LP) IS REQUIRED, DEP APPROVAL WILL BE REQUIRED.
6. STONE COLUMN AND/OR PEDESTRIAN PATHWAY WHEN REQUIRED.
7. WHERE \( EL_{___} \) IS INDICATED. ELEVATION TO BE SHOWN IN CONTRACT PLANS.
8. PEDESTRIAN PATHWAY CULVERT COVER TO BE CONCRETE WHEN ELEVATION AT SIDEWALK CURB IS HIGHER THAN ELEVATION AT ROADWAY CURB. OTHERWISE, CULVERT COVER TO BE METAL GRATED WITH PATHWAY SLOPING TOWARDS GRATING ON EITHER SIDE.

CONCRETE HEADER - NOTCH DETAILS

MANAGING DIRECTOR,
GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION
06-17-2020
DATE
NOTES:
1. DEPTH OF SOIL AND STONE SHALL BE DIMENSIONED IN ACCORDANCE WITH STORMWATER GREENSTREET CALCULATIONS.
2. ENGINEERED SOIL DEPTH TO BE 18", AND 24" IF TREE IS PRESENT. STONE DEPTH VARIES. TOTAL DEPTH NOT TO EXCEED 60".
3. DEPTH AND MATERIALS MAY CHANGE DUE TO FIELD CONDITIONS UNDER THE DIRECTION OF THE ENGINEER.
4. IF DEEPER LOW POINT (L.P.) IS REQUIRED, DEP APPROVAL WILL BE REQUIRED.
5. PEDESTRIAN PATHWAY WHEN REQUIRED.
6. WHERE (EL___) IS INDICATED, ELEVATION TO BE SHOWN IN CONTRACT PLANS.
7. HEADER NOTCHES ARE PLACED EQUALLY SPACED 4' TO 7' APART.
NOTES:
1. DEPTH OF SOIL AND STONE SHALL BE DIMENSIONED IN ACCORDANCE WITH STORMWATER GREENSTREET CALCULATIONS.
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6. WHERE (EL__) IS INDICATED, ELEVATION TO BE SHOWN IN CONTRACT PLANS.
7. HEADER NOTCHES ARE PLACED EQUALLY SPACED 4" TO 7" APART.
8. 5" (MIN.) DISTANCE BETWEEN STONE COLUMNS; NUMBER OF STONE COLUMNS AS REQUIRED BY DEP.
R.O.W. STORMWATER GREENSTREET (ROWSGS) TYPE 2A-WITH STONE COLUMNS
LAYOUT
- NO CONNECTION TO SEWERS

NOTES:
1. DEPTH OF SOIL AND STONE SHALL BE DIMENSIONED IN ACCORDANCE WITH STORMWATER GREENSTREET CALCULATIONS.
2. IMPERVIOUS ROW AREA IS CALCULATED IN TDA ANALYSIS SPREADSHEET.
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ENGINEERED SOIL
18"-24" DEPTH FROM LOW POINT
FOR 3"-6" DEEP DEPRESSION

L-SHAPED EDGING WITH MINIMUM 9" STAKES FILLED WITH OPEN-GRATED STONE
WRAP STONE IN GEOTEXTILE (TOP AND SIDES ONLY)
UNDISTURBED SOIL
STONE COLUMN (TYP.)

SECTION B-B
AT MIDSECTION (STONE COLUMN)

SECTION C-C
AT PEDESTRIAN PATHWAY

CONCRETE PEDESTRIAN PATHWAY
CONCRETE HEADER
EXISTING ROADWAY

CONCRETE HEADER - NOTCH DETAILS

P.E.
MANAGING DIRECTOR,
GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION
06-17-2020
DATE
NOTES:

1. DEPTH OF SOIL AND STONE SHALL BE DIMENSIONED IN ACCORDANCE WITH STORMWATER GREENSTREET CALCULATIONS.
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5. PEDESTRIAN PATHWAY WHEN REQUIRED.
6. WHERE (EL___) IS INDICATED. ELEVATION TO BE SHOWN IN CONTRACT PLANS.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

R.O.W. STORMWATER GREENSTREET (ROWSGS) TYPE 3 LAYOUT

- NO CONNECTION TO SEWERS

MANAGING DIRECTOR,
GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION

06-17-2020
GALVANIZED D STEEL BAR GRATE, BAR SIZE SHALL BE 1" x 3/16"
EDGE OF PLATE FLUSH AND TRUE

EXPANSION JOINT WITH JOINT SEALER
STEEL TREE PIT GUARD - SEE DRAWING GI-601, GI-602 & GI-603
6" x 12" STONE STRIP BED
L-SHAPED EDGING WITH MINIMUM 9" STAKES SEE DRAWING GI-204
ENGINEERED SOIL - GEOTEXTILE

#3 REINFORCEMENT SPACED EVENLY WITH 2" CLEARANCE ON ALL SIDES
PRECAST CONCRETE CULVERT COVER
6" x 12" STONE STRIP BED
L-SHAPED EDGING WITH MINIMUM 9" STAKES SEE DRAWING GI-204
ENGINEERED SOIL - GEOTEXTILE

#3 REINFORCEMENT SPACED EVENLY WITH 2" CLEARANCE ON ALL SIDES
PRECAST CONCRETE CULVERT COVER
6" x 12" STONE STRIP BED
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ENGINEERED SOIL - GEOTEXTILE

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ENGINEERED SOIL - GEOTEXTILE

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ENGINEERED SOIL - GEOTEXTILE

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ENGINEERED SOIL - GEOTEXTILE

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PRECAST CONCRETE CULVERT COVER
6" x 12" STONE STRIP BED
L-SHAPED EDGING WITH MINIMUM 9" STAKES SEE DRAWING GI-204
ENGINEERED SOIL - GEOTEX
GI-400
RIGHT-OF-WAY POROUS PAVEMENT
GREEN INFRASTRUCTURE
GUIDELINES
GUIDELINE FOR R.O.W. PRECAST POROUS CONCRETE PAVEMENT - NO CONNECTION TO SEWERS

**NOTES:**
1. CASTINGS INCLUDE BUT NOT LIMITED TO MANHOLES, UTILITY VALVES AND UTILITY GRATES
2. REFER TO GI-205 FOR UTILITY SLEEving DETAILS

**DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**BUREAU OF ENVIRONMENTAL PLANNING & ANALYSIS - GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION**

MANAGING DIRECTOR,
GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION

P.E. 06-17-2020

- REMOVE AND REPLACE 2" ASPHALT WEARING COURSE
- CAST-IN-PLACE CONCRETE. DEPTH AND REINFORCEMENT PER DESIGN PLANS
- CLEAN OPEN-GRADED STONE BASE
- 6" CONCRETE HEADER; 0" REVEAL
- EXPANSION JOINT (TYP.)
- PRECAST POROUS PANEL
- 6" CONCRETE HEADER EXISTING ROADWAY
- LEVELING COURSE
- GEOGRID LINER
- HDPE BARRIER
- 1/8" OPEN JOINT (SPACER PLATE SHALL BE PROVIDED)

**SECTION A-A**

- CONCRETE HEADER: 0" REVEAL
- EXPANSION JOINT (TYP.)
- PRECAST POROUS CONCRETE PANEL
- NEW CURB SIDEWALK
- SLOPE TO MATCH EXISTING
- LEVELING COURSE
- GEOTEXTILE FABRIC
- UNDISTURBED SOIL
- CONCRETE COLLAR
- SEE GI-205 FOR DETAILS

**SECTION C-C**

- LONGITUDINAL SLOPES > 5%
- HOPE BARRIER

**SECTION B-B**

- CLEAN OPEN-GRADED STONE BASE
- GEOGRID LINER
GI-500
PLANTING PLANS FOR
RIGHT-OF-WAY GREEN INFRASTRUCTURE PRACTICES
NOTES FOR CONSTRUCTION:
1. PLANTING LOCATIONS ARE SPECIFIC TO EACH TYPE SHOWN.
2. PLANTING PLANS ARE DETERMINED PER THE SCHEDULE ON PLANTING PLANS FOR STANDARD ROWB PAGES.
3. TREES TO BE INCLUDED IN PLANTING PLANS UPON DIRECTION OF DPR, AND SHOULD CONFORM TO DPR’S STREET TREE SIZE AND FORM. THE AREA DIRECTLY ABOVE THE TREE ROOTBALL (1.5’ RADIUS) IS NOT TO BE PLANTED WITH SHRUBS, PERENNIALS, OR GRASSES, IN ACCORDANCE WITH DPR REQUIREMENTS.
4. ALL PLANTS SHALL BE WELL ROOTED AND VIGOROUS. BULBS FOR FALL PLANTING ONLY.
5. SHRUBS SHALL TAKE A MULTI-STEM FORM.
6. ADDITIONAL PLANTS PLANTED AS SHOWN (IN GREY) ONLY IN ROWB WITH NO TREE.
7. AREA DIRECTLY IN FRONT OF INLET SHALL REMAIN UNPLANTED AND RESERVED FOR SEDIMENT CONTROL.
### Standard Planting Schedule for Wet and Dry R.O.W. Bioswales and R.O.W. Rain Gardens

#### Wet Sites

**Mixed Sun and Shade (East/West-Facing) Plant Schedule for Wet Sites**

<table>
<thead>
<tr>
<th>Location</th>
<th>Type</th>
<th>Botanical Name</th>
<th>Common Name</th>
<th>Size</th>
<th>Spacing</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Shrub</td>
<td>Cornus sericea 'Kelseys Dwarf'</td>
<td>Red-OSier Dogwood</td>
<td>2-Gallon</td>
<td>18&quot; O.C</td>
</tr>
<tr>
<td>B</td>
<td>Grass</td>
<td>Acorus americanus</td>
<td>American Sweetflag</td>
<td>1-Gallon</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Perennial</td>
<td>Solidago sempervirens</td>
<td>seaside Goldenroo</td>
<td>1-Gallon</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bulb</td>
<td>Narcissus 'Dutch Master'</td>
<td>Trumpet Daffodil</td>
<td>Bulb</td>
<td>Cluster 2 at</td>
</tr>
</tbody>
</table>

**Shady (North-Facing) Plant Schedule for Wet Sites**

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<th>Location</th>
<th>Type</th>
<th>Botanical Name</th>
<th>Common Name</th>
<th>Size</th>
<th>Spacing</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Shrub</td>
<td>Ilex glabra 'Shamrock'</td>
<td>Shamrock Inkberry</td>
<td>2-Gallon</td>
<td>18&quot; O.C</td>
</tr>
<tr>
<td>B</td>
<td>Perennial</td>
<td>Eupatorium rugosum 'Chocolate'</td>
<td>Snakeroot</td>
<td>1-Gallon</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Grass</td>
<td>Chasmanthium latifolium</td>
<td>Northern Sea Oats</td>
<td>1-Gallon</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bulb</td>
<td>Narcissus 'Dutch Master'</td>
<td>Trumpet Daffodil</td>
<td>Bulb</td>
<td>Cluster 2 at</td>
</tr>
</tbody>
</table>

**Sunny (South-Facing) Plant Schedule for Wet Sites**

<table>
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<tr>
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<th>Botanical Name</th>
<th>Common Name</th>
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<tr>
<td></td>
<td>Bulb</td>
<td>Narcissus 'Dutch Master'</td>
<td>Trumpet Daffodil</td>
<td>Bulb</td>
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</tr>
</tbody>
</table>

#### Dry Sites

**Mixed Sun and Shade (East/West-Facing) Plant Schedule for Dry Sites**

<table>
<thead>
<tr>
<th>Location</th>
<th>Type</th>
<th>Botanical Name</th>
<th>Common Name</th>
<th>Size</th>
<th>Spacing</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Shrub</td>
<td>Aronia arbutifolia 'Brilliantissima'</td>
<td>Chokeberry</td>
<td>2-Gallon</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Grass</td>
<td>Chasmanthurum latifolium</td>
<td>Northern Sea Oats</td>
<td>1-Gallon</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Perennial</td>
<td>Rudebeckia laciniata</td>
<td>Cutleaf Coneflower</td>
<td>1-Gallon</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bulb</td>
<td>Narcissus 'Dutch Master'</td>
<td>Trumpet Daffodil</td>
<td>Bulb</td>
<td>Cluster 2 at</td>
</tr>
</tbody>
</table>

**Shady (North-Facing) Plant Schedule for Dry Sites**

<table>
<thead>
<tr>
<th>Location</th>
<th>Type</th>
<th>Botanical Name</th>
<th>Common Name</th>
<th>Size</th>
<th>Spacing</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Shrub</td>
<td>Ilex glabra 'Shamrock'</td>
<td>Shamrock Inkberry</td>
<td>2-Gallon</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Perennial</td>
<td>Eupatorium rugosum 'Chocolate'</td>
<td>Snakeroot</td>
<td>1-Gallon</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Grass</td>
<td>Chasmanthium latifolium</td>
<td>Northern Sea Oats</td>
<td>1-Gallon</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bulb</td>
<td>Narcissus 'Dutch Master'</td>
<td>Trumpet Daffodil</td>
<td>Bulb</td>
<td>Cluster 2 at</td>
</tr>
</tbody>
</table>

**Sunny (South-Facing) Plant Schedule for Dry Sites**

<table>
<thead>
<tr>
<th>Location</th>
<th>Type</th>
<th>Botanical Name</th>
<th>Common Name</th>
<th>Size</th>
<th>Spacing</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Shrub</td>
<td>Aronia arbutifolia 'Brilliantissima'</td>
<td>Chokeberry</td>
<td>2-Gallon</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Grass</td>
<td>Chasmanthurum latifolium</td>
<td>Northern Sea Oats</td>
<td>1-Gallon</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Perennial</td>
<td>Rudebeckia laciniata</td>
<td>Cutleaf Coneflower</td>
<td>1-Gallon</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bulb</td>
<td>Narcissus 'Dutch Master'</td>
<td>Trumpet Daffodil</td>
<td>Bulb</td>
<td>Cluster 2 at</td>
</tr>
</tbody>
</table>

### Notes to Designer:

1. Planting plans are based on amount of sun received in each location.
2. To determine amount of sun received by each location, consider directional orientation (North/South/East/West) and height of adjacent buildings.
3. Planting plans are based on hydrologic regime (Wet/Dry or Average).
4. To determine wet/dry/average, consider size of tributary drainage area and number of adjacent bioswales. Estimate individual tributary area per bioswale by consulting the interim geotechnical report summary table for available upstream distance and minimum required upstream distance.
5. Adaptive direction, including palette changes, may be given to contractors for plant replacement with agency approval.
NOTES TO DESIGNER:

1. PLANTING PLANS ARE BASED ON AMOUNT OF SUN RECEIVED IN EACH LOCATION.
2. TO DETERMINE AMOUNT OF SUN RECEIVED BY EACH LOCATION, CONSIDER DIRECTIONAL ORIENTATION (NORTH/SOUTH/EAST/WEST) AND HEIGHT OF ADJACENT BUILDINGS.
3. INDUSTRIAL VS. RESIDENTIAL PLANTING PLANS ARE BASED ON HIGH VS. LOW PEDESTRIAN TRAFFIC AREAS.
4. ADAPTIVE DIRECTION, INCLUDING PALETTE CHANGES, MAY BE GIVEN TO CONTRACTORS FOR PLANT REPLACEMENT WITH AGENCY APPROVAL.

**SUNNY (SOUTH-FACING) PLANT SCHEDULE FOR AVERAGE SITES**

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>TYPE</th>
<th>BOTANICAL NAME</th>
<th>COMMON NAME</th>
<th>SIZE</th>
<th>SPACING</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>SHRUB</td>
<td>ARONIA ARBUTIFOLIA 'BRILLIANTISSIMA'</td>
<td>CHOKEBERRY</td>
<td>2-GALLON</td>
<td>18&quot; O.C.</td>
</tr>
<tr>
<td>B</td>
<td>PERENNIAL</td>
<td>AEGLEPIAS INCARNATA</td>
<td>SWAMP MILKWEED</td>
<td>1-GALLON</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>GRASS</td>
<td>PANICUM VIBRUM 'SHENANDOAH'</td>
<td>SWITCH GRASS</td>
<td>1-GALLON</td>
<td></td>
</tr>
</tbody>
</table>
| *        | BULB  | NARCISSUS 'DUTCH MASTER'                 | TRUMPET DAFFODIL    | BULBS   | CLUSTER 2 A.T.

**SHADY (NORTH-FACING) PLANT SCHEDULE FOR AVERAGE SITES**

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>TYPE</th>
<th>BOTANICAL NAME</th>
<th>COMMON NAME</th>
<th>SIZE</th>
<th>SPACING</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>SHRUB</td>
<td>ILEX GLABRA 'SHAMROCK'</td>
<td>SHAMROCK INKBERRY</td>
<td>2-GALLON</td>
<td>18&quot; O.C.</td>
</tr>
<tr>
<td>B</td>
<td>PERENNIAL</td>
<td>PYCNAMTHEMUM MUTICUM</td>
<td>SHORT TOOTHED MOUNTAIN MINT</td>
<td>1-GALLON</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>PERENNIAL</td>
<td>EUPATORIUM RUGOSUM 'CHOCOLATE'</td>
<td>SNAKE ROOT</td>
<td>1-GALLON</td>
<td></td>
</tr>
</tbody>
</table>
| *        | BULB  | NARCISSUS 'DUTCH MASTER'                 | TRUMPET DAFFODIL    | BULBS   | CLUSTER 2 A.T.

**MIXED SUN AND SHADE (EAST/WEST-FACING) PLANT SCHEDULE FOR AVERAGE SITES**

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>TYPE</th>
<th>BOTANICAL NAME</th>
<th>COMMON NAME</th>
<th>SIZE</th>
<th>SPACING</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>SHRUB</td>
<td>CORNUS SERICEA 'KELSEY'S DWARF'</td>
<td>RED-OISER DOGWOOD</td>
<td>2-GALLON</td>
<td>18&quot; O.C.</td>
</tr>
<tr>
<td>B</td>
<td>PERENNIAL</td>
<td>EUPATORIUM DUBIUM 'LITTLE JOE'</td>
<td>JOE PYE WEDD</td>
<td>1-GALLON</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>GRASS</td>
<td>CAREX PENSYLVANICA</td>
<td>PENNSYLVANIA SEDGE</td>
<td>1-GALLON</td>
<td></td>
</tr>
</tbody>
</table>
| *        | BULB  | NARCISSUS 'DUTCH MASTER'               | TRUMPET DAFFODIL  | BULBS   | CLUSTER 2 A.T.

**COMBINATION WET/DRY SITES**

**SUNNY (SOUTH-FACING) PLANT SCHEDULE FOR AVERAGE SITES**

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>TYPE</th>
<th>BOTANICAL NAME</th>
<th>COMMON NAME</th>
<th>SIZE</th>
<th>SPACING</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>SHRUB</td>
<td>ARONIA ARBUTIFOLIA 'BRILLIANTISSIMA'</td>
<td>CHOKEBERRY</td>
<td>2-GALLON</td>
<td>18&quot; O.C.</td>
</tr>
<tr>
<td>B</td>
<td>PERENNIAL</td>
<td>AEGLEPIAS INCARNATA</td>
<td>SWAMP MILKWEED</td>
<td>1-GALLON</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>GRASS</td>
<td>PANICUM VIBRUM 'SHENANDOAH'</td>
<td>SWITCH GRASS</td>
<td>1-GALLON</td>
<td></td>
</tr>
</tbody>
</table>
| *        | BULB  | NARCISSUS 'DUTCH MASTER'                 | TRUMPET DAFFODIL    | BULBS   | CLUSTER 2 A.T.

**SHADY (NORTH-FACING) PLANT SCHEDULE FOR AVERAGE SITES**

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>TYPE</th>
<th>BOTANICAL NAME</th>
<th>COMMON NAME</th>
<th>SIZE</th>
<th>SPACING</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>SHRUB</td>
<td>ILEX GLABRA 'SHAMROCK'</td>
<td>SHAMROCK INKBERRY</td>
<td>2-GALLON</td>
<td>18&quot; O.C.</td>
</tr>
<tr>
<td>B</td>
<td>PERENNIAL</td>
<td>PYCNAMTHEMUM MUTICUM</td>
<td>SHORT TOOTHED MOUNTAIN MINT</td>
<td>1-GALLON</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>PERENNIAL</td>
<td>EUPATORIUM RUGOSUM 'CHOCOLATE'</td>
<td>SNAKE ROOT</td>
<td>1-GALLON</td>
<td></td>
</tr>
</tbody>
</table>
| *        | BULB  | NARCISSUS 'DUTCH MASTER'                 | TRUMPET DAFFODIL    | BULBS   | CLUSTER 2 A.T.

**MIXED SUN AND SHADE (EAST/WEST-FACING) PLANT SCHEDULE FOR AVERAGE SITES**

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>TYPE</th>
<th>BOTANICAL NAME</th>
<th>COMMON NAME</th>
<th>SIZE</th>
<th>SPACING</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>SHRUB</td>
<td>CORNUS SERICEA 'KELSEY'S DWARF'</td>
<td>RED-OISER DOGWOOD</td>
<td>2-GALLON</td>
<td>18&quot; O.C.</td>
</tr>
<tr>
<td>B</td>
<td>PERENNIAL</td>
<td>EUPATORIUM DUBIUM 'LITTLE JOE'</td>
<td>JOE PYE WEDD</td>
<td>1-GALLON</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>GRASS</td>
<td>CAREX PENSYLVANICA</td>
<td>PENNSYLVANIA SEDGE</td>
<td>1-GALLON</td>
<td></td>
</tr>
</tbody>
</table>
| *        | BULB  | NARCISSUS 'DUTCH MASTER'               | TRUMPET DAFFODIL  | BULBS   | CLUSTER 2 A.T.

NOTES TO DESIGNER:

PLANTING PLANS SELECTION CRITERIA:
1. PLANTING PLANS ARE BASED ON AMOUNT OF SUN RECEIVED IN EACH LOCATION.
2. TO DETERMINE AMOUNT OF SUN RECEIVED BY EACH LOCATION, CONSIDER DIRECTIONAL ORIENTATION (NORTH/SOUTH/EAST/WEST) AND HEIGHT OF ADJACENT BUILDINGS.
3. INDUSTRIAL VS. RESIDENTIAL PLANTING PLANS ARE BASED ON HIGH VS. LOW PEDESTRIAN TRAFFIC AREAS.
4. ADAPTIVE DIRECTION, INCLUDING PALETTE CHANGES, MAY BE GIVEN TO CONTRACTORS FOR PLANT REPLACEMENT WITH AGENCY APPROVAL.
STANDARD PLANTING SCHEDULE AND LAYOUT FOR R.O.W. TYPE 1, TYPE 2, AND TYPE 3 GREENSTRIPS

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>TYPE I</th>
<th>TYPE II</th>
<th>TYPE III</th>
<th>SIZE</th>
<th>SPACING</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>12</td>
<td>9</td>
<td>7</td>
<td>2-GALLON</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>11</td>
<td>8</td>
<td>6</td>
<td>1-GALLON</td>
<td></td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>8</td>
<td>6</td>
<td>BULB</td>
<td></td>
</tr>
</tbody>
</table>

NOTES TO DESIGNER:
PLANTING PLAN SELECTION CRITERIA:
1. PLANTING PLANS ARE BASED ON AMOUNT OF SUN RECEIVED IN EACH LOCATION.
2. TO DETERMINE AMOUNT OF SUN RECEIVED BY EACH LOCATION, CONSIDER DIRECTIONAL ORIENTATION (NORTH/SOUTH/EAST/WEST) AND HEIGHT OF ADJACENT BUILDINGS.
3. PLANTING PLANS ARE BASED ON HYDROLOGIC REGIME (WET/DRY OR AVERAGE).
4. TO DETERMINE WET/DRY/AVERAGE, CONSIDER SIZE OF TRIBUTARY DRAINAGE AREA AND NUMBER OF ADJACENT BIOSWALVES. ESTIMATE INDIVIDUAL TRIBUTARY AREA PER BIOSWALE BY CONSULTING THE INTERIM GEOTECHNICAL REPORT SUMMARY SHEET.
5. ADAPTIVE DIRECTION, INCLUDING PALETTE CHANGES, MAY BE GIVEN TO CONTRACTORS FOR PLANT REPLACEMENT WITH AGENCY APPROVAL.

NOTES FOR CONSTRUCTION:
1. PLANTING LOCATIONS ARE SPECIFIC TO EACH PLANT TYPE SHOWN.
2. PLANTING PLANS ARE DETERMINED PER THE SCHEDULE ON PLANTING PLANS FOR STANDARD ROWS PAGES GI-501B AND GI-501C.
3. ALL PLANTS SHALL BE WELL ROOTED AND VIGOROUS. SHRUBS SHALL HAVE A MULTI-STEM FORM.
4. BULBS ARE ONLY TO BE PLANTED IN FALL.
5. AREA DIRECTLY IN FRONT OF INLET SHALL REMAIN UNPLANTED AND RESERVED FOR SEDIMENT CONTROL.

MANAGING DIRECTOR,
GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION
06-17-2020
INDUSTRIAL ROWBS IN COMMERCIAL AND INDUSTRIAL AREAS

TYPE I

UNDISTURBED SOIL
OPEN-GRADED STONE
WHEN SPECIFIED, 4 TO 6 PLANTS TO BE INSTALLED IN PLACE OF TREE
ALL PLANTS PLANTED AT GRADE, NOT ABOVE OR BELOW, WITHOUT MOUNDED SOIL

TYPE II

PLANTING AS REQUIRED
PLANTING PER DPR STANDARDS
ROOT FLARE OF TREE EXPOSED
NO PLANTING ABOVE TREE ROOT BALL

TYPE III

LOOSEN AND SCORE ROOTS OF ALL POTTED PLANTS BEFORE PLANTING
PLANTS HAVE WATER RETAINING SOIL SAUCERS

NOTES FOR CONSTRUCTION:
1. PLANTING LOCATIONS ARE SPECIFIC TO THE ORIENTATION SHOWN. SPECIES AND PLANS PER DRAWINGS.
2. THE AREA DIRECTLY ABOVE THE TREE ROOTBALL (1.5' RADIUS) IS NOT TO BE PLANTED WITH SHRUBS, PERENNIALS OR GRASSES.
3. ALL AREAS ARE TO RECEIVE 3" MULCH COVER UPON PLANTING. MULCH MUST NOT COME INTO CONTACT WITH WOODY STEMS OF PLANTS.
4. ALL PLANTS SHALL BE WELL ROOTED AND VIGOROUS. SHRUBS SHALL HAVE A MULTI-STEM FORM.
5. BULBS ARE ONLY TO BE PLANTED IN FALL

CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL PLANNING & ANALYSIS – GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION
STANDARD PLANTING LAYOUT FOR TYPE D R.O.W INDUSTRIAL BIOSWALES

PLANTING DETAIL

NOT TO SCALE

MANAGING DIRECTOR,
GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION
06-17-2020
RESIDENTIAL ROWBS IN RESIDENTIAL AREAS

TYPE I

RESIDENTIAL ROWBS IN RESIDENTIAL AREAS

TYPE II

RESIDENTIAL ROWBS IN RESIDENTIAL AREAS

TYPE III

RESIDENTIAL ROWBS IN RESIDENTIAL AREAS

NOTES FOR CONSTRUCTION:
1. PLANTING LOCATIONS ARE SPECIFIC TO THE ORIENTATION SHOWN. SPECIES AND PLANTS PER DRAWING.
2. OPEN-GRADED STONE (IS SPECIFIED) IS NOT TO BE PLANTED WITH SHRUBS, PERENNIALS, OR GRASSES.
3. ALL AREAS ARE TO RECEIVE 3" MULCH COVER. MULCH NOT TO COME INTO CONTACT WITH WOODY STEMS OF PLANTS.
4. ALL PLANTS SHALL BE WELL ROOTED AND VIGOROUS. SHRUBS SHALL HAVE A MULTI-STEM FORM.
5. BULBS ARE ONLY TO BE PLANTED IN FALL.

PLANTING DETAIL

BULB PLANTING DEPTH IS 2X HEIGHT OF BULB

PLANTS HAVE WATER RETAINING SOIL SAUCERS

TOP LAYER: 2" MULCH

NO PLANTING ABOVE TREE ROOTBALL

WHEN SPECIFIED, 4 TO 6 PLANTS TO BE INSTALLED IN PLACE OF TREE

ROOT BALL OF TREE EXPOSED

MOIST MULCH SHALL BE 6" AWAY FROM WOODY STEMS OF TREES AND SHRUBS

TREES PLANTING AS REQUIRED PER DPR STANDARDS

ROOT BALL OF TREE EXPOSED

NO PLANTING ABOVE TREE ROOTBALL

NO PLANTING ABOVE TREE ROOTBALL

TOPSOIL

UNDISTURBED SOIL

OPEN GRORED STONE

LOosen and score roots of all potted plants before planting

PLANTING DETAIL

NOT TO SCALE

PLANTING DETAIL

MANAGING DIRECTOR,
GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION

06-17-2020

P.E.
## STANDARD PLANTING SCHEDULE FOR TYPE D R.O.W. INDUSTRIAL BIOSWALES

### INDUSTRIAL SUN: Type I

<table>
<thead>
<tr>
<th>CITY</th>
<th>KEY</th>
<th>SYMBOL</th>
<th>TYPE</th>
<th>BOTANICAL NAME</th>
<th>COMMON NAME</th>
<th>SIZE</th>
<th>SPACING</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>Ech</td>
<td>A</td>
<td>PERENNIAL</td>
<td>Ceanothus 'Cheyenne Spirit'</td>
<td>CONIFLOR</td>
<td>2-GALLON</td>
<td>18&quot;O.C.</td>
</tr>
<tr>
<td>11</td>
<td>Ech</td>
<td>B</td>
<td>PERENNIAL</td>
<td>Aronia 'Butterfly' 'Bella Hirtissima'</td>
<td>CRABSTRAWBERRY</td>
<td>1-GALLON</td>
<td>18&quot;O.C.</td>
</tr>
<tr>
<td>10</td>
<td>Snu</td>
<td>B</td>
<td>SHRUB</td>
<td>Sambucus nigra</td>
<td>CHOICE</td>
<td>1-GALLON</td>
<td>18&quot;O.C.</td>
</tr>
<tr>
<td>9</td>
<td>Snu</td>
<td>C</td>
<td>GRASSES</td>
<td>Sorgiastrum nutans</td>
<td>INDIAN GRASS</td>
<td>1-GALLON</td>
<td>18&quot;O.C.</td>
</tr>
<tr>
<td>8</td>
<td>Snu</td>
<td>D</td>
<td>PERENNIAL</td>
<td>Nepeta 'Walker's Low'</td>
<td>CATMINT</td>
<td>1-GALLON</td>
<td>18&quot;O.C.</td>
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</tbody>
</table>

### INDUSTRIAL SHADE: Type I

<table>
<thead>
<tr>
<th>CITY</th>
<th>KEY</th>
<th>SYMBOL</th>
<th>TYPE</th>
<th>BOTANICAL NAME</th>
<th>COMMON NAME</th>
<th>SIZE</th>
<th>SPACING</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>Snu</td>
<td>A</td>
<td>GRASSES</td>
<td>Carex appalachica</td>
<td>CARRIAGE</td>
<td>1-GALLON</td>
<td>18&quot;O.C.</td>
</tr>
<tr>
<td>12</td>
<td>Snu</td>
<td>B</td>
<td>GRASSES</td>
<td>Brighamia latifolium</td>
<td>NORTHERN SEA OATS</td>
<td>1-GALLON</td>
<td>18&quot;O.C.</td>
</tr>
<tr>
<td>11</td>
<td>Snu</td>
<td>C</td>
<td>PERENNIAL</td>
<td>Solidago caesia</td>
<td>BLUE STEM GOLDENROD</td>
<td>1-GALLON</td>
<td>18&quot;O.C.</td>
</tr>
<tr>
<td>10</td>
<td>Snu</td>
<td>D</td>
<td>PERENNIAL</td>
<td>Echinochloa crypta</td>
<td>PIGTAIL</td>
<td>1-GALLON</td>
<td>18&quot;O.C.</td>
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</tbody>
</table>

### INDUSTRIAL SUN: Type II

<table>
<thead>
<tr>
<th>CITY</th>
<th>KEY</th>
<th>SYMBOL</th>
<th>TYPE</th>
<th>BOTANICAL NAME</th>
<th>COMMON NAME</th>
<th>SIZE</th>
<th>SPACING</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>Ech</td>
<td>A</td>
<td>PERENNIAL</td>
<td>Eupatorium hyssopifolium</td>
<td>CONEFLOWER</td>
<td>2-GALLON</td>
<td>18&quot;O.C.</td>
</tr>
<tr>
<td>11</td>
<td>Ech</td>
<td>B</td>
<td>PERENNIAL</td>
<td>Aronia 'Butterfly' 'Bella Hirtissima'</td>
<td>CRABSTRAWBERRY</td>
<td>1-GALLON</td>
<td>18&quot;O.C.</td>
</tr>
<tr>
<td>10</td>
<td>Snu</td>
<td>B</td>
<td>SHRUB</td>
<td>Sambucus nigra</td>
<td>CHOICE</td>
<td>1-GALLON</td>
<td>18&quot;O.C.</td>
</tr>
<tr>
<td>9</td>
<td>Snu</td>
<td>C</td>
<td>GRASSES</td>
<td>Pycnanthemum muticum</td>
<td>CLUSTERED MOUNTAIN MINT</td>
<td>1-GALLON</td>
<td>18&quot;O.C.</td>
</tr>
<tr>
<td>8</td>
<td>Snu</td>
<td>D</td>
<td>PERENNIAL</td>
<td>Solidago caesia</td>
<td>BLUE STEM GOLDENROD</td>
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### INDUSTRIAL SHADE: Type II

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<tr>
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<tr>
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### INDUSTRIAL SUN: Type III

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<tr>
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<td>CATMINT</td>
<td>1-GALLON</td>
<td>18&quot;O.C.</td>
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### INDUSTRIAL SHADE: Type III

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<td>1-GALLON</td>
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<tr>
<td>4</td>
<td>Snu</td>
<td>C</td>
<td>GRASSES</td>
<td>Sambucus nigra</td>
<td>CHOICE</td>
<td>1-GALLON</td>
<td>18&quot;O.C.</td>
</tr>
<tr>
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<td>D</td>
<td>PERENNIAL</td>
<td>Nepeta 'Walker's Low'</td>
<td>CATMINT</td>
<td>1-GALLON</td>
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### ADDITIONAL PLANTING IN ROW BIOSWALE WITH NO TREE

- **INDUSTRIAL SUN: Type I**
  - 3
  - 3
  - **INDUSTRIAL SHADE: Type I**
  - 3
  - 3
  - **INDUSTRIAL SUN: Type II**
  - 3
  - 3
  - **INDUSTRIAL SHADE: Type II**
  - 3
  - 3
  - **INDUSTRIAL SUN: Type III**
  - 3
  - 3
  - **INDUSTRIAL SHADE: Type III**
  - 3
  - 3

**NOTES TO DESIGNER:**

1. PLANTING PLANS ARE BASED ON AMOUNT OF SUN RECEIVED IN EACH LOCATION.
2. TO DETERMINE AMOUNT OF SUN RECEIVED BY EACH LOCATION, CONSIDER DIRECTIONAL ORIENTATION (NORTH/SOUTH/EAST/WEST) AND HEIGHT OF ADJACENT BUILDINGS.
3. ADDITIONAL DIRECTION, INCLUDING PALETTE CHANGES, MAY BE GIVEN TO CONTRACTORS FOR PLANT REPLACEMENT WITH AGENCY APPROVAL.

**MANAGING DIRECTOR:**

**GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION**

**DATE:** 06-17-2020

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**BUREAU OF ENVIRONMENTAL PLANNING & ANALYSIS - GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION**

**DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**CITY OF NEW YORK**
### INDUSTRIAL MIXED SUN/SHADE - Type I

<table>
<thead>
<tr>
<th>QTY</th>
<th>KEY</th>
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<th>COMMON NAME</th>
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<tr>
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ADDITIONAL PLANTING IN ROW BIOSWALES WITH NO TREE

<table>
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<tr>
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<th>PENNSYLVANIA SEDGE</th>
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<tr>
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<tbody>
<tr>
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<td>CALICO ASTER</td>
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<tr>
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<td>SHRUB</td>
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<td>FRAGRANT SUMAC</td>
<td>1-GALLON</td>
<td>18&quot; O.C.</td>
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<td>6</td>
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<tr>
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ADDITIONAL PLANTING IN ROW BIOSWALES WITH NO TREE

<table>
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<tr>
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<th>18&quot; O.C.</th>
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### INDUSTRIAL MIXED SUN/SHADE - Type III

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<tr>
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<td>MEEHANIA CORDATA</td>
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<td>1-GALLON</td>
<td>18&quot; O.C.</td>
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ADDITIONAL PLANTING IN ROW BIOSWALES WITH NO TREE

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### NOTES TO DESIGNER:

**PLANTING PLAN SELECTION CRITERIA:**
1. PLANTING PLANS ARE BASED ON AMOUNT OF SUN RECEIVED IN EACH LOCATION.
2. TO DETERMINE AMOUNT OF SUN RECEIVED BY EACH LOCATION, CONSIDER DIRECTIONAL ORIENTATION (NORTH/SOUTH/EAST/WEST) AND HEIGHT OF ADJACENT BUILDINGS.
3. PLANTING PLANS ARE BASED ON HIGH VS. LOW PEDESTRIAN TRAFFIC AREAS.
4. ADAPTIVE DIRECTION, INCLUDING PALETTE CHANGES, MAY BE GIVEN TO CONTRACTORS FOR PLANT REPLACEMENT WITH AGENCY APPROVAL.

**PLANTING PLAN SELECTION CRITERIA:**
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2. TO DETERMINE AMOUNT OF SUN RECEIVED BY EACH LOCATION, CONSIDER DIRECTIONAL ORIENTATION (NORTH/SOUTH/EAST/WEST) AND HEIGHT OF ADJACENT BUILDINGS.
3. INDUSTRIAL VS. RESIDENTIAL PLANTING PLANS ARE BASED ON HIGH VS. LOW PEDESTRIAN TRAFFIC AREAS.
4. ADAPTIVE DIRECTION, INCLUDING PALETTE CHANGES, MAY BE GIVEN TO CONTRACTORS FOR PLANT REPLACEMENT WITH AGENCY APPROVAL.
### RESIDENTIAL SHADE GARDEN - Type I

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<tr>
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<td>BUTTERFLY MILKWEED</td>
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**ADDITIONAL PLANTING IN ROW BIOSWALE WITH NO TREE**

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**ADDITIONAL PLANTING IN ROW BIOSWALE WITH NO TREE**

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<td>CREEPING MINT</td>
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### NOTES TO DESIGNER:

PLANTING PLAN SELECTION CRITERIA:
1. PLANTING PLANS ARE BASED ON AMOUNT OF SUN RECEIVED IN EACH LOCATION.
2. TO DETERMINE AMOUNT OF SUN RECEIVED BECAUSE EACH LOCATION, CONSIDER DIRECTIONAL ORIENTATION (NORTH/SOUTHEAST/WEST) AND HEIGHT OF ADJACENT BUILDINGS.
3. INDUSTRIAL VS. RESIDENTIAL PLANTING PLANS ARE BASED ON HIGH VS. LOW PEDESTRIAN TRAFFIC AREAS.
4. ADAPTIVE DIRECTION, INCLUDING PALETTE CHANGES, MAY BE GIVEN TO CONTRACTORS FOR PLANT REPLACEMENT WITH AGENCY APPROVAL.

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**MANAGING DIRECTOR, GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION**

P.E. 06-17-2020  
DATE
# RESIDENTIAL MIXED SUN/SHADE - Type I

<table>
<thead>
<tr>
<th>QTY</th>
<th>KEY</th>
<th>SYMBOL</th>
<th>TYPE</th>
<th>BOTANICAL NAME</th>
<th>COMMON NAME</th>
<th>SIZE</th>
<th>SPACING</th>
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<tbody>
<tr>
<td>14</td>
<td>Cfl</td>
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<td>GRASSES</td>
<td>CAREX FLACCA 'BLUE ZINGER'</td>
<td>GLACIOUS SEDGE</td>
<td>1-GALLON</td>
<td>18&quot; O.C.</td>
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<tr>
<td>6</td>
<td>AA</td>
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<td>SHRUB</td>
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<td>CHOKEBERRY</td>
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<tr>
<td>12</td>
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<td>BLUESTAR</td>
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<td></td>
</tr>
<tr>
<td>8</td>
<td>Pvi</td>
<td>D</td>
<td>GRASSES</td>
<td>PANEUM VIRGATUM 'SHENANDOAH'</td>
<td>SWITCHGRASS</td>
<td></td>
<td></td>
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<tr>
<td>18</td>
<td>Ndu</td>
<td>E</td>
<td>BULB</td>
<td>NARCISSUS 'DUTCH MASTER'</td>
<td>TRUMPET DAFFODIL</td>
<td>CLUSTER OF 2</td>
<td>AS SHOWN</td>
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</table>

**ADDITIONAL PLANTING IN ROW BIOSWALE WITH NO TREE**

| 4   | Vsp | E/F   | PERENNIAL| VERONICA SPICATA 'GLORY' | ROYAL CANDLES | SPEEDWELL | 1-GALLON | 18" O.C. |

# RESIDENTIAL MIXED SUN/SHADE - Type II

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<th>QTY</th>
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<td>CHOKEBERRY</td>
<td>1-GALLON</td>
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<td>AMSONIA 'BLUE ICE'</td>
<td>BLUESTAR</td>
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<td>GRASSES</td>
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<td>SWITCHGRASS</td>
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<td>E</td>
<td>BULB</td>
<td>NARCISSUS 'DUTCH MASTER'</td>
<td>TRUMPET DAFFODIL</td>
<td>CLUSTER OF 2</td>
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**ADDITIONAL PLANTING IN ROW BIOSWALE WITH NO TREE**

| 4   | Vsp | E/F   | PERENNIAL| VERONICA SPICATA 'GLORY' | ROYAL CANDLES | SPEEDWELL | 1-GALLON | 18" O.C. |

# RESIDENTIAL MIXED SUN/SHADE - Type III

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<td>GLACIOUS SEDGE</td>
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<td>AMSONIA 'BLUE ICE'</td>
<td>BLUESTAR</td>
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<td>C</td>
<td>GRASSES</td>
<td>PANEUM VIRGATUM 'SHENANDOAH'</td>
<td>SWITCHGRASS</td>
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<td>E</td>
<td>BULB</td>
<td>NARCISSUS 'DUTCH MASTER'</td>
<td>TRUMPET DAFFODIL</td>
<td>CLUSTER OF 2</td>
<td>AS SHOWN</td>
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**ADDITIONAL PLANTING IN ROW BIOSWALE WITH NO TREE**

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<th>D</th>
<th>SHRUB</th>
<th>ARONIA ARBITROFILA 'BRIILLIANTISSIMA'</th>
<th>CHOKEBERRY</th>
<th>2-GALLON</th>
<th>18&quot; O.C.</th>
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<tr>
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**MANAGING DIRECTOR:**

**P.E.**

**DATE:** 06-17-2020
GI-600

STEEL GUARDS STANDARDS FOR RIGHT-OF-WAY GREEN INFRASTRUCTURE PRACTICES
NOTES:

1. FIELD MEASUREMENTS MUST BE TAKEN PRIOR TO FABRICATION.
2. ALL STEEL SHALL CONFORM TO SPECIFICATION C1015 OF THE A.I.S.I.
3. ALL JOINTS TO BE WELDED UNLESS NOTED OTHERWISE.
4. ALL STEEL TO BE PAINTED WITH ONE (1) SHOP COAT OF PRIMER AND ONE (1) SHOP COAT OF INTERMEDIATE AND ONE (1) SHOP COAT (OR ROLLED FIELD COAT) OF FINISH TOP COAT IN COMPLIANCE WITH THE REQUIREMENTS OF SUBSECTION 2.13.4 OF THE NYC DOT STANDARD HIGHWAY SPECIFICATIONS. THE COLOR OF TOP COAT SHALL BE BLACK.
5. RAILS TO FOLLOW LINE OF GRADE.
6. ALL STEEL TO BE SOLID STEEL.
7. ALL SPIKES OF TREE GUARD TO BE EMBEDDED IN CONCRETE ENCASEMENT AS PER STANDARD DRAWINGS
NOTES:

1. **FIELD MEASUREMENTS MUST BE TAKEN PRIOR TO FABRICATION.**
2. **ALL STEEL SHALL CONFORM TO SPECIFICATION C1015 OF THE A.I.S.I. (ALTERNATE STEEL PER DEP APPROVAL).**
3. **ALL JOINTS TO BE WELDED UNLESS NOTED OTHERWISE.**
4. **ALL POST AND GROOVE CONNECTIONS TO BE BOLTED.**
5. **ALL VISIBLE BOLTS TO BE COUNTERSUNK AND FLUSHED WITH THE POSTS.**
6. **ALL STEEL TO BE PAINTED WITH ONE (1) SHOP COAT OF PRIMER AND ONE (1) SHOP COAT OF INTERMEDIATE AND ONE (1) SHOP COAT (OR ROLLED FIELD COAT) OF FINISH TOP COAT IN COMPLIANCE WITH THE REQUIREMENTS OF SUBSECTION 2.13.4 OF THE NYC DOT STANDARD HIGHWAY SPECIFICATIONS. THE COLOR OF TOP COAT SHALL BE BLACK.**
7. **RAILS TO FOLLOW LINE OF GRADE.**
8. **ALL SPIKES OF TREE GUARD TO BE EMBEDDED IN CONCRETE PIERS AS PER STANDARD DRAWINGS.**
2"X2" STEEL POST
4" DIA CONCRETE ENCASMENT SPIKE BOLTED TO THE 2X2 POST

13/4"X13/4" STEEL POST
4" DIA CONCRETE ENCASMENT SPIKE BOLTED TO THE 2X2 POST

STEEL POST 2"X2"

STEEL POST 13/4"X13/4"

DETAIL A
SS 1/4" DIA SOCKET HEAD CAP SCREWS 1" LONG

DETAIL B
CONCRETE LOCKING HOLES Ø 9/16"

STEEL SPIKE LENGTH VARIES

POST AND GROOVE CONNECTION PLATE
NOTES:
1. EDUCATIONAL SIGN TO BE INSTALLED AS DIRECTED AT EITHER END OF THE GI PRACTICE
1.1. HOLES SHALL NOT PUNCH THROUGH FACE OF SIGN
1.2. GRAPHICS AS PER SPECIFICATIONS

P.E. 06-17-2020
MANAGING DIRECTOR,
GREEN INFRASTRUCTURE DESIGN & CONSTRUCTION
STEEL TREE GUARD MOUNT & EDUCATIONAL SIGN

MOUNT COMPONENTS

LEFT SIDE VIEW

RIGHT SIDE VIEW

SECTION

SECTION

FRONT VIEW

BACK VIEW

3/16" THICK BENT PLATE

2 - 3/16" THICK STEEL RIBS
1 7/8" x 1 1/2" x 3/16" BENT PLATE

5/16" DIA. HOLE FOR 1/4"-20 SCREWS

1/4" DIA. THREADED HOLES FOR SET SCREWS

TREE GUARD RAIL
1/4" DIA. SET SCREWS
1/4" - 20 TAMPER RESISTANT SCREW
HEX. NUT

3/16" THICK BENT PLATE

5/16" DIA. HOLE FOR 1/4"-20 SCREWS

1/4" DIA. THREADED HOLE FOR SET SCREWS

5/16" DIA. HOLES (TYP.)