Addendum No. 2
CSO-GC-SFS-OH CP3 - CSO Facilities for Gowanus Canal Construction Package CP3
November 5, 2026

ADDENDUM NO. 2 TO CONTRACT DOCUMENTS

PROJECT:	CSO Facilities for Gowanus Canal, OH CP3	**PROJECT NO.:**	CSO-GC-SFS-OH-CP3
OWNER:	NYCDEP	**DATE:**	November 5, 2026

To All Bidders:

Contractors submitting bids for the above-named project shall take note of the following changes, additions, deletions, clarifications, etc., in the Contract Documents, which shall become a part of and have precedence over anything contrarily shown or described in the Contract Documents, and all such shall be taken into consideration and be included in the Contractor's bid proposal.

(Please see attached pages.)

Plan holders wishing to submit bids should acknowledge receipt of this and all Addenda by listing the Addendum Numbers on the appropriate line of the Bid Booklet – Section B2, Acknowledgment of Addenda.



Changes to the Bid Documents

CONTRACT TERMS

Item 1. Schedule A, Contract Article 14-Date for Substantial Completion, REPLACE "1,333 consecutive calendar days" with "1,699 consecutive calendar days"

SPECIFICATIONS

Item 2. Specification Section 01 27 10 – Project Milestone and Scheduling Constraints, REPLACE Completion of Milestone from "731 ccds from NTP" to "1,096 from NTP" under paragraph 1.05.A.1.b.

Item 3. Specification Section 01 73 12 – Maintenance of Operations and Construction Staging, ADD paragraph 3.02.A.5.d:

"d. Hydraulic design assumptions for the 2nd Avenue PS shall be consistent with the information provided in the contract documents, including the Existing Conditions Report, and related record drawings and information included therein."

Item 4. Specification Section 01 73 14 – DEP Facilities Turnover, DELETE paragraph 1,05.E, and REPLACE with "Two tide gates are present within the 2nd Avenue Diversion Chamber. Flow exceeding the capacity of the 2nd Avenue Pump Station passes over the diversion weir, through the tide gates, into a sedimentation trap and then out to the Gowanus Canal. Maintenance of the diversion facility and the existing tide gates will be the responsibility of the Contractor."

Item 5. Specification Section 01 73 14 – DEP Facilities Turnover, MODIFY the second sentence of paragraph 3.01.B.3. to state, "The Contractor will be responsible for installing their own SCADA alarm system(s) or maintain the CP2 installed system to continuously monitor alarms and provide pump station data telemetry (24 hours per day, 365 days per year) without interruption for the existing pump station and any temporary bypass pumping systems utilized by the Contractor, including but not limited to pump run status, cumulative run time, wet well level, and high and low level and pump failure alarms."

Item 6. Specification Section 09 96 56 – MIC Coating System, DELETE paragraph 1.05.B, and REPLACE with "Scope of work includes but not limited to MIC coating of walls, floor, transition areas at gate openings and roof the Second Avenue Pump Station, Second Avenue Wet Well and Influent Chamber. Seal all joints treatment between structures and terminate coating system at the edges of the work. Edges shall be chased to "lock" the lining into the concrete. The Second Avenue Pump Station, Wet Well and Influent Chamber are located between column lines 8-9 and A-C on drawings S-102, M-100, M-102, M-520, M-521 and M-800."

Item 7. Specification Section 23 05 48 - Vibration and Seismic Controls For HVAC, DELETE paragraph 1.05.H.1.b and REPLACE with:

"b. Seismic Design Category: B"

Item 8. Specification Section 32 90 05 – Soil Mixes, REPLACE spec in its entirety with specification section in Attachment No. 151.

Item 9. Specification Section 33 06 01 – Schedule for Buried Piping, REPLACE spec in its entirety with specification section in Attachment No. 152.

Item 10. Specification Section 33 39 10 – Sanitary and Storm Sewer Structures, REPLACE spec in its entirety with specification section in Attachment No. 153.

Item 11. Specification Section 41 52 13.34 - Satellite Dewatering Container, ADD paragraph 1.05.A.3:

"3. The dewatering containers shall be rotating front loaders with floor filters."

Item 12. Specification Section 41 52 13.34 - Satellite Dewatering Container, DELETE paragraph 2.02.D.1. and REPLACE with:

"1. The equipment provided under this Section shall be painted in accordance with the requirements of Section 09 91 00 – Painting.
2. All exposed welds shall be cleaned of welding slag and rounded.
3. All exposed sharp edges and corners shall be rounded."

Item 13. Specification Section 46 21 12 – Mechanically Cleaned Bar Screens, ADD to the first sentence of paragraph 2.04.F.2, "in accordance with Section 40 67 16 – PMCS Panels and Enclosures."

Item 14. Specification Section 46 21 12 – Mechanically Cleaned Bar Screens, DELETE the following "six-inch color touch screen" in paragraph 2.04.F.6.c., and REPLACE with "twelve-inch color touch screen".

DRAWINGS

Item 15. Drawing B-401 - INSTRUMENTATION AND MONITORING PLAN, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 1.

Item 16. Drawing B-500, REPLACE Note 3 with the following: "FOR TYPE 1 AND TYPE 2 PILE LAYOUTS SEE STRUCTURAL DRAWINGS NOS S-601, S-801 AND S-965. FOR TYP 3 AND TYPE 3A PILE LAYOUTS REFER TO THE FORCE MAIN RELATED CIVIL AND STRUCTURAL DRAWINGS. FOR TYPE 3B PILES SEE STRUCTURAL DRAWING NO S-953 AND CIVIL DRAWINGS."

Item 17. Drawing B-700 - PROCESS EFFLUENT AND PUMP STATION FORCE MAINS – GENERAL PLAN, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 2.

Item 18. Drawing B-711 - PROCESS EFFLUENT AND PUMP STATION FORCE MAINS – SECTIONS 2 OF 2, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 3.

Item 19. Drawing B-713 - PROCESS EFFLUENT AND PUMP STATION FORCE MAINS – ENLARGED PLAN AND SECTION, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 4.

Item 20. Drawing C-003 – OVERALL SITE PLAN AND DRAWING KEY, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 5.

Item 21. Drawing C-005 – EROSION AND SEDIMENT CONTROL PLAN PHASE I, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 6.

Item 22. Drawing C-006 – EROSION AND SEDIMENT CONTROL PLAN PHASE II, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 7.

Item 23. Drawing C-101 – EXISTING CONDITIONS AND DEMOLITION PLAN AREA 1, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 8.

Item 24. Drawing C-103 – EXISTING CONDITIONS AND DEMOLITION PLAN AREA 3, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 9.

Item 25. Drawing C-121 – GRADING AND DRAINAGE PLAN AREA 1, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 10.

Item 26. Drawing C-123 – GRADING AND DRAINAGE PLAN AREA 2, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 11.

Item 27. Drawing C-124 – GRADING AND DRAINAGE PLAN TOP OF TANK AREA, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 12.

Item 28. Drawing C-131 – YARD PIPING PLAN AREA 1, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 13.

Item 29. Drawing C-132 – YARD PIPING PLAN AREA 2, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 14.

Item 30. Drawing C-133 – YARD PIPING PLAN AREA 3, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 15.

Item 31. Drawing C-141 – FINAL SITE PLAN AREA 1, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 16.

Item 32. Drawing C-143 – FINAL SITE PLAN AREA 3, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 17.

Item 33. Drawing C-201 – ACCESS DRIVEWAY PLAN AND PROFILE, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 18.

Item 34. Drawing C-202 – 2ND AVENUE PLAN AND PROFILE, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 19.

Item 35. Drawing C-203 – CONSTRUCTION DRIVEWAY PLAN AND PROFILE, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 20.

Item 36. Drawing C-210 – SITE SECTIONS – OVERALL PLAN, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 21.

Item 37. Drawing C-211 – SITE SECTIONS – SHEET 1, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 22.

Item 38. Drawing C-212 – SITE SECTIONS – SHEET 2, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 23.

Item 39. Drawing C-213 – SITE SECTIONS – SHEET 3, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 24.

Item 40. Drawing C-301 – GCC FACILITY WATER MAIN SERVICE PLAN AND PROFILE, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 25.

Item 41. Drawing C-302 – CSO FACILITY WATER SERVICE PLAN AND PROFILE, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 26.

Item 42. Drawing C-311 – SANITARY SEWER PLAN AND PROFILE, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 27.

Item 43. Drawing C-312 – STORM DRAIN NETWORK PROFILES 1 OF 2, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 28.

Item 44. Drawing C-313 – STORM DRAIN NETWORK PROFILES 2 OF 2, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 29.

Item 45. Drawing C-320 – FORCE MAIN EXISTING CONDITIONS, DEMO, AND EROSION & SEDIMENT CONTROL PLAN, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 30.

Item 46. Drawing C-321 – FORCE MAINS PLAN AND PROFILE 1 OF 3, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 31.

Item 47. Drawing C-322 – FORCE MAINS PLAN AND PROFILE 2 OF 3, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 32.

Item 48. Drawing C-323 – FORCE MAINS PLAN AND PROFILE 3 OF 3, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 33.

Item 49. Drawing C-324 – FORCE MAIN DETAILS AND SECTIONS 1 OF 3, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 34.

Item 50. Drawing C-325 – FORCE MAIN DETAILS AND SECTIONS 2 OF 3, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 35.

Item 51. Drawing C-327 – BURIED INFRASTRUCTURE SECTIONS, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 36.

Item 52. Drawing C-330 – FINAL RESTORATIN PLAN, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 37.

Item 53. Drawing C-401 – TREE PROTECTION PLAN 1 OF 3, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 38.

Item 54. Drawing C-402 – TREE PROTECTION PLAN 2 OF 3, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 39.

Item 55. Drawing C-403 – TREE PROTECTION PLAN 3 OF 3, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 40.

Item 56. Drawing C-603 – MAINTENANCE AND PROTECTION OF TRAFFIC-STAGE 1, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 41.

Item 57. Drawing C-604 – MAINTENANCE AND PROTECTION OF TRAFFIC-STAGE 2, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 42.

Item 58. Drawing C-605 – MAINTENANCE AND PROTECTION OF TRAFFIC-STAGE 3, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 43.

Item 59. Drawing C-606 – MAINTENANCE AND PROTECTION OF TRAFFIC-STAGE 4, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 44.

Item 60. Drawing C-607 – MAINTENANCE AND PROTECTION OF TRAFFIC-STAGE 4 DETOUR PLAN, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 45.

Item 61. Drawing C-608 – MAINTENANCE AND PROTECTION OF TRAFFIC-STAGE 5, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 46.

Item 62. Drawing C-609 – MAINTENANCE AND PROTECTION OF TRAFFIC-STAGE 6, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 47.

Item 63. Drawing C-610 – MAINTENANCE AND PROTECTION OF TRAFFIC-STAGE 7, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 48.

Item 64. Drawing C-610A – MAINTENANCE AND PROTECTION OF TRAFFIC-STAGE 7A, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 49.

Item 65. Drawing C-611 – MAINTENANCE AND PROTECTION OF TRAFFIC-STAGE 11, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 50.

Item 66. Drawing C-612 – MAINTENANCE AND PROTECTION OF TRAFFIC-STAGE 12, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 51.

Item 67. Drawing C-613 – MAINTENANCE AND PROTECTION OF TRAFFIC-STAGE 13, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 52.

Item 68. Drawing C-614 – MAINTENANCE AND PROTECTION OF TRAFFIC-STAGE 8, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 53.

Item 69. Drawing C-615 – MAINTENANCE AND PROTECTION OF TRAFFIC-STAGE 9, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 54.

Item 70. Drawing C-616 – MAINTENANCE AND PROTECTION OF TRAFFIC-STAGE 10, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 55.

Item 71. Drawing C-904 – SITE DETAILS 4, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 56.

Item 72. Drawing C-905 – SITE DETAILS 5, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 57.

Item 73. Drawing C-907 – NYC PARKS STANDARD DETAILS SHEET 2 OF 3, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 58.

Item 74. Drawing C-908 – NYC PARKS STANDARD DETAILS SHEET 3 OF 3, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 59.

Item 75. Drawing L-101 - MATERIALS PLAN 1, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 60.

Item 76. Drawing L-102 - MATERIALS PLAN 2, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 61.

Item 77. Drawing L-103 - MATERIALS PLAN 3, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 62.

Item 78. Drawing L-111 - PAVING CONDITIONS PLAN 1, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 63.

Item 79. Drawing L-112 - PAVING CONDITIONS PLAN 2, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 64.

Item 80. Drawing L-113 - PAVING CONDITIONS PLAN 3, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 65.

Item 81. Drawing L-121 - LAYOUT PLAN 1, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 66.

Item 82. Drawing L-122 - LAYOUT PLAN 2, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 67.

Item 83. Drawing L-123 - LAYOUT PLAN 3, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 68.

Item 84. Drawing L-124 - PAVING FIELD LAYOUT PLAN 1, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 69.

Item 85. Drawing L-125 - PAVING FIELD LAYOUT PLAN 2, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 70.

Item 86. Drawing L-126 - PAVING FIELD LAYOUT PLAN 3, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 71.

Item 87. Drawing L-131 - FURNISHING LAYOUT PLAN 1, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 72.

Item 88. Drawing L-132 - FURNISHING LAYOUT PLAN 2, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 73.

Item 89. Drawing L-133 - FURNISHING LAYOUT PLAN 3, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 74.

Item 90. Drawing L-141 - GRADING PLAN 1, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 75.

Item 91. Drawing L-142 - GRADING PLAN 2, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 76.

Item 92. Drawing L-143 - GRADING PLAN 3, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 77.

Item 93. Drawing L-151 - SOILS PLAN 1, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 78.

Item 94. Drawing L-152 - SOILS PLAN 2, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 79.

Item 95. Drawing L-153 - SOILS PLAN 3, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 80.

Item 96. Drawing L-160 - PLANTING SCHEDULE, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 81.

Item 97. Drawing L-161 - CANOPY PLANTING PLAN 1, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 82.

Item 98. Drawing L-162 - CANOPY PLANTING PLAN 2, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 83.

Item 99. Drawing L-163 - CANOPY PLANTING PLAN 3, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 84.

Item 100. Drawing L-171 - UNDERSTORY PLANTING PLAN 1, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 85.

Item 101. Drawing L-172 - UNDERSTORY PLANTING PLAN 2, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 86.

Item 102. Drawing L-173 - UNDERSTORY PLANTING PLAN 3, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 87.

Item 103. Drawing L-703 - SECTIONS, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 88.

Item 104. Drawing L-704 - SECTIONS, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 89.

Item 105. Drawing L-801 - PLAN ENLARGEMENT 1, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 90.

Item 106. Drawing L-904 - PAVING DETAILS 04, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 91.

Item 107. Drawing L-912 - RETAINING WALL DETAILS 3, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 92.

Item 108. Drawing L-922 - STAIR AND SEATING STEP DETAILS 2, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 93.

Item 109. Drawing L-944 - FURNISHING DETAILS 5, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 94.

Item 110. Drawing S-200 - GROUND FLOOR GENERAL ARRANGEMENT PLAN, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 95.

Item 111. Drawing S-201 - GROUND FLOOR PARTIAL PLAN 1, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 96.

Item 112. Drawing S-202 - GROUND FLOOR PARTIAL PLAN 2, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 97.

Item 113. Drawing S-518 - BUILDING SECTIONS 9, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 98.

Item 114. Drawing S-520 - BUILDING SECTIONS 11, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 99.

Item 115. Drawing S-950 - LANDSCAPE SITE WALLS GENERAL ARRANGEMENT, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 100.

Item 116. Drawing S-951 - LANDSCAPE SITE WALLS SECTIONS AND DETAILS 1, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 101.

Item 117. Drawing S-962 - FORCE MAIN SUPPORT CRADLE PLANS AND SECTIONS, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 102.

Item 118. Drawing S-963 - REPLACEMENT 12 SEWER AND 30 CS SUPPORT AT 8 FM 18 FM CROSSING PLAN AND SECTION, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 103.

Item 119. Drawing S-964 - REPLACEMENT 12 SEWER AND 30 CS SUPPORT AT 8 FM 18 FM CROSSING PLAN AND SECTION, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 104.

Item 120. Drawing S-965 - UTILITY CORRIDOR SLAB PLAN AND SECTIONS, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 105.

Item 121. Drawing E-033 – SECURITY SYSTEM RISED DIAGRAM, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 106.

Item 122. Drawing E-060 - OUTDOOR PARK LIGHTING SCHEDULE, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 107.

Item 123. Drawing E-061 - OUTDOOR PARK LIGHTING SCHEDULE – 2, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 108.

Item 124. Drawing E-062 - OUTDOOR PARK LIGHTING SCHEDULE – 3, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 109.

Item 125. Drawing E-063 - OUTDOOR PARK LIGHTING SCHEDULE – 4, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 110.

Item 126. Drawing E-065 - OUTDOOR PARK LIGHTING – 1, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 111.

Item 127. Drawing E-066 - OUTDOOR PARK LIGHTING – 2, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 112.

Item 128. Drawing E-067 - SINGLE LINE 1, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 113.

Item 129. Drawing E-091 – ELECTRICAL SITE PLAN, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 114.

Item 130. Drawing E-201 - GROUND FLOOR PARTIAL PLAN 1, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 115.

Item 131. Drawing E-203 - GROUND FLOOR PARTIAL POWER PLAN 3, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 116.

Item 132. Drawing E-212 - GROUND FLOOR PARTIAL CONTROL AND SIGNAL PLAN 2, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 117.

Item 133. Drawing E-240 - GROUND FLOOR SECURITY PLAN, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 118.

Item 134. Drawing E-302 - SECOND FLOOR PARTIAL POWER PLAN 2, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 119.

Item 135. Drawing E-312 - SECOND FLOOR PARTIAL SIGNAL AND CONTROL PLAN 2, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 120.

Item 136. Drawing E-330 - SECOND FLOOR SECURITY PLAN, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 121.

Item 137. Drawing E-410 - ROOF SECURITY PLAN, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 122.

Item 138. Drawing E-420 - ROOF LEVEL GENERAL ARRANGEMENT LIGHTING AND RECEPTACLE PLAN, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 123.

Item 139. Drawing E-905 - STANDARD DETAILS 6, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 124.

Item 140. Drawing P-001 – LEGENDS AND ABBREVIATIONS, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 125.

Item 141. Drawing P-002 – GENERAL NOTES, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 126.

Item 142. Drawing P-003 – SCHEDULES, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 127.

Item 143. Drawing P-004 – SANITARY DRAINAGE RISER DIAGRAMS 1, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 128.

Item 144. Drawing P-005 – SANITARY DRAINAGE RISER DIAGRAMS 2, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 129.

Item 145. Drawing P-007 – STORM DRAINAGE RISER DIAGRAM 2, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 130.

Item 146. Drawing P-008 – DOMESTIC WATER RISER DIAGRAM 1, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 131.

Item 147. Drawing P-200 – GROUND FLOOR PLAN, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 132.

Item 148. Drawing P-202 – GROUND FLOOR PARTIAL PLAN 2, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 133.

Item 149. Drawing P-204 – GROUND FLOOR PARTIAL PLAN 4, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 134.

Item 150. Drawing P-206 – GROUND FLOOR PARTIAL PLAN 6, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 135.

Item 151. Drawing P-210 – GROUND FLOOR ENLARGED PLANS 1, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 136.

Item 152. Drawing P-211 – GROUND FLOOR ENLARGED PLANS 2, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 137.

Item 153. Drawing P-212 – GROUND FLOOR ENLARGED PLANS 3, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 138.

Item 154. Drawing P-300 – SECOND FLOOR PLAN, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 139.

Item 155. Drawing P-304 – SECOND FLOOR PARTIAL PLAN 4, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 140.

Item 156. Drawing P-400 – ROOF PLAN, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 141.

Item 157. Drawing P-502 – SECTIONS 3, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 142.

Item 158. Drawing P-900 – DETAILS 1, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 143.

Item 159. Drawing F-001 – LEGEND, ABBREVIATIONS, SCHEDULES, AND DESIGN CRITERIA, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 144.

Item 160. Drawing F-002 – GENERAL NOTES, SYSTEM NOTES, AND DESIGN CRITERIA, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 145.

Item 161. Drawing F-003 – FIRE PROTECTION SYSTEM RISER DIAGRAM, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 146.

Item 162. Drawing F-203 – GROUND FLOOR PARTIAL PLAN 3, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 147.

Item 163. Drawing F-303 – SECOND FLOOR PARTIAL PLAN 3, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 148.

Item 164. Drawing F-500 – SECTIONS 1, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 149.

Item 165. Drawing F-501 – SECTIONS 2, DELETE sheet in its entirety and REPLACE with attached drawing in Attachment No. 150.

EXHIBITS

Item 166. Include the following supplemental report prepared for NYSDEC:

1. Citizens-Carroll Garden MGP Off-Site Investigation of the Owls Head Site Data Summary Report by Ecology and Environmental Engineering, P.C. Dated February 2025.

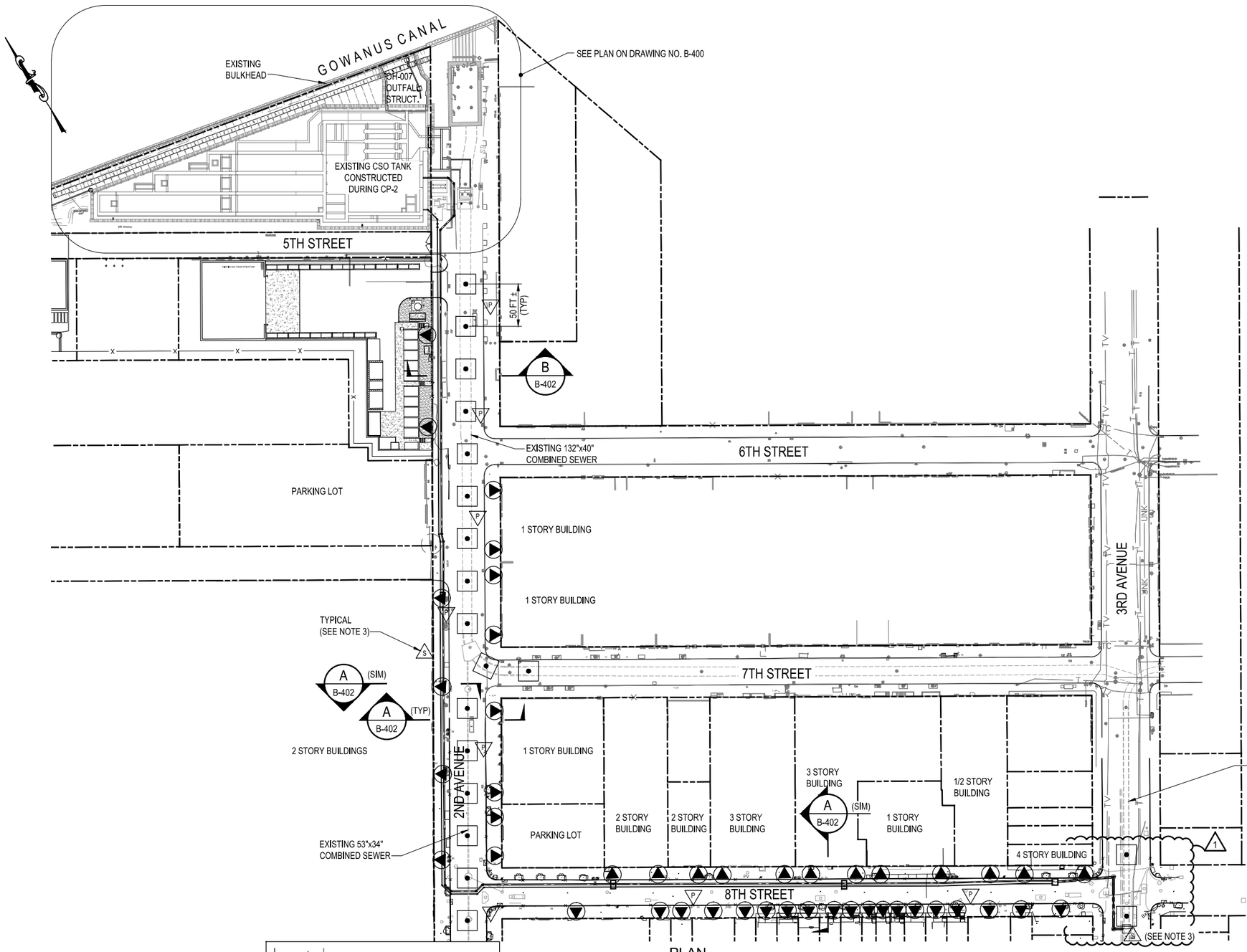
LIST OF ATTACHMENTS

Attachment 1.	Drawing B-401 - INSTRUMENTATION AND MONITORING PLAN
Attachment 2.	Drawing B-700 - PROCESS EFFLUENT AND PUMP STATION FORCE MAINS – GENERAL PLAN
Attachment 3.	Drawing B-711 - PROCESS EFFLUENT AND PUMP STATION FORCE MAINS – SECTIONS 2 OF 2
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PLAN
1/64"=1'-0"

NOTES:

1. FOR GENERAL NOTES, SEE DRAWING NO B-001.
2. FOR INSTRUMENTATION AND MONITORING NOTES, SEE DRAWING NO B-402.
3. MONITOR CONSTRUCTION VIBRATIONS AT ALL EXISTING ADJACENT STRUCTURES WITHIN 100 FT OF ACTIVE EXCAVATION AND CONSTRUCTION WORK FOR THE FORCE MAINS. IN ADDITION, PERFORM THE VIBRATION AND MOVEMENT MONITORING PROGRAM DESCRIBED IN CON EDISON'S "GUIDELINES FOR PROTECTING EXISTING UNDERGROUND TRANSMISSION ELECTRIC FACILITIES FROM NEARBY CONSTRUCTION ACTIVITIES", DOCUMENT CE-SI-1080/02, SECTION 5.3, AND ON THE NOTES ON DRAWING NO B-713 WHEN WORKING IN THE AREA OF THE OIL STATIC LINES ON 3RD AVENUE INDICATED ON DRAWING NO B-713.
4. SETTLEMENT AND HEAVE MONITORING POINTS ON SURFACE ARE NOT INDICATED ON THIS PLAN. PROVIDE POINTS ON BOTH SIDES OF THE STREETS ALONG THE ALIGNMENT OF THE SOE FOR THE FORCE MAINS ON 2ND AVENUE, 8TH STREET AND 3RD AVENUE, SPACED AT A MAXIMUM DISTANCE OF 50 FT BETWEEN POINTS.

MONITORING INSTRUMENT LEGEND:

- P - PIEZOMETER
- S - SEISMOGRAPH (SEE NOTE 3)
- STRUCTURAL DEFORMATION MONITORING POINT ON SOE OR BULKHEAD
- STRUCTURAL DEFORMATION MONITORING POINT ON ABOVE GROUND STRUCTURE
- SETTLEMENT AND HEAVE MONITORING POINT ON SURFACE
- UTILITY SETTLEMENT AND HEAVE MONITORING POINT

1/64"=1'-0" 0 25 50 125 FT.

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BID SET

SUBMITTAL DATE: SEPTEMBER 2026

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14 PENN PLAZA - 225 WEST 34TH STREET, NEW YORK, NY 10122
MRCE PROJECT NO. 14070

NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.
1	10/2026	ADDENDUM NO. 2	AA

DESIGNED BY: A. ARANA	DRAWN BY: J. MAURIN	PROJECT MANAGER: E. CAMILLERI
CHECKED BY: S. BUTLER	DESIGN LEAD: H.SHAH	DESIGN MANAGER: G. DEREAMER

Hazen Brown AND Caldwell

STATE OF NEW YORK HIREN J. SHAH LICENSED PROFESSIONAL ENGINEER 079845

NYC Environmental Protection

ACCOUNTABLE MANAGER	JESSE GOLDIN, P.E.
PORTFOLIO MANAGER	KEVIN CLARKE, P.E.

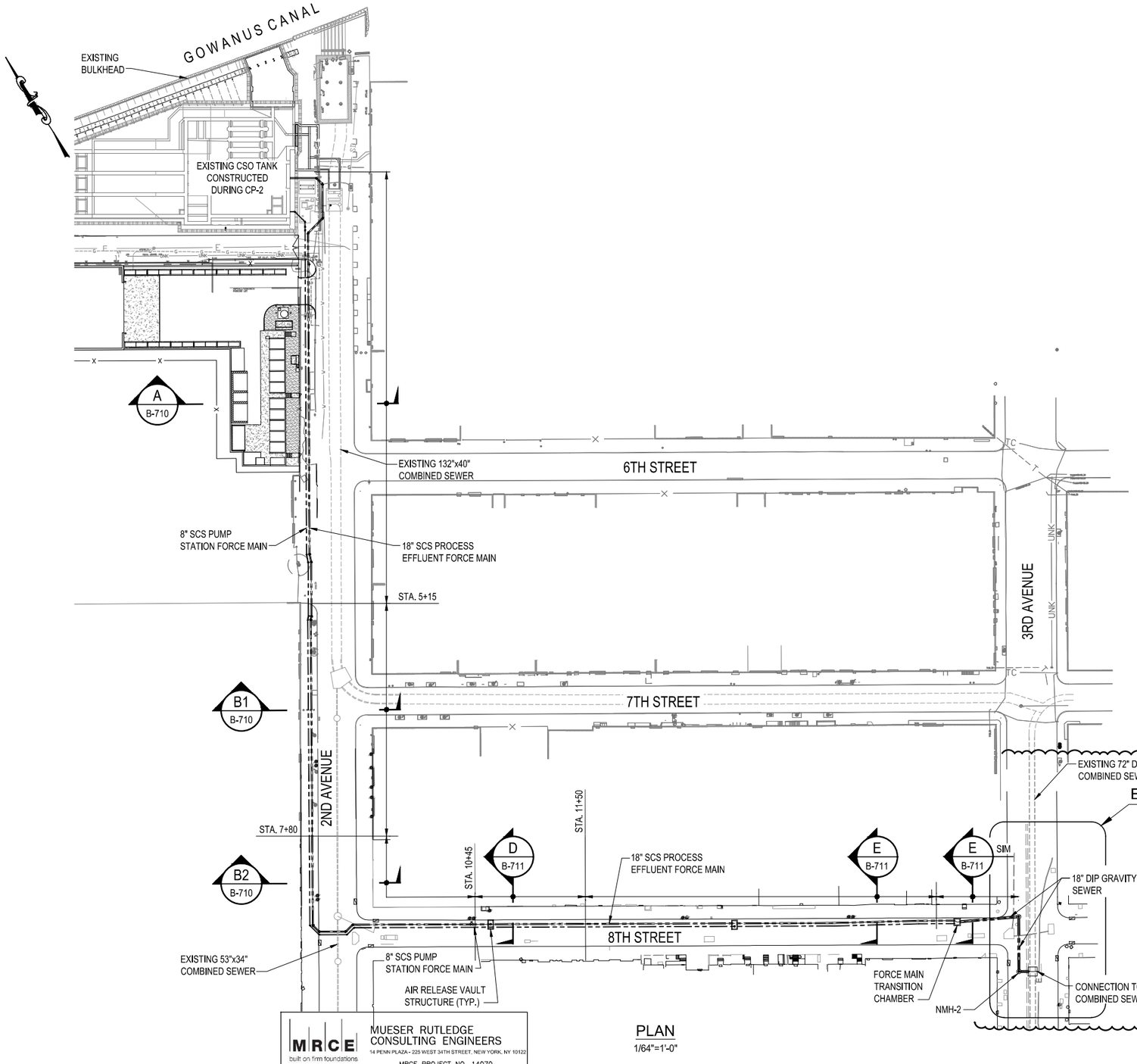
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CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

TEMPORARY EXCAVATION SUPPORT INSTRUMENTATION AND MONITORING PLAN

DATE: SEPTEMBER 2026
SHEET NO: 38 OF 719
DRAWING NO. B-401.00



PLAN
1/64"=1'-0"

NOTES:

1. FOR GENERAL NOTES, SEE DRAWING NO B-001.
2. FOR PLAN AND PROFILE OF 8" AND 18" FORCE MAINS SEE CIVIL DRAWINGS NOS. C-321. C-322 AND C-323. FOR DETAILS OF AIR RELEASE VAULTS AND TRANSITION CHAMBER SEE DRAWINGS NOS S-960 AND S-961.

1

3. FOR DETAILS OF CONNECTION TO EXISTING COMBINED SEWER SEE CIVIL DRAWINGS NOS. C-323, AND C-324.
4. ALL EXISTING UTILITIES ARE NOT SHOWN ON THIS PLAN. FOR DETAILED INFORMATION ON EXISTING UTILITIES, INCLUDING UTILITIES THAT ARE TO BE RELOCATED AND/OR ABANDONED, AND STAGING OF UTILITY DEMOLITION, REFER TO THE CIVIL DRAWINGS. LOCATE ALL EXISTING UTILITIES BY UTILITY COMPANY MARK OUT. FOR UTILITIES WITHIN 4 FEET OF SOLDIER PILE INSTALLATION, CONFIRM CLEARANCE BY LOCAL PRE-EXCAVATION / TEST PITS.
5. SOE SOLDIER PILES SHALL BE INSTALLED BY DRILLED METHODS, REMOVING CUTTINGS BY USE OF INTERNAL FLUSH METHODS AND MAINTAINING A POSITIVE HYDROSTATIC HEAD AT ALL TIMES.
6. PROVIDE BRACING FOR THE FULL EXTENTS OF THE SOE FOR THE FORCE MAINS AT THE ELEVATIONS SHOWN ON TABLE 1. BRACING DESIGN, INCLUDING LAYOUT, CONNECTIONS AND DETAILS, SHALL BE PROVIDED BY THE CONTRACTOR FOR THE LATERAL LOADS SHOWN ON TABLE 1 ON THIS DRAWING. THE LOADS PROVIDED ON TABLE 1 ARE WORKING LEVEL (UNFACTORED) LOADS AND INCLUDE EARTH, WATER AND CONSTRUCTION SURCHARGE ALLOWANCE OF 300 PSF (APPLIED VERTICALLY). THE SOE DESIGN ASSUMES THAT THE JET GROUT PLUG WILL ALSO PROVIDE LATERAL SUPPORT TO THE SOE WALLS. SUBMIT BRACING DRAWINGS AND CALCULATIONS SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NEW YORK.
7. STATIONING NOTED ON THIS DRAWING REFERS TO STATIONING FOR THE 18" DIA. FORCE MAIN.
8. PRIOR TO THE START OF CONSTRUCTION OF THE SOE SYSTEM FOR THE FORCE MAINS, PERFORM TEST PITS TO DETERMINE THE CONFIGURATION AND TYPE OF FOUNDATIONS AT ALL THE EXISTING STRUCTURES ADJACENT TO THE PROPOSED ALIGNMENT.

1

TABLE 1

SECTION	LIMITS	BRACE ELEVATION	HORIZONTAL LINE LOAD (K/FT)
A	CSO TANK TO STA 5+15	+4.0	6.0
B1	STA 5+15 TO STA 7+80	+7.0	5.0
B2	STA 7+80 TO STA 10+45	+7.0	5.0
D	STA 10+45 TO STA 11+50	3' BELOW EXISTING GRADE	4.0
E	STA 11+50 TO NMH-2	3' BELOW EXISTING GRADE	4.0
F	NMH-2 TO EXISTING SEWER	3' BELOW EXISTING GRADE	4.0

1/64"=1'-0" 0 25 50 125 FT.

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

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MRCE PROJECT NO. 14070

NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.
1	10/2026	ADDENDUM NO. 2	AA

DESIGNED BY: A. ARANA	DRAWN BY: J. MAURIN	PROJECT MANAGER: E. CAMILLERI
CHECKED BY: S. BUTLER	DESIGN LEAD: H.SHAH	DESIGN MANAGER: G. DEREAMER

Hazen Brown AND Caldwell

STATE OF NEW YORK · BIREN J. SHAH · 079845 · LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.
PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

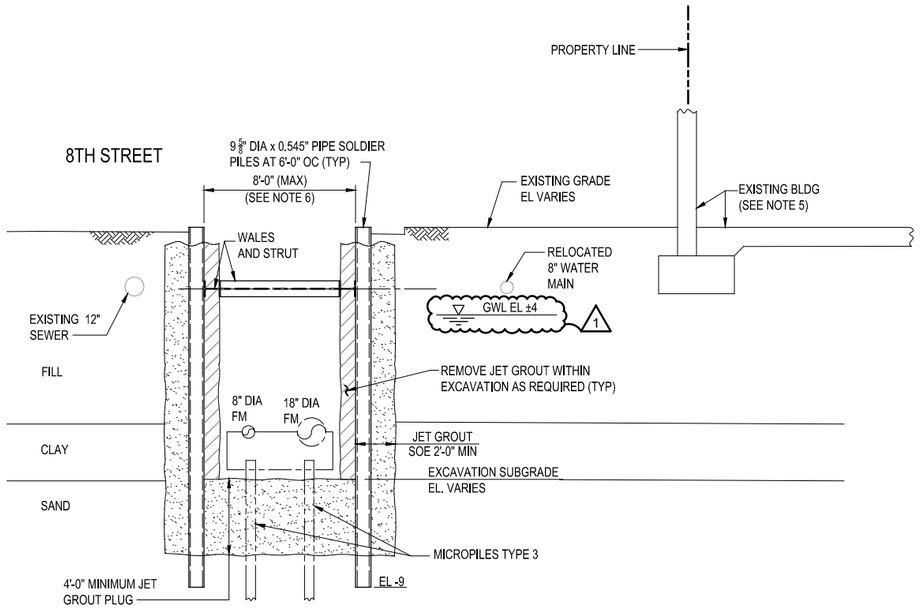
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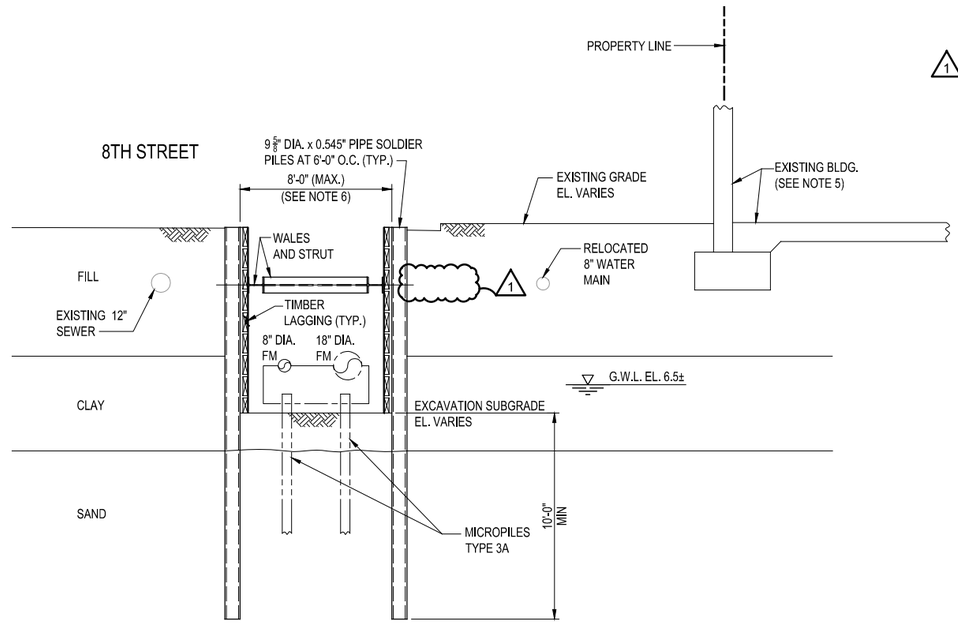
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TEMPORARY EXCAVATION SUPPORT
PROCESS EFFLUENT AND PUMP STATION FORCE MAINS
GENERAL PLAN

DATE: SEPTEMBER 2026
SHEET NO: 46 OF 719
DRAWING NO. B-700.00



D B-700 SECTION
SCALE: 1/4" = 1'-0"



E B-700 SECTION
SCALE: 1/4" = 1'-0"

NOTES:

1. FOR GENERAL NOTES AND JET GROUT NOTES, SEE DRAWING NO B-001.
2. FOR PLAN AND PROFILE OF 8" AND 18" FORCE MAINS SEE CIVIL DRAWINGS NOS C-321, C-322 AND C-323 AND C-324.
3. FOR DETAIL OF CRADLE FOR FORCE MAINS SEE STRUCTURAL DRAWINGS. FOR MICROPILE DETAILS SEE DRAWING NO B-501.
4. BRACING DESIGN TO BE PROVIDED BY THE CONTRACTOR IN ACCORDANCE WITH NOTE 5 ON DRAWING NO B-700. FOR SUGGESTED BRACING DETAILS SEE DRAWING NO B-712.
5. CONFIGURATION OF EXISTING BUILDINGS SHOWN ON THESE SECTIONS IS SCHEMATIC. CONTRACTOR SHALL VERIFY LOCATION AND EXTENTS OF ADJACENT FOUNDATIONS PRIOR TO THE START OF SOE WORK FOR THE FORCE MAINS. REFER TO NOTE 7 ON DRAWING NO B-700.
6. EXCAVATION WIDTH SHALL BE LOCALLY INCREASED AS REQUIRED AT ARV STRUCTURES AV-01 AND AV-02 AND AT THE TRANSITION CHAMBER, TO A MAXIMUM WIDTH OF 12'-0".
7. THE GEOLOGIC PROFILES SHOWN ON THESE SECTIONS REPRESENT APPROXIMATE STRATIGRAPHY. FOR DETAILED INFORMATION REFER TO THE GEOTECHNICAL DATA REPORT INCLUDED IN THE EXISTING CONDITIONS REPORT.

0 4 8 FT.
1/4"=1'-0"

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SUBMITTAL DATE: SEPTEMBER 2026

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14 PENN PLAZA - 225 WEST 34TH STREET, NEW YORK, NY 10122
MRCE PROJECT NO. 14070

NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.
1	10/2026	ADDENDUM NO. 2	AA

DESIGNED BY:	DRAWN BY:	PROJECT MANAGER:
A. ARANA	J. MAURIN	E. CAMILLERI
CHECKED BY:	DESIGN LEAD:	DESIGN MANAGER:
S. BUTLER	H.SHAH	G. DEREAMER

Hazen Brown AND Caldwell

STATE OF NEW YORK HIREN J. SHAH LICENSED PROFESSIONAL ENGINEER 079845

NYC Environmental Protection

ACCOUNTABLE MANAGER
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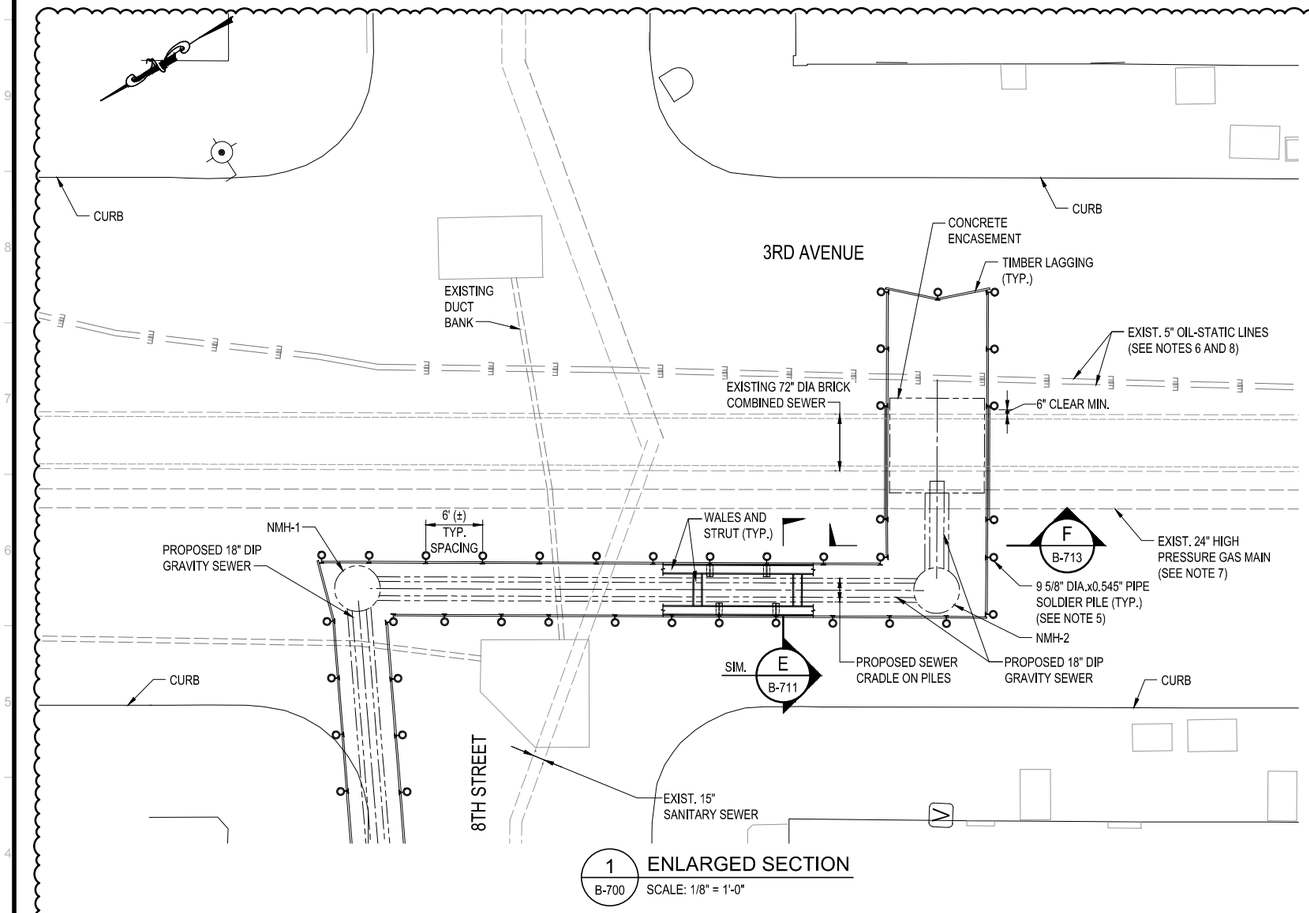
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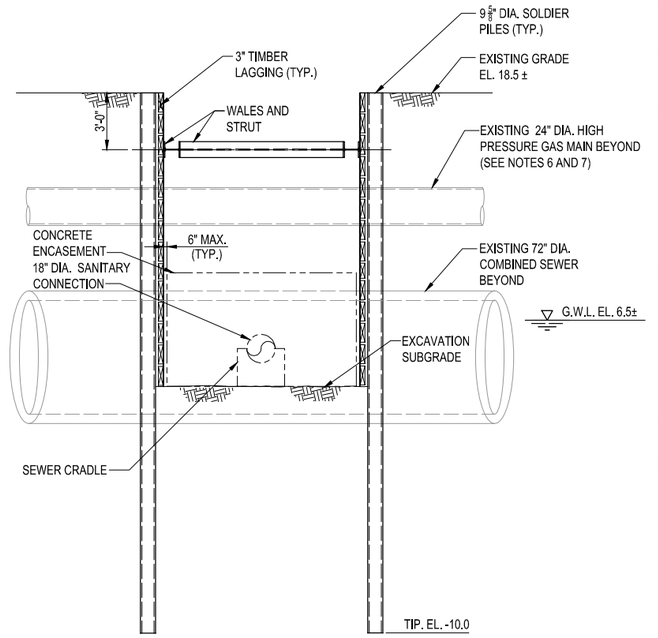
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TEMPORARY EXCAVATION SUPPORT
PROCESS EFFLUENT AND PUMP STATION FORCE MAINS
SECTIONS 2 OF 2

DATE: SEPTEMBER 2026
SHEET NO: 48 OF 719
DRAWING NO. B-711.00



1 B-700 ENLARGED SECTION
SCALE: 1/8" = 1'-0"



F B-713 SECTION
SCALE: 1/4" = 1'-0"

NOTES:

1. FOR GENERAL NOTES, SEE DRAWING NO B-001.
2. ALL EXISTING UTILITIES ARE NOT SHOWN ON THE ENLARGED PLAN ON THIS DRAWING. FOR DETAILED INFORMATION ON EXISTING UTILITIES, INCLUDING UTILITIES THAT ARE TO BE RELOCATED AND/OR ABANDONED, AND STAGING OF UTILITY DEMOLITION REFER TO THE CIVIL DRAWINGS.
3. EXISTING GAS MAINS TO BE RELOCATED BY NATIONAL GRID PRIOR TO THE WORK SHOWN ON THESE DRAWINGS ARE NOT SHOWN.
4. REFER TO THE B-400 SERIES DRAWINGS FOR INSTRUMENTATION AND MONITORING PROGRAM REQUIREMENTS RELATED TO THE WORK SHOWN ON THIS DRAWING.
5. PRIOR TO INSTALLATION OF SOLDIER PILES, EXPOSE ALL UTILITIES BY HAND EXCAVATION, INCLUDING THE EXISTING 24" PRESSURE GAS MAIN, THE 72"DIA. COMBINED SEWER, AND THE 5" OIL STATIC LINES. THE SOLDIER PILE LAYOUT SHOWN ON THE ENLARGED PLAN ON THIS DRAWING IS FOR REFERENCE ONLY. THE CONTRACTOR SHALL DETERMINE THE LAYOUT OF THE SOLDIER PILES TAKING INTO CONSIDERATION THE ACTUAL LOCATION OF ALL EXISTING UTILITIES, WHILE MAINTAINING A MINIMUM CLEAR DISTANCE OF 6" TO THE EXISTING GAS MAIN, COMBINED SEWER AND OIL STATIC LINES.
6. ALL UTILITIES THAT CROSS THE EXCAVATION AND THAT ARE TO REMAIN SHALL BE TEMPORARILY SUPPORTED. OIL STATIC LINES AND GAS MAIN SHALL, AT A MINIMUM, BE SUPPORTED EVERY 5 FEET ON CENTER. THE CONTRACTOR SHALL SUBMIT FOR APPROVAL HIS PROPOSED METHOD OF TEMPORARY SUPPORTS FOR UTILITIES PRIOR TO PERFORMING THE WORK ALONG WITH DETAILED CALCULATIONS AND DRAWINGS SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NEW YORK.
7. FOR REQUIREMENTS OF WORK IN THE AREA OF THE EXISTING 24" GAS TRANSMISSION MAIN SEE TGM NOTES ON CIVIL DRAWING NO C-324.
8. FOR REQUIREMENTS OF WORK IN THE AREA OF THE EXISTING OIL STATIC LINES, INCLUDING VIBRATION MONITORING AND SUPPORT DESIGN CRITERIA REFER TO CON EDISON'S "GUIDELINES FOR PROTECTING EXISTING UNDERGROUND TRANSMISSION ELECTRIC FACILITIES FROM NEARBY CONSTRUCTION ACTIVITIES" DOCUMENT CE-SI-1080/02. THE OIL STATIC LINES SHALL BE EXPOSED AND LOCATED PRIOR TO INSTALLATION OF THE SOLDIER PILES. MOVEMENT MONITORING POINTS SHALL BE PROVIDED, LOCATED AT THE CENTER OF EACH OIL STATIC LINE EXPOSED IN THE EXCAVATION. POINTS SHALL BE MONITORED A MINIMUM OF TWICE DAILY UNTIL BACKFILLING IS COMPLETED. MOVEMENTS SHALL NOT EXCEED 0.25 INCH (THRESHOLD ALERT LEVEL) AND 0.5 INCH (MAXIMUM PERMITTED). PERFORM ALL REQUIRED SUBMISSIONS AND OBTAIN APPROVAL FROM CON EDISON PRIOR TO PROCEEDING WITH THE WORK IN THE AREA OF THE OIL STATIC LINES.
9. BACKFILL FOR THE AREA OF THE EXISTING OIL STATIC LINES SHALL MEET THE REQUIREMENTS OF CON EDISON'S "GENERAL SPECIFICATION FOR CONTROLLED THERMAL SAND MATERIAL FOR HIGH PRESSURE PIPE TYPE CABLES", DOCUMENT CE-TS-4047/09. AFTER COMPLETION OF THE WORK, CUT DOWN SOLDIER PILES TO MAINTAIN 3 FT CLEARANCE FROM THE OIL STATIC LINES.

1/8"=1'-0" 0 5 10 15 FT.

MRCE built on firm foundations
MUESER RUTLEDGE CONSULTING ENGINEERS
14 PENN PLAZA - 225 WEST 34TH STREET, NEW YORK, NY 10122
MRCE PROJECT NO. 14070

NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.
1	10/2026	NEW-ISSUED FOR ADDENDUM #2	AA

DESIGNED BY:	DRAWN BY:	PROJECT MANAGER:
A. ARANA	J. MAURIN	E. CAMILLERI
CHECKED BY:	DESIGN LEAD:	DESIGN MANAGER:
S. BUTLER	H.SHAH	G. DEREAMER

Hazen | Brown AND Caldwell

STATE OF NEW YORK · DREW J. SHAH · 079845 · LICENSED PROFESSIONAL ENGINEER

Environmental Protection

ACCOUNTABLE MANAGER
JESSE GOLDIN, P.E.
PORTFOLIO MANAGER
KEVIN CLARKE, P.E.

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BID SET
SUBMITTAL DATE: SEPTEMBER 2026

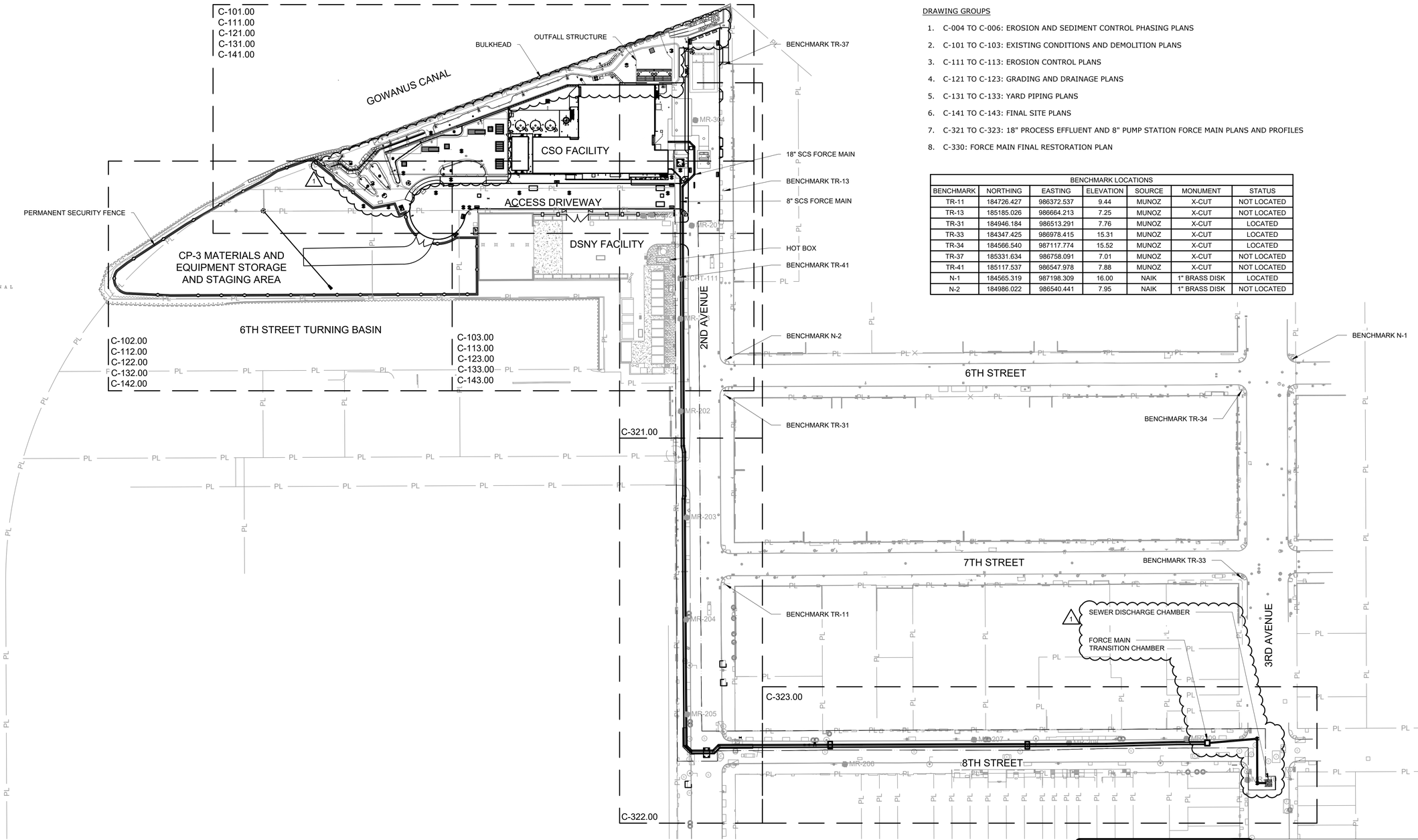
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CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

TEMPORARY EXCAVATION SUPPORT
PROCESS EFFLUENT AND PUMP STATION FORCE MAINS
ENLARGED PLAN AND SECTION

DATE: SEPTEMBER 2026
SHEET NO: 46 OF 719
DRAWING NO. B-713.00



DRAWING GROUPS

1. C-004 TO C-006: EROSION AND SEDIMENT CONTROL PHASING PLANS
2. C-101 TO C-103: EXISTING CONDITIONS AND DEMOLITION PLANS
3. C-111 TO C-113: EROSION CONTROL PLANS
4. C-121 TO C-123: GRADING AND DRAINAGE PLANS
5. C-131 TO C-133: YARD PIPING PLANS
6. C-141 TO C-143: FINAL SITE PLANS
7. C-321 TO C-323: 18" PROCESS EFFLUENT AND 8" PUMP STATION FORCE MAIN PLANS AND PROFILES
8. C-330: FORCE MAIN FINAL RESTORATION PLAN

BENCHMARK LOCATIONS

BENCHMARK	NORTHING	EASTING	ELEVATION	SOURCE	MONUMENT	STATUS
TR-11	184726.427	986372.537	9.44	MUNOZ	X-CUT	NOT LOCATED
TR-13	185185.026	986664.213	7.25	MUNOZ	X-CUT	NOT LOCATED
TR-31	184946.184	986513.291	7.76	MUNOZ	X-CUT	LOCATED
TR-33	184347.425	986978.415	15.31	MUNOZ	X-CUT	LOCATED
TR-34	184566.540	987117.774	15.52	MUNOZ	X-CUT	LOCATED
TR-37	185331.634	986758.091	7.01	MUNOZ	X-CUT	NOT LOCATED
TR-41	185117.537	986547.978	7.88	MUNOZ	X-CUT	NOT LOCATED
N-1	184565.319	987198.309	16.00	NAIK	1" BRASS DISK	LOCATED
N-2	184986.022	986540.441	7.95	NAIK	1" BRASS DISK	NOT LOCATED

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

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1	10/2026	ADDENDUM NO. 2	DS

DESIGNED BY: K. ROBBINS | DRAWN BY: J. TANNER | PROJECT MANAGER: E. CAMILLERI
CHECKED BY: D. SHEERAN | DESIGN LEAD: D. SHEERAN | DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

Environmental Protection

ACCOUNTABLE MANAGER
JESSE GOLDIN, P.E.

PORTFOLIO MANAGER
KEVIN CLARKE, P.E.

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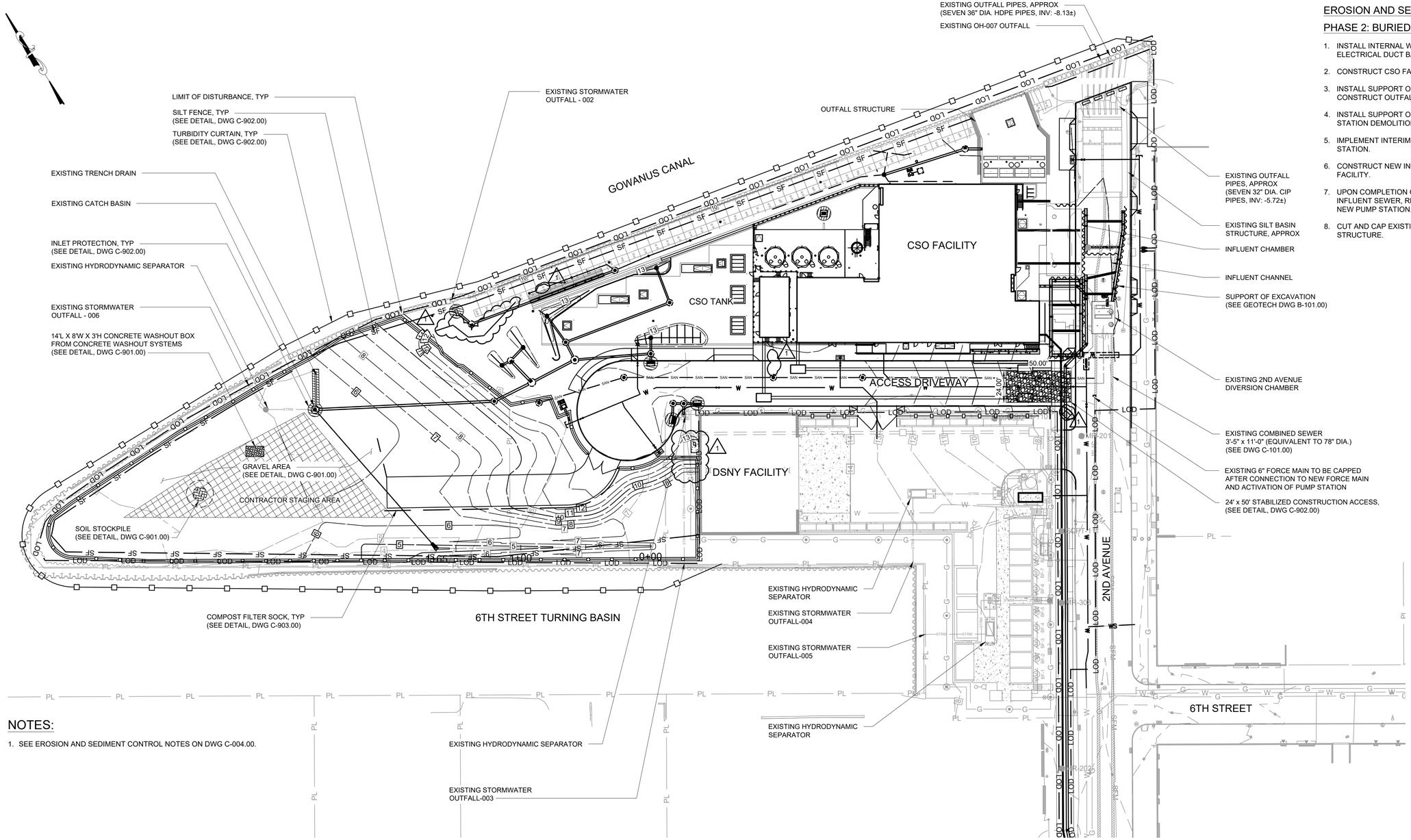
CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

CIVIL
OVERALL SITE PLAN

DATE: SEPTEMBER 2026
SHEET NO: 52 OF 723
DRAWING NO. C-003.01

All inquiries regarding this drawing(s) or project should be made to NYC Environmental Protection, Bureau of Engineering Design and Construction.

Last Saved By: KRobbins
Last Date Saved: 10/28/2026 1:55 PM
Paper Size Printed/Plotted: ANSI full bleed D (34.00 x 22.00 Inches)
Drawing File Name & Drive Location: C:_DCACCDocs\Hazen and Sawyer\90409-000_CSO-GC-SFS-DES-OH\Project Files\000-ProjectWise\Civil\CP-03\C-003.dwg
Date & Time Plotted: 10/29/2026 3:34 PM
Plot Scale: 1:1
Xref Style Table: HS-FWS.ctb



EROSION AND SEDIMENT CONTROL

PHASE 2: BURIED INFRASTRUCTURE AND CSO FACILITY

1. INSTALL INTERNAL WATER MAIN, WATER SERVICE, SANITARY DRAIN, AND ELECTRICAL DUCT BANKS IN ACCESS DRIVEWAY.
2. CONSTRUCT CSO FACILITY SUPERSTRUCTURE.
3. INSTALL SUPPORT OF EXCAVATION FOR OUTFALL STRUCTURE AND CONSTRUCT OUTFALL STRUCTURE.
4. INSTALL SUPPORT OF EXCAVATION FOR INFLUENT CHANNEL AND PUMP STATION DEMOLITION.
5. IMPLEMENT INTERIM PUMP STATION AND DEMOLISH EXISTING PUMP STATION.
6. CONSTRUCT NEW INFLUENT SEWER TO NEW PUMP STATION INSIDE CSO FACILITY.
7. UPON COMPLETION OF OUTFALL STRUCTURE, INFLUENT CHANNEL, AND INFLUENT SEWER, REMOVE INTERIM PUMP STATION AND COMMISSION NEW PUMP STATION.
8. CUT AND CAP EXISTING OUTFALL PIPES AND DEMOLISH SILT BASIN STRUCTURE.

NOTES:

1. SEE EROSION AND SEDIMENT CONTROL NOTES ON DWG C-004.00.

BMP	PHASE
	2
SILT FENCE	M
STORM DRAIN INLET PROTECTION	M
CONCRETE WASHOUT	I
COMPOST FILTER SOCK	M
TURBIDITY CURTAIN	M
TEMPORARY BARRIER FENCE	M
STABILIZED CONSTRUCTION ACCESS	M

I = INSTALLED
M = MAINTAINED INSTALLATION FROM PRIOR PHASE
R = REMOVAL UPON STABILIZATION

1"=40' 0 40 80 FT.

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

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NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.
1	10/2026	ADDENDUM NO. 2	DS

DESIGNED BY: J. PERRUZZA | DRAWN BY: J. PERRUZZA | PROJECT MANAGER: E. CAMILLERI
CHECKED BY: D. SHEERAN | DESIGN LEAD: D. SHEERAN | DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

STATE OF NEW YORK — DANIEL JAMES SHEERAN — 088955 — LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER
JESSE GOLDIN, P.E.

PORTFOLIO MANAGER
KEVIN CLARKE, P.E.

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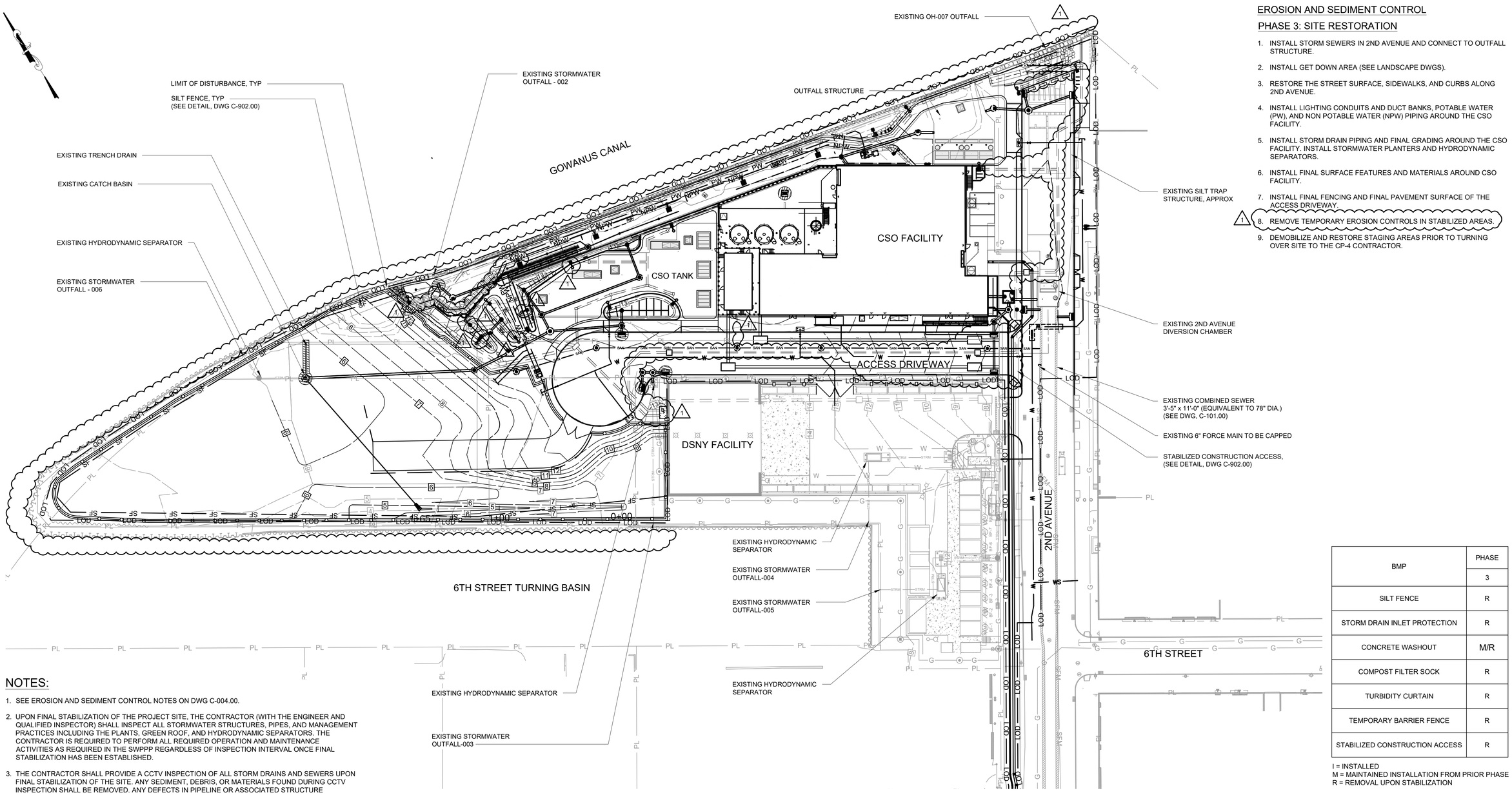
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CIVIL
EROSION AND SEDIMENT CONTROL PLAN
PHASE II

DATE: SEPTEMBER 2026
SHEET NO: 54 OF 723
DRAWING NO. C-005.01

Last Saved By: JLu
Last Date Saved: 10/29/2026 4:29 PM
Paper Size Printed/Plotted: ANSI full bleed D (34.00 x 22.00 Inches)
Drawing File Name & Drive Location: C:_DCA\CCDocs\Hazen and Sawyer\90409-000_CSO-GC-SFS-DES-OH\Project Files\000-ProjectWise\Civil\CP-03\C-005.dwg
Date & Time Plotted: 10/30/2026 10:56 AM
Plot Style Table: HS-FWS.ctb
Plot Scale: 1:1

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EROSION AND SEDIMENT CONTROL

PHASE 3: SITE RESTORATION

1. INSTALL STORM SEWERS IN 2ND AVENUE AND CONNECT TO OUTFALL STRUCTURE.
2. INSTALL GET DOWN AREA (SEE LANDSCAPE DWGS).
3. RESTORE THE STREET SURFACE, SIDEWALKS, AND CURBS ALONG 2ND AVENUE.
4. INSTALL LIGHTING CONDUITS AND DUCT BANKS, POTABLE WATER (PW), AND NON POTABLE WATER (NPW) PIPING AROUND THE CSO FACILITY.
5. INSTALL STORM DRAIN PIPING AND FINAL GRADING AROUND THE CSO FACILITY. INSTALL STORMWATER PLANTERS AND HYDRODYNAMIC SEPARATORS.
6. INSTALL FINAL SURFACE FEATURES AND MATERIALS AROUND CSO FACILITY.
7. INSTALL FINAL FENCING AND FINAL PAVEMENT SURFACE OF THE ACCESS DRIVEWAY.
8. REMOVE TEMPORARY EROSION CONTROLS IN STABILIZED AREAS.
9. DEMOBILIZE AND RESTORE STAGING AREAS PRIOR TO TURNING OVER SITE TO THE CP-4 CONTRACTOR.

NOTES:

1. SEE EROSION AND SEDIMENT CONTROL NOTES ON DWG C-004.00.
2. UPON FINAL STABILIZATION OF THE PROJECT SITE, THE CONTRACTOR (WITH THE ENGINEER AND QUALIFIED INSPECTOR) SHALL INSPECT ALL STORMWATER STRUCTURES, PIPES, AND MANAGEMENT PRACTICES INCLUDING THE PLANTS, GREEN ROOF, AND HYDRODYNAMIC SEPARATORS. THE CONTRACTOR IS REQUIRED TO PERFORM ALL REQUIRED OPERATION AND MAINTENANCE ACTIVITIES AS REQUIRED IN THE SWPPP REGARDLESS OF INSPECTION INTERVAL ONCE FINAL STABILIZATION HAS BEEN ESTABLISHED.
3. THE CONTRACTOR SHALL PROVIDE A CCTV INSPECTION OF ALL STORM DRAINS AND SEWERS UPON FINAL STABILIZATION OF THE SITE. ANY SEDIMENT, DEBRIS, OR MATERIALS FOUND DURING CCTV INSPECTION SHALL BE REMOVED. ANY DEFECTS IN PIPELINE OR ASSOCIATED STRUCTURE INSTALLATION SHALL BE REPAIRED BY THE CONTRACTOR.
4. EXTENTS OF EXISTING TIEBACKS NOT SHOWN FOR CLARITY. SEE DWGS C-101.00 THROUGH C-103.00.

BMP	PHASE
	3
SILT FENCE	R
STORM DRAIN INLET PROTECTION	R
CONCRETE WASHOUT	M/R
COMPOST FILTER SOCK	R
TURBIDITY CURTAIN	R
TEMPORARY BARRIER FENCE	R
STABILIZED CONSTRUCTION ACCESS	R

I = INSTALLED
M = MAINTAINED INSTALLATION FROM PRIOR PHASE
R = REMOVAL UPON STABILIZATION

1"=40' 0 40 80 FT.

BID SET
SUBMITTAL DATE: SEPTEMBER 2026

GRAPHIC SCALES CHECK BEFORE USE

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NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.
1	10/2026	ADDENDUM NO. 2	DS

DESIGNED BY: J. PERRUZZA | DRAWN BY: J. PERRUZZA | PROJECT MANAGER: E. CAMILLERI
CHECKED BY: D. SHEERAN | DESIGN LEAD: D. SHEERAN | DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.
PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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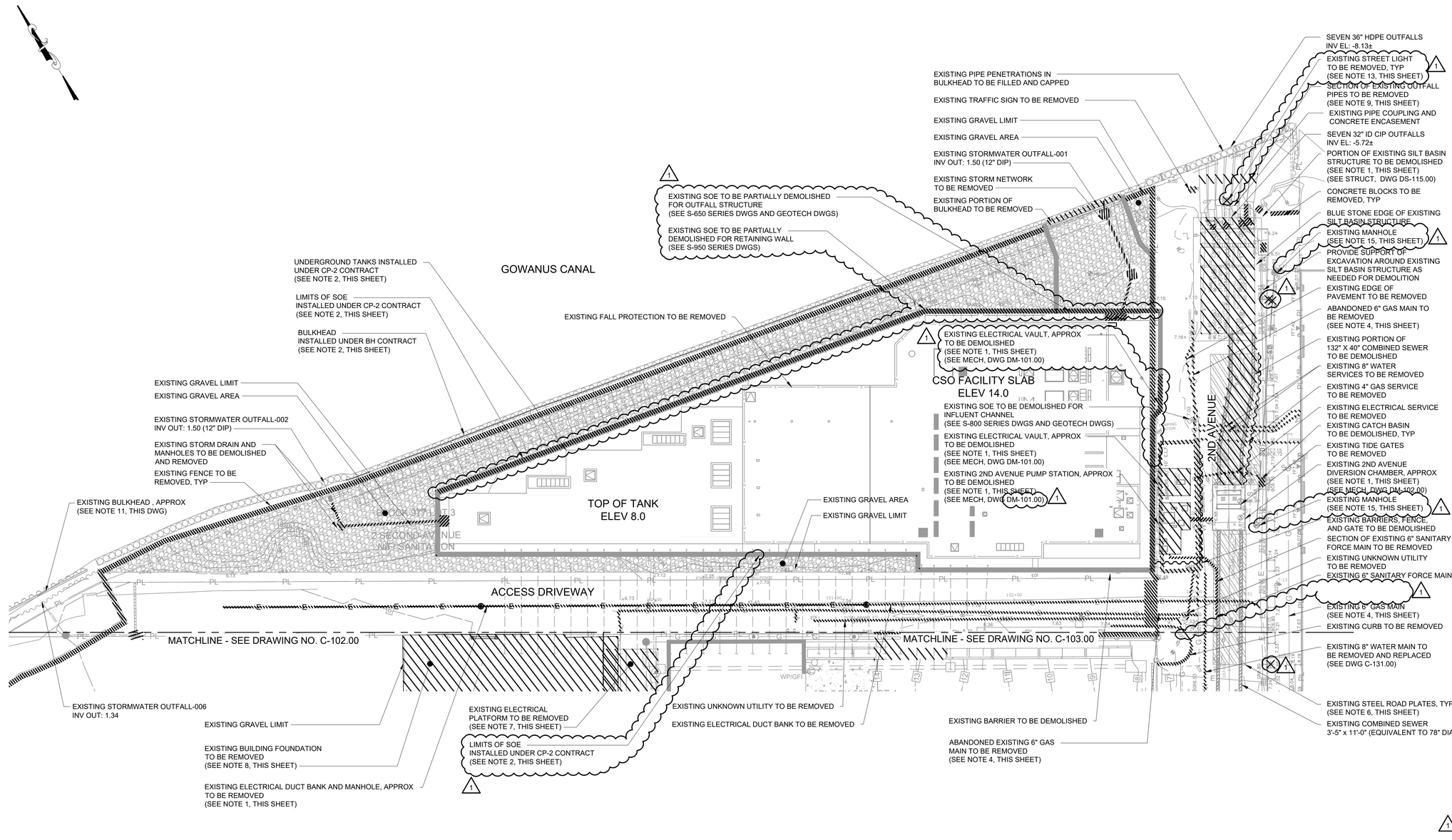
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CIVIL
EROSION AND SEDIMENT CONTROL PLAN
PHASE III

DATE: SEPTEMBER 2026
SHEET NO: 55 OF 723
DRAWING NO. C-006.01

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Last Saved By: JLu
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Drawing File Name & Drive Location: C:_DOACCDocs\Hazen and Sawyer\90409-000_CSO-GC-SFS-DES-OH\Project Files\000-ProjectWiseCivil\CP-03\C-006.dwg
Last Date Saved: 10/29/2026 4:30 PM
Plot Style Table: HS-FWS.ctb
Plot Scale: 1:1
Date & Time Plotted: 10/30/2026 10:57 AM



NOTES:

1. EXISTING UNDERGROUND UTILITY INFORMATION AND SITE CONDITIONS HAVE BEEN PLOTTED FROM THE RECORD DRAWINGS SHOWN BELOW.
   - A. OH-007 CONTRACT 2455 SHEET A (1897) - GENERAL PLAN OF MAIN RELIEF SEWER FOR THE RELIEF OF THE THIRD AVE. AND FOURTH AVE. SEWERS.
   - B. OH-007 CONTRACT 2455 (1897) - DETAIL SHEET OF MAIN RELIEF SEWER FOR THE RELIEF OF THIRD AVE. AND FOURTH AVE. SEWERS.
   - C. WP-288 OWL'S HEAD WATER POLLUTION CONTROL PROJECT (1990) - 2ND AVENUE PUMP STATION TOP PLANS AND PILE PLANS.
   - D. CONSOLIDATED EDISON LOW TENSION MAINS AND SERVICE PLATE NOS. 39-L AND 39-M.
2. EXISTING SOE IS A SOLDIER PILE TREMIE CONCRETE (SPTC) WALL CONSTRUCTED UNDER THE CP-2 CONTRACT. PORTIONS OF THE EXISTING SOE WILL BE REQUIRED TO BE DEMOLISHED TO ACCOMODATE PIPING, DUCT BANKS, AND PROPOSED STRUCTURES AND SHALL COME AT NO ADDITIONAL COST TO THE CITY, UNLESS OTHERWISE SHOWN, SOE SHALL BE DEMOLISHED A MINIMUM OF 18" BELOW FINISHED GRADE.
3. SERVICES TO BE RECONNECTED. FOR RECONNECTIONS, SEE DWG C-131.00.
4. GAS MAIN RELOCATED BY NATIONAL GRID DURING CP-1 CONTRACT. REQUIREMENTS FOR EP7 TO BE COORDINATED AS PART OF MASS MAILING AND ALIGNMENT MEETING.
5. EXISTING SANITARY FORCE MAIN WILL NOT BE DEMOLISHED AND BE USED AS A REDUNDANCY ONCE INSPECTED AND APPROVED.
6. THE SITE AND NYCDOT PERMITS SHALL BE TRANSFERRED FROM THE CP-2 CONTRACTOR TO THE CP-3 CONTRACTOR, AND THE CP-3 CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE PLATES THROUGHOUT CONSTRUCTION. ALL STEEL PLATES SHALL HAVE A 100 PSF LOAD LIMITATION.
7. THE ELECTRICAL PLATFORM INSTALLED UNDER THE CP-2 CONTRACT WILL REMAIN FOR A PORTION OF THE CP-3 CONTRACT AS THE CONSTRUCTION SCHEDULE CALLS FOR AN OVERLAP OF THE TWO CONTRACTS.
8. EXISTING BUILDING FOUNDATION AND UNDERGROUND INFORMATION HAS YET TO BE INVESTIGATED.
9. CONTRACTOR SHALL REMOVE THE SECTION OF THE SEVEN 36" CIP WITH HDPE SLEEVES AS SHOWN. THE REMAINDER OF THE PIPES SHALL BE CAPPED AND FILLED WITH CONCRETE.
10. THE CONTRACTOR SHALL PROVIDE SIGNAGE LIMITING THE LOADING ON AND ADJACENT TO THE SILT BASIN STRUCTURE PRIOR TO DEMOLITION. THE CONTRACTOR SHALL LIMIT SUPERIMPOSED LIVE AND DEAD LOADS ON TOP OF THE SILT BASIN STRUCTURE TO 110 PSF.
11. INFORMATION SHOWN IS FROM THE AS-BUILT DRAWINGS FOR CONTRACT 7491011215, REMEDIATION TARGET AREA (RTA2) DESIGN, FOR BLOCK 990 LOTS 1, 16, 21 AND BLOCK 977 LOT 1.
12. EXISTING HYDRANTS SHALL NOT BE REMOVED OR TAKEN OUT OF SERVICE UNTIL A REPLACEMENT HYDRANT IS PROVIDED OR MEANS FOR A TEMPORARY HYDRANT ARE PROVIDED.
13. SEE SL-SERIES DRAWINGS FOR LIGHT POLES TO BE REMOVED.
14. EXISTING TIE-RODS AND WALES TO REMAIN AND BE PROTECTED DURING CONSTRUCTION.
15. THE EXISTING MANHOLE IS BASED ON RECORD DOCUMENTS AND WAS NOT SURVEYED. THE CONTRACTOR SHALL LOCATE THE MANHOLE IN THE FIELD AND EXPOSE THE STRUCTURE AND PIPE FOR CCTV INSPECTION OF THE SANITARY DRAIN. INSPECTION SHALL BE PERFORMED IN ACCORDANCE WITH NYCDEP SPECIFICATION SECTION 53.11 AND SUBMITTED TO NYCDEP AND THE ENGINEER FOR REVIEW. THE COST OF THE INSPECTION WORK SHALL BE ASSUMED TO BE PART OF THE LUMP SUM BID ITEM.

1"=30' 0 30 60 FT.

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

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NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.
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DESIGNED BY: K. ROBBINS | DRAWN BY: K. ROBBINS | PROJECT MANAGER: E. CAMILLERI
CHECKED BY: D. SHEERAN | DESIGN LEAD: D. SHEERAN | DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

STATE OF NEW YORK — JAMES SHEERAN — 088955 — LICENSED PROFESSIONAL ENGINEER

Environmental Protection

ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.
PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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CONSTRUCTION PACKAGE 3 - OH-007

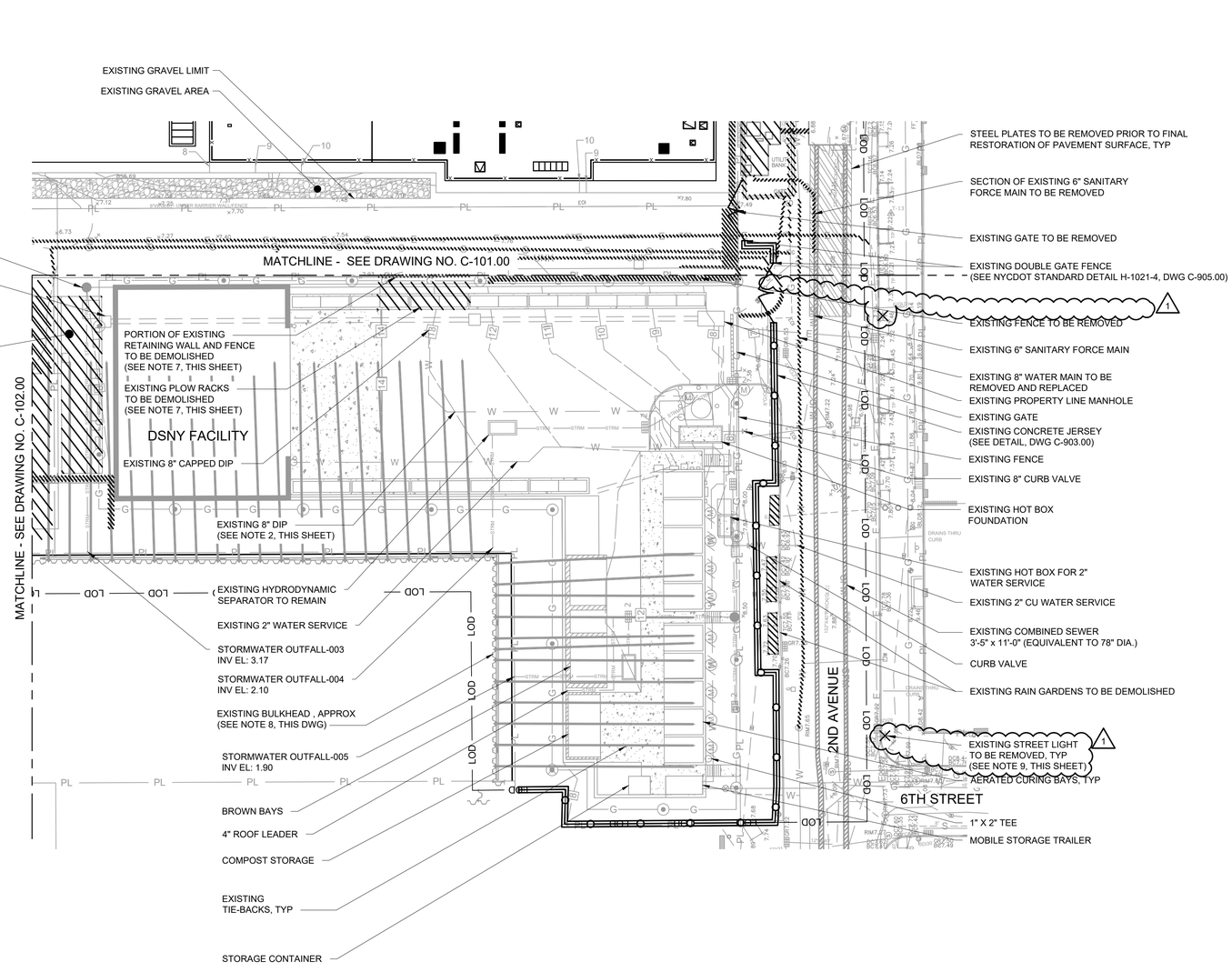
CIVIL

EXISTING CONDITIONS AND DEMOLITION PLAN
AREA 1

DATE: SEPTEMBER 2026
SHEET NO: 56 OF 723
DRAWING NO. C-101.01

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Last Date Saved: DATE&TIME_DWG_SAVED
Date & Time Plotted: DATE&TIME_PLOTTED
Plot Scale: PLOT_SCALE
Plot Style Table: PLOT_STYLE_TABLE



NOTES:

1. EXISTING UNDERGROUND UTILITY INFORMATION AND SITE CONDITIONS HAVE BEEN PLOTTED FROM THE RECORD DRAWINGS SHOWN BELOW.
   - A. OH-007 CONTRACT 2455 SHEET A (1897) - GENERAL PLAN OF MAIN RELIEF SEWER FOR THE RELIEF OF THE THIRD AVE. AND FOURTH AVE. SEWERS
   - B. OH-007 CONTRACT 2455 (1897) - DETAIL SHEET OF MAIN RELIEF SEWER FOR THE RELIEF OF THIRD AVE. AND FOURTH AVE. SEWERS
   - C. WP-288 OWL'S HEAD WATER POLLUTION CONTROL PROJECT (1990) - 2ND AVENUE PUMP STATION TOP PLANS AND PILE PLANS
   - D. CONSOLIDATED EDISON LOW TENSION MAINS AND SERVICE PLATE NOS. 39-L AND 39-M
2. EXISTING CONDITIONS ARE THE RECORD DRAWINGS ASSOCIATED WITH BH, CP-1, AND CP-2 CONSTRUCTION.
3. SERVICES TO BE RECONNECTED. FOR RECONNECTIONS, SEE DWG C-131.
4. GAS MAIN TO BE RELOCATED BY NATIONAL GRID PRIOR TO CONSTRUCTION. REQUIREMENTS FOR EP7 TO BE COORDINATED AS PART OF MASS MAILING AND ALIGNMENT MEETING.
5. EXISTING SANITARY FORCE MAIN WILL NOT BE DEMOLISHED UNTIL NEW 8" PUMP STATION FORCE MAIN IS IN OPERATION.
6. THE ELECTRICAL PLATFORM INSTALLED UNDER THE CP-2 CONTRACT WILL REMAIN AS TEMPORARY POWER FOR THE CP-3 CONTRACT. GENERATORS ARE TO BE USED FOR SUPPLEMENTAL POWER AS NEEDED.
7. CONTRACTOR SHALL COORDINATE THE REMOVAL OF THE RETAINING WALL, ADJACENT SLABS, RACKS, AND PLOW RACKS WITH DSNY.
8. INFORMATION SHOWN IS FROM THE AS-BUILT DRAWINGS FOR CONTRACT 7491011215, REMEDIATION TARGET AREA (RTA2) DESIGN, FOR BLOCK 990 LOTS 1, 16, 21 AND BLOCK 977 LOT 1.
9. SEE SL-SERIES DRAWINGS FOR LIGHT POLES TO BE REMOVED.

1"=30' 0 30 60 FT.

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

GRAPHIC SCALES CHECK BEFORE USE

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NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.
1	10/26/2026	ADDENDUM NO. 2	DS

DESIGNED BY: J. PERRUZZA | DRAWN BY: J. TANNER | PROJECT MANAGER: E. CAMILLERI
CHECKED BY: D. SHEERAN | DESIGN LEAD: D. SHEERAN | DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.
PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

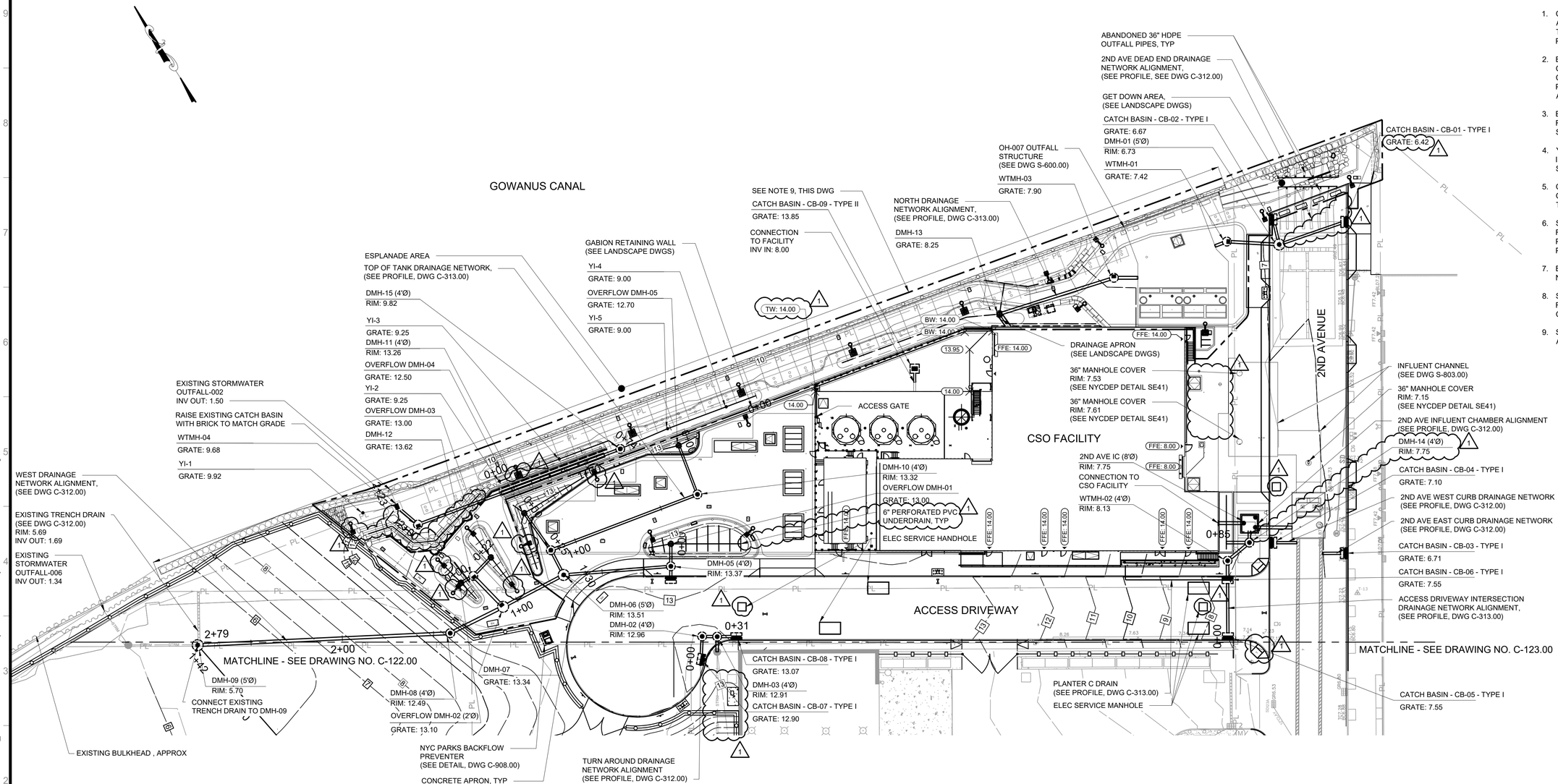
CIVIL

EXISTING CONDITIONS AND DEMOLITION PLAN AREA 3

DATE: SEPTEMBER 2026
SHEET NO: 58 OF 723
DRAWING NO. C-103.01

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Last Saved By: JLu
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Last Date Saved: DATE&TIME_DWG_SAVED
Plot Scale: PLOT_SCALE
Date & Time Plotted: DATE&TIME_PLOTTED
Plot Style Table: PLOT_STYLE_TABLE



NOTES:

1. CONTRACTOR SHALL MAINTAIN ALL EXISTING AND NEW HYDRODYNAMIC SEPARATORS THROUGH SUBSTANTIAL COMPLETION OF THE PROJECT.
2. BULKHEAD ELEVATIONS PROVIDED FROM CONTRACT DRAWING SET TITLED CSO-GC-SFS-OH-BH OH-007 BULKHEAD, PREPARED BY HAZEN AND SAWYER / BROWN AND CALDWELL DATED NOVEMBER 2021.
3. EXISTING SUPPORT OF EXCAVATION SYSTEM FOR CSO FACILITY NOT SHOWN FOR CLARITY. SEE DWG C-101.
4. YARD PIPING AND BURIED UTILITY INFRASTRUCTURE NOT SHOWN FOR CLARITY. SEE DWG C-131.
5. CONTRACTOR SHOULD REFER TO DETAIL M1001 ON DWG M-900.00 FOR COUPLING CONNECTION THROUGH CSO FACILITY WALL.
6. SEE STRUCTURES TABLE ON DWG C-904.00 FOR STAKING COORDINATES. INVERTS AND PIPE CONNECTIONS ARE SHOWN ON THE PROFILE DRAWINGS C-312.00 AND C-313.00.
7. BRICK UP EXISTING STRUCTURES TO MATCH NEW GRADE.
8. SEE DRAWINGS C-124.00, C-201.00 AND C-202.00 FOR SPOT ELEVATIONS AND TOP AND BOTTOM OF CURB ELEVATIONS.
9. SEE LANDSCAPE DRAWINGS FOR GRADING AND SPOT ELEVATIONS FOR THIS AREA.

1"=30' 0 30 60 FT.

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

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CHECKED BY: D. SHEERAN | DESIGN LEAD: D. SHEERAN | DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

Environmental Protection

ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.
PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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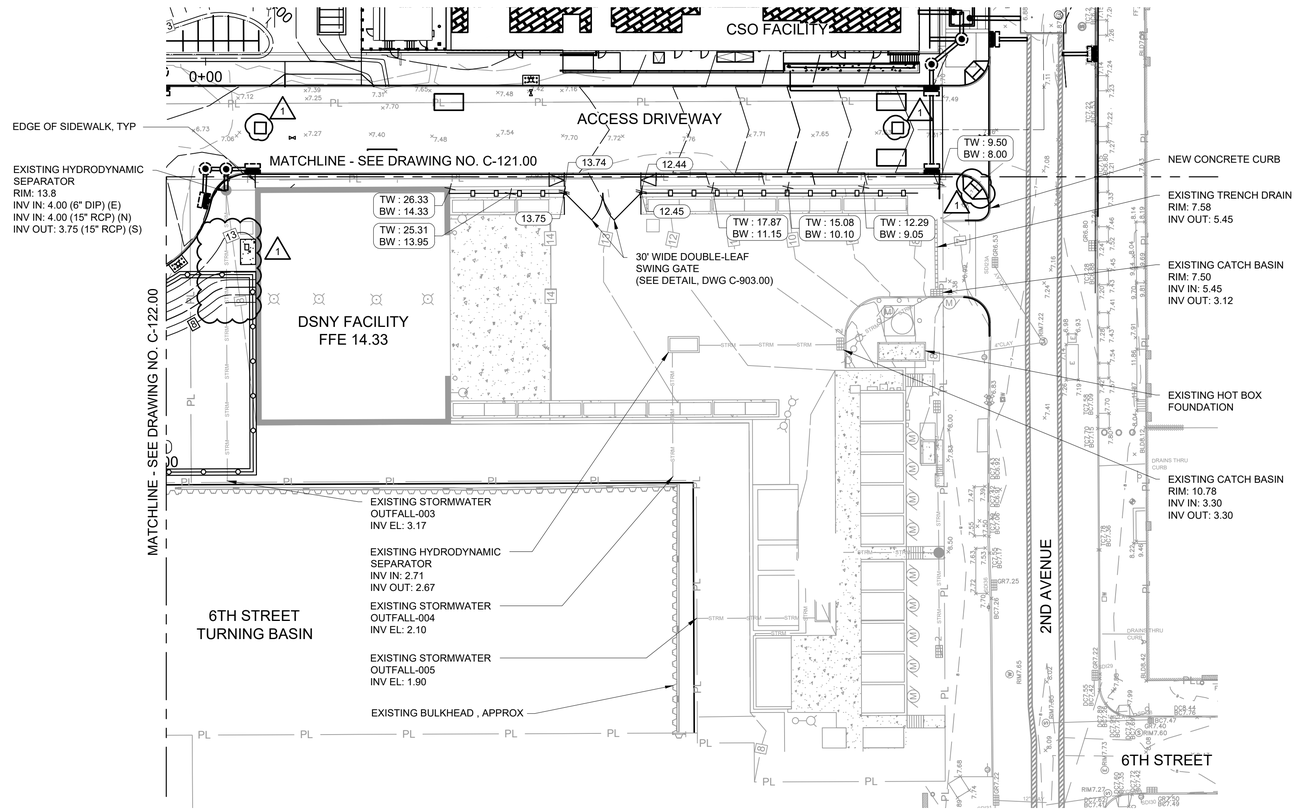
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GRADING AND DRAINAGE PLAN AREA 1

DATE: SEPTEMBER 2026
SHEET NO: 62 OF 723
DRAWING NO. C-121.01

Last Saved By: JLu
Paper Size Printed/Plotted: ANSI full bleed D (34.00 x 22.00 Inches)
Drawing File Name & Drive Location: C:_DCACDocs\Hazen and Sawyer\90409-000_CSO-GC-SFS-DES-OH\Project Files\000-ProjectWiseCivil\CP-03\C-121.dwg
Last Date Saved: 10/29/2026 4:32 PM
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Plot Scale: 1:1
Plot Style Table: HS-FWS.ctb

All inquiries regarding this drawing(s) or project should be made to NYC Environmental Protection, Bureau of Engineering Design and Construction.



NOTES:

1. ALL ELEVATIONS REFER TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) WHICH IS 1.447 FEET BELOW THE BROOKLYN BOROUGH SEWER DATUM.
2. EXISTING SUPPORT OF EXCAVATION SYSTEM FOR CSO FACILITY NOT SHOWN FOR CLARITY. SEE DWG C-101.
3. YARD PIPING AND BURIED UTILITY INFRASTRUCTURE NOT SHOWN FOR CLARITY. SEE DWG C-133.
4. CP-3 CONTRACTOR TO MAINTAIN EXISTING HYDRODYNAMIC SEPARATORS, EXCLUDING THE ONE WITHIN THE DSNY YARD, THROUGHOUT THE COURSE OF CONSTRUCTION.
5. SEE STRUCTURES TABLE ON DWG C-904.00 FOR ADDITIONAL INFORMATION.

1"=30' 0 30 60 FT.

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DESIGNED BY:	DRAWN BY:	PROJECT MANAGER:
J. PERRUZZA	J. PERRUZZA	E. CAMILLERI
CHECKED BY:	DESIGN LEAD:	DESIGN MANAGER:
D. SHEERAN	D. SHEERAN	G. DEREAMER

Hazen Brown AND Caldwell

Environmental Protection

ACCOUNTABLE MANAGER	JESSE GOLDIN, P.E.
PORTFOLIO MANAGER	KEVIN CLARKE, P.E.

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CIVIL

GRADING AND DRAINAGE PLAN

AREA 3

DATE: SEPTEMBER 2026

SHEET NO: 64 OF 723

DRAWING NO. C-123.01

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Date & Time Plotted: DATE&TIME_PLOTTED
Plot Scale: PLOT_SCALE
Plot Style Table: PLOT_STYLE_TABLE

GOWANUS CANAL

EXISTING CATCH BASIN
GRATE: 9.90

WTMH-04
GRATE: 9.68

YI-1
GRATE: 9.92

OVERFLOW DMH-04
GRATE: 12.50

YI-2
GRATE: 9.25

YI-3
GRATE: 9.25

YI-4
GRATE: 9.00

YI-5
GRATE: 9.00

REINFORCED CONCRETE
DROP CURB, TYP
(SEE DETAIL, DWG C-905.00)

DMH-15 (4'Ø)
RIM: 9.82

OVERFLOW DMH-03
GRATE: 13.00

OVERFLOW DMH-05
GRATE: 12.70

DMH-10 (4'Ø)
RIM: 13.32

DMH-11 (4'Ø)
RIM: 13.26

DMH-06 (5'Ø)
RIM: 13.51

OVERFLOW DMH-01
GRATE: 13.00

DMH-05 (4'Ø)
RIM: 13.37

OVERFLOW DMH-02
GRATE: 13.10

DMH-12
GRATE: 13.62

DMH-08 (4'Ø)
RIM: 12.49

DMH-07
GRATE: 13.34

DMH-02 (4'Ø)
RIM: 12.96

DMH-03 (4'Ø)
RIM: 12.91

CATCH BASIN - CB-10 - TYPE I
GRATE: 12.83

CATCH BASIN - CB-08 - TYPE I
GRATE: 13.07

CATCH BASIN - CB-07 - TYPE I
GRATE: 12.90

6" PERFORATED PVC
UNDERDRAIN, TYP

ACCESS DRIVEWAY
(SEE DWG C-201.00)

SEE LANDSCAPE DWGS
FOR GRADING DESIGN
FOR THIS AREA

PB
EH
PL
STRM

NOTES:

1. ALL ELEVATIONS REFER TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) WHICH IS 1.447 FEET BELOW THE BROOKLYN BOROUGH SEWER DATUM.
2. EXISTING SUPPORT OF EXCAVATION SYSTEM FOR CSO FACILITY NOT SHOWN FOR CLARITY. SEE DWG C-101.
3. YARD PIPING AND BURIED UTILITY INFRASTRUCTURE NOT SHOWN FOR CLARITY. SEE DWG C-131.
4. CP-3 CONTRACTOR TO MAINTAIN EXISTING HYDRODYNAMIC SEPARATOR THROUGHOUT THE COURSE OF CONSTRUCTION.
5. CONTOURS ROUNDED TO THE NEAREST TENTH SHOWN FOR THE TOP OF TANK AREA DUE TO THE SMALL VARIATIONS IN GRADE. ONE-FOOT CONTOURS USED IN ALL OTHER AREAS.

PLAN - TOP OF TANK
SCALE: 1"=10'

0 10 20 FT.
1"=10'

BID SET
SUBMITTAL DATE: SEPTEMBER 2026

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CHECKED BY: D. SHEERAN	DESIGN LEAD: D. SHEERAN	DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

DANIEL JAMES SHEERAN — 088955 — LICENSED PROFESSIONAL ENGINEER — STATE OF NEW YORK

NYC Environmental Protection

ACCOUNTABLE MANAGER
JESSE GOLDIN, P.E.

PORTFOLIO MANAGER
KEVIN CLARKE, P.E.

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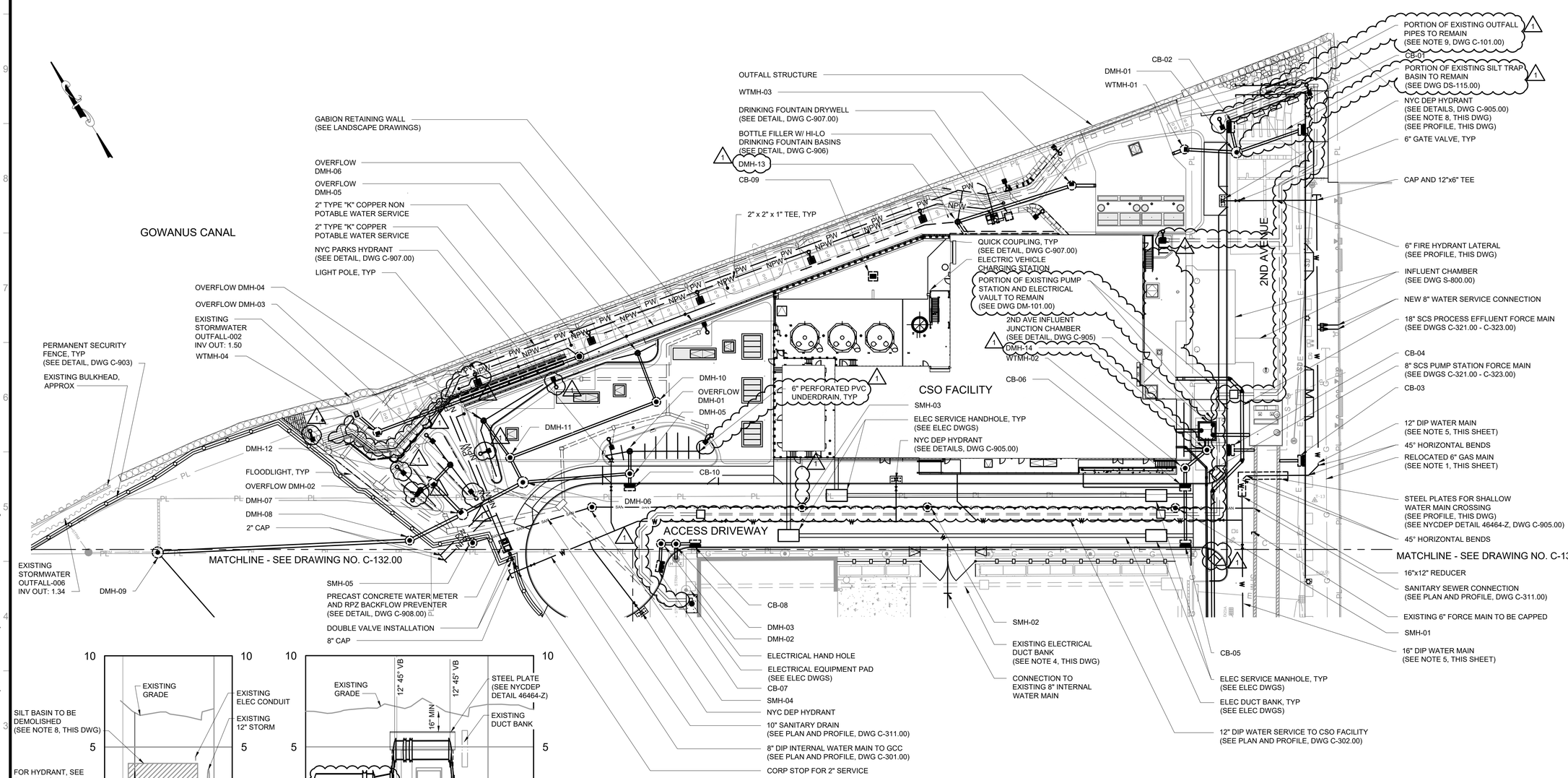
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GRADING AND DRAINAGE PLAN
TOP OF TANK AREA

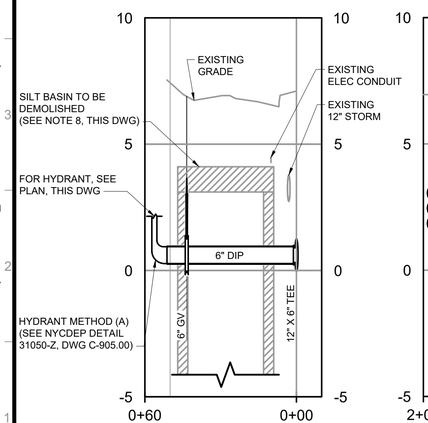
DATE: SEPTEMBER 2026
SHEET NO: 65 OF 723
DRAWING NO. C-124.01

Last Saved By: JLu
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Drawing File Name & Drive Location: C:_DOCACCDocs\Hazen and Sawyer\90409-000_CSO-GC-SFS-DES-OH\Project Files\000-ProjectWiseCivil\CP-03\C-124.dwg
Last Date Saved: 10/29/2026 4:33 PM
Date & Time Plotted: 10/30/2026 10:58 AM
Plot Scale: 1:1
Plot Style Table: HS-FWS.ctb



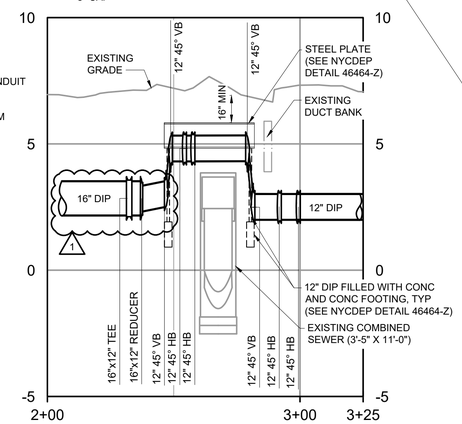
NOTES:

1. GAS MAIN LOCATION WITHIN 2ND AVENUE SIDEWALK IS SHOWN AS APPROXIMATE. CONTRACTOR SHALL VERIFY LOCATION OF THE GAS MAIN PRIOR TO INSTALLATION OF THE 12" WATER MAIN.
2. EXISTING SUPPORT OF EXCAVATION FOR CSO FACILITY NOT SHOWN FOR CLARITY. SEE DWG C-101.
3. CONTRACTOR SHOULD REFER TO DETAIL M1002 ON DWG M-900.00 FOR COUPLING CONNECTION THROUGH CSO FACILITY WALL.
4. ELECTRICAL DUCT BANK CONSTRUCTED IN THE CP-1 CONTRACT.
5. ALL WATER MAINS WITHIN PUBLIC RIGHT-OF-WAY SHALL BE INSTALLED IN ACCORDANCE WITH NYC DEP WATER MAIN STANDARD DRAWINGS AND SPECIFICATIONS.
6. SEE ELECTRICAL DRAWING SET FOR DUCT BANK COORDINATION.
7. REFER TO CONTRACT DRAWINGS C-321.00 - C-323.00 FOR 18" SCS PROCESS EFFLUENT FORCE MAIN AND 8" SCS PUMP STATION FORCE MAIN PLAN AND PROFILES.
8. THE CONTRACTOR SHALL INSTALL A FIRE HYDRANT ON THE EAST SIDE OF 2ND AVENUE UNTIL THE EXISTING SILT BASIN IS DEMOLISHED. ONCE SILT BASIN IS DEMOLISHED, A PERMANENT HYDRANT CAN BE CONSTRUCTED ON THE WEST SIDE OF 2ND AVENUE AND THE HYDRANT ON THE EAST SIDE OF THE STREET CAN BE REMOVED.
9. EXISTING INFRASTRUCTURE TO BE DEMOLISHED, RELOCATED, OR REMOVED NOT SHOWN IN PLAN VIEW FOR CLARITY. SEE EXISTING CONDITIONS AND DEMOLITION DRAWINGS C-101.00 TO C-103.00



PROFILE - FIRE HYDRANT LATERAL

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'



PROFILE - SHALLOW WATER MAIN CROSSING

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'

1"=3' 0 3 6 FT.

1"=30' 0 30 60 FT.

BID SET

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CHECKED BY: D. SHEERAN	DESIGN LEAD: D. SHEERAN	DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

STATE OF NEW YORK — MICHAEL JAMES SHEERAN — 088955 — LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER
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PORTFOLIO MANAGER
KEVIN CLARKE, P.E.

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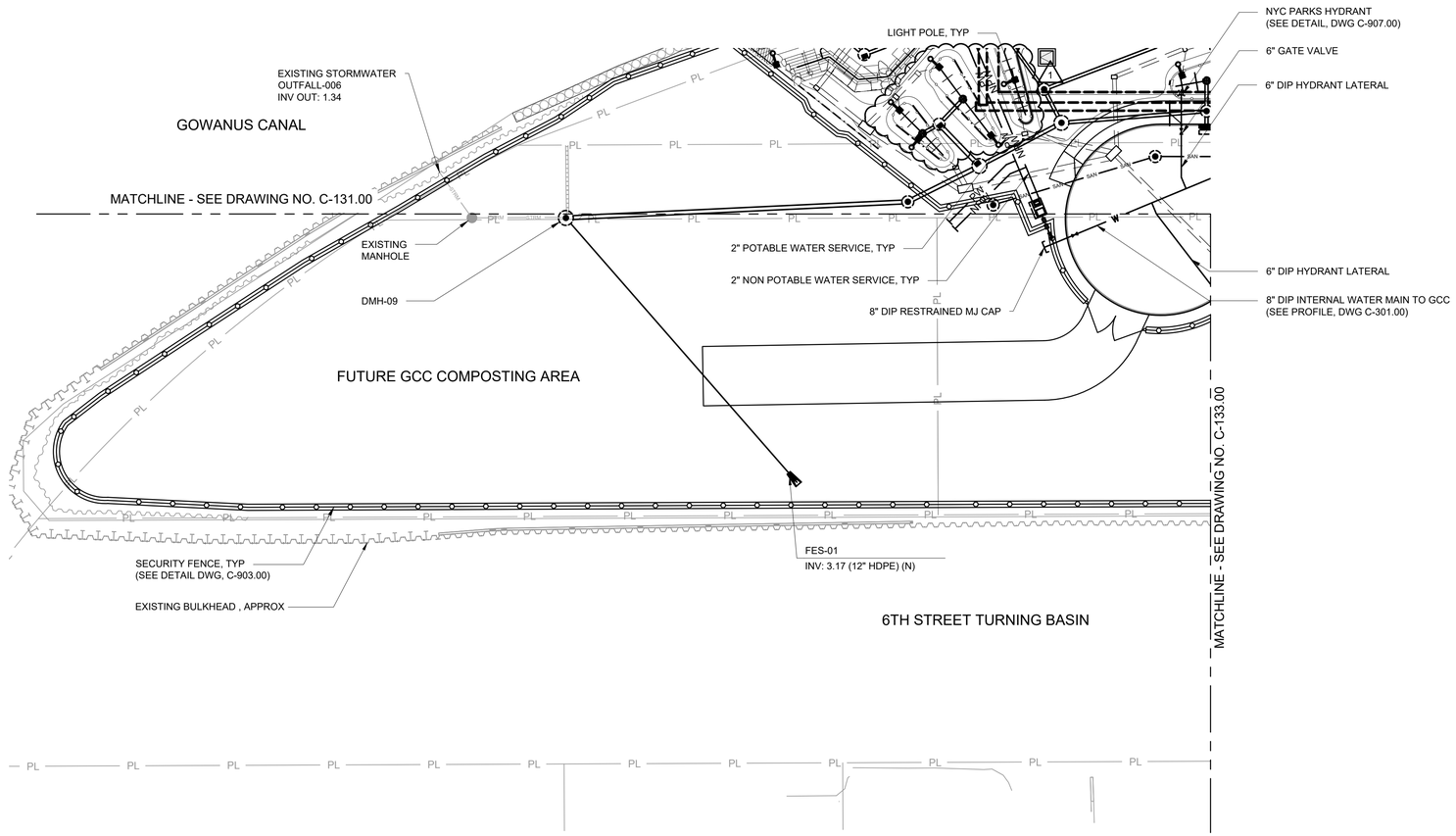
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CIVIL
YARD PIPING PLAN
AREA 1

DATE: SEPTEMBER 2026
SHEET NO: 66 OF 723
DRAWING NO. C-131.01

Last Saved By: JLu
Paper Size Printed/Plotted: ANSI full bleed D (34.00 x 22.00 Inches)
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Last Date Saved: 10/29/2026 4:45 PM
Date & Time Plotted: 10/30/2026 11:00 AM
Plot Scale: 1:1
Plot Style Table: HS-FWS.ctb

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1"=30' 0 30 60 FT.

NOTES:

1. FOR INFORMATION REGARDING ELECTRICAL LINES AND ELECTRICAL TRENCHES REFERENCE ELECTRICAL DWGS.
2. EXISTING INFRASTRUCTURE TO BE DEMOLISHED, RELOCATED, OR REMOVED NOT SHOWN IN PLAN VIEW FOR CLARITY. SEE EXISTING CONDITIONS AND DEMOLITION DRAWINGS C-101.00 TO C-103.00.

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

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J. PERRUZZA	J. PERRUZZA	E. CAMILLERI
CHECKED BY:	DESIGN LEAD:	DESIGN MANAGER:
D. SHEERAN	D. SHEERAN	G. DEREAMER

Hazen | Brown AND Caldwell

STATE OF NEW YORK — DANIEL JAMES SHEERAN — 088955 — LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER	JESSE GOLDIN, P.E.
PORTFOLIO MANAGER	KEVIN CLARKE, P.E.

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CIVIL

YARD PIPING PLAN

AREA 2

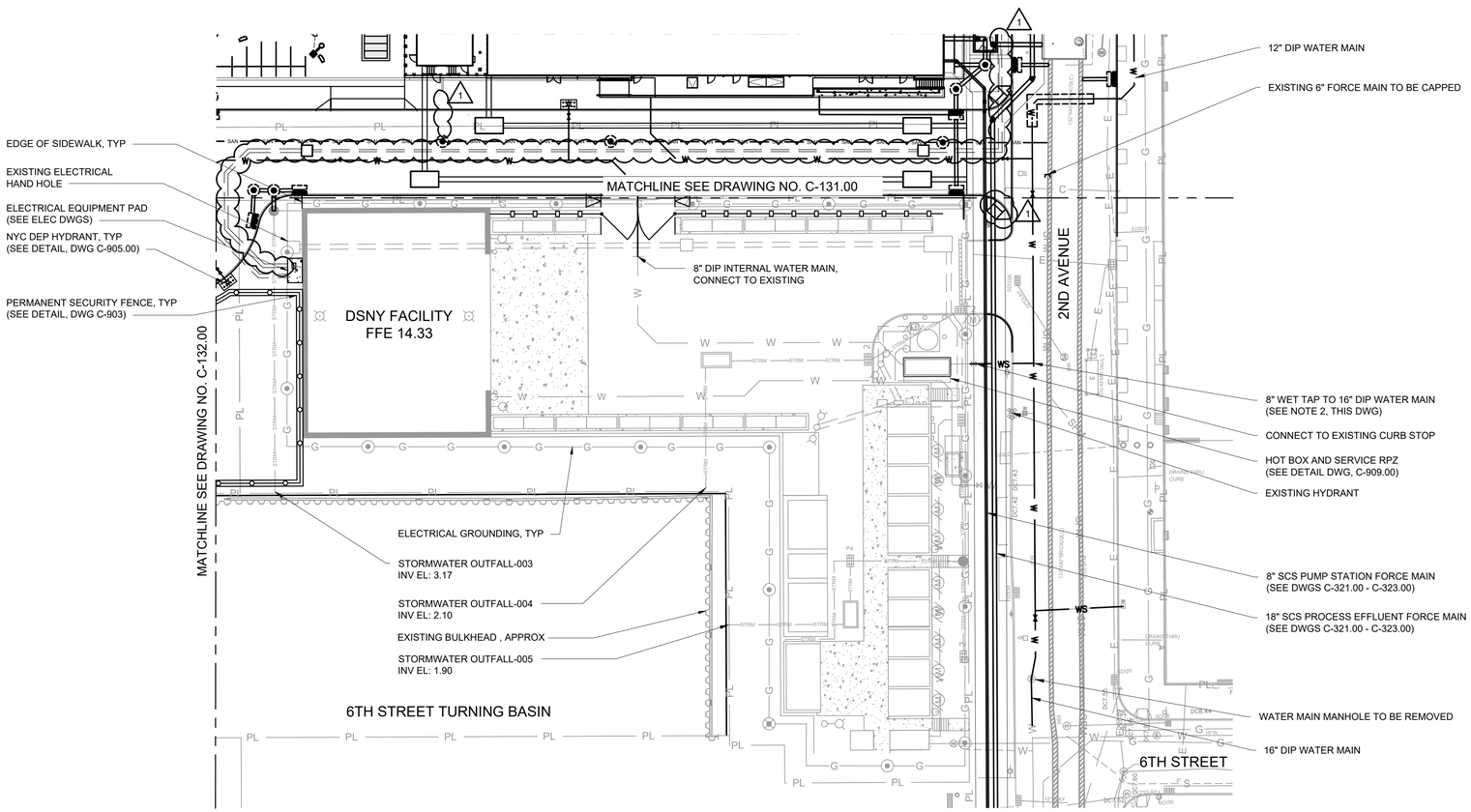
DATE: SEPTEMBER 2026

SHEET NO: 67 OF 723

DRAWING NO. C-132.01

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Plot Scale: PLOT_SCALE
Plot Style Table: PLOT_STYLE_TABLE



NOTES:

1. FOR INFORMATION REGARDING ELECTRICAL LINES AND ELECTRICAL TRENCHES REFERENCE ELECTRICAL DWGS.
2. CONTRACTOR SHALL PROCURE PERMIT FOR TAP CONNECTION FOR PRIVATE WATER MAIN FROM NYCDEP.
3. EXISTING INFRASTRUCTURE TO BE DEMOLISHED, RELOCATED, OR REMOVED NOT SHOWN IN PLAN VIEW FOR CLARITY. SEE EXISTING CONDITIONS AND DEMOLITION DRAWINGS C-101.00 TO C-103.00.

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CHECKED BY: D. SHEERAN	DESIGN LEAD: D. SHEERAN	DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

STATE OF NEW YORK — JESSE JAMES SHEERAN — 088955 — LICENSED PROFESSIONAL ENGINEER

Environmental Protection

ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.

PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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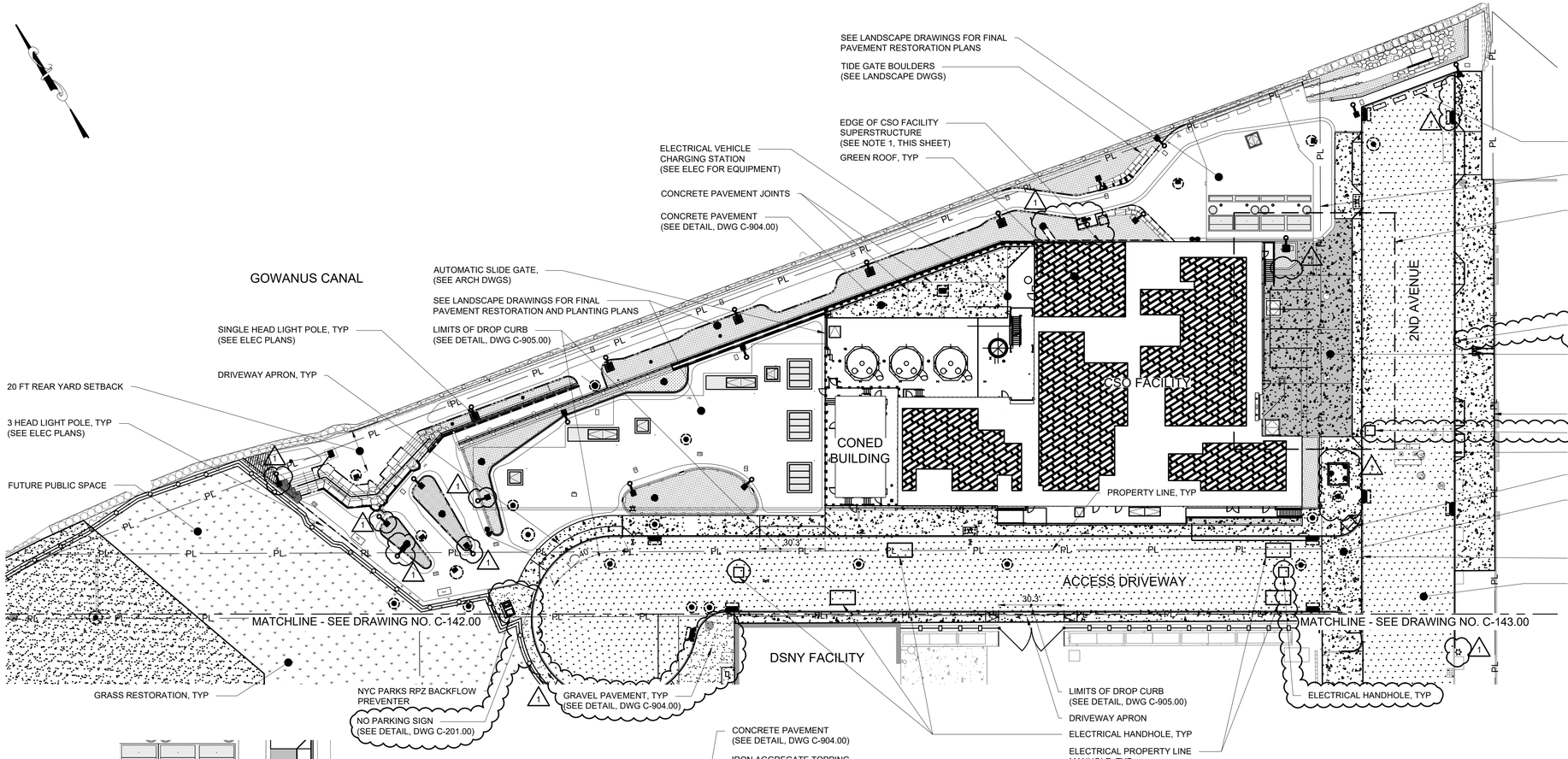
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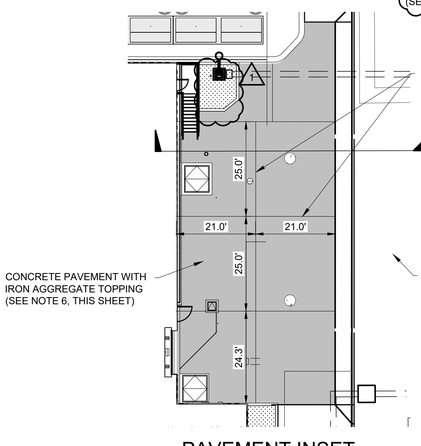
CIVIL
YARD PIPING PLAN
AREA 3

DATE: SEPTEMBER 2026
SHEET NO: 68 OF 723
DRAWING NO. C-133.01

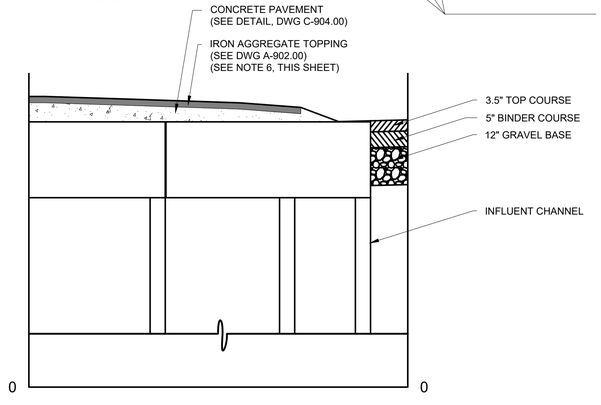
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Last Saved By: JLu
Paper Size Printed/Plotted: PAPPER_SIZE_PRINTED/PLOTTED
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Last Date Saved: DATE&TIME_DWG_SAVED
Date & Time Plotted: DATE&TIME_PLOTTED
Plot Scale: PLOT_SCALE
Plot Style Table: PLOT_STYLE_TABLE





PAVEMENT INSET
SCALE: 1" = 20'



SECTION L
HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 2'

NOTES:

1. LIMITS OF BUILDING SHOWN AS OUTER EDGE OF STRUCTURE. SEE ARCHITECTURAL DRAWINGS FOR SCREENING EXTENDING PAST EDGE OF STRUCTURE.
2. REFER TO LANDSCAPE DRAWINGS FOR FINAL RESTORATION AND LANDSCAPE PLANTING PLANS.
3. ROADWAY MARKINGS TO BE REPLACED IN KIND.
4. STRUCTURES SHOWN NOT LABELED, SEE DWGS C-121-123 AND C-131-133 FOR STRUCTURE TYPE AND NAME.
5. ASPHALT PAVEMENT SHALL BE RESTORED TO THE FULL DEPTH AS INDICATED ON ASPHALT PAVEMENT DETAIL ON DRAWING C-905.00.
6. IRON AGGREGATE TOPPING SHALL BE APPLIED ON TOP OF THE CONCRETE PAVEMENT. SEE CONCRETE PAVEMENT DETAIL ON DRAWING C-904.00, AND SECTION L ON THIS DRAWING.
7. CONCRETE PAVEMENT AT THE START OF THE ACCESS DRIVEWAY SHALL BE PER NYCDOT DETAIL H-1034 AS LISTED ON DRAWING C-905.00.
8. SEE SL-SERIES DRAWINGS FOR STREET LIGHT LAYOUT AND DETAILS.

1"=10' 0 10 20 FT.
1"=20' 0 20 40 FT.
1"=30' 0 30 60 FT.

BID SET
SUBMITTAL DATE: SEPTEMBER 2026

GRAPHIC SCALES CHECK BEFORE USE

IF SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT. SCALE ACCORDINGLY

NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.
1	10/2026	ADDENDUM NO. 2	DS

DESIGNED BY:	DRAWN BY:	PROJECT MANAGER:
J. PERRUZZA	J. TANNER	E. CAMILLERI
CHECKED BY:	DESIGN LEAD:	DESIGN MANAGER:
D. SHEERAN	D. SHEERAN	G. DEREAMER

Hazen | Brown AND Caldwell

STATE OF NEW YORK — DANIEL JAMES SHEERAN — 088955 — LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER	JESSE GOLDIN, P.E.
PORTFOLIO MANAGER	KEVIN CLARKE, P.E.

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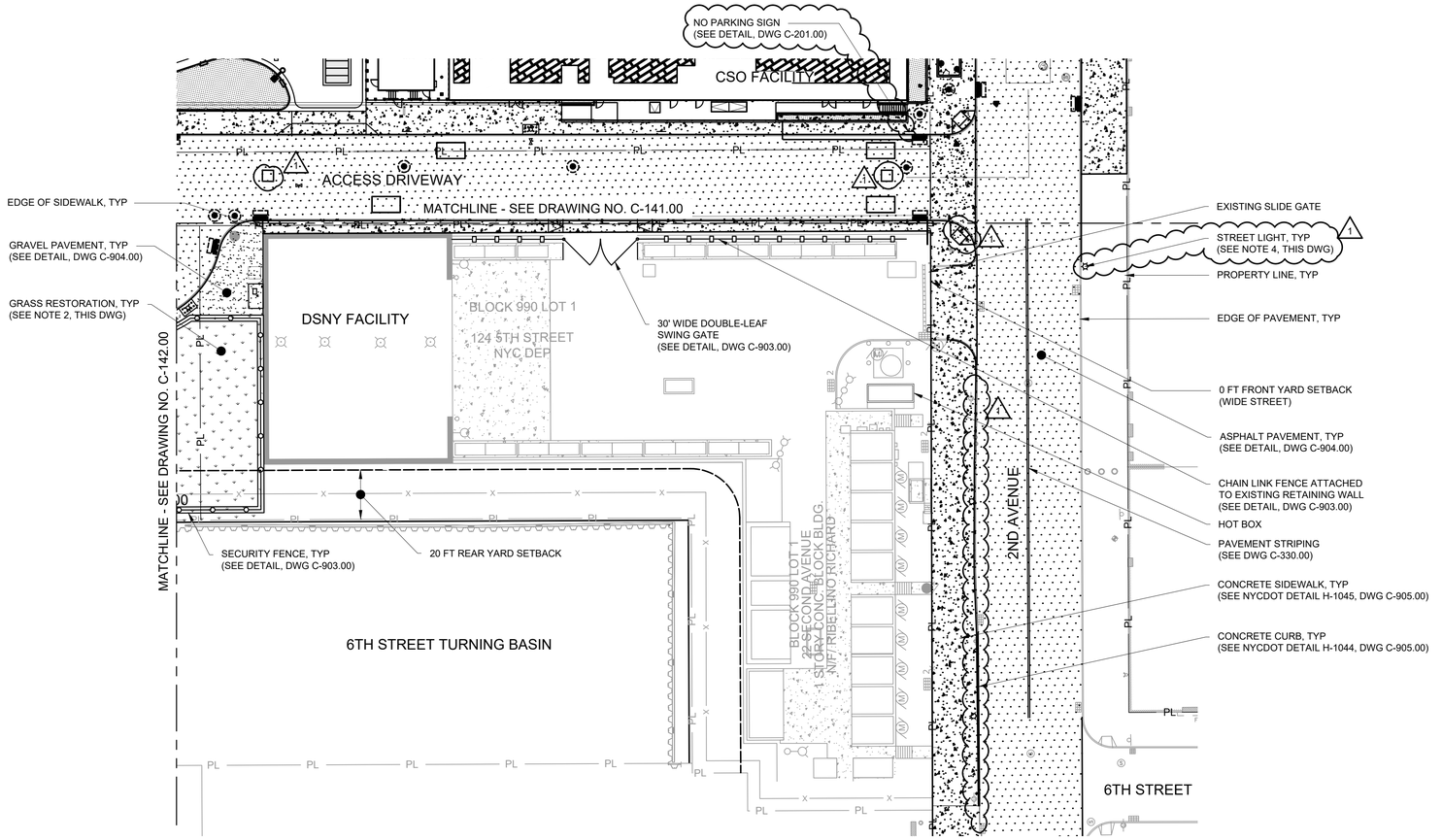
CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

CIVIL
FINAL SITE PLAN
AREA 1

DATE: SEPTEMBER 2026
SHEET NO: 69 OF 723
DRAWING NO. C-141.01

Last Saved By: JLu
Paper Size Printed/Plotted: ANSI full bleed D (34.00 x 22.00 Inches)
Drawing File Name & Drive Location: C:_DOACCDocs\Hazen and Sawyer\90409-000_CSO-GC-SFS-DES-OH\Project Files\000-ProjectWiseCivil\CP-03\C-141.dwg
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Plot Style Table: HS-FWS.ctb
Plot Scale: 1:1

All inquiries regarding this drawing(s) or project should be made to NYC Environmental Protection, Bureau of Engineering Design and Construction.



NOTES:

1. LIMITS OF BUILDING SHOWN AS OUTER EDGE OF STRUCTURE. SEE ARCHITECTURAL DRAWINGS FOR SCREENING EXTENDING PAST EDGE OF STRUCTURE.
2. REFER TO THE "GRASS SEED FOR LAWN AREAS" IN SPECIFICATION SECTION 32 90 00 - PLANTING FOR SEED MIX AND "LAWN MIX" IN SPECIFICATION SECTION 32 90 05 - SOIL MIXES FOR GRASS RESTORATION.
3. ROADWAY MARKINGS TO BE REPLACED IN KIND.
4. SEE SL-SERIES DRAWINGS FOR STREET LIGHT LAYOUT AND DETAILS.

1"=30' 0 30 60 FT.

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

GRAPHIC SCALES CHECK BEFORE USE

IF SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT. SCALE ACCORDINGLY

NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.
1	10/2026	ADDENDUM NO. 2	DS

DESIGNED BY: J. PERRUZZA	DRAWN BY: J. TANNER	PROJECT MANAGER: E. CAMILLERI
CHECKED BY: D. SHEERAN	DESIGN LEAD: D. SHEERAN	DESIGN MANAGER: G. DEREAMER

Hazen Brown AND Caldwell

STATE OF NEW YORK — DANIEL JAMES SHEEHAN — 088955 — LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER
JESSE GOLDIN, P.E.

PORTFOLIO MANAGER
KEVIN CLARKE, P.E.

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CIVIL
FINAL SITE PLAN
AREA 3

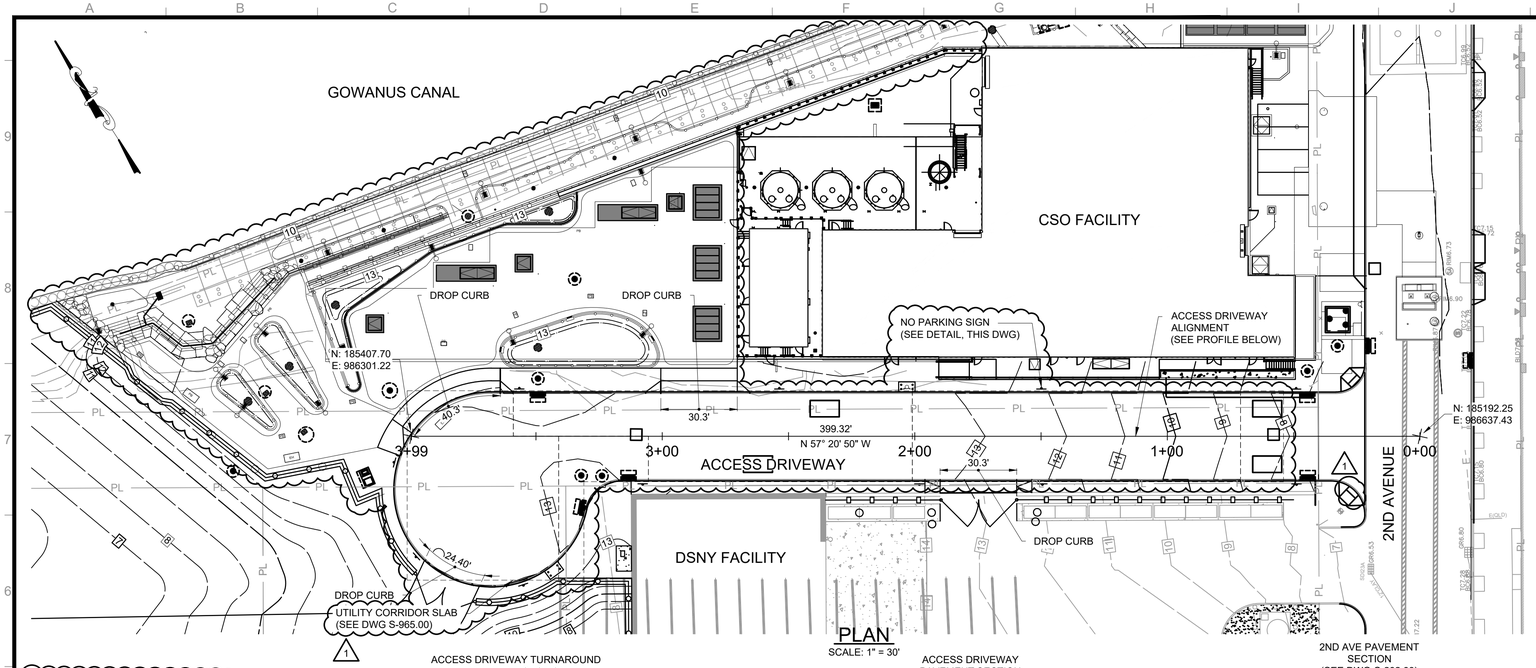
DATE: SEPTEMBER 2026

SHEET NO: 71 OF 723

DRAWING NO. C-143.01

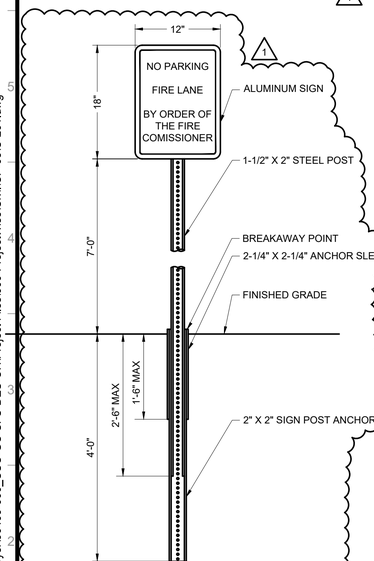
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Last Date Saved: DATE&TIME_DWG_SAVED
Date & Time Plotted: DATE&TIME_PLOTTED
Plot Scale: PLOT_SCALE
Plot Style Table: PLOT_STYLE_TABLE



PLAN

SCALE: 1" = 30'

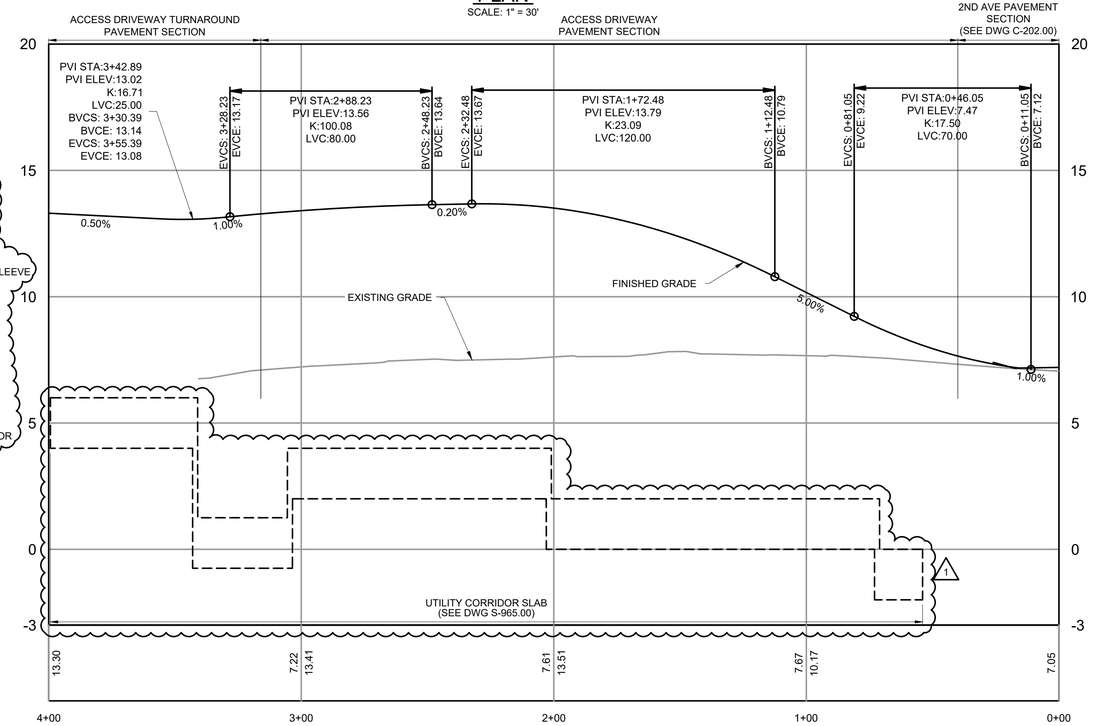


BREAKAWAY SIGN POST DETAIL

NOT TO SCALE

PARKING SIGN NOTES:

1. SIGN SHALL HAVE RED LETTERS ON A WHITE REFLECTIVE BACKGROUND.

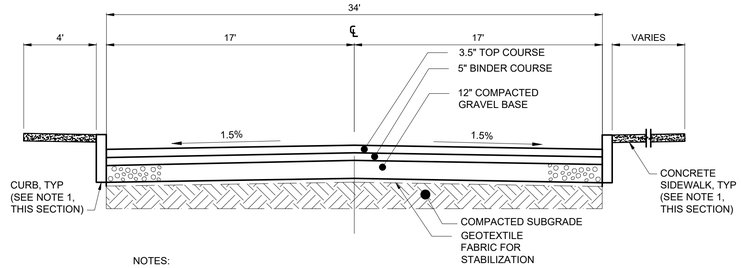


ACCESS DRIVEWAY PROFILE

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'

NOTES:

1. EXISTING SUPPORT OF EXCAVATION SYSTEM FOR CSO FACILITY NOT SHOWN FOR CLARITY. SEE DWG C-101.
2. YARD PIPING AND BURIED UTILITY INFRASTRUCTURE NOT SHOWN FOR CLARITY. SEE DWGS C-121, C-123, C-131 AND C-133 FOR UNDERGROUND PIPING INFORMATION.
3. SIDEWALK TRANSITIONS ARE LOCATED ON EITHER SIDE OF THE DSNY FACILITY ENTRY.

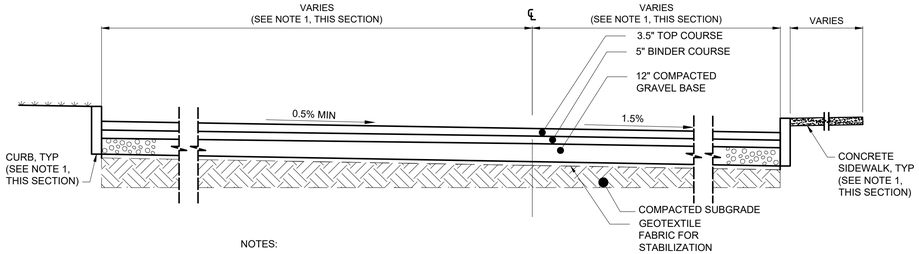


NOTES:

1. SEE C-140 SERIES DRAWINGS FOR DROP CURB LOCATIONS AND SIDEWALK WIDTHS.
2. SECTION IS CUT LOOKING TOWARDS THE END OF THE ALIGNMENT.
3. WHERE ROAD REQUIRES FILL BETWEEN THE SUBGRADE AND GRAVEL BASE, SELECT FILL SHALL BE PROVIDED. SEE SECTIONS ON DWGS C-211.00 THROUGH C-213.00.

ACCESS DRIVEWAY PAVEMENT SECTION

NTS



NOTES:

1. SEE C-140 SERIES DRAWINGS FOR DROP CURB LOCATIONS, SIDEWALK WIDTHS, AND TURNAROUND DIMENSIONS.
2. SECTION IS CUT LOOKING TOWARDS THE END OF THE ALIGNMENT.
3. WHERE ROAD REQUIRES FILL BETWEEN THE SUBGRADE AND GRAVEL BASE, SELECT FILL SHALL BE PROVIDED. SEE SECTIONS ON DWGS C-211.00 THROUGH C-213.00.

ACCESS DRIVEWAY TURNAROUND PAVEMENT SECTION

NTS

1"=3' 0 3 6 FT.
1"=30' 0 30 60 FT.

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

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CHECKED BY: D. SHEERAN	DESIGN LEAD: D. SHEERAN	DESIGN MANAGER: G. DEREAMER

Hazen and Brown and Caldwell

STATE OF NEW YORK — DANIEL JAMES SHEERAN — 088955 — LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER	JESSE GOLDIN, P.E.
PORTFOLIO MANAGER	KEVIN CLARKE, P.E.

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CIVIL

ACCESS DRIVEWAY PLAN AND PROFILE

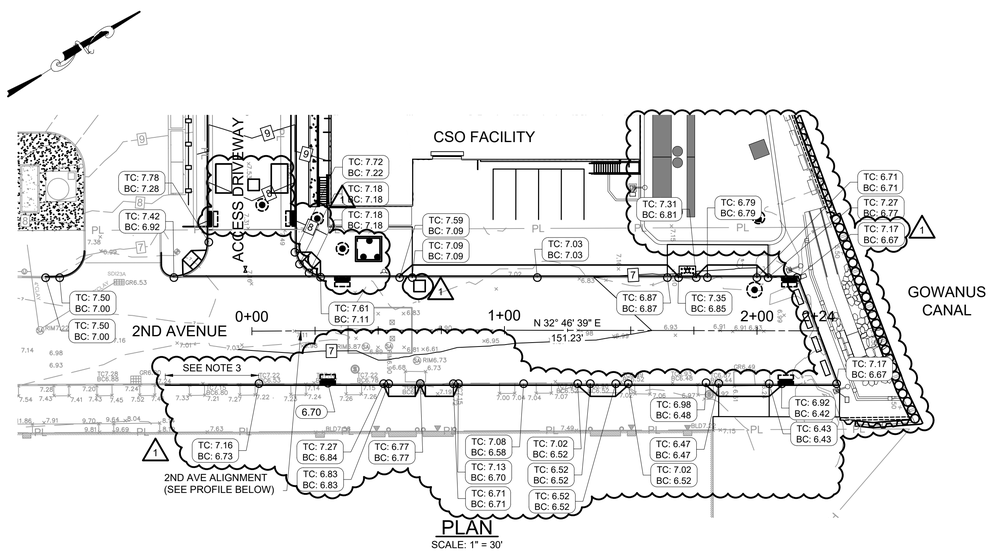
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SHEET NO: 72 OF 723

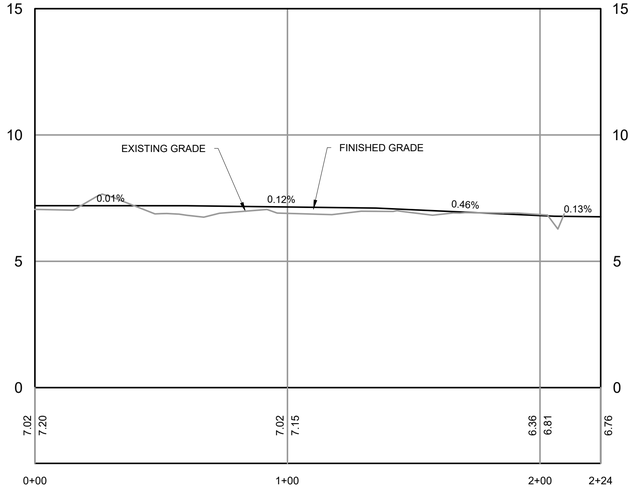
DRAWING NO. C-201.01

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Drawing File Name & Drive Location: C:_DCACCDocs\Hazen and Sawyer\90409-000_CSO-GC-SFS-DES-OH\Project Files\000-ProjectWise\Civil\CP-03\C-201.dwg
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Plot Scale: 1:1
Date & Time Plotted: 10/29/2026 3:45 PM

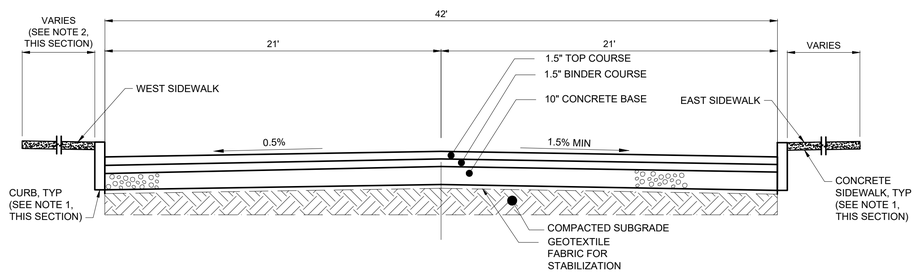


PLAN
SCALE: 1" = 30'



2ND AVENUE PROFILE

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'



NOTES:

1. SEE C-140 SERIES DRAWINGS FOR DROP CURB LOCATIONS AND SIDEWALK WIDTHS.
2. SEE CROSS-SECTION ON DWG C-141 FOR CONCRETE PAVEMENT WITH IRON AGGREGATE TOPPING LOCATED BETWEEN STA 0+63 AND 1+65.

2ND AVENUE PAVEMENT SECTION

NTS

NOTES:

1. EXISTING SUPPORT OF EXCAVATION SYSTEM FOR CSO FACILITY NOT SHOWN FOR CLARITY. SEE DWG C-101.
2. YARD PIPING AND BURIED UTILITY INFRASTRUCTURE NOT SHOWN FOR CLARITY. SEE DWGS C-121, C-123, C-131 AND C-133 FOR UNDERGROUND PIPING INFORMATION.
3. TOP AND BOTTOM OF CURB ELEVATIONS TO MATCH EXISTING GRADE.

1"=3' 0 3 6 FT.
1"=30' 0 30 60 FT.

BID SET
SUBMITTAL DATE: SEPTEMBER 2026

GRAPHIC SCALES CHECK BEFORE USE

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1	10/2026	ADDENDUM NO. 2	DS

DESIGNED BY:	DRAWN BY:	PROJECT MANAGER:
J. PERRUZZA	J. TANNER	E. CAMILLERI
CHECKED BY:	DESIGN LEAD:	DESIGN MANAGER:
D. SHEERAN	D. SHEERAN	G. DEREAMER

Hazen | Brown AND Caldwell

STATE OF NEW YORK — DANIEL JAMES SHEERAN — 088955 — LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER	JESSE GOLDIN, P.E.
PORTFOLIO MANAGER	KEVIN CLARKE, P.E.

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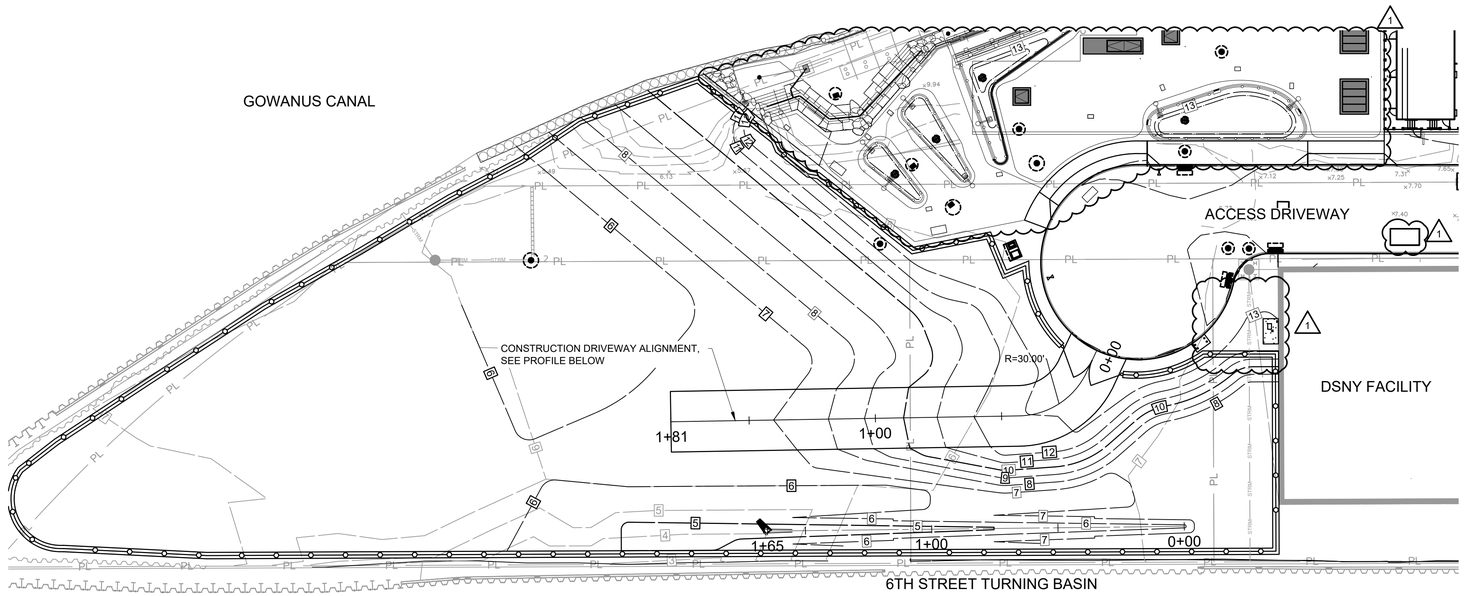
CIVIL

2ND AVENUE PLAN AND PROFILE

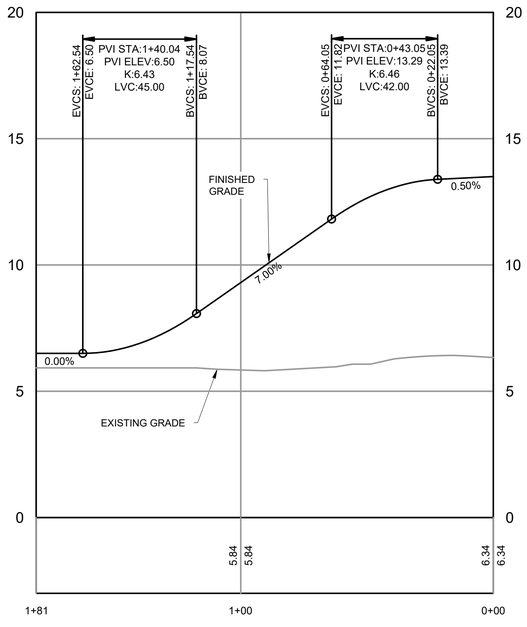
DATE: SEPTEMBER 2026
SHEET NO: 73 OF 723
DRAWING NO. C-202.01

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All inquiries regarding this drawing(s) or project should be made to NYC Environmental Protection, Bureau of Engineering Design and Construction.



PLAN
SCALE: 1" = 30'



CONSTRUCTION DRIVEWAY PROFILE
HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'

1"=3' 0 3 6 FT.

1"=30' 0 30 60 FT.

NOTES:

1. EXISTING SUPPORT OF EXCAVATION SYSTEM FOR CSO FACILITY NOT SHOWN FOR CLARITY. SEE DWG C-101.
2. YARD PIPING AND BURIED UTILITY INFRASTRUCTURE NOT SHOWN FOR CLARITY. SEE DWGS C-121, C-122, C-131 AND C-132 FOR UNDERGROUND PIPING INFORMATION.
3. FOR CONTINUATION OF FINISHED GRADE SEE DRAWINGS C-121.00 AND C-201.00

BID SET
SUBMITTAL DATE: SEPTEMBER 2026

GRAPHIC SCALES CHECK BEFORE USE

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DESIGNED BY: J. PERRUZZA | DRAWN BY: J. TANNER | PROJECT MANAGER: E. CAMILLERI
CHECKED BY: D. SHEERAN | DESIGN LEAD: D. SHEERAN | DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

STATE OF NEW YORK — MICHAEL JAMES SHEERAN — 088955 — LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.
PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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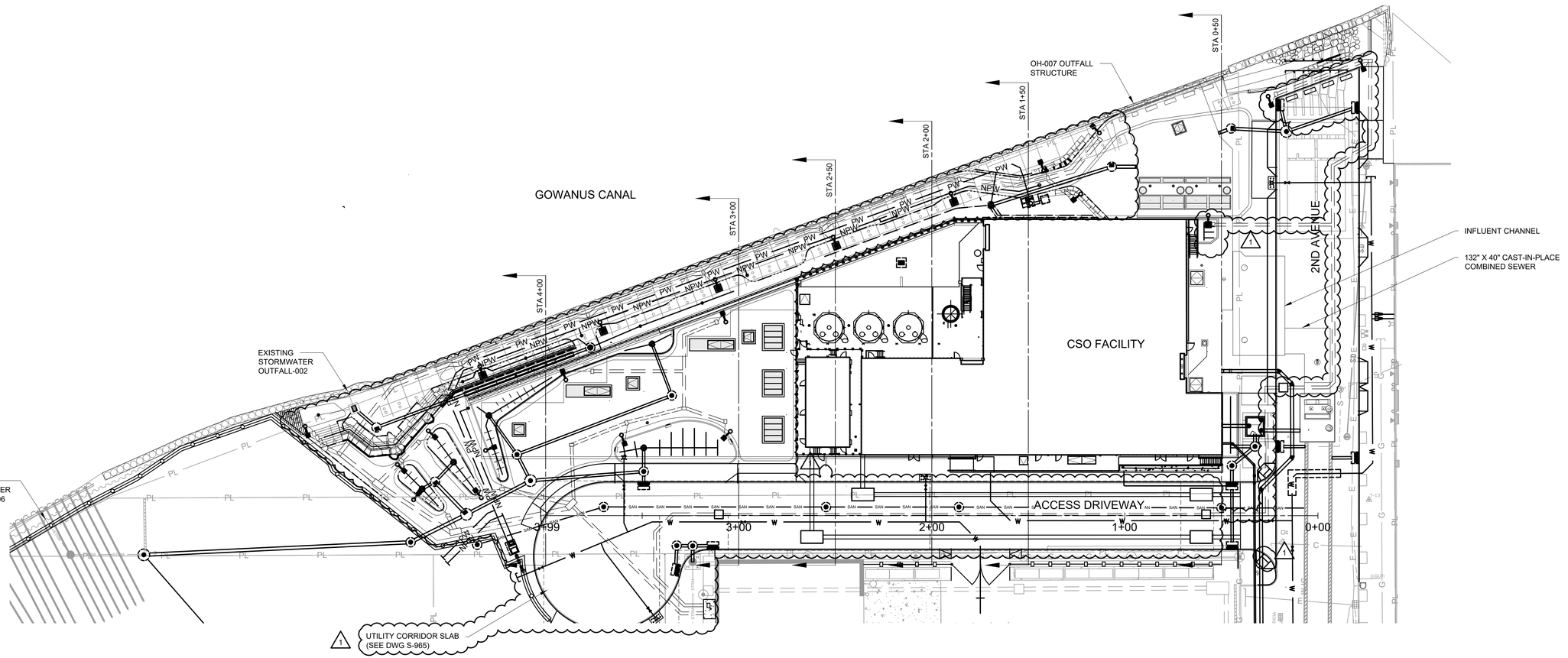
CIVIL

CONSTRUCTION DRIVEWAY PLAN AND PROFILE

DATE: SEPTEMBER 2026
SHEET NO: 74 OF 723
DRAWING NO. C-203.01

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Last Date Saved: 10/29/2026 4:39 PM
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Drawing File Name & Drive Location: C:_DCIACCDocs\Hazen and Sawyer\90409-000_CSO-GC-SFS-DES-OH\Project Files\000-ProjectWise\Civil\CP-03\C-203.dwg
Date & Time Plotted: 10/30/2026 11:01 AM
Plot Scale: 1:1
Plot Style Table: HS-FWS.ctb



NOTES:

1. TOPOGRAPHIC INFORMATION NOT SHOWN FOR CLARITY. SEE GRADING AND DRAINAGE DRAWINGS C-121.00 THROUGH C-124.00.

1"=30' 0 30 60 FT.

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

GRAPHIC SCALES CHECK BEFORE USE

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DESIGNED BY:	DRAWN BY:	PROJECT MANAGER:
J. PERRUZZA	K. ROBBINS	E. CAMILLERI
CHECKED BY:	DESIGN LEAD:	DESIGN MANAGER:
D. SHEERAN	D. SHEERAN	G. DEREAMER

Hazen | Brown AND Caldwell

STATE OF NEW YORK — DANIEL JAMES SHEERAN — LICENSED PROFESSIONAL ENGINEER — 088955

NYC Environmental Protection

ACCOUNTABLE MANAGER	JESSE GOLDIN, P.E.
PORTFOLIO MANAGER	KEVIN CLARKE, P.E.

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SITE SECTIONS - OVERALL PLAN

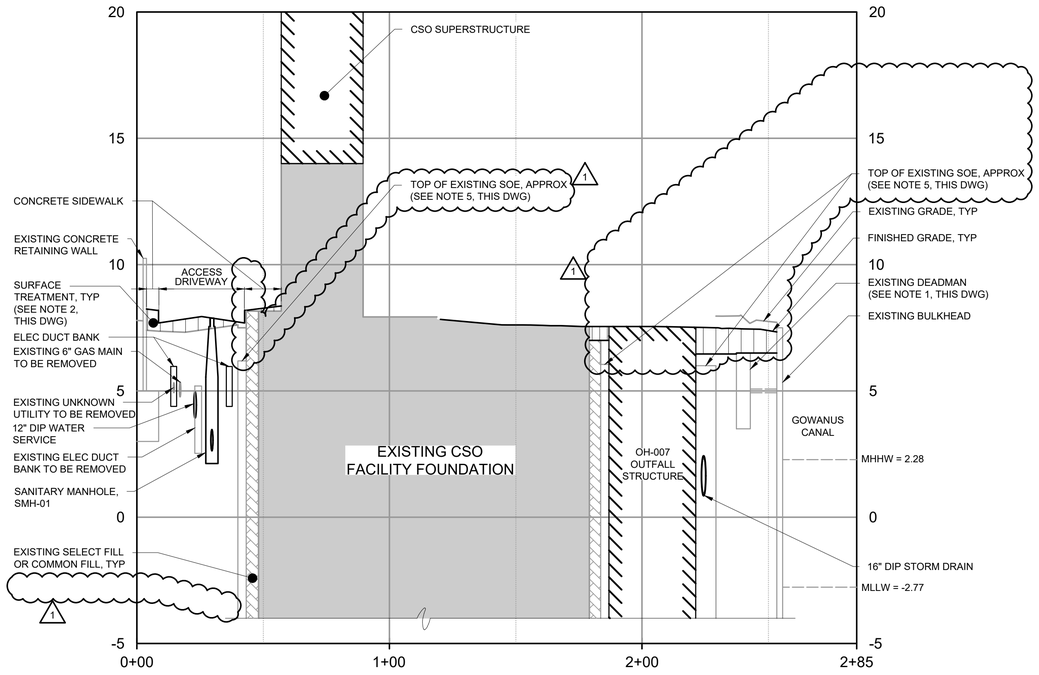
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SHEET NO: 75 OF 723

DRAWING NO. C-210.01

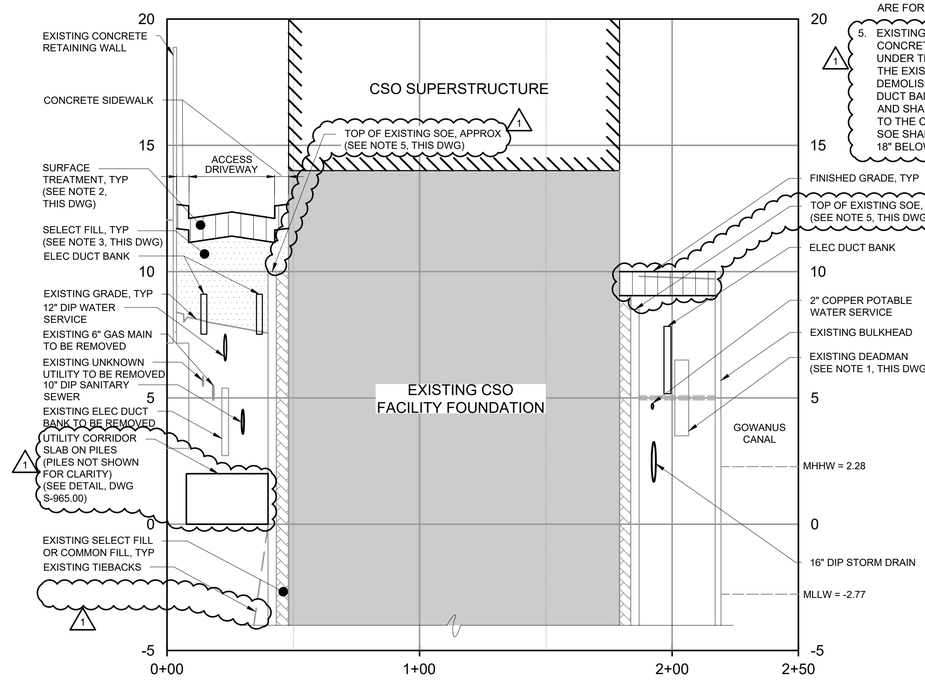
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Plot Scale: 1:1



SITE SECTION - STA 0+50

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'



SITE SECTION - STA 1+50

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'

NOTES:

1. EXISTING DEADMAN SUPPORT PILES NOT SHOWN FOR CLARITY. REFER TO CP-02 GEOTECHNICAL DRAWINGS B-200.00 THROUGH B-203.00.
2. SURFACE TREATMENT DETAILS (PAVEMENT, CURBING, PAVERS) PROVIDED ON FINAL SITE PLAN C-141.00. PLANTING DETAILS NOT SHOWN FOR CLARITY, SEE LANDSCAPE DRAWINGS.
3. THE TOP ELEVATION OF SELECT FILL IS DRAWN 1 FT BELOW GRADE FOR CLARITY. THE LIMIT OF THE SELECT FILL SHALL EXTEND TO THE BOTTOM OF THE APPLICABLE SURFACE TREATMENT DETAILS. THE BOTTOM ELEVATION OF SELECT FILL IS TO EXISTING GRADE FOR CLARITY. THE CONTRACTOR SHALL BACKFILL AS NECESSARY TO ACCOMMODATE THE EXCAVATION NECESSARY FOR THE UTILITY CORRIDOR SLAB.
4. MEAN HIGHER HIGH WATER (MHHW) AND MEAN LOWER LOW WATER (MLLW) LISTED ARE FOR THE GOWANUS CANAL.
5. EXISTING SOE IS A SOLDIER PILE TREMIE CONCRETE (SPTC) WALL CONSTRUCTED UNDER THE CP-2 CONTRACT. PORTIONS OF THE EXISTING SOE WILL BE REQUIRED TO BE DEMOLISHED TO ACCOMMODATE PIPING, DUCT BANKS, AND PROPOSED STRUCTURES AND SHALL COME AT NO ADDITIONAL COST TO THE CITY. UNLESS OTHERWISE SHOWN, SOE SHALL BE DEMOLISHED A MINIMUM OF 18" BELOW FINISHED GRADE.

1"=3' 0 3 6 FT.
1"=30' 0 30 60 FT.

BID SET
SUBMITTAL DATE: SEPTEMBER 2026

GRAPHIC SCALES CHECK BEFORE USE

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NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.
1	10/2026	ADDENDUM NO. 2	DS

DESIGNED BY:	DRAWN BY:	PROJECT MANAGER:
J. PERRUZZA	K. ROBBINS	E. CAMILLERI
CHECKED BY:	DESIGN LEAD:	DESIGN MANAGER:
D. SHEERAN	D. SHEERAN	G. DEREAMER

Hazen | Brown AND Caldwell

STATE OF NEW YORK — DANIEL JAMES SHEERAN — 088955 — LICENSED PROFESSIONAL ENGINEER

Environmental Protection

ACCOUNTABLE MANAGER
JESSE GOLDIN, P.E.

PORTFOLIO MANAGER
KEVIN CLARKE, P.E.

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CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

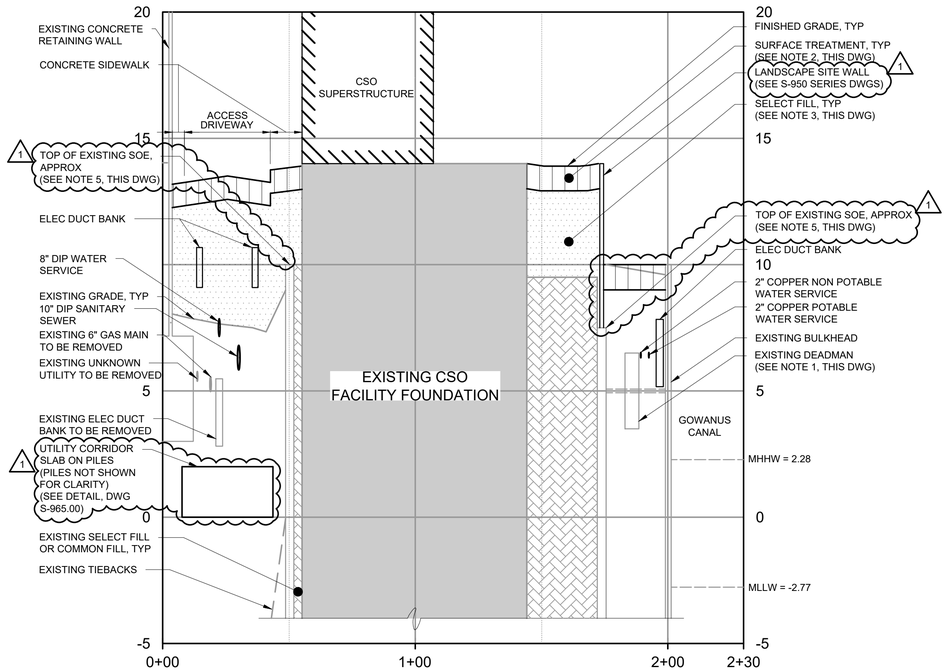
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SITE SECTIONS - SHEET 1

DATE: SEPTEMBER 2026
SHEET NO: 76 OF 723
DRAWING NO. C-211.01

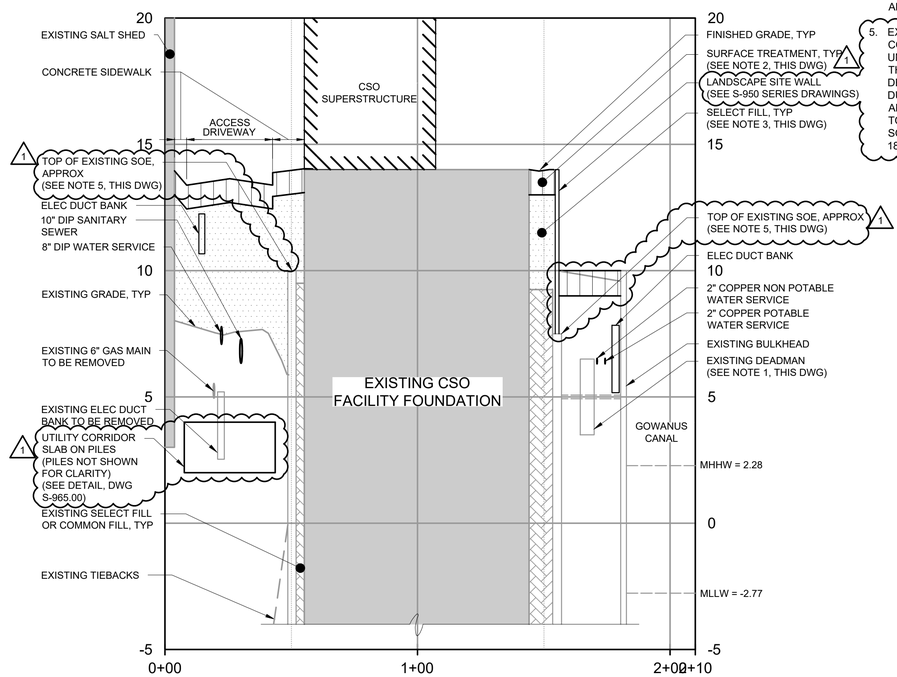
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Date & Time Plotted: 10/29/2026 3:49 PM Plot Scale: 1:1



SITE SECTION - STA 2+00

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'



SITE SECTION - STA 2+50

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'

NOTES:

1. EXISTING DEADMAN SUPPORT PILES NOT SHOWN FOR CLARITY. REFER TO CP-02 GEOTECHNICAL DRAWINGS B-200.00 THROUGH B-203.00.
2. SURFACE TREATMENT DETAILS (PAVEMENT, CURBING, PAVERS) PROVIDED ON FINAL SITE PLAN C-141.00. PLANTING DETAILS NOT SHOWN FOR CLARITY, SEE LANDSCAPE DRAWINGS.
3. THE TOP ELEVATION OF SELECT FILL IS DRAWN 1 FT BELOW GRADE FOR CLARITY. THE LIMIT OF THE SELECT FILL SHALL EXTEND TO THE BOTTOM OF THE APPLICABLE SURFACE TREATMENT DETAILS. THE BOTTOM ELEVATION OF SELECT FILL IS TO EXISTING GRADE FOR CLARITY. THE CONTRACTOR SHALL BACKFILL AS NECESSARY TO ACCOMMODATE THE EXCAVATION NECESSARY FOR THE UTILITY CORRIDOR SLAB.
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1"=3' 0 3 6 FT.
1"=30' 0 30 60 FT.

BID SET
SUBMITTAL DATE: SEPTEMBER 2026

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1	10/2026	ADDENDUM NO. 2	DS

DESIGNED BY: J. PERRUZZA	DRAWN BY: K. ROBBINS	PROJECT MANAGER: E. CAMILLERI
CHECKED BY: D. SHEERAN	DESIGN LEAD: D. SHEERAN	DESIGN MANAGER: G. DEREAMER

Hazen and Brown AND Caldwell

STATE OF NEW YORK — MICHAEL JAMES SHEERAN — 088955 — LICENSED PROFESSIONAL ENGINEER

Environmental Protection

ACCOUNTABLE MANAGER
JESSE GOLDIN, P.E.

PORTFOLIO MANAGER
KEVIN CLARKE, P.E.

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CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

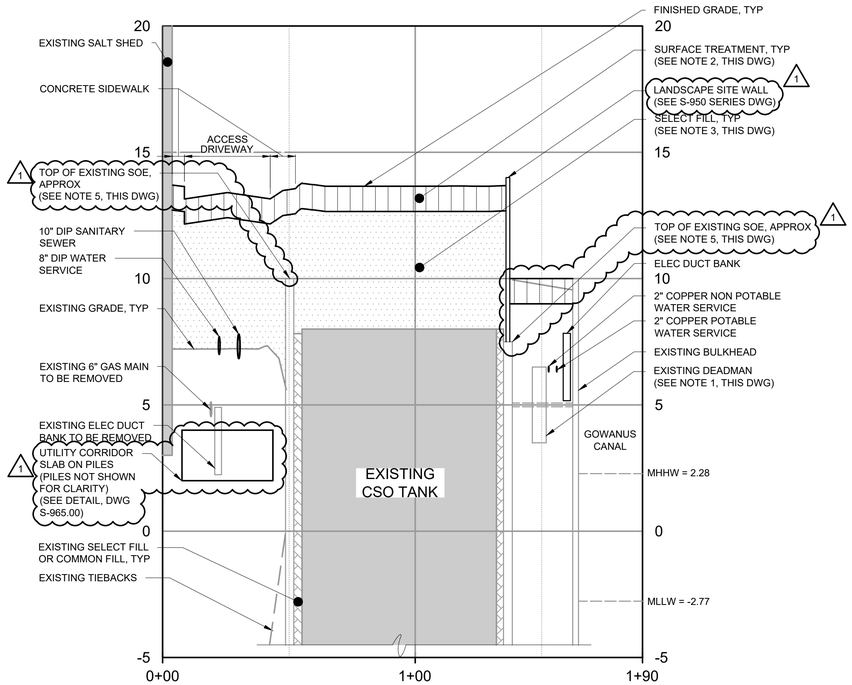
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SITE SECTIONS - SHEET 2

DATE: SEPTEMBER 2026
SHEET NO: 78 OF 723
DRAWING NO. C-212.01

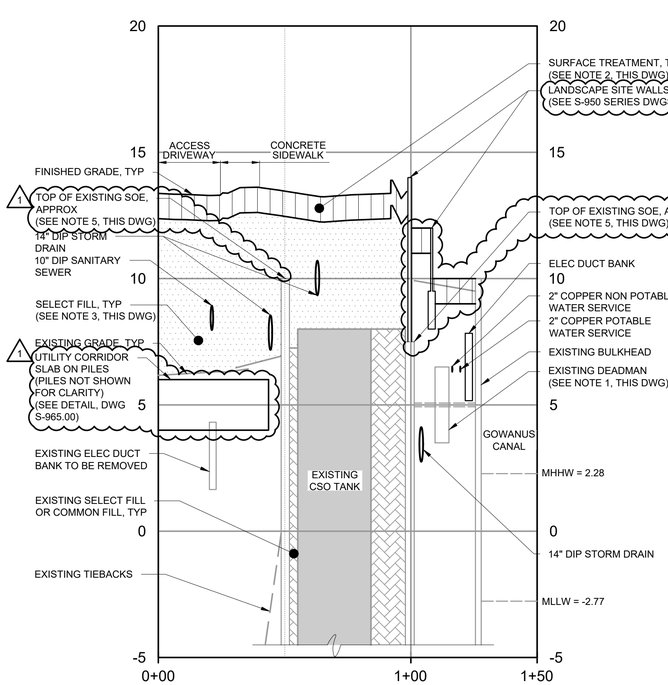
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Last Date Saved: 10/29/2026 11:24 AM
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Plot Scale: 1:1
Plot Style Table: HS-FWS.ctb



SITE SECTION - STA 3+00

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'



SITE SECTION - STA 4+00

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'

NOTES:

1. EXISTING DEADMAN SUPPORT PILES NOT SHOWN FOR CLARITY. REFER TO CP-02 GEOTECHNICAL DRAWINGS B-200.00 THROUGH B-203.00.
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3. THE TOP ELEVATION OF SELECT FILL IS DRAWN 1 FT BELOW GRADE FOR CLARITY. THE LIMIT OF THE SELECT FILL SHALL EXTEND TO THE BOTTOM OF THE APPLICABLE SURFACE TREATMENT DETAILS. THE BOTTOM ELEVATION OF SELECT FILL IS TO EXISTING GRADE FOR CLARITY. THE CONTRACTOR SHALL BACKFILL AS NECESSARY TO ACCOMMODATE THE EXCAVATION NECESSARY FOR THE UTILITY CORRIDOR SLAB.
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1	10/2026	ADDENDUM NO. 2	DS

DESIGNED BY: J. PERRUZZA | DRAWN BY: K. ROBBINS | PROJECT MANAGER: E. CAMILLERI
CHECKED BY: D. SHEERAN | DESIGN LEAD: D. SHEERAN | DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

STATE OF NEW YORK — WILLIAM JAMES SHEERAN — 088955 — LICENSED PROFESSIONAL ENGINEER

Environmental Protection

ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.
PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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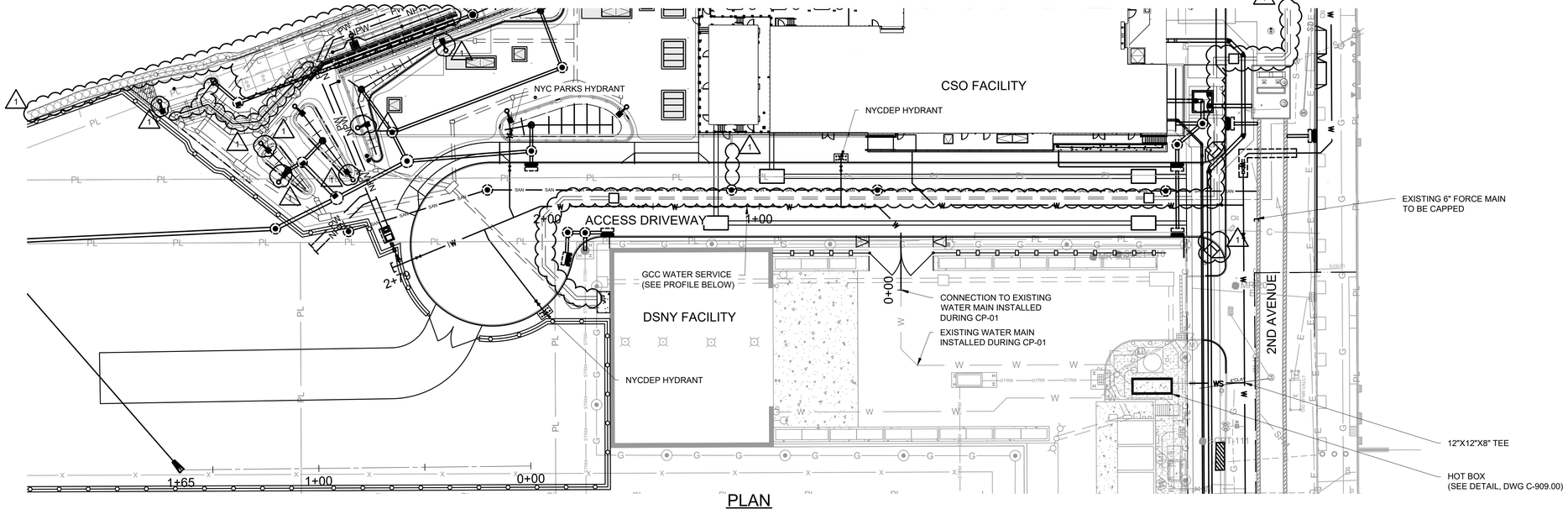
CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

CIVIL
SITE SECTIONS - SHEET 3

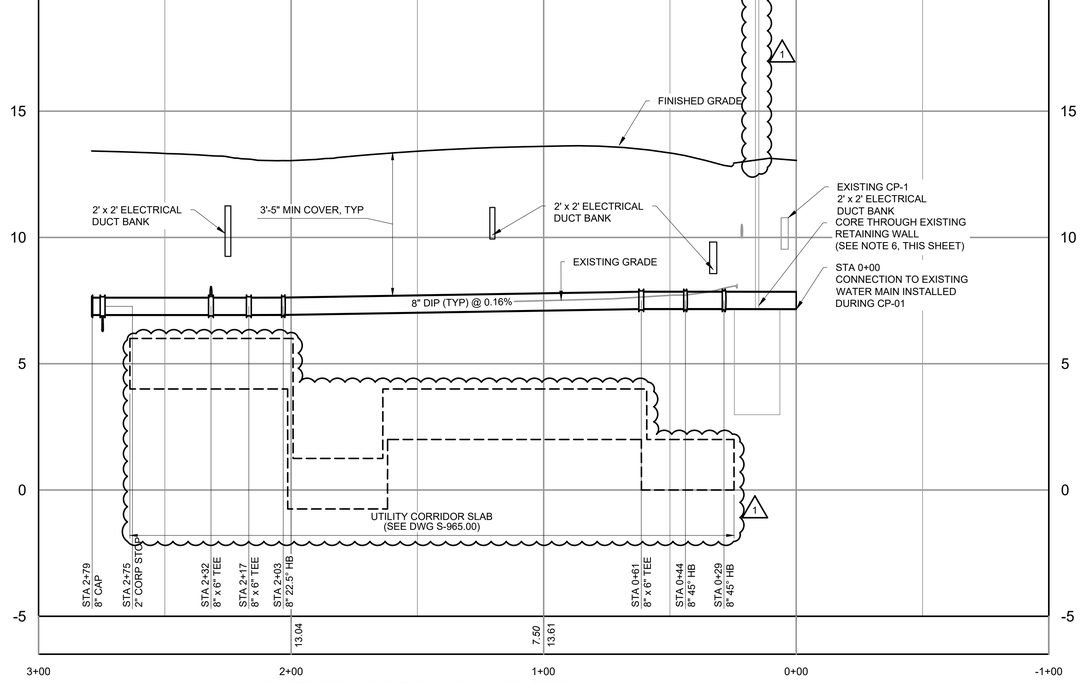
DATE: SEPTEMBER 2026
SHEET NO: 78 OF 723
DRAWING NO. C-213.01

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Last Saved By: KRobbins
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Drawing File Name & Drive Location: C:_DCACCDocs\Hazen and Sawyer\90409-000_CSO-GC-SFS-DES-OH\Project Files\000-ProjectWise\Civil\CP-03\C-213.dwg
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Date & Time Plotted: 10/29/2026 3:49 PM
Plot Scale: 1:1
Plot Style Table: HS-FWS.ctb
© HS-FWS.ctb



PLAN
1" = 20'



INTERNAL WATER MAIN TO GCC
HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'

NOTES:

1. EXISTING UNDERGROUND UTILITY INFORMATION AND SITE CONDITIONS HAVE BEEN PLOTTED FROM THE RECORD DRAWINGS SHOWN BELOW.
   A. OH-007 CONTRACT 2455 SHEET A (1897) - GENERAL PLAN OF MAIN RELIEF SEWER FOR THE RELIEF OF THE THIRD AVE. AND FOURTH AVE. SEWERS
   B. WP-288 OWL'S HEAD WATER POLLUTION CONTROL PROJECT (1990) - 2ND AVENUE PUMP STATION TOP PLANS AND PILE PLANS.
2. MANHOLE INVERT INTERPOLATED FROM INVERTS OF ADJACENT MANHOLES PROVIDED WITH SURVEY.
3. EXISTING 6" FORCE MAIN ASSUMED TO HAVE 5 FEET OF COVER. CONTRACTOR SHALL INSTALL NEW 8" FORCE MAIN WITH 6.5' OF COVER.
4. FOR PIPE CROSSINGS WITH LESS THAN 18" OF VERTICAL SEPARATION, ENCASEMENT IS REQUIRED.
5. FOR INFORMATION REGARDING ALL APPURTENANCES AND FEATURES ASSOCIATED WITH THE INTERNAL GCC WATER MAIN SEE DWG C-131.00.
6. THE CORE THROUGH THE RETAINING WALL SHALL BE DONE ABOVE THE JOINT BETWEEN THE WALL AND FOOTING. CONTRACTOR SHALL SUBMIT FINAL CORE LOCATION TO THE ENGINEER FOR REVIEW.
7. EXISTING TIE-RODS FOR THE EXISTING SHEETING HAVE BEEN HIDDEN FOR CLARITY.

1"=3' 0 3 6 FT.
1"=30' 0 30 60 FT.

BID SET
SUBMITTAL DATE: SEPTEMBER 2026

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1	10/2026	ADDENDUM NO. 2	DS

DESIGNED BY: J. PERRUZZA	DRAWN BY: J. TANNER	PROJECT MANAGER: E. CAMILLERI
CHECKED BY: D. SHEERAN	DESIGN LEAD: D. SHEERAN	DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

STATE OF NEW YORK — MICHAEL JAMES SHEA — 088955 — LICENSED PROFESSIONAL ENGINEER

Environmental Protection

ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.
PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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CONSTRUCTION PACKAGE 3 - OH-007

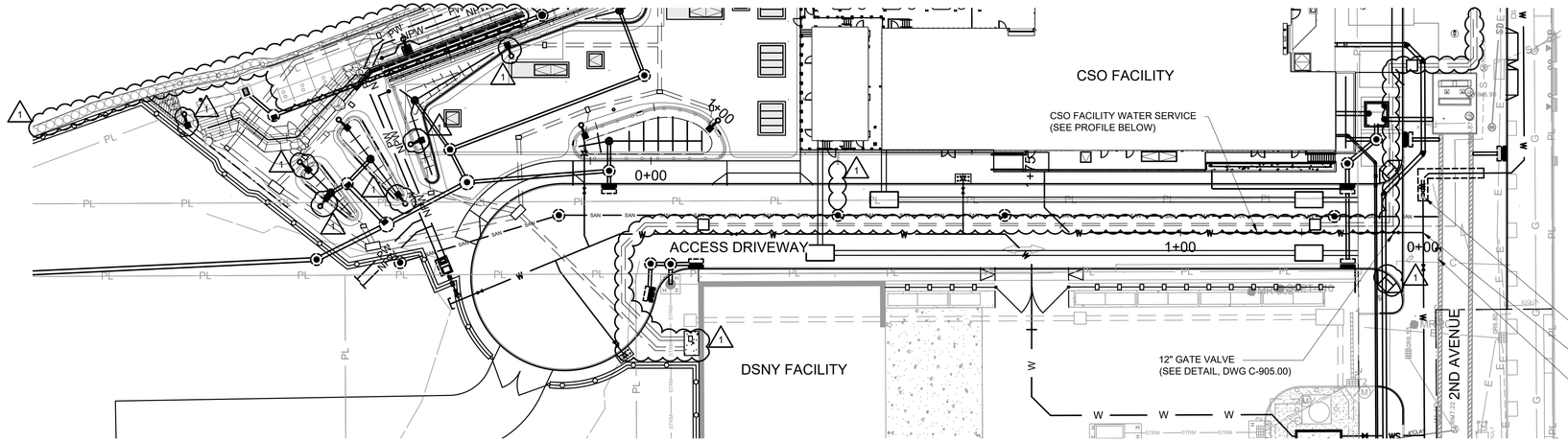
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GCC FACILITY WATER SERVICE PLAN AND PROFILE

DATE: SEPTEMBER 2026
SHEET NO: 79 OF 723
DRAWING NO. C-301.01

Last Saved By: JLu
Last Date Saved: 10/29/2026 3:12 PM
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Drawing File Name & Drive Location: C:_DCKACCDocs\Hazen and Sawyer\90409-000_CSO-GC-SFS-DES-OH\Project Files\000-ProjectWise\Civil\CP-03\C-301.dwg
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Plot Scale: 1:1
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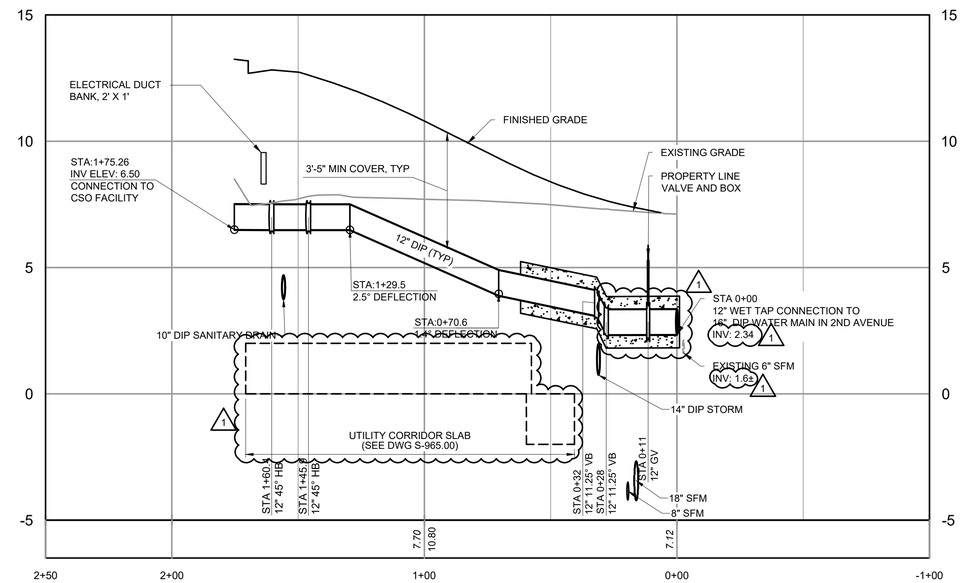
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PLAN
1" = 20'

NOTES:

1. EXISTING UNDERGROUND UTILITY INFORMATION AND SITE CONDITIONS HAVE BEEN PLOTTED FROM THE RECORD DRAWINGS SHOWN BELOW.
   A. OH-007 CONTRACT 2455 SHEET A (1897) - GENERAL PLAN OF MAIN RELIEF SEWER FOR THE RELIEF OF THE THIRD AVE. AND FOURTH AVE. SEWERS
   B. WP-288 OWL'S HEAD WATER POLLUTION CONTROL PROJECT (1990) - 2ND AVENUE PUMP STATION TOP PLANS AND PILE PLANS.
2. MANHOLE INVERT INTERPOLATED FROM INVERTS OF ADJACENT MANHOLES PROVIDED WITH SURVEY.
3. EXISTING 6" FORCE MAIN ASSUMED TO HAVE 5 FEET OF COVER.
4. FOR PIPE CROSSINGS WITH LESS THAN 18" OF VERTICAL SEPARATION, ENCASEMENT IS REQUIRED.
5. CONTRACTOR SHALL PROCURE PERMIT FOR TAP CONNECTION FOR PRIVATE WATER MAIN FROM NYCDEP.



WATER SERVICE TO CSO FACILITY
HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'

1"=3' 0 3 6 FT.
1"=30' 0 30 60 FT.

BID SET
SUBMITTAL DATE: SEPTEMBER 2026

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CHECKED BY: D. SHEERAN | DESIGN LEAD: D. SHEERAN | DESIGN MANAGER: G. DEREAMER

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STATE OF NEW YORK — MICHAEL JAMES SHEA — LICENSED PROFESSIONAL ENGINEER — 088955

NYC Environmental Protection

ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.
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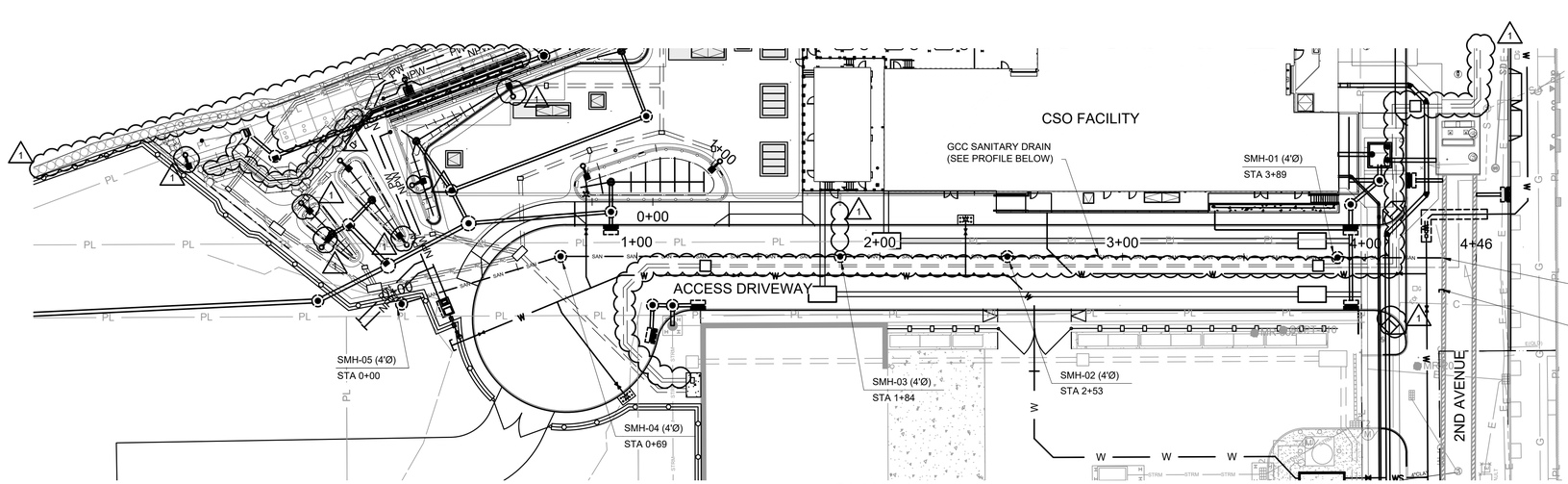
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CIVIL
CSO FACILITY WATER SERVICE PLAN AND PROFILE

DATE: SEPTEMBER 2026
SHEET NO: 80 OF 723
DRAWING NO. C-302.01

Last Saved By: JTanner
Paper Size Printed/Plotted: ANSI full bleed D (34.00 x 22.00 inches)
Drawing File Name & Drive Location: C:\oms\hazen-pw\d0206634\C-302.dwg
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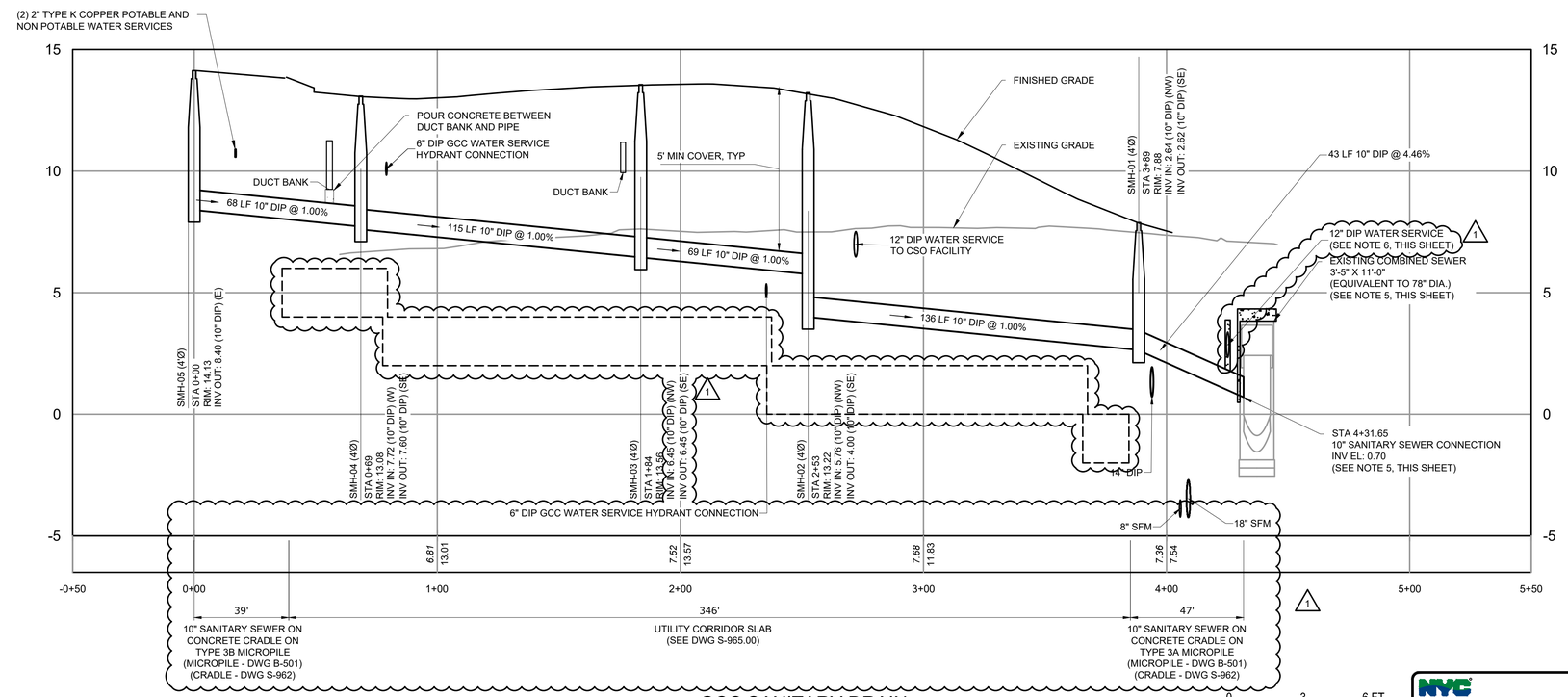
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PLAN
1"=30'

NOTES:

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   B. WP-288 OWL'S HEAD WATER POLLUTION CONTROL PROJECT (1990) - 2ND AVENUE PUMP STATION TOP PLANS AND PILE PLANS.
2. 2ND AVENUE MANHOLE INVERT INTERPOLATED FROM INVERTS OF ADJACENT MANHOLES PROVIDED WITH SURVEY.
3. EXISTING 6" FORCE MAIN ASSUMED TO HAVE 5 FEET OF COVER.
4. FOR PIPE CROSSINGS WITH LESS THAN 18" OF VERTICAL SEPARATION, ENCASEMENT IS REQUIRED.
5. CONTRACTOR SHALL CORE THE COMBINED SEWER TO PROVIDE AN OPENING FOR THE 10" SANITARY CONNECTION. GROUT ANNULAR SPACE BETWEEN 10" PIPE AND CORE OPENING AS NECESSARY. CORE SHALL NOT EXCEED 15". CONTRACTOR SHALL PROCURE SEWER CONNECTION PERMIT FROM NYCDEP PRIOR TO CONNECTION BEING MADE.
6. CONTRACTOR SHALL ENCASE THE 12" WATER MAIN IN CONCRETE, SEE DETAIL ON DRAWING C-902.00.



GCC SANITARY DRAIN
HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'

1"=3' 0 3 6 FT.
1"=30' 0 30 60 FT.

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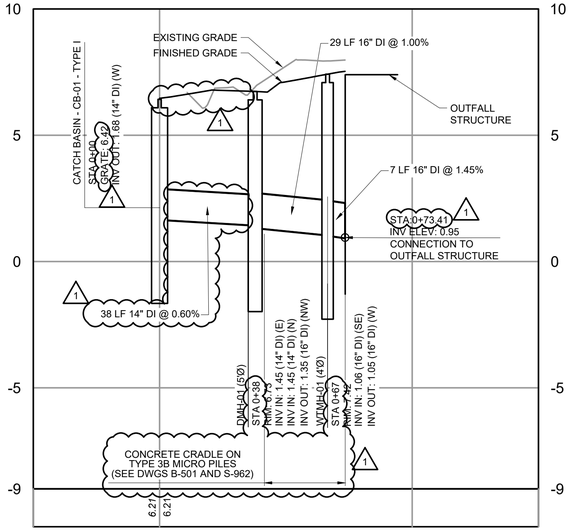
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CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007
CIVIL
SANITARY SEWER PLAN AND PROFILE

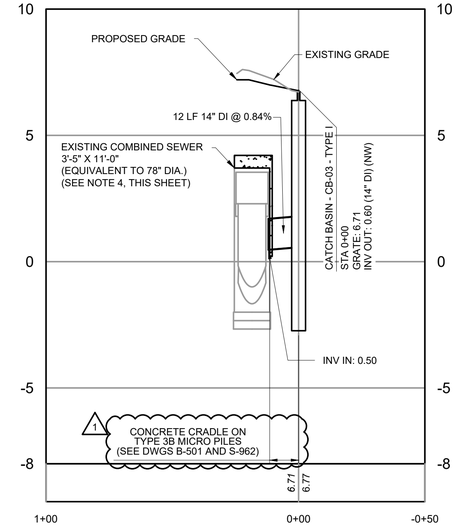
DATE: SEPTEMBER 2026
SHEET NO: 81 OF 723
DRAWING NO. C-311.01

Last Saved By: JLu Last Date Saved: 10/29/2026 3:11 PM
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All inquiries regarding this drawing(s) or project should be made to NYC Environmental Protection, Bureau of Engineering Design and Construction.



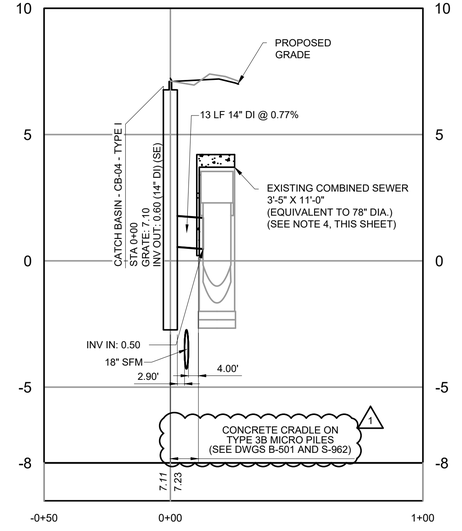
2ND AVE DEAD END DRAINAGE NETWORK

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'



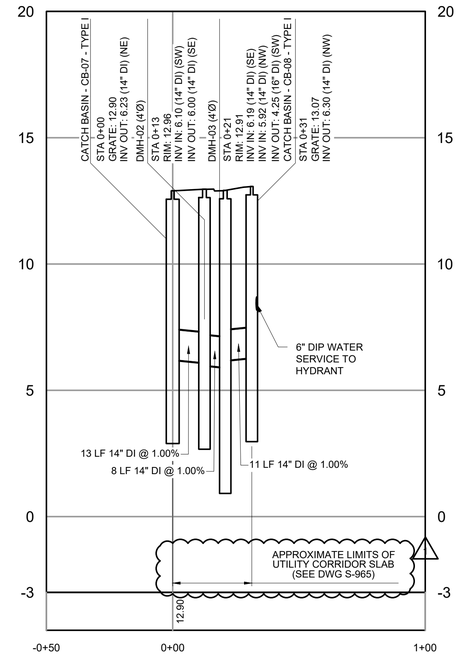
2ND AVE EAST CURB STORM SEWER NETWORK

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'



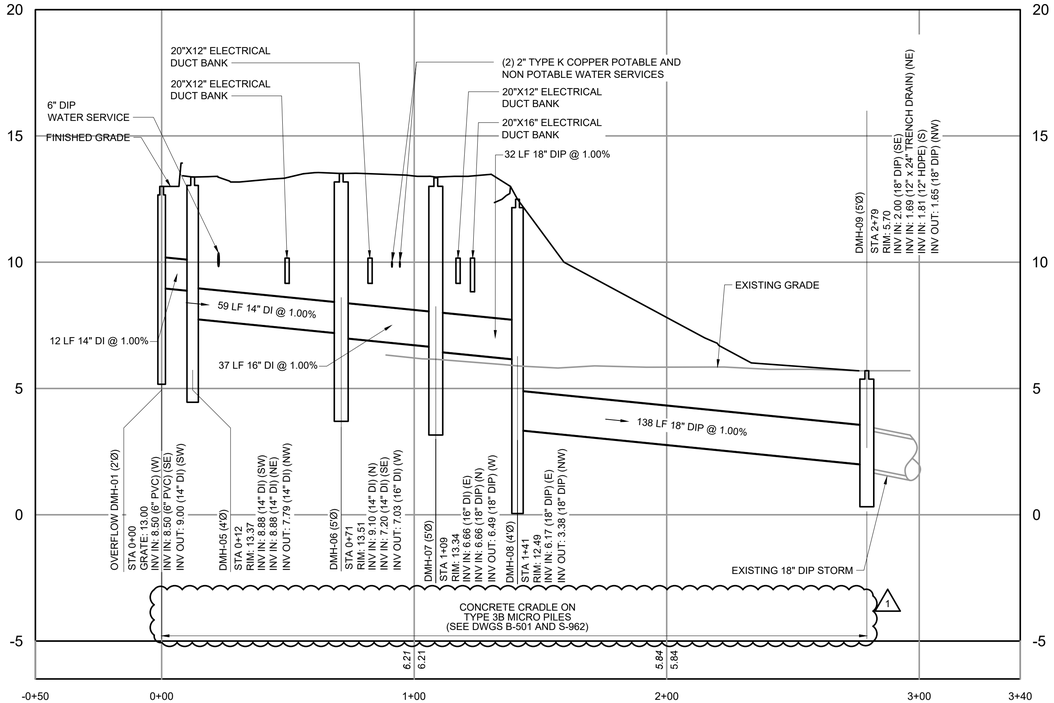
2ND AVE WEST CURB STORM SEWER NETWORK

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'



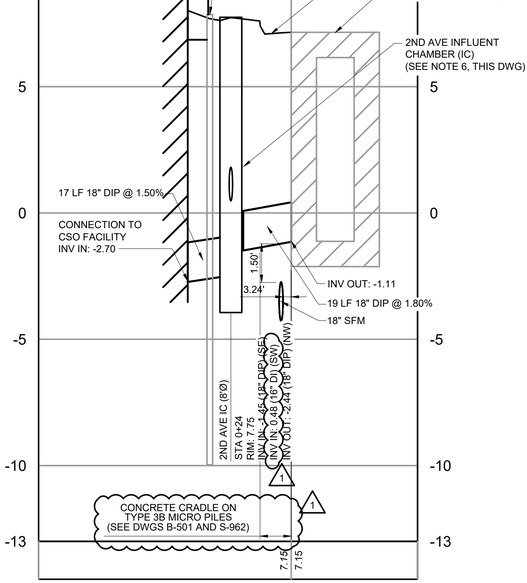
TURN AROUND DRAINAGE NETWORK

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'



WEST DRAINAGE NETWORK

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'



2ND AVE INFLUENT JUNCTION CHAMBER

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'

NOTES:

1. REFER TO DRAWINGS C-902.00 AND C-905.00 FOR DETAILS REGARDING TRENCH, MANHOLE, OVERFLOW MANHOLE, AND CATCH BASIN STRUCTURES.
2. SEE CONNECTION DETAILS ON M-900.00 FOR THE CSO FACILITY AND OUTFALL.
3. WTMH-## DENOTES HYDRODYNAMIC SEPARATOR (SEE DETAIL, DWG C-904.00)
4. THE CONTRACTOR SHALL POUR ENCASEMENT AROUND THE EXISTING COMBINED SEWER AND CORE TO PROVIDE AN OPENING FOR THE 14" DIP STORM CONNECTION. GROUT ANNULAR SPACE BETWEEN 14" PIPE AND CORE OPENING AS NECESSARY. CORE SHALL NOT EXCEED 18"
5. EXISTING SOE INSTALLED PREVIOUSLY UNDER THE CP-2 CONTRACT. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF EXISTING SOE TO ACCOMODATE THE INSTALLATION OF ALL YARD PIPING, SERVICES, AND FORCE MAINS AT NO ADDITIONAL COST TO THE CITY.
6. EXISTING 2ND AVE PS NOT SHOWN IN THE PROFILE FOR CLARITY. 2ND AVE PS TO BE DEMOLISHED PRIOR TO CONSTRUCTION OF 2ND AVE INFLUENT CHAMBER AND ASSOCIATED PIPING.

1"=3' 0 3 6 FT.
1"=30' 0 30 60 FT.

GRAPHIC SCALES CHECK BEFORE USE

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BID SET
SUBMITTAL DATE: SEPTEMBER 2026

NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.
1	10/2026	ADDENDUM NO. 2	DS

DESIGNED BY: J. PERRUZZA | DRAWN BY: J. TANNER | PROJECT MANAGER: E. CAMILLERI
CHECKED BY: D. SHEERAN | DESIGN LEAD: D. SHEERAN | DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

STATE OF NEW YORK JAMES SHEERAN 088955 LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER
JESSE GOLDIN, P.E.
PORTFOLIO MANAGER
KEVIN CLARKE, P.E.

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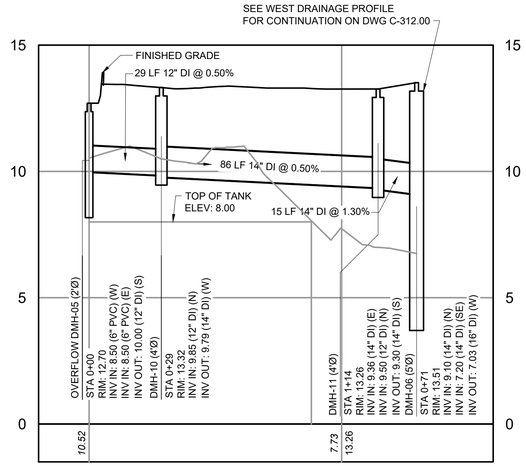
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CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007
CIVIL
STORM DRAIN NETWORK PROFILES
1 OF 2

DATE: SEPTEMBER 2026
SHEET NO: 82 OF 723
DRAWING NO. C-312.01

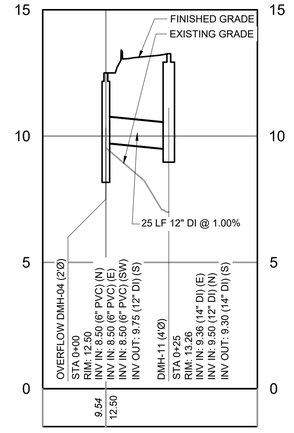
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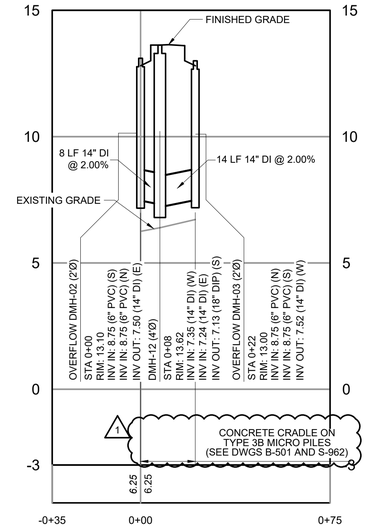
TOP OF TANK DRAINAGE NETWORK

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'



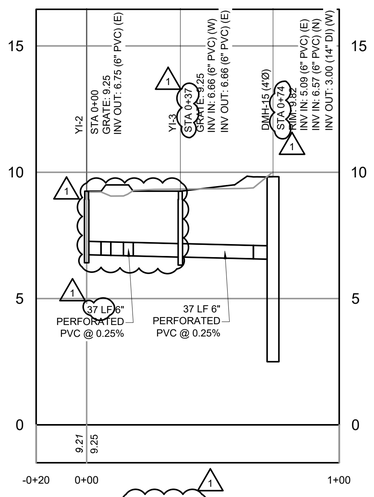
TOP OF TANK OVERFLOW CONNECTION

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'



PLANTER A TO B DRAINAGE NETWORK

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'

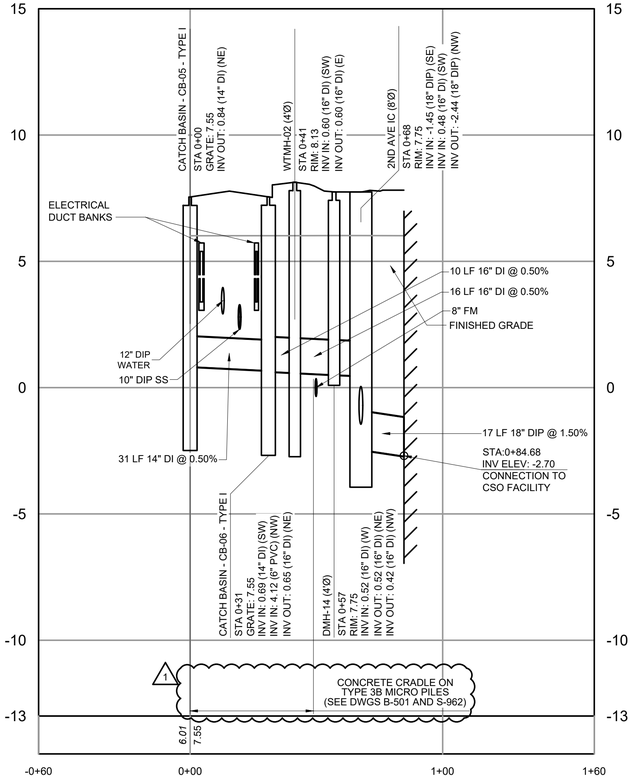


YI-2 TO DMH-15 NETWORK

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'

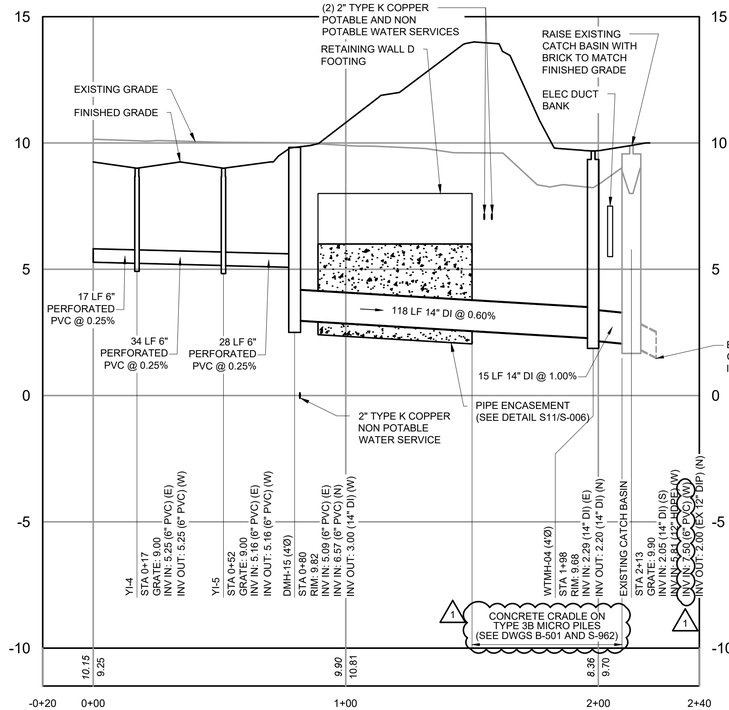
NOTES:

1. REFER TO DRAWINGS C-902.00 AND C-905.00 FOR DETAILS REGARDING TRENCH, MANHOLE, OVERFLOW MANHOLE, AND CATCH BASIN STRUCTURES.
2. SEE CONNECTION DETAILS ON M-900.00 FOR THE CSO FACILITY AND OUTFALL.
3. WTMH-## DENOTES HYDRODYNAMIC SEPARATOR (SEE DETAIL, DWG C-904.00).
4. DEADMAN AND TIE RODS SHALL BE EXPOSED PRIOR TO LAYOUT AND INSTALLATION OF MICRO PILES. (1)



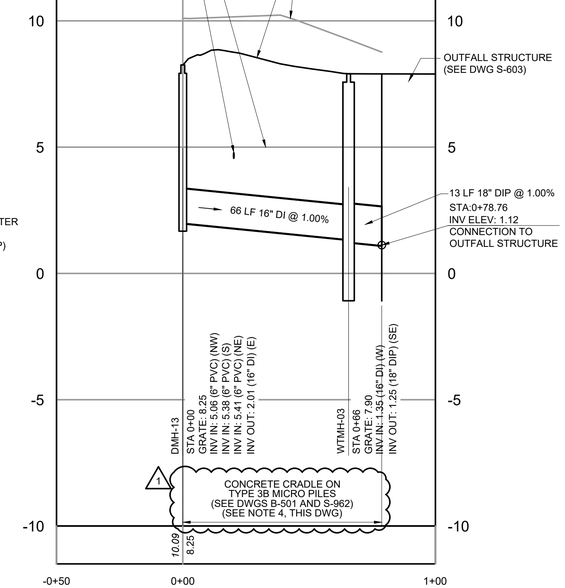
ACCESS DRIVEWAY INTERSECTION DRAINAGE NETWORK

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'



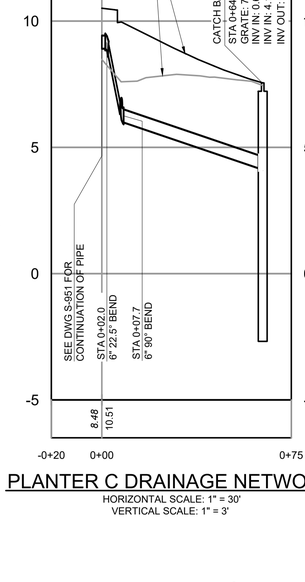
STORMWATER OUTFALL-002 DRAINAGE NETWORK

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'



NORTH DRAINAGE NETWORK

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'



PLANTER C DRAINAGE NETWORK

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'

0 3 6 FT.
1"=3'

0 30 60 FT.
1"=30'

BID SET
SUBMITTAL DATE: SEPTEMBER 2026

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CHECKED BY: D. SHEERAN | DESIGN LEAD: D. SHEERAN | DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

STATE OF NEW YORK — KRISTOFFER JAMES SHEA — 088955 — LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.
PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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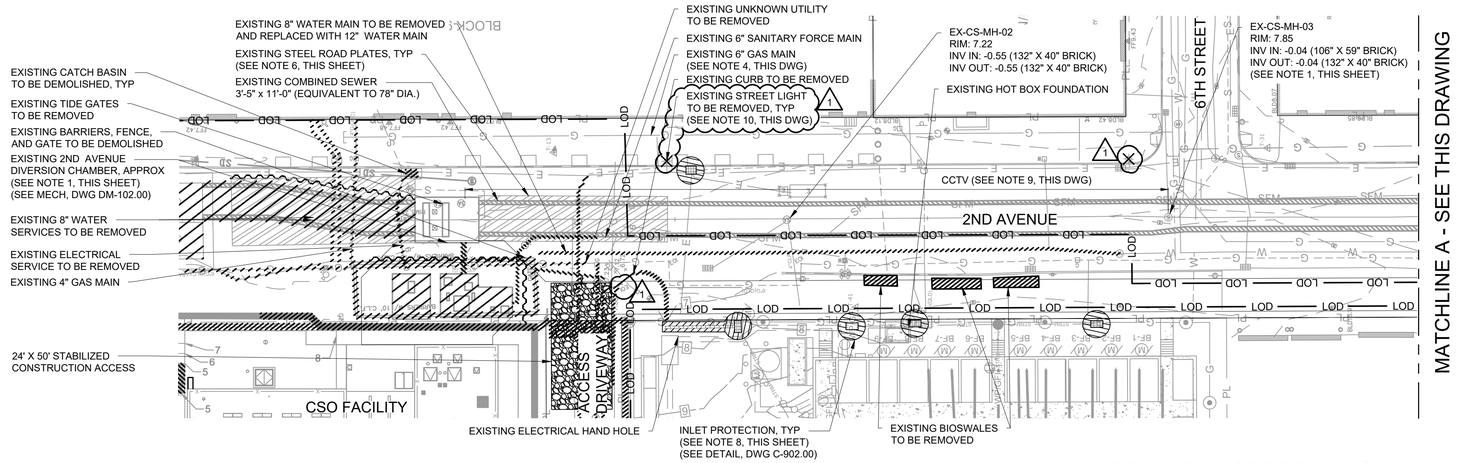
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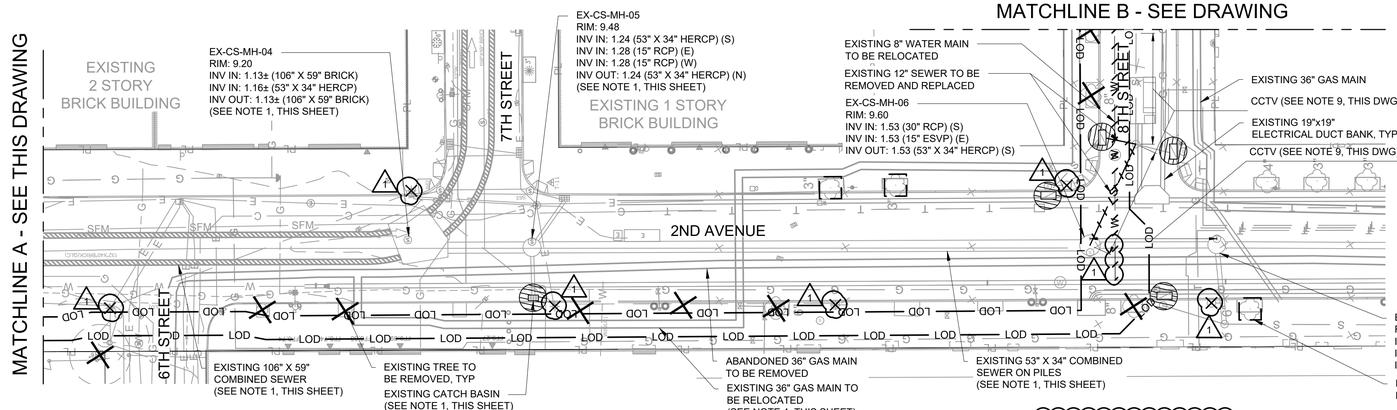
STORM DRAIN NETWORK PROFILES
2 OF 2

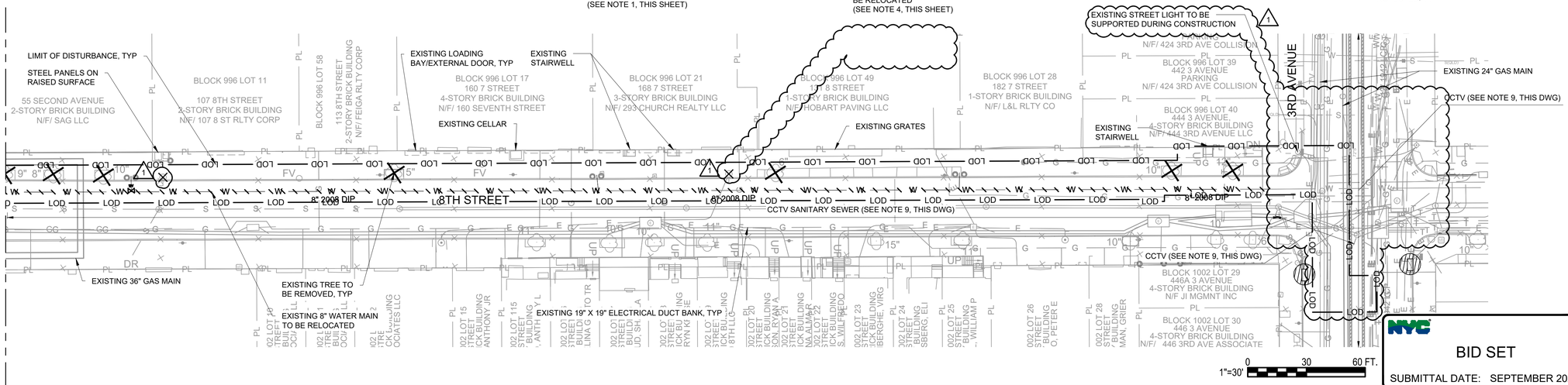
DATE: SEPTEMBER 2026
SHEET NO: 83 OF 723
DRAWING NO. C-313.01

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Last Date Saved: 10/29/2026 2:55 PM
Date & Time Plotted: 10/29/2026 3:56 PM
Plot Scale: 1:1
Plot Style Table: HS-FWS.ctb







1"=30' 0 30 60 FT.

NOTES:

1. EXISTING UNDERGROUND UTILITY INFORMATION AND SITE CONDITIONS HAVE BEEN PLOTTED FROM THE RECORD DRAWINGS SHOWN BELOW.
   - A. OH-007 CONTRACT 2455 SHEET A (1897) - GENERAL PLAN OF MAIN RELIEF SEWER FOR THE RELIEF OF THE THIRD AVE. AND FOURTH AVE. SEWERS
   - B. OH-007 CONTRACT 2455 (1897) - DETAIL SHEET OF MAIN RELIEF SEWER FOR THE RELIEF OF THIRD AVE. AND FOURTH AVE. SEWERS.
   - C. WP-288 OWL'S HEAD WATER POLLUTION CONTROL PROJECT (1990) - 2ND AVENUE PUMP STATION TOP PLANS AND PILE PLANS.
   - D. CONSOLIDATED EDISON LOW TENSION MAINS AND SERVICE PLATE NOS. 39-L AND 39-M.
2. EXISTING CONDITIONS ARE THE FINAL SITE PLANS ASSOCIATED WITH BH, CP-1, AND CP-2 CONSTRUCTION.
3. SERVICES TO BE RECONNECTED. FOR RECONNECTIONS, SEE DWG C-131.00.
4. GAS MAIN RELOCATED BY NATIONAL GRID DURING CP-1 CONTRACT. REQUIREMENTS FOR EP7 TO BE COORDINATED AS PART OF MASS MAILING AND ALIGNMENT MEETING.
5. EXISTING SANITARY FORCE MAIN WILL NOT BE DEMOLISHED AND BE USED AS A REDUNDANCY ONCE INSPECTED AND APPROVED.
6. ONCE THE SITE AND NYCDOT PERMITS HAVE BEEN TRANSFERRED FROM THE CP-2 CONTRACTOR TO THE CP-3 CONTRACTOR, THE CP-3 CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE PLATES THROUGHOUT CONSTRUCTION. ALL STEEL PLATES SHALL HAVE A 100 PSF LOAD LIMITATION.
7. THE ELECTRICAL PLATFORM INSTALLED UNDER THE CP-2 CONTRACT WILL REMAIN FOR A PORTION OF THE CP-3 CONTRACT AS THE CONSTRUCTION SCHEDULE CALLS FOR AN OVERLAP OF THE TWO CONTRACTS.
8. EROSION AND SEDIMENT CONTROL MEASURES SHOWN ARE ASSOCIATED WITH FORCE MAIN WORK ALONG 8TH STREET AND 2ND AVENUE, AND SHALL ONLY BE INSTALLED AT THE TIME OF RIGHT-OF-WAY CONSTRUCTION.
9. THE CONTRACTOR SHALL CONDUCT CCTV INSPECTIONS OF THE EXISTING SEWER PRE AND POST CONSTRUCTION AND SUBMIT TO THE ENGINEER AND DEP FOR REVIEW.
10. SEE SL-SERIES DRAWINGS FOR LIGHT POLES TO BE REMOVED. (1)

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SUBMITTAL DATE: SEPTEMBER 2026

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CHECKED BY: D. SHEERAN | DESIGN LEAD: D. SHEERAN | DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

STATE OF NEW YORK — JAMES SHEA — LICENSED PROFESSIONAL ENGINEER — 088955

NYC Environmental Protection

ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.
PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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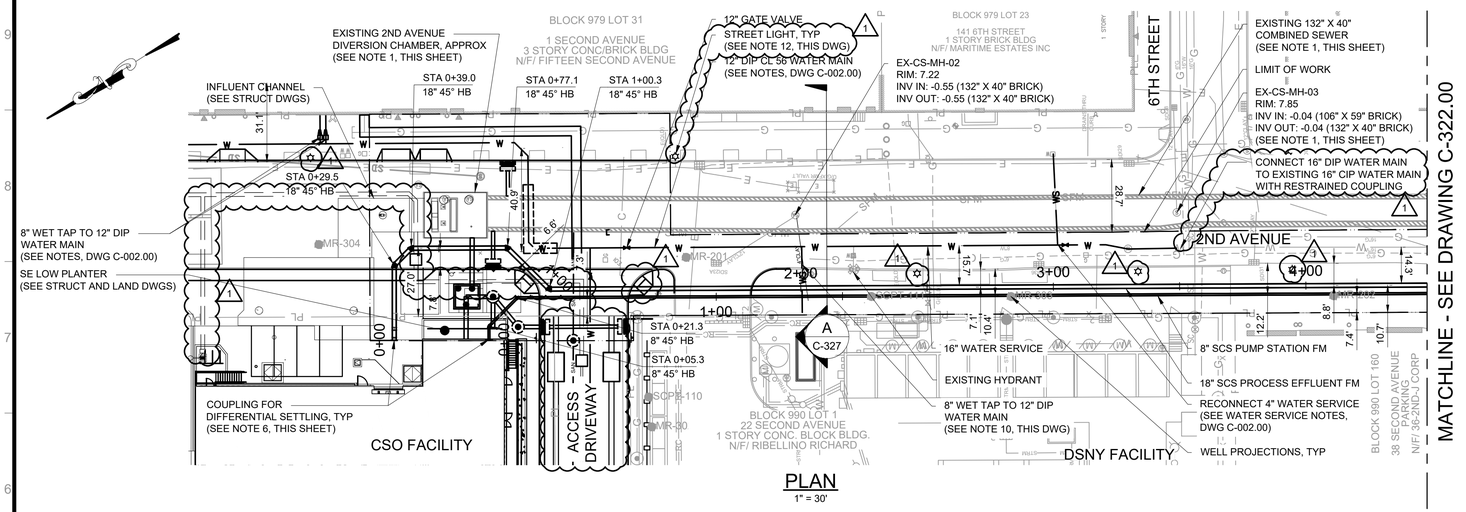
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FORCE MAIN EXISTING CONDITIONS, DEMO, AND EROSION & SEDIMENT CONTROL PLAN

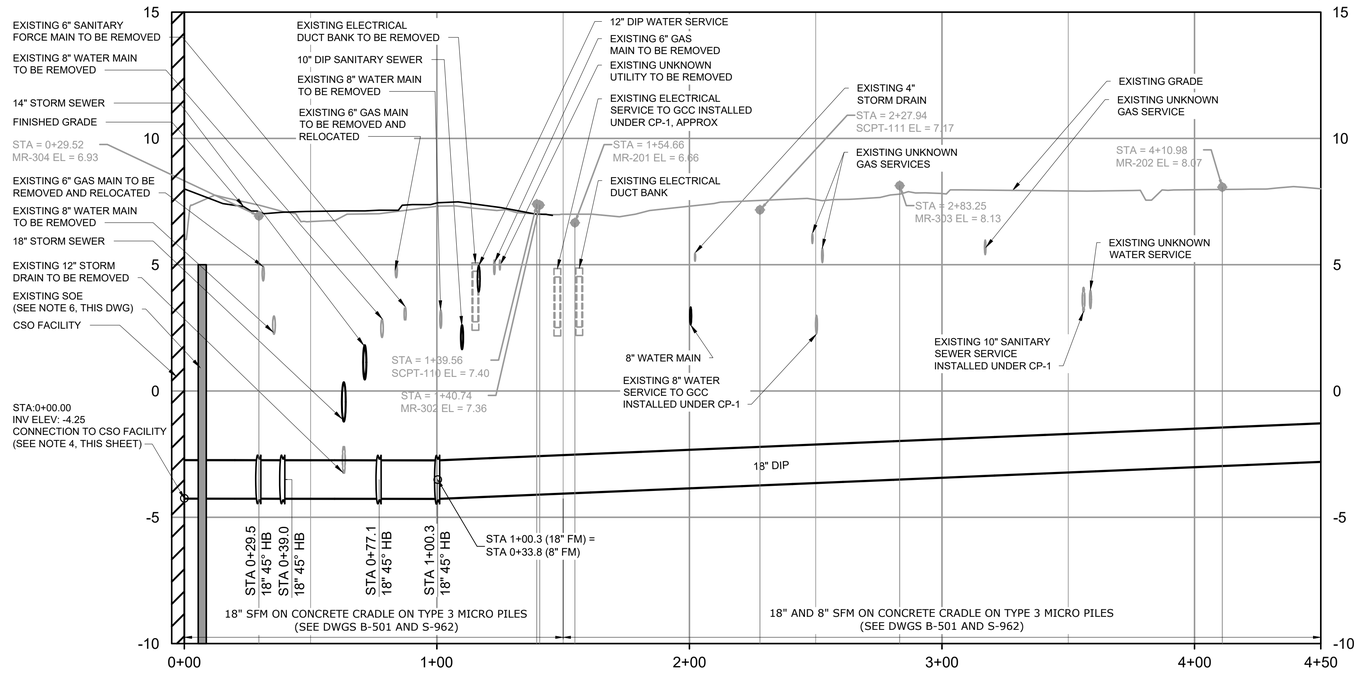
DATE: SEPTEMBER 2026
SHEET NO: 84 OF 723
DRAWING NO. C-320.01

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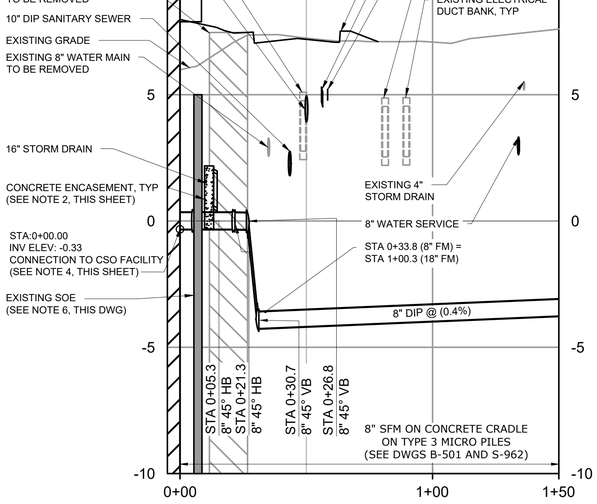
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Date & Time Plotted: DATE&TIME_PLOTTED
Plot Style Table: PLOT_STYLE_TABLE



PLAN
1" = 30'



FORCE MAINS PROFILE (1 OF 3)
HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'
SEE NOTE 9



8" SCS PUMP STATION FM PROFILE
HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'

1"=3' 0 3 6 FT.
1"=30' 0 30 60 FT.

NOTES:

1. EXISTING UNDERGROUND UTILITY INFORMATION AND SITE CONDITIONS HAVE BEEN PLOTTED FROM THE RECORD DRAWINGS SHOWN BELOW.
   A. OH-007 CONTRACT 2455 SHEET A (1897) - GENERAL PLAN OF MAIN RELIEF SEWER FOR THE RELIEF OF THE THIRD AVE. AND FOURTH AVE. SEWERS
   B. WP-288 OWL'S HEAD WATER POLLUTION CONTROL PROJECT (1990) - 2ND AVENUE PUMP STATION TOP PLANS AND PILE PLANS.
   C. NYCDDC CAPITAL PROJECT WM-1 FOR THE REPLACEMENT OF WATER MAINS AND APPURTANCES IN 2ND AVENUE BETWEEN 9TH STREET AND 7TH STREET (2016)
2. FOR PIPE CROSSINGS WITH LESS THAN 18" OF VERTICAL SEPARATION, PROVIDE CONCRETE ENCASEMENT. SEE DETAIL DWG C-902.00.
3. EXISTING AND TEMPORARY EXCAVATION SUPPORT NOT SHOWN IN PLAN VIEW FOR CLARITY. SEE DWG C-101 AND GEOTECH DWGS.
4. CONTRACTOR SHOULD REFER TO DETAIL M1002 ON DWG M-900.00 FOR COUPLING CONNECTION THROUGH CSO FACILITY WALL.
5. MANHOLE COVER WAS PAVED OVER AND COULD NOT BE ACCESSED DURING FIELD INVESTIGATION. DIMENSIONS AND SEWER SIZES ARE BASED ON AVAILABLE RECORDS AND OBSERVATIONS UPSTREAM AND DOWNSTREAM OF THE STRUCTURE.
6. EXISTING SOE INSTALLED PREVIOUSLY UNDER THE CP-2 CONTRACT. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF EXISTING SOE TO ACCOMMODATE THE INSTALLATION OF ALL YARD PIPING, SERVICES AND FORCE MAINS AT NO ADDITIONAL COST TO THE CITY.
7. 8" SCS PUMP STATION FORCE MAIN NOT SHOWN ON THE PROFILE FOR CLARITY. 8" AND 18" FORCE MAINS SHALL HAVE THE SAME BOTTOM OF PIPE ELEVATION FROM STA 1+00.3 (18" FM) = STA 0+33.8 (8" FM) UNTIL THE DISCHARGE AT THE FM TRANSITION CHAMBER SHOWN ON DRAWING C-323.00.
8. PILE SPACING SHALL BE AS SHOWN ON DRAWING S-962. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE TOP OF PILE ELEVATION.
9. FORCE MAINS SHALL BE CLASS 56 DUCTILE IRON PIPE WITH CERAMIC EPOXY LINING, ASPHALTIC EXTERIOR COATING, AND POLYETHYLENE ENCASEMENT.
10. CONTRACTOR SHALL PROCURE PERMIT FOR TAP CONNECTION FOR PRIVATE WATER MAIN FROM NYCDEP.
11. EXISTING INFRASTRUCTURE TO BE DEMOLISHED, RELOCATED, OR REMOVED NOT SHOWN IN PLAN VIEW FOR CLARITY, SEE DRAWINGS C-101.00 TO C-103.00 AND C-320.00.
12. SEE SL-SERIES DRAWINGS FOR STREET LIGHT LAYOUT AND DETAILS. (1)

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BID SET
SUBMITTAL DATE: SEPTEMBER 2026

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DESIGNED BY: L. WALLACE | DRAWN BY: K. ROBBINS | PROJECT MANAGER: E. CAMILLERI
CHECKED BY: D. SHEERAN | DESIGN LEAD: D. SHEERAN | DESIGN MANAGER: G. DEREAMER

Hazen and Brown and Caldwell

STATE OF NEW YORK — JAMES SHEA — LICENSED PROFESSIONAL ENGINEER — 088955

NYC Environmental Protection

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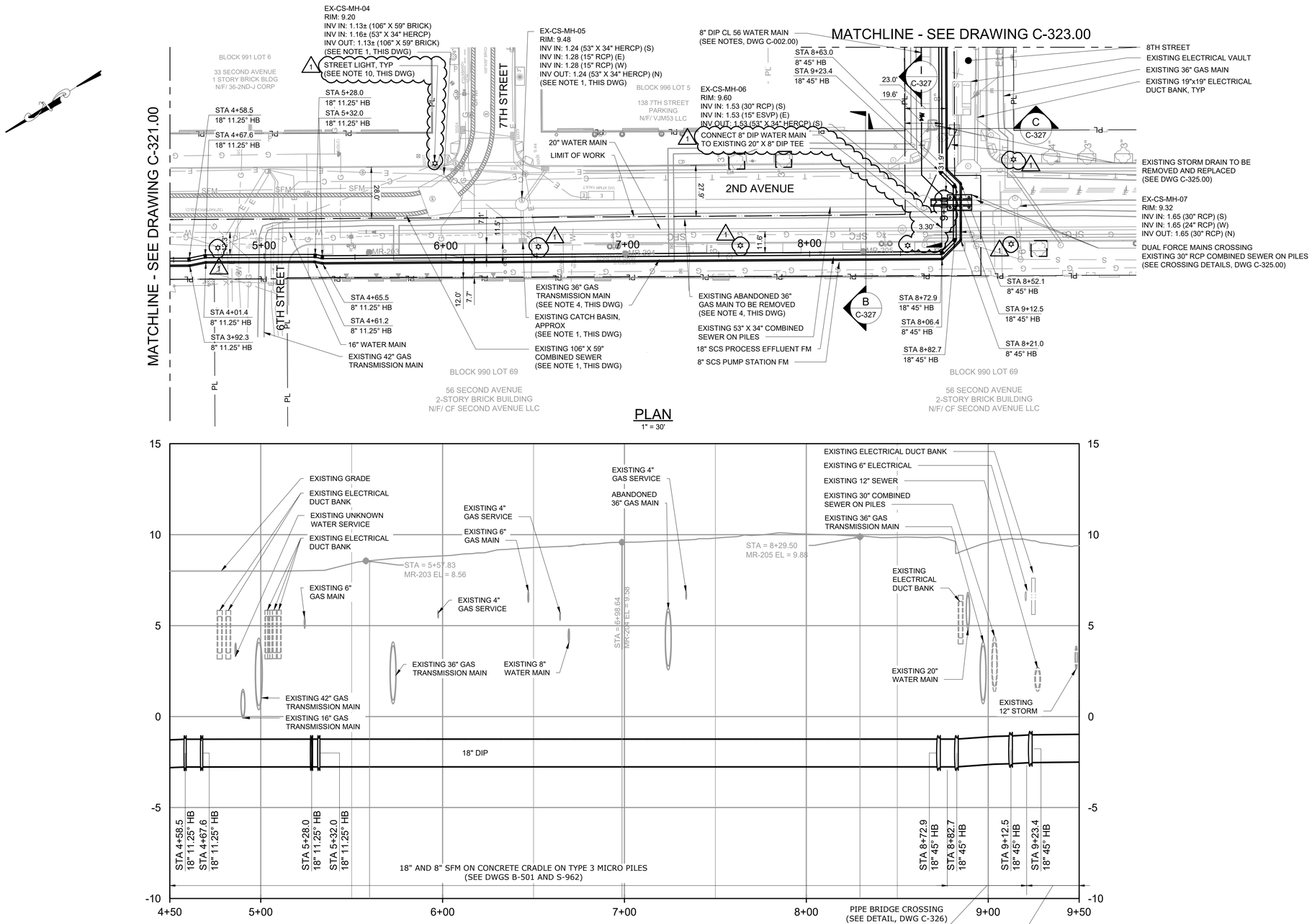
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FORCE MAINS PLAN AND PROFILE
1 OF 3

DATE: SEPTEMBER 2026
SHEET NO: 85 OF 723
DRAWING NO. C-321.01

Last Saved By: KRobbins
Last Date Saved: 10/29/2026 2:51 PM
Paper Size Printed/Plotted: ANSI full bleed D (34.00 x 22.00 Inches)
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FORCE MAINS PROFILE (2 OF 3)

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'
SEE NOTE 3, THIS DWG

NOTES:

1. EXISTING UNDERGROUND UTILITY INFORMATION AND SITE CONDITIONS HAVE BEEN PLOTTED FROM THE RECORD DRAWINGS SHOWN BELOW.
   A. OH-007 CONTRACT 2455 SHEET A (1897) - GENERAL PLAN OF MAIN RELIEF SEWER FOR THE RELIEF OF THE THIRD AVE. AND FOURTH AVE. SEWERS
   B. WP-288 OWL'S HEAD WATER POLLUTION CONTROL PROJECT (1990) - 2ND AVENUE PUMP STATION TOP PLANS AND PILE PLANS
2. FOR PIPE CROSSINGS WITH LESS THAN 18" OF VERTICAL SEPARATION, PROVIDE CONCRETE ENCASEMENT. SEE DETAIL DWG C-902.00.
3. 8" SCS PUMP STATION FORCE MAIN NOT SHOWN ON THE PROFILE FOR CLARITY. 8" AND 18" FORCE MAINS SHALL HAVE THE SAME BOTTOM OF PIPE ELEVATION FROM STA 1+00.3 (18" FM) = STA 0+33.8 (8" FM) UNTIL THE DISCHARGE AT THE FM TRANSITION CHAMBER SHOWN ON DRAWING C-323.00.
4. CONTRACTOR SHALL REMOVE THE ABANDONED GAS PIPE AND RELOCATE THE EXISTING 36" GAS MAIN TO THIS TRENCH.
5. CONTRACTOR IS PROHIBITED FROM WORKING WITHIN 25-FEET OF ACTIVE GAS TRANSMISSION MAINS BETWEEN NOVEMBER 1ST AND APRIL 15TH.
6. PILE SPACING SHALL BE AS SHOWN ON DRAWING S-961. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE TOP OF PILE ELEVATION.
7. THE CONTRACT SHALL CONDUCT CCTV INSPECTIONS OF THE EXISTING SEWER PRE AND POST CONSTRUCTION AND SUBMIT TO THE ENGINEER AND DEP FOR REVIEW.
8. FORCE MAINS SHALL BE CLASS 56 DUCTILE IRON PIPE WITH CERAMIC EPOXY LINING, ASPHALTIC EXTERIOR COATING, AND POLYETHYLENE ENCASEMENT.
9. EXISTING INFRASTRUCTURE TO BE DEMOLISHED, RELOCATED, OR REMOVED NOT SHOWN IN PLAN VIEW FOR CLARITY, SEE DRAWING C-320.00.
10. SEE SL-SERIES DRAWINGS FOR STREET LIGHT LAYOUT AND DETAILS.

0 3 6 FT.
1"=3'
0 30 60 FT.
1"=30'

BID SET
SUBMITTAL DATE: SEPTEMBER 2026

GRAPHIC SCALES CHECK BEFORE USE

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NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.
1	10/2026	ADDENDUM NO. 2	DS

DESIGNED BY: L. WALLACE | DRAWN BY: K. ROBBINS | PROJECT MANAGER: E. CAMILLERI
CHECKED BY: D. SHEERAN | DESIGN LEAD: D. SHEERAN | DESIGN MANAGER: G. DEREAMER

Hazen and Brown and Caldwell

ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.
PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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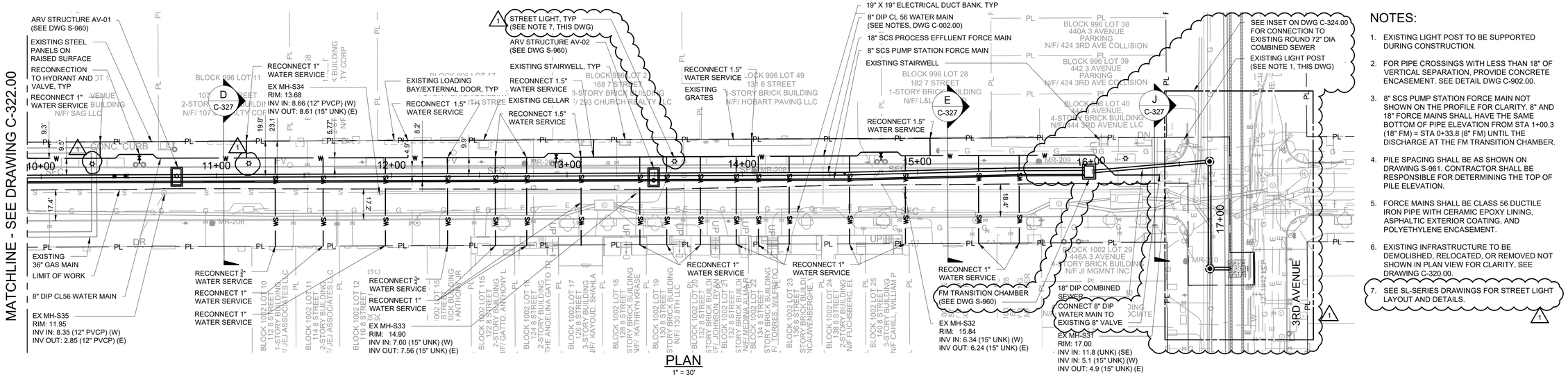
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CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007
CIVIL
FORCE MAINS PLAN AND PROFILE
2 OF 3

DATE: SEPTEMBER 2026
SHEET NO: 86 OF 723
DRAWING NO. C-322.01

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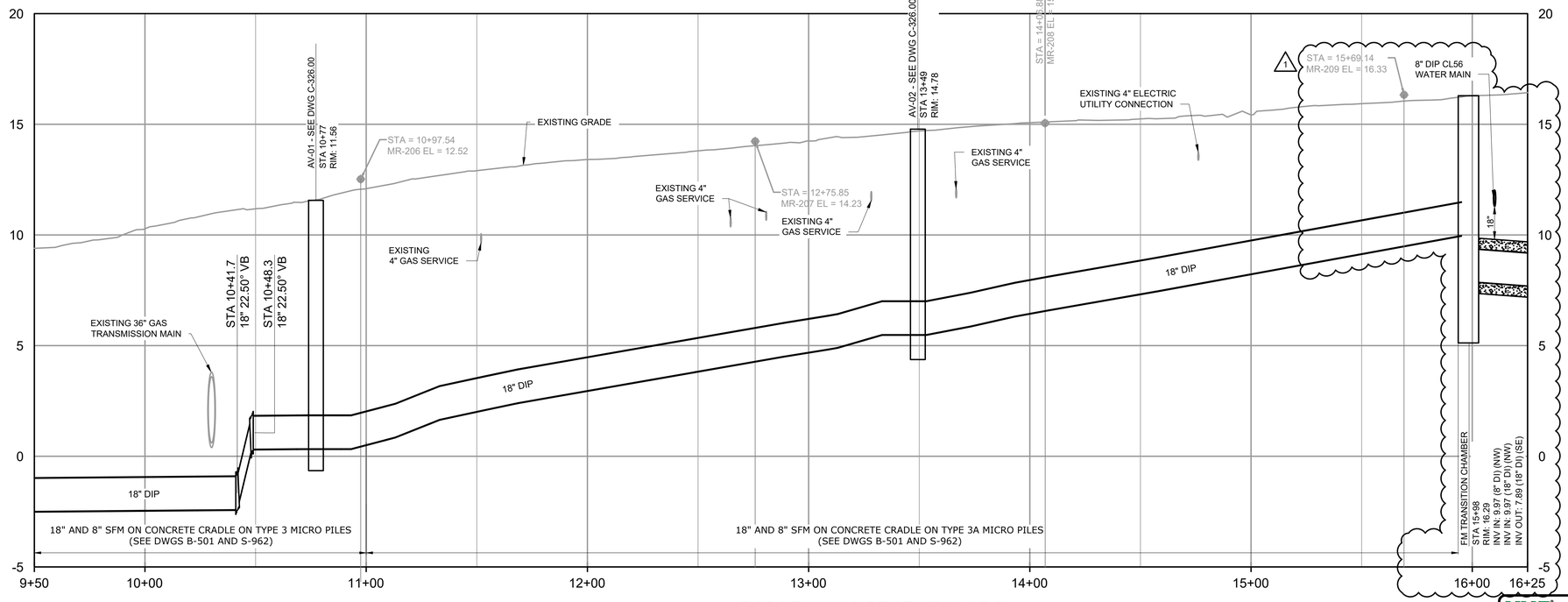
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Date & Time Plotted: 10/29/2026 4:00 PM
Plot Scale: 1:1
Plot Style Table: HS-FWS.ctb



PLAN
1" = 30'

NOTES:

1. EXISTING LIGHT POST TO BE SUPPORTED DURING CONSTRUCTION.
2. FOR PIPE CROSSINGS WITH LESS THAN 18" OF VERTICAL SEPARATION, PROVIDE CONCRETE ENCASEMENT. SEE DETAIL DWG C-902.00.
3. 8" SCS PUMP STATION FORCE MAIN NOT SHOWN ON THE PROFILE FOR CLARITY. 8" AND 18" FORCE MAINS SHALL HAVE THE SAME BOTTOM OF PIPE ELEVATION FROM STA 1+00.3 (18" FM) = STA 0+33.8 (8" FM) UNTIL THE DISCHARGE AT THE FM TRANSITION CHAMBER.
4. PILE SPACING SHALL BE AS SHOWN ON DRAWING S-961. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE TOP OF PILE ELEVATION.
5. FORCE MAINS SHALL BE CLASS 56 DUCTILE IRON PIPE WITH CERAMIC EPOXY LINING, ASPHALTIC EXTERIOR COATING, AND POLYETHYLENE ENCASEMENT.
6. EXISTING INFRASTRUCTURE TO BE DEMOLISHED, RELOCATED, OR REMOVED NOT SHOWN IN PLAN VIEW FOR CLARITY, SEE DRAWING C-320.00.
7. SEE SL-SERIES DRAWINGS FOR STREET LIGHT LAYOUT AND DETAILS.



FORCE MAINS PROFILE (3 OF 3)
HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'

1"=3' 0 3 6 FT.
1"=30' 0 30 60 FT.

BID SET
SUBMITTAL DATE: SEPTEMBER 2026

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Hazen and Brown and Caldwell

DANIEL JAMES SHEERAN, STATE OF NEW YORK, LICENSED PROFESSIONAL ENGINEER, 088955

Environmental Protection

ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.
PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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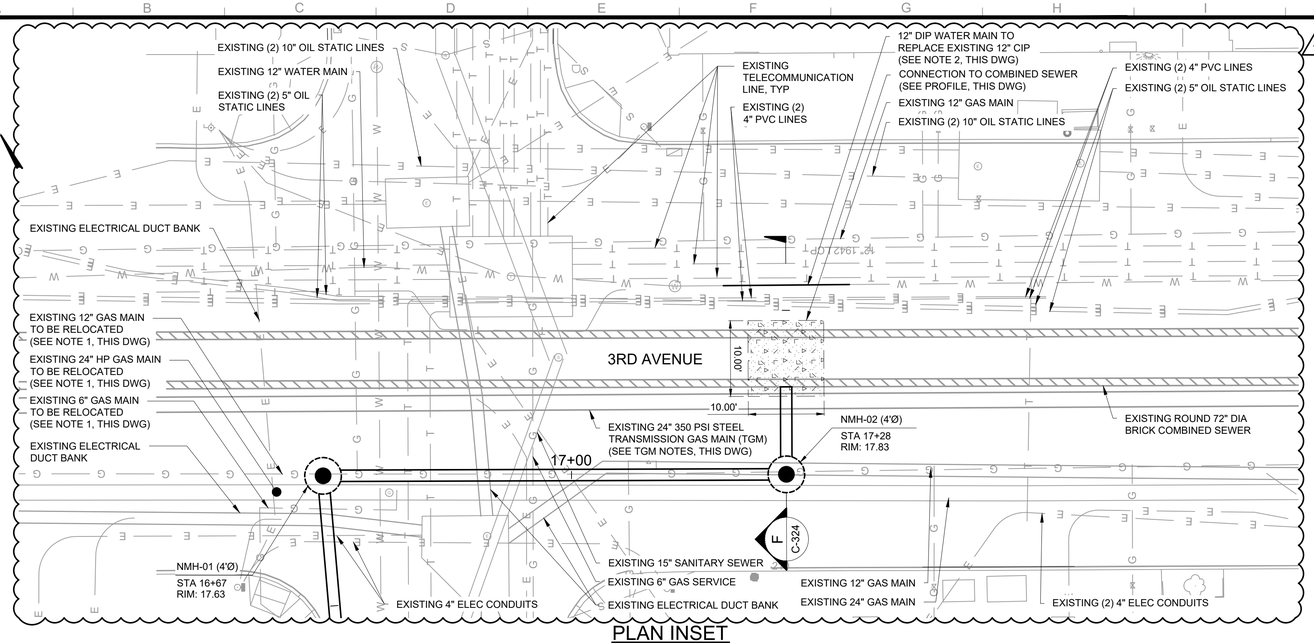
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CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007
CIVIL
FORCE MAINS PLAN AND PROFILE 3 OF 3

DATE: SEPTEMBER 2026
SHEET NO: 87 OF 723
DRAWING NO. C-323.01

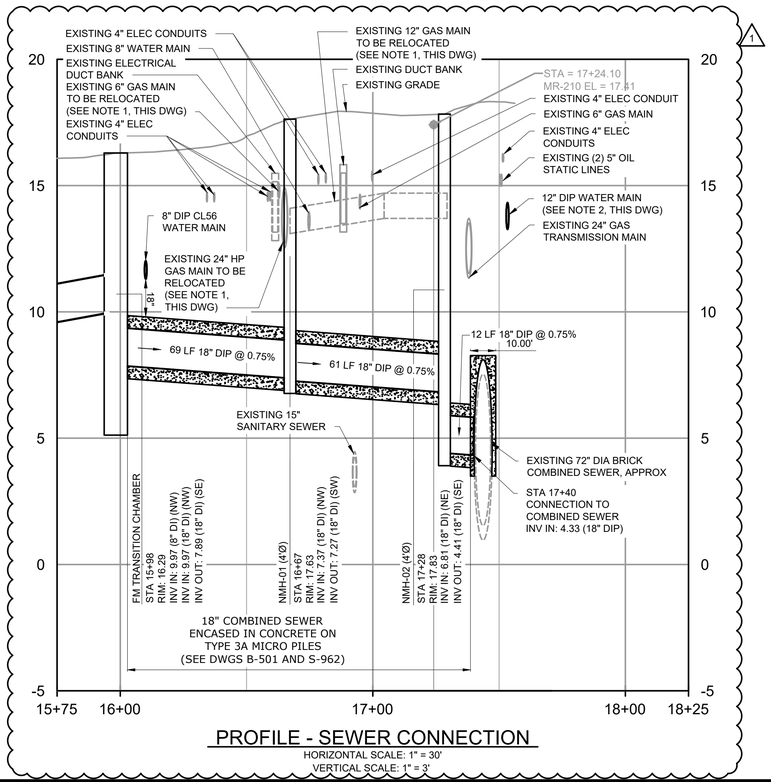
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PLAN INSET

1" = 10'



PROFILE - SEWER CONNECTION

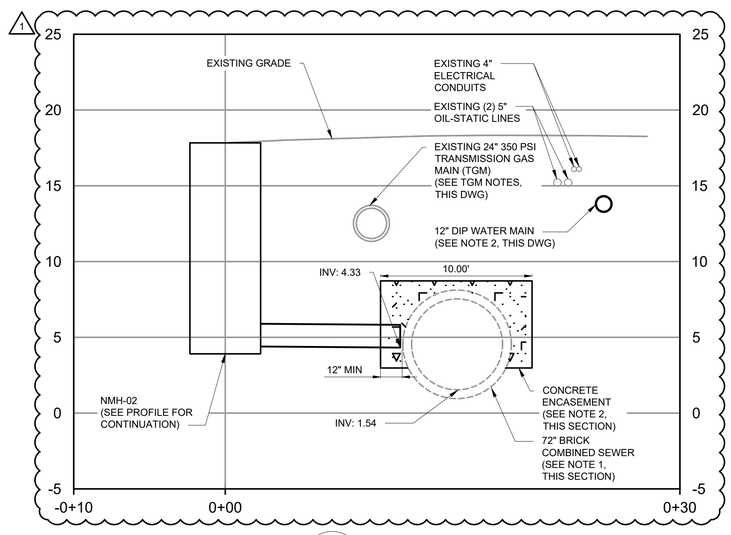
HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 3'

NOTES:

1. GAS MAINS TO BE RELOCATED BY NATIONAL GRID PRIOR TO CONSTRUCTION.
2. CONNECTION TO EXISTING 12" CIP WATER MAIN SHALL BE MADE WITH RESTRAINED COUPLING.

TRANSMISSION GAS MAIN (TGM) NOTES:

1. EXCAVATION NEAR OR EXPOSING NATIONAL GRID'S (NG) TGM SHALL NOT BE PERFORMED BETWEEN THE GAS MORATORIUM OF NOVEMBER 1ST - MARCH 30TH.
2. CONTRACTOR SHALL BE RESPONSIBLE TO SUPPORT AND PROTECT NG'S TGM WITH A MAXIMUM ALLOWABLE OPERATING PRESSURE (MAOP) OF 124-PSIG DURING CONSTRUCTION.
3. CONTRACTOR SHALL BE REQUIRED TO HAVE A NG REPRESENTATIVE ON LOCATION WHEN EXCAVATING IN THE VICINITY OF THE TGM. ALL EXCAVATIONS IN THE VICINITY OF THE TGM SHALL BE AS REQUIRED BY NYS INDUSTRIAL CODE 753. NO SAW CUTTING OF PAVEMENT OR MASONRY FOR TGM HAVING LESS THAN 2 FEET OF COVER TO BREAK ASPHALT/CONCRETE SHALL BE PERMITTED AS DETERMINED BY NATIONAL GRID. THE CONTRACTOR SHALL USE POWER EXCAVATION FOR THE REMOVAL OF PAVEMENT OR MASONRY BUT ONLY TO THE DEPTH OF SUCH PAVEMENT OR MASONRY (BREAKING OF PAVEMENT OR MASONRY SHALL BE DONE BY MEANS OF HANDHELD PNEUMATIC BREAKING EQUIPMENT). UPON REMOVAL OF PAVEMENT OR MASONRY, THE CONTRACTOR SHALL USE SOFT DIG METHODS INCLUDING BUT NOT LIMITED TO VACUUM EXCAVATION, HAND TOOLS, AND NON-MECHANICAL EQUIPMENT TO ASCERTAIN THE CLEARANCES OF THE TGM WITH RESPECT TO THE PROPOSED EXCAVATION. ONCE THE LOCATION OF THE TGM WITH RESPECT TO THE PROPOSED EXCAVATION IS VERIFIED TO THE SATISFACTION OF NATIONAL GRID AND RESIDENT ENGINEER, THE CONTRACTOR SHALL THEN PROCEED WITH HAND ONLY EXCAVATION WITHIN THE ZONE OF PROTECTION DESCRIBED AS 2 FEET FROM THE FACE OF THE TGM IN ALL DIRECTIONS OF THE FACILITY AS REQUIRED TO PRESERVE THE INTEGRITY OF THE FACILITY. ONCE OUTSIDE OF THE ZONE OF PROTECTION AS DESCRIBED ABOVE, THE CONTRACTOR MAY USE A COMBINATION OF HAND AND MACHINE TO COMPLETE THE EXCAVATION.
4. ALL SHEETING REQUIRED TO SUPPORT AND PROTECT NG'S TGM SHALL BE REVIEWED AND APPROVED BY NG.
5. WHEN DIRECTED BY NG, TEST PITS SHALL BE DUG IN ORDER TO ASCERTAIN EXACT LOCATIONS, COVER, CLEARANCES, AND ALIGNMENT OF NG'S TGM.
6. CONTRACTOR SHALL BE REQUIRED TO HAVE A NG REPRESENTATIVE ON LOCATION WHEN EXCAVATING IN THE VICINITY OF THE TGM.
7. CONTRACTOR SHALL ALLOW NG TO INSPECT AND REPAIR (IF NECESSARY) ANY EXPOSED TGM WITHIN A REASONABLE TIMEFRAME.
8. PRIOR TO BACKFILLING, NG SHALL APPROVE ALL BACKFILL MATERIAL IMMEDIATELY ADJACENT (WITHIN 12 INCHES IN ANY DIRECTION) TO THE TGM. IF NG DETERMINES THE BACKFILL MATERIAL WITHIN 12 INCHES IN ANY OF DIRECTION OF THE TGM IS NOT SUITABLE, NG SHALL SUPPLY BACKFILL MATERIAL.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPORTING AND PROTECTING ALL EXISTING TGM HARDWARE.
10. IF APPLICABLE, CONTRACTOR SHALL REMOVE AND REINSTALL NEW TGM HARDWARE TO PROPOSED GRADE AS PER NG APPROVAL. NG SHALL SUPPLY ALL NEW HARDWARE IF REQUIRED.
11. ALL TGM VALVES SHALL BE READILY ACCESSIBLE AT ALL TIMES DURING ALL PHASES OF CONSTRUCTION.
12. DAMAGE TO TGM, HARDWARE, OR OTHER GAS RELATED MATERIAL SHALL BE INSPECTED BY NG.
13. NG SHALL BE REIMBURSED BY CONTRACTOR ALL COSTS ASSOCIATED WITH ANY TGM RELATED DAMAGE(S).



F
C-323
SECTION

SCALE: 1" = 5'

SECTION F NOTES:

1. THE CONTRACTOR SHALL POUR A CONCRETE ENCASEMENT AROUND THE EXISTING COMBINED SEWER AND CORE TO PROVIDE AN OPENING FOR THE 18" SANITARY CONNECTION. GROUT ANNULAR SPACE BETWEEN 18" PIPE AND CORE OPENING AS NECESSARY. CORE SHALL NOT EXCEED 24 INCHES.
2. CONTRACTOR SHALL NOT EXCAVATE MORE THAN 18" BELOW THE SPRINGLINE OF THE EXISTING INTERCEPTOR TO INSTALL THE CONCRETE ENCASEMENT.

1"=3' 0 3 6 FT.
1"=5' 0 1 2 3 4 5 10 FT.
1"=10' 0 10 20 FT.
1"=30' 0 30 60 FT.

NYC

BID SET

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Hazen | Brown AND Caldwell

STATE OF NEW YORK DANIEL JAMES SHEERAN LICENSED PROFESSIONAL ENGINEER 088955

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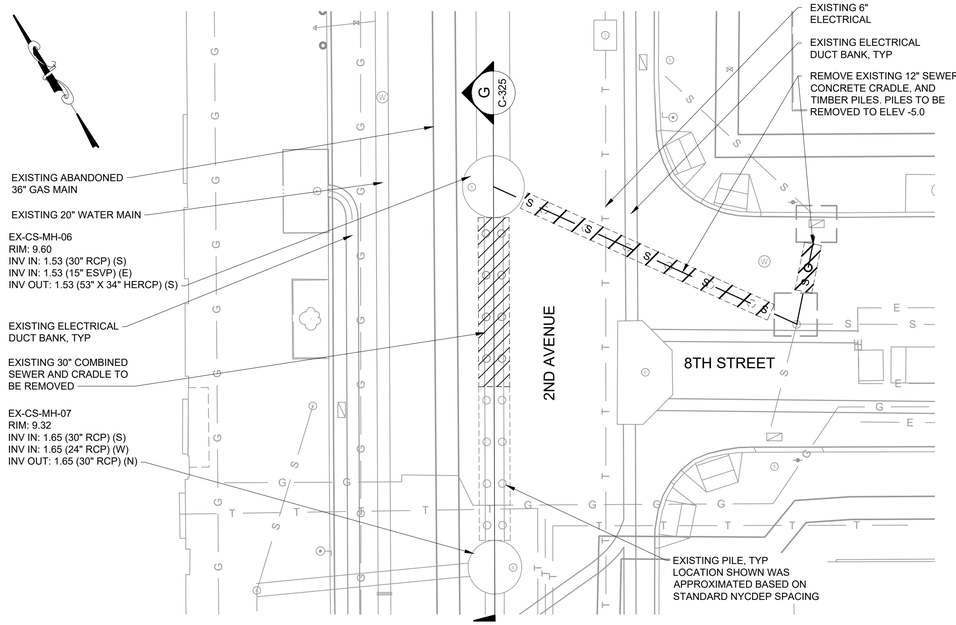
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FORCE MAIN DETAILS AND SECTIONS
1 OF 3

DATE: SEPTEMBER 2026
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DRAWING NO. C-324.01

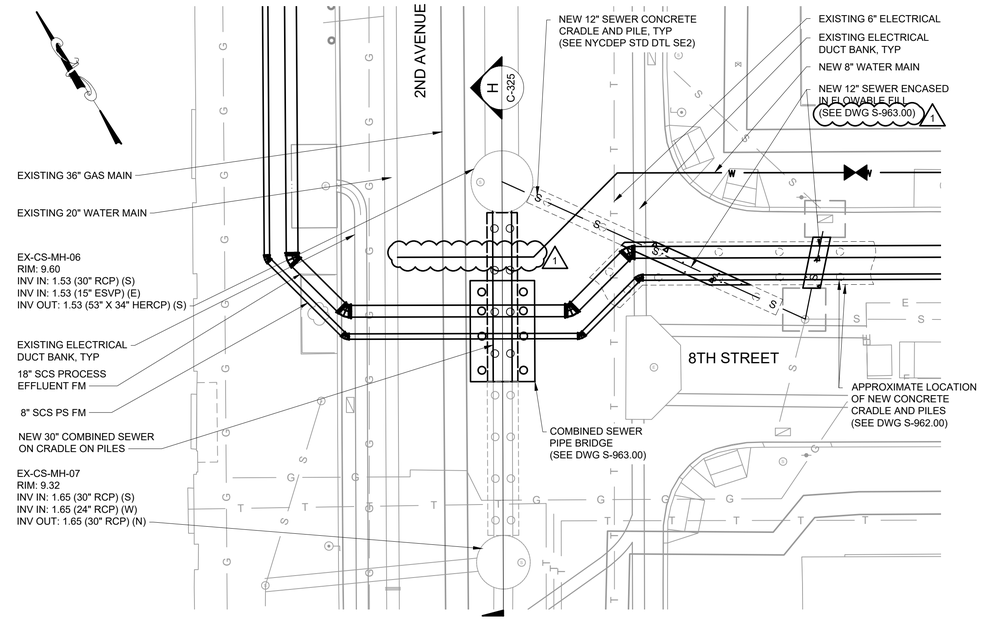
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30" COMBINED SEWER - DEMOLITION PLAN

SCALE: 1' = 10"



30" COMBINED SEWER - RESTORATION PLAN

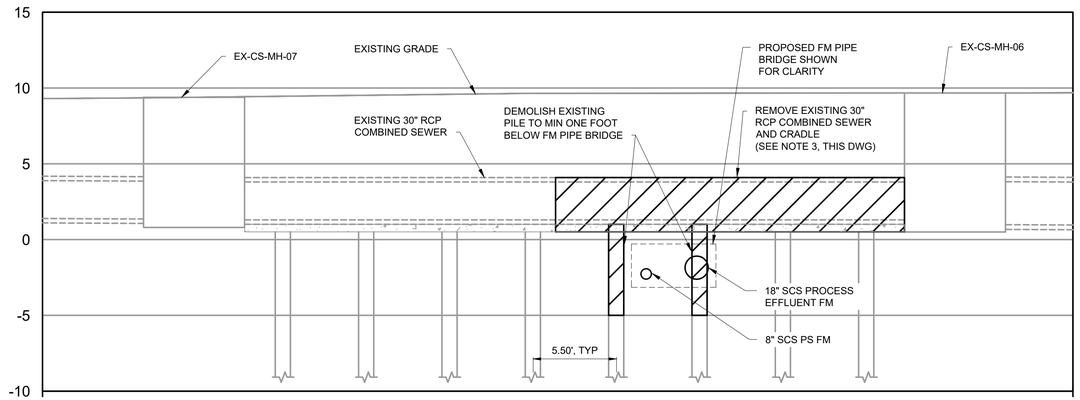
SCALE: 1' = 10"

NOTES:

1. PILE TYPE AND SPACING FOR THE EXISTING 30" COMBINED SEWER SHOWN PER CONTRACT SEK20068 RECORD DRAWINGS.
2. CONTRACTOR SHALL TEST PIT THE 30" COMBINED SEWER CROSSING AREA TO DETERMINE THE ACTUAL LOCATION OF THE EXISTING PILES. CONTRACTOR SHALL SUBMIT THE TEST PIT RESULTS TO THE ENGINEER FOR REVIEW.
3. EXISTING 30" RCP SHALL BE REMOVED TO THE NEAREST PIPE JOINT ON THE UPSTREAM END, AND SHALL BE REMOVED UP TO MANHOLE EX-CS-MH-06 ON THE DOWNSTREAM END.
4. GEOMETRY OF PIPE SUPPORT CRADLE UNKNOWN. ANTICIPATED GEOMETRY TO BE SIMILAR TO NYCDEP SEWER DESIGN STANDARD, LATEST EDITION, DETAIL SE6 FOR THE 30" COMBINED SEWER AND DETAIL SE2 FOR THE 12" SEWER.
5. CONTRACTOR TO VERIFY LOCATION AND LENGTH OF EXISTING COMBINED SEWER PIPE. CRADLE TO BE REMOVED BASED ON LOCATIONS OF EXISTING PILES. LOCATION OF REMOVED SECTION SHALL BE SUCH THAT SECTIONS OF PIPE AND CRADLE TO REMAIN DO NOT EXTEND PAST SUPPORTING PILES IN EXCESS OF DIMENSIONS SHOWN. COORDINATE FINAL EXTENTS OF DEMOLITION WITH PROPOSED PIPE BRIDGE ON DRAWING S-963.

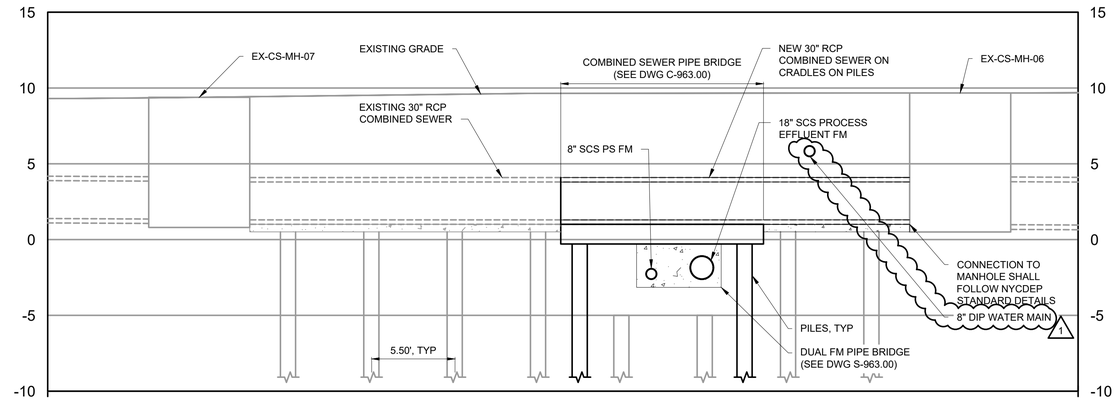
SUGGESTED SEQUENCE OF CONSTRUCTION:

1. INSTALL PILES FOR FORCE MAINS, FORCE MAIN PIPE BRIDGE, AND COMBINED SEWER PIPE BRIDGE.
2. INSTALL SUPPORT OF EXCAVATION FOR THE FORCE MAINS CROSSING OF EXISTING 30" COMBINED SEWER.
3. EXPOSE THE 30" COMBINED SEWER AND PROVIDE FLUME OR BYPASS.
4. DEMOLISH THE EXISTING CRADLE AND PILES FOR THE 30" COMBINED SEWER.
5. CONSTRUCT THE DUAL FM PIPE BRIDGE.
6. CONSTRUCT THE 30" COMBINED SEWER PIPE BRIDGE.
7. INSTALL THE 30" COMBINED SEWER AND REMOVE THE TEMPORARY FLUME OR BYPASS.
8. BACKFILL THE EXCAVATION AND RESTORE THE ROADWAY.



SECTION G

SCALE: 1" = 5'



SECTION H

SCALE: 1" = 5'

1"=5' 0 1 2 3 4 5 10 FT.

1"=10' 0 10 20 FT.

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CHECKED BY: D. SHEERAN	DESIGN LEAD: D. SHEERAN	DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

STATE OF NEW YORK — MICHAEL JAMES SHEA — 088959 — LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER	JESSE GOLDIN, P.E.
PORTFOLIO MANAGER	KEVIN CLARKE, P.E.

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FORCE MAIN DETAILS AND SECTIONS 2 OF 3

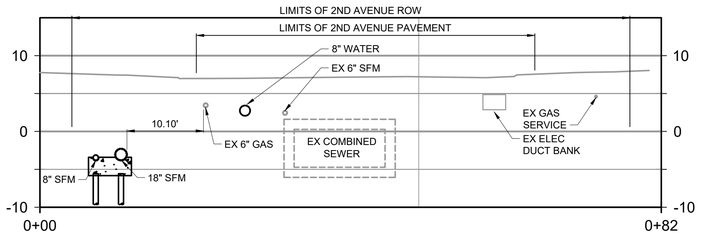
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SHEET NO: 89 OF 723

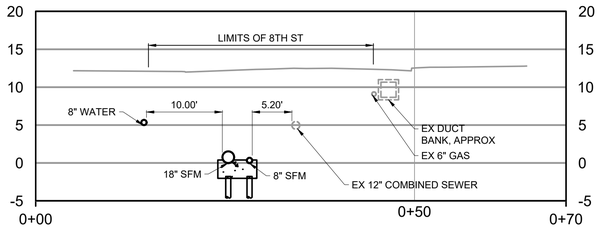
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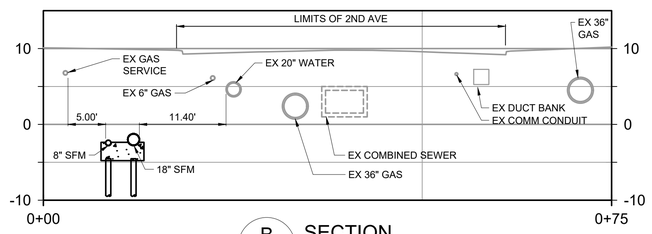
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C-321
SCALE: 1" = 10'



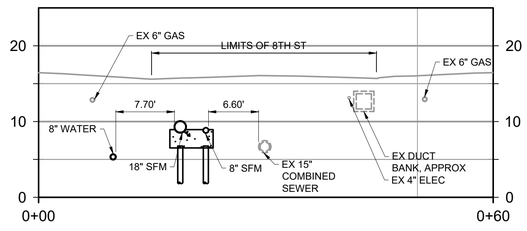
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C-323
SCALE: 1" = 10'

NOTE:

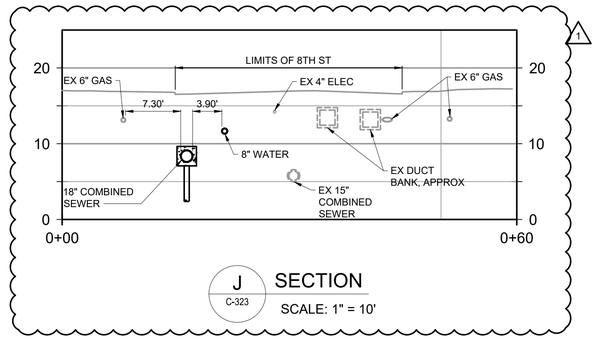
1. 8" AND 18" SANITARY FORCE MAINS SHALL BE SUPPORTED ON CONCRETE CRADLES ON TYPE 3 MICROPILES AS SHOWN ON THE SECTIONS. SEE DETAILS ON DRAWING S-961.00 FOR ADDITIONAL INFORMATION.



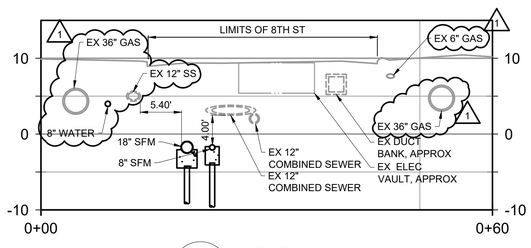
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C-322
SCALE: 1" = 10'



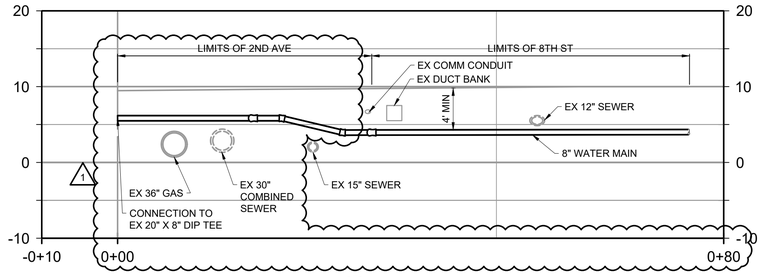
E SECTION
C-323
SCALE: 1" = 10'



J SECTION
C-323
SCALE: 1" = 10'



C SECTION
C-322
SCALE: 1" = 10'



I SECTION
C-322
SCALE: 1" = 10'

1"=10' 0 10 20 FT.

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SUBMITTAL DATE: SEPTEMBER 2026

GRAPHIC SCALES CHECK BEFORE USE

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NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.
1	10/2026	ADDENDUM NO. 2	DS

DESIGNED BY: L. WALLACE | DRAWN BY: K. ROBBINS | PROJECT MANAGER: E. CAMILLERI
CHECKED BY: D. SHEERAN | DESIGN LEAD: D. SHEERAN | DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

Environmental Protection

ACCOUNTABLE MANAGER
JESSE GOLDIN, P.E.

PORTFOLIO MANAGER
KEVIN CLARKE, P.E.

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CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

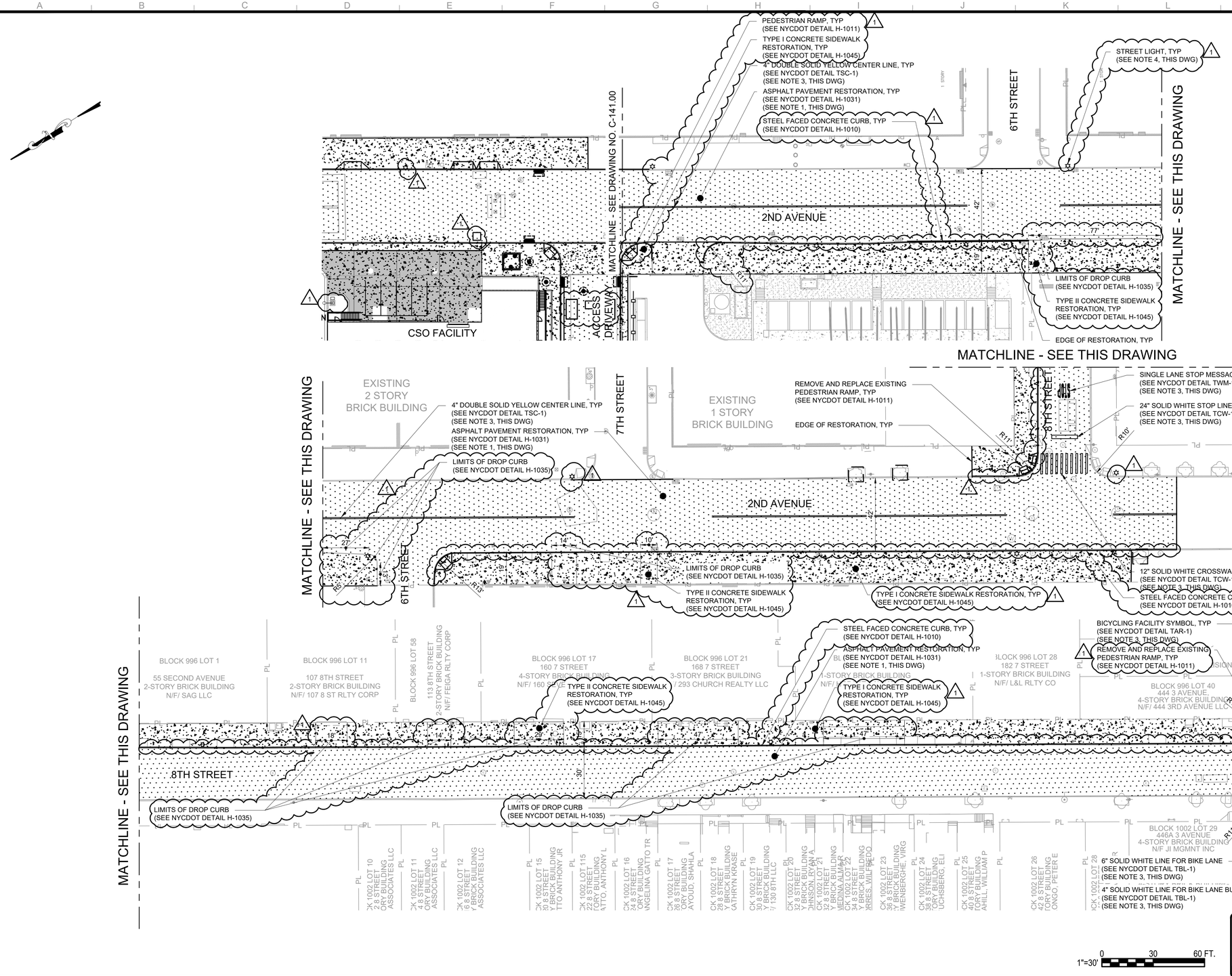
CIVIL

BURIED INFRASTRUCTURE SECTIONS

DATE: SEPTEMBER 2026
SHEET NO: 91 OF 723
DRAWING NO. C-327.01

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Last Saved By: KRobbins
Paper Size Printed/Plotted: ANSI full bleed D (34.00 x 22.00 Inches)
Drawing File Name & Drive Location: C:_DCA\ACDocs\Hazen and Sawyer\90409-000_CSO-GC-SFS-DES-OH\Project Files\000-ProjectWise\Civil\CP-03\C-327.dwg
Last Date Saved: 10/15/2026 3:13 PM
Date & Time Plotted: 10/29/2026 4:07 PM
Plot Scale: 1:1
Plot Style Table: HS-FWS.ctb



NOTES:

1. ASPHALT PAVEMENT WITHIN TRENCH LIMITS SHALL BE RESTORED TO THE FULL DEPTH AS INDICATED ON ASPHALT PAVEMENT DETAIL H-1031 ON DWG C-905.00. ANY AREAS OUTSIDE OF TRENCH RESTORATION SHALL BE MILLED AND OVERLAID. MILL AND PAVE CURB TO CURB WITHIN LIMITS OF CITY STREET.
2. PROVIDE NEW CURB WHERE FORCE MAIN ALIGNMENT INTERSECTS, SEE NYCDOT DETAIL H-1044.
3. ALL PAVEMENT MARKINGS SHALL BE RESTORED IN ACCORDANCE WITH NYCDOT TRANSPORTATION PLANNING AND MANAGEMENT DETAILS FOR TYPICAL PAVEMENT MARKINGS. REFER TO DETAILS ON DWG C-905.00.
4. SEE SL-SERIES DRAWINGS FOR STREET LIGHT LAYOUT AND DETAILS.

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

GRAPHIC SCALES CHECK BEFORE USE

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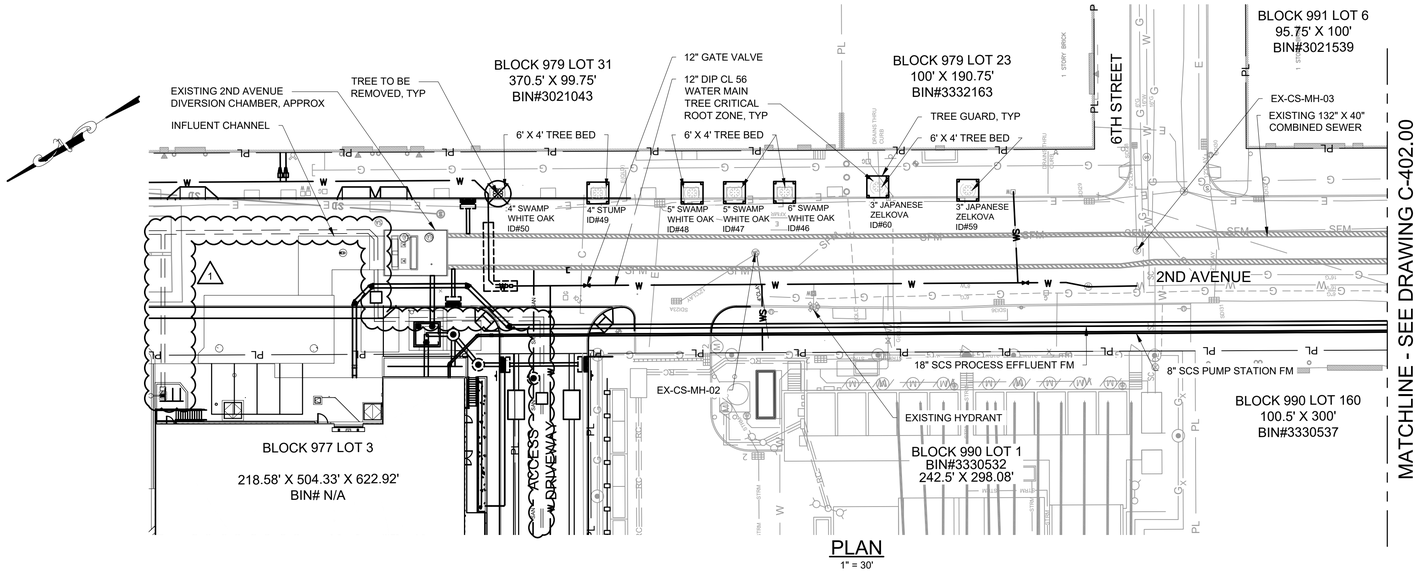
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FINAL RESTORATION PLAN

DATE: SEPTEMBER 2026
SHEET NO: 92 OF 723
DRAWING NO. C-330.01

Last Saved By: KRobbins
Last Date Saved: 10/29/2026 3:19 PM
Paper Size Printed/Plotted: ANSI full bleed D (34.00 x 22.00 Inches)
Drawing File Name & Drive Location: C:_DCACCDocs\hazen and Sawyer\90409-000_CSO-GC-SFS-DES-OH\Project Files\000-ProjectWise\Civil\CP-03\C-330.dwg
Date & Time Plotted: 10/29/2026 4:08 PM
Plot Style Table: HS-FWS.ctb
Plot Scale: 1:1

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PLAN
1" = 30'

TREE #	SPECIES (COMMON NAME)	DBH (INCHES)	CTLA CONDITION RATING	TPZ CRITICAL ROOTZONE (CRZ) RADIUS (ft.)	TREE REMOVAL	STUMP REMOVAL	TREE PROTECTION: TEMPORARY WOODEN TREE GUARD	COMMENTS
46	OAK, SWAMP WHITE	6	97%	4.5			X	Healed over trunk wound. Tree inaccessible due to construction
47	OAK, SWAMP WHITE	5	94%	3.0			X	Girdling roots
48	OAK, SWAMP WHITE	5	94%	3.0			X	Girdling roots
49	STUMP	4	0%	3.0		X		
50	OAK, SWAMP WHITE	4	94%	3.0	X			Asphalt in tree pit
59	ZELKOVA, JAPANESE	3	100%	3.0			X	
60	ZELKOVA, JAPANESE	3	100%	3.0			X	

NOTES:

1. WILL FOLLOW ALL NYC PARKS TREE PLANTING SPECIFICATIONS. ALL PIT SIZES INDICATED ARE TO BE FULLY EXCAVATED TO THE DIMENSIONS LABELED AND REPLACED WITH NEW TOPSOIL TO NYC PARKS STANDARDS.
2. NYC PARKS RESERVES THE RIGHT TO REVOKE AN APPROVED PLAN AT ANY TIME. ANY SUBSEQUENT CHANGES (I.E. UTILITIES AND/OR INFRASTRUCTURE - GAS/WATER/ELECTRIC, ETC.) TO THE SITE AFTER PLAN APPROVAL, NULLIFIES APPROVAL. CHANGES MUST BE DISCLOSED TO NYC PARKS AND THE APPLICANT MUST SUBMIT AMENDED PLANS FOR RE-APPROVAL.
3. PLAN APPROVAL BY NYC PARKS DOES NOT CONSTITUTE PERMISSION TO PLANT, REMOVE, TRANSPLANT, OR TO WORK AROUND EXISTING TREES UNDER PARKS JURISDICTION. ANY WORK DONE ON OR NEAR A CITY TREE REQUIRES A PERMIT FROM NYC PARKS. THIS INCLUDES UTILITY, SIDEWALK, TREE PRUNING, TREE REMOVAL OR ANY OTHER WORK WITHIN THE CRITICAL ROOT ZONE OF A TREE UNDER NYC PARKS JURISDICTION. ALL TREES WITHIN 50 FT. OF CONSTRUCTION MUST BE PROTECTED IN ACCORDANCE WITH PARKS STANDARDS THROUGHOUT THE DURATION OF CONSTRUCTION. PROPER PERMIT(S) AND WORK ORDER(S) MUST BE OBTAINED FROM THE CENTRAL FORESTRY OFFICE.

TREE LEGEND

TREE GUARD

TREE TO BE REMOVED

1"=30' 0 30 60 FT.

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

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Hazen | Brown AND Caldwell

STATE OF NEW YORK — DANIEL JAMES SHEERAN — 088955 — LICENSED PROFESSIONAL ENGINEER

Environmental Protection

ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.
PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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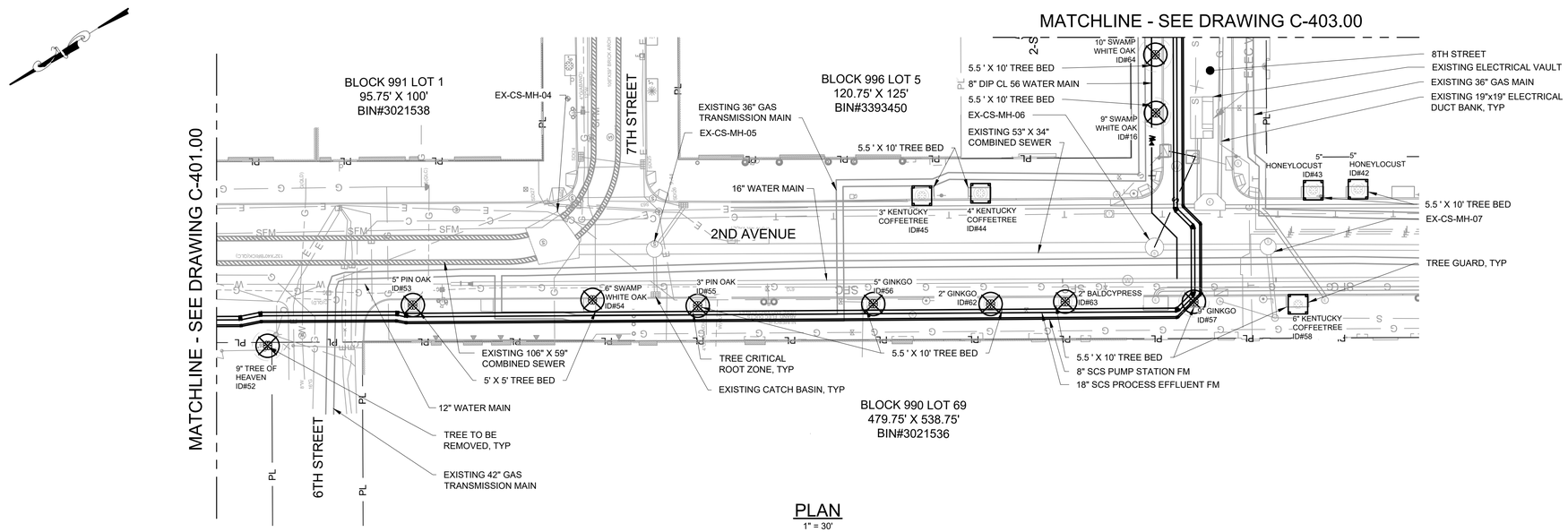
TREE PROTECTION PLAN

1 OF 3

DATE: SEPTEMBER 2026
SHEET NO: 93 OF 723
DRAWING NO. C-401.01

All inquiries regarding this drawing(s) or project should be made to NYC Environmental Protection, Bureau of Engineering Design and Construction.

Last Saved By: KRobbins
Last Date Saved: 10/29/2026 3:34 PM
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Drawing File Name & Drive Location: C:_DCA\CDocs\Hazen and Sawyer\900409-000_CSO-GC-SFS-DES-OH\Project Files\000-ProjectWise\Civil\CP-03\C-401.dwg
Date & Time Plotted: 10/29/2026 4:09 PM
Plot Style Table: HS-FWS.ctb
Plot Scale: 1:1



PLAN
1" = 30'

TREE #	SPECIES (COMMON NAME)	DBH (INCHES)	CTLA CONDITION RATING	USA CRITICAL ROOTZONE (CRZ) RADIUS (ft.)	TREE REMOVAL	STUMP REMOVAL	TREE PROTECTIO: TEMPORARY WOODEN TREE GUARD	COMMENTS
16	OAK, SWAMP WHITE	9	44%	6.8	X			Major trunk wound, crossing scaffolding branches
42	HONEYLOCUST	5	100%	3.0			X	
43	HONEYLOCUST	5	91%	3.0			X	Minor Trunk and scaffolding wounds
44	KENTUCKY COFFEETREE	4	44%	3.0			X	Heavily pollarded, scaffold wounds
45	KENTUCKY COFFEETREE	3	63%	3.0			X	Heavily pollarded
52	TREE OF HEAVEN	9	44%	6.8	X			Recruit along fence, fence trunk conflict, trunk lean, power lines
53	OAK, PIN	5	47%	3.8	X			Trunk and scaffolding wounds, tunk lean, plastic tarp and gravel covering roots
54	OAK, SWAMP WHITE	6	94%	4.5	X			Plastic tarp and gravel over roots
55	OAK, PIN	5	63%	3.8	X			Trunk and scaffolding wounds, slight trunk lean
56	GINKGO	5	81%	3.0	X			Large trunk wound
57	GINKGO	9	97%	6.8	X			Trunk wound.
58	KENTUCKY COFFEETREE	6	38%	4.5			X	Large trunk wound, snapped scaffold branches.
62	GINKGO	2	44%	3.0	X			Exposed roots ball, girdling roots, cut root sprouts, minor trunk wound
63	BALDCYPRESS	2	88%	3.0	X			
64	OAK, SWAMP WHITE	10	88%	7.5	X			Scaffold wounds.

1

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TREE LEGEND

TREE GUARD

TREE TO BE REMOVED

1"=30' 0 30 60 FT.

BID SET
SUBMITTAL DATE: SEPTEMBER 2026

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CHECKED BY: D, SHEERAN | DESIGN LEAD: D, SHEERAN | DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.
PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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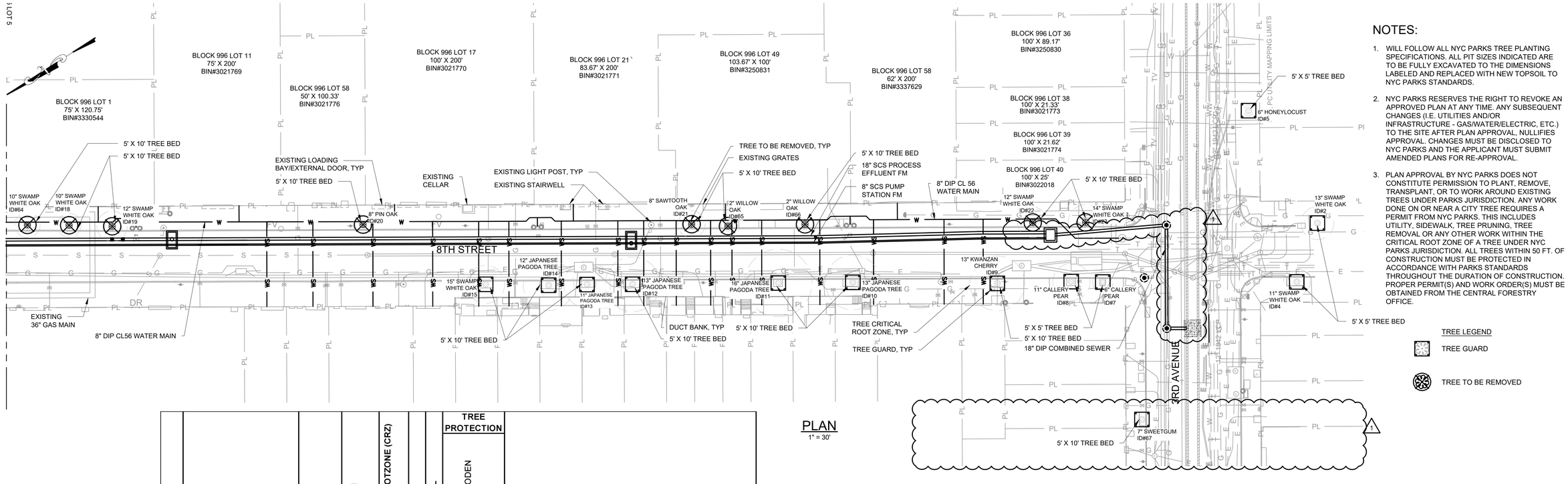
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TREE PROTECTION PLAN
2 OF 3

DATE: SEPTEMBER 2026
SHEET NO: 94 OF 723
DRAWING NO. C-402.01

Last Saved By: KRobbins Last Date Saved: 10/26/2026 11:19 AM
Paper Size Printed/Plotted: ANSI full bleed D (34.00 x 22.00 Inches) Pen Style Table: HS-FWS.ctb
Drawing File Name & Drive Location: C:_DCACDocs\Hazen and Sawyer\90409-000_CSO-GC-SFS-DES-OH\Project Files\000-ProjectWise\Civil\CP-03\C-402.dwg
Date & Time Plotted: 10/29/2026 4:10 PM Plot Scale: 1:1

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PLAN
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TREE LEGEND
- TREE GUARD
- TREE TO BE REMOVED

TREE #	SPECIES (COMMON NAME)	DBH (INCHES)	CTLA CONDITION RATING	NSA CRITICAL ROOTZONE (CRZ) RADIUS (ft.)	TREE REMOVAL	STUMP REMOVAL	TREE PROTECTION: TEMPORARY WOODEN TREE GUARD	COMMENTS
2	OAK, SWAMP WHITE	13	94%	9.8	1		X	Codominant stems
4	OAK, SWAMP WHITE	11	94%	7.9			X	Trunk lean, crossing branches
5	HONEYLOCUST	6	69%	4.5			X	Irregular trunk base, healed trunk wounds, scaffold wounds
7	PEAR, CALLERY	6	66%	6.0			X	Trunk wounds, crossing branches, small pit
8	PEAR, CALLERY	11	75%	11.0			X	Small pit, trunk wounds, codominant stems
9	CHERRY, KWANZAN	13	97%	16.3			X	Crossing roots
10	JAPANESE PAGODA TREE	13	91%	16.3			X	Scaffold wounds
11	JAPANESE PAGODA TREE	16	81%	20.0			X	Small pit, minor trunk and scaffolding wounds
12	JAPANESE PAGODA TREE	13	97%	16.3			X	10% dieback
13	JAPANESE PAGODA TREE	11	72%	13.8			X	Minor root collar and trunk wounds, broken scaffolding branch
14	JAPANESE PAGODA TREE	12	100%	15.0			X	
15	OAK, SWAMP WHITE	15	97%	11.3			X	Codominant stems, crossing scaffolding branches
16	OAK, SWAMP WHITE	9	44%	6.8	X			Major trunk wound, crossing scaffolding branches
17	OAK, SWAMP WHITE	9	94%	6.8	X			Minor trunk and scaffolding wounds
18	OAK, SWAMP WHITE	10	91%	7.1	X			Minor trunk and scaffolding wounds, competing leaders
19	OAK, SWAMP WHITE	12	94%	9.0	X			Competing leaders
20	OAK, PIN	8	100%	7.5	X			Bioswale
21	OAK, SAWTOOTH	8	94%	10.0	X			Bioswale, deep mulch
22	OAK, SWAMP WHITE	12	94%	9.0	X			Minor girdling roots
23	OAK, SWAMP WHITE	14	97%	10.5	X			Minor girdling roots
64	OAK, SWAMP WHITE	10	88%	3.0	X			Scaffold wounds.
65	OAK, WILLOW	2	100%	3.0	X			
66	OAK, WILLOW	2	100%	3.0	X			
67	SWEETGUM	7	97%	4.9			x	Columnar. Some mature branches starting to hang down. 1

1"=30' 0 30 60 FT.

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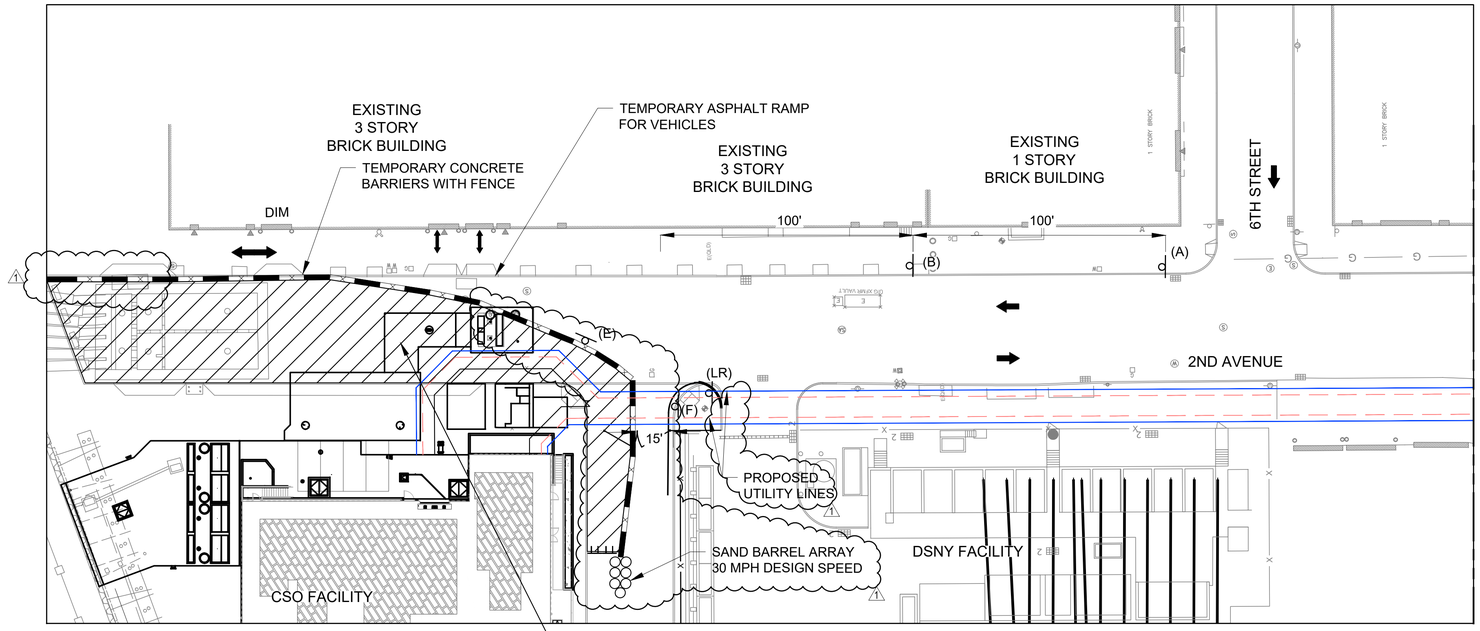
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TREE PROTECTION PLAN
3 OF 3

DATE: SEPTEMBER 2026
SHEET NO: 95 OF 723
DRAWING NO. C-403.01

Last Saved By: KRobbins
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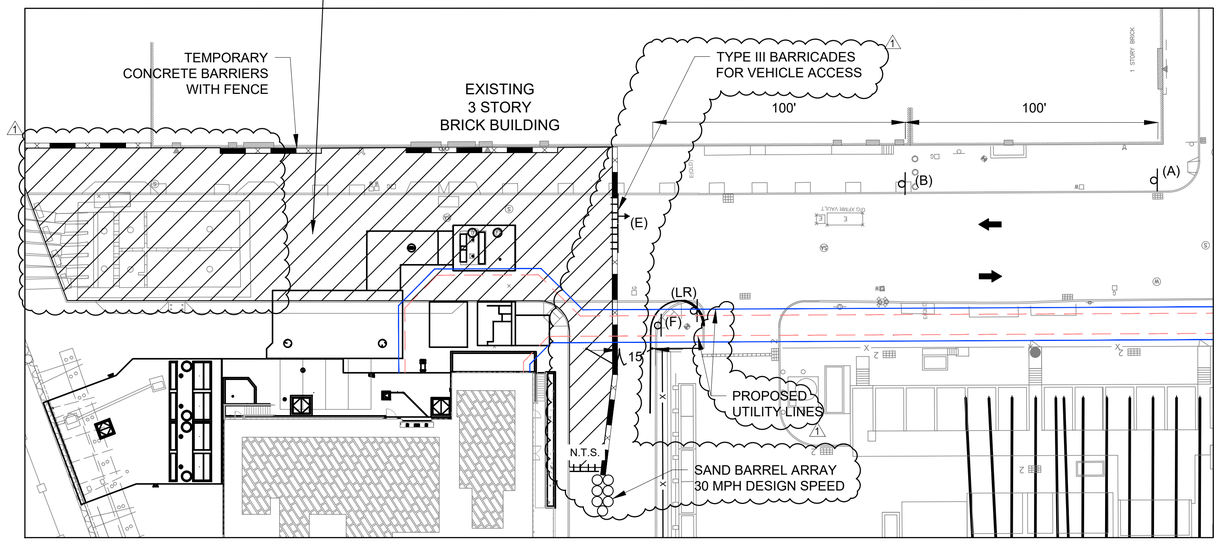


MPT DURING CORRECTIONAL FACILITY BUSINESS HOURS

N.T.S.

MPT STAGE 1 (NON-BUSINESS HOURS):

1. 2ND AVENUE WEST SIDEWALK TO BE CLOSED (NORTH OF CONSTRUCTION DRIVEWAY) AS DAILY CLOSURE.
2. INSTALL APPROPRIATE MPT DEVICES, ADVANCE SIGNING AND PEDESTRIAN SIGNING.
3. COORDINATE WITH PROPERTY OWNERS ALONG 2ND AVENUE PRIOR TO CLOSURE.
4. OBTAIN NYCDOT OCMC PERMITS PRIOR TO CLOSURE.
5. ELIMINATE STREET PARKING ALONG 2ND AVENUE PRIOR TO CLOSURE.



MPT DURING CORRECTIONAL FACILITY NON-BUSINESS HOURS

MPT STAGE 1 (BUSINESS HOURS):

1. 2ND AVENUE WEST SIDEWAL[illegible]3E CLOSED (NORTH OF CONSTRUCTION DRIVEWAY) AS LONG TERM CLOSURE.
2. MAINTAIN DRIVEWAY ACCESS WAY DURING BUSINESS HOURS OF THE ADJACENT CORRECTIONAL FACILITY..
3. INSTALL APPROPRIATE MPT DEVICES, ADVANCE SIGNING AND PEDESTRIAN SIGNING.
4. COORDINATE WITH PROPERTY OWNERS ALONG 2ND AVENUE PRIOR TO CLOSURE.
5. OBTAIN NYCDOT OCMC PERMITS PRIOR TO CLOSURE.
6. ELIMINATE STREET PARKING ALONG 2ND AVENUE PRIOR TO CLOSURE.
7. NO CONSTRUCTION ACTIVITIES WILL OCCUR BEHIND BARRIER DURING CORRECTIONAL FACILITY BUSINESS HOURS.

CONSTRUCTION WORK:

1. DEMOLITION OF EXISTING OUTFALL AND SILT BASIN.
2. CUT AND CAP EXISTING OH-007 OUTFALL PIPES.
3. 8" WATER SERVICE CONNECTION.
4. 18" SCS PROCESS EFFLUENT FORCE MAIN.
5. 8" SCS PUMP STATION FORCE MAIN.
6. RELOCATED 6" GAS MAIN.
7. 12" DIP WATER MAIN.
8. SANITARY SEWER CONNECTION.

1"=30' 0 30 60 FT.

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

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CHECKED BY: A.DELUCA | DESIGN LEAD: A.DELUCA | DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

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ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.
PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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CONSTRUCTION PACKAGE 3 - OH-007

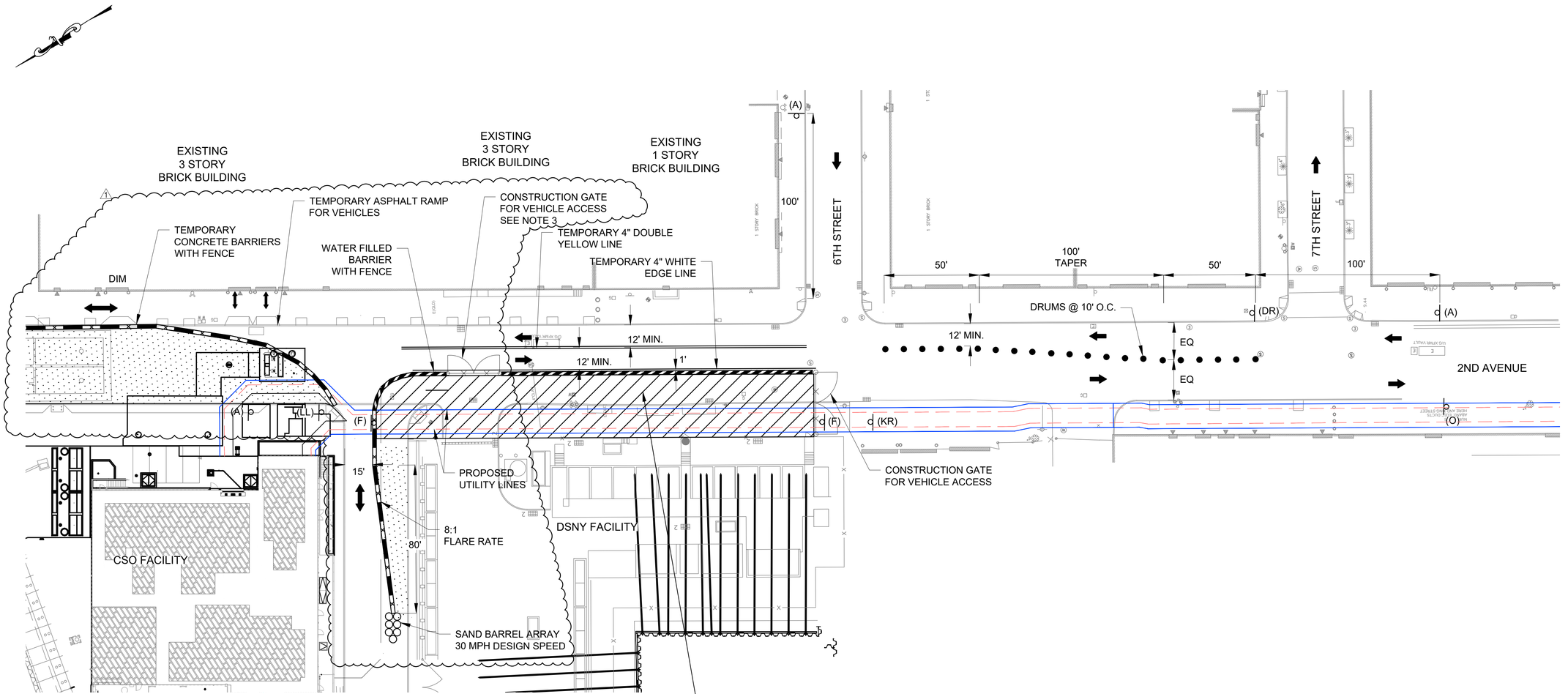
CIVIL

MAINTENANCE AND PROTECTION OF TRAFFIC STAGE 1

DATE: SEPTEMBER 2026
SHEET NO: 98 OF 723
DRAWING NO. C-603.00

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Plot Scale: 1:1
Date & Time Plotted: 10/30/2026 1:17 PM



MPT STAGE 2:

1. MAINTAIN A 12-FT LANE MINIMUM BOTH DIRECTIONS AND CLOSE WEST SIDEWALK. NARROW ROAD AS LONG TERM WITH NIGHTLY OPTIONAL CLOSURE
2. INSTALL APPROPRIATE MPT DEVICES, PEDESTRIAN SIGNING, AND ADVANCE SIGNING
3. COORDINATE WITH DSNY AND PROPERTY OWNERS ALONG 2nd AVENUE PRIOR TO CLOSURE
4. OBTAIN NYCDOT OCMC PERMITS PRIOR TO CLOSURE
5. ELIMINATE STREET PARKING ALONG 2nd AVENUE PRIOR TO CLOSURE

CONSTRUCTION WORK:

1. 18" SCS PROCESS EFFLUENT FORCE MAIN.
2. 8" SCS PUMP STATION FORCE MAIN.
3. 12" DIP WATER MAIN.

1"=30' 0 30 60 FT.

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

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NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.
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DESIGNED BY: T. KUI | DRAWN BY: K. BHOLANAUTH | PROJECT MANAGER: E. CAMILLERI
CHECKED BY: J. AMOROSA | DESIGN LEAD: J. AMOROSA | DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

STATE OF NEW YORK ANTHONY F. DELUCA 103359 LICENSED PROFESSIONAL ENGINEER

Environmental Protection

ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.
PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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MAINTENANCE AND PROTECTION OF TRAFFIC STAGE 2

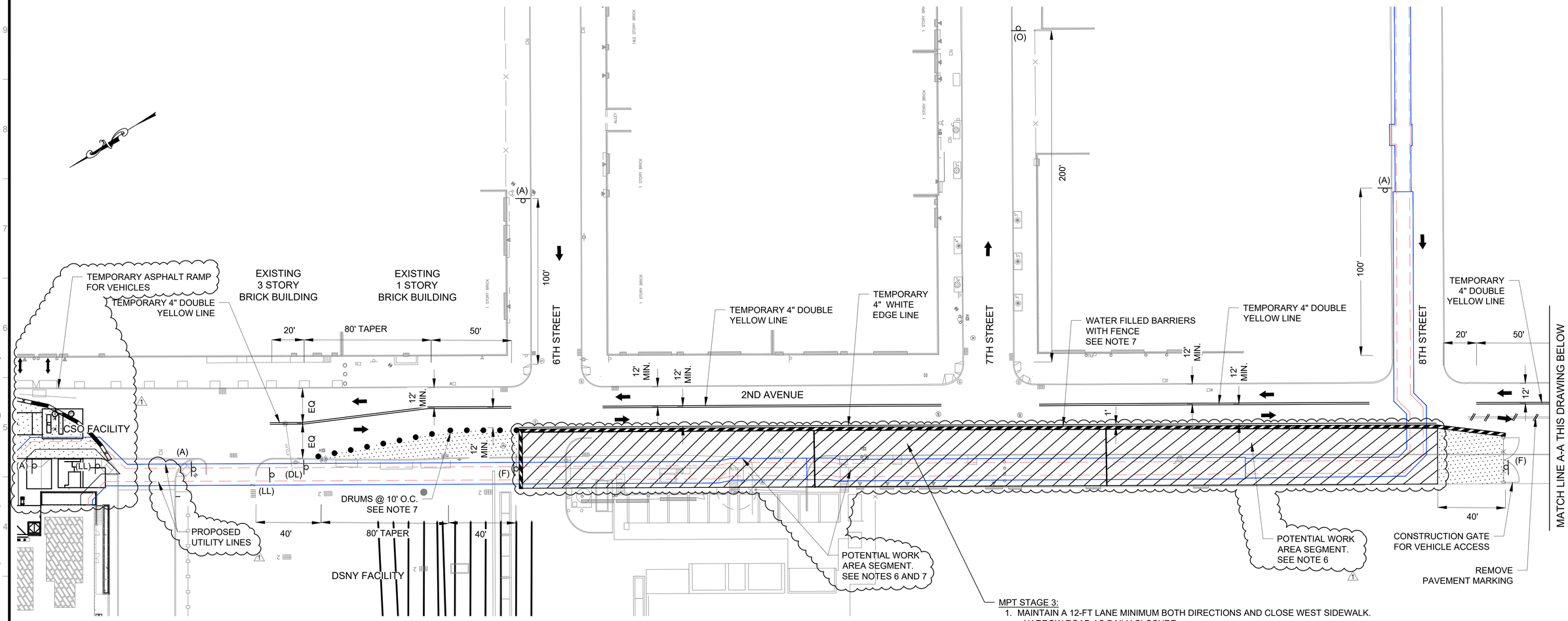
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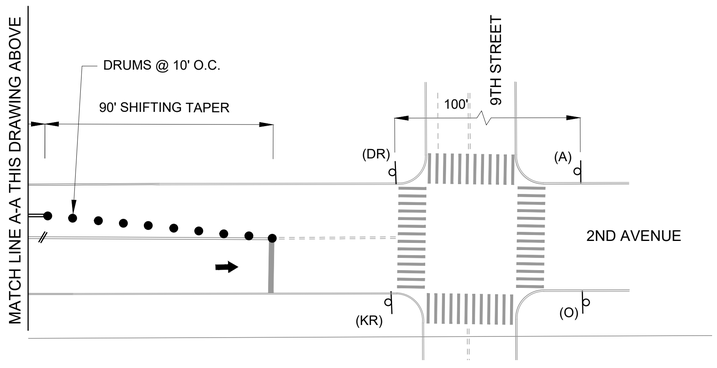
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MPT STAGE 3:

1. MAINTAIN A 12-FT LANE MINIMUM BOTH DIRECTIONS AND CLOSE WEST SIDEWALK. NARROW ROAD AS DAILY CLOSURE
2. INSTALL APPROPRIATE MPT DEVICES, PEDESTRIAN SIGNING, AND ADVANCE SIGNING
3. COORDINATE WITH PROPERTY OWNERS ALONG 2nd AVENUE PRIOR TO CLOSURE
4. OBTAIN NYCDOT OCMC PERMITS PRIOR TO CLOSURE
5. ELIMINATE STREET PARKING ALONG 2nd AVENUE PRIOR TO CLOSURE
6. WORK AREAS WILL BE SEGMENTED AS ACTIVE UTILITY WORK REQUIRES. THE CONTRACTOR WILL SHIFT WORK AREA AS CONSTRUCTION PROGRESSES. LENGTH OF EACH WORK ZONE SEGMENT WILL BE DETERMINED BY CONTRACTOR AND SHALL CONSIDER ACCESS TO ADJACENT BUILDINGS AND DRIVEWAYS.
7. WATER FILLED BARRIER AND DRUMS SHALL SHIFT WITH EACH WORK ZONE SEGMENT ACCORDINGLY.
8. MAINTAIN BUILDING AND DRIVEWAY ACCESS ALONG 2nd AVENUE ALL ALL TIMES.

CONSTRUCTION WORK:

1. 18" SCS PROCESS EFFLUENT FORCE MAIN.
2. 8" SCS PUMP STATION FORCE MAIN.

1"=30' 0 30 60 FT.

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DESIGNED BY:	DRAWN BY:	PROJECT MANAGER:
T. KUI	K. BHOLANAUTH	E. CAMILLERI
CHECKED BY:	DESIGN LEAD:	DESIGN MANAGER:
J. AMOROSA	J. AMOROSA	G. DEREAMER

Hazen | Brown AND Caldwell

STATE OF NEW YORK ANTHONY F. DELUCA LICENSED PROFESSIONAL ENGINEER 103359

NYC Environmental Protection

ACCOUNTABLE MANAGER
JESSE GOLDIN, P.E.
PORTFOLIO MANAGER
KEVIN CLARKE, P.E.

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CIVIL

MAINTENANCE AND PROTECTION OF TRAFFIC STAGE 3

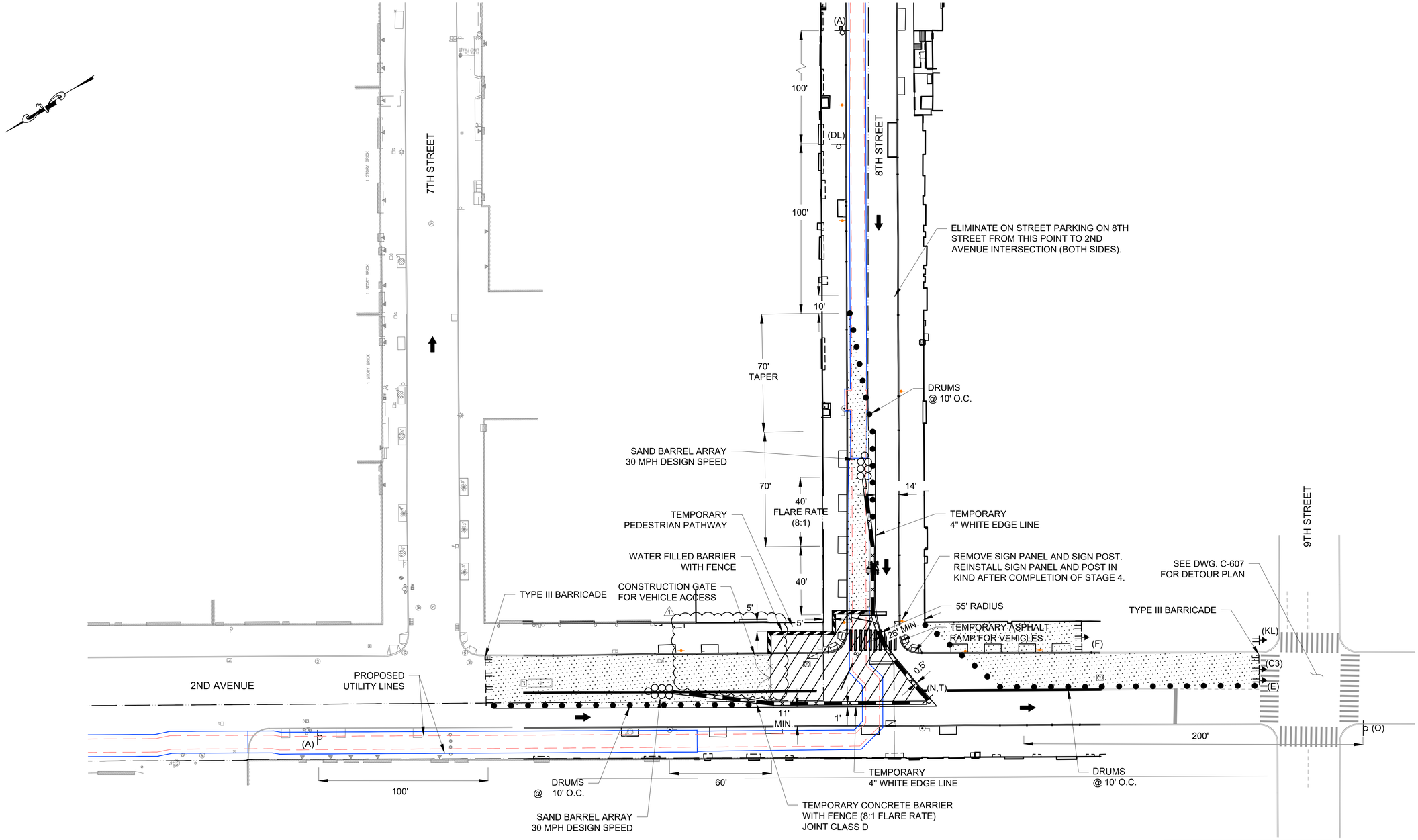
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1"=30' 0 30 60 FT.

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CHECKED BY: J. AMOROSA	DESIGN LEAD: J. AMOROSA	DESIGN MANAGER: G. DEREAMER

Hazen and Brown AND Caldwell

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MAINTENANCE AND PROTECTION OF TRAFFIC STAGE 4

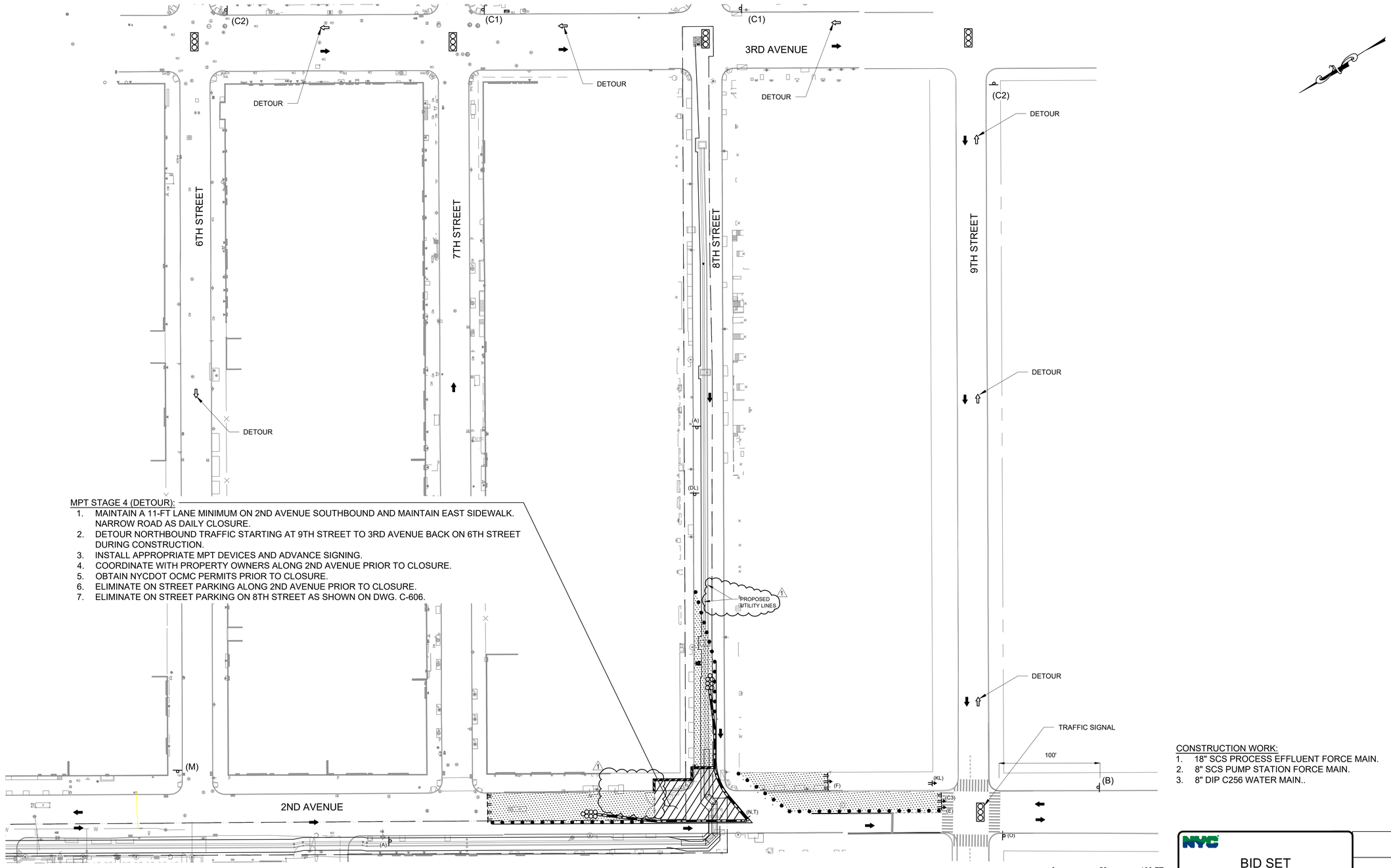
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Plot Scale: 1:1



MPT STAGE 4 (DETOUR):

1. MAINTAIN A 11-FT LANE MINIMUM ON 2ND AVENUE SOUTHBOUND AND MAINTAIN EAST SIDEWALK. NARROW ROAD AS DAILY CLOSURE.
2. DETOUR NORTHBOUND TRAFFIC STARTING AT 9TH STREET TO 3RD AVENUE BACK ON 6TH STREET DURING CONSTRUCTION.
3. INSTALL APPROPRIATE MPT DEVICES AND ADVANCE SIGNING.
4. COORDINATE WITH PROPERTY OWNERS ALONG 2ND AVENUE PRIOR TO CLOSURE.
5. OBTAIN NYCDOT OCMC PERMITS PRIOR TO CLOSURE.
6. ELIMINATE ON STREET PARKING ALONG 2ND AVENUE PRIOR TO CLOSURE.
7. ELIMINATE ON STREET PARKING ON 8TH STREET AS SHOWN ON DWG. C-606.

CONSTRUCTION WORK:

1. 18" SCS PROCESS EFFLUENT FORCE MAIN.
2. 8" SCS PUMP STATION FORCE MAIN.
3. 8" DIP C256 WATER MAIN..

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DESIGNED BY:	DRAWN BY:	PROJECT MANAGER:
T. KUI	T. KUI	E. CAMILLERI
CHECKED BY:	DESIGN LEAD:	DESIGN MANAGER:
A. DELUCA	A. DELUCA	G. DEREAMER

Hazen | Brown AND Caldwell

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Environmental Protection

ACCOUNTABLE MANAGER
JESSE GOLDIN, P.E.
PORTFOLIO MANAGER
KEVIN CLARKE, P.E.

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MAINTENANCE AND PROTECTION OF TRAFFIC STAGE 4 DETOUR PLAN

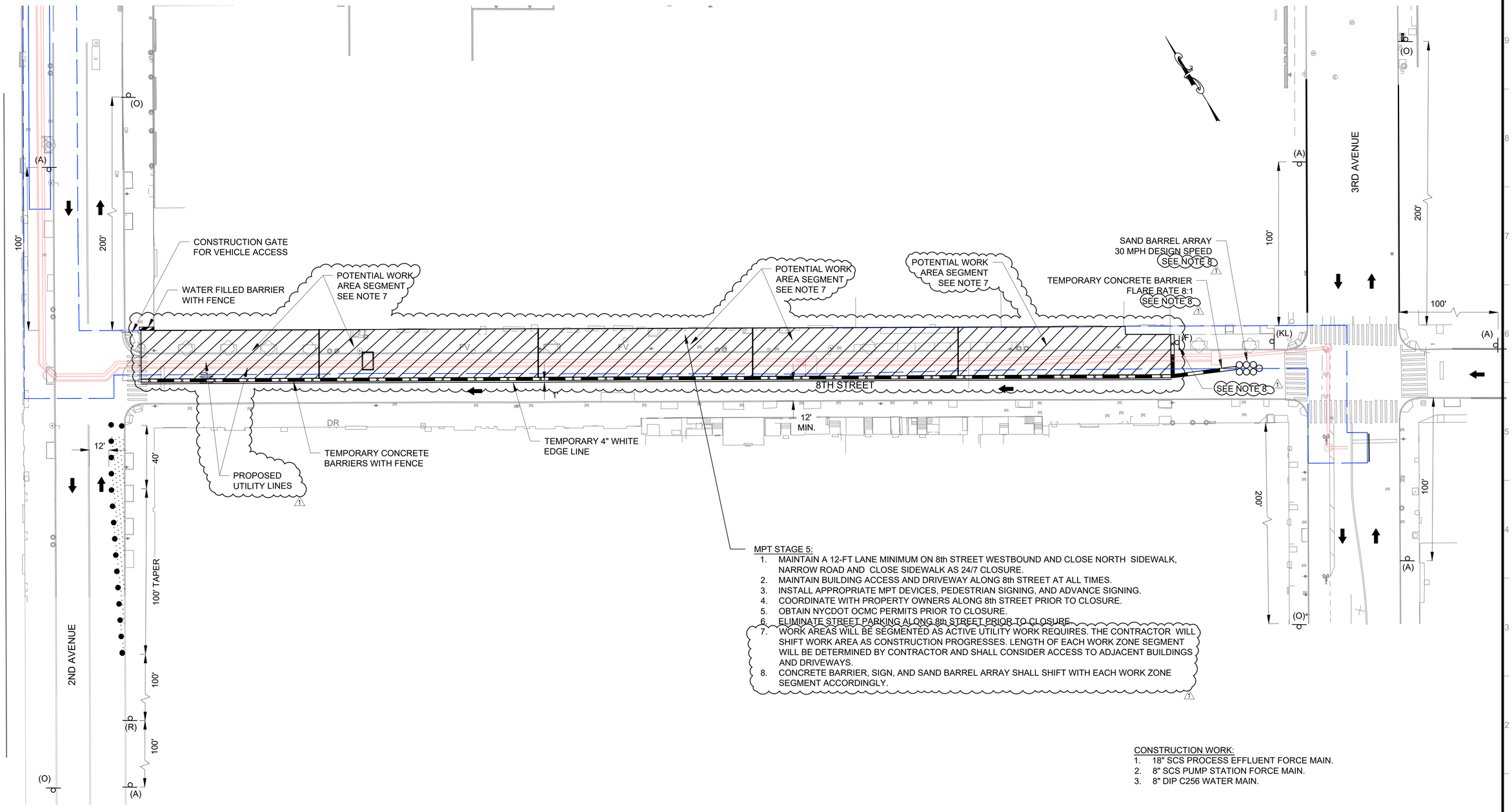
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MPT STAGE 5:

1. MAINTAIN A 12-FT LANE MINIMUM ON 8th STREET WESTBOUND AND CLOSE NORTH SIDEWALK, NARROW ROAD AND CLOSE SIDEWALK AS 24/7 CLOSURE.
2. MAINTAIN BUILDING ACCESS AND DRIVEWAY ALONG 8th STREET AT ALL TIMES.
3. INSTALL APPROPRIATE MPT DEVICES, PEDESTRIAN SIGNING, AND ADVANCE SIGNING.
4. COORDINATE WITH PROPERTY OWNERS ALONG 8th STREET PRIOR TO CLOSURE.
5. OBTAIN NYCDOT OCMC PERMITS PRIOR TO CLOSURE.
6. ELIMINATE STREET PARKING ALONG 8th STREET PRIOR TO CLOSURE.
7. WORK AREAS WILL BE SEGMENTED AS ACTIVE UTILITY WORK REQUIRES. THE CONTRACTOR WILL SHIFT WORK AREA AS CONSTRUCTION PROGRESSES. LENGTH OF EACH WORK ZONE SEGMENT WILL BE DETERMINED BY CONTRACTOR AND SHALL CONSIDER ACCESS TO ADJACENT BUILDINGS AND DRIVEWAYS.
8. CONCRETE BARRIER, SIGN, AND SAND BARREL ARRAY SHALL SHIFT WITH EACH WORK ZONE SEGMENT ACCORDINGLY.

CONSTRUCTION WORK:

1. 18" SCS PROCESS EFFLUENT FORCE MAIN.
2. 8" SCS PUMP STATION FORCE MAIN.
3. 8" DIP C256 WATER MAIN.

1"=30' 0 30 60 FT.

BID SET

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CHECKED BY: A. DELUCA | DESIGN LEAD: A. DELUCA | DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

STATE OF NEW YORK ANTHONY F. DELUCA 103359 LICENSED PROFESSIONAL ENGINEER

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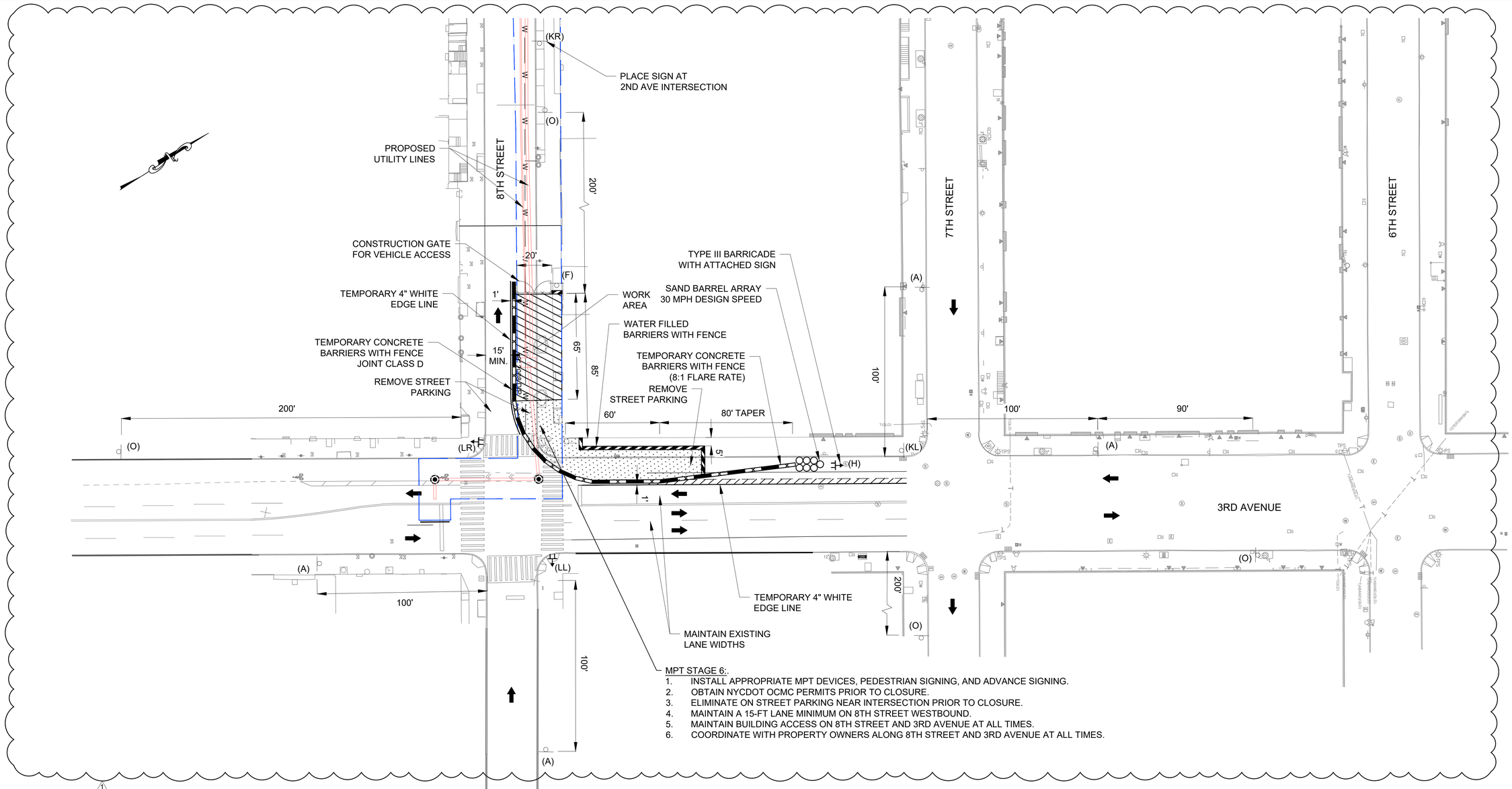
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MAINTENANCE AND PROTECTION OF TRAFFIC STAGE 5

DATE: SEPTEMBER 2026
SHEET NO: 103 OF 723
DRAWING NO. C-608.00

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MPT STAGE 6:.

1. INSTALL APPROPRIATE MPT DEVICES, PEDESTRIAN SIGNING, AND ADVANCE SIGNING.
2. OBTAIN NYCDOT OCMC PERMITS PRIOR TO CLOSURE.
3. ELIMINATE ON STREET PARKING NEAR INTERSECTION PRIOR TO CLOSURE.
4. MAINTAIN A 15-FT LANE MINIMUM ON 8TH STREET WESTBOUND.
5. MAINTAIN BUILDING ACCESS ON 8TH STREET AND 3RD AVENUE AT ALL TIMES.
6. COORDINATE WITH PROPERTY OWNERS ALONG 8TH STREET AND 3RD AVENUE AT ALL TIMES.

CONSTRUCTION WORK:

1. 18" SCS PROCESS EFFLUENT FORCE MAIN.
2. 8" SCS PUMP STATION FORCE MAIN.

1"=30' 0 30 60 FT.

BID SET

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CHECKED BY: A. DELUCA	DESIGN LEAD: A. DELUCA	DESIGN MANAGER: G. DEREAMER

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CONSTRUCTION PACKAGE 3 - OH-007

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MAINTENANCE AND PROTECTION OF TRAFFIC
STAGE 6

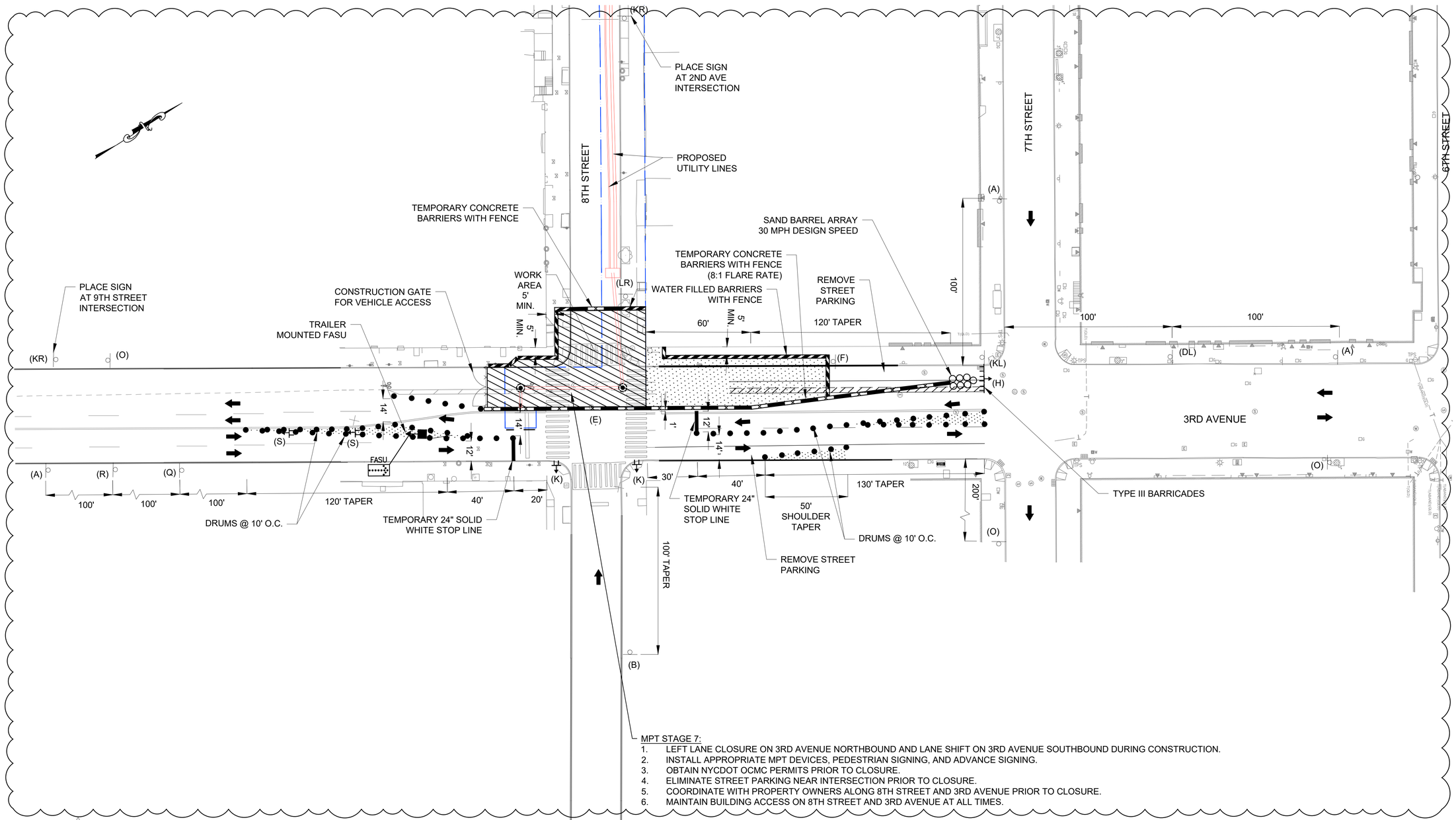
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MPT STAGE 7:

1. LEFT LANE CLOSURE ON 3RD AVENUE NORTHBOUND AND LANE SHIFT ON 3RD AVENUE SOUTHBOUND DURING CONSTRUCTION.
2. INSTALL APPROPRIATE MPT DEVICES, PEDESTRIAN SIGNING, AND ADVANCE SIGNING.
3. OBTAIN NYCDOT OCMC PERMITS PRIOR TO CLOSURE.
4. ELIMINATE STREET PARKING NEAR INTERSECTION PRIOR TO CLOSURE.
5. COORDINATE WITH PROPERTY OWNERS ALONG 8TH STREET AND 3RD AVENUE PRIOR TO CLOSURE.
6. MAINTAIN BUILDING ACCESS ON 8TH STREET AND 3RD AVENUE AT ALL TIMES.

CONSTRUCTION WORK:

1. 18" DIP COMBINED SEWER
2. CONNECTION TO 10' X 10' INTERCEPTOR.

1"=30' 0 30 60 FT.

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

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CHECKED BY: A. DELUCA	DESIGN LEAD: A. DELUCA	DESIGN MANAGER: G. DEREAMER

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STATE OF NEW YORK · ANTHONY F. DELUCA · 103359 · LICENSED PROFESSIONAL ENGINEER

Environmental Protection

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MAINTENANCE AND PROTECTION OF TRAFFIC STAGE 7

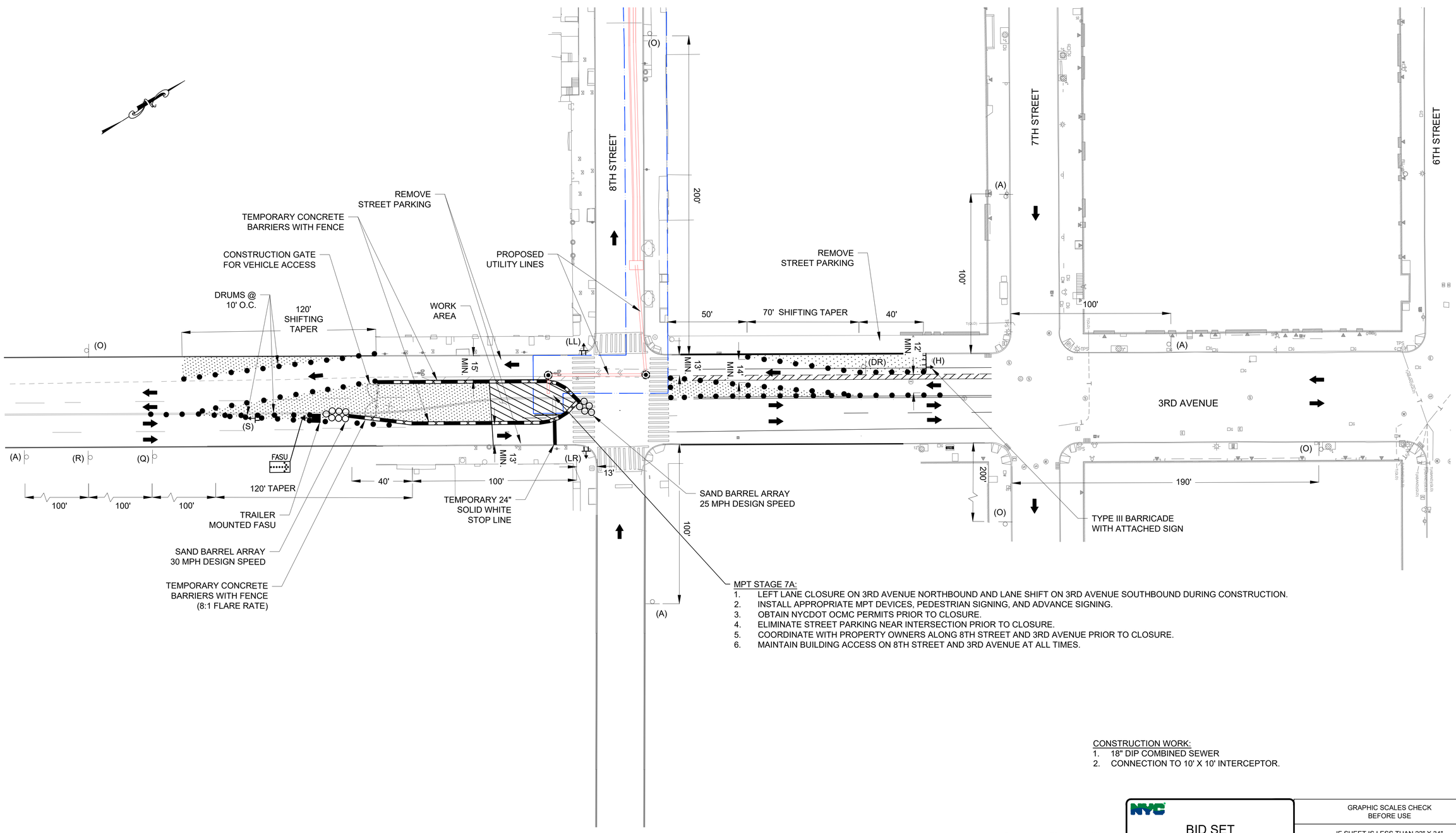
DATE: SEPTEMBER 2026

SHEET NO: OF 723

DRAWING NO. C-610.00

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Plot Style Table: BEDC_Acad_2021.ctb
Plot Scale: 1:1
Date & Time Plotted: 10/30/2026 1:35 PM



MPT STAGE 7A:

1. LEFT LANE CLOSURE ON 3RD AVENUE NORTHBOUND AND LANE SHIFT ON 3RD AVENUE SOUTHBOUND DURING CONSTRUCTION.
2. INSTALL APPROPRIATE MPT DEVICES, PEDESTRIAN SIGNING, AND ADVANCE SIGNING.
3. OBTAIN NYCDOT OCMC PERMITS PRIOR TO CLOSURE.
4. ELIMINATE STREET PARKING NEAR INTERSECTION PRIOR TO CLOSURE.
5. COORDINATE WITH PROPERTY OWNERS ALONG 8TH STREET AND 3RD AVENUE PRIOR TO CLOSURE.
6. MAINTAIN BUILDING ACCESS ON 8TH STREET AND 3RD AVENUE AT ALL TIMES.

CONSTRUCTION WORK:

1. 18" DIP COMBINED SEWER
2. CONNECTION TO 10' X 10' INTERCEPTOR.

1"=30' 0 30 60 FT.

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

GRAPHIC SCALES CHECK BEFORE USE

IF SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT. SCALE ACCORDINGLY

NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.
1	10/2026	ADDENDUM NO. 2	AD

DESIGNED BY: T. KUI | DRAWN BY: T. KUI | PROJECT MANAGER: E. CAMILLERI
CHECKED BY: A. DELUCA | DESIGN LEAD: A. DELUCA | DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

ANTHONY F. DELUCA — STATE OF NEW YORK — LICENSED PROFESSIONAL ENGINEER — 103359

Environmental Protection

ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.
PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

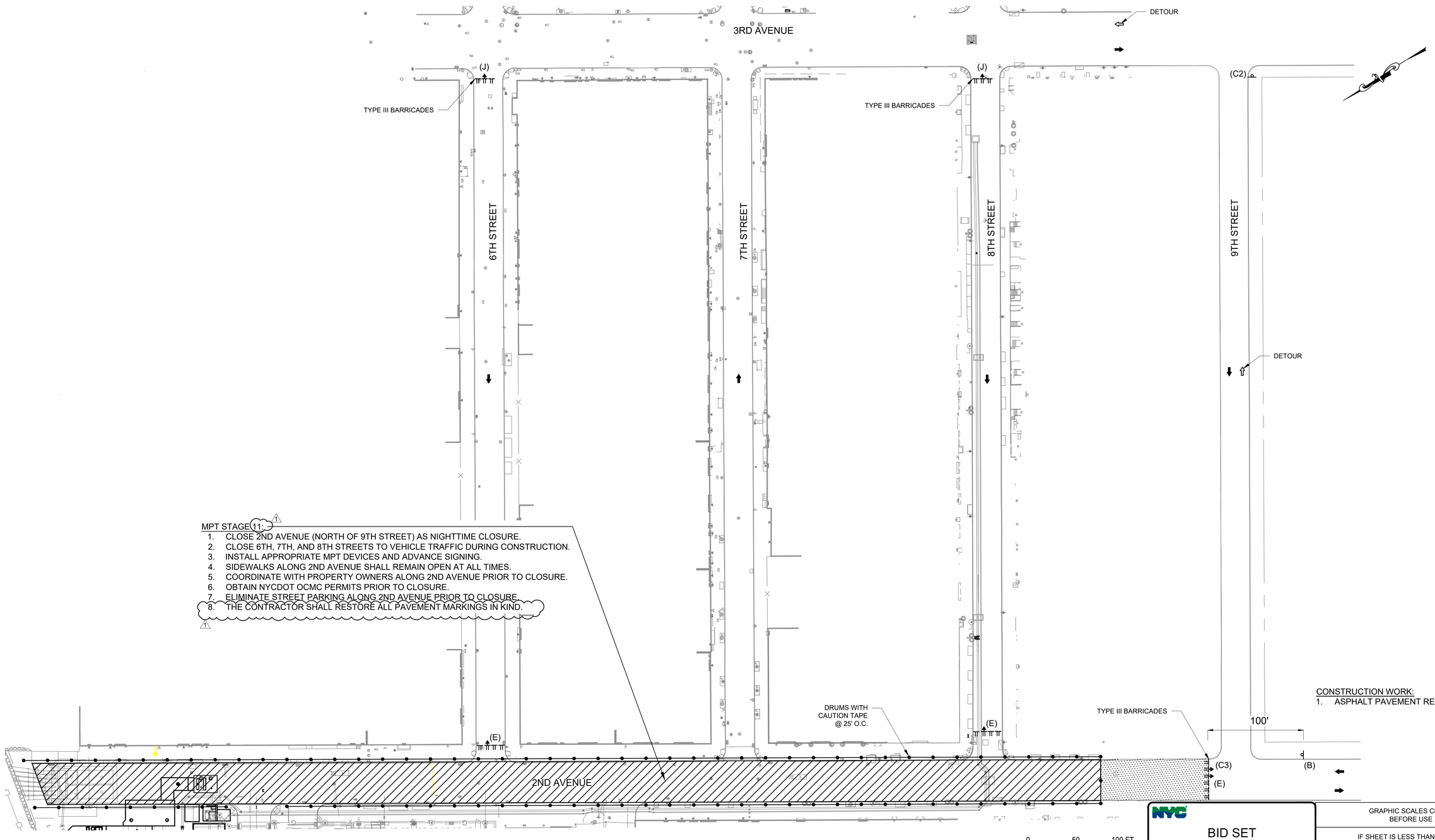
CIVIL

MAINTENANCE AND PROTECTION OF TRAFFIC
NEW-ISSUED FOR ADDENDUM #2 - STAGE 7A

DATE: SEPTEMBER 2026
SHEET NO: OF 723
DRAWING NO. C-610A.00

All inquiries regarding this drawing(s) or project should be made to NYC Environmental Protection, Bureau of Engineering Design and Construction.

Last Saved By: Tkui
Last Date Saved: 10/30/2026 11:59 AM
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SUBMITTAL DATE: SEPTEMBER 2026

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NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.
1	10/2026	ADDENDUM NO. 2	AD

DESIGNED BY: T. KUI	DRAWN BY: K. BHOLANAUTH	PROJECT MANAGER: E. CAMILLERI
CHECKED BY: J. AMOROSA	DESIGN LEAD: J. AMOROSA	DESIGN MANAGER: G. DEREAMER

Hazen Brown AND Caldwell

STATE OF NEW YORK ANTHONY F. BELUSCI LICENSED PROFESSIONAL ENGINEER 103359

Environmental Protection

ACCOUNTABLE MANAGER	JESSE GOLDIN, P.E.
PORTFOLIO MANAGER	KEVIN CLARKE, P.E.

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MAINTENANCE AND PROTECTION OF TRAFFIC STAGE 11 1

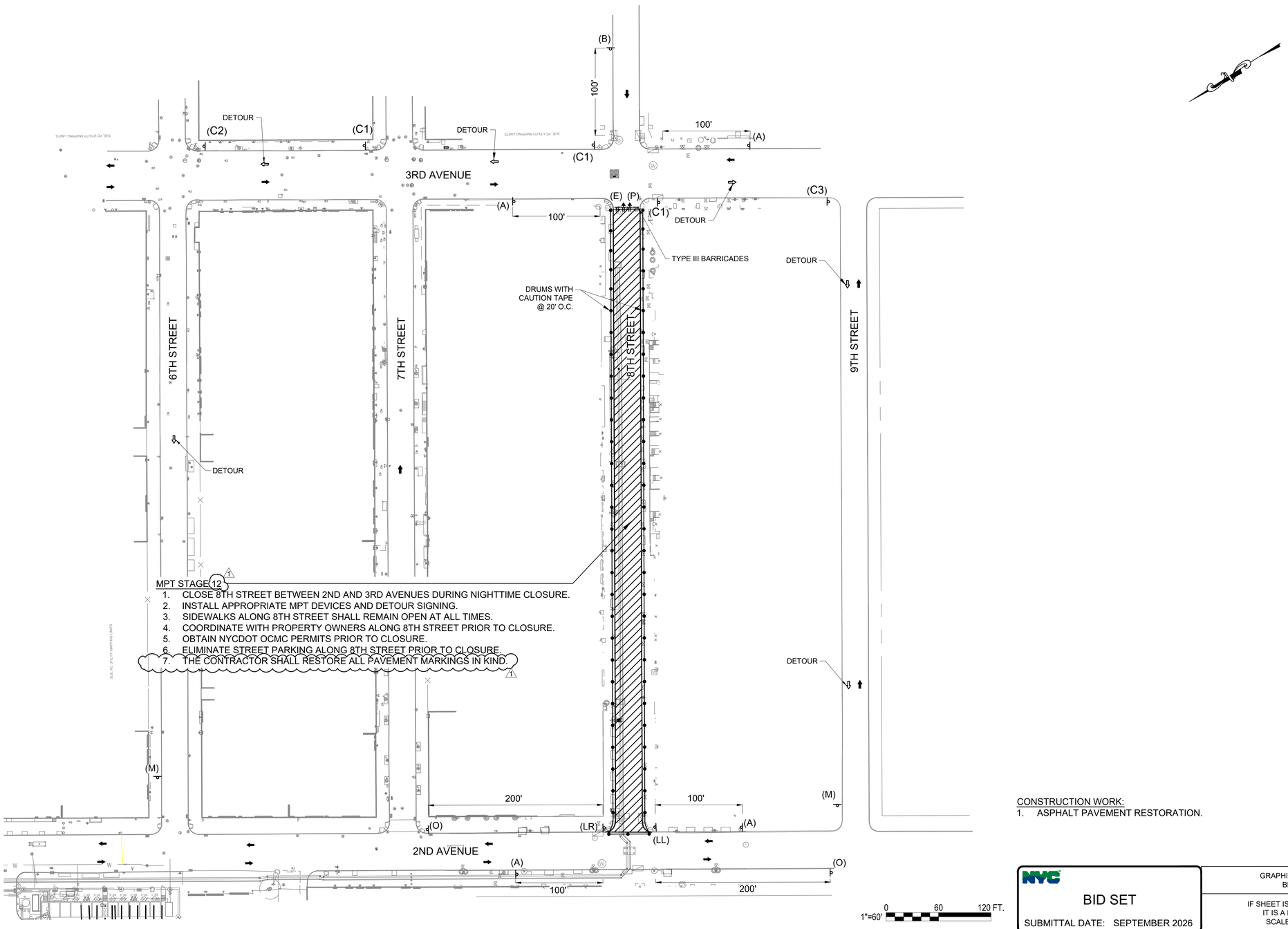
DATE: SEPTEMBER 2026

SHEET NO: 106 OF 723

DRAWING NO. C-611.00

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Plot Style Table: BEDC_Acad_2021.ctb



CONSTRUCTION WORK:

1. ASPHALT PAVEMENT RESTORATION.

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

GRAPHIC SCALES CHECK BEFORE USE

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NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.
1	10/2026	ADDENDUM NO. 2	AD

DESIGNED BY:	DRAWN BY:	PROJECT MANAGER:
T. KUI	K. BHOLANAUTH	E. CAMILLERI
CHECKED BY:	DESIGN LEAD:	DESIGN MANAGER:
J. AMOROSA	J. AMOROSA	G. DEREAMER

Hazen | Brown AND Caldwell

STATE OF NEW YORK · ANTHONY F. BELUCIA · 103359 · LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER
JESSE GOLDIN, P.E.
PORTFOLIO MANAGER
KEVIN CLARKE, P.E.

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MAINTENANCE AND PROTECTION OF TRAFFIC STAGE 12

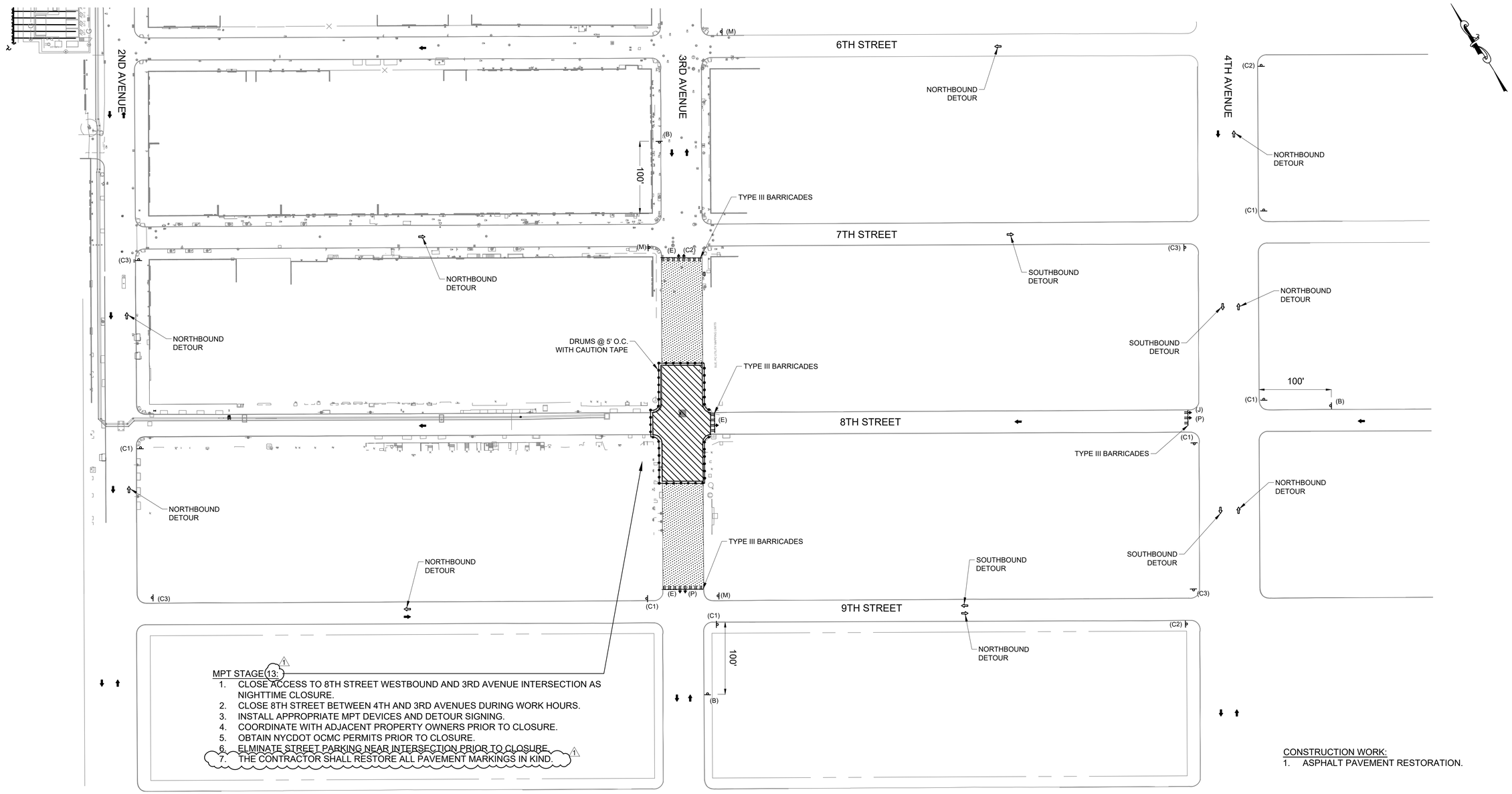
DATE: SEPTEMBER 2026

SHEET NO: 107 OF 723

DRAWING NO. C-612.00

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Plot Style Table: BEDC_Acad_2021.ctb

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MPT STAGE 13:

1. CLOSE ACCESS TO 8TH STREET WESTBOUND AND 3RD AVENUE INTERSECTION AS NIGHTTIME CLOSURE.
2. CLOSE 8TH STREET BETWEEN 4TH AND 3RD AVENUES DURING WORK HOURS.
3. INSTALL APPROPRIATE MPT DEVICES AND DETOUR SIGNING.
4. COORDINATE WITH ADJACENT PROPERTY OWNERS PRIOR TO CLOSURE.
5. OBTAIN NYCDOT OCMC PERMITS PRIOR TO CLOSURE.
6. ELMINATE STREET PARKING NEAR INTERSECTION PRIOR TO CLOSURE.
7. THE CONTRACTOR SHALL RESTORE ALL PAVEMENT MARKINGS IN KIND.

CONSTRUCTION WORK:

1. ASPHALT PAVEMENT RESTORATION.

1"=70' 0 70 140 FT.

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

GRAPHIC SCALES CHECK BEFORE USE

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NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.
1	10/2026	ADDENDUM NO. 2	AD

DESIGNED BY: T. KUI | DRAWN BY: K. BHOLANAUTH | PROJECT MANAGER: E. CAMILLERI

CHECKED BY: J. AMOROSA | DESIGN LEAD: J. AMOROSA | DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

STATE OF NEW YORK ANTHONY F. DELGA 103359 LICENSED PROFESSIONAL ENGINEER

Environmental Protection

ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.

PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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MAINTENANCE AND PROTECTION OF TRAFFIC STAGE 13 (1)

DATE: SEPTEMBER 2026

SHEET NO: 108 OF 723

DRAWING NO. C-613.00

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Date & Time Plotted: 10/30/2026 1:45 PM
Plot Scale: 1:1
Plot Style Table: BEDC_Acad_2021.ctb

MPT STAGE 8

1. EAST SIDEWALK ALONG 2ND AVENUE (NORTH OF 6TH STREET) TO BE CLOSED AS SHORT-TERM CLOSURE.
2. MAINTAIN BUILDING ACCESS ALONG 2ND AVENUE AT ALL TIMES.
3. INSTALL APPROPRIATE MPT DEVICES, PEDESTRIAN SIGNING, AND ADVANCE SIGNING.
4. COORDINATE WITH PROPERTY OWNERS ALONG 2ND AVENUE PRIOR TO CLOSURE.
5. OBTAIN NYCDOT OCMC PERMITS PRIOR TO CLOSURE.
6. ELMINATE STREET PARKING ALONG 2ND AVENUE PRIOR TO CLOSURE.
7. MAINTAIN 15-FT LANE ON 2ND AVENUE NORTHBOUND AND SOUTHBOUND.
8. THE RESTORATION OF CONCRETE SIDEWALK SHALL BE PERFORMED ON A FRIDAY NIGHT OR SATURDAY TO ALLOW FOR CURE TIMES OUTSIDE OF DOCCS OFFICE HOURS.

6TH STREET

7TH STREET

2ND AVENUE

BUCKUP TRUCK W/ IMAPCT ATTENUATOR WITH FASU

TYPE III BARRICADES

DRUMS @ 10' O.C.

TEMPORARY 4" DOUBLE YELLOW LINE

30'

100' TAPER

100'

100'

100'

15'

15'

15'

15'

(A)

(DL)

(A)

(F)

(KL)

(U)

(U)

(U)

(LR)

(O)

CONSTRUCTION WORK:

1. CONCRETE SIDEWALK RESTORATION.

1"=30' 0 30 60 FT.

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

GRAPHIC SCALES CHECK BEFORE USE

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DESIGNED BY: T. KUI | DRAWN BY: K. BHOLANAUTH | PROJECT MANAGER: E. CAMILLERI
CHECKED BY: J. AMOROSA | DESIGN LEAD: J. AMOROSA | DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

STATE OF NEW YORK ANTHONY F. DELUCA 103359 LICENSED PROFESSIONAL ENGINEER

Environmental Protection

ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.

PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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CONSTRUCTION PACKAGE 3 - OH-007

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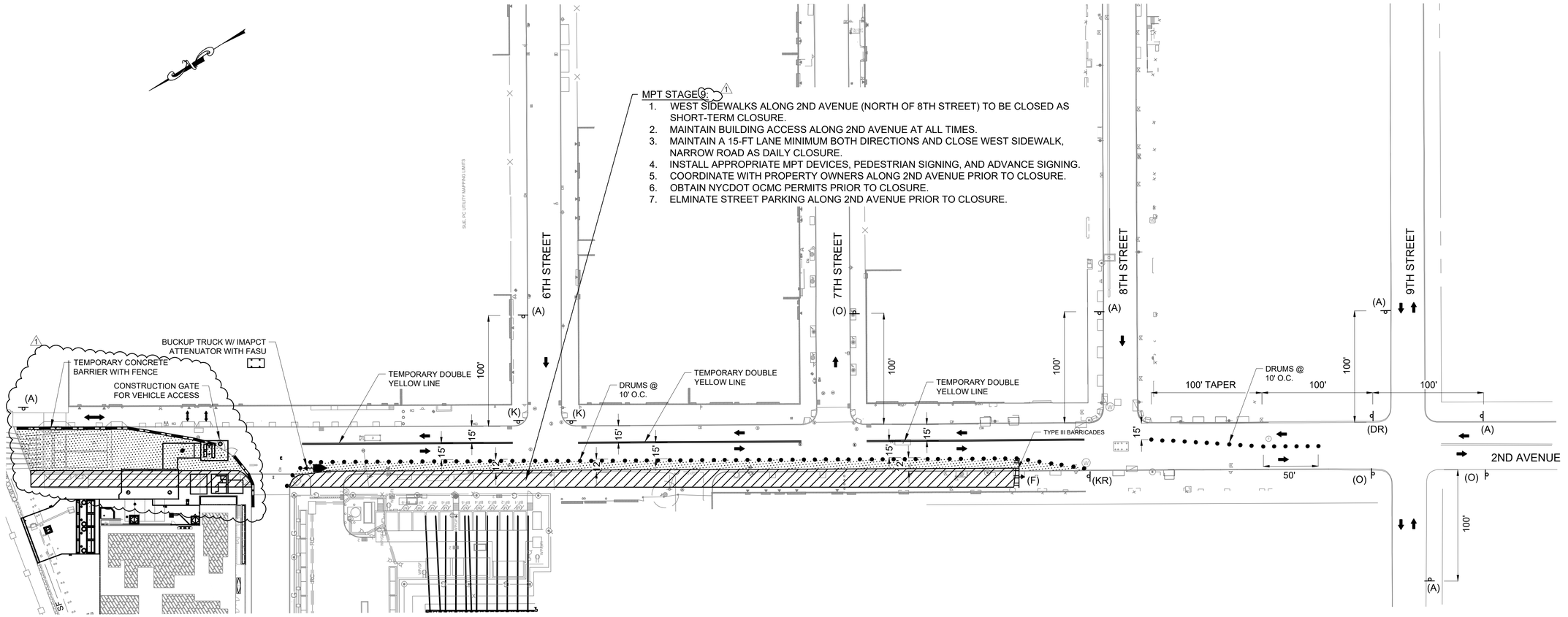
MAINTENANCE AND PROTECTION OF TRAFFIC STAGE 8

DATE: SEPTEMBER 2026

SHEET NO: 109 OF 723

DRAWING NO. C-614.00

All inquiries regarding this drawing(s) or project should be made to NYC Environmental Protection, Bureau of Engineering Design and Construction.



CONSTRUCTION WORK:
1. CONCRETE SIDEWALK RESTORATION.

1"=50' 0 50 100 FT.

BID SET
SUBMITTAL DATE: SEPTEMBER 2026

GRAPHIC SCALES CHECK BEFORE USE

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Hazen | Brown AND Caldwell

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Environmental Protection

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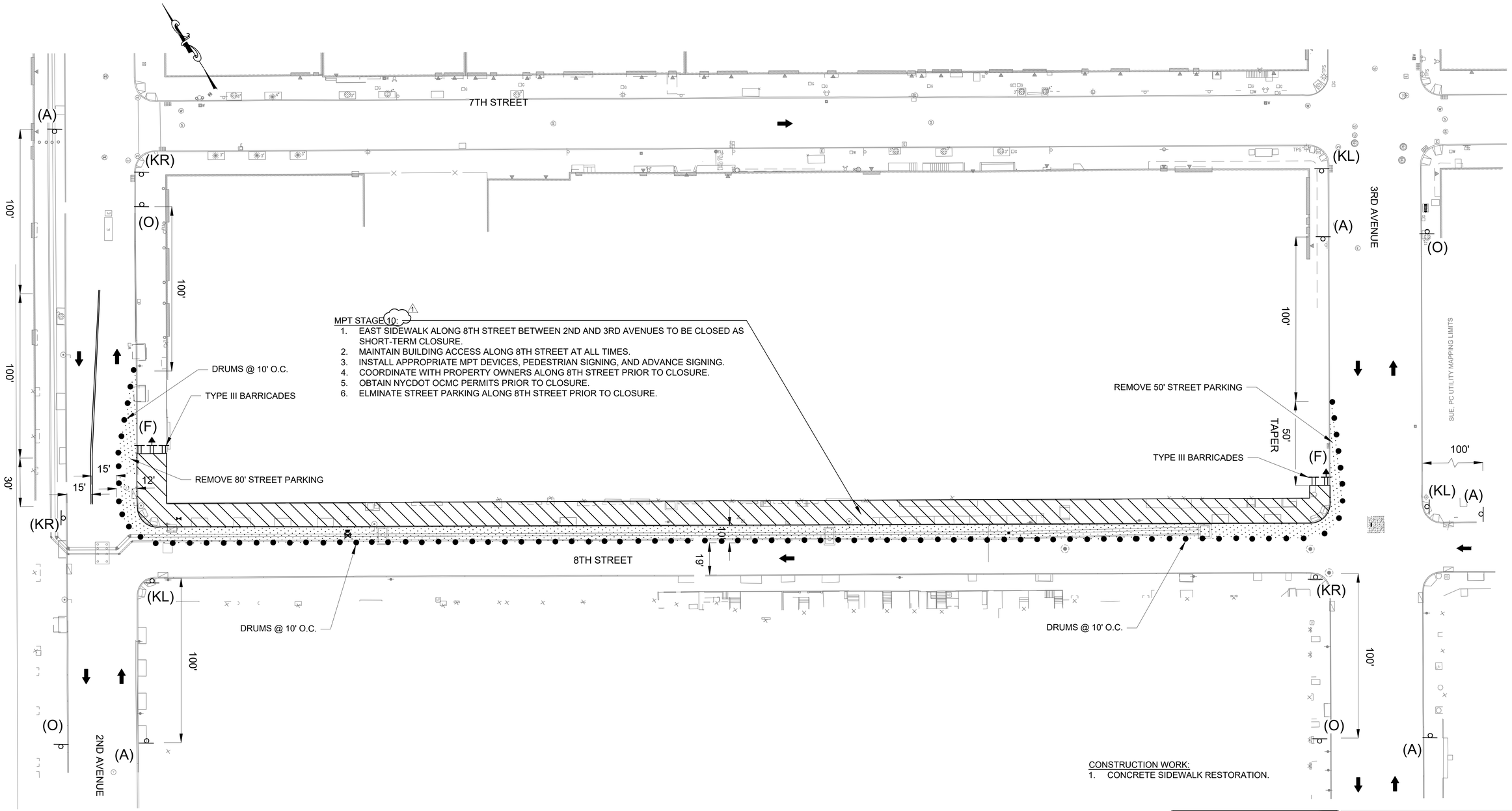
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MAINTENANCE AND PROTECTION OF TRAFFIC STAGE 9 (1)

DATE: SEPTEMBER 2026
SHEET NO: 110 OF 723
DRAWING NO. C-615.00

All inquiries regarding this drawing(s) or project should be made to NYC Environmental Protection, Bureau of Engineering Design and Construction.

Last Saved By: Tkui
Paper Size Printed/Plotted: ANSI full bleed D (34.00 x 22.00 Inches)
Drawing File Name & Drive Location: C:\Users\tkui\DOCACCDocs\Hazen and Sawyer\90409-000_CSO-GC-SFS-DES-OH\Project Files\000-ProjectWise\Civil\CP-03\C-615_Addendum 2.dwg
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Date & Time Plotted: 10/30/2026 1:48 PM
Plot Scale: 1:1
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MPT STAGE 10:

1. EAST SIDEWALK ALONG 8TH STREET BETWEEN 2ND AND 3RD AVENUES TO BE CLOSED AS SHORT-TERM CLOSURE.
2. MAINTAIN BUILDING ACCESS ALONG 8TH STREET AT ALL TIMES.
3. INSTALL APPROPRIATE MPT DEVICES, PEDESTRIAN SIGNING, AND ADVANCE SIGNING.
4. COORDINATE WITH PROPERTY OWNERS ALONG 8TH STREET PRIOR TO CLOSURE.
5. OBTAIN NYCDOT OCMC PERMITS PRIOR TO CLOSURE.
6. ELMINATE STREET PARKING ALONG 8TH STREET PRIOR TO CLOSURE.

CONSTRUCTION WORK:

1. CONCRETE SIDEWALK RESTORATION.

1"=30' 0 30 60 FT.

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

GRAPHIC SCALES CHECK BEFORE USE

IF SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT. SCALE ACCORDINGLY

NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.
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CHECKED BY: J. AMOROSA	DESIGN LEAD: J. AMOROSA	DESIGN MANAGER: G. DEREAMER

Hazen Brown AND Caldwell

STATE OF NEW YORK ANTHONY F. DELICA 103359 LICENSED PROFESSIONAL ENGINEER

Environmental Protection

ACCOUNTABLE MANAGER	JESSE GOLDIN, P.E.
PORTFOLIO MANAGER	KEVIN CLARKE, P.E.

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MAINTENANCE AND PROTECTION OF TRAFFIC STAGE 10 (1)

DATE: SEPTEMBER 2026

SHEET NO: 111 OF 723

DRAWING NO. C-616.00

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Paper Size Printed/Plotted: ANSI full bleed D (34.00 x 22.00 Inches)
Drawing File Name & Drive Location: C:\Users\tkui\DCAACDocs\Hazen and Sawyer\90409-000_CSO-GC-SFS-DES-OH\Project Files\000-ProjectWise\Civil\CP-03\C-616_Addendum 2.dwg
Last Date Saved: 10/30/2026 1:04 PM
Plot Style Table: BEDC Acad_2021.ctb
Plot Scale: 1:1
Date & Time Plotted: 10/30/2026 1:51 PM

STORM STRUCTURE SCHEDULE

STRUCTURE NAME:	DIAMETER	LENGTH x WIDTH	RIM / GRATE EL:	COORDINATES:	DETAIL
2ND AVE IC [1]	N/A	96" X 96"	R: 7.75	N: 185248.98 E: 986635.02	SEE DETAIL, DWG C-905.00
CATCH BASIN - CB-01 - TYPE I	N/A	48" X 42"	G: 6.42 [1]	N: 185359.77 E: 986767.81	NYCDEP CB - SE47
CATCH BASIN - CB-02 - TYPE I	N/A	48" X 42"	G: 6.67	N: 185381.99 E: 986735.73	NYCDEP CB - SE47
CATCH BASIN - CB-03 - TYPE I	N/A	48" X 42"	G: 6.71	N: 185207.15 E: 986669.80	NYCDEP CB - SE47
CATCH BASIN - CB-04 - TYPE I	N/A	48" X 42"	G: 7.10	N: 185233.02 E: 986640.18	NYCDEP CB - SE47
CATCH BASIN - CB-05 - TYPE I	N/A	48" X 42"	G: 7.55	N: 185203.12 E: 986591.66	NYCDEP CB - SE47
CATCH BASIN - CB-06 - TYPE I	N/A	48" X 42"	G: 7.55	N: 185229.30 E: 986608.22	NYCDEP CB - SE47
CATCH BASIN - CB-07 - TYPE I	N/A	48" X 42"	G: 12.90	N: 185348.11 E: 986342.19	NYCDEP CB - SE47
CATCH BASIN - CB-08 - TYPE I	N/A	48" X 42"	G: 13.07	N: 185348.23 E: 986365.21	NYCDEP CB - SE47
CATCH BASIN - CB-09 - TYPE II	N/A	48" X 42"	G: 13.85	N: 185419.01 E: 986526.45	NYCDEP CB - SE48
CATCH BASIN - CB-10 - TYPE I	N/A	48" X 42"	G: 12.83	N: 185393.76 E: 986351.76	NYCDEP CB - SE47
DMH-01	60" ∅	N/A	R: 6.73	N: 185368.64 E: 986731.03	NYCDEP MH SE-29A - SE-29D
DMH-02	48" ∅	N/A	R: 12.96	N: 185358.38 E: 986349.45	NYCDEP MH SE-28A - SE-28D
DMH-03	48" ∅	N/A	R: 12.91	N: 185353.81 E: 986356.30	NYCDEP MH SE-28A - SE-28D
DMH-05	48" ∅	N/A	R: 13.37	N: 185399.92 E: 986355.73	NYCDEP MH SE-28A - SE-28D
DMH-06	60" ∅	N/A	R: 13.51	N: 185427.57 E: 986303.79	NYCDEP MH SE-29A - SE-29D
DMH-07	60" ∅	N/A	G: 13.34	N: 185430.78 E: 986266.48	NYCDEP MH SE-29A - SE-29D
DMH-08	48" ∅	N/A	R: 12.49	N: 185434.21 E: 986234.33	NYCDEP MH SE-28A - SE-28D
DMH-09	60" ∅	N/A	R: 5.70	N: 185503.27 E: 986114.46	NYCDEP MH SE-29A - SE-29D
DMH-10	48" ∅	N/A	R: 13.32	N: 185425.24 E: 986389.21	NYCDEP MH SE-28A - SE-28D

STORM STRUCTURE SCHEDULE

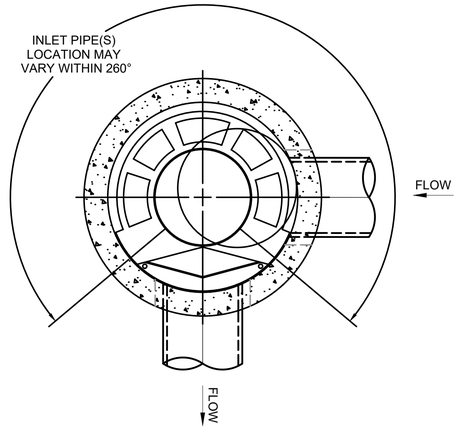
STRUCTURE NAME:	DIAMETER	LENGTH x WIDTH	RIM / GRATE EL:	COORDINATES:	DETAIL
DMH-11	48" ∅	N/A	R: 13.26	N: 185442.76 E: 986305.20	NYCDEP MH SE-28A - SE-28D
DMH-12	48" ∅	N/A	G: 13.62	N: 185453.79 E: 986261.86	NYCDEP MH SE-28A - SE-28D
DMH-13	30" ∅	N/A	G: 8.25	N: 185419.14 E: 986581.65	SEE YARD INLET DETAIL, THIS DWG
DMH-14	48" ∅	N/A	R: 7.75	N: 185240.04 E: 986629.28	NYCDEP MH SE-28A - SE-28D
DMH-15	48" ∅	N/A	R: 9.82	N: 185468.94 E: 986367.09	NYCDEP MH SE-28A - SE-28D
OVERFLOW DMH-01	30" ∅	N/A	G: 13.00	N: 185410.26 E: 986362.35	SEE YARD INLET DETAIL, THIS DWG
OVERFLOW DMH-02	30" ∅	N/A	G: 13.10	N: 185454.23 E: 986254.23	SEE YARD INLET DETAIL, THIS DWG
OVERFLOW DMH-03	30" ∅	N/A	G: 13.00	N: 185457.11 E: 986275.45	SEE YARD INLET DETAIL, THIS DWG
OVERFLOW DMH-04	30" ∅	N/A	G: 12.50	N: 185467.64 E: 986303.92	SEE YARD INLET DETAIL, THIS DWG
OVERFLOW DMH-05	30" ∅	N/A	G: 12.70	N: 185453.25 E: 986395.05	SEE YARD INLET DETAIL, THIS DWG
WTMH-01	48" ∅	N/A	G: 7.42	N: 185385.44 E: 986707.79	SEE HYDRODYNAMIC SEPARATOR DETAIL, THIS DWG
WTMH-02	48" ∅	N/A	R: 8.13	N: 185238.11 E: 986613.86	SEE HYDRODYNAMIC SEPARATOR DETAIL, THIS DWG
WTMH-03	48" ∅	N/A	G: 7.90	N: 185402.10 E: 986645.03	SEE HYDRODYNAMIC SEPARATOR DETAIL, THIS DWG
WTMH-04	48" ∅	N/A	G: 9.68	N: 185493.82 E: 986251.56	SEE HYDRODYNAMIC SEPARATOR DETAIL, THIS DWG
YI-1	12" ∅	N/A	G: 9.92	N: 185515.49 E: 986229.65	SEE YARD INLET DETAIL, THIS DWG
YI-2	6" ∅	N/A	G: 9.25	N: 185489.71 E: 986301.93	SEE YARD INLET DETAIL, THIS DWG
YI-3	6" ∅	N/A	G: 9.25	N: 185482.30 E: 986335.98	SEE YARD INLET DETAIL, THIS DWG
YI-4	6" ∅	N/A	G: 9.00	N: 185457.08 E: 986428.36	SEE YARD INLET DETAIL, THIS DWG
YI-5	6" ∅	N/A	G: 9.00	N: 185464.30 E: 986394.88	SEE YARD INLET DETAIL, THIS DWG

SANITARY STRUCTURE SCHEDULE

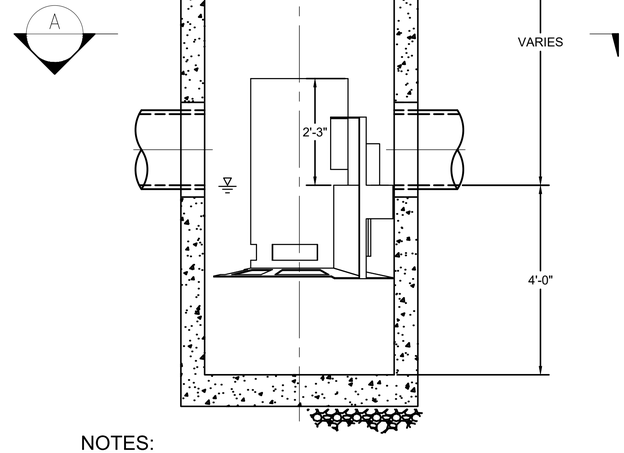
STRUCTURE NAME:	DIAMETER	RIM EL:	COORDINATES:	DETAIL
SMH-01	48" ∅	R: 7.88	N: 185222.63 E: 986597.54	DEP MH SE-28A - SE-28D
SMH-02	48" ∅	R: 13.22	N: 185296.34 E: 986483.25	DEP MH SE-28A - SE-28D
SMH-03	48" ∅	R: 13.56	N: 185333.51 E: 986425.31	DEP MH SE-28A - SE-28D
SMH-04	48" ∅	R: 13.08	N: 185395.68 E: 986328.37	DEP MH SE-28A - SE-28D
SMH-05	48" ∅	R: 14.13	N: 185414.54 E: 986262.67	DEP MH SE-28A - SE-28D

TABLE NOTES:

1. REFER TO NYC DEP SEWER DESIGN STANDARDS FOR DETAILS
2. R = RIM
3. G = GRATE
4. MANHOLES 36" IN DIAMETER AND SMALLER SHALL BE NYLOPLAST DRAIN BASINS AS MANUFACTURED BY ADS, OR APPROVED EQUAL. SEE YARD INLET DETAIL, THIS DWG.



SECTION A-A

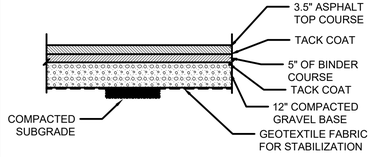


NOTES:

1. THE CASCADE CS-4 ARE DETAILS THAT WERE PROVIDED BY CONTECH ENGINEERING SOLUTIONS.
2. SEE STRUCTURE TABLE, THIS SHEET, MANHOLE DIAMETERS AND COVER TYPE.

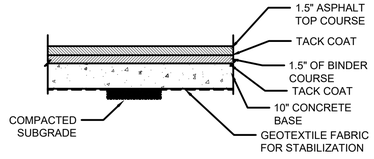
HYDRODYNAMIC SEPARATOR (WTMH-0X)

NTS



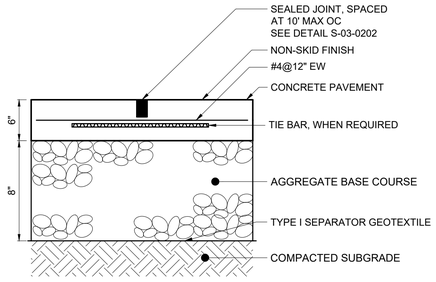
ASPHALT PAVEMENT SECTION - NON-NYCDOT ROW

NTS



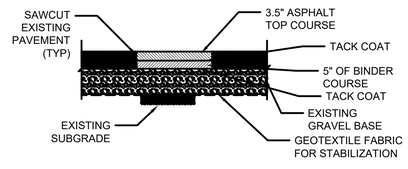
ASPHALT PAVEMENT SECTION - NYCDOT ROW

NTS



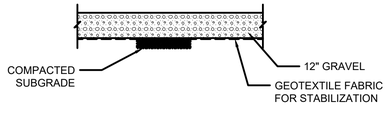
CONCRETE PAVEMENT

NTS



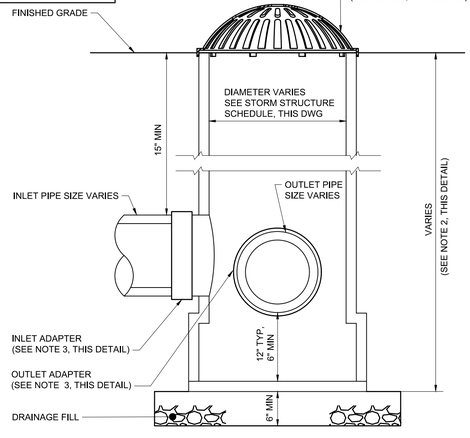
ASPHALT PAVEMENT RESTORATION SECTION

NTS



GRAVEL CONSTRUCTION ACCESS ROAD / LAYDOWN AREA

NTS



NOTES:

1. FLAT GRATES SHALL BE PROVIDED WITHIN PAVED LOCATIONS. DOME GRATES SHALL BE PROVIDED WITHIN GRASS AREAS. DOME GRATE SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05. DOME GRATES HAVE NO LOAD RATING.
2. DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 84" IN DEPTH.
3. DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE.

YARD INLET

NTS

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

GRAPHIC SCALES CHECK BEFORE USE

IF SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT. SCALE ACCORDINGLY

NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.
1	10/2026	ADDENDUM NO. 2	DS

DESIGNED BY: J. PERRUZZA | DRAWN BY: J. TANNER | PROJECT MANAGER: E. CAMILLERI
CHECKED BY: D. SHEERAN | DESIGN LEAD: D. SHEERAN | DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

STATE OF NEW YORK — MICHAEL JAMES SHEERAN — 088955 — LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.
PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

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4 OF 5

DATE: SEPTEMBER 2026
SHEET NO: 115 OF 723
DRAWING NO. C-904.01

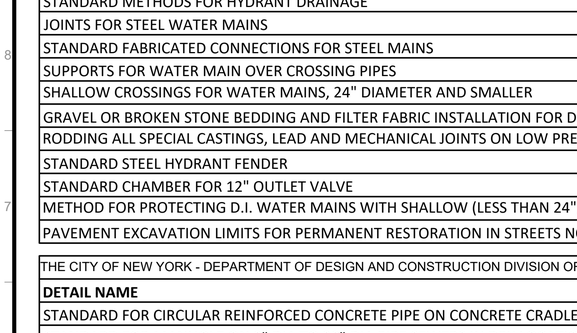
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Last Date Saved: DATE&TIME_DWG_SAVED
Date & Time Plotted: DATE&TIME_PLOTTED
Plot Scale: PLOT_SCALE
Plot Style Table: PLOT_STYLE_TABLE

All inquiries regarding this drawing(s) or project should be made to NYC Environmental Protection, Bureau of Engineering Design and Construction.

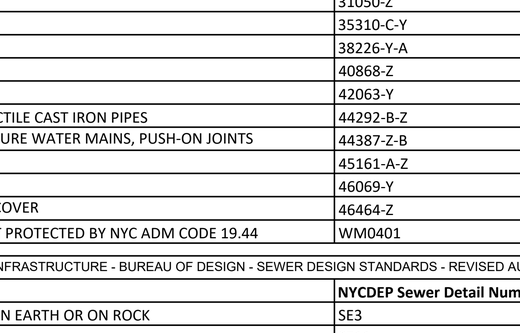
THE CITY OF NEW YORK - BUREAU OF WATER AND SEWER OPERATIONS DEPARTMENT OF ENVIRONMENTAL PROTECTION - WATER MAIN STANDARD DRAWINGS - NOVEMBER 1, 2010	
DETAIL NAME	**NYCDEP Water Main Detail Number**
VALVE BOX SKIRT CAST IRON	10240-A-Z
HYDRANT VALVE BOX	10241-A-Z
FOUNDATIONS FOR VALVE BOXES	11576-A-Z
WIDE FLANGE MANHOLE HEAD AND COVER - CAST IRON	13547-B-Z
STANDARD METHODS FOR RECONSTRUCTING CATCH BASIN CONNECTIONS	19841-Z-B
HYDRANT DRAIN BASE	22809-Z
STANDARD METHODS FOR HYDRANT DRAINAGE	31050-Z
JOINTS FOR STEEL WATER MAINS	35310-C-Y
STANDARD FABRICATED CONNECTIONS FOR STEEL MAINS	38226-Y-A
SUPPORTS FOR WATER MAIN OVER CROSSING PIPES	40868-Z
SHALLOW CROSSINGS FOR WATER MAINS, 24" DIAMETER AND SMALLER	42063-Y
GRAVEL OR BROKEN STONE BEDDING AND FILTER FABRIC INSTALLATION FOR DUCTILE CAST IRON PIPES	44292-B-Z
RODDING ALL SPECIAL CASTINGS, LEAD AND MECHANICAL JOINTS ON LOW PRESSURE WATER MAINS, PUSH-ON JOINTS	44387-Z-B
STANDARD STEEL HYDRANT FENDER	45161-A-Z
STANDARD CHAMBER FOR 12" OUTLET VALVE	46069-Y
METHOD FOR PROTECTING D.I. WATER MAINS WITH SHALLOW (LESS THAN 24") COVER	46464-Z
PAVEMENT EXCAVATION LIMITS FOR PERMANENT RESTORATION IN STREETS NOT PROTECTED BY NYC ADM CODE 19.44	WM0401

THE CITY OF NEW YORK - DEPARTMENT OF DESIGN AND CONSTRUCTION DIVISION OF INFRASTRUCTURE - BUREAU OF DESIGN - SEWER DESIGN STANDARDS - REVISED AUGUST, 2018	
DETAIL NAME	**NYCDEP Sewer Detail Number**
STANDARD FOR CIRCULAR REINFORCED CONCRETE PIPE ON CONCRETE CRADLE ON EARTH OR ON ROCK	SE3
STANDARD FOR MANHOLE ON 8" DIA TO 30" DIA PIPE SEWERS IN DRY LOCATION	SE11
STANDARD FOR SHALLOW MANHOLES ON 8" DIA TO 30" DIA PIPE SEWERS	SE13
STANDARD FOR DROP PIPE MANHOLE (TYPE 1) ON 10" DIA TO 24" DIA PIPE SEWERS	SE24
STANDARD FOR 4'-0" DIAMETER PRECAST MANHOLE	SE28A / D
STANDARD FOR 5'-0" DIAMETER PRECAST MANHOLE	SE29A / D
STANDARD FOR 6'-0" DIAMETER PRECAST MANHOLE	SE30A / C / D
STANDARD FOR PRECAST MANHOLE DETAILS	SE31A / B
STANDARD FOR 36" DIAMETER CAST IRON MANHOLE FRAME AND COVER FOR CLEANOUT	SE41
STANDARD FOR CAST IRON MANHOLE STEP	SE43
STANDARD FOR TYPE 1 CATCH BASIN WITH CURB PIECE	SE47
STANDARD FOR TYPE 2 CATCH BASIN WITHOUT CURB PIECE	SE48
STANDARD FOR TYPE 3 CATCH BASIN WITH CURB PIECE	SE49B
STANDARD FOR CAST IRON FRAME FOR CATCH BASINS WITH CURB PIECE	SE57
STANDARD FOR CAST IRON FRAME FOR CATCH BASINS WITHOUT CURB PIECE	SE58A
STANDARD FOR CAST IRON FRAME FOR TYPE 3 CATCH BASIN WITH CURB PIECE	SE58B
STANDARD FOR CAST IRON GRATING, BACK PLATE AND CURB PIECE FOR CATCH BASINS (WITH H=6")	SE59A
STANDARD FOR CAST IRON HOOD AND HOOKS FOR CATCH BASINS	SE60
STANDARD FOR HOUSE CONNECTIONS	SE62
STANDARD FOR CONSTRUCTION OF CATCH BASIN	SE67
STANDARD FOR RECONSTRUCTION OF EXISTING MANHOLE AND REPLACEMENT OF EXISTING MH FRAME AND COVER	SE68
STANDARD FOR ROADWAY REESURFACING	SE69

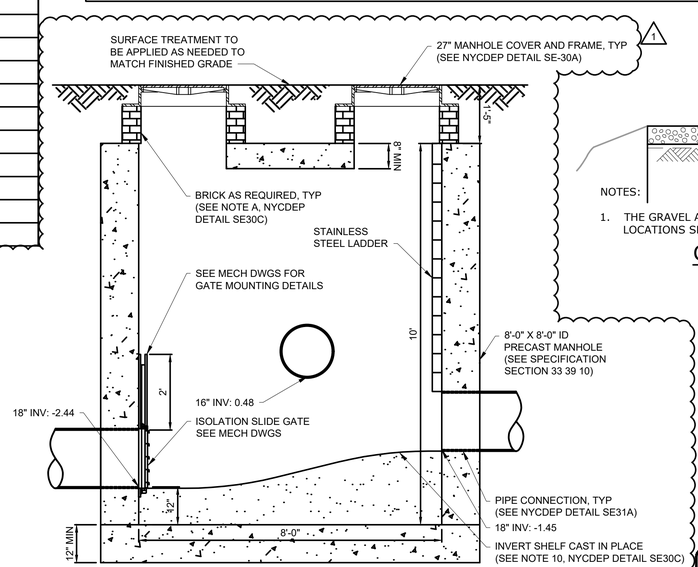
THE CITY OF NEW YORK - DEPARTMENT OF TRANSPORTATION - STANDARD DETAILS OF CONSTRUCTION - JUNE, 2022	
DETAIL NAME	**NYCDOT Standard Detail Numbers**
CHAIN LINK FENCE	H-1021-1
PEDESTRAIN RAMPS CORNER CASES PERPENDICULAR	H-1011-2
PEDESTRAIN RAMPS DETECTABLE WARNING SURFACES	H-1011-9
CHAIN LINK FENCE SINGLE GATE	H-1021-3
CHAIN LINK FENCE DOUBLE GATE	H-1021-4
TYPICAL PAVEMENT KEY	H-1031
PAVEMENT KEY TYPE A, B-1, B-2, C	H-1055
TYPICAL RESURFACING ON ASPHALT PAVEMENT AND/OR WEARING COURSE (LESS THAN FULL WIDTH)	H-1033
REINFORCED CONCRETE CURB & DROP CURB	H-1035
ROADWAY RESTORATION FOR NEWLY CONSTRUCTED ROADWAYS	H-1042C
CONCRETE CURB	H-1044
CONCRETE CURB STEEL FACED	H-1010
CONCRETE SIDEWALK	H-1045
STREET TREE PLANTING DETAIL TYPE 1	H-1046
PROTECTIVE TREE BARRIER	H-1046A
TYPICAL CURB DETAIL AT EXISTING TREES	H-1047
DETAILS FOR CONSTRUCTION AREAS OF ADJUSTMENT AND TRANSITION SECTIONS	H-1053
SIDEWALK PAVEMENT LIMITS	MS-1001
TYPICAL ROADWAY CROSS SECTION/ RESURFACING	MS-1003
CATCH BASIN ADJUSTMENT - TYPE 2	MS-1004
ADJUSTMENT AT CATCH BASINS	MS-1005
BEAM BARRICADE FOR DEAD END STREETS	H-1022
THE CITY OF NEW YORK - DEPARTMENT OF TRANSPORTATION - TRANSPORTATION PLANNING AND MANAGEMENT - TYPICAL PAVEMENT MARKINGS - DECEMBER 1, 2015	
DETAIL NAME	**NYCDOT TP&M Detail Number**
TYPICAL PAVEMENT MARKINGS - CROSSWALKS & STOP BARS	TCW-1
TYPICAL PAVEMENT MARKINGS - BIKE ROUTES	TBL-2
TYPICAL PAVEMENT MARKINGS - BIKE LANES & BUFFERED BIKE LANES	TBL-1
TYPICAL PAVEMENT MARKINGS - BIKE LANES THROUGH INTERSECTIONS	TBI-1
TYPICAL PAVEMENT MARKINGS - STRIPING AND CROSS HATCHING	TSC-1
TYPICAL PAVEMENT MARKINGS - ARROWS & SYMBOLS	TAR-1
TYPICAL PAVEMENT MARKINGS - WORD MESSAGES	TWM-1



TOP PLAN
SCALE: 1" = 3'



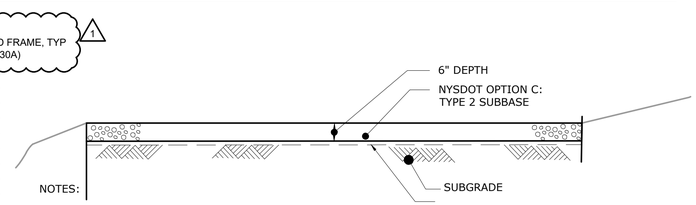
BOTTOM PLAN
SCALE: 1" = 3'



SECTION
SCALE: 1" = 2'

NOTES

1. INVERT SHELVES SHALL BE DESIGNED USING THE TOP OF THE OUTLET PIPE.



NOTES:

1. THE GRAVEL AREA SECTION SHALL BE INSTALLED IN LOCATIONS SHOWN ON THE DRAWINGS ONLY.

CONSTRUCTION ROAD STABILIZATION
NTS

2ND AVE INFLUENT JUNCTION CHAMBER

NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.
1	10/2026	ADDENDUM NO. 2	DS

DESIGNED BY: J. PERRUZZA	DRAWN BY: J. TANNER	PROJECT MANAGER: E. CAMILLERI
CHECKED BY: D. SHEERAN	DESIGN LEAD: D. SHEERAN	DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

STATE OF NEW YORK · DANIEL JAMES SHEERAN · LICENSED PROFESSIONAL ENGINEER · 088955

NYC Environmental Protection

ACCOUNTABLE MANAGER	JESSE GOLDIN, P.E.
PORTFOLIO MANAGER	KEVIN CLARKE, P.E.

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5 OF 5

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BID SET
SUBMITTAL DATE: SEPTEMBER 2026

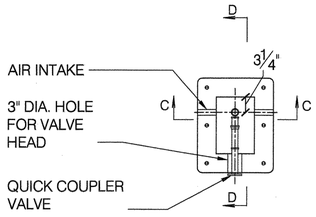
GRAPHIC SCALES CHECK BEFORE USE

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DATE: SEPTEMBER 2026
SHEET NO: 116 OF 723
DRAWING NO. C-905.01

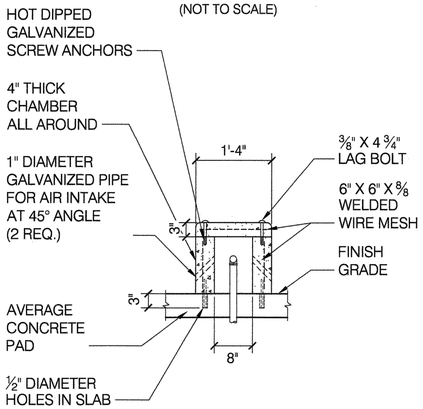
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Date & Time Plotted: DATE&TIME_PLOTTED
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Plot Style Table: PLOT_STYLE_TABLE

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PLAN

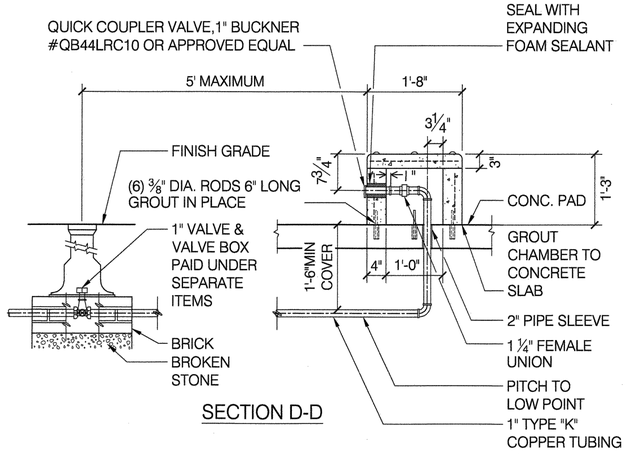
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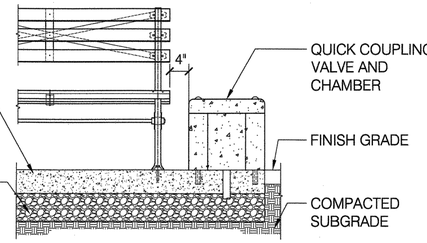
NOTE: LAG BOLTS SHALL BE 18-8 STAINLESS STEEL BOLTS W/ SIDE SLOT TRUSS TYPE VANDAL PROOF HEAD BOLTS TO BE WELL OILED TO PREVENT ADHESION TO CONCRETE. COAT SURFACE OF BOLT HEADS WITH A PASTE OF WHITE LEAD & LINSEED OIL BEFORE DRIVING BOLTS.

TREE RETENTION AND PLACEMENT TABLE	
TOTAL NUMBER OF TREES REQUIRED BY NYC DOB	X
EXISTING TREES TO PROTECT	22
PROPOSED TREES TO REMOVE OR TRANSPLANT	21
PROPOSED TREES TO PLANT ONSITE	X
PROPOSED TREES TO PLANT OFFSITE	X
TREES TO PAY INTO TREE FUND AS ONSITE TREE PLANTINGS	X
TREES TO PAY INTO TREE FUND AS OFFSITE TREE PLANTINGS	X

NOTE: TREE TOTALS PROVIDED ARE FOR THE BUILDING AND FORCE MAIN ALIGNMENT



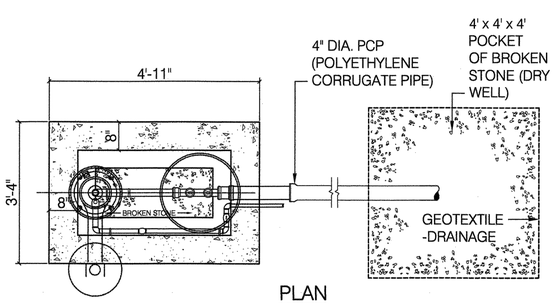
SECTION D-D



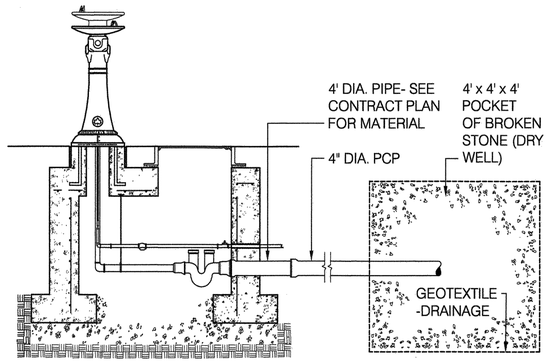
QUICK COUPLER ADJACENT TO STANDARD BENCH

QUICK COUPLING VALVE AND CHAMBER

NTS



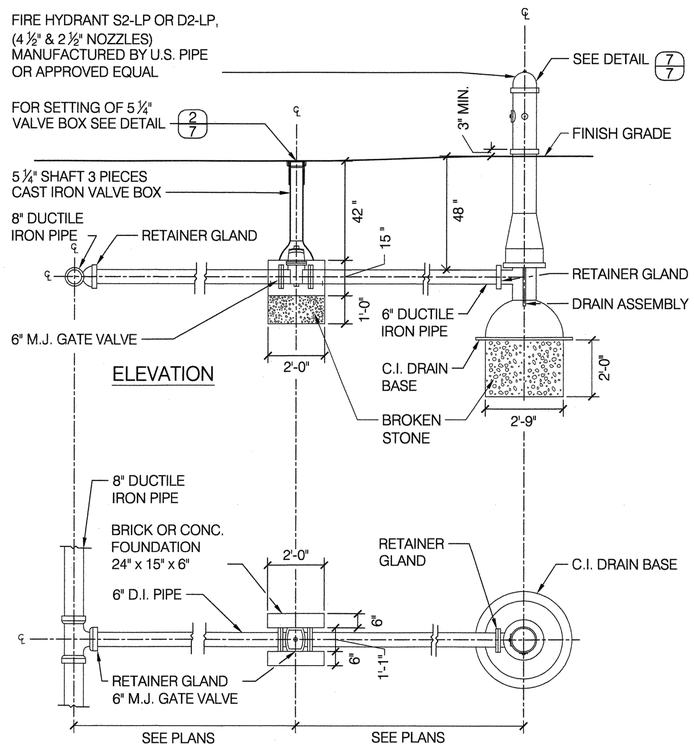
PLAN



ELEVATION

DRINKING FOUNTAIN DRYWELL

NTS



ELEVATION

NOTE: THE INSTALLER OF FIRE HYDRANT MUST BE APPROVED BY NYCDEP BWS

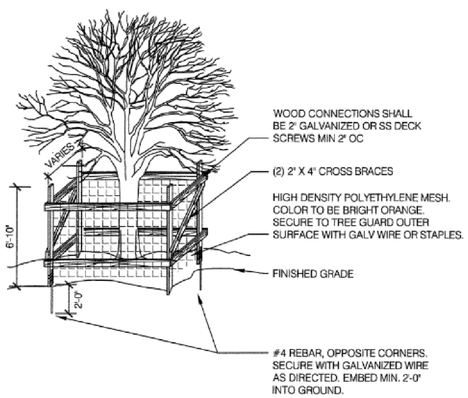
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NYC PARKS HYDRANT DETAIL

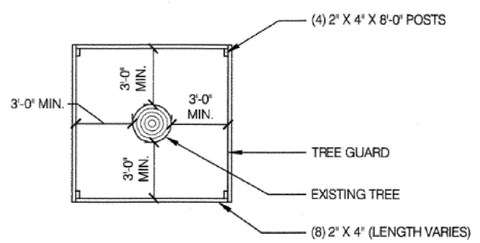
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5 TREE GUARD

SCALE ½"= 1'-0"



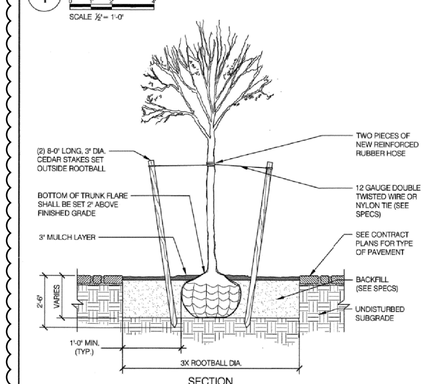
SECTION VIEW



PLAN VIEW

1 MAJOR TREE IN PAVED AREA

SCALE ½"= 1'-0"



SECTION

1

*ALL DETAIL REFERENCES REFER TO CITY OF NEW YORK PARKS & RECREATIONAL DETAIL SHEETS DATED SEPTEMBER 1, 2020.

NYC

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SUBMITTAL DATE: SEPTEMBER 2026

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1	10/2026	ADDENDUM NO. 2	DS

DESIGNED BY: J. PERRUZZA | DRAWN BY: K. ROBBINS | PROJECT MANAGER: E. CAMILLERI

CHECKED BY: D. SHEERAN | DESIGN LEAD: D. SHEERAN | DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

STATE OF NEW YORK — JAMES SHEERAN — 088955 — LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.

PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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CIVIL

NYC PARKS STANDARD DETAILS SHEET 2 OF 3

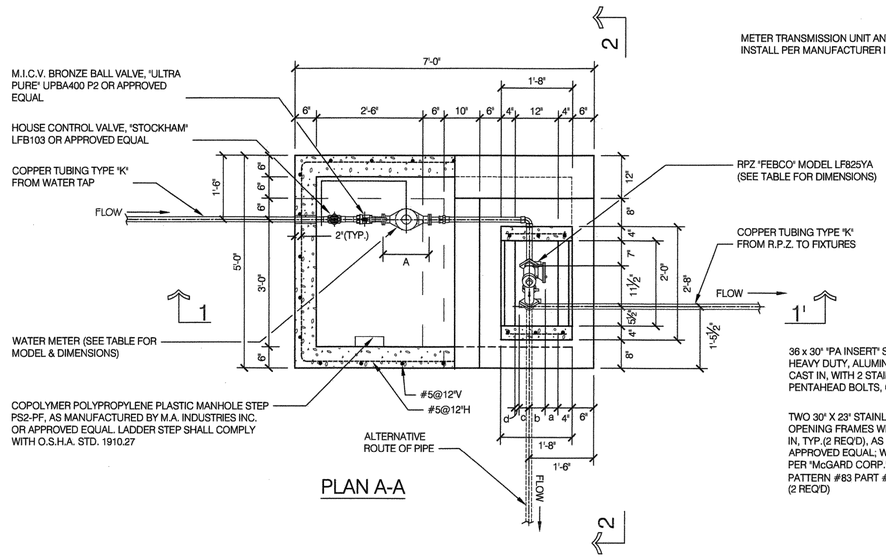
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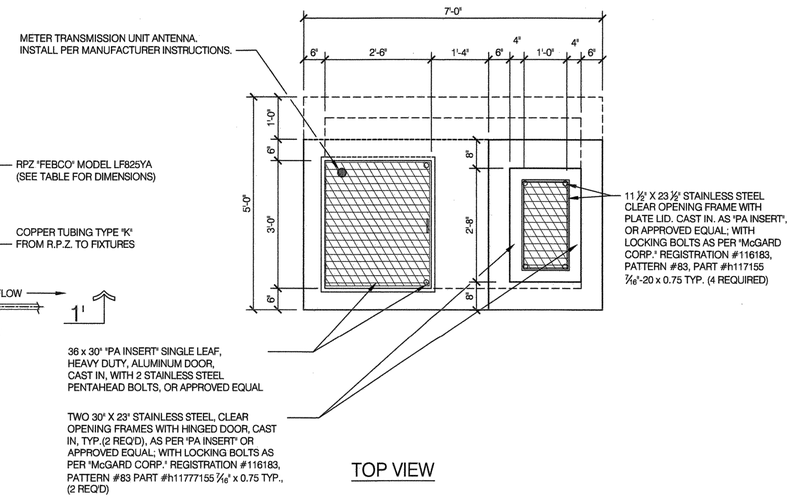
SHEET NO: 118 OF 723

DRAWING NO. C-907.01

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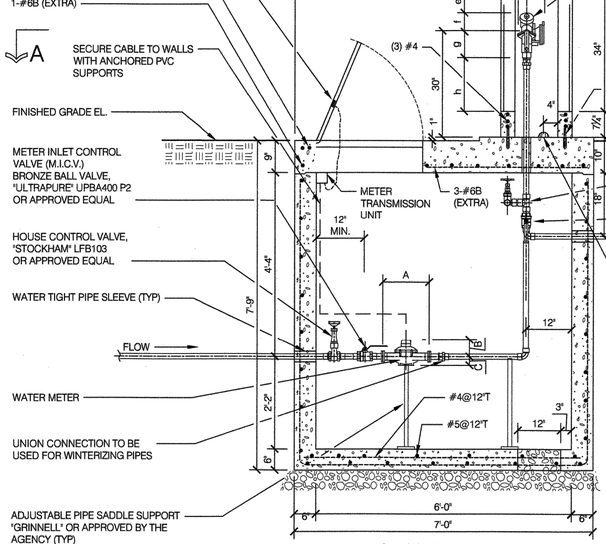


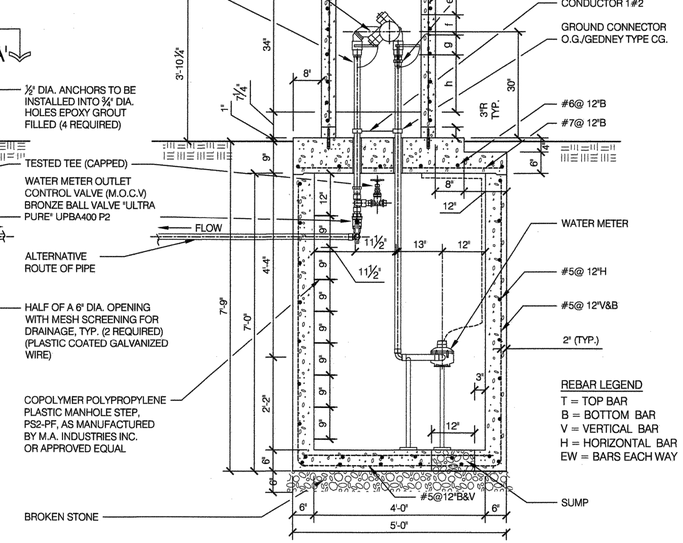


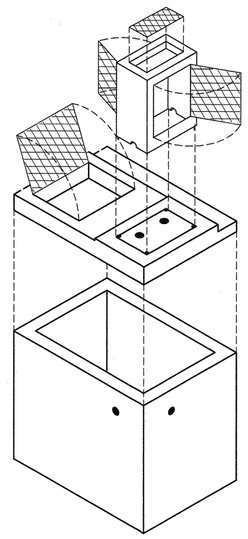
SIZE (INCH)	WATER METER (WM)						
	COMPANY	MODEL	DIMENSIONS (INCH) A	B	C	CONNECTION	REMOTE SYSTEM FOR PIT METER SETTING
1	NEPTUNE	T-10	10¾	3	2⅛	THREADED	Proread ARB System
	SENSUS	ACCUSTREAM	6.3	6.9	2⅝		ECR
1½	NEPTUNE	T-10	13	6	2⅝	OVAL FLANGE	Proread ARB System
	SENSUS	OMNI C²	13	7⅞	2⅝		Full Electronic Register
2	METRON FARNIER	SPECTRUM 130D	9.78	4.28	2.02	OVAL FLANGE	Innov8 Register
	SENSUS	OMNI C²	15¼	7⅞	2⅝		Full Electronic Register

NOTES: 1. THE REMOTE READING DEVICE SHALL BE AN ACALA METER TRANSMISSION UNIT (MTU) WITH THROUGH-THE-LID ANTENNA, OR DEP APPROVED EQUAL.
2. SEE "LIST OF APPROVED METERS AND RELATED EQUIPMENT" FOR ALL WATER METER MODELS APPROVED BY DEP.

SIZE (INCH)	REDUCED PRESSURE ZONE BACKFLOW PREVENTER (RPZ)												
	COMPANY	MODEL	a	b	c	d	e	f	g	h	i	j	k	l
1	FEBCO	LF825YA	3⅛	4⅛	1⅝	2⅜	7⅛	4⅛	5¼	17½	4⅝	10¼	9⅛	28⅝
1½	FEBCO	LF825YA	3	5	2⅝	1⅜	6	5¼	6⅞	15⅞	4⅛	14¼	5⅜	27¾
2	FEBCO	LF825YA	3	5	2⅝	1⅜	6	5¼	7½	15¼	3 13/16	14⅞	5 5/16	27¾







NOTES:

1. THIS STANDARD DETAIL SHOWS THE MINIMUM REQUIREMENT FOR RPZ ASSEMBLY. ADDITIONAL CHECK VALVES MAY BE REQUIRED FOR SITES WITH HIGH WATER TABLE, THE RPZ BOX SUMP SHALL BE ELIMINATED AND WATER TIGHT SLEEVES SHALL BE PROVIDED AT ALL PIPE OPENINGS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL CERTIFICATIONS NECESSARY TO COMPLY WITH NYS DEPARTMENT OF HEALTH REGULATIONS FOR BFP (AFTER INSTALLATION) INCLUDING THE FOLLOWING:
   A. CERTIFICATION BY BACKFLOW PREVENTION DEVICE TESTER.
   B. CERTIFICATION OF MASTER PLUMBER RESPONSIBLE FOR SUCH INSTALLATION.
   C. PROFESSIONAL ENGINEER'S OR REGISTERED ARCHITECT'S CERTIFICATION THAT THE INSTALLATION IS IN ACCORDANCE WITH THE APPROVED PLANS.
   D. ALL OTHER REQUIREMENTS TO ENSURE COMPLIANCE WITH NYSDOH GEN. 215B.
3. THE CONTRACTOR SHALL SUBMIT THE FOLLOWING SHOP DRAWINGS AND CATALOG CUTS: SHOP DRAWINGS: A) WM & RPZ STRUCTURES, B) WM & RPZ INSTALLATION. CATALOG CUTS A) RPZ, B) VALVES, C) WATER METER, D) PIPING AND FITTINGS.
4. WATER SERVICE INTO PARK SHALL BE SHUT OFF DURING WINTER MONTHS WITH ALL PIPING BEING PROPERLY DRAINED.
5. THE CONTRACTOR MAY MAKE NECESSARY MODIFICATIONS TO THE PIPING AS MAY BE REQUIRED, AT NO EXTRA COST TO THE CITY OF NEW YORK. PROPOSED CHANGES MUST BE SUBMITTED FOR APPROVAL PRIOR TO THE START OF ANY CONSTRUCTION WORK.
6. ALL CONCRETE TO BE 5,000 PSI @ 28 DAYS.
7. ALL EXPOSED CONCRETE EDGES SHALL HAVE ¾" CHAMFERS.
8. PIPE LABELING: BETWEEN POINT OF ENTRY (PROPERTY LINE) AND RPZ AND AT ALL WALL AND FLOOR PENETRATIONS IN BFP (RPZ) CHAMBER AND WATER METER PIT, THE PIPES MUST BE STENCILED "FEED TO BACKFLOW PREVENTER, DO NOT TAP OR CONNECT TO THIS LINE" (½" GREEN COLORED LETTERING ON A WHITE BACKGROUND AT INTERVALS OF 5 FEET).
9. DIAMETER OF PIPES AND VALVES SHOWN ON THE DRAWINGS IS EQUAL TO DIAMETER OF WATER METER AND RPZ.
10. ALL WALL AND ROOF PENETRATIONS SHALL BE PROVIDED WITH PIPE SLEEVES.
11. ALL PROPOSED INSTALLATIONS/REPAIR OF BACKFLOW PREVENTER (BFP) DEVICES TO BE UTILIZED ON ALL DOMESTIC DRINKING WATER SERVICES FOR HUMAN CONSUMPTION, MUST BE LEAD-FREE IN COMPLIANCE WITH THE AMENDED FEDERAL LAW, SAFE DRINKING WATER ACT (SDWA).
12. SEE THE CIVIL DRAWING FOR PLUMBING AFTER THE METER OUTLET VALVE.
13. IF GROUNDWATER IS ENCOUNTERED WITHIN 3 FEET BELOW THE ELEVATION OF THE STRUCTURE, THEN THE STRUCTURE SHOULD BE MADE WATERTIGHT AND SUMP SHALL BE ELIMINATED.
14. FOR LAYOUT OF WATER METER AND RPZ STRUCTURES, SEE YARD PIPING DRAWING C-131.00.

PRECAST CONCRETE WATER METER AND REDUCED PRESSURE ZONE BACKFLOW PREVENTER

NTS

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Hazen | Brown AND Caldwell

STATE OF NEW YORK — JILL JAMES SHEA — 088959 — LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.
PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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NYC PARKS STANDARD DETAILS SHEET 3 OF 3

DATE: SEPTEMBER 2026
SHEET NO: 119 OF 723
DRAWING NO. C-908.01

Last Saved By: KRobbins
Paper Size Printed/Plotted: PAPPER_SIZE_PRINTED/PLOTTED
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LEGEND

- LANDSCAPE LIMIT OF WORK
- PLANTING AREA, L-140.00 AND L-150.00 SERIES
- CONCRETE PAVING AREA, SEE L-110.00 SERIES
- CONCRETE UNIT PAVER AREA, SEE L-110.00 SERIES
- COBBLE PAVING, SEE L-110.00 SERIES
- GABION VENEER RETAINING WALL
- AMPHITHEATER STEPS
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- NYC DOT CITY RACK
- TRASH RECEPTACLE
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- STORM DRAIN, SEE CIVIL DWGS
- UNDER DRAIN, SEE CIVIL DWGS
- ADA COMPANION SEATING
- FIRE HYDRANT
- SITE RAILING, SEE L-120 SERIES RAILING PLANS FOR RAIL TYPES
- POLE MOUNTED LIGHT, SEE ELECTRICAL DWGS
- POLE MOUNTED FLOOD LIGHT, SEE ELECTRICAL DWGS
- EH PB ELECTRICAL BOX, SEE ELECTRICAL DWGS

1 L-943.00 NYC 1964 WORLD'S FAIR BENCH WITH BACK

5 L-934.00 INLAND GUARDRAIL WITH HANDRAIL

2 L-912.00 GABION VENEER RETAINING WALL D AT RAMP

1 L-934.00 HANDRAIL

2 L-910.00 GABION VENEER RETAINING WALL

1 L-940.00 CUSTOM BACKED WOOD BENCH

1 L-911.00 GABION VENEER WALL AT PLAZA AREA

MATCH LINE - SEE L-102.00

GOWANUS CANAL

2 L-703.00

STRUCTURAL WALL BELOW, SEE STRUCTURAL DWGS

1 L-912.00 GABION VENEER RETAINING WALL E AT AMPHITHEATER

1 L-703.00

AMPHITHEATER ENLARGEMENT PLAN - MATERIAL AND LAYOUT 3 L-801.00

EXISTING BULKHEAD, VIF, SEE OH-007 BULKHEAD RECORD DWGS

GOWANUS GUARDRAIL 1 L-930.00

BUILDING FENCE, SEE ARCHITECTURE DWGS

2 L-911.00 GABION VENEER RETAINING WALL AT MAINTENANCE AREA

1 L-941.00 CUSTOM LOUNGE CHAIR

SEE CIVIL DWGS FOR MAINTENANCE YARD IMPROVEMENTS

1 L-920.00

6 L-902.00 SCUPPER CURB, TYP

5 L-902.00 RAISED CIP CURB, TYP

2 L-704.00

EXISTING TANK ACCESS HATCH, TYP INSTALLED UNDER PRIOR CONTRACT, SEE CP-2 DRAWINGS FOR ADDITIONAL DETAIL

CSO BUILDING, SEE ARCH DWGS

PLANTING AREA, TYP

COBBLE PAVING, SEE L-110.00 SERIES

STORM DRAIN, TYP SEE CIVIL DWGS

MATCH LINE - SEE L-102.00

CONNECTION TO FUTURE PHASE CP-4

CONSTRUCTION FENCE, SEE CIVIL DWGS

CATCH BASIN, SEE CIVIL DWGS

ACCESS DRIVE

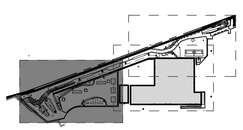
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1 L-704.00

EH

PB

KEY PLAN



SCAPE

LANDSCAPE MATERIALS PLAN 1

SCALE: 1'=10'

1"=10' 0 10 20 FT.

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1	10/2026	Addendum No.2	JD

DESIGNED BY: S. BARNETT | DRAWN BY: G. MORGIS | PROJECT MANAGER: E. CAMILLERI

CHECKED BY: T. MEAD | DESIGN LEAD: J. DONNELLY | DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

REGISTERED LANDSCAPE ARCHITECT JOHN DONNELLY 2368-1 STATE OF NEW YORK

NYC Environmental Protection

ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.

PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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LANDSCAPE MATERIALS PLAN 1

DATE: SEPTEMBER 2026

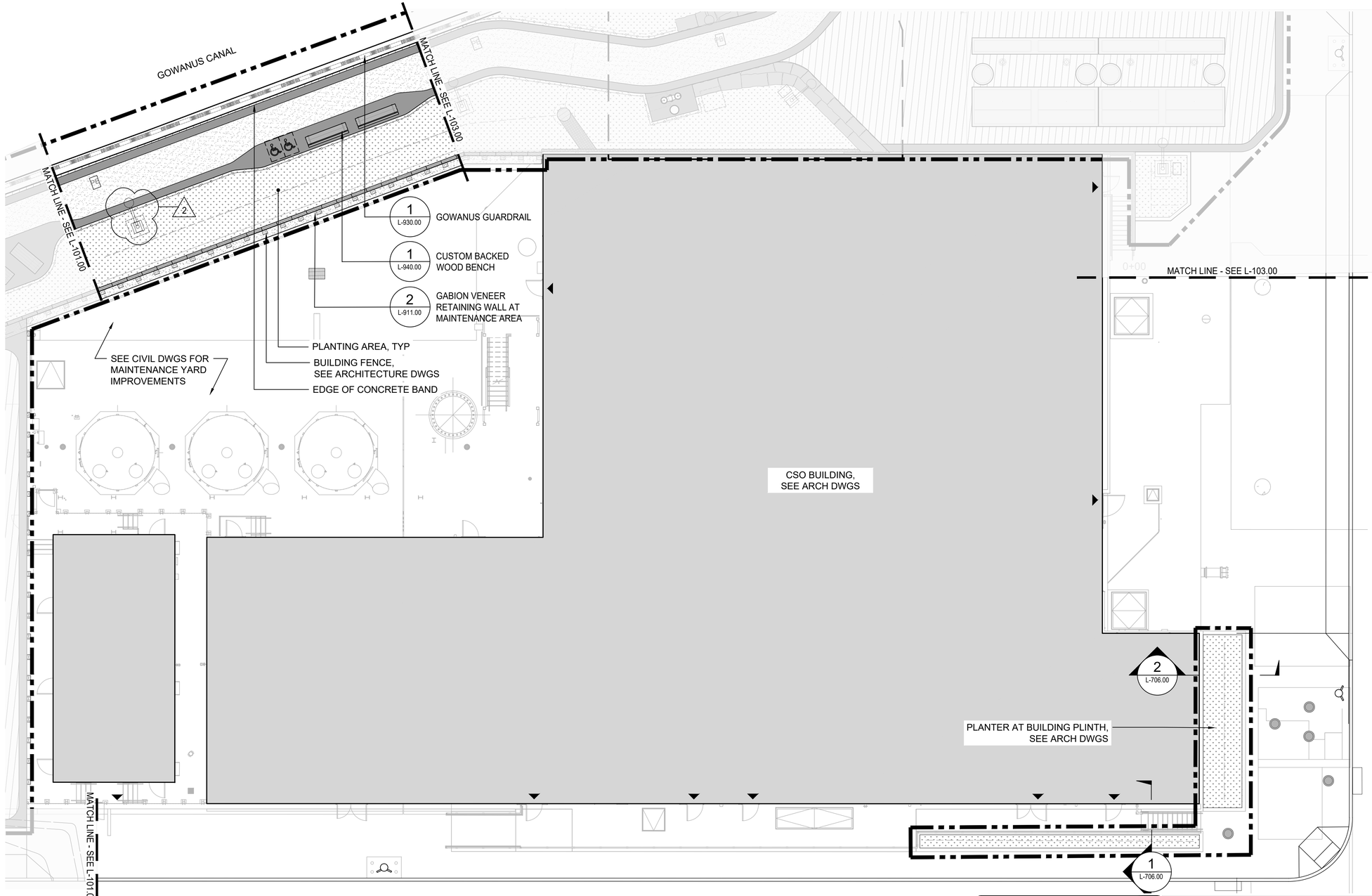
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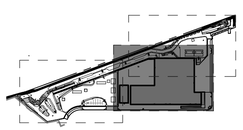
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KEY PLAN



LANDSCAPE MATERIALS PLAN 2

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SCAPE

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DESIGNED BY:	DRAWN BY:	PROJECT MANAGER:
S. BARNETT	G. MORGIS	E. CAMILLERI
CHECKED BY:	DESIGN LEAD:	DESIGN MANAGER:
T. MEAD	J. DONNELLY	G. DEREAMER

Hazen and Brown and Caldwell

REGISTERED LANDSCAPE ARCHITECT JOHN DONNELLY 2369-1 STATE OF NEW YORK

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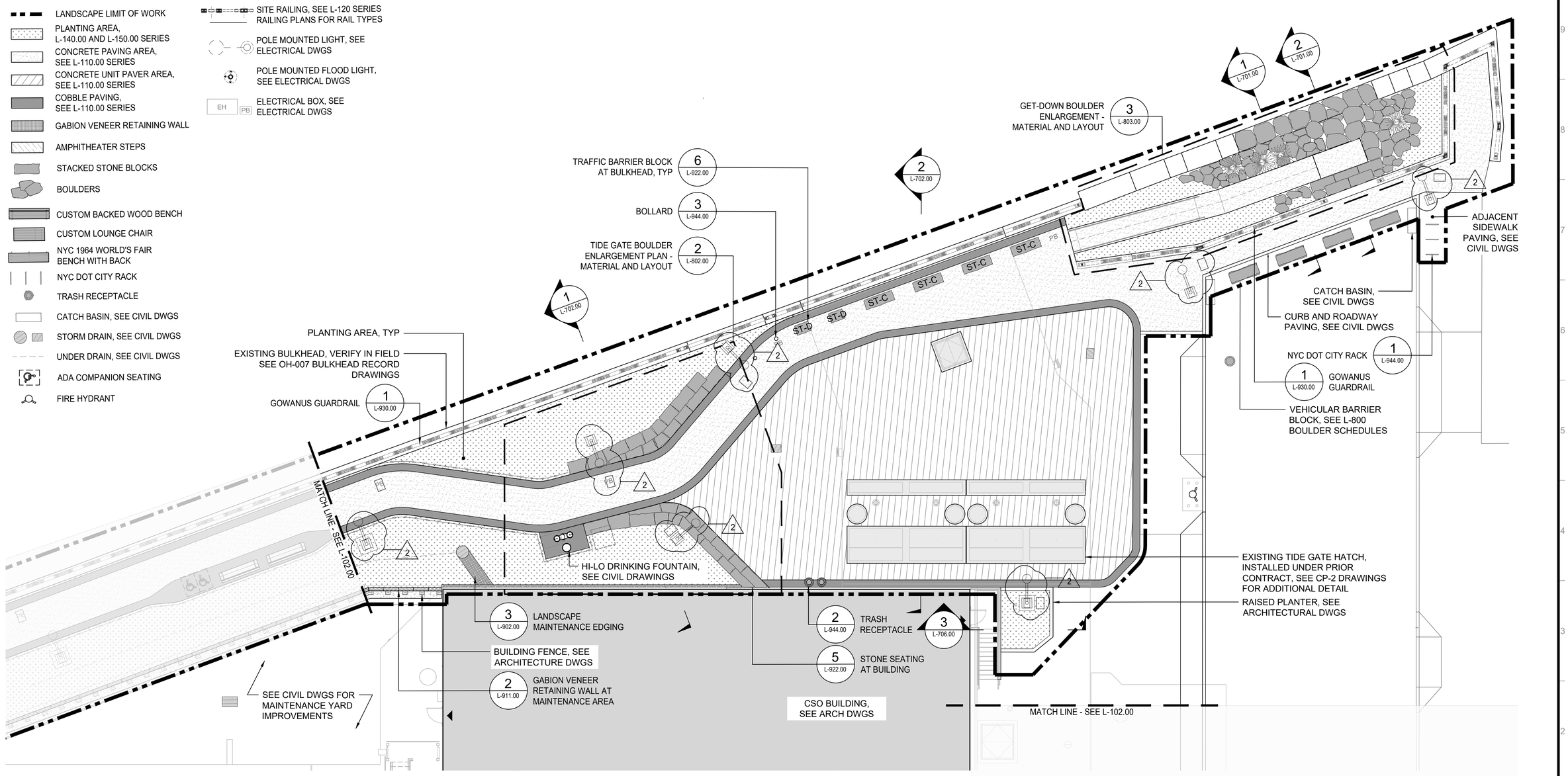
LANDSCAPE MATERIALS PLAN 2

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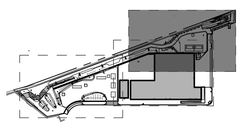
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KEY PLAN



SCAPE

LANDSCAPE MATERIALS PLAN 3

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PORTFOLIO MANAGER
KEVIN CLARKE, P.E.

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CORONA, NEW YORK 11368
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CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

LANDSCAPE MATERIALS PLAN 3

DATE: SEPTEMBER 2026

SHEET NO: 138 OF 719

DRAWING NO. L-103.00

Last Saved By: Kelly
Paper Size Printed/Plotted: ANSI full bleed D (34.00 x 22.00 Inches)
Drawing File Name & Drive Location: C:\Users\kelly\DC\ACCDocs\Hazen and Sawyer\90409-000_CSO-SC-SFS-DES-OH\Project Files\000-ProjectWise\Landscape\CP-03\03_PLTIL-103.00 MATERIALS PLAN 3.dwg
Last Date Saved: 10/30/2026 10:00 AM
Date & Time Plotted: 10/30/2026 10:53 AM
Plot Scale: 1:1
Plot Style Table: BEDC_Acad_2021.ctb

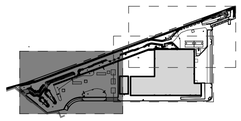
LEGEND

- LIMIT OF WORK
- STRUCTURE UNDERNEATH, SEE CIVIL
- PLANTING AREA, L-150.00 AND L-160.00 SERIES
- GRANITE PAVERS, TYP
- GRANITE PAVERS ON CONCRETE
- GRANITE PAVERS ON STRUCTURE
- GRANITE PAVERS ON STRUCTURAL WALL
- CONCRETE UNIT PAVERS, TYP
- CONCRETE UNIT PAVERS ON STRUCTURE
- CONCRETE UNIT PAVERS ON PAVER TRAYS
- CONCRETE PAVING
- CONCRETE PAVING ON STRUCTURE
- CONCRETE AT BULKHEAD
- STONE BLOCKS
- BOULDERS
- 8 / L-903.00 — PAVER EDGE RESTRAINT
- 7 / L-903.00 — PATH METAL EDGING
- 3 / L-902.00 — LANDSCAPE MAINTENANCE EDGING

NOTE:
FURNISH PAVING MATERIALS UP TO THE CLOSEST JOINT AND COORDINATE PAVING TRANSITION WITH FUTURE PHASE DEVELOPMENT WITH LANDSCAPE ARCHITECT.

PATH METAL EDGING 7 / L-903.00
GRANITE PAVERS 6 / L-901.00
CONCRETE PAVING 1 / L-901.00
CUSTOM LOUNGE CHAIR 1 / L-941.00
CONCRETE UNIT PAVERS 3 / L-901.00
GRANITE PAVERS ON CONCRETE 7 / L-901.00
PLANTING AREA, TYP
MATCH LINE - SEE L-112.00
PEDESTRIAN RAMP WITH HANDRAIL ENLARGEMENT PLAN 2 / L-920.00
GRANITE PAVERS ON CONCRETE AT BULKHEAD, WIDTH VARIES, SEE LAYOUT PLANS AND SPECIFICATIONS FOR PIGMENT DETAILS 8 / L-904.00
PAVER EDGE RESTRAINT 8 / L-903.00
GRANITE PAVERS ON STRUCTURAL WALL 7 / L-904.00
AMPHITHEATER STEPS, SEE STRUCTURAL DRAWINGS FOR MORE INFORMATION
AMPHITHEATER ENLARGEMENT PLAN - MATERIAL AND LAYOUT 3 / L-801.00
6 / L-903.00 — ARCHITECTURE SLAB TO GRANITE PAVERS ON CONCRETE TO CONCRETE UNIT PAVERS
SEE CIVIL DWGS FOR MAINTENANCE YARD IMPROVEMENTS
4 / L-904.00 — CONCRETE UNIT PAVERS AT ACCESS HATCHES AND UTILITY BOXES
CSO BUILDING, SEE ARCH DWGS
EXISTING TANK ACCESS HATCH, TYP INSTALLED UNDER PRIOR CONTRACT, SEE CP-2 DRAWINGS FOR ADDITIONAL DETAIL
2 / L-903.00 — GRANITE PAVERS ON CONCRETE TO CONCRETE PAVING
6 / L-902.00 — SCUPPER CURB, TYP
4 / L-902.00 — FLUSH CIP CURB, TYP
7 / L-902.00 — CONCRETE UNIT PAVERS ON PAVER GRATE
MATCH LINE - SEE L-112.00
CONNECTION TO FUTURE PHASE CP-4
CONCRETE SIDEWALK, SEE CIVIL DRAWINGS
GRANITE PAVERS TO CONCRETE PAVING 1 / L-903.00
4 / L-903.00 — CONCRETE PAVING TO GRANITE PAVERS ON CONCRETE TO CONCRETE UNIT PAVERS
3 / L-903.00 — GRANITE PAVERS TO GRANITE PAVERS ON CONCRETE

KEY PLAN



SCAPE

PAVING CONDITIONS PLAN 1

SCALE: 1'=10'

1"=10' 0 10 20 FT.

NYC

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

GRAPHIC SCALES CHECK BEFORE USE

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1	10/2026	Addendum No.2	JD

DESIGNED BY: S. BARNETT | DRAWN BY: G. MORGIS | PROJECT MANAGER: E. CAMILLERI
CHECKED BY: T. MEAD | DESIGN LEAD: J. DONNELLY | DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

REGISTERED LANDSCAPE ARCHITECT JOHN DONNELLY 2369 STATE OF NEW YORK

NYC Environmental Protection

ACCOUNTABLE MANAGER
JESSE GOLDIN, P.E.

PORTFOLIO MANAGER
KEVIN CLARKE, P.E.

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CSO FACILITIES FOR GOWANUS CANAL
CONSTRUCTION PACKAGE 3 - OH-007

LANDSCAPE
PAVING CONDITIONS PLAN 1

DATE: SEPTEMBER 2026
SHEET NO: 139 OF 719
DRAWING NO. L-111.00

Last Saved By: Kelly
Paper Size Printed/Plotted: ANSI full bleed D (34.00 x 22.00 Inches)
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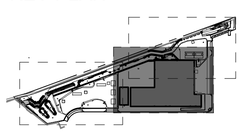
LEGEND

- LIMIT OF WORK
- STRUCTURE UNDERNEATH, SEE CIVIL
- PLANTING AREA, L-150.00 AND L-160.00 SERIES
- GRANITE PAVERS, TYP
- GRANITE PAVERS ON CONCRETE
- GRANITE PAVERS ON STRUCTURE
- GRANITE PAVERS ON STRUCTURAL WALL
- CONCRETE UNIT PAVERS, TYP
- CONCRETE UNIT PAVERS ON STRUCTURE
- CONCRETE UNIT PAVERS ON PAVER TRAYS
- CONCRETE PAVING
- CONCRETE PAVING ON STRUCTURE
- CONCRETE AT BULKHEAD
- STONE BLOCKS
- BOULDERS

- 8 / L-903.00 — PAVER EDGE RESTRAINT
- 7 / L-903.00 — PATH METAL EDGING
- 3 / L-902.00 — LANDSCAPE MAINTENANCE EDGING

NOTE:
FURNISH PAVING MATERIALS UP TO THE CLOSEST JOINT AND COORDINATE PAVING TRANSITION WITH FUTURE PHASE DEVELOPMENT WITH LANDSCAPE ARCHITECT.

KEY PLAN



CONCRETE AT BULKHEAD , WIDTH VARIES, SEE LAYOUT PLANS AND SPECIFICATIONS FOR PIGMENT DETAILS

COBBLE PAVING ENLARGEMENT DETAIL — 2 / L-804.00

GRANITE PAVERS ON CONCRETE TO CONCRETE PAVING — 2 / L-903.00

MATCH LINE - SEE L-113.00

MATCH LINE - SEE L-111.00

8 / L-904.00 — GRANITE PAVERS ON CONCRETE AT BULKHEAD

7 / L-901.00 — GRANITE PAVERS ON CONCRETE, FOR LOUNGERS ONLY

3 / L-903.00 — GRANITE PAVERS TO GRANITE PAVERS ON CONCRETE

PLANTING AREA, TYP

7 / L-903.00 — PATH METAL EDGING

1 / L-901.00 — CONCRETE PAVING

6 / L-901.00 — GRANITE PAVERS

1 / L-903.00 — GRANITE PAVERS TO CONCRETE PAVING

SEE CIVIL DWGS FOR MAINTENANCE YARD IMPROVEMENTS

CSO BUILDING, SEE ARCH DWGS

MATCH LINE - SEE L-113.00

2 / L-706.00

PLANTER AT BUILDING PLINTH, SEE ARCH DWGS

PLANTING AREA, TYP

1 / L-706.00

MATCH LINE - SEE L-111.00

PAVING CONDITIONS PLAN 2

SCALE: 1'=10'

1"=10' 0 10 20 FT.

SCAPE

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

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1	10/2026	Addendum No.2	JD

DESIGNED BY: S. BARNETT	DRAWN BY: G. MORGIS	PROJECT MANAGER: E. CAMILLERI
CHECKED BY: T. MEAD	DESIGN LEAD: J. DONNELLY	DESIGN MANAGER: G. DEREAMER

Hazen — Brown AND Caldwell

ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.

PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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LANDSCAPE
PAVING CONDITIONS PLAN 2

DATE: SEPTEMBER 2026

SHEET NO: 140 OF 719

DRAWING NO. L-112.00

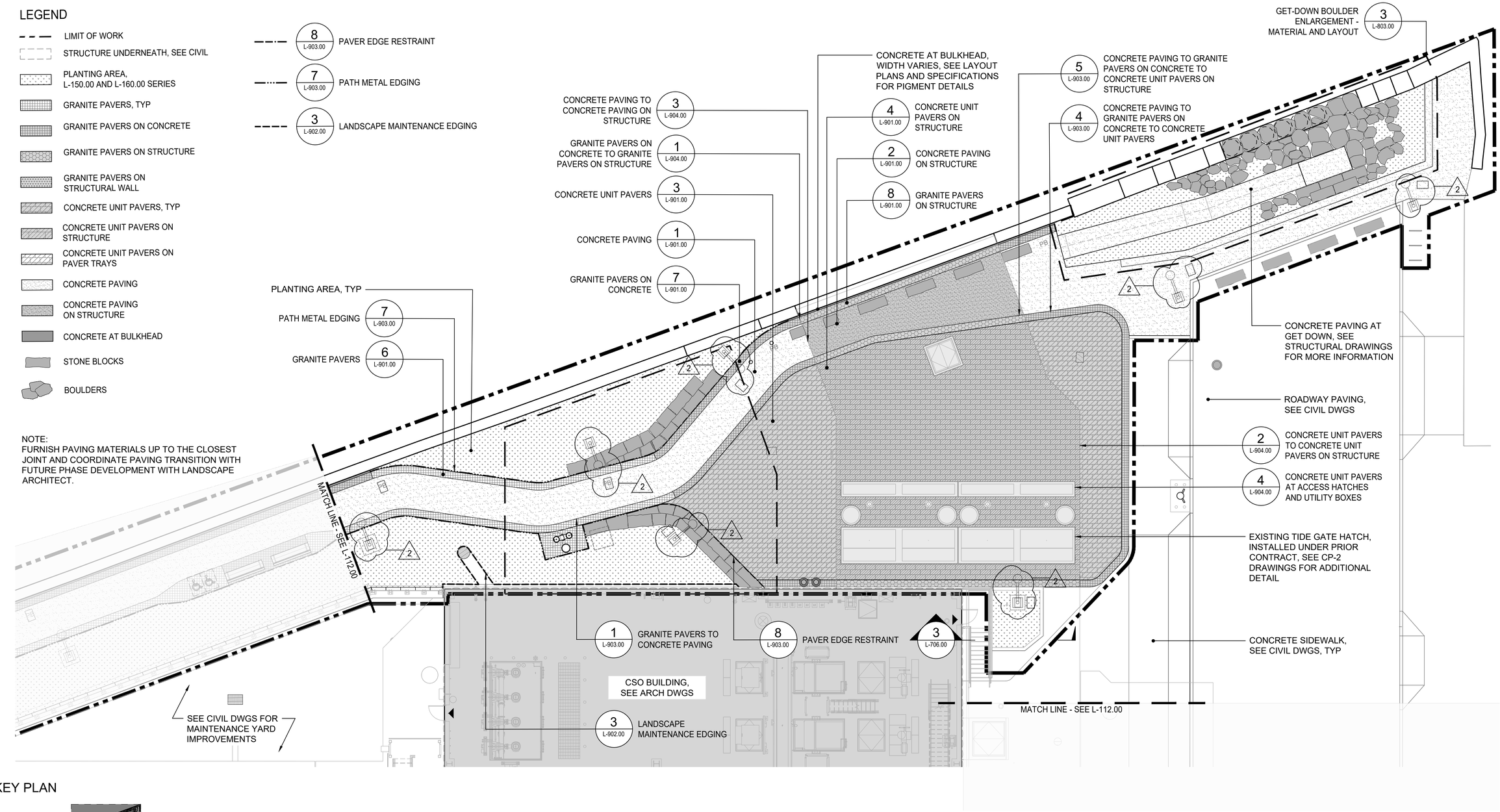
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Last Date Saved: 10/30/2026 10:02 AM
Date & Time Plotted: 10/30/2026 10:54 AM
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LEGEND

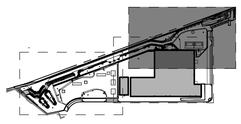
- LIMIT OF WORK
- STRUCTURE UNDERNEATH, SEE CIVIL
- PLANTING AREA, L-150.00 AND L-160.00 SERIES
- GRANITE PAVERS, TYP
- GRANITE PAVERS ON CONCRETE
- GRANITE PAVERS ON STRUCTURE
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- CONCRETE UNIT PAVERS, TYP
- CONCRETE UNIT PAVERS ON STRUCTURE
- CONCRETE UNIT PAVERS ON PAVER TRAYS
- CONCRETE PAVING
- CONCRETE PAVING ON STRUCTURE
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- STONE BLOCKS
- BOULDERS

- 8 / L-903.00 — PAVER EDGE RESTRAINT
- 7 / L-903.00 — PATH METAL EDGING
- 3 / L-902.00 — LANDSCAPE MAINTENANCE EDGING

NOTE:
FURNISH PAVING MATERIALS UP TO THE CLOSEST JOINT AND COORDINATE PAVING TRANSITION WITH FUTURE PHASE DEVELOPMENT WITH LANDSCAPE ARCHITECT.



KEY PLAN



SCAPE

PAVING CONDITIONS PLAN 3

SCALE: 1'=10'

1"=10' 0 10 20 FT.

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

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1	10/2026	Addendum No.2	JD

DESIGNED BY:	DRAWN BY:	PROJECT MANAGER:
S. BARNETT	G. MORGIS	E. CAMILLERI
CHECKED BY:	DESIGN LEAD:	DESIGN MANAGER:
T. MEAD	J. DONNELLY	G. DEREAMER

Hazen | Brown AND Caldwell

REGISTERED LANDSCAPE ARCHITECT JOHN DONNELLY 2368.1 STATE OF NEW YORK

Environmental Protection

ACCOUNTABLE MANAGER
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CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

LANDSCAPE
PAVING CONDITIONS PLAN 3

DATE: SEPTEMBER 2026
SHEET NO: 141 OF 719
DRAWING NO. L-113.00

Last Saved By: Kelly
Paper Size Printed/Plotted: ANSI full bleed D (34.00 x 22.00 Inches)
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Last Date Saved: 10/30/2026 10:03 AM
Date & Time Plotted: 10/30/2026 10:54 AM
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Plot Style Table: BEDC_Acad_2021.ctb

LEGEND

- MATCH LINE - SEE L-X00
- LIMIT OF WORK
- PLANT RAILING, SEE LANDSCAPE MATERIALS PLANS
- BUILDING ENTRANCE
- ALIGN — ALIGN INDICATED FEATURES
- ℄ CENTERLINE
- RX" — CATCH BASIN, SEE CIVIL DWGS
- PLANTING AREA, SEE L-140.00 AND L-150.00 SERIES
- STACKED STONE BLOCKS, SEE LANDSCAPE MATERIALS PLANS
- BOULDERS
- STORM DRAIN, SEE CIVIL DWGS

PAVING LAYOUT			PI 263	185471.85'	986372.71'
NUMBER	NORTHINGS	EASTINGS	PI 264	185475.22'	986379.89'
PI 227	185488.12'	986295.18'	PI 265	185472.85'	986384.48'
PI 228	185468.30'	986249.53'	PI 266	185472.40'	986385.71'
PI 229	185463.17'	986246.88'	PI 267	185466.85'	986411.22'
PI 230	185440.96'	986254.48'	PI 268	185466.74'	986412.52'
PI 231	185441.60'	986259.34'	PI 269	185466.94'	986416.70'
PI 232	185465.58'	986257.23'	PI 270	185466.83'	986418.00'
PI 233	185469.06'	986252.11'	PI 271	185459.77'	986450.45'
PI 234	185474.79'	986271.39'	PI 272	185456.41'	986454.15'
PI 235	185470.21'	986268.60'	PI 273	185454.89'	986454.63'
PI 236	185438.23'	986274.68'	PI 274	185451.53'	986458.33'
PI 237	185438.60'	986279.63'	PI 275	185446.52'	986481.34'
PI 238	185472.17'	986281.23'	PI 276	185448.04'	986486.10'
PI 239	185476.19'	986276.09'	PI 277	185449.22'	986487.17'
PI 240	185478.32'	986299.09'	PI 278	185450.74'	986491.93'
PI 241	185438.00'	986289.98'	PI 334	185526.95'	986211.67'
PI 242	185436.34'	986295.91'	PI 335	185498.12'	986224.66'
PI 243	185459.29'	986303.54'	PI 336	185497.38'	986222.51'
PI 244	185462.71'	986308.05'	PI 337	185427.48'	986246.40'
PI 245	185464.43'	986346.11'	PI 338	185411.22'	986287.58'
PI 246	185464.21'	986348.69'	PI 352	185460.93'	986304.45'
PI 247	185458.06'	986376.90'	PI 353	185462.17'	986306.01'
PI 248	185457.39'	986378.54'	PI 354	185461.83'	986359.62'
PI 249	185446.56'	986395.43'	PI 355	185461.40'	986361.57'
PI 250	185448.82'	986405.79'	PI 356	185450.72'	986407.01'
PI 251	185453.73'	986408.94'	PI 357	185452.41'	986408.09'
PI 252	185413.39'	986381.14'	PI 358	185417.00'	986348.66'
PI 253	185408.51'	986391.49'	PI 359	185418.50'	986349.97'
PI 254	185389.82'	986402.83'	PI 360	185414.08'	986378.41'
PI 255	185382.64'	986401.76'	PI 361	185413.59'	986380.35'
PI 256	185380.05'	986394.33'	PI 362	185387.75'	986402.79'
PI 257	185408.05'	986350.65'	PI 363	185442.98'	986298.11'
PI 258	185419.83'	986355.75'	PI 364	185444.88'	986298.75'
PI 259	185495.34'	986287.06'			
PI 260	185479.99'	986357.58'			
PI 261	185474.49'	986360.98'			
PI 262	185467.40'	986359.44'			

PI 542	185485.89'	986300.73'
PI 543	185480.44'	986299.55'
PI 544	185481.14'	986327.29'
PI 545	185475.03'	986325.96'
PI 546	185479.58'	986334.46'
PI 547	185473.47'	986333.13'

GRANITE PAVER BAND LAYOUT			PI 430	185453.88'	986490.12'	PI 490	185469.94'	986267.19'	PI 512	185461.38'	986341.99'	PI 530	185422.39'	986357.25'
NUMBER	NORTHINGS	EASTINGS	PI 466	185495.49'	986234.32'	PI 491	185467.89'	986267.58'	PI 513	185461.61'	986343.27'	PI 531	185417.93'	986347.55'
PI 401	185523.04'	986222.53'	PI 467	185480.11'	986239.57'	PI 492	185466.59'	986267.65'	PI 514	185462.57'	986346.30'	PI 532	185416.04'	986340.68'
PI 402	185521.71'	986226.80'	PI 468	185473.76'	986251.89'	PI 493	185462.44'	986267.34'	PI 515	185462.69'	986348.88'	PI 539	185459.27'	986237.05'
PI 403	185516.79'	986239.18'	PI 469	185486.64'	986295.23'	PI 494	185461.14'	986267.42'	PI 516	185457.58'	986372.36'	PI 540	185458.81'	986235.69'
PI 404	185516.01'	986239.93'	PI 470	185485.77'	986299.24'	PI 495	185438.70'	986271.68'	PI 517	185456.91'	986374.00'	PI 541	185447.75'	986406.81'
PI 405	185509.88'	986242.02'	PI 471	185481.68'	986298.35'	PI 496	185435.32'	986279.11'	PI 518	185444.73'	986393.00'	PI 548	185448.24'	986427.01'
PI 406	185507.79'	986240.06'	PI 472	185480.43'	986297.89'	PI 497	185438.53'	986281.06'	PI 519	185449.19'	986407.73'	PI 549	185447.77'	986428.30'
PI 407	185513.30'	986219.79'	PI 473	185476.81'	986296.00'	PI 498	185444.18'	986281.33'	PI 520	185451.38'	986413.01'	PI 550	185445.96'	986431.70'
PI 408	185524.42'	986222.91'	PI 474	185475.59'	986295.55'	PI 499	185445.47'	986281.57'	PI 521	185439.36'	986468.23'	PI 551	185445.49'	986432.99'
PI 409	185523.06'	986227.28'	PI 475	185440.08'	986287.52'	PI 500	185449.43'	986282.83'	PI 522	185434.81'	986470.12'	PI 552	185445.05'	986435.02'
PI 410	185515.55'	986246.20'	PI 476	185436.22'	986288.23'	PI 501	185450.71'	986283.06'	PI 523	185365.35'	986425.60'	PI 553	185444.95'	986436.38'
PI 411	185511.12'	986262.67'	PI 477	185418.07'	986300.24'	PI 502	185471.74'	986284.07'	PI 524	185364.43'	986421.37'	PI 554	185445.18'	986440.23'
PI 412	185502.63'	986301.14'	PI 478	185469.44'	986248.32'	PI 503	185477.77'	986276.36'	PI 525	185376.03'	986403.26'	PI 555	185445.07'	986441.59'
PI 413	185495.09'	986294.94'	PI 479	185461.75'	986244.35'	PI 504	185420.55'	986303.28'	PI 526	185379.86'	986402.17'			
PI 414	185498.96'	986294.79'	PI 480	185441.10'	986251.41'	PI 505	185422.02'	986299.35'	PI 527	185393.23'	986403.88'			
PI 415	185500.66'	986300.51'	PI 481	185438.80'	986259.24'	PI 506	185426.72'	986296.24'	PI 528	185408.66'	986393.63'			
PI 416	185500.70'	986303.41'	PI 482	185442.23'	986260.72'	PI 507	185431.05'	986295.67'	PI 529	185417.70'	986375.74'			
PI 417	185481.95'	986355.30'	PI 483	185450.62'	986259.99'	PI 508	185458.84'	986304.90'						
PI 418	185481.84'	986356.60'	PI 484	185451.92'	986260.04'	PI 509	185461.30'	986308.67'						
PI 419	185482.04'	986360.72'	PI 485	185456.02'	986260.76'	PI 510	185460.29'	986314.03'						
PI 420	185481.93'	986362.03'	PI 486	185457.32'	986260.82'	PI 511	185460.18'	986315.33'						
PI 421	185471.09'	986411.85'	PI 487	185465.43'	986260.10'									
PI 422	185470.65'	986413.07'	PI 488	185470.66'	986252.41'									
PI 423	185468.75'	986416.74'	PI 489	185476.17'	986270.98'									
PI 424	185468.31'	986417.97'												
PI 425	185461.78'	986447.95'												
PI 426	185461.68'	986449.25'												
PI 427	185461.87'	986453.43'												
PI 428	185461.76'	986454.71'												
PI 429	185454.32'	986488.89'												

GOWANUS CANAL

CONNECTION TO FUTURE PHASE CP-4

REFER TO SECTIONS FOR PATHWAY DIMENSIONS

BULKHEAD AND PILE CAP; SEE OH-007 BULKHEAD RECORD DWGS

MATCH LINE - SEE L-132.00

PARALLEL TO SOE WALL

EDGE OF GRANITE PAVER BAND

EDGE OF CONCRETE BAND

EXISTING TANK ACCESS HATCH, TYP INSTALLED UNDER PRIOR CONTRACT, SEE CP-2 DRAWINGS FOR ADDITIONAL DETAIL

MATCH LINE - SEE L-132.00

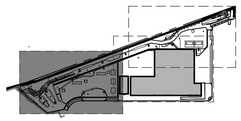
AMPHITHEATER ENLARGEMENT PLAN - 3 / L-801.00

ALL LAYOUT COORDINATES SHALL BE IN ACCORDANCE WITH LAYOUT NOTES AS OUTLINED ON L-001.00 GENERAL NOTES

REFER TO CIVIL DWGS FOR SIDEWALK AND ROADWAY LAYOUT

CONSTRUCTION FENCE

KEY PLAN



LANDSCAPE LAYOUT PLAN 1

SCALE: 1'=10'

1"=10' 0 10 20 FT.

SCAPE

NYC

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

GRAPHIC SCALES CHECK BEFORE USE

IF SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT. SCALE ACCORDINGLY

NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.
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##	####	######	##
1	10/2026	Addendum No.2	JD

DESIGNED BY: S. BARNETT | DRAWN BY: G. MORGIS | PROJECT MANAGER: E. CAMILLERI

CHECKED BY: T. MEAD | DESIGN LEAD: J. DONNELLY | DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

REGISTERED LANDSCAPE ARCHITECT JOHN DONNELLY 2368-1 STATE OF NEW YORK

NYC Environmental Protection

ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.

PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

LANDSCAPE LAYOUT PLAN 1

DATE: SEPTEMBER 2026

SHEET NO: 144 OF 719

DRAWING NO. L-121.00

Last Saved By: Kelly
Paper Size Printed/Plotted: ANSI full bleed D (34.00 x 22.00 Inches)
Drawing File Name & Drive Location: C:\Users\kkelly\DC\ACCDocs\Hazen and Sawyer\90409-000_CSO-SC-SFS-DES-OH\Project Files\000-ProjectWise\Landscape\CP-03103_PLTIL-121.00 LAYOUT PLAN 1.dwg
Last Date Saved: 10/30/2026 10:04 AM
Date & Time Plotted: 10/30/2026 10:54 AM
Plot Scale: 1:1
Plot Style Table: BEDC_Acad_2021.ctb

LEGEND

- MATCH LINE - SEE L-X00
- LIMIT OF WORK
- PLANT RAILING, SEE LANDSCAPE MATERIALS PLANS
- BUILDING ENTRANCE
- ALIGN — ALIGN INDICATED FEATURES
- ℄ — CENTERLINE
- RX" — CATCH BASIN, SEE CIVIL DWGS
- PLANTING AREA, SEE L-140.00 AND L-150.00 SERIES
- STACKED STONE BLOCKS, SEE LANDSCAPE MATERIALS PLANS
- BOULDERS
- STORM DRAIN, SEE CIVIL DWGS

ALL LAYOUT COORDINATES SHALL BE COORDINATED WITH FIELD CONDITIONS IN ACCORDANCE WITH LAYOUT NOTES AS OUTLINED ON L-001.00 GENERAL NOTES

GOWANUS CANAL

MATCH LINE - SEE L-131.00

MATCH LINE - SEE L-133.00

EDGE OF GRANITE PAVER BAND

EDGE OF CONCRETE BAND

CSO BUILDING, SEE ARCH DWGS

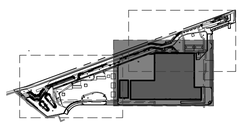
EXISTING TANK ACCESS HATCH, TYP INSTALLED UNDER PRIOR CONTRACT, SEE CP-2 DRAWINGS FOR ADDITIONAL DETAIL

PLANTER AT BUILDING PLINTH, SEE ARCH DWGS

PAVING LAYOUT		
NUMBER	NORTHINGS	EASTINGS
PI 279	185443.97'	986523.03'
PI 280	185443.54'	986524.25'
PI 281	185441.61'	986528.01'
PI 282	185441.17'	986529.23'
PI 283	185435.30'	986556.20'
PI 284	185435.19'	986557.52'
PI 285	185435.40'	986561.60'
PI 286	185435.29'	986562.91'

GRANITE PAVER BAND LAYOUT		
NUMBER	NORTHINGS	EASTINGS
PI 431	185451.98'	986493.82'
PI 432	185451.49'	986495.23'
PI 433	185445.31'	986523.64'
PI 434	185445.20'	986524.93'
PI 435	185445.39'	986529.15'
PI 436	185445.28'	986530.44'
PI 437	185439.54'	986556.81'
PI 438	185439.10'	986558.03'
PI 439	185437.21'	986561.68'
PI 440	185436.76'	986562.92'

KEY PLAN



SCAPE

LANDSCAPE LAYOUT PLAN 2

SCALE: 1'=10'

1"=10' 0 10 20 FT.

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

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CHECKED BY: T. MEAD | DESIGN LEAD: J. DONNELLY | DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

REGISTERED LANDSCAPE ARCHITECT JOHN DONNELLY 2369-1 STATE OF NEW YORK

Environmental Protection

ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.

PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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LANDSCAPE LAYOUT PLAN 2

DATE: SEPTEMBER 2026

SHEET NO: 145 OF 719

DRAWING NO. L-122.00

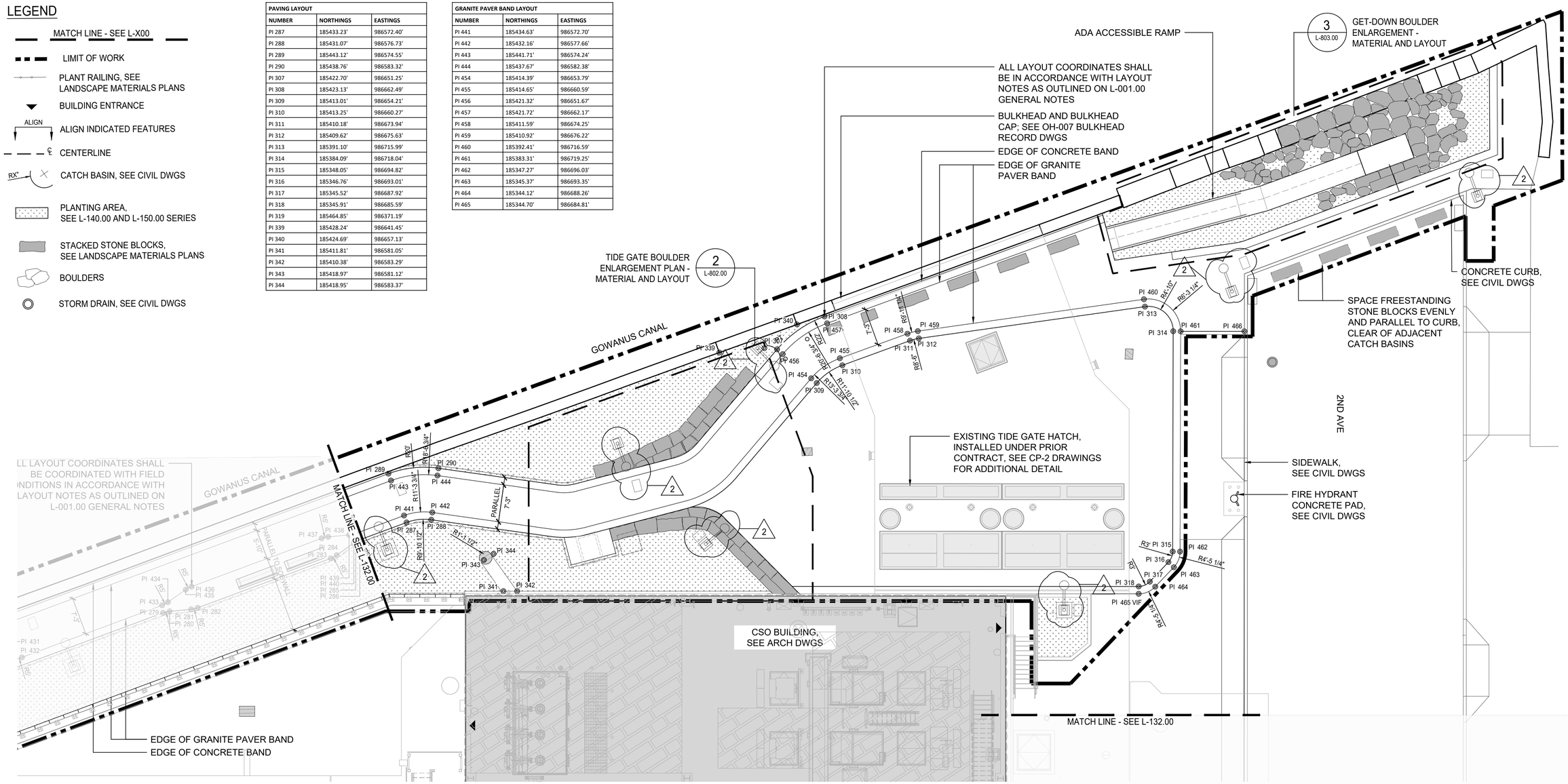
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Last Date Saved: 10/30/2026 10:04 AM
Date & Time Plotted: 10/30/2026 10:55 AM
Plot Scale: 1:1
Plot Style Table: BEDC_Acad_2021.ctb

LEGEND

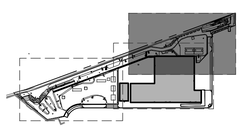
- MATCH LINE - SEE L-X00
- LIMIT OF WORK
- PLANT RAILING, SEE LANDSCAPE MATERIALS PLANS
- BUILDING ENTRANCE
- ALIGN — ALIGN INDICATED FEATURES
- ℄ — CENTERLINE
- RX" — CATCH BASIN, SEE CIVIL DWGS
- PLANTING AREA, SEE L-140.00 AND L-150.00 SERIES
- STACKED STONE BLOCKS, SEE LANDSCAPE MATERIALS PLANS
- BOULDERS
- STORM DRAIN, SEE CIVIL DWGS

PAVING LAYOUT		
NUMBER	NORTHINGS	EASTINGS
PI 287	185433.23'	986572.40'
PI 288	185431.07'	986576.73'
PI 289	185443.12'	986574.55'
PI 290	185438.76'	986583.32'
PI 307	185422.70'	986651.25'
PI 308	185423.13'	986662.49'
PI 309	185413.01'	986654.21'
PI 310	185413.25'	986660.27'
PI 311	185410.18'	986673.94'
PI 312	185409.62'	986675.63'
PI 313	185391.10'	986715.99'
PI 314	185384.09'	986718.04'
PI 315	185348.05'	986694.82'
PI 316	185346.76'	986693.01'
PI 317	185345.52'	986687.92'
PI 318	185345.91'	986685.59'
PI 319	185464.85'	986371.19'
PI 339	185428.24'	986641.45'
PI 340	185424.69'	986657.13'
PI 341	185411.81'	986581.05'
PI 342	185410.38'	986583.29'
PI 343	185418.97'	986581.12'
PI 344	185418.95'	986583.37'

GRANITE PAVER BAND LAYOUT		
NUMBER	NORTHINGS	EASTINGS
PI 441	185434.63'	986572.70'
PI 442	185432.16'	986577.66'
PI 443	185441.71'	986574.24'
PI 444	185437.67'	986582.38'
PI 454	185414.39'	986653.79'
PI 455	185414.65'	986660.59'
PI 456	185421.32'	986651.67'
PI 457	185421.72'	986662.17'
PI 458	185411.59'	986674.25'
PI 459	185410.92'	986676.22'
PI 460	185392.41'	986716.59'
PI 461	185383.31'	986719.25'
PI 462	185347.27'	986696.03'
PI 463	185345.37'	986693.35'
PI 464	185344.12'	986688.26'
PI 465	185344.70'	986684.81'



KEY PLAN



SCAPE

LANDSCAPE LAYOUT PLAN 3

SCALE: 1"=10'

1"=10' 0 10 20 FT.

NYC

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

GRAPHIC SCALES CHECK BEFORE USE

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##	#####	#######	##
##	####	#######	##
##	####	######	##
1	10/2026	Addendum No.2	JD

DESIGNED BY:	DRAWN BY:	PROJECT MANAGER:
S. BARNETT	G. MORGIS	E. CAMILLERI
CHECKED BY:	DESIGN LEAD:	DESIGN MANAGER:
T. MEAD	J. DONNELLY	G. DEREAMER

Hazen Brown AND Caldwell

REGISTERED LANDSCAPE ARCHITECT JOHN DONNELLY 2368-1 STATE OF NEW YORK

NYC Environmental Protection

ACCOUNTABLE MANAGER	JESSE GOLDIN, P.E.
PORTFOLIO MANAGER	KEVIN CLARKE, P.E.

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CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

LANDSCAPE LAYOUT PLAN 3

DATE: SEPTEMBER 2026

SHEET NO: 146 OF 719

DRAWING NO. L-123.00

Last Saved By: Kelly
Paper Size Printed/Plotted: ANSI full bleed D (34.00 x 22.00 Inches)
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Date & Time Plotted: 10/30/2026 10:55 AM
Plot Style Table: BEDC_Acad_2021.ctb
Plot Scale: 1:1

LEGEND

- PAVING ZONE BOUNDARY
- PAVING ZONE 01 COLOR MIX (Z1)
  - 75% PERMEABLE CONCRETE UNIT PAVER A
  - 25% PERMEABLE CONCRETE UNIT PAVER B
  - 00% PERMEABLE CONCRETE UNIT PAVER C
- PAVING ZONE 02 COLOR MIX (Z2)
  - 28% PERMEABLE CONCRETE UNIT PAVER A
  - 50% PERMEABLE CONCRETE UNIT PAVER B
  - 22% PERMEABLE CONCRETE UNIT PAVER C
- PAVING ZONE 03 COLOR MIX (Z3)
  - 00% PERMEABLE CONCRETE UNIT PAVER A
  - 30% PERMEABLE CONCRETE UNIT PAVER B
  - 70% PERMEABLE CONCRETE UNIT PAVER C
- STORM DRAIN, SEE CIVIL DWGS
- SITE RAILING, SEE L-120 SERIES RAILING PLANS FOR RAIL TYPES
- EXPOSED AGGREGATE CONCRETE
- PT — POINT OF TANGENCY
- PI — POINT OF INTERSECTION NUMBER
- R XXX' — RADIUS
- CONCRETE ISOLATION JOINT (1 / L-902.00)
- CONCRETE SAW CUT JOINT (2 / L-902.00)

CONCRETE PAVER LAYOUT			PI 28	185409.60'	986453.96'	PI 58	185426.50'	986395.10'
NUMBER	NORTHINGS	EASTINGS	PI 29	185402.34'	986449.31'	PI 59	185435.82'	986391.34'
PI 1	185432.58'	986296.17'	PI 30	185403.01'	986445.83'	PI 60	185431.85'	986402.00'
PI 2	185436.40'	986312.61'	PI 32	185416.25'	986428.27'	PI 61	185429.41'	986421.48'
PI 3	185436.19'	986334.84'	PI 33	185410.91'	986415.37'	PI 62	185428.57'	986426.89'
PI 4	185442.92'	986339.13'	PI 34	185389.81'	986422.31'	PI 63	185430.18'	986431.46'
PI 5	185451.49'	986327.68'	PI 35	185380.64'	986415.10'	PI 64	185442.37'	986425.63'
PI 6	185460.52'	986322.89'	PI 36	185373.28'	986407.56'	PI 65	185439.81'	986421.09'
PI 7	185422.03'	986310.81'	PI 37	185436.69'	986297.54'	PI 66	185437.45'	986413.03'
PI 8	185431.38'	986325.82'	PI 38	185441.23'	986305.87'	PI 67	185440.46'	986394.97'
PI 9	185429.65'	986335.04'	PI 39	185444.87'	986317.90'	PI 68	185444.96'	986392.64'
PI 10	185431.98'	986348.75'	PI 40	185439.15'	986334.40'	PI 69	185441.39'	986410.53'
PI 11	185431.87'	986359.38'	PI 41	185442.71'	986336.13'	PI 70	185443.05'	986416.03'
PI 12	185419.67'	986367.96'	PI 42	185452.35'	986321.51'	PI 71	185448.83'	986424.30'
PI 13	185417.17'	986377.66'	PI 43	185460.25'	986314.27'	PI 72	185432.46'	986468.61'
PI 14	185431.69'	986378.29'	PI 44	185421.22'	986327.05'	PI 73	185429.96'	986452.88'
PI 15	185439.35'	986359.64'	PI 45	185427.46'	986331.95'	PI 74	185421.40'	986445.84'
PI 16	185443.73'	986352.57'	PI 46	185426.97'	986347.38'	PI 75	185416.19'	986446.92'
PI 17	185449.76'	986340.04'	PI 47	185420.74'	986363.76'	PI 76	185413.04'	986456.17'
PI 18	185461.46'	986342.80'	PI 48	185442.56'	986363.37'	PI 77	185398.56'	986446.88'
PI 19	185377.99'	986401.96'	PI 49	185435.57'	986371.29'	PI 78	185399.84'	986442.11'
PI 20	185413.37'	986408.11'	PI 50	185440.45'	986381.25'	PI 79	185409.06'	986428.55'
PI 21	185424.52'	986423.32'	PI 51	185455.67'	986370.08'	PI 80	185404.58'	986420.81'
PI 22	185426.57'	986436.80'	PI 52	185457.72'	986348.67'	PI 81	185385.90'	986427.05'
PI 23	185433.21'	986439.41'	PI 53	185424.08'	986390.47'	PI 82	185375.45'	986420.65'
PI 24	185444.95'	986436.38'	PI 54	185419.45'	986388.50'	PI 83	185370.18'	986412.40'
PI 25	185443.12'	986450.57'	PI 55	185413.55'	986390.54'			
PI 26	185424.49'	986441.66'	PI 56	185405.59'	986401.80'			
PI 27	185411.81'	986444.00'	PI 57	185406.88'	986406.52'			

2 L-920.00 — PEDESTRIAN RAMP WITH HANDRAIL ENLARGEMENT PLAN

AMPHITHEATER COBBLE ENLARGEMENT PLAN — 1 / L-804.00

3 L-804.00 — COBBLE PAVING CORNER ENLARGEMENT DETAIL

2 L-804.00 — COBBLE PAVING ENLARGEMENT DETAIL

4 L-904.00 — CONCRETE UNIT PAVERS AT ACCESS HATCHES AND UTILITY BOXES

5 L-904.00 — CONCRETE UNIT PAVERS AT MANHOLE, TYP

7 L-902.00 — CONCRETE UNIT PAVERS ON PAVER GRATE

FURNISHING, ABOVE ANCHOR BOLT, TYP

SEE CIVIL DWGS FOR MAINTENANCE YARD IMPROVEMENTS

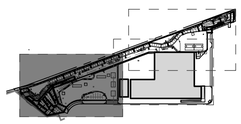
MATCH LINE, SEE L-115.00

MATCH LINE - SEE L-115.00

CONNECTION TO FUTURE PHASE CP-4

PI CORNER OF SIDEWALK

KEY PLAN



PAVING FINISHES PLAN 1

SCALE: 1"=10'

1"=10' 0 10 20 FT.

BID SET

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Hazen — Brown AND Caldwell

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CSO FACILITIES FOR GOWANUS CANAL
CONSTRUCTION PACKAGE 3 - OH-007

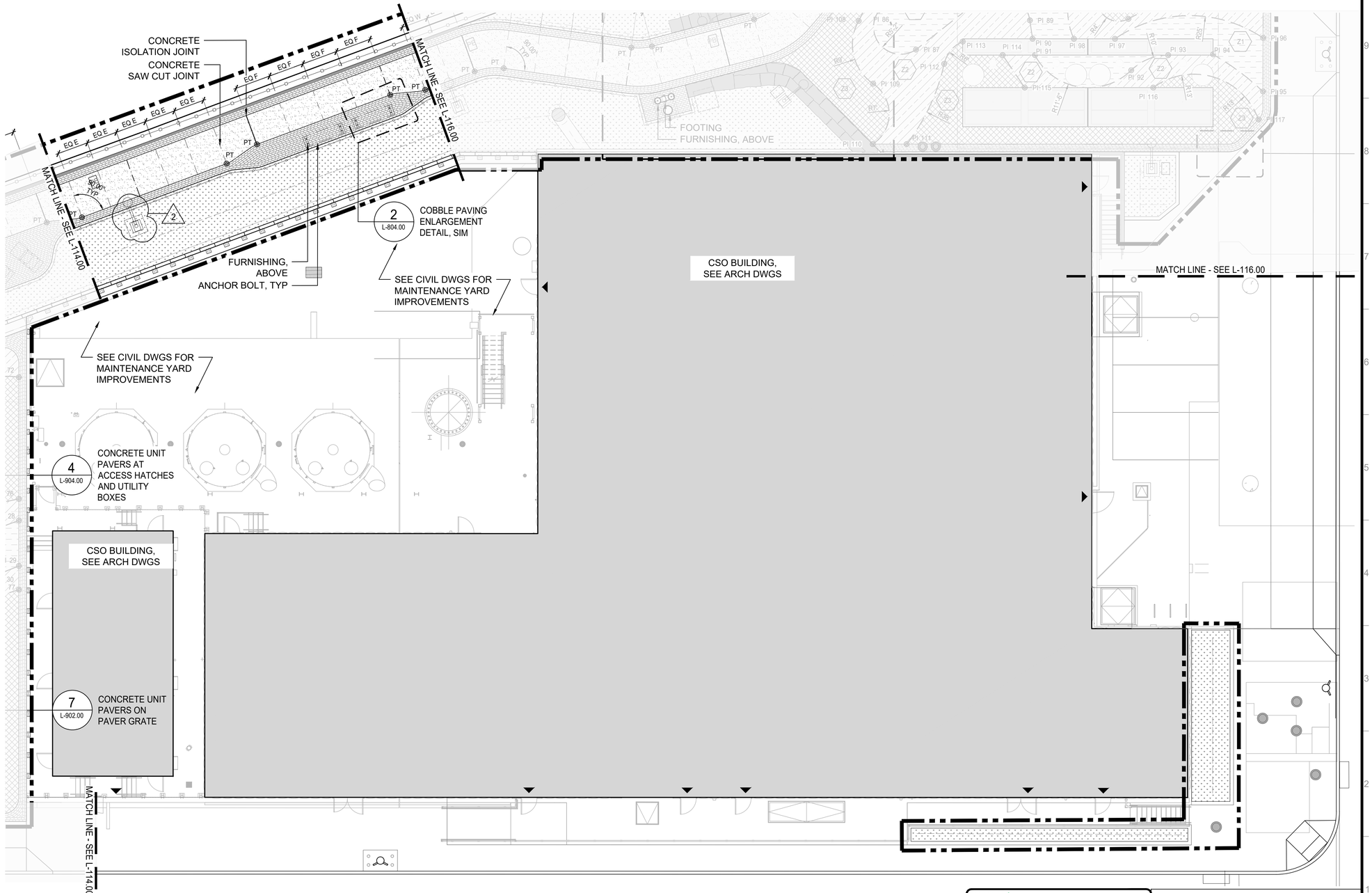
LANDSCAPE
PAVING FIELD LAYOUT PLAN 1

DATE: SEPTEMBER 2026
SHEET NO: 147 OF 719
DRAWING NO. L-124.00

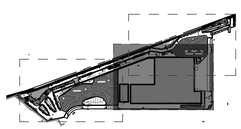
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Last Date Saved: 10/30/2026 10:05 AM
Date & Time Plotted: 10/30/2026 10:55 AM
Plot Style Table: BEDC Acad_2021.ctb
Plot Scale: 1:1

LEGEND

- STORM DRAIN, SEE CIVIL DWGS
- SITE RAILING, SEE L-120 SERIES RAILING PLANS FOR RAIL TYPES
- EXPOSED AGGREGATE CONCRETE
- PT — POINT OF TANGENCY
- PI — POINT OF INTERSECTION NUMBER
- R XXX' — RADIUS
- CONCRETE ISOLATION JOINT — 1 / L-902.00
- CONCRETE SAW CUT JOINT — 2 / L-902.00



KEY PLAN



SCAPE

PAVING FINISHES PLAN 2

SCALE: 1'=10'

1"=10' 0 10 20 FT.

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

GRAPHIC SCALES CHECK BEFORE USE

IF SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT. SCALE ACCORDINGLY

NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.
##	####	#######	##
##	####	#######	##
##	#####	#######	##
##	####	#######	##
##	####	######	##
1	10/2026	Addendum No.2	JD

DESIGNED BY:	DRAWN BY:	PROJECT MANAGER:
S. BARNETT	G. MORGIS	E. CAMILLERI
CHECKED BY:	DESIGN LEAD:	DESIGN MANAGER:
T. MEAD	J. DONNELLY	G. DEREAMER

Hazen | Brown AND Caldwell

REGISTERED LANDSCAPE ARCHITECT JOHN DONNELLY 2368-1 STATE OF NEW YORK

NYC Environmental Protection

ACCOUNTABLE MANAGER
JESSE GOLDIN, P.E.
PORTFOLIO MANAGER
KEVIN CLARKE, P.E.

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CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

LANDSCAPE
PAVING FIELD LAYOUT PLAN 2

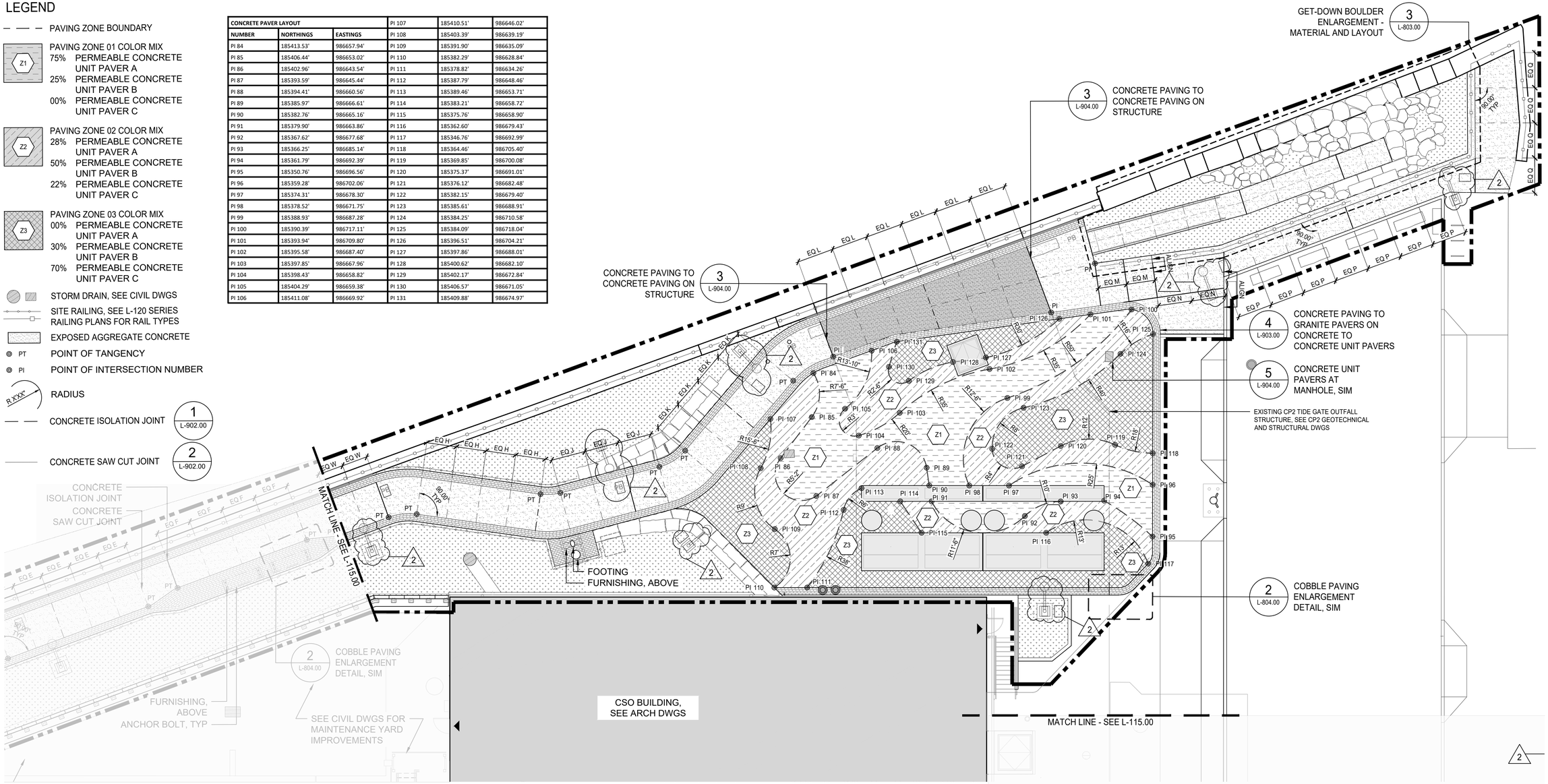
DATE: SEPTEMBER 2026
SHEET NO: 148 OF 719
DRAWING NO. L-125.00

Last Saved By: Kelly
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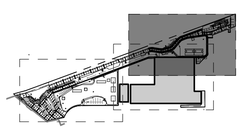
LEGEND

- PAVING ZONE BOUNDARY
- PAVING ZONE 01 COLOR MIX (Z1)
  - 75% PERMEABLE CONCRETE UNIT PAVER A
  - 25% PERMEABLE CONCRETE UNIT PAVER B
  - 00% PERMEABLE CONCRETE UNIT PAVER C
- PAVING ZONE 02 COLOR MIX (Z2)
  - 28% PERMEABLE CONCRETE UNIT PAVER A
  - 50% PERMEABLE CONCRETE UNIT PAVER B
  - 22% PERMEABLE CONCRETE UNIT PAVER C
- PAVING ZONE 03 COLOR MIX (Z3)
  - 00% PERMEABLE CONCRETE UNIT PAVER A
  - 30% PERMEABLE CONCRETE UNIT PAVER B
  - 70% PERMEABLE CONCRETE UNIT PAVER C
- STORM DRAIN, SEE CIVIL DWGS
- SITE RAILING, SEE L-120 SERIES RAILING PLANS FOR RAIL TYPES
- EXPOSED AGGREGATE CONCRETE
- PT — POINT OF TANGENCY
- PI — POINT OF INTERSECTION NUMBER
- R XXX' — RADIUS
- CONCRETE ISOLATION JOINT — 1 / L-902.00
- CONCRETE SAW CUT JOINT — 2 / L-902.00

CONCRETE PAVER LAYOUT			PI 107	185410.51'	986646.02'
NUMBER	NORTHINGS	EASTINGS	PI 108	185403.39'	986639.19'
PI 84	185413.53'	986657.94'	PI 109	185391.90'	986635.09'
PI 85	185406.44'	986653.02'	PI 110	185382.29'	986628.84'
PI 86	185402.96'	986643.54'	PI 111	185378.82'	986634.26'
PI 87	185393.59'	986645.44'	PI 112	185387.79'	986648.46'
PI 88	185394.41'	986660.56'	PI 113	185389.46'	986653.71'
PI 89	185385.97'	986666.61'	PI 114	185383.21'	986658.72'
PI 90	185382.76'	986665.16'	PI 115	185375.76'	986658.90'
PI 91	185379.90'	986663.86'	PI 116	185362.60'	986679.43'
PI 92	185367.62'	986677.68'	PI 117	185346.76'	986692.99'
PI 93	185366.25'	986685.14'	PI 118	185364.46'	986705.40'
PI 94	185361.79'	986692.39'	PI 119	185369.85'	986700.08'
PI 95	185350.76'	986696.56'	PI 120	185375.37'	986691.01'
PI 96	185359.28'	986702.06'	PI 121	185376.12'	986682.48'
PI 97	185374.31'	986678.30'	PI 122	185382.15'	986679.40'
PI 98	185378.52'	986671.75'	PI 123	185385.61'	986688.91'
PI 99	185388.93'	986687.28'	PI 124	185384.25'	986710.58'
PI 100	185390.39'	986717.11'	PI 125	185384.09'	986718.04'
PI 101	185393.94'	986709.80'	PI 126	185396.51'	986704.21'
PI 102	185395.58'	986687.40'	PI 127	185397.86'	986688.01'
PI 103	185397.85'	986667.96'	PI 128	185400.62'	986682.10'
PI 104	185398.43'	986658.82'	PI 129	185402.17'	986672.84'
PI 105	185404.29'	986659.38'	PI 130	185406.57'	986671.05'
PI 106	185411.08'	986669.92'	PI 131	185409.88'	986674.97'



KEY PLAN



SCAPE

PAVING FINISHES PLAN 3

SCALE: 1"=10'

1"=10' 0 10 20 FT.

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

GRAPHIC SCALES CHECK BEFORE USE

IF SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT. SCALE ACCORDINGLY

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##	####	#######	##
##	####	#######	##
##	####	######	##
1	10/2026	Addendum No.2	JD

DESIGNED BY: S. BARNETT | DRAWN BY: G. MORGIS | PROJECT MANAGER: E. CAMILLERI
CHECKED BY: T. MEAD | DESIGN LEAD: J. DONNELLY | DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

REGISTERED LANDSCAPE ARCHITECT JOHN DONNELLY 2368-1 STATE OF NEW YORK

NYC Environmental Protection

ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.
PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

LANDSCAPE
PAVING FIELD LAYOUT PLAN 3

DATE: SEPTEMBER 2026
SHEET NO: 149 OF 719
DRAWING NO. L-126.00

Last Saved By: Kelly
Paper Size Printed/Plotted: ANSI full bleed D (34.00 x 22.00 Inches)
Drawing File Name & Drive Location: C:\Users\kelly\DC\ACCDocs\Hazen and Sawyer\90409-000_CSO-GC-SFS-DES-OH\Project Files\000-Project\Wise
Last Date Saved: 10/30/2026 10:09 AM
Date & Time Plotted: 10/30/2026 10:56 AM
Plot Scale: 1:1
Plot Style Table: BEDC_Acad_2021.ctb

LEGEND

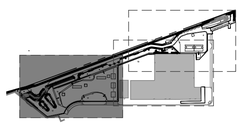
- MATCH LINE - SEE L-X00
- LIMIT OF WORK
- RAIL TYPE 1: GOWANUS GUARDRAIL (A POST, V POST)
- RAIL TYPE 2A: INLAND GUARDRAIL
- RAIL TYPE 2B: INLAND HANDRAIL
- RAIL TYPE 3: PLANT RAIL
- BUILDING ENTRANCE
- ALIGN — ALIGN INDICATED FEATURES
- ℄ — CENTERLINE
- STORM DRAIN, SEE CIVIL DWGS

NOTE:
SEE L-930.00 - L936.00 RAILING DETAILS FOR TYPICAL LENGTHS UNLESS OTHERWISE NOTED.

FURNISHINGS LAYOUT		
NUMBER	NORTHINGS	EASTINGS
PI 601	185491.49'	986227.19'
PI 602	185483.26'	986227.86'
PI 603	185482.03'	986230.43'
PI 604	185473.80'	986231.09'
PI 605	185461.17'	986244.88'
PI 606	185454.27'	986249.40'
PI 607	185449.53'	986251.02'
PI 608	185441.31'	986251.69'
PI 609	185457.45'	986258.45'
PI 610	185465.60'	986259.77'
PI 611	185460.86'	986267.80'
PI 612	185453.38'	986271.29'
PI 613	185446.02'	986272.69'
PI 614	185437.78'	986272.19'
PI 615	185451.08'	986282.77'
PI 616	185459.16'	986281.11'
PI 617	185464.15'	986281.35'
PI 618	185472.04'	986283.77'
PI 619	185475.19'	986295.77'
PI 620	185466.93'	986296.00'
PI 621	185462.06'	986294.90'
PI 622	185454.70'	986291.15'
PI 623	185449.38'	986292.03'
PI 624	185442.02'	986288.29'
PI 625	185439.85'	986289.15'
PI 626	185437.64'	986288.75'
PI 627	185460.87'	986319.65'
PI 628	185463.09'	986327.56'
PI 629	185463.18'	986329.55'
PI 630	185461.68'	986337.63'
PI 631	185455.97'	986376.38'
PI 632	185453.21'	986384.12'
PI 633	185450.51'	986388.33'
PI 634	185444.63'	986394.06'
PI 635	185422.00'	986356.77'
PI 636	185418.23'	986364.06'
PI 637	185417.01'	986368.91'
PI 638	185416.84'	986377.12'
PI 639	185474.87'	986386.26'
PI 640	185471.17'	986393.65'
PI 641	185470.76'	986395.60'
PI 642	185471.06'	986403.85'
PI 643	185458.56'	986456.67'
PI 644	185453.46'	986460.96'
PI 645	185457.30'	986462.37'
PI 646	185452.19'	986466.66'
PI 647	185454.65'	986474.28'
PI 648	185449.55'	986478.57'
PI 649	185453.39'	986479.98'
PI 650	185448.28'	986484.27'
PT 685	185466.74'	986477.30'
PT 686	185512.89'	986264.03'
PT 687	185525.62'	986228.15'
PT 688	185529.37'	986216.04'
PT 695	185510.73'	986218.74'
PT 696	185508.29'	986220.16'
PT 697	185467.87'	986250.24'
PT 698	185466.45'	986252.68'
PT 699	185454.09'	986250.77'
PT 700	185452.88'	986253.32'
PT 701	185439.55'	986276.04'
PT 702	185437.75'	986278.22'
PT 703	185473.93'	986273.14'
PT 704	185472.51'	986275.59'
PT 705	185453.46'	986296.61'
PT 706	185451.09'	986298.15'
PT 707	185487.98'	986311.74'
PT 708	185485.61'	986313.29'
PT 709	185474.60'	986375.96'
PT 710	185470.46'	986378.67'
PT 711	185460.22'	986438.74'
PT 712	185457.85'	986440.29'
PT 727	185448.10'	986433.59'
PT 728	185445.73'	986435.13'
PT 729	185393.35'	986400.80'
PT 730	185390.96'	986399.29'
PT 731	185418.52'	986354.40'
PT 732	185416.15'	986355.95'
PT 733	185467.52'	986347.64'
PT 734	185465.15'	986349.18'

GUARDRAIL CORNER TRUSS — 1 / L-931.00
PLANT RAIL — 1 / L-936.00
PLANT RAIL SPACING 6'-0" OC, 3'-0" OC AT CURVES, TYP
ALIGN POSTS ACROSS PATHWAYS AND RAMP, TYP
INLAND GUARDRAIL WITH HANDRAIL — 5 / L-934.00
MATCH LINE - SEE L-122.00
FENCING AT CSO YARD, SEE ARCH DWGS
GOWANUS CANAL
PARALLEL TO SEE WALL
5'-6" OC, VIF
HANDRAIL — 1 / L-934.00
INLAND GUARDRAIL — 3 / L-934.00
TRASH RECEPTACLE — 2 / L-944.00
AMPHITHEATER ENLARGEMENT PLAN - 3 / L-801.00
PLANT RAIL, TYP — 1 / L-936.00

KEY PLAN



FURNISHING LAYOUT PLAN 1

SCALE: 1"=10'

1"=10' 0 10 20 FT.

SCAPE

BID SET
SUBMITTAL DATE: SEPTEMBER 2026

GRAPHIC SCALES CHECK BEFORE USE

IF SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT. SCALE ACCORDINGLY

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##	####	#######	##
##	####	######	##
1	10/2026	Addendum No.2	JD

DESIGNED BY: S. BARNETT	DRAWN BY: G. MORGIS	PROJECT MANAGER: E. CAMILLERI
CHECKED BY: T. MEAD	DESIGN LEAD: J. DONNELLY	DESIGN MANAGER: G. DEREAMER

Hazen — Brown AND Caldwell

REGISTERED LANDSCAPE ARCHITECT JOHN DONNELLY 2368-1 STATE OF NEW YORK

NYC Environmental Protection

ACCOUNTABLE MANAGER	JESSE GOLDIN, P.E.
PORTFOLIO MANAGER	KEVIN CLARKE, P.E.

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LANDSCAPE
FURNISHING LAYOUT PLAN 1

DATE: SEPTEMBER 2026
SHEET NO: 150 OF 719
DRAWING NO. L-131.00

Last Saved By: Kelly
Last Date Saved: 10/30/2026 10:09 AM
Paper Size Printed/Plotted: ANSI full bleed D (34.00 x 22.00 Inches)
Drawing File Name & Drive Location: C:\Users\kelly\DCACDocs\Hazen and Sawyer\90409-000_CSO-GC-SFS-DES-OH\Project Files\000-ProjectWise Lanndscape\CP-03303_PLTIL-131.00 FURNISHING LAYOUT PLAN 1.dwg
Date & Time Plotted: 10/30/2026 10:57 AM
Plot Style Table: BEDC_Acad_2021.ctb
Plot Scale: 1:1

LEGEND

- MATCH LINE - SEE L-X00
- LIMIT OF WORK
- RAIL TYPE 1: GOWANUS GUARDRAIL (A POST, V POST)
- RAIL TYPE 2A: INLAND GUARDRAIL
- RAIL TYPE 2B: INLAND HANDRAIL
- RAIL TYPE 3: PLANT RAIL
- BUILDING ENTRANCE
- ALIGN — ALIGN INDICATED FEATURES
- ℄ — CENTERLINE
- STORM DRAIN, SEE CIVIL DWGS

FURNISHINGS LAYOUT		
NUMBER	NORTHINGS	EASTINGS
PI 651	185441.76'	986538.43'
PI 652	185438.07'	986545.82'
PI 653	185439.63'	986548.20'
PI 654	185435.95'	986555.59'
PT 713	185445.73'	986502.09'
PT 714	185443.36'	986503.64'

2

GOWANUS CANAL

MATCH LINE - SEE L-123.00

MATCH LINE - SEE L-121.00

PI 653
PI 652
PI 654
PI 651
PI 675
PI 676
PI 646
PI 690
PT 713
PT 714
PT 716
PT 719
PT 720
PT 721
PT 722

2

1
L-936.00
PLANT RAIL

PLANT RAIL SPACING 6'-0" OC,
3'-0" OC AT CURVES, TYP

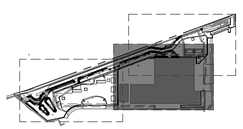
FENCING AT CSO YARD,
SEE ARCH DWGS

CSO BUILDING,
SEE ARCH DWGS

MATCH LINE - SEE L-123.00

MATCH LINE - SEE L-121.00

KEY PLAN



SCAPE

FURNISHING LAYOUT PLAN 2

SCALE: 1'=10'

1"=10' 0 10 20 FT.

NYC

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

GRAPHIC SCALES CHECK BEFORE USE

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NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.
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##	####	#######	##
##	#####	#######	##
##	####	#######	##
##	####	######	##
1	10/2026	Addendum No.2	JD

DESIGNED BY:	DRAWN BY:	PROJECT MANAGER:
S. BARNETT	G. MORGIS	E. CAMILLERI
CHECKED BY:	DESIGN LEAD:	DESIGN MANAGER:
T. MEAD	J. DONNELLY	G. DEREAMER

Hazen | Brown AND Caldwell

REGISTERED LANDSCAPE ARCHITECT JOHN DONNELLY 2368-1 STATE OF NEW YORK

NYC Environmental Protection

ACCOUNTABLE MANAGER
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CORONA, NEW YORK 11368
www.nyc.gov/dep

CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

LANDSCAPE
FURNISHING LAYOUT PLAN 2

DATE: SEPTEMBER 2026
SHEET NO: 151 OF 719
DRAWING NO. L-132.00

Last Saved By: Kelly
Paper Size Printed/Plotted: ANSI full bleed D (34.00 X 22.00 Inches)
Drawing File Name & Drive Location: C:\Users\kelly\DCACCDocs\Hazen and Sawyer\90409-000_CSO-GC-SFS-DES-OH\Project Files\000-ProjectWise\Landscape\CP-03\03_PLTIL-132.00 FURNISHING LAYOUT PLAN 2.dwg
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Date & Time Plotted: 10/30/2026 10:57 AM
Plot Scale: 1:1
Plot Style Table: BEDC_Acad_2021.ctb

LEGEND

- MATCH LINE - SEE L-X00
- LIMIT OF WORK
- RAIL TYPE 1: GOWANUS GUARDRAIL (A POST / V POST)
- RAIL TYPE 2A: INLAND GUARDRAIL
- RAIL TYPE 2B: INLAND HANDRAIL
- RAIL TYPE 3: PLANT RAIL
- BUILDING ENTRANCE
- ALIGN — ALIGN INDICATED FEATURES
- ℄ — CENTERLINE
- STORM DRAIN, SEE CIVIL DWGS

FURNISHINGS LAYOUT		
NUMBER	NORTHINGS	EASTINGS
PT 655	185420.27'	986651.64'
PI 656	185421.22'	986657.27'
PI 657	185419.47'	986661.20'
PI 658	185420.76'	986664.49'
PI 659	185417.88'	986668.22'
PI 660	185419.17'	986671.59'
PI 661	185416.33'	986675.56'
PI 662	185416.96'	986681.86'
PI 663	185414.05'	986685.68'
PI 664	185414.68'	986691.97'
PI 665	185411.77'	986695.80'
PI 666	185412.40'	986702.09'
PI 667	185381.52'	986739.71'
PI 668	185382.21'	986745.99'
PI 669	185379.41'	986749.48'
PI 670	185380.10'	986755.77'
PI 671	185377.31'	986759.26'
PI 672	185378.00'	986765.55'
PI 673	185375.20'	986769.04'
PI 674	185375.88'	986775.29'
PI 675	185376.78'	986636.57'
PI 676	185375.44'	986638.68'
PI 683	185394.02'	986809.86'
PI 684	185378.90'	986801.80'
PI 693	185409.50'	986705.92'
PI 694	185410.12'	986712.17'
PT 715	185431.94'	986565.62'
PT 716	185429.58'	986567.18'
PT 717	185425.23'	986614.46'
PT 718	185422.86'	986616.01'
PT 719	185399.12'	986617.98'
PT 720	185397.41'	986620.24'
PT 721	185351.23'	986670.60'
PT 722	185348.47'	986671.23'
PT 723	185385.58'	986731.09'
PT 724	185383.21'	986732.63'
PT 725	185375.47'	986781.36'
PT 726	185373.10'	986782.90'

1 L-932.00 GUARDRAIL TERMINATION POST

BULKHEAD TRANSITION ELEVATION, SEE L-705.00 - SECTIONS

1 L-932.00 GUARDRAIL TERMINATION POST

1 L-930.00 GOWANUS GUARDRAIL

1 L-932.00 GUARDRAIL TERMINATION POST

BEGINNING OF GUARDRAIL, EDGE OF BASEPLATE TO BE 3" FROM EDGE OF EXISTING BULKHEAD, VIF, SEE L-705.00 - SECTIONS

GUARDRAIL CORNER TRUSS 1 L-931.00

GUARDRAIL TERMINATION POST, COORDINATE WITH FIELD CONDITIONS 1 L-932.00

TIDE GATE BOULDER ENLARGEMENT PLAN - MATERIAL AND LAYOUT 2 L-802.00

6 L-922.00 TRAFFIC BARRIER BLOCK AT BULKHEAD, TYP

3 L-944.00 BOLLARD

3 L-803.00 GET-DOWN BOULDER ENLARGEMENT - MATERIAL AND LAYOUT

2 L-944.00 TRASH RECEPTACLE

1 L-936.00 PLANT RAIL, TYP

PLANT RAIL SPACING 6'-0" OC, 3'-0" OC AT CURVES

SLOPED GUARDRAIL

3" MIN CLEARANCE

RAIL EQ

EQ

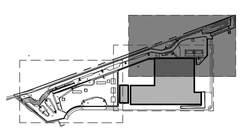
PI 653 PI 652 PI 654 PI 651 PI 656 PI 657 PI 658 PI 659 PI 660 PI 661 PI 662 PI 663 PI 664 PI 665 PI 666 PI 693 PI 694 PI 675 PI 676 PI 674 PI 673 PI 672 PI 671 PI 670 PI 669 PI 668 PI 667

PT 713 PT 714 PT 715 PT 716 PT 717 PT 718 PT 719 PT 720 PT 721 PT 722 PT 723 PT 724 PT 725 PT 726 PT 683 PT 684

MATCH LINE - SEE L-122.00

MATCH LINE - SEE L-122.00

KEY PLAN



SCAPE

FURNISHING LAYOUT PLAN 3

SCALE: 1"=10'

1"=10' 0 10 20 FT.

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

GRAPHIC SCALES CHECK BEFORE USE

IF SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT. SCALE ACCORDINGLY

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##	####	######	##
1	10/2026	Addendum No.2	JD

DESIGNED BY: S. BARNETT | DRAWN BY: G. MORGIS | PROJECT MANAGER: E. CAMILLERI

CHECKED BY: T. MEAD | DESIGN LEAD: J. DONNELLY | DESIGN MANAGER: G. DEREAMER

Hazen AND Brown and Caldwell

REGISTERED LANDSCAPE ARCHITECT JOHN DONNELLY 2368-1 STATE OF NEW YORK

NYC Environmental Protection

ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.

PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

LANDSCAPE
FURNISHING LAYOUT PLAN 3

DATE: SEPTEMBER 2026

SHEET NO: 152 OF 719

DRAWING NO. L-133.00

Last Saved By: Kelly
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Date & Time Plotted: 10/30/2026 10:57 AM
Plot Scale: 1:1
Plot Style Table: BEDC_Acad_2021.ctb

LEGEND

- MATCH LINE - SEE L-X00
- LIMIT OF WORK
- STRUCTURE UNDERNEATH
- ELECTRICAL BOX, SEE ELECTRICAL DWGS
- UNDER DRAIN, SEE CIVIL DWGS
- STORM DRAIN, SEE CIVIL DWGS
- BUILDING ENTRANCE
- EL 00.00 + PROPOSED SPOT ELEVATION
- FS 00.00 / FG 00.00 + FINISH SURFACE / FINISH GRADE ELEVATION
- TC 00.00 / BC 00.00 + TOP / BOTTOM OF CURB ELEVATION
- TS 00.00 / BS 00.00 + TOP / BOTTOM OF STAIR ELEVATION
- TW 00.00 + TOP OF WALL ELEVATION
- BW 00.00 + BOTTOM OF WALL ELEVATION
- TR 00.00 + TOP OF RAMP ELEVATION
- BR 00.00 + BOTTOM OF RAMP ELEVATION
- TD 00.00 + TOP OF DRAIN ELEVATION
- HP 00.00 + HIGH POINT ELEVATION
- LP 00.00 + LOW POINT ELEVATION
- XX.XX% PROPOSED SLOPE
- CATCH BASIN, SEE CIVIL DWGS
- POLE MOUNTED LIGHT, SEE ELECTRICAL DWGS
- POLE MOUNTED FLOOD LIGHT, SEE ELECTRICAL DWGS

NOTE:
HARDSCAPE GRADING IS SHOWN AT 0.10 FT INTERVALS
SOFTSCAPE GRADING IS SHOWN AT 0.25 FT INTERVALS

PEDESTRIAN RAMP WITH HANDRAIL ENLARGEMENT PLAN — 2 / L-920.00

EXISTING CONCRETE DEADMAN, SEE OH-007 BULKHEAD RECORD DWGS

AMPHITHEATER ENLARGEMENT PLAN - GRADING — 1 / L-801.00

SLOPE STORM DRAIN WITH PROPOSED GRADE, TYP

CONNECTION TO FUTURE PHASE CP-4

ADJACENT GRADING, SEE CIVIL DWGS

SCUPPER CURB, TYP — 6 / L-902.00

SEE CIVIL DWGS FOR TOP-OF-TANK GRADING

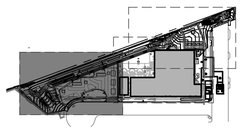
STORAGE TANK, SEE CP-2 STRUCTURAL DWGS

SOE WALL, SEE CP2 GEOTECHNICAL DWGS

MATCH LINE - SEE L-142

MATCH LINE - SEE L-142

KEY PLAN



SCAPE

LANDSCAPE GRADING PLAN 1

SCALE: 1"=10'

1"=10' 0 10 20 FT.

NYC

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

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Hazen — Brown AND Caldwell

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PORTFOLIO MANAGER	KEVIN CLARKE, P.E.

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LANDSCAPE GRADING PLAN 1

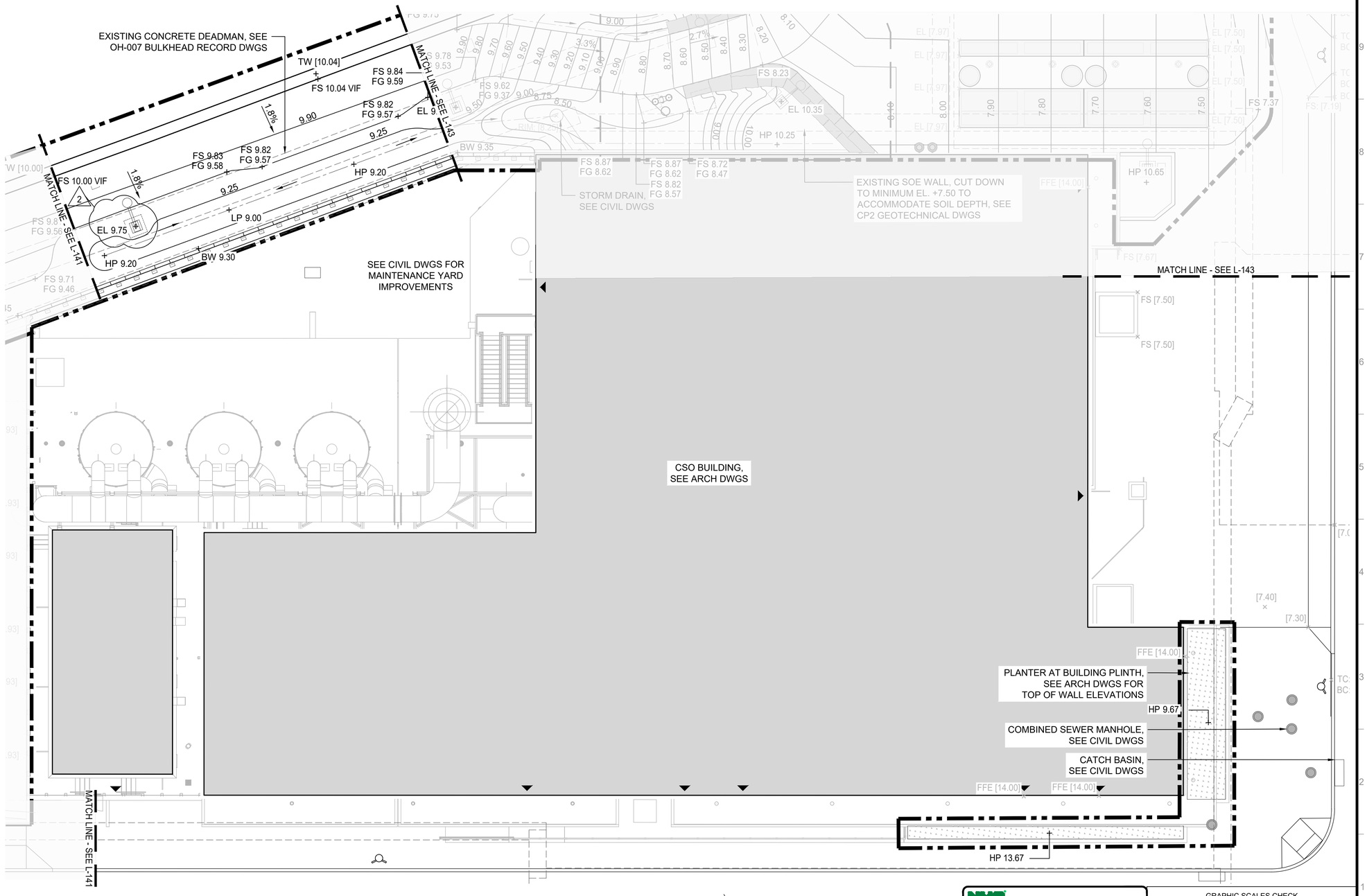
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DRAWING NO. L-141.00

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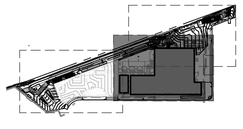
LEGEND

- MATCH LINE - SEE L-X00
- LIMIT OF WORK
- STRUCTURE UNDERNEATH
- ELECTRICAL BOX, SEE ELECTRICAL DWGS
- UNDER DRAIN, SEE CIVIL DWGS
- STORM DRAIN, SEE CIVIL DWGS
- BUILDING ENTRANCE
- EL 00.00 + PROPOSED SPOT ELEVATION
- FS 00.00 FINISH SURFACE ELEVATION
- FG 00.00 + FINISH GRADE ELEVATION
- TC 00.00 TOP OF CURB ELEVATION
- BC 00.00 + BOTTOM OF CURB ELEVATION
- TS 00.00 TOP OF STAIR ELEVATION
- BS 00.00 + BOTTOM OF STAIR ELEVATION
- TW 00.00 + TOP OF WALL ELEVATION
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- BR 00.00 + BOTTOM OF RAMP ELEVATION
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- HP 00.00 + HIGH POINT ELEVATION
- LP 00.00 + LOW POINT ELEVATION
- XX.XX% PROPOSED SLOPE
- CATCH BASIN, SEE CIVIL DWGS
- POLE MOUNTED LIGHT, SEE ELECTRICAL DWGS
- POLE MOUNTED FLOOD LIGHT, SEE ELECTRICAL DWGS

NOTE:
HARDSCAPE GRADING IS SHOWN AT 0.10 FT INTERVALS
SOFTSCAPE GRADING IS SHOWN AT 0.25 FT INTERVALS



KEY PLAN



LANDSCAPE GRADING PLAN 2

SCALE: 1"=10'

1"=10' 0 10 20 FT.

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

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1	10/2026	Addendum No.2	JD

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CHECKED BY: T. MEAD | DESIGN LEAD: J. DONNELLY | DESIGN MANAGER: G. DEREAMER

ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.
PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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CONSTRUCTION PACKAGE 3 - OH-007

LANDSCAPE GRADING PLAN 2

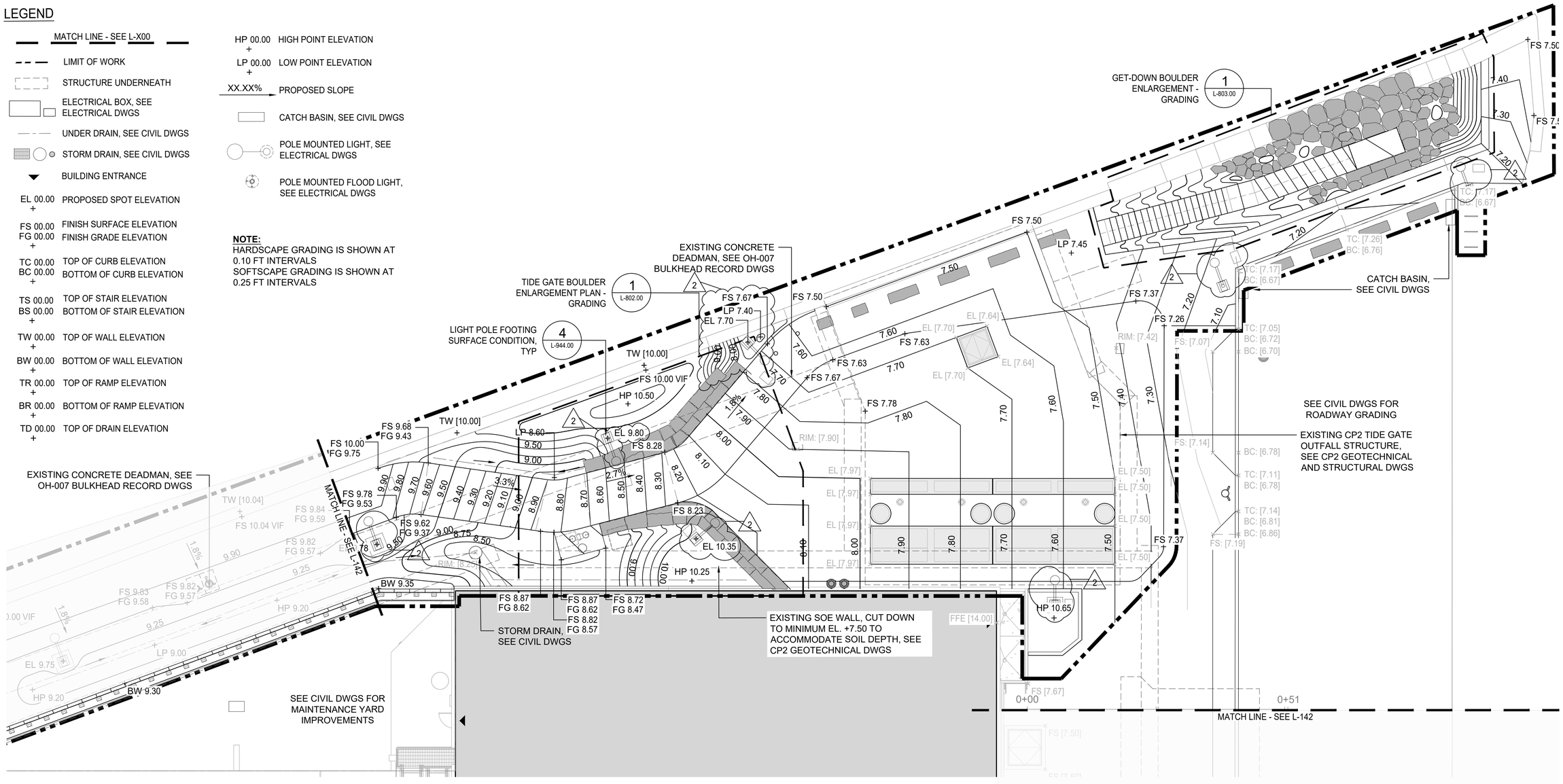
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SHEET NO: 154 OF 719
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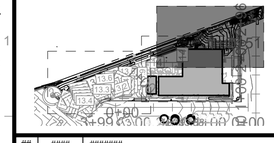
LEGEND

- MATCH LINE - SEE L-X00
- LIMIT OF WORK
- STRUCTURE UNDERNEATH
- ELECTRICAL BOX, SEE ELECTRICAL DWGS
- UNDER DRAIN, SEE CIVIL DWGS
- STORM DRAIN, SEE CIVIL DWGS
- BUILDING ENTRANCE
- EL 00.00 PROPOSED SPOT ELEVATION
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- TD 00.00 TOP OF DRAIN ELEVATION
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- LP 00.00 LOW POINT ELEVATION
- XX.XX% PROPOSED SLOPE
- CATCH BASIN, SEE CIVIL DWGS
- POLE MOUNTED LIGHT, SEE ELECTRICAL DWGS
- POLE MOUNTED FLOOD LIGHT, SEE ELECTRICAL DWGS

NOTE:
HARDSCAPE GRADING IS SHOWN AT 0.10 FT INTERVALS
SOFTSCAPE GRADING IS SHOWN AT 0.25 FT INTERVALS



KEY PLAN



LANDSCAPE GRADING PLAN 3

SCALE: 1"=10'

1"=10' 0 10 20 FT.

BID SET

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ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.
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CONSTRUCTION PACKAGE 3 - OH-007

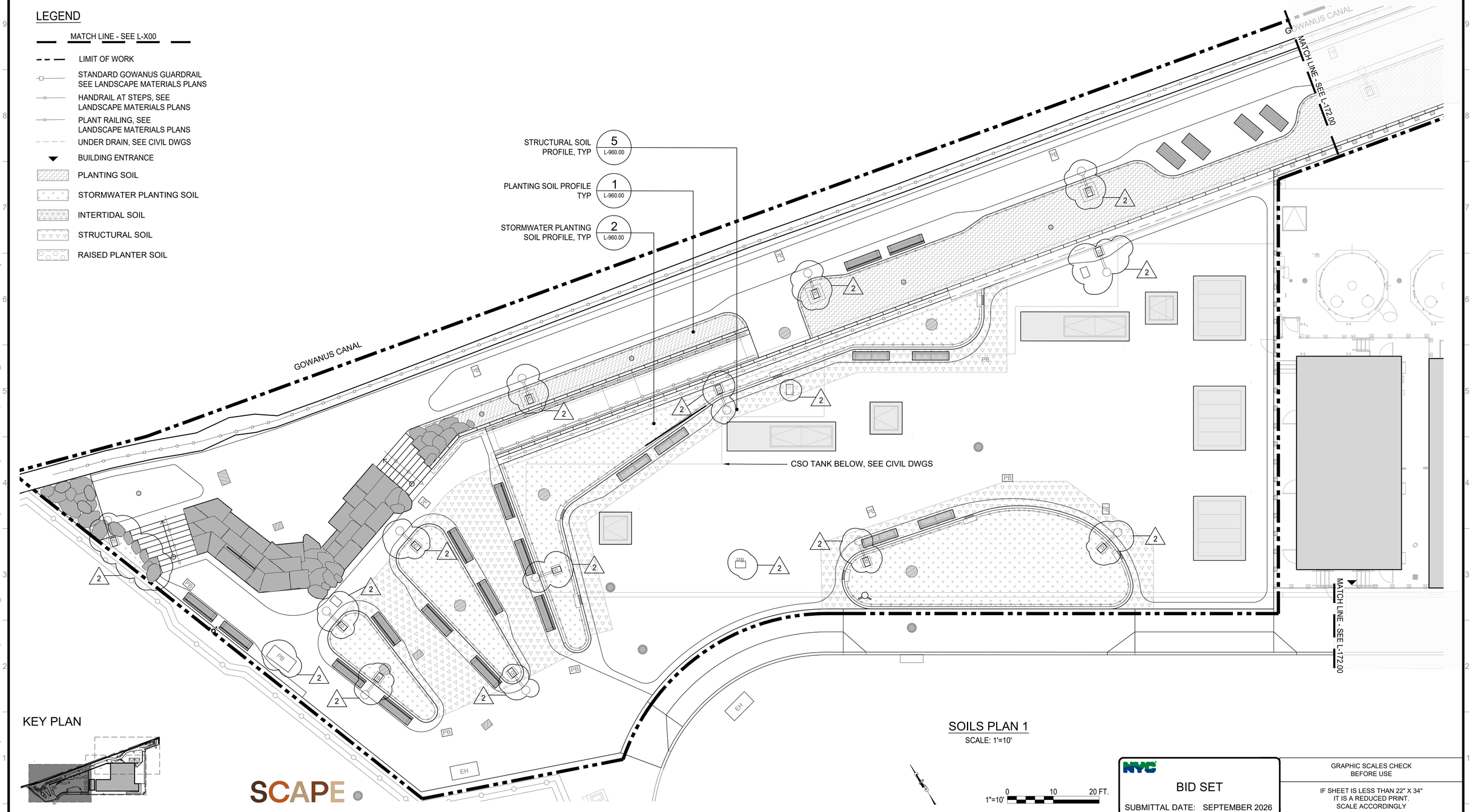
LANDSCAPE GRADING PLAN 3

DATE: SEPTEMBER 2026
SHEET NO: 155 OF 719
DRAWING NO. L-143.00

Last Saved By: Kelly
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Plot Scale: 1:1

LEGEND

- MATCH LINE - SEE L-X00
- LIMIT OF WORK
- STANDARD GOWANUS GUARDRAIL SEE LANDSCAPE MATERIALS PLANS
- HANDRAIL AT STEPS, SEE LANDSCAPE MATERIALS PLANS
- PLANT RAILING, SEE LANDSCAPE MATERIALS PLANS
- UNDER DRAIN, SEE CIVIL DWGS
- BUILDING ENTRANCE
- PLANTING SOIL
- STORMWATER PLANTING SOIL
- INTERTIDAL SOIL
- STRUCTURAL SOIL
- RAISED PLANTER SOIL



KEY PLAN

SCAPE

SOILS PLAN 1

SCALE: 1"=10'

1"=10' 0 10 20 FT.

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

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Hazen | Brown AND Caldwell

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LANDSCAPE
SOILS PLAN 1

DATE: SEPTEMBER 2026

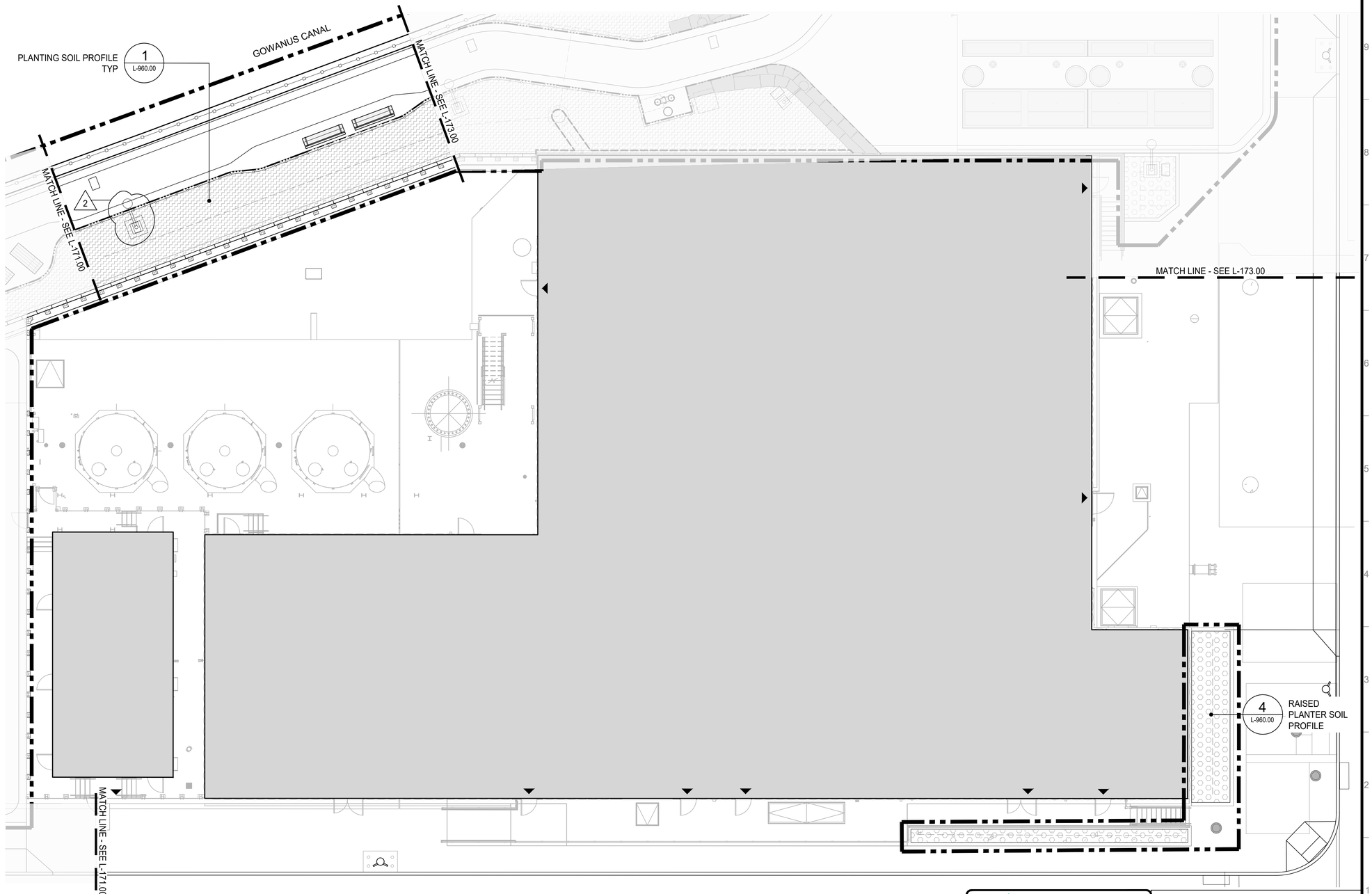
SHEET NO: 156 OF 719

DRAWING NO. L-151.00

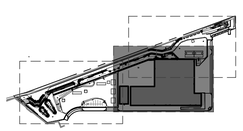
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LEGEND

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- UNDER DRAIN, SEE CIVIL DWGS
- BUILDING ENTRANCE
- PLANTING SOIL
- STORMWATER PLANTING SOIL
- INTERTIDAL SOIL
- STRUCTURAL SOIL
- RAISED PLANTER SOIL



KEY PLAN



SCAPE

SOILS PLAN 2

SCALE: 1'=10'

1"=10' 0 10 20 FT.

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

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##	####	######	##
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S. BARNETT	G. MORGIS	E. CAMILLERI
CHECKED BY:	DESIGN LEAD:	DESIGN MANAGER:
T. MEAD	J. DONNELLY	G. DEREAMER

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LANDSCAPE
SOILS PLAN 2

DATE: SEPTEMBER 2026

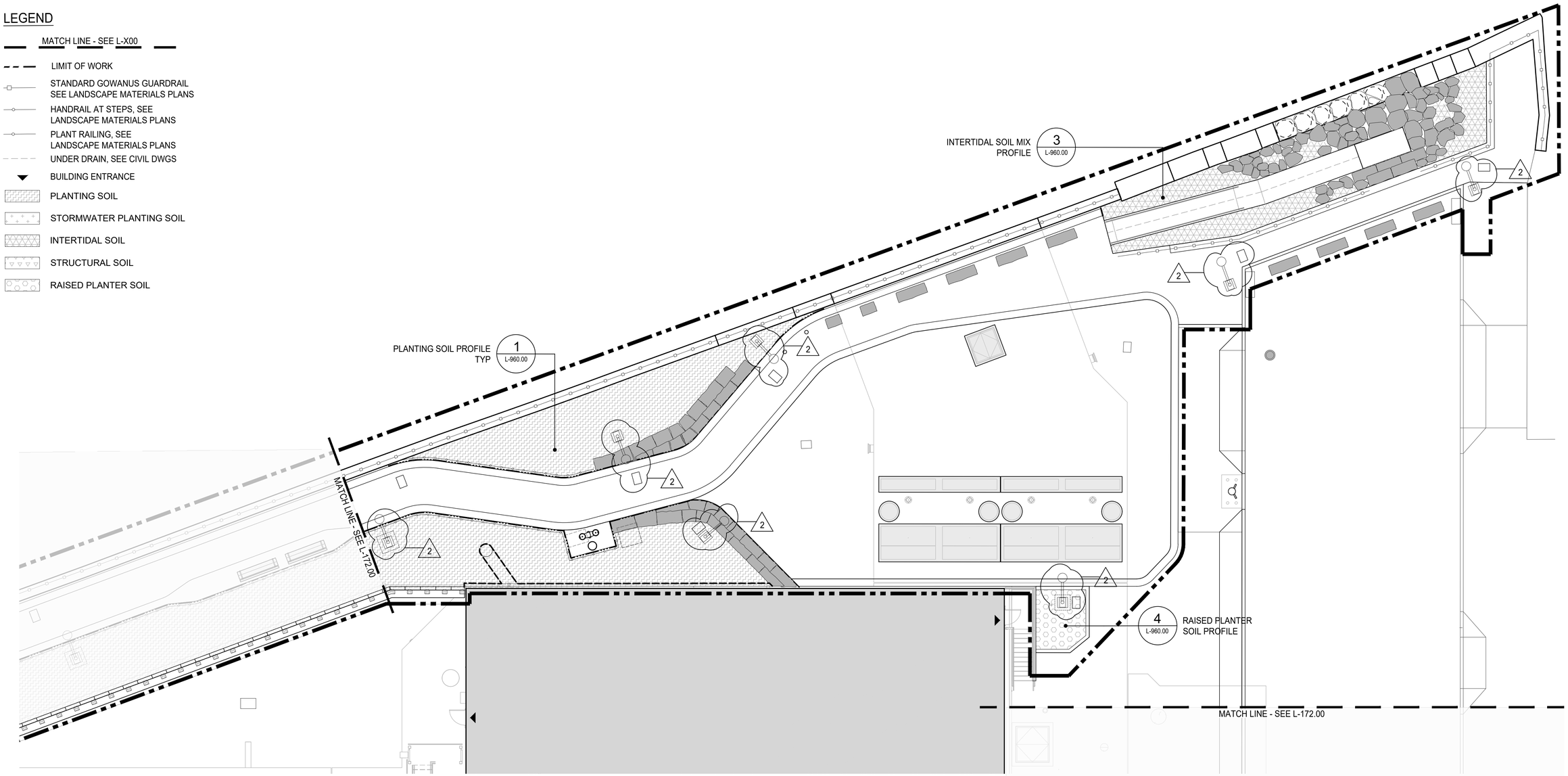
SHEET NO: 157 OF 719

DRAWING NO. L-152.00

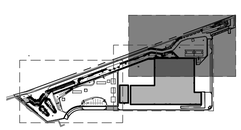
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Date & Time Plotted: 10/30/2026 10:59 AM
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Plot Scale: 1:1

LEGEND

- MATCH LINE - SEE L-X00
- LIMIT OF WORK
- STANDARD GOWANUS GUARDRAIL SEE LANDSCAPE MATERIALS PLANS
- HANDRAIL AT STEPS, SEE LANDSCAPE MATERIALS PLANS
- PLANT RAILING, SEE LANDSCAPE MATERIALS PLANS
- UNDER DRAIN, SEE CIVIL DWGS
- BUILDING ENTRANCE
- PLANTING SOIL
- STORMWATER PLANTING SOIL
- INTERTIDAL SOIL
- STRUCTURAL SOIL
- RAISED PLANTER SOIL



KEY PLAN



SCAPE

SOILS PLAN 3

SCALE: 1"=10'

1"=10' 0 10 20 FT.

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

GRAPHIC SCALES CHECK BEFORE USE

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1	10/2026	Addendum No.2	JD

DESIGNED BY: S. BARNETT | DRAWN BY: G. MORGIS | PROJECT MANAGER: E. CAMILLERI

CHECKED BY: T. MEAD | DESIGN LEAD: J. DONNELLY | DESIGN MANAGER: G. DEREAMER

Hazen and Brown AND Caldwell

REGISTERED LANDSCAPE ARCHITECT JOHN DONNELLY 2368-1 STATE OF NEW YORK

NYC Environmental Protection

ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.

PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

LANDSCAPE
SOILS PLAN 3

DATE: SEPTEMBER 2026

SHEET NO: 158 OF 719

DRAWING NO. L-153.00

Last Saved By: Kelly
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Date & Time Plotted: 10/30/2026 11:00 AM
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Plot Scale: 1:1

TREES

CANOPY TREES

QTY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	FORM	NOTES
2	AR	ACER RUBRUM	RED MAPLE	5" CAL	AS SHOWN	B&B	
1	MV	MAGNOLIA VIRGINIANA	SWEETBAY MAGNOLIA	14-16' HT	AS SHOWN	B&B	MULTI-STEM, LOW GROWTH
5	NS	NYSSA SYLVATICA	TUPELO	3" CAL	AS SHOWN	B&B	
3	PS	PRUNUS SEROTINA	BLACK CHERRY	3" CAL	AS SHOWN	B&B	
5	QB	QUERCUS BICOLOR	SWAMP WHITE OAK	5" CAL	AS SHOWN	B&B	
2	QP	QUERCUS PALUSTRIS	PIN OAK	5" CAL	AS SHOWN	B&B	
4	TD	TAXODIUM DISTICHUM 'EMERALD SHADOW'	BALD CYPRESS EMERALD SHADOW	8-10' HT.	AS SHOWN	B&B	
2	TG	TAXODIUM DISTICHUM 'EMERALD SHADOW'	BALD CYPRESS EMERALD SHADOW	16-18' HT.	AS SHOWN	B&B	

UNDERSTORY TREES

QTY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	FORM	NOTES
3	AC	AMELANCHIER CANADENSIS	CANADIAN SERVICEBERRY	8-10' HEIGHT	AS SHOWN	B&B	MULTI-STEM SPECIMEN
3	BN	BETULA NIGRA	RIVER BIRCH	12-14' HT.	AS SHOWN	B&B	
5	CE	CERCIS CANADENSIS	EASTERN REDBUD	8-10' HT.	AS SHOWN	B&B	MULTI-STEM SPECIMEN
8	PT	POPULUS TREMULOIDES	QUAKING ASPEN	3" CAL	AS SHOWN	B&B	
12	SA	SASSAFRAS ALBIDUM	SASSAFRAS	6-8' HT.	AS SHOWN	CONTAINER	

EVERGREEN TREES

QTY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	FORM	NOTES
1	IA	ILEX OPACA	AMERICAN HOLLY	8-10' HT.	AS SHOWN	CONTAINER	30% MALE, 70% FEMALE
8	PR	PINUS RIGIDA	PITCH PINE	6-7' HT.	AS SHOWN	CONTAINER	

SHRUBS

QTY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	FORM	NOTES
9	Aa	ARONIA ARBUTIFOLIA 'BRILLIANTISSIMA'	BRILLIANT RED CHOKEBERRY	3 GAL	AS SHOWN	CONTAINER	
54	Am	ARONIA MELANOCARPA 'SMNAMPEM'	LOW SCAPE SNOWFIRE BLACK CHOKEBERRY	3 GAL	AS SHOWN	CONTAINER	
18	Ae	ARONIA MELANOCARPA 'UCONNAM165'	LOW SCAPE MOUND BLACK CHOKEBERRY	3 GAL	AS SHOWN	CONTAINER	
9	Bh	BACCHARIS HALIMIFOLIA	GROUNDSEL BUSH	7 GAL	AS SHOWN	CONTAINER	
15	Cb	CEPHALANTHUS OCCIDENTALIS	BUTTONBUSH	5 GAL	AS SHOWN	CONTAINER	
10	Cs	CLETHRA ALNIFOLIA	SUMMERSWEET	3 GAL	AS SHOWN	CONTAINER	
43	Cc	CLETHRA ALNIFOLIA 'COMPACTA'	COMPACT SUMMERSWEET	3 GAL	AS SHOWN	CONTAINER	
14	Hm	HIBISCUS MOSCHEUTOS	ROSE MALLOW	5 GAL	AS SHOWN	CONTAINER	
16	Ig	ILEX GLABRA 'ILEXFARROWTRACEY'	STRONGBOX INKBERRY HOLLY	5 GAL	AS SHOWN	CONTAINER	30% MALE, 70% FEMALE
37	Is	ITEA VIRGINICA 'SPRICH'	LITTLE HENRY SWEETSPIRE	5 GAL	AS SHOWN	CONTAINER	
7	If	IVA FRUTESCENS	MARSH ELDER	3 GAL	AS SHOWN	CONTAINER	
13	Mp	MYRICA PENSYLVANICA	NORTHERN BAYBERRY	7 GAL	AS SHOWN	CONTAINER	
4	Pm	PRUNUS MARITIMA	BEACH PLUM	4-5' HT. 7 GAL	AS SHOWN	CONTAINER	FULL, HEAVY SPECIMENS
49	Rg	RHUS AROMATICA 'GRO-LOW'	GRO-LOW FRAGRANT SUMAC	3 GAL	AS SHOWN	CONTAINER	
7	Va	VIBURNUM DENTATUM 'CHICAGO LUSTRE'	CHICAGO LUSTRE ARROWWOOD VIBURNUM	7 GAL	AS SHOWN	CONTAINER	

GREEN ROOF PLANT MIX

GRASSES

QTY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING
1493	ss	SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	1 QUART	12"
3327	df	DESCHAMPSIA FLEXUOSA	WAVY HAIR GRASS	1 QUART	9"
1899	es	ERAGROSTIS SPECTABILIS	PURPLE LOVE GRASS	1 QUART	12"
347	cp	CAREX PENSYLVANICA	PENNSYLVANIA SEDGE	1 QUART	9"
1415	km	KOELERIA MACRANTHA	PRAIRIE JUNEGRASS	1 QUART	12"

PLANT MIXES

QTY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING
MIX A					
126	df	DESCHAMPSIA FLEXUOSA	WAVY HAIR GRASS	1 QUART	35% @ 9" O.C.
126	cp	CAREX PENSYLVANICA	PENNSYLVANIA SEDGE	1 QUART	35% @ 9" O.C.
61	ob	OENOTHERA BIENNIS	COMMON EVENING PRIMROSE	1 QUART	30% @ 12" O.C.
MIX B					
146	es	ERAGROSTIS SPECTABILIS	PURPLE LOVE GRASS	1 QUART	35% @ 12" O.C.
259	df	DESCHAMPSIA FLEXUOSA	WAVY HAIR GRASS	1 QUART	35% @ 9" O.C.
125	cq	COREOPSIS VERTICILLATA	WHORLED TICKSEED	1 QUART	30% @ 12" O.C.
MIX C					
127	km	KOELERIA MACRANTHA	PRAIRIE JUNEGRASS	1 QUART	35% @ 12" O.C.
127	ss	SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	1 QUART	35% @ 12" O.C.
108	at	ASCLEPIAS TUBEROSA	BUTTERFLY WEED	1 QUART	30% @ 12" O.C.
MIX D					
285	df	DESCHAMPSIA FLEXUOSA	WAVY HAIR GRASS	1 QUART	35% @ 9" O.C.
161	ss	SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	1 QUART	35% @ 12" O.C.
137	rh	RUDBECKIA HIRTA	BLACK EYED SUSAN	1 QUART	30% @ 12" O.C.
MIX E					
273	km	KOELERIA MACRANTHA	PRAIRIE JUNEGRASS	1 QUART	35% @ 12" O.C.
273	es	ERAGROSTIS SPECTABILIS	PURPLE LOVE GRASS	1 QUART	35% @ 12" O.C.
234	sh	SYMPHYOTRICHUM ERICOIDES	WHITE WREATH ASTER	1 QUART	35% @ 12" O.C.

PERENNIALS

QTY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	FORM	NOTES
176	ap	ANTENNARIA PLANTAGINIFOLIA	PUSSYTOES	1 GAL	12" O.C.	CONTAINER	
40	cl	COREOPSIS LANCEOLATA	LANCE-LEAF TICKSEED	1 GAL	12" O.C.	CONTAINER	
167	cr	COREOPSIS ROSEA	PINK TICKSEED	1 GAL	12" O.C.	CONTAINER	
126	ls	LIATRIS SPICATA	DENSE BLAZING STAR	1 GAL	12" O.C.	CONTAINER	
42	mf	MONARDA FISTULOSA	WILD BERGAMOT	1 GAL	12" O.C.	CONTAINER	
170	rh	RUDBECKIA HIRTA	BLACK-EYED SUSAN	1 GAL	12" O.C.	CONTAINER	
58	rt	RUDBECKIA TRILOBA	BROWN-EYED SUSAN	1 GAL	12" O.C.	CONTAINER	
40	se	SOLIDAGO NEMORALIS	GRAY GOLDENROD	1 GAL	12" O.C.	CONTAINER	
82	sr	SOLIDAGO RUGOSA	WRINKLY LEAF GOLDENROD	1 GAL	12" O.C.	CONTAINER	
72	sv	SOLIDAGO SEMPERVIRENS	SEASIDE GOLDENROD	1 GAL	12" O.C.	CONTAINER	
142	sa	SYMPHYOTRICHUM NOVAE ANGLIAE	NEW ENGLAND ASTER	1 GAL	12" O.C.	CONTAINER	
146	sb	SYMPHYOTRICHUM NOVI-BELGII	NEW YORK ASTER	1 GAL	12" O.C.	CONTAINER	
87	so	SYMPHYOTRICHUM OBLONGIFOLIUM	AROMATIC ASTER	1 GAL	12" O.C.	CONTAINER	
170	za	ZIZIA AUREA	GOLDEN ALEXANDER	1 GAL	12" O.C.	CONTAINER	
9	Pq	PARTHENOCISSUS QUINQUEFOLIA	VIRGINA CREEPER	2 GAL	AS SHOWN	CONTAINER	STAKED, 6' HT.

PERENNIAL PLANT MIXES

QTY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	FORM	NOTES
BASE MIX A							
619	av	ANDROPOGON VIRGINICUS	BROOMSEDGE	1 GAL	37.5% @ 12" O.C.	CONTAINER	
421	cv	CAREX VULPINOIDEA	FOX SEDGE	1 GAL.	25% @ 12" O.C.	CONTAINER	
619	pv	PANICUM VIRGANTUM	SWITCHGRASS	1 GAL	37.5% @ 12" O.C.	CONTAINER	
BASE MIX B							
4040	ca	CAREX PENSYLVANICA	PENNSYLVANIA SEDGE	1 GAL	12" O.C.	CONTAINER	
2061	jt	JUNCUS TENUIS	LESSER POVERTY RUSH	1 GAL	12" O.C.	CONTAINER	
TIDAL MIX A							
230	pv	PANICUM VIRGANTUM	SWITCHGRASS	1 GAL	33% @ 12" O.C.	CONTAINER	
115	jg	JUNCUS GERARDII	SALTMARSH RUSH	2" PLUG	67% @ 12" O.C.	CONTAINER	
TIDAL MIX B							
29	ds	DISTICHLIS SPICATA	SALT GRASS	2" PLUG	25% @ 6" O.C.	CONTAINER	
29	sn	SPARTINA ALTERNIFLORA	SALT MARSH GRASS	2" PLUG	25% @ 6" O.C.	CONTAINER	
29	sp	SPARTINA PATENS	SALTMEADOW CORDGRASS	2" PLUG	25% @ 6" O.C.	CONTAINER	
7	st	SYMPHYOTRICHUM TENUIFOLIUM	SALT MARSH ASTER	1 GAL	25% @ 12" O.C.	CONTAINER	

SCAPE

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

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DESIGNED BY: S. BARNETT | DRAWN BY: G. MORGIS | PROJECT MANAGER: E. CAMILLERI

CHECKED BY: T. MEAD | DESIGN LEAD: J. DONNELLY | DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

REGISTERED LANDSCAPE ARCHITECT JOHN DONNELLY 2368-1 STATE OF NEW YORK

Environmental Protection

ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.

PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

LANDSCAPE
PLANTING SCHEDULE

DATE: SEPTEMBER 2026

SHEET NO: 159 OF 719

DRAWING NO. L-160.00

Last Saved By: Kelly
Paper Size Printed/Plotted: ANSI D (22.00 X 34.00 Inches)
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Date & Time Plotted: 10/30/2026 11:00 AM
Plot Scale: 1:1
Plot Style Table: BEDC_Acad_2021.ctb

LEGEND

MATCH LINE - SEE L-X00

LIMIT OF WORK

STANDARD GOWANUS GUARDRAIL
SEE LANDSCAPE MATERIALS PLANS

HANDRAIL AT STEPS, SEE
LANDSCAPE MATERIALS PLANS

PLANT RAILING, SEE
LANDSCAPE MATERIALS PLANS

BUILDING ENTRANCE

DECIDUOUS TREE
ROOTBALL,TYP

EVERGREEN TREE
ROOTBALL,TYP

SYMBOL	BOTANICAL NAME
AR	ACER RUBRUM
AC	AMELANCHIER CANADENSIS
BL	BETULA LENTA
CE	CERCIS CANADENSIS
IA	ILEX OPACA
MV	MAGNOLIA VIRGINIANA
NS	NYSSA SYLVATICA
PR	PINUS RIGIDA
PT	POPULUS TREMULOIDES
PW	PRUNUS SEROTINA
QB	QUERCUS BICOLOR
QP	QUERCUS PALUSTRIS
SA	SASSAFRAS ALBIDUM
TE	TAXODIUM DISTICHUM , 16-18' HT.
TA	TAXODIUM DISTICHUM, 6-7' HT.
TD	TAXODIUM DISTICHUM, 8-10' HT.

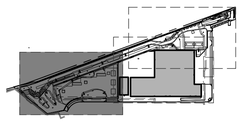
UNDERSTORY PLANTING AREAS,
SEE L-161 - L-163

NOTE: FOR PLANTING SCHEDULE, SEE L-150

GOWANUS CANAL

(9) - Sassafras albidum
(2) - Acer rubrum
(1) - Cercis canadensis
(1) - Nyssa sylvatica
(1) - Prunus serotina
EXISTING CONCRETE DEADMAN,
SEE OH-007 BULKHEAD RECORD DWGS
(3) - Cercis canadensis
LIGHTPOLE, TYP; SEE
ELECTRICAL DWGS
(2) - Prunus serotina
(1) - Cercis canadensis
(1) - Nyssa sylvatica
(3) - Populus tremuloides
(3) - Populus tremuloides
LIGHTPOLE, TYP; SEE
ELECTRICAL DWGS
(1) - Betula nigra
(2) - Nyssa sylvatica
(1) - Nyssa sylvatica
(2) - Quercus palustris
(1) - Populus tremuloides
(2) - Betula nigra
HYDRANT, TYP;
SEE CIVIL DWGS
SOE WALL, SEE CP2
GEOTECHNICAL DWGS
(3) - Quercus bicolor
(2) - Quercus bicolor
MATCH LINE - SEE L-152.00
MATCH LINE - SEE L-152.00

KEY PLAN



SCAPE

CANOPY PLANTING PLAN 1

SCALE: 1"=10'

1"=10' 0 10 20 FT.

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

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Hazen | Brown AND Caldwell

REGISTERED LANDSCAPE ARCHITECT JOHN DONNELLY 2969.1 STATE OF NEW YORK

Environmental Protection

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CONSTRUCTION PACKAGE 3 - OH-007

LANDSCAPE
CANOPY PLANTING PLAN 1

DATE: SEPTEMBER 2026
SHEET NO: 160 OF 719
DRAWING NO. L-161.00

Last Saved By: Kelly
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Drawing File Name & Drive Location: C:\Users\kelly\DCACCDocs\Hazen and Sawyer\90409-000_CSO-GC-SFS-DES-OH\Project Files\000-ProjectWise\Landscape\CP-03\03_PLTIL-161.00 CANOPY PLANTING PLAN 1.dwg
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Plot Scale: 1:1
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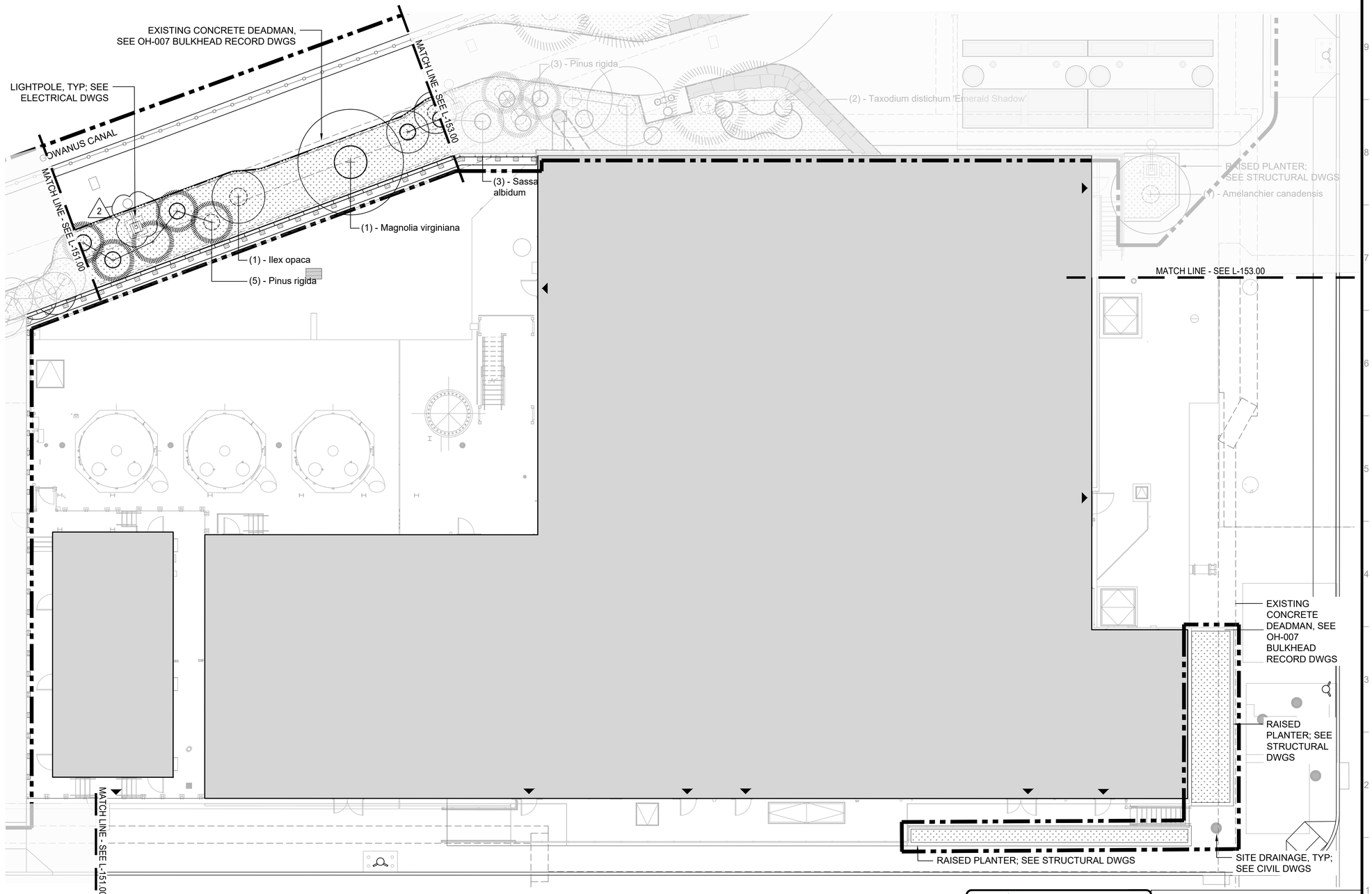
LEGEND

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- LIMIT OF WORK
- STANDARD GOWANUS GUARDRAIL SEE LANDSCAPE MATERIALS PLANS
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- BUILDING ENTRANCE
- DECIDUOUS TREE ROOTBALL,TYP
- EVERGREEN TREE ROOTBALL,TYP

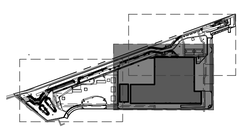
SYMBOL	BOTANICAL NAME
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TD	TAXODIUM DISTICHUM, 8-10' HT.

- UNDERSTORY PLANTING AREAS, SEE L-161 - L-163

NOTE: FOR PLANTING SCHEDULE, SEE L-150



KEY PLAN



SCAPE

CANOPY PLANTING PLAN 2

SCALE: 1'=10'

1"=10' 0 10 20 FT.

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

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DESIGNED BY:	DRAWN BY:	PROJECT MANAGER:
S. BARNETT	G. MORGIS	E. CAMILLERI
CHECKED BY:	DESIGN LEAD:	DESIGN MANAGER:
T. MEAD	J. DONNELLY	G. DEREAMER

Hazen | Brown AND Caldwell

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LANDSCAPE
CANOPY PLANTING PLAN 2

DATE:	SEPTEMBER 2026
SHEET NO:	161 OF 719
DRAWING NO.	L-162.00

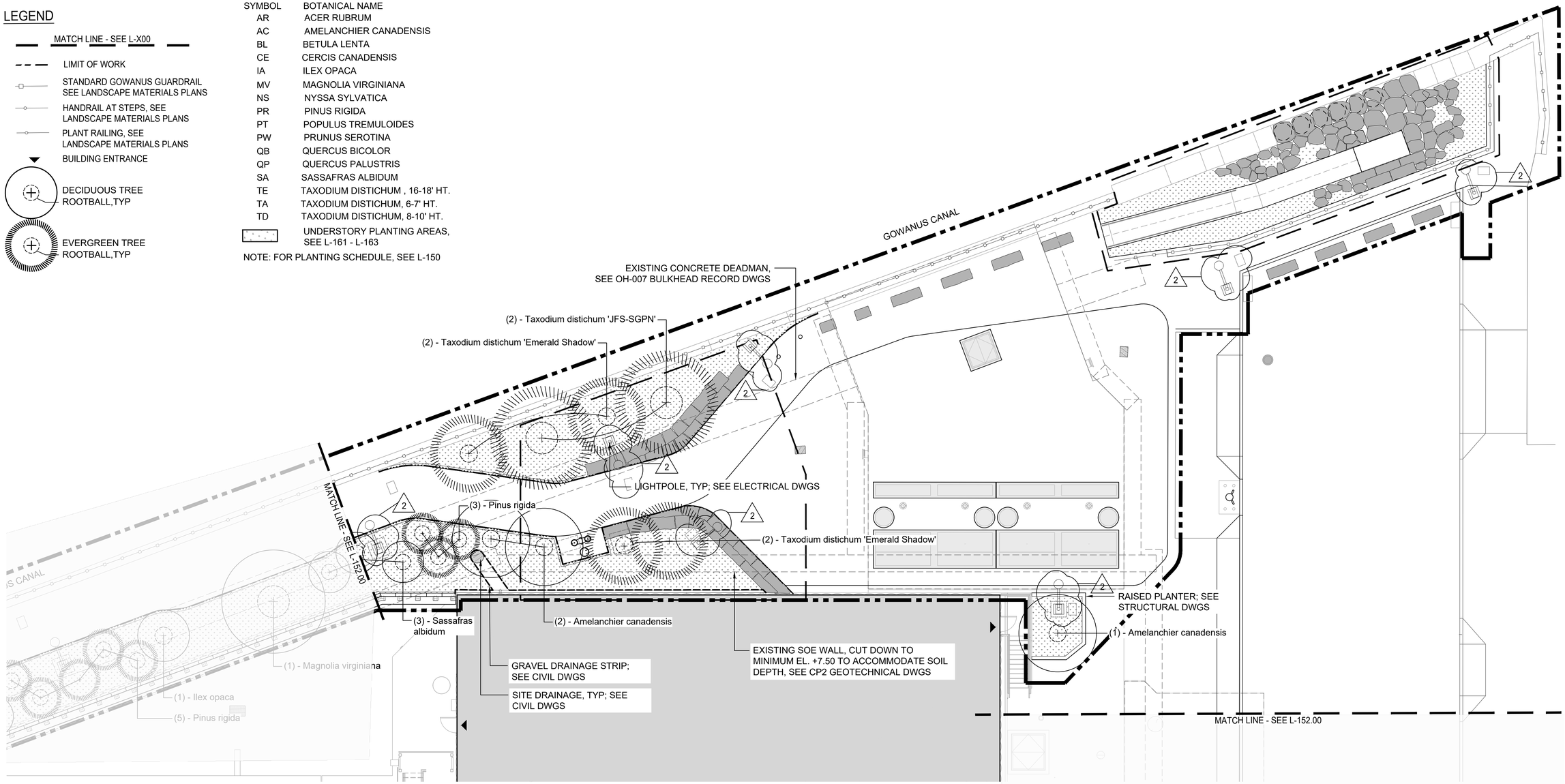
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Paper Size Printed/Plotted: ANSI full bleed D (34.00 x 22.00 Inches)
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Last Date Saved: 10/30/2026 10:20 AM
Plot Style Table: BEDC_Acad_2021.ctb
Plot Scale: 1:1
Date & Time Plotted: 10/30/2026 11:01 AM

LEGEND

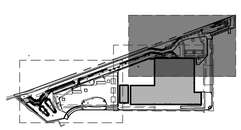
- MATCH LINE - SEE L-X00
- LIMIT OF WORK
- STANDARD GOWANUS GUARDRAIL SEE LANDSCAPE MATERIALS PLANS
- HANDRAIL AT STEPS, SEE LANDSCAPE MATERIALS PLANS
- PLANT RAILING, SEE LANDSCAPE MATERIALS PLANS
- BUILDING ENTRANCE
- DECIDUOUS TREE ROOTBALL,TYP
- EVERGREEN TREE ROOTBALL,TYP

SYMBOL	BOTANICAL NAME
AR	ACER RUBRUM
AC	AMELANCHIER CANADENSIS
BL	BETULA LENTA
CE	CERCIS CANADENSIS
IA	ILEX OPACA
MV	MAGNOLIA VIRGINIANA
NS	NYSSA SYLVATICA
PR	PINUS RIGIDA
PT	POPULUS TREMULOIDES
PW	PRUNUS SEROTINA
QB	QUERCUS BICOLOR
QP	QUERCUS PALUSTRIS
SA	SASSAFRAS ALBIDUM
TE	TAXODIUM DISTICHUM , 16-18' HT.
TA	TAXODIUM DISTICHUM, 6-7' HT.
TD	TAXODIUM DISTICHUM, 8-10' HT.
	UNDERSTORY PLANTING AREAS, SEE L-161 - L-163

NOTE: FOR PLANTING SCHEDULE, SEE L-150



KEY PLAN



SCAPE

CANOPY PLANTING PLAN 3

SCALE: 1'=10'

1"=10' 0 10 20 FT.

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

GRAPHIC SCALES CHECK BEFORE USE

IF SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT. SCALE ACCORDINGLY

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##	####	#######	##
##	####	######	##
1	10/2026	Addendum No.2	JD

DESIGNED BY: S. BARNETT	DRAWN BY: G. MORGIS	PROJECT MANAGER: E. CAMILLERI
CHECKED BY: T. MEAD	DESIGN LEAD: J. DONNELLY	DESIGN MANAGER: G. DEREAMER

Hazen Brown AND Caldwell

REGISTERED LANDSCAPE ARCHITECT JOHN DONNELLY 2368-1 STATE OF NEW YORK

NYC Environmental Protection

ACCOUNTABLE MANAGER	JESSE GOLDIN, P.E.
PORTFOLIO MANAGER	KEVIN CLARKE, P.E.

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LANDSCAPE
CANOPY PLANTING PLAN 3

DATE: SEPTEMBER 2026

SHEET NO: 162 OF 719

DRAWING NO. L-163.00

Last Saved By: Kelly
Paper Size Printed/Plotted: ANSI full bleed D (34.00 x 22.00 Inches)
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Plot Style Table: BEDC_Acad_2021.ctb
Plot Scale: 1:1
Date & Time Plotted: 10/30/2026 11:01 AM

LEGEND

- MATCH LINE - SEE L-X00
- LIMIT OF WORK
- STANDARD GOWANUS GUARDRAIL SEE LANDSCAPE MATERIALS PLANS
- HANDRAIL AT STEPS, SEE LANDSCAPE MATERIALS PLANS
- PLANT RAILING, SEE LANDSCAPE MATERIALS PLANS
- BUILDING ENTRANCE

NOTE: FOR PLANTING SCHEDULE, SEE L-150

SHRUBS

SYMBOL	BOTANICAL NAME
Aa	ARONIA ARBUTIFOLIA 'BRILLIANTISSIMA'
Am	ARONIA MELANOCARPA 'SMNAMPEM'
Ae	ARONIA MELANOCARPA 'UCONNAM165'
Bh	BACCHARIS HALIMIFOLIA
Cb	CEPHALANTHUS OCCIDENTALIS
Cs	CLETHRA ALNIFOLIA
Cc	CLETHRA ALNIFOLIA 'COMPACTA'
Hm	HIBISCUS MOSCHEUTOS
Ig	ILEX GLABRA 'ILEXFARRPWTRACEY'
Iv	ITEA VIRGINICA 'SPRICH'
If	IVA FRUTESCENS
Mp	MYRICA PENSYLVANICA
Pm	PRUNUS MARITIMA
Rg	RHUS AROMATICA 'GRO-LOW'
Rw	RHUS COPALLINA
Va	VIBURNUM DENTATUM 'CHICAGO LUSTRI

VINES

SYMBOL	
Pq	PARTHENOCISSUS QUINQUEFOLIA
Mc	MENISPERMUM CANADENSE

PERENNIALS

SYMBOL	BOTANICAL NAME
ap	ANTENNARIA PLANTAGINIFOLIA
cl	COREOPSIS LANCEOLATA
cr	COREOPSIS ROSEA
ls	LIATRIS SPICATA
mf	MONARDA FISTULOSA
rh	RUDBECKIA HIRTA
rt	RUDBECKIA TRILOBA
se	SOLIDAGO NEMORALIS
sr	SOLIDAGO RUGOSA
sv	SOLIDAGO SEMPERVIRENS
sa	SYMPHYOTRICHUM NOVAE ANGLIAE
sb	SYMPHYOTRICHUM NOVI-BELGII
so	SYMPHYOTRICHUM OBLONGIFOLIUM
za	ZIZIA AUREA
Pq	PARTHENOCISSUS QUINQUEFOLIA

PLANT MIXES

SYMBOL	BOTANICAL NAME
BASE MIX A	
av	ANDROPOGON VIRGINICUS
cv	CAREX VULPINOIDEA
pv	PANICUM VIRGANTUM
BASE MIX B	
ca	CAREX PENSYLVANICA
jt	JUNCUS TENUIS
TIDAL MIX A	
pv	PANICUM VIRGANTUM
jg	JUNCUS GERARDII
TIDAL MIX B	
ds	DISTICHLIS SPICATA
sn	SPARTINA ALTERNIFOLIA
sp	SPARTINA PATENS
st	SYMPHYOTRICHUM TENUIFOLIUM

GOWANUS CANAL

MATCH LINE - SEE L-162.00

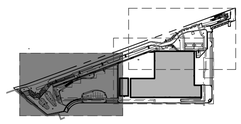
MATCH LINE - SEE L-172.00

SITE DRAINAGE, TYP; SEE CIVIL DWGS

HYDRANT, TYP; SEE CIVIL DWGS

LIGHTPOLE, TYP; SEE ELECTRICAL DWGS

KEY PLAN



UNDERSTORY PLANTING PLAN 1

SCALE: 1"=10'

1"=10' 0 10 20 FT.

SCAPE

NYC BID SET

SUBMITTAL DATE: SEPTEMBER 2026

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1	10/2026	Addendum No.2	JD

DESIGNED BY:	DRAWN BY:	PROJECT MANAGER:
S. BARNETT	G. MORGIS	E. CAMILLERI
CHECKED BY:	DESIGN LEAD:	DESIGN MANAGER:
T. MEAD	J. DONNELLY	G. DEREAMER

Hazen | Brown AND Caldwell

REGISTERED LANDSCAPE ARCHITECT JOHN DONNELLY 2368-1 STATE OF NEW YORK

NYC Environmental Protection

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PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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LANDSCAPE

UNDERSTORY PLANTING PLAN 1

DATE: SEPTEMBER 2026

SHEET NO: 163 OF 719

DRAWING NO. L-171.00

Last Saved By: Kelly
Paper Size Printed/Plotted: ANSI full bleed D (34.00 x 22.00 Inches)
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Plot Style Table: BEDC_Acad_2021.ctb
Date & Time Plotted: 10/30/2026 11:02 AM

LEGEND

- MATCH LINE - SEE L-X00
- LIMIT OF WORK
- STANDARD GOWANUS GUARDRAIL SEE LANDSCAPE MATERIALS PLANS
- HANDRAIL AT STEPS, SEE LANDSCAPE MATERIALS PLANS
- PLANT RAILING, SEE LANDSCAPE MATERIALS PLANS
- BUILDING ENTRANCE

NOTE: FOR PLANTING SCHEDULE, SEE L-150

SHRUBS

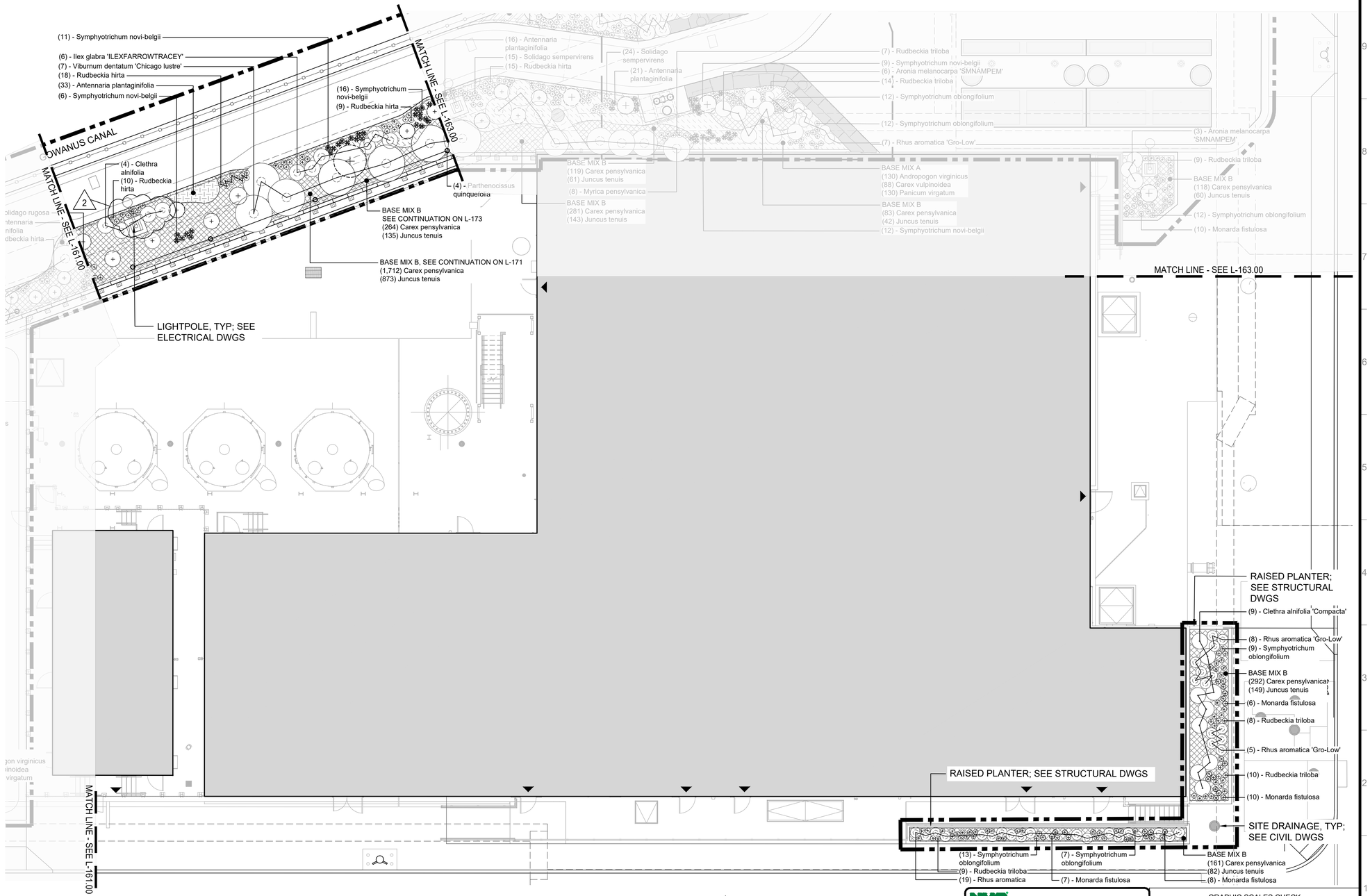
SYMBOL	BOTANICAL NAME
Aa	ARONIA ARBUTIFOLIA 'BRILLIANTISSIMA'
Am	ARONIA MELANOCARPA 'SMNAMPEM'
Ae	ARONIA MELANOCARPA 'UCONNAM165'
Bh	BACCHARIS HALIMIFOLIA
Cb	CEPHALANTHUS OCCIDENTALIS
Cs	CLETHRA ALNIFOLIA
Cc	CLETHRA ALNIFOLIA 'COMPACTA'
Hm	HIBISCUS MOSCHEUTOS
Ig	ILEX GLABRA 'ILEXFARRPWTRACEY'
Iv	ITEA VIRGINICA 'SPRICH'
If	IVA FRUTESCENS
Mp	MYRICA PENSYLVANICA
Pm	PRUNUS MARITIMA
Rg	RHUS AROMATICA 'GRO-LOW'
Rw	RHUS COPALLINA
Va	VIBURNUM DENTATUM 'CHICAGO LUSTRE'

VINES

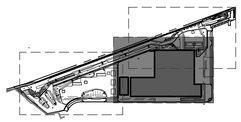
SYMBOL	
Pq	PARTHENOCISSUS QUINQUEFOLIA
Mc	MENISPERMUM CANADENSE

PERENNIALS

SYMBOL	BOTANICAL NAME
ap	ANTENNARIA PLANTAGINIFOLIA
cl	COREOPSIS LANCEOLATA
cr	COREOPSIS ROSEA
ls	LIATRIS SPICATA
mf	MONARDA FISTULOSA
rh	RUDBECKIA HIRTA
rt	RUDBECKIA TRILOBA
se	SOLIDAGO NEMORALIS
sr	SOLIDAGO RUGOSA
sv	SOLIDAGO SEMPERVIRENS
sa	SYMPHYOTRICHUM NOVAE ANGLIAE
sb	SYMPHYOTRICHUM NOVI-BELGII
so	SYMPHYOTRICHUM OBLONGIFOLIUM
za	ZIZIA AUREA
Pq	PARTHENOCISSUS QUINQUEFOLIA



KEY PLAN



SCAPE

UNDERSTORY PLANTING PLAN 2

SCALE: 1'=10'

1"=10' 0 10 20 FT.

NYC BID SET

SUBMITTAL DATE: SEPTEMBER 2026

GRAPHIC SCALES CHECK BEFORE USE

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1	10/2026	Addendum No.2	JD

DESIGNED BY:	DRAWN BY:	PROJECT MANAGER:
S. BARNETT	G. MORGIS	E. CAMILLERI
CHECKED BY:	DESIGN LEAD:	DESIGN MANAGER:
T. MEAD	J. DONNELLY	G. DEREAMER

Hazen | Brown AND Caldwell

REGISTERED LANDSCAPE ARCHITECT JOHN DONNELLY 2368-1 STATE OF NEW YORK

NYC Environmental Protection

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LANDSCAPE
UNDERSTORY PLANTING PLAN 2

DATE: SEPTEMBER 2026

SHEET NO: 164 OF 719

DRAWING NO. L-172.00

Last Saved By: Kelly
Paper Size Printed/Plotted: ANSI full bleed D (34.00 X 22.00 Inches)
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Plot Style Table: BEDC_Acad_2021.ctb
Plot Scale: 1:1
Date & Time Plotted: 10/30/2026 11:02 AM

LEGEND

MATCH LINE - SEE L-X00

LIMIT OF WORK

STANDARD GOWANUS GUARDRAIL SEE LANDSCAPE MATERIALS PLANS

HANDRAIL AT STEPS, SEE LANDSCAPE MATERIALS PLANS

PLANT RAILING, SEE LANDSCAPE MATERIALS PLANS

BUILDING ENTRANCE

NOTE: FOR PLANTING SCHEDULE, SEE L-150

SHRUBS

SYMBOL	BOTANICAL NAME
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Am	ARONIA MELANOCARPA 'SMNAMPEM'
Ae	ARONIA MELANOCARPA 'UCONNAM165'
Bh	BACCHARIS HALIMIFOLIA
Cb	CEPHALANTHUS OCCIDENTALIS
Cs	CLETHRA ALNIFOLIA
Cc	CLETHRA ALNIFOLIA 'COMPACTA'
Hm	HIBISCUS MOSCHEUTOS
Ig	ILEX GLABRA 'ILEXFARRPWTRACEY'
Iv	ITEA VIRGINICA 'SPRICH'
If	IVA FRUTESCENS
Mp	MYRICA PENSYLVANICA
Pm	PRUNUS MARITIMA
Rg	RHUS AROMATICA 'GRO-LOW'
Rw	RHUS COPALLINA
Va	VIBURNUM DENTATUM 'CHICAGO LUSTF

VINES

SYMBOL	
Pq	PARTHENOCISSUS QUINQUEFOLIA
Mc	MENISPERMUM CANADENSE

VINES

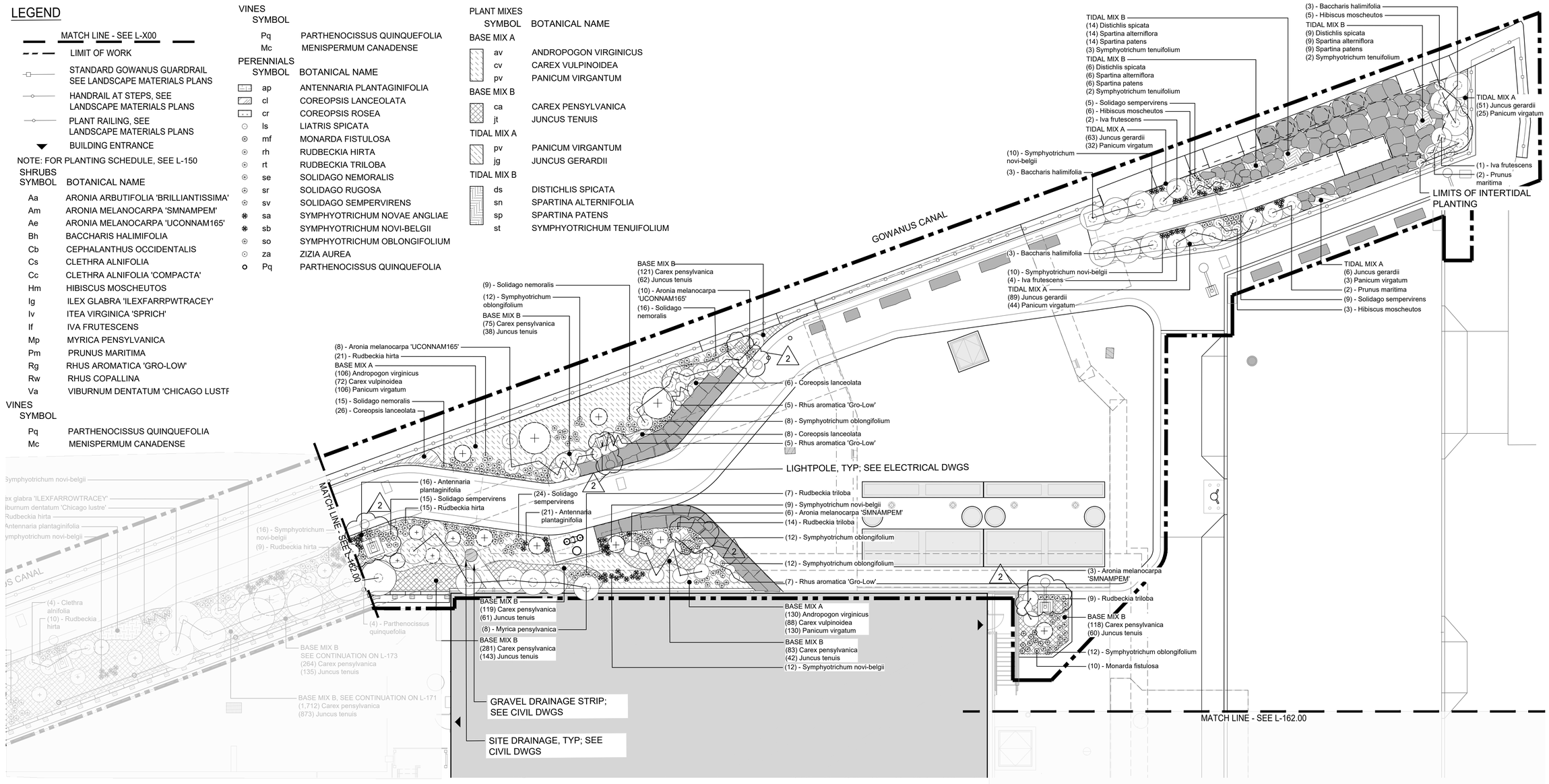
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Mc	MENISPERMUM CANADENSE

PERENNIALS

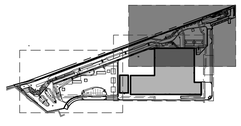
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cr	COREOPSIS ROSEA
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mf	MONARDA FISTULOSA
rh	RUDBECKIA HIRTA
rt	RUDBECKIA TRILOBA
se	SOLIDAGO NEMORALIS
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sv	SOLIDAGO SEMPERVIRENS
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so	SYMPHYOTRICHUM OBLONGIFOLIUM
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SYMBOL	BOTANICAL NAME
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cv	CAREX VULPINOIDEA
pv	PANICUM VIRGANTUM
BASE MIX B	
ca	CAREX PENSYLVANICA
jt	JUNCUS TENUIS
TIDAL MIX A	
pv	PANICUM VIRGANTUM
jg	JUNCUS GERARDII
TIDAL MIX B	
ds	DISTICHLIS SPICATA
sn	SPARTINA ALTERNIFOLIA
sp	SPARTINA PATENS
st	SYMPHYOTRICHUM TENUIFOLIUM



KEY PLAN



SCAPE

UNDERSTORY PLANTING PLAN 3

SCALE: 1"=10'

1"=10' 0 10 20 FT.

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

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DESIGNED BY: S. BARNETT	DRAWN BY: G. MORGIS	PROJECT MANAGER: E. CAMILLERI
CHECKED BY: T. MEAD	DESIGN LEAD: J. DONNELLY	DESIGN MANAGER: G. DEREAMER

Hazen Brown AND Caldwell

REGISTERED LANDSCAPE ARCHITECT JOHN DONNELLY 2368-1 STATE OF NEW YORK

NYC Environmental Protection

ACCOUNTABLE MANAGER	JESSE GOLDIN, P.E.
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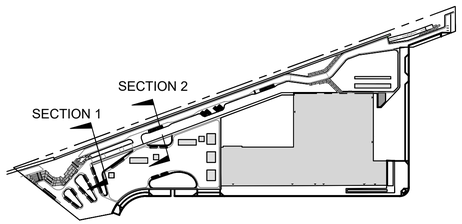
LANDSCAPE
UNDERSTORY PLANTING PLAN 3

DATE: SEPTEMBER 2026

SHEET NO: 165 OF 719

DRAWING NO. L-173.00

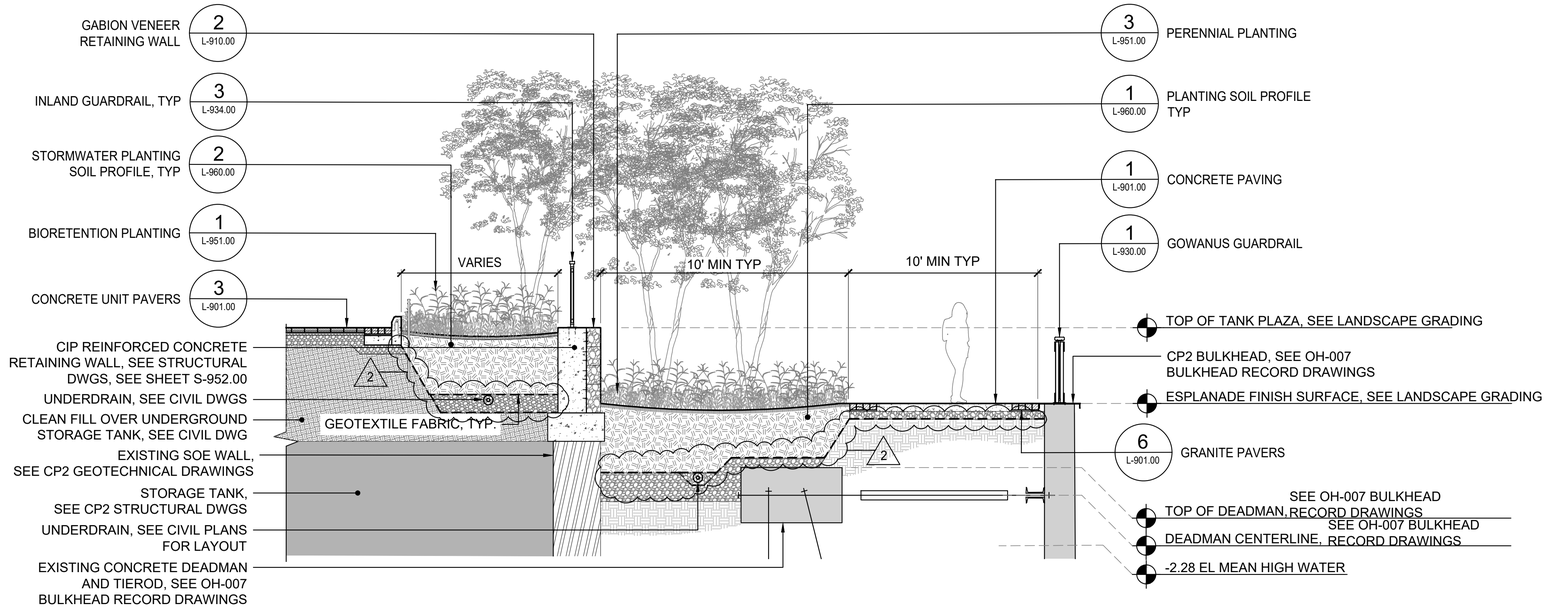
Last Saved By: Kelly
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Date & Time Plotted: 10/30/2026 11:03 AM
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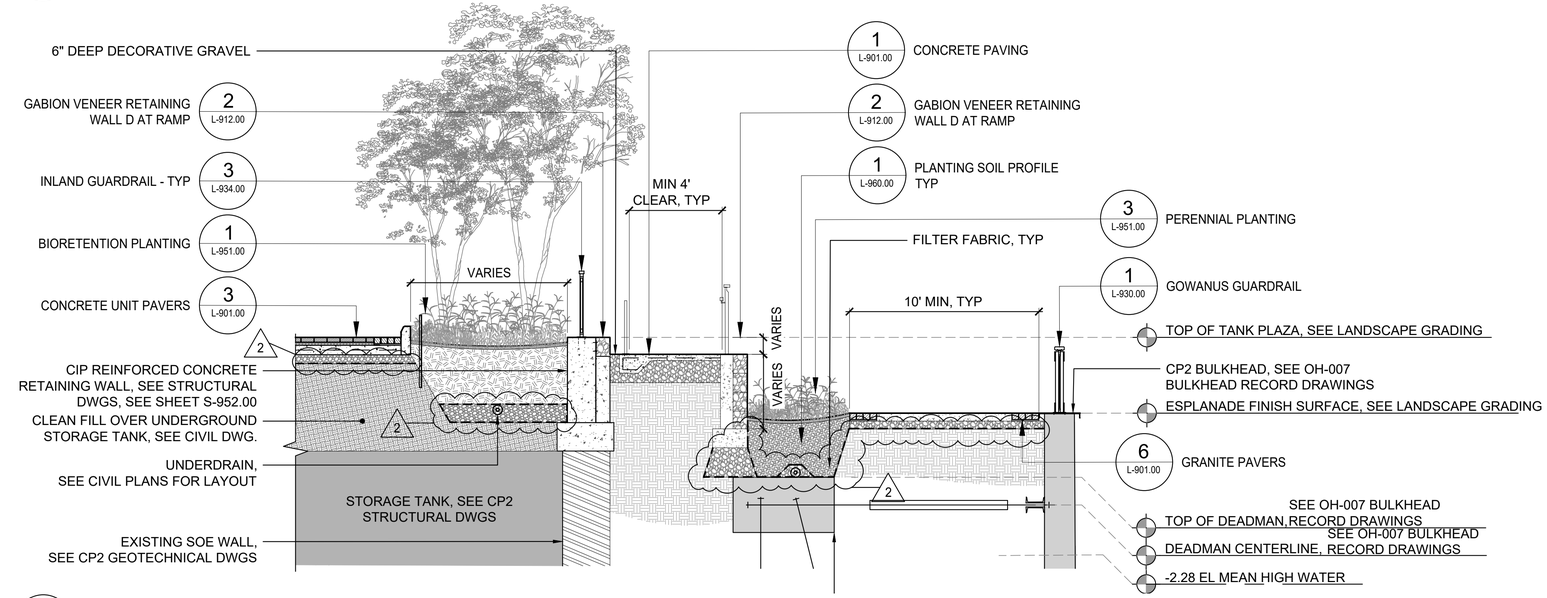
KEY PLAN

NOTES:

SECTIONS ARE SHOWN TO DEPICT RELATIONSHIPS BETWEEN PROPOSED ELEMENTS. REFER TO ASSEMBLY AND DETAIL DRAWINGS FOR MORE INFORMATION. THE SECTIONS AND DETAILS ARE TO BE UTILIZED IN CONCERT TO FULLY INTERPRET THE DESIGN INTENT. THE CONTRACTOR SHALL SEEK CLARIFICATION FROM THE LANDSCAPE ARCHITECT IN THE EVENT OF ANY DISCREPANCIES BETWEEN THE SECTIONS AND DETAILS.



2 L-703.00 SECTION AT TOP TANK OF RETAINING WALL
SCALE: 1/4" = 1'-0"



1 L-703.00 SECTION AT AMPHITHEATER RAMP
SCALE: 1/4" = 1'-0"

SCAPE

BID SET
SUBMITTAL DATE: SEPTEMBER 2026

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CHECKED BY: T. MEAD | DESIGN LEAD: J. DONNELLY | DESIGN MANAGER: G. DEREAMER

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Environmental Protection

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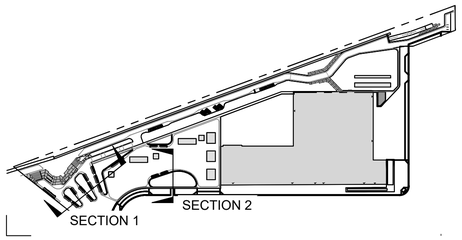
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CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

LANDSCAPE SECTIONS

DATE: SEPTEMBER 2026
SHEET NO: 169 OF 719
DRAWING NO. L-703.00

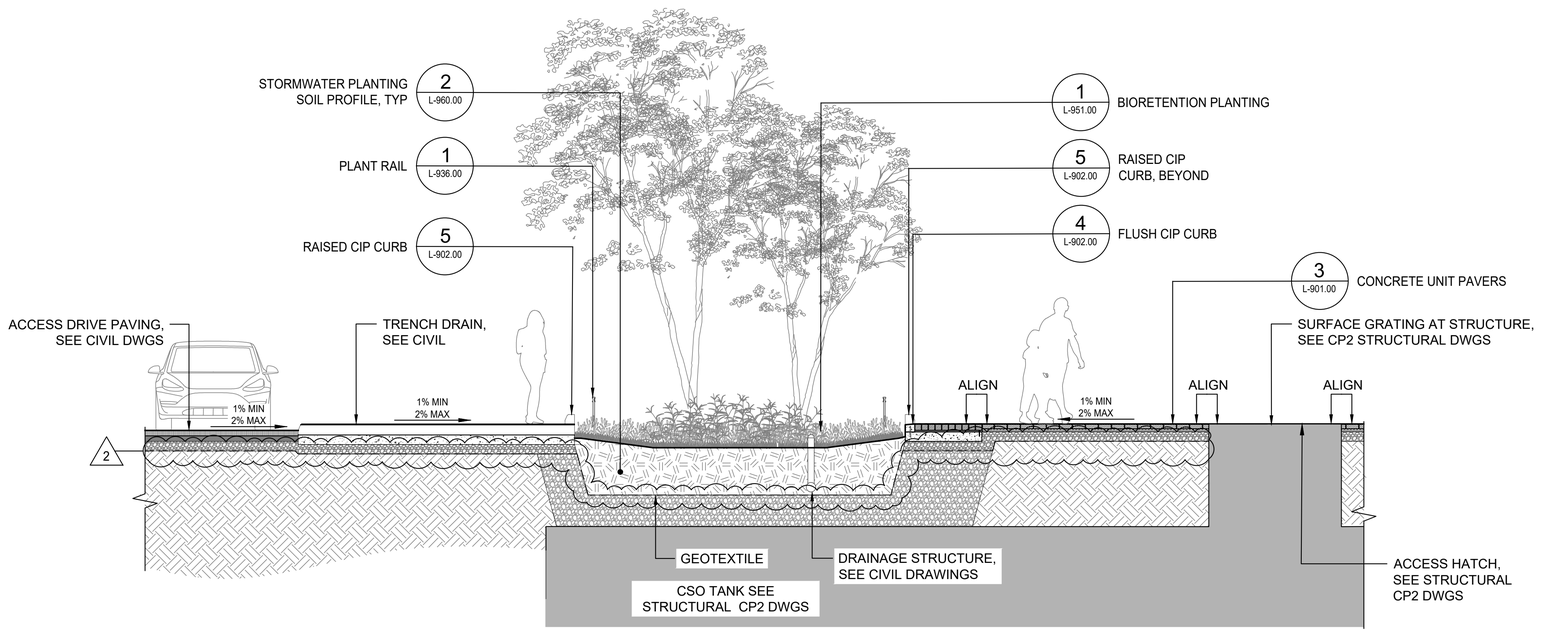
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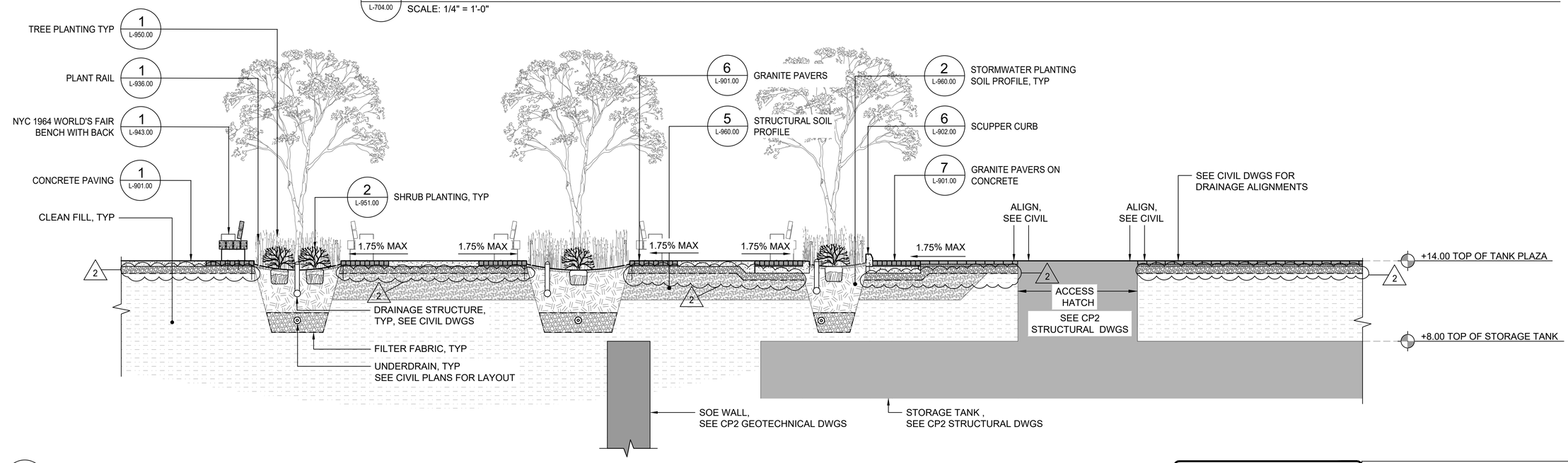
KEY PLAN

NOTES:

SECTIONS ARE SHOWN TO DEPICT RELATIONSHIPS BETWEEN PROPOSED ELEMENTS. REFER TO ASSEMBLY AND DETAIL DRAWINGS FOR MORE INFORMATION. THE SECTIONS AND DETAILS ARE TO BE UTILIZED IN CONCERT TO FULLY INTERPRET THE DESIGN INTENT. THE CONTRACTOR SHALL SEEK CLARIFICATION FROM THE LANDSCAPE ARCHITECT IN THE EVENT OF ANY DISCREPANCIES BETWEEN THE SECTIONS AND DETAILS.



2 L-704.00 SECTION AT TOP OF TANK BIORETENTION PLANTING
SCALE: 1/4" = 1'-0"



1 L-704.00 SECTION AT TOP OF TANK TRANSITION
SCALE: 1/4" = 1'-0"

SCAPE

NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.
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1	10/2026	Addendum No. 2	JD

DESIGNED BY: S. BARNETT | DRAWN BY: G. MORGIS | PROJECT MANAGER: E. CAMILLERI
CHECKED BY: T. MEAD | DESIGN LEAD: J. DONNELLY | DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

Environmental Protection

ACCOUNTABLE MANAGER
JESSE GOLDIN, P.E.

PORTFOLIO MANAGER
KEVIN CLARKE, P.E.

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CSO FACILITIES FOR GOWANUS CANAL
CONSTRUCTION PACKAGE 3 - OH-007

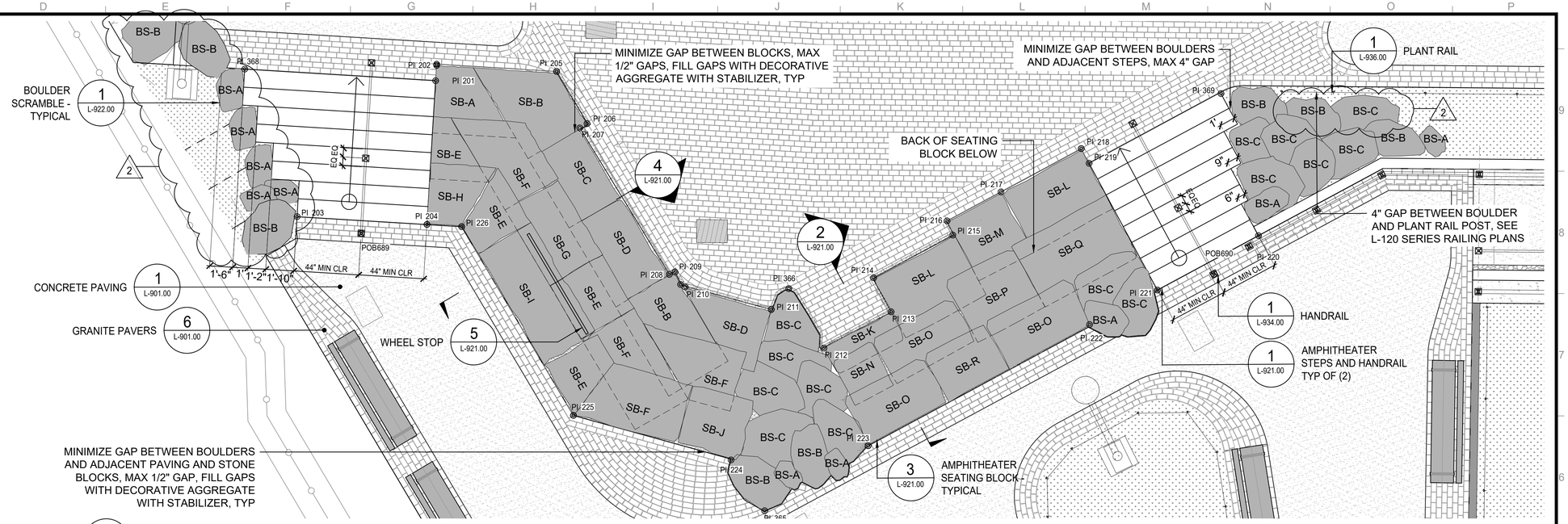
LANDSCAPE SECTIONS

DATE: SEPTEMBER 2026
SHEET NO: 170 OF 719
DRAWING NO. L-704.00

NYC
BID SET
SUBMITTAL DATE: SEPTEMBER 2026

GRAPHIC SCALES CHECK ~~BEFORE USE~~
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3 L-801.00 AMPHITHEATER ENLARGEMENT PLAN - MATERIALS AND LAYOUT

SCALE: 1/4" = 1'-0"

AMPHITHEATER ENLARGEMENT LAYOUT		
NUMBER	NORTHINGS	EASTINGS
PI 201	185511.08'	986222.49'
PI 202	185507.40'	986235.99'
PI 203	185499.50'	986225.03'
PI 204	185497.27'	986233.24'
PI 205	185505.34'	986243.57'
PI 206	185501.59'	986244.83'
PI 207	185501.41'	986244.30'
PI 208	185490.85'	986248.08'
PI 209	185490.91'	986248.48'
PI 210	185489.83'	986248.92'
PI 211	185487.24'	986254.13'
PI 212	185484.07'	986256.98'
PI 213	185485.50'	986261.77'
PI 214	185487.91'	986261.11'
PI 215	185489.58'	986266.74'
PI 216	185490.57'	986266.57'
PI 217	185491.71'	986270.40'
PI 218	185493.41'	986276.11'
PI 219	185495.55'	986283.30'
PI 220	185485.34'	986285.81'
PI 221	185483.35'	986279.10'
PI 222	185482.04'	986274.30'
PI 223	185477.23'	986258.52'
PI 224	185478.15'	986249.56'
PI 225	185483.10'	986240.07'
PI 226	185496.67'	986235.43'
PI 365	185474.45'	986251.03'
PI 366	185488.34'	986255.54'
POB 689	185497.47'	986225.52'
POB 690	185486.35'	986285.12'

NOTE

1. BOULDER AND STONE BLOCK SELECTON AND PLACEMENT TO BE APPROVED BY LANDSCAPE ARCHITECT ON SITE
2. TOP OF STONE SPOT ELEVATIONS ARE APPROXIMATE



2 L-801.00 STONE BLOCK REFERENCE IMAGE

SCALE: NTS



1 L-801.00 AMPHITHEATER ENLARGEMENT PLAN - GRADING

SCALE: 1/4" = 1'-0"

SCAPE

NYC BID SET

SUBMITTAL DATE: SEPTEMBER 2026

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CHECKED BY: T. MEAD | DESIGN LEAD: J. DONNELLY | DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

REGISTERED LANDSCAPE ARCHITECT JOHN DONNELLY 2368-1 STATE OF NEW YORK

NYC Environmental Protection

ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.

PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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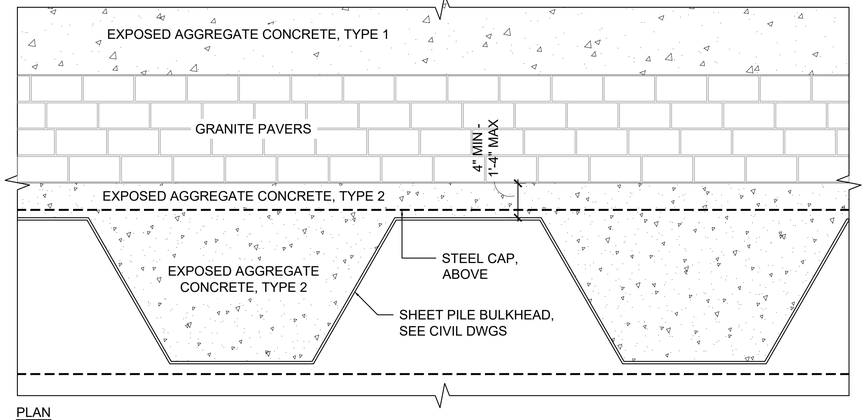
LANDSCAPE
PLAN ENLARGEMENT 1

DATE: SEPTEMBER 2026

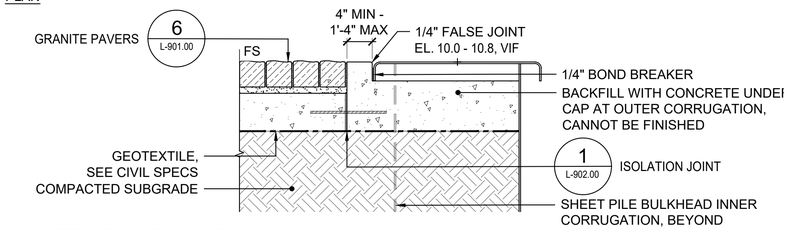
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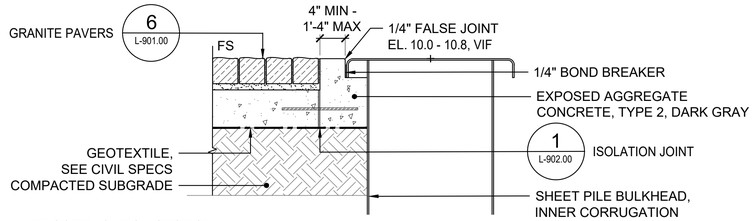
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PLAN



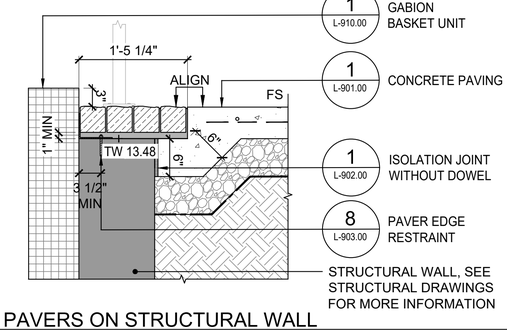
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INNER CORRUGATION SECTION

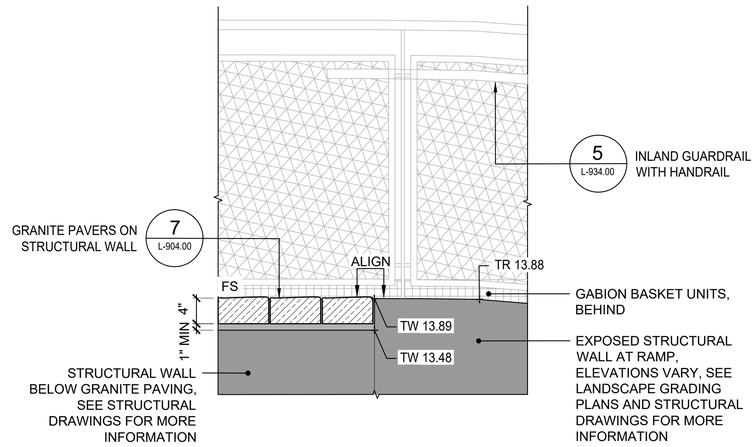
8 L-904.00 GRANITE PAVERS ON CONCRETE AT BULKHEAD

SCALE: 1" = 1'-0"



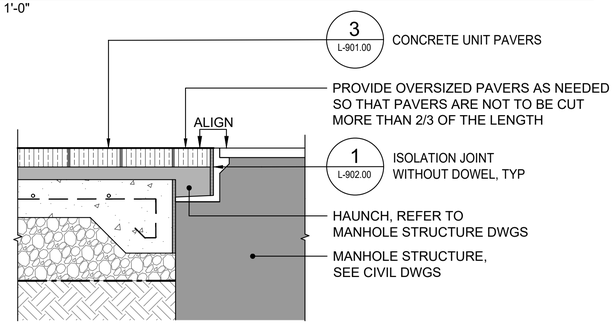
7 L-904.00 GRANITE PAVERS ON STRUCTURAL WALL

SCALE: 1" = 1'-0"



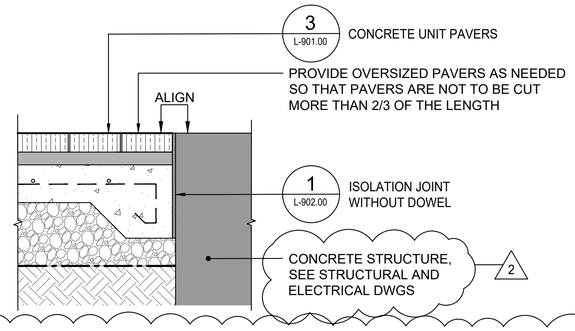
6 L-904.00 EXPOSED STRUCTURAL WALL TO GRANITE PAVERS ON STRUCTURE

SCALE: 1" = 1'-0"



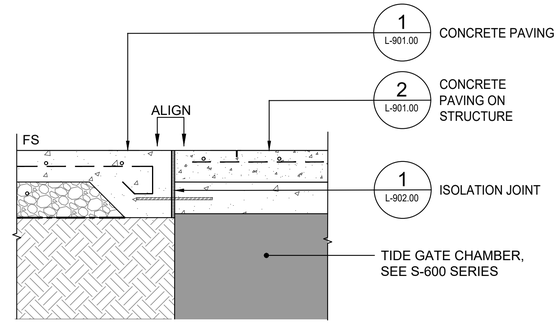
5 L-904.00 CONCRETE UNIT PAVERS AT MANHOLE

SCALE: 1" = 1'-0"



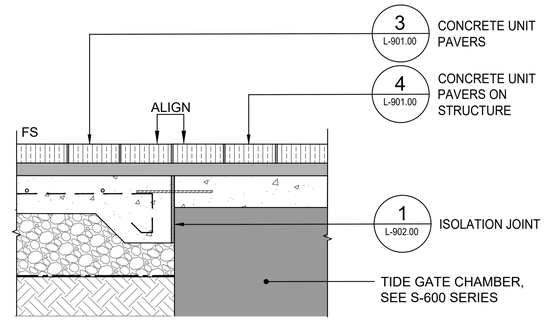
4 L-904.00 CONCRETE UNIT PAVERS AT ACCESS HATCHES AND UTILITY BOXES

SCALE: 1" = 1'-0"



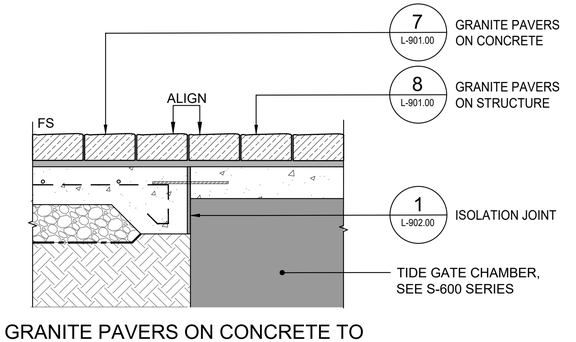
3 L-904.00 CONCRETE PAVING TO CONCRETE PAVING ON STRUCTURE

SCALE: 1" = 1'-0"



2 L-904.00 CONCRETE UNIT PAVERS TO CONCRETE UNIT PAVERS ON STRUCTURE

SCALE: 1" = 1'-0"



1 L-904.00 GRANITE PAVERS ON CONCRETE TO GRANITE PAVERS ON STRUCTURE

SCALE: 1" = 1'-0"

SCAPE

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1	10/2026	Addendum No. 2	JD

DESIGNED BY:	DRAWN BY:	PROJECT MANAGER:
S. BARNETT	G. MORGIS	E. CAMILLERI
CHECKED BY:	DESIGN LEAD:	DESIGN MANAGER:
T. MEAD	J. DONNELLY	G. DEREAMER

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CONSTRUCTION PACKAGE 3 - OH-007

LANDSCAPE
PAVING DETAILS 04

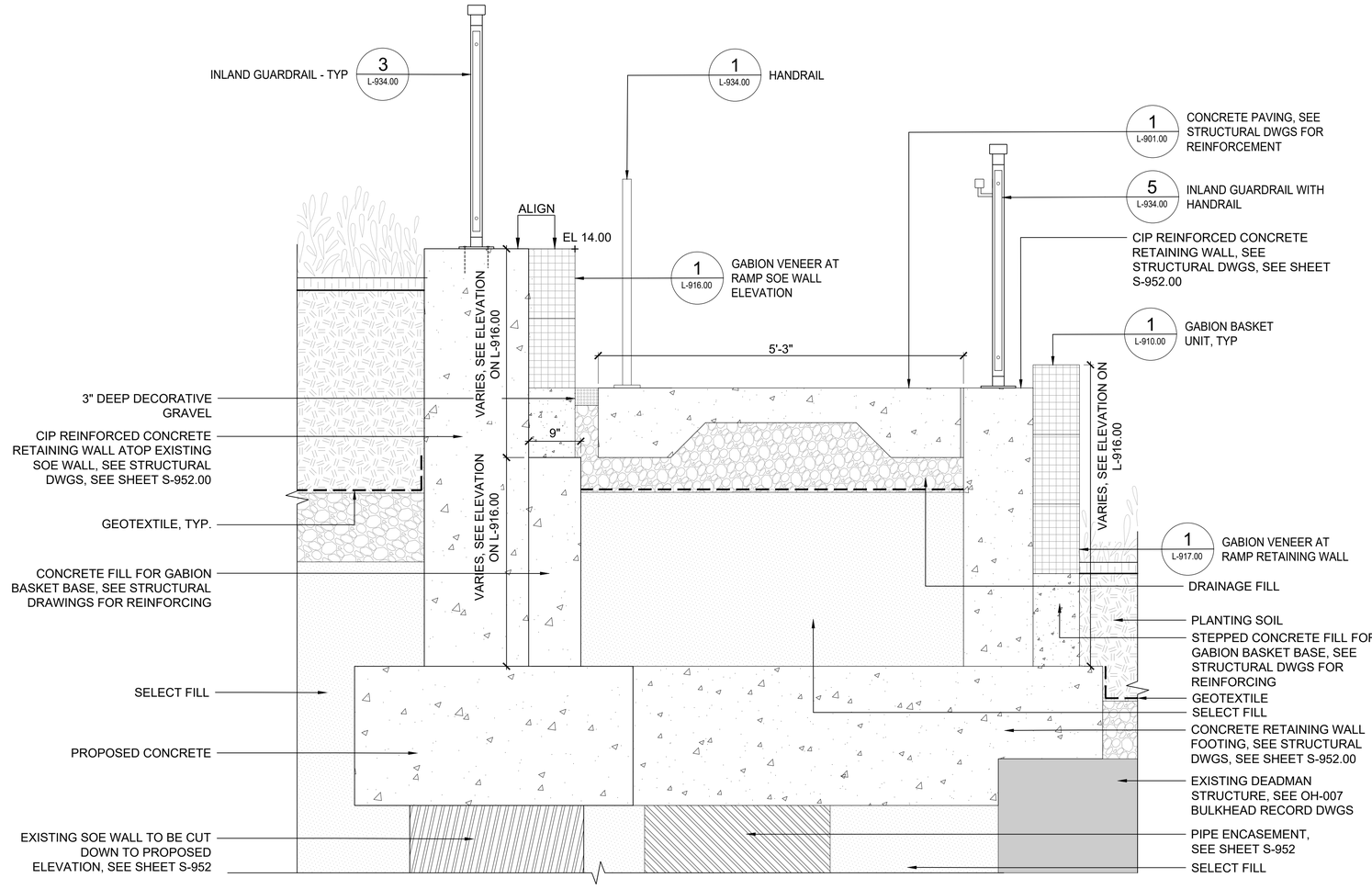
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SHEET NO: 181 OF 719
DRAWING NO. L-904.00

BID SET
SUBMITTAL DATE: SEPTEMBER 2026

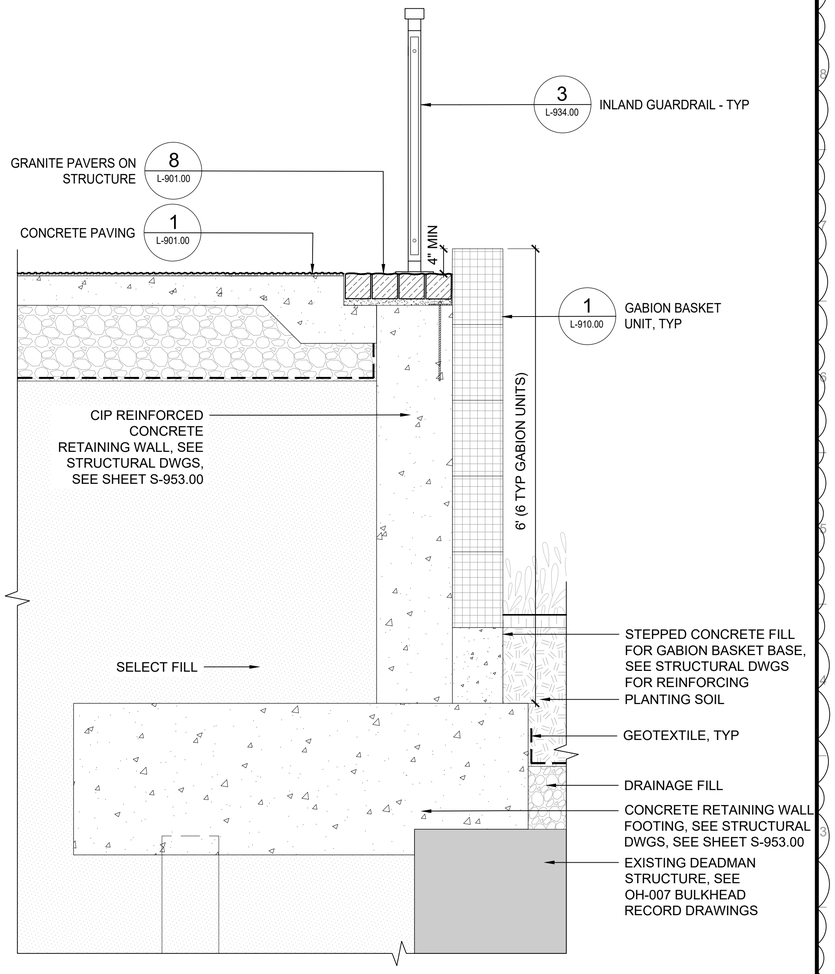
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Plot Scale: 1:1



2 L-912.00 GABION VENEER RETAINING WALL D AT RAMP
SCALE: 1" = 1'-0"



1 L-912.00 GABION VENEER RETAINING WALL E AT AMPHITHEATER
SCALE: 1" = 1'-0"

SCAPE

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DESIGNED BY: S. BARNETT | DRAWN BY: G. MORGIS | PROJECT MANAGER: E. CAMILLERI
CHECKED BY: T. MEAD | DESIGN LEAD: J. DONNELLY | DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

REGISTERED LANDSCAPE ARCHITECT JOHN DONNELLY 2369-1 STATE OF NEW YORK

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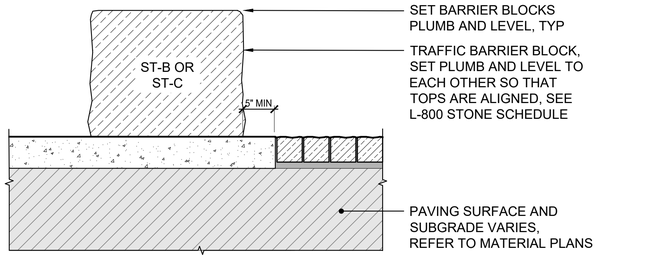
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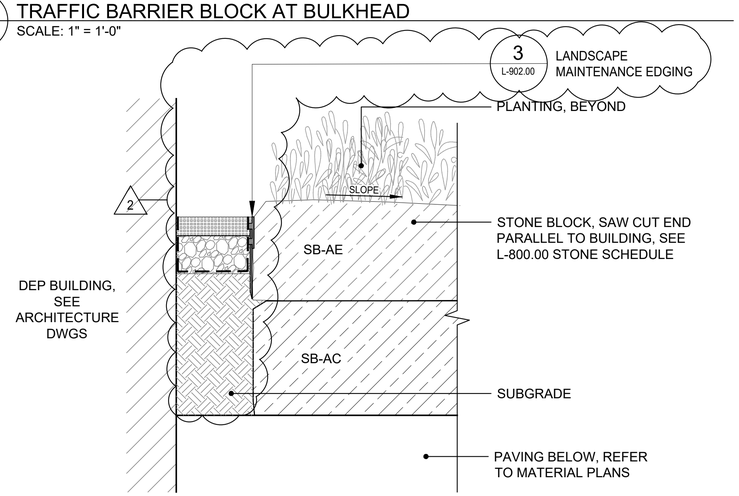
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RETAINING WALL DETAILS 03

DATE: SEPTEMBER 2026
SHEET NO: 184 OF 719
DRAWING NO. L-912.00

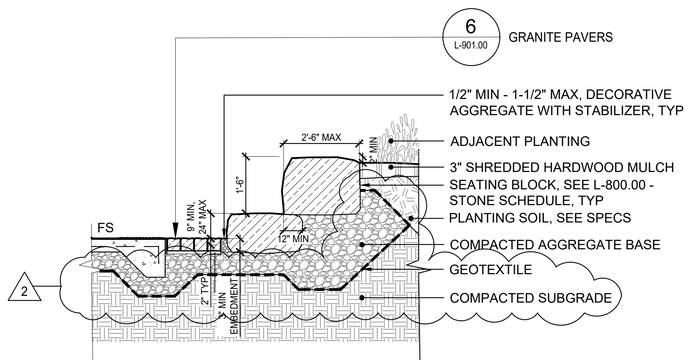
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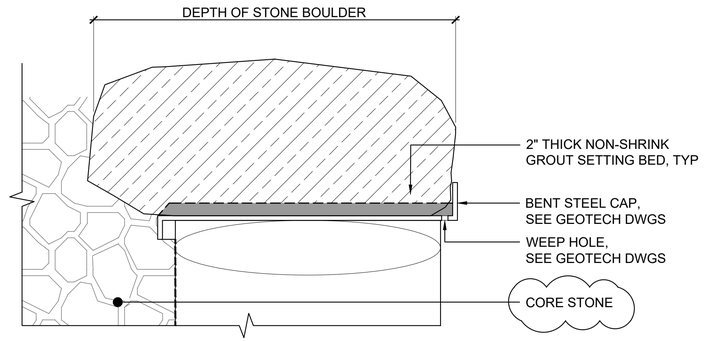
6 L-922.00 TRAFFIC BARRIER BLOCK AT BULKHEAD
SCALE: 1" = 1'-0"



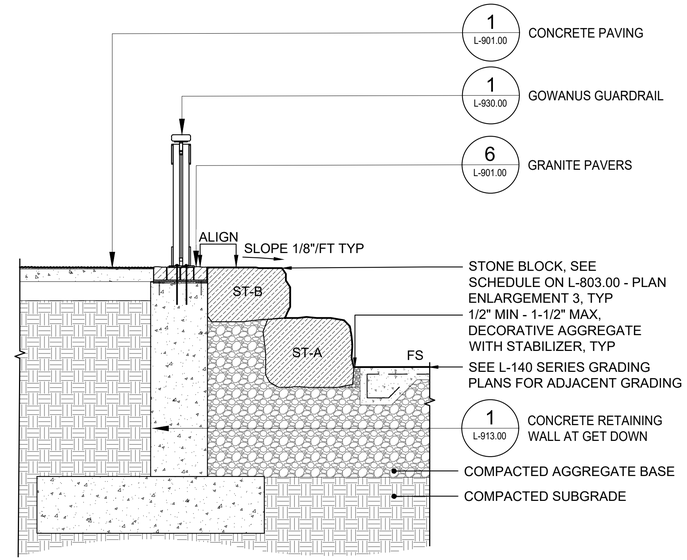
5 L-922.00 STONE SEATING AT BUILDING
SCALE: 1" = 1'-0"



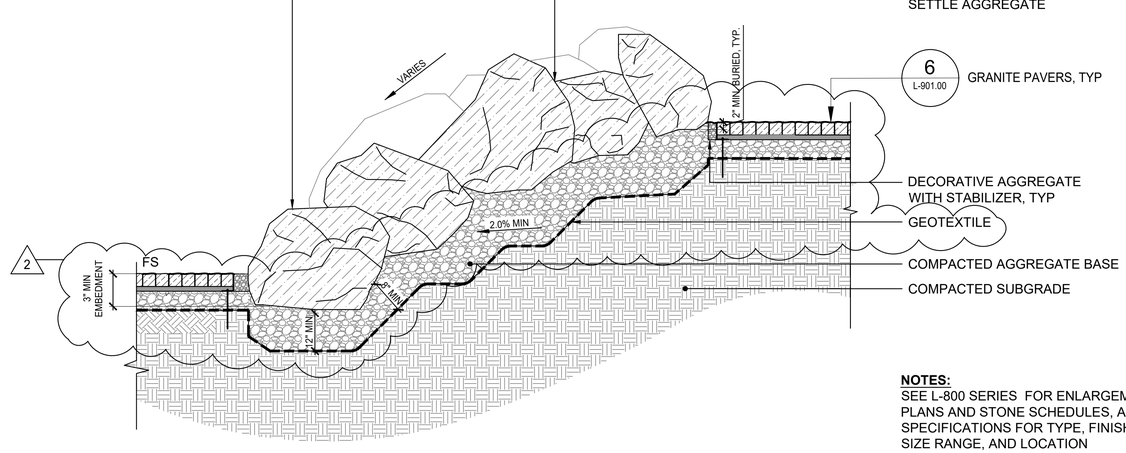
4 L-922.00 STONE SEATING AT CANAL PLAZA
SCALE: 1/2" = 1'-0"



3 L-922.00 STONE BOULDER AT BULKHEAD CAP
SCALE: 1" = 1'-0"



2 L-922.00 STONE STEPS AT GETDOWN
SCALE: 1/2" = 1'-0"



NOTES:
SEE L-800 SERIES FOR ENLARGEMENT PLANS AND STONE SCHEDULES, AND SPECIFICATIONS FOR TYPE, FINISH, SIZE RANGE, AND LOCATION

1 L-922.00 BOULDER SCRAMBLE - TYPICAL
SCALE: 1/2" = 1'-0"

SCAPE

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Hazen Brown AND Caldwell

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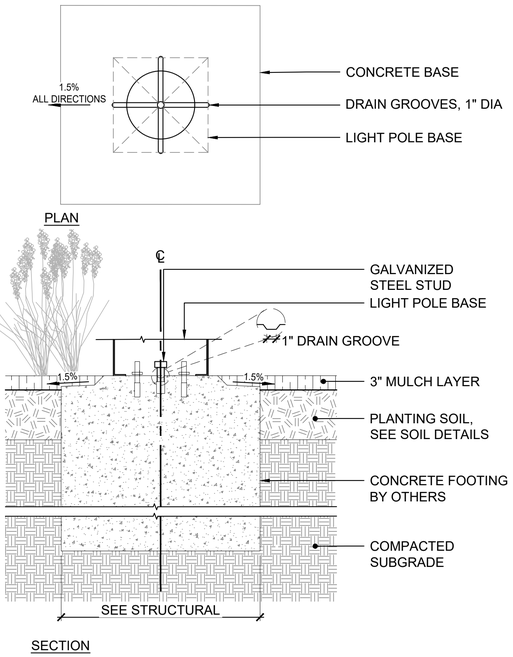
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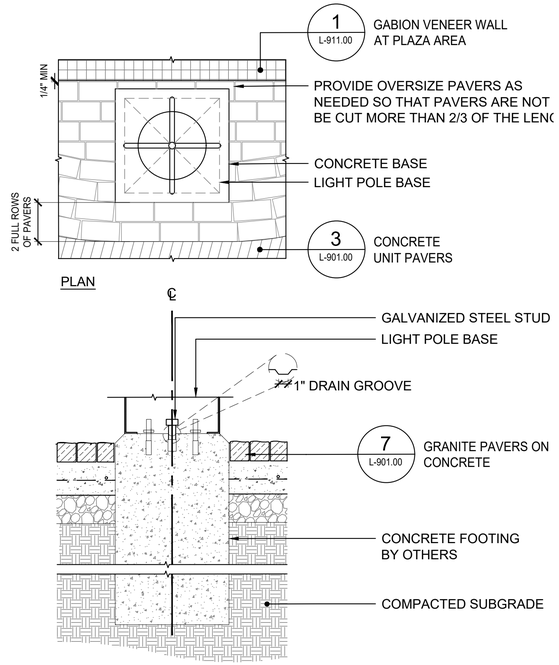
LANDSCAPE
STAIR AND SEATING STEP DETAILS 02

DATE: SEPTEMBER 2026
SHEET NO: 192 OF 719
DRAWING NO. L-922.00

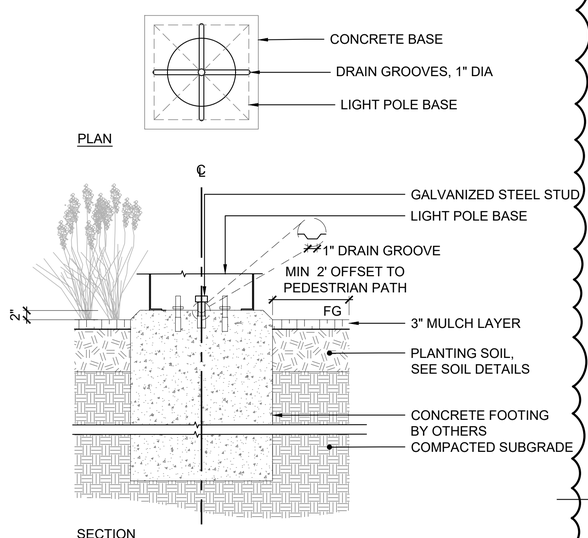
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Date & Time Plotted: 10/30/2026 11:05 AM
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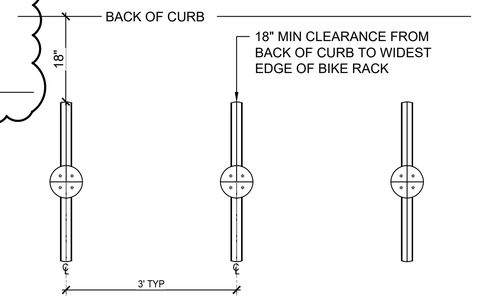
6 L-944.00 SHALLOW LIGHT POLE FOOTING
SCALE: 3/4" = 1'-0"

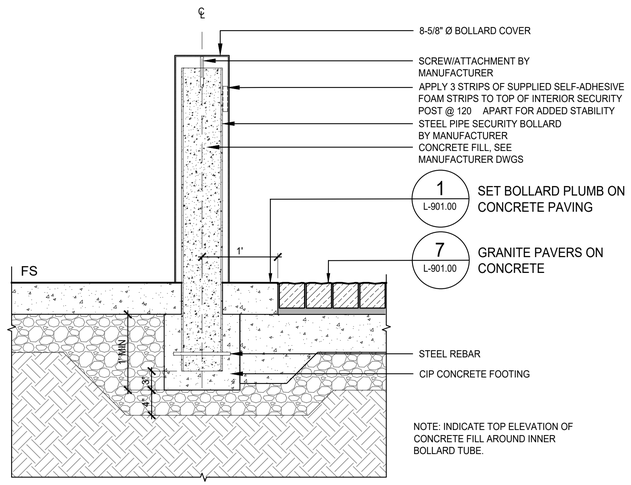


5 L-944.00 LIGHT POLE AT GRANITE PAVERS
SCALE: 3/4" = 1'-0"

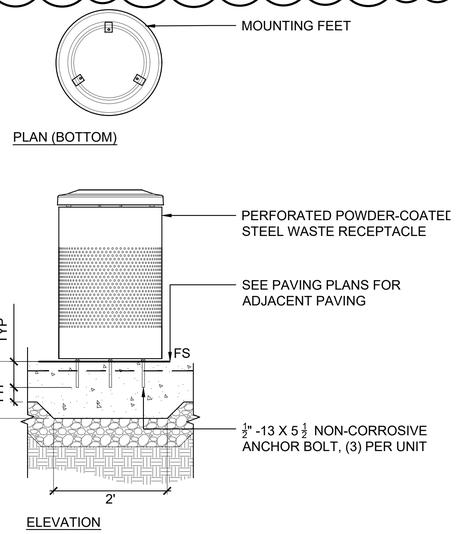


4 L-944.00 LIGHT POLE FOOTING SURFACE CONDITION
SCALE: 3/4" = 1'-0"

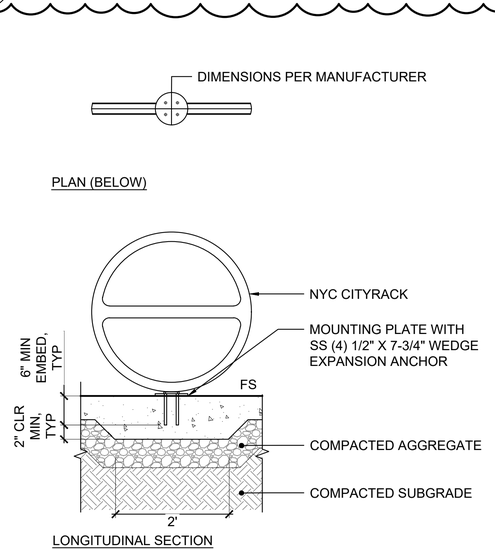




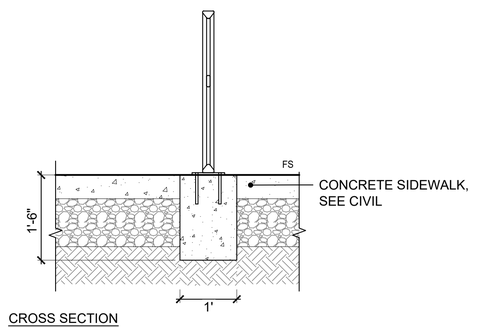
3 L-944.00 BOLLARD
SCALE: 1" = 1'-0"



2 L-944.00 TRASH RECEPTACLE
SCALE: 3/4" = 1'-0"



1 L-944.00 NYC DOT CITY RACK
SCALE: 3/4" = 1'-0"



SCAPE

BID SET
SUBMITTAL DATE: SEPTEMBER 2026

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NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.
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##	####	#######	##
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##	####	######	##
1	10/20/26	Addendum 2	##

DESIGNED BY: S. BARNETT | DRAWN BY: G. MORGIS | PROJECT MANAGER: E. CAMILLERI
CHECKED BY: T. MEAD | DESIGN LEAD: J. DONNELLY | DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

REGISTERED LANDSCAPE ARCHITECT JOHN DONNELLY 2368-1 STATE OF NEW YORK

Environmental Protection

ACCOUNTABLE MANAGER
JESSE GOLDIN, P.E.

PORTFOLIO MANAGER
KEVIN CLARKE, P.E.

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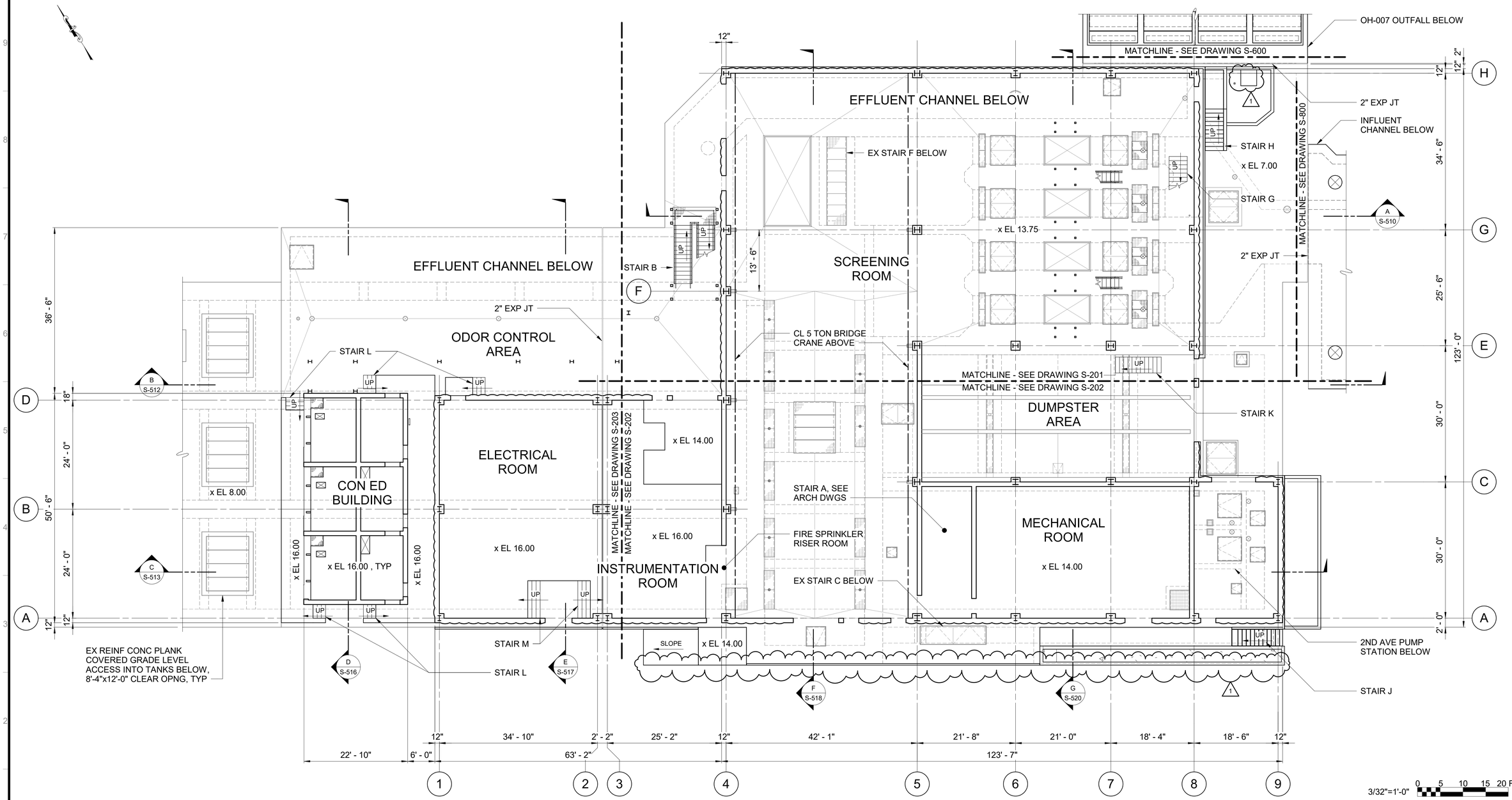
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CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

LANDSCAPE
FURNISHING DETAILS 05

DATE: SEPTEMBER 2026
SHEET NO: 204 OF 719
DRAWING NO. L-944.00

Last Saved By: Kelly
Paper Size Printed/Plotted: ANSI full bleed D (34.00 x 22.00 Inches)
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Last Date Saved: 10/30/2026 10:50 AM
Date & Time Plotted: 10/30/2026 11:05 AM
Plot Scale: 1:1
Plot Style Table: BEDC_Acad_2021.ctb



BUILDING GROUND FLOOR - GENERAL ARRANGEMENT PLAN

3/32" = 1'-0"

BID SET
DATE ISSUED: SEPTEMBER 2026

GRAPHIC SCALES CHECK BEFORE USE

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NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.
1	10/2/2026	ADDENDUM 2	GD

DESIGNED BY: A. THURSTON	DRAWN BY: K. GRISSOM	PROJECT MANAGER: E. CAMILLERI
CHECKED BY: T. QUESADA	DESIGN LEAD: L. GIROUX	DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

LISA G. GIROUX — STATE OF NEW YORK — 088552 — LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.

PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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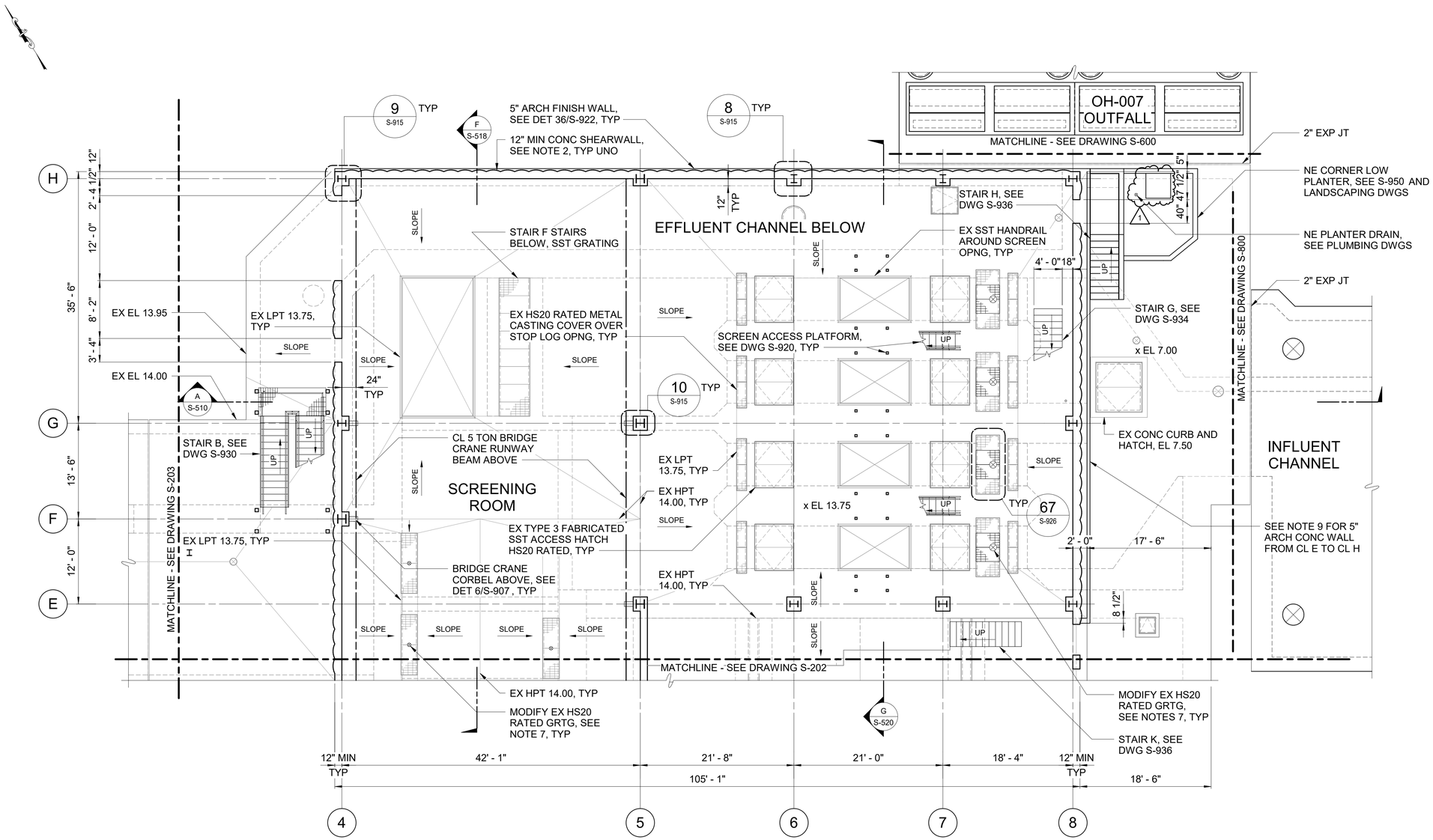
CSO FACILITIES FOR GOWANUS CANAL
CONSTRUCTION PACKAGE 3 - OH-007

STRUCTURAL
GROUND FLOOR GENERAL ARRANGEMENT PLAN

DATE: SEPTEMBER 2026
SHEET NO: 298 OF 719
DRAWING NO. S-200.00

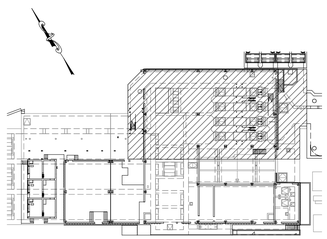
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NOTES:

1. SEE MECHANICAL, HVAC, PLUMBING AND ELECTRICAL DRAWINGS FOR ADDITIONAL PENETRATIONS AND EQUIPMENT PADS.
2. SEE DRAWING S-204 FOR SHEAR WALL CONSTRUCTION JOINT AND OPENING LOCATIONS.
3. EXISTING RAILING INSTALLED UNDER CONTRACT CP2 IS SHOWN. SEE ARCHITECTURAL DRAWINGS FOR HANDRAIL TO BE INSTALLED UNDER THIS CONTRACT.
4. TRENCH SHALL BE 12"Wx12"D WITH HEAVY DUTY HS20 RATED STAINLESS STEEL GRATING.
5. CONTRACTOR MAY TEMPORARILY REMOVE EXISTING STAINLESS STEEL HANDRAIL AND REINSTALL AT COMPLETION OF WORK. ANY HANDRAIL DAMAGED AS PART OF THE WORK SHALL BE REPLACED BY THE CONTRACTOR.
6. SEE ARCHITECTURAL DRAWINGS FOR MASONRY WALL LOCATIONS AND DETAILS. SEE DRAWINGS S-918 AND S-917 FOR MASONRY REINFORCING, ANCHORAGE AND LINTEL DETAILS.
7. MODIFY OR REPLACE EXISTING HS20 RATED STAINLESS STEEL GRATING AND COORDINATE WITH MECHANICAL EQUIPMENT TO PROVIDE 1" MAX CLEARANCE BETWEEN EQUIPMENT AND EDGE OF OPENING PER OSHA REQUIREMENTS.
8. ALL EXTERIOR FACING CONCRETE ABOVE EL 14.00 AND THE 5" ARCHITECTURAL FINISH WALL SHALL UTILIZE ARCHITECTURAL CONCRETE PER SECTION 03 33 00 ARCHITECTURAL CAST-IN-PLACE CONCRETE.
9. PLACE 5" ARCHITECTURAL CONCRETE WALL FROM COLUMN LINE E TO COLUMN LINE H ALONG COLUMN LINE 8 AFTER INFLUENT CHANNEL HAS BEEN CONSTRUCTED.
10. SEE DETAIL 70/S-908 FOR INTERIOR LIGHT FIXTURE POLE MOUNTING BEAM DETAIL. SEE ARCHITECTURAL AND ELECTRICAL DRAWINGS FOR LIGHT FIXTURE LOCATIONS AND DETAILS.



KEYPLAN
1" = 60'-0"

BUILDING GROUND FLOOR - PARTIAL PLAN 1

1/8" = 1'-0"

1/8"=1'-0" 0 5 10 15 FT.

BID SET
DATE ISSUED: SEPTEMBER 2026

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NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.
1	10/2026	ADDENDUM 2	GD

DESIGNED BY:	DRAWN BY:	PROJECT MANAGER:
A. THURSTON	K. GRISSOM	E. CAMILLERI
CHECKED BY:	DESIGN LEAD:	DESIGN MANAGER:
T. QUESADA	L. GIROUX	G. DEREAMER

Hazen Brown AND Caldwell

LISA G. GIROUX 088557 LICENSED PROFESSIONAL ENGINEER STATE OF NEW YORK

NYC Environmental Protection

ACCOUNTABLE MANAGER
JESSE GOLDIN, P.E.
PORTFOLIO MANAGER
KEVIN CLARKE, P.E.

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STRUCTURAL
GROUND FLOOR PARTIAL PLAN 1

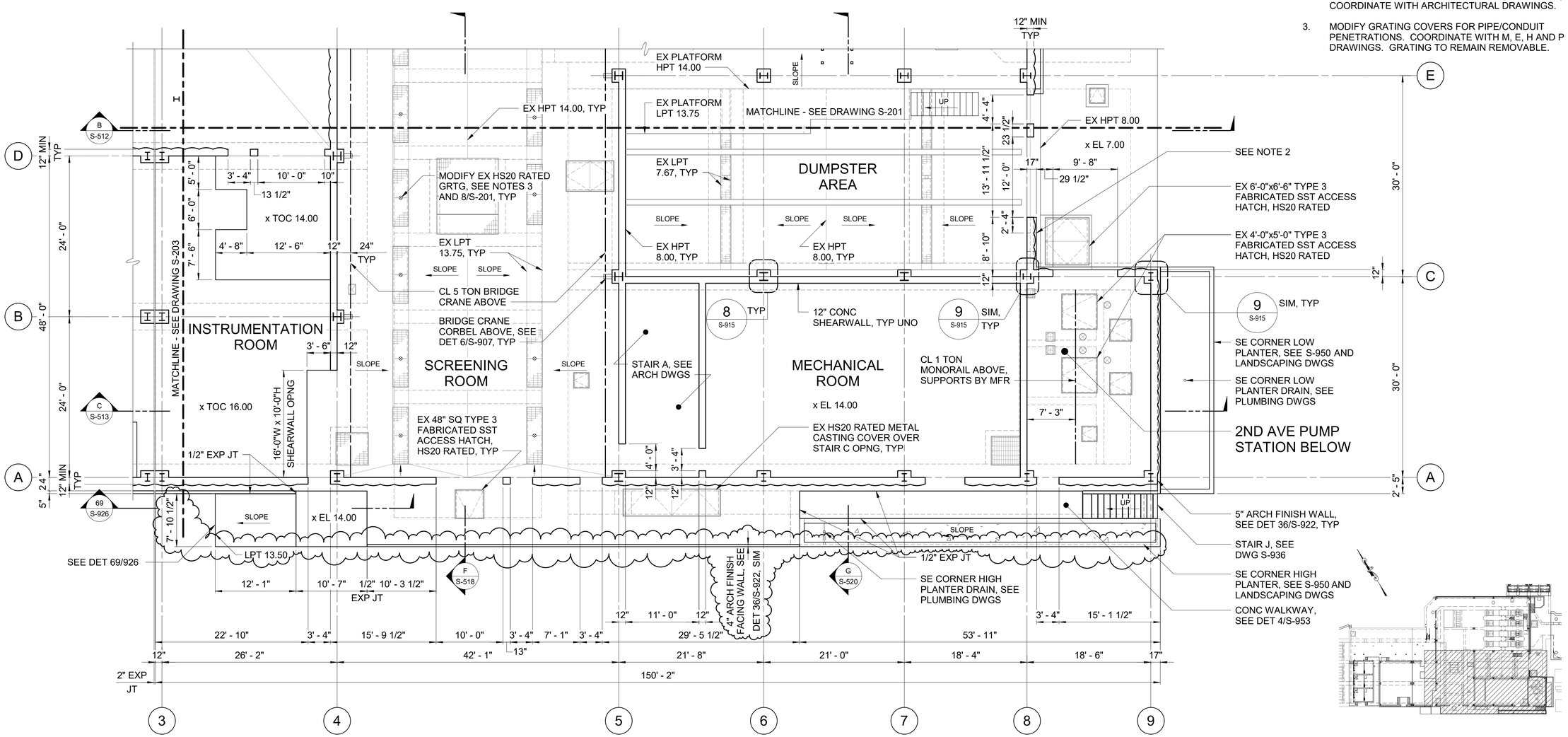
DATE: SEPTEMBER 2026
SHEET NO: 299 OF 719
DRAWING NO. S-201.00

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NOTES:

1. SEE NOTES ON DRAWING S-201.
2. PROVIDE 33"Wx16 1/2"H OPENING FOR FLOOD VENTS CENTERED IN WALL SECTION (INVERT 8.67). COORDINATE WITH ARCHITECTURAL DRAWINGS.
3. MODIFY GRATING COVERS FOR PIPE/CONDUIT PENETRATIONS. COORDINATE WITH M, E, H AND P DRAWINGS. GRATING TO REMAIN REMOVABLE.



BUILDING GROUND FLOOR - PARTIAL PLAN 2

1/8" = 1'-0"

KEYPLAN

1" = 60'-0"

1/8"=1'-0" 0 5 10 15 FT.

BID SET
DATE ISSUED: SEPTEMBER 2026

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NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.
1	10/2026	ADDENDUM 2	GD

DESIGNED BY: A. THURSTON	DRAWN BY: K. GRISSOM	PROJECT MANAGER: E. CAMILLERI
CHECKED BY: T. QUESADA	DESIGN LEAD: L. GIROUX	DESIGN MANAGER: G. DEREAMER

Hazen Brown AND Caldwell

STATE OF NEW YORK LISA G. GIROUX 088552 LICENSED PROFESSIONAL ENGINEER

Environmental Protection

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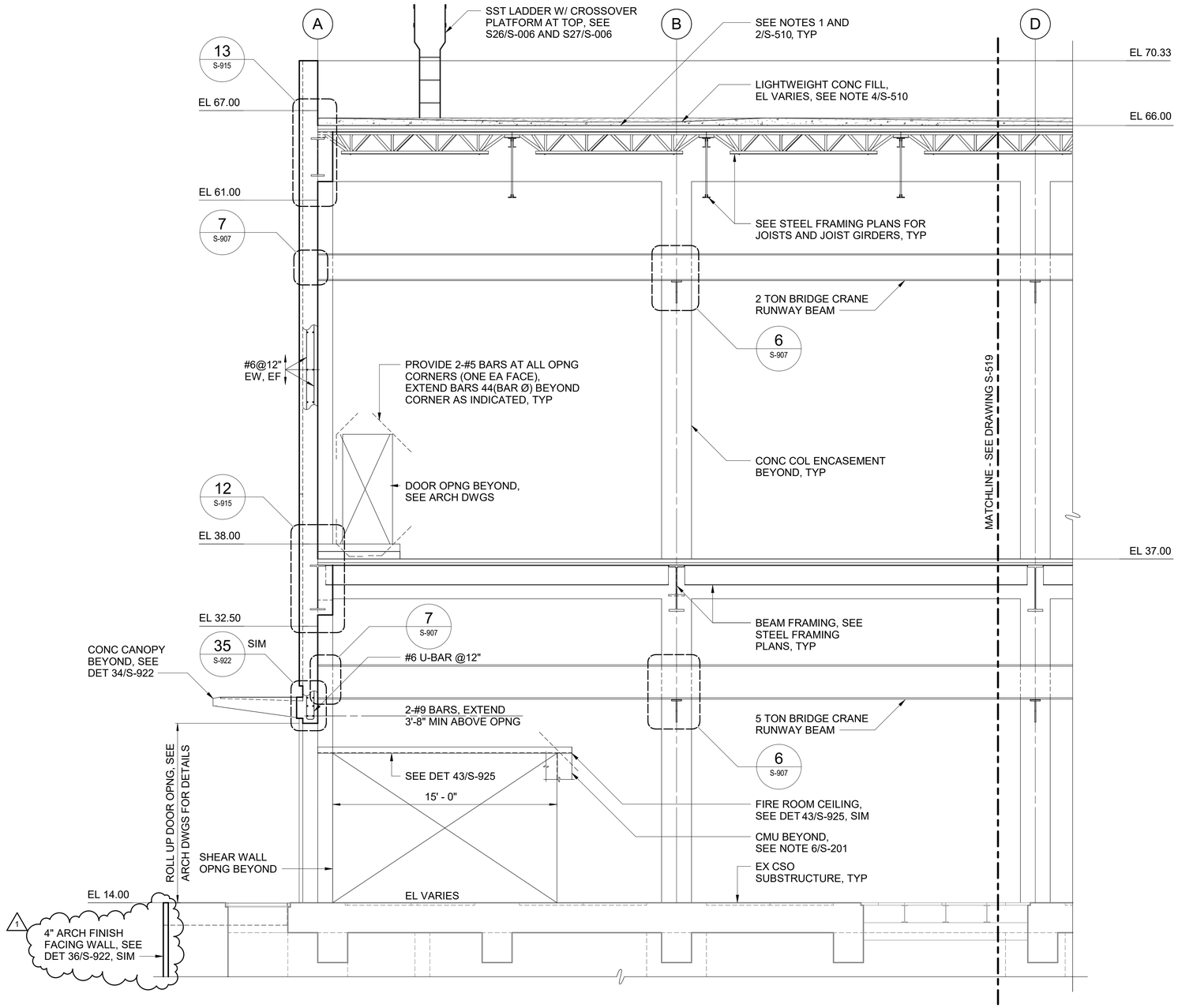
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STRUCTURAL
GROUND FLOOR PARTIAL PLAN 2

DATE: SEPTEMBER 2026
SHEET NO: 300 OF 719
DRAWING NO. S-202.00

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F S-200 SECTION

SCALE: 1/4" = 1'-0"

NOTES:

1. SEE NOTES ON S-510.

1/4"=1'-0" 0 4 8 FT.

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DATE ISSUED: SEPTEMBER 2026

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NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.
1	10/2026	ADDENDUM 2	GD

DESIGNED BY: A. THURSTON	DRAWN BY: K. GRISSOM	PROJECT MANAGER: E. CAMILLERI
CHECKED BY: T. QUESADA	DESIGN LEAD: L. GIROUX	DESIGN MANAGER: G. DEREAMER

Hazen Brown AND Caldwell

STATE OF NEW YORK LISA G. GIROUX 088557 LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

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PORTFOLIO MANAGER
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CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

STRUCTURAL
BUILDING SECTIONS 9

DATE: SEPTEMBER 2026

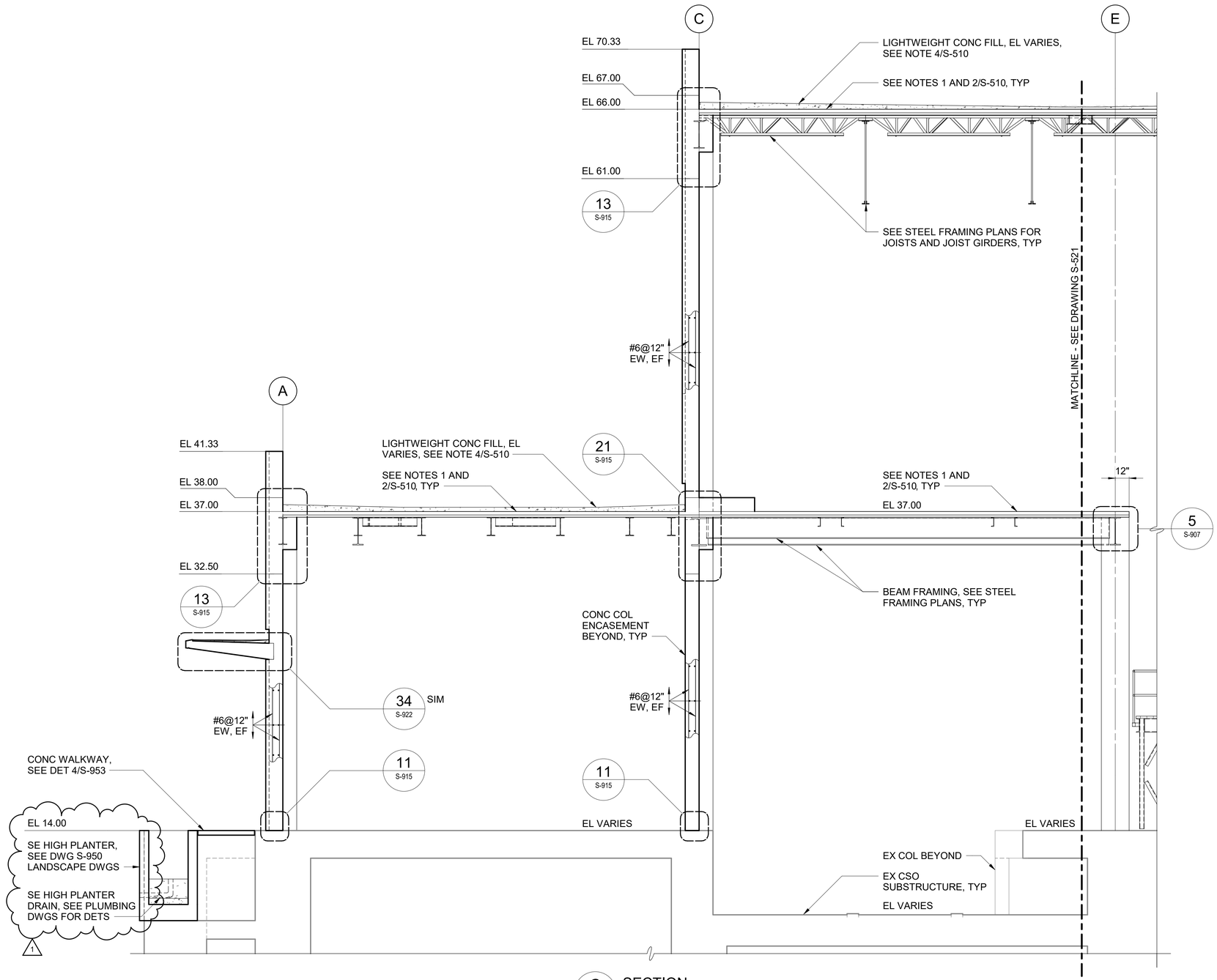
SHEET NO: 343 OF 719

DRAWING NO. S-518.00

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G S-200 SECTION

SCALE: 1/4" = 1'-0"

1/4"=1'-0" 0 4 8 FT.

NOTES:

1. SEE NOTES ON S-510.

NYC

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DATE ISSUED: SEPTEMBER 2026

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NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.
1	10/2026	ADDENDUM 2	GD

DESIGNED BY: A. THURSTON	DRAWN BY: K. GRISSOM	PROJECT MANAGER: E. CAMILLERI
CHECKED BY: T. QUESADA	DESIGN LEAD: L. GIROUX	DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

LISA G. GIROUX — STATE OF NEW YORK — 088552 — LICENSED PROFESSIONAL ENGINEER

Environmental Protection

ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.

PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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CONSTRUCTION PACKAGE 3 - OH-007

STRUCTURAL
BUILDING SECTIONS 11

DATE: SEPTEMBER 2026

SHEET NO: 345 OF 719

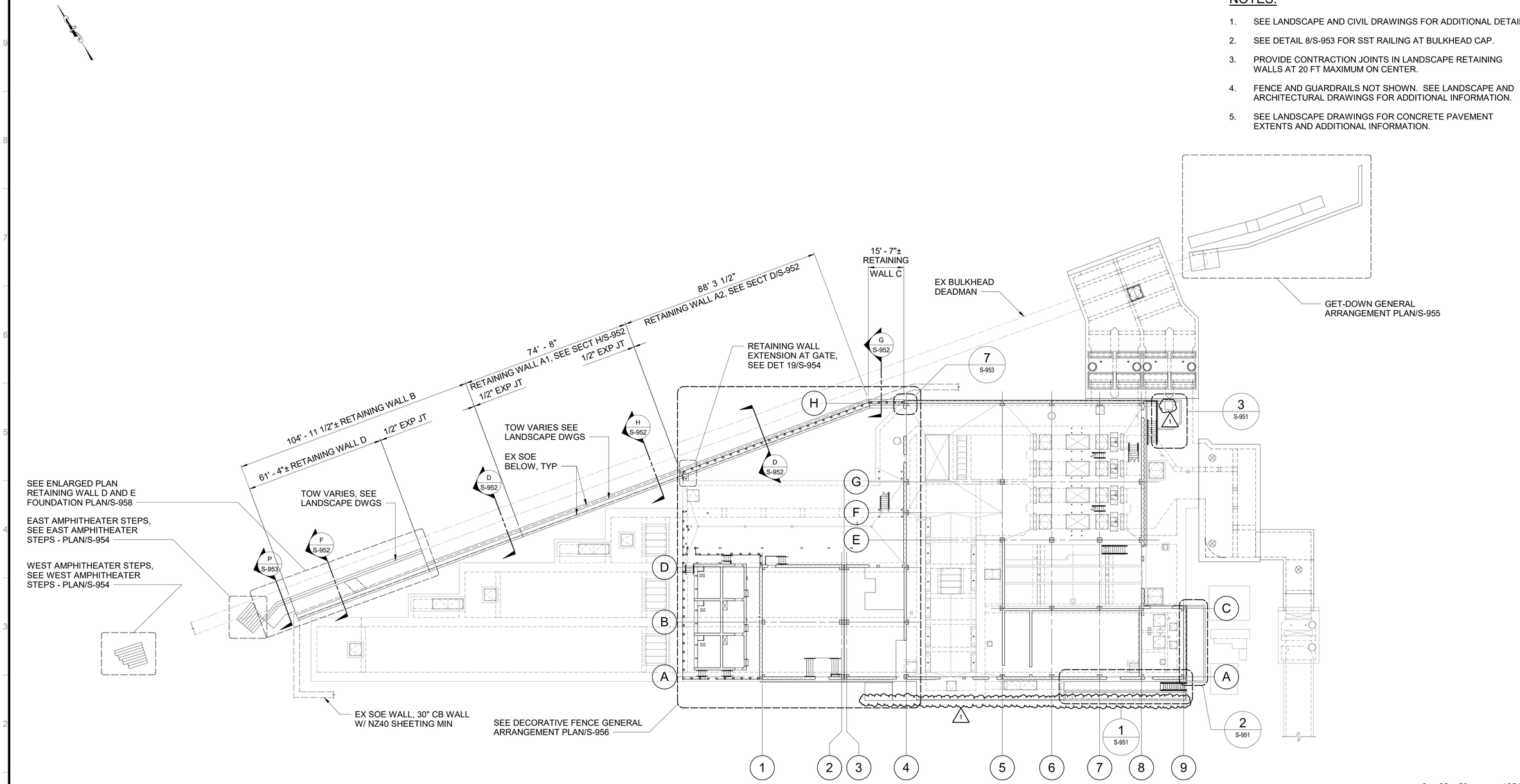
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NOTES:

1. SEE LANDSCAPE AND CIVIL DRAWINGS FOR ADDITIONAL DETAILS.
2. SEE DETAIL 8/S-953 FOR SST RAILING AT BULKHEAD CAP.
3. PROVIDE CONTRACTION JOINTS IN LANDSCAPE RETAINING WALLS AT 20 FT MAXIMUM ON CENTER.
4. FENCE AND GUARDRAILS NOT SHOWN. SEE LANDSCAPE AND ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
5. SEE LANDSCAPE DRAWINGS FOR CONCRETE PAVEMENT EXTENTS AND ADDITIONAL INFORMATION.



LANDSCAPE SITE WALLS GENERAL ARRANGEMENT

3/64" = 1'-0"

1/64"=1'-0" 0 25 50 125 FT.

BID SET
DATE ISSUED: SEPTEMBER 2026

GRAPHIC SCALES CHECK BEFORE USE

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NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.
1	10/2026	ADDENDUM 2	GD

DESIGNED BY:	DRAWN BY:	PROJECT MANAGER:
A. THURSTON	K. GRISSOM	E. CAMILLERI
CHECKED BY:	DESIGN LEAD:	DESIGN MANAGER:
T. QUESADA	L. GIROUX	G. DEREAMER

Hazen | Brown AND Caldwell

LISA G. GIROUX — 088552 — LICENSED PROFESSIONAL ENGINEER — STATE OF NEW YORK

Environmental Protection

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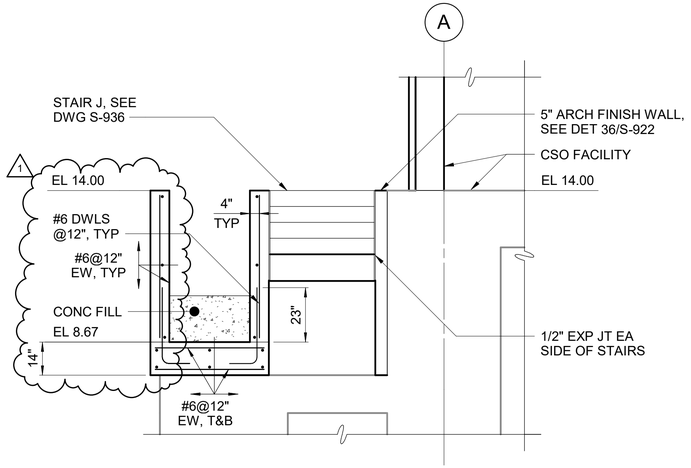
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STRUCTURAL
LANDSCAPE SITE WALLS GENERAL ARRANGEMENT

DATE: SEPTEMBER 2026
SHEET NO: 396 OF 719
DRAWING NO. S-950.00

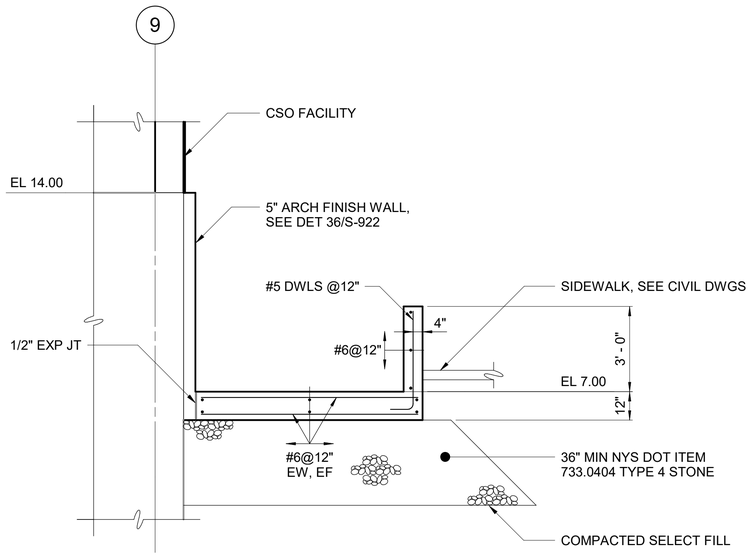
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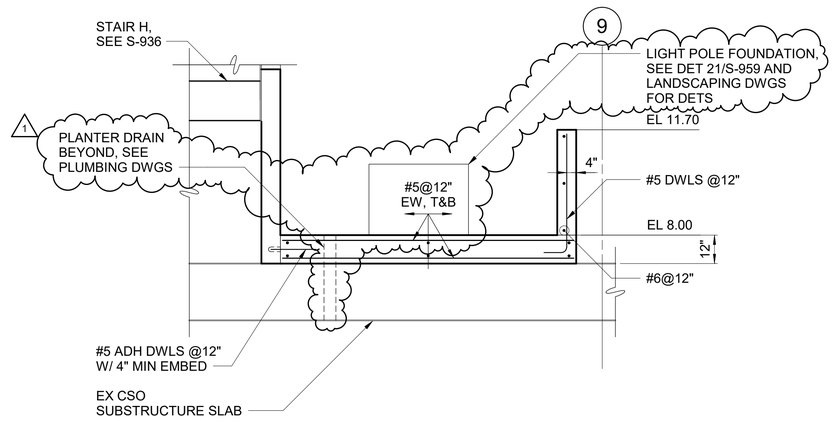
A S-951 SE CORNER HIGH PLANTER

3/8" = 1'-0"



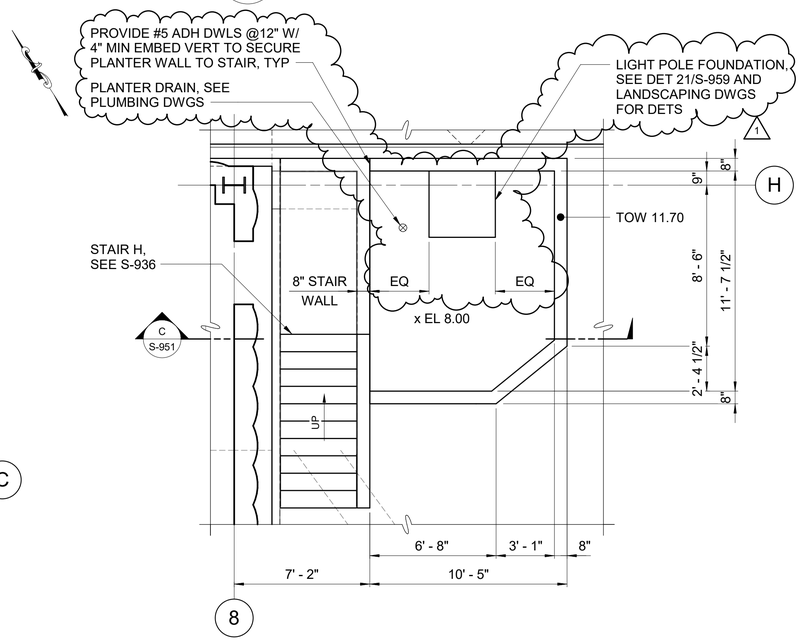
B S-951 SE CORNER LOW PLANTER

3/8" = 1'-0"



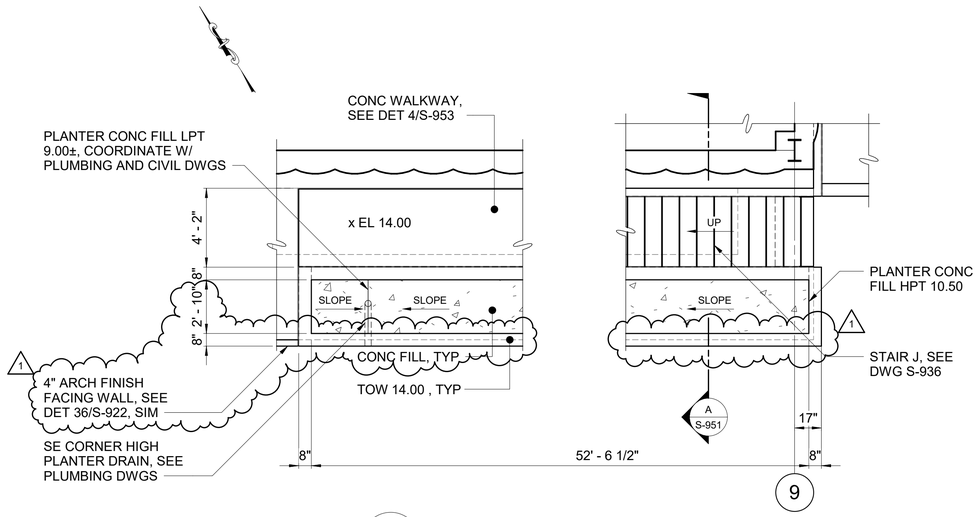
C S-951 NE CORNER LOW PLANTER

3/8" = 1'-0"



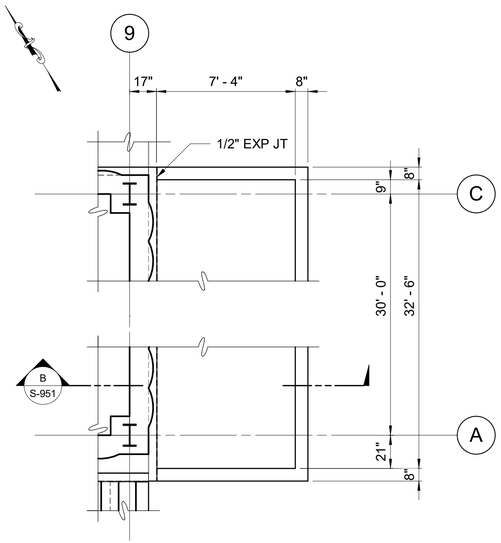
3 S-950 NE CORNER LOW PLANTER PLAN

1/4" = 1'-0"



1 S-950 SE CORNER HIGH PLANTER PLAN

1/4" = 1'-0"



2 S-950 SE CORNER LOW PLANTER PLAN

1/4" = 1'-0"

3/8"=1'-0" 0 1 2 3 5 FT.

1/4"=1'-0" 0 4 8 FT.

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CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

STRUCTURAL
LANDSCAPE SITE WALLS SECTIONS AND DETAILS
1

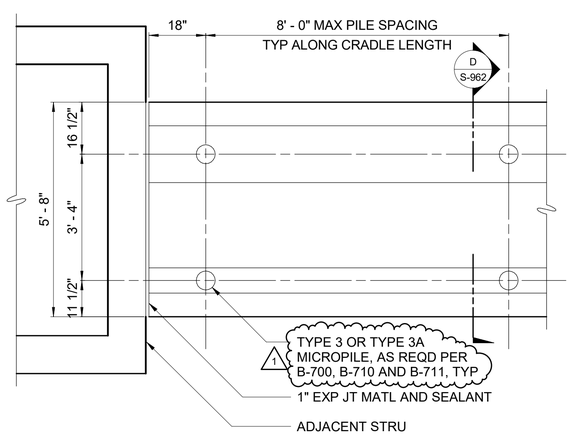
DATE: SEPTEMBER 2026

SHEET NO: 397 OF 719

DRAWING NO. S-951.00

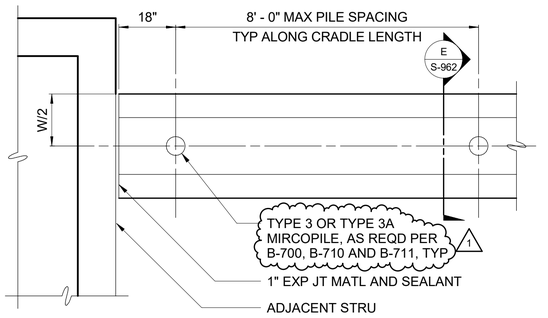
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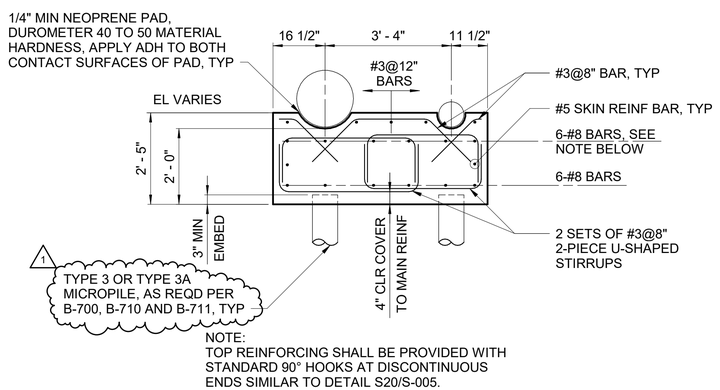
DOUBLE PIPE CRADLE SUPPORT - GENERAL PLAN

1/2" = 1'-0"



SINGLE PIPE CRADLE SUPPORT - GENERAL PLAN

1/2" = 1'-0"

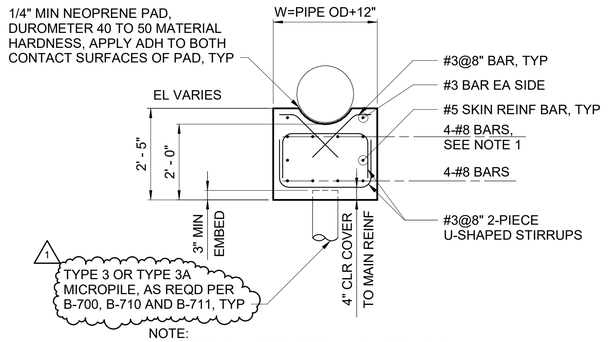


NOTE:
TOP REINFORCING SHALL BE PROVIDED WITH STANDARD 90° HOOKS AT DISCONTINUOUS ENDS SIMILAR TO DETAIL S20/S-005.

D SECTION

S-962

SCALE: 1/2" = 1'-0"



NOTE:

1. TOP REINFORCING SHALL BE PROVIDED WITH STANDARD 90° HOOKS AT DISCONTINUOUS ENDS SIMILAR TO DETAIL S20/S-005.
2. PIPE SHALL BE CENTERED ON SUPPORT.

E SECTION

S-962

SCALE: 1/2" = 1'-0"

1/2"=1'-0" 0 1 2 4 FT.

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A. MURPHY	K. GRISSOM	E. CAMILLERI
CHECKED BY:	DESIGN LEAD:	DESIGN MANAGER:
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Hazen | Brown AND Caldwell

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CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

STRUCTURAL
FORCE MAIN SUPPORT CRADLE PLANS AND SECTIONS

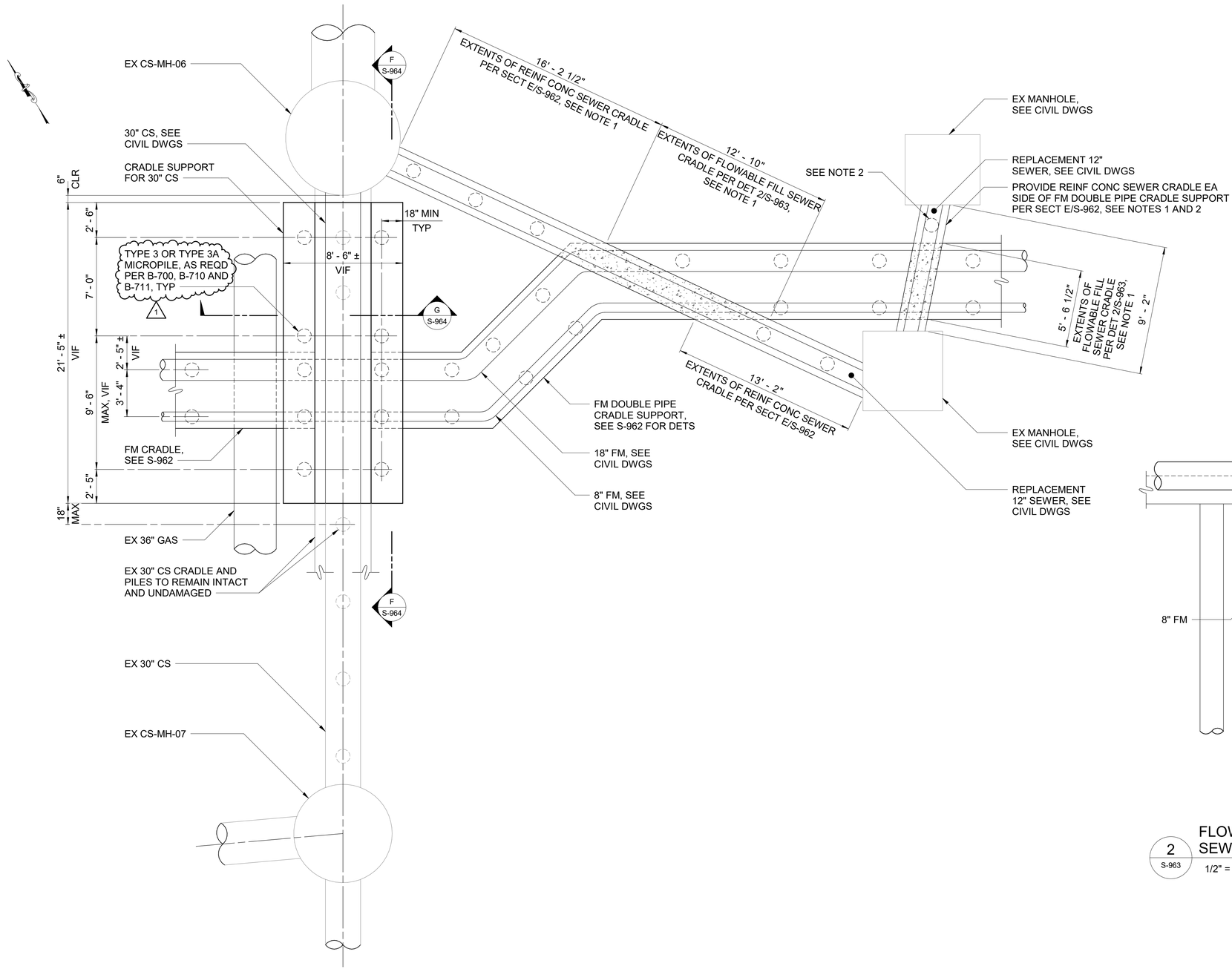
DATE: SEPTEMBER 2026

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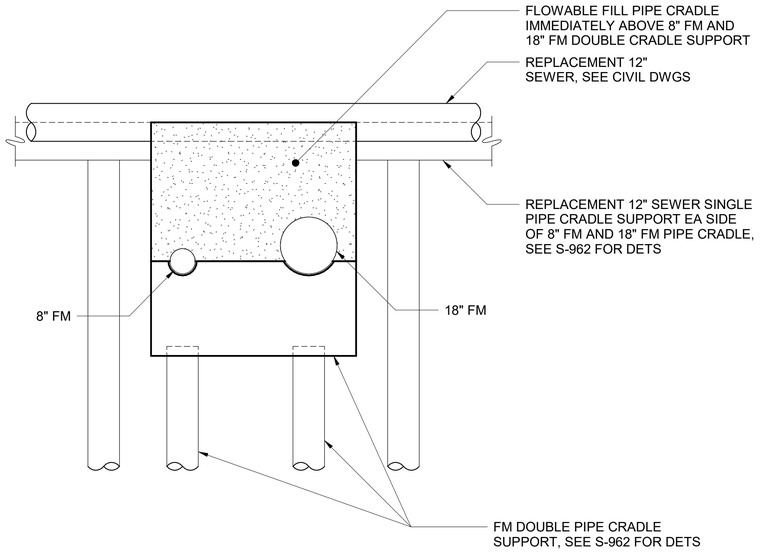


REPLACEMENT 12" SEWER & 30" CS CRADLE SUPPORT AT 8" FM/18" FM CROSSING

1/4" = 1'-0"

NOTES:

1. WHERE 12" SEWER CROSSES FM DOUBLE PIPE CRADLE, SEWER PIPE SHALL BE SUPPORTED BY AN UNREINFORCED FLOWABLE FILL PIPE CRADLE AS SHOWN IN DETAIL 2/S-963. WHERE 12" SEWER SPANS BETWEEN MANHOLE AND FM DOUBLE PIPE CRADLE SEWER PIPE SHALL BE SUPPORTED BY A PILE SUPPORTED REINFORCED CONCRETE PIPE CRADLE PER SECTION E/S-962.
2. WHERE CLEAR DISTANCE BETWEEN MANHOLE AND FM DOUBLE PIPE CRADLE IS LESS THAN 18" NO PIPE CRADLE IS REQUIRED FOR 12" SEWER. FOR CLEAR SPANS GREATER THAN 18" PROVIDE PILE SUPPORTED REINFORCED CONCRETE PIPE CRADLE. QUANTITY AND SPACING OF PILES BENEATH CRADLE SHALL BE PER SINGLE PIPE CRADLE SUPPORT - GENERAL PLAN/S-962.



2 / S-963 FLOWABLE FILL PIPE CRADLE @ REPLACEMENT 12" SEWER

1/2" = 1'-0"

1/4"=1'-0" 0 4 8 FT.

1/2"=1'-0" 0 1 2 4 FT.

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Hazen | Brown AND Caldwell

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PORTFOLIO MANAGER	KEVIN CLARKE, P.E.

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STRUCTURAL
REPLACEMENT 12" SEWER & 30" CS SUPPORT AT 8" FM/18" FM CROSSING PLAN AND SECTION

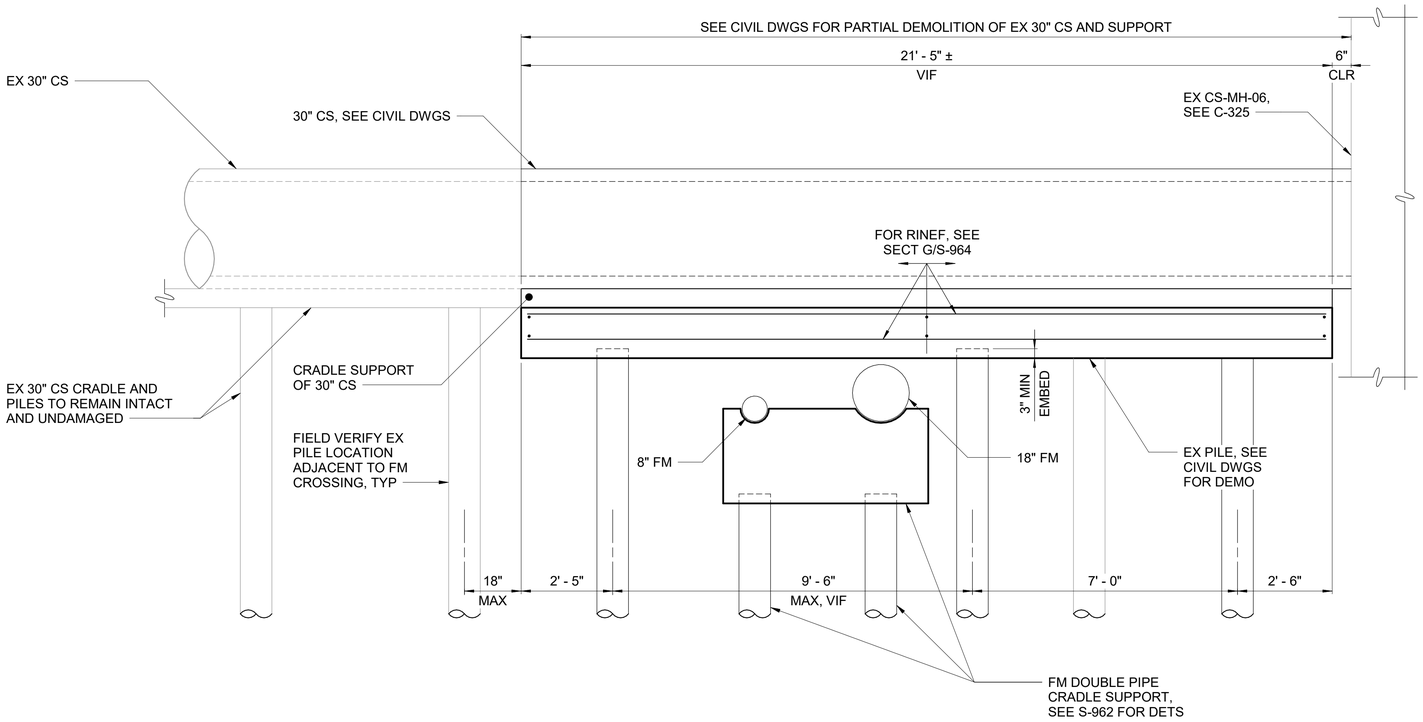
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SHEET NO: 409 OF 719
DRAWING NO. S-963.00

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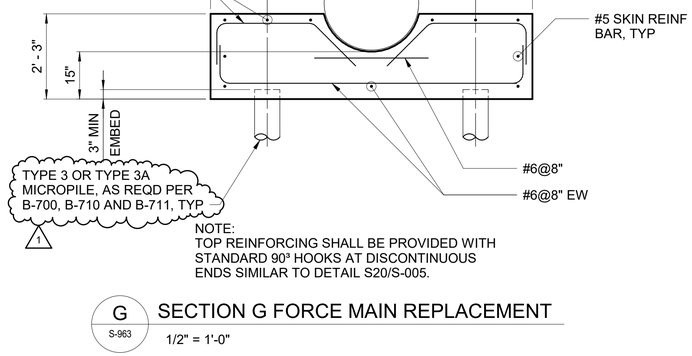
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NOTES:

1. SEE CIVIL DRAWINGS FOR PIPING DETAILS.



F S-963 SECTION
1/2" = 1'-0"



G S-963 SECTION G FORCE MAIN REPLACEMENT
1/2" = 1'-0"

1/2"=1'-0" 0 1 2 4 FT.

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PORTFOLIO MANAGER
KEVIN CLARKE, P.E.

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CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

STRUCTURAL
REPLACEMENT 12" SEWER & 30" CS SUPPORT AT 8" FM/18" FM CROSSING PLAN AND SECTION

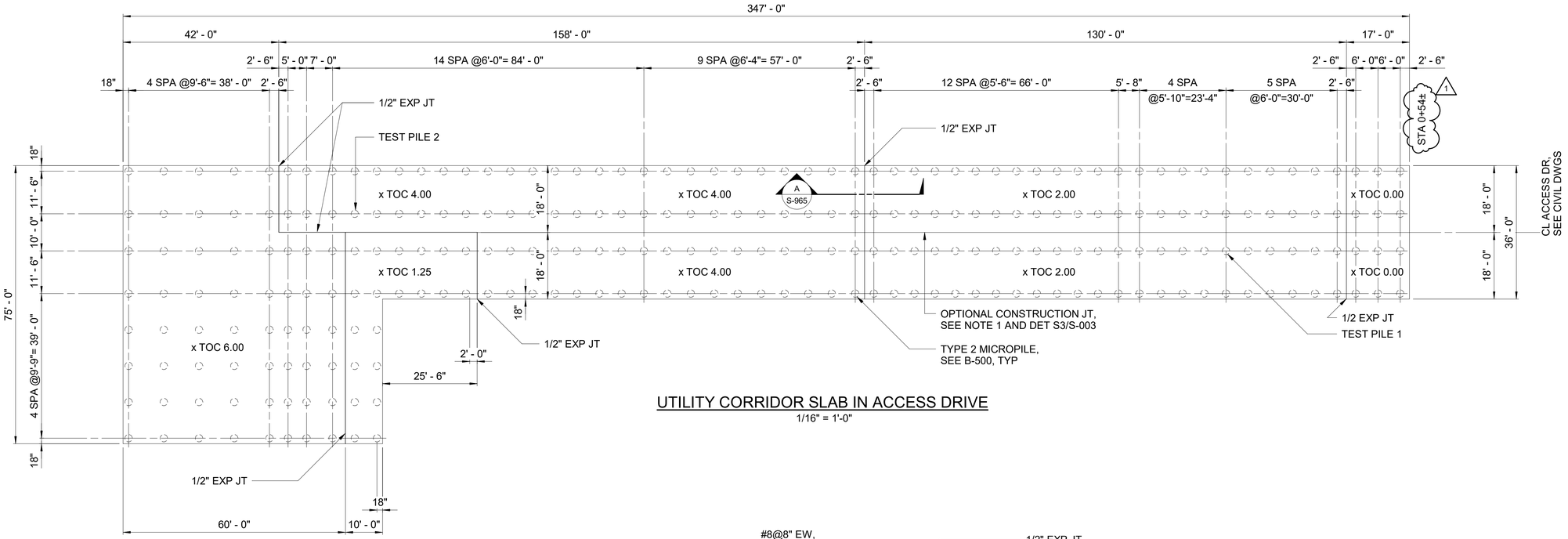
DATE: SEPTEMBER 2026
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DRAWING NO. S-964.00

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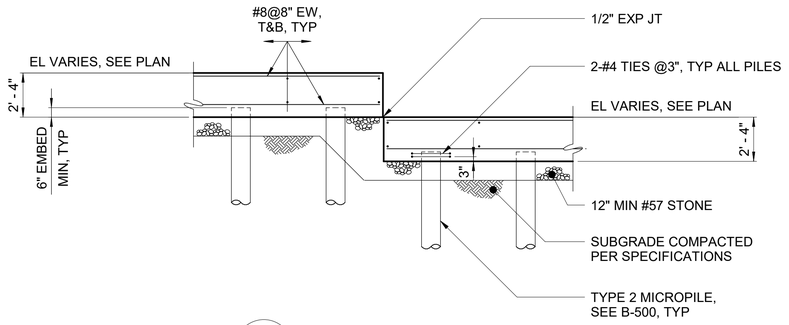
NOTES:

1. OPTIONAL CONSTRUCTION JOINT MAY BE PROVIDED AT LOCATION SHOWN IF REQUIRED FOR SEQUENCING.
2. PILES SHALL BE 65 TON TYPE 2 COMPRESSION MICROPILES, SEE DRAWINGS B-500 AND B-501 FOR TYPICAL PILE DETAILS.
3. PRODUCTION PILES SHALL NOT BE INSTALLED PRIOR TO SUCCESSFUL COMPLETION OF PILE LOAD TESTS.



UTILITY CORRIDOR SLAB IN ACCESS DRIVE

1/16" = 1'-0"



A / S-965 SECTION

SCALE: 1/4" = 1'-0"

1/16"=1'-0" 0 10 20 30 FT.

1/4"=1'-0" 0 4 8 FT.

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PORTFOLIO MANAGER	KEVIN CLARKE, P.E.

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STRUCTURAL
UTILITY CORRIDOR SLAB PLAN AND SECTIONS

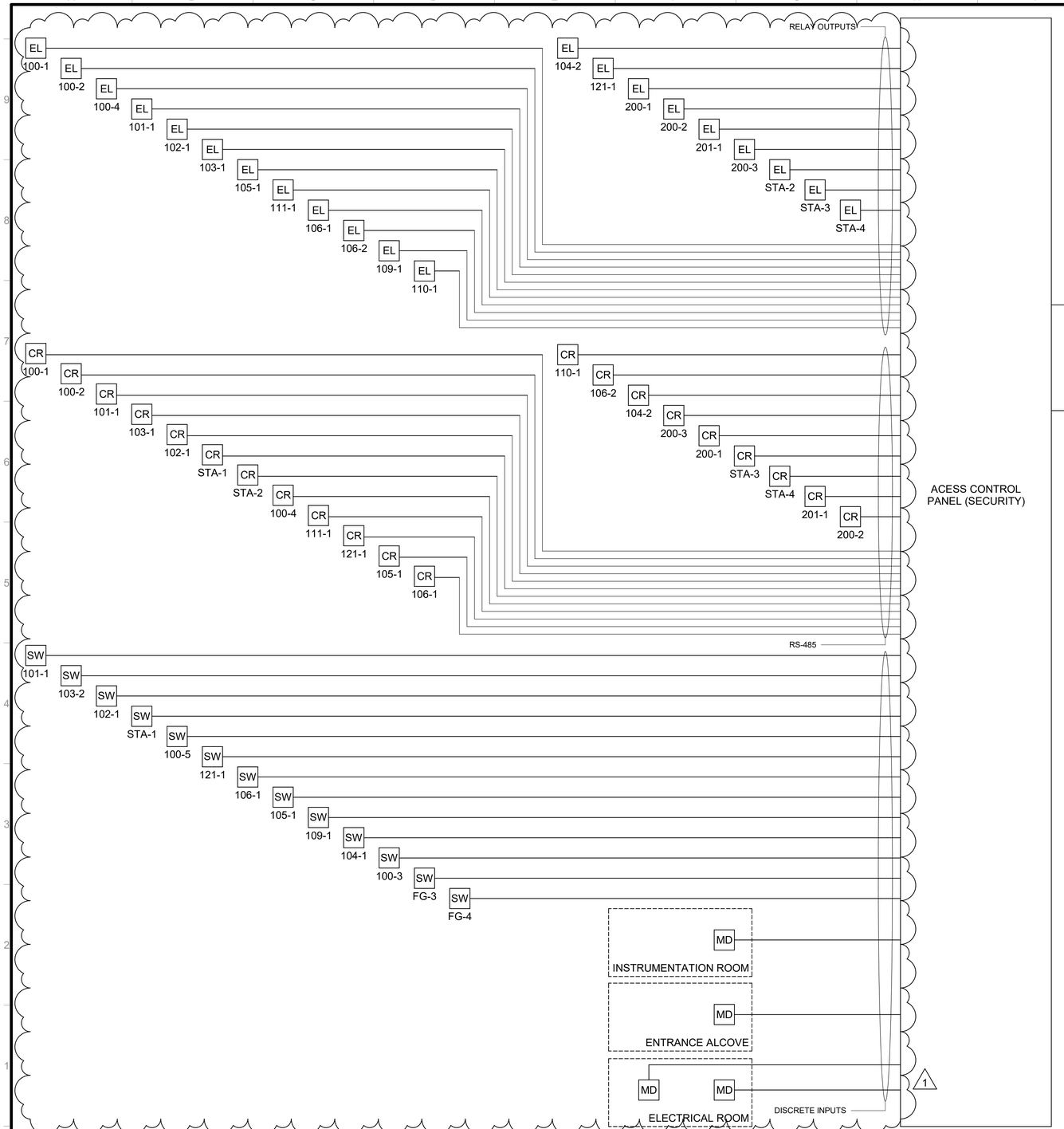
DATE: SEPTEMBER 2026

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NOTES

1. RS 485 TWO PAIR TWISTED SHLD, ONE PAIR BELDEN 9552 (18AWG), ONE PAIR BELDEN 1069 (#16AWG) MAXIMUM DISTANCE OF 2000 FEET. FOR DISTANCES GREATER THAN 2000 FEET, USE BELDEN 9343 (2/C#14) FOR POWER AND BELDEN 9841 ONE PAIR SHLD FOR DATA.
2. RS-232 SHALL BE BELDEN 9539 OR APPROVED EQUAL.
3. CONDUIT ROUTES ARE NOT SHOWN IN THE PLAN. EXACT ROUTING SHALL BE DETERMINED IN THE FIELD.
4. SEE DRAWING G-014 FOR NFPA 820 AREA CLASSIFICATIONS.
5. FURNISH AND INSTALL ALL INTERCONNECTING CONDUIT AND WIRE AS REQUIRED FOR A FULLY OPERATIONAL SYSTEM.
6. REFER TO SPECIFICATION SECTION 28 12 02 SECURITY ACCESS AND SURVEILLANCE SYSTEM.
7. SEE PLAN DRAWINGS E-240, E-330 AND E-410 FOR DEVICE LOCATIONS. CONTRACTOR SHALL LOCATE ALL DEVICES AS REQUIRED.
8. FOR DOOR SCHEDULE AND HARDWARE SEE DRAWING A-921 AND SPECIFICATION SECTION 08 71 01.
9. REFER TO I-007 FOR CAMERA NETWORK DIAGRAM.

1

LEGEND

EL	ELECTRIFIED LOCKSET
CR	PROXIMITY CARD READER
SW	MAGNETIC MONITOR SWITCH
MD	MOTION DETECTOR

1

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CHECKED BY: W. DICKERSON	DESIGN LEAD: W. DICKERSON	DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

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KEVIN CLARKE, P.E.

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ELECTRICAL
SECURITY SYSTEM RISER DIAGRAM

DATE: SEPTEMBER 2026
SHEET NO: OF 723
DRAWING NO. E-033.00

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SYMBOL: TYPE	DESCRIPTION		LAMP	VOLT	SYSTEM WATTAGE	CONTROL INTENT
L1 	DESCRIPTION:	NOM. 100W 12342 LUMENS 3000K LED LUMINAIRE WITH TYPE III DISTRIBUTION; WITH A NOM. 4'-0" LONG ARM MTD. AT 17'-0" A.F.G ON STEEL TBTA POLE; OVERALL POLE HEIGHT 20'-4" A.F.G.; 0-10V DIMMING [REFER TO DOT 2026 STREET LIGHTING STANDARD DRAWINGS LP-033 & LUM-002 AND SPECIFICATION SECTION #XXXX OUTDOOR LIGHTING]	3000°K WHITE/MIN. 80CRI LED CHIP ON BOARD LED ARRAY [12342 DELIVERED LUMENS] *LAMP ASSEMBLY AND HEAT SINK SHALL BE ROHS COMPLIANT AND TESTED PER IESNA - LM-79-08	120	100W	0-10 V DIMMING; BUILT IN PHOTOCELL
	OPTICS:	INJECTION-MOLDED ACRYLIC WITH INTERNAL OPTICS; TYPE III DISTRIBUTION.				
	LOCATION/ REMARKS:	[SITE GENERAL] LUMINAIRE DIMENSION SHALL BE NOMINAL 16" WIDTH AND 34" HEIGHT, SHIELD SHALL BE NOMINAL 28" DIAMETER . LUMINAIRE SHALL BE CONSTRUCTED OF CAST ALUMINUM, LUMINAIRE SHALL HAVE A SHIELD. ALL EXPOSED SURFACES TO RECEIVE A MINIMUM 2.5 mil EXTERIOR GRADE SATIN POLYESTER POWDER COAT ENAMEL PAINTED FINISH; DOT APPROVED FINISH COLOR (BY ARCH). FIXTURE SHALL BE UL LISTED FOR WET LOCATION, THROUGH WIRING AND BEAR AN IBEW LABEL. SPACING CRITERION SHALL BE 3.08 (0-180), 4.32 (90-270) AND 3.36 (DIAGONAL). FIXTURE MOUNTED AT NOM. 17'-0" A.F.G; EXACT MOUNTING HEIGHT WILL BE BASED ON GRADE ELEVATION (SEE CIVIL ENGINEER DRAWING FOR GRADE ELEVATION.) LUMINAIRE SHALL BE PROVIDED WITH MIN. 10kV SURGE PROTECTIVE DEVICE. HOUSING SHALL BE PROVIDED WITH TOOL-LESS LATCH ASSEMBLY ON REMOVABLE DOOR FOR ACCESS TO ELECTRICAL COMPARTMENT. PROVIDE JUNCTION BOX PER FIXTURE LOCATION. ALL HARDWARE AND FASTENERS TO BE STAINLESS STEEL AND CORROSION-RESISTANT. ALL SEALS AND SEALING DEVICES SHALL BE LINED WITH SILICONE. INSTALLING CONTRACTOR TO PROVIDE ALL NECESSARY SUPPORTS REQUIRED FOR SAFE AND PROPER MOUNTING. PROVIDE QUICK DISCONNECT FOR LED MODULE AND DRIVER.				
	DRIVER:	PROVIDE WITH AN INTEGRAL 120 VOLT SOLID STATE ELECTRONIC 0-10V DIMMING DRIVER. THE POWER SUPPLY SHALL BE OVERLOAD AND SHORT CIRCUIT PROTECTED AS WELL AS THERMALLY REGULATED TO PREVENT OVERHEATING. DRIVER SHALL BE SOUND A RATED AND ASSEMBLED ON AN UNITIZED REMOVABLE TRAY WITH QUICK DISCONNECT PLUG. PROVIDE WITH PRE-PROGRAMMED PROGRESSIVE LAMP STARTING, CONSISTENT LIGHT OUTPUT, AND END OF LAMP LIFE ALERT.				
	POLE:	TBTA POLE SHALL BE STEEL SHAFT. POLE SHALL BE NOMINAL 20'-4" TALL. POLE SHALL MEET A MIN. WIND LOAD SPEED 110 MPH 3S WITH A 1.3 GUST FACTOR (AS PER AASHTO LTS-6-2013). POLE SHALL HAVE A 4'-0" LONG ARM. ALL EXPOSED POLE SURFACES TO RECEIVE A PRIMER COAT PLUS A MINIMUM 4 mil EXTERIOR GRADE SPRAYED ON ACRYLIC POLYURETHANE PAINTED FINISH; DOT APPROVED FINISH COLOR (BY ARCH). PROVIDE HAND HOLE WITH HINGED COVER AND GALVANIZED CARBON STEEL FASTENERS. PROVIDE WITH VIBRATION PAD. PROVIDE WITH GALVANIZED LEVELING NUTS AT ANCHOR BOLTS. POLE AND BASE SHALL BE SHIPPED WITH PROTECTIVE WRAPPING. ALL EXPOSED POLE SURFACES TO RECEIVE GALVANIZED PRIME PAINT. REFER TO DOT 2026 STREET LIGHTING STANDARD DRAWINGS LP-033.				
	FOOTING/ BASE:	POLE BASE (BOTTOM PORTION) SHALL BE OF DUCTIE IRON PER ASTM A536-84 (1999)e1, POLE BASE (TOP PORTION) SHALL BE OF DUCTIE IRON OR CAST ALUMINUM, MOUNTING PLATE SHALL BE OF STEEL; BOLTS, SCREWS, NUTS, WASHERS AND HINGES SHALL BE OF STAINLESS STEEL. DOT APPROVED FINISH COLOR (BY ARCH). REFER TO DOT 2026 STREET LIGHTING STANDARD DRAWINGS LP-033 FOR POLE BASE AND FDN-001,FDN-009 FOR FOUNDATION.				

1

Domingo Gonzalez Associates
Architectural Lighting Design
29 Broadway
New York, NY 10006
ph.212.608.4800
fx.212.385.9160

BID SET

SUBMITTAL DATE: SEPTEMBER 2026

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1	10/2026	ADDENDUM NO.2	PQ

DESIGNED BY:	DRAWN BY:	PROJECT MANAGER:
K. PHILIPPI	E. BRAVO	P. QUACH
CHECKED BY:	DESIGN LEAD:	DESIGN MANAGER:
P. QUACH	D. GONZALEZ	G. DEREAMER

Hazen | Brown AND Caldwell

Environmental Protection

ACCOUNTABLE MANAGER
JESSE GOLDIN, P.E.

PORTFOLIO MANAGER
KEVIN CLARKE, P.E.

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CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

SITE LIGHTING
FIXTURE SCHEDULE

DATE: SEPTEMBER 2026
SHEET NO: OF 723
DRAWING NO. E-060.00

All inquiries regarding this drawing(s) or project should be made to NYC Environmental Protection, Bureau of Engineering Design and Construction.

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Date & Time Plotted: 10/29/2026 2:10 PM
Plot Scale: 1:1
Plot Style Table: 18520-Acad_BEDC_HD.ctb

Assembly or Fixture Tag (SEE PLAN)	Assembly Description	Component Tag (SEE CUTS PKG)	Component Qty	Manufacturer's catalog reference	Driver& Dimming	Source wattage (W)	Extended wattage (W)	Voltage (V)	Source type	Notes See General Comments at top of page
SMF1	SURFACE MOUNTED 1FT LENGTH RIGID LINEAR GRAZER	-	-	SURFACE MOUNTED 1FT LENGTH RIGID LINEAR GRAZER, 2700K Luminaire: ECOSENSE TROV_L50 Grazer L50-E-12"-12-27-80-VOLTAGE(BY EE)-9x59-0-10V DIMMING Accessory: ECOSENSE BRACKET: MNT-L-FAB LOUVER: LV-L50-ASYM-12	INTEGRAL / 0-10V DIMMING	12 W	-	120 V	LED 2700°K 80 CRI 996 DELIVERED LUMENS L70@25°C ≥150,000 Hrs.	See General Comments at top of page. 1. Fixture warranty: 5 yr. 2. EE to confirm dimming protocol. 3. Wiring options to be verified by EE/EC. 4. EEC/GC to coordinate mounting to Architecture to ensure proper installation.
SMF1.1	SURFACE MOUNTED 1FT LENGTH RIGID LINEAR WALL WASHER	-	-	SURFACE MOUNTED 1FT LENGTH RIGID LINEAR WALL WASHER, 2700K Luminaire: ECOSENSE TROV_L50 Wall Washer L50-E-12"-12-27-80-VOLTAGE(BY EE)-70x70-0-10V DIMMING Accessory: ECOSENSE BRACKET: MNT-L-FAB LOUVER: LV-L50-ASYM-12	INTEGRAL / 0-10V DIMMING	12 W	-	120 V	LED 2700°K 80 CRI 1,122 DELIVERED LUMENS L70@25°C ≥150,000 Hrs.	See General Comments at top of page. 1. Fixture warranty: 5 yr. 2. EE to confirm dimming protocol. 3. Wiring options to be verified by EE/EC. 4. EC/GC to coordinated mounting to Architecture to ensure proper install.
SMF4	SURFACE MOUNTED 4FT LENGTH RIGID LINEAR	-	-	CLASS 1 DIV 1, SURFACE MOUNTED 4FT LENGTH RIGID LINEAR LUMINAIRE, 3000K Luminaire: PHOENIX LFXB-LED-4-WW-EMERGENCY BATTERY BACKUP(BY EE)-MOD 0-10V DIMMING Accessory: MOUNTING ACCESSORIES TO BE VERIFIED BY EC/GC.	INTEGRAL / 0-10V DIMMING	80 W	-	120 V	LED 3000°K 80 CRI 8,400 NOMINAL LUMENS (4FT) L70@50,000 Hrs.	See General Comments at top of page. 1. Fixture warranty: 5 yr. 2. 80W for 4ft length. 3. EE to confirm dimming protocol. 4. EC/GC to coordinate mounting to Architecture to ensure proper installation.

1

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Plot Scale: 1:1

NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.
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DESIGNED BY: D. JOSEPH	DRAWN BY: T. HILLIARD	PROJECT MANAGER: P. YOUNG
CHECKED BY: W. DICKERSON	DESIGN LEAD: W. DICKERSON	DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

STATE OF NEW YORK · AUSTIN W. VIRAMONTES · 105877 · LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER	JESSE GOLDIN, P.E.
PORTFOLIO MANAGER	KEVIN CLARKE, P.E.

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CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

ELECTRICAL

OUTDOOR PARK LIGHTING SCHEDULE - 2

DATE: SEPTEMBER 2026
SHEET NO: OF 723
DRAWING NO. E-061.00

NYC BID SET
SUBMITTAL DATE: SEPTEMBER 2026

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Assembly or Fixture Tag (SEE PLAN)	Assembly Description	Component Tag (SEE CUTS PKG)	Component Qty	Manufacturer's catalog reference	Driver& Dimming	Source wattage (W)	Extended wattage (W)	Voltage (V)	Source type	Notes See General Comments at top of page
SMF5	POLE MOUNTED ADJUSTABLE FLOOD LIGHT	-	-	CLASS 1 DIV 1, POLE MOUNTED ADJUSTABLE FLOOD LIGHT, 3000K Luminaire: SOLAS RAY LIGHTING HJDS1-150-MOD TO 30K-VOLTAGE(BY EE)-40-MOUNTING OPTIONS(BY EC/GC/AR)-EMERGENCY BATTERY BACKUP (BY EE)-MOD 0-10V DIMMING Accessory: SOLAS RAY LIGHTING TENON SLIP FITTER: TSF (EC/GC TO VERIFY)	INTEGRAL / 0-10V DIMMING	150 W	-	120 V	LED MOD 3000°K 80 CRI 21,000 NOMINAL LUMENS L70@70,000 Hrs.	See General Comments at top of page. 1. Fixture warranty: 5 yr. 2. EE to confirm dimming protocol. 3. EC/GC to coordinate mounting to pole and structure to ensure proper installation. 4. EC/GC to provide manufacturer shop drawings showing the fixture, mounting accessory(ies), pole, structural support at the pole base for mounting to the platform, and electrical feeds, all in accordance with the coordinated architectural drawings.
SMW1	SURFACE MOUNTED LUMINAIRE @DOOR	-	-	SURFACE MOUNTED LUMINAIRE, FORWARD THROW OPTIC, 3000K Luminaire: LITHONIA WDGE1 LED WDGE1 LED-P2-30K-80CRI-VF-VOLTAGE(BY EE)-MOUNTING(BY EC/GC/AR)-OPTIONS(BY EE)-FINISH(BY AR)	INTEGRAL / NON-DIM	15 W	-	120V	LED 3000°K 80 CRI 1,827 DELIVERED LUMENS L91@25°C ≥100,000 Hrs.	See General Comments at top of page. 1. Fixture warranty: 5 yr. 2. EC/GC to coordinate mounting to Architecture to ensure proper installation.
SMW2	SURFACE MOUNTED LUMINAIRE	-	-	SURFACE MOUNTED WALL LUMINAIRE Luminaire: TARGETTI DAS-RP-RAL-L2-FL-30-VOLTAGE-MG-M60-UNDERDRIVE FIXTURE TO 75%OUTPUT Accessory: TARGETTI Asymmetric Snoot: 1E3013-FINISH Rotational Bracket: 1E3015-FINISH POWER SUPPLY AS VERIFIED BY EE/EC	REMOTE / NON-DIM	15 W	-	120V	LED 3000°K 80 CRI 1,450 DELIVERED LUMENS L80/B10 80,000 Hrs @ max TA +25°C	See General Comments at top of page. 1. Fixture warranty: 5 yr. 2. Finish to be verified by landscape architect. 3. Power Supply to be verified by EE/EC.
SMW3	SURFACE MOUNTED LUMINAIRE @STAIRWELL STRUCTURE	-	-	SURFACE MOUNTED LUMINAIRE, ADJUSTABLE, 3000K Luminaire: LITHONIA ESXF LED ESXF1-ALO-SWW2-MOUNTING(BY EC/GC/AR)-FINISH(BY AR) Accessory: MOUNTING ACCESSORIES TO BE VERIFIED BY EC/GC.	INTEGRAL / NON-DIM	34 W	-	120V	LED 3000°K 80 CRI 4,748 DELIVERED LUMENS L90 @25°C ≥ 36,000 Hrs.	See General Comments at top of page. 1. Fixture warranty: 5 yr. 2. Fixture has a selector switch for three input wattages. Medium input (19 W) is specified and shall be set in the field. 3. EC/GC to coordinate mounting to Architecture to ensure proper installation. 4. EC/GC to provide manufacturer shop drawings showing the fixture, mounting accessory(ies), stairwell structure, and electrical feeds, all in accordance with the coordinated architectural drawings.

1

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1	10/2026	ADDENDUM NO. 2	AV

DESIGNED BY: D. JOSEPH | DRAWN BY: T. HILLIARD | PROJECT MANAGER: P. YOUNG
CHECKED BY: W. DICKERSON | DESIGN LEAD: W. DICKERSON | DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

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NYC Environmental Protection

ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.
PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

ELECTRICAL

OUTDOOR PARK LIGHTING SCHEDULE - 3

DATE: SEPTEMBER 2026
SHEET NO: OF 723
DRAWING NO. E-062.00

NYC BID SET
SUBMITTAL DATE: SEPTEMBER 2026

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Last Saved By: TDimiceli
Last Date Saved: 9/28/2026 12:48 PM
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Drawing File Name & Drive Location: C:\Users\THilliard\DCACDocs\Hazen and Sawyer\90409-000_CSO-GC-SFS-DES-OH\Project Files\100-AutoCAD\01-AutoCAD\2-Sheets\10-BC\CP-03\E-063.00.dwg
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Plot Style Table: BEDC_Acad_2021.ctb

1

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CHECKED BY: W. DICKERSON	DESIGN LEAD: W. DICKERSON	DESIGN MANAGER: G. DEREAMER

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NYC Environmental Protection

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PORTFOLIO MANAGER	KEVIN CLARKE, P.E.

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ELECTRICAL

OUTDOOR PARK LIGHTING SCHEDULE - 4

DATE: SEPTEMBER 2026
SHEET NO: OF 723
DRAWING NO. E-063.00

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GENERAL NOTES:

1. SEE CIVIL, STRUCTURAL AND LANDSCAPE DRAWINGS FOR SUBSURFACE COORDINATION.
2. SEE SPECIFICATION 26 56 11 FOR OUTDOOR LIGHTING.
3. SEE SPECIFICATION 26 05 43 AND DRAWING E-900, DETAIL 1 FOR UNDERGROUND DUCTBANKS
.
4. SEE DRAWINGS E-060 THRU E-062 FOR LIGHTING FIXTURE SCHEDULES AND E-905 THRU E-907 FOR LIGHTING DETAILS.
5. ELECTRICAL CONTRACTOR SHALL COORDINATE ALL NECESSARY FIXTURE AND MOUNTING ACCESSORIES TO ENSURE PROPER INSTALLATION.
6. FINAL ALIGNMENT OF FIXTURE TO BE COORDINATED ON-SITE BY LIGHTING DESIGNER.
7. ELECTRICAL HANDHOLES SHALL BE 48" x 12".
8. ELECTRICAL PULLBOXES SHALL BE 18" x 12".

KEY NOTES:

A. MANHOLE AND DUCTBANK INSTALLED DURING CONSTRUCTION PHASE CP-1.

B. SEE DRAWING E-066 FOR PARK LIGHTING PANEL ELEVATION DETAILS. PARK LIGHTING PANEL LP-PA01 IS SERVICED FROM UTILITY POWER AND NOT FROM NEW CSO FACILITY VIA THE MANHOLE AND DUCTBANK INSTALLED DURING CONSTRUCTION PHASE CP-1.

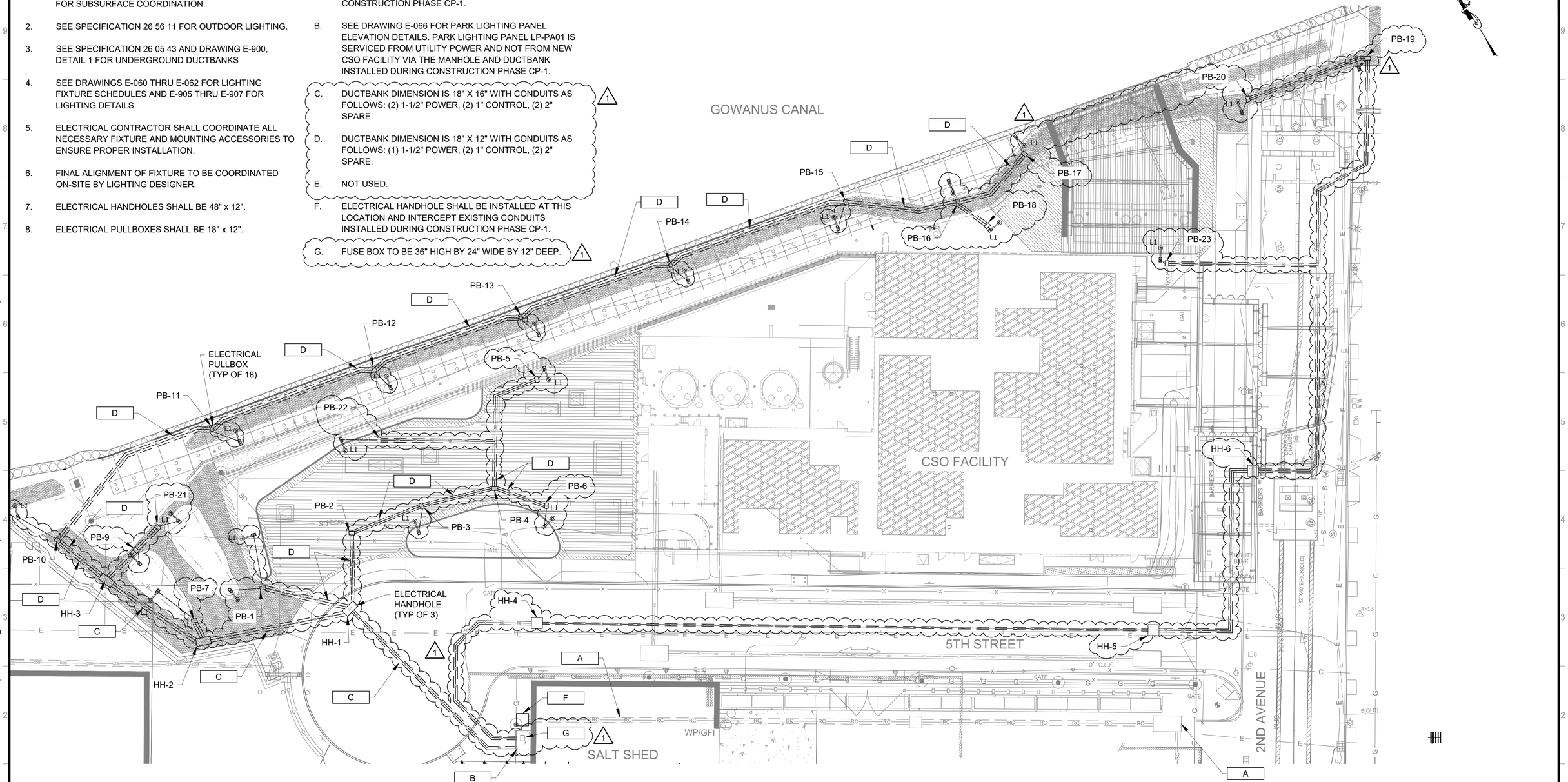
C. DUCTBANK DIMENSION IS 18" X 16" WITH CONDUITS AS FOLLOWS: (2) 1-1/2" POWER, (2) 1" CONTROL, (2) 2" SPARE.

D. DUCTBANK DIMENSION IS 18" X 12" WITH CONDUITS AS FOLLOWS: (1) 1-1/2" POWER, (2) 1" CONTROL, (2) 2" SPARE.

E. NOT USED.

F. ELECTRICAL HANDHOLE SHALL BE INSTALLED AT THIS LOCATION AND INTERCEPT EXISTING CONDUITS INSTALLED DURING CONSTRUCTION PHASE CP-1.

G. FUSE BOX TO BE 36" HIGH BY 24" WIDE BY 12" DEEP.



OUTDOOR PARK LIGHTING PLAN 1

SCALE: 1"=20'-0"

1"=20' 0 20 40 FT.

BID SET

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D. JOSEPH	T. HILLIARD	P. YOUNG
CHECKED BY:	DESIGN LEAD:	DESIGN MANAGER:
W. DICKERSON	W. DICKERSON	G. DEREAMER

Hazen | Brown AND Caldwell

NYC Environmental Protection

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ELECTRICAL
OUTDOOR PARK LIGHTING - 1

DATE: SEPTEMBER 2026
SHEET NO: OF 723
DRAWING NO. E-065.00.00

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Date & Time Plotted: 10/29/2026 10:56 AM
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1

0 1 2 FT.
1"=1'-0"

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SUBMITTAL DATE: SEPTEMBER 2026

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DESIGNED BY:	DRAWN BY:	PROJECT MANAGER:
D. JOSEPH	T. HILLIARD	P. YOUNG
CHECKED BY:	DESIGN LEAD:	DESIGN MANAGER:
W. DICKERSON	W. DICKERSON	G. DEREAMER

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CONSTRUCTION PACKAGE 3 - OH-007

ELECTRICAL

OUTDOOR PARK LIGHTING - 2

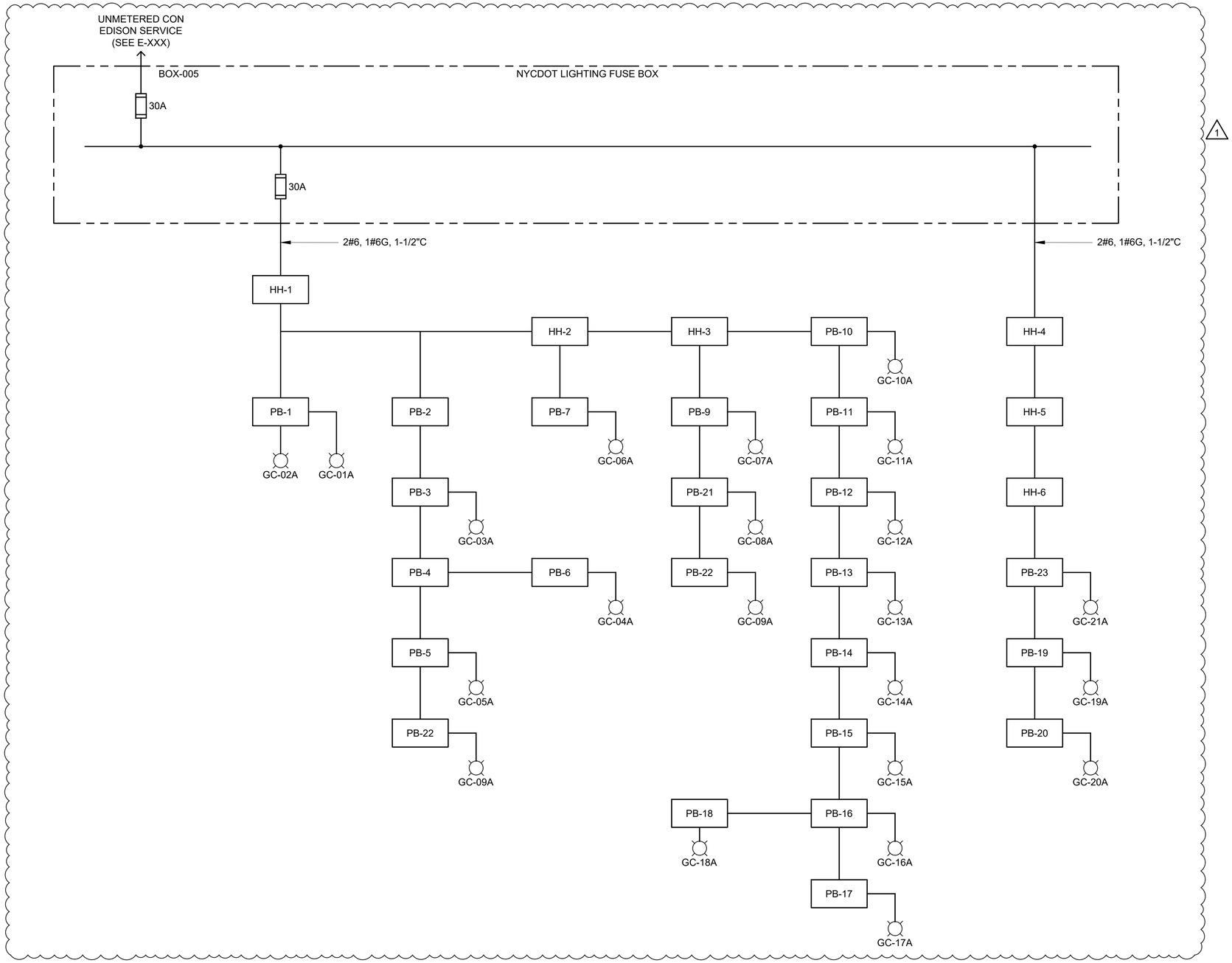
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CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

ELECTRICAL

SINGLE LINE

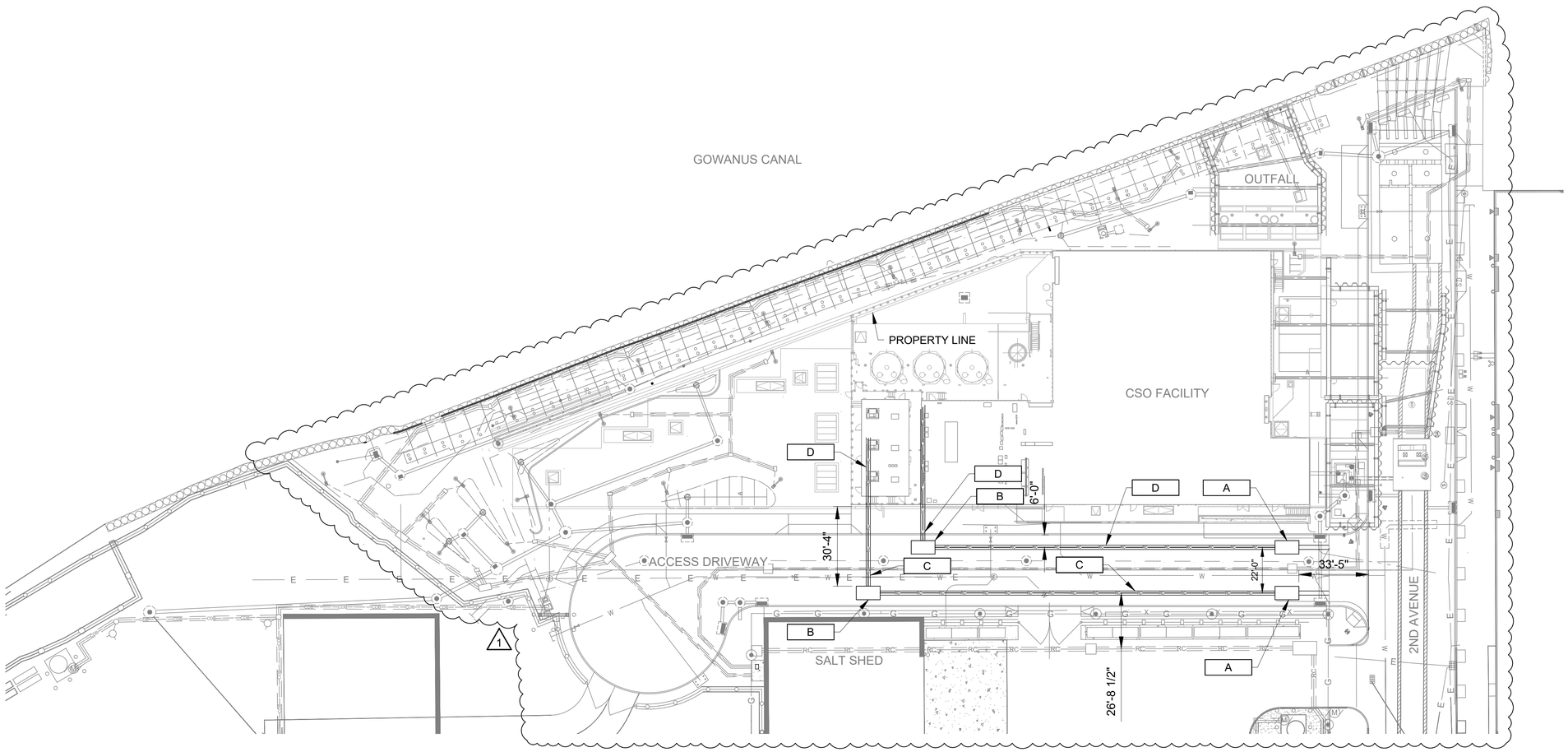
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Date & Time Plotted: 10/30/2026 10:12 AM
Plot Scale: 1:1
Plot Style Table: BEDC_Acad_2021.ctb



ELECTRICAL SITE PLAN

SCALE: 1"=30'-0"

NOTES:

1. CONTRACTOR SHALL PROVIDE MINIMUM 24" COVER DEPTH TO TOP OF CONDUIT WITH THE DUCTBANKS. SEE DETAIL 1 ON E-900.
2. CONTRACTOR SHALL PROVIDE PROPERTY LINE MANHOLES IN ACCORDANCE WITH CON EDISON REQUIREMENTS.
3. LOCATION OF DUCTBANKS FROM PROPERTY LINE MANHOLES TO THE CSO FACILITY ARE APPROXIMATE. FINAL ROUTING SHALL BE COORDINATED WITH AND APPROVED BY CON EDISON.
4. CONTRACTOR SHALL COORDINATE WITH CON EDISON PRIOR TO PERFORMING ANY WORK AT THE POINT OF INTERCONNECTION WITH THE UTILITY.
5. THE HIGH VOLTAGE UNDERGROUND SYSTEMS WITHIN THE PROPERTY LINE SHALL BE SEPARATED THROUGHOUT THEIR LENGTH BY A MINIMUM SPACING OF 20' BETWEEN THE FEEDER BANDS.
6. REFER TO C-131 FOR ROUTING PLACEMENT.
7. REFER TO CONSTRUCTION PHASE CP-2 APPROVED SHOP DRAWINGS FOR AVAILABLE TEMPORARY CONSTRUCTION POWER.

KEYNOTES:

A. PROPERTY LINE MANHOLES.

B. HANDHOLES.

C. DUCTBANK DIMENSIONS 2' X 2' WITH (4) 5" CONDUITS.

D. DUCTBANK DIMENSIONS 2' X 1'-3" WITH (2) 5" CONDUITS.

0 30 60 FT.
1"=30"

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BID SET

SUBMITTAL DATE: SEPTEMBER 2026

NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.
1	10/2026	ADDENDUM NO. 2	AV

DESIGNED BY: D. JOSEPH | DRAWN BY: T. HILLIARD | PROJECT MANAGER: P. YOUNG
CHECKED BY: W. DICKERSON | DESIGN LEAD: W. DICKERSON | DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

STATE OF NEW YORK • AUSTIN M. VIRAMONTES • LICENSED PROFESSIONAL ENGINEER • 105877

Environmental Protection

ACCOUNTABLE MANAGER
JESSE GOLDIN, P.E.

PORTFOLIO MANAGER
KEVIN CLARKE, P.E.

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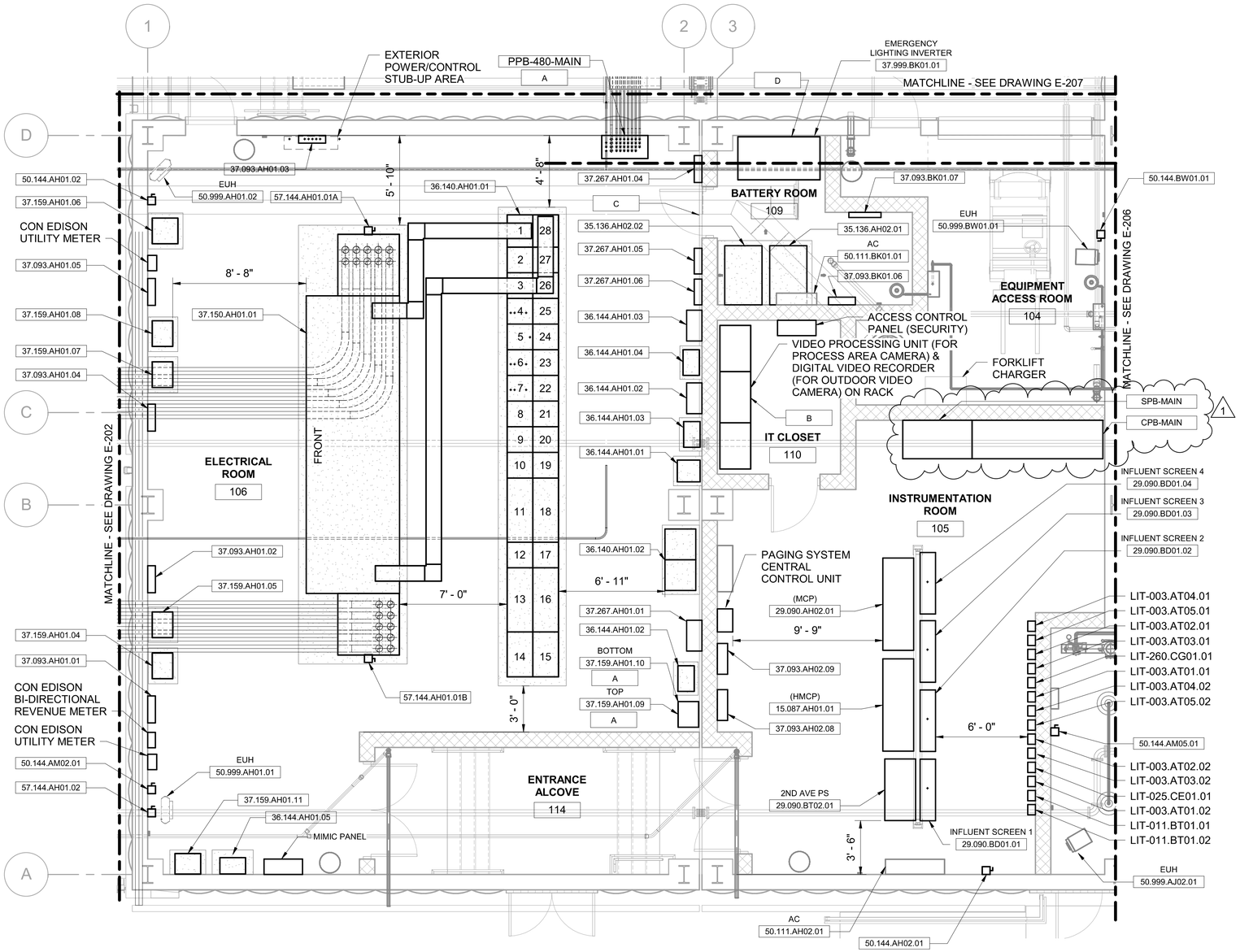
CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

ELECTRICAL
ELECTRICAL SITE PLAN

DATE: SEPTEMBER 2026
SHEET NO: OF 723
DRAWING NO. E-091.00.00

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Date & Time Plotted: 10/30/2026 1:11 PM
Plot Style Table: BEDC Acad 2021.ctb
Plot Scale: 1:1



GROUND FLOOR - PARTIAL POWER PLAN 1

1/4" = 1'-0"

NOTES

1. THE CONTRACTOR SHALL PROVIDE THE ELECTRICAL AND INSTRUMENTATION ROOM LAYOUT FOR APPROVAL BY THE ENGINEER PRIOR TO ROUGH IN.
2. CONTRACTOR SHALL INSTALL SUFFICIENT PULL BOXES WHILE ROUTING CONDUITS TO ENSURE THAT NO SECTION CONTAINS MORE THAN THE EQUIVALENT OF THREE QUARTER BENDS IN COMPLIANCE WITH THE NEC.

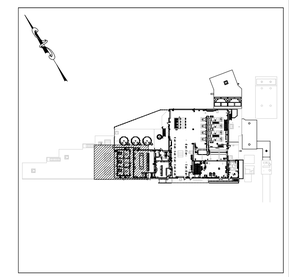
KEYNOTES

A. MOUNTED ON THE WALL.

B. EQUIPMENT IN THE IT CLOSET SHALL BE MOUNTED ON RACKS.

C. EXPANSION FITTINGS SHALL BE INSTALLED ON EXPOSED CONDUIT RUNS WHEN CROSSING STRUCTURAL EXPANSION JOINTS AS REFERENCED IN SECTION 26 05 33.

D. 5KVA EMERGENCY LIGHTING INVERTER MODEL SHALL BE EMERGI-LITE FTE SERIES OR EQUAL, WITH BATTERY TEMPERATURE MONITOR AND NEMA 2 DRIP TOP.



KEY PLAN

1/4"=1'-0" 0 4 8 FT.

GRAPHIC SCALES CHECK BEFORE USE

IF SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT. SCALE ACCORDINGLY

NYC

BID SET

DATE ISSUED: SEPTEMBER 2026

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CHECKED BY: W. DICKERSON	DESIGN LEAD: W. DICKERSON	DESIGN MANAGER: G. DEREAMER

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NYC Environmental Protection

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PORTFOLIO MANAGER	KEVIN CLARKE, P.E.

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ELECTRICAL
GROUND FLOOR PARTIAL POWER PLAN 1

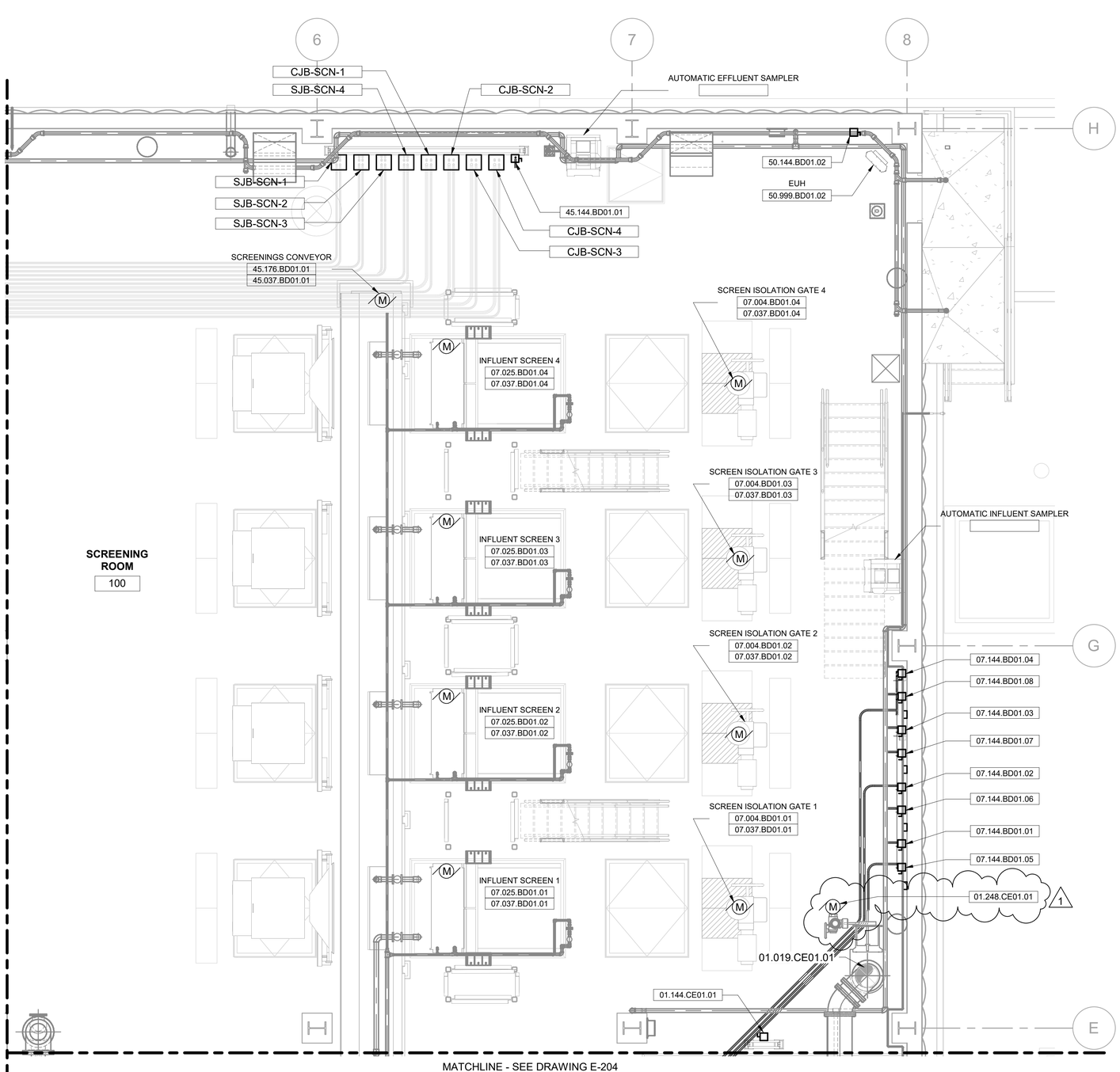
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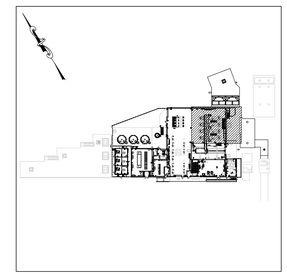


GROUND FLOOR - PARTIAL POWER PLAN 3

1/4" = 1'-0"

NOTE

1. CONTRACTOR SHALL INSTALL SUFFICIENT PULL BOXES WHILE ROUTING CONDUITS TO ENSURE THAT NO SECTION CONTAINS MORE THAN THE EQUIVALENT OF THREE QUARTER BENDS IN COMPLIANCE WITH THE NEC.



KEY PLAN

1/4"=1'-0" 0 4 8 FT.

BID SET

DATE ISSUED: SEPTEMBER 2026

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DESIGNED BY:	DRAWN BY:	PROJECT MANAGER:
D. JOSEPH	W. SCHRUPP	E. CAMILLERI
CHECKED BY:	DESIGN LEAD:	DESIGN MANAGER:
W. DICKERSON	W. DICKERSON	G. DEREAMER

Hazen | Brown AND Caldwell

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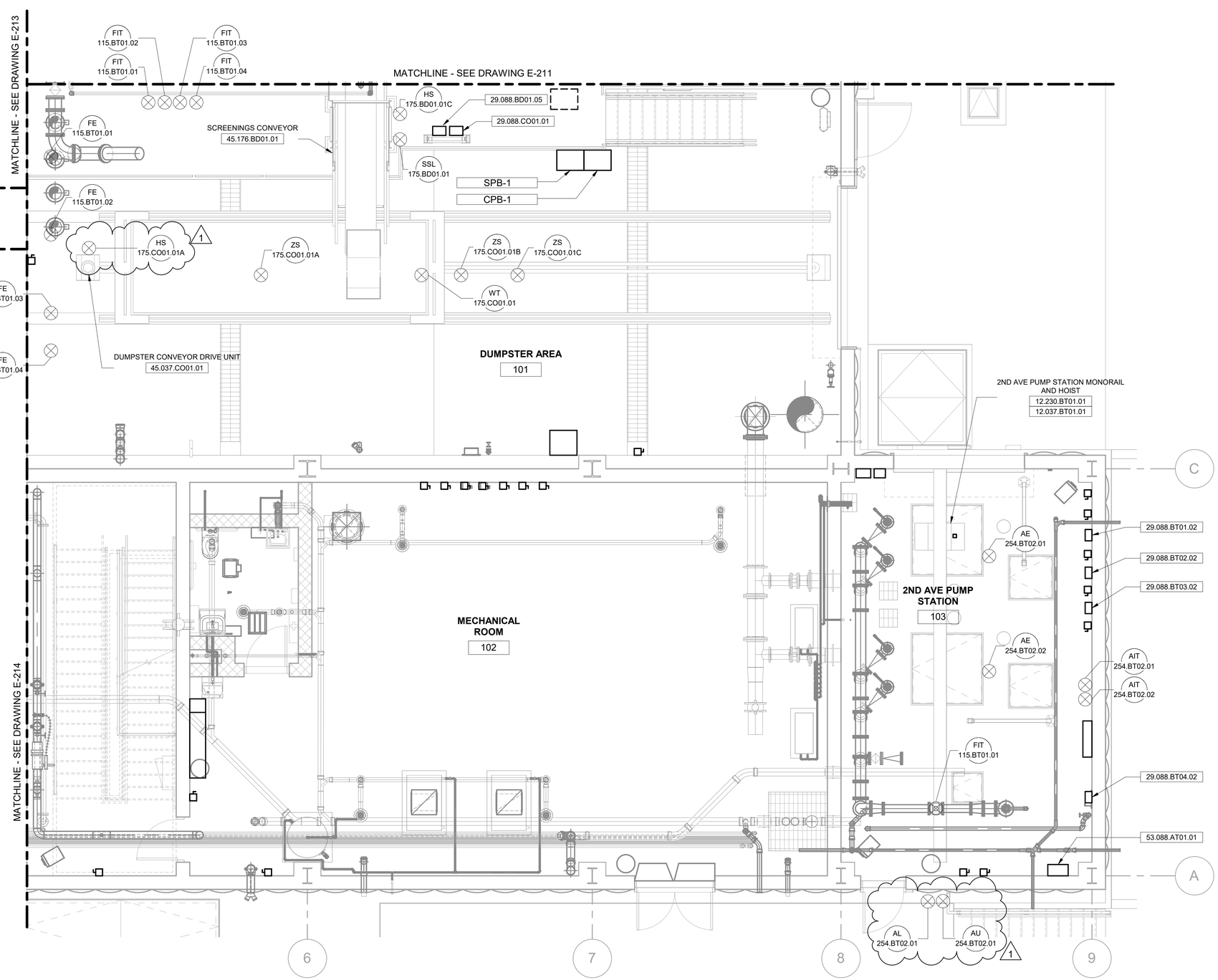
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ELECTRICAL
GROUND FLOOR PARTIAL POWER PLAN 3

DATE:	SEPTEMBER 2026
SHEET NO:	OF 723
DRAWING NO.	E-203.00

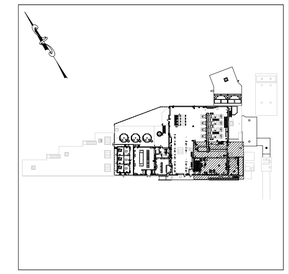
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NOTE

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KEY PLAN

GROUND FLOOR - PARTIAL CONTROL AND SIGNAL PLAN 2

1/4" = 1'-0"

1/4"=1'-0" 0 4 8 FT.

BID SET
DATE ISSUED: SEPTEMBER 2026

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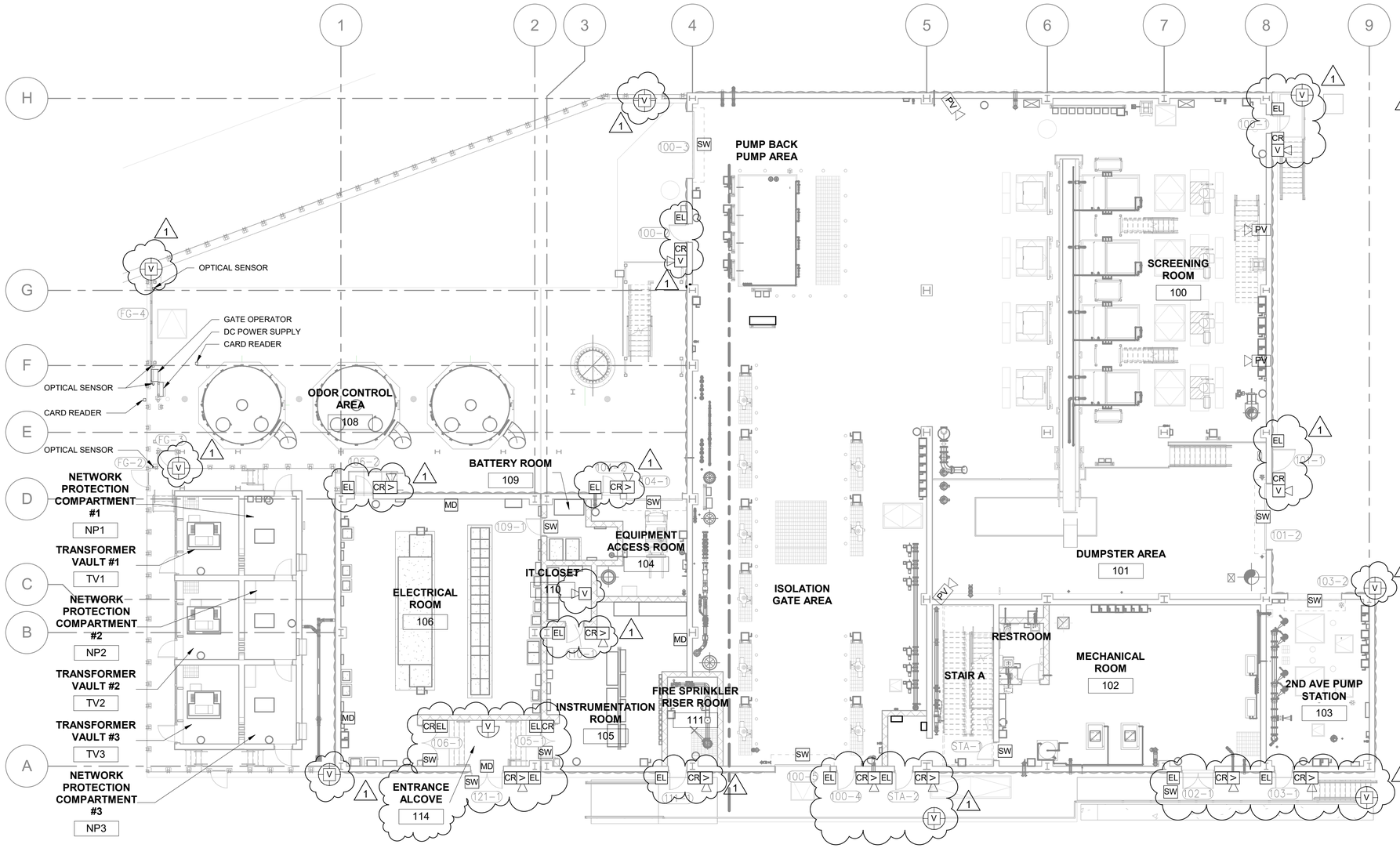
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ELECTRICAL
GROUND FLOOR PARTIAL CONTROL AND SIGNAL PLAN 2

DATE: SEPTEMBER 2026
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GROUND FLOOR - SECURITY PLAN

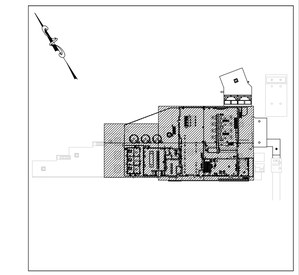
3/32" = 1'-0"

NOTES

1. REFER TO SECURITY SYSTEM RISER DIAGRAM E-033 AND SECTION 28 12 02 FOR SECURITY ACCESS AND SURVIELLANCE SYSTEM SPECIFICATION.
2. PROVIDE SEPARATE AND INDEPENDANT COMMUNICATION NETWORKS FOR THE PROCESS VIDEO AND OUTDOOR VIDEO CAMERA'S. REFER TO SECTION 28 12 12 FOR PROCESS VIDEO SURVEILLANCE SPECIFICATION.

LEGEND

EL	ELECTRIFIED LOCKSET
CR	PROXIMITY CARD READER
SW	MAGNETIC MONITOR SWITICH
MD	MOTION DETECTOR
V	SURVEILLANCE CAMERA
PV	PROCESS VIDEO
V	360 DEGREE MULTI SENSOR SURVEILLANCE CAMERA
V	180 DEGREE MULTI SENSOR SURVEILLANCE CAMERA



KEY PLAN

3/32"=1'-0" 0 5 10 15 20 FT.

BID SET
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ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.
PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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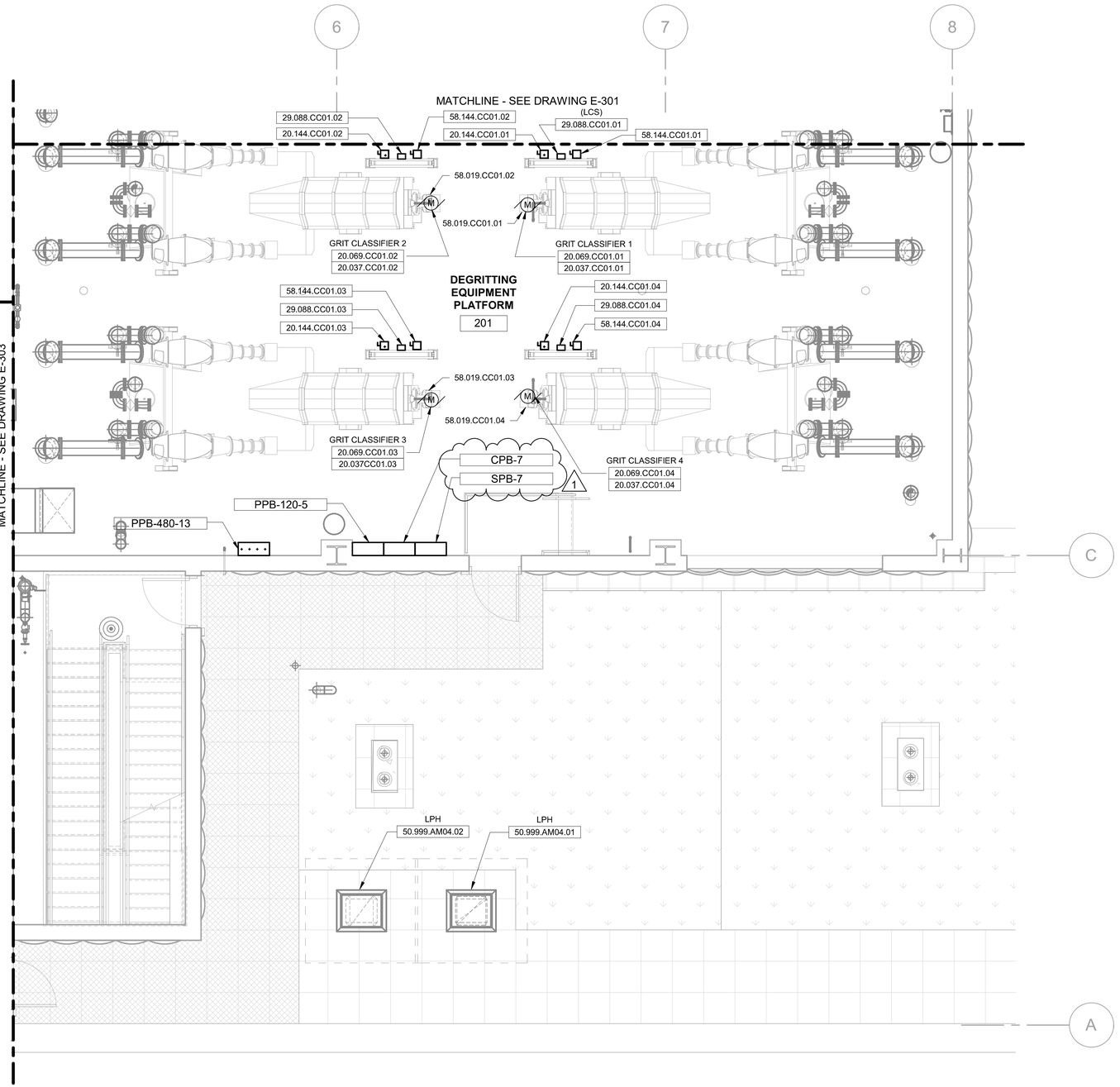
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ELECTRICAL
GROUND FLOOR SECURITY PLAN

DATE: SEPTEMBER 2026
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DRAWING NO. E-240.00

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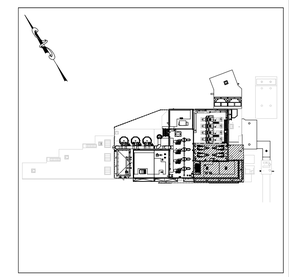


SECOND FLOOR - PARTIAL PLAN 2

1/4" = 1'-0"

NOTE

1. CONTRACTOR SHALL INSTALL SUFFICIENT PULL BOXES WHILE ROUTING CONDUITS TO ENSURE THAT NO SECTION CONTAINS MORE THAN THE EQUIVALENT OF THREE QUARTER BENDS IN COMPLIANCE WITH THE NEC.



KEY PLAN

1/4"=1'-0" 0 4 8 FT.

BID SET

DATE ISSUED: SEPTEMBER 2026

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CHECKED BY: D. JOSEPH	DESIGN LEAD: W. DICKERSON	DESIGN MANAGER: G. DEREAMER

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ELECTRICAL
SECOND FLOOR PARTIAL POWER PLAN 2

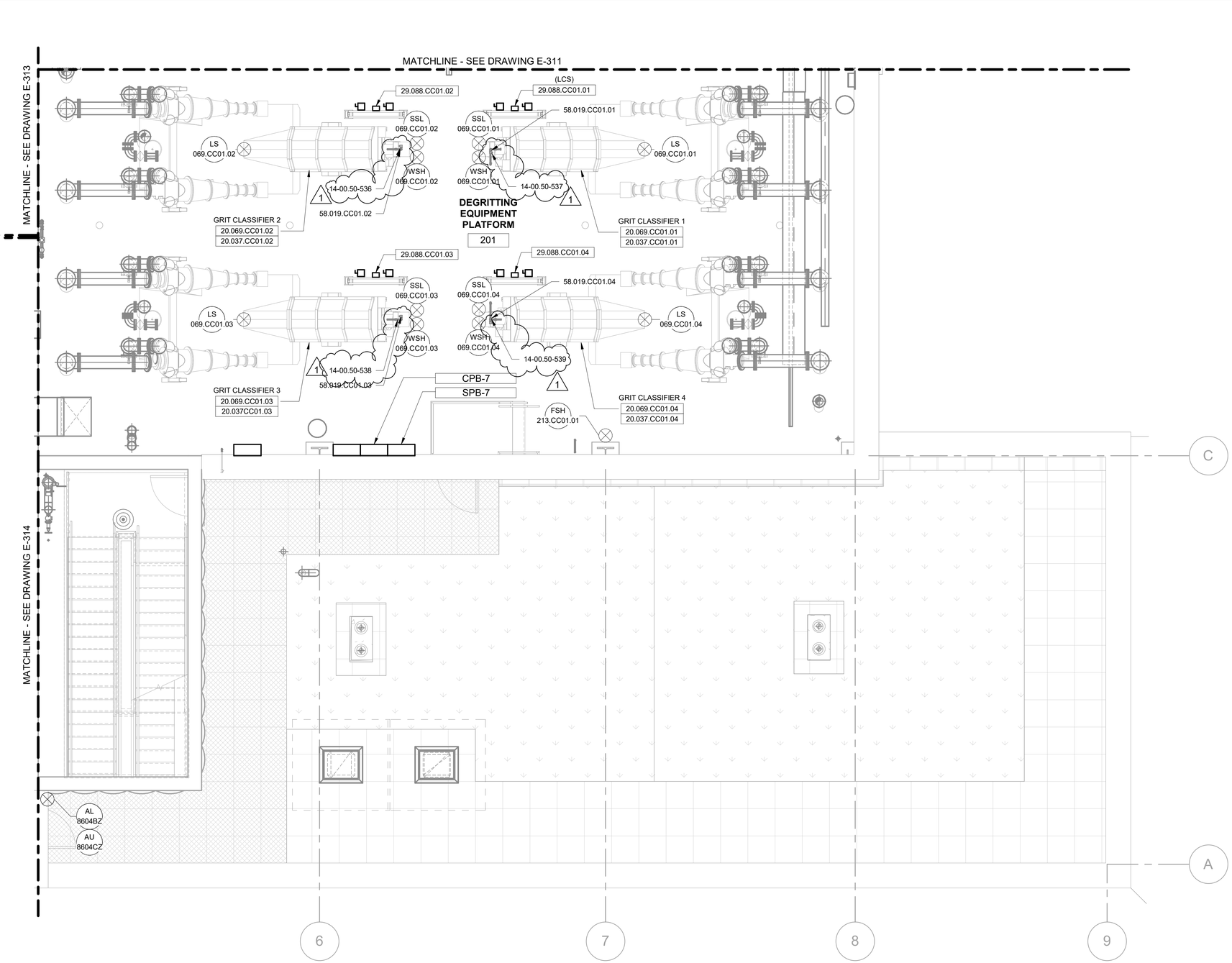
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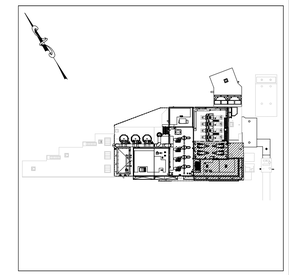
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NOTE

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KEY PLAN

SECOND FLOOR - PARTIAL SIGNAL AND CONTROL PLAN 2

1/4" = 1'-0"

1/4"=1'-0" 0 4 8 FT.

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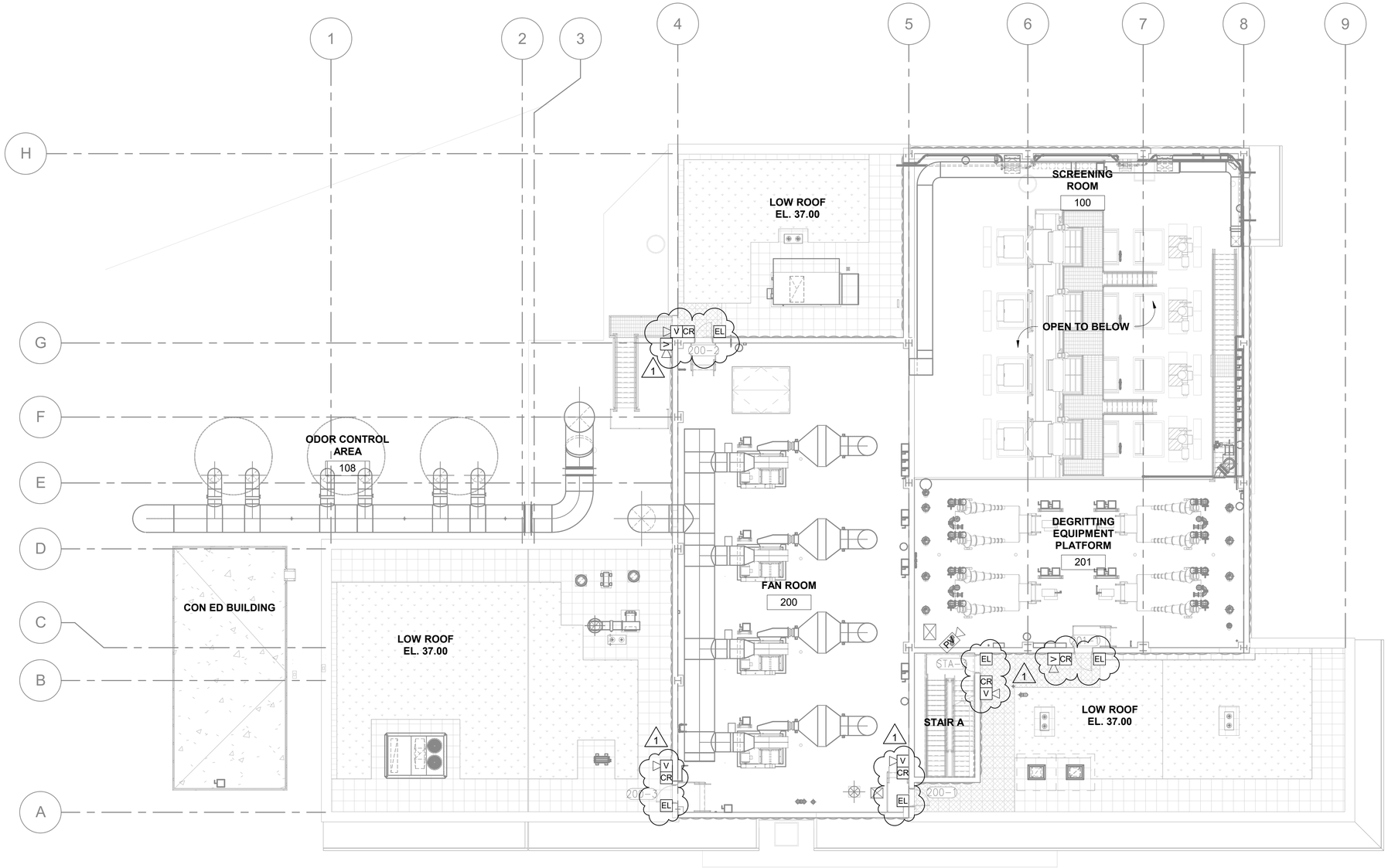
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ELECTRICAL
SECOND FLOOR PARTIAL SIGNAL AND CONTROL PLAN 2

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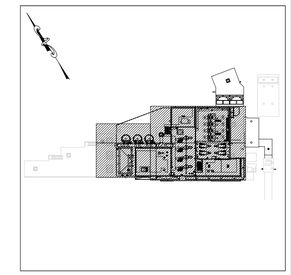


NOTES

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MD	MOTION DETECTOR
V	SURVEILLANCE CAMERA
PV	PROCESS VIDEO
V	360 DEGREE MULTI SENSOR SURVEILLANCE CAMERA
V	180 DEGREE MULTI SENSOR SURVEILLANCE CAMERA



KEY PLAN

SECOND FLOOR SECURITY PLAN

3/32" = 1'-0"

3/32"=1'-0" 0 5 10 15 20 FT.

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AUSTIN M. VIRAMONTES — 105877 — LICENSED PROFESSIONAL ENGINEER — STATE OF NEW YORK

NYC Environmental Protection

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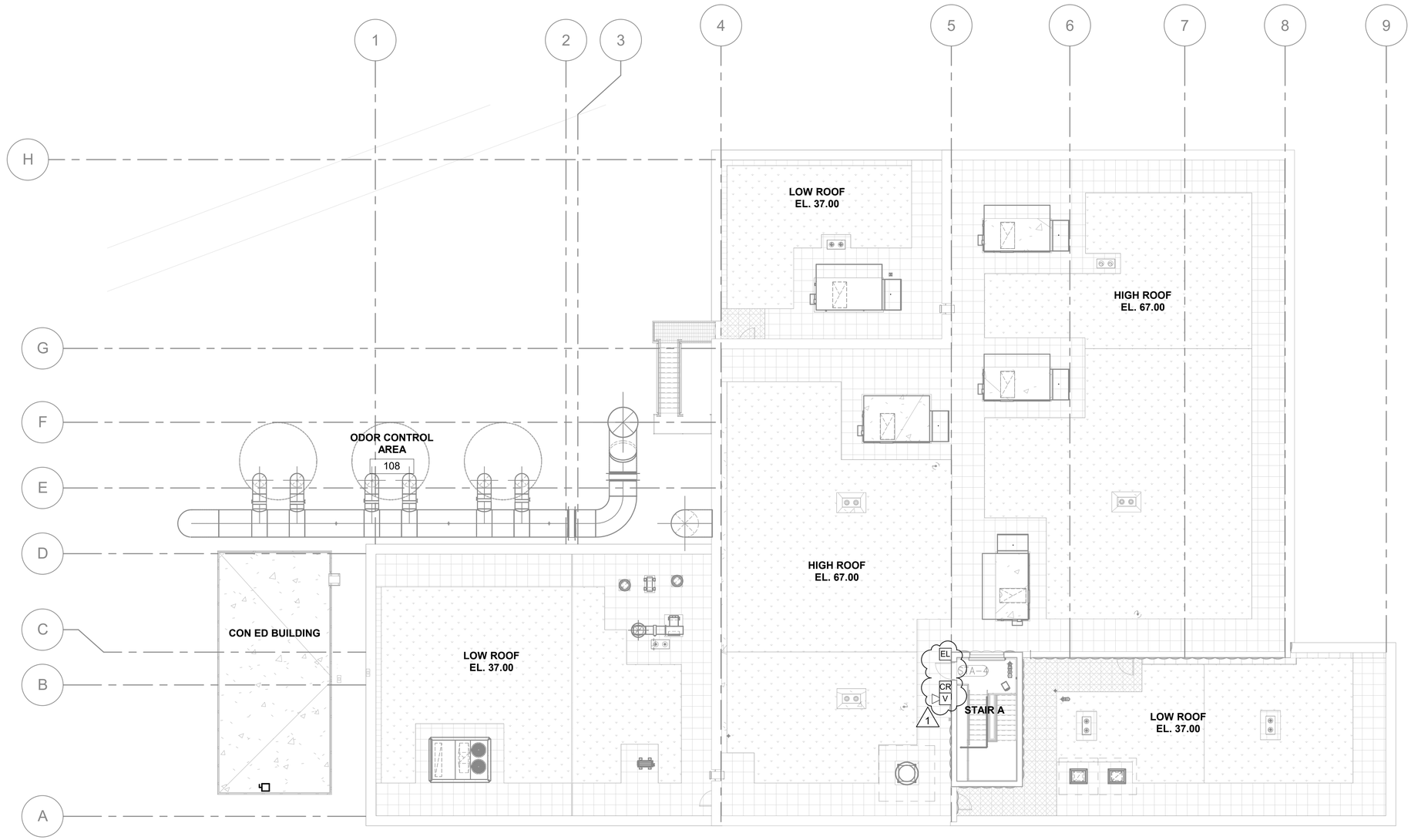
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ELECTRICAL
SECOND FLOOR SECURITY PLAN

DATE: SEPTEMBER 2026
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ROOF SECURITY PLAN

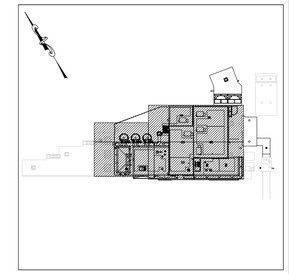
3/32" = 1'-0"

NOTE

1. REFER TO SECURITY SYSTEM RISER DIAGRAM E-033 AND SECTION 28 12 02 FOR SECURITY ACCESS AND SURVIELLANCE SYSTEM SPECIFICATION.

LEGEND

1	
EL	ELECTRIFIED LOCKSET
CR	PROXIMITY CARD READER
SW	MAGNETIC MONITOR SWITICH
MD	MOTION DETECTOR
V	SURVEILLANCE CAMERA
PV	PROCESS VIDEO
V	360 DEGREE MULTI SENSOR SURVEILLANCE CAMERA
V	180 DEGREE MULTI SENSOR SURVEILLANCE CAMERA



KEY PLAN

3/32"=1'-0" 0 5 10 15 20 FT.

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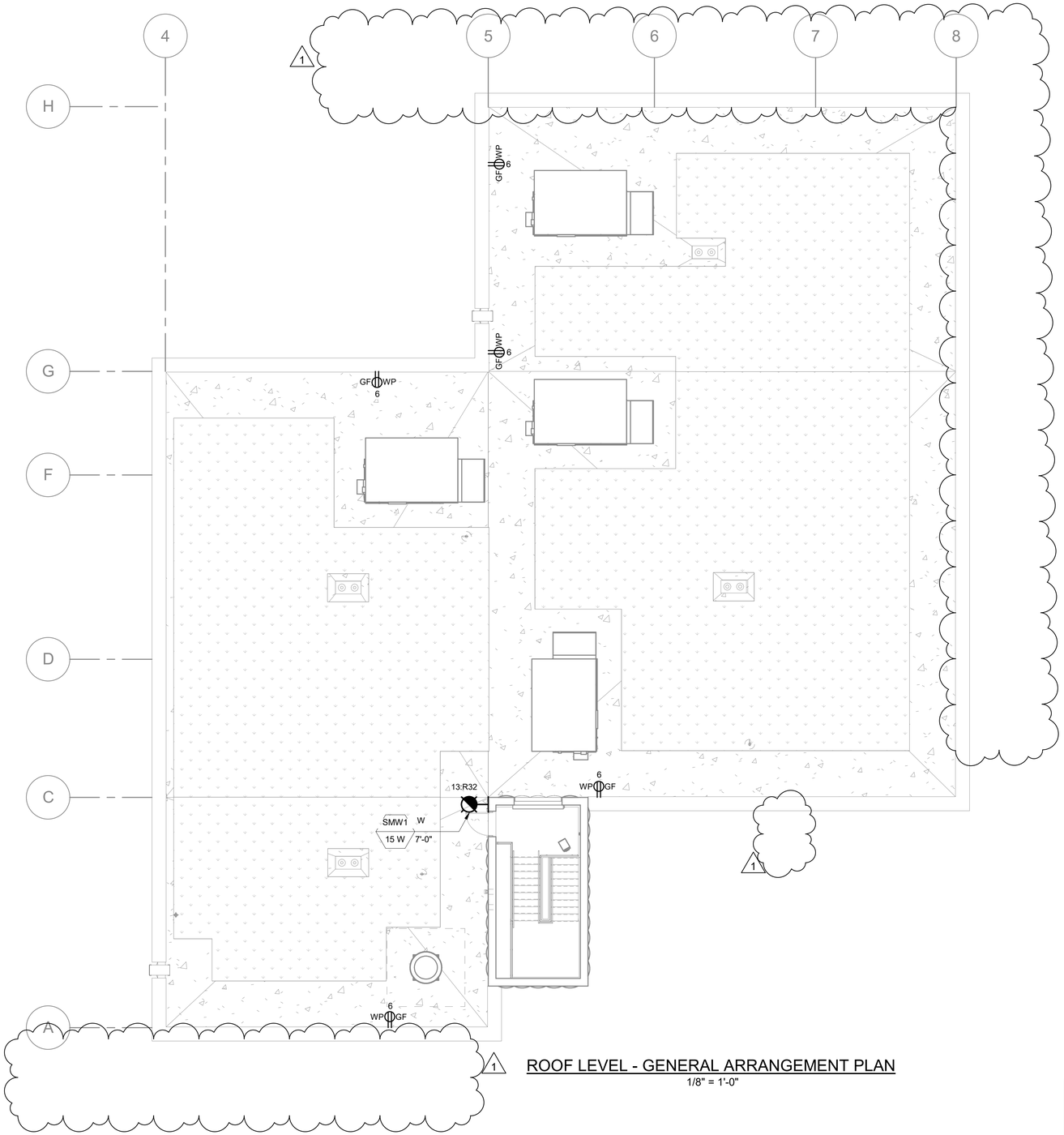
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ELECTRICAL
ROOF SECURITY PLAN

DATE: SEPTEMBER 2026
SHEET NO: OF 723
DRAWING NO. E-410.00

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GENERAL NOTES

1. ALL GENERAL USE RECEPTACLE CIRCUITS FED FROM PANEL 37.093.BK01.07 UNLESS OTHERWISE NOTED.
2. ALL EMERGENCY LIGHTING CIRCUITS FED FROM INVERTER PANEL 37.093.BK01.06 AND ROUTED THROUGH 37.093.BK01.07 FOR LIGHTING CONTROL.
3. CIRCUITS AT LIGHTING FIXTURES SHOWN WITH FORMAT "CIRCUIT:RELAY". SEE RELAY PANEL SCHEDULE ON DRAWING E-040.
4. REFER TO ARCHITECTURAL DRAWING A-007 FOR EMERGENCY EXIT SIGN LOCATIONS. POWER FED FROM PANEL 37.093.AH01.03, CIRCUIT 12.

1

ROOF LEVEL - GENERAL ARRANGEMENT PLAN

1/8" = 1'-0"

1/8"=1'-0" 0 5 10 15 FT.

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ELECTRICAL
ROOF LEVEL GENERAL ARRANGEMENT LIGHTING AND RECEPTACLE PLAN

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ELECTRICAL
STANDARD DETAILS 6

DATE: SEPTEMBER 2026
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ABBREVIATIONS

AD	AREA DRAIN
AFF	ABOVE FINISHED FLOOR
AGF	AIR GAP FITTING
1 BC	BUILDING CODE
BFG	BELOW FINISHED GRADE
BFP	BACKFLOW PREVENTER
BFV	BUTTERFLY VALVE
BLDG	BUILDING
BWV	BACKWATER VALVE
CC	CENTER TO CENTER
CF	CUBIC FEET
CFM	CUBIC FEET PER MINUTE
CI	CAST IRON
CL	CENTERLINE
CLG	CEILING
CO	CLEAN OUT
CODP	CLEAN OUT DECK PLATE
COL	COLUMN
CP	CONSTRUCTION PACKAGE
CPLG	COUPLING
CU	COPPER
CV	CHECK VALVE
D	DRAIN
DCDA	DOUBLE CHECK DETECTOR ASSEMBLY
DFU	DRAINAGE FIXTURE UNIT
DI	DUCTILE IRON
DIA	DIAMETER
DN	DOWN TO FLOOR BELOW
DSN	DOWNSPOUT NOZZLE
1 DSB	DOWNSPOUT BOOT
DWV	DRAIN, WASTE AND VENT
EL	ELEVATION
EW	EMERGENCY EYEWASH
EWC	ELECTRIC WATER COOLER
EX	EXISTING
FAI	FRESH AIR INLET
1 FCS	FLOOD CONTROL SENSOR
FD	FLOOR DRAIN OR FUNNEL DRAIN
FIXT	FIXTURE UNIT
FIN	FINISHED
FLG	FLANGE
FLR	FLOOR
FM	FACTORY MUTUAL
FPW	FIRE PROTECTION WATER
FS	FLOW SWITCH
FT	FEET
GAL	GALLON
GC	GENERAL CONTRACTOR
GCO	GRADE CLEAN OUT
GM	GAS METER
GPM	GALLONS PER MINUTE
GR	GAS REGULATOR
GV	GATE VALVE
H/P	HIGH POINT
HB	HOSE BIBB
HT	HOUSE TRAP
HP	HORSEPOWER
HW	HOT WATER
HWB	HOT WATER BOILER
HWH	HOT WATER HEATER
ID	IDENTIFIER
IE	INVERT ELEVATION
IN	INCH
IRI	INDUSTRIAL RISK INSURANCE
IW	INDIRECT WASTE
IWH	INSTANT WATER HEATER
1 KW	KILOWATT
L/P	LOW POINT
LAV	LAVATORY
LB	POUND
MAX	MAXIMUM
MIN	MINIMUM
NFHB	NON-FREEZE HOSE BIBB
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NG	NATURAL GAS
NRS	NON RISING STEM
NTS	NOT TO SCALE
1 NYC	NEW YORK CITY
OD	OUTSIDE DIAMETER
OSY	OUTSIDE SCREW AND YOKE
PD	PUMP DISCHARGE
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAGE
1 PVB	PRESSURE VACUUM BREAKER
PVC	POLY VINYL CHLORIDE
PW	POTABLE WATER
RD	ROOF DRAIN
RF	ROOF HYDRANT
RISE	RISE IN EXISTING STORY
RPM	REVOLUTIONS PER MINUTE
RPZ	REDUCED PRESSURE ZONE
SAN	SANITARY
SCH	SCHEDULE
SD	STORM DRAIN
SF	SQUARE FOOT
SP	SUMP PUMP
SPD	SUMP PUMP DISCHARGE
SS	SERVICE SINK OR STAINLESS STEEL
SW	SERVICE WATER
TD	TRENCH DRAIN
TP	TRAP PRIMER
TS	TAMPER SWITCH
TYP	TYPICAL
TW	TEMPERED WATER
UL	UNDERWRITERS LABORATORY
UON	UNLESS OTHERWISE NOTED
UP	UP TO FLOOR ABOVE
V	VENT
VA	VALVE
VB	VACUUM BREAKER
VIV	VALVE IN VERTICAL
VTR	VENT THROUGH ROOF
WC	WATER CLOSET
WCO	WALL CLEAN OUT
WFD	WATER FLOW DETECTOR
WFS	WATER FLOW SWITCH
WFU	WATER FIXTURE UNIT
WH	WALL HYDRANT
WHA	WATER HAMMER ARRESTER
WM	WATER METER

LINETYPES

- PLUMBING - NEW WORK
- PLUMBING - EXISTING CONDITIONS
- OTHER DISCIPLINES - NEW AND EXISTING WORK

SYMBOLS

- ANGLE STOP
- GATE VALVE
- GLOBE VALVE
- GAS COCK OR PLUG VALVE
- BUTTERFLY VALE
- CHECK VALVE
- BACKWATER VALVE
- WATER METER
- GAS METER
- FLOW ELEMENT
- PRESSURE INDICATOR
- PIPE CAP
- AUTOMATIC CONTROL VALVE 2-WAY
- BALL VALVE
- PIPING ELBOW, 90 TURNED DOWN
- PIPING ELBOW, 90 TURNED UP
- BACKFLOW PREVENTER DOUBLE CHECK DETECTOR ASSEMBLY (DCDA)
- BACKFLOW PREVENTER REDUCED PRESSURE ZONE (RPZ)
- STRAINER WYE TYPE WITH BALL VALVE BLOW OFF
- LAVATORY (LAV)
- PRESSURE GAGE WITH SHUTOFF COCK (BALL VALVE)
- FUNNEL DRAIN
- CLEAN OUT
- TRENCH DRAIN
- UNION
- PIPING TEE, OUTLET TURNED DOWN
- PIPING TEE, OUTLET TURNED UP
- THERMOMETER
- FLOOR OR ROOF DRAIN
- P-TRAP
- CLEAN OUT DECK PLATE (CODP)
- WATER HAMMER ARRESTOR (WHA)
- WATER CLOSET (WC)
- ELECTRICAL WATER COOLER (EWC)
- SERVICE SINK (SS)
- REDUCER/INCREASER
- EMERGENCY EYEWASH
- CONNECT TO EXISTING PIPING

ASSET TAGGING DESIGNATION

84.004.AJ02.00

- SYSTEM ID
- SUBSYSTEM ID
- LOCATION ID
- SEQUENTIAL NUMBERING

ASSET ID CODES

SYSTEM ID		SUBSYSTEM ID		LOCATION ID	
52	CITY WATER SYSTEM	111	HVAC UNIT	AJ02	FIRE SPRINKLER RISER ROOM (111)
57	FIRE PROTECTION	213	PLUMBING - GENERAL	AM01	FAN ROOM (200)
58	SERVICE WATER SYSTEM (POTABLE WATER USED FOR OPERATIONS)	271	WATER COOLER/ CHILLER	AU01	MECHANICAL ROOM (102)
		279	WATER HEATING SYSTEM	BD01	SCREENING ROOM (100)
		283	CONTROL VALVE (AUTOMATED)	BK01	BATTERY ROOM (109)
68	RESCUE AND FIRST AID EQUIPMENT			BL01	TOILET
				BW01	EQUIPMENT ACCESS ROOM (104)
				ZZ01	STAIR A (112)
				XXXX	EXTERIOR

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PLUMBING
LEGENDS AND ABBREVIATIONS

DATE: SEPTEMBER 2026
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DRAWING NO. P-001.00

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GENERAL NOTES (APPLICABLE TO ALL DRAWINGS AND SPECIFICATIONS)

1. THE ENTIRE PLUMBING SYSTEM SHALL BE IN ACCORDANCE WITH THE 2022 EDITION OF THE NEW YORK CITY PLUMBING CODE REGULATIONS AND LOCAL PLUMBING INSPECTOR.
2. THE PIPING INDICATED ON THESE PLANS IS DIAGRAMMATIC. ALL WORK SHALL BE COORDINATED WITH ALL OTHER TRADES PRIOR TO INSTALLATION. CONTRACTOR SHALL COORDINATE ROUTING OF ALL PIPING WITH OTHER TRADES AND SHALL PROVIDE ANY NECESSARY OFFSETS, REROUTING, TEES, ELBOWS, ETC. REQUIRED FOR A COMPLETE AND COORINATED INSTALLATION.
3. THE CONTRACTOR SHALL OBTAIN AND PAY ALL FEES RELATED TO PERMITTING, AND INSPECTIONS.
4. ALL PLUMBING AND PIPING SYSTEMS SHALL BE SUPPORTED AS REQUIRED BY CODE REQUIREMENTS AND PER MANUFACTURERS RECOMMENDATIONS.
5. ALL PLUMBING FIXTURES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS WRITTEN INSTRUCTIONS. CONTRACTOR SHALL MAINTAIN ON-SITE THE WRITTEN INSTRUCTIONS FOR THE INSPECTOR'S REVIEW.
6. ALL PIPING PENETRATIONS THROUGH WALLS, AND FLOORS SHALL BE SEALED TO EQUAL THE RATING OF THE WALL OR FLOOR.
7. THE PLUMBING SYSTEM SHALL BE TESTED AS REQUIRED BY CODE OR BY THE REQUIREMENTS OF THE LOCAL PLUMBING INSPECTOR.
8. THE ENTIRE DOMESTIC WATER SYSTEM SHALL BE DISINFECTED IN ACCORDANCE WITH THE LOCAL HEALTH DEPARTMENT REQUIREMENTS AND AS SPECIFIED.
9. ROUTE ALL PIPING CONCEALED ABOVE CEILINGS, WITHIN WALLS OR IN CHASES EXCEPT AS SPECIFICALLY NOTED, OR IN MECHANICAL ROOMS.
10. SEE ARCHITECTURAL DRAWINGS FOR FIXTURE LOCATIONS AND MOUNTING HEIGHTS.
11. CONTRACTOR SHALL PROVIDE AND INSTALL WHEN REQUIRED BY CODE AN AIR GAP SERVING INDIVIDUAL FIXTURES, DEVICES, APPLIANCES OR APPARATUS.
12. SEE SANITARY WASTE AND VENT RISER SCHEMATIC DIAGRAM FOR WASTE AND VENT PIPE SIZES.
13. SEE DOMESTIC WATER RISER SCHEMATIC DIAGRAM FOR DOMESTIC WATER PIPE SIZES.
14. CONTRACTOR SHALL PROVIDE WATER STOPS AT EACH FIXTURE.
15. SIZE AND LOCATION OF CLEANOUTS (AS WELL AS ALL PLUMBING WORK) SHALL BE IN ACCORDANCE WITH THE PLUMBING CODE.
16. ALL CONCEALED VALVES. WATER HAMMER ARRESTORS, CLEANOUTS, ETC., CONCEALED IN WALLS SHALL BE PROVIDED WITH AN ACCESS PANEL SUCH AS ZURN MODEL ZN-1460 OR APPROVED EQUAL.
17. ALL CONCEALED PIPING IN CHASE AREAS SHALL BE SUPPORTED WITH A PIPING SUPPORT SYSTEM SUCH AS SUMNER POSIFIX, STAKFIX AND CHANNEL OR APPROVED EQUAL.
18. DO NOT ROUTE PLUMBING PIPE OVER OR IN FRONT OF ELECTRICAL PANELS, BREAKERS, ETC.
19. ALL HOSE BIBS SHALL BE PROVIDED WITH VACUUM BREAKER BFP.
20. JOINTS BETWEEN DIFFERENT MATERIALS SHALL BE MADE WITH A DIELECTRIC FITTING OR A DELECTRIC UNION CONFORMING TO ASSE 1079.
21. THE SYMBOLS AND ABBREVIATIONS LIST ON DWG. P-001 IS A COMPREHENSIVE STANDARD GUIDE INTENDED FOR GENERAL USE ON ALL PROJECTS. THEREFORE NOT ALL THE SYMBOLS AND ABBREVIATIONS CONTAINED IN THIS LIST ARE NECESSARILY USED ON THIS PARTICULAR PROJECT AND SHOULD BE USED FOR CLARIFICATION ONLY.

1
22. HOSE BIBS SHOWN IN ROOMS CONTAINING FLOOR DRAINS OR OTHER INFREQUENTLY USED TRAPS ARE PROVIDED, IN PART, AS A MANUAL WATER SOURCE FOR MAINTAINING TRAP SEALS IN ACCORDANCE WITH NYC PLUMBING CODE 2022, SECTION 1002.4.1.3. DO NOT REMOVE OR RELOCATE SUCH HOSE BIBS WITHOUT PRIOR REVIEW BY THE ENGINEER OF RECORD. WHERE RELOCATED, THE HOSE BIBB SHALL REMAIN WITHIN THE SAME ROOM, WITHIN 25 FEET HORIZONTALLY OF THE TRAP(S) SERVED, AND NOT MORE THAN 3 FEET ABOVE THE FINISHED FLOOR.
23. NOT ALL REQUIRED SHUTOFF VALVES ARE SHOWN ON THE DRAWINGS. PROVIDE VALVES WHERE INDICATED AND AT LOCATIONS REQUIRED BY THE PLUMBING CODE. AT A MINIMUM, PROVIDE VALVES AT EACH BRANCH FROM A WATER DISTRIBUTION MAIN; AT THE BASE OF EACH WATER RISER; AT EACH WATER HEATER; AT EACH HOSE BIBB; AT EACH APPLIANCE OR PIECE OF MECHANICAL EQUIPMENT REQUIRING A WATER CONNECTION; AND AT OTHER SERVICEABLE COMPONENTS OR ASSEMBLIES AS REQUIRED FOR ISOLATION AND MAINTENANCE. SHUT-OFF VALVES SERVING EMERGENCY SHOWERS, EYEWASHES, AND OTHER EMERGENCY WATER FIXTURES SHALL BE SECURED IN THE NORMALLY OPEN POSITION AND SHALL NOT BE CLOSED EXCEPT FOR AUTHORIZED TESTING, MAINTENANCE, OR REPAIR. ALL SHUTOFF AND ISOLATION VALVES SHALL BE ACCESSIBLE FOR OPERATION AND MAINTENANCE.
24. NOT ALL REQUIRED PRESSURE GAUGES ARE SHOWN ON THE DRAWINGS. PROVIDE PRESSURE GAUGES AT LOCATIONS NECESSARY TO MONITOR AND VERIFY SYSTEM OPERATING PRESSURES, INCLUDING, BUT NOT LIMITED TO, WATER SERVICE ENTRANCES, IMMEDIATELY UPSTREAM AND DOWNSTREAM OF WATER METERS AND BACKFLOW PREVENTION ASSEMBLIES, AND UPSTREAM AND DOWNSTREAM OF ANY PRESSURE-REGULATING EQUIPMENT. PROVIDE ISOLATION VALVES AT ALL PRESSURE GAUGE CONNECTIONS. LOCATE GAUGES IN ACCESSIBLE LOCATIONS.
25. NOT ALL REQUIRED TEMPERATURE GAUGES ARE SHOWN ON THE DRAWINGS. PROVIDE TEMPERATURE GAUGES AT WATER HEATER INLETS AND OUTLETS AND UPSTREAM AND DOWNSTREAM OF THERMOSTATIC MIXING VALVES. PROVIDE THERMOWELLS FOR ALL TEMPERATURE GAUGES TO ALLOW REMOVAL WITHOUT DRAINING THE SYSTEM. LOCATE GAUGES IN ACCESSIBLE LOCATIONS.

BUILDING DEPARTMENT PLUMBING NOTES

1. ALL PLUMBING WORK SHALL MEET THE REQUIREMENTS OF THE 2022 NYC PLUMBING CODE (PC).
2. PROTECTION OF PIPING AS OUTLINED IN SECTIONS PC 305.1 AND 305.8 SHALL BE PROVIDED AS REQUIRED.
3. TESTING AND INSPECTION OF PLUMBING WORK SHALL BE AS PER SECTION PC 312.
4. CONDENSATE DISPOSAL FROM HIGH EFFICIENCY FUEL BURNING APPLIANCES, EVAPORATORS AND COOLING COILS SHALL BE AS PER SECTION PC 314.
5. FAUCETS AND FIXTURE FITTING SHALL CONFORM TO SECTION PC 424.
6. WATER HEATER INSTALLATION SHALL COMPLY WITH PC 502.
7. CONSTRUCTION, QUANTITIES, DEVICES, FIXTURES, FAUCETS, VALVES AND FACILITIES FOR THE DISABLED SHALL BE AS OUTLINED IN CHAPTER 4 OF THE PC.
8. CONSTRUCTION, SPACING OF HANGERS AND SUPPORTS, AND SEISMIC SUPPORTS SHALL BE IN ACCORDANCE WITH SECTION PC 308 AND PC TABLE 308.5.
9. WATER SUPPLY SYSTEM AND TESTING SHALL BE AS REQUIRED BY SECTION PC 312.5. VALVES AND WATER HAMMER ARRESTORS SHALL BE PROVIDED AT RISERS. PIPE SIZING SHALL BE AS PER SECTION PC 604.
10. BUILDING WATER SERVICE, DISTRIBUTION PIPING AND FITTING MATERIAL SHALL BE AS DIRECTED IN SECTIONS PC 605.3, 605.4, 605.5 & 605.8.
11. INSTALLATION OF THE BUILDING WATER DISTRIBUTION SYSTEM SHALL BE AS PER SECTION PC 606.
12. SANITARY DRAINAGE PIPING AND MATERIALS SHALL BE AS PER SECTIONS PC 303 & PC 702.
13. PIPING JOINTS AND CONNECTIONS SHALL BE AS PER SECTIONS PC 605 & PC 705.
14. TRAPS SHALL BE AS PER SECTION PC 1002.
15. SIZING AND INSTALLATION OF DRAINAGE PIPING, FITTINGS AND OFFSETS SHALL BE AS PER CHAPTER 7 OF THE PC.
16. VENT SIZING, GRADING, CONNECTIONS, LOCATIONS AND OFFSETS SHALL BE AS PER CHAPTER 9 OF THE PC.
17. SIZING AND MATERIALS FOR STORM DRAINAGE PIPING SHALL BE IN ACCORDANCE WITH CHAPTER 11 OF THE PC. STORM WATER MANAGEMENT UTILIZING CONTROLLED FLOW DRAINAGE SHALL BE AS PER SECTION PC 1110.
18. SPECIAL WASTES AND PIPING SHALL BE AS PER CHAPTER 8 OF THE PC.
19. INDIRECT WASTES AND PIPING SHALL BE AS REQUIRED IN CHAPTER 8 OF THE PC.

1
20. NOT USED.

21. MINIMUM NUMBER OF PLUMBING FIXTURES AND INSTALLATION SHALL BE AS REQUIRED IN CHAPTER 4 OF THE PC.

1
22. PLUMBING PIPING, EQUIPMENT, AND ASSOCIATED SUPPORTS AND ATTACHMENTS SHALL BE SEISMICALLY RESTRAINED WHERE REQUIRED BY SECTION 1613 OF THE 2022 NYC BUILDING CODE, IN ACCORDANCE WITH ASCE 7-2016 AS MODIFIED BY THE NYC BUILDING CODE.

23. CLEAN OUTS FOR SANITARY AND STORM DRAINAGE SHALL BE AS PER SECTION PC 708.
24. WATER HEATER SHALL BE TESTED IN ACCORDANCE WITH ANSI 21.10.1 AND ANSI 21.10.3.
25. ALL PLUMBING WORK SHALL BE DONE BY OR UNDER THE DIRECT SUPERVISION OF A LICENSED MASTER PLUMBER AS PER THE NYC ADMINISTRATIVE CODE.
26. DRAINAGE PIPING SHALL BE PITCHED IN ACCORDANCE WITH SECTION PC 704.1.

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CHECKED BY:	DESIGN LEAD:	DESIGN MANAGER:
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Hazen Brown AND Caldwell

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CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

PLUMBING
GENERAL NOTES

DATE: SEPTEMBER 2026
SHEET NO: 498 OF 719
DRAWING NO. P-002.00

Autodesk Docs://90409-000_CSO-GC-SFS-DES-OH/CSO-GC-SFS-DES-OH_P-CP3.rvt
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PLUMBING SLAB-MOUNTED HEATER SCHEDULE

MARK	ASSET ID TAG	LOCATION	REMARKS
SLH-1	52.111.XXXX.01	CP-3 HOTBOX (SEE CIVIL DRAWINGS)	1
SLH-2	52.111.XXXX.02		
SLH-3	52.111.XXXX.03		
SLH-4	52.111.XXXX.04	PIPE SPACE BELOW CP-3 HOTBOX (SEE CIVIL DRAWINGS)	
SLH-5	52.111.XXXX.05		
SLH-6	52.111.XXXX.06		
SLH-7	52.111.XXXX.07		

REMARKS
1. SEE C-909 FOR ADDITIONAL REQUIREMENTS AND ELECTRICAL INFORMATION.

PLUMBING INSTANTANEOUS WATER HEATER SCHEDULE

MARK	ASSET ID TAG	LOCATION	MANUFACTURER	MODEL	TYPE	CW (IN)	HW (IN)	INPUT (KW)	DESIGN FLOWRATE (GPM)	TYPE	TEMPERATURE RISE AT DESIGN FLOW (°F)	ELECTRICAL V/PH/AMPS	REMARKS
IWH-1	58.279.BL01.01	RESTROOM	EEMAX	SPEX3512T S	ELECTRIC	1/2	1/2	3.5 (1)	.5	INSTANTANEOUS, TANKLESS	48 (1)	120V/1/30	1
IWH-2	58.279.BL01.02	RESTROOM	EEMAX	ED020480T2T	ELECTRIC	1/2	1/2	20	2.2	INSTANTANEOUS, TANKLESS	62	480V/3/24	1
IWH-3	58.279.BW01.01	EQUIP. ACCESS ROOM	EEMAX	ED024480T3EE_N4X	ELECTRIC	1/2	1/2	24	6.4	INSTANTANEOUS, TANKLESS	25	480V/3/38	1
IWH-4	58.279.BW01.02	BATTERY ROOM	EEMAX	ED024480T3EE_N4X	ELECTRIC	1/2	1/2	24	6.4 (1)	INSTANTANEOUS, TANKLESS	25 (1)	480V/3/38	1

REMARKS
1. INSTALL DIELECTRIC UNIONS AND SHUT-OFF ISOLATION VALVES AT EACH WATER CONNECTION.

PLUMBING FIXTURE ROUGH-IN SCHEDULE

FIXTURE TAG	ASSET ID TAG	FIXTURE TYPE	PW (IN)	HW (IN)	WASTE (IN)	VENT (IN)	MANUFACTURER	MODEL	GALLONS PER FLUSH/MIN	FAUCET/ VALVE MANUFACTURER	FAUCET/VALVE MODEL	REMARKS
WC	-	FLUSH VALVE WATER CLOSET	1	-	4	2	AMERICAN STANDARD	2257.528	1.1 / 1.6	SLOAN	WES-111-1.6_1.1-CPH	-
LAV	-	WALL HUNG LAVATORY	1/2	1/2	1 1/2	1 1/2	AMERICAN STANDARD	0355.012	.5	AMERICAN STANDARD	605B215 (1)	-
EW-1	68.213.BK01.01	EMERGENCY EYEWASH	1/2	-	1 1/4	-	GUARDIAN	G1784-BC-HFC	6.4	-	-	1
EW-2	68.213.BK01.02	EMERGENCY EYEWASH	1/2	-	1 1/4	-	GUARDIAN	G1784-BC-HFC	6.4 (1)	-	-	1
SS	-	SERVICE SINK - WALL MOUNTED	1/2	1/2	3	2	AMERICAN STANDARD	7695.018	2.2	CHICAGO FAUCETS	540-LDWXFABCP	-
EWC	58.271.AU01.01	ELECTRIC WATER COOLER	3/8	-	1 1/2	1 1/2	ELKAY	LZS8WSSP	-	-	-	120V, 1PH, 370W
PVB (1)	-	PRESSURE VACUUM BREAKER	3/4	-	-	-	ZURN WILKINS	420XL	-	-	-	-
RPZ-1	52.213.BD01.01	REDUCED PRESSURE ZONE BACKFLOW PREVENTER	6	-	-	-	WATTS	957OSY	-	-	-	2
RPZ-2	52.213.BD01.02	REDUCED PRESSURE ZONE BACKFLOW PREVENTER	2	-	-	-	WATTS	LF909	-	-	-	2
DCDA-1	57.213.AJ02.01	DOUBLE CHECK DETECTOR ASSEMBLY	6	-	-	-	WATTS	LF757DCDA-OSY	-	-	-	2
DSB-1 (1)	-	DOWNSPOUT BOOT	-	-	4	-	J. R. HOE	N-3532	-	-	-	-
FD-1	-	FLOOR DRAIN	-	-	3	3	J.R. SMITH	2230-P050	-	-	-	-
FCV-1	52.283.AJ02.01	FLOOD CONTROL VALVE	8	-	-	-	WATTS	LFF113FP (1)	-	-	-	120V, 1PH, NOTE 5
HB-1	-	HOSE BIBB	3/4	-	-	-	ZURN	Z1341XL	5	-	-	3
HB-2	-	FROSTPROOF, NON LOCKABLE HOSE BIBB	3/4	-	-	-	J. R. SMITH	5630	5	-	-	3
HB-3	-	FROSTPROOF, LOCKABLE HOSE BIBB	3/4	-	-	-	ZURN	Z1321XL	5	-	-	3
HCV	57.213.AJ02.02	HOUSE CONTROL VALVE	12	-	-	-	ASC ENGINEERED SOLUTIONS	FIGURE 35FW (1)	-	-	-	-
RD-1	-	ROOF DRAIN	-	-	2	-	ZURN	Z125	-	-	-	-
RD-2	-	DUPLEX ROOF DRAIN	-	-	3	-	ZURN	Z163-84	-	-	-	4
RD-3	-	DUPLEX ROOF DRAIN	-	-	4	-	ZURN	Z163-84	-	-	-	4
RF-1	-	NONFREEZE ROOF HYDRANT	3/4	-	-	-	WOODFORD	SRH-MS	5	-	-	-
DSN-1	-	DOWNSPOUT NOZZLE	-	-	3	-	ZURN	Z199	-	-	-	-
DSN-2	-	DOWNSPOUT NOZZLE	-	-	4	-	ZURN	Z199	-	-	-	-
AD-1	-	AREA DRAIN	-	-	4	-	J.R. SMITH	2230-P050	-	-	-	-
DPCO-1	-	DECKPLATE CLEANOUT	-	-	4	-	ZURN	Z1400	-	-	-	-

REMARKS
1. 85 DEG F TEPID WATER
2. MAXIMUM WORKING PRESSURE 175 PSI
3. MANUFACTURER SHALL PROVIDE INTEGRAL ASSE 1011 VACUUM BREAKER
4. STAINLESS STEEL PERFORATED GRAVEL GUARD.
5. (1) PROVIDE FLOOD SENTRY PLUS FLOOD CONTROL SYSTEM. FLOOD CONTROL SENSOR, RELAY BOX AND OTHER ASSOCIATED ELECTRICAL COMPONENTS LOCATED WITHIN A CLASSIFIED AREA SHALL BE LISTED AND LABELED FOR USE IN CLASS I, DIVISION 1, GROUP D HAZARDOUS (CLASSIFIED) LOCATIONS.

BID SET
DATE ISSUED: SEPTEMBER 2026

GRAPHIC SCALES CHECK BEFORE USE

IF SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT. SCALE ACCORDINGLY

NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.
1	10/26	ADDENDUM NO. 2	MG

DESIGNED BY: J. LURIE | DRAWN BY: J. LURIE | PROJECT MANAGER: E. CAMILLERI
CHECKED BY: T. QUESADA | DESIGN LEAD: M. GIORDANO | DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

MARC A. GIORDANO — 099858 — LICENSED PROFESSIONAL ENGINEER — STATE OF NEW YORK

Environmental Protection

ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.
PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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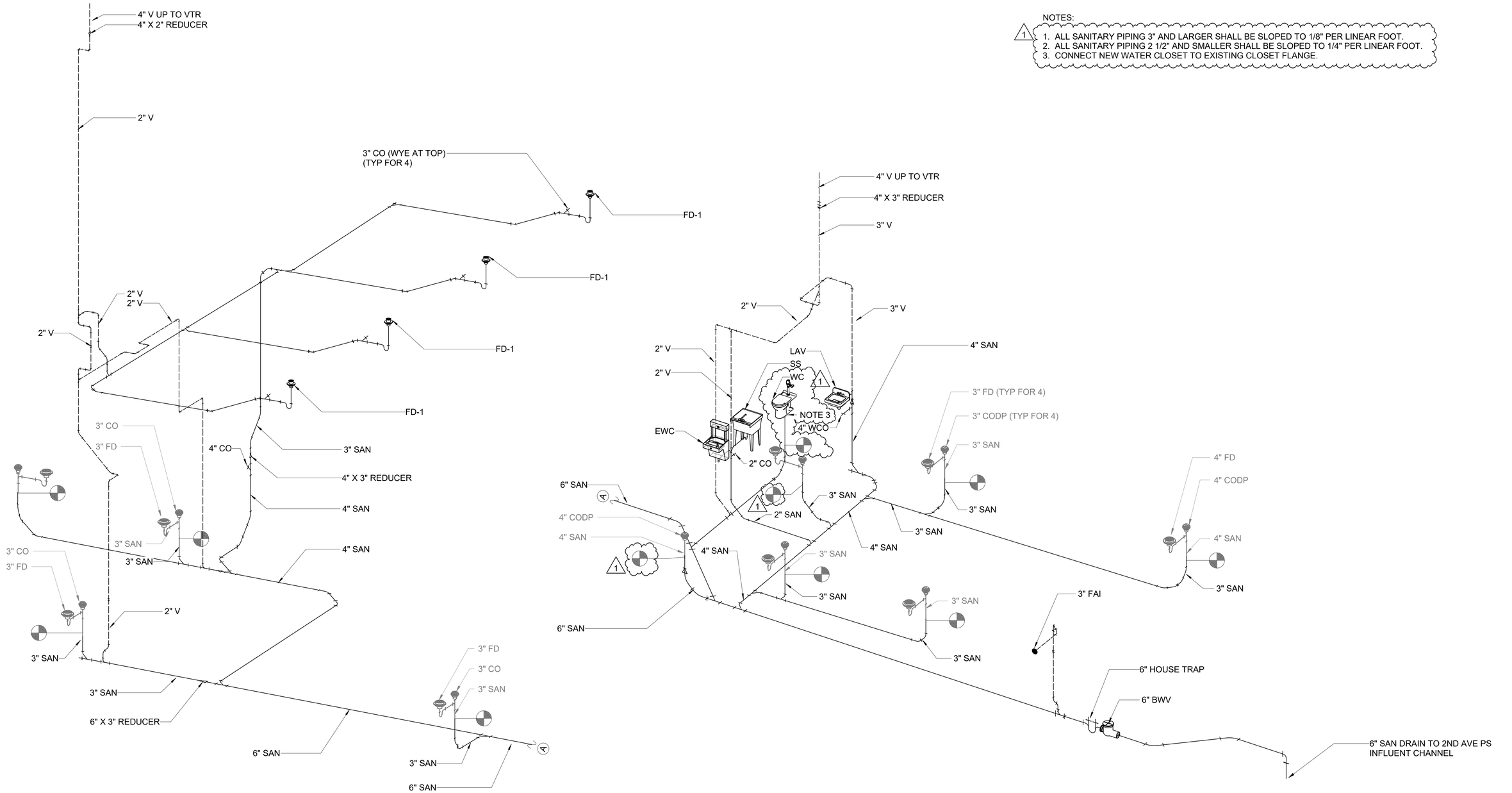
CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

PLUMBING SCHEDULES

DATE: SEPTEMBER 2026
SHEET NO: 499 OF 719
DRAWING NO. P-003.00

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NOTES:

1. ALL SANITARY PIPING 3" AND LARGER SHALL BE SLOPED TO 1/8" PER LINEAR FOOT.
2. ALL SANITARY PIPING 2 1/2" AND SMALLER SHALL BE SLOPED TO 1/4" PER LINEAR FOOT.
3. CONNECT NEW WATER CLOSET TO EXISTING CLOSET FLANGE.

SAN-A RISER DIAGRAM

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PLUMBING
SANITARY DRAINAGE RISER DIAGRAMS 1

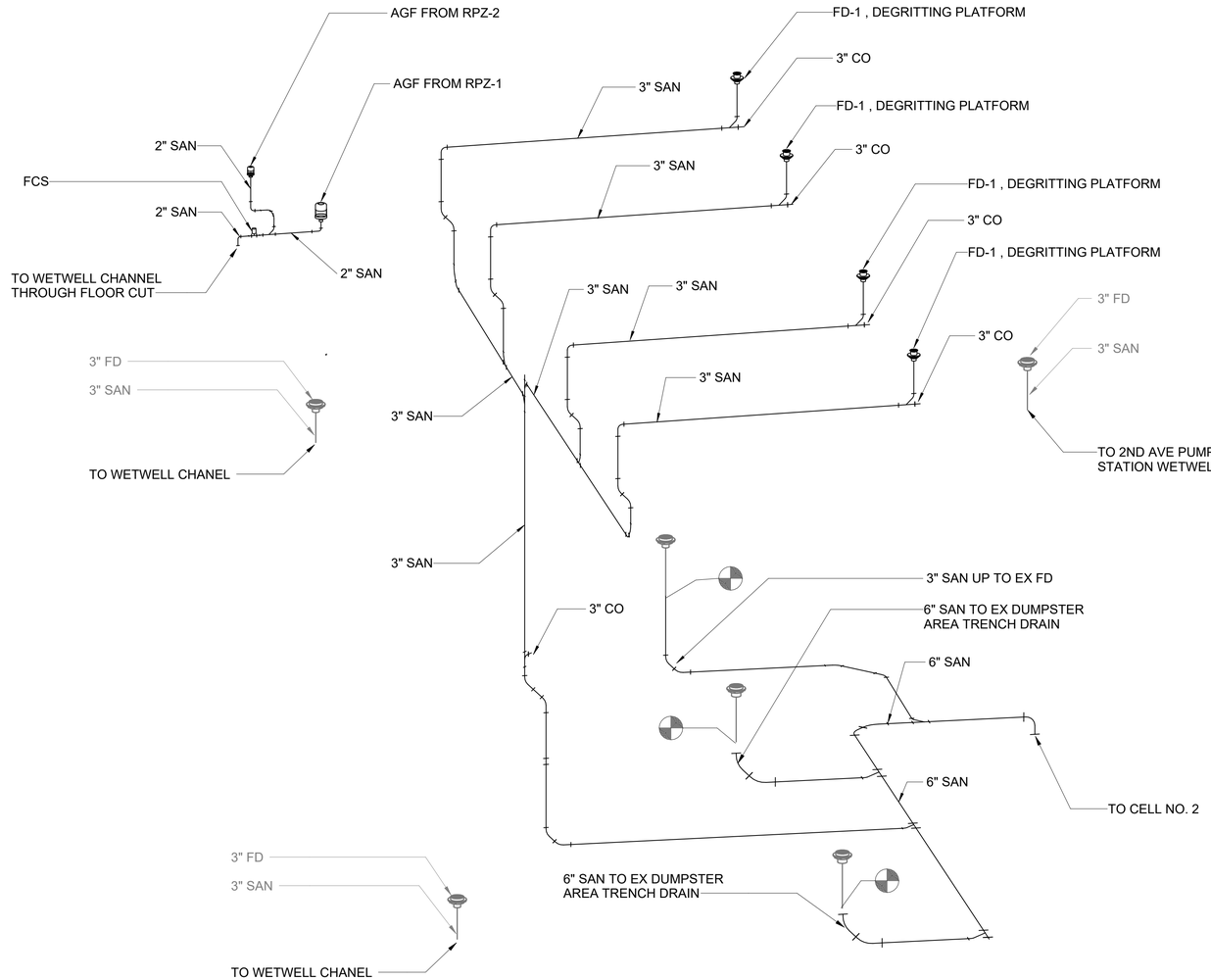
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SAN-B RISER DIAGRAM

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PLUMBING
SANITARY DRAINAGE RISER DIAGRAMS 2

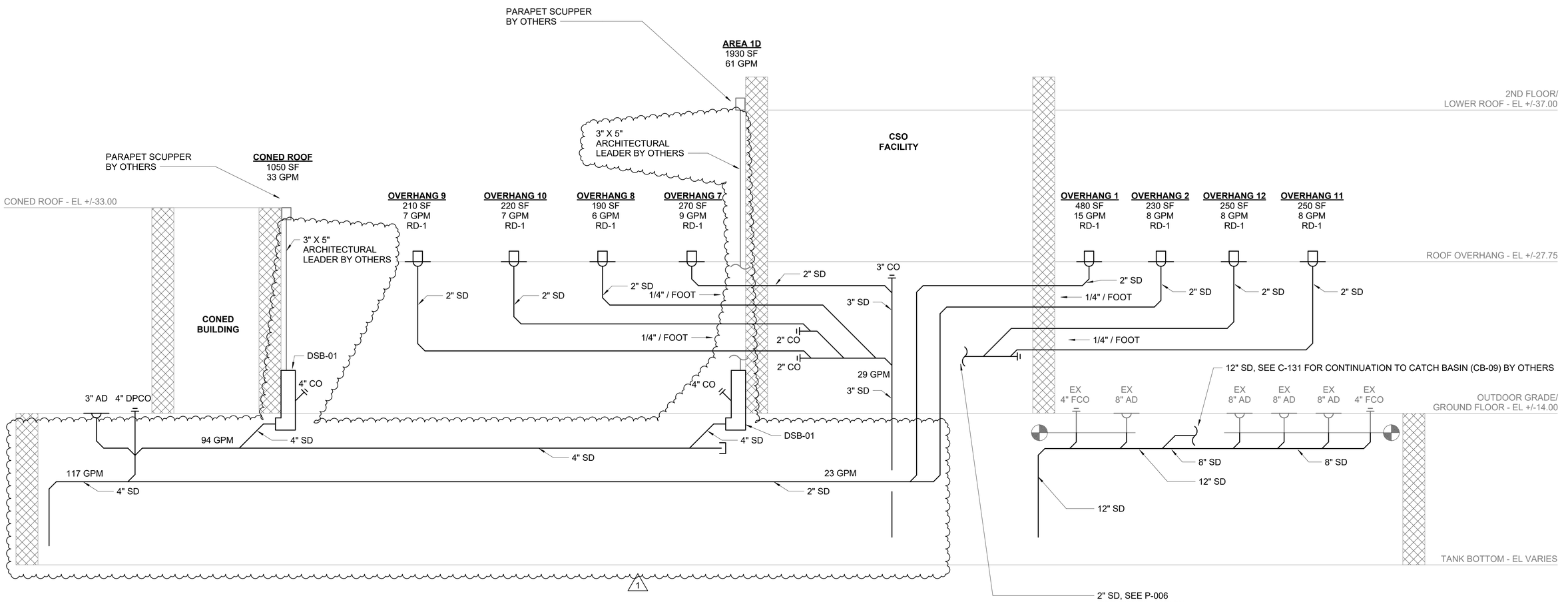
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NOTES:

1. ALL HORIZONTAL STORM PIPING SHALL BE SLOPED AT 1/8" / FOOT UNLESS OTHERWISE NOTED.



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PLUMBING
STORM DRAINAGE RISER DIAGRAM 2

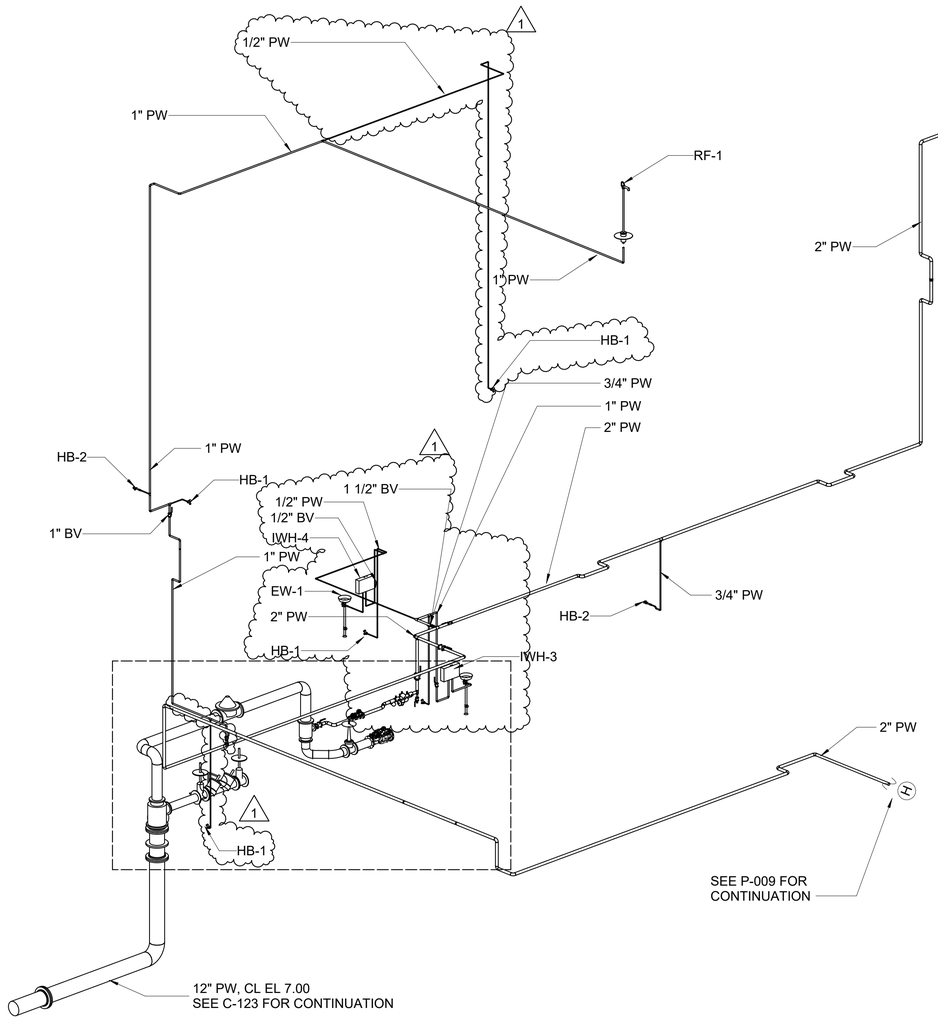
DATE: SEPTEMBER 2026
SHEET NO: 503 OF 719
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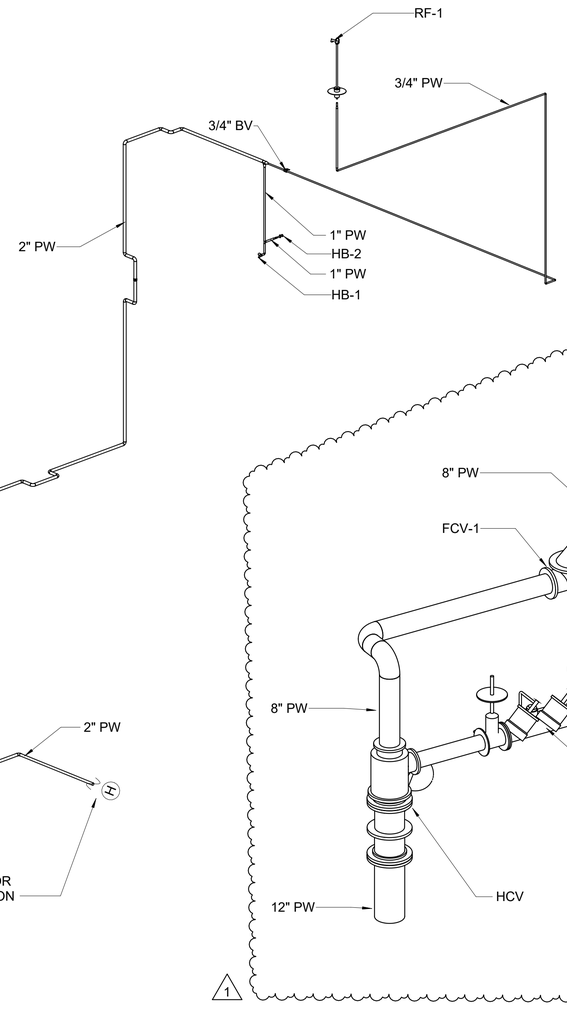
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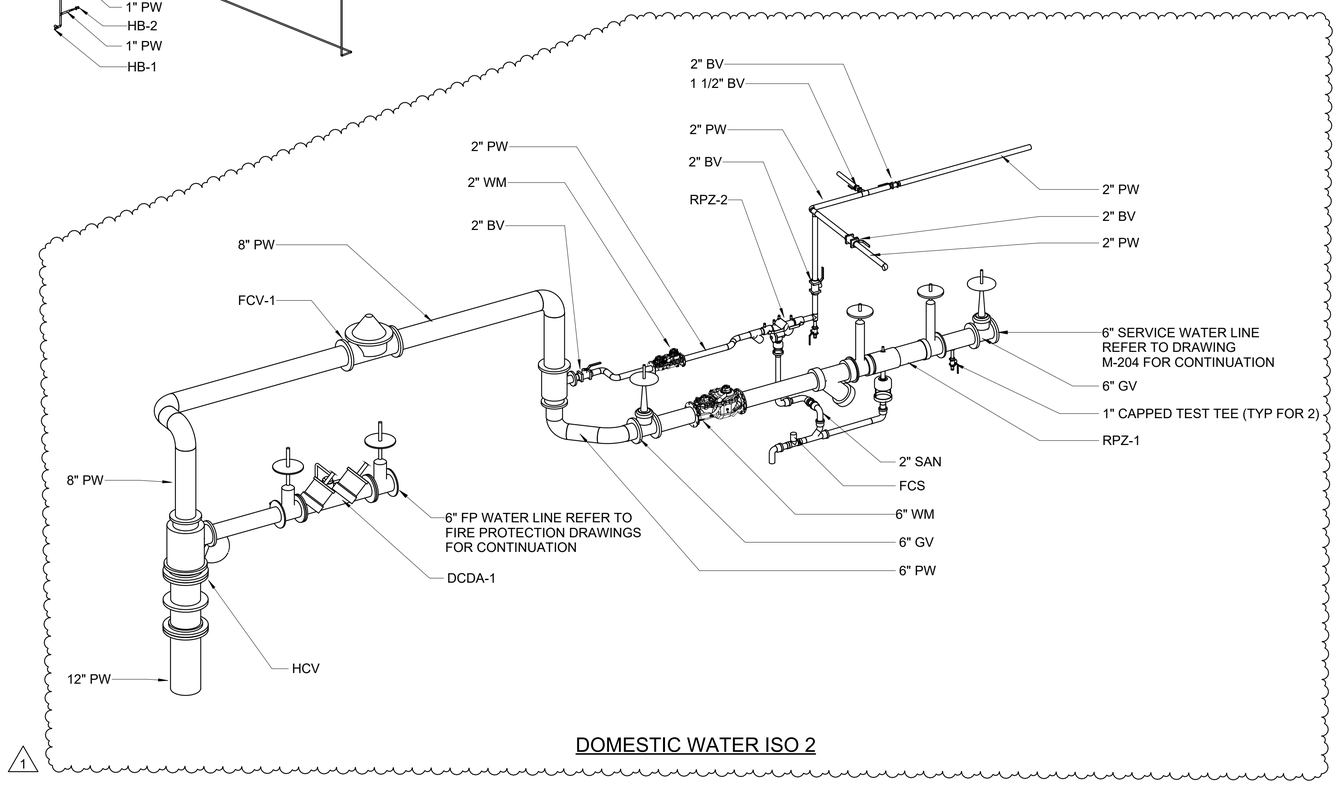
NOTE:

1. REFER PLUMBING EQUIPMENT SCHEDULES FOR FIXTURE DESCRIPTION.



DOMESTIC WATER ISO 1





DOMESTIC WATER ISO 2

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PLUMBING
DOMESTIC WATER RISER DIAGRAM 1

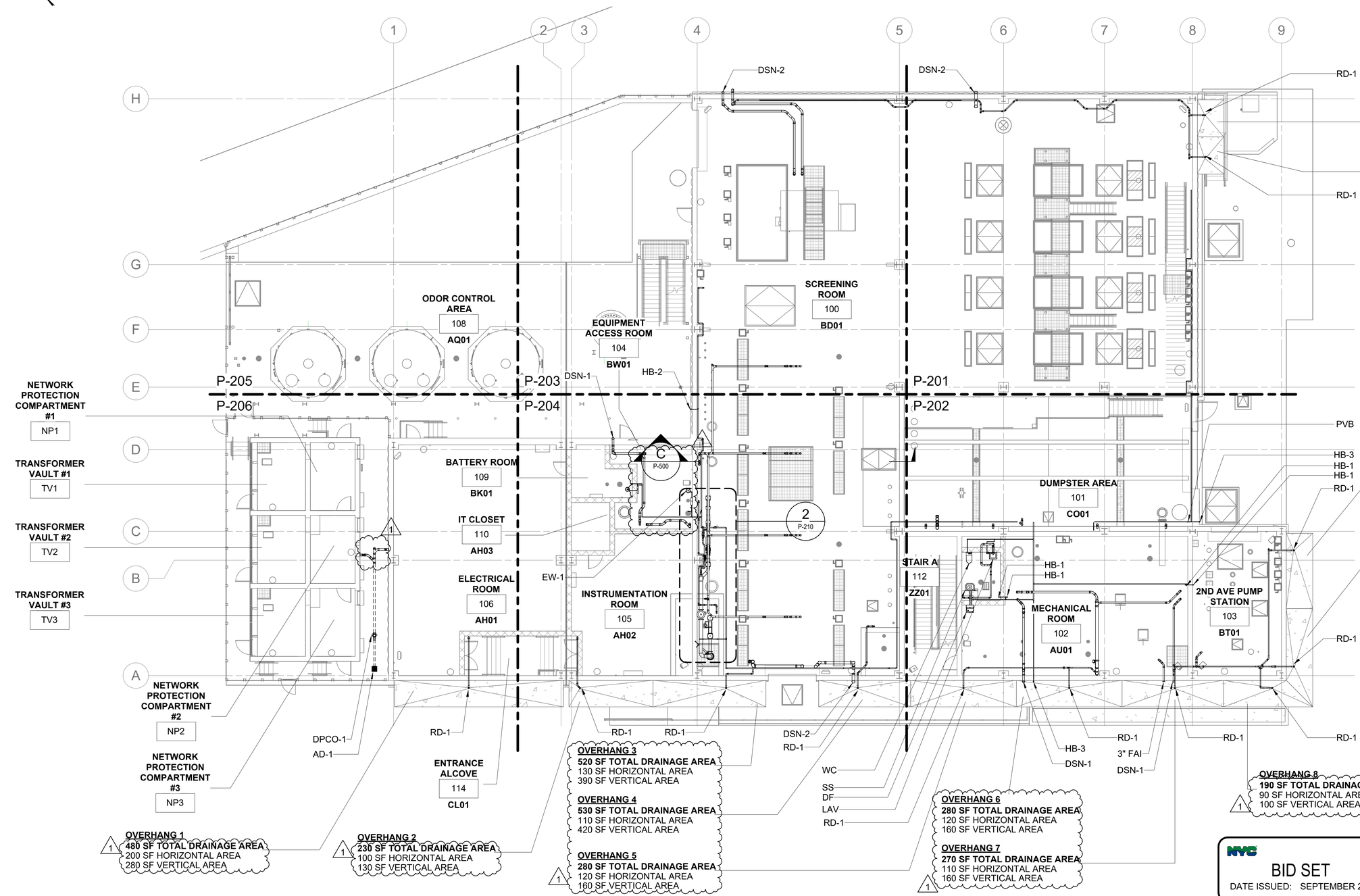
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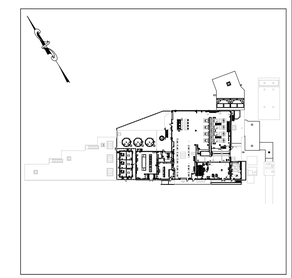
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NOTES:

1. THE WORK OF OTHER DISCIPLINES IS HIDDEN OR HALF-TONED FOR CLARITY. REFER TO CONTRACT DRAWINGS OF OTHER DISCIPLINES FOR ADDITIONAL WORK BY OTHERS.





KEY PLAN

3/32"=1'-0"

0 5 10 15 20 FT.

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PLUMBING
GROUND FLOOR
PLAN

DATE: SEPTEMBER 2026

SHEET NO: 508 OF 719

DRAWING NO. P-200.00

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1. THE WORK OF OTHER DISCIPLINES IS HIDDEN OR HALF-TONED FOR CLARITY. REFER TO CONTRACT DRAWINGS OF OTHER DISCIPLINES FOR ADDITIONAL WORK BY OTHERS.
2. ROOF OVERHANGS HAVE BEEN HIDDEN IN THIS DRAWING.

FOR CONTINUATION SEE P-201

FOR CONTINUATION SEE P-204

DUMPSTER AREA
101
CO01

MECHANICAL ROOM
102
AU01

2ND AVE PUMP STATION
103
BT01

3/4" PW
3" CO
3" SAN UP TO DEGRIT PLATFORM DRAIN
TYP FOR 4
3/4" PW UP
3/4" PW, CL EL 25.67
PVB
HB-3
HB-1
2" CO
RD-1
2" SD (EMBEDDED IN CONCRETE OVERHANG)
3" SD UP TO RD-1
3" SD DN
2" CO
2" SD (EMBEDDED IN CONCRETE OVERHANG)
RD-1
RD-1
2" PW, CL EL 25.67
3" SAN DN
3" CO
6" CO
6" SD DN
3" V DROP TO LAV
1" PW
WC
IWH-1
LAV
SS
IWH-2
2" V DN TO WC DRAIN
2" V DROP AND 2" SAN DN
1 1/2" SAN
1/2" PW
DF
2" V
3" SD UP TO RD-1
2" PW, CL EL 25.67
4" V UP TO VTR
2" V
HB-1
4" SD
4" CO (WYE AT TOP)
1/8" / 1'-0"
E
P-502
4" CO (WYE AT TOP)
6" CO
HOUSE TRAP PIT
3" V DN
3" V, INV 17.00
3" FAI
3" SD
3" CO
1/8" / 1'-0"
1/4" / 1'-0"
1/4" / 1'-0"
3" SD
3" CO
6" SD DN
4" CO
DSN-1
RD-1
HB-3
RD-1
DSN-1
RD-1

1/4"=1'-0" 0 4 8 FT.

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PORTFOLIO MANAGER	KEVIN CLARKE, P.E.

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CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

PLUMBING
GROUND FLOOR PARTIAL PLAN 2
PLAN

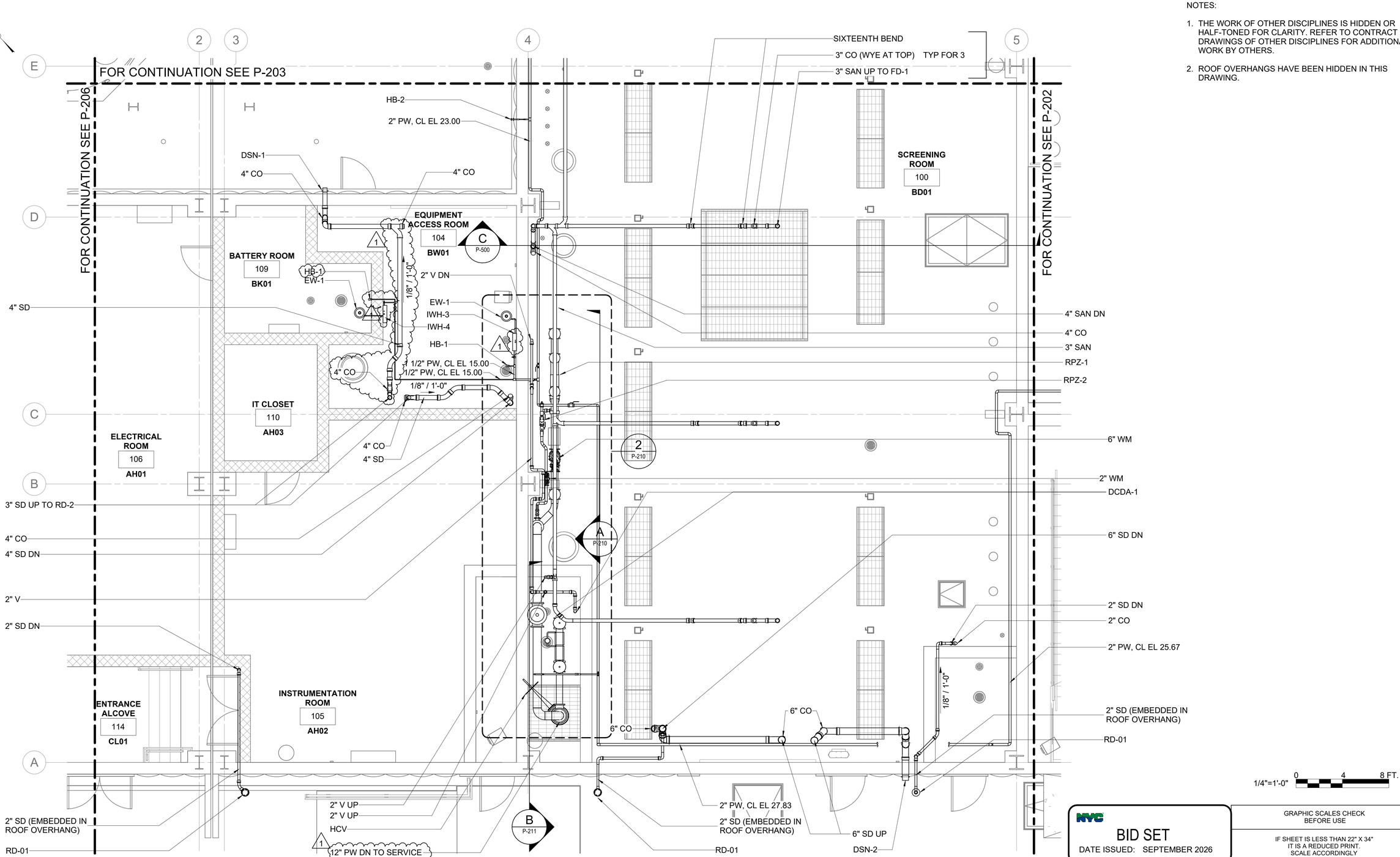
DATE: SEPTEMBER 2026
SHEET NO: 510 OF 719
DRAWING NO. P-202.00

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NOTES:

1. THE WORK OF OTHER DISCIPLINES IS HIDDEN OR HALF-TONED FOR CLARITY. REFER TO CONTRACT DRAWINGS OF OTHER DISCIPLINES FOR ADDITIONAL WORK BY OTHERS.
2. ROOF OVERHANGS HAVE BEEN HIDDEN IN THIS DRAWING.



1/4"=1'-0" 0 4 8 FT.

BID SET
DATE ISSUED: SEPTEMBER 2026

GRAPHIC SCALES CHECK BEFORE USE

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NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.
1	10/26	ADDENDUM NO. 2	MG

DESIGNED BY:	DRAWN BY:	PROJECT MANAGER:
J. LURIE	J. LURIE	E. CAMILLERI
CHECKED BY:	DESIGN LEAD:	DESIGN MANAGER:
T. QUESADA	M. GIORDANO	G. DEREAMER

Hazen | Brown AND Caldwell

MARC A. GIORDANO — 099855 — STATE OF NEW YORK — LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

ACCOUNTABLE MANAGER	JESSE GOLDIN, P.E.
PORTFOLIO MANAGER	KEVIN CLARKE, P.E.

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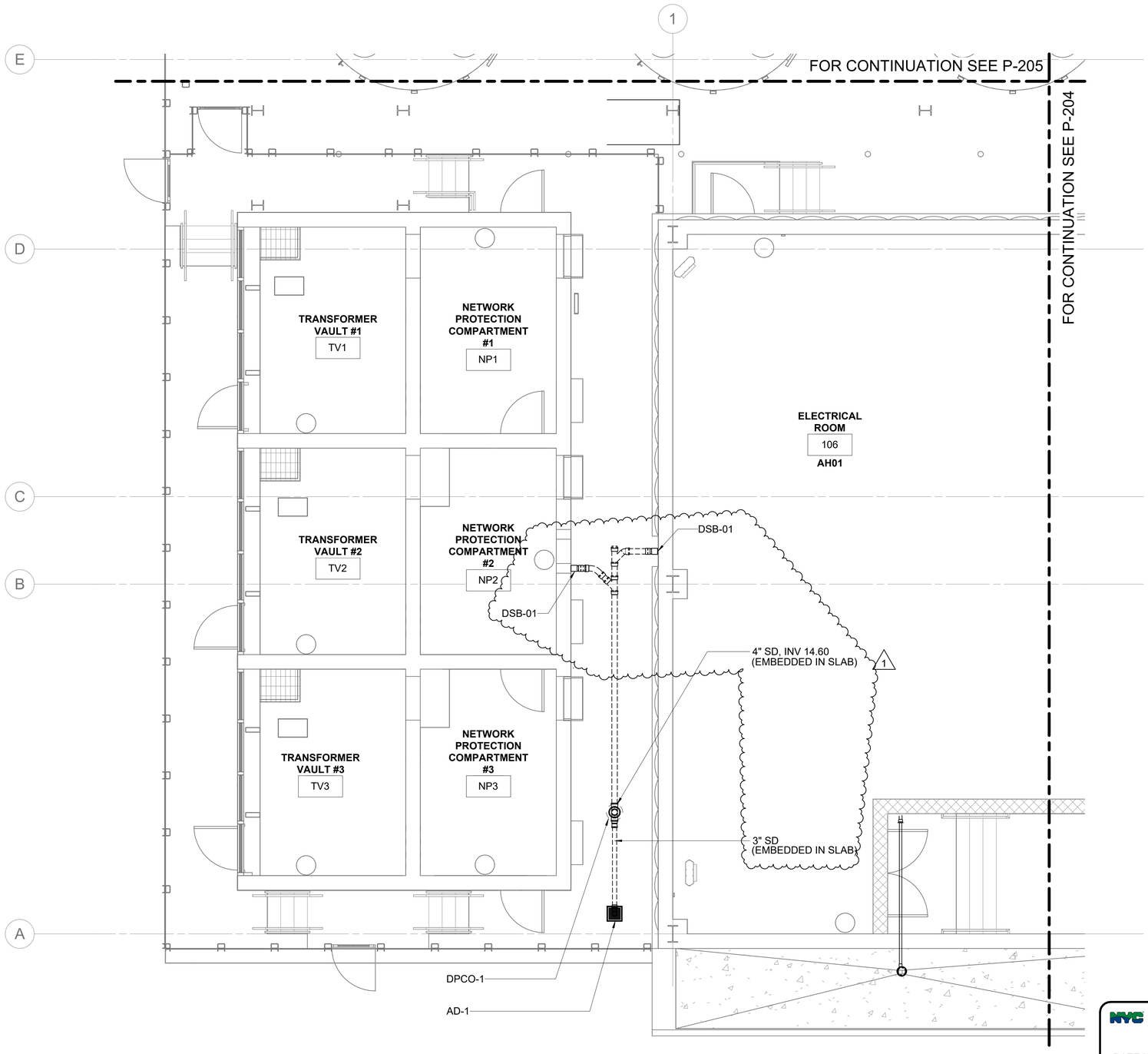
CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

PLUMBING
GROUND FLOOR PARTIAL PLAN 4
PLAN

DATE: SEPTEMBER 2026
SHEET NO: 512 OF 719
DRAWING NO. P-204.00

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1/4"=1'-0" 0 4 8 FT.

BID SET
DATE ISSUED: SEPTEMBER 2026

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NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.
1	10/26	ADDENDUM NO. 2	MG

DESIGNED BY: J. LURIE | DRAWN BY: J. LURIE | PROJECT MANAGER: E. CAMILLERI
CHECKED BY: T. QUESADA | DESIGN LEAD: M. GIORDANO | DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

MARC A. STORANI — LICENSED PROFESSIONAL ENGINEER

Environmental Protection

ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.
PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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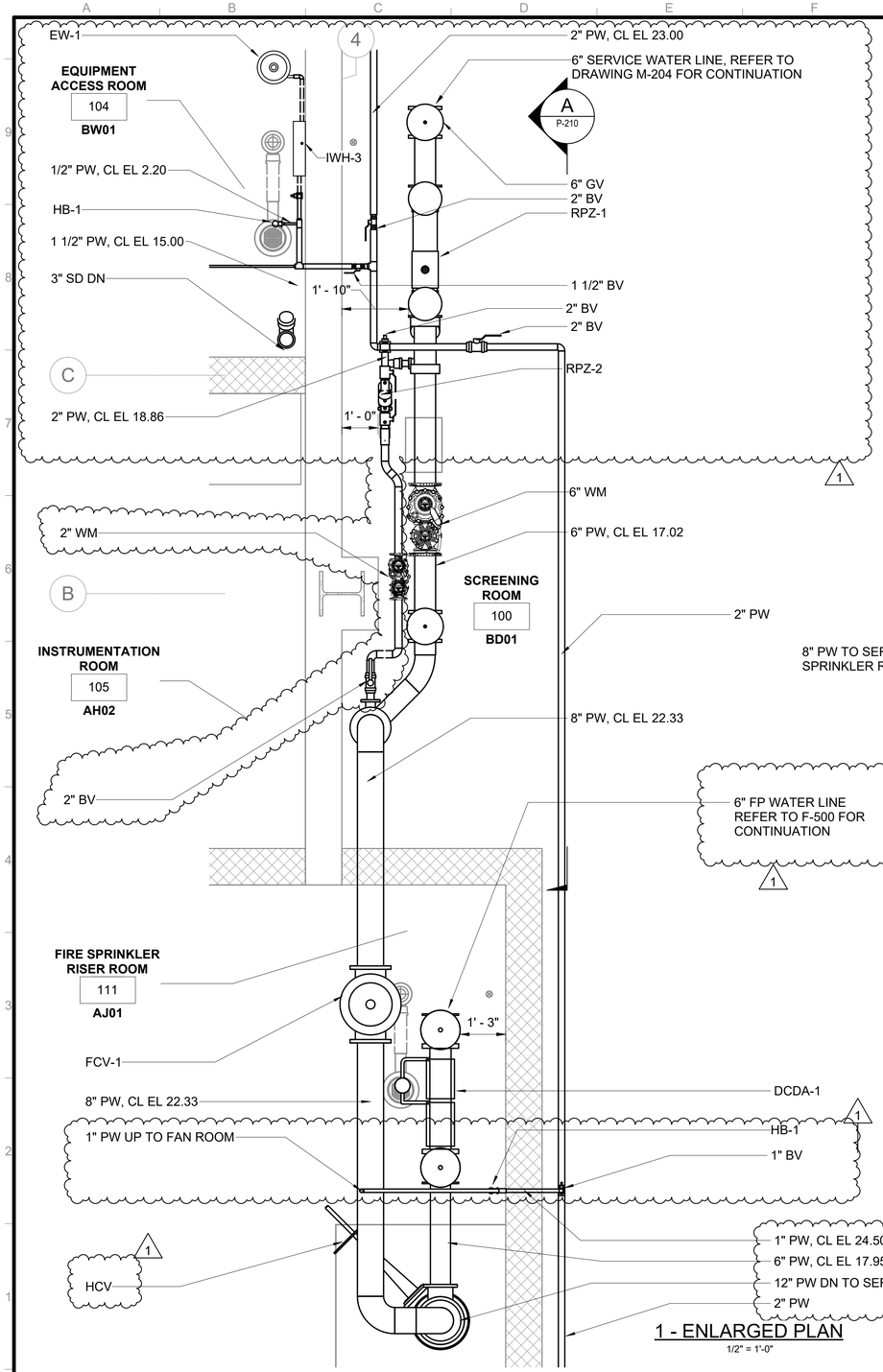
CSO FACILITIES FOR GOWANUS CANAL
CONSTRUCTION PACKAGE 3 - OH-007

PLUMBING
GROUND FLOOR PARTIAL PLAN 6
PLAN

DATE: SEPTEMBER 2026
SHEET NO: 514 OF 719
DRAWING NO. P-206.00

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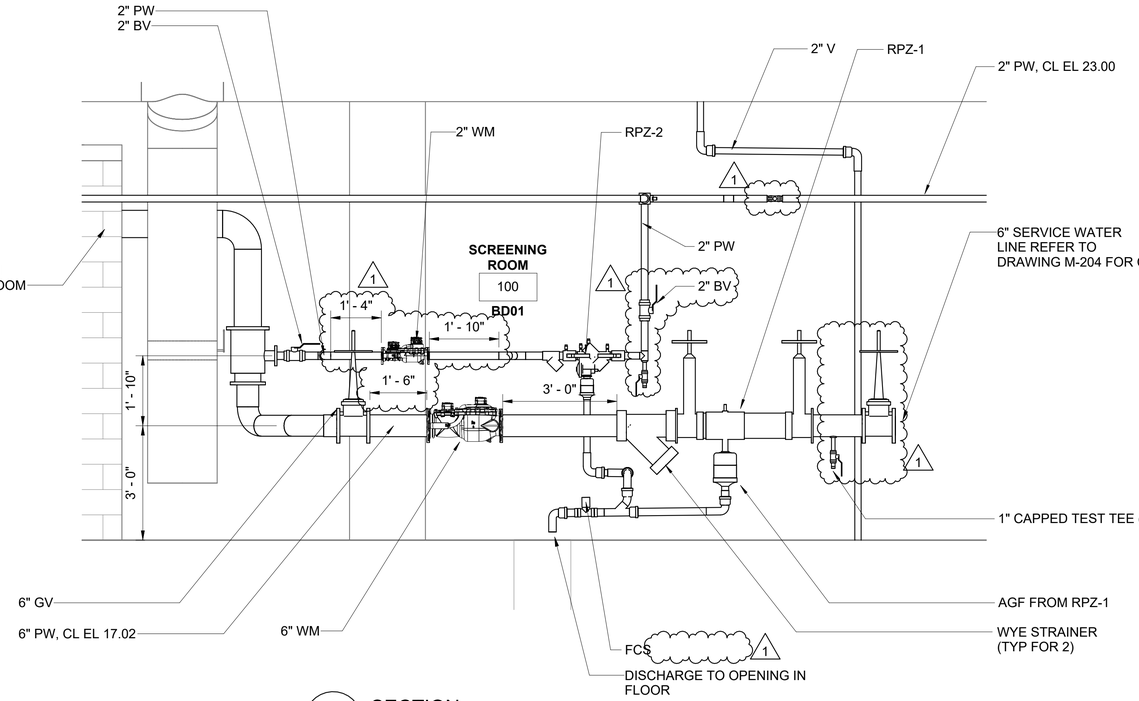
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1 - ENLARGED PLAN

1/2" = 1'-0"





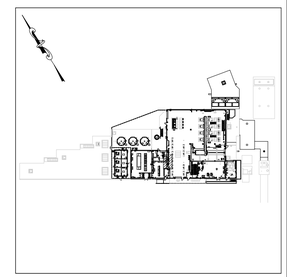
A SECTION

A / P-204

SCALE: 1/2" = 1'-0"

NOTES:

1. THE WORK OF OTHER DISCIPLINES IS HIDDEN OR HALF-TONED FOR CLARITY. REFER TO CONTRACT DRAWINGS OF OTHER DISCIPLINES FOR ADDITIONAL WORK BY OTHERS.
2. VENT INVERT ELEVATION SHALL EXCEED 10" AFF.
3. MAINTAIN ALL RPZ CLEARANCE REQUIREMENTS LISTED IN LATEST VERSION OF NYC DEP CROSS CONNECTION CONTROL HANDBOOK.



KEY PLAN

1/2"=1'-0" 0 1 2 4 FT.

BID SET
DATE ISSUED: SEPTEMBER 2026

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CHECKED BY: T. QUESADA	DESIGN LEAD: M. GIORDANO	DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

STATE OF NEW YORK — MICHAEL A. GIORDANO — 099855 — PROFESSIONAL ENGINEER

Environmental Protection

ACCOUNTABLE MANAGER	JESSE GOLDIN, P.E.
PORTFOLIO MANAGER	KEVIN CLARKE, P.E.

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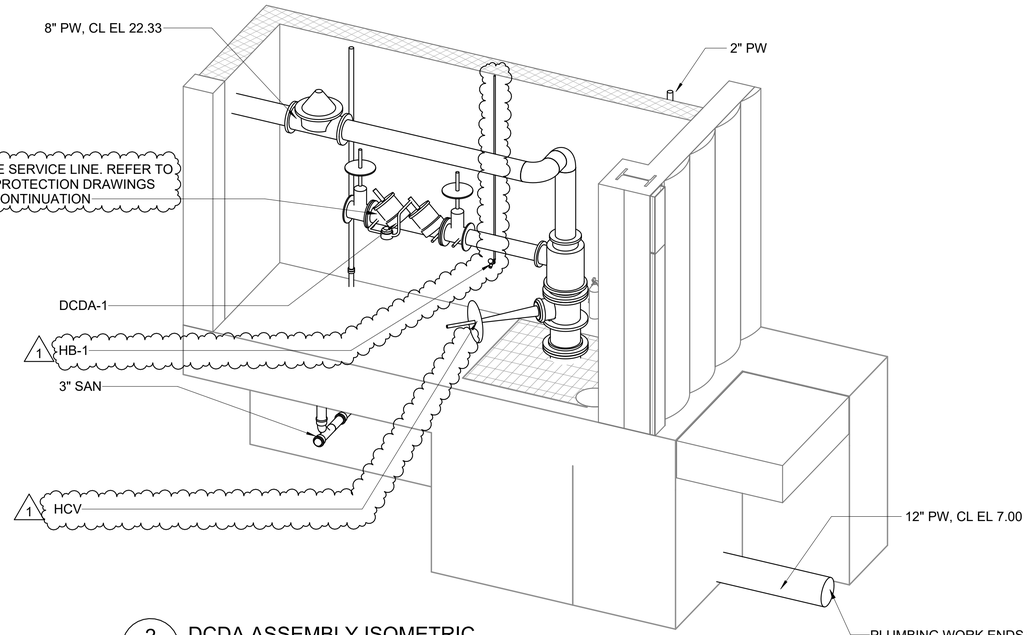
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PLUMBING
GROUND FLOOR ENLARGED PLANS 1

DATE: SEPTEMBER 2026
SHEET NO: 515 OF 719
DRAWING NO. P-210.00

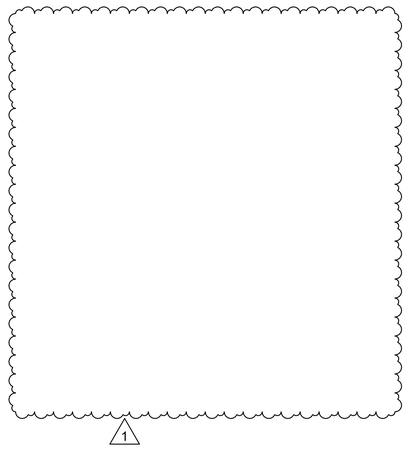
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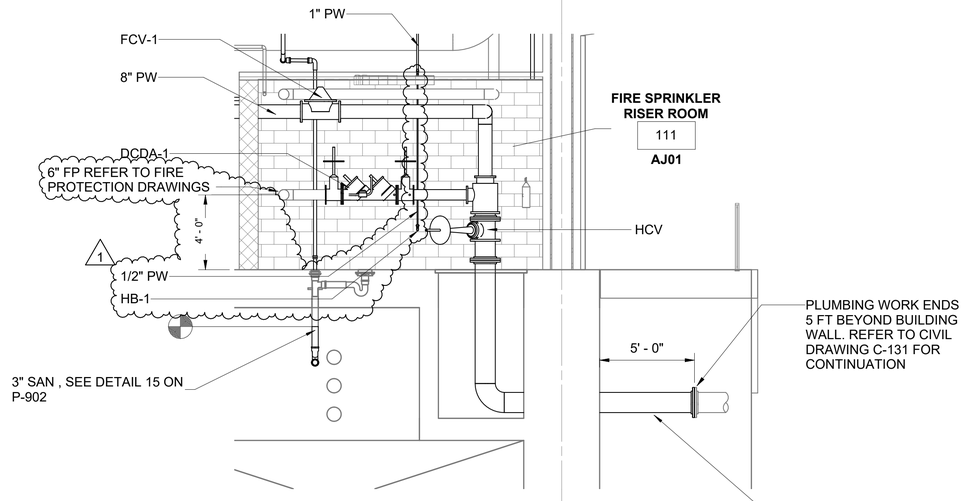
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2 DCDA ASSEMBLY ISOMETRIC

SCALE: NTS



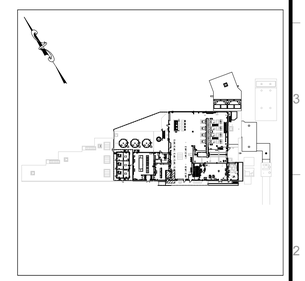


B P-204 SECTION

SCALE: 1/4" = 1'-0"

NOTES:

1. THE WORK OF OTHER DISCIPLINES IS HIDDEN OR HALF-TONED FOR CLARITY. REFER TO CONTRACT DRAWINGS OF OTHER DISCIPLINES FOR ADDITIONAL WORK BY OTHERS.
2. REFER TO F DRAWINGS FOR VALVE TAMPER SWITCH LOCATIONS.



KEY PLAN

1/2"=1'-0" 0 1 2 4 FT.

1/4"=1'-0" 0 4 8 FT.

BID SET

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NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.
1	10/26	ADDENDUM NO. 2	MG

DESIGNED BY: J. LURIE	DRAWN BY: J. LURIE	PROJECT MANAGER: E. CAMILLERI
CHECKED BY: T. QUESADA	DESIGN LEAD: M. GIORDANO	DESIGN MANAGER: G. DEREAMER

Hazen Brown AND Caldwell

Environmental Protection

ACCOUNTABLE MANAGER	JESSE GOLDIN, P.E.
PORTFOLIO MANAGER	KEVIN CLARKE, P.E.

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CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

PLUMBING
GROUND FLOOR ENLARGED PLANS 2

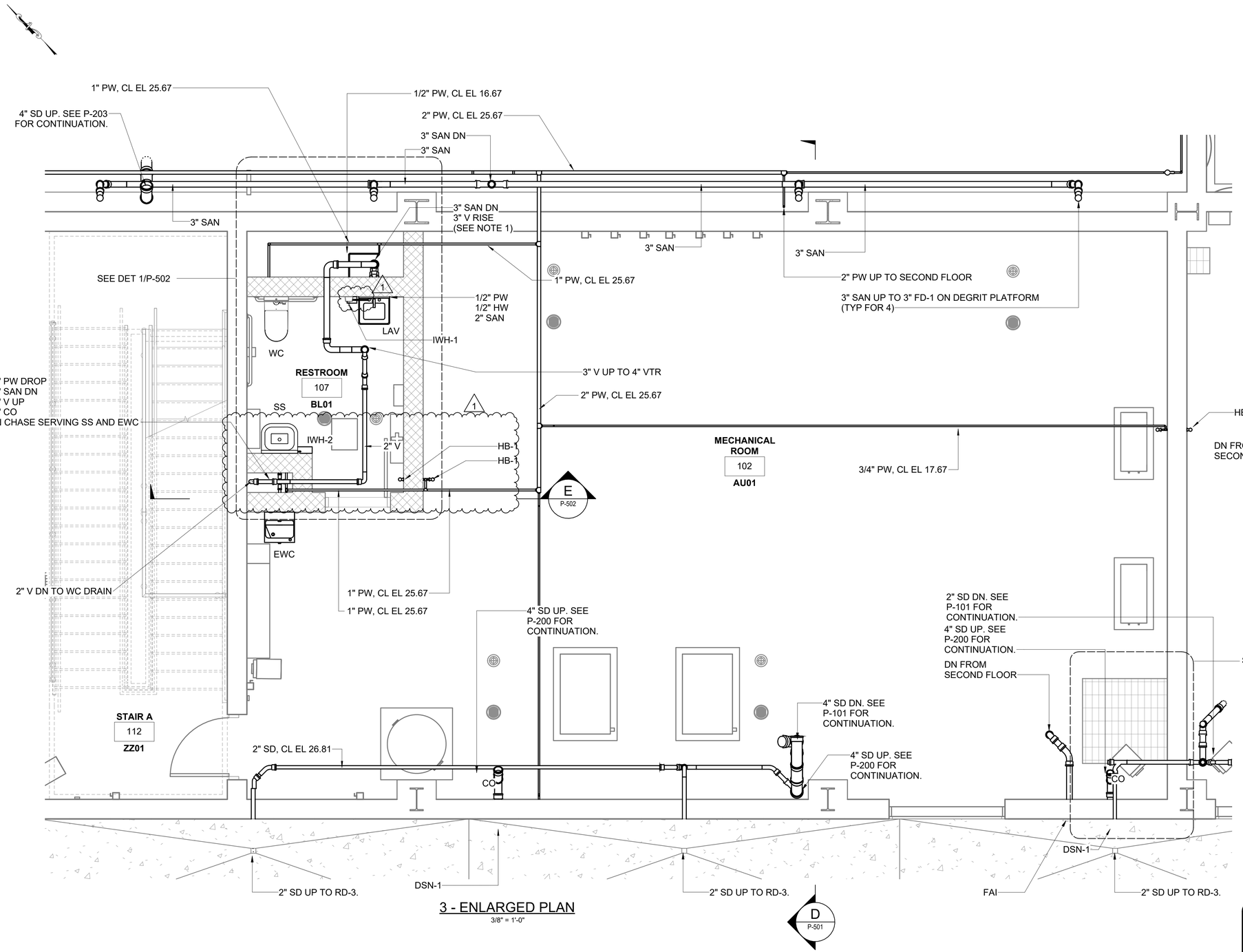
DATE: SEPTEMBER 2026

SHEET NO: 516 OF 719

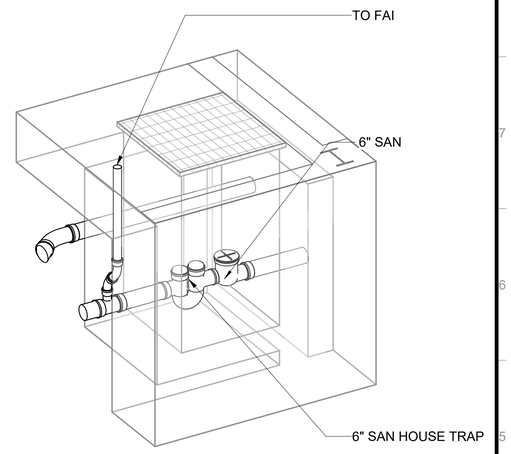
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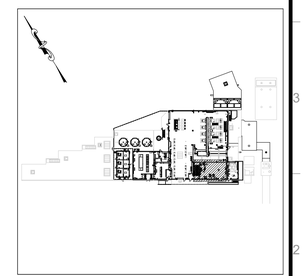
NOTES:
1. 2" VENT CONNECTIONS SHALL CONNECT TO VENT HEADER AT A HEIGHT NOT LESS THAN 6" ABOVE THE FLOOD RIM OF LAV.
2. THE WORK OF OTHER DISCIPLINES IS HIDDEN OR HALF-TONED FOR CLARITY. REFER TO CONTRACT DRAWINGS OF OTHER DISCIPLINES FOR ADDITIONAL WORK BY OTHERS.



3 - ENLARGED PLAN
3/8" = 1'-0"



4 - HOUSE TRAP PIT ISOMETRIC



KEY PLAN

3/8"=1'-0" 0 1 2 3 5 FT.

BID SET
DATE ISSUED: SEPTEMBER 2026

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NO.	DATE	REVISIONS/DESCRIPTION	APPR'D.
1	10/26	ADDENDUM NO. 2	MG

DESIGNED BY: J. LURIE	DRAWN BY: J. LURIE	PROJECT MANAGER: E. CAMILLERI
CHECKED BY: T. QUESADA	DESIGN LEAD: M. GIORDANO	DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

STATE OF NEW YORK — MARC A. GIORDANO — 099855 — PROFESSIONAL ENGINEER

Environmental Protection

ACCOUNTABLE MANAGER
JESSE GOLDIN, P.E.

PORTFOLIO MANAGER
KEVIN CLARKE, P.E.

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CSO FACILITIES FOR GOWANUS CANAL
CONSTRUCTION PACKAGE 3 - OH-007

PLUMBING
GROUND FLOOR ENLARGED PLANS 3

DATE: SEPTEMBER 2026
SHEET NO: 517 OF 719
DRAWING NO. P-212.00

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NOTES:

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4H
2820 SF TOTAL DRAINAGE AREA
1510 SF HORIZONTAL AREA
1310 SF VERTICAL AREA
1

RD-3

HB-2

HB-1

SCREENING ROOM
100
BD01

ODOR CONTROL AREA
108
AQ01

FD-1

FD-1

FD-1

FD-1

FD-1

FD-1

DEGRITTING EQUIPMENT PLATFORM
201
CC01

P-303
P-304
P-301
P-302

CONED ROOF
1050 SF TOTAL DRAINAGE AREA
930 SF HORIZONTAL AREA
120 SF VERTICAL AREA
1

FAN ROOM
200
AM01

CON ED BUILDING

20'-10"

33' - 6" TALL WALL BY OTHERS

STAIR A
112
ZZ01

FD-1

FD-1

HB-2

RD-2

HB-2

7C
1590 SF TOTAL DRAINAGE AREA
1130 SF HORIZONTAL AREA
460 SF VERTICAL AREA
1

RD-2

5C
2600 SF TOTAL DRAINAGE AREA
1110 SF HORIZONTAL AREA
1490 SF VERTICAL AREA
1

RD-2

4" VTR

1D
1930 SF TOTAL DRAINAGE AREA
1670 SF HORIZONTAL AREA
260 SF VERTICAL AREA
1

3D
2640 SF TOTAL DRAINAGE AREA
1630 SF HORIZONTAL AREA
1010 SF VERTICAL AREA
1

RD-2

HB-2

KEY PLAN

3/32"=1'-0"

0 5 10 15 20 FT.

NYC
BID SET
DATE ISSUED: SEPTEMBER 2026

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CHECKED BY: T. QUESADA | DESIGN LEAD: M. GIORDANO | DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

STATE OF NEW YORK — MARC A. GIORDANO — 099855 — PROFESSIONAL ENGINEER

Environmental Protection

ACCOUNTABLE MANAGER
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PORTFOLIO MANAGER
KEVIN CLARKE, P.E.

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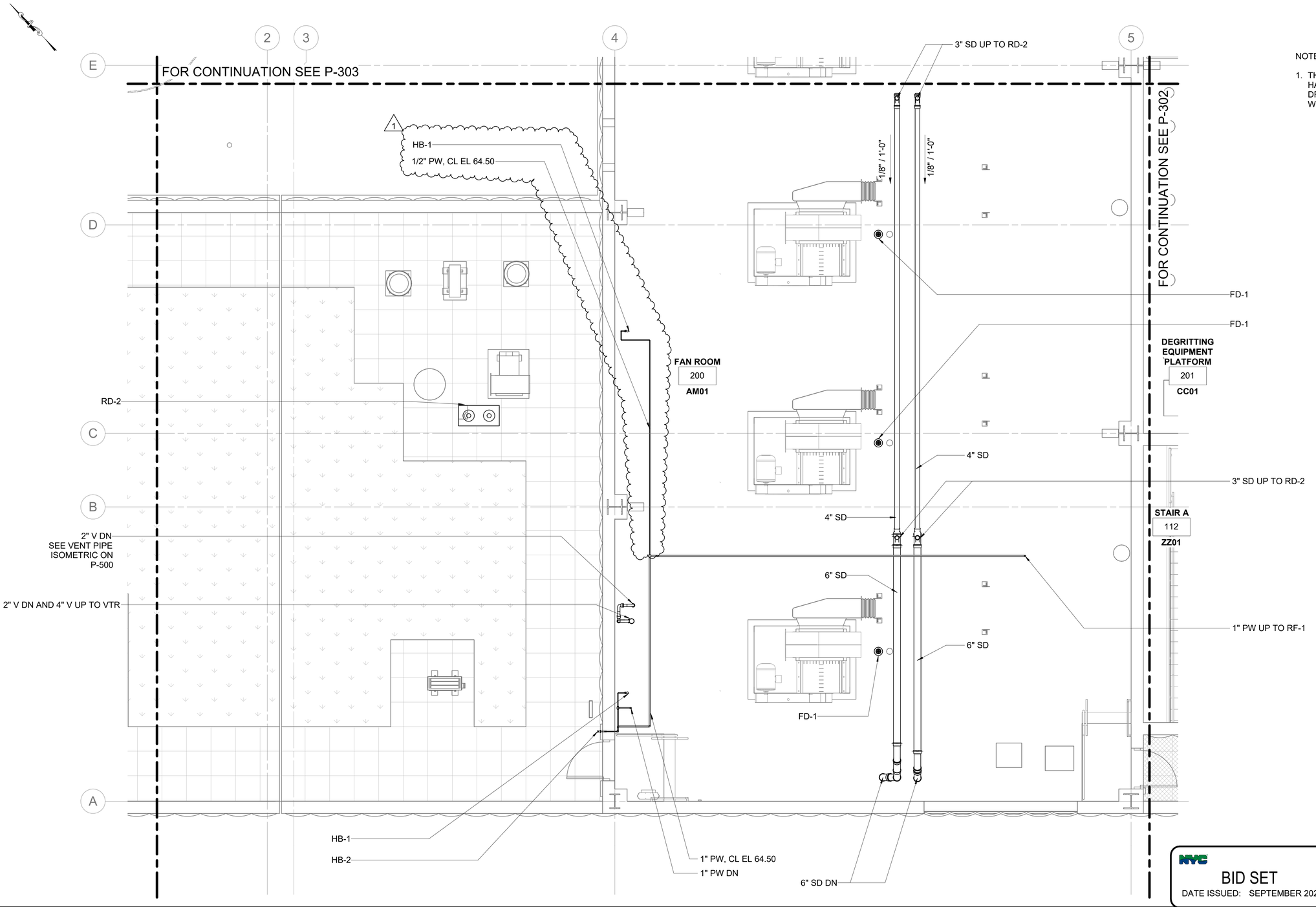
CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

PLUMBING
SECOND FLOOR
PLAN

DATE: SEPTEMBER 2026
SHEET NO: 518 OF 719
DRAWING NO. P-300.00

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1/4"=1'-0" 0 4 8 FT.

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J. LURIE	J. LURIE	E. CAMILLERI
CHECKED BY:	DESIGN LEAD:	DESIGN MANAGER:
T. QUESADA	M. GIORDANO	G. DEREAMER

Hazen | Brown AND Caldwell

MARC A. GIORDANO — STATE OF NEW YORK — 099858 — LICENSED PROFESSIONAL ENGINEER

Environmental Protection

ACCOUNTABLE MANAGER
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PORTFOLIO MANAGER
KEVIN CLARKE, P.E.

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CSO FACILITIES FOR GOWANUS CANAL
CONSTRUCTION PACKAGE 3 - OH-007

PLUMBING
SECOND FLOOR PARTIAL PLAN 4
PLAN

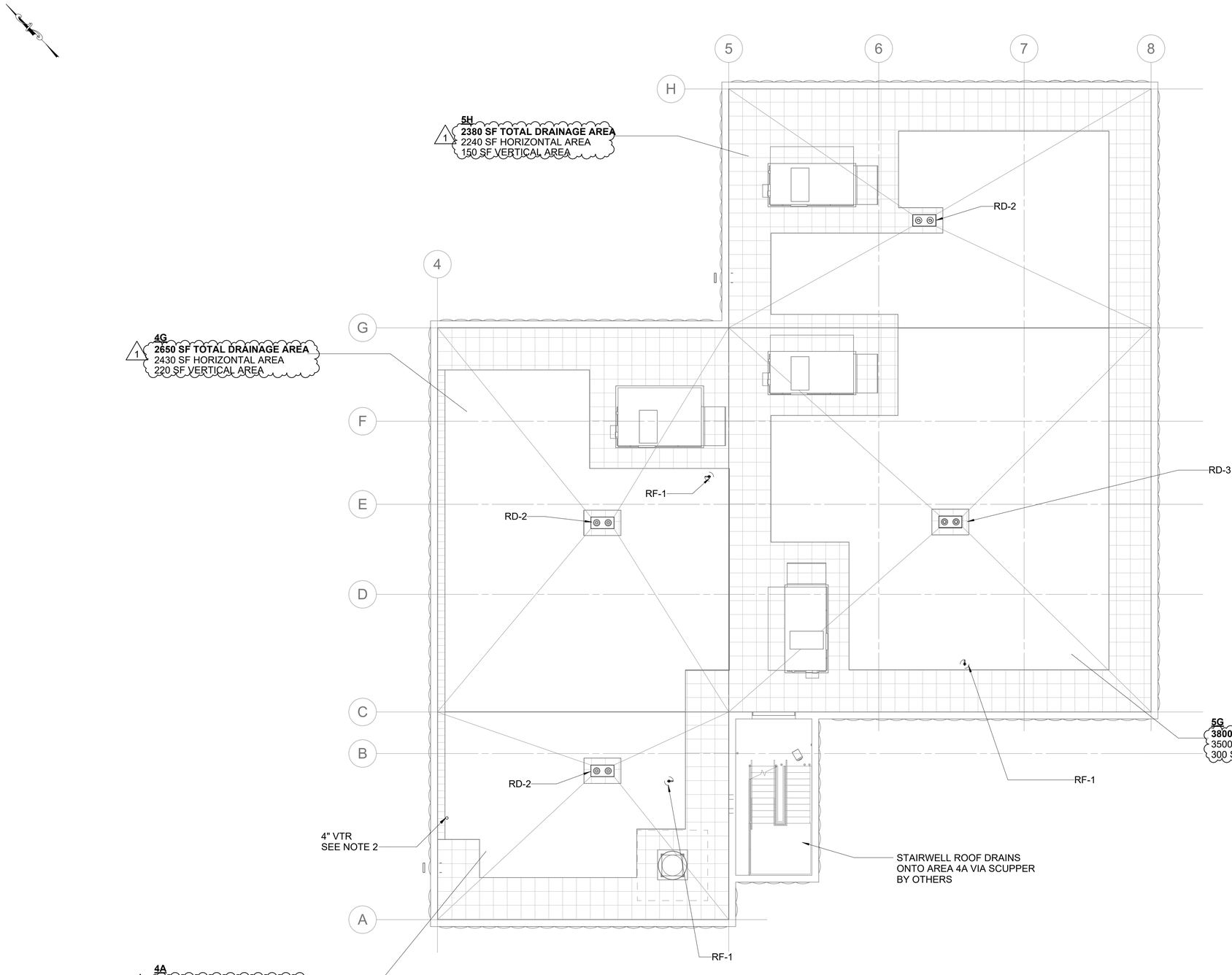
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DRAWING NO. P-304.00

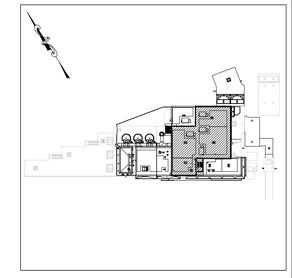
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NOTES:

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2. 4" VENT SHALL TERMINATE 7' - 0" ABOVE ROOF SURFACE.





KEY PLAN

1/8"=1'-0" 0 5 10 15 FT.

BID SET
DATE ISSUED: SEPTEMBER 2026

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Hazen | Brown AND Caldwell

MARC A. GIORDANO — STATE OF NEW YORK — 099858 — LICENSED PROFESSIONAL ENGINEER

Environmental Protection

ACCOUNTABLE MANAGER
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PORTFOLIO MANAGER
KEVIN CLARKE, P.E.

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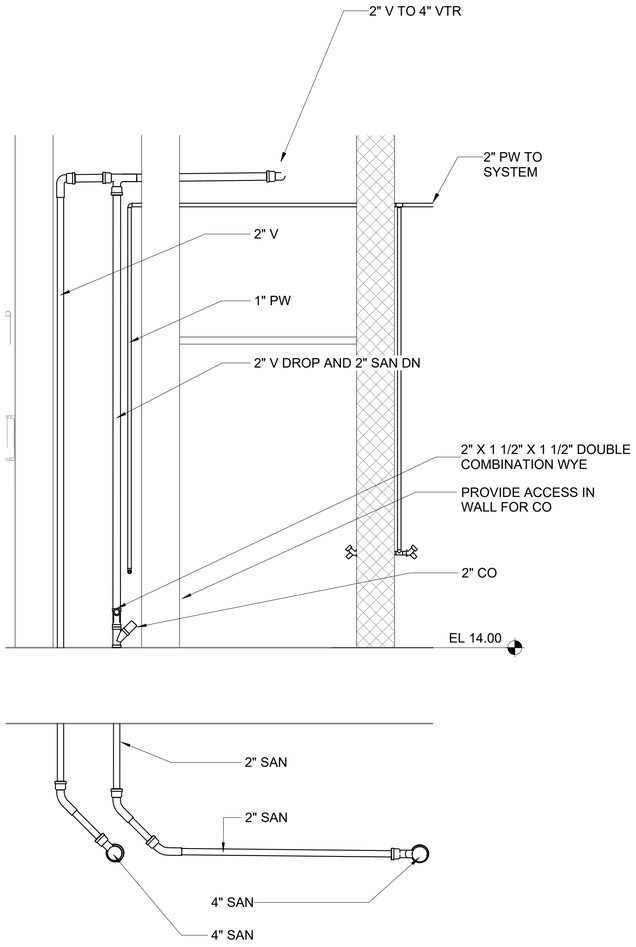
CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

PLUMBING
ROOF PLAN

DATE: SEPTEMBER 2026
SHEET NO: 523 OF 719
DRAWING NO. P-400.00

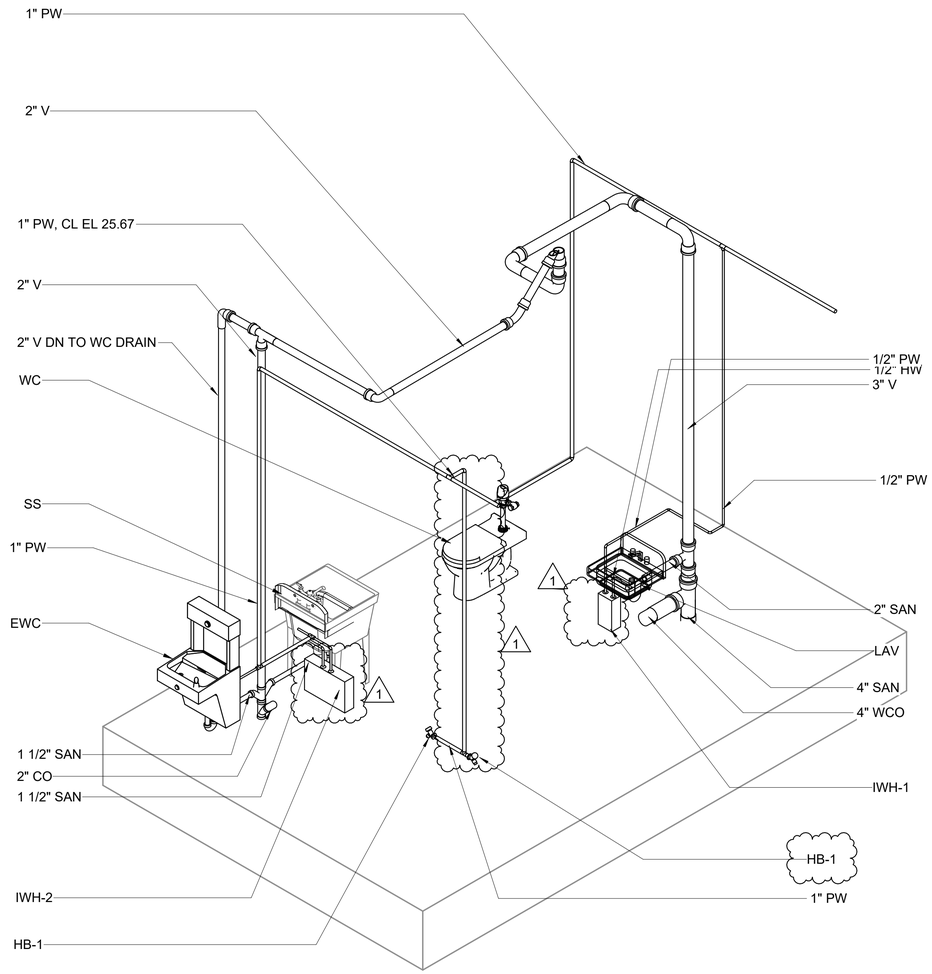
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E P-101 SERVICE SINK DRAINAGE OFFSET

SCALE: 1/2" = 1'-0"



6 - RESTROOM ISOMETRIC

NOTES:

1. COORDINATE DRAINAGE AND VENT PIPING WITH BRIDGE-CRANE TRAVEL PATH. PIPING SHALL NOT CROSS THE PLANE 9" BELOW THE BOTTOM FACE OF THE MAJOR STRUCTURAL BEAMS UNTIL CLEAR OF BRIDGE CRANE BELOW.
2. COORDINATE DRAINAGE AND VENT PIPING WITH SPRINKLER PIPING INSTALLATION.

1/2"=1'-0" 0 1 2 4 FT.

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1	10/26	ADDENDUM NO. 2	MG

DESIGNED BY: J. LURIE	DRAWN BY: J. LURIE	PROJECT MANAGER: E. CAMILLERI
CHECKED BY: T. QUESADA	DESIGN LEAD: M. GIORDANO	DESIGN MANAGER: G. DEREAMER

Hazen Brown AND Caldwell

STATE OF NEW YORK MARC A. GIORDANO 099859 PROFESSIONAL ENGINEER

Environmental Protection

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JESSE GOLDIN, P.E.

PORTFOLIO MANAGER
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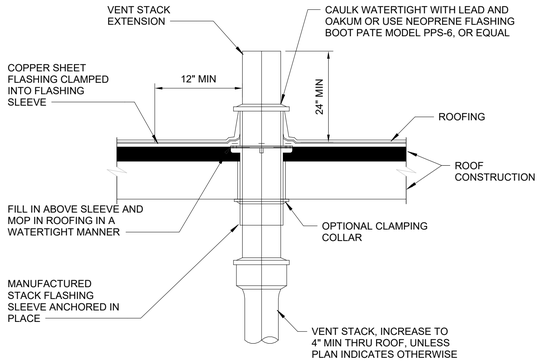
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SECTIONS 3

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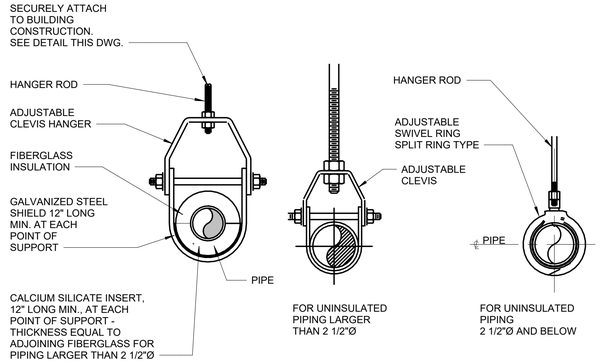
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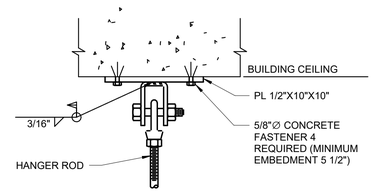
1 FLASHING SLEEVE

SCALE: NTS



2 TYPICAL PIPE SUPPORTS

SCALE: NTS

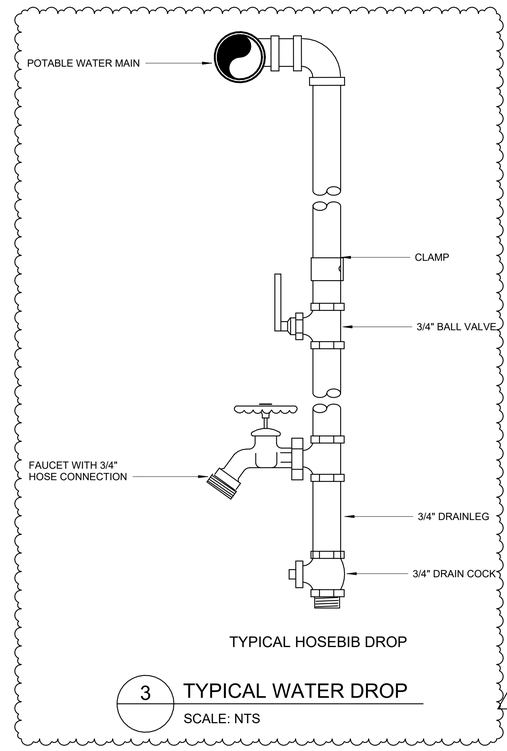


NOTE:

THIS DETAIL TO BE USED FOR STRUCTURAL CONCRETE CEILING ONLY. NOT TO BE USED WITH CINDER CONCRETE CEILING, OR AS ORDERED BY ENGINEER.

4 HANGER SUPPORT

SCALE: NTS

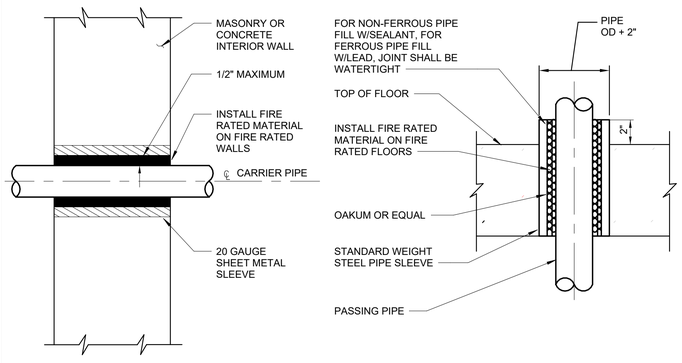


TYPICAL HOSEBIB DROP

3 TYPICAL WATER DROP

SCALE: NTS

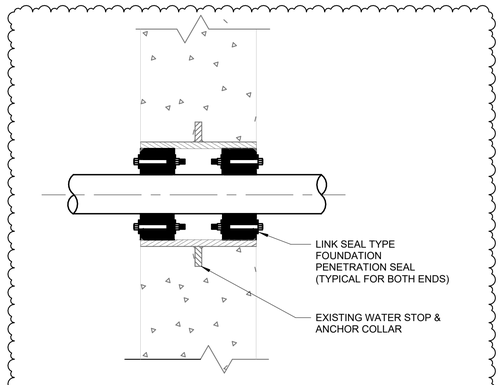
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5 PIPE PENETRATION AT FIRE RATED WALL AND FLOOR

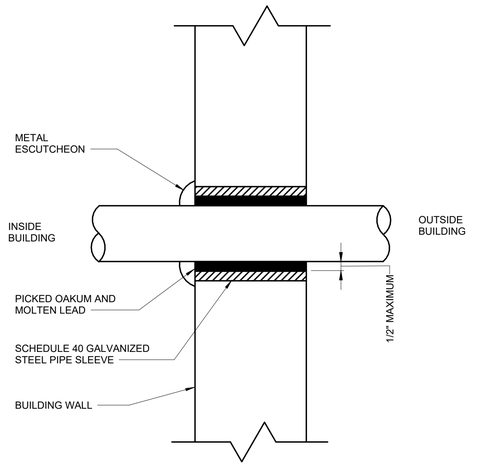
SCALE: NTS



6 PIPE THROUGH EXISTING PENETRATION

SCALE: NTS

1



7 PIPE PENETRATION EXTERIOR WALL ABOVE GRADE

SCALE: NTS

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CHECKED BY:	DESIGN LEAD:	DESIGN MANAGER:
T. QUESADA	M. GIORDANO	G. DEREAMER

Hazen | Brown AND Caldwell

STATE OF NEW YORK — MARC A. GIORDANO — 099858 — LICENSED PROFESSIONAL ENGINEER

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PLUMBING DETAILS 1

DATE: SEPTEMBER 2026

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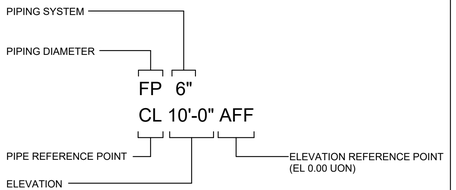
LEGEND

SINGLE LINE	DESCRIPTION
	WET SPRINKLER PIPE
	SPRINKLER DRAIN
	CAPPED PIPE
	OS&Y VALVE
	BUTTERFLY VALVE
	SWING CHECK VALVE
	UNION
FS	FLOW SWITCH
TS	TAMPER SWITCH
1 PS	PRESSURE SWITCH
	DOUBLE CHECK DETECTOR ASSEMBLY
	FIRE DEPARTMENT CONNECTION (FDC)
	STANDARD SPRAY STANDARD COVERAGE UPRIGHT SPRINKLER HEAD
	ALARM CHECK VALVE
	FIRE HOSE VALVE (FHV)
1 PG	PRESSURE GAUGE
	SIGHT GLASS
	FLEXIBLE HOSE
	SIGNAL TO BUILDING FIRE ALARM CONTROL UNIT

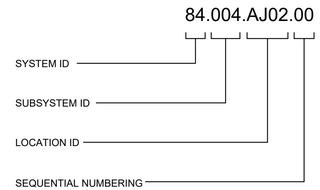
ABBREVIATIONS

1 ACV	ALARM CHECK VALVE
AFF	ABOVE FINISHED FLOOR
AHJ	AUTHORITY HAVING JURISDICTION
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
BOT	BOTTOM
BP	BACKFLOW PREVENTER
CFM	CUBIC FEET PER MINUTE
CL	CENTERLINE
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONSTR	CONSTRUCTION
CONT	CONTINU(ED), (OUS)
CVA	CONTROL VALVE ASSEMBLY
D	DELUGE SYSTEM
DCDABFP	DOUBLE CHECK DETECTOR ASSEMBLY BACKFLOW PREVENTER
DIA	DIAMETER
DIM	DIMENSION
DIP	DUCTILE IRON PIPE
DLG(V)	DELUGE (VALVE)
DN	DOWN
DWG(S)	DRAWING(S)
DWV	DRAIN, WASTE, VENT
EL,	ELEV ELEVATION
ELEC	ELECTRICAL
EMG	EMERGENCY
EQ	EQUAL
EQUIP	EQUIPMENT
EXIST	EXISTING
1 FACU	FIRE ALARM CONTROL UNIT
FCVA	FLOOR CONTROL VALVE ASSEMBLY
FDC	FIRE DEPARTMENT CONNECTION
FHV	FIRE HOSE VALVE
FLA	FULL LOAD AMPS
FLEX	FLEXIBLE
FLR	FLOOR
FPC	FIRE PROTECTION CONTRACTOR
FPM	FEET PER MINUTE
FPW	FIRE PROTECTION WATER
FS	FLOW SWITCH
FSP	FIRE STANDPIPE
FT	FOOT
FTG	FOOTING
GAL	GALLONS
GALV	GALVANIZED
GPM	GALLONS PER MINUTE
HP	HORSEPOWER
HR	HOUR
HT	HEIGHT
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
I.E.	INVERT ELEVATION
ID	IDENTIFIER
IN	INCHES
INST	INSTANTANEOUS
INSUL	INSULATION
INV	INVERT
IWH	INSTANTANEOUS WATER HEATER
KW	KILOWATT
MAX	MAXIMUM
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
N	NORTH
(N)	NEW
N/A	NOT APPLICABLE
NIC	NOT IN CONTRACT
NO.	NUMBER
NTS	NOT TO SCALE
PD	PRESSURE DROP
1 PG	PRESSURE GAUGE
PH	PHASE
PRESS	PRESSURE
PSI	POUND PER SQUARE INCH
PRV	PRESSURE REDUCING VALVE
PW	POTABLE WATER
REF	REFERENCE
S	SEWER
SAN	SANITARY
SCHED	SCHEDULE
SD	STANDPIPE
SEC	SECOND
SF	SQUARE FEET
SP	SPRINKLER
SPD	SPRINKLER DRAIN
SPEC	SPECIFICATION(S)
SQ	SQUARE
SS	SANITARY SEWER
SST	STAINLESS STEEL
STD	STANDARD
ST(L)	STEEL
STR(UCT)	STRUCTUR(E), (AL)
SW	SERVICE WATER
SYS	SYSTEM
TEMP	TEMPERATURE, TEMPORARY
TS	TAMPER SWITCH
T/S, TOS	TOP OF STEEL
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
UP	UP
W	WATT, WATER
W/	WITH
WS	WATER SERVICE
#	POUND, NUMBER

PIPING DESIGNATION



ASSET TAGGING DESIGNATION



ASSET ID CODES

SYSTEM ID		SUBSYSTEM ID		LOCATION ID	
57	FIRE PROTECTION	244	FIRE ALARM SYSTEM	AJ02	FIRE SPRINKLER RISER ROOM (111)
		246	STANDPIPE AND SPRINKLERS	AM01	FAN ROOM (200)
				AU01	MECHANICAL ROOM (102)
				BD01	SCREENING ROOM (100)
				ZZ01	STAIR A (112)

FIRE PROTECTION EQUIPMENT SCHEDULE

TAG	ASSET ID TAG	CT	ITEM	MANUFACTURER		INLET	OUTLET	POWER			NOTES
				MAKE	MODEL			VOLT	PHASE	AMPS	
ACV	57.246.AJ02.01	1	ALARM CHECK VALVE ASSEMBLY	RELIABLE	E	6"	6"	-	-	-	
SP SYSTEM CONTROL VALVE	57.246.AJ02.02	1	INDICATING BALL VALVE WITH INTEGRAL TAMPER SWITCH	RELIABLE	REL363GT	6"	6"	-	-	-	
DLGV	57.246.AJ02.03	1	DELUGE VALVE ASSEMBLY	VICTAULIC	769N	1 1/2"	1 1/2"	-	-	-	
DLG SYSTEM CONTROL VALVE	57.246.AJ02.04	1	INDICATING BALL VALVE WITH INTEGRAL TAMPER SWITCH	RELIABLE	REL363GT	1 1/2"	1 1/2"	-	-	-	
FACU-DLGV	57.057.AJ02.01	1	FIRE ALARM CONTROL UNIT - DELUGE SYSTEM RELEASE	POTTER	PFC-4410G3	-	-	120	60	SEE NOTE 2	1
FCVA-1	57.246.ZZ01.03	2	FLOOR CONTROL VALVE ASSEMBLY	VICTAULIC	UMC	6"	6"	-	-	-	
FCVA-2	57.246.ZZ01.04										
FDC-1	57.246.AU01.00	2	FIRE DEPARTMENT CONNECTION	DIXON VALVE	6" X 3" X 3" BACK OUTLET	(2) 3"	6"	-	-	-	
FDC-2	57.246.BD01.00										
FHV	57.246.ZZ01.07	7	FIRE HOSE VALVE	DIXON VALVE	AVF250	2 1/2"	2 1/2"	-	-	-	
	57.246.ZZ01.08										
	57.246.ZZ01.09										
	57.246.AM01.10										
	57.246.AM01.11										
	57.246.BD01.12										
	57.246.BD01.13										
RCV-1	57.244.ZZ01.06	2	RISER CONTROL VALVE	RELIABLE	REL363GT	6"	6"	-	-	-	
RCV-2	57.244.ZZ01.07										
TDVA	57.246.BD01.14	1	TEST DRAIN AND VALVE ASSEMBLY	RELIABLE	TD	1"	1"	-	-	-	

1. SEE F-304 FOR DELUGE SYSTEM FACU DESIGN CRITERIA.
2. THE FIRE PROTECTION ENGINEER SHALL SUBMIT SIGNED AND SEALED BATTERY CALCUALTIONS IN COMPLIANCE WITH NFPA 15 AND NFPA 72.

BUILDING FIRE ALARM CONNECTION SCHEDULE

TAG	ASSET ID TAG	TYPE	ASSOCIATED EQUIPMENT	NOTES
FACU-DLGV-1	57.057.AJ02.01	DELUGE SYSTEM FIRE ALARM CONTROL UNIT	-	1, 2
FS-FCVA-1	57.244.ZZ01.1A	FLOW SWITCH	FCVA-1	2
FS-FCVA-2	57.244.ZZ01.2A	FLOW SWITCH	FCVA-2	2
PS-ACV-1	57.244.AJ02.01	PRESSURE SWITCH	ACV	2
PS-DLGV-1	57.244.AJ02.03A	PRESSURE SWITCH	DLGV	2
TS-DCDA-1	57.244.AJ02.05	TAMPER SWITCH	DCDA-1 (VALVE 1)	2
TS-DCDA-2	57.244.AJ02.06	TAMPER SWITCH	DCDA-1 (VALVE 2)	2
TS-DLGCV-1	57.244.AJ02.04	TAMPER SWITCH (INTEGRAL TO VALVE)	DLG SYSTEM CONTROL VALVE	2
TS-FCVA-1	57.244.ZZ01.1B	TAMPER SWITCH (INTEGRAL TO VALVE)	FCVA-1	2
TS-FCVA-2	57.244.ZZ01.2B	TAMPER SWITCH (INTEGRAL TO VALVE)	FCVA-2	2
TS-HCV-1	57.244.AJ02.03	TAMPER SWITCH	HCV-1	2
TS-RCV-1	57.244.ZZ01.06	TAMPER SWITCH (INTEGRAL TO VALVE)	RCV-1	2
TS-RCV-2	57.244.ZZ01.07	TAMPER SWITCH (INTEGRAL TO VALVE)	RCV-2	2
TS-SPCV-1	57.244.AJ02.02	TAMPER SWITCH (INTEGRAL TO VALVE)	SP SYSTEM CONTROL VALVE	2

1. SEE F-304 FOR DELUGE SYSTEM FACU DESIGN CRITERIA.
2. FIRE PROTECTION CONTRACTOR SHALL PROVIDE AND INSTALL SWITCHES AND RELEASING PANELS. FIRE ALARM CONTRACTOR SHALL PROVIDE WIRING TO AND FROM THE BUILDING FIRE ALARM CONTROL UNIT.

1

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STATE OF NEW YORK · MARC A. GIORDANO · 099855 · PROFESSIONAL ENGINEER

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CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

FIRE PROTECTION
LEGEND, ABBREVIATIONS, SCHEDULES AND DESIGN CRITERIA

DATE: SEPTEMBER 2026
SHEET NO: 701 OF 719
DRAWING NO. F-001.00

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FIRE PROTECTION NOTES

1. FOLLOW THE CITY REQUIREMENTS OF NFPA13-2016 (AS MODIFIED BY 2022 NYC BC APPENDIX Q), NFPA14-2016 (AS MODIFIED BY 2022 NYC BC APPENDIX Q), 2022 NEW YORK CITY BUILDING CODE, AND THOSE OF ANY CITY, STATE, OR FEDERAL AGENCY HAVING JURISDICTION OVER THIS PROJECT. ALL REFERENCES TO "NFPA 13" IN THE CONTRACT DRAWINGS SHALL REFER TO NFPA 13-2016, AS MODIFIED BY THE 2022 NYC BC (NYCBC) APPENDIX Q. SIMILARLY, REFERENCES TO "NFPA 14" SHALL REFER TO NFPA 14-2016, AS MODIFIED BY THE 2022 NYC BC APPENDIX Q (NYCBC).
2. PLANS INDICATE GENERAL SCOPE OF WORK. REFER TO CONTRACT DOCUMENTS FOR DETAILS OF THE ENTIRE SCOPE OF WORK. LOCATIONS OF SPRINKLER OUTLETS, BRANCH LINES AND FEED MAINS ARE DIAGRAMMATIC. THE DRAWINGS ARE NOT MEANT TO SHOW ALL OFFSETS AND PIPING ELEVATION CHANGES. THE CONTRACTOR SHALL VERIFY ALL NEEDED OFFSETS AND PIPE ELEVATIONS TO INSTALL PROPOSED SPRINKLER SYSTEM.
3. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE WORK WITH THAT OF ALL OTHER TRADES.
4. ANY INTERFERENCE SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE AND SHALL BE RESOLVED PRIOR TO THE INSTALLATION OF WORK. ANY SIZES OF NEW PIPING SHOWN ON THE PLANS ARE MEANT TO BE A GUIDE FOR ESTIMATING THE WORK.
5. THE CONTRACTOR SHALL PERFORM A 100% HYDRAULIC CALCULATION TO VERIFY PIPE SIZES ARE ADEQUATE TO PROVIDE THE NECESSARY SYSTEM DEMANDS.
6. PROVIDE A NEW TWO HYDRANT FLOW TEST AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION AND NFPA. USE THE RESULTS OF THE NEW HYDRANT FLOW TEST TO HYDRAULICALLY DESIGN THE SPRINKLER SYSTEMS WITHIN THE BUILDING.
7. THE CONTRACTOR SHALL PREPARE AND SUBMIT ALL REQUIRED DOCUMENTS TO ALL AGENCIES HAVING JURISDICTION FOR PERMITS AND/OR APPROVALS FOR THIS PROJECT.
8. PROVIDE ACCESS PANELS AND SIGNAGES FOR CONCEALED SHUT-OFF VALVES.

SPRINKLER HYDRAULIC DESIGN CRITERIA

ORDINARY HAZARD GROUP 2
NFPA 13 FIGURE 11.2.3.1.1 SELECTION

DESIGN AREA	=	1500 SF
DESIGN DENSITY	=	.20 GPM/SF
DEMAND AT FIRE: AREA X DENSITY	=	300 GPM
CALCULATED HYDRAULIC BUILDUP/OVERAGE	=	12 GPM
TOTAL SPRINKLER DEMAND	=	312 GPM
DOMESTIC WATER DEMAND	=	0 GPM
TOTAL HOSE STREAM ALLOWANCE	=	250 GPM
INDOOR HOSE STREAM	=	0 GPM
TOTAL FLOW DEMAND	**=**	**562 GPM**

PRESSURE REQUIRED FOR THE SYSTEM (AS MEASURED AT THE HYDRANT FLOW TEST NODE) DETERMINED BY THE HIGHEST LINE OF SPRINKLERS ABOVE GRADE AND ANTICIPATED FRICTION LOSS IN SPRINKLER SYSTEM PIPING (INCLUDING DCDA, ALARM CHECK VALVE AND CONTROL VALVES).

PRESSURE REQUIRED AT FLOW TEST NODE	=	51.265 PSIG
PRESSURE AVAILIBLE AT FLOW TEST NODE	=	59.654 PSIG
SAFETY MARGIN	**=**	**8.4 PSIG**
SAFETY MARGIN (%)	**=**	**14.1%**

DELUGE SYSTEM HYDRAULIC DESIGN CRITERIA

PROTECTION EQUIVALENT FOR WET TRANSFORMERS (NFPA 15 7.4.4)
NFPA 15 7.4.4.3 APPLICATION AND PROTECTION

PROTECTED SURFACE AREA	=	60 SF
DESIGN DENSITY	=	.25 GPM/SF
DEMAND AT FIRE: AREA X DENSITY	=	15 GPM
CALCULATED HYDRAULIC BUILDUP/OVERAGE	=	5 GPM
TOTAL SPRINKLER DEMAND	=	20 GPM
DOMESTIC WATER DEMAND	=	0 GPM
TOTAL HOSE STREAM ALLOWANCE	=	250 GPM
INDOOR HOSE STREAM	=	0 GPM
TOTAL FLOW DEMAND	**=**	**270 GPM**

PRESSURE REQUIRED FOR THE SYSTEM (AS MEASURED AT THE HYDRANT FLOW TEST NODE) DETERMINED BY THE HIGHEST LINE OF SPRINKLERS ABOVE GRADE AND ANTICIPATED FRICTION LOSS IN SPRINKLER SYSTEM PIPING (INCLUDING DCDA, DELUGE CHECK VALVE AND CONTROL VALVES).

PRESSURE REQUIRED AT FLOW TEST NODE	=	51.831 PSIG
PRESSURE AVAILIBLE AT FLOW TEST NODE	=	61.396 PSIG
SAFETY MARGIN	**=**	**9.6 PSIG**
SAFETY MARGIN (%)	**=**	**15.6%**

STANDPIPE DESIGN CRITERIA

DEMAND:	PRIMARY STANDPIPE	=	500 GPM
	ADDITIONAL STANDPIPE	=	250 GPM
	TOTAL STANDPIPE DEMAND	=	750 GPM

MANUAL WET STANDPIPE TO BE PRESSURIZED BY FIRE DEPARTMENT APPARATUS TO ACHIEVE 100 PSIG AT TOP OF STANDPIPE.

SPRINKLER NOTES

1. THE SPRINKLER SYSTEM INCLUDING INSTALLATION, COMPONENTS, SIZING, SPACING, LOCATION, CLEARANCES, POSITION, AND TYPE OF SYSTEMS SHALL CONFORM TO NFPA 13.
2. CONTRACTOR TO ENSURE COMPLIANCE WITH THE LATEST REQUIREMENTS OF NFPA, THE 2022 NYC BUILDING CODE, FIRE CODE AND PLUMBING CODE, INTERNATIONAL FIRE CODES, AND THOSE OF ANY CITY, STATE, OR FEDERAL AGENCY HAVING JURISDICTION OVER THIS PROJECT AND FIRE MARSHALL.
3. PLANS INDICATE GENERAL SCOPE OF WORK. REFER TO CONTRACT DOCUMENTS AND SPECIFICATIONS FOR DETAILS ON ENTIRE SCOPE OF WORK. LOCATIONS OF SPRINKLER OUTLETS, BRANCH LINES AND FEED MAINS ARE DIAGRAMMATIC. THE DRAWINGS ARE NOT MEANT TO SHOW ALL OFFSETS AND PIPING ELEVATIONS TO INSTALL THE PROPOSED SPRINKLER SYSTEM. THE CONTRACTOR SHALL PROVIDE AND INSTALL FINAL SPRINKLER OUTLETS, BRANCHES AND FEED MAINS AS REQUIRED BY APPLICABLE CODES AND THE AHJ.
4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE WORK WITH THAT OF ALL OTHER TRADES. THE INSTALLING CONTRACTOR SHALL COORDINATE ALL WORK TO THE EXISTING AND/OR NEW FIELD CONDITIONS.
5. ANY INTERFERENCE SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE AND DESIGN/BUILDER, AND SHALL BE RESOLVED PRIOR TO THE INSTALLATION OF WORK. ANY SIZES OF NEW PIPING SHOWN ON THE PLAN ARE MEANT TO BE A GUIDE FOR ESTIMATING THE WORK.
6. THE FIRE PROTECTION CONTRACTOR SHALL PERFORM HYDRAULIC CALCULATIONS TO VERIFY PIPE SIZES ARE ADEQUATE TO PROVIDE THE NECESSARY SYSTEM DEMANDS. DESIGN CALCULATIONS SHALL INCLUDE SEISMIC BRACING WHERE REQUIRED BY BUILDING CODE AND NFPA 13.
7. PROVIDE A NEW FLOW TEST BY THE AUTHORITY HAVING JURISDICTION AND NFPA. USE THE RESULTS OF THE NEW HYDRANT FLOW TEST TO HYDRAULICALLY DESIGN THE SPRINKLER SYSTEMS WITHIN THE BUILDING.
8. PROVIDE SEAL AGAINST WATER INTRUSION AT PIPE ENTRANCE.
9. DESIGN CRITERIA:
   A. SPRINKLER SYSTEMS SHALL BE HYDRAULICALLY DESIGNED AND CALCULATED BY THE FIRE PROTECTION CONTRACTOR. THE FIRE PROTECTION CONTRACTOR SHALL SUBMIT ALL REQUIRED HYDRAULIC CALCULATIONS TO PROVE THE HYDRAULICALLY MOST REMOTE AREAS ARE BEING PROTECTED PER SYSTEM AND OCCUPANCY HAZARD. FABRICATION DRAWINGS AND HYDRAULIC CALCULATIONS SHALL BE SUBMITTED TO THE AUTHORITY HAVING JURISDICTION AND INSURANCE UNDERWRITERS PRIOR TO SUBMITTING TO THE ENGINEER FOR REVIEW. FABRICATION DRAWINGS AND HYDRAULIC CALCULATIONS SHALL BEAR THE SEAL OF REGISTRATION OF A QUALIFIED REGISTERED PROFESSIONAL FIRE PROTECTION ENGINEER. MAINTAIN A MINIMUM OF 10% CUSHION BETWEEN REQUIRED PRESSURE AND AVAILABLE PRESSURE. PROVIDE 7 PSI MINIMUM PRESSURE AT SPRINKLER HEADS. COMPLY WITH ALL UNDERWRITERS' AND CODE AUTHORITIES REQUIREMENTS INCLUDING MAXIMUM WATER FLOW VELOCITY IN THE FIRE PROTECTION SYSTEM. (1) (1)
   B. AUTOMATIC SPRINKLER SYSTEMS IN AREAS OF ORDINARY HAZARD GROUP-2 OCCUPANCY SHALL BE DESIGNED WITH A MINIMUM DESIGN DENSITY OF A 0.20 GPM PER SQUARE FOOT. MAXIMUM PROTECTION AREA PER SPRINKLER HEAD SHALL BE 130 SQUARE FEET. PROVIDE A 250 GPM HOSE ALLOWANCE. INCREASE DESIGN AREA FOR SLOPED CEILINGS.
10. FIRE PROTECTION ENGINEER SHALL CONFIRM FIELD CONDITIONS AND PROVIDE DESIGN COMPLIANT WITH THE REQUIREMENTS OF NFPA STANDARDS, IBC/IFC CODE, AND THE AUTHORITY HAVING JURISDICTION.
11. AS PER CHAPTER 6 OF NFPA 13 AND SPECIFICATION SECTION 21 10 00, ONLY APPROVED MATERIALS SHALL BE USED.
12. DIRECT CONNECTION OF SPRINKLERS TO THE PUBLIC WATER SYSTEM SHALL CONFORM TO CHAPTER 23 OF NFPA 13.
13. SPRINKLERS SHALL BE PROTECTED AGAINST FREEZING AND INJURY AS PER SECTION 10.5 OF NFPA 13.
14. INSPECTIONS AND TESTS OF SPRINKLERS SHALL BE CONDUCTED AS PER SECTIONS 10.10.2.2.1 AND 24.2.1.1 OF NFPA 13.
15. THE OCCUPANCY OF THE AREAS TO BE SPRINKLERED IN ACCORDANCE WITH CHAPTER 5 OF NFPA 13 SHALL BE THOSE SPECIFIED ON THE PLANS.
16. MULTIPLE INSPECTOR'S TEST CONNECTIONS OR MULTIPLE FLOOR CONTROL VALVES SHALL BE PROVIDED TO TEST EACH WATERFLOW ALARM DEVICE FOR EACH SYSTEM IN ACCORDANCE WITH SECTION 8.17.4.2.1, FIGURE A.8.17.4.2(a) AND FIGURE A.8.17.4.2(b) OF NFPA 13.
17. PIPING, SPECIFICATIONS, PIPE SCHEDULES, SYSTEM TEST PIPES, PROTECTION AGAINST CORROSION DAMAGE, FITTINGS, VALVES, HANGERS, SPRINKLERS, GUARDS AND SHIELDS SHALL BE IN ACCORDANCE WITH CHAPTERS 6 & 9 OF NFPA 13 AND SPECIFICATION SECTION 21 10 00.
18. STOCK OF SPARE SPRINKLERS AND A SPECIAL SPRINKLER WRENCH SHALL BE FURNISHED AS PER SECTION 6.2.9 OF NFPA 13 AND SPECIFICATION SECTION 21 10 00 (REQUIRED FOR EACH TEMPERATURE RATING).
19. SPRINKLER ALARMS SHALL BE IN ACCORDANCE WITH SECTIONS 6.9 AND 8.17 OF NFPA 13, SPECIFICATION SECTION 21 10 00 AND SECTION 903.4 OF THE NYCBC.
20. ALL CONCEALED SPACES ENCLOSED WHOLLY OR PARTIALLY BY EXPOSED COMBUSTIBLE CONSTRUCTION OR ARE USED FOR THE STORAGE OF COMBUSTIBLE MATERIALS, OR CONTAIN COMBUSTIBLES ASSOCIATED WITH BUILDING SYSTEM FEATURES SUCH AS LARGE BUNDLES OF COMPUTER WIRING OR LARGE QUANTITIES OF NON-METALLIC PIPING, ETC. SHALL BE PROTECTED BY SPRINKLERS EXCEPT IN CONCEALED SPACES WHERE SPRINKLERS ARE NOT REQUIRED TO BE INSTALLED BY SECTIONS 8.15.1.2.1 THROUGH 8.15.1.2.15 OF NFPA 13.
21. ALL PIPING PASSING THROUGH RATED WALLS AND HORIZONTAL ASSEMBLIES SHALL COMPLY WITH NYCBC SECTION 712.
22. DISTANCE OF SPRINKLERS FROM HEAT SOURCES SHALL BE IN ACCORDANCE WITH SECTION 8.3.2 OF NFPA 13.
23. AS PER NYCBC 903.1.2.5, DEPARTMENT OF WATER SUPPLY (NYC DEPT. OF ENVIRONMENTAL PROTECTION) LETTER WITH FLOW TEST DATA SHALL BE PROVIDED.
24. ALL PIPING PASSING THROUGH FOUNDATION WALLS SHALL BE PROTECTED WITH PIPE SLEEVES HAVING CLEARANCES AS PER SECTION 9.3.4 OF NFPA 13.
25. THIS APPLICATION IS NOT FILED AS A RESULT OF ACTIONS BY THE FIRE COMMISSIONER AS AUTHORIZED BY THE B.S. & A. TO MODIFY THE CERTIFICATE OF OCCUPANCY NOR IS SUCH ACTION PENDING.
26. ALL VALVES SHALL BE IDENTIFIED AS REQUIRED BY SECTIONS 6.7.4, 8.16.1.1.8 AND 8.16.1.4.3 OF NFPA 13.
27. DRAINAGE SYSTEM TO CONFORM TO SECTION 8.16.2 OF NFPA 13.
28. FITTINGS SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 6.4 OF NFPA 13.
29. SEE SYMBOLS FOR TYPE OF SPRINKLER HEADS.
30. A ONE PIECE REDUCING FITTING SHOULD BE USED WHEREVER A CHANGE IS MADE IN THE SIZE OF PIPE AS PER SECTION 6.4.6 OF NFPA 13.
31. ALL VALVES ON CONNECTIONS TO WATER SUPPLY AND IN SUPPLY PIPES TO SPRINKLERS SHALL BE APPROVED O.S. & Y. OR APPROVED INDICATOR TYPE PER SECTION 8.16.1.1.1 OF NFPA 13.
32. DRAIN VALVES AND TEST VALVES SHALL BE APPROVED TYPE AS PER SECTIONS 8.16.2 AND 8.17.4 OF NFPA 13.
33. HANGING, BRACING AND RESTRAINT OF SYSTEM PIPING SHALL BE IN ACCORDANCE WITH CHAPTER 9 OF NFPA 13 AND SPECIFICATION SECTION 21 10 00.
34. PROVISIONS SHALL BE MADE TO FACILITATE FLUSHING SYSTEM IN ACCORDANCE WITH SECTIONS 10.10.2.1 AND 24.2.1.12 OF NFPA 13.
35. SPRINKLERS SHALL BE OF APPROVED TYPE AND TEMPERATURE RATING AS PER SECTION 6.2.5 OF NFPA 13.
36. PROVIDE CLEARANCE BETWEEN THE SPRINKLER DEFLECTOR AND THE TOP OF STORAGE IN ACCORDANCE WITH SECTION 8.5.6 OF NFPA 13.
37. FIRE DEPARTMENT CONNECTIONS, WHEN REQUIRED, SHALL COMPLY WITH SECTIONS 6.8 AND 8.15 OF NFPA 13.
38. AS PER NYCBC SECTION 903.1, INSTALLATION OF AUTOMATIC SPRINKLER SYSTEMS SHALL COMPLY WITH THE SPECIAL INSPECTION REQUIREMENTS OF CHAPTER 17 OF THE NYCBC.

STANDPIPE NOTES

1. STANDPIPE AND EQUIPMENT SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA 14, AND NYCBC SECTION 905 ALONG WITH THE SPECIAL INSPECTION REQUIREMENTS OF CHAPTER 17.
2. FIRE DEPARTMENT CONNECTIONS SHALL BE 3"X3"X6" FLUSH CONNECTION (SEE FLOOR PLAN), OF APPROVED TYPE WITH SEPARATE CLAPPER VALVES AND CAP AND CHAIN AT EACH INLET AS PER SECTIONS 4.8.2 AND 4.8.2.1 OF NFPA 14.
3. FIRE DEPARTMENT CONNECTIONS SHALL BE LOCATED 18" TO 36" ABOVE FINAL GRADE OR SIDEWALK AND BE PROVIDED WITH APPROVED PAINTED SIGNS HAVING WHITE BACKGROUND AND RED LETTERS AS PER SECTIONS 4.8.2.2(g) AND 4.10 OF NFPA 14.
4. FIRE DEPARTMENT CONNECTIONS SHALL HAVE APPROVED TYPE 3/4" AUTOMATIC BALL DRIP SET IN A HORIZONTAL POSITION AS PER SECTION 4.8.2.2(i) OF NFPA 14.
5. HOSE VALVES SHALL BE LISTED APPROVED TYPE 2-1/2" ANGLE GLOBE VALVE LOCATED NOT MORE THAN 5 FEET AND NOT LESS THAN 3 FEET ABOVE FLOOR OR STAIR LANDING.
6. APPROVED 3-WAY MANIFOLD SHALL BE LOCATED ABOVE THE ROOF. IF AREA IS NOT HEATED, A CONTROL VALVE AND AUTOMATIC BALL DRIP SHALL BE PROVIDED IN HEATED SPACE BELOW AS PER SECTION 7.3.2.2 OF NFPA 14.
7. PIPE AND FITTINGS FOR STANDPIPE SHALL BE IN ACCORDANCE WITH CHAPTER 4 OF NFPA 14.
8. SUPPORT FOR PIPING SHALL COMPLY WITH SECTION 6.5 OF NFPA 14.
9. SYSTEM ACCEPTANCE TESTS SHALL COMPLY WITH CHAPTER 11 OF NFPA 14.
10. FROST PROTECTION SHALL BE PROVIDED AS PER SECTION 6.1.2.3 OF NFPA 14.
11. RISER LOCATION SHALL COMPLY WITH SECTION 6.3.1.1 OF NFPA 14.
12. INSTALL RISER CONTROL VALVES AS PER SECTION 6.3.1 OF NFPA 14.
13. RISER CONTROL VALVE SHALL BE LISTED, APPROVED O.S. & Y TYPE AND ELECTRICALLY SUPERVISED AS PER SECTION 6.3.3 OF NFPA 14.
14. LOCATION OF RISER CONTROL VALVE SHALL BE INDICATED BY SIGNS AND ARROWS.
15. ALL DEVICES USED SHALL BEAR MANUFACTURER'S NAME AND APPROVAL NUMBER.
16. VALVES PLACED 7'-0" ABOVE A FLOOR SHALL BE MADE ACCESSIBLE BY MEANS OF AN APPROVED IRON LADDER AS PER SECTION 6.3.2.5 OF NFPA 14.
17. VALVES SHALL BE LOCKED OPEN BY MEANS OF HEAVY CHAIN AND APPROVED TYPE LOCKS.
18. AT HAZARDOUS SPACES SUCH AS ELECTRIC, TELEPHONE EQUIPMENT AND SIMILAR ROOMS, A METAL SIGN SHALL BE PROVIDED ON THE DOOR STATING NATURE OF USE AND "IN CASE OF FIRE, USE NO WATER" AS PER SECTION 903.2 OF THE NYCBC.

SPECIAL INSPECTIONS

SPECIAL INSPECTIONS REQUIRED IN ACCORDANCE WITH NYCBC SECTION 1704 AND THE APPLICABLE SECTIONS OF THE BUILDING CODE ARE LISTED BELOW. THE CONTRACTOR MUST NOTIFY THE REVELANT SPECIAL INSPECTOR OR SPECIAL INSPECTION AGENCY IN WRITING FOR SPECIAL INSPECTION AT LEAST 72 HOURS BEFORE THE SPECIFIC WORK COMMENCES.

1. SPRINKLER SYSTEMS NYCBC SECTION 1704.23.
2. STAND PIPE SYSTEMS NYCBC SECTION 1704.24.

HYDRANT FLOW TEST

WATER SOURCE	STATIC PRESSURE [PSI]	TEST FLOW RATE [GPM]	RESIDUAL PRESSURE [PSI]
CITY WATER	60	750	58

TEST DATE:	12/3/2021	SUPPLY HYDRANT:	H305298
TEST TIME:	12:31 PM	TEST HYDRANT:	H305291

HYDRANT FLOW TEST RESULTS

WATER SOURCE	STATIC PRESSURE		RESIDUAL PRESSURE		RESIDUAL FLOW
	RELATIVE [PSI]	NAVD88 [FT]	RELATIVE [PSI]	NAVD88 [FT]	[GPM]
CITY WATER	60	144.0	58	148.6	750
CITY WATER (WITH 10 PSI REDUCTION)	50	125.6	48	121.1	

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DESIGNED BY: J. LURIE | DRAWN BY: J. LURIE | PROJECT MANAGER: E. CAMILLERI
CHECKED BY: T. QUESADA | DESIGN LEAD: M. GIORDANO | DESIGN MANAGER: G. DEREAMER

Hazen | Brown AND Caldwell

STATE OF NEW YORK · MARC A. GIORDANO · 099858 · PROFESSIONAL ENGINEER

Environmental Protection

ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.
PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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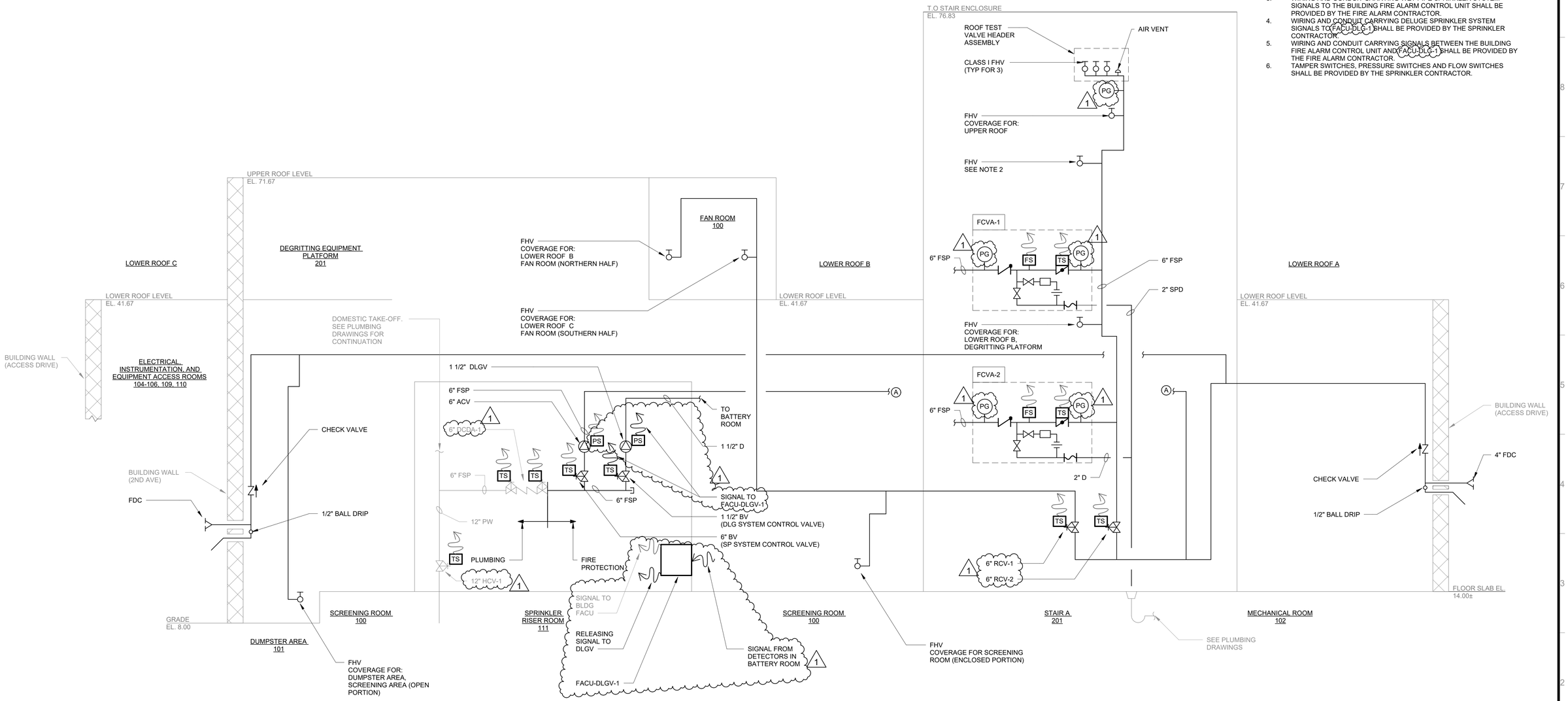
FIRE PROTECTION
GENERAL NOTES, SYSTEM NOTES AND DESIGN CRITERIA

DATE: SEPTEMBER 2026
SHEET NO: 702 OF 719
DRAWING NO. F-002.00

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NOTES:

1. LOWER ROOFS A & B ARE PERMANENTLY LANDSCAPED GREEN ROOFS. STANDPIPE HOSE COVERAGE SHALL EXTEND TO THESE AREAS PER 2022 NYC PC 905.3.8.
2. HOSE VALVE ON INTERMEDIATE STAIR LANDING PER 2022 NYC BC 905.4 REQUIREMENT FOR FLOOR LANDINGS GREATER THAN 25' APART.
3. WIRING AND CONDUIT CARRYING WET PIPE SPRINKLER SYSTEM SIGNALS TO THE BUILDING FIRE ALARM CONTROL UNIT SHALL BE PROVIDED BY THE FIRE ALARM CONTRACTOR.
4. WIRING AND CONDUIT CARRYING DELUGE SPRINKLER SYSTEM SIGNALS TO FACU-DLG-1 SHALL BE PROVIDED BY THE SPRINKLER CONTRACTOR.
5. WIRING AND CONDUIT CARRYING SIGNALS BETWEEN THE BUILDING FIRE ALARM CONTROL UNIT AND FACU-DLG-1 SHALL BE PROVIDED BY THE FIRE ALARM CONTRACTOR.
6. TAMPER SWITCHES, PRESSURE SWITCHES AND FLOW SWITCHES SHALL BE PROVIDED BY THE SPRINKLER CONTRACTOR.



SPRINKLER/STANDPIPE RISER DIAGRAM

SCALE: NTS

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DATE ISSUED: SEPTEMBER 2026

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CHECKED BY: T. QUESADA | DESIGN LEAD: M. GIORDANO | DESIGN MANAGER: G. DEREAMER

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Environmental Protection

ACCOUNTABLE MANAGER: JESSE GOLDIN, P.E.
PORTFOLIO MANAGER: KEVIN CLARKE, P.E.

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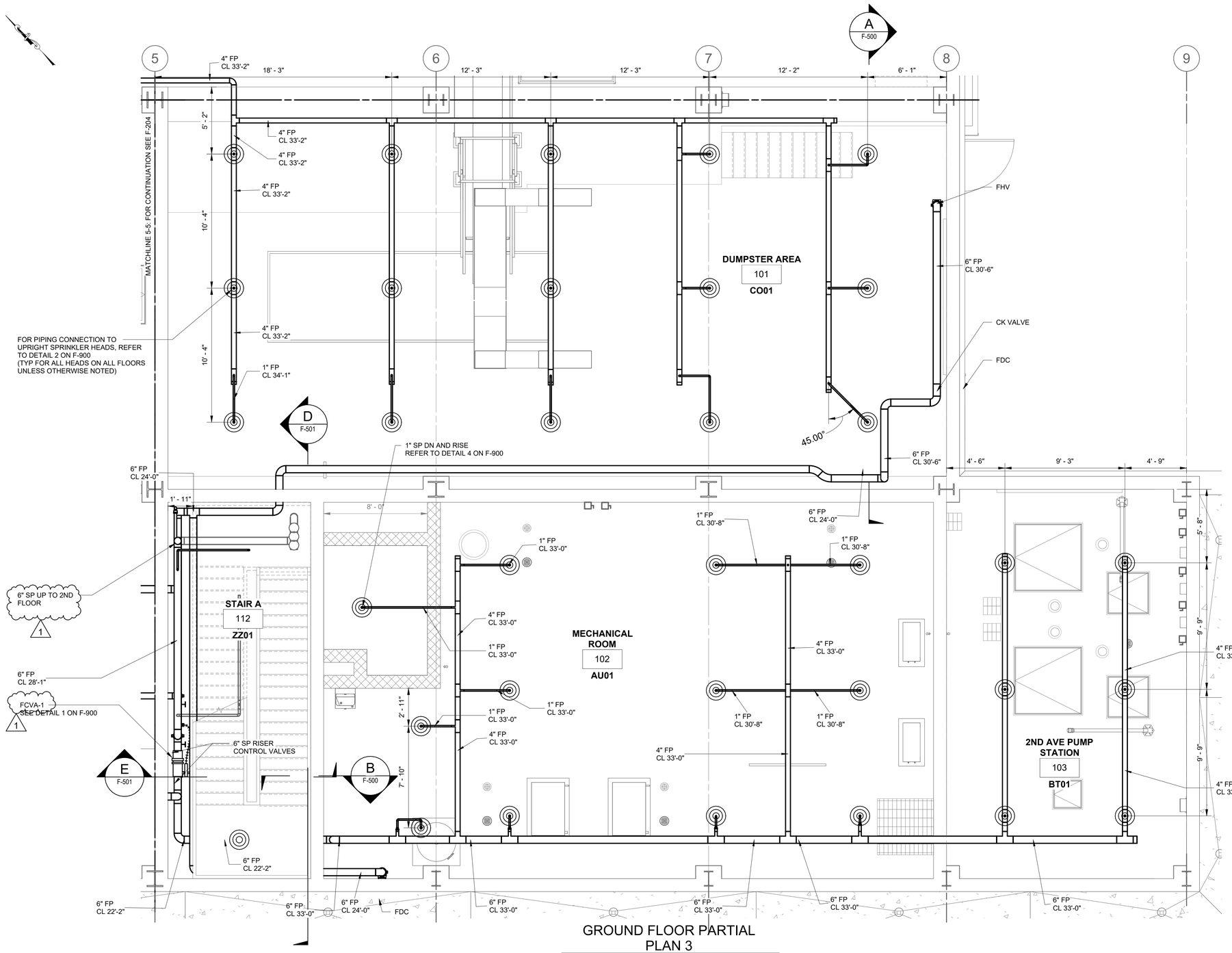
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FIRE PROTECTION
FIRE PROTECTION SYSTEM RISER DIAGRAM

DATE: SEPTEMBER 2026
SHEET NO: 703 OF 719
DRAWING NO. F-003.00

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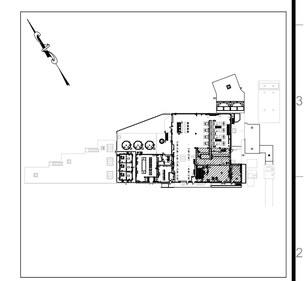


GROUND FLOOR PARTIAL
PLAN 3

SCALE: 1/4" = 1'-0"

NOTES:

1. EXCEPT WHERE OTHERWISE NOTED, SP MAINS ARE 6" AND SP BRANCH LINES ARE 4".
2. EXCEPT WHERE OTHERWISE DIMENSIONED, SPRINKLER HEADS ARE ALIGNED IN THE VERTICAL AND HORIZONTAL PLANES.
3. THE WORK OF OTHER DISCIPLINES IS HIDDEN OR HALF-TONED FOR CLARITY. REFER TO CONTRACT DRAWINGS OF OTHER DISCIPLINES FOR ADDITIONAL WORK BY OTHERS.



KEY PLAN

1/4"=1'-0" 0 4 8 FT.

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J. LURIE	J. LURIE	E. CAMILLERI
CHECKED BY:	DESIGN LEAD:	DESIGN MANAGER:
T. QUESADA	M. GIORDANO	G. DEREAMER

Hazen Brown AND Caldwell

MARC A. GIORDANO — STATE OF NEW YORK — 099858 — LICENSED PROFESSIONAL ENGINEER

NYC Environmental Protection

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PORTFOLIO MANAGER	KEVIN CLARKE, P.E.

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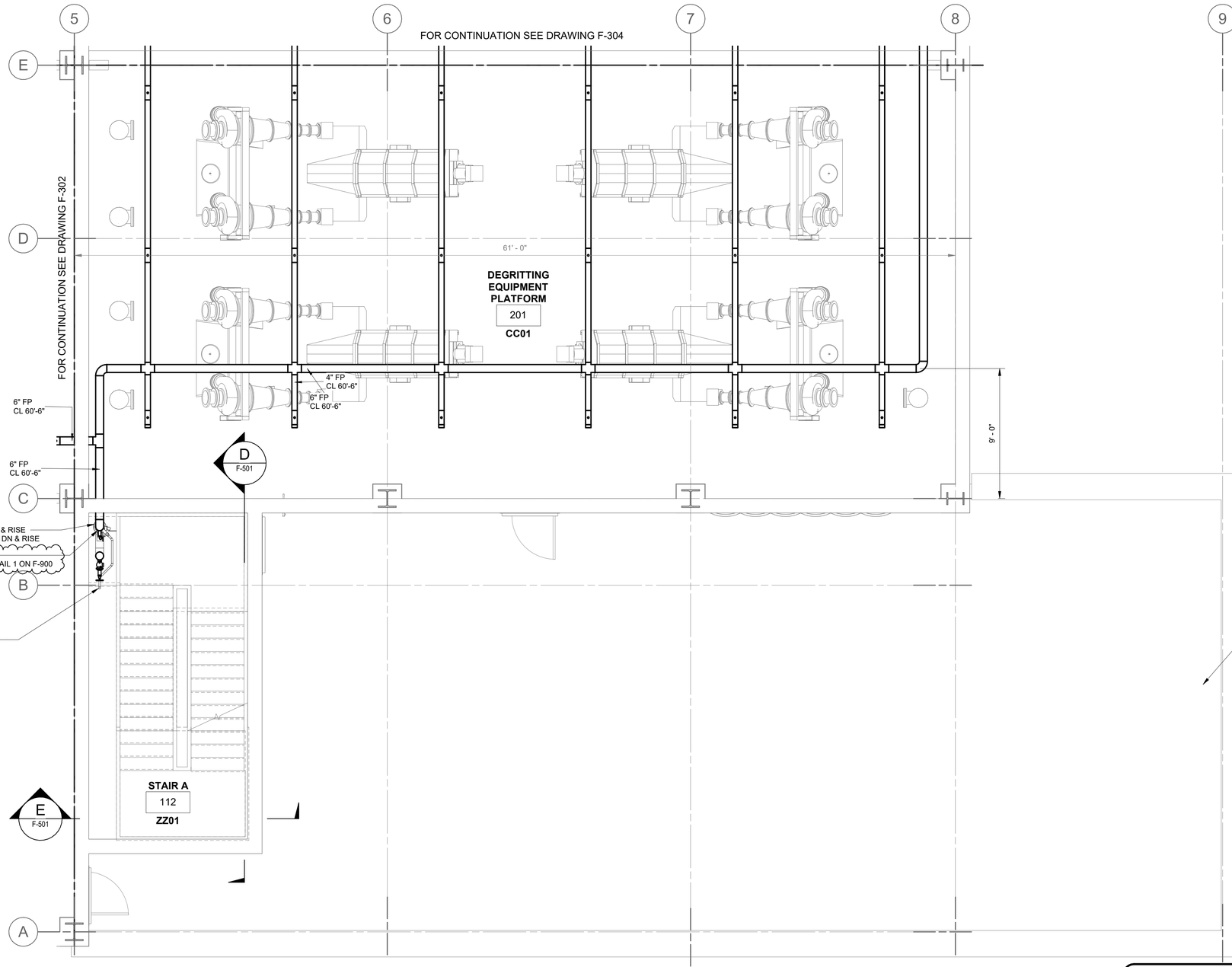
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FIRE PROTECTION
GROUND FLOOR PARTIAL PLAN 3

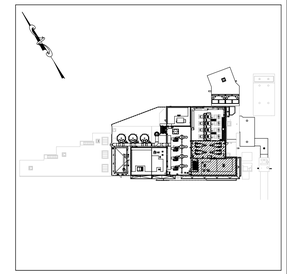
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KEY PLAN

1/4"=1'-0" 0 4 8 FT.

SECOND FLOOR PARTIAL PLAN 3

SCALE: 1/4" = 1'-0"

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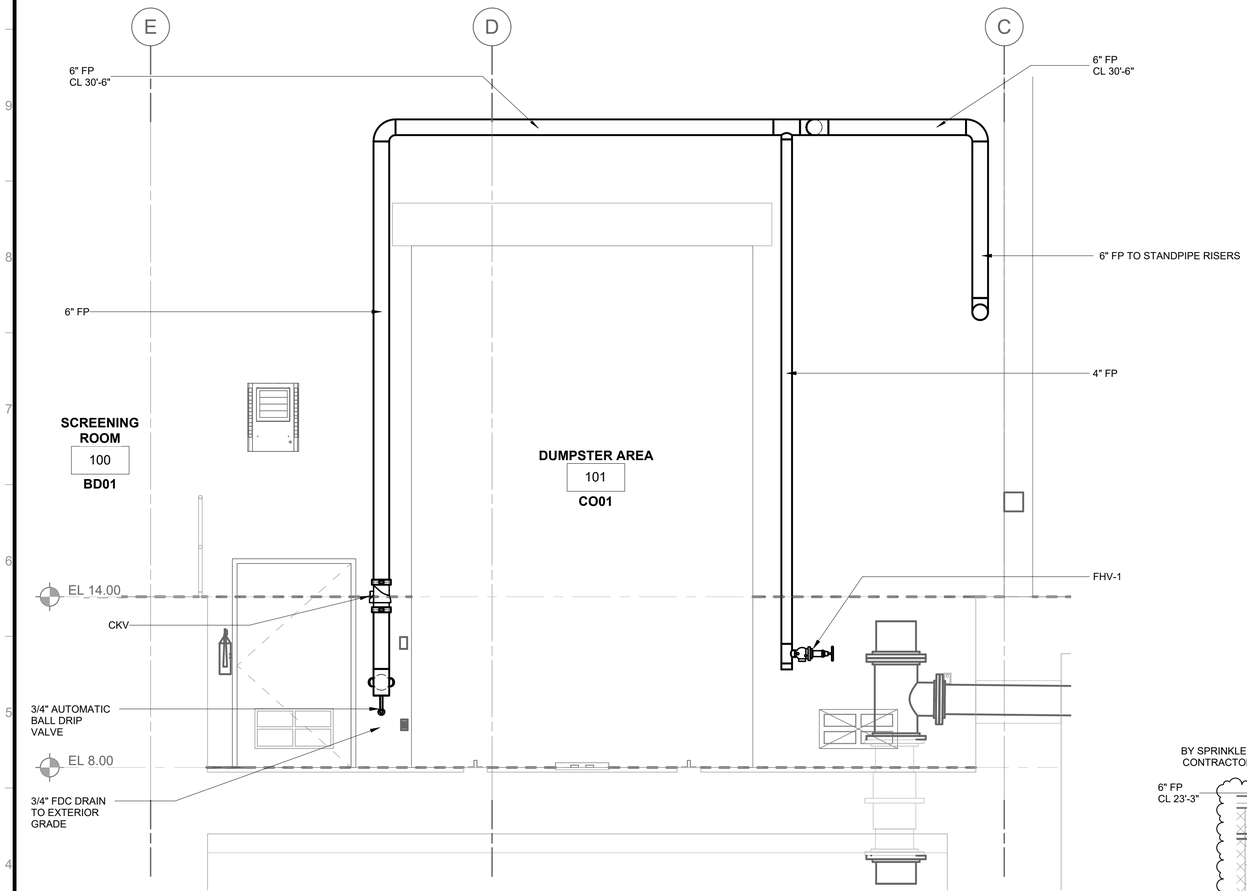
FIRE PROTECTION
SECOND FLOOR PARTIAL PLAN 3

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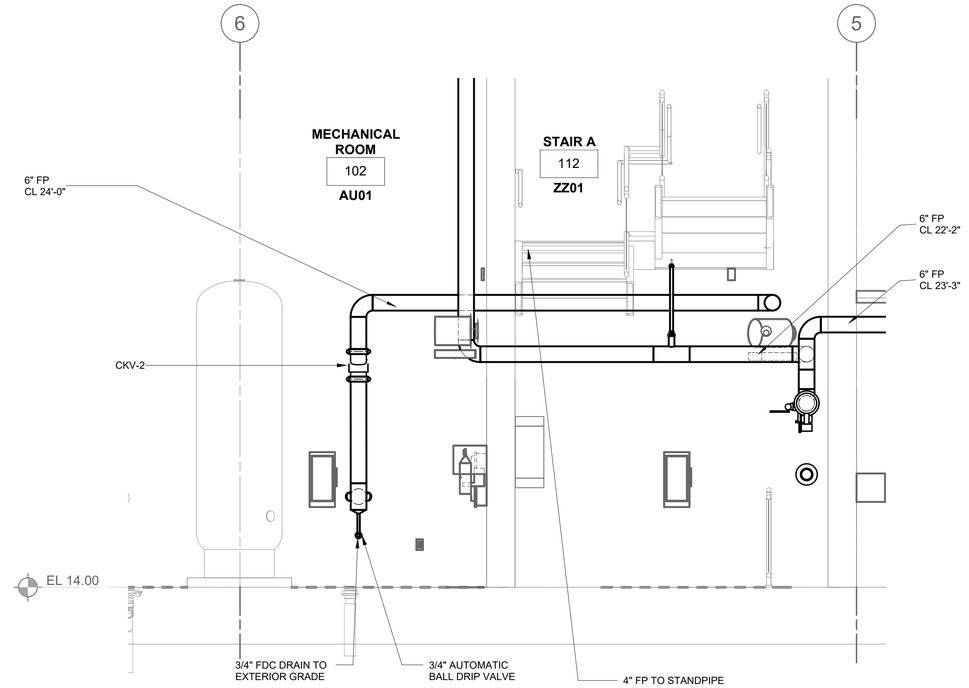
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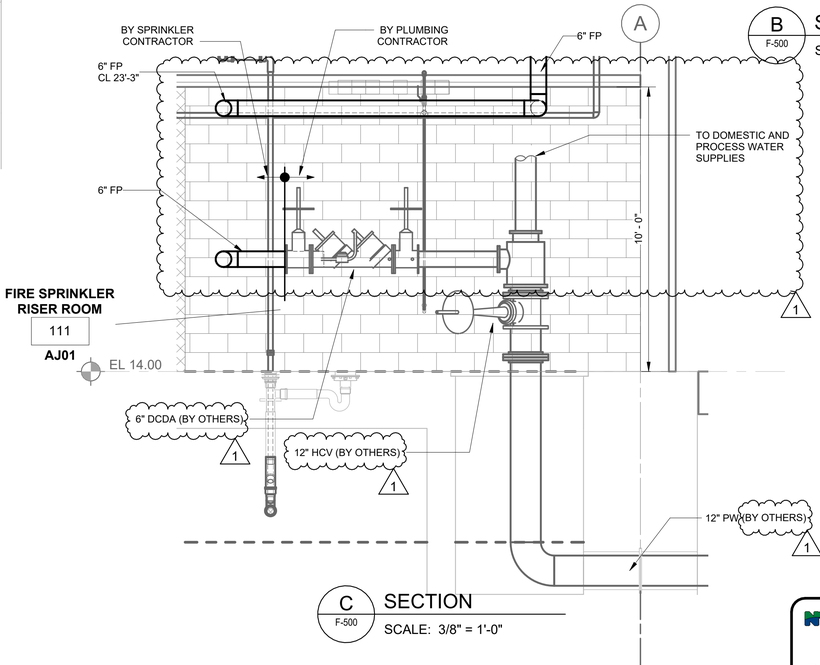
A F-500 SECTION

SCALE: 3/8" = 1'-0"



B F-500 SECTION

SCALE: 3/8" = 1'-0"



C F-500 SECTION

SCALE: 3/8" = 1'-0"

3/8"=1'-0" 0 1 2 3 5 FT.

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SECTIONS 1

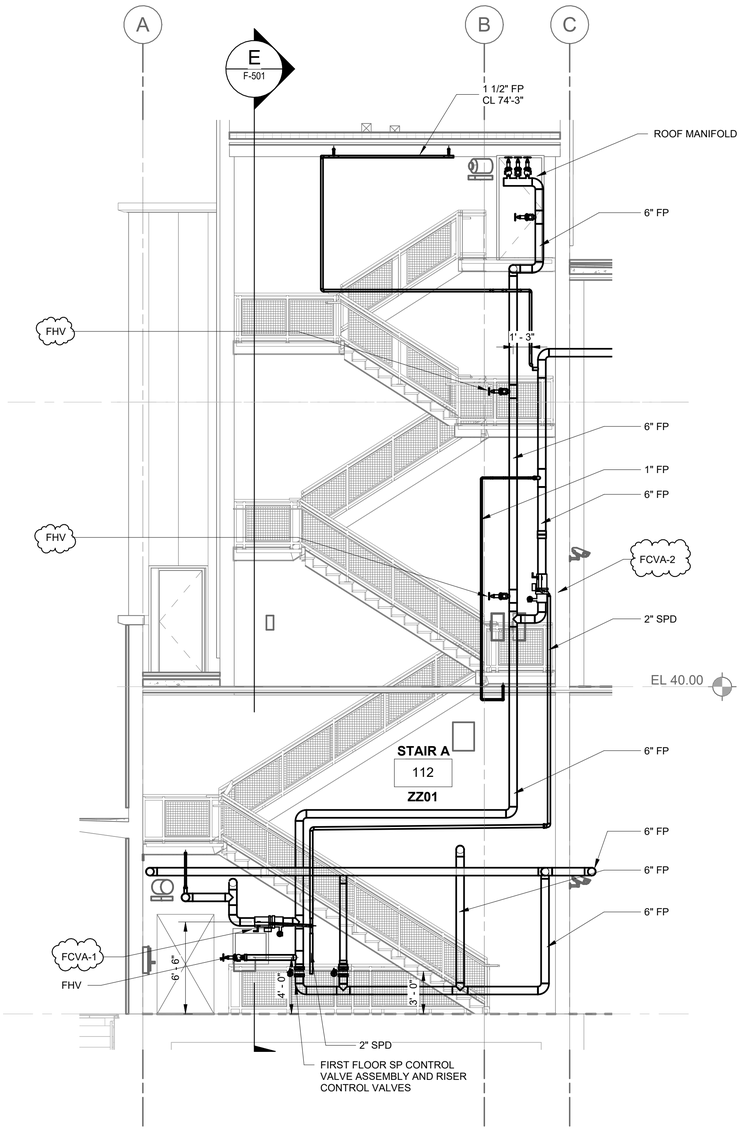
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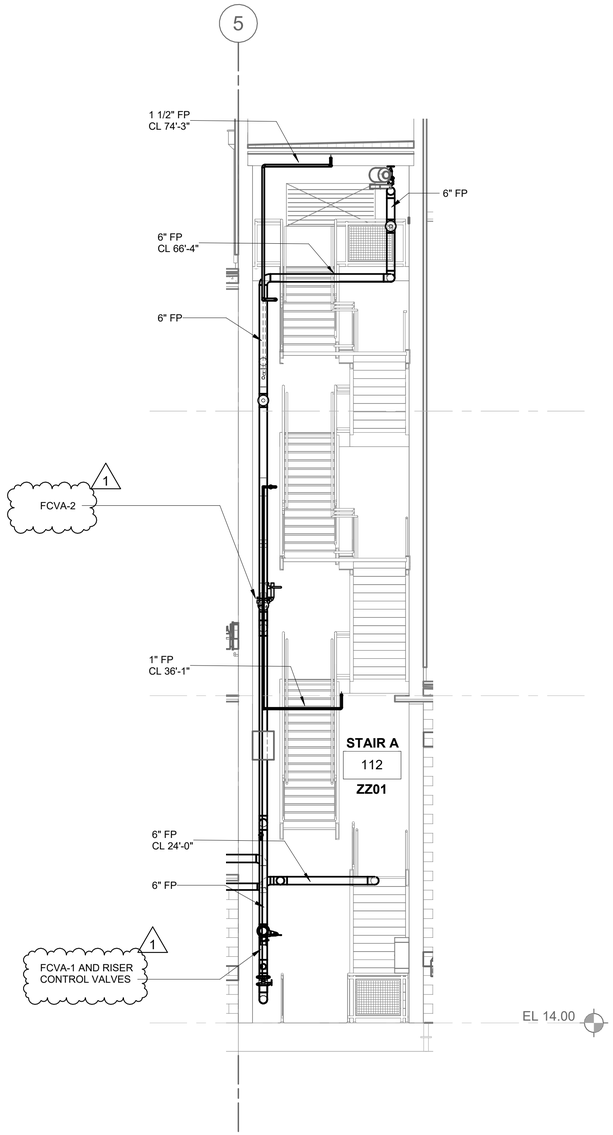
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E F-501 SECTION

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CSO FACILITIES FOR GOWANUS CANAL CONSTRUCTION PACKAGE 3 - OH-007

FIRE PROTECTION SECTIONS 2

DATE: SEPTEMBER 2026

SHEET NO: 717 OF 719

DRAWING NO. F-501.00

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PART 1 GENERAL

1.01 SUMMARY

A. The work of this Section includes but is not limited to the following:

1. Subgrade preparations.
2. Supply of component materials and soil amendments for soil mixes or supply of blended soil mixes from approved off-site sources. Soil mixes include:
    a. Planting Soil Mix
    b. Bioretention Soil Mix
    c. Intertidal Soil Mix
    d. Structural Soil Mix
3. Testing and analysis for specification conformance.
4. Preparation of soil mixes and testing for conformance.
5. Installation, placement, spreading, and fine grading of soil mixes and associated drainage layer.
6. Testing of all soil component materials, soil amendments, and soil mixes.
7. De-compaction and re-compaction of soils as needed for specification conformance.
8. Coordination with other contractors and trades.
9. Clean-up.

B. The Contractor shall report information pertaining to the sustainable procurement, regional sourcing, and/or recycled content of new materials to be procured during the Work, in accordance with Section 01 35 63 – Sustainability Certification Project Requirements. The Contractor shall coordinate with their vendor on sustainable product requirements as stipulated by the Contractor's approved New Materials Sustainable Implementation Plan, in accordance with Section 01 35 63 – Sustainability Certification Project Requirements. The Contractor shall submit vendor shop drawings for review by the Engineer that clearly illustrate the vendor is meeting the requirements as approved in the Contractor's New Materials Sustainable Implementation Plan.

C. The following index of this Section is presented for convenience:

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1.02 PAYMENT

A. No separate payment shall be made for performing any Work required under this Section. All costs for Work required for this Section shall be included in the applicable lump sum, unit price(s), or allowance(s) as set forth in Section 01 27 00 – Measurement and Payment.

1.03 RELATED SECTIONS

A. Section 01 35 63 - Sustainability Certification Project Requirements

B. Section 02 24 20 - Soil Sampling and Analysis

C. Section 31 23 16 - Excavation

D. Section 31 23 23 - Fill

E. Section 31 25 10 - Dust, Soil Erosion and Sediment Control

F. Section 32 14 10 - Unit Pavers

G. Section 32 90 00 - Planting

1.04 REFERENCES

A. ASTM International (ASTM) Standards

1. ASTM D1556 -- Standard Test Method for Density and Unit Weight of Soil in Place by Sand Cone Method

2. ASTM D1557 -- Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3 (2,700 kN-m/m3))

3. ASTM D3385 -- Standard Test Method for Infiltration Rate of Soils in Field Using Double-Ring Infiltrometers

4. ASTM D4318 -- Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils
5. ASTM D6938 -- Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)
6. ASTM F1647 -- Standard Test Methods for Organic Matter Content of Athletic Field Rootzone Mixes

B. The Northeast Coordinating Committee for Soil Testing

1. NEC-1012 -- Recommended soil testing procedures for the Northeast United States, Northeastern Regional Publication Number 493

C. The New York City Department of Health and Mental Hygiene

1. Local Law 37 Pesticides Use by City Agencies – Pesticide Product Search Local Law 37 - NYC Health

D. The New York State Department of Environmental Conservation Bureau of Pesticide Management

1. Pesticide Product Information Portal
2. https://www.dec.ny.gov/nyspad/products?0

E. New York State Department of Environmental Conservation (NYSDEC)

1. 6NYCRR Subpart 360-5, Composting Facilities
2. 6NYCRR Subpart 375-6, Remedial Program Soil Cleanup Objectives
3. 6NYCRR Part 360 Part 360, Solid Waste Management Facilities

F. Soil Science Society of America, Methods of Soil Analysis (SSSA)

G. American Association for Laboratory Accreditation (A2LA)

H. US Composting Council (USCC)

I. NYC DOT Standard Highway Specifications

1. Section 4.15 SS – Structural Soil Foundation Material

1.05 DESCRIPTION

A. System Design Requirements

1. All soil mix components shall be tested and approved prior to incorporation into blended soil mixes.
2. Provide adequate quantities of all soil mix materials to attain, after compaction and natural settlement, all design-finished grades.
3. Sustainable Design Requirements

a. Regional Materials: Soil shall be extracted within 250 miles of the project site.

1.06 QUALITY ASSURANCE

A. Contractor shall submit written test reports as required in this Section.

1. Testing shall be carried out by an independent testing laboratory. Testing laboratory shall be in independent, state-operated, or university-operated laboratory recognized by the SSSA; experienced in soil science, soil testing, and plant nutrition; with the experience and capability to conduct the testing indicated, and that specializes in types of tests to be performed.

2. Engineer or Landscape Architect's approval of the testing laboratory shall be obtained by the Contractor before it is given any work of this Section.

3. Contractor shall be responsible for timely submittal of samples to the testing laboratory.

B. Each test shall be carried out using the categories and sieve sizes as specified herein. Failure to include any of the required criteria will be sufficient cause for rejection of the test.

C. Each test report shall include the following information:

1. Project title

2. Name of Contractor

3. Name of material supplier and location where material is extracted from

4. Testing laboratory name, address and telephone number

5. Type of test

6. Date of test: Testing must be for samples taken within the prior 6 months.

7. Test results, including identification of deviations from acceptable ranges.

D. Each sample shall be tested, as applicable, for the following:

1. Mechanical analysis: Sieve method, using sieve sizes specified.

2. Textural Class: As determined by combined hydrometer and wet sieving in compliance with ASTM F1632.

3. pH should be measured according to Recommended Soil Testing Procedures for the Northeastern United States (NEC-1012). Where soil will be used to support plant growth, lab analysis results must include corrective recommendations.

4. Organic matter content: Percentage of oven-dry weight of soil, determined by loss on ignition of moisture-free sample, in accordance with Method A of ASTM F1647.

5. Electrical conductivity (soluble salts): Test by saturated paste method in deciSiemens per meter (dS/m).

6. Soil Fertility Analysis: Analysis for available macronutrients including, at a minimum, phosphorus and potassium in parts per million according to methods as specified in NEC-1012. Test methods and fertility recommendations must be included with results.

7. Chemical Analyses shall include the 6 NYCRR Part 375-6 compounds detailed in Section 02 24 20 - Soil Sampling and Analysis. All analyses shall be performed by a testing laboratory certified by the New York State Department of Health Environmental Laboratory Accreditation Program (NYSDOH-ELAP). The frequency of testing per volume of fill shall be in accordance with 6 NYCRR Part 360.13 (e)(1), Table 1, Minimum Analysis Frequency for Fill Material.

E. Provide 1 test for every 100 cubic yards delivered to the site.

F. The Engineer or Landscape Architect may take and analyze at any time, such additional samples of materials as deemed necessary for verification of conformance to specification requirements. Contractor shall furnish samples for this purpose upon request and shall perform testing as requested at no additional cost to the City.

G. No component bulk material for soil mix shall be used or blended into a mix, until test reports have been received and approved by the Engineer or Landscape Architect. As necessary, make any and all soil mix amendments and resubmit test reports indicating amendments, until approved.

H. Comply with all rules, regulations, laws and ordinances of local, state and federal authorities having jurisdiction. Provide labor, materials, equipment and services necessary for work to comply with such requirements at no additional cost to City.

I. Soil Mixing Supplier Qualifications: Shall be an experienced supplier / manufacturer able to provide soil mixes that meet the specifications within the performance criteria and tolerances assigned. Supplier shall be able to produce enough consistently uniform and homogeneously blended material for the project to meet scheduled demands.

J. Installer Qualifications: Engage an experienced installer who has completed landscaping and soil supply work similar in material, design, and extent to that indicated for this project with a record of successful landscape establishment. Installer shall maintain an experienced full-time supervisor on Project Site when planting is in progress.

K. Procure and pay for all permits and licenses required for the Work of this Section.

1.07 SUBMITTALS

A. The Contractor shall submit Shop Drawings and material specifications for the approval of the Engineer or Landscape Architect. Submittals shall include, but not be limited to:

1. Manufacturer's technical information, including application instructions where relevant, for all soil amendment materials required.
    a. Fertilizers
    b. Soil Inoculants
    c. Herbicides
    d. Water-absorbent Polymer
2. Samples of Blended Soil Mixes (1-pound package each):
    a. Planting Soil Mix
    b. Bioretention Soil Mix
    c. Intertidal Soil Mix
    d. Structural Soil Mix
3. Test Results for Blended Soil Mix Components (written report for each bulk component):
    a. Planting Soil Mix -- offsite imported material for typical topsoil.
    b. Bioretention Soil Mix – offsite imported material for stormwater planting areas.
    c. Intertidal Soil Mix – offsite imported material for intertidal planting area as shown on Contract Drawings.
    d. Structural Soil -- offsite imported material for areas identified for structural soil, as shown on Contract Drawings.
        1) Submit license and separate test results for clay loam and crushed stone, in accordance with NYCDOT Standard Highway Specification 4.15SS.
    e. Sand
    f. Compost
4. Sources and Manufacturers List: Submit a full list of sources and manufacturers of soil mixes, including component materials and soil amendments.
    a. Supplier shall provide certifications on the key physical and chemical properties describing the component materials and final soil mixes.

B. Sustainable Design Submittals:
1. Regional Materials: Provide the information as required in Section 01 35 63 – Sustainability Certification Project Requirements.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Conform to all governmental regulations in regard to the transportation of materials to, from, and at the job site, and secure in advance such permits as may be necessary.

B. Packaged Materials: Deliver packaged materials to the location where planting soil mixes are to be installed, in unopened bags or containers, each bearing the name and trademark of the producer, material composition, manufacturers' certified analysis, and the weight of the material.

1. All bags shall be protected from water and contamination with other materials. Store packaged material off the ground and covered in a manner to prevent materials from getting wet or damp and in such manner that material effectiveness will not be impaired.

2. Retain packages for inspection by the Engineer or Landscape Architect.

3. All packaged materials shall be stored, handled and applied in strict accordance with manufacturer’s instructions.

C. Stockpiles

1. Contractor shall employ all means necessary for stockpile maintenance to prevent unstable, noxious or anaerobic conditions including, but not exclusive to, temperature monitoring, planting, stockpile repacking, and runoff control.

2. All stockpiled materials shall be adequately handled as required in Section 31 25 10 – Dust, Soil Erosion and Sediment Control. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.

3. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing planting areas or plants.

4. Do not move or handle materials when they are wet or frozen.

1.09 SPARE PARTS, SPECIAL TOOLS, AND SUPPLIES

A. Not Used

1.10 WARRANTY

A. The Contractor shall obtain from the manufacturer and provide to DEP the manufacturer’s standard warranty, in an acceptable form, warranting against defects in design, materials, abnormal aging, and workmanship.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Fertilizer shall be as manufactured by:

1. Osmocote®, The Scotts Company, Marysville, OH;
2. Meister®, The Scotts Company, Marysville, OH;
3. Or approved equal.

B. Planting Soil, Bioretention Soil and Intertidal Soil Mix sources are:

1. East Coast Mines & Materials, Inc., East Quogue, NY 11959.
2. The Dirt Company – Northeast, PO Box 156, Jamesburg, NJ 08831.
3. George Schofield Company, Inc. PO Box 110, Bound Brook, NJ 08805.
4. Or approved equal.

C. Structural soil shall be licensed providers by:

1. East Coast Mines & Materials, Inc., East Quogue, NY 11959
2. Long Island Compost, Yaphank, NY 11590
3. Ascape Landscape, Blauvelt, NY 10913
4. Or approved equal.

2.02 MATERIALS / EQUIPMENT

A. Planting Soil

1. Imported topsoil or soil blends may not be mined from soils defined by the Natural Resources Conservation Service as prime farmland, unique farmland, or farmland of statewide importance. Imported topsoil shall be:
   a. Of uniform quality, free from hard clods, stiff clay, hardpan, sods, roots, chips, sticks, partially disintegrated stone, cement, ashes, slag, concrete, tar residues, tarred paper, boards, or any other undesirable material. No topsoil shall be delivered in a frozen or muddy condition.
   b. Free from refuse, material toxic or otherwise deleterious to plant growth, seeds, or other viable propagules of invasive plants. Construction and demolition debris as classified under 6 NYCRR Part 360, other than uncontaminated land clearing debris, shall not be used to amend topsoil.
   c. Free of stones over 1 ½ inches in diameter, and will have less than 10 percent gravel.
2. Topsoil shall conform to the following requirements:
   a. pH 6.0 to 7.0.

b. Organic content 4 - 6%

3. Topsoil shall conform to the following mechanical analysis:

Sieve Size	Percent Passing
1"	100
1/4"	90 - 99
# 10	80 - 100
# 40	40 - 60
# 60	30 - 40
# 100	10 - 30
# 200	10 - 20

4. Planting soil shall be of textural class, as determined by combined hydrometer and wet sieving in compliance with ASTM F1632:
   a. Sand (0.05 – 2.0mm dia. range): 45-85% total weight
   b. Silt (0.002 – 0.05mm dia. range): 6-12% total weight
   c. Clay (less than 0.002mm dia. range): 3-6% total weight
5. Rate of Percolation: Between 2” and 4” per hour as determined by ASTM F1815-97.
6. Salinity / Electrical conductivity: 0.7 to 2.0 mmhos/cm
7. Phosphorous: 20-100 PPM using extract method.
8. Potassium: 200-600 PPM using extract method.
9. Cation Exchange Capacity (CEC): Greater than or equal to 8 Meq/110g using extract method.
10. Planting soil blend shall consist of the following proportions by volume:
    a. Six parts topsoil
    b. Two parts compost
11. When the topsoil otherwise complies with the requirements of the specification but shows a deficiency of not more than one percent (1%) organic matter content; then humus, compost, or other approved organic matter may be incorporated when or as permitted by the Engineer or Landscape Architect.
12. Topsoil shall not contain hazardous waste, petroleum spills or other chemical releases, or industrial waste. Any shipment of topsoil that does

not meet this requirement will be rejected by the Engineer or Landscape Architect and shall not be brought on site.

13. Topsoil being brought on site shall be sampled and must meet the definition of General Fill as defined in NYSDEC 6 NYCRR Part 360.13 (f), Table 2: Fill Material Beneficial Use, unless otherwise approved by the Engineer. Topsoil to be used in ecologically sensitive sites (e.g., wetlands) shall meet the SCOs for the protection of Ecological Resources, unless otherwise approved. See Section 31 23 23 – Fill.

14. The following items shall be added to the planting soil mix if specified in contract drawings or approved in writing by the Engineer or Landscape Architect:

    a. Five pounds bonemeal per cubic yard of soil mixture

    b. One pound commercial fertilizer per cubic yard of soil mixture

    c. One pound controlled release fertilizer per cubic yard of soil mixture

    d. Two pounds water absorbent polymer per cubic yard of soil mixture, or as recommended by manufacturer

    e. Ground limestone as required for specified pH

B. Bioretention Soil Mix: Sandy loam, friable soil of uniform quality, free from hard clods, stiff clay, hard pan, sods, partially disintegrated stone, lime, cement, ashes, slag, concrete, tar residues, paper, board chips, sticks, or an other undesirable material.

1. Marginal Mix shall conform to the following requirements:

    a. Organic Matter: 3 % minimum, 12% maximum

    b. pH: 5.5 to 7.0

    c. Electrical Conductivity (soluble salts): 0.8 - 4.0 dS/m

2. Mix shall consist of the following proportions by volume:

    a. Sand (0.05 to 2mm) 75% to 85%

    b. Silt (0.002 to 0.05 mm) 10 to 25%

    c. Clay (<0.002 mm) 10% maximum

3. Electrical conductivity shall be a maximum of 1.0 mmhos/cm. A higher level would indicate excessive salt content.

4. Nutrients: Bioretention soil test results shall show recommendations for soil additives or fertilizers to correct nutrient deficiencies as necessary.

Magnesium	Min 200lbs/acre
Phosphorous	Min 10lbs/acre

Potassium Min 30lbs/acre

5. Material must be sampled and analyzed by a New York State Department of Health Environmental Laboratory Approval Program certidied laboratory in accordance with the New York State Department of Environmental Conservation (NYSDEC) DER-10 protocols

C. Intertidal Soil Mix

1. Shall be comprised of clean sand conforming to the following requirements:

a. Textural Class shall be:

1) Sand (0.05-2.0mm dia. range): 70-85%

2) Silt (0.002-0.05mm dia. range): 10-15%

3) Clay (Less than 0.002mm dia. range): 5-15%

4) Gravel (2.0mm to 2” dia. range): 0-8%

2. pH: Between 5.5 to 7.2.

3. Organic Content (Loss on ignition): 3% maximum.

4. Particle size shall conform to the following mechanical analysis:

Sieve Size	Accepted range
# 10	0%
# 18	< 10%
# 35	< 20%
# 60	> 70%
# 100	< 20%
# 270	< 3%
0.002mm	< 10%

5. Salinity / Electrical conductivity: 1 mmhos/cm maximum.

6. Total nitrogen (TKN): 200 ppm maximum.

7. Nitrate: 1 ppm maximum.

8. No stones or coarse fragments over 1” in size.

9. Intertidal soil mix shall be the product of a commercial processing facility specializing in production of clean sand for intertidal wetland application. Material shall be free of hazardous waste, petroleum spills or other chemical releases, or industrial waste. Any shipment of intertidal soil mix that does

not meet this requirement will be rejected by the Engineer and shall not be brought on site.

10. Unless otherwise directed by the Engineer or the Engineer or Landscape Architect, soil amendment and fertilizer application shall be prohibited in the intertidal planting area due to potential addition of unnecessary nutrient loads to waterways.

D. Structural Soil

1. Shall conform to the latest NYCDOT Standard Highway Specification 4.15SS Structural Soil Foundation Material and specified herein.

2. Shall conform to CU-Soil™, as patened by Cornell University, patent #5,849,069. Structural soil shall contain the following proportion:

   a. Crushed stone: 83% dry weight

   b. Clay loam: 17% dry weight

   c. Hydrogel: 1 ounce per 200 pounds of stone

3. Requirement for Crushed Stone:

   a. Crushed stone shall be crushed granite or traprack, no limestone or sandstone shall be accepted. No recycled material shall be accepted. Stone shall meet the ASTM C33 requirements for #4 crushed angular stone graded within the following limits:

Sieve Size	Percent Passing
2"	100
1-1/2"	90 - 100
1”	20 - 55
3/4”	0 - 15
3/8”	0 - 5

4. Requirement for Clay Loam:

   a. Shall conform to ASTM D422. Clay loam shall be uniform composition, without admixture of subsoil, and free of stones greater than 1/2” diameter, leaves, roots, debris, toxic materials, or lumps or clods over 1” diameter.

   b. Material shall have been obtained from naturally well drained areas which have never been previously stripped for topsoil and shall have a history of supporting satisfactory vegetative growth. Material shall be the product of a commercial processing facility specializing in

production of stripped natural topsoil. No clay loam shall come from USDA classified prime farmland.

c. It shall contain not less than 2% nor more than 5% organic matter, as determined by loss on ignition of oven-dried samples, dried to a constant weight at a temperature of 230 deg F, plus or minus 9 deg F. Mechanical analysis for clay loam shall be as follows:

1) Sand: 20-45% total dry weight

2) Silt: 20-50% total dry weight

3) Clay: 20-40% total dry weight

4) Gravel: Less than 5% total dry weight

d. Clay loam small meet or be amended to meet the following chemical analysis criteria:

1) pH: Between 5.5 and 6.5.

2) Organic matter: 2-5% by dry weight

3) Soluble salts less than 1.0 mmhos/cm.

4) Cation exchange capacity (CEC): Greater than 10.

5) Carbon / Nitrogen ratio: Less than 33:1.

5. Requirement for Hydrogel: Shall be Gelscape, a potassium propenoate-propenamide copolymer hydrogel, as manufactured by Amereq, Inc. New City, NY, or approved tested equivalent. No substitution is recommended, since small changes in the hydrogel structure greatly change the quality of the structural soil.

6. pH Adjustment:

a. To lower the clay loam pH to acceptable levels, commercial granular ferrous sulfate, 90% pure sulfur may be added to lower soil pH above 6.5. To raise pH levels, the manufacturer may add agricultural limestone containing a minimum of 85% carbonates. Minimum gradation: 100% passing 10 mesh sieve, 98% passing 20 mesh sieve, 55% passing 60 mesh sieve, and 40% passing 100 mesh sieve.

E. Compost

1. Shall conform to the following requirements:

a. Material shall be capable of sustaining the growth of vegetation, with no admixture of refuse or material toxic to plant growth.

b. Material shall be derived from organic wastes such as food and agriculture residues, composted cow or other animal manures,

sewage sludge or other materials that meet the specified requirements.

c. Material shall be screened, and shall be free of any stones, branches, roots, brush, weeds, or wood chips, and all debris such as plastic fragments, glass, and metal fragments.

d. Materials shall produce a maturity index result equal to or greater than 7 using the Solvita Compost Maturity Index procedure or approved equal.

e. Organic content: 50% minimum.

f. pH: 5.5 to 8.0.

g. Carbon/nitrogen ratio: 25:1 to 35:1.

h. 100% passing 1/2" screen .

2. Compost shall meet the requirements for "Monthly Average Concentration" pollutant limits, except where the Engineer specifically allows the use of the "Maximum Concentration" pollutant limits, as stated in the current version of 6 NYCRR Part 360.

3. No compost shall be delivered until the approval of samples by the Engineer or Landscape Architect, but such approval does not constitute final acceptance. The Engineer or Landscape Architect reserves the right to reject, on or after delivery, any material which does not, in their opinion, meet these specifications. When compost is stored on the job, it shall be done as directed by the Engineer.

4. Certification: Only facilities permitted to compost biosolids under 6 NYCRR Part 360, will be allowed to furnish finished compost for use in topsoil. The certification shall be supplied by the Contractor prior to the delivery of any composted biosolids, topsoil containing sewage sludge, or other such regulated material to the site.

F. Soil Amendment Materials: Within the watershed, fertilizers shall not be used unless a soil test indicating a need for soil amendment is provided. Recommended materials below may not be used except where they fulfill amendment requirements. Where authorized for use in the Contract Documents, or by written direction of the Engineer or Engineer or Landscape Architect, Soil Amendment Materials shall have the following compositions:

1. Soil Fertility Analysis: Available macronutrients including Phosphorus and Potassium should be adequate to support the intended plant community. Available macronutrients shall not be at excessive levels that could potentially impair plant growth or impact water quality. The determination as to whether available nutrients are low, optimum, or excessive shall be made and reported by the soil testing laboratory based on extraction and test methods used.

a. Only when soil analysis indicates a need and if approved in advance by the Engineer, apply commercial fertilizer and uniformly work in to top one inch of seedbed. The rate of application shall be determined by soil analysis.

b. Do not apply superphosphate except where specifically indicated and as approved by the Engineer. Where required, uniformly work in to top one inch of seedbed. The rate of application shall be determined by soil analysis.

2. In addition to obtaining the Engineer's approval of the type(s) and N-P-K (Nitrogen-Phosphorus-Potassium) analyses of soil amendment materials, proposed based on soil test results, the Contractor shall meet the following requirements:

a. Bonemeal: Shall be finely ground.

b. Commercial Fertilizer: A minimum of 50% of the nitrogen shall be derived from organic sources.

c. Controlled-release Fertilizer: Shall be in granular form.

3. Limestone: Shall be granular limestone, produced from Dolomitic limestone specifically for use in planting, with a minimum of 88% of calcium and magnesium carbonates, conforming to the following requirements:

Sieve Size	Percent Passing
# 10	100
# 20	90 minimum
# 100	60 minimum

4. Only when chemical analysis indicates a need and where approved by the Engineer, apply ground limestone and uniformly work in to top one inch of seedbed. The rate of limestone application shall be dependent on the pH of the soil, as determined by chemical analysis, and shall be as follows:

pH of Soil	Rate: Pounds/1000 Square Feet
5.0 to 5.5	100
5.5 to 6.0	50
6.0 to 6.8	25
over 6.8	0

5. Sulfur: Lower pH if required, by use of elemental sulfur product.

a. Peat moss or copper sulfate may not be used to lower pH.

6. Mycorrhizal Fungi Inoculant

a. For tree plantings, the Contractor shall supply Mycorrhizal Fungi Inoculant, if specified, in granular form such as by means of a three ounce (3 oz.) premeasured dry formulation packet, such as Mycor Tree Saver Transplant®, as manufactured by Plant Health Care, Inc., Pittsburgh, PA, or approved equal.

7. Water Retention Additive

a. Water Retention Additives for tree plantings shall be a granular polyacrylamide polymer of a potassium base and not a sodium base that slowly releases moisture into the root zone such as Terra Sorb, as manufactured by Plant Health Care, Inc., 440 William Pitt Way, Pittsburgh, Pa., or approved equal.

G. Herbicides and Pesticides shall be in compliance with NYC Local Law 37 of 2005 and in conformance with the guidelines of NYC Department of Health for determining whether a pesticide or herbicide is prohibited by the Law.

H. The following items shall be added to the Planting Soil Mix if specified in contract drawings or approved in writing by the Engineer or Landscape Architect:

1. Five pounds bonemeal per cubic yard of soil mixture

2. One pound commercial fertilizer per cubic yard of soil mixture

3. One pound controlled release fertilizer per cubic yard of soil mixture

4. Two pounds water absorbent polymer per cubic yard of soil mixture, or as recommended by manufacturer

5. Ground limestone as required for specified pH

I. Miscellaneous Accessories

1. Drainage aggregate: Shall be No. 57 crushed aggregates or washed gravel complying with ASTM D448. Aggregate shall be sound, free-draining and free of fines, surface coatings and deleterious materials.

2. Filter Fabric: See Section 32 14 10 Unit Pavers.

3. Geo-grid: See Section 32 14 10 Unit Pavers.

4. Erosion control blanket: See 32 90 00 Planting.

2.03 FABRICATION / ASSEMBLING / FINISHES

A. Structural Soil Mixing

1. Structural soil must be mixed in the presence of the licensee, and no soil shall be placed until inspected by the licensee. All structural soil shall be mixed using appropriate soil measuring, mixing, and shredding equipment

of sufficient capacity and capability to assure proper quality control and consistent mix ratios.

2. No mixing of Structural Soil at the Project Site shall be permitted unless a large paved area is available for mixing and the site has been pre-approved for use by the Engineer or Landscape Architect.

3. No structural soil shall be mixed or placed in air temperatures below 40 deg F or delivered or placed in frozen, wet, or muddy conditions.

4. Material shall be delivered at or near optimal compaction moisture content, as determined by AASHTO T99 / ASTM D698. No material shall be delivered or placed in an excessively moist condition, beyond 2% above optimal compaction moisture content per AASHTO T99 / ASTM D698.

5. Structural soil mixing and quality control shall be in strict accordance with NYCDOT Standard Highway Specification 4.15SS.

2.04 SOURCE QUALITY CONTROL / SHOP TESTS

A. Not Used

PART 3 EXECUTION

3.01 EXAMINATION / PREPARATION

A. Pre-installation Conference: Conduct conference at project site prior to the start of any work in this Section and shall meet the requirements of this Specification.

B. Layout and Grading

1. Permanent benchmarks shall be established by a registered land surveyor or professional civil engineer, at the Contractor's expense. The Contractor shall maintain established bounds and benchmarks and replace them, if any are destroyed or disturbed.

2. The Contractor shall maintain at the site, sufficient surveying equipment to accurately excavate to the required subgrade and install soil to the required finish grade. The Contractor shall be responsible to install soil profiles at the elevations and thickness shown on the Plans.

C. Examination

1. Prior to all soil mix placement, the Contractor shall examine the site to determine the status of construction and existing condition in and near the areas to be planted.

2. The Contractor shall ascertain the location of all existing and proposed electric cables, conduits, irrigation, under-drainage systems and all other underground or at grade utilities, by contacting the appropriate utility company. The Contractor shall comply with the requirements of Section 31 23 16 - Excavation prior to any excavation work.

a. Contractor shall take proper precautions so as not to disturb or damage any sub-surface elements.

b. Contractor shall be liable for and all damage to such utilities during the course of construction, and shall be responsible for making requisite repairs to damaged utilities at Contractor's own expense.

c. Contractor shall be liable for any and all damage to surrounding areas caused by planting operations and shall be required to restore or replace damaged areas to original conditions, to the satisfaction of the Engineer or Landscape Architect.

3. The Contractor shall comply with the requirements of Section 31 25 10 - Dust, Soil Erosion and Sediment Control.

4. The Contractor shall coordinate, adjust, and relate together, work of this Section with other work of the Project and with work of other Contractors. Such coordination shall include but not be limited to the following:

a. Scheduling of planting operations

b. Scheduling of maintenance operations

5. The Contractor shall also:

a. Verify that all work requiring access through or adjacent to areas where soil mixes are to be placed has been completed and no further access (other than landscape installation) will be required. In the event that access will be required, this must be coordinated with the Engineer or Landscape Architect.

b. Perform soil mix blending and site soil work only during suitable weather conditions. Do not handle, haul, place, work, disc or rototill soil when frozen, excessively wet, or in otherwise unsatisfactory condition.

D. Preparation of Soil Mixes

1. Excavation of subgrade shall conform to the applicable requirements of Section 31 23 16 - Excavation.

2. Uniformly blend all ingredients as required for each soil mix type, by wind rowing and/or tilling on a hard surfaced area.

a. The components of all soil mixes shall be blended so that ingredients are thoroughly incorporated into the mixture to assure uniform distribution.

b. Do not over-mix, mix shall remain friable and well aerated.

c. Organic matter shall be maintained moist, not wet, during blending.

d. Delay mixing of any approved fertilizers if planting will not follow within a few days.

e. Add mycorrhizal fungi inoculant, if specified, to each tree planting at rate specified by approved manufacturer.

f. Apply water retention additive as per approved manufacturer's instructions.

E. Preparation of Sub-Grade

1. Verify as-constructed or existing sub-grade elevation and perform additional grading operations as necessary to bring the sub-grade to a true, smooth, slope parallel to the finished grade, at all areas to receive soil mixes.

2. Any sub-grades or soils polluted by gasoline, oil, plaster, construction debris, unacceptable soils, or other substances which would render material unsuitable for plant growth, shall be removed from the premises, at no additional cost to the City, whether or not such pollution occurred or existed prior to or during the Contract period. In the event that such material is placed, this material shall be removed and replaced with approved material. All remedial operations associated with soil mixes shall be reviewed and approved by the Engineer or Landscape Architect.

3. Clean sub-grade and dispose of all debris prior to placement of soil mixes.

a. Remove all large clods, lumps, brush, roots, stumps, litter, trash, and other foreign material and stones one-half inch in diameter or larger.

b. Dispose of removed material legally off-site in accordance with the applicable laws and regulations and the requirements for waste disposal under the Contract.

4. Where specified in contract drawings or approved in writing by the Engineer or Landscape Architect, spray all vegetation on sub-grade with a pre-emergent weed killer at the rate of application recommended by the manufacturer.

5. Protect adjacent pavements, walls, utilities and other construction from damage or staining by any soil mix placement operations.

3.02 IMPLEMENTATION

A. Placement of Soil Mixes

1. Do not place any muddy or wet Soil Mixes.

2. Place and spread soil mix over sub-grade, to a depth sufficiently greater than the depth required for planting areas so that after settlement the completed work will conform to the lines, grades, and elevations shown or otherwise indicated.

3. Place and spread soil mix over the approved sub-grade, in 6-inch lifts, or as directed by the Engineer or Landscape Architect, and settle to eliminate air

pockets and minimize settlement. Lightly scarify previously placed surfaces prior to placing subsequent lifts.

4. Compact to 85% maximum, Standard Proctor, uniform in any defined area unless otherwise specified in the Contract Documents.

   a. Provide compaction testing to conform with the specified compaction density.

   b. Fills shall not be so compacted as to restrict the flow of air or water through the soil.

5. After completion of compaction operations, protect the installation from additional compaction from vehicular traffic, contamination by toxic materials or trash, and from water containing cement, clay, silt or any other materials.

6. Any soils that are over-compacted or contaminated after placement or otherwise made unsuitable for plant growth shall be removed from the premises and replaced with approved material or satisfactorily remediated at no additional cost to the City.

7. The Contractor shall also meet the applicable requirements on placement of soil mixes for different planting operations in Section 32 90 00 – Planting.

B. Placement of Intertidal Soil Mix:

1. The Contractor shall determine the Bulk Density of all in-place topsoil on a 100-ft by 100-ft grid or equivalent area. Bulk Density shall be in the range of 1.0 to 1.4 g/cubic cm. If the bulk density is greater than 1.4 g/cubic cm, the Contractor shall thoroughly disc the area to a depth of 6-in. or as is required to reduce the compaction. This work shall be conducted at no extra cost to DEP.

2. The spreading shall be performed in such a manner that planting can proceed with little additional soil preparation. Irregularities in the soil surface resulting from spreading or other operations which persist following two tidal flushings shall be corrected so as to prevent the formation of depressions where water will stand.

3. Placement of topsoil shall be performed only when it can be followed within 5 days by planting. After topsoil placement and final grading, no equipment shall be permitted to travel on these completed areas. The Contractor shall, through mechanical raking and hand grading with rakes and shovels, grade all areas around goose exclusion fences as needed in preparation for planting.

4. The Contractor shall, as part of the topsoil spreading operation, mechanically rake and clean all undesirable materials from the topsoil prior to planting operations. The soil shall be allowed to be flowed by the tide for two tidal cycles prior to planting operations. Any ponded or mounded areas

which are present following the tidal flushing shall be mechanically raked or hand graded with rakes and shovels to facilitate proper drainage, as determined by the Construction Manager.

C. Placement of Structural Soil: Shall be in strict accordance with NYCDOT Standard Specification 4.15SS Structural Soil for Foundation Material.

D. Grading of Soil Mixes

1. After settlement has occurred, add soil to maintain finished grades. If for any reason soil is left exposed for a long duration prior to planting, add soil and regrade as required.

2. Protect placed soil mixes against construction activity with snow fencing or by other acceptable methods.

3. Protect from the eroding effects of wind and rain with filter fabric, as necessary.

3.03 FIELD TESTING / QUALITY CONTROL

A. Not Used

3.04 STARTUP / DEMONSTRATION

A. Not Used

3.05 ADJUSTING / PROTECTION / CLEANUP

A. Clean up

1. At the end of each work day the Contractor shall broom-clean the site, to remove all trash, debris, and loose soil materials.

2. Immediately following the completion of soil mix installation operations, the Contractor shall remove all excess materials, stock piles, waste material, tools and equipment, and leave the site in a clear and clean condition.

3. All waste materials shall be disposed offsite by the Contractor in accordance with the applicable laws and regulations and the requirements for waste disposal under the Contract.

END OF SECTION

SECTION 33 06 01 – SCHEDULE FOR BURIED PIPING
CONTRACT CSO-GC-SFS-OH CP3

PART 1 GENERAL

1.01 SUMMARY

A. Contractor shall provide all labor, materials, equipment, incidentals, and appurtenances as shown, specified and required, to furnish, install, and test all buried piping as indicated in the buried piping schedule, complete and operational.

B. The following index of this Section is presented for convenience:

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A. The following schedule(s), attached after the end of section designation, are a part of this Section:

1. Schedule 33 06 01-1, Schedule of Buried Piping.

1.02 PAYMENT

A. No separate payment shall be made for performing any Work required under this Section. All costs for Work required by this Section shall be included in the applicable lump sum, unit price(s) or allowance(s) as set forth in Section 01 27 00 – Measurement and Payment.

1.03 RELATED SECTIONS

A. Not Used.

1.04 REFERENCES
- A. Not Used

1.05 DESCRIPTION
- A. Not Used

1.06 QUALITY ASSURANCE
- A. Not Used

1.07 SUBMITTALS
- A. Not Used

1.08 DELIVERY, STORAGE, AND HANDLING
- A. Not Used

1.09 SPARE PARTS, SPECIAL TOOLS, AND SUPPLIES
- A. Not Used

1.10 WARRANTY
- A. Not Used

PART 2 PRODUCTS

2.01 MANUFACTURERS
- A. Not Used

2.02 MATERIALS / EQUIPMENT
- A. Not Used

2.03 FABRICATION / ASSEMBLING / FINISHES
- A. Not Used

2.04 SOURCE QUALITY CONTROL / SHOP TESTS
- A. Not Used

PART 3 EXECUTION

3.01 EXAMINATION / PREPARATION
- A. Not Used

3.02 INSTALLATION
- A. Not Used

3.03 FIELD TESTING / QUALITY CONTROL

A. Not Used

3.04 STARTUP / DEMONSTRATION

A. Not Used

3.05 ADJUSTING / PROTECTION / CLEANUP

A. Not Used

END OF SECTION

SCHEDULE 33 06 01-1
BURIED PIPING SCHEDULE

					Pressure (psig)		Temperature (Deg F)			Test Pressure (psig)						
Service Name	Material	Wall Thickness/ Schedule/ Class	Type of Joint	Gasket Material	Working	Max	Operating	Max	Test Type	Test Pressure (psig)	Medium	Test Duration (Min)	Leakage Allowance	Interior Coating	Exterior Coatings, Treatments	Remarks
DRAIN	DI	56	MJ	NITRILE OR NEOPRENE	5	50	40	80	Hyd	120	Water	60	zero	CEL	AC	Polyethylene Encasement
SANITARY DRAIN AND SANITARY SEWER	DI	56	RPOJ/RMJ	NITRILE OR NEOPRENE	N/A	N/A	40	80	Exf/Inf	N/A	Water	480	100 GAL/INCH DIAMETER PER MILE	CEL	AC	Polyethylene Encasement
SANITARY FORCE MAIN	DI	56	RPOJ / RMJ	NITRILE OR NEOPRENE					Hyd		Water	120		CEL	AC	Polyethylene Encasement, Includes both process effluent and pump station force mains.
POTABLE WATER & SERVICE WATER	DI	56	RPOJ/RMJ	NITRILE OR NEOPRENE	60	150	40	80	Hyd	120	Water	60	zero	CEL	AC	Polyethylene Encasement: Interior Coating shall be Ceramapure PL 90 by Induron Inc. or approved equal
POTABLE WATER & SERVICE WATER	Cu	Type K	Thd/Comp	N/A	60	150	40	80	Hyd	100	Water	120	zero	N/A	N/A	
STORM DRAIN / SEWER / CS	RCP	Class 3	BS	RUBBER	N/A	N/A	40	80	Exf/Inf	N/A	Water	24	100 GAL/INCH DIAMETER PER MILE			
STORM DRAIN / SEWER / CS	DI	56	BS	RUBBER	N/A	N/A	40	80	Exf/Inf	N/A	Water	24	100 GAL/INCH DIAMETER PER MILE			Catch Basin/Inlet Connections
UNDERDRAIN	PCP	Varies with Diameter	BS (Soil Tight)	RUBBER	N/A	N/A	40	80	N/A	N/A						Geotextile Wrap
NATURAL GAS	Stl Grade B	Sch 40	Thd/BW	N/A	60	120	60	150	Gas	25	CYLINDER NITROGEN	12	zero	N/A	Urethane	

A. The following service abbreviations are used in Schedule 33 06 01-1:

Service:	**Abbrev:**	**Service:**	**Abbrev:**
Combined Sewer	**CS**		
Natural Gas	NG/G	Service Water	SW
Potable Water	PW	Storm Drain	SD
Sanitary Sewer	SAN	Underdrain	D

B. The following pipe material abbreviations are used in Schedule 33 06 01-1:

Pipe Material:	**Abbrev:**	**Pipe Material:**	**Abbrev:**
Copper	Cu	Reinforced Concrete Pipe	RCP
Ductile Iron	DI	Steel	Stl
High-Density Polyethylene	HDPE	Polyvinyl Chloride Pipe	PVC
Perforated Corrugated Polyethylene	PCP		

C. The following joint type abbreviations are used in Schedule 33 06 01-1:

Joint Type:	**Abbrev:**	**Joint Type:**	**Abbrev:**
Bell and Spigot	BS	Soldered	Sld
Butt Weld	BW	Solvent Weld	SW
Push-on Joint	POJ	Restrained Mechanical Joint	RMJ
Lap Welded	LW	Restrained Push-on Joint	RPOJ
Threaded	Thd	Flanged	Flg
Mechanical Joint	MJ	Welded	Wld

D. The following interior coating abbreviations are used in Schedule 33 06 01-1:

Interior Coating	**Abbrev:**	**Interior Coating:**	**Abbrev:**
Asphalt Coated	AC	Cement Lined	CL
Ceramic Epoxy Lined	CEL		

E. The following exterior coating and treatment abbreviations are used in Schedule 33 06 01-1:

Exterior Coating, Treat.:	**Abbrev:**	**Exterior Coating, Treat.:**	**Abbrev:**
Asphalt Coated	AC	Galvanized	Galv
Epoxy	Epx		

F. The following testing abbreviations are used in Schedule 33 06 01-1:

Test Type:	**Abbrev:**	**Test Type:**	**Abbrev:**
Exfiltration	Exf	Infiltration	Inf

Hydrostatic	Hyd	--	--

G. The following labels and colors apply to the buried piping systems in Schedule 33 06 01-1:

System Label	Colors	
	Letters:	Background:
DRAIN *	White (1)	Green (1)
SANITARY SEWER	White	Green
POTABLE WATER	White	Blue
STORM DRAIN *	White	Green
NATURAL GAS	Black	Yellow

* Where shown, specified or required, the legend for blowoff, drain, metering, sump, vent and similar lines shall also include the equipment, structure or identification number to which the service applies.
(1) Colors shall be approved by DEP.

END OF SECTION

PART 1 GENERAL

1.01 SUMMARY

A. Contractor shall provide all labor, materials, equipment, incidentals, and appurtenances as shown, specified and required, for furnishing and installing precast and cast-in-place structures, including manholes, catch basins, and other structures in sanitary sewers and storm sewers including all appurtenances.

B. Other structures include, but are not limited to, inlets, catch basins, manholes, pipe cradles and encasements, and splash pads.

C. The following index of this Section is presented for convenience:

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1.02 PAYMENT

A. No separate payment shall be made for performing any Work required under this Section. All costs for Work required by this Section shall be included in the applicable lump sum, unit price(s), or allowance(s) as set forth in Section 01 27 00 – Measurement and Payment.

1.03 RELATED SECTIONS

A. Section 01 35 63 – Sustainability Certification Project Requirements

B. Section 03 21 00 - Reinforcing Steel

C. Section 03 30 00 - Cast-in-Place Concrete

D. Section 05 56 00.01 - Miscellaneous Metal Castings

E. Section 33 05 05.32 - Leakage Testing for Buried Piping

1.04 REFERENCES

A. ASTM C32 - Sewer and Manhole Brick (Made from Clay or Shale)

B. ASTM C39 - Standard Test Method for Compressive Strength for Cylindrical Concrete Specimens

C. ASTM C78 - Standard Test Method for Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading)

D. ASTM C139 - Concrete Masonry Units for Construction of Catch Basins and Manholes

E. ASTM C140 - Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units

F. ASTM C144 - Aggregate for Masonry Mortar

G. ASTM C279 - Chemical-Resistant Masonry Units

H. ASTM C443 - Joints for Concrete Sewer and Manholes, Using Rubber Gaskets

I. ASTM C478 - Circular Precast Reinforced Concrete Manhole Sections

J. ASTM C666 - Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing Freeze Thaw Stability of Concrete Specimens

K. AWWA C302 - Reinforced Concrete Pressure Pipe, Non-cylinder Type

L. City of New York Department of Environmental Protection (NYCDEP) Sewer Design Standards, latest version

1.05 DESCRIPTION

A. Design Requirements

1. Except as otherwise shown or specified, construct sewer manholes and catch basins of precast reinforced concrete sections conforming to ASTM C478.

2. Unless otherwise shown, manholes and catch basins shall be built in accordance with the NYCDEP Sewer Design Standards, except that they shall be constructed without steps. Trench drains shall be constructed of precast, interlocking modular components.

3. Fiberglass trench drains shall be constructed of resin vinylester suitable for 15% sodium hypochlorite at 100°F with a resin of Hetron 922 or approved equal.

B. Construction of Manholes

1. Manhole Base Section: Unless otherwise shown, provide manhole base sections consisting of a base riser section with an integral floor. When benches are made at the manufacturing site, provide concrete used for benched inverts conforming to the requirements for concrete used for precast sections. When benches are made in the field, Class 45 concrete may be used. Benches shall be float finished and sloped to drain.

2. O-ring Joints: Join riser, cone and flat slab top sections with O-ring rubber gasket joints or self-sealing butyl gaskets, as shown in the NYCDEP Sewer Design Standards. Fill voids in the joints completely with mortar after assembly of the sections.

C. Precast Products

1. Unless otherwise shown or specified, precast concrete products shall be used for sanitary and storm sewer structures.

2. The number of joints in manhole and catch basin riser sections shall be kept to a minimum by using sections 8'-0" long in so far as possible. Joints shall be tongue and groove type conforming to AWWA C302, with continuous steel reinforcement in the tongue and bell. Joints shall be watertight.

3. Wet-cast methods only shall be used. Forms shall leave the surfaces smooth and free of irregularities or honeycombing.

4. Unless otherwise shown or specified, the following design loadings shall be used with 30 percent impact allowance in roads and 15 percent elsewhere.

   a. Earth = 130 pcf

   b. Wheel = HS-20

   c. Buoyancy for ground water to the top of the structure with 1.25 Safety Factor.

   d. Buoyancy shall be calculated without removable slab on top of structure and structure empty.

   e. Design loadings shall be used for connections to tension piles and/or tie downs.

5. Unless otherwise shown or specified, wall thickness for manholes and catch basins shall be not less than:

   a. 8 inches for walls

   b. 8 inches for top slab

6. No more than two (2) tapered lifting holes shall be provided per section of manhole or lifting holes shall be filled with tapered rubber plugs.

7. The point of intersection (P.I.) of pipes shall be marked with a pin in the manhole floor.

8. The date of manufacture and the manufacturer's trademark shall be marked inside each manhole and catch basin barrel.

9. Non-standard NYCDEP manholes shall be founded using piles where indicated on the Contract Drawings. Refer to drawing B-500 for pile capacity information. Pile layout shall be the responsibility of the precast manufacturer.

1.06 QUALITY ASSURANCE

A. Not Used.

1.07 SUBMITTALS

A. Contractor shall submit Shop Drawings and material specifications for the approval of the Engineer. Submittals shall include, but not be limited to:

1. Shop and field test reports of concrete samples tested in an approved laboratory.

2. Brick, concrete ring and mortar materials specifications and sources of supply.

3. Gaskets, sealants, coatings and grout product and/or material specifications.

4. Proof-of-design test for flat top slabs.

5. List of items required for construction in accordance with standards and item locations including but not limited to:

a. Construction joints and expansion joints.

b. Inserts and dowels.

6. Drawings showing manufacturing and fabrication details for the entire structure.

7. Notarized statement signed by a duly authorized officer of the manufacturer stating that structures have been designed in accordance with ASTM Standards, Design Loadings, and Project Site specific conditions.

8. Submit structural design calculations sealed by a Professional Engineer registered in the State of New York for all non-NYC DEP standard manholes and catch basins.

B. Sustainability Submittals

1. The Contractor shall report information pertaining to the sustainable procurement, regional sourcing, and/or recycled content of new materials to be procured during the Work, in accordance with Section 01 35 63 – Sustainability Certification Project Requirements. The Contractor shall coordinate with their vendor on sustainable product requirements as stipulated by the Contractor's approved New Materials Sustainable

Implementation Plan, in accordance with Section 01 35 63 – Sustainability Certification Project Requirements. The Contractor shall submit vendor shop drawings for review by the Engineer that clearly illustrate the vendor is meeting the requirements as approved in the Contractor's New Materials Sustainable Implementation Plan.

1.08 DELIVERY, STORAGE, AND HANDLING

A. General: Follow manufacturer's written recommendations for delivery, storage and handling. Take every precaution to prevent injury to the structures during transportation and unloading. Unload manhole sections and other precast items using skids, pipe hooks, rope slings, or suitable power equipment, if necessary, and keep the items under control at all times. Do not allow the items to be dropped, dumped or dragged under any conditions.

B. If any precast manhole section or other structural unit is damaged in the process of transportation or handling, reject and immediately remove the item from the Site, and replace it at no additional cost to DEP.

1.09 SPARE PARTS, SPECIAL TOOLS, AND SUPPLIES

A. Not Used.

1.10 SPECIAL WARRANTY PROVISIONS / GUARANTEE PERIODS

A. The Contractor shall obtain from the manufacturer and provide to DEP the manufacturer's standard warranty, in an acceptable form, warranting against defects in design, materials, abnormal aging, and workmanship.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Polymer Concrete Trench Drains shall be as manufactured by:

1. ABT, Inc., Troutman, NC;
2. ACO Polymer Products, Inc., Chardon, OH;
3. Or approved equal.

B. Fiberglass Trench Drains shall be as manufactured by:

1. ACO Polymer Products, Inc., Chardon, OH;
2. Aqueduct, Inc., Waltham, MA;
3. Or approved equal.

C. Precast Manholes shall be as manufactured by:

1. Monarch Precast Concrete Corp., Allentown, PA;
2. Precast Concrete Sales Company, Valley Cottage, NY;
3. Long Island Precast, Inc., Holtsville, NY;

4. Or approved equal.

D. Precast Inlets shall be as manufactured by:

1. Monarch Precast Concrete Corp., Allentown, PA;
2. Penn-Cast Products, Inc., Fredericksburg, VA;
3. Precast Concrete Sales Company, Valley Cottage, NY;
4. Or approved equal.

E. Precast Catch Basins shall be as manufactured by:

1. Monarch Precast Concrete Corp., Allentown, PA;
2. Penn-Cast Products, Inc., Fredericksburg, VA;
3. Long Island Precast, Inc., Brookhaven, NY;
4. Precast Concrete Sales Company, Valley Cottage, NY;
5. Or approved equal.

F. Hydrodynamic Separators shall be as manufactured by:

1. Cascade Separator by Contech Engineering Solutions
2. Aqua-Swirl Xcelerator by AquaShield, Inc.
3. Barracuda MAX by Advanced Drainage Systems, Inc.
4. Or approved equal.

2.02 MATERIALS / EQUIPMENT

A. Concrete, Steel Reinforcement and Aggregates: For precast manholes, catch basins, inlets, and other sanitary, combined and storm sewer structures, reinforced concrete, cementitious materials, aggregates and steel reinforcement shall conform to the requirements of ASTM C478. If concrete rings are used for adjusting manhole frames to grade, they shall conform to the requirements of ASTM C139. For cast-in-place structures, these materials shall conform to Sections 03 30 00 – Cast-in-Place Concrete and 03 21 00 – Reinforcing Steel.

B. Brick: If brick is used for adjusting manhole and catch basin frames to grade, it shall conform to ASTM C32, Grade MS, with minimum dimensions of 2 1/4 by 3 1/2 by 7 1/2 inches. Brick shall be new, solid, sound, hard burned throughout and uniform in size and quality.

C. Mortar: Provide mortar that is composed of one part Type II Portland cement or Portland pozzolan cement to two parts sand. Sand shall be natural sand that conforms to the requirements of ASTM C144.

D. Frames and Covers: Provide frames, covers, gratings and miscellaneous metal castings shown in the NYCDEP Sewer Design Standards, New York City Department of Transportation standards, or as shown on the Contract Drawings for installation on manholes, catch basins, trench drains and other sanitary structures.

Frames, covers, gratings and miscellaneous metal castings shall be gray iron and shall meet the requirements of Section 05 56 00.01- Miscellaneous Metal Casting. Grating for trench drains shall be compatible with the trench drain manufacturer's systems and recommendations.

E. O-Ring Rubber Gaskets: Provide O-ring rubber gaskets conforming to ASTM C443 for joining manhole sections.

F. Polymer Concrete Trench Drains.

1. The trench drain shall be formed from high strength, durable polymer concrete, meeting or exceeding the following requirements:

Property	ASTM Designation	Polymer Concrete
Compressive Strength	C39	14,000 psi
Tensile Strength	C78	1,500 psi
Freeze Thaw	C666	1,700 cycles (no weight loss)
Chemical Resistance	C279	Resistant to most acids and alkali
Absorption of Moisture	C140	Less than 0.2 (surface wetting only)

2. Sealant for Polymer Concrete Trench Drains. Joints between channel sections shall be sealed during installation with a material recommended by manufacturer.

G. Fiberglass Trench Drains:

1. Fiberglass trench drains shall be manufactured from fiberglass reinforced plastic utilizing vinylester. FRP fabrication shall be of the hand lay-up type. The trench drain systems utilizing polymer resins with aggregate or sand are not acceptable. To reduce air entrapment, no pigment shall be used on the resin system. A double synthetic veil shall be provided on the inner trench surfaces and an ultraviolet inhibitor shall be provided. Cobalt compounds shall not be used in any way.

2. The trench drains shall have a built-in slope of not less than 1%, and shall be furnished in modular lengths of 6 feet. Modules shall have a bottom radius of not less than 2 inches expanding to a nominal inlet opening of 8 inches. Modules shall be joined together with a lap joint not less than 2 inches to provide a positive seal, and joint shall be designed so as to minimize disturbance of flow. Joints between channel sections shall be sealed during installation with a material recommended by manufacturer.

3. Channel modules shall incorporate flanges predrilled to accept the appropriate grate frame, as specified. Frames shall be of all welded construction with welded stainless steel concrete anchors and threaded for grate lockdown.

H. Storm Water Treatment Device:

1. Each stormwater treatment system shall include a circular aluminum "swirl chamber" (or "grit chamber") with a tangential inlet to induce a swirling flow pattern that will accumulate and store settleable solids in a manner and a location that will prevent re-suspension of previously captured particulates.

2. Housing unit of stormwater treatment device shall be constructed of pre-cast or cast-in-place concrete, no exceptions. Concrete for precast stormwater treatment systems shall conform to ASTM C 857 and C 858 and meet the following additional requirements.

   a. The wall thickness shall not be less than 6 inches 152 mm) or as shown on the dimensional drawings. In all cases the wall thickness shall be no less than the minimum thickness necessary to sustain HS20-44 (MS18) loading requirements as determined by a New York State Licensed Professional Engineer.

   b. Sections shall have tongue and groove or ship-lap joints with a butyl mastic sealant conforming to ASTM C 990.

   c. Cement shall be Type II Portland cement conforming to ASTM C 150.

   d. All sections shall be cured by an approved method. Sections shall not be shipped until the concrete has attained a compressive strength of 4,000 psi (twenty-eight [28] MPa) or until 5 days after fabrication and/or repair, whichever is the longer.

   e. Pipe openings shall be sized to accept pipes of the specified size(s) and material(s), and shall be sealed by the Contractor with a hydraulic cement conforming to ASTM C 595M.

   f. Brick or masonry used to build the manhole frame to grade shall conform to ASTM C 32 or ASTM C 139 and shall be installed in conformance with all local requirements.

   g. Casting for manhole frames and covers shall be in accordance with ASTM A48, CL.35B and AASHTO M105.

3. Internal Components and appurtenances shall conform to the following:

   a. Internal aluminum plate components shall be aluminum alloy 5052-H32 in accordance with ASTM B 209.

   b. Sealant to be utilized at the base of the swirl chamber shall be 60 durometer extruded nitrile butadiene rubber (Buna N) and shall be provided to the concrete precaster for installation.

2.03 FABRICATION / ASSEMBLING / FINISHES

A. Not Used.

2.04 SOURCE QUALITY CONTROL / SHOP TESTS

A. Concrete Strength: Manhole sections will be inspected and tested by an independent, certified testing laboratory, retained by the City, to establish the strength of the concrete and the adequacy of curing, to certify the date that the sections were cast and to confirm that the reinforcing steel has been properly placed. This inspection and testing will be performed by the laboratory at the manufacturing plant prior to shipment.

1. A minimum of one set of three cylinders will be taken each day that manhole sections are cast, with batch samples to be designated by the laboratory representative. At least one set of cylinders will be taken from each 9 cubic yards of concrete used in manhole section construction. These samples will be tested for strength. If the samples fail to meet specified minimum concrete strength requirements, all manhole sections manufactured from the concrete from which the cylinders were made will be rejected.

2. DEP reserves the right to core manholes either at the job site or point of delivery to validate strength of concrete and placement of steel. If cores fail to demonstrate the required strength or indicate incorrect placement of reinforcing steel, all sections not previously tested will be considered rejected until sufficient additional cores are tested, at no additional cost to DEP, to substantiate conformance to these requirements.

B. Acceptance of flat slab tops will be based on the tops passing a proof-of-design test in accordance with ASTM C478. One flat slab top for each design shall be tested.

PART 3 EXECUTION

3.01 EXAMINATION / PREPARATION

A. Stormwater Treatment Device

1. Each Stormwater Treatment System shall be constructed according to the sizes shown on the Drawings and as specified herein. Install at elevations and locations shown on the Drawings or as otherwise directed by the Engineer.

2. Place the precast base unit on a granular subbase of minimum thickness of 6 inches (152 mm) after compaction or of greater thickness and compaction if specified elsewhere. The granular subbase shall be checked for level prior to setting and the precast base section of the trap shall be checked for level at all four corners after it is set. If the slope from any corner to any other corner exceeds 0.5% the base section shall be removed and the granular subbase material re-leveled.

3. Prior to setting subsequent sections place bitumen sealant in conformance with ASTM C 990-91 along the construction joint in the section that is already in place.

4. After setting the base and wall or riser sections, prepare to install the swirl chamber (if not installed prior to delivery). Place the butyl mastic sealant vertically on the outside of the swirl chamber starting one inch above the bottom of the swirl chamber and continuing to a height equal to the elevation of the bottom of the upper aperture of the swirl chamber. The butyl mastic sealant should abut the downstream side of the pre-drilled mounting holes that attach the swirl chamber to the long walls of the concrete vault. Next, install the extruded Buna N seal on the bottom edge of the 180 degree downstream section of the swirl chamber by first applying a bead of Sikaflex-1a polyurethane elastomeric sealant into the extruded slot then slide the seal onto the swirl chamber. The extruded seal should extend 3-inches (76 mm) upstream of the mounting holes, toward the inlet end of the vault. Set the swirl chamber into position and keep the seal approximately 1/2-inch (13 mm) above the floor of the concrete vault. Apply a continuous bead of Sikaflex-1a sealant under the cupped bottom of the seal. Set the circular swirl chamber on the floor of the vault and anchor it by bolting the swirl chamber to the side walls of the concrete vault at the three (3) tangent points and at the inlet tab using HILTI brand stainless steel drop-in wedge anchors or equivalent 3/8-inch (10 mm) diameter by 2¾ inch (70 mm) minimum length at heights of approximately 3 inches (76 mm) off the floor and at 15 inch (381 mm) intervals to approximately the same height of the butyl mastic sealant (at locations of pre-drilled holes in aluminum components). Apply a continuous bead of Sikaflex-1a sealant to the intersection of the inside bottom edge of the extruded seal and the vault floor.

5. If the oil baffle wall (Baffle A) and flow control wall (Baffle B) are not integrally cast-in to riser/wall sections then the Baffle wall panels shall be placed in the formed keyways or between bolted-in-place angle flanges as provided by the manufacturer. Apply non-shrink grout or Sikaflex-1a sealant to each end of Baffle A and Baffle B at the upstream intersection with the side walls of the concrete vault.

6. Prior to setting the precast roof section, bitumen sealant equal to ASTM C 990 shall be placed along the top of the oil baffle wall (Baffle A), using more than one layer of mastic if necessary, to a thickness at least 1-inch (25 mm) greater than the nominal gap between the top of the baffle and the roof section. The nominal gap shall be determined either by field measurement or the shop drawings. Do not seal the top of Baffle B unless specified on the shop drawings to do so. After placement of the roof section has compressed the butyl mastic sealant in the gap over Baffle A, finish sealing the gap with an approved non-shrink grout on both sides of the gap using the butyl mastic as a backing material to which to apply the grout. If roof section is “clamshell” or “bathtub” halves, then finish sealing the ends of the Baffle walls by applying non-shrink grout or Sikaflex-1a sealant to each end of Baffle A at the upstream intersection with the side walls of the

concrete vault and to each end of Baffle B at the downstream intersection with the side walls of the concrete vault.

7. After setting the precast roof section of the stormwater treatment system, set precast concrete manhole riser sections, to the height required to bring the cast iron manhole covers to grade, so that the sections are vertical and in true alignment with a 1/4-inch (6 mm) maximum tolerance allowed. Backfill in a careful manner, bringing the fill up in 6-inch (152 mm) lifts on all sides. If leaks appear, clean the inside joints and caulk with lead wool to the satisfaction of the Engineer. In all instances, installation of Stormwater Treatment Systems shall conform to ASTM specification C 891 "Standard Practice for Installation of Underground Precast Utility Structures".

8. Holes made in the concrete sections for handling or other purposes shall be plugged with a nonshrink grout or by using grout in combination with concrete plugs.

9. Where holes must be cut in the precast sections to accommodate pipes, do all cutting before setting the sections in place to prevent any subsequent jarring which may loosen the mortar joints. The Contractor shall make all pipe connections.

3.02 INSTALLATION

A. Manhole Frames: Firmly embed manhole frames in mortar. Provide wedges or shims for accurate and level placing of the frames.

B. Connections to Riser Section: Manufacture riser sections with openings properly located for making connections to sewers. The minimum distance between a joint in a manhole section and the nearest edge of an opening for a connecting sewer and the diameter of such openings shall be as shown in the NYCDEP Sewer Design Standards.

C. Coatings: No exterior coating shall be used for precast structures.

D. Laying Masonry:

1. Bricks shall be wetted before applying mortar.

2. Full bed, end and side joints shall be formed in one operation.

3. Horizontal joints shall be 3/8 inch maximum and radial joints shall be 1/4 inch maximum.

4. Keyways shall be completely filled with mortar.

5. The total amount of adjustment by bricks or concrete rings shall not exceed 12 inches.

E. Precast Items:

1. Place on crushed stone bed or concrete cradle set level as shown.

2. Place backfill in even lifts on all sides to prevent overturning loads.

F. Stubs for Future Connections: Where shown, provide stubs or bells cast in walls and provide approved plugs or caps.

G. Trench Drains: Follow manufacturer's recommendations for installation methods. Forming system for fiberglass trench drains shall be designed so that no portion of fiberglass form is exposed to traffic upon completion of installation.

H. Grading:

1. Manholes and catch basins shall be installed such that covers will be at final grade.

2. Structures shall not project above finished pavements.

3. Structures in areas with temporary working grades shall be initially installed to match the temporary grade, and adjusted later to final grade prior to regrading.

4. Contractor shall be responsible for setting structures to the proper grade. The Engineer's review will be general and will apply to components only.

3.03 FIELD TESTING / QUALITY CONTROL

A. Test for leakage as required by Section 33 05 05.32 – Leakage Testing for Buried Piping.

3.04 STARTUP / DEMONSTRATION

A. Not Used.

3.05 ADJUSTING / PROTECTION / CLEANUP

A. Not Used.

END OF SECTION

Citizens-Carroll Garden MGP
Off-Site Investigation of the Owls Head Site
Data Summary Report
Gowanus Canal MGP Multi-Site
Kings County, Brooklyn, New York

February 2025

Prepared for:

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List of Abbreviations and Acronyms

ADT	Aquifer Drilling and Testing, Inc.
bgs	below ground surface
BTEX	benzene, ethylbenzene, toluene, and xylenes
CSO	combined-sewer overflow
DNAPL	dense non-aqueous phase liquid
DSR	data summary report
DSNY	New York City Department of Sanitation
DUSR	Data Usability Summary Report
E & E	Ecology and Environment Engineering and Geology, P.C.
GCM	grossly contaminated material
IDW	investigation-derived waste
IRT	Innovative Recycling Technologies
LNAPL	light non-aqueous phase liquid
µg/L	micrograms per liter
mg/kg	milligrams per kilogram
MGP	Manufactured Gas Plant
MS/MSD	matrix spike/matrix spike duplicate
NAPL	non-aqueous phase liquid
NPL	National Priorities List
NYCDEP	New York City Department of Environmental Protection
NYSDEC	New York State Department of Environmental Conservation
QA	quality assurance
QAPP	Quality Assurance Project Plan
QC	quality control
PCB	polychlorinated biphenyl
PFAS	per- and polyfluoroalkyl substances
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
PPE	personal protective equipment

List of Abbreviations and Acronyms (cont.)

ppm	parts per million
ROD	Record of Decision
SVOC	semivolatile organic compound
USEPA	U.S. Environmental Protection Agency
VOC	volatile organic compound

1 Introduction

1.1 Purpose

Pursuant to Work Assignment Number D009807-31, Ecology and Environment Engineering and Geology, P.C. (E & E) performed an off-site investigation to determine whether contamination from the former Citizens-Carroll Garden Manufactured Gas Plant (MGP) parcels has impacted the subsurface beneath the proposed "Owls Head" combined-sewer overflow (CSO) facility at Second Avenue and Sixth Street in Brooklyn, New York (see Figure 1-1). The Citizens-Carroll Garden MGP site is located west of the Owls Head CSO facility site across the Gowanus Canal. The primary objective of this data summary report (DSR) is to summarize the findings of this off-site investigation before the New York City Department of Environmental Protection (NYCDEP) constructs the Owls Head CSO facility in 2024.

1.2 Site Description

The Gowanus Canal is an approximately 1.8-mile-long man-made navigational waterway in Brooklyn, Kings County, New York, and is a U.S. Environmental Protection Agency (USEPA) National Priorities List (NPL) site (EPA 2012). The New York State Department of Environmental Conservation (NYSDEC) is the lead agency responsible for overseeing the investigation and remediation of approximately 47 upland environmental sites adjacent to both sides of the Gowanus Canal. Most of the sites are located within a heavily industrialized and developed area that is primarily covered with buildings and pavement.

The proposed Owls Head CSO facility is one of two proposed CSO facilities that are part of the USEPA Record of Decision (ROD) remedial design for the Gowanus Canal. The Owls Head CSO facility will be a below-grade structure containing a 4 million-gallon tank and tank system designed to hold sewer flows during wet weather events that would otherwise be discharged from CSO Outfall OH-007. Construction activities at the Owls Head CSO facility are expected to start in summer 2024.

Based on U.S. Geological Survey topographic mapping, the area around the investigation area lies at an elevation about 5 to 10 feet above mean sea level including areas north of the eliminated portion of Fifth Street that are generally 3 to 5 feet higher than the areas south of the former street. The Gowanus Canal borders the site along the northern, western, and southern boundaries of the site.

1.3 Site History

The Owls Head CSO site consists of an eliminated portion of Fifth Street between Second Avenue and the Gowanus Canal, four formerly privately owned parcels located along Fifth Street, and one City-owned parcel that contained a New York City Department of Sanitation (DSNY) facility (see Figure 1-1). The existing land uses in the nearby area around the Gowanus Canal, including the four formerly private parcels, are primarily light-manufacturing, light-industrial, and commercial uses. The Owls Head CSO facility will consist of an approximately 31,000-square-foot below-grade structure containing one 4 million-gallon tank and tank system and an approximately 17,600-square-foot, two-story above-grade structure. The remainder of the site is expected to be paved and accessible for maintenance and operations, and will have landscaping where appropriate.

Former MGP operations began on the Citizens-Carroll Garden MGP property in the late 1860s until the plant was closed and demolished in the early 1960s. During MGP operations, coal tar was released directly into the Gowanus Canal by discharge pipes or into the subsurface by leaking pipes and tanks. As a result of the MGP operations, coal tar (a byproduct of the MGP process) led to subsurface contamination of soil and groundwater throughout much of the area surrounding the Gowanus Canal.

1.4 Gowanus Canal Area Geology

Overburden in this area of Kings County is generally 150 to 200 feet thick and may consist of the following five layers:

- Fill generally consists of loose, non-cohesive sand, silty sand, and gravel mixed with brick, concrete, coal fragments, wood, ash, metal fragments, and debris ranging from 5 to 30 feet thick.
- Alluvial/marsh deposits generally consist of sand, silt, and organic material with a maximum thickness of 50 feet.
- Two types of glacial deposits: a predominantly sandy glacial outwash unit that is sporadically inter-bedded with glacial till. The glacial outwash generally consists of brown to gray, loose, non-cohesive, well-sorted, fine to coarse sands with varied amounts of gravel and trace silt. The isolated layers of glacial till are generally a brown, poorly sorted unit consisting of silt and fine to coarse sand. The glacial deposits in the area range in thickness between 100 to 200 feet.
- Jameco gravel generally consists of loose, non-cohesive, gray, widely graded medium to coarse sand and coarse gravel up to 50 feet thick.

Bedrock in this area is typically the Fordham gneiss, a metamorphosed, medium- to coarse-grained igneous rock unit of Precambrian age.

Up to four regional groundwater aquifers are present in this area of Kings County. Three are within the Upper Glacial Aquifer and one is within the Jameco Aquifer:

- The Upper Glacial Aquifer is generally an unconfined aquifer, although deeper portions of the aquifer may exhibit semiconfined aquifer conditions due to silt and clay layers. The Upper Glacial Aquifer has been subdivided into shallow, intermediate, and deep groundwater zones, with tides potentially affecting the shallow and intermediate zones. Groundwater within this aquifer in the project area likely flows toward the Gowanus Canal.
- The Jameco Aquifer is a regionally semiconfined aquifer overlying the Raritan Formation or Precambrian Fordham gneiss bedrock form, or both.

1.5 Previous Investigations

In 2013 a ROD was issued by the USEPA identifying actions to be undertaken by various parties to remediate contamination in the canal (USEPA 2013a). As part of the ROD, the USEPA mandated the design and construction of two CSO facilities, one of which is the Owls Head CSO facility.

In February 2018, the NYCDEP issued a notice of Completion for the *Gowanus Canal Combined-Sewer Overflow (CSO) Facilities Final Environmental Impact Statement (FEIS)* which identified any significant adverse environmental impacts associated with the construction of the CSO (NYCDEP 2018).

2 Site Activities

This investigation assessed the areas and depths at which contamination from the former Citizens-Carroll Garden MGP parcels has impacted the subsurface of the proposed Owls Head CSO facility at Second Avenue and Sixth Street. Investigation activities included drilling eight boreholes and sampling soils; installing and developing 15 new monitoring wells; sampling groundwater at 15 new and 12 existing monitoring wells; conducting a site survey; collecting static groundwater elevation and product level measurements; managing investigation-derived waste (IDW); and preparing this DSR.

Most field activities (e.g., borehole drilling, monitoring well installation, well development, monitoring well sampling, and well gauging) were conducted by E & E field teams between March 18 and April 15, 2024. IDW associated with the fieldwork was removed from the site on April 22 and 29, 2024. NYSDEC was informed by NYCDEP in early July 2024 that some of the site wells needed to be removed to accommodate site activities, so NYSDEC had E & E perform an additional round of well gauging on July 11, 2024.

E & E performed all fieldwork according to the project-specific Sampling and Analysis Plan submitted to NYSDEC on March 7, 2024. The methodologies and specific goals of each activity are described in the following subsections. A photographic log of field activities is presented in Appendix A.

2.1 Field Activities

2.1.1 Health and Safety Monitoring

During ground-intrusive activities, E & E performed air monitoring to characterize airborne contaminant concentrations, including volatile organic vapors and explosive gases. During intrusive sampling, a photoionization detector was used to monitor the concentration of volatile organic vapors in the workers' breathing zone and adjacent to the boreholes. An oxygen/explosive gas meter was also used during intrusive activities to monitor for potentially explosive conditions. A Community Air Monitoring Plan was implemented that included both vapor and particulate monitoring to assess whether contaminants migrated off site during the investigation.

The monitoring during all intrusive activates indicated that there were no impacts on workers or the surrounding community. All work was performed in Level D personal protective equipment (PPE)

2.1.2 Borehole Drilling

Fifteen soil borings were drilled at eight different locations by Aquifer Drilling and Testing, Inc. (ADT)/Cascade Drilling, L.P. using roto-sonic techniques under the direction of E & E from March 18 to April 2, 2024. Prior to the start of drilling, ADT obtained New York City Department of Transportation permits to advance the borings and coordinated with the underground facilities protection organization (811 "Call Before You Dig") to identify and locate underground utilities in the vicinity of the borings.

At each location, the top 5 feet of soil were excavated by hand to confirm that each location was clear of buried utilities. Continuous soil cores were then collected to the bottom of the deepest borehole drilled at each location, which ranged up to 100 feet below ground surface (bgs). An E & E geologist screened soils for volatile organic vapors and logged the results in accordance with NYSDEC's MGP Field Guidance and the Unified Soil Classification System. Evidence of non-aqueous phase liquid (NAPL) impacts and grossly contaminated material (GCM), including odors and visual contamination, were noted in the boring logs. Drill borehole logs are included in Appendix B.

Following the procedures described in the Sampling and Analysis Plan, 23 soil samples, including one field duplicate, were collected from the eight boreholes up to 100 feet (OH-SB-01 to OH-SB-08). Soil samples were collected from each distinct interval of NAPL identified in a borehole, and a soil sample from approximately 1 foot below the last identified interval of contamination. No soil samples were collected from additional boreholes advanced at locations where additional monitoring wells would be installed. A summary of soil samples collected is presented in Table 2-1. The locations of the eight boreholes are included in Figure 2-1.

All 15 boreholes for this investigation were completed as flush-mount monitoring wells (see Section 2.1.3). Drill cuttings and decontamination water from the installation of these boreholes were managed as IDW (see Section 2.4).

2.1.3 Monitoring Well Installation

During borehole drilling, groundwater was detected in all three Upper Glacial Aquifer zones identified in Section 1.4: a shallow aquifer to about 21 feet bgs, an intermediate aquifer from about 30 to 51 feet bgs, and a deep aquifer from 53 feet bgs to borehole depth. The depths of the monitoring wells installed at the site were determined based on subsurface geology, the observed presence of contamination, and discussions with NYSDEC.

Evidence of NAPL and GCM contamination was not identified in soil from the shallow aquifer at any of the eight borehole locations. However, shallow

monitoring wells were installed at four locations (i.e., OH-MW01S, OH-MW04S, OH-MW05S, and OH-MW06S) for water table gauging and monitoring the shallow aquifer for light non-aqueous phase liquid (LNAPL) contamination.

NAPL and GCM contamination was identified in soil from the intermediate aquifer at all eight borehole locations (OH-MW01I to OH-MW08I). As such, intermediate monitoring wells were installed at all eight locations screened across the interval that exhibited the highest level of contamination based on visual observation and volatile organic vapor readings.

NAPL and GCM contamination was identified in soil from the deep aquifer at three borehole locations (OH-MW03D, OH-MW05D, and OH-MW06D). Therefore, monitoring wells were installed in this aquifer at these locations to gauge groundwater and monitor the deep aquifer for dense non-aqueous phase liquid (DNAPL) contamination.

Monitoring wells were constructed according to the Sampling and Analysis Plan except for OH-MW02I. This was the first borehole to encounter significant NAPL in the subsurface, so a 2-foot sump was built below the screen to monitor DNAPL contamination. Well construction details are summarized in Table 2-2, and well construction logs and boring logs are provided in Appendix B.

The locations of the 15 new monitoring wells are provided on Figure 2-2.

2.1.4 Monitoring Well Development

Thirteen of the new monitoring wells were developed from March 26 to April 3, 2024, and two new monitoring wells (OH-MW04S and OH-MW04I) were developed on April 9, 2024. Wells were developed by surging and purging a minimum of three well volumes using either dedicated bailers or a submersible electric pump. The well development pump was decontaminated with Alconox and distilled water, and new tubing was used for each well to prevent cross-contamination. During well development a multimeter was used to monitor pH, temperature, conductivity, and turbidity. The purge amounts and final water quality measurements collected from well development are presented in Table 2-3. All development water was containerized in 55-gallon steel drums and temporarily staged in an area adjacent to the site (see Section 2.4).

2.1.5 Static Groundwater and NAPL Elevation Measurements

Four rounds of static groundwater elevation and product level measurements were collected from the new and existing monitoring wells at the site: (1) after well development activities on April 3 and 4, 2024; (2) after well sampling activities on April 15, 2024; (3) during a well gauging event of accessible wells on July 11, 2024; and (4) during a well gauging event of accessible wells on September 23, 2024. Groundwater and depth to product levels in each well were measured using an oil-water interface probe capable of measuring depth to water and depth to product within 0.01 foot from the top of each inside well casing. The presence of DNAPL in some of the wells coated the oil-water interface probe making it

difficult to collect accurate DNAPL and water interface, and total well depths in some wells during the April 3 and 4, 2024, gauging event. As such, DNAPL and total well depths were not collected during the April 15 and July 11, 2024, gauging events to prevent contamination of the interface probe. However new oil-water interface probe decontamination methods were employed during the September 23, 2024, event so accurate DNAPL and total depth measurements could be collected. The four rounds of groundwater and product measurements are included in Table 2-4. Groundwater elevation data from the July 11, 2024, gauging event are provided on Figures 2-3, 2-4, and 2-5.

2.1.6 Monitoring Well Sampling

Groundwater samples were collected from the 27 monitoring wells (15 new and 12 existing monitoring wells) located on the site between April 4 and 15, 2024. Dedicated polyethylene bailers were used to purge and sample shallow and intermediate wells while a decontaminated bladder pump with dedicated high-density polyethylene tubing was used to purge and low-flow sample the deep monitoring wells. Prior to purging and sampling the wells, static water levels were measured and used to determine the volume of standing water in each well. Temperature, pH, conductivity, turbidity, dissolved oxygen, and oxidation-reduction potential measurements were recorded throughout the well-purging process. Purging was continued until groundwater quality parameters were stable for three consecutive readings during low-flow sampling or after three to five well volumes were removed using the dedicated polyethylene bailers. Groundwater samples were collected when purging was complete. Table 2-5 provides a summary of groundwater samples. Purge and sample logs are provided in Appendix C

DNAPL product samples were collected from intermediate monitoring wells OH-MW07I and OH-MW05I on April 15, 2024, for fingerprint analysis.

Upon collection, the sample containers were labeled and immediately placed in a cooler maintained with ice at 4 degrees Celsius. Samples were packaged and delivered to New York State Environmental Laboratory Approval Program-certified Chemtech Laboratories for analysis. Field quality control (QC) sampling included one duplicate groundwater sample and one matrix spike/matrix spike duplicate (MS/MSD). A trip blank also accompanied most shipments of water samples.

2.2 Sample Analysis

All soil and groundwater sample analyses were performed by York Analytical Laboratories, Inc. Field QC samples are discussed in Section 2.5 and the Data Usability Summary Reports (DUSRs) are provided in Appendix D. The laboratory followed the NYSDEC Analytical Services Protocol of June 2005 for analytical methods, quality assurance (QA)/QC, holding times, and reporting requirements. Laboratory data was reported with a full data package (Category B) and EQuIS electronic data deliverable.

2.3 Site Survey

The 15 new monitoring wells were surveyed by Paul James Olszweski, PLS, PLLC on April 10, 2024. Horizontal coordinates were given in the New York State Plane (Long Island) coordinate system to an accuracy of ±0.10 feet relative to the North American Datum of 1983. Vertical elevations were given relative to the North American Vertical Datum of 1988 to an accuracy of ±0.01 foot. The survey data for the new monitoring wells is included in Table 2-2.

2.4 Investigation-Derived Waste Management

IDW generated during this investigation included soil from subsurface drilling, plastic bags used to hold subsurface soil during roto-sonic drilling, decontamination water, groundwater from well development and purging, dedicated sampling equipment (tubing and pump bladders), and spent PPE.

Soil and aqueous IDW from drilling and well development activities were placed in 55-gallon steel drums that were temporarily staged within secondary containment at one of two temporary staging areas at the Owls Head CSO facility site.

All waste was transported by Innovative Recycling Technologies (IRT) of Lindenhurst, New York, during two events. On April 22, three drums of non-hazardous PPE (including the drilling plastic bags) and 25 drums of non-hazardous drilling and decontamination water were transported off-site to JG Environmental Waste Processing Facility in Lancaster, Pennsylvania. On April 29, 25 drums of development and purge water and 11 drums of subsurface soil that were determined to be hazardous were transported off site by IRT to Republic Environmental Systems in Hatfield, Pennsylvania.

2.5 Quality Assurance and Quality Control

QA/QC samples, including field duplicates, trip blanks, and additional volume for MS/MSD analysis were collected in accordance with the specifications of E & E's *Master Quality Assurance Project Plan (QAPP) for NYSDEC Projects* (E & E 2020).

Field duplicate samples were collected in the same manner as field samples (i.e., they were placed into separate containers and labeled as separate samples) to maintain consistency in sample collection. When MS/MSD samples were collected, additional sample volumes were provided to allow for the evaluation of potential matrix interferences. Field duplicates and MS/MSD samples were collected at the rate of one per 20 field samples.

Trip blanks were collected to establish that external sources of contamination were not introduced to the samples or sample vials during transport to and from the field. Trip blank samples consisted of vials of organic-free water that were filled at the laboratory and were included with each laboratory shipment of groundwater samples for volatile organic compound (VOC) analysis.

The QA/QC sample results are provided in the DUSRs (see Appendix D).

2.6 Data Validation Review

All laboratory deliverables were reviewed in accordance with E & E's Master QAPP prepared for NYSDEC (E & E 2020). The data were qualified following general guidelines in the USEPA Region 2 Standard Operating Procedure HW-33, *Low/Medium Volatile Data Validation* (USEPA 2013b). DUSRs were prepared for each laboratory report (based on sample delivery group) as specified in NYSDEC's *Guidance for the Development of Quality Assurance Plans and Data Usability Summary Reports* (Appendix B of DER-10) (NYSDEC 2010).

The data review included an evaluation of the following:

- Holding times
- Initial and continuing calibration
- Reporting limits
- Laboratory blanks
- MS/MSD samples
- Laboratory control samples
- Field duplicates
- Sample result verification
- Method-specific QC samples (e.g., gas chromatography and mass spectroscopy)

DUSRs were prepared by E & E's data validation chemist (see Appendix D). Any deviations from acceptable QC specifications were identified in the DUSRs. Qualifiers were added to the data, if appropriate, to indicate potential concerns with data usability, and these qualifiers were transferred to the data summary tables (see Section 3). There were no significant impacts on data usability.

3 Analytical Results

This section presents the analytical results from the Owls Head CSO facility off-site investigation field activities. A summary of the analytical results is provided in the following subsection and positive laboratory results are summarized in Table 3-1 (soil); Tables 3-2, 3-3, and 3-4 (groundwater); and Table 3-5 (DNAPL product). Complete laboratory analytical results are presented in Appendix E.

The analytical results were compared to existing New York State regulatory standards, guidance values, and criteria to identify samples with analyte concentrations that may represent a threat to human health or the environment, or both. Soil analytical results were compared to the NYSDEC Part 375 Soil Cleanup Objectives for Unrestricted Use and Protection of Groundwater (NYSDEC 2006, with updates). Groundwater analytical results were compared to NYSDEC Technical and Operational Guidance series 1.1.1 *Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations* (NYSDEC 1998). The groundwater standards applied are promulgated standards with which all ambient waters of New York State must comply.

3.1 Soil Sampling Results

A total of 23 soil samples (including field duplicates) were collected from the eight deep boreholes drilled to 100 feet bgs (OH-SB-01 to OH-SB-08) and were analyzed for VOCs, semivolatile organic compounds (SVOCs), organochloride pesticides, polychlorinated biphenyl (PCBs), metals including mercury, cyanide, and per- and polyfluoroalkyl substances (PFAS). Most of the soil samples collected were from observed contaminated zones, but the bottom sample from each borehole was collected from within 2 feet below the last observed contamination zone. Table 3-1 summarizes positive soil sample detections. Figure 3-1 summarizes the total VOCs, total SVOCs, and naphthalene results from samples taken from the eight boreholes.

Eighteen VOCs were detected in the soil samples, nine of which exceed applicable screening levels (1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, ethylbenzene, methylene chloride, n-butylbenzene, n-propylbenzene, toluene, and xylenes) in 13 of the 23 samples. Total VOC concentrations ranged from non-detect to 5,578 milligrams per kilogram (mg/kg), while total benzene, ethylbenzene, toluene, and xylenes (BTEX) concentrations ranged from non-detect to 3,683 mg/kg.

Twenty-five SVOCs were detected in the soil samples, 16 of which exceed applicable screening levels (i.e., acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, dibenzofuran, fluoranthene, fluorene, indeno1,2,3-(c, d)pyrene, naphthalene, phenanthrene, and pyrene) in 11 of the 23 samples. Total SVOC concentrations ranged from non-detect to 8,671 mg/kg, while naphthalene concentrations ranged from non-detect to 1,840 mg/kg.

Seven PFAS compounds were detected in eight of the 23 soil samples. Only two of the detected PFAS compounds have applicable screening levels (perfluoropentanoic acid and perfluorotetradecanoic acid), but no soil sample exceeded the screening levels.

Eighteen metals were detected in the 23 soil samples, only two of which exceeded applicable screening levels (nickel and total chromium). Total chromium was detected above the screening level in all 23 soil samples while nickel was only detected above the screening level in one soil sample (OH-SB05-Z 32-33).

Cyanide was only detected in one of the 23 soil samples (OH-SB02-Z 64-65) and it did not exceed applicable screening levels.

Four organochloride pesticides were detected in the 23 soil samples, none of which exceeded applicable screening levels. No PCBs were detected in the soil samples.

3.2 Monitoring Well Sampling Results

A total of 29 groundwater samples, including two duplicates, were collected from 27 monitoring wells (15 new and 12 existing) and were analyzed for VOCs, SVOCs, organochloride pesticides, PCBs, metals including mercury, cyanide, and PFAS. Eight of the 29 groundwater samples were collected from shallow monitoring wells, 13 groundwater samples were collected from intermediate monitoring wells, and eight groundwater samples were collected from deep monitoring wells.

Tables 3-2, 3-3, and 3-4 summarize the positive detections in groundwater samples from shallow, intermediate, and deep wells, respectively. Figures 3-2, 3-3, and 3-4 summarize the total BTEX, total VOCs, total SVOCs, and naphthalene concentrations from the shallow, intermediate, and deep wells, respectively.

3.2.1 Shallow Groundwater

Twenty-one VOCs were detected in the eight shallow groundwater samples, seven of which exceed applicable screening levels (1,2,4-trimethylbenzene, 1,4-dichlorobenzene, benzene, ethylbenzene, methylene chloride, toluene, and xylenes) in four of the eight samples. Total VOC concentrations ranged from 3.5 to 147 micrograms per liter (µg/L), while total BTEX concentrations ranged from non-detect to 125 µg/L.

Nineteen SVOCs were detected in the shallow groundwater samples, 10 of which exceed applicable screening levels (acenaphthene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, fluorene, indeno(1,2,3-c,d)pyrene, naphthalene, and phenanthrene) in five of the eight samples. Total SVOC concentrations ranged from 1.4 to 355 µg/L, while naphthalene concentrations ranged from non-detect to 11 µg/L.

Three organochloride pesticides (heptachlor epoxide, P,P'-DDD, and P,P'-DDT) were detected in two of the groundwater samples, none of which exceed applicable screening levels.

One PCB (Aroclor 1260) was detected in two of the eight groundwater samples and is slightly above the screening level in the groundwater sample from MW-07S.

Fourteen PFAS compounds were detected in the eight shallow groundwater samples. Only two of the detected PFAS compounds have applicable screening levels. Perfluoropentanoic acid exceeding in all eight samples and perfluorotetradecanoic acid exceeded screening levels in seven of the eight samples.

Twenty-one metals (including mercury) were detected in the shallow groundwater samples, 13 of which exceed applicable screening levels (antimony, arsenic, beryllium, cadmium, chromium, copper, iron, lead, magnesium, manganese, nickel, and sodium).

Cyanide was detected above the screening level in two shallow groundwater samples (OH-MW01S and MW-04S).

3.2.2 Intermediate Groundwater

Twenty-two VOCs were detected in the 13 intermediate groundwater samples, 11 of which exceed applicable screening levels (1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, ethylbenzene, isopropylbenzene, methylene chloride, n-butylbenzene, n-propylbenzene, styrene, toluene, and xylenes) in 11 of the 12 samples. Total VOC concentrations ranged from 10 to 9,712 µg/L, while total BTEX concentrations ranged from 5.9 to 8,943 µg/L.

Twenty-two SVOCs were detected in the intermediate groundwater samples, 15 of which exceed applicable screening levels (4-nitrophenol, biphenyl, acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, fluoranthene, fluorene, indeno(1,2,3-c,d)pyrene, naphthalene, phenanthrene, and pyrene) in 12 of the 13 samples. Total SVOC concentrations ranged from 3.1 to 66,606 µg/L, while naphthalene concentrations ranged from non-detect to 20,100 µg/L.

Eleven PFAS compounds were detected in the 13 intermediate groundwater samples. Only two of the detected PFAS compounds have applicable screening levels, perfluoropentanoic acid exceeded screening levels in one sample and perfluorotetradecanoic acid exceeded screening levels in seven of the eight samples.

One organochloride pesticide (Beta Bhc) was detected in the two of the groundwater samples, neither of which exceed the applicable screening levels.

No PCBs were detected in the groundwater samples.

Twenty metals (including mercury) were detected in the groundwater samples, 11 of which exceed applicable screening levels (barium, chromium, copper, iron, lead, magnesium, manganese, mercury, nickel, sodium, and zinc).

Cyanide was detected nine of the groundwater sample, none of which were above the applicable screening level.

3.2.3 Deep Groundwater

Nineteen VOCs were detected in the eight deep groundwater samples, 11 of which exceed applicable screening levels (1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, chloroform, ethylbenzene, isopropylbenzene, n-butylbenzene, n-propylbenzene, styrene, toluene, and xylenes). Total VOC concentrations ranged from 31 to 2,720 µg/L, while total BTEX concentrations ranged from non-detect to 2,385 µg/L.

Thirteen SVOCs were detected in the deep groundwater samples, 10 of which exceed applicable screening levels (biphenyl, acenaphthene, anthracene, benzo(a)anthracene, chrysene, fluoranthene, fluorene, naphthalene, phenanthrene, and pyrene). Total SVOC concentrations ranged from 0.65 to 3,705 µg/L, while naphthalene concentrations ranged from non-detect to 1,690 µg/L.

Ten PFAS compounds were detected in the eight intermediate groundwater samples. Only two of the detected PFAS compounds had applicable screening levels and perfluoropentanoic acid and perfluorotetradecanoic acid exceeded screening criteria in one of the eight samples (MW-06D).

No PCBs and pesticides were detected in the groundwater samples.

Sixteen metals were detected in the groundwater samples, five of which exceeded applicable screening levels (barium, iron, magnesium, manganese, and sodium).

Cyanide was detected in one groundwater sample (MW-07D), but not above the applicable screening level.

3.3 DNAPL Sampling Results

Two DNAPL product samples were collected from intermediate monitoring wells OH-MW07I and OH-MW05I on April 15, 2024, and were analyzed using a fingerprint analysis, which classified the DNAPL as “Chromatogram is similar to a Coal Tar product”.

4 Conclusions

The purpose of this off-site investigation was to determine whether contamination from the former Citizens-Carroll Garden MGP parcels has impacted the subsurface of the Owls Head CSO facility site and if so, at what depths. A total of 23 soil samples were collected during the installation of eight boreholes (OH-SB01 to OH-SB08) and 29 groundwater samples were collected from 15 newly installed monitoring wells and 12 existing monitoring wells.

4.1 Subsurface Soil Results

Eight boreholes were installed in four general areas at the Owls Head CSO facility site: borehole OH-BH01 is located on the east-central area of the site; boreholes OH-BH02 and OH-BH04 are located on the west central area of the site; boreholes OH-BH03 and OH-BH05 are located adjacent to the west-southwest bulkhead on the site; and boreholes OH-BH06, OH-BH07 and OH-BH08 are located adjacent to the northern bulkhead on the site.

Although NAPL-impacted soil was not observed during the drilling of Borehole OH-BH01, two soil samples were collected from the borehole (44 to 45 feet bgs in the intermediate aquifer zone and 94 to 95 feet bgs in the deep aquifer zone near the bottom of the borehole). No VOC or SVOC contamination was identified in either sample.

Two soil samples were collected from Soil Boring OH-SB02. The soil sample from the intermediate aquifer zone (OH-SB02-Z 37-38) had 704 parts per million (ppm) total VOCs and 8,671 ppm total SVOCs, while the soil sample from the deep aquifer (OH-SB02-Z 64-65) only had 0.1 ppm total VOCs and no SVOCs.

Three soil samples were collected from soil boring OH-SB03. The shallower of the two soil samples from the intermediate aquifer zone (OH-SB03-Z37-38 and OH-SB03-Z51-52) had higher concentrations of contamination with 875 ppm total VOCs and 2,850 ppm total SVOCs. The soil sample from the deeper aquifer (OH-SB03-Z67-68) had no VOCs and 0.36 ppm total SVOCs.

Three soil samples were collected from soil boring OH-SB04. The shallower of the two soil samples from the intermediate aquifer zone (OH-SB04-Z33-34 and OH-SB04-Z52-53) had higher concentrations of contamination with 5,578 ppm total VOCs and 2,667 ppm total SVOCs. The soil sample from the deeper aquifer (OH-SB04-Z62-63) had 0.04 ppm total VOCs and no SVOCs.

Four soil samples were collected from soil boring OH-SB05. The deeper of the two soil samples from the intermediate aquifer zone (OH-SB05-Z 32-33 and OH-SB05-Z 41-42) had higher concentrations of contamination with 2,513 ppm total VOCs and 3,619 ppm total SVOCs. The shallower of the two soil samples from the deeper aquifer (OH-SB05-Z 71-72 and OH-SB05-Z 75-76) had 2.4 ppm total VOCs and 29 ppm total SVOCs.

Three soil samples were collected from soil boring OH-SB06. The soil sample from the intermediate aquifer zone (OH-SB06-Z 37-38) had 0.9 ppm total VOCs and 13 ppm total SVOCs. The deeper of the two soil samples from the deep aquifer zone (OH-SB06-Z 71-72 and OH-SB06-Z 78-79) had higher concentrations of contamination with 13 ppm total VOCs and 836 ppm total SVOCs.

Two soil samples were collected from the intermediate aquifer zone of soil boring OH-SB07 (OH-SB07-Z 31-32 and OH-SB07-Z 52-53); the shallower of the two samples had higher levels of contaminations(1,581 ppm total VOCs and 3,426 ppm total SVOCs).

Three soil samples were collected from the intermediate aquifer zone of soil boring OH-SB08 (OH-SB08-Z 31-32, OH-SB08-Z 41-42, and OH-SB08-Z 47-48), 658 ppm total VOCs were detected in the 41 to 42 feet bgs soil sample and 5,306 ppm total SVOCs were detected in the 31 to 32 feet bgs soil sample.

4.2 Groundwater Results

Shallow Aquifer

Groundwater samples were collected from eight monitoring wells screened within the shallow aquifer, two wells located on the eastern (upgradient) portion of the site, and six locations on the western portion of the Owls Head CSO facility property.

Only two shallow monitoring wells (OH-MW05S and MW-05S), both located on the western portion of the site, had VOC contamination above 100 µg/L and more than 75% of this contamination was from BTEX compounds. VOC groundwater contamination in the shallow aquifer is 10 to 100 times less than VOC groundwater contamination identified in the intermediate aquifer.

Only one shallow monitoring well (MW-07S) located on the western portion of the site had SVOC contamination above 100 µg/L. Naphthalene, a compound commonly associated with coal tar NAPL contamination, was only detected in one groundwater sample above the screening level (MW-06S). Except for the MW-07S sample, SVOC groundwater contamination in the shallow aquifer is more than 100 times less than SVOC groundwater contamination identified in the intermediate aquifer.

PFAS compounds were detected in all the shallow groundwater samples; perfluorooctanesulfonic acid (PFOS) exceeded the screening level in all samples and perfluorooctanoic acid (PFOA) exceeded the screening level in nearly all samples.

Metals contamination in the shallow aquifer is higher than the contamination detected in the intermediate or deep aquifers and may be the result of historic fill material on the site.

A small upward groundwater gradient appears to be located on the western portion of the site based on a comparison of groundwater elevations from the shallow and intermediate aquifers during the April 15 and July 11, 2024, well gauging events.

A thin (less than 0.1-foot-thick) layer of LNAPL product was detected in one shallow monitoring well (MW-05S) during one gauging event. DNAPL product was not identified in any of the monitoring wells screened within the shallow aquifer during well gauging events.

Intermediate Aquifer

Groundwater samples were collected from 12 monitoring wells screened within the intermediate aquifer, two wells located in the east-central portion of the site, three wells located along the northern bulkhead of the site, and seven wells located on the western portion of the Owls Head CSO facility property.

Except for the two wells located in the east-central (upgradient) portion of the site, OH-MW01I and MW-04I, all of the other 10 monitoring wells contained VOCs above 1,000 µg/L. Similar to the shallow monitoring wells, more than 75% of the VOC contamination is from BTEX compounds. VOC groundwater contamination in the intermediate aquifer is higher than VOC groundwater contamination identified in the shallow or deep aquifers.

Except for the two wells located in the east-central (upgradient) portion of the site, OH-MW01I and MW-04I, the other 10 intermediate monitoring wells identified SVOC contamination above 600 µg/L, with more than 25,000 µg/L identified in monitoring wells OH-MW03I and MW-06I. Naphthalene was detected above the screening level of 10 µg/L in 10 of the intermediate monitoring wells, with concentrations more than 100 times the screening level identified in seven of the wells. SVOC groundwater contamination in the intermediate aquifer is 10 times higher than SVOC groundwater contamination identified in the shallow or deep aquifers.

PFAS compounds were detected in all the intermediate groundwater samples; PFOA exceeded the screening level in six of the 12 wells and PFOS exceeded the screening level in one well.

Metals concentrations in the intermediate aquifer are lower than concentrations in the shallow aquifer, but above the concentrations detected in the deep aquifer.

A thin (less than 0.1-foot-thick) layer of LNAPL product was detected in eight of the 12 intermediate monitoring wells during well gauging events. More than 1 foot of DNAPL product was identified in up to seven of the 12 monitoring wells screened within the intermediate aquifer during well gauging events.

Deep Aquifer

Groundwater samples were collected from seven monitoring wells screened within the deep aquifer, one well located in the east-central portion of the site and six wells located on the western portion of the Owls Head CSO facility property.

VOCs were detected in three of the shallow monitoring wells located on the western portion of the site (OH-MW03D, MW-06D and MW-07D) exceeding 1,000 µg/L; more than 65% of this contamination is from BTEX compounds. SVOCs were detected in these same three wells also exceeding 1,000 µg/L. Naphthalene was detected above the screening level in five of the seven wells; concentrations above 500 µg/L were detected in two of the wells (OH-MW03D and MW-07D). VOC and SVOC groundwater contamination in the deep aquifer is less than VOC groundwater contamination in the intermediate aquifer.

PFAS compounds were detected in all the deep groundwater samples; PFOA and PFOS exceeded the screening level in one well (MW-06D).

Metals concentrations in the deep aquifer are similar or lower than the concentrations detected in the shallow and intermediate aquifers.

A thin (less than 0.1-foot-thick) layer of LNAPL product was detected in one deep monitoring well (MW-06D) during one gauging event. DNAPL product was not identified in any monitoring wells screened within the deep aquifer during well gauging events.

Owls Head Subsurface Conclusions

The Gowanus Canal extends to about 30 feet below mean sea level (MSL), which is equivalent to about 35 to 37 feet bgs on the Owls Head CSO facility site. As such, NAPL contamination from the Citizens-Carroll Garden MGP site could only migrate onto the Owls Head CSO facility site through the intermediate and deeper overburden aquifers.

None of soil in the shallow aquifer zone from the eight boreholes had visual evidence of NAPL impacts, GCM impacts, or volatile organic vapors at a significant concentration to indicate NAPL impacts. As such, the NAPL observed at depth throughout the Owls Head CSO facility site does not appear to be the result of surface or near-surface releases from the Owls Head CSO facility site itself.

The majority of the NAPL-impacted soil was identified in soils within the intermediate aquifer zone (32 to 53 feet bgs or 28 to 46 feet below MSL) on the western third of the property and adjacent to the northern bulkhead. NAPL-impacted soil was only identified in one soil sample from the deep aquifer zone at borehole location OH-SB06 (78 to 79 feet bgs), but these VOC and SVOC concentrations were generally lower than contamination detected in the intermediate aquifer zone samples. This data suggests that the majority of the NAPL contamination migrating onto the site is through the intermediate aquifer and there are limited pathways that connect the intermediate and deep aquifers on the Owls Head CSO facility site.

Except for the OH-SB04-Z33-34 soil sample from borehole SB-04, total SVOC concentrations were higher than total VOC concentrations in soil samples.

5 References

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Tables

Table 2-1 Soil Sample Summary
Citizens-Carroll Garden MGP Off-Site Investigation
Owls Head Site, Brooklyn, NY

Boring No.	Total Boring Depth (ft bgs)	Sample Date	Field Sample ID	Soil Sample Interval (ft bgs)	Sample Description
OH-SB01	100	3/18/2024	OH-SB01-Z44-45	44-45	Poorly graded fine sand
		3/19/2024	OH-SB01-Z94-95	94-95	Poorly graded fine silty sand
OH-SB02	100	3/20/2024	OH-SB02-Z37-38	37-38	NAPL coated poorly graded sand
		3/20/2024	OH-SB02-Z64-65	64-65	1 ft. below last observed contamination
OH-SB03	100	3/29/2024	OH-SB03-Z37-38	37-38	NAPL saturated silty sand
		3/29/2024	OH-SB03-Z51-52	51-52	NAPL saturated sand
		3/29/2024	OH-SB03-Z67-68	67-68	1 ft. below last observed contamination
OH-SB04	100	4/1/2024	OH-SB04-Z33-34	33-34	NAPL saturated poorly graded sand
		4/1/2024	OH-SB04-Z52-53	52-53	NAPL saturated silty sand
		4/1/2024	OH-SB04-Z62-63	62-63	1 ft. below last observed contamination
OH-SB05	100	3/27/2024	OH-SB05-Z32-33	32-33	NAPL saturated poorly graded sand
		3/27/2024	OH-SB05-Z41-42	41-42	heavily NAPL saturated sandy silt
		3/27/2024	OH-SB05-Z41-42-Q	41-42	heavily NAPL saturated sandy silt
		3/27/2024	OH-SB05-Z71-72	71-72	NAPL saturated poorly graded sand
		3/27/2024	OH-SB05-Z75-76	75-76	1 ft. below last observed contamination
OH-SB06	100	3/21/2024	OH-SB06-Z37-38	37-38	NAPL saturated well graded sand
		3/21/2024	OH-SB06-Z71-72	71-72	NAPL sheen in well graded sand
		3/21/2024	OH-SB06-Z78-79	78-79	1 ft. below last observed contamination
OH-SB07	100	3/25/2024	OH-SB07-Z31-32	31-32	NAPL saturated well graded sand
		3/25/2024	OH-SB07-Z52-53	52-53	1 ft. below last observed contamination
OH-SB08	100	3/26/2024	OH-SB08-Z31-32	31-32	NAPL saturated poorly graded sand
		3/26/2024	OH-SB08-Z41-42	41-42	NAPL saturated poorly graded sand
		3/26/2024	OH-SB08-Z47-48	47-48	1 ft. below last observed contamination

Key:
ft bgs = feet below ground surface

Source: Ecology and Environment Engineering and Geology, P.C.

Table 2-2 Well Construction Summary
Citizens-Carroll Garden MGP Off-Site Investigation
Owls Head Site, Brooklyn, NY

Well ID	Installation Date	Northing [1]	Easting [1]	Top of Outer Casing Elevation [2] (feet AMSL)	Top of Inner Casing Elevation [(2)] (feet AMSL)	Total Drill Depth (ft bgs)	Borehole Backfill Interval (ft bgs)	Screen Interval (ft bgs)	Filter Pack Interval (ft bgs)
Shallow Monitoring Wells									
OH-MW01S	3/19/2024	185330.18	986433.51	7.54	7.19	14	N/A	3-13	2-14
OH-MW04S	4/2/2024	185448.38	986152.99	6.01	5.60	16	N/A	5-15	4-16
OH-MW05S	3/28/2024	185538.67	986044.72	6.47	6.00	14	N/A	3-13	2-14
OH-MW06S	3/22/2024	185515.18	986225.37	9.88	9.56	21	N/A	10-20	8-21
Intermediate Monitoring Wells									
OH-MW01I	3/19/2024	185328.91	986436.53	7.44	7.16	100	48-100	35-45	33-48
OH-MW02I [3]	3/20/2024	185448.91	986278.05	6.73	6.40	100	46-100	32-42	30-46
OH-MW03I	4/1/2024	185432.43	986037.80	6.56	6.33	43	N/A	32-42	30-43
OH-MW04I	4/2/2024	185446.16	986155.61	6.01	5.76	100	51-100	39-49	37-51
OH-MW05I	3/28/2024	185538.74	986047.33	6.48	6.16	43	N/A	32-42	30-43
OH-MW06I	3/22/2024	185516.59	986221.64	9.89	9.48	45	N/A	34-44	32-45
OH-MW07I	3/25/2024	185459.53	986464.35	9.67	9.33	100	36-100	27-37	26-39
OH-MW08I	3/26/2024	185426.71	986610.52	9.10	8.64	100	42-100	30-40	29-42
Deep Monitoring Wells									
OH-MW03D	3/29/2024	185434.28	986035.38	6.66	6.44	100	67-100	55-65	53-67
OH-MW05D	3/27/2024	185537.83	986052.62	6.46	5.99	100	78-100	66-76	64-78
OH-MW06D	3/22/2024	185518.08	986218.18	9.97	9.44	100	77-100	65-75	63-77

Notes:

[1] New York State Plane Long Island, feet, North American Datum 1983.

[2] All elevations are in feet referenced to North American Vertical Datum of 1988 (NAVD88)
Northing and Easting coordinates were measured during the survey conducted on April 10, 2024.

[3] A two-foot sump was added to the bottom of the screen at monitoring well OH-MW02I.

Key:

AMSL = above mean sea level
ft bgs = feet below ground surface
N/A = Not Applicable; no backfill needed

Source: Ecology and Environment Engineering and Geology, P.C.

Table 2-3 Monitoring Well Development Summary
Citizens-Carroll Garden MGP Off-Site Investigation
Owls Head Site, Brooklyn, NY

	Development Date	Development Method	Depth to Water (ft BTOIC)	Groundwater Elevation (feet AMSL)	Measured Well Depth (ft BTOIC)	Purged Volume (gallons)	Final pH (s.u.)	Final Temperature (^{o}C)	Final Conductivity (µS/cm)	Final Turbidity (NTUs)
Shallow Monitoring Wells										
OH-MW01S	3/26/2024	bailer	2.89	4.296	13.17	55	8.42	10.97	5730	>1000
OH-MW04S	4/9/2024	bailer and submersible	NM	NM	14.05	20	7.25	13.92	3390	>1000
OH-MW05S	4/1/2024	submersible	7.51	-1.5102	12.64	55	7.52	9.90	22820	35.6
OH-MW06S	3/26/2024	bailer	9.43	0.1296	19.51	55	8.14	9.49	18000	>1000
Intermediate Monitoring Wells										
OH-MW01I	3/26/2024	bailer	3.33	3.827	44.84	55	8.71	11.33	5470	>1000
OH-MW02I	3/27-28/2024	bailer and submersible	2.81	3.589	43.78	80	7.85	13.80	19700	35.2
OH-MW03I	4/3/2024	submersible	3.41	2.921	40.90	55	No readings due to water/product mixture			
OH-MW04I	4/9/2024	submersible	NM	NM	48.04	90	8.09	15.02	23800	28.7
OH-MW05I	4/1/2024	submersible	3.34	2.815	41.00	75	6.89	14.10	31180	23.6
OH-MW06I	4/2/2024	submersible	6.78	2.6989	43.96	65	No readings due to water/product mixture			
OH-MW07I	3/29/2024	submersible	7.84	1.49	34.00	95	7.82	12.20	18790	>1000
OH-MW08I	3/28/2024	submersible	6.64	1.998	38.00	55	7.68	13.70	9349	504
Deep Monitoring Wells										
OH-MW03D	4/3/2024	submersible	2.57	3.868	57.45	110	8.38	12.84	25800	152
OH-MW05D	4/1/2024	submersible	3.35	2.6445	68.48	75	7.67	13.90	15070	432
OH-MW06D	4/2/2024	submersible	6.13	3.3128	73.15	65	8.10	13.19	10100	23.6

Key:
AMSL = above mean sea level
BTOIC = below top of inner casing
NM = not measured
NTUs = Nephelometric turbidity units
^{o}C = Degrees Celsius
s.u. = standard units
µS/cm = microSiemens per centimeter

Source: Ecology and Environment Engineering and Geology, P.C.

Table 2-4 Depth to Water and Product Measurements
Citizens-Carroll Garden MGP Off-Site Investigation
Owls Head Site, Brooklyn, NY

Well ID	Top of Outer Casing Elevation* (feet AMSL)	Top of Inner Casing Elevation* (feet AMSL)	Measured Well Depth (ft BTOIC)	Depth to Water (ft BTOIC)	Water Elevation (feet)	Depth to LNAPL Product (ft BTOIC)	Product Thickness (feet)	Depth to Water (ft BTOIC)	Water Elevation (feet)	Depth to LNAPL Product (ft BTOIC)	Product Thickness (feet)	Depth to Water (ft BTOIC)	Water Elevation (feet)	Depth to LNAPL Product (ft BTOIC)	Product Thickness (feet)	Depth to Water (ft BTOIC)	Water Elevation (feet)	Depth to LNAPL Product (ft BTOIC)	Product Thickness (feet)	Depth to DNAPL Product (ft BTOIC)	DNAPL Product Thickness (feet)
				4/3/24-4/4/2024				4/15/2024				7/11/2024				9/23/2024					
Shallow Monitoring Wells																					
OH-MW01S	7.54	7.19	13.2	2.89	4.30	ND	ND	3.17	4.02	ND	ND	3.29	3.90	ND	ND	2.90	4.29	ND	ND	ND	ND
MW-04S	8.07	7.82	9.8	3.55	4.27	ND	ND	3.97	3.85	ND	ND	Inaccessible				Inaccessible					
OH-MW04S	6.01	5.60	14.8	NM	NM	NM	NM	2.97	2.63	ND	ND	3.26	2.34	ND	ND	2.77	2.83	ND	ND	ND	ND
MW-05S	5.45	5.05	9.7	0.60	4.45	ND	ND	2.53	2.52	ND	ND	2.78	2.27	FILM	FILM	2.16	2.89	ND	ND	ND	ND
OH-MW05S	6.47	6.00	12.8	7.51	-1.51	ND	ND	7.39	-1.39	ND	ND	3.93	2.07	ND	ND	3.41	2.59	ND	ND	ND	ND
MW-06S	5.39	5.18	8.1	0.04	5.14	ND	ND	2.45	2.73	ND	ND	3.60	1.58	ND	ND	3.45	1.73	ND	ND	ND	ND
OH-MW06S	9.88	9.56	19.5	9.43	0.13	ND	ND	9.76	-0.20	ND	ND	8.08	1.48	ND	ND	8.75	0.81	ND	ND	ND	ND
MW-07S	7.50	7.21	10.5	5.88	1.33	ND	ND	6.22	0.99	ND	ND	5.94	1.27	ND	ND	4.70	2.51	ND	ND	ND	ND
Intermediate Monitoring Wells																					
OH-MW01I	7.44	7.16	44.8	3.33	3.83	ND	ND	4.54	2.62	ND	ND	3.98	3.18	ND	ND	3.80	3.36	ND	ND	ND	ND
OH-MW02I	6.73	6.40	43.8	2.81	3.59	FILM	FILM	3.75	2.65	FILM	FILM	Inaccessible				Inaccessible					
OH-MW03I	6.56	6.33	40.9	3.41	2.92	3.34	0.07	3.73	2.60	3.71	0.02	3.62	2.71	FILM	FILM	3.46	2.87	ND	ND	32.60	8.30
MW-04I	8.08	7.31	36.9	3.60	3.71	ND	ND	3.66	3.65	ND	ND	Inaccessible				Inaccessible					
OH-MW04I	6.01	5.76	48.1	NM	NM	NM	NM	3.20	2.56	3.19	0.01	2.80	2.96	ND	ND	3.33	2.43	ND	ND	45.19	2.86
MW-05I	5.49	5.18	35.8	2.19	2.99	ND	ND	2.52	2.66	ND	ND	Inaccessible				2.20	2.98	ND	ND	ND	ND
OH-MW05I	6.48	6.16	41.9	3.34	2.82	3.30	0.04	3.24	2.92	3.18	0.06	2.86	3.30	FILM	FILM	3.27	2.89	ND	ND	40.55	1.35
OH-MW06I	9.89	9.48	44.0	6.78	2.70	6.74	0.04	6.82	2.66	6.76	0.06	6.33	3.15	FILM	FILM	6.50	2.98	ND	ND	39.96	4.00
MW-06I	5.62	5.22	44.6	1.82	3.40	1.80	0.02	2.35	2.87	2.30	0.05	2.17	3.05	FILM	FILM	2.58	2.64	2.56	0.02	37.84	6.76
MW-07I	7.58	7.22	40.8	4.90	2.32	4.88	0.02	4.32	2.90	4.3	0.02	4.13	3.09	FILM	FILM	4.26	2.96	ND	ND	ND	ND
OH-MW07I	9.67	9.33	36.0	7.84	1.49	7.78	0.06	NA	NA	NA	NA	7.72	1.61	FILM	FILM	7.18	2.15	ND	ND	29.39	6.61
OH-MW08I	9.10	8.64	39.1	6.64	2.00	6.60	0.04	6.74	1.90	6.68	0.06	5.94	2.70	FILM	FILM	6.58	2.06	ND	ND	26.56	12.54
Deep Monitoring Wells																					
OH-MW03D	6.66	6.44	64.5	2.57	3.87	ND	ND	3.21	3.23	ND	ND	2.78	3.66	ND	ND	2.84	3.60	ND	ND	ND	ND
MW-04D	8.07	7.67	70.6	3.30	4.37	ND	ND	3.66	4.01	ND	ND	Inaccessible				Inaccessible					
MW-05D	5.53	5.20	71.9	NM	NM	NM	NM	1.39	3.81	ND	ND	1.38	3.82	ND	ND	1.27	3.93	ND	ND	ND	ND
OH-MW05D	6.46	5.99	71.9	3.35	2.64	3.31	0.04	4.56	1.43	ND	ND	2.58	3.41	ND	ND	2.90	3.09	ND	ND	ND	ND
OH-MW06D	9.97	9.44	73.9	6.13	3.31	6.11	0.02	6.02	3.42	ND	ND	5.65	3.79	ND	ND	6.15	3.29	ND	ND	ND	ND
MW-06D	5.51	5.26	72.3	1.58	3.68	FILM	FILM	1.83	3.43	ND	ND	1.57	3.69	ND	ND	2.13	3.13	ND	ND	ND	ND
MW-07D	7.61	6.92	72.6	3.44	3.48	ND	ND	3.94	2.98	ND	ND	3.60	3.32	ND	ND	3.84	3.08	ND	ND	ND	ND

Notes:

1) All elevations are in feet referenced to North American Vertical Datum of 1988 (NAVD88)
2) DNAPL is present at the bottom of two wells, about 6 feet thick in MW-06I and about 4.8 feet thick in MW-07D.

Key:

AMSL = above mean sea level
BTOIC = below top of inner casing
DNAPL = Dense non-aquious phase liquid
ft BTOIC = feet below top of inner casing
LNAPL = Light non-aqueous phase liquid
ND = not detected
NM = not measured

Source: Ecology and Environment Engineering and Geology, P.C.

Table 2-5 Monitoring Well Sampling Summary
Citizens-Carroll Garden MGP Off-Site Investigation
Owls Head Site, Brooklyn, NY

Well ID	Sampling Date	Sampling Method	Purge Volume (L)	Final pH (s.u.)	Final Temperature (°C)	Final Conductivity (µS/cm)	Final Turbidity (NTUs)	Redox Potential (mV)	Dissolved Oxygen (mg/L)
Shallow Monitoring Wells									
OH-MW01S	4/4/2024	bailer	13	7.98	11.33	6450	>1000	2	0
MW-04S	4/5/2024	bailer	3	7.54	10.95	14100	>1000	-135	92.8
OH-MW04S	4/11/2024	bailer	9	7.51	14.98	1880	>1000	-90	4.41
MW-05S	4/10/2024	bailer	8	7.42	13.38	4130	>1000	-136	0
OH-MW05S	4/11/2024	bailer	11	6.20	13.55	21300	48.6	-185	1.16
MW-06S	4/9/2024	bailer	15	6.87	15.43	1530	>1000	-51	0
OH-MW06S	4/12/2024	bailer	10	5.81	12.51	15600	>1000	-149	3.25
MW-07S	4/5/2024	bailer	6	7.92	10.69	24100	438	105	1.40
Intermediate Monitoring Wells									
OH-MW01I	4/4/2024	low flow	9	8.74	13.11	5500	157	-19	0
OH-MW02I	4/5/2024	bailer	30	8.82	10.33	23400	149	-25	0
OH-MW03I	4/10/2024	bailer	20	6.79	17.17	4070	38.2	-83	0.21
MW-04I	4/4/2024	low flow	8	8.03	15.25	1930	402	-39	67.8
OH-MW04I	4/11/2024	bailer	37	5.92	16.40	20400	59	-122	2.87
MW-05I	4/10/2024	bailer	25	7.62	16.61	9190	516	-64	1.89
OH-MW05I	4/11/2024	bailer	35	5.90	15.58	3040	44.1	-113	0.57
MW-06I	4/9/2024	bailer	35	6.23	16.60	2430	>1000	-81	0
OH-MW06I	4/12/2024	bailer	40	5.72	16.34	6170	155	-90	0.79
MW-07I	4/5/2024	bailer	40	7.73	12.94	2860	422	-19	0
OH-MW07I	4/15/2024	bailer	20	7.12	20.41	2030	>1000	-129	0
OH-MW08I	4/15/2024	bailer	25	6.56	19.32	7740	532	-110	0
Deep Monitoring Wells									
OH-MW03D	4/10/2024	low flow	3	7.36	15.10	20200	135	12	2.98
MW-04D	4/4/2024	low flow	3	7.81	15.13	1060	144	64	19.4
MW-05D	4/10/2024	low flow	2	7.25	13.82	5060	16.0	10	2.36
OH-MW05D	4/11/2024	low flow	3	7.40	14.54	11000	97.1	3	3.5
MW-06D	4/9/2024	low flow	2	8.40	16.08	15200	75	-48	0
OH-MW06D	4/12/2024	low flow	2	7.19	11.91	9020	24.7	9	0
MW-07D	4/5/2024	low flow	3	7.54	14.56	18700	179	-120	0

Key:
mg/L = milligrams per liter
mV = millivolts
NTUs = Nephelometric Turbidity Units
°C = Degrees Celsius
s.u. = standard unit
µS/cm = microSiemens per centimeter

Source: Ecology and Environment Engineering and Geology, P.C.

Table 3-1 Summary of Positive Analytical Results for Soil Samples
Citizens-Carroll Garden MGP Off-Site Investigation Owl's Head Site, Brooklyn, NY

Analyte	Unrestricted [1]	Note	Protection of Groundwater [2]	Location ID: OH-SB01-Z 44-45	OH-SB01-Z 94-95	OH-SB02-Z 37-38	OH-SB02-Z 64-65	OH-SB03-Z37-38	OH-SB03-Z51-52	OH-SB03-Z67-68	OH-SB04-Z33-34	OH-SB04-Z52-53	OH-SB04-Z62-63	OH-SB05-Z 32-33	OH-SB05-Z 41-42	OH-SB05-Z 41-42
				Depth: 44 - 45 ft	94 - 95 ft	37 - 38 ft	64 - 65 ft	37 - 38 ft	51 - 52 ft	67 - 68 ft	33 - 34 ft	52 - 53 ft	62 - 63 ft	32 - 33 ft	41 - 42 ft	41 - 42 ft
				Date: 03/18/24	03/19/24	03/20/24	03/20/24	03/29/24	03/29/24	03/29/24	04/01/24	04/01/24	04/01/24	03/27/24	03/27/24	03/27/24
Volatile Organic Compoundss by Method SW8260 (mg/kg)																
1,2,4-Trimethylbenzene	3.6	f	3.6	0.0025 U	0.0024 U	**170**	**0.020**	**140**	**5.6**	0.0026 U	**1600**	**2.3**	**0.011**	**230**	**350**	**420**
1,3,5-Trimethylbenzene (Mesitylene)	8.4	f	8.4	0.0025 U	0.0024 U	**54**	**0.0063**	**59**	**2.0**	0.0026 U	**100**	0.0019 U	**0.0036 J**	**61**	**110**	**140**
Acetone	0.05		0.05	0.005 U	0.0047 U	0.57 U	0.0044 U	1.1 U	0.62 U	0.0051 U	0.94 U	**0.0042 J**	0.0049 U	0.99 U	1.1 U	1.1 U
Benzene	0.06		0.06	0.0025 U	0.0024 U	**13**	0.0022 U	**59**	0.31 U	0.0026 U	**53**	**0.5 J**	0.0024 U	**75**	**71**	**85**
Chloroform	0.37		0.37	0.0025 U	0.0024 U	0.28 U	0.0022 U	0.56 U	0.31 U	0.0026 U	0.47 U	**0.0048**	0.0024 U	0.5 U	0.56 U	0.53 U
Ethylbenzene	1	f	1	0.0025 U	0.0024 U	**140**	**0.016**	**220**	**7.6**	0.0026 U	**1200**	**2.9**	**0.0099**	**320**	**520 J**	**630**
Isopropylbenzene (Cumene)	N/A		N/A	0.0025 U	0.0024 U	**9.3**	0.0022 U	**8.2**	**0.44 J**	0.0026 U	**14**	**0.084**	0.0024 U	**41**	**52**	**70**
Methyl Acetate	N/A		N/A	0.0025 U	0.0024 U	0.28 U	0.0022 U	0.56 U	0.31 U	0.0026 U	0.47 U	0.0019 U	0.0024 U	0.5 U	0.56 U	**0.57 J**
Methyl Ethyl Ketone (2-Butanone)	0.12		0.12	0.0025 U	0.0024 U	0.28 U	0.0022 U	0.56 U	0.31 U	0.0026 U	0.47 U	0.0019 U	0.0024 U	0.5 U	0.56 U	0.53 U
Methylcyclohexane	N/A		N/A	0.0025 U	0.0024 U	**0.29 J**	0.0022 U	0.56 U	0.31 U	0.0026 U	**0.61 J**	**0.0026 J**	0.0024 U	0.5 U	**0.66 J**	**0.75 J**
Methylene Chloride	0.05		0.05	0.005 U	0.0047 U	**0.6 J**	0.0044 U	**1.2 J**	**0.94 J**	**0.0055 J**	**0.98 J**	0.0038 U	0.0049 U	**8.6**	**10**	**7.6**
N-Butylbenzene	12	f	12	0.0025 U	0.0024 U	**3.5**	0.0022 U	0.56 U	0.31 U	0.0026 U	0.47 U	0.0019 U	0.0024 U	**31**	**19**	0.53 U
N-Propylbenzene	3.9	f	3.9	0.0025 U	0.0024 U	**12**	0.0022 U	**9.8**	**0.38 J**	0.0026 U	**19**	**0.035**	0.0024 U	**13**	**16**	**20**
P-Cymene (P-Isopropyltoluene)	N/A		N/A	0.0025 U	0.0024 U	**12**	0.0022 U	**9.9**	**0.52 J**	0.0026 U	**30**	**0.053**	0.0024 U	**24**	**30**	**38**
Sec-Butylbenzene	11	f	11	0.0025 U	0.0024 U	**0.95**	0.0022 U	0.56 U	0.31 U	0.0026 U	0.47 U	0.0019 U	0.0024 U	0.5 U	0.56 U	**1.4**
Styrene	N/A		N/A	0.0025 U	0.0024 U	**40**	**0.0026 J**	**15**	**1.0**	0.0026 U	**130**	0.0019 U	0.0024 U	0.5 U	0.56 U	0.53 U
Toluene	0.7		0.7	0.0025 U	0.0024 U	**18**	0.0022 U	**83**	**2.3**	0.0026 U	**130**	**0.56 J**	0.0024 U	**2.7**	**14**	**270**
Total Xylenes	0.26	k	1.6	0.0076 U	0.0071 U	**230**	**0.026**	**270**	**10**	0.0077 U	**2300**	**3.9**	**0.012 J**	**160**	**580**	**830**
			Total VOCs:	**ND**	**ND**	**704**	**0.05**	**875**	**31**	**0.006**	**5,578**	**10**	**0.04**	**966**	**1,773**	**2,513**
			Total BTEX:	**ND**	**ND**	**401**	**0.04**	**632**	**20**	**ND**	**3,683**	**7.9**	**0.02**	**558**	**1,185**	**1,815**
Semivolatile Organics by Method SW8270 (mg/kg)																
2-Methylnaphthalene	N/A		N/A	0.0515 U	0.0499 U	**1210**	0.0495 U	**520**	**78.1**	**0.0645 J**	**417**	**2.83**	0.0486 U	**239**	**348**	**407**
3,3'-Dichlorobenzidine	N/A		N/A	0.0515 U	0.0499 U	0.24 UR	0.0495 U	**2.28**	0.0528 U	0.0546 U	0.0459 U	0.0508 U	0.0486 U	2.38 U	5.09 U	2.42 U
4-Nitroaniline	N/A		N/A	0.103 U	0.0995 U	0.478 UJ	0.0988 U	0.101 U	0.105 U	0.109 U	0.0916 U	0.101 U	0.097 U	**9.34 J**	**27.8**	**15**
Acenaphthene	20		98	0.0515 U	0.0499 U	**111**	0.0495 U	**29.7**	**12.7**	0.0546 U	**93.1**	**1.27**	0.0486 U	**120**	**153**	**187**
Acenaphthylene	100	a, f	107	0.0515 U	0.0499 U	**612**	0.0495 U	**253**	**36.5**	**0.0784 J**	**172**	**2.03**	0.0486 U	**94.9**	**266**	**154**
Anthracene	100	a, f	1000	0.0515 U	0.0499 U	**569**	0.0495 U	**133**	**1.6**	0.0546 U	**115**	**1.13**	0.0486 U	**58.3**	**75.1**	**90**
Benzidine	N/A		N/A	0.206 U	0.199 U	0.958 U	0.198 U	**0.208 J**	0.211 U	0.218 U	0.183 UJ	0.203 UJ	0.194 U	9.51 U	20.3 U	9.68 U
Benzo(A)Anthracene	1	c, f	1	0.0515 U	0.0499 U	**344**	0.0495 U	**73.8**	**12.9**	0.0546 U	**112**	**0.629**	0.0486 U	**133**	**322**	**154**
Benzo(A)Pyrene	1	c	22	0.0515 U	0.0499 U	**137 J**	0.0495 U	**50.5**	**8.64**	0.0546 U	**74**	**0.474**	0.0486 U	**112**	**264**	**126**
Benzo(B)Fluoranthene	1	c, f	1.7	0.0515 U	0.0499 U	**102**	0.0495 U	**26.2**	**6.65**	0.0546 U	**60.5**	**0.38**	0.0486 U	**81.1**	**197**	**94**
Benzo(G,H,I)Perylene	100	f	1000	0.0515 U	0.0499 U	**46.3 J**	0.0495 U	**12.8**	**3.17**	0.0546 U	**31.2**	**0.182**	0.0486 U	**32.9**	**77.8**	**36.9**
Benzo(K)Fluoranthene	0.8	c, f	1.7	0.0515 U	0.0499 U	**92.8**	0.0495 U	**8.42**	**2.28**	0.0546 U	**21.1**	**0.109**	0.0486 U	**26.1**	**62.5**	**31.3**
Biphenyl (Diphenyl or 1,1'-Biphenyl)	N/A		N/A	0.0515 U	0.0499 U	**106**	0.0495 U	**62.6**	**10**	0.0546 U	**80**	**0.403**	0.0486 U	**92.4**	**227**	**121**
Carbazole	N/A		N/A	0.0515 U	0.0499 U	**6.19**	0.0495 U	**3.19**	**0.593**	0.0546 U	0.0459 U	0.0508 U	0.0486 U	**7.14**	**20.7**	**10.7**
Chrysene	1	c, f	1	0.0515 U	0.0499 U	**300**	0.0495 U	**60.9**	**10.7**	0.0546 U	**97.3**	**0.513**	0.0486 U	**111**	**275**	**130**
Dibenz(A,H)Anthracene	0.33	b, f	1000	0.0515 U	0.0499 U	**12.7 J**	0.0495 U	**4.56 J**	**1.29 J**	0.0546 U	**11.2**	**0.0608 J**	0.0486 U	**11.6 J**	**29.6 J**	**14.5 J**
Dibenzofuran	7	f	210	0.0515 U	0.0499 U	2.4 U	0.0495 U	**10.9**	**3.08**	0.0546 U	**27.1**	**0.128**	0.0486 U	**27.5**	**67.6**	**34.8**
Di-N-Butyl Phthalate	N/A		N/A	0.0515 U	0.0499 U	0.24 U	0.0495 U	**0.202**	0.0528 U	0.0546 U	0.0459 U	0.0508 U	0.0486 U	2.38 U	5.09 U	2.42 U
Fluoranthene	100	a, f	1000	0.0515 U	0.0499 U	**656**	0.0495 U	**127**	**22.9**	0.0546 U	**101**	**1.2**	0.0486 U	**54.9**	**75.5**	**90.2**
Fluorene	30		386	0.0515 U	0.0499 U	**657**	0.0495 U	**146**	**30.4**	0.0546 U	**126**	**1.48**	0.0486 U	**60.5**	**94.2**	**117**
Indeno(1,2,3-C,D)Pyrene	0.5	c, f	8.2	0.0515 U	0.0499 U	**46.7 J**	0.0495 U	**1.1 J**	**4.1 J**	0.0546 U	**32.8 J**	**0.218 J**	0.0486 U	**41.2 J**	**98.4 J**	**49.1 J**
Naphthalene	12	f	12	0.0515 U	0.0499 U	**1840**	0.0495 U	**804**	**117**	**0.148**	**612**	**3.44**	0.0486 U	**362**	**582**	**579**
N-Nitrosodiphenylamine	N/A		N/A	0.0515 UJ	0.0499 UJ	0.24 U	0.0495 U	0.0507 UJ	0.0528 UJ	0.0546 UJ	0.0459 U	0.0508 U	0.0486 U	**58.8 J**	5.09 U	2.42 U
Phenanthrene	100		1000	0.0515 U	0.0499 U	**1120**	0.0495 U	**374**	**60.2**	**0.0723 J**	**344**	**2.73**	0.0486 U	**194**	**258**	**302**
Pyrene	100	f	1000	0.0515 U	0.0499 U	**702**	0.0495 U	**146**	**26.9**	0.0546 U	**140**	**1.41**	0.0486 U	**77.1**	**97.4**	**111**
			Total SVOCs:	**ND**	**ND**	**8,671**	**ND**	**2,850**	**450**	**0.36**	**2,667**	**21**	**ND**	**2,005**	**3,619**	**2,855**

Key at end of table.

Source: Ecology and Environment Engineering, P.C.

Table 3-1 Summary of Positive Analytical Results for Soil Samples
Citizens-Carroll Garden MGP Off-Site Investigation Owl's Head Site, Brooklyn, NY

Analyte	Unrestricted [1]	Note	Protection of Groundwater [2]	Location ID: OH-SB01-Z 44-45	OH-SB01-Z 94-95	OH-SB02-Z 37-38	OH-SB02-Z 64-65	OH-SB03-Z37-38	OH-SB03-Z51-52	OH-SB03-Z67-68	OH-SB04-Z33-34	OH-SB04-Z52-53	OH-SB04-Z62-63	OH-SB05-Z 32-33	OH-SB05-Z 41-42	OH-SB05-Z 41-42
				Depth: 44 - 45 ft	94 - 95 ft	37 - 38 ft	64 - 65 ft	37 - 38 ft	51 - 52 ft	67 - 68 ft	33 - 34 ft	52 - 53 ft	62 - 63 ft	32 - 33 ft	41 - 42 ft	41 - 42 ft
				Date: 03/18/24	03/19/24	03/20/24	03/20/24	03/29/24	03/29/24	03/29/24	04/01/24	04/01/24	04/01/24	03/27/24	03/27/24	03/27/24
Organochlorine Pesticides by Method SW8081 (mg/kg)																
Endrin Aldehyde	N/A		N/A	0.00204 U	0.00197 U	0.00189 U	0.00195 U	0.00201 U	**0.00439**	0.00216 U	0.00181 U	0.00203 U	0.00192 U	0.00187 U	0.00197 U	0.00189 U
Gamma Bhc (Lindane)	0.1		0.1	0.00204 U	0.00197 U	0.00189 U	0.00195 U	0.00201 U	0.00209 U	0.00216 U	**0.00321**	0.00203 U	0.00192 U	0.00187 U	0.00197 U	0.00189 U
Methoxychlor	N/A		N/A	0.00204 U	0.00197 U	0.00189 U	0.00195 U	0.00201 U	0.00209 U	0.00216 U	**0.237 P**	0.00203 U	0.00192 U	0.00187 U	0.00197 U	0.00189 U
P,P'-DDT	0.0033	b	136	0.00204 U	0.00197 U	0.00189 U	0.00195 U	0.00201 U	0.00209 U	0.00216 U	0.00181 U	**0.00239**	0.00192 U	0.00187 U	0.00197 U	0.00189 U
PCBs by Method SW8082 (mg/kg)																
None detected.																
PFAS by Method E1633 (ug/kg)																
3-Perfluoropropyl propanoic acid	N/A		N/A	0.777 UJ	0.748 UJ	0.728 U	0.741 U	0.772 U	0.792 U	0.827 U	0.696 UJ	0.771 UJ	0.742 UJ	**10.9**	0.77 U	0.733 U
Perfluorobutanoic Acid	N/A		N/A	0.771 U	0.881 U	0.125 U	0.127 U	0.133 U	0.136 U	0.142 U	0.12 U	0.133 U	0.128 U	0.123 U	0.132 U	**0.349 J**
Perfluorohexanoic acid (PFHxA)	N/A		N/A	0.167 U	0.173 U	**0.107 J**	0.062 U	0.0645 U	0.0662 U	0.0692 U	0.0581 U	0.0644 U	0.062 U	0.0596 U	0.0643 U	0.0613 U
Perfluorononanesulfonic Acid (PFNS)	N/A		N/A	0.152 UJ	0.146 UJ	0.142 UJ	0.145 UJ	0.151 U	0.155 U	0.162 U	0.136 U	0.151 U	0.145 U	**0.251**	**0.163 J**	0.143 U
Perfluoropentanesulfonic Acid (PFPeS)	N/A		N/A	0.192 UJ	0.185 UJ	0.18 U	0.184 U	0.191 U	0.196 U	0.205 U	0.172 U	0.191 U	0.184 U	0.177 U	**0.209 J**	0.182 U
Perfluoropentanoic Acid (PFPeA)	1		1	0.342 UJ	0.339 UJ	0.125 U	0.127 U	0.133 U	**0.23 J**	0.142 U	0.12 U	0.133 U	0.128 U	0.123 U	0.132 U	**0.22 J**
Perfluorotetradecanoic acid (PFTA)	0.33		1000	**0.145 EMPC**	0.122 UJ	0.118 U	0.12 U	0.125 U	0.129 U	0.134 U	0.113 U	0.125 U	0.121 U	0.116 U	0.125 U	0.119 U
Metals by Method SW6010 (mg/kg)																
Aluminum	N/A		N/A	**3900**	**4720**	**3930**	**4360**	**7790 J+**	**4850 J+**	**7330 J+**	**3890 J+**	**3980 J+**	**4570 J+**	**3070 J+**	**3850 J+**	**3720 J+**
Arsenic	13	c	16	1.55 U	**2.83**	**2.08**	1.49 U	1.53 U	1.59 U	1.64 U	**2.5**	1.54 U	**1.7**	**3.06 J**	1.53 UJ	**1.46 J**
Barium	350	c	820	**80.1**	**43.1**	**65.7**	**76.9**	**56.4**	**131**	**78.1**	**37.6**	**58.5**	**52.2**	**12.8 J**	**59.9 J**	**48.5 J**
Beryllium	7.2		47	0.052 U	0.05 U	0.048 U	0.05 U	0.051 U	0.053 U	0.055 U	**0.335 J**	**0.226 J**	**0.091 J**	0.048 UJ	0.051 UJ	0.049 UJ
Calcium	N/A		N/A	**8820**	**7320**	**9190**	**9590**	**19800**	**9330**	**17200**	**1590**	**8820**	**10000**	**2250 J**	**7950 J**	**6330 J**
Chromium, Total	1	b, e	N/A	**8.93**	**10.9**	**8.71**	**9.38**	**14**	**10.5**	**13.5**	**8.3**	**9**	**12.5**	**15.7 J**	**8.44 J**	**8.34 J**
Cobalt	N/A		N/A	**3.89**	**3.92**	**3.64**	**3.93**	**6.04**	**4.43**	**5.89**	**4.77**	**3.29**	**4.36**	**6.29 J**	**3.37 J**	**3.17 J**
Copper	50		1720	**8.46**	**9.85**	**8.94**	**8.89**	**19.7**	**13**	**18.4**	**8.03**	**10.2**	**9.87**	**5.24**	**6.97**	**9.5**
Iron	N/A		N/A	**7820**	**9090**	**8000**	**8700**	**14600**	**9300**	**12600**	**9750**	**7560**	**9220**	**9110**	**7880**	**7360**
Lead	63	c	450	**3.68**	**6.4**	**3.83**	**4.52**	**6.02**	**4.09**	**5.55**	**5.95**	**4.37**	**5.98**	**12.3 J**	**7.04 J**	**5.31 J**
Magnesium	N/A		N/A	**4140**	**3550**	**4140 B**	**4380 B**	**8060**	**4770**	**7400**	**2480**	**4310**	**5780**	**9270**	**3870**	**3480**
Manganese	1600		2000	**224**	**206**	**257**	**235**	**386**	**261**	**336**	**223**	**256**	**254**	**106 J**	**222 J**	**206 J**
Nickel	30		130	**13.4**	**12.4**	**10.9**	**14.6**	**18.5**	**12.4**	**18.2**	**14.3**	**13.1**	**29.1**	**70.8 J**	**10.5 J**	**11.1 J**
Potassium	N/A		N/A	**1150**	**1170**	**1200**	**1210**	**2210**	**1700**	**2020**	**898**	**1190**	**1200**	**644 J**	**1140 J**	**1030 J**
Sodium	N/A		N/A	**249**	**268**	**735**	**419**	**413**	**1250**	**1270**	**261**	**455**	**527**	**172 J**	**469 J**	**361 J**
Vanadium	N/A		N/A	**12.5**	**13.9**	**13.3**	**13.1**	**18.3**	**16.8**	**17.6**	**14.3**	**11.1**	**14.6**	**14.3**	**12**	**11.2**
Zinc	109	c	2480	**16.2**	**25.7**	**14.2**	**18.9**	**29.9**	**17.3**	**31.3**	**22.2**	**24.9**	**20.7**	**15.3 J**	**14.5 J**	**13.4 J**
Mercury by Method SW7473 (mg/kg)																
Mercury	0.18	c	0.73	0.0372 U	0.0359 U	0.0345 U	0.0356 U	0.0367 U	0.0382 U	0.0395 U	0.0332 U	0.037 U	0.0351 U	0.0343 U	0.0368 U	0.0349 U
Cyanide by Method SW9014A (mg/kg)																
Cyanide	27	e, f	40	0.62 U	0.599 U	0.575 U	**1.25**	0.611 U	0.636 U	0.658 U	0.553 U	0.616 U	0.585 U	0.571 U	0.613 U	0.581 U

Key at end of table.

Source: Ecology and Environment Engineering, P.C.

Table 3-1 Summary of Positive Analytical Results for Soil Samples
Citizens-Carroll Garden MGP Off-Site Investigation Owl's Head Site, Brooklyn, NY

Location ID:				OH-SB05-Z 71-72	OH-SB05-Z 75-76	OH-SB06-Z 37-38	OH-SB06-Z 71-72	OH-SB06-Z 78-79	OH-SB07-Z 31-32	OH-SB07-Z 52-53	OH-SB08-Z 31-32	OH-SB08-Z 41-42	OH-SB08-Z 47-48
Depth:				71 - 72 ft	75 - 76 ft	37 - 38 ft	71 - 72 ft	78 - 79 ft	31 - 32 ft	52 - 53 ft	31 - 32 ft	41 - 42 ft	47 - 48 ft
Date:				03/27/24	03/27/24	03/21/24	03/21/24	03/21/24	03/25/24	03/25/24	03/26/24	03/26/24	03/26/24
Analyte	Unrestricted [1]	Note	Protection of Groundwater [2]										
Volatile Organic Compoundss by Method SW8260 (mg/kg)													
1,2,4-Trimethylbenzene	3.6	f	3.6	**0.64**	0.003 U	**0.13**	0.0019 U	**2.8**	1.4 U	0.0024 U	**28**	**140**	0.0021 U
1,3,5-Trimethylbenzene (Mesitylene)	8.4	f	8.4	0.22 U	0.003 U	**0.20**	0.0019 U	**0.79**	**190**	0.0024 U	**9.3**	**46**	0.0021 U
Acetone	0.05		0.05	0.43 U	0.0059 U	**0.011**	0.0038 U	**0.021**	2.7 UJ	0.0048 UJ	0.84 U	1.2 U	**0.0068 J**
Benzene	0.06		0.06	0.22 U	0.003 U	**0.029**	0.0019 U	**1.0**	**69**	0.0024 U	**2.9**	**17**	0.0021 U
Chloroform	0.37		0.37	0.22 U	0.003 U	**0.0046 J**	0.0019 U	0.0023 U	1.4 U	0.0024 U	0.42 U	0.62 U	0.0021 U
Ethylbenzene	1	f	1	**0.93**	0.003 U	**0.20**	0.0019 U	**4.0**	**390**	0.0024 U	**29**	**160**	0.0021 U
Isopropylbenzene (Cumene)	N/A		N/A	0.22 U	0.003 U	**0.0089**	0.0019 U	**0.32 J**	**40**	0.0024 U	**3.4**	**14**	0.0021 U
Methyl Acetate	N/A		N/A	0.22 U	0.003 U	0.0027 U	0.0019 U	0.0023 U	1.4 UJ	0.0024 U	0.42 U	0.62 U	0.0021 U
Methyl Ethyl Ketone (2-Butanone)	0.12		0.12	0.22 U	0.003 U	0.0027 U	0.0019 U	**0.0053**	1.4 UJ	0.0024 U	0.42 U	0.62 U	0.0021 U
Methylcyclohexane	N/A		N/A	0.22 U	0.003 U	0.0027 U	0.0019 U	**0.0036 J**	1.4 U	0.0024 U	0.42 U	0.62 U	0.0021 U
Methylene Chloride	0.05		0.05	0.43 U	**0.014**	0.0055 U	0.0038 U	0.0045 U	2.7 U	0.0048 U	0.84 U	1.2 U	0.0043 U
N-Butylbenzene	12	f	12	0.22 U	0.003 U	0.0027 UJ	0.0019 UJ	0.0023 UJ	**10**	0.0024 U	**0.83 J**	0.62 U	0.0021 U
N-Propylbenzene	3.9	f	3.9	0.22 U	0.003 U	**0.0056**	0.0019 U	**0.10**	**44**	0.0024 U	**1.9**	**10**	0.0021 U
P-Cymene (P-Isopropyltoluene)	N/A		N/A	0.22 U	0.003 U	**0.0077**	0.0019 U	**0.20 J**	**42**	0.0024 U	**4**	**16**	0.0021 U
Sec-Butylbenzene	11	f	11	0.22 U	0.003 U	0.0027 U	0.0019 U	0.0023 U	1.4 U	0.0024 U	0.42 U	0.62 U	0.0021 U
Styrene	N/A		N/A	0.22 U	0.003 U	0.0027 U	0.0019 U	0.0023 U	**76**	0.0024 U	**1.7**	**11**	0.0021 U
Toluene	0.7		0.7	0.22 U	0.003 U	**0.054**	0.0019 U	**0.024**	**210**	0.0024 U	**8.1**	**44**	0.0021 U
Total Xylenes	0.26	k	1.6	**0.84 J**	0.0089 U	**0.25**	0.0057 U	**4.1**	**510**	0.0072 U	**41**	**200**	0.0064 U
			Total VOCs:	**2.4**	**0.01**	**0.90**	**ND**	**13**	**1,581**	**ND**	**130**	**658**	**0.007**
			Total BTEX:	**1.8**	**ND**	**0.53**	**ND**	**9.1**	**1,179**	**ND**	**81**	**421**	**ND**
Semivolatile Organics by Method SW8270 (mg/kg)													
2-Methylnaphthalene	N/A		N/A	**5.2**	**0.0675 J**	**1.86**	0.0443 U	**140**	**524**	**0.091 J**	**1060**	**436**	**0.0947**
3,3'-Dichlorobenzidine	N/A		N/A	0.261 U	0.0465 U	0.0535 U	0.0443 U	0.0499 U	1.2 U	0.0519 U	1 U	0.484 U	0.045 U
4-Nitroaniline	N/A		N/A	0.521 U	0.0928 U	0.107 U	0.0884 U	0.0995 U	2.39 U	0.103 U	**14.3**	**5.14**	0.0897 U
Acenaphthene	20		98	**2.44**	**0.0876 J**	**0.556**	0.0443 U	**61.2**	**293**	**0.0976 J**	**450**	**152**	**0.0674 J**
Acenaphthylene	100	a, f	107	**1.12**	**0.0727 J**	**0.812**	0.0443 U	**11.9**	**122**	**0.147**	**95.8**	**71.1**	**0.133**
Anthracene	100	a, f	1000	**1.36**	0.0465 U	**0.691**	0.0443 U	**35.4**	**179**	**0.0521 J**	**189**	**95.5**	**0.0552 J+**
Benzidine	N/A		N/A	1.04 U	0.186 U	0.214 U	0.177 U	0.199 U	4.79 U	0.207 U	4 U	1.93 U	0.18 U
Benzo(A)Anthracene	1	c, f	1	**0.833**	0.0465 U	**0.461**	0.0443 U	**22.8**	**98**	0.0519 U	**106**	**54**	0.045 U
Benzo(A)Pyrene	1	c	22	**0.62**	0.0465 U	**0.282**	0.0443 U	**16.3**	**65.6**	0.0519 U	**77.9**	**40.1**	**0.048 J**
Benzo(B)Fluoranthene	1	c, f	1.7	**0.458 J**	0.0465 U	**0.125**	0.0443 U	**13.6**	**46.4**	0.0519 U	**57.9**	**29.8**	0.045 U
Benzo(G,H,I)Perylene	100	f	1000	0.261 U	0.0465 U	**0.111**	0.0443 U	**6.75**	**37**	0.0519 U	**46.2**	**15.2**	0.045 U
Benzo(K)Fluoranthene	0.8	c, f	1.7	0.261 U	0.0465 U	**0.151**	0.0443 U	**4.91**	**61.2**	0.0519 U	**36.1**	**11.8**	0.045 U
Biphenyl (Diphenyl or 1,1'-Biphenyl)	N/A		N/A	**0.541**	0.0465 U	**0.215**	0.0443 U	**12.4**	**65.8**	0.0519 U	**76.9**	**37.2**	0.045 U
Carbazole	N/A		N/A	0.261 U	0.0465 U	0.0535 U	0.0443 U	**1.13**	**6.75**	0.0519 U	**6.43**	**2.39**	0.045 U
Chrysene	1	c, f	1	**0.658**	0.0465 U	**0.392**	0.0443 U	**19.5**	**89.1**	0.0519 U	**86.7**	**44.7**	0.045 U
Dibenz(A,H)Anthracene	0.33	b, f	1000	0.261 UJ	0.0465 U	0.0535 U	0.0443 U	**0.792**	**14.8**	0.0519 U	**16.8 J**	**4.62 J**	0.045 U
Dibenzofuran	7	f	210	0.261 U	0.0465 U	**0.0717 J**	0.0443 U	**4.0**	**32.7**	0.0519 U	**32.3**	**11.5**	0.045 U
Di-N-Butyl Phthalate	N/A		N/A	0.261 U	0.0465 U	0.0535 U	0.0443 U	0.0499 U	1.2 U	0.0519 U	1 U	0.484 U	0.045 U
Fluoranthene	100	a, f	1000	**1.4**	0.0465 U	**0.692**	0.0443 U	**36.7**	**181**	0.0519 U	**179**	**90.4**	0.045 U
Fluorene	30		386	**1.68**	0.0465 U	**0.705**	0.0443 U	**36.4**	**191**	0.0519 U	**224**	**112**	0.045 U
Indeno(1,2,3-C,D)Pyrene	0.5	c, f	8.2	0.261 UJ	0.0465 U	**0.123**	0.0443 U	**6.91 J**	**42.7**	0.0519 U	**59.8 J**	**20.4 J**	0.045 U
Naphthalene	12	f	12	**6.61**	**0.166**	**1.93**	0.0443 U	**198**	**728**	**0.0968 J**	**1380**	**580**	**0.0853 J**
N-Nitrosodiphenylamine	N/A		N/A	0.261 U	0.0465 U	0.0535 UJ	0.0443 UJ	0.0499 UJ	1.2 UJ	0.0519 UJ	1 U	0.484 U	0.045 UJ
Phenanthrene	100		1000	**4.69**	0.0465 U	**2.51**	0.0443 U	**153**	**402**	**0.116**	**826**	**339**	**0.136 J+**
Pyrene	100	f	1000	**1.83**	0.0465 U	**1.21**	0.0443 U	**54.7**	**246**	**0.0653 J**	**285**	**146**	**0.0717 J**
			Total SVOCs:	**29**	**0.39**	**13**	**ND**	**836**	**3,426**	**0.67**	**5,306**	**2,299**	**0.69**

Key at end of table.

Source: Ecology and Environment Engineering, P.C.

Table 3-1 Summary of Positive Analytical Results for Soil Samples
Citizens-Carroll Garden MGP Off-Site Investigation Owl's Head Site, Brooklyn, NY

Analyte	Unrestricted [1]	Note	Protection of Groundwater [2]	Location ID: OH-SB05-Z 71-72 Depth: 71 - 72 ft Date: 03/27/24	OH-SB05-Z 75-76 75 - 76 ft 03/27/24	OH-SB06-Z 37-38 37 - 38 ft 03/21/24	OH-SB06-Z 71-72 71 - 72 ft 03/21/24	OH-SB06-Z 78-79 78 - 79 ft 03/21/24	OH-SB07-Z 31-32 31 - 32 ft 03/25/24	OH-SB07-Z 52-53 52 - 53 ft 03/25/24	OH-SB08-Z 31-32 31 - 32 ft 03/26/24	OH-SB08-Z 41-42 41 - 42 ft 03/26/24	OH-SB08-Z 47-48 47 - 48 ft 03/26/24
Organochlorine Pesticides by Method SW8081 (mg/kg)													
Endrin Aldehyde	N/A		N/A	0.00201 U	0.0018 U	0.00207 U	0.00172 U	0.00193 U	0.00189 U	0.00205 U	0.00195 U	0.00189 U	0.00176 U
Gamma Bhc (Lindane)	0.1		0.1	0.00201 U	0.0018 U	0.00207 U	0.00172 U	0.00193 U	0.00189 U	0.00205 U	0.00195 U	0.00189 U	0.00176 U
Methoxychlor	N/A		N/A	0.00201 U	0.0018 U	0.00207 U	0.00172 U	0.00193 U	0.00189 U	0.00205 U	0.00195 U	0.00189 U	0.00176 U
P,P'-DDT	0.0033	b	136	0.00201 U	0.0018 U	0.00207 U	0.00172 U	0.00193 U	0.00189 U	0.00205 U	0.00195 U	0.00189 U	0.00176 U
PCBs by Method SW8082 (mg/kg)													
None detected.													
PFAS by Method E1633 (ug/kg)													
3-Perfluoropropyl propanoic acid	N/A		N/A	0.785 U	0.696 U	0.723 UJ	0.605 UJ	0.747 UJ	0.721 UJ	0.778 UJ	**6.01 J**	0.726 UJ	0.677 UJ
Perfluorobutanoic Acid	N/A		N/A	0.135 U	0.12 U	0.124 U	0.104 U	0.128 U	0.124 UJ	0.134 UJ	0.131 UJ	0.125 UJ	0.116 UJ
Perfluorohexanoic acid (PFHxA)	N/A		N/A	0.0656 U	0.0581 U	0.0604 U	0.0506 U	0.0625 U	0.0603 U	0.0651 U	0.0635 U	0.0607 U	0.0566 U
Perfluorononanesulfonic Acid (PFNS)	N/A		N/A	0.154 U	0.136 U	0.141 UJ	0.118 UJ	0.146 UJ	0.141 UJ	0.152 UJ	0.149 UJ	0.142 UJ	0.132 UJ
Perfluoropentanesulfonic Acid (PFPeS)	N/A		N/A	0.194 U	0.172 U	0.179 U	0.15 U	0.185 U	**0.186 J**	0.193 UJ	**0.496 J**	0.18 UJ	0.168 UJ
Perfluoropentanoic Acid (PFPeA)	1		1	0.135 U	0.12 U	0.124 U	0.104 U	0.128 U	**0.233 J**	0.134 U	**0.466 J**	0.125 U	0.116 U
Perfluorotetradecanoic acid (PFTA)	0.33		1000	0.128 U	0.113 U	0.117 U	0.0982 U	0.121 U	0.117 UJ	0.126 UJ	0.123 UJ	0.118 UJ	0.11 UJ
Metals by Method SW6010 (mg/kg)													
Aluminum	N/A		N/A	**4300 J+**	**5580 J+**	**3730 J+**	**4350 J+**	**4190 J+**	**3850 J+**	**3260 J+**	**3590 J+**	**4840 J+**	**4920 J+**
Arsenic	13	c	16	1.57 UJ	1.4 UJ	1.61 U	**2.13**	**4.86**	**7.22**	1.56 U	**5.6**	**3.92**	1.35 U
Barium	350	c	820	**70.3 J**	**51.2 J**	**72**	**32.3**	**26.4**	**19.9**	**41.6**	**25**	**36.1**	**52.5**
Beryllium	7.2		47	0.053 UJ	0.047 UJ	0.054 U	0.045 U	0.05 U	**0.223**	0.052 U	0.051 U	0.049 U	0.045 U
Calcium	N/A		N/A	**9240 J**	**8910 J**	**9290**	**7640**	**693**	**912**	**7300**	**525**	**4850**	**13100**
Chromium, Total	1	b, e	N/A	**10.1 J**	**11.8 J**	**7.68**	**10.8**	**9.5**	**8.03**	**7.21**	**7.78**	**9.95**	**8.72**
Cobalt	N/A		N/A	**4.14 J**	**4.43 J**	**3.26**	**4.21**	**3.28**	**6.13**	**3.35**	**2.86**	**4.98**	**3.84**
Copper	50		1720	**7.56**	**8.93**	**10.3**	**12.3**	**9.75**	**6.59**	**10.7**	**4.74**	**7.8**	**11.7**
Iron	N/A		N/A	**10300**	**10900**	**7370**	**8410**	**7860**	**9570**	**7020**	**9360**	**11900**	**9000**
Lead	63	c	450	**4.17 J**	**7.18 J**	**2.54**	**6.89**	**3.76**	**4.5**	**3.02**	**3.89 J**	**3.98 J**	**3.25 J**
Magnesium	N/A		N/A	**5100**	**4550**	**4410**	**4240**	**1910**	**1710**	**3460**	**1500**	**3200**	**5500**
Manganese	1600		2000	**232 J**	**252 J**	**222**	**215**	**65.1**	**282**	**212**	**168**	**349**	**259**
Nickel	30		130	**16.8 J**	**14.9 J**	**11.1**	**18.2**	**10.2**	**11.1**	**13.7**	**8.16**	**13.4**	**11.2**
Potassium	N/A		N/A	**1010 J**	**1370**	**1030**	**1270**	**922**	**927**	**767 J**	**892**	**1420**	**1300**
Sodium	N/A		N/A	**355 J**	**159**	**331**	**214**	**289**	**144**	**239 J**	**603**	**511**	**470**
Vanadium	N/A		N/A	**17**	**17.3**	**9.65**	**14.5**	**10.4**	**14.7**	**10.5**	**10.8**	**12.5**	**11.7**
Zinc	109	c	2480	**19.4 J**	**25 J**	**15.3 B**	**21.5 B**	**24.2 B**	**22.6**	**15**	**20.6**	**21.9**	**20.8**
Mercury by Method SW7473 (mg/kg)													
Mercury	0.18	c	0.73	0.0376 U	0.0335 U	**0.0565**	0.0319 U	0.0359 U	0.0345 U	0.0373 U	0.0361 U	0.0349 U	0.0325 U
Cyanide by Method SW9014A (mg/kg)													
Cyanide	27	e, f	40	0.627 U	0.558 U	0.642 U	0.532 U	0.599 U	0.576 U	0.622 U	0.602 U	0.581 U	0.541 U

Key at end of table.

Source: Ecology and Environment Engineering, P.C.

Table 3-1 Summary of Positive Analytical Results for Soil Samples
Citizens-Carroll Garden MGP Off-Site Investigation Owl's Head Site, Brooklyn, NY

Analyte	Unrestricted [1]	Note	Protection of Groundwater [2]	Location ID:	OH-SB05-Z 71-72	OH-SB05-Z 75-76	OH-SB06-Z 37-38	OH-SB06-Z 71-72	OH-SB06-Z 78-79	OH-SB07-Z 31-32	OH-SB07-Z 52-53	OH-SB08-Z 31-32	OH-SB08-Z 41-42	OH-SB08-Z 47-48
				Depth:	71 - 72 ft	75 - 76 ft	37 - 38 ft	71 - 72 ft	78 - 79 ft	31 - 32 ft	52 - 53 ft	31 - 32 ft	41 - 42 ft	47 - 48 ft
				Date:	03/27/24	03/27/24	03/21/24	03/21/24	03/21/24	03/25/24	03/25/24	03/26/24	03/26/24	03/26/24

Key:

Qualifiers

J = Estimated value
J+ = Estimated value with high bias
J- = Estimated value with low bias
U = Not detected (method detection limit shown)
UJ = Not detected/estimated detection limit
UR = Not detected/result is rejected

1	values
10	ds
100	ds

Notes

G = Guidance value (no standard available)
N/A = Not regulated/no available criteria
PCB = Polychlorinated Biphenyls
PFAS = Per- and Polychlorinated Substances

Other

µg/kg = Micrograms per kilograms
mg/kg = Milligrams per kilograms
-- = Analyte not analyzed for
"-Q" denotes field duplicate sample

1. New York State Department of Environmental Conservation, Codes, Rules, and Regulations Part 375-6.8(a): *Unrestricted Use Soil Cleanup Objectives* 1998 (with updates)

2. New York State Department of Environmental Conservation, Codes, Rules, and Regulations Part 375-6.8(b): *Restricted Use Soil Cleanup Objectives* 1998 (with updates), Protection of Groundwater

Notes

[a] The SCOs for residential, restricted-residential and ecological resources use wer
[b] The SCOs for commercial use were capped at a maximum value of 500 ppm. Se
[c] The SCOs for industrial use and the protection of groundwater were capped at a
[d] The SCOs for metals were capped at a maximum value of 10,000 ppm. See TSI
[e] For constituents where the calculated SCO was lower than the contract required
[f] For constituents where the calculated SCO was lower than the rural soil backgro
[g] This SCO is derived from data on mixed isomers of BHC.
[h] The SCO for this specific compound (or family of compounds) is considered to b
[i] This SCO is for the sum of endosulfan I, endosulfan II, and endosulfan sulfate.
[j] This SCO is the lower of the values for mercury (elemental) or mercury (inorgani
[k] Total Xylenes consists of the ortho-, meta-, and para- isomers.

Key at end of table.

Source: Ecology and Environment Engineering, P.C.

Table 3-2 Summary of Positive Analytical Results for Shallow Groundwater Samples
Citizens-Carroll Garden MGP Off-Site Investigation Owl's Head Site, Brooklyn, NY

Analyte	Criteria [1]	Notes	Location ID: OH-MW01S Depth: 3 - 13 ft Date: 04/04/24	MW-04S 4 - 10 ft 04/05/24	OH-MW04S 5 - 15 ft 04/11/24	MW-05S 3 - 10 ft 04/10/24	OH-MW05S 3 - 13 ft 04/11/24	MW-06S 3 - 8 ft 04/09/24	OH-MW06S 10 - 20 ft 04/12/24	MW-07S 6 - 11 ft 04/05/24
Volatile Organic Compounds by Method SW8260 (ug/L)										
1,2,4-Trichlorobenzene	5		**0.51**	0.138 U	0.138 U	0.69 U	0.69 U	0.138 U	0.138 U	0.138 UJ
1,2,4-Trimethylbenzene	5		**6.47**	0.31 U	**0.99**	**11**	**6.95**	**0.41 J**	**1.8**	**1.44**
1,3,5-Trimethylbenzene (Mesitylene)	5		**0.64**	0.347 U	0.347 U	**2.55**	1.74 U	0.347 U	**0.46 J**	0.347 U
1,4-Dichlorobenzene	3		0.311 UJ	0.311 UJ	0.311 U	1.56 UJ	**4.35**	0.311 UJ	0.311 U	0.311 UJ
1,4-Diethyl Benzene	N/A		**1.55**	0.341 U	0.341 U	1.7 U	1.7 UJ	0.341 U	0.341 UJ	**0.4 J**
4-Ethyltoluene	N/A		**1.93**	0.2 U	**1.23**	**5.35 J**	**10.9**	**0.26 J**	**1.94**	**0.7**
Acetone	50	G	**1.93 J**	1.34 UJ	1.34 UJ	6.7 UJ	6.7 UJ	**30.8 J**	1.34 UJ	1.34 UJ
Benzene	1		**1.29**	0.279 U	0.279 U	**28.1**	**52.1**	0.279 U	**11.7 J+**	0.279 UJ
Carbon Disulfide	60	G	**0.43 J**	**0.71**	0.362 U	1.81 U	1.81 U	**0.38 J**	0.362 U	0.362 U
Ethylbenzene	5		**3.61**	0.29 U	**1.84**	**22.5**	**31.8**	0.29 U	**12.5**	**1.35**
Isopropylbenzene (Cumene)	5		**0.56**	0.405 U	0.405 U	**2.85**	2.02 U	**0.49 J**	**0.87**	**1**
Methyl Ethyl Ketone (2-Butanone)	50	G	0.421 U	0.421 U	**1.06**	2.1 U	2.1 U	**2.8**	0.421 U	0.421 U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone	N/A		0.365 U	0.365 U	0.365 UJ	1.82 U	1.82 U	**1.04**	0.365 U	0.365 U
Methylene Chloride	5		0.397 U	0.397 U	0.397 U	**6.85 J**	1.98 U	0.397 U	0.397 U	0.397 U
N-Butylbenzene	5		0.399 U	0.399 U	0.399 U	2 U	2 UJ	0.399 U	0.399 UJ	0.399 U
N-Propylbenzene	5		**0.75**	0.384 U	0.384 U	1.92 U	1.92 U	0.384 U	0.384 U	**0.96**
P-Cymene (P-Isopropyltoluene)	N/A		**0.39 J**	0.377 U	0.377 U	1.88 U	1.88 U	0.377 U	0.377 U	0.377 U
Styrene	5		0.255 U	0.255 U	0.255 U	**2.4 J**	1.28 U	0.255 U	0.255 U	**0.36 J**
Tert-Butyl Alcohol	N/A		0.608 UJ	**2.75 J**	**3.66 J**	3.04 U	3.04 UJ	0.608 U	0.608 UJ	0.608 U
Toluene	5		**0.79**	0.346 U	**0.69**	**21.8**	**10.3**	0.346 U	**1.36**	**0.55**
Total Xylenes	5		**4.86**	0.839 U	**2.56**	**29.6**	**30.4**	0.839 U	**8.16**	**1.39 J**
Total VOCs:			**26**	**3.5**	**12**	**133**	**147**	**36**	**39**	**8.2**
Total BTEX:			**11**	**ND**	**5.1**	**102**	**125**	**ND**	**34**	**3.3**
Semivolatile Organic Compounds by Method SW8270D (ug/L)										
Acenaphthene	20	G	**4.27**	0.05 U	**0.78**	**3.2**	**4.19**	**19**	**1.42**	**114**
Acenaphthylene	N/A		**0.89**	**0.27 J**	**0.17**	0.5 U	**0.79**	5 U	0.05 U	**3.5**
Anthracene	50	G	**1.88**	0.05 U	**0.12**	0.5 U	**0.71**	**8**	0.05 U	**17.5**
Benzo(A)Anthracene	0.002	G	**0.7**	0.05 U	0.05 U	0.5 U	**0.12**	**6**	0.05 U	**2.5**
Benzo(A)Pyrene	0		**0.91**	0.05 U	0.05 U	0.5 U	0.05 U	5 U	0.05 U	2.5 U
Benzo(B)Fluoranthene	0.002	G	**1.19**	**0.06 J**	0.05 U	0.5 U	0.05 U	5 U	0.05 U	2.5 U
Benzo(G,H,I)Perylene	N/A		**0.39 J**	0.05 U	0.05 U	0.5 U	0.05 U	5 U	0.05 U	2.5 U
Benzo(K)Fluoranthene	0.002	G	**0.62**	0.05 U	0.05 U	0.5 U	0.05 U	5 U	0.05 U	2.5 U
Bis(2-Ethylhexyl) Phthalate	5		**0.82 J**	0.5 UJ	0.5 UJ	5 UJ	0.5 UJ	50 UJ	0.5 UJ	25 UJ
Chrysene	0.002	G	**0.7**	0.05 U	0.05 U	0.5 U	**0.07**	**5**	0.05 U	**2.5**
Dibenz(A,H)Anthracene	N/A		**0.11**	0.05 U	0.05 U	0.5 U	0.05 U	5 U	0.05 U	2.5 U
Dibenzofuran	N/A		2.5 UJ	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	**49.4**
Diethyl Phthalate	50	G	2.5 UJ	2.5 U	2.5 U	2.5 U	2.5 U	**3.41 J**	2.5 U	12.5 U
Fluoranthene	50	G	**2.04 J**	**0.06 J**	**0.14**	**1.5**	**0.96**	**19**	0.05 U	**19.5**
Fluorene	50	G	**2.74**	**0.05 J**	0.05 U	0.5 U	**1.28**	**12**	0.05 U	**57.5**
Indeno(1,2,3-C,D)Pyrene	0.002	G	**0.39**	0.05 U	0.05 U	0.5 U	0.05 U	5 U	0.05 U	2.5 U
Naphthalene	10	G	**1.23 J**	**0.7 J**	**0.66**	0.5 U	**0.51**	**11**	0.05 U	**5.5**
Phenanthrene	50	G	**1.82**	**0.29 J**	**0.14**	0.5 U	**1.33**	**12**	0.05 U	**69.5**
Pyrene	50	G	**3.06**	**0.05 J**	**0.11**	**2.2**	**3.51**	**18**	0.05 U	**13.5**
Total SVOCs:			**24**	**1.5**	**2.1**	**6.9**	**13**	**113**	**1.4**	**355**

Table 3-2 Summary of Positive Analytical Results for Shallow Groundwater Samples
Citizens-Carroll Garden MGP Off-Site Investigation Owl's Head Site, Brooklyn, NY

Analyte	Criteria [1]	Notes	Location ID: OH-MW01S Depth: 3 - 13 ft Date: 04/04/24	MW-04S 4 - 10 ft 04/05/24	OH-MW04S 5 - 15 ft 04/11/24	MW-05S 3 - 10 ft 04/10/24	OH-MW05S 3 - 13 ft 04/11/24	MW-06S 3 - 8 ft 04/09/24	OH-MW06S 10 - 20 ft 04/12/24	MW-07S 6 - 11 ft 04/05/24
Organochlorine Pesticides by Method SW8081 (ug/L)										
Heptachlor Epoxide	**0.03**		**0.00655 J**	0.004 U	0.004 U	0.004 U	0.0041 U	0.0041 U	0.00408 U	0.004 U
P,P'-DDD	**0.3**		0.004 U	0.004 U	0.004 U	0.004 U	0.0041 U	0.0041 U	0.00408 U	**0.0126**
P,P'-DDT	**0.2**		0.004 U	0.004 U	0.004 U	0.004 U	0.0041 U	0.0041 U	0.00408 U	**0.0676**
PCBs by Method SW8082 (ug/L)										
PCB-1260 (Aroclor 1260)	**0.09**		0.05 U	0.05 U	0.05 U	0.05 UJ	0.0513 UJ	**0.0831 J-**	0.051 UJ	**0.0978 J**
Polychlorinated Biphenyl (PCBs)	**N/A**		0.05 U	0.05 U	0.05 U	0.05 U	0.0513 UJ	**0.0831 J-**	0.051 UJ	**0.0978 J**
PFAS by Method E1633 (ng/L)										
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid	**N/A**		5.33 UJ	5.56 UJ	**2.4 J**	1.25 UJ	1.09 UJ	1.39 UJ	1.06 UJ	5.12 UJ
N-ethyl perfluorooctanesulfonamidoacetic acid	**N/A**		5.18 U	5.4 U	1.08 U	1.21 U	**1.36 J**	1.35 U	1.03 U	4.98 U
Perfluorobutanesulfonic acid (PFBS)	**N/A**		**7.98 J**	2.46 U	**7.85**	**0.737 J**	**1.21 J**	**0.801 J**	**2.45**	**7.22 J**
Perfluorobutanoic Acid	**N/A**		1.66 UR	1.73 UR	0.346 UR	0.389 U	0.339 UR	0.432 U	**11.4**	1.59 UR
Perfluorodecanoic acid (PFDA)	**N/A**		3.77 U	3.93 U	**5.94**	**1.22 J**	**1.8 J**	0.983 U	**8.18 J**	3.62 U
Perfluoroheptanoic acid (PFHpA)	**N/A**		**7.28 J**	**8.96 J**	**16.9 J**	0.836 U	**2.72 J**	**2.11 J**	**9.06 J**	**18**
Perfluorohexanesulfonic acid (PFHxS)	**N/A**		**6.61 J**	**13.5**	**1.83 J**	0.801 U	**1.24 J**	0.891 U	**2.97**	**9.41**
Perfluorohexanoic acid (PFHxA)	**N/A**		**42.5**	**23.1**	**28.1**	**4.6**	**10**	**5.41**	**34.9**	**53.9**
Perfluorononanoic acid (PFNA)	**N/A**		**17.8**	**13**	**6.44**	**2.42**	**3.61**	**2.17 J**	**10.2**	**4.5 J**
Perfluorooctane Sulfonamide (FOSA)	**N/A**		**5.24 J**	4.61 U	0.922 U	1.04 U	0.903 U	1.15 U	**1.66 J**	4.25 U
Perfluorooctanesulfonic acid (PFOS)	**2.7**		**240 J**	**102 J**	**46**	**11.8**	**10.2 J**	**8.79**	**37.6**	**7.41 J**
Perfluorooctanoic acid (PFOA)	**6.7**		**86.3**	**112**	**66.9**	**6.68**	**17**	**10.6**	**63**	**126**
Perfluoropentanoic Acid (PFPeA)	**N/A**		**28.7 J**	**21.7**	**20**	**4.05 J**	**5.14**	**3.24 J**	**16.9**	**56.8**
Perfluoroundecanoic Acid (PFUnA)	**N/A**		5.69 U	5.92 U	**1.57 J**	1.33 U	1.16 U	1.48 U	1.13 U	5.46 U
Metals by Method SW6010 (mg/L)										
Aluminum	**N/A**		**3.36 J+**	**8.04 J+**	**33.7 J+**	**4.14**	**0.108 J+**	**1.11**	**7.97 J+**	**10.7 J+**
Barium	**1**		**0.179**	**0.443**	**0.896**	**0.202**	**0.0687**	**0.0535**	**0.207**	**0.103**
Calcium	**N/A**		**106**	**240**	**453**	**112**	**271**	**57.9 J+**	**303**	**445**
Chromium, Total	**0.05**		**0.0158**	**0.0179**	**0.073**	**0.0133**	0.00556 U	**0.00711**	**0.022**	**0.0671**
Cobalt	**N/A**		0.00444 U	**0.00463**	**0.0313**	0.00444 U	0.00444 U	0.00444 U	**0.00688**	0.00444 U
Copper	**0.2**		**0.0345**	**0.228**	**0.0436 J**	0.0222 U	0.0222 U	**0.0654**	**0.264**	**0.415**
Iron	**0.3**		**10.8**	**33.7**	**117**	**10.3**	0.278 UJ	**1.96 J+**	**10.1 J-**	**20.5**
Lead	**0.025**		**0.73 J+**	**1.62 J+**	**1.09 J-**	**0.163**	**0.0099 J+**	**0.0797**	**0.859 J+**	**0.53 J+**
Magnesium	**35**	**G**	**33.6**	**16.1**	**62.4**	**58.2**	**475**	**8.17**	**232**	**460**
Manganese	**0.3**		**0.311**	**1.38**	**1.62**	**0.769**	**0.333**	**0.0476**	**1.26**	**0.33**
Nickel	**0.1**		**0.019**	**0.0164**	**0.255**	0.0111 U	0.0111 U	0.0111 U	**0.0287**	**0.0317**
Potassium	**N/A**		**28**	**39.7**	**63.9**	**37.5**	**271 J+**	**34.1**	**161 J+**	**190**
Sodium	**20**		**1090**	**4550**	**576**	**878 J+**	**5480 J**	**163 J+**	**3790 J**	**4670**
Vanadium	**N/A**		**0.149**	**0.0364**	**0.261**	**0.0148**	0.0111 U	**0.727**	**0.0996**	**0.136**
Zinc	**2**		**0.489**	**0.588**	**0.599**	**0.128**	0.0278 U	**0.119**	**0.765 J+**	**0.701**

Table 3-2 Summary of Positive Analytical Results for Shallow Groundwater Samples
Citizens-Carroll Garden MGP Off-Site Investigation Owl's Head Site, Brooklyn, NY

Analyte	Criteria [1]	Notes	Location ID: OH-MW01S Depth: 3 - 13 ft Date: 04/04/24	MW-04S 4 - 10 ft 04/05/24	OH-MW04S 5 - 15 ft 04/11/24	MW-05S 3 - 10 ft 04/10/24	OH-MW05S 3 - 13 ft 04/11/24	MW-06S 3 - 8 ft 04/09/24	OH-MW06S 10 - 20 ft 04/12/24	MW-07S 6 - 11 ft 04/05/24
Metals by Method SW6020 (ug/L)										
Antimony	**3**		1.11 U	1.11 U	1.11 U	1.11 U	1.11 U	**400**	1.11 U	1.11 U
Arsenic	**25**		**12.9**	**33.5**	**67.4**	**3.53**	**1.68**	**13.2**	**62.2**	**63**
Beryllium	**3**	**G**	**0.337 J**	**0.415 J**	**5.42**	0.333 U	0.333 U	0.333 U	**0.425**	**1.06 J**
Cadmium	**5**		**0.656**	**0.823**	**11.1**	0.556 U	0.556 U	**0.599**	**2.35**	**2.93**
Selenium	**10**		**1.42**	1.11 U	**1.49 J+**	**1.57 J+**	**3.33 J-**	**2.58 J+**	1.11 UJ	**3.24**
Mercury by Method SW7470 (mg/L)										
Mercury	**0.0007**		**0.0009**	**0.0049**	0.0002 U	**0.0041**	0.0002 U	0.0002 U	**0.001**	**0.0056**
Cyanide by Method SW9014 (mg/L)										
Cyanide	**0.2**		**0.85**	**0.55**	**0.035**	**0.04**	**0.012**	0.01 U	**0.055**	**0.014**

Key:

Qualifiers

J = Estimated value

J+ = Estimated value with high bias

J- = Estimated value with low bias

U = Not detected (method detection limit shown)

UJ = Not detected/estimated detection limit

UR = Not detected/result is rejected

R = Detect/result is rejected

Notes

G = Guidance value (no standard available)

N/A = Not regulated/no available criteria

PCB = Polychlorinated Biphenyls

PFAS = Per- and Polychlorinated Substances

Other

µg/L = Micrograms per liter

mg/L = Milligrams per liter

ng/L - Nanograms per liter

-- = Analyte not analyzed for

"-Q" denotes field duplicate sample

1	Bold values denote positive hits.
10	Exceeds groundwater standard.

1. New York State Department of Environmental Conservation, Technical and Operational Guidance Series Memorandum #1.1.1: *Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations,* 1998 (with updates), Class GA Groundwater Standards and

Table 3-3 Summary of Positive Analytical Results for Intermediate Groundwater Samples
Citizens-Carroll Garden MGP Off-Site Investigation Owl's Head Site, Brooklyn, NY

Analyte	Criteria [1]	Notes	Location ID:	OH-MW01I	OH-MW02I	DUP01	OH-MW03I	MW-04I	OH-MW04I	MW-05I	OH-MW05I	MW-06I	OH-MW06I	MW-07I	OH-MW07I	OH-MW08I
			Depth:	35 - 45 ft	32 - 42 ft	32 - 42 ft	32 - 42 ft	29 - 39 ft	39 - 49 ft	25 - 35 ft	32 - 42 ft	35 - 45 ft	34 - 44 ft	31 - 41 ft	27 - 37 ft	30 - 40 ft
			Date:	04/04/24	04/05/24	04/05/24	04/10/24	04/04/24	04/11/24	04/10/24	04/11/24	04/09/24	04/12/24	04/05/24	04/15/24	04/15/24
Volatile Organic Compounds by Method SW8260 (ug/L)																
1,1-Dichloroethane	5			0.272 U	0.272 U	0.272 U	2.72 U	0.272 U	0.272 U	0.272 U	**0.9 J-**	1.36 U	0.272 U	2.72 U	2.72 U	2.72 U
1,2,4-Trimethylbenzene	5			0.31 U	**327 J**	**142 J**	**352**	0.31 U	**162**	**174**	**338**	**327**	**58.4**	**341**	**526**	**181**
1,3,5-Trimethylbenzene (Mesitylene)	5			0.347 U	**41.5**	**44.4**	**78.8**	0.347 U	**44.8**	**52.4**	**73**	**77.6**	**12.8**	**62.2**	**131**	**46.9**
1,4-Diethyl Benzene	N/A			0.341 U	**4.3**	**4.78**	**16.2**	0.341 U	**9.39**	**11.2**	**15.9 J**	**14.6**	**1.8 J**	**31.8**	**32.3**	**10.4**
4-Ethyltoluene	N/A			0.2 U	**136 J**	**59 J**	**706**	0.2 U	**189**	**248 J**	**172**	**394 J**	**380**	**211**	**1010**	**331**
Acetone	50	G		1.34 UJ	**1.74 J+**	**2.12 J+**	13.4 UJ	**2.48 J**	1.34 UJ	1.34 UJ	1.34 UJ	6.7 UJ	1.34 UJ	13.4 UJ	13.4 U	13.4 U
Benzene	1			0.279 U	**370 J**	**422**	**2610**	**4.59**	**1220**	**1570**	**4140**	**1810**	**1570**	**6390**	**976**	**266**
Carbon Disulfide	60	G		0.362 U	0.362 U	0.362 U	3.62 U	**1.43**	0.362 U	0.362 U	0.362 UJ	1.81 U	0.362 U	3.62 U	3.62 U	3.62 U
Cis-1,2-Dichloroethylene	5			0.294 U	0.294 U	0.294 U	2.94 U	0.294 U	0.294 U	0.294 U	**0.95 J-**	1.47 U	0.294 U	2.94 U	2.94 U	2.94 U
Ethylbenzene	5			0.29 U	**414**	**474**	**1170**	**0.82**	**746**	**636**	**2050**	**1100**	**804**	**1460**	**1650**	**520**
Isopropylbenzene (Cumene)	5			0.405 U	**12.2**	**12.7**	**37.4**	0.405 U	**39.4**	**26.2**	**61.5**	**28.1**	**5.86**	**65.3**	**33.5**	**11.6**
Methyl Acetate	N/A			**0.48 J**	0.442 U	0.442 U	4.42 U	0.442 U	0.442 U	0.442 U	0.442 UJ	2.21 U	0.442 U	4.42 U	4.42 U	4.42 U
Methyl Ethyl Ketone (2-Butanone)	50	G		0.421 U	0.421 U	0.421 U	4.21 U	0.421 U	0.421 U	0.421 U	**2.18 J-**	2.1 U	0.421 U	4.21 U	4.21 U	4.21 U
Methylene Chloride	5			0.397 U	0.397 U	0.397 U	3.97 U	0.397 U	0.397 U	0.397 U	0.397 UJ	**7.75 J**	0.397 U	3.97 U	3.97 U	3.97 U
N-Butylbenzene	5			0.399 UJ	0.399 UJ	**1.31 J**	**14.8**	0.399 UJ	**23.4**	0.399 U	**61.9 J**	**3.45**	**5.71 J**	3.99 U	3.99 U	3.99 U
N-Propylbenzene	5			0.384 U	**9.04**	**9.57**	**13.1**	0.384 U	**10.6**	**9.77**	**14.2**	**12.6**	**2.32**	**14.3**	**23.3**	**6.2**
P-Cymene (P-Isopropyltoluene)	N/A			0.377 U	**4.44**	**4.82**	**9.9**	0.377 U	**6.82**	**8.53**	**12.4**	**10.2**	**1.51**	**13.4**	**16.7**	**8.4**
Styrene	5			0.255 U	**302 J**	**122 J**	**38.3**	0.255 U	**40.3**	**68.8**	**22.7**	**165**	**16**	**22.2**	**180**	**35.1**
Tert-Butyl Methyl Ether	10	G		0.244 U	0.244 U	0.244 U	2.44 U	0.244 U	0.244 U	**0.36 J**	0.244 UJ	1.22 U	0.244 U	**7.3**	2.44 U	2.44 U
Toluene	5			0.346 U	**328 J**	**144 J**	**1090**	**0.45 J**	**112**	**431**	**61.7**	**1320**	**694**	**227**	**2030**	**275**
Trichloroethylene (TCE)	5			0.249 U	0.249 U	0.249 UJ	2.49 U	0.249 U	0.249 U	0.249 U	**0.38 J**	1.24 U	0.249 U	2.49 UJ	2.49 U	2.49 U
Total Xylenes	5			0.839 U	**1590 J**	**638 J**	**1690**	0.839 U	**569**	**828**	**1160**	**1400**	**1430**	**866**	--	**661**
		Total VOCs:		**0.48**	**3,540**	**2,081**	**7,827**	**10**	**3,173**	**4,064**	**8,188**	**6,670**	**4,982**	**9,712**	**6,609**	**2,353**
		Total BTEX:		**ND**	**2,702**	**1,678**	**6,560**	**5.9**	**2,647**	**3,465**	**7,412**	**5,630**	**4,498**	**8,943**	**4,656**	**1,722**
Semivolatile Organic Compounds by Method SW8270D (ug/L)																
2-Methylnaphthalene	N/A			2.5 UJ	**487**	**407 J+**	**12200 J**	2.5 U	**554**	**471 J**	500 U	**4070 J**	**273 J+**	**980**	**1600**	**636**
4-Nitrophenol	1			5 UJ	100 U	50 UJ	500 UJ	5 UJ	5 UJ	**5.67 J+**	1000 UJ	500 UJ	5 U	250 U	5 U	5 U
Acenaphthene	20	G		**0.55**	**28**	50 UJ	**3510**	**0.31**	**180**	**130**	**80**	**990**	**25**	**160**	**150**	**75**
Acenaphthylene	N/A			**0.16**	10 UJ	**24**	**3070**	**0.27**	**200**	50 U	**25**	**1810**	**75**	50 U	**180**	**70**
Anthracene	50	G		**0.15**	**12 J**	**150 J**	**2690**	**0.33**	50 U	50 U	25 U	**970**	**30**	50 U	**165**	**65**
Benzo(A)Anthracene	0.002	G		0.05 U	10 U	100 U	**1300**	**0.05**	50 U	50 U	25 U	**450**	25 U	50 U	**60**	25 U
Benzo(A)Pyrene	0			0.05 U	10 U	10 U	**1180**	0.05 U	50 U	50 U	25 U	**420**	25 U	50 U	**50**	25 U
Benzo(B)Fluoranthene	0.002	G		0.05 U	10 U	10 U	**690**	0.05 U	50 U	50 U	25 U	**310**	25 U	50 U	**30**	25 U
Benzo(G,H,I)Perylene	N/A			0.05 UJ	10 U	10 U	**430**	0.05 UJ	50 U	50 U	25 U	**160**	25 U	50 U	25 U	25 U
Benzo(K)Fluoranthene	0.002	G		0.05 U	10 U	10 U	**490**	0.05 U	50 U	50 U	25 U	**230**	25 U	50 U	**25**	25 U
Biphenyl (Diphenyl or 1,1'-Biphenyl)	5			2.5 UJ	50 U	50 U	**1230 J**	2.5 UJ	**34.8**	2.5 UJ	500 U	250 U	2.5 U	125 U	2.5 U	2.5 U
Bis(2-Ethylhexyl) Phthalate	5			**1.23 J**	100 UJ	10 U	500 UJ	0.5 UJ	500 UJ	500 UJ	250 UJ	500 UJ	250 UJ	500 UJ	250 UJ	250 UJ
Carbazole	N/A			2.5 UJ	50 U	50 U	250 U	2.5 U	**17**	**25.3 J+**	500 U	250 U	**13.4**	125 U	**14.1**	**11**
Chrysene	0.002	G		0.05 U	10 U	100 UJ	**1230**	0.05 U	50 U	50 U	25 U	**450**	25 U	50 U	**60**	25 U
Dibenz(A,H)Anthracene	N/A			0.05 U	10 U	10 U	**130**	0.05 U	50 U	50 U	25 U	**50**	25 U	50 U	25 U	25 U
Dibenzofuran	N/A			2.5 UJ	50 U	50 U	**356 J**	2.5 U	2.5 U	**15.9 J+**	500 U	250 U	2.5 U	125 U	2.5 U	**18.3**
Fluoranthene	50	G		**0.13 J**	10 U	10 U	**2780**	**0.2 J**	50 U	50 U	25 U	**990**	25 U	50 U	**105**	**35**
Fluorene	50	G		**0.22**	**52**	10 U	**3440**	**0.31**	**110**	**50**	25 U	**1310**	**30**	**60**	**165**	**65**
Indeno(1,2,3-C,D)Pyrene	0.002	G		0.05 U	10 U	100 UJ	**430**	0.05 U	50 U	50 U	25 U	**160**	25 U	50 U	25 U	25 U
Naphthalene	10	G		**0.37 J**	**172 J**	10 U	**20100 J**	**2.05 J**	**5720 J**	**570**	**1980**	**11800 J**	**1140**	**4290**	**2060**	**950**
Phenanthrene	50	G		**0.17**	**52**	50 UJ	**7830 J**	**1.67**	50 U	**50**	25 U	**2900**	**50**	**90**	**350**	**120**
Pyrene	50	G		**0.12**	10 U	**44**	**3520**	**0.2**	50 U	50 U	25 U	**1300**	25 U	50 U	**185**	**35**
		Total SVOCs:		**3.1**	**803**	**625**	**66,606**	**5.4**	**6,816**	**1,318**	**2,085**	**28,370**	**1,636**	**5,580**	**5,199**	**2,080**

Table 3-3 Summary of Positive Analytical Results for Intermediate Groundwater Samples
Citizens-Carroll Garden MGP Off-Site Investigation Owl's Head Site, Brooklyn, NY

Analyte	Criteria [1]	Notes	Location ID: OH-MW01I Depth: 35 - 45 ft Date: 04/04/24	OH-MW02I 32 - 42 ft 04/05/24	DUP01 32 - 42 ft 04/05/24	OH-MW03I 32 - 42 ft 04/10/24	MW-04I 29 - 39 ft 04/04/24	OH-MW04I 39 - 49 ft 04/11/24	MW-05I 25 - 35 ft 04/10/24	OH-MW05I 32 - 42 ft 04/11/24	MW-06I 35 - 45 ft 04/09/24	OH-MW06I 34 - 44 ft 04/12/24	MW-07I 31 - 41 ft 04/05/24	OH-MW07I 27 - 37 ft 04/15/24	OH-MW08I 30 - 40 ft 04/15/24
Organochlorine Pesticides by Method SW8081 (ug/L)															
Beta Bhc (Beta Hexachlorocyclohexane)	0.04		0.00404 U	**0.0264 J+**	**0.0342**	0.004 U	0.0043 U	0.004 U	0.004 U	0.00404 U	0.00432 U	0.0041 U	0.004 U	7.11 U	0.004 U
PFAS by Method E1633 (ng/L)															
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid	N/A		**26.8 J**	1.14 UJ	1.01 UJ	10.6 UJ	**135 J**	1.16 UJ	1.16 UJ	0.966 UJ	10.6 UJ	1.17 UJ	1.11 UJ	10.6 UJ	10.6 UJ
Perfluorobutanesulfonic acid (PFBS)	N/A		0.469 U	0.506 U	0.448 U	4.7 U	**1.17 J**	**0.84 J**	0.514 U	**4.78**	4.7 U	0.518 U	0.492 U	4.7 U	4.7 U
Perfluorobutanoic Acid	N/A		0.329 U	0.355 UR	0.314 UR	**5.22 J**	0.322 U	0.362 UR	0.475 U	0.301 UR	3.3 U	0.364 UR	0.346 UR	**8.5 R**	**5.08 R**
Perfluoroheptanoic acid (PFHpA)	N/A		0.709 UJ	0.764 U	0.676 U	**9 J**	0.693 UJ	0.779 UJ	0.776 U	**4.75 J**	7.1 U	**2.99 J**	**5.56 J**	7.1 UJ	7.1 UJ
Perfluorohexanesulfonic acid (PFHxS)	N/A		0.679 U	0.732 U	0.648 U	6.8 U	**5.89 J**	0.746 U	0.743 U	**1.69**	6.8 U	0.75 U	**4.6**	6.8 U	6.8 U
Perfluorohexanoic acid (PFHxA)	N/A		0.349 U	0.377 UJ	**17.4 J**	**19.5 J**	**4.15**	**6.02**	**0.539 J**	**5**	**9.26 J**	**5.71**	**8.95**	**4.38 J**	3.5 U
Perfluorononanoic acid (PFNA)	N/A		**0.638 J**	0.56 U	0.519 U	**6.53 J**	0.507 UJ	0.57 U	0.569 U	**0.579 J**	5.2 U	**0.743 J**	1.92 U	5.2 U	5.2 U
Perfluorooctanesulfonic acid (PFOS)	2.7		0.819 UJ	0.883 UJ	**4.05 J**	8.2 U	0.8 U	0.9 U	0.897 U	0.748 U	8.2 U	0.904 U	**1.29 J**	8.2 U	8.2 U
Perfluorooctanoic acid (PFOA)	6.7		**2.8 J**	**7.14**	**6.95**	**56.7**	**36.7 J**	**0.473 J**	**0.501 J**	**31.8**	4.2 U	**8.39**	**88**	4.2 U	4.2 U
Perfluoropentanoic Acid (PFPeA)	N/A		0.23 U	**107**	**78.2**	**2.72 J**	**11.7**	**147**	**1.59 J**	0.21 U	**36.2 J**	0.254 U	**4.89**	**8.69 J**	2.3 U
Perfluorotridecanoic Acid (PFTriA/PFTrDA)	N/A		0.739 UJ	0.796 U	0.705 U	7.4 U	**0.823 J**	0.812 U	0.809 U	0.675 U	7.4 U	0.816 U	0.775 U	7.4 U	7.4 U
Metals by Method SW6010 (mg/L)															
Aluminum	N/A		**0.176 J+**	**0.476 J+**	**1.32 J+**	0.0556 U	**18.2 J+**	**0.187 J+**	**1.44 J+**	**0.742 J+**	**1.08**	0.0556 U	**7.23 J+**	**4.43 J+**	**1.13 J+**
Barium	1		**0.147**	**2.47**	**2.47**	**0.685**	**0.403**	**6.93**	**1.48**	**0.761**	**1.03**	**0.128**	**1.14**	0.25 U	**1.93**
Calcium	N/A		**37.5**	**137**	**139**	**14.9**	**68**	**204**	**129**	**74.5**	**64.7 J+**	**10.1**	**146**	**28.7**	**61.2**
Chromium, Total	0.05		0.00556 U	0.00556 U	0.00556 U	0.00556 U	**0.35**	0.00556 U	**0.00654**	0.00556 U	0.025 U	0.00556 U	**0.0159**	0.05 U	0.05 U
Cobalt	N/A		0.00444 U	0.00444 U	0.00444 U	0.00444 U	**0.0552**	0.00444 U	0.00444 U	0.00444 U	0.02 U	0.00444 U	**0.00459**	0.04 U	0.04 U
Copper	0.2		**0.0312**	**0.039**	**0.0369**	0.0222 U	**2.27**	**0.0253 J**	**0.0425**	0.0222 U	0.1 U	0.0222 U	0.0222 U	**0.201**	**0.207**
Iron	0.3		**0.794**	**2.83**	**3.22**	**2.31**	**61.7**	**14.9**	**8.87**	**28.6 J-**	**24.1 J+**	**1.08 J-**	**36.2**	**9.52**	**7.11**
Lead	0.025		**0.0102 J+**	**0.0233 J+**	**0.021 J+**	0.00556 UJ	**0.321 J+**	**0.012 J-**	**0.0312 J-**	**0.0132 J+**	**0.052**	0.00556 UJ	**0.0455 J+**	**0.162**	**0.0956**
Magnesium	35	G	**60.2**	**368**	**372**	**14.5**	**55**	**470**	**167**	**63.8**	**64.8**	**12.8**	**129**	**25.1**	**104**
Manganese	0.3		**0.177**	**0.342**	**0.343**	**0.0262**	**1.55**	**0.924**	**0.472**	**1.42**	**0.793**	**0.0912**	**3.29**	**0.436**	**0.349**
Nickel	0.1		0.0111 U	0.0111 U	0.0111 U	0.0111 U	**0.391**	0.0111 U	0.0111 U	0.0111 U	0.05 U	0.0111 U	**0.0241**	0.1 U	0.1 U
Potassium	N/A		**33.3**	**164**	**167**	**8.75**	**31.1**	**194**	**150 J**	**58.6 J+**	**58.1**	**11.3 J+**	**52.9**	**17.1 J-**	**47.6 J-**
Silver	0.05		0.00556 U	0.00556 U	0.00556 U	0.00556 U	**0.0249**	0.00556 U	0.00556 U	0.00556 U	0.025 U	0.00556 U	0.00556 U	0.05 U	0.05 U
Sodium	20		**1080**	**5650**	**6080**	**99.7**	**317**	**162**	**2470 J+**	**791 J+**	**1020 J+**	**201 J+**	**314**	**289 J-**	**1670 J-**
Vanadium	N/A		0.0111 U	0.0111 U	0.0111 U	0.0111 U	**0.093**	0.0111 U	**0.0126**	0.0111 U	0.05 U	0.0111 U	**0.0399**	0.1 U	0.1 U
Zinc	2		0.0278 U	**0.0362**	**0.0376**	0.0278 U	**2.24**	**0.0356**	**0.0967**	0.0278 U	0.125 U	0.0278 U	**0.0964**	**0.407**	**0.359**
Metals by Method SW6020 (ug/L)															
Arsenic	25		**1.77 J**	**3.14**	**2.49**	1.11 U	**4.22**	**1.91**	**1.94**	**1.92**	5 U	1.11 U	**3.32**	**15.1**	**16.7**
Beryllium	3	G	**1.37 J**	0.333 UJ	0.333 UJ	0.333 U	**1.38**	0.333 U	0.333 U	0.333 U	1.5 U	0.333 U	**0.782 J**	3 U	3 U
Selenium	10		1.11 U	1.11 UJ	**4.63 J**	1.11 U	1.11 U	**3.68 J+**	**4.62 J+**	1.11 UJ	5 U	1.11 UJ	**2.08**	10 U	10 U
Mercury by Method SW7470 (mg/L)															
Mercury	0.0007		0.0002 U	0.0002 U	0.0002 U	0.0002 U	**0.001**	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	**0.0004**	**0.0025**	**0.0003**
Cyanide by Method SW9014 (mg/L)															
Cyanide	0.2		**0.032**	**0.051**	10 U	**0.026**	**0.04**	**0.035**	**0.056**	**0.029**	**0.038**	0.01 U	0.01 U	**0.098**	0.01 U

Table 3-3 Summary of Positive Analytical Results for Intermediate Groundwater Samples
Citizens-Carroll Garden MGP Off-Site Investigation Owl's Head Site, Brooklyn, NY

Analyte	Criteria [1]	Notes	Location ID:	OH-MW01I	OH-MW02I	DUP01	OH-MW03I	MW-04I	OH-MW04I	MW-05I	OH-MW05I	MW-06I	OH-MW06I	MW-07I	OH-MW07I	OH-MW08I
			Depth:	35 - 45 ft	32 - 42 ft	32 - 42 ft	32 - 42 ft	29 - 39 ft	39 - 49 ft	25 - 35 ft	32 - 42 ft	35 - 45 ft	34 - 44 ft	31 - 41 ft	27 - 37 ft	30 - 40 ft
			Date:	04/04/24	04/05/24	04/05/24	04/10/24	04/04/24	04/11/24	04/10/24	04/11/24	04/09/24	04/12/24	04/05/24	04/15/24	04/15/24

Key:

Qualifiers

J = Estimated value

J+ = Estimated value with high bias

J- = Estimated value with low bias

U = Not detected (method detection limit shown)

UJ = Not detected/estimated detection limit

UR = Not detected/result is rejected

R = Detect/result is rejected

Notes

G = Guidance value (no standard available)

N/A = Not regulated/no available criteria

PCB = Polychlorinated Biphenyls

PFAS = Per- and Polychlorinated Substances

Other

µg/L = Micrograms per liter

mg/L = Milligrams per liter

ng/L - Nanograms per liter

-- = Analyte not analyzed for

"-Q" denotes field duplicate sample

1	values
10	groundwa

1. New York State Department of Environmental Conservation, Technical and Operational Guidance Series Memorandum #1.1.1: *Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations,* 1998 (with updates), Class GA Groundwater Standards and

Table 3-4 Summary of Positive Analytical Results for Deep Groundwater Samples
Citizens-Carroll Garden MGP Off-Site Investigation Owl's Head Site, Brooklyn, NY

Analyte	Criteria [1]	Notes	Location ID: OH-MW03D Depth: 55 - 65 ft Date: 04/10/24	DUP02 55 - 65 ft 04/10/24	MW-04D 60 - 70 ft 04/04/24	MW-05D 60 - 70 ft 04/10/24	OH-MW05D 66 - 76 ft 04/11/24	MW-06D 60 - 70 ft 04/09/24	OH-MW06D 65 - 75 ft 04/12/24	MW-07D 60 - 70 ft 04/05/24
Volatile Organic Compounds by Method SW8260 (ug/L)										
1,2,4-Trimethylbenzene	5		105	122	0.31 U	7.22	56.8	122	25.4	95
1,3,5-Trimethylbenzene (Mesitylene)	5		37.3	37.4	0.347 U	2.04	16.8	38.8	6.93	30.8
1,4-Diethyl Benzene	N/A		6.31	6.74	0.341 U	0.67	4.84 J	4.8	1.76 J	3.14
4-Ethyltoluene	N/A		151	180	0.2 U	5.14 J	31.6	152 J	39.5	99
Benzene	1		260	316	0.279 U	3.77	11.4	31.3	13.2	456
Bromodichloromethane	50	G	0.245 U	0.245 U	2.28	0.245 U	0.245 U	0.245 U	0.245 U	0.245 U
Carbon Disulfide	60	G	0.362 U	0.362 U	0.362 U	0.39 J	0.362 U	1.58	0.362 U	0.362 U
Chloroform	7		0.243 U	0.243 U	28.5	0.243 U	0.37 U	0.243 U	0.243 U	0.243 UJ
Ethylbenzene	5		342	401	0.29 U	7.71	114	343	50.9	497
Isopropylbenzene (Cumene)	5		23.8	23.5	0.405 U	0.46 J	12.1	14.5	2.02	7.12
Methyl Ethyl Ketone (2-Butanone)	50	G	0.421 U	0.421 U	0.421 U	0.421 U	0.421 U	0.71	0.421 U	0.421 U
Methylene Chloride	5		0.82 U	0.82 U	0.397 U	0.397 U	0.397 U	0.397 U	3.75	0.397 U
N-Butylbenzene	5		24.3	24.9 J	0.399 U	0.399 U	11.8 J	28.4	6 J	0.5
N-Propylbenzene	5		6.42	6.44	0.384 U	0.384 U	3.12	6.8	1.19	5.42
P-Cymene (P-Isopropyltoluene)	N/A		5.17	5.32	0.377 U	0.69	2.74	4.16	1.2	3.03
Styrene	5		43.1	45.2	0.255 U	1.5	2.3	47.4	2.98	90.5
Tert-Butyl Alcohol	N/A		0.608 UJ	0.608 UJ	0.608 UJ	0.608 U	1.01 J	0.608 U	0.608 UJ	0.608 U
Toluene	5		208	252	0.346 U	4.06	7.86	90.5	19.8	840
Total Xylenes[2]	5		503	578	0.839 U	11.2	150	419	61.3	592
Total VOCs:			1,715	1,999	31	45	426	1,305	236	2,720
Total BTEX:			1,313	1,547	ND	27	283	884	145	2,385
Semivolatile Organic Compounds by Method SW8270D (ug/L)										
2-Methylnaphthalene	N/A		326 J	312 J	2.5 U	65.4 J	78.6 J+	308	109	210
Acenaphthene	20	G	35	50 UR	0.07 J	25 U	64	64	19.5	484
Acenaphthylene	N/A		25	35	0.07 J	25 U	16	239	41.5	105
Anthracene	50	G	25 U	25	0.05 J	25 U	10 U	17	7.5	102
Benzo(A)Anthracene	0.002	G	25 U	250 U	0.05 J	25 U	10 U	6	2.5 U	10 U
Biphenyl (Diphenyl or 1,1'-Biphenyl)	5		50 UJ	50 U	2.5 U	2.5 UJ	16.6	125 U	2.5 U	25 U
Carbazole	N/A		50 U	50 UR	2.5 U	2.5 U	5 U	125 U	2.5 U	25 U
Chrysene	0.002	G	25 U	250 UJ	0.05 J	25 U	10 U	6	2.5 U	10 U
Fluoranthene	50	G	25 U	25 U	0.12 J	25 U	10 U	13	2.5 U	54
Fluorene	50	G	25 U	25 U	0.08 J	25 U	22	59	21.5	472
Naphthalene	10	G	860	25 U	0.05 U	35	10	290	180	1690
Phenanthrene	50	G	25 U	125 UJ	0.06 J	25 U	20	57	19	528
Pyrene	50	G	25 U	25 U	0.1 J	25 U	10 U	13	2.5 U	60
Total SVOCs:			1,246	372	0.65	100	227	1,072	398	3,705

Table 3-4 Summary of Positive Analytical Results for Deep Groundwater Samples
Citizens-Carroll Garden MGP Off-Site Investigation Owl's Head Site, Brooklyn, NY

Analyte	Criteria [1]	Notes	Location ID: OH-MW03D Depth: 55 - 65 ft Date: 04/10/24	DUP02 55 - 65 ft 04/10/24	MW-04D 60 - 70 ft 04/04/24	MW-05D 60 - 70 ft 04/10/24	OH-MW05D 66 - 76 ft 04/11/24	MW-06D 60 - 70 ft 04/09/24	OH-MW06D 65 - 75 ft 04/12/24	MW-07D 60 - 70 ft 04/05/24
PFAS by Method E1633 (ng/L)										
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid	N/A		10.6 UJ	**7.51 J**	**173 J**	**18 J**	**5.94 J**	**42.2 J**	**5.38 J**	**3.81 J**
Perfluorobutanesulfonic acid (PFBS)	N/A		4.7 U	**0.561 J**	0.5 U	0.515 U	0.48 U	0.489 U	**0.512 J**	**0.537 J**
Perfluorobutanoic Acid	N/A		**5.65 R**	0.341 UR	0.351 UR	0.645 UR	0.337 UR	0.343 UR	**0.419 J**	**0.753 R**
Perfluoroheptanoic acid (PFHpA)	N/A		7.1 U	0.734 UJ	**1.54 J**	0.777 U	0.726 UJ	**2.79 J**	0.724 UJ	0.707 U
Perfluorohexanesulfonic acid (PFHxS)	N/A		6.8 U	0.703 U	0.724 U	0.744 U	0.695 U	**1.49 J**	0.693 U	0.678 U
Perfluorohexanoic acid (PFHxA)	N/A		3.5 U	**0.613 J**	**17.3**	0.383 U	0.358 U	**7.89 J**	0.357 U	**0.684 J**
Perfluorononanoic acid (PFNA)	N/A		**5.46 J**	0.537 UJ	0.554 U	**0.702 J**	0.532 U	**1.13 J**	**0.592 J**	0.518 U
Perfluorooctanesulfonic acid (PFOS)	2.7		8.2 U	0.847 U	0.873 U	0.898 U	0.838 U	**6.64 J**	0.836 U	**0.866 J**
Perfluorooctanoic acid (PFOA)	6.7		4.2 U	0.434 U	**0.718 J**	0.46 U	0.429 U	**15.1 J**	0.428 U	0.418 U
Perfluoropentanoic Acid (PFPeA)	N/A		2.3 U	**9.35**	**38.9**	0.252 U	0.235 U	**3.62 J**	0.235 U	**14.5**
Metals by Method SW6010 (mg/L)										
Aluminum	N/A		**0.561 J+**	**0.419 J+**	**1.17 J+**	**0.158 J+**	**0.31 J+**	**0.362**	**0.281 J+**	**0.383 J+**
Barium	1		**0.884**	**0.884**	**0.0998**	**0.166 J+**	**0.544**	**0.654**	**1.01**	**0.362**
Calcium	N/A		**371**	**371**	**96.7**	**275 J+**	**278**	**252 J+**	**727**	**355**
Chromium, Total	0.05		0.00556 U	0.00556 U	0.00556 U	0.00556 U	0.00556 U	**0.00626**	0.00556 U	0.00556 U
Copper	0.2		**0.0339 J**	**0.0295 J**	0.0222 U	0.0222 U	0.0222 U	**0.0284**	0.0222 U	**0.0313**
Iron	0.3		**13.4**	**12.9**	**1.16**	**1.46 J+**	**9.11 J-**	**2.7 J+**	**2.75 J-**	**9.85**
Lead	0.025		**0.00594 J-**	0.00556 UJ	**0.0132 J+**	**0.0056 J-**	**0.0112 J+**	**0.0213**	0.00556 UJ	**0.0115 J+**
Magnesium	35	G	**467**	**462**	**46.4**	**110**	**287**	**292**	**253**	**409**
Manganese	0.3		**0.923**	**0.929**	**0.426**	**1.2 J+**	**0.719**	**1.02**	**2.04**	**0.725**
Potassium	N/A		**163**	**167**	**7.55**	**22.1 J+**	**128 J+**	**125**	**54.3 J+**	**163**
Silver	0.05		0.00556 U	0.00556 U	0.00556 UJ	0.00556 U	0.00556 U	0.00556 U	**0.00789**	0.00556 U
Sodium	20		**4510**	**4560**	**43.8**	**1180 J+**	**3180 J**	**2610**	**1300 J**	**4360**
Zinc	2		**0.0309**	**0.0279**	**0.0425**	0.0278 U	0.0278 U	**0.189**	0.0278 U	0.0278 U
Metals by Method SW6020 (ug/L)										
Antimony	3		1.11 U	1.11 U	**1.76**	1.11 U	1.11 U	**2.81**	1.11 U	1.11 U
Arsenic	25		**5.55**	**5.25**	1.11 U	**10.6**	**2.82**	**6.73**	**5.43**	**2.92**
Selenium	10		**3.67 J+**	**3.21 J+**	1.11 U	**1.85 J+**	1.11 UJ	**2.21 J+**	1.11 UJ	1.11 U
Cyanide by Method SW9014 (mg/L)										
Cyanide	0.2		0.01 U	25 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	**0.016**

Table 3-4 Summary of Positive Analytical Results for Deep Groundwater Samples
Citizens-Carroll Garden MGP Off-Site Investigation Owl's Head Site, Brooklyn, NY

Analyte	Criteria [1]	Notes	Location ID:	OH-MW03D	DUP02	MW-04D	MW-05D	OH-MW05D	MW-06D	OH-MW06D	MW-07D
			Depth:	55 - 65 ft	55 - 65 ft	60 - 70 ft	60 - 70 ft	66 - 76 ft	60 - 70 ft	65 - 75 ft	60 - 70 ft
			Date:	04/10/24	04/10/24	04/04/24	04/10/24	04/11/24	04/09/24	04/12/24	04/05/24

Key:

Qualifiers

J = Estimated value

J+ = Estimated value with high bias

J- = Estimated value with low bias

U = Not detected (method detection limit shown)

UJ = Not detected/estimated detection limit

UR = Not detected/result is rejected

R = Detect/result is rejected

Notes

G = Guidance value (no standard available)

N/A = Not regulated/no available criteria

PCB = Polychlorinated Biphenyls

PFAS = Per- and Polychlorinated Substances

Other

µg/L = Micrograms per liter

mg/L = Milligrams per liter

ng/L - Nanograms per liter

-- = Analyte not analyzed for

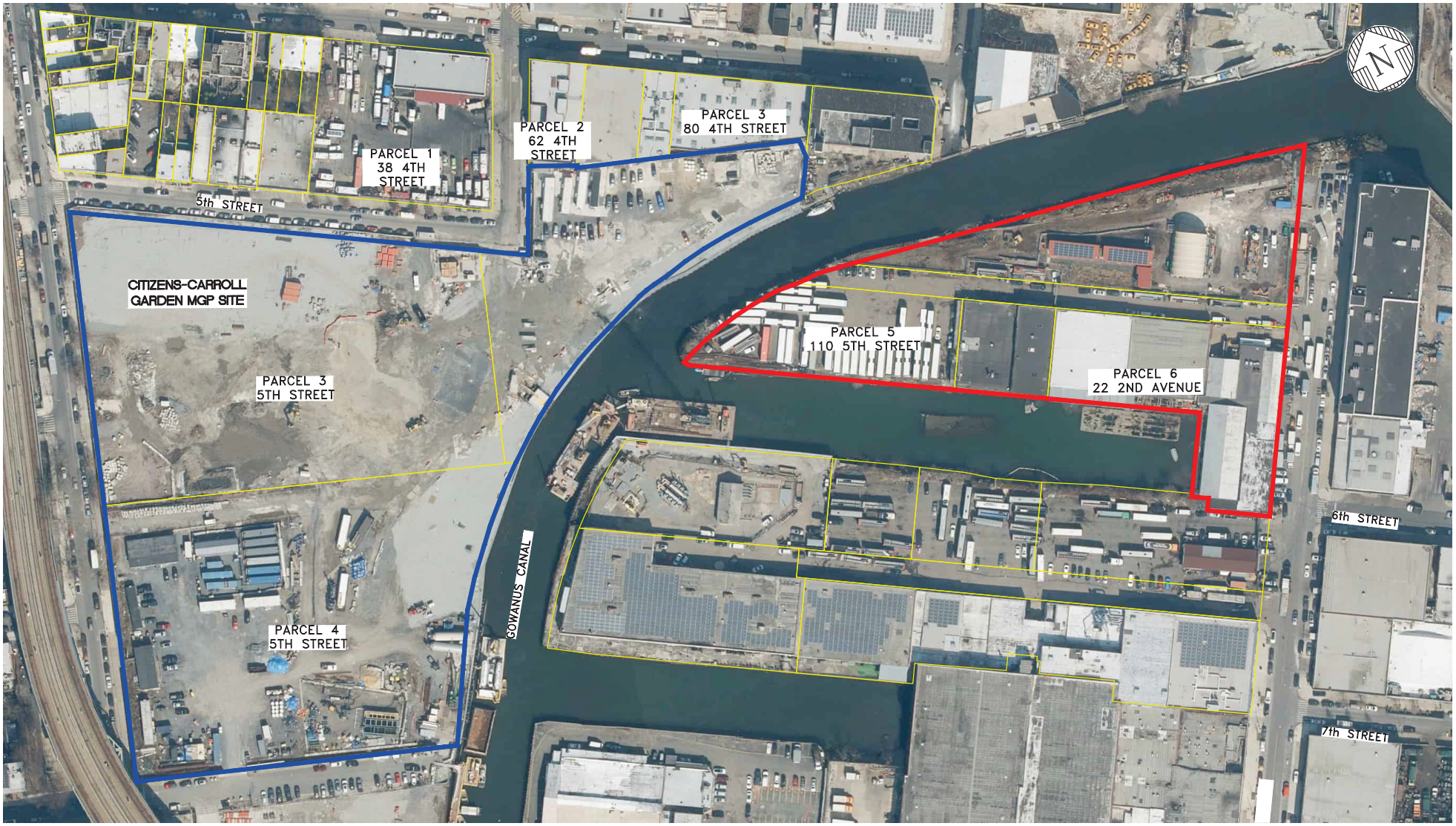
"-Q" denotes field duplicate sample

1	values
10	groundwa

1. New York State Department of Environmental Conservation, Technical and Operational Guidance Series Memorandum #1.1.1: *Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations,* 1998 (with updates), Class GA Groundwater Standards and

2. Total Xylenes consists of the ortho-, meta-, and para- isomoers.

Figures



SCALE IN FEET

0 120 240 360

NOTES

1. AERIAL IMAGERY SHOWN IS FROM KINGS COUNTY, NEW YORK (2022).

LEGEND

- PARCEL BOUNDARY
- OWLS HEAD SITE
- CITIZENS–CARROLL GARDEN MGP SITE

COMPLETED BY:
PREPARED BY: KMK
PROJECT MANGER: BC
5–13–2024
SCALE: AS SHOWN
PROJECT: EE1705007.0028

FIGURE 1-1 - OWLS HEAD SITE LOCATION

PREPARED FOR: NEW YORK STATE Department of Environmental Conservation

PREPARED BY: ecology and environment engineering and geology p.c.



SCALE IN FEET

0 60 120 180

NOTES

1. AERIAL IMAGERY SHOWN IS FROM KINGS COUNTY, NEW YORK (2022).

LEGEND

SOIL BORING LOCATION

APPROXIMATE ALIGNMENT OF CSO TANK SUPPORT (MRCE2020)

COMPLETED BY:
PREPARED BY: KMK
PROJECT MANGER: BC
5-13-2024
SCALE: AS SHOWN
PROJECT: EE1705007.0031

FIGURE 2-1 - OWLS HEAD SOIL BORING LOCATIONS

PREPARED FOR: NEW YORK STATE Department of Environmental Conservation

PREPARED BY: ecology and environment engineering and geology p.c.



SCALE IN FEET

0 60 120 180

NOTES

1. AERIAL IMAGERY SHOWN IS FROM KINGS COUNTY, NEW YORK (2022).

LEGEND

EXISTING MONITORING WELL

NEW MONITORING WELL

APPROXIMATE ALIGNMENT OF CSO TANK SUPPORT (MRCE2020)

COMPLETED BY:
PREPARED BY: KMK
PROJECT MANGER: BC
3-27-2024
SCALE: AS SHOWN
PROJECT: EE1705007.0031

FIGURE 2-2 - OWLS HEAD MONITORING WELL LOCATIONS

PREPARED FOR: NEW YORK STATE Department of Environmental Conservation

PREPARED BY: ecology and environment engineering and geology p.c.



SCALE IN FEET

0 60 120 180

NOTES

1. AERIAL IMAGERY SHOWN IS FROM KINGS COUNTY, NEW YORK (2022).

LEGEND

EXISTING SHALLOW MONITORING WELL	3.82	GROUNDWATER ELEVATION
NEW SHALLOW MONITORING WELL	NA	NOT ACCESSIBLE
APPROXIMATE ALIGNMENT OF CSO TANK SUPPORT (MRCE2020)	2	GROUNDWATER CONTOUR

COMPLETED BY:
PREPARED BY: KMK
PROJECT MANGER: BC
3-27-2024
SCALE: AS SHOWN
PROJECT: EE1705007.0031

FIGURE 2-3 - OWLS HEAD
SHALLOW GROUNDWATER CONTOURS

PREPARED FOR: NEW YORK STATE Department of Environmental Conservation

PREPARED BY: ecology and environment engineering and geology p.c.



SCALE IN FEET

0 60 120 180

NOTES

1. AERIAL IMAGERY SHOWN IS FROM KINGS COUNTY, NEW YORK (2022).

LEGEND

- EXISTING INTERMEDIATE MONITORING WELL 3.82 GROUNDWATER ELEVATION
- NEW INTERMEDIATE MONITORING WELL NA NOT ACCESSIBLE
- APPROXIMATE ALIGNMENT OF CSO TANK SUPPORT (MRCE2020)
- 2 GROUNDWATER CONTOUR

COMPLETED BY:
PREPARED BY: KMK
PROJECT MANGER: BC
3-27-2024
SCALE: AS SHOWN
PROJECT: EE1705007.0031

FIGURE 2-4 - OWLS HEAD
INTERMEDIATE GROUNDWATER CONTOURS

PREPARED FOR: NEW YORK STATE Department of Environmental Conservation

PREPARED BY: ecology and environment engineering and geology p.c.



SCALE IN FEET

0 60 120 180

NOTES

1. AERIAL IMAGERY SHOWN IS FROM KINGS COUNTY, NEW YORK (2022).

LEGEND

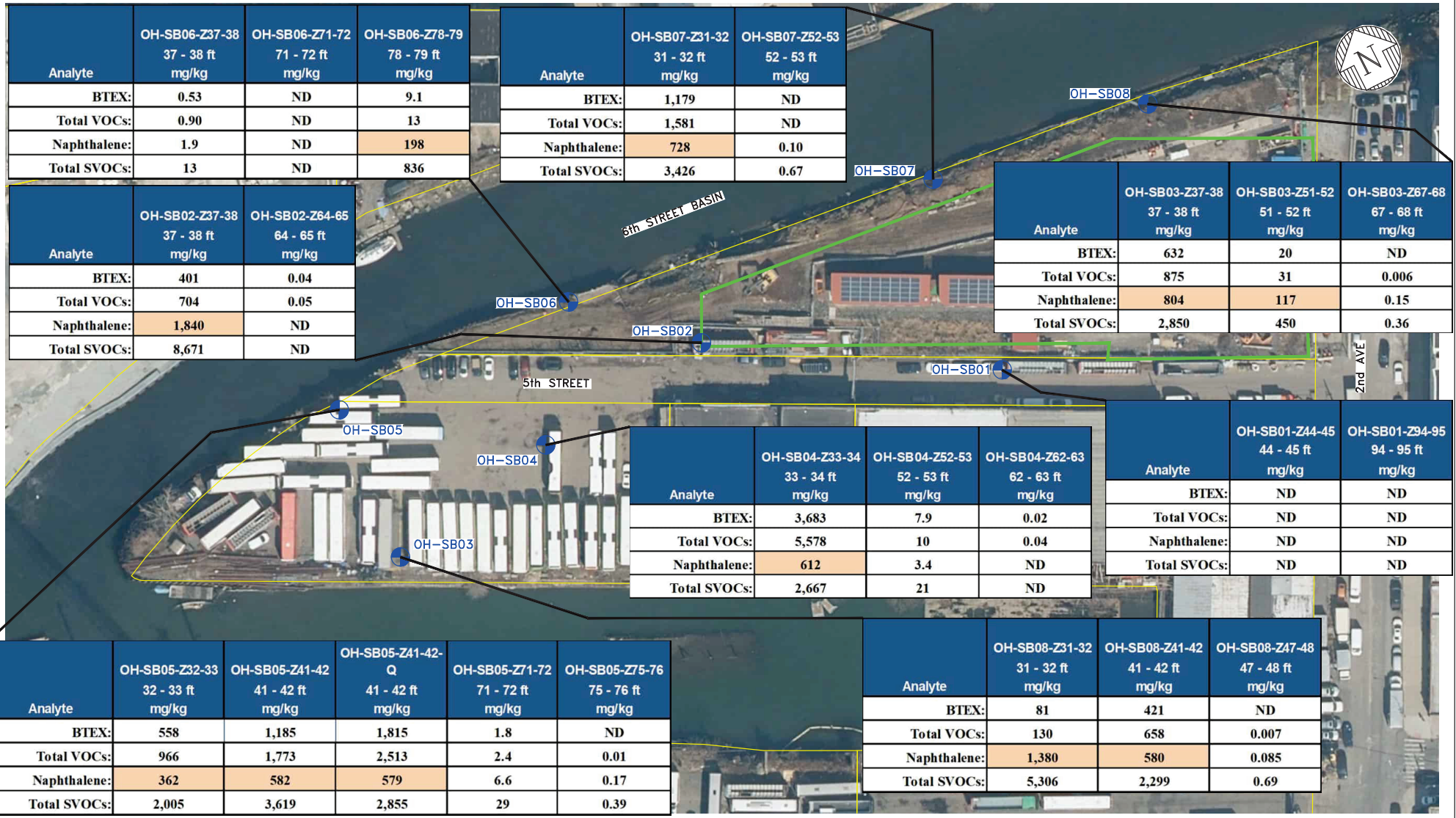
EXISTING DEEP MONITORING WELL	3.82	GROUNDWATER ELEVATION
NEW DEEP MONITORING WELL	NA	NOT ACCESSIBLE
APPROXIMATE ALIGNMENT OF CSO TANK SUPPORT (MRCE2020)		

COMPLETED BY:
PREPARED BY: KMK
PROJECT MANGER: BC
3-27-2024
SCALE: AS SHOWN
PROJECT: EE1705007.0031

FIGURE 2-5 - OWLS HEAD
DEEP GROUNDWATER RESULTS

PREPARED FOR: NEW YORK STATE Department of Environmental Conservation

PREPARED BY: ecology and environment engineering and geology p.c.



Analyte	OH-SB06-Z37-38 37 - 38 ft mg/kg	OH-SB06-Z71-72 71 - 72 ft mg/kg	OH-SB06-Z78-79 78 - 79 ft mg/kg
BTEX:	0.53	ND	9.1
Total VOCs:	0.90	ND	13
Naphthalene:	1.9	ND	198
Total SVOCs:	13	ND	836

Analyte	OH-SB07-Z31-32 31 - 32 ft mg/kg	OH-SB07-Z52-53 52 - 53 ft mg/kg
BTEX:	1,179	ND
Total VOCs:	1,581	ND
Naphthalene:	728	0.10
Total SVOCs:	3,426	0.67

Analyte	OH-SB02-Z37-38 37 - 38 ft mg/kg	OH-SB02-Z64-65 64 - 65 ft mg/kg
BTEX:	401	0.04
Total VOCs:	704	0.05
Naphthalene:	1,840	ND
Total SVOCs:	8,671	ND

Analyte	OH-SB03-Z37-38 37 - 38 ft mg/kg	OH-SB03-Z51-52 51 - 52 ft mg/kg	OH-SB03-Z67-68 67 - 68 ft mg/kg
BTEX:	632	20	ND
Total VOCs:	875	31	0.006
Naphthalene:	804	117	0.15
Total SVOCs:	2,850	450	0.36

Analyte	OH-SB04-Z33-34 33 - 34 ft mg/kg	OH-SB04-Z52-53 52 - 53 ft mg/kg	OH-SB04-Z62-63 62 - 63 ft mg/kg
BTEX:	3,683	7.9	0.02
Total VOCs:	5,578	10	0.04
Naphthalene:	612	3.4	ND
Total SVOCs:	2,667	21	ND

Analyte	OH-SB01-Z44-45 44 - 45 ft mg/kg	OH-SB01-Z94-95 94 - 95 ft mg/kg
BTEX:	ND	ND
Total VOCs:	ND	ND
Naphthalene:	ND	ND
Total SVOCs:	ND	ND

Analyte	OH-SB05-Z32-33 32 - 33 ft mg/kg	OH-SB05-Z41-42 41 - 42 ft mg/kg	OH-SB05-Z41-42-Q 41 - 42 ft mg/kg	OH-SB05-Z71-72 71 - 72 ft mg/kg	OH-SB05-Z75-76 75 - 76 ft mg/kg
BTEX:	558	1,185	1,815	1.8	ND
Total VOCs:	966	1,773	2,513	2.4	0.01
Naphthalene:	362	582	579	6.6	0.17
Total SVOCs:	2,005	3,619	2,855	29	0.39

Analyte	OH-SB08-Z31-32 31 - 32 ft mg/kg	OH-SB08-Z41-42 41 - 42 ft mg/kg	OH-SB08-Z47-48 47 - 48 ft mg/kg
BTEX:	81	421	ND
Total VOCs:	130	658	0.007
Naphthalene:	1,380	580	0.085
Total SVOCs:	5,306	2,299	0.69

LEGEND

SOIL BORING LOCATION

APPROXIMATE ALIGNMENT OF CSO TANK SUPPORT (MRCE2020)

SCALE IN FEET

0 60 120 180

NOTES

1. AERIAL IMAGERY SHOWN IS FROM KINGS COUNTY, NEW YORK (2022).

ND NOT DETECTED

ft FEET BELOW GROUND SURFACE

100 EXCEEDS PART 375 UNRESTRICTED USE AND PROTECTION OF GROUNDWATER SOIL CLEANUP OBJECTIVES

mg/kg MILLIGRAMS PER KILOGRAM

BTEX TOTAL OF BENZENE, ETHYLBENZENE, XYLENES, AND TOLUENE. XYLENES IS THE TOTAL OF M,P-XYLENE, O-XYLENE, AND XYLENES.

VOCs VOLATILE ORGANIC COMPOUNDS

SVOCs SEMI-VOLATILE ORGANIC COMPOUNDS

COMPLETED BY:
PREPARED BY: KMK
PROJECT MANGER: BC
5-13-2024
SCALE: AS SHOWN
PROJECT: EE1705007.0031

FIGURE 3-1 - BOREHOLE SAMPLE RESULTS FIGURE

PREPARED FOR: NEW YORK STATE Department of Environmental Conservation

PREPARED BY: ecology and environment engineering and geology p.c.



LEGEND

- EXISTING SHALLOW MONITORING WELL
- NEW SHALLOW MONITORING WELL
- APPROXIMATE ALIGNMENT OF CSO TANK SUPPORT (MRCE2020)

ND NOT DETECTED

ft FEET BELOW GROUND SURFACE

100 EXCEEDS GROUNDWATER STANDARD

ug/L MICROGRAMS PER LITER

BTEX TOTAL OF BENZENE, ETHYLBENZENE, XYLENES, AND TOLUENE. XYLENES IS THE TOTAL OF M,P-XYLENE, O-XYLENE, AND XYLENES.

VOCs VOLATILE ORGANIC COMPOUNDS

SVOCs SEMI-VOLATILE ORGANIC COMPOUNDS

NOTES

1. AERIAL IMAGERY SHOWN IS FROM KINGS COUNTY, NEW YORK (2022).
2. THE HIGHEST CONCENTRATION OF NAPHTHALENE DETECTED IN EACH GROUNDWATER SAMPLE IS REPORTED IN THIS FIGURE.

SCALE IN FEET

0 60 120 180

COMPLETED BY:
PREPARED BY: KMK
PROJECT MANGER: BC
3-27-2024
SCALE: AS SHOWN
PROJECT: EE1705007.0031

FIGURE 3-2 - OWLS HEAD SHALLOW MONITORING WELL SAMPLE RESULTS FIGURE

PREPARED FOR: NEW YORK STATE Department of Environmental Conservation

PREPARED BY: ecology and environment engineering and geology p.c.



LEGEND

- EXISTING INTERMEDIATE MONITORING WELL
- NEW INTERMEDIATE MONITORING WELL
- APPROXIMATE ALIGNMENT OF CSO TANK SUPPORT (MRCE2020)

ND NOT DETECTED

ft FEET BELOW GROUND SURFACE

100 EXCEEDS GROUNDWATER STANDARD

ug/L MICROGRAMS PER LITER

BTEX TOTAL OF BENZENE, ETHYLBENZENE, XYLENES, AND TOLUENE. XYLENES IS THE TOTAL OF M,P-XYLENE, O-XYLENE, AND XYLENES.

VOCs VOLATILE ORGANIC COMPOUNDS

SVOCs SEMI-VOLATILE ORGANIC COMPOUNDS

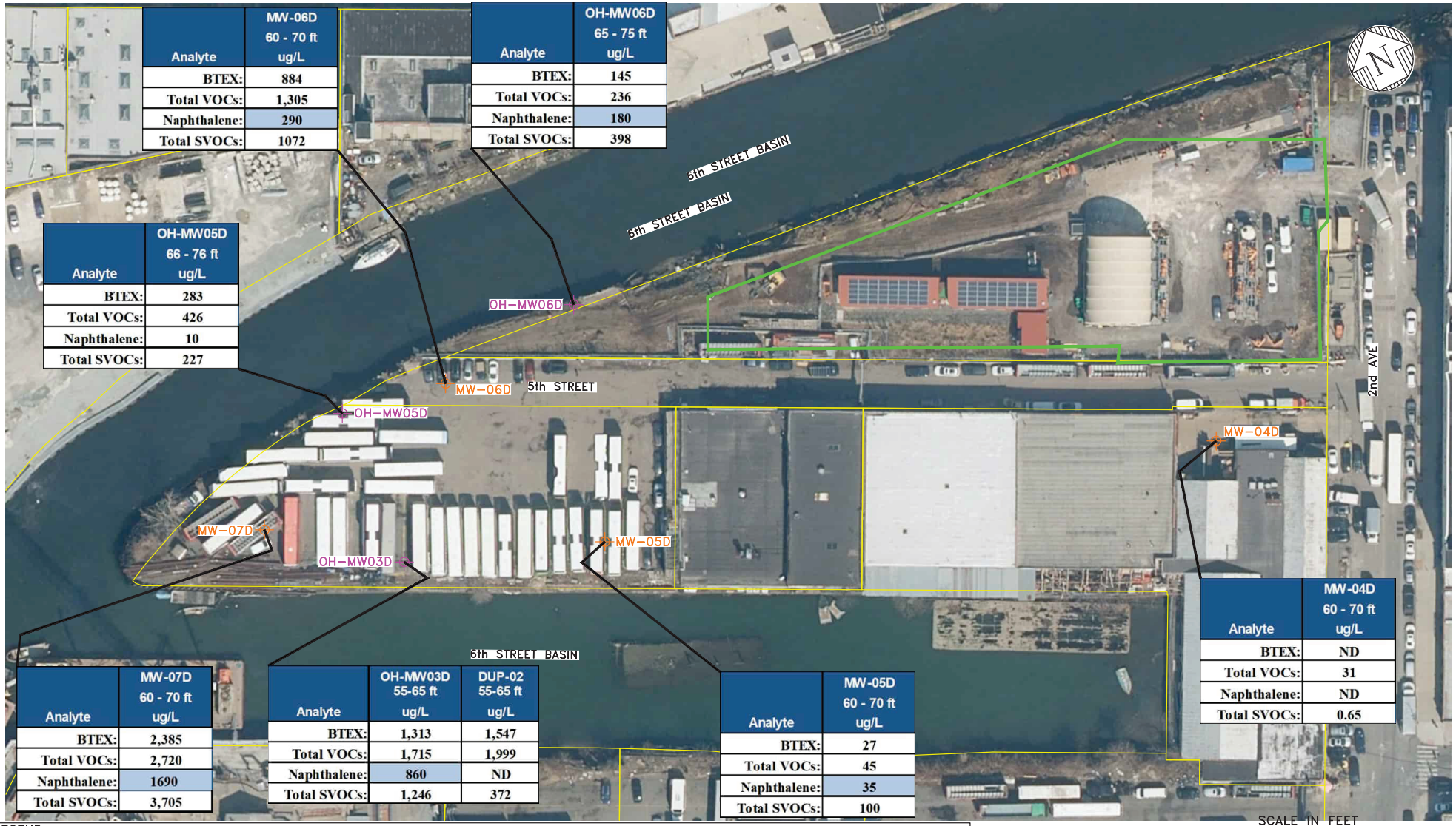
NOTES
1. AERIAL IMAGERY SHOWN IS FROM KINGS COUNTY, NEW YORK (2022).

COMPLETED BY:
PREPARED BY: KMK
PROJECT MANGER: BC
3-27-2024
SCALE: AS SHOWN
PROJECT: EE1705007.0031

FIGURE 3-3 - OWLS HEAD INTERMEDIATE MONITORING WELL SAMPLE RESULTS FIGURE

PREPARED FOR: NEW YORK STATE Department of Environmental Conservation

PREPARED BY: ecology and environment engineering and geology p.c.



LEGEND

- EXISTING DEEP MONITORING WELL
- NEW DEEP MONITORING WELL
- APPROXIMATE ALIGNMENT OF CSO TANK SUPPORT (MRCE2020)

ND NOT DETECTED

ft FEET BELOW GROUND SURFACE

100 EXCEEDS GROUNDWATER STANDARD

ug/L MICROGRAMS PER LITER

BTEX TOTAL OF BENZENE, ETHYLBENZENE, XYLENES, AND TOLUENE. XYLENES IS THE TOTAL OF M,P-XYLENE, O-XYLENE, AND XYLENES.

VOCs VOLATILE ORGANIC COMPOUNDS

SVOCs SEMI-VOLATILE ORGANIC COMPOUNDS

NOTES

1. AERIAL IMAGERY SHOWN IS FROM KINGS COUNTY, NEW YORK (2022).
2. NAPHTHALENE WAS ANALYZED FOR BY EITHER EPA METHOD 8260 FOR VOCS AND/OR EPA METHOD 8270 FOR SVOCS IN EACH GROUNDWATER SAMPLE COLLECTED.

COMPLETED BY:
PREPARED BY: KMK
PROJECT MANGER: BC
3-27-2024
SCALE: AS SHOWN
PROJECT: EE1705007.0031

FIGURE 3-4 - OWLS HEAD DEEP MONITORING WELL SAMPLE RESULTS FIGURE

PREPARED FOR: NEW YORK STATE Department of Environmental Conservation

PREPARED BY: ecology and environment engineering and geology p.c.

A Photographic Log

ecology and environment
engineering and geology, p.c.

PHOTOGRAPHIC LOG		
NYSDEC	**Citizens-Carroll Garden MGP Off-Site Investigation Owl's Head Site, Brooklyn, NY**	**EE1705007.0031**

Photo No.	**Date**
1	March 15, 2024

Estimated location of soil boring OH-SB-06 facing south during site walkover.



Photo No.	**Date**
2	March 15, 2024

Estimated location of soil boring OH-SB-06 facing east during site walkover.



ecology and environment
engineering and geology, p.c.

PHOTOGRAPHIC LOG		
NYSDEC	**Citizens-Carroll Garden MGP Off-Site Investigation Owl's Head Site, Brooklyn, NY**	**EE1705007.0031**

Photo No.	**Date**
3	March 18, 2024

Sonic drill rig set up at borehole location OH-SB-01.



Photo No.	**Date**
4	March 18, 2024

Set up of temporary IDW drum storage area between OH-SB-06 and OH-SB-07 borehole locations.



PHOTOGRAPHIC LOG		
NYSDEC	**Citizens-Carroll Garden MGP Off-Site Investigation Owl's Head Site, Brooklyn, NY**	**EE1705007.0031**

Photo No.	**Date**
5	March 19, 2024

Shallow soil with wood/root fragments from the OH-SB-01 borehole.



Photo No.	**Date**
6	March 19, 2024

Completed flush mount wells OH-MW01I (foreground) and OH-MW01S (background).



PHOTOGRAPHIC LOG		
NYSDEC	**Citizens-Carroll Garden MGP Off-Site Investigation Owl's Head Site, Brooklyn, NY**	**EE1705007.0031**

Photo No.	**Date**
7	March 20, 2024

Decontamination of the sonic core barrel while drilling at boring location OH-SB02.



Photo No.	**Date**
8	March 20, 2024

NAPL stained soil from 37-38 ft. bgs in the OH-SB02 borehole.



PHOTOGRAPHIC LOG		
NYSDEC	**Citizens-Carroll Garden MGP Off-Site Investigation Owl's Head Site, Brooklyn, NY**	**EE1705007.0031**

Photo No.	**Date**
9	March 21, 2024

Wood observed in the core barrel encountered 20-30 ft. bgs in the OH-SB06 borehole.



Photo No.	**Date**
10	March 21, 2024

NAPL saturated soil between 31-50 ft. bgs in the OH-SB06 borehole.



PHOTOGRAPHIC LOG		
NYSDEC	**Citizens-Carroll Garden MGP Off-Site Investigation Owl's Head Site, Brooklyn, NY**	**EE1705007.0031**

Photo No.	**Date**	
11	April 3, 2024	
NAPL coating the water level meter during a gauging event.		

Photo No.	**Date**	
12	April 15, 2024	
Free product sampled from intermediate monitoring well OH-MW07I.		

PHOTOGRAPHIC LOG		
NYSDEC	**Citizens-Carroll Garden MGP Off-Site Investigation Owl's Head Site, Brooklyn, NY**	**EE1705007.0031**

Photo No.	**Date**
13	April 19, 2024

Poorly graded silty sand in the 94 to 95 ft bgs interval in the OH-SB01 borehole. No observed impacts.



Photo No.	**Date**
14	April 29, 2024

Temporary storage for IDW purge water drums on the north side of the site's main access road.

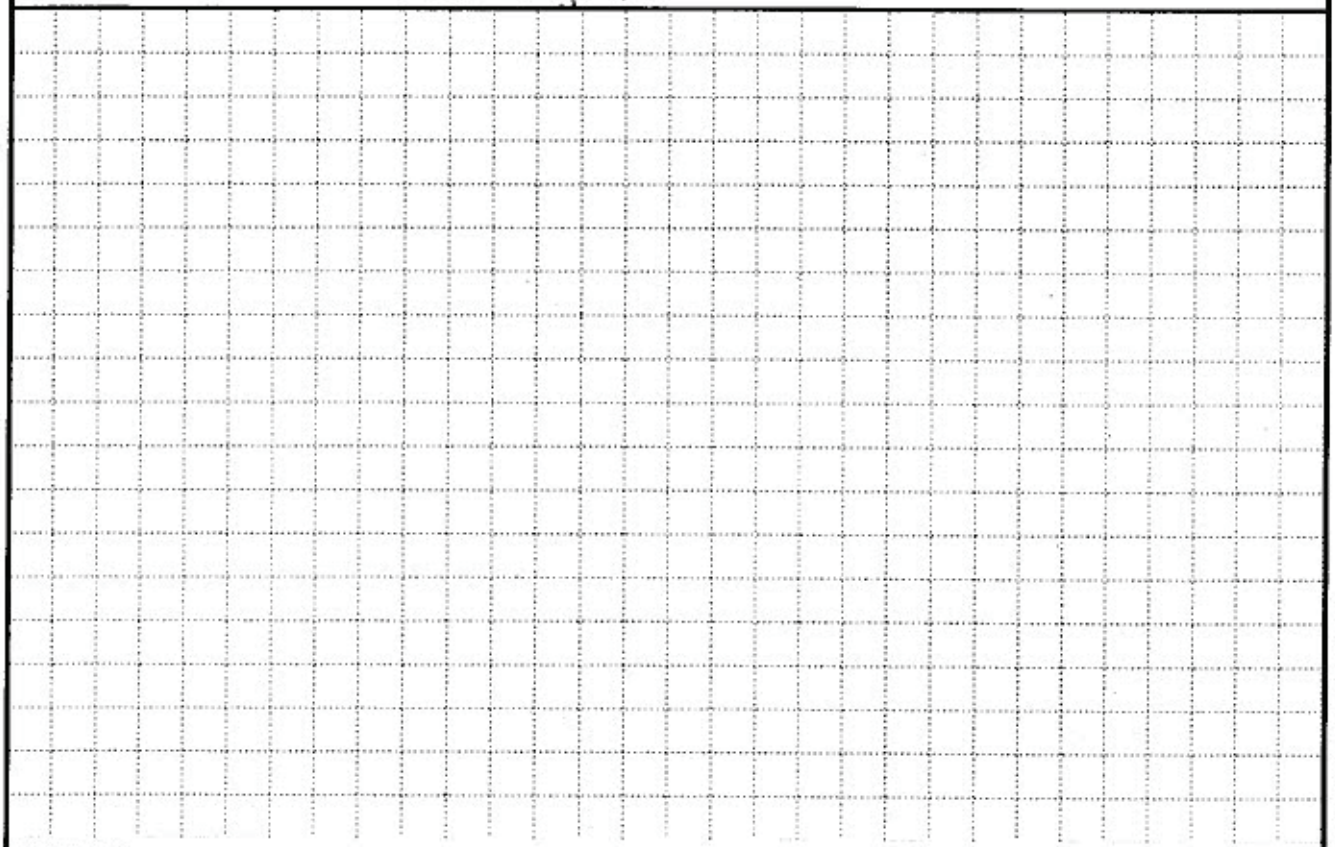


B Borehole Logs

HTRW DRILLING LOG

District		Hole Number SB-01
1. Company Name: WSP USA (E&E)	2. Drill Subcontractor: Cascade Drilling LP (ADT)	Sheet 1 of Sheets
3. Project: EE 1705007.0031	4. Location: Gowanus - Brooklyn, NY	
5. Name of Driller: D. Moon (Cascade/ADT)	6. Manufacturer's Designation of Drill	
7. Sizes and Types of Drilling and Sampling Equipment	8. Hole Location	
	9. Surface Elevation	
	10. Date Started: 3-18-2024	11. Date Completed: 3-19-2024
12. Overburden Thickness: 100'/+	15. Depth Groundwater Encountered: 4' BGS	
13. Depth Drilled Into Rock: Ø	16. Depth to Water and Elapsed Time After Drilling Completed	
14. Total Depth of Hole: 100' BGS	17. Other Water Level Managements (Specify)	
18. Geological Samples: Disturbed	Undisturbed	19. Total Number of Core Boxes
20. Samples For Chemical Analysis: 2 VOC	Metals	Other (Specify) / Other (Specify) / Other (Specify) / 21. Total Core Recovery %
22. Disposition of Hole: Backfilled	Monitoring Well: 2	Other (Specify) / 23. Signature of Inspector

LOCATION SKETCH/COMMENTS * See fig. 1 **SCALE:**



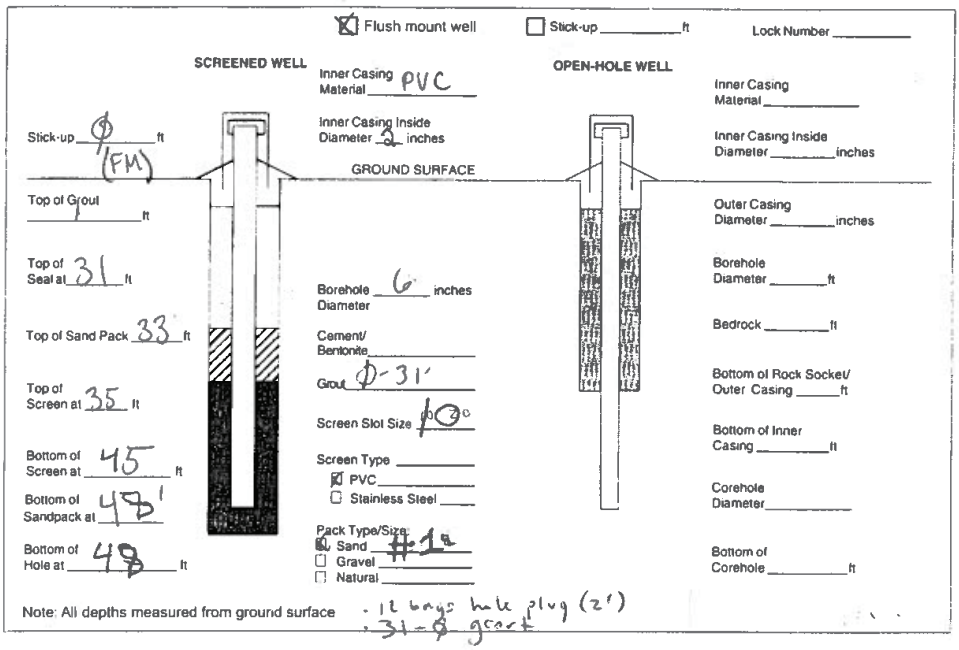
PROJECT **HOLE NO.**

ENG FORM 5056-R, AUG 94 (Proponent: CECW-EG)

02 0000/H 0602 00/HTRW_drilling log.cdr-GRA

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Well Construction Log for Well No. _____



Comments

OH-MW01I : SB-01 drilled to 100' BGS, bentonite sealed From 48-100' BGS,

OH-MW01S : 14' BGS (bottom of hole), screened 3-13' BGS, sand 2-14' BGS, 1-2' BGS bentonite chips, ~0.5-1' BGS grout. Well is 2" PVC, screen slot size 10, #1 sand, flush mount

Investigation Derived Waste					
Container ID	**Source**	**Date**	**Contents**	**Volume**	**Location/Comments**

EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Hole Number: SB-01
Sheet: 1 of 6

Project: Owl's Head
Inspector: C. Porreca

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
		Asphalt					
		GW-GC					
		Asphalt					
		construction materials					
		SW-SM					
	5	SW-SM w/ const. materials					
		CL					
	10	CL					
		Peat w/CL					
		CL w/Peat					
	15	CL					

PROJECT: Owl's Head Gowanus
HOLE NO.: SB-01

(Proponent: CECW-EG)

02:0000/H.0602.00/HTRW_drilling log.cdr:GRA

ENG FORM 5056A-R, AUG 94

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

07-002260 KZ03 04_07-B2651

Page 1 of 6 Borehole No. SB-01

Depth(feet).	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
0	full	~0-0.5' Asphalt	●	○	○
	(5.0/	~0.5-1.5' SA GRAVEL, well-graded w/CLAY	●	○	○
	5.0)	(GW-GC)	●	○	○
		~1.5-2.0' Asphalt	●	○	○
		~2.0-2.5' Construction Debris	●	○	○
		(concrete, brick, wood, etc.)	●	○	○
		~2.5-5.0 Dark brown well graded	○	●	○
		SAND w/SILT & GRAVEL (SW-SM)	○	●	○
5		- ▽@4.0' BGS	○	●	○
		5-6.8' same as above w/construction	○	●	○
		materials throughout	○	●	○
		6.8-10' Lean CLAY (CL), trace organics (roots)	○	●	○
	(4.7/	-6.8-8' Dark gray-gray banding	○	●	○
	8.0)	~8-9' Gray-lt. gray banding, lt. brown	○	●	○
		~9-10' Gray-dark gray, med. brown	○	●	○
			○	●	○
10		10.0-13.0' Same as above	○	●	○
			○	●	○
		13.0-14.0' Peat w/silty CLAY (CL)	○	●	○
	(8.5/	(Dark brown)	○	●	○
	10.0')	14.0-15.0' silty CLAY and peat (CL)	○	●	○
		(Dark brown)	○	●	○
		15.0-20.0' Lean CLAY w/organic material	○	●	○
20		(shells) (CL) (Dark brown)	○	●	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○

02:0000VH.0602.00:geotechnical_logbook\narrative lithologic description.cdr-GRA

EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Hole Number: SB-01
Sheet 2 of 6 Sheets

Project: Owl's Head
Inspector: C. Parreira

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
	17	CL					
	20						
		CL					
	25						
		CL					
		SM					
	30	NR					
	40						

PROJECT Owl's Head Gowanus HOLE NO. SB-01

(Proponent: CECW-EG)

02:0000V\H:0602.00\HTRW_drilling log.cdr-GRA

ENG FORM 5056A-R, AUG 94

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Depth(feet).	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
20	(5.5/10')	~~26.5'~~ 20.0 - ~~22.0~~ (CP) Same as above; grading to higher SILT content	○	●	○
		~~26.5~~ - 29.0' * ~3.5' missing from top of core	○	●	○
		~~22.0 - 23.5~~ (CP) Lt. brown / gray lean CLAY (CL)	○	●	○
		~28.8-29.0 lean CLAY w/SAND (CL)	○	●	○
		29.0	○	●	○
		(CP) ~~23.5~~ - 30.0' Dark brown silty SAND (SM)	○	●	○
30			○	●	○
		* ~0.5' overlap of 20-26.5' and 26.5-29.0' layers	○	●	○
			○	○	○
40	Ø	30-40' No Recovery! Drill bit was lost down hole; Driller pushed casing down to chase bit and cleared hole to 40' once recovered	○	○	○

02:0000VH.0602.00\geotechnical_logbook\narrative lithologic description.cdr-GRA

EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Hole Number: SB-01

Project: Owl's Head | Inspector: C. Porreca | Sheet 3 of 6

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
		SP					
	45	SP					
	50	SP					
	55						

PROJECT: Owl's Head Gowanus | HOLE NO. SB-01

(Proponent: CECW-EG)

02.0000VH.0602.00\HTRW_drilling log cdr-GRA

ENG FORM 5056A-R, AUG 94

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Depth(feet)	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
40	(10.0/	40.0-50.0' Med. brown-slight reddish	○	●	○
50	10.0)	tint poorly graded f. SAND (SP)	○	●	○
			○	○	○
			○	○	○
		1600 Collect OH-SB01-Z44-45 (3/18)	○	○	○
			○	○	○
	(3/19)	0830 Resume drilling	○	○	○
			○	○	○
50	(10.0/	50.0-60.0' Same as above (SP)	○	●	○
	10.0)		○	○	○

Geotechnical Info.
References
Borehole No. SB-01

EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Hole Number: SB-01

Project: Owl's Head | Inspector: C. Porreca | Sheet: 4 of 6

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
		SP					
	60	SP					
		SP					
	70	SP					

PROJECT Owl's Head Gowanus | HOLE NO. SB-01

02:0006VH.0602.00\HTRW_drilling log cdr-GRA

ENG FORM 5056A-R, AUG 94 (Proponent: CECW-EG)

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Page 4 of 6 Borehole No. SB-01

Depth(feet)	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
60	10/10'	60-66' BGS: Same as above SP	○	●	○
			○	●	○
		66-70' BGS: Med. brown w/reddish	○	●	○
		tint poorly graded f.-med.	○	●	○
		grained SAND with ~~some~~ (5%) SR	○	●	○
70		GRAVEL (SP)	○	●	○
			○	○	○
			○	○	○
			○	○

EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Hole Number SB-01

Project Owl's Head | Inspector C. Porreca | Sheet 5 of 6

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
	75	SP					
	80	SP					
	85	SP					
		SP					

PROJECT Owl's Head Gowanus | HOLE NO. SB-01

02.0000\H.0602.00\HTRW_drilling log cdr-GRA

ENG FORM 5056A-R, AUG 94 (Proponent: CECW-EG)

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Depth(feet).	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
70	10/10'	70-80' BGS: Same as above (SP)	○	●	○
			○	●	○
80	10/10'	80-89.0' BGS: Same as above (SP)	○	●	○
			○	●	○
89		89.0-90.0' BGS: Med. brown/reddish	○	●	○
90		brown poorly graded sand w/silt	○	●	○
		and gravel (SP-SM) F.-M. (CP)	○	●	○
		SA-SR (CP)	○	●	○
			○	○	○
			○	○	○
			○	○

EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Hole Number SB-01

Project Owls Head | Inspector C. Porreca | Sheet 6 of 6

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
		SP					
	90	SP - SM					
		SP-SM					
	95	SP-SM					
	100	End of Boring					

PROJECT Owl's Head Gowanus | HOLE NO. SB-01

(Proponent: CECW-EG)

ENG FORM 5056A-R, AUG 94

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

02:0000VH 0602.00\HTRW_drilling log.cdr:GRA

02:002260_KZ03_04_07-B2651

Depth(feet).	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
90	10/10'	90-100.0' BGS: Same as above (SP-SM)	○	●	○
100		End of Boring; final depth: 100' BGS	○	●	○

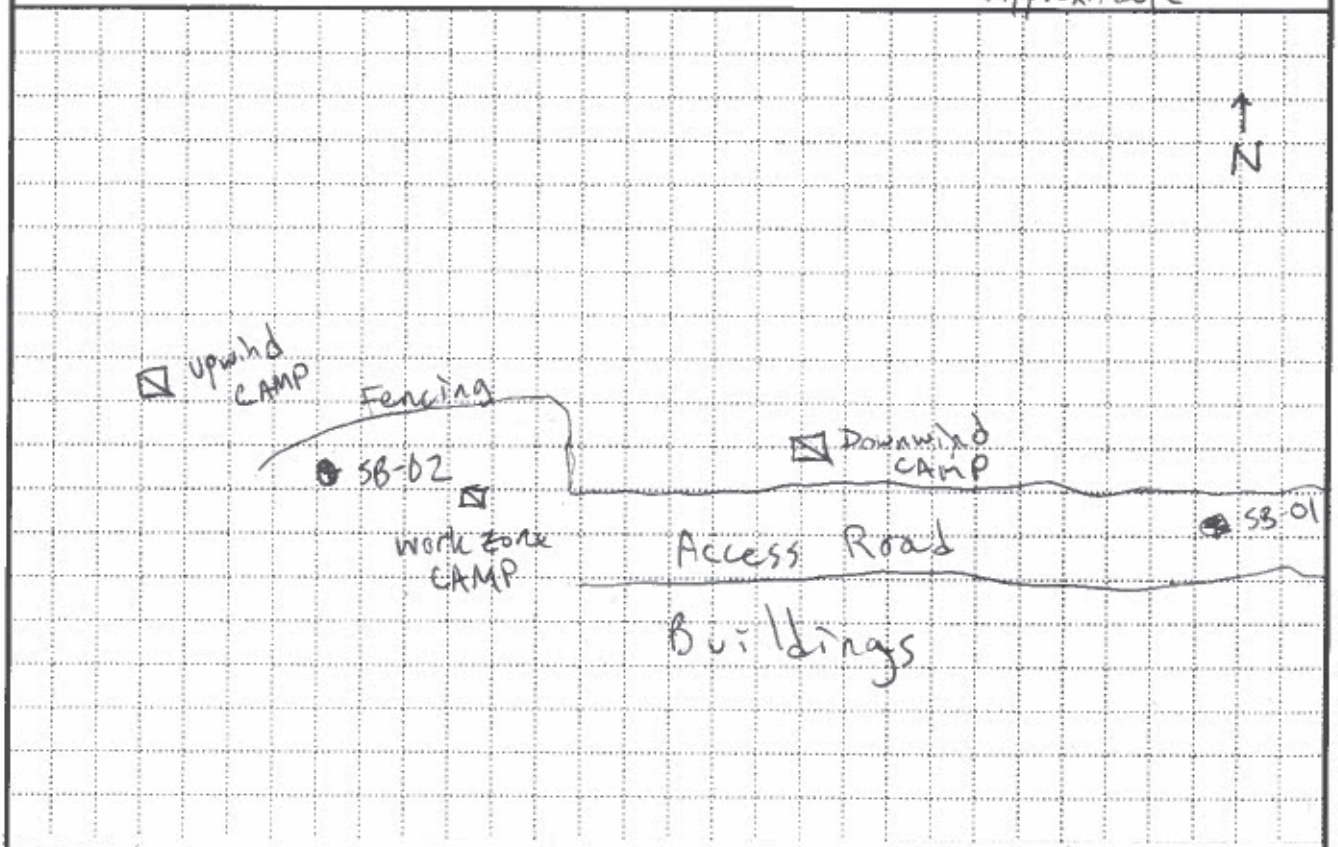
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EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG

District		Hole Number	SB-02
1. Company Name	WSP USA (E&E)	2. Drill Subcontractor	Cascade Drilling LP (ADT)
Sheet / Sheets	1 of 1		
3. Project	Owl's Head Gowanus	4. Location	Brooklyn, NY
5. Name of Driller	D. Moon (ADT)	6. Manufacturer's Designation of Drill	
7. Sizes and Types of Drilling and Sampling Equipment		8. Hole Location	
		9. Surface Elevation	
		10. Date Started	3-19-2024
		11. Date Completed	3-20-2024
12. Overburden Thickness	100' +	15. Depth Groundwater Encountered	
13. Depth Drilled Into Rock		16. Depth to Water and Elapsed Time After Drilling Completed	
14. Total Depth of Hole	100'	17. Other Water Level Managements (Specify)	
18. Geological Samples	Disturbed	Undisturbed	19. Total Number of Core Boxes
20. Samples For Chemical Analysis	VOC / Metals / Other (Specify) / Other (Specify) / Other (Specify)		21. Total Core Recovery %
22. Disposition of Hole	Backfilled / Monitoring Well: OH-MW-62I / Other (Specify)	23. Signature of Inspector	

LOCATION SKETCH/COMMENTS SCALE: Approximate



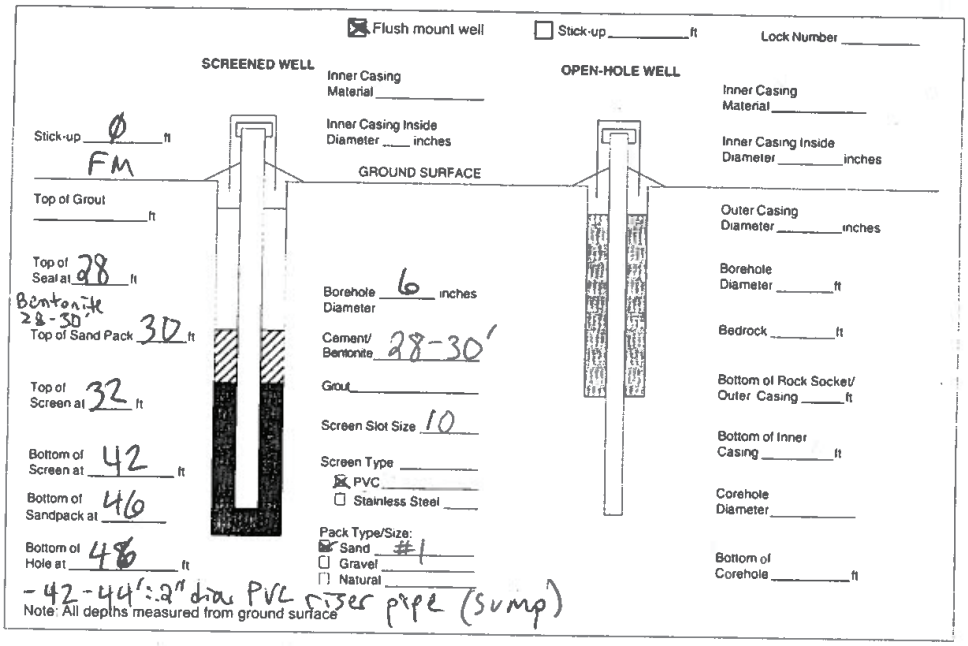
PROJECT Owl's Head - Gowanus HOLE NO. SB-02

ENG FORM 5056-R, AUG 94 (Proponent: CECW-EG)

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

02.0000\VH.0802.00\HTRW_drilling log.cdr-GRA

Well Construction Log for Well No. _____



Comments

OH-MW02I installed to 44' bgs w/2' PVC Riser - Sump (2" diameter)

Investigation Derived Waste					
Container ID	**Source**	**Date**	**Contents**	**Volume**	**Location/Comments**

1110-1-4000
AUG 94

ITRW DRILLING LOG (Continuation Sheet)

Hole Number SB-02

Sheet 1 of 1 Sheets

Project: Owl's Head | Inspector: C. Porreca

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
	0	Construction materials					
	5	SP-SM					
	10	GM					
		Peat					
	15	CL					

PROJECT Owl's Head Gowanus HOLE NO. SB-02

(Proponent: CECW-EG)

ENG FORM 5056A-R, AUG 94

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

02:00000\H.0602.00\HTRW_drilling log cdr-GRA

02:002260_KZ03_04_07-B2651

Page 1 of 6 Borehole No. SB-02

Depth(feet).	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
0		0-5' Hand-cleared (3/19)	●	○	○
		- Construction materials (concrete,	●	○	○
		brick, wood, etc.)	●	○	○
		- ▽ ~4.5-5.0' BGS	○	○	○
3/20 5	5.0/5.6'	5-8.0' BGS Dark brown-black poorly	○	●	○
		graded sand w/silt + gravel (SP-SM),	○	●	○
		little brick/const. materials, PID = 1.6ppm	○	●	○
			○	●	○
8		8.0-10.0' BGS silty gravel w/sand (GM),	○	●	○
		grading from lt. brown to dark brown/	○	●	○
		black to med-dark brown w/reddish tint	○	●	○
			○	●	○
10		10.0-11.0' Same as above (GM)	○	●	○
			○	●	○
11		11.0-12.0' Peat w/SILT, dark brown	○	●	○
			○	●	○
12		12.0-12.3' Dark brown lean CLAY w/sand	○	●	○
		and silt, some organics (CL)	○	●	○
12.3		12.3-19.5' Gray-olive gray lean CLAY (CL)	○	●	○
		- 13.8-14.2' black leas w/SA gravel	○	●	○
		and organics (roots), slight odor	○	●	○
		PID = 0.8ppm	○	●	○
			○	●	○
19.5		19.5-20.0' Med. brown lean CLAY w/sand	○	●	○
20		(CL) and organics (wood)	○	●	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○

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110-1-4000
JG 94

TRW DRILLING LOG (Continuation Sheet)

Hole Number: SB-02

ect: Owl's Head | Inspector: C. Porreca | Sheet 2 of 7 Sheets

ıvation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
	20	CL					
	25	Peat					
	30	SP					
		CL					
		SP					

IOJECT Owl's Head Gowanus HOLE NO. SB-02

3 FORM 5056A-R, AUG 94 (Proponent: CECW-EG)

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HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Depth(feet).	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry / Moist / Wet
		F.-med. (C.F.) SA-SR	
		20.0-23.5' Gray lean CLAY w/gravel (CL), ~20.5-21.2' NO GRAVEL	
		23.5-25.3' Med.-dark brown w/reddish Peat	
		25.3-28.5' Gray lean CLAY (CL), little SILT, trace F. SAND increasing towards end	
		28.5-30.0' BGS Gray poorly graded F. SAND (SP), trace SILT	
		30.0-30.8' BGS Same as above (SP)	
		30.8-31.5' BGS Lt. brown-gray lean CLAY (CL), little F. SAND	
		31.5-40.0' Lt.-med. brown-reddish brown poorly graded f. SAND (SP), trace SILT; CLAY lenses as above (30.8-31.5') @ ~32.0-32.4' and 36.5-36.8'	
		- NAPL stained, grading to coated ~32.4-36.8'	
		- NAPL coated ~36.8-40.0'	
		- Collected OH-SB02-237-38 @1025 @37.5' PID = 312 ppm	

References
Borehole Requirements
Borehole No. SB-02

1110-1-4000
AUG 94

ITRW DRILLING LOG (Continuation Sheet)

Hole Number SB-02

Project Owl's Head | Inspector C. Porreca | Sheet 3 of 7 Sheets

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
	35						
			- PID = 312 ppm				
	40	SP					
	45						

PROJECT Owl's Head Gowanus HOLE NO. SB-02

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G FORM 5056A-R, AUG 94 (Proponent: CECW-EG)

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Depth(feet).	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
		~~48.0'~~ BGS (SP)			
40	10/10'	40.0 - ~~50.0~~ Same as above (SP)		●	
		w/ interbedded thin CLAY-leases		●	
		- NAPL Stained		●	
48		48.0 - 50.0' Lt.-med. brown - reddish		●	
		poorly-graded F. SAND (SP)		●	
		- No NAPL staining visible; no odor;			
50		PID = 0 ppm			

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G 94

TRW DRILLING LOG (Continuation Sheet)

Hole Number SB-02

ct Owl's Head | Inspector C. Porreca | Sheet 4 of 7

ration (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
	50	SP	PID = 0				
	55						
	60	SP					

ECT Owl's Head Gowanus HOLE NO. SB-02

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ORM 5056A-R, AUG 94 (Proponent: CECW-EG)

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Depth(feet)	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
		62.0' (CP)			
50	10.0/10.0'	50.0-~~60.0~~' BGS same as 40-48.0'			
		+31.5-40.0' layers: lt.-med. brown-			
		reddish brown poorly graded F.			
		SAND (SP), trace SILT, some			
		interbedded thin CLAY lenses			
		- NAPL stained			
		62.0 (R)			
60	10.0/	~~60.0~~-65.0' BGS ~~same as 48.0'-50.0'~~ (CP)			
	10.0'	~~(CP) layer:~~ Lt.-Med. brown-reddish brown			
		poorly graded F. SAND(SP),			
		trace SA GRAVEL			
		- No NAPL observed ~~past 62' BGS~~ (CP)			
3/20		- collected OH-SB02-E64-65 @ 1135			
65		65-70.0' BGS Same as above (SP)			
		w/ Med.-coarse SA-R GRAVEL			
70		- No NAPL observed			

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1110-1-4000
AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Project: Owl's Head | Inspector: C. Porreca | Hole Number: SB-02 | Sheet: 5 of 7

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
	65	SP					
	70						
	75						
	80						

PROJECT: Owl's Head Gowanus | HOLE NO. SB-02

FORM 5056A-R, AUG 94

(Proponent: CECW-EG)

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HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Depth(feet).	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
70	10.0/	70.0 - 80.0' BGS same as above:	○	●	○
	10.0'	Lt.-med. brown - reddish brown	○	○	○
		Poorly graded F. SAND w/med.-c.	○	○	○
80		SA-R GRAVEL (SP)	○	○	○

EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Hole Number: SB-02

Project: Owl's Head | Inspector: C. Porreca | Sheet: 6 of Sheets: 7

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
		SP					
	85						
	90	CL					
	95	SC					

PROJECT: Owl's Head Gowanus | HOLE NO.: SB-02

NG FORM 5056A-R, AUG 94

(Proponent: CECW-EG)

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HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Depth(feet).	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry / Moist / Wet
80	10.0/ 10.0'	80 - 87.0' Same as above (SP)	
87		87 - 90.0' Same as above w/f. - Med. poorly-graded SAND (SP)	
90		90.0 ~ 90.5' Same as above (SP)	
		90.5 ~ 92.5' BGS Lt. brown - reddish brown lean CLAY w/gravel (F-C, SA-R) (CL)	
		92.5 ~ 96.0' BGS Lt. brown - reddish brown clayey sand w/ F-C, SA-R gravel (SC)	
		96.0 - 100.0' BGS Med. brown - reddish brown compact, poorly sorted F-vf SAND w/CLAY and F. SA-SR Gravel (SP-SC)	
100		End of boring	

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EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Hole Number SB-02

Project Owl's Head | Inspector C. Porreca | Sheet 7 of 7 Sheets

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
		@ 98					
		SP-SC					
	100	End of Boring					

PROJECT Owl's Head Gowanus HOLE NO. SB-02

NG FORM 5056A-R, AUG 94

(Proponent: CECW-EG)

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HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG

District: Gowanus			Hole Number: SB-03
1. Company Name: WSP	2. Drill Subcontractor: ADT (Cascade DLP)		Sheet: 1 of Sheets: 1
3. Project: Owl's Head	4. Location: Brooklyn, NY		
5. Name of Driller: D. Moon	6. Manufacturer's Designation of Drill		
7. Sizes and Types of Drilling and Sampling Equipment	8. Hole Location		
	9. Surface Elevation		
	10. Date Started: 3-29-2024	11. Date Completed: 3-29-2024	
12. Overburden Thickness: 100' +	15. Depth Groundwater Encountered: ~18' BGS		
13. Depth Drilled Into Rock: —	16. Depth to Water and Elapsed Time After Drilling Completed		
14. Total Depth of Hole	17. Other Water Level Managements (Specify)		
18. Geological Samples: Disturbed	Undisturbed	19. Total Number of Core Boxes	
20. Samples For Chemical Analysis: VOC / Metals / Other (Specify) / Other (Specify) / Other (Specify)		21. Total Core Recovery %	
22. Disposition of Hole: Backfilled / Monitoring Well / Other (Specify)	23. Signature of Inspector		

LOCATION SKETCH/COMMENTS * See boring location figure — **SCALE:**



PROJECT Owl's Head Investigation — **HOLE NO.** SB-03

ENG FORM 5056-R, AUG 94 (Proponent: CECW-EG)

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HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Well Construction Log for Well No. OH-MW03 wells

☒ Flush mount well ☐ Stick-up _____ ft Lock Number _____

SCREENED WELL

Inner Casing Material PVC

Stick-up 0 ft

Inner Casing Inside Diameter 2 inches

GROUND SURFACE

Top of Grout 1 ft

Top of Seal at 51 ft

Top of Sand Pack 53 ft

Top of Screen at 55 ft

Bottom of Screen at 65 ft

Bottom of Sandpack at 67

Bottom of Hole at 100 ft

Borehole Diameter 6 inches

Cement/Bentonite 51-53, 67-100

Grout 1-51

Screen Slot Size 10

Screen Type _____

☒ PVC

☐ Stainless Steel

Pack Type/Size:

☒ Sand #1

☐ Gravel _____

☐ Natural _____

OPEN-HOLE WELL

Inner Casing Material _____

Inner Casing Inside Diameter _____ inches

Outer Casing Diameter _____ inches

Borehole Diameter _____ ft

Bedrock _____ ft

Bottom of Rock Socket/ Outer Casing _____ ft

Bottom of Inner Casing _____ ft

Corehole Diameter _____

Bottom of Corehole _____ ft

Note: All depths measured from ground surface

Comments

OH-MW03D installed in SB-03 hole screened from 55 - 65' BGS

OH-MW03I installed adjacent to SB-03/OH-MW03D and screened from 32'-42' BGS

Investigation Derived Waste

Container ID	Source	Date	Contents	Volume	Location/Comments

EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Hole Number: SB-03

Project: Owl's Head | Inspector: C. Porreca | Sheet 1 of 6

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (PID) (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
	5	SW	Ø				
	10	Wood					
	15	ML	3 ppm				

PROJECT: Owl's Head Investigation | HOLE NO. SB-03

ENG FORM 5056A-R, AUG 94 (Proponent: CECW-EG)

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HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Page 1 of 6 Borehole No. SB-03

Depth(feet).	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
0	5/5'	0-5' BGS Asphalt, brick (construction materials), dark brown well graded SAND + gravel (SW) - Hand cleared	●	○	○
5	5/5'	5-10' BGS Same as Above (SW)	●	○	○
10	9/10'	10-12' BGS Same as Above (SW)	●	○	○
12		Wood 12-13' BGS	○	○	○
13		13-17' BGS Dark brown SILT (ML), construction materials (brick); foul odor	●	○	○
17		17-~~20~~' BGS Wood - ▽ @18' BGS - Wood blocking Full recovery	●	●	○

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EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Hole Number: SB-03

Project: Owl's Head | Inspector: C. Porreca | Sheet 2 of 6 Sheets

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
		ML	(PID)				
			238ppm	▽			
		Wood					
	20						
			5ppm				
		ML					
	25		20ppm				
		GW-GM	22ppm				
	30						
		SP					
			190ppm				

PROJECT: Owl's Head Gowanus | HOLE NO.: SB-03

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ENG FORM 5056A-R, AUG 94 (Proponent: CECW-EG)

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Depth(feet).	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry / Moist / Wet
20	8/10'	20.0 - 27.0' Dark brown SILT (ML) w/brick, some wood	Moist
			Moist
27		27.0 - 30.0' BGS Dark brown well graded gravel w/ SILT (GW-GM); cobble-sized gravel @ end preventing full recovery	
30	10/10'	30.0 - 36.0' BGS Lt. brown-grayish poorly graded f. SAND ~~w/~~ (SP)	Moist
			Moist
		- NAPL stained-coated From 30.0 - 32.5' BGS	Moist
		- NAPL saturated From 32.5 - 36.0' BGS	Moist
			Moist
36		36.0 - 40.0' BGS Lt. brown - slightly reddish poorly graded vf compacted SAND w/ SILT (SP-SM)	Moist
			Moist
			Moist
		- NAPL saturated 36-39'	Moist
40		- NAPL stained-coated 39-40'	Moist
		@ 1020 Collect OH-SB03-Z37-38 from 37-38' bgs	Moist

3129

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EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Hole Number SB-03

Project Owl's Head | Inspector C. Porreca | Sheet 3 of 6 Sheets

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
	35	SP	85 ppm				
			320 ppm				
		SP-SM	340 ppm				
	40		14 ppm				
			30 ppm				
		SP	75 ppm				
	45		160 ppm				
			180 ppm				

PROJECT Owl's Head Gowanus HOLE NO. SB-03

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ENG FORM 5056A-R, AUG 94

(Proponent: CECW-EG)

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Depth(feet).	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
		40.0-50.0' BGS (18)			
40	10/10	Same as 30-36' BGS			
		(poorly graded f. SAND; SP)			
		40.0-50.0' BGS			
		-NAPL stained-coated w/blebs			
		40.0-42.5', 48.5-50.0'			
50		-NAPL saturated 42.5-48.5'			

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EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Hole Number: SB-03

Project: Owl's Head | Inspector: C. Porreca | Sheet 4 of 6 Sheets

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
	50	SP	10 ppm				
			82 ppm				
			25 ppm				
			20 ppm				
			Ø				
	55		Ø				
		SP-SM					
			Ø				
			Ø				
	60						
			Ø				
		SP-SM					

PROJECT: Owl's Head Gowanus | HOLE NO. SB-03

ENG FORM 5056A-R, AUG 94 (Proponent: CECW-EG)

02:0000/H.0602.00/HTRW_drilling log cdr-GRA

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Page 4 of 6 Borehole No. SB-03

Depth(feet).	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry / Moist / Wet
50	10/10'	50.0-53.0' Same as above (SP)	○ ◉ ○
		-NAPL saturated	○ ◉ ○
3-29		@1100 Collect OH-SB03-Z51-52 From 51-52'	○ ◉ ○
			○ ○ ○
53		53.0-60.0' BGS Same as 36.0-40.0'	○ ◉ ○
		(Poorly graded vf compacted SAND w/SILT) (SP-SM) CP	○ ◉ ○
		- Thin SILT lenses @ 56.0, 58.5'	○ ◉ ○
		-NAPL stained-coated w/blebs	○ ◉ ○
			○ ○ ○
			○ ○ ○
60		60.0-70.0' BGS Same as Above	○ ◉ ○
		(SP-SM)	○ ◉ ○
		- Thin SILT lenses @ 62.0, 66.0'	○ ◉ ○
		~~-NAPL saturated from 60-62.0~~ CP	○ ◉ ○
		-NAPL stained-coated w/blebs	○ ◉ ○
70		from 62.0-66.0'	○ ◉ ○
		-No NAPL detected/observed	○ ◉ ○
		from 66-70'	○ ◉ ○
3/29		@1200 Collect OH-SB03-Z67-68	○ ◉ ○
		from 67-68' bgs	○ ◉ ○
			○ ○ ○
			○ ○ ○
			○ ○ ○
			○ ○ ○
			○ ○ ○
		32-42,	○ ○ ○
		Wells: ~~30-40~~ CP, ~~43-53~~ 55-65	○ ○ ○
			○ ○ ○
			○ ○ ○

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EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Hole Number SB-03

Project Owl's Head | Inspector C. Porreca | Sheet 5 of 6 Sheets

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
	65	SP-SM	ϕ				
	70	SW	ϕ				
	75						
	80						

PROJECT Owl's Head Gowanus HOLE NO. SB-03

ENG FORM 5056A-R, AUG 94

(Proponent: CECW-EG)

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HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Page 5 of 6 Borehole No. SB-03

Depth(feet).	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
70	2/10'	70-80' BGS	○	◐	○
		Lt. brown poorly graded f-vf	○	◕	○
		SAND w/F-M, SA-SR gravel	○	◕	○
		(SW)	○	◕	○
		-No NAPL observed	○	◕	○
		-F. SAND + gravel properties caused	○	◕	○
		most of run to fall out of	○	◕	○
		core tube back down hole	○	◕	○
		through catcher	○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○

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EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Hole Number SB-03

Project Owl's Head | Inspector C. Porreca | Sheet 6 of 6 Sheets

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
	80	SW	Φ				
		SP	Φ				
	85		Φ				
			Φ				
	90						
	95						

PROJECT Owl's Head Gowanus | HOLE NO. SB-03

(Proponent: CECW-EG)

ENG FORM 5056A-R, AUG 94

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

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Depth(feet).	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
80	10/10'	80.0-~~82~~.0' BGS same as above (SW)	○	◉	○
			○	◉	○
			○	○	○
82		82.0-90.0' BGS Lt. brown - slightly reddish poorly graded vf compacted SAND w/ F-M, SA-SR gravel (SP) - coarse gravel @ end of run	○	◉	○
			○	◉	○
			○	◉	○
			○	◉	○
			○	◉	○
			○	○	○
			○	○	○
90		90.0-92.0' BGS Lt. brown - ~~reddish~~ (SP) well graded M-C SAND w/ F-M, SA-SR GRAVEL (SW)	○	◉	○
			○	◉	○
			○	◉	○
			○	◉	○
			○	○	○
			○	○	○
92		92.0-98.0' BGS Lt. brown - reddish brown poorly graded vF compacted SAND w/SILT and M-C, SA-SR gravel (SP-SM)	○	◉	○
			○	◉	○
			○	◉	○
			○	◉	○
			○	○	○
			○	○	○
98		98.0-100.0' BGS Lt. brown - reddish brown well graded M-C SAND and M-C, SA-SR GRAVEL (SW)	○	◉	○
			○	◉	○
			○	◉	○
100		— End of Boring —	○	◉	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○

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EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG

District: Gowanus		Hole Number: SB-04
1. Company Name: WSP (E&E)	2. Drill Subcontractor: Cascade DLP (ADT)	Sheet: 1 of Sheets: 1
3. Project: Owl's Head Investigation	4. Location: Brooklyn, NY	
5. Name of Driller: D. Moon	6. Manufacturer's Designation of Drill	
7. Sizes and Types of Drilling and Sampling Equipment	8. Hole Location	
	9. Surface Elevation	
	10. Date Started: 4-1-2024	11. Date Completed: 4-1-2024
12. Overburden Thickness: 100'+	15. Depth Groundwater Encountered: 7' BGS	
13. Depth Drilled Into Rock: -	16. Depth to Water and Elapsed Time After Drilling Completed	
14. Total Depth of Hole: 100'	17. Other Water Level Managements (Specify)	
18. Geological Samples: Disturbed	Undisturbed	19. Total Number of Core Boxes

20. Samples For Chemical Analysis: VOC	Metals	Other (Specify)	Other (Specify)	Other (Specify)	21. Total Core Recovery %
33-34', 52-53', 62-63'					

22. Disposition of Hole: Backfilled	Monitoring Well	Other (Specify)	23. Signature of Inspector
X	XX		

LOCATION SKETCH/COMMENTS: * See boring location figure SCALE:

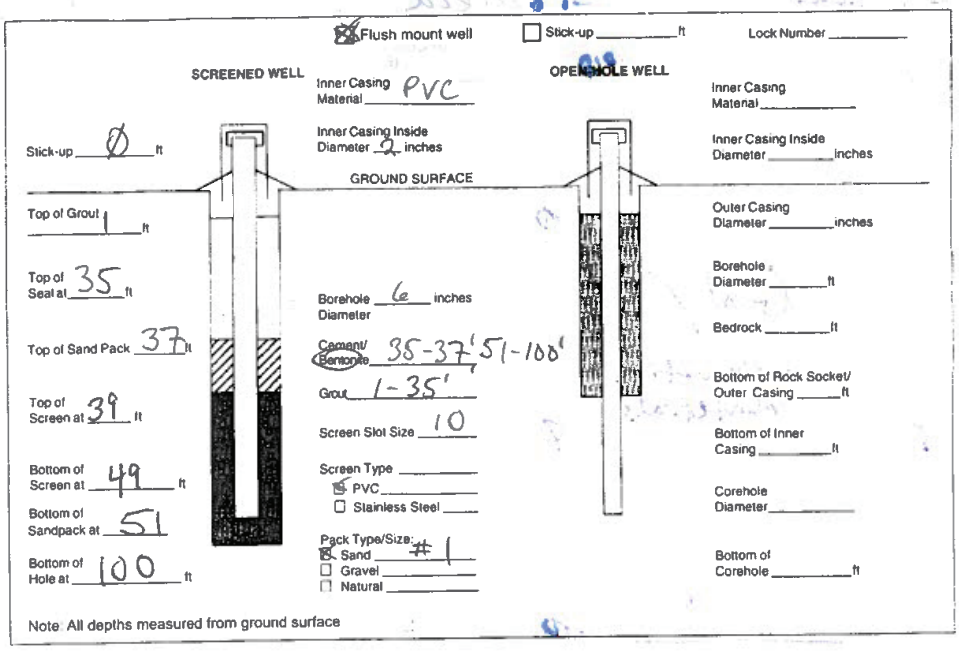
PROJECT: Owl's Head, Gowanus HOLE NO.: SB-04

ENG FORM 5056-R, AUG 94 (Proponent: CECW-EG)

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

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Well Construction Log for Well No: OH-MW04I



Comments

OH-MW04I installed in SB-04 hole screened from 39-49' BGS

OH-MW04S installed adjacent to SB-04/OH-MW04I and screened from 5-15' BGS

Investigation Derived Waste

Container ID	Source	Date	Contents	Volume	Location/Comments

EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Hole Number: SB-04
Sheet 1 of Sheets 6

Project: Owl's Head
Inspector: C. Porreca

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (PID) (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
	5	GW / construction materials	ϕ				
		ML	ϕ				
	10	SP	ϕ				
		ML	ϕ				
	15		ϕ				

PROJECT Owl's Head Gowanus HOLE NO. SB-04

(Proponent: CECW-E)

ENG FORM 5056A-R, AUG 94

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Page 1 of 6 Borehole No. SB-04

Depth(feet)	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
0	5/5'	0-5' Hand-cleared - construction materials (asphalt, brick, concrete), well graded GRAVEL w/sand (GW)	●	○	○
5	5/5'	5.0-7.5' BGS Same as Above (construction materials, GW) ~7.0' BGS ▽Water table	●	○	○
7.5		7.5-9.0' BGS Med. brown SILT (ML)	○	●	○
9.0		9.0-10.0' BGS Lt. brown poorly graded VF SAND (SP)	○	●	○
10	10/10'	10.0-20.0' BGS Lt. brown-gray SILT (ML) w/organic materials (shells, wood fibers/peat)	○	●	○

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EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Hole Number: SB-09
Sheet: 2 of 6 Sheets

Project: Owl's Head
Inspector: C. Porreca

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
	20	ML	ϕ				
	25	SP-SM	ϕ				
	30	SW	ϕ				
		SP	123 ppm				

PROJECT: Owl's Head Bowmans
HOLE NO.: SB-04

(Proponent: CECW-EG)

ENG FORM 5056A-R, AUG 94

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

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Page 2 of 6 Borehole No. SB-04

Depth(feet).	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry / Moist / Wet
20	10/10'	20.0 - 25.0' BGS Same as Above (ML)	Moist
		- w/GRAVEL from 20.0 - 22.5', F-C, SA-SR	Moist
		- 24.0-25.0' mostly (CP) Peat dense	Moist
25		25.0 - ~~28.5~~ 28.5' BGS Poorly graded F. SAND w/SILT (SP-SM), Lt. brown	Moist
28.5		28.5 - 30.0' BGS Lt. brown well graded F-M SAND (SW)	Moist
30	10/10'	30.0 - 40.0' BGS Lt.-Med. brown poorly graded F. SAND (SP)	Moist
		- F-M, SA-SR gravels ~31.0 - 33.0'	Moist
		- NAPL Saturated from 30.0 - 37.0	Wet
		- NAPL stained-coated from 37 - 39.0'	Wet
		- No NAPL observed from 39.0 - 40.0'	Moist
41		@12:00 collected OH-SB04-233-34 from 33 - 34' BGS	Moist

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HTRW DRILLING LOG (Continuation Sheet)

Hole Number: SB-04

Project: Owl's Head | Inspector: C. Porreca | Sheet 3 of 6 Sheets

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
	35	SP	386 ppm				
			287 ppm				
			260 ppm				
			220 ppm				
			22 ppm				
	40	SP					
	45						

PROJECT: Owl's Head Governus | HOLE NO. SB-04

ENG FORM 5056A-R, AUG 94 (Proponent: CECW-EG)

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HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Depth(feet)	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
40	4/10'	40.0-50.0 - Same as Above (SP) - Poor recovery due to lack of use of a catcher/basket - most of sample lost down hole - NAPL stained - coated	○	●	○
			○	○	○

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EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Hole Number SB-04

Project Owl's Head | Inspector C. Porreca | Sheet 4 of 6

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
	50	SP - SM	52 ppm				
	55		25 ppm				
	60	SP - SM	4 ppm Φ Φ				

PROJECT Owl's Head Gowanus | HOLE NO. SB-04

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ENG FORM 5056A-R, AUG 94 (Proponent: CECW-EG)

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Depth(feet)	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
50	10/10'	50.0 - 60.0' BGS Lt. brown, compacted poorly graded f-vf SAND w/SILT (SP-SM)	○	●	○
		- Thin CLAY lens @ 56.0'	○	●	○
		- NAPL saturated 50.0 - 56.0'	○	●	○
		- NAPL stained - coated 56 - 60.0'	○	●	○
60	10/10'	60.0 - 70.0' BGS Same as Above but H. brown - reddish (SP-SM) w/M-C, SA-SR GRAVEL	○	●	○
		- NAPL stained - coated 60 - 61.0'	○	●	○
		- No NAPL detected 61 - 70'	○	●	○

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EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Hole Number SB-04
Sheet 5 of 6

Project Owl's Head
Inspector C. Perreon

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
	65	SP-SM	Ø			/	
			Ø				
	70		Ø ppm				
			4 ppm				
			7 ppm				
			Ø				
	75	SP-SM	Ø				
			Ø				
	80		Ø				

PROJECT Owl's Head, Gowanus HOLE NO. SB-04

(Proponent: CECW-EG)

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ENG FORM 5056A-R, AUG 94

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Depth(feet).	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
70	10/10'	70.0 – 80.0' BGS Same as Above – Lt. brown - reddish, compacted poorly-graded f-vf SAND w/ SILT and m-c, SA-SR GRAVEL - No NAPL observed (SP-SM)	○	●	○
			○	●	○
			○	●	○
			○	●	○
			○	○	○
			○	○	○
			○	○

EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Hole Number SB-04

Project Owl's Head | Inspector C. Ponsa | Sheet 6 of Sheets 6

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
	80		7 ppm				
		SP/SM	∅				
	85		∅				
			∅				
	90		∅				
		SW	∅				
			∅				
	95-100	SP	∅				

PROJECT Owl's Head, Gouverneur | HOLE NO. SB-04

(Proponent: CECW-EG)

ENG FORM 5056A-R, AUG 94

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HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Depth(feet)	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry / Moist / Wet
80	10/10'	80.0 - 90.0' BGS Same as above (SP-SM)	Moist
		- Heavy gravel density from 80-81.0' and 83.0-84.0'	Moist
		- M-C gravels including some cobble-sized	Moist
		- 89.0-90.0' Reddish, mostly compacted gravels M-C, SA-SR	Moist
		95.0 @	
90	10/10'	90.0 - ~~100.0~~ BGS Lt. brown - reddish well graded f-m SAND w/ f-m, SA-SR gravel (SW)	Moist
95		95.0-100.0' BGS Lt. brown-reddish compacted, poorly graded f-vf SAND w/ m-C, SA-SR gravel (SP)	Moist
100		— End of Boring —	Moist
		I S screen zones: 39-49, 5-15	
		saturated: 30-37, 50-56	
		stained-coated: 37-39, 40-50, 56-61	
		"clean" after 61'	

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EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG

District: Gowanus		Hole Number: SB-05
1. Company Name: WSP (E&E)	2. Drill Subcontractor: Cascade Drilling LP (ADT)	Sheet: 1 of Sheets: 1
3. Project: Owl's Head Investigation	4. Location: Brooklyn, NY	
5. Name of Driller: D. Moon	6. Manufacturer's Designation of Drill	
7. Sizes and Types of Drilling and Sampling Equipment	8. Hole Location	
	9. Surface Elevation	
	10. Date Started: 3-27-24 →	11. Date Completed
12. Overburden Thickness: 100'+	15. Depth Groundwater Encountered: 4-5' BGS	
13. Depth Drilled Into Rock: —	16. Depth to Water and Elapsed Time After Drilling Completed	
14. Total Depth of Hole: 100' BGS	17. Other Water Level Managements (Specify)	
18. Geological Samples: Disturbed	Undisturbed	19. Total Number of Core Boxes
20. Samples For Chemical Analysis: 5 — VOC / Metals / Other (Specify) / Other (Specify) / Other (Specify)		21. Total Core Recovery %
22. Disposition of Hole: Backfilled / Monitoring Well: 3x / Other (Specify)	23. Signature of Inspector	

LOCATION SKETCH/COMMENTS: * See Borehole location fig. SCALE:

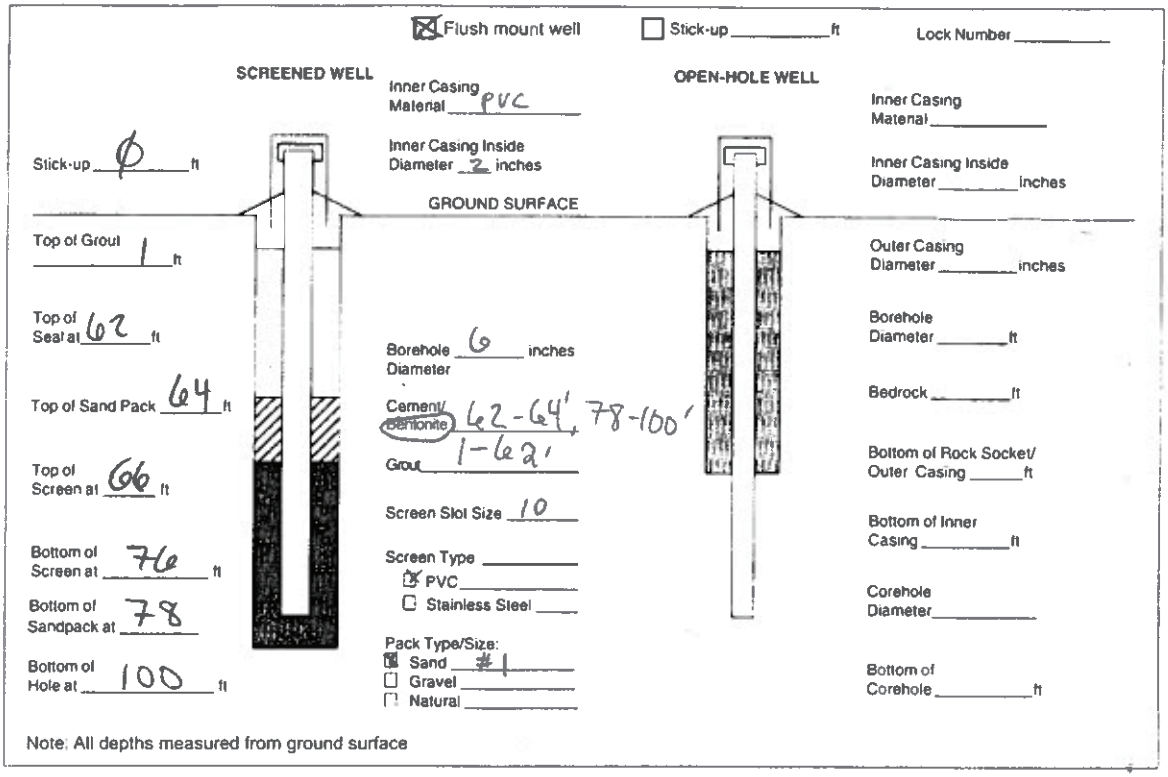
PROJECT: Owl's Head Gowanus HOLE NO.: SB-05

ENG FORM 5056-R, AUG 94 (Proponent: CECW-EG)

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HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Well Construction Log for Well No. OH-MW05D



Comments

OH-MW05D installed in SB-05 hole w/screened interval from 66-76' BGS

OH-MW05I installed adjacent to SB-05 hole w/screened interval From 32-42' BGS

OH-MW05S installed adjacent to SB-05 hole w/screened interval From 3-13' BGS

Investigation Derived Waste					
Container ID	Source	Date	Contents	Volume	Location/Comments

EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Hole Number: SB-05

Project: Owl's Head | Inspector: C. Porreca | Sheet 1 of 6

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D) (PID)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
	5	Construction Materials + GW	1ppm				
	10	GW + Wood					
	15						

PROJECT: Owl's Head Gowanus | HOLE NO.: SB-05

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ENG FORM 5056A-R, AUG 94 (Proponent: CECW-EG)

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Page 1 of 6 Borehole No. SB-05

Depth(feet).	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
0	5/5'	0-5' Hand cleared - Construction materials (blacktop, concrete, etc.) w/gravel and sand (GW)	●	○	○
			●	○	○
			●	○	○
		- ▽ @ 5'	○	●	○
			○	○	○
5	5/5'	5-10' BGS - Same as Above (GW)	○	●	○
			○	○	○
			○	○	○
10	3/10'	10-20' BGS - Wood preventing full recovery, M-C, SA-SR GRAVEL W/SAND (GW), dark brown w/oily NAPL sheen	○	●	○
			○	●	○
			○	●	○
			○	●	○
			○	○	○
			○	○	○
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EM 1110-1-4000
31 AUG 94

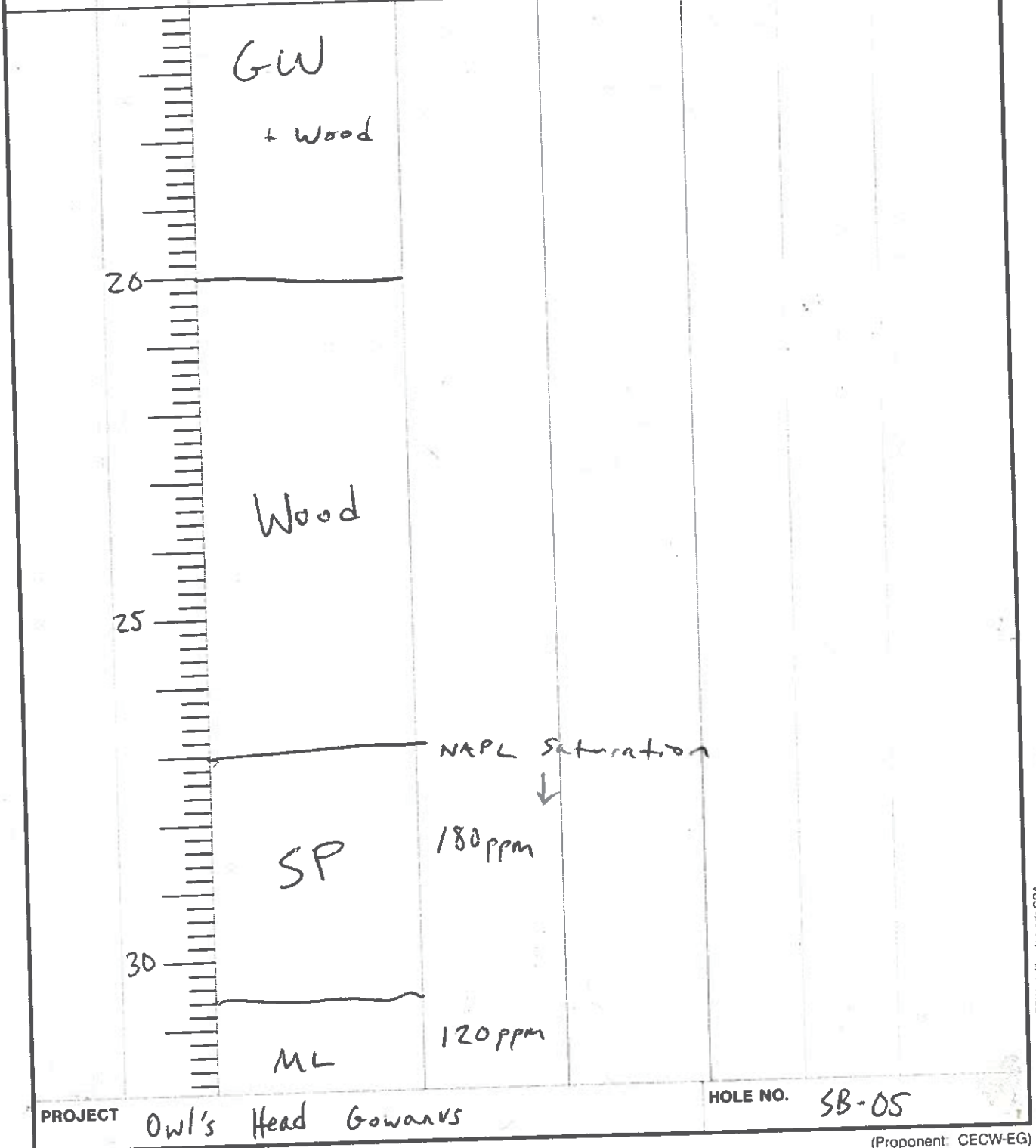
HTRW DRILLING LOG (Continuation Sheet)

Hole Number SB-05

Sheet 2 of 6 Sheets

Project Owl's Head | Inspector C. Porreca

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)



PROJECT Owl's Head Gowanus HOLE NO. SB-05

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(Proponent: CECW-EG)

ENG FORM 5056A-R, AUG 94

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Depth(feet).	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry / Moist / Wet
20	10/10'	20.0 - 30.0' BGS	○ ● ○
		20.0 - 27.0' Wood w/SAND and	○ ● ○
		NAPL sheen	○ ● ○
			○ ○ ○
			○ ○ ○
27		27.0 - 30.0' BGS: Dark brown	○ ● ○
		poorly graded f-vf SAND	○ ● ○
		(SP) - NAPL saturated	○ ● ○
			○ ○ ○
			○ ○ ○
30		30.0 - 40.0' BGS Same as Above (SP)	○ ● ○
		- NAPL saturated	○ ● ○
		- 30.5 - 32.0' SILT w/vf SAND (ML)	○ ● ○
40		- 35.0 - 40.0' grading to med. SAND	○ ● ○
			○ ○ ○
			○ ○ ○
			○ ○ ○
			○ ○ ○
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EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Hole Number SB-05

Project Owl's Head | Inspector C. Porreca | Sheet 3 of 6 Sheets

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
	35	SP	445 ppm				
			180 ppm				
	40	SP	460 ppm				
			230 ppm				
	45		20 ppm				
		SP-SM	10 ppm				
			202 ppm				

PROJECT Owl's Head Towers | HOLE NO. SB-05

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ENG FORM 5056A-R, AUG 94 (Proponent: CECW-EG)

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Depth(feet).	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
40	10/10'	40.0 - 45' Same as Above (SP)	○	◐	○
		- NAPL saturation - 41-42' heavily saturated	○	●	○
			○	●	○
			○	○	○
45		45.0-50.0' Lt. brown slightly reddish	○	●	○
		poorly graded vf SAND w/ silt	○	●	○
		(SP-SM), compacted, and M SA-JR gravel	○	●	○
		- NAPL Saturated (varying throughout,	○	●	○
50		heavily @48.0-48.5')	○	●	○
			○	○	○
			○	○	○
		@ Collect SB	○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
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EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Hole Number: SB-05

Project: Owl's Head | Inspector: C. Porreca | Sheet: 4 of 6 Sheets

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
	50	SP-SM	3 ppm				
			6 ppm				
	55		ø				
		SW	ø				
			ø				
	60						
		SP-SM	ø				

PROJECT: Owl's Head Gowanus | HOLE NO.: SB-05

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ENG FORM 5056A-R, AUG 94 (Proponent: CECW-EG)

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Depth(feet).	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
50	10/10'	50.0 - 56.0' Same as above (SP-SM)	○	●	○
		- NAPL saturation ends @ 50.5';	○	●	○
		No NAPL detected past 50.5'	○	●	○
		- CLAY lenses @ 52.0 and 54.0' (thin)	○	●	○
			○	○	○
56		56.0 - 60.0' Lt. brown well graded	○	●	○
		F-M SAND (SW)	○	●	○
		- No NAPL observed	○	●	○
			○	○	○
			○	○	○
60		60.0 - 70.0' BGS Lt brown -	○	●	○
		slightly reddish compacted, poorly	○	●	○
		graded F-vf SAND w/SILT	○	●	○
		(SP-SM), thin CLAY lenses	○	●	○
		@ ~63.0, 64.0, and 67.0' BGS	○	●	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
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			○	○	○
			○	○	○
			○	○	○
		(2)	○	○	○
		Samples 32-33, 41-42, 71-72, 75-76	○	○	○
		I 32-42 screen S 3-13 screen	○	○	○
		D 66-76 screen	○	○	○
			○	○	○
			○	○	○

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EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Hole Number: SB-05

Project: Owl's Head | Inspector: C. Porreca | Sheet 5 of 6 Sheets

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
	65	SP-SM	∅				
			∅				
	70		45 ppm				NAPL Saturated
	75	SP					
	80						

PROJECT: Owl's Head Gowanus | HOLE NO. SB-05

ENG FORM 5056A-R, AUG 94 (Proponent: CECW-EG)

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HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Depth(feet).	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
70	10/10'	70.0 - 80.0' BGS Lt. brown - reddish brown poorly graded F- SAND w/M-C, SA-SR gravel (SP)	○	●	○
		- NAPL saturation from 70.0 - 74.0' BGS	○	●	○
		- No NAPL observed From 74.0 - 80.0'	○	●	○
3/27		@1230 collect OH-SB05-Z71-72 From 71-72' BGS	○	●	○
		@1240 collect OH-SB05-Z75-76 From 75-76' BGS	○	●	○
80			○	○	○

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EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Hole Number SB-05

Project Owl's Head | Inspector C. Porreca | Sheet 6 of 6 Sheets

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
	85	SP	∅				
	90	SP	∅				
	95		∅				
	100	End of Boring					

PROJECT Owl's Head Gowanus | HOLE NO. SB-05

ENG FORM 5056A-R, AUG 94

(Proponent: CECW-EG)

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HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Page 6 of 6 Borehole No. SB-05

Depth(feet).	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
80	10/10'	80.0 - 90.0' BGS	○	●	○
		- Same as above (SP)	○	●	○
		- No NAPL observed	○	●	○
			○	○	○
			○	○	○
90	10/10'	90.0 - 100.0' BGS	○	●	○
		- Same as Above (SP)	○	●	○
		- No NAPL observed	○	●	○
		- Grading to more gravel + rock	○	●	○
		— End of boring —	○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○

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EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG

District: Gowanus		Hole Number: SB-06
1. Company Name: WSP (ENE)	2. Drill Subcontractor: CDLP (ADT)	Sheet: 1 of 1 Sheets
3. Project: Owl's Head Investigation	4. Location: Brooklyn, NY	
5. Name of Driller: D. Moon	6. Manufacturer's Designation of Drill	
7. Sizes and Types of Drilling and Sampling Equipment	8. Hole Location	
	9. Surface Elevation	
	10. Date Started: 3-21-2024	11. Date Completed: 3-21-2024
12. Overburden Thickness: 100'+	15. Depth Groundwater Encountered: 12'	
13. Depth Drilled Into Rock	16. Depth to Water and Elapsed Time After Drilling Completed	
14. Total Depth of Hole: 100'	17. Other Water Level Managements (Specify)	

18. Geological Samples: 3	Disturbed		Undisturbed		19. Total Number of Core Boxes	
20. Samples For Chemical Analysis: 3	VOC	Metals	Other (Specify)	Other (Specify)	Other (Specify)	21. Total Core Recovery %
22. Disposition of Hole	Backfilled	Monitoring Well	Other (Specify)	23. Signature of Inspector		
		X				

LOCATION SKETCH/COMMENTS: *See Well location Figure SCALE:

PROJECT: Owl's Head Gowanus HOLE NO.: SB-06

ENG FORM 5056-R, AUG 94 (Proponent: CECW-EG)

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

02-0000WH-0602.00\HTRW_drilling log cdr-GPA

Well Construction Log for Well No. MW06 cluster

☒ Flush mount well ☐ Stick-up _____ ft Lock Number _____

SCREENED WELL

Inner Casing Material PVC

Inner Casing Inside Diameter 2 inches

Stick-up 0 ft

GROUND SURFACE

Top of Grout 1 ft

Top of Seal at 61 ft

Top of Sand Pack 63 ft

Top of Screen at 65 ft

Bottom of Screen at 75 ft

Bottom of Sandpack at 77

Bottom of Hole at 100 ft

Borehole Diameter 6 inches

Cement/Bentonite Grout 77-100', 61-63'

Screen Slot Size 10

Screen Type
☒ PVC
☐ Stainless Steel

Pack Type/Size:
☒ Sand #1
☐ Gravel
☐ Natural

OPEN-HOLE WELL

Inner Casing Material _____

Inner Casing Inside Diameter _____ inches

Outer Casing Diameter _____ inches

Borehole Diameter _____ ft

Bedrock _____ ft

Bottom of Rock Socket/ Outer Casing _____ ft

Bottom of Inner Casing _____ ft

Corehole Diameter _____

Bottom of Corehole _____ ft

Note: All depths measured from ground surface

same materials as ~~OH-MW06D~~ noted in figure

Comments

~~MW-OH~~ OH-MW06D: Bentonite chipped/sealed from 77-100', Sand from 63-77', screened from 65-75', Bentonite sealed from 1-61'

OH-MW06I: ~~Bentonite from 45-46'~~, Sand from 32-45', screened from 34-44', Bentonite sealed from 30-32', Grout from 1-30'

OH-MW06S: Sand from 8-21', screened from 10-20', bentonite sealed from 6-8', Grout from 1-6'

Investigation Derived Waste

Container ID	Source	Date	Contents	Volume	Location/Comments

EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Project	Inspector	Hole Number
Owl's Head	C. Porreca	SB-06

Sheet 1 of 7

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results PID; (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
	5	SP	Φ				
	10		Φ				
	15		Φ				

PROJECT Owl's Head Gowanus HOLE NO. SB-06

ENG FORM 5056A-R, AUG 94

(Proponent: CECW-EG)

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

02:0000VH.0602.00\HTRW_drilling log.cdr-GRA

Page 1 of 6 Borehole No. SB-06

Depth(feet).	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
Ø	5/5'	Ø-5' BGS - Hand cleared	●	○	○
		Ø-4' BGS Dark brown poorly graded	●	○	○
		sand w/gravel fill material (SP)	●	○	○
			●	○	○
4		4-5' BGS Concrete Fill material	●	○	○
			●	○	○
5	5/5'	5-10' BGS Dark brown poorly graded	●	○	○
		F-C SAND w/F-C SA-SR GRAVEL (SP)	●	○	○
		Fill material	●	○	○
			●	○	○
10	10/10'	10-18' BGS Same as Above (SP)	●	○	○
		▽ @12.0'	○	●	○
18		18-20.0' Gray boulder material / poorly	○	●	○
20		graded C. GRAVEL (GP)	○	●	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			●	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○

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EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Project: Owl's Head | Inspector: C. Porreca | Hole Number: SB-06 | Sheet: 2 of 7

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
		SP	Φ				
		GP					
	20	GW-GM					
		ML	Φ				
	25	Peat	Φ				
		Wood					
		No Recovery	Φ				
	30	CL					
		SW	PID = 22 ppm				

PROJECT: Owl's Head Gowanus | HOLE NO.: SB-06

ENG FORM 5056A-R, AUG 94

(Proponent: CECW-EG)

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

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Depth(feet).	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
20	6.0'	~~20.0 (@) Ø-2.0' Same as above (GP)~~	○	●	○
	10.0'	Ø-2.0' Dark brown well graded gravel	○	●	○
		w/silt and Sand (GW-GM), some	○	●	○
		brick + broken up asphalt	○	●	○
		~2.0-5.0' SILT (ML)	○	●	○
			○	●	○
		~5.0-5.3' Peat	○	●	○
			○	●	○
		~5.3-6.0' Wood	○	●	○
		- Wood stuck in bit likely pushed	○	●	○
		through material beneath disallowing	○	●	○
30		recovery into core	○	●	○
			○	●	○
	10.0/	30.0-31.0' Lt.-med. brown/grayish	○	●	○
	10.0'	/lean CLAY (CL)	○	●	○
		- NAPL Stained-coated	○	●	○
31		31.0-38.0' Well-graded F-M. SAND (SW)	○	●	○
		- NAPL saturated	○	●	○
31.21		- Collected OH-SB06-737-38 @ 12:02	○	●	○
			○	●	○
		38.0-40.0' BGS Lt.-med. brown grayish (GP) well	○	●	○
		graded F-C. SAND w/gravel (SW)	○	●	○
40		- Napl saturated	○	●	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○

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HTRW DRILLING LOG (Continuation Sheet)

Project: Owl's Head | Inspector: C. Porreca | Hole Number: SB-06 | Sheet 3 of 7 Sheets

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
	35	SW	PID = 22ppm				
	40	SW	PID = 22ppm				
	45	SW					

PROJECT: Owl's Head Gowanus | HOLE NO.: SB-06

ENG FORM 5056A-R, AUG 94

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

(Proponent: CECW-EG)

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Page 3 of 6 Borehole No. SB-06

Depth(feet).	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
		50.0 (CP)			
40	10.0/	40.0 ~~45.0~~ BGS Same as 31.0-48.0 layer:			
	10.0'	Lt.-med. brown/gray-Bk well graded			
		f-med. SAND (SW)			
		- NAPL ~~saturated~~ (40-45.0' BGS)			
		~~50.0~~			
		~ 45.0 ~~47.0~~ BGS VF SAND; no			
~~45~~	(CP)	~~45.0~~ NAPL observed			
50		~~47.0 - 50.0' BGS NAPL sheen~~ (CP)			

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EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Hole Number: SB-06

Project: Owl's Head | Inspector: C. Porreca | Sheet 4 of 7

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
	50	SW	PID = 113 ppm				
	55						
	60	SW					

PROJECT: Owl's Head Gowanus | HOLE NO. SB-06

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ENG FORM 5056A-R, AUG 94 (Proponent: CECW-EG)

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Depth(feet).	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
50	10.0/	50.0-60.0' BGS	○	●	○
	10.0'	Same as Above (SW)	○	●	○
		-NAPL ~~saturated~~ sheen (CP)	○	●	○
60			○	●	○
		60.0-70.0' BGS	○	●	○
		Same as Above (SW)	○	●	○
		-NAPL ~~Saturated~~ sheen (CP)	○	●	○
			○	○	○
			○	○	○
			○	○

EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Hole Number: SB-06
Sheet: 5 of 7 Sheets

Project: Owl's Head
Inspector: C. Porreca

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
	65	SW					
	70						
	75	NAPL sheen ↑					
		No NAPL observed ↓					
		SP	ϕ				
	80						

PROJECT: Owl's Head Gowanus
HOLE NO.: SB-06

(Proponent: CECW-EG)

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ENG FORM 5056A-R, AUG 94

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Depth(feet).	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
70	10.0/ 10.0'	70.0 - 76.0' Same as Above (SW) - NAPL sheen - Collected OH-SB06-Z70-72 @1330	○	●	○
76		76.0 - 80.0' BGS Lt.-Med. brown poorly graded F. SAND w/F-C. SA-SR GRAVEL (SP) - No NAPL observed - Collected OH-SB06-Z78-79 @1255 from 78.0 - 79.0' BGS	○	●	○
80			○	○	○

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Borehole No. SB-06

EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Hole Number: SB-06

Project: Owl's Head | Inspector: C. Porreca | Sheet 6 of 7 Sheets

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
	85	SP	Ø				
			Ø				
	90		Ø				
		SP-SM	Ø				
	95		Ø				

PROJECT Owl's Head Gowanus | HOLE NO. SB-06

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ENG FORM 5056A-R, AUG 94 (Proponent: CECW-EG)

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Depth(feet).	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry / Moist / Wet
80	10.0/	80.0-90.0' BGS	○ ● ○
	10.0'	Same as Above (SP)	○ ● ○
			○ ● ○
			○ ● ○
90		90.0 - 96.0' BGS	○ ● ○
		Lt.-Med brown/reddish brown	○ ● ○
		poorly graded f. SAND w/ silt	○ ● ○
		and F-c. SA-SR gravel (SP-SM)	○ ● ○
			○ ● ○
96		96.0-97.0 'BGS	○ ● ○
		Lt.-med. brown/reddish brown poorly	○ ● ○
		graded f. SAND w/clay and F-c.	○ ● ○
		SA-SR GRAVEL (SP-SC)	○ ● ○
			○ ● ○
97		97.0-100.0' BGS	○ ● ○
		Lt.-med. brown/reddish brown	○ ● ○
		well graded F-C. SAND w/F-C.	○ ● ○
		SA-SR GRAVEL (SW)	○ ● ○
100		End of boring	○ ● ○
			○ ○ ○
			○ ○ ○
			○ ○ ○
			○ ○ ○
			○ ○ ○
			○ ○ ○
			○ ○ ○
			○ ○ ○
			○ ○ ○
			○ ○ ○
			○ ○ ○
			○ ○ ○

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EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Hole Number: SB-06

Project: Owl's Head | Inspector: C. Porreca | Sheet: 7 of 7

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
		SP-SC					
			Ø				
		SW					
	100						
		End of Boring					

PROJECT: Owl's Head Gowanus | HOLE NO.: SB-06

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ENG FORM 5058A-R, AUG 94

(Proponent: CECW-EG)

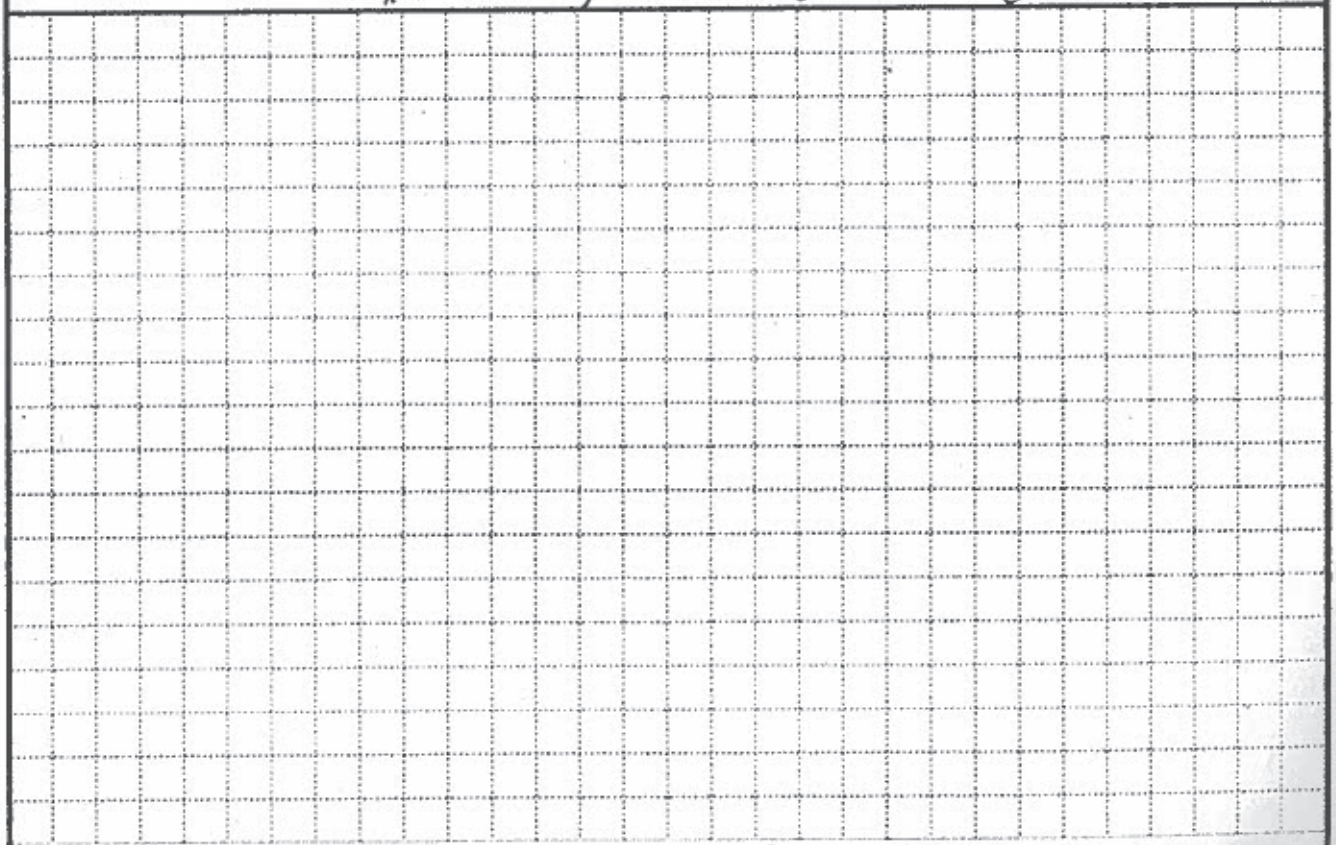
HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

HTRW DRILLING LOG

District: Gowanus			Hole Number: SB-07
1. Company Name: WSP (E&E)	2. Drill Subcontractor: Cascade Drilling LP (ADT)		Sheet: 1 of Sheets: 1
3. Project: Owl's Head Investigation		4. Location: Brooklyn, NY	
5. Name of Driller: C. Porreca (Geologist) / D. Moon		6. Manufacturer's Designation of Drill	
7. Sizes and Types of Drilling and Sampling Equipment		8. Hole Location	
		9. Surface Elevation	
		10. Date Started: 3-25-2024	11. Date Completed: 3-25-24
12. Overburden Thickness: 100'+		15. Depth Groundwater Encountered: ~7'	
13. Depth Drilled into Rock: -		16. Depth to Water and Elapsed Time After Drilling Completed	
14. Total Depth of Hole: 100' BGS		17. Other Water Level Managements (Specify)	
18. Geological Samples	Disturbed	Undisturbed	19. Total Number of Core Boxes: 0

20. Samples For Chemical Analysis: 2	VOC	Metals	Other (Specify)	Other (Specify)	Other (Specify)	21. Total Core Recovery %
22. Disposition of Hole	Backfilled	Monitoring Well: X	Other (Specify)	23. Signature of Inspector: [signature]		

LOCATION SKETCH/COMMENTS * See Boring Location Figure SCALE:



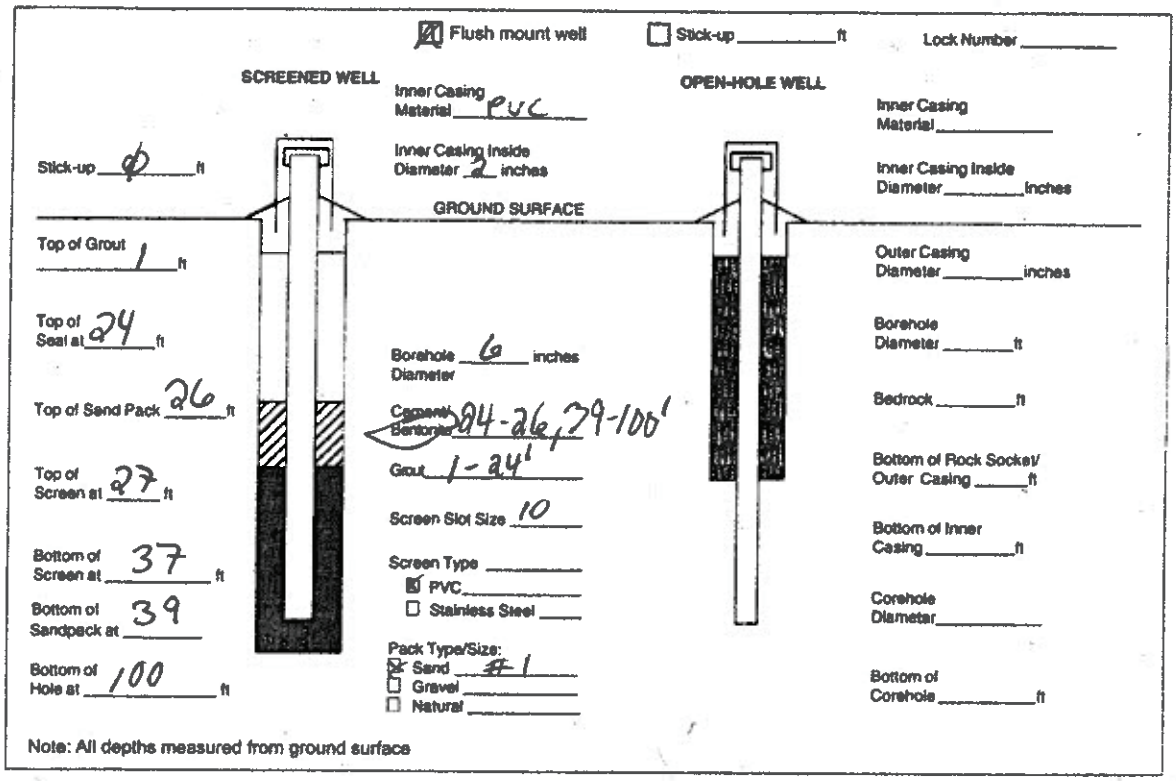
PROJECT: Owl's Head Gowanus HOLE NO.: SB-07

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ENG FORM 5056-R, AUG 94 (Proponent: CECW-EG)

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Well Construction Log for Well No. OH-MW07I



Comments

OH-MW07I set w/ screened interval from 27-37' BGS

Investigation Derived Waste					
Container ID	Source	Date	Contents	Volume	Location/Comments

EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Hole Number: SB-07
Sheet 1 of 6

Project: Owl's Head
Inspector: C. Porreca

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
	5	SM					
		0	∅				
	10						
		ML	PID = 1.3 ppm				
	15						

PROJECT: Owl's Head Gowanus
HOLE NO. SB-07

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(Proponent: CECW-EG)

ENG FORM 5056A-R, AUG 94

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

02-002260 KZ03 04 07-B2651

Page 1 of 6 Borehole No. SB-07

Depth(feet)	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
0	5/5'	Hand cleared 0-5' BGS: Med. brown fine grained silty SAND w/ SA-SR gravel (SM), some construction materials (brick, concrete)/Fill material → F-c (CF)	●	○	○
5	5/5'	5-10' BGS: Same as above	●	○	○
	(8) 6.0	~▽ 7' BGS water level	○	●	○
10	~~10.0~~/ 10.0'	10.0-10.0' BGS: Same as above	○	●	○
12		12.0-16.0' BGS: SILT w/ F-n, SA-SR gravel (ML); construction materials (concrete) @~16.0' BGS thick wood present preventing bit from collecting full sample	○	●	○
20			○	○	○

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EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Hole Number: SB-07
Project: Owl's Head
Inspector: C. Porreca
Sheet: 2 of 6

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
	20	ML	NAPL	sat			
	25		NAPL	Saturation in lenses			
			NAPL PID = ~165 ppm	Saturation ↓			
	30	SW	PID = 180 ppm				
			PID = 414 ppm				

PROJECT: Owl's Head Gowanus
HOLE NO.: SB-07

02:0000VH.08822.00\HTRW_drilling log.cdr-GRA

ENG FORM 5056A-R, AUG 94
(Proponent: CECW-EG)

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Depth(feet).	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry / Moist / Wet
20	10.0/	20.0 ~ 28.5' BGS Same as Above (ML)	
	10.0'	- 22.0-23.0' BGS Thick wood Zone	
		- 27.5'-28.5' F-M SAND lenses w/NAPL saturation	
28.5		28.5-30.0' Med.-dark brown F-M well graded SAND (SW); NAPL saturated	
30			
30		30.0~32.5' Same as above (SW); NAPL Saturated	
3/25		-Collect OH-SB07-Z31-32 @1140	
32.5		32.5~34.0' Same as above but transitioning to F. SAND w/gravel & more compacted (is looser above)	
34		34.0~39.0' BGS Med.-lt. brown F-vf silty (CP) poorly graded SAND (SP-SM); NAPL sheen	
39		39.0-40.0' BGS Lt. brown F-M poorly graded SAND w/SILT (SP-SM); NAPL sheen	
40			

EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Hole Number: SB-07

Project: Owl's Head | Inspector: C. Porreca | Sheet 3 of 6 Sheets

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
	35	SW	NAPL Saturation ↑ NAPL Sheen ↓				
		SP-SM					
	40						
	45	SP-SM					

PROJECT Owl's Head Gowanus | HOLE NO. SB-07

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ENG FORM 5056A-R, AUG 94 (Proponent: CECW-EG)

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Depth(feet).	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
40	10.0/	40.0-50.0' Same as Above (SP-SM)	○	●	○
50	10.0'	-NAPL Sheen	○	●	○
		-48-50' grading to clean/ less NAPL sheen	○	●	○
			○	●	○
			○	○	○
			○	○	○
			○	○

EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Hole Number: SB-07
Sheet: 4 of 6

Project: Owl's Head
Inspector: C. Porreca

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
	50	SP-SM					NAPL no longer observed
			∅				
	55		∅				
		SP-SM	∅				
	60						
		SW-SM	∅				

PROJECT: Owl's Head Gowanus
HOLE NO.: SB-07

(Proponent: CECW-EG)

ENG FORM 5056A-R, AUG 94

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

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Depth(feet).	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
50	10.0/ 10.0'	50.0-60.0' BGS Same as Above (SP-SM); NO NAPL Sheen	○	●	○
		-Collect OH-SB07-252-53 @1215 3/25	○	●	○
			○	●	○
			○	●	○
60	10.0/ 10.0'	60.0-70.0' Lt. brown well graded f-m SAND w/F-m, SA-SR gravel (SW-SM)	○	●	○
			○	●	○
		-No NAPL observed	○	●	○
		-Grading to f-c, SA-SR from ~67.0-70.0'	○	●	○
			○	●	○
		-Higher gravel content from ~68.5-70.0'	○	●	○
			○	●	○
		-Some silt lenses (4mm; <5mm) @~66.0'	○	●	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○

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EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Hole Number: SB-07

Project: Owl's Head | Inspector: C. Porreca | Sheet 5 of 6 Sheets

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
	65	SW	ϕ				
		SM					
	70						
		SP -	ϕ				
		SM					
	75		ϕ				
			ϕ				
	80						

PROJECT: Owl's Head Gowanus | HOLE NO. SB-07

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ENG FORM 5056A-R, AUG 94 (Proponent: CECW-EG)

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Depth(feet).	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
70	10.0/	70.0 - 80.0' BGS Lt. - med. brown/	○	●	○
	10.0'	slightly reddish, poorly graded	○	◕	○
		f-vf compacted SAND w/SILT	○	◑	○
		and M-C, SA-SR Gravel (some	○	◕	○
80		cobble-sized gravel(s) (SP-SM)	○	◕	○
			○	○	○
			○	○	○
			○	○

EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Hole Number SB-07
Sheet 6 of 6

Project: Owl's Head
Inspector: C. Pomeca

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
	85	SP-SM	ϕ				
	90	SP-SM	ϕ				
	95		ϕ				
	100		ϕ				

PROJECT: Owl's Head Gowanus
HOLE NO. SB-07

(Proponent: CECW-EG)

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ENG FORM 5056A-R, AUG 94

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Depth(feet).	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
		80.0-90.0' BGS			
80	~4.0/	Same as Above except high density	○	◕	○
	10.0'	of cobble-sized gravels obstructing	○	◕	○
90		Sonic recovery (SP-SM)	○	◕	○
			○	◕	○
			○	◕	○
90	~4.0/	90.0 - 100.0' BGS	○	◕	○
	10.0'	Same as Above	○	◕	○
		- fewer cobblesized gravels in core	○	◕	○
		as prevented recovery (SP-SM)	○	◕	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
		- Set wells 27-37', ~~40-50'~~	○	○	○
		~~backfill to 50, sand 50-50~~	○	○	○
		(12) - backfill to 39'	○	○	○
		~~bent to 37'~~	○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○

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HTRW DRILLING LOG

District: Gowanus		Hole Number: SB-08
1. Company Name: WSP (E&E)	2. Drill Subcontractor: Cascade (ADT)	Sheet: 1 of 1
3. Project: Owl's Head Investigation	4. Location: Brooklyn, NY	
5. Name of Driller: D. Moon	6. Manufacturer's Designation of Drill	
7. Sizes and Types of Drilling and Sampling Equipment	8. Hole Location	
	9. Surface Elevation	
	10. Date Started: 3-26-2024	11. Date Completed: 3-26-2024
12. Overburden Thickness: 100'+	15. Depth Groundwater Encountered: ~8.5'	
13. Depth Drilled Into Rock: —	16. Depth to Water and Elapsed Time After Drilling Completed	
14. Total Depth of Hole: 100' BGS	17. Other Water Level Managements (Specify)	

18. Geological Samples	Disturbed		Undisturbed		19. Total Number of Core Boxes: 0	
20. Samples For Chemical Analysis: 3	VOC	Metals	Other (Specify)	Other (Specify)	Other (Specify)	21. Total Core Recovery %
22. Disposition of Hole	Backfilled	Monitoring Well: X	Other (Specify)	23. Signature of Inspector		

LOCATION SKETCH/COMMENTS: * See Boring Location Figure SCALE:

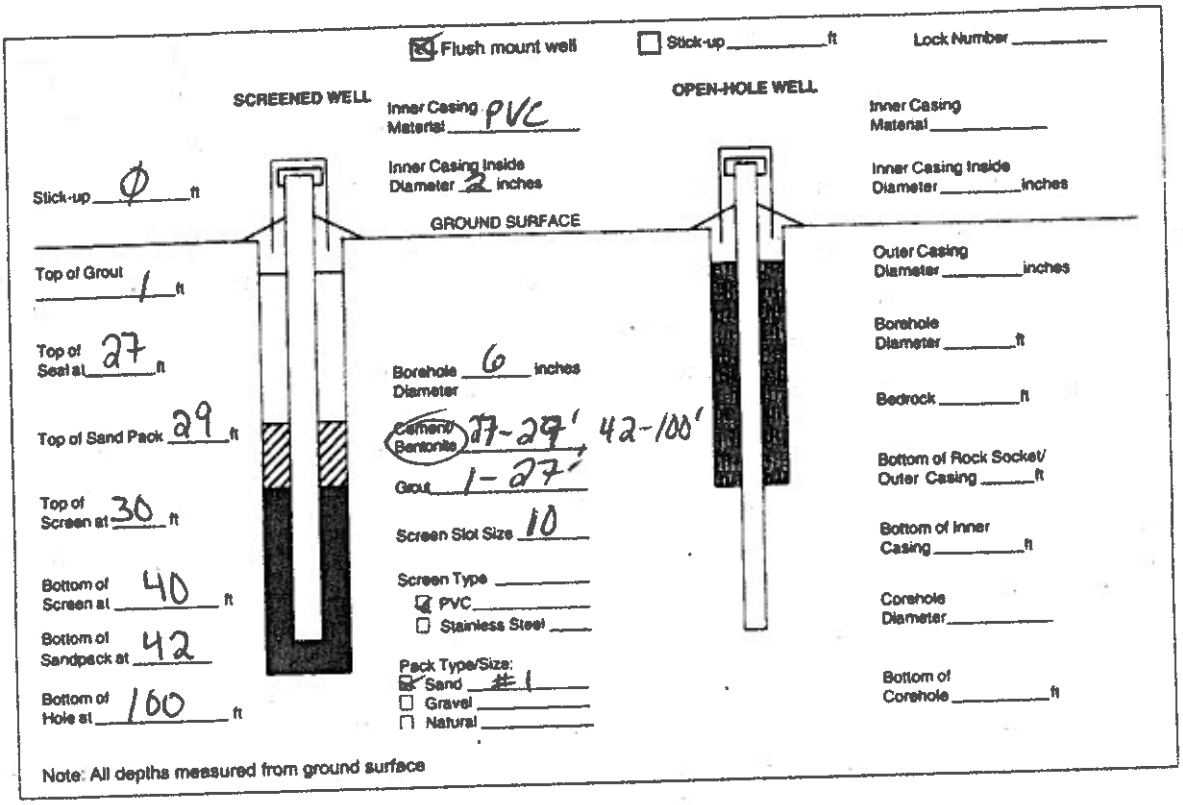
PROJECT: Owl's Head Gowanus HOLE NO.: SB-08

ENG FORM 5056-R, AUG 94 (Proponent: CECW-EG)

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

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Well Construction Log for Well No. OH-MW08I



Comments

OH-MW08I set w/screened interval from 30-40' BGS

Investigation Derived Waste

Container ID	Source	Date	Contents	Volume	Location/Comments

EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Hole Number: SB-08

Project: Owl's Head | Inspector: C. Porreca | Sheet: 1 of 6

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
	0	GW	∅				
	5		∅				
		Concrete					
		GW					
	10	Wood	∅				
	15						

PROJECT: Owl's Head Gowanus | HOLE NO.: SB-08

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ENG FORM 5056A-R, AUG 94 (Proponent: CECW-EG)

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Depth(feet)	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
0	5/5'	0-5' BGS Hand Cleared	●	○	○
		- Well graded gravel w/sand, construct. materials (concrete, brick, etc.) (GW)	●	○	○
			●	○	○
5	5/5'	5.0-8.0' BGS Same as Above (GW)	●	○	○
			●	○	○
8.0		8.0-8.5' BGS Concrete	●	○	○
			●	○	○
8.5		8.5-10.0' BGS Same as Above (GW)	○	●	○
		w/ SILT lenses	○	●	○
		- ▽ Water	○	●	○
			○	●	○
10	6.0/	10.0-10.0' Wood; Coarse gravel @ end	○	●	○
	10.0'	of run blocking sonic tube /	○	●	○
20		preventing recovery	○	●	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○

EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Hole Number: SB-08

Project: Owl's Head | Inspector: C. Porreca | Sheet 2 of 6

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
	20	Wood	∅ (PID) CP ~~8.5~~ ppm CP ~~8.5~~ 8.5				
	25	Wood	35 ppm — NAPL staining				
	30	SP	— NAPL saturated ↓ 174 ppm				

PROJECT: Owl's Head Gowanus | HOLE NO.: SB-08

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(Proponent: CECW-EG)

ENG FORM 5056A-R, AUG 94

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Page 2 of 6 Borehole No. SB-08

Depth(feet).	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content Dry	Moist	Wet
20	~6.0/ 10.0'	20-30.0' BGS Wood ; c. gravel @start - Wood preventing sonic tube From full recovery - Wood is coated in dark brown - silty material - NAPL staining From 29.0-30.0'			
30	10.0/ 10.0'	30.0 - 40.0' BGS Lt. brown/gray, damp, compacted (CP) poorly graded f-vf SAND w/ f-m, SA-SR gravel (SP) - NAPL saturation from 30.0-35.0' - NAPL stained From 35.0-36.0' (CP) - No NAPL observed From 36.0-40.0' (CP) sheen			
40		- collected OH-SB08-231-32 @1140 from 31-32' BGS			

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EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Hole Number: SB-08

Project: Owl's Head | Inspector: C. Porreca | Sheet: 3 of 6

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
	35	SP	174 ppm NAPL	saturated stained sheen			
			~~No NAPL~~ (SP) ~~observed~~				
	40	SP	NAPL sheen 120 ppm				
	50		ϕ				
			ϕ				

PROJECT: Owl's Head Gowanus | HOLE NO.: SB-08

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ENG FORM 5056A-R, AUG 94 (Proponent: CECW-EG)

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Page 3 of 6 Borehole No. SB-08

Depth(feet).	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
40	10/10'	40.0-50.0' BGS Lt. brown-grayish/slightly reddish poorly graded F-VF compacted SAND (SP)	○	●	○
		- NAPL saturated From 40-42.0'	○	●	○
		- NAPL sheen From 42-46.0'	○	●	○
		- No NAPL observed From 46.0-50.0'	○	●	○
			○	●	○
		- Collected OH-SB08-Z41-42 @ 1150	○	●	○
		From 41-42' BGS	○	●	○
			○	●	○
		- Collected OH-SB08-Z47-48 @ 1200	○	●	○
50		From 47-48 BGS	○	●	○
			○	○	○
			○	○	○
50	10/10'	50.0- Lt. brown - reddish brown	○	●	○
		60.0' BGS poorly graded f-vf	○	●	○
		compacted SAND (SP)	○	●	○
		- No NAPL observed	○	●	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
			○	○	○
		Well ~~2"~~ 30-40'	○	○	○
		~46' clean, collect in sheen ~41-42-43	○	○	○

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EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Hole Number SB-08

Project Owl's Head | Inspector C. Porreca | Sheet 4 of 6 Sheets

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
	55	SP	∅				
	60		∅				
		SP					
	65		∅				
		GW					
		SW					

PROJECT Owl's Head Gowanus | HOLE NO. SB-08

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ENG FORM 5056A-R, AUG 94 (Proponent: CECW-EG)

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Depth(feet).	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
60		60.0 - 66.0' Same as Above (SP)	○	●	○
			○	○	○
			○	○	○
66		66.0 - 68.0' Well graded SA-SR	○	●	○
		gravel w/sand (GW), Lt. brown	○	●	○
			○	○	○
			○	○	○
68		68.0 - 70.0' Lt. brown well graded	○	●	○
		f-m SAND w/f-m, SA-SR	○	●	○
		gravel (SW)	○	●	○
			○	○	○
			○	○	○
			○	○

EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Hole Number: SB-08
Sheet 5 of 10

Project: Owl's Head
Inspector: C. Porreca

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
	70	SW					
		SP	ϕ				
	75		ϕ				
			ϕ				
	80	SP					
			ϕ				
	85						

PROJECT: Owl's Head Gowanus
HOLE NO.: SB-08

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ENG FORM 5056A-R, AUG 94
(Proponent: CECW-EG)

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Depth(feet).	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
70	10/10'	70.0 – 80.0' Lt. brown - reddish brown poorly graded f-vf SAND w/F-C, SA-SR GRAVEL (SP)	○	●	○
			○	◔	○
			○	●	○
			○	◉	○
			○	○	○
			○	○	○
80		80.0 - 90.0' Same as Above (SP)	○	●	○
			○	○	○
			○	○	○
			○	○

EM 1110-1-4000
31 AUG 94

HTRW DRILLING LOG (Continuation Sheet)

Hole Number: SB-08

Project: Owl's Head | Inspector: C. Porreca | Sheet 6 of 6 Sheets

Elevation (A)	Depth (B)	Description of Materials (C)	Field Screening Results (D)	Geotech Sample or Core Box No. (E)	Analytical Sample No. (F)	Blow Count (G)	Remarks (H)
	90	SP	ϕ				
	95	SP	ϕ				
	100	End of borehole	ϕ				

PROJECT: Owl's Head Gowanus | HOLE NO.: SB-08

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ENG FORM 5056A-R, AUG 94 (Proponent: CECW-EG)

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE DRILL LOG FORM

Depth(feet).	Core Recovery	NARRATIVE LITHOLOGIC DESCRIPTION	Moisture Content: Dry	Moist	Wet
90	10/10'	90.0 - 100.0' Same as Above (SP)	○	●	○
			○	●	○
			○	○	○
			○	○	○
			○	○

C

Well Development and Groundwater Sampling Purge Logs

ecology and environment
engineering and geology, p.c.
Environmental Specialists

WELL PURGE & SAMPLE RECORD

Site Name/Location: Owl's Head, Gowanus
Well ID: MW-045
EEEPC Project No.: EE1705007.0031
Date: 4-5-24

Initial Depth to Water: 3.55 feet TOIC
Start Time: 810
Total Well Depth: 9.79 feet TOIC
End Time:
Depth to Pump: _____ feet TOIC
☒ Bailer ☐ Pump
Initial Pump Rate: _____ Lpm / gpm
Pump Type:
adjusted to: _____ at _____ minutes
Well Diameter: 2 inches
adjusted to: _____ at _____ minutes
1x Well Volume: 1.02 gallons x 3 = 3.06

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
8:13	-	7.20	10.94	-80	10.6	102.7	54.7	3.55
8:20	1	7.54	11.07	-143	15.8	100.5	858	
8:29	2	7.58	10.82	-148	16.3	97.2	205	
	3	7.56	10.94	-138	13.3	99.5	>1000	
	3.25	7.54	10.95	-135	14.1	92.8	>1600	
Final Sample Data:		7.54	10.95	-135	14.1	92.8	>1,000	

Sample ID: MW-045-20240405 Duplicate? ☐ Dupe Samp ID:
Sample Time: 830 MS/MSD? ☐

Analyses:	Methods:
☐ VOCs	☐ CLP
☐ SVOCs	☐ SW846
☐ PCBs	☐ Drink. Wtr.
☐ Metals	☐ _____
☒ See CoC	☐ _____

Comments:
Sampler(s): QH, CP

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Owl's Head, Gowanus
Well ID: MW-04I
EEEPC Project No.: EE1705007.0031
Date:

Initial Depth to Water: 3.60 feet TOIC
Total Well Depth: 36.87 feet TOIC
Depth to Pump: ~32 feet TOIC
Initial Pump Rate: ~0.57 Lpm (gpm) / 0.22 Lpm
adjusted to: _____ at _____ minutes
adjusted to: _____ at _____ minutes

Start Time: 9:00, restarted @ 9:15
End Time:
☐ Bailer ☒ Pump
Pump Type: Bladder
Well Diameter: 2 inches
1x Well Volume: 5.43 gallons

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
920		7.91	13.35	-13	2.08	11.12	147	
925		7.90	13.68	-27	2.09	10.02	149	
930		7.94	14.01	-35	2.09	8.91	158	
935		7.95	14.04	-42	2.09	8.81	149	
940		7.96	14.28	-52	2.09	8.59	165	10.95
945		7.97	14.30	-61	2.10	8.45	170	12.40
950	2.0	7.99	14.54	-56	2.11	8.27	185	13.74
955		7.99	14.57	-19	2.09	8.20	357	14.69
1000		8.01	14.65	-10	2.07	8.06	409	15.62
1005		8.02	14.77	-17	2.05	7.91	400	16.70
1010		8.01	14.82	-28	2.01	7.75	390	17.61
1015		8.02	14.89	-25	1.98	7.57	330	18.40
1020		8.03	14.93	-16	1.99	7.67	273	19.35
1025		8.02	14.91	-16	1.98	7.55	245	20.35
1030		8.01	14.92	-20	1.97	7.27	207	20.91
1035		8.02	14.94	-12	2.01	7.17	205	21.85
1040		8.02	14.97	-18	1.99	7.10	259	22.40
1045	~	8.03	15.02	-17	2.01	7.00	278	23.16
Final Sample Data:		8.03	15.25	-39	1.93	67.8	402	26.78

Sample ID: MW-04I-20240404
Sample Time: 1120
Duplicate? ☐
MS/MSD? ☐
Dupe Samp ID:

Analyses: / Methods:
☐ VOCs ☐ CLP
☐ SVOCs ☐ SW846
☐ PCBs ☐ Drink. Wtr.
☐ Metals ☐ _____
☒ see col ☐ _____

Comments:

Sampler(s): CP, QH

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WELL PURGE & SAMPLE RECORD

Site Name/Location: OWI's Head, Gowanus
Well ID: MW-04I
EEEPC Project No.: EE1705007.0031
Date:

Initial Depth to Water: 3.60 feet TOIC
Start Time: 9:00, restarted @ 9:15
Total Well Depth: 36.87 feet TOIC
End Time:
Depth to Pump: ~32 feet TOIC
☐ Bailer ☒ Pump
Initial Pump Rate: ~0.57 Lpm / (gpm) / 0.22 Lpm
Pump Type: Bladder
adjusted to: _____ at _____ minutes
Well Diameter: 2 inches
adjusted to: _____ at _____ minutes
1x Well Volume: 5.43 gallons

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1050		8.05	15.12	-11	2.03	6.8	328	24.00
1055		8.03	15.20	-29	2.00	70.3	460	24.80
1100		8.03	15.23	-47	1.90	70	449	25.15
1105		8.04	15.25	-36	1.97	68	391	25.75
1110		8.04	15.24	-32	1.95	69.2	372	26.15
1115	~8.0	8.03	15.25	-39	1.93	67.8	402	26.78
Final Sample Data:		8.03	15.25	-39	1.93	67.8	402	26.78

Sample ID: MW-04I-20240404
Duplicate? ☐
Dupe Samp ID:
Sample Time: 1120
MS/MSD? ☐

Analyses:	Methods:
☐ VOCs	☐ CLP
☐ SVOCs	☐ SW846
☐ PCBs	☐ Drink. Wtr.
☐ Metals	☐ _____
☒ See CoC	☐ _____

Comments:

Sampler(s): CP, QH

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Owl's Head, Gowanus
Well ID: MW-04D
EEEPC Project No.: EE1705007.0031
Date: 4-4-24
Initial Depth to Water: (QH) 3.10 ~~3.90~~ feet TOIC
Start Time: 1435
Total Well Depth: 70.60 feet TOIC
End Time:
Depth to Pump: ~66.5 feet TOIC
☐ Bailer ☒ Pump
Initial Pump Rate: 0.556 Lpm / (gpm) / 0.21 Lpm
Pump Type: Tiny Bladder
adjusted to: _____ at _____ minutes
Well Diameter: 2 inches
adjusted to: _____ at _____ minutes
1x Well Volume: (QH) ~~10.98~~ 11.18 gallons

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1445		7.81	15.22	80	0.951	6.32	247	2.16
1450		7.80	15.14	75	1.02	43.0	242	~~2.80~~ 2.20
1455		7.80	15.10	77	1.04	32.0	213	2.20
1500		7.81	15.02	78	1.05	28.0	185	2.30
1505		7.81	15.11	76	1.05	25.0	160	2.35
1510		7.81	15.11	70	1.06	22.1	145	2.40
1515		7.81	15.13	65	1.06	20.0	145	2.40
1520	~2.5	7.81	15.13	64	1.06	19.4	144	2.45
Final Sample Data:		7.81	15.13	64	1.06	19.4	144	2.45

Sample ID: MW-04D-20240404 Duplicate? ☐ Dupe Samp ID: _____
Sample Time: 1525 MS/MSD? ☑

Analyses:	Methods:
☐ VOCs	☐ CLP
☐ SVOCs	☐ SW846
☐ PCBs	☐ Drink. Wtr.
☐ Metals	☐ _____
☒ See Col	☐ _____

Comments: _____
Sampler(s): CP, QH

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WELL PURGE & SAMPLE RECORD

Site Name/Location: OWL'S HEAD, GOWANUS/BROOKLYN, NY Well ID: MW-05S

EEEPC Project No.: _____ Date: 4/10/24

Initial Depth to Water: 2.21 feet TOIC Start Time: 0840

Total Well Depth: 9.70 feet TOIC End Time: 0925

Depth to Pump: - feet TOIC ☑ Bailer ☐ Pump

Initial Pump Rate: - Lpm / gpm Pump Type: -

adjusted to: - at - minutes Well Diameter: 2 inches

adjusted to: - at - minutes 1x Well Volume: 1.22 gallons 3vol: 3.66 5vol: 6.10

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
0840	Initial	6.35	13.87	-59	2.65	3.36	>1000	
	1	6.97	13.60	-128	3.13	3.36	>1000	
	2	7.22	13.44	-130	3.70	4.07	>1000	
	3	7.30	13.39	-132	3.86	0.16	>1000	
	4	7.33	13.38	-138	4.00	0.27	>1000	
	5	7.46	13.51	-123	3.97	0.00	>1000	
	6	7.41	13.39	-142	4.33	0.00	>1000	
	7	7.41	13.47	-138	4.10	0.00	>1000	
0910	8	7.42	13.38	-136	4.13	0.00	>1000	
Final Sample Data:		7.42	13.38	-136	4.13	0.00	>1000	

Sample ID: MW-05S-20240410 Duplicate? ☐ Dupe Samp ID: _____

Sample Time: 0915 MS/MSD? ☐

Analyses:	Methods:
☑ VOCs	☐ CLP
☑ SVOCs	☐ SW846
☑ PCBs	☐ Drink. Wtr.
☑ Metals	☑ Cyanide
☑ Hg	☑ pesticides
	☑ PFAS

Comments: _____

Sampler(s): M. REIFF, M. PULA

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WELL PURGE & SAMPLE RECORD

Site Name/Location: OWL'S HEAD, GOWANUS / BROOKLYN, NY Well ID: MW-05I

EEEPC Project No.: _____ Date: 4/10/24

Initial Depth to Water: 2.05 feet TOIC * Depth to product: 2.03 Start Time: 0900

Total Well Depth: 35.70 feet TOIC End Time: 1040

Depth to Pump: - feet TOIC ☑ Bailer ☐ Pump

Initial Pump Rate: - Lpm / gpm Pump Type: -

adjusted to: - at - minutes Well Diameter: 2 inches

adjusted to: - at - minutes 1x Well Volume: 5.49 gallons 3vol: 16.47

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. °C/°F)	ORP (mV)	Conductivity (µS/cm ~~mS/cm~~)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
0900	Initial	7.58	13.50	-113	1.48	0.43	875	
	5	7.28	15.49	-126	~~mS/cm~~ 9.52	1.36	>1000	
	10	7.86	16.53	-70	9.21	2.23	544	
	15	7.69	16.60	-69	9.20	1.94	523	
	20	7.63	16.62	-67	9.20	1.93	514	
1025	25	7.62	16.61	-64	9.19	1.89	516	
Final Sample Data:		7.62	16.61	-64	9.19	1.89	516	

Sample ID: MW-05I-20240410 Duplicate? ☐ Dupe Samp ID: _____

Sample Time: 1030 MS/MSD? ☐

Analyses:	Methods:
☑ VOCs	☐ CLP
☑ SVOCs	☐ SW846
☑ PCBs	☐ Drink. Wtr.
☑ Metals	☑ Cyanide
☑ Hg	☑ pesticides
	☑ PFAS

Comments: _____

Sampler(s): Q. HAWKINS, M. PULA

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Owl's Head, Gowanus
Well ID: MW-05D
EEEPC Project No.: EE1705007.0031
Date: 4-10-24

Initial Depth to Water: 0.75 feet TOIC
Start Time: 0850
Total Well Depth: 71.4 feet TOIC
End Time:
Depth to Pump: ~67.5 feet TOIC
☐ Bailer ☒ Pump
Initial Pump Rate: ~0.155 Lpm / gpm
Pump Type: Small Bladder
adjusted to: _____ at _____ minutes
Well Diameter: 2 inches
adjusted to: _____ at _____ minutes
1x Well Volume: 11.53 gallons

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
855		6.15	13.19	40	5.44	8.86	79	1.65
900		6.51	13.18	7	5.51	4.94	49	1.65
905		6.63	13.23	0	5.48	4.59	44	1.65
910		6.80	13.32	-4	5.36	4.10	34	1.65
915		6.89	13.40	-3	5.28	3.54	30	1.65
920		7.02	13.52	0	5.17	3.10	26	1.65
925		7.07	13.58	2	5.13	2.92	25	1.65
930		7.14	13.62	4	5.10	2.70	21	1.65
935		7.19	13.67	6	5.09	2.59	21	1.65
940		7.23	13.80	8	5.06	2.43	17	1.65
945	~2.25	7.25	13.82	10	5.06	2.36	16	1.65
Final Sample Data:		7.25	13.82	10	5.06	2.36	16	1.65

Sample ID: MW-05D-20240410
Duplicate? ☐
Dupe Samp ID: _____
Sample Time: 950
MS/MSD? ☐

Analyses: Methods:
☐ VOCs ☐ CLP
☐ SVOCs ☐ SW846
☐ PCBs ☐ Drink. Wtr.
☐ Metals ☐ _____
☒ See Co C ☐ _____

Comments: _____

Sampler(s): CP

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WELL PURGE & SAMPLE RECORD

Site Name/Location: OWL'S HEAD, GOWANUS / BROOKLYN, NY Well ID: MW-06S

EEEPC Project No.: _____ Date: 4/9/24

Initial Depth to Water: 2.29 feet TOIC Start Time: 1400

Total Well Depth: 8.08 feet TOIC End Time: ~~1430~~ 1435 (me)

Depth to Pump: – feet TOIC ☑ Bailer ☐ Pump

Initial Pump Rate: – Lpm / gpm Pump Type: –

adjusted to: – at – minutes Well Diameter: 2 inches

adjusted to: – at – minutes 1x Well Volume: 0.92 gallons 3 vol: 2.77 5 vol: 4.6

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C /°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1400	1	9.38	20.17	16	0.915	0.75	>1000	
	3	8.55	16.94	-146	1.03	0.00	>1000	
	4	7.69	15.41	-106	1.23	0.00	>1000	
	5	6.90	15.44	-58	1.56	0.00	>1000	
	10	6.88	15.43	-52	1.55	0.00	>1000	
1425	15	6.87	15.43	-51	1.53	0.00	>1000	
Final Sample Data:		6.87	15.43	-51	1.53	0.00	>1000	

Sample ID: MW-06S-20240409 Duplicate? ☐ Dupe Samp ID: _____

Sample Time: 1430 MS/MSD? ☐

Analyses: / Methods:

- ☑ VOCs / ☐ CLP
- ☑ SVOCs / ☐ SW846
- ☑ PCBs / ☐ Drink. Wtr.
- ☑ Metals / ☑ Cyanide
- ☑ Hg / ☑ Pesticides
- ☑ PFAS

Comments: _____

Sampler(s): M. REIFF, Q. HAWKINS, M. PULA

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WELL PURGE & SAMPLE RECORD

Site Name/Location: OWL'S HEAD, GOWANUS / BROOKLYN, NY Well ID: MW-06I

EEEPC Project No.: _____ Date: 4/9/24

Initial Depth to Water: 2.28 feet TOIC * Depth to product: 2.25 Start Time: 1415

Total Well Depth: 44.60 feet TOIC End Time: 1500

Depth to Pump: - feet TOIC ☑ Bailer ☐ Pump

Initial Pump Rate: - Lpm / gpm Pump Type: -

adjusted to: - at - minutes Well Diameter: 2 inches

adjusted to: - at - minutes 1x Well Volume: 6.7 gallons 3vol: 20.3 5vol: 33.8

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1415	Initial	6.92	16.04	-45	1.78	0.80	186	
	7	6.66	17.68	-59	2.34	0.00	627	
	15	6.51	17.61	-64	2.39	0.00	>1000	
	20	6.37	16.98	-68	2.40	0.00	889	
	25	6.28	16.66	-72	2.41	0.00	>1000	
	30	6.26	16.62	-76	2.44	0.00	>1000	
1445	35	6.23	16.60	-81	2.43	0.00	>1000	
Final Sample Data:		6.23	16.60	-81	2.43	0.00	>1000	

Sample ID: MW-06I-20240409 Duplicate? ☐ Dupe Samp ID: _____

Sample Time: 1450 MS/MSD? ☐

Analyses:	Methods:	Comments:
☑ VOCs	☐ CLP	
☑ SVOCs	☐ SW846	
☑ PCBs	☐ Drink. Wtr.	
☑ Metals	☑ Cyanide	
☑ Hg	☑ Pesticides	Sampler(s): M. REIFF, Q. HAWKINS, M. PULA
	☑ PFAS	

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(CP)

WELL PURGE & SAMPLE RECORD

Site Name/Location: Owl's Head, Gowanus
Well ID: MW-~~07~~06D
EEEPC Project No.: EE1705007.0031
Date: 4-9-24

Initial Depth to Water: 1.99 feet TOIC
Start Time: 1425
Total Well Depth: 72.10 feet TOIC
End Time: ~1600
Depth to Pump: ~67.5 feet TOIC
☐ Bailer ☒ Pump
Initial Pump Rate: ~0.15 (Lpm) gpm
Pump Type: small Bladder
adjusted to: _____ at _____ minutes
Well Diameter: 2 inches
adjusted to: _____ at _____ minutes
1x Well Volume: 11.44 gallons

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1430		~~0~~8.69	21.24	-43	15.1	-19	427	~~0~~2.33
1435		8.62	17.92	-40	17.1	0	306	2.34
1440		8.41	16.73	-40	17.0	—	155	2.34
1445		8.37	16.37	-42	16.8	—	103	2.35
1450		8.34	16.22	-43	16.7	—	106	2.35
1455		8.32	16.17	-45	16.5	—	89	2.35
1500		8.32	16.05	-45	16.3	—	75	2.35
1505		8.32	16.11	-46	16.1	—	73	2.35
1510		8.36	16.14	-47	15.5	—	74	2.35
1515	~2.0	8.40	16.08	-48	15.2	—	75	2.35
Final Sample Data:		8.40	16.08	-48	15.2	—	75	2.35

Sample ID: MW-06D-20240409
Duplicate? ☐
Dupe Samp ID: _____
Sample Time: 1520
MS/MSD? ☐

Analyses:	Methods:
☐ VOCs	☐ CLP
☐ SVOCs	☐ SW846
☐ PCBs	☐ Drink. Wtr.
☐ Metals	☐ _____
☒ See Cal	☐ _____

Comments: _____

Sampler(s): CP

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WELL PURGE & SAMPLE RECORD

Site Name/Location: OWL'S HEAD, GOWANUS / BROOKLYN, NY Well ID: MW-07S

EEEPC Project No.: _____ Date: 4/5/24

Initial Depth to Water: 5.88 feet TOIC Start Time: 1140

Total Well Depth: 10.5 feet TOIC End Time: 1210

Depth to Pump: – feet TOIC ☑ Bailer ☐ Pump

Initial Pump Rate: – Lpm / gpm Pump Type: –

adjusted to: – at – minutes Well Diameter: 2 inches

adjusted to: – at – minutes 1x Well Volume: 0.7 gallons

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
	Initial	7.57	11.09	25	25.5	0.25	53.3	
	1	7.93	10.74	52	24.8	0.96	520	
	2	7.95	10.55	88	24.2	1.61	366	
	3	7.96	10.56	104	24.4	1.51	553	
	4	7.94	10.61	106	24.5	1.65	620	
	5	7.94	10.70	103	24.4	1.14	71000	
	6	7.92	10.69	105	24.1	1.40	438	
Final Sample Data:		7.92	10.69	105	24.1	1.40	438	

Sample ID: MW-07S-20240405 Duplicate? ☐ Dupe Samp ID: _____

Sample Time: 1215 MS/MSD? ☐

Analyses:	Methods:
☑ VOCs	☐ CLP
☑ SVOCs	☐ SW846
☑ PCBs	☐ Drink. Wtr.
☑ Metals	☑ Pesticides
☑ Hg	☑ Cyanide
☑ PFAS	

Comments: _____

Sampler(s): M. PULA, Q. HAWKINS

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WELL PURGE & SAMPLE RECORD

Site Name/Location: OWL'S HEAD, GOWANUS / BROOKLYN, NY Well ID: MW-07I

EEEPC Project No.: _____ Date: 4/5/24

Initial Depth to Water: _____ feet TOIC Start Time: 1125

Total Well Depth: _____ feet TOIC End Time: 1340

Depth to Pump: - feet TOIC ☑ Bailer ☐ Pump

Initial Pump Rate: - Lpm / gpm Pump Type: -

adjusted to: - at - minutes Well Diameter: 2 inches

adjusted to: - at - minutes 1x Well Volume: 5.7 gallons

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
	1	8.91	10.68	-14	3.50	0.00	138	
	5	8.49	12.40	-11	2.94	0.00	465	
	10	8.16	12.48	1	4.25	0.00	>1000	
	15	7.17	12.92	-7	3.85	0.00	558	
	20	7.71	12.96	-13	2.86	0.00	406	
	25	7.73	12.97	-10	2.87	0.00	398	
	30	7.72	12.92	-13	2.87	0.00	404	
	35	7.71	12.90	-16	2.87	0.00	411	
	40	7.73	12.94	-19	2.86	0.00	422	
Final Sample Data:		7.73	12.94	-19	2.86	0	422	

Sample ID: MW-07I-20240405 Duplicate? ☐ Dupe Samp ID: _____

Sample Time: 1345 MS/MSD? ☐

Analyses:	Methods:
☑ VOCs	☐ CLP
☑ SVOCs	☐ SW846
☑ PCBs	☐ Drink. Wtr.
☑ Metals	☑ Pesticides
☑ Hg	☑ Cyanide
	☑ PFAS

Comments: _____

Sampler(s): M. REIFF, M. PULA, Q. HAWKINS

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Owl's Head, Gowanus
Well ID: MW-07D
EEEPC Project No.: EE1705007.0031
Date: 4-5-24
Initial Depth to Water: ~~3.44~~ 3.74 feet TOIC
Start Time: 1110
Total Well Depth: 72.60 feet TOIC
End Time:
Depth to Pump: ~63 feet TOIC
☐ Bailer ☒ Pump
Initial Pump Rate: _____ Lpm / gpm
Pump Type: Tiny Bladder
adjusted to: _____ at _____ minutes
Well Diameter: 2 inches
adjusted to: _____ at _____ minutes
1x Well Volume: 11.29 gallons

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C °F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1115		7.68	14.60	-53	17.9	9.92	159	4.25
1120		7.62	14.59	-58	18.7	7.62	218	4.27
1125		7.59	14.29	-64	18.7	5.85	230	4.29
1130		7.58	14.40	-79	18.8	2.56	232	4.28
1135		7.56	14.53	-100	18.9	Ø	230	4.28
1140		7.55	14.51	-105	18.9	—	224	4.28
1145		7.55	14.54	-110	18.8	—	212	4.28
1150		7.56	14.46	-115	18.8	—	203	4.28
1155		7.55	14.48	-117	18.8	—	191	4.28
1200		7.54	14.50	-117	18.8	—	184	4.28
1205		7.54	14.53	-118	18.8	—	177	4.28
1210		7.55	14.55	-120	18.7	—	173	4.28
1215	~2.75	7.54	14.56	-120	18.7	—	179	4.28
~~1220~~ (EB)								
Final Sample Data:		7.54	14.56	-120	18.7	—	179	4.28

Sample ID: MW-07D-20240405
Duplicate? ☐
Dupe Samp ID: _____
Sample Time: 1220
MS/MSD? ☐

Analyses:	Methods:
☐ VOCs	☐ CLP
☐ SVOCs	☐ SW846
☐ PCBs	☐ Drink. Wtr.
☐ Metals	☐ _____
☒ See CoC	☐ _____

Comments: _____

Sampler(s): CP, QH

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WELL PURGE & SAMPLE RECORD

Site Name/Location: QUOS HEAD, GOWANUS / BROOKLYN, NY Well ID: OH-MW01S

EEEPC Project No.: _____ Date: 4/4/24

Initial Depth to Water: 2.89 feet TOIC Start Time: 1415

Total Well Depth: 13.17 feet TOIC End Time: 1530

Depth to Pump: - feet TOIC ☑ Bailer ☐ Pump

Initial Pump Rate: - Lpm / gpm Pump Type: -

adjusted to: - at - minutes Well Diameter: 2 inches

adjusted to: - at - minutes 1x Well Volume: 1.6 gallons

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1415	1	9.14	11.25	62	4.76	6.44	>1000	
	2	8.82	11.09	8	5.11	3.02	>1000	
	3	8.62	11.03	-6	5.51	2.54	>1000	
	4	8.47	11.07	2	5.44	6.24	>1000	
	5	8.41	11.20	-2	5.48	4.35	>1000	
	6	8.35	11.14	-1	5.59	3.36	>1000	
	7	8.26	11.17	1	5.84	3.44	>1000	
	8	8.14	11.20	3	6.16	4.28	>1000	
	9	8.02	11.24	1	6.44	3.65	>1000	
	10	7.97	11.30	7	6.46	0	>1000	
	11	7.94	11.31	9	6.47	0	>1000	
	12	7.95	11.29	6	6.48	0	>1000	
1530	13	7.98	11.33	2	6.45	0	>1000	
Final Sample Data:		7.98	11.33	2	6.45	0	>1000	

Sample ID: OH-MW01S Duplicate? ☐ Dupe Samp ID: _____

Sample Time: 1530 MS/MSD? ☐

Analyses:	Methods:
☑ VOCs	☐ CLP
☑ SVOCs	☐ SW846
☑ PCBs	☐ Drink. Wtr.
☑ Metals	☑ Pesticides
☑ Cyanide	☑ Hg
	☑ PFAS

Comments: _____

Sampler(s): M. PULA, M. REIFF

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WELL PURGE & SAMPLE RECORD

Site Name/Location: OWL'S HEAD, GOWANUS / BROOKLYN, NY Well ID: OH-MW01I

EEEPC Project No.: _____ Date: 4/4/24

Initial Depth to Water: 3.33 feet TOIC Start Time: 1035

Total Well Depth: 44.84 feet TOIC End Time: 1125

Depth to Pump: ~39 feet TOIC ☐ Bailer ☑ Pump

Initial Pump Rate: 200 ~~lpm/gpm~~ ml/min Pump Type: BLADDER PUMP

adjusted to: - at - minutes Well Diameter: 2 inches

adjusted to: - at - minutes 1x Well Volume: 19.92 gallons

Time	Purge Volume (gallons liters)	pH (s.u.)	Temp. (°C °F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1040	1	8.98	12.28	66	5.36	2.73	537	3.47
1045	2	8.89	12.86	59	5.21	3.50	362	3.71
1050	3	8.82	12.99	22	5.45	1.60	225	3.86
1055	4	8.78	13.08	-2	5.51	0.36	187	3.99
1100	5	8.77	13.12	-9	5.52	0.00	164	4.42
1105	6	8.75	13.12	-16	5.48	0.00	147	4.67
1110	7	8.75	13.13	-17	5.45	0.00	154	4.67
1115	8	8.74	13.09	-18	5.44	0.00	155	4.67
1120	9	8.74	13.11	-19	5.50	0.00	157	4.67
Final Sample Data:		8.74	13.11	-19	5.50	0.00	157	4.67

Sample ID: OH-MW01I Duplicate? ☐ Dupe Samp ID: _____

Sample Time: 1125 MS/MSD? ☑

Analyses: Methods: Comments: _____

☑ VOCs ☐ CLP

☑ SVOCs ☐ SW846

☑ PCBs ☐ Drink. Wtr.

☑ Metals ☑ Pesticides

☑ Hg ☑ Cyanide Sampler(s): M. PULA

☑ PFAS

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WELL PURGE & SAMPLE RECORD

Site Name/Location: OWL'S HEAD, GOWANUS / BROOKLYN, NY Well ID: OH-MW02I

EEEPC Project No.: _____ Date: 04/05/24

Initial Depth to Water: 2.81 feet TOIC Start Time: 0815

Total Well Depth: 43.78 feet TOIC End Time: 1000

Depth to Pump: - feet TOIC ☑ Bailer ☐ Pump

Initial Pump Rate: - Lpm / gpm Pump Type: -

adjusted to: - at - minutes Well Diameter: 2 inches

adjusted to: - at - minutes 1x Well Volume: 6.69 gallons

Time	Purge Volume gallons/liters	pH (s.u.)	Temp. °C/°F	ORP (mV)	Conductivity µS/cm mS/cm	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
0815	0	12.09	8.66	136	0.329	13.22	344	
	5	11.78	9.66	36	12.0	1.22	124	
	9	8.86	12.57	-27	24.1	0.56	148	
	13	8.74	12.89	-30	25.1	0.07	296	
	20	8.72	12.49	-16	25.1	1.37	226	
	21	9.66	10.01	85	25.2	3.07	133	
	22	9.14	10.05	3	24.7	2.53	113	
	23	8.93	10.23	-19	23.8	0	160	
	24	8.89	10.26	-22	23.6	0	156	
	25	8.91	10.31	-16	23.3	0	142	
	26	8.88	10.32	-21	23.4	0	148	
	27	8.87	10.35	-20	23.3	0	149	
	28	8.85	10.33	-24	23.5	0	141	
	29	8.81	10.30	-21	23.4	0	148	
	30	8.82	10.33	-25	23.4	0	149	
Final Sample Data:		8.82	10.33	-25	23.4	0	149	

Sample ID: OH-MW02I-20240405 Duplicate? ☑ Dupe Samp ID: DUP01-20240405

Sample Time: 1010 MS/MSD? ☐

Analyses: / Methods:

- ☑ VOCs / ☐ CLP
- ☑ SVOCs / ☐ SW846
- ☑ PCBs / ☐ Drink. Wtr.
- ☑ Metals / ☑ Pesticides
- ☑ Hg / ☑ Cyanide
- ☑ PFAS

Comments: _____

Sampler(s): M. REIFF, M. PULA

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WELL PURGE & SAMPLE RECORD

Site Name/Location: OWL'S HEAD, GOWANUS / BROOKLYN, NY Well ID: OH-MW03I

EEEPC Project No.: _____ Date: 4/10/24

Initial Depth to Water: 2.76 feet TOIC ◆ Depth to Product: 2.73 Start Time: 1250

Total Well Depth: 40.90 feet TOIC End Time: 1410

Depth to Pump: - feet TOIC ☑ Bailer ☐ Pump

Initial Pump Rate: - Lpm / gpm Pump Type: -

adjusted to: - at - minutes Well Diameter: 2 inches

adjusted to: - at - minutes 1x Well Volume: 6.22 gallons 3vol: 18.66

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C °F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1250	Initial	7.10	15.93	-80	4.14	0.32	72.8	
	5	6.92	16.42	-81	4.08	0.24	90.5	
	10	6.80	17.20	-83	4.27	0.52	40.9	
	15	6.81	17.31	-84	4.18	0.36	29.9	
1400	20	6.79	17.17	-83	4.07	0.21	38.2	
Final Sample Data:		6.79	17.17	-83	4.07	0.21	38.2	

Sample ID: OH-MW03I-20240410 Duplicate? ☐ Dupe Samp ID: _____

Sample Time: 1400 MS/MSD? ☐

Analyses:	Methods:
☑ VOCs	☐ CLP
☑ SVOCs	☐ SW846
☑ PCBs	☐ Drink. Wtr.
☑ Metals	☑ Cyanide
☑ Hg	☑ Pesticides
	☑ PFAS

Comments: _____

Sampler(s): M. REIFF, Q. HAWKINS, M. PULA

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Owl's Head, Gowanus
Well ID: OH-MW03D
EEEPC Project No.: EE1705007.0031
Date: 4-10-24

Initial Depth to Water: 2.42 feet TOIC
Start Time: 1250
Total Well Depth: 57.45 feet TOIC
End Time:
Depth to Pump: ~53 feet TOIC
☐ Bailer ☒ Pump
Initial Pump Rate: ~0.15 Lpm / gpm
Pump Type: small Bladder
adjusted to: _____ at _____ minutes
Well Diameter: 2 inches
adjusted to: _____ at _____ minutes
1x Well Volume: _____ gallons

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1255		7.36	15.87	-5	19.4	3.94	255	2.96
1300		7.35	14.30	-18	20.7	Ø	126	3.00
1305		7.37	14.21	-16	20.7	Ø	143	3.02
1310		7.38	14.77	-17	20.4	0.30	150	3.09
1315		7.38	14.56	-2	20.3	1.46	132	3.10
1320		7.38	14.57	3	20.3	2.23	125	3.10
1325		7.38	14.62	6	20.3	2.64	122	3.10
1330		7.38	14.66	9	20.3	2.31	132	3.10
1335		7.39	14.46	11	20.3	3.33	129	3.10
1340		7.37	14.57	13	20.3	3.35	126	3.10
1345		7.38	14.61	13	20.3	3.20	127	3.10
1350		7.36	15.22	13	20.3	3.03	132	3.10
1355	~2.5	7.36	15.10	12	20.2	2.98	135	3.10
Final Sample Data:		7.36	15.10	12	20.2	2.98	135	3.10

Sample ID: OH-MW03D-20240410
Duplicate? ☒
Dupe Samp ID: DUP02-20240410
Sample Time: 1400
MS/MSD? ☐

Analyses: Methods:
☐ VOCs ☐ CLP
☐ SVOCs ☐ SW846
☐ PCBs ☐ Drink. Wtr.
☐ Metals ☐ _____
☒ See Col ☐ _____

Comments: Sheen observed

Sampler(s): CP

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Owl's Head, Gowanus
Well ID: OH-MW045
EEEPC Project No.: EE1705007.0031
Date: 4-11-24

Initial Depth to Water: 2.69 feet TOIC
Start Time: 835
Total Well Depth: 14.05 feet TOIC
End Time:
Depth to Pump: feet TOIC
☒ Bailer ☐ Pump
Initial Pump Rate: Lpm / gpm
Pump Type:
adjusted to: at minutes
Well Diameter: 2 inches
adjusted to: at minutes
1x Well Volume: 1.85 gallons x 3 = 5.55

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm :nS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
0835	–	5.43	13.86	150	1.67	3.77	101	2.69
	1	6.73	13.94	59	2.34	1.57	>1000	
	2	6.06	14.71	-52	~~3.57~~	0.93	>1000	
	3	5.80	15.08	-38	3.66	0.00	>1000	
	4	5.63	15.41	0	4.24	0.00	>1000	
	5	5.84	15.27	26	4.16	7.34	>1,000	
	6	5.79	15.57	13	3.71	5.09	>1,000	*DRY @ 6.5 gal.
1030	7	6.41	15.83	-81	4.36	4.67	>1,000	
	8	7.62	14.76	-162	2.02	0.99	>1,000	
	9	7.56	14.99	-65	1.51	92.6	>1,000	
	9.25	7.51	14.98	-90	1.88	4.41	>1,000	
Final Sample Data:		7.51	14.98	-90	1.88	4.41	>1,000	

x 5 = 9.25

Sample ID: OH-MW045-20240411
Duplicate? ☐
Dupe Samp ID:
Sample Time: 10:40
MS/MSD? ☐

Analyses:	Methods:
☐ VOCs	☐ CLP
☐ SVOCs	☐ SW846
☐ PCBs	☐ Drink. Wtr.
☐ Metals	☐ _____
☒ See CoC	☐ _____

Comments: Sheen observed

Sampler(s): CP, QH

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Owl's Head, Gowanus
Well ID: MW-04I
EEEPC Project No.: EE1705007.0031
Date:

Initial Depth to Water: 3.60 feet TOIC
Total Well Depth: 36.87 feet TOIC
Depth to Pump: ~32 feet TOIC
Initial Pump Rate: ~0.57 Lpm (gpm) / 0.22 Lpm
adjusted to: _____ at _____ minutes
adjusted to: _____ at _____ minutes

Start Time: 9:00, restarted @ 9:15
End Time:
☐ Bailer ☒ Pump
Pump Type: Bladder
Well Diameter: 2 inches
1x Well Volume: 5.43 gallons

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
920		7.91	13.35	-13	2.08	11.12	147	
925		7.90	13.68	-27	2.09	10.02	149	
930		7.94	14.01	-35	2.09	8.91	158	
935		7.95	14.04	-42	2.09	8.81	149	
940		7.96	14.28	-52	2.09	8.59	165	10.95
945		7.97	14.30	-61	2.10	8.45	170	12.40
950	2.0	7.99	14.54	-56	2.11	8.27	185	13.74
955		7.99	14.57	-19	2.09	8.20	357	14.69
1000		8.01	14.65	-10	2.07	8.06	409	15.62
1005		8.02	14.77	-17	2.05	7.91	400	16.70
1010		8.01	14.82	-28	2.01	7.75	390	17.61
1015		8.02	14.89	-25	1.98	7.57	330	18.40
1020		8.03	14.93	-16	1.99	7.67	273	19.35
1025		8.02	14.91	-16	1.98	7.55	245	20.35
1030		8.01	14.92	-20	1.97	7.27	207	20.91
1035		8.02	14.94	-12	2.01	7.17	205	21.85
1040		8.02	14.97	-18	1.99	7.10	259	22.40
1045	~	8.03	15.02	-17	2.01	7.00	278	23.16
Final Sample Data:		8.03	15.25	-39	1.93	67.8	402	26.78

Sample ID: MW-04I-20240404
Sample Time: 1120
Duplicate? ☐
MS/MSD? ☐
Dupe Samp ID:

Analyses: / Methods:
☐ VOCs ☐ CLP
☐ SVOCs ☐ SW846
☐ PCBs ☐ Drink. Wtr.
☐ Metals ☐ _____
☒ see col ☐ _____

Comments:

Sampler(s): CP, QH

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WELL PURGE & SAMPLE RECORD

Site Name/Location: OWI's Head, Gowanus
Well ID: MW-04I
EEEPC Project No.: EE1705007.0031
Date:

Initial Depth to Water: 3.60 feet TOIC
Start Time: 9:00, restarted @ 9:15
Total Well Depth: 36.87 feet TOIC
End Time:
Depth to Pump: ~32 feet TOIC
☐ Bailer ☒ Pump
Initial Pump Rate: ~0.57 Lpm / (gpm) / 0.22 Lpm
Pump Type: Bladder
adjusted to: _____ at _____ minutes
Well Diameter: 2 inches
adjusted to: _____ at _____ minutes
1x Well Volume: 5.43 gallons

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1050		8.05	15.12	-11	2.03	6.8	328	24.00
1055		8.03	15.20	-29	2.00	70.3	460	24.80
1100		8.03	15.23	-47	1.90	70	449	25.15
1105		8.04	15.25	-36	1.97	68	391	25.75
1110		8.04	15.24	-32	1.95	69.2	372	26.15
1115	~8.0	8.03	15.25	-39	1.93	67.8	402	26.78
Final Sample Data:		8.03	15.25	-39	1.93	67.8	402	26.78

Sample ID: MW-04I-20240404
Duplicate? ☐
Dupe Samp ID:
Sample Time: 1120
MS/MSD? ☐

Analyses:	Methods:
☐ VOCs	☐ CLP
☐ SVOCs	☐ SW846
☐ PCBs	☐ Drink. Wtr.
☐ Metals	☐ _____
☒ See CoC	☐ _____

Comments:

Sampler(s): CP, QH

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Owl's Head, Gowanus
Well ID: MW-04D
EEEPC Project No.: EE1705007.0031
Date: 4-4-24
Initial Depth to Water: (QH) 3.10 ~~3.90~~ feet TOIC
Start Time: 1435
Total Well Depth: 70.60 feet TOIC
End Time:
Depth to Pump: ~66.5 feet TOIC
☐ Bailer ☒ Pump
Initial Pump Rate: 0.556 Lpm / (gpm) / 0.21 Lpm
Pump Type: Tiny Bladder
adjusted to: _____ at _____ minutes
Well Diameter: 2 inches
adjusted to: _____ at _____ minutes
1x Well Volume: (QH) ~~10.98~~ 11.18 gallons

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1445		7.81	15.22	80	0.951	6.32	247	2.16
1450		7.80	15.14	75	1.02	43.0	242	~~2.80~~ 2.20
1455		7.80	15.10	77	1.04	32.0	213	2.20
1500		7.81	15.02	78	1.05	28.0	185	2.30
1505		7.81	15.11	76	1.05	25.0	160	2.35
1510		7.81	15.11	70	1.06	22.1	145	2.40
1515		7.81	15.13	65	1.06	20.0	145	2.40
1520	~2.5	7.81	15.13	64	1.06	19.4	144	2.45
Final Sample Data:		7.81	15.13	64	1.06	19.4	144	2.45

Sample ID: MW-04D-20240404 Duplicate? ☐ Dupe Samp ID: _____
Sample Time: 1525 MS/MSD? ☑

Analyses:	Methods:
☐ VOCs	☐ CLP
☐ SVOCs	☐ SW846
☐ PCBs	☐ Drink. Wtr.
☐ Metals	☐ _____
☒ See Col	☐ _____

Comments: _____
Sampler(s): CP, QH

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WELL PURGE & SAMPLE RECORD

Site Name/Location: OWL'S HEAD, GOWANUS / BROOKLYN, NY Well ID: OH-MW05S

EEEPC Project No.: _____ Date: 4/11/24

Initial Depth to Water: 3.36 feet TOIC Start Time: 1230

Total Well Depth: 12.64 feet TOIC End Time: 1330

Depth to Pump: – feet TOIC ☑ Bailer ☐ Pump

Initial Pump Rate: – Lpm / gpm Pump Type: –

adjusted to: – at – minutes Well Diameter: 2 inches

adjusted to: – at – minutes 1x Well Volume: 1.48 gallons 3x vol = 4.44

5x vol = 7.4

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
	–	6.45	15.56	-115	20.2	3.49	>1000	
	1	6.26	14.20	-143	20.6	4.31	978	
	2	6.25	13.70	-147	20.6	2.03	>1000	
	3	6.23	13.55	-167	20.5	2.47	728	
	4	6.25	13.59	-170	20.7	2.44	796	
	5	6.21	13.58	-177	21.1	1.26	>1000	
	6	6.25	13.55	-173	21.1	1.21	858	
	7	6.23	13.52	-177	20.9	1.23	500	
	8	6.21	13.50	-177	21.2	1.28	291	
	9	6.20	13.47	-181	21.3	1.22	156	
	10	6.20	13.51	-183	21.3	1.18	112	
	11	6.20	13.55	-185	21.3	1.16	48.6	
Final Sample Data:		6.20	13.55	-185	21.3	1.16	48.6	

Sample ID: OH-MW05S-20240411 Duplicate? ☐ Dupe Samp ID: _____

Sample Time: 1300 MS/MSD? ☐

Analyses:	Methods:
☑ VOCs	☐ CLP
☑ SVOCs	☐ SW846
☑ PCBs	☐ Drink. Wtr.
☑ Metals	☑ Cyanide
☑ Hg	☑ pesticides
	☑ PFAS

Comments: _____

Sampler(s): M. REIFF, Q. HAWKINS, M. PULA

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WELL PURGE & SAMPLE RECORD

Site Name/Location: OWL'S HEAD, GOWANUS/BROOKLYN, NY Well ID: OH-MW05I

EEEPC Project No.: _____ Date: 4/11/24

Initial Depth to Water: 2.20 feet TOIC Start Time: 1345

Total Well Depth: 41.00 feet TOIC End Time: 1545

Depth to Pump: – feet TOIC ☑ Bailer ☐ Pump

Initial Pump Rate: – Lpm / gpm Pump Type: –

adjusted to: – at – minutes Well Diameter: 2 inches 3 x vol / 18.6

adjusted to: – at – minutes 1x Well Volume: 6.2 gallons 5 x vol / 31.04

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm, mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
	–	6.71	1507	-114	3.86	3.28	96.4	
	5	5.94	15.72	-111	2.94	0.25	165	
	10	5.85	15.64	-107	3.19	0.51	525	
	15	5.90	15.60	-102	3.09	0.68	397	
	20	5.97	15.67	-104	3.07	0.66	289	
	25	5.96	15.63	-107	3.07	0.62	107	
	30	5.94	15.60	-111	3.04	0.59	89.3	
	35	5.90	15.58	-113	3.04	0.57	44.1	
Final Sample Data:		5.90	15.58	-113	3.04	0.57	44.1	

Sample ID: OH-MW05I-20240411 Duplicate? ☐ Dupe Samp ID: _____

Sample Time: 1515 MS/MSD? ☐

Analyses:	Methods:
☑ VOCs	☐ CLP
☑ SVOCs	☐ SW846
☑ PCBs	☐ Drink. Wtr.
☑ Metals	☑ Cyanide
☑ Hg	☑ pesticides
	☑ PFAS

Comments: _____

Sampler(s): M. REIFF, M. PULA, Q. HAWKINS

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Owl's Head, Gowanus
Well ID: OH-MW05D
EEEPC Project No.: EE1705007.0031
Date: 4-11-24

Initial Depth to Water: 2.56 feet TOIC
Start Time: 1245
Total Well Depth: 68.48 feet TOIC
End Time:
Depth to Pump: ~64 feet TOIC
☐ Bailer ☒ Pump
Initial Pump Rate: ~0.15 (Lpm)/gpm
Pump Type: Small Bladder
adjusted to: _____ at _____ minutes
Well Diameter: 2 inches
adjusted to: _____ at _____ minutes
1x Well Volume: 10.76 gallons

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1250		5.96	15.89	20	10.4	1.57	>1,000	~2.50
1255		6.38	14.11	-11	10.7	0.22	364	
1300		6.57	14.28	-11	10.7	0.82	238	
1305		6.78	15.93	-11	10.8	0.26	366	
1310		6.87	13.94	-18	10.8	<1000	481	
1315		6.97	14.01	-24	10.8	<1000	404	
1320		7.04	14.05	-28	10.9	<1000	360	
1325		7.11	14.09	-30	10.9	0	257	
1330		7.15	14.17	-28	10.9	0	230	
1335		7.20	14.25	-22	10.9	0	181	
1340		7.24	14.24	-13	10.9	0.79	133	
1345		7.24	14.38	-13	10.9	1.85	128	
1350		7.33	14.43	-15	-1	2.84	119	
1355		8.37	14.45	1	11.0	3.33	108	
1400		7.38	14.52	2	11.1	3.37	110	
1405	~3.0	7.40	14.54	3	11.0	3.50	97.1	
Sample →								
Final Sample Data:		7.40	14.54	3	11.0	3.50	97.1	~2.50

Sample ID: OH-MW05D-20240411
Duplicate? ☐
Dupe Samp ID: _____
Sample Time: 1410
MS/MSD? ☐

Analyses:	Methods:
☐ VOCs	☐ CLP
☐ SVOCs	☐ SW846
☐ PCBs	☐ Drink. Wtr.
☐ Metals	☐ _____
☒ See CoC	☐ _____

Comments: Sheen observed

Sampler(s): QH, CP

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WELL PURGE & SAMPLE RECORD

Site Name/Location: Owl's Head, Gowanus
Well ID: OH-MW06S
EEEPC Project No.: EE1705007.0031
Date: 4-12-24

Initial Depth to Water: 8.78 feet TOIC
Start Time: 0835
Total Well Depth: 19.50 feet TOIC
End Time: 1015
Depth to Pump: _____ feet TOIC
☑ Bailer ☐ Pump
Initial Pump Rate: _____ Lpm / gpm
Pump Type: —
adjusted to: _____ at _____ minutes
Well Diameter: 2 inches
3 Vol 5.1
adjusted to: _____ at _____ minutes
1x Well Volume: 1.7 gallons
5 Vol 8.5

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
—	—	5.64	13.63	-64	15.4	1.16	59	
	2	5.64	13.96	-147	16.2	2.89	741	
	4	5.79	13.96	-148	17.0	0.25	>1000	
	6	5.80	12.56	-145	15.5	3.27	>1000	
	8	5.83	12.54	-146	15.6	3.22	>1000	
	10	5.81	12.51	-149	15.6	3.25	>1000	
Final Sample Data:		5.81	12.51	-149	15.6	3.25	>1000	

Sample ID: OH-MW06S-20240412
Duplicate? ☐
Dupe Samp ID: _____
Sample Time: 0940
MS/MSD? ☐

Analyses: Methods:
☐ VOCs ☐ CLP
☐ SVOCs ☐ SW846
☐ PCBs ☐ Drink. Wtr.
☐ Metals ☐ _____
☐ _____ ☐ _____

Comments: _____

Sampler(s): QH

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WELL PURGE & SAMPLE RECORD

Site Name/Location: OWS Head | Gowanus
Well ID: OH-MW06I
EEEPC Project No.:
Date:

Initial Depth to Water: 5.44 feet TOIC
Total Well Depth: ~~5.44~~ feet TOIC 43.96
Depth to Pump: — feet TOIC
Initial Pump Rate: — Lpm / gpm
adjusted to: — at _____ minutes
adjusted to: — at _____ minutes

Start Time: 1045
End Time: 1240
☑ Bailer ☐ Pump
Pump Type: —
Well Diameter: 2 inches
1x Well Volume: 6.16 gallons
3 x Vol 18.4
5 x Vol 30.8

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
	—	6.29	13.43	-8	2.04	1.85	257	
	5	5.84	14.55	-74	1.85	8.23	286	
	10	5.66	14.56	-95	6.88	1.06	371	
	15	5.84	14.67	-85	6.87	1.12	305	
	20	5.78	15.15	-88	6.85	1.04	162	
	25	5.98	16.74	-89	6.55	0.86	187	
	30	5.68	16.74	-93	6.24	1.40	409	
	35	5.68	16.45	-94	6.20	0.78	201	
	40	5.72	16.34	-90	6.17	0.79	155	
Final Sample Data:		5.72	16.34	-90	6.17	0.79	155	

Sample ID: OH-MW06I-20240412
Sample Time: 1225
Duplicate? ☐
MS/MSD? ☐
Dupe Samp ID: _____

Analyses: Methods:
☑ VOCs ☐ CLP
☑ SVOCs ☐ SW846
☑ PCBs ☐ Drink. Wtr.
☑ Metals ☑ Cyanide
☑ pesticides ☑ PCB
☑ PFAS

Comments: _____

Sampler(s): Q. Hawkins

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(06D)

WELL PURGE & SAMPLE RECORD

Site Name/Location: Owl's Head, Gowanus
Well ID: OH-MW06D
EEEPC Project No.: EE170.5007.0031
Date: 4-12-24

Initial Depth to Water: 5.46 feet TOIC
Total Well Depth: 73.15 feet TOIC
Depth to Pump: ~69 feet TOIC
Initial Pump Rate: ~0.17 (Lpm)/ gpm
adjusted to: _____ at _____ minutes
adjusted to: _____ at _____ minutes

Start Time: 850
End Time: _____
☐ Bailer ☒ Pump
Pump Type: Small Bladder
Well Diameter: 2 inches
1x Well Volume: 11.05 gallons

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
855		5.70	12.22	205	6.30	40.0	>1000	5.29
900		6.20	11.70	34	8.84	0	111	5.29
905		6.56	11.69	7	9.08	0	45	5.30
910		6.74	11.71	-1	9.16	0	40.5	5.32
915		6.85	11.71	-3	9.14	0	42.6	5.34
920		6.88	11.74	-1	9.06	0	32.2	5.35
925		7.05	11.74	1	9.06	0	28.7	5.35
930		7.09	11.74	3	9.06	0	24.5	5.35
935		7.16	11.81	7	9.05	0	25.2	5.35
940	~2.25	7.19	11.91	9	9.02	0	24.7	5.36
Final Sample Data:		7.19	11.91	9	9.02	0	24.7	5.36

Sample ID: OH-MW06D-20240412 Duplicate? ☐ Dupe Samp ID: _____
Sample Time: 945 MS/MSD? ☐

Analyses:	Methods:
☐ VOCs	☐ CLP
☐ SVOCs	☐ SW846
☐ PCBs	☐ Drink. Wtr.
☐ Metals	☐ _____
☒ See CoC	☐ _____

Comments: _____

Sampler(s): CP

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WELL PURGE & SAMPLE RECORD

Site Name/Location: OWL'S HEAD, GOWANUS / BROOKLYN, NY Well ID: OH-MW07I

EEEPC Project No.: _____ Date: 4/15/24

Initial Depth to Water: 13.86 feet TOIC * Depth to Product: ~~13.80~~ (mp) 13.80

Total Well Depth: ~~38.00~~ (mp) 34.00 feet TOIC Start Time: 1215

Depth to Pump: – feet TOIC End Time: 1400

☑ Bailer ☐ Pump

Initial Pump Rate: – Lpm / gpm Pump Type: – 3xVol = 9.6

adjusted to: – at – minutes Well Diameter: 2 inches

adjusted to: – at – minutes 1x Well Volume: 3.2 gallons 5xVol = ~~16~~ 11

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
	–	7.76	22.95	-30	1.53	3.12	116	–
	3.5	7.42	20.86	-60	1.43	~~5~~ 5.13	355	
	5	7.23	20.12	-84	2.09	4.54	71000	
	7.5	7.19	20.43	-92	2.07	2.12	71000	
	10	7.07	20.41	-113	2.07	0.86	7100	
	12.5	6.58	20.56	-116	2.06	0	71000	
	15	7.09	20.48	-121	2.06	0	71000	
	~~15~~	7.10	20.46	-126	2.04	0	71000	
	20	7.12	20.41	-129	2.03	0	71000	
Final Sample Data:								

Sample ID: OH-MW07I-20240415 Duplicate? ☐ Dupe Samp ID: _____

Sample Time: 1345 MS/MSD? ☐

Analyses:
- ☑ VOCs
- ☑ SVOCs
- ☑ PCBs
- ☑ Metals
- ☑ Hg

Methods:
- ☐ CLP
- ☐ SW846
- ☐ Drink. Wtr.
- ☑ Cyanide
- ☑ Pesticides
- ☑ PFAS

Comments: _____

Sampler(s): M. REIFF, M. PULA

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WELL PURGE & SAMPLE RECORD

Site Name/Location: OWL'S HEAD, GOWANUS / BROOKLYN, NY
Well ID: OH-MW08I
EEEPC Project No.: _____
Date: 4/15/24

Initial Depth to Water: 6.74 feet TOIC * Depth to product: 6.68
Total Well Depth: 38.00 feet TOIC
Depth to Pump: - feet TOIC
Initial Pump Rate: - Lpm / gpm
adjusted to: - at - minutes
adjusted to: - at - minutes

Start Time: 1000
End Time: 1120
☑ Bailer ☐ Pump
Pump Type: -
Well Diameter: 2 inches
1x Well Volume: 5.00 gallons 3x vol: 15.00 5x vol: 25.00

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1000	Initial	6.88	21.13	-142	6.93	2.46	376	
	5	6.60	19.67	-115	~~7.77~~	0.44	687	
	10	6.56	19.40	-109	7.68	0.00	580	
	15	6.56	18.86	-111	7.78	0.00	543	
	20	~~6.57~~	19.51	-110	7.70	0.00	538	
1100	25	6.56	19.32	-110	7.74	0.00	532	
Final Sample Data:		6.56	19.32	-110	7.74	0.00	532	

Sample ID: OH-MW08I-20240415
Sample Time: 1105
Duplicate? ☐ Dupe Samp ID: _____
MS/MSD? ☐

Analyses: / Methods:
- ☑ VOCs / ☐ CLP
- ☑ SVOCs / ☐ SW846
- ☑ PCBs / ☐ Drink. Wtr.
- ☑ Metals / ☑ Cyanide
- ☑ Hg / ☑ Pesticides
- ☑ PFAS

Comments: _____

Sampler(s): M. REIFF, M. PULA

D Data Usability Summary Reports

Data Usability Summary Report	Project: Gowanus Canal Owl's Head Investigation
Date Completed: June 25, 2024	Prepared by: Sayward Gohman-Kramer Reviewed by: Danielle Sylvia Cofelice

The analytical data provided by the laboratory were reviewed for precision, accuracy, and completeness based on applicable sections of the following guidelines.

- NYSDEC Division of Environmental Remediation Guidance for Data Deliverables and the Development of Data Usability Summary Reports (in DER-10, May 2010)
- EPA Region 2 Data Validation SOPs
  - *SOP No. HW-34A, Rev. 1, Trace Volatile Data Validation*
  - *SOP No. HW-35A, Rev. 1, Semivolatile Data Validation*
  - *SOP No. HW-36A, Rev. 1, Pesticide Data Validation*
  - *SOP No. HW-37A, Polychlorinated Biphenyls (PCB) Aroclor Data Validation*
  - *SOP No. HW-3a, Rev. 1, ICP-AES Data Validation*
  - *SOP No. HW-3b, Rev. 1, ICP-MS Data Validation*
- NYSDEC Division of Environmental Remediation, Appendix I – Data Review Guidelines for Analysis of PFAS in Non-Potable Water and Solids (in DER-10, January 2020)
- USDOD Data Validation Module 6: Procedure for Per- and Polyfluoroalkyl Substances Analysis by QSM Table B-24 (November 1, 2022)

Specific criteria for QC limits were obtained from the master QAPP. Compliance with the project QA program is indicated in the checklist and tables below. Any major or minor concerns affecting data usability are listed below. The checklist and tables also indicate whether data qualification is required and/or the type of qualifier assigned.

Reference:

Project ID	Lab Work Order	Laboratory Report
EE1705007.0031	24D0369 24D0460 24D0731 24D0807 24D0896 24D0948	York Analytical Laboratory – Richmond Hill, New York

Table 1 – Sample Listing Summary

Work Order	Matrix	Sample ID	Lab ID	Sample Date	Lab QC	ID Corrections
24D0369	WG	MW-04I-20240404	24D0369-01	4/4/2024		
24D0369	WG	MW-01I	24D0369-02	4/4/2024		OH-MW01I-20240404
24D0369	WG	MW-01I (MS)	24D0369-02	4/4/2024	MS	
24D0369	WG	MW-01I (MSD)	24D0369-02	4/4/2024	MSD	
24D0460	WG	MW-04D-20240404	24D0460-01	4/4/2024		
24D0460	WG	MW-04D-20240404 (MS)	24D0460-01	4/4/2024	MS	
24D0460	WG	MW-04D-20240404 (MSD)	24D0460-01	4/4/2024	MSD	
24D0460	WG	OH-MW01S-20240404	24D0460-02	4/4/2024		
24D0460	WG	MW-04S-20240405	24D0460-03	4/5/2024		
24D0460	WG	OH-MW02I-20240405	24D0460-04	4/5/2024		
24D0460	WG	DUP01-20240405	24D0460-05	4/5/2024	FD	
24D0460	WG	MW-07D-20240405	24D0460-06	4/5/2024		

Work Order	Matrix	Sample ID	Lab ID	Sample Date	Lab QC	ID Corrections
24D0460	WG	MW-07S-20240405	24D0460-07	4/5/2024		
24D0460	WG	MW-07I-20240405	24D0460-08	4/5/2024		
24D0460	WQ	Trip Blank	24D0460-09	4/5/2024	TB	
24D0731	WG	MW-06S-20240409	24D0731-01	4/9/2024		
24D0731	WG	MW-06I-20240409	24D0731-02	4/9/2024		
24D0731	WG	MW-06D-20240409	24D0731-03	4/9/2024		
24D0731	WQ	TB-20240410	24D0731-04	4/10/2024	TB	
24D0731	WG	MW-05S-20240410	24D0731-05	4/10/2024		
24D0731	WG	MW-05D-20240410	24D0731-06	4/10/2024		
24D0731	WG	MW-05I-20240410	24D0731-07	4/10/2024		
24D0807	WG	OH-MW03I-20240410	24D0807-01	4/10/2024		
24D0807	WG	OH-MW03D-20240410	24D0807-02	4/10/2024		
24D0807	WG	DUP02-20240410	24D0807-03	4/10/2024	FD	
24D0807	WG	OH-MW04I-20240411	24D0807-04	4/11/2024		
24D0807	WG	OH-MW04S-20240411	24D0807-05	4/11/2024		
24D0807	WQ	TB-20240411	24D0807-06	4/11/2024	TB	
24D0896	WG	OH-MW05S-20240411	24D0896-01	4/11/2024		
24D0896	WG	OH-MW05D-20240411	24D0896-02	4/11/2024		
24D0896	WG	OH-MW05I-20240411	24D0896-03	4/11/2024		
24D0896	WG	OH-MW06S-20240412	24D0896-04	4/12/2024		
24D0896	WG	OH-MW06D-20240412	24D0896-05	4/12/2024		
24D0896	WG	OH-MW06I-20240412	24D0896-06	4/12/2024		
24D0896	WQ	TB-20240412	24D0896-07	4/12/2024	TB	
24D0948	WG	OH-MW08I-20240415	24D0948-01	4/15/2024		
24D0948	WG	OH-MW07I-20240415	24D0948-02	4/15/2024		
24D0948	WQ	GWRinseBlank20240415	24D0948-03	4/15/2024	RB	
24D0948	WQ	TB-20240415	24D0948-04	4/15/2024	TB	

Table 1A – Sample Test Summary

Work Orders	Matrix	Test Method	Method Name	Number of Samples	Sample Type
24D0369	WG	8260D	Volatile Organic Compounds by GC/MS	2	N
24D0369	WG	8270D	Semivolatile Organic Compounds by GC/MS	2	N
24D0369	WG	8270SIM	Semivolatile Organic Compounds by GC/MS SIM	2	N
24D0369	WG	8081B	Organochloride Pesticides by GC/ECD	2	N
24D0369	WG	8082A	Polychlorinated Biphenyls by GC/ECD	2	N
24D0369	WG	6010D	Metals (ICP)	2	N
24D0369	WG	6020B	Metals (ICPMS)	2	N
24D0369	WG	7470	Mercury (CVAA)	2	N

Work Orders	Matrix	Test Method	Method Name	Number of Samples	Sample Type
24D0369	WG	SM 4500	Cyanide	2	N
24D0369	WG	1633	PFAS by LCMS/MS	2	N
24D0369	WG	8260D	Volatile Organic Compounds by GC/MS	2	MS/MSD
24D0369	WG	8270D	Semivolatile Organic Compounds by GC/MS	2	MS/MSD
24D0369	WG	8270SIM	Semivolatile Organic Compounds by GC/MS SIM	2	MS/MSD
24D0369	WG	8081B	Organochloride Pesticides by GC/ECD	2	MS/MSD
24D0369	WG	8082A	Polychlorinated Biphenyls by GC/ECD	2	MS/MSD
24D0369	WG	6010D	Metals (ICP)	2	MS/MSD
24D0369	WG	6020B	Metals (ICPMS)	2	MS/MSD
24D0369	WG	7473	Mercury (CVAA)	2	MS/MSD
24D0369	WG	SM 4500	Cyanide	2	MS/MSD
24D0369	WG	1633	PFAS by LCMS/MS	2	MS/MSD
24D0460	WG	8260D	Volatile Organic Compounds by GC/MS	7	N
24D0460	WG	8270D	Semivolatile Organic Compounds by GC/MS	7	N
24D0460	WG	8270SIM	Semivolatile Organic Compounds by GC/MS SIM	7	N
24D0460	WG	8081B	Organochloride Pesticides by GC/ECD	7	N
24D0460	WG	8082A	Polychlorinated Biphenyls by GC/ECD	7	N
24D0460	WG	6010D	Metals (ICP)	7	N
24D0460	WG	6020B	Metals (ICPMS)	7	N
24D0460	WG	7470	Mercury (CVAA)	7	N
24D0460	WG	SM4500	Cyanide	7	N
24D0460	WG	1633	PFAS by LCMS/MS	7	N
24D0460	WG	8260D	Volatile Organic Compounds by GC/MS	2	MS/MSD
24D0460	WG	8270D	Semivolatile Organic Compounds by GC/MS	2	MS/MSD
24D0460	WG	8270SIM	Semivolatile Organic Compounds by GC/MS SIM	2	MS/MSD
24D0460	WG	8081B	Organochloride Pesticides by GC/ECD	2	MS/MSD
24D0460	WG	8082A	Polychlorinated Biphenyls by GC/ECD	2	MS/MSD
24D0460	WG	6010D	Metals (ICP)	2	MS/MSD
24D0460	WG	6020B	Metals (ICPMS)	2	MS/MSD
24D0460	WG	7470	Mercury (CVAA)	2	MS/MSD
24D0460	WG	SM4500	Cyanide	2	MS/MSD
24D0460	WG	1633	PFAS by LCMS/MS	2	MS/MSD
24D0460	WG	8260D	Volatile Organic Compounds by GC/MS	1	FD
24D0460	WG	8270D	Semivolatile Organic Compounds by GC/MS	1	FD
24D0460	WG	8270SIM	Semivolatile Organic Compounds by GC/MS SIM	1	FD
24D0460	WG	8081B	Organochloride Pesticides by GC/ECD	1	FD

Work Orders	Matrix	Test Method	Method Name	Number of Samples	Sample Type
24D0460	WG	8082A	Polychlorinated Biphenyls by GC/ECD	1	FD
24D0460	WG	6010D	Metals (ICP)	1	FD
24D0460	WG	6020B	Metals (ICPMS)	1	FD
24D0460	WG	7470	Mercury (CVAA)	1	FD
24D0460	WG	SM4500	Cyanide	1	FD
24D0460	WG	1633	PFAS by LCMS/MS	1	FD
24D0460	WQ	8260D	Volatile Organic Compounds by GC/MS	1	TB
24D0731	WG	8260D	Volatile Organic Compounds by GC/MS	6	N
24D0731	WG	8270D	Semivolatile Organic Compounds by GC/MS	6	N
24D0731	WG	8270SIM	Semivolatile Organic Compounds by GC/MS SIM	6	N
24D0731	WG	8081B	Organochloride Pesticides by GC/ECD	6	N
24D0731	WG	8082A	Polychlorinated Biphenyls by GC/ECD	6	N
24D0731	WG	6010D	Metals (ICP)	6	N
24D0731	WG	6020B	Metals (ICPMS)	6	N
24D0731	WG	7470	Mercury (CVAA)	6	N
24D0731	WG	SM4500	Cyanide	6	N
24D0731	WG	1633	PFAS by LCMS/MS	6	N
24D0731	WQ	8260D	Volatile Organic Compounds by GC/MS	1	TB
24D0807	WG	8260D	Volatile Organic Compounds by GC/MS	4	N
24D0807	WG	8270D	Semivolatile Organic Compounds by GC/MS	4	N
24D0807	WG	8270SIM	Semivolatile Organic Compounds by GC/MS SIM	4	N
24D0807	WG	8081B	Organochloride Pesticides by GC/ECD	4	N
24D0807	WG	8082A	Polychlorinated Biphenyls by GC/ECD	4	N
24D0807	WG	6010D	Metals (ICP)	4	N
24D0807	WG	6020B	Metals (ICPMS)	4	N
24D0807	WG	7470	Mercury (CVAA)	4	N
24D0807	WG	SM4500	Cyanide	4	N
24D0807	WG	1633	PFAS by LCMS/MS	4	N
24D0807	WG	8260D	Volatile Organic Compounds by GC/MS	1	FD
24D0807	WG	8270D	Semivolatile Organic Compounds by GC/MS	1	FD
24D0807	WG	8270SIM	Semivolatile Organic Compounds by GC/MS SIM	1	FD
24D0807	WG	8081B	Organochloride Pesticides by GC/ECD	1	FD
24D0807	WG	8082A	Polychlorinated Biphenyls by GC/ECD	1	FD
24D0807	WG	6010D	Metals (ICP)	1	FD
24D0807	WG	6020B	Metals (ICPMS)	1	FD
24D0807	WG	7470	Mercury (CVAA)	1	FD
24D0807	WG	SM4500	Cyanide	1	FD

Work Orders	Matrix	Test Method	Method Name	Number of Samples	Sample Type
24D0807	WG	1633	PFAS by LCMS/MS	1	FD
24D0807	WQ	8260D	Volatile Organic Compounds by GC/MS	1	TB
24D0896	WG	8260D	Volatile Organic Compounds by GC/MS	6	N
24D0896	WG	8270D	Semivolatile Organic Compounds by GC/MS	6	N
24D0896	WG	8270SIM	Semivolatile Organic Compounds by GC/MS SIM	6	N
24D0896	WG	8081B	Organochloride Pesticides by GC/ECD	6	N
24D0896	WG	8082A	Polychlorinated Biphenyls by GC/ECD	6	N
24D0896	WG	6010D	Metals (ICP)	6	N
24D0896	WG	6020B	Metals (ICPMS)	6	N
24D0896	WG	7470	Mercury (CVAA)	6	N
24D0896	WG	SM4500	Cyanide	6	N
24D0896	WG	1633	PFAS by LCMS/MS	6	N
24D0896	WQ	8260	Volatile Organic Compounds by GC/MS	1	TB
24D0948	WG	8260D	Volatile Organic Compounds by GC/MS	2	N
24D0948	WG	8270D	Semivolatile Organic Compounds by GC/MS	2	N
24D0948	WG	8270SIM	Semivolatile Organic Compounds by GC/MS SIM	2	N
24D0948	WG	8081B	Organochloride Pesticides by GC/ECD	2	N
24D0948	WG	8082A	Polychlorinated Biphenyls by GC/ECD	2	N
24D0948	WG	6010D	Metals (ICP)	2	N
24D0948	WG	6020B	Metals (ICPMS)	2	N
24D0948	WG	7470	Mercury (CVAA)	2	N
24D0948	WG	SM4500	Cyanide	2	N
24D0948	WG	1633	PFAS by LCMS/MS	2	N
24D0948	WQ	8260D	Volatile Organic Compounds by GC/MS	1	TB
24D0948	WQ	8270D	Volatile Organic Compounds by GC/MS	1	RB
24D0948	WQ	8270SIM	Semivolatile Organic Compounds by GC/MS	1	RB
24D0948	WQ	8081B	Semivolatile Organic Compounds by GC/MS SIM	1	RB
24D0948	WQ	8082A	Organochloride Pesticides by GC/ECD	1	RB
24D0948	WQ	6010D	Polychlorinated Biphenyls by GC/ECD	1	RB
24D0948	WQ	6020B	Metals (ICP)	1	RB
24D0948	WQ	7470	Metals (ICPMS)	1	RB
24D0948	WQ	SM4500	Mercury (CVAA)	1	RB
24D0948	WQ	1633	Cyanide	1	RB

General Sample Information	
Do Samples and Analyses on COC check against Lab Sample Tracking Form?	No.

	Sample MW-01I was incorrectly named by the field team on the COC. The laboratory updated the name per client request. This change is noted in Table 1. A trip blank was included with SDG 24D0460 but was not indicated on the COC. SVOC method 8270 SIM was not indicated on the COC but was analyzed by the laboratory. Review of this data was included in this DUSR. Metals method 6020 was not indicated on the COC but was analyzed by the laboratory. Review of this data was included in this DUSR. Using professional judgement, naphthalene results via 8260 analysis were not included but results via 8270 analysis were included in final result tables due to the nature and characteristics of the contamination being a DNAPL and continuity throughout data reporting for nearby sites.
Did coolers arrive at lab between 2 and 6°C and in good condition as indicated on COC and Cooler Receipt Form?	Yes.
Frequency of Field QC Samples Correct? Field Duplicate - 1 sample per 20 MS/MSD – 1 sample per 20 Trip Blank - Every cooler with VOCs waters only Equipment Blank - 1/ set per equipment per matrix?	Yes – 2 Field Duplicates per 27 Samples. 2 MS/MSD samples per 27 Samples 5 Trip Blanks. Two coolers were received without trip blanks. 1 Rinse Blank collected on the last day of sampling.
Case narrative present and complete?	Yes.
Any holding time violations?	Yes. SVOC – MW-04S-20240405 was prepared 20 minutes past the hold time of 7 days. Sample was non-detect for all compounds; therefore, no qualification was made. SVOC SIM – MW-04S-20240405 was prepared 20 minutes past the hold time of 7 days. Sample detections were J qualified as estimated and non-detects were not qualified.

The following tables are presented at the end of this DUSR and provide summaries of results outside QC criteria:

- Method Blanks Results (Table 2)

- Surrogates/Isotope Dilution Standards Outside Limits (Table 3)
- Internal Standards Outside Limits (Table 4)
- MS/MSD Outside Limits (Table 5)
- LCS Outside Limits (Table 6)
- CCV Outside Limits (Table 7)
- Reanalysis Results (Table 8)
- Duplicate Results (Table 9)

Go to Tables List

VOCs/SVOCs

Volatile Organics and Semivolatile Organics by GC/MS	
Description	**Notes and Qualifiers**
Any compounds present in method, trip, or field blanks (see Table 2)?	Yes. VOC – 24D0460: Methylene chloride and naphthalene were detected above the MDL in method blanks BD40797-BLK1, BD40882-BLK1, and BD41018-BLK1. Chloroform was detected above the RL and bromodichloromethane were detected above the MDL in the Trip Blank. 24D0731: Acetone was detected above the MDL and chloroform was detected above the reporting limit in the trip blank TB-20240410. Methylene chloride as detected above the MDL in method blank BD40935-BLK1. Naphthalene was detected above the MDL in method blank BD41177-BLK1 24D0807: Acetone and chloroform were detected above the MDL in trip blank TB-20240411. Methylene chloride was detected above MDL in method blanks BD41432-BLK1 and BD41141-BLK1. 24D0896: Acetone was detected above the MDL in trip blank TB-20240412. Chloroform was detected above the reporting limit in trip blank TB-20240412. Naphthalene was detected above the MDL in method blanks BD41230-BLK1 and BD41535-BLK1. 24D0948: Several compounds were detected above the reporting limit in the GWRinse Blank. Methylene chloride was detected above the MDL in method blank BD41537-BLK1. SVOC SIM – 24D0460: Bis(2-Ethylhexyl) Phthalate and naphthalene were detected above the MDL in method blank BD40875-BLK2. 24D0807: Naphthalene was detected above the MDL in method blank BD41412-BLK2.

Volatile Organics and Semivolatile Organics by GC/MS	
Description	**Notes and Qualifiers**
	24D0896: Naphthalene was detected above the MDL in method blank BD41412-BLK2. Several compounds were detected in method blank BD41530-BLK2. 24D0948: Several compounds were detected in GWRinse Blank. Several compounds were detected in method blank BD41530-BLK2.
For samples, if results are < 5 times the blank or < 10 times the blank for common laboratory contaminants, then "U" flag data. Qualification also applies to TICs.	VOC – When associated results were non-detect or were detected greater than 5x the method blank contamination, no qualification was made. 24D0460: Chloroform was less than 5 times the blank concentration for samples DUP01-20240405, OH-MW02I-20240405, and OH-MW01S-20240404, these samples were qualified as non-detect (U). 24D0731: Acetone was detected less than 10x the blank contamination and greater than the reporting limit in samples MW-05I-20240410 and MW-06D-20240409. Samples were qualified U as non-detect and the PQL raised to the sample concentration. 24D0807: Acetone and chloroform were detected less than 5x and 10x the blank contamination. Results were U qualified as non-detect. Methylene chloride was detected less than 10x the blank contamination in samples DUP02-20240410 and OH-MW03D-20240410. Results were U qualified as non-detect. 24D0896: Acetone and chloroform were detected less than 5x the trip blank contamination in sample OH-MW05D-20240411. Results were U qualified as non-detect. Chloroform was detected less than 5x the trip blank contamination in sample OH-MW06D-20240412. Result was U qualified as non-detect. SVOC SIM – When associated results were non-detect or were detected greater tan 5x the method blank contamination, no qualification was made. 24D0460: Bis(2-ethylhexyl)phthalate and Naphthalene were less than 5x the blank contamination in sample MW-04D-20240404, these were qualified as non-detect (U).

Data Usability Summary Report	Project: Gowanus Canal Owl's Head Investigation
Date Completed: June 25, 2024	Prepared by: Sayward Gohman-Kramer Reviewed by: Danielle Sylvia Cofelice

Volatile Organics and Semivolatile Organics by GC/MS	
Description	**Notes and Qualifiers**
	Several compounds were detected less than 5x the method blank contamination in sample OH-MW06S-20240412. Results were qualified U as non-detect.
Are surrogates for method blanks and LCS within limits?	No. SVOC – Nitrobenzene-d5 and terphenyl-d14 were recovered above acceptance criteria in several QC samples. 2-Fluorobiphenyl was recovered above acceptance criteria in LCSDs BD40785-BSD1 and BD40875-BSD1. 2,4,6-Tribromophenyl was recovered above acceptance criteria in multiple method blanks and LCSs.
Are surrogates for samples and MS/MSD within limits? (See Table 3). If not, were all samples reanalyzed for VOCs? Semivolatile samples should reanalyzed if more than one base-neutral and/or more than one acid phase compound for semivolatiles is out. Matrix effects should be established.	No. VOC – 1,2-Dichloroethane-d4 was recovered above acceptance criteria in several samples Associated sample detections were J+ qualified as estimated biased high and non-detects were not qualified. 1,2-Dichloroethane-d4 was recovered below acceptance criteria in samples OH-MW05I-20240411. All associated detections were J- qualified as estimated biased low and non-detects were UJ qualified as estimated non-detect. SVOC – Several surrogates were recovered outside acceptance criteria in several samples. When samples were prepared at a 20x dilution or greater, no qualification was made. When surrogates were recovered under the lowest acceptance criteria of 10%, associated sample results were rejected and considered unusable. When recovery was high, associated sample detections were J+ qualified as estimated biased high and non-detects were not qualified. When recovery was low, associated samples were non-detect for associated analytes; therefore, results were UJ qualified as estimated non-detect.
Is Laboratory QC frequency at least one blank and LCS with each batch and one set of MS/MSD per 20 samples?	Yes
Is MS/MSD within QC criteria (see Table 5)? If out and LCS is compliant, then "J" flag positive data in original sample due to matrix.	No. VOC – 24D0369: Several compounds were recovered outside acceptance criteria for sample OH-MW01I-20240404. Sample was non-detect for these

Volatile Organics and Semivolatile Organics by GC/MS	
Description	**Notes and Qualifiers**
	compounds. When the associated LCS was acceptable, no qualification was made. When the associated LCS recovery was below acceptance criteria, results were UJ qualified as estimated non-detect. Bromomethane and butylbenzene were recovered with high RPD between the MS and MSD BD40642-MS1 and BD40642-MSD1. Sample was non-detect for these compounds; therefore, no qualification was made. 24D0460: Several compounds were recovered outside acceptance criteria for sample MW-04D-20240404. Sample was non-detect for these compounds. When the associated LCS was acceptable, no qualification was made. When the associated LCS recovery was below acceptance criteria, results were UJ qualified as estimated non-detect. SVOC – 24D0369: Several compounds were recovered outside acceptance criteria in MS and MSD BD40785-BS1 and BD40785-BSD1. Parent sample OH-MW01I-20240404 was non-detect for these compounds; therefore, when the associated LCS recovery was outside acceptance criteria, results were UJ qualified as estimated non-detect. When the LCS was acceptable, no qualification was made. Several compounds were recovered with high RPD between MS and MSD BD40785-BS1 and BD40785-BSD1. Parent sample OH-MW01I-20240404 was non-detect for these compounds; therefore, no qualification was made. 24D0460: Aniline and bis(2-chloroethylether) were recovered above acceptance criteria in MS BD40875-MS1. Parent sample MW-04D-20240404 was non-detect for these compounds; therefore, no qualification was made. Caprolactam and hexachlorocyclopentadiene were not recovered in the MS and MSD BD40875-MS1 and BD40875-MSD1. Parent sample MW-04S-20240404 was non-detect for these compounds; therefore, no qualification was made. Several compounds had high %RPD between MS and MSD BD40875-MS1 and BD40875-MSD1. Parent sample MW-04S-20240404 was non-detect for these compounds; therefore, no qualification was made.

Volatile Organics and Semivolatile Organics by GC/MS	
Description	**Notes and Qualifiers**
Is LCS within QC criteria (see Table 6)? If out, and the recovery is high with no positive values, then no data qualification is required.	No. VOC – Several compounds were recovered outside acceptance criteria in several LCSs and LCSDs. When recovery was high, associated sample detections were J qualified as estimated and non-detects were not qualified. When recovery was low, associated sample detections were J qualified as estimated and non-detects were UJ qualified as estimated non-detect. When recovery was less than 10%, associated results were rejected and considered unusable. Several compounds were recovered with high RPD between the LCS and LCSD. Associated sample detections were J qualified as estimated and non-detects were UJ qualified as estimated non-detect. SVOC – Several compounds were recovered outside acceptance criteria in several LCSs and LCSDs. When recovery was high, associated sample detections were J qualified as estimated and non-detects were not qualified. When recovery was low, associated sample detections were J qualified as estimated and non-detects were UJ qualified as estimated non-detect. When recovery was less than 10%, associated results were rejected and considered unusable. Several compounds were recovered with high RPD between the LCS and LCSD. Associated sample detections were J qualified as estimated and non-detects were UJ qualified as estimated non-detect. SVOC SIM – Several compounds were recovered outside acceptance criteria in several LCSs and LCSDs. When recovery was high, associated sample detections were J qualified as estimated and non-detects were not qualified. When recovery was less than 10%, associated results were rejected and considered unusable.
Do internal standards areas and retention time meet criteria? If not was sample re-analyzed to establish matrix (see Table 4)?	Yes.
Is initial calibration for target compounds <20 %RSD or curve fit? (See Table 7)	No. VOC -

Volatile Organics and Semivolatile Organics by GC/MS	
Description	**Notes and Qualifiers**
	24D0948: 1,2,3-Trichlorobenzene and methylene chloride had high %RSD in calibration curve SD40032. Associated samples were non-detect for these compounds; therefore, no qualification was necessary. Dichlorodifluoromethane and methylcyclohexane had high %RSD in calibration curve SD40046. GWRinse Blank was non-detect for these compounds; therefore, no qualification was necessary. SVOC – 2,4-Dinitrophenol and 4,6-dinitro-2-methyphenol had high %RSD in calibration curve SC40028. Associated samples were non-detect for these compounds; therefore, no qualification was necessary. Several compounds had high %RSD in calibration curve SD40020. Sample MW-04D-20240404 was non-detect for these compounds; therefore, no qualification was necessary. 2,4-Dinitrophenol, 4,6-dinitro-2-methyphenol, and benzaldehyde had high %RSD in calibration curve SD40001. Associated samples were non-detect for these compounds; therefore, no qualification was necessary.
Is the initial calibration verification for target compounds between laboratory limits or 70-130%? (See Table 7)	No. VOC – Several compounds were recovered outside acceptance criteria in several ICVs. Associated sample detections were J qualified as estimated and non-detects were UJ qualified as estimated non-detect. SVOC – Several compounds were recovered outside acceptance criteria in several ICVs. Associated sample detections were J qualified as estimated and non-detects were UJ qualified as estimated non-detect. SVOC SIM – Several compounds were recovered outside acceptance criteria in several ICVs. Associated sample detections were J qualified as estimated and non-detects were UJ qualified as estimated non-detect.
Is continuing calibration for target compounds < 20.5%D. (See Table 7)	No.

Volatile Organics and Semivolatile Organics by GC/MS	
Description	**Notes and Qualifiers**
	VOC – Several compounds were recovered outside acceptance criteria in several CCVs. Associated sample detections were J qualified as estimated and non-detects were UJ qualified as estimated non-detect. SVOC – Several compounds were recovered outside acceptance criteria in several CCVs. Associated sample detections were J qualified as estimated and non-detects were UJ qualified as estimated non-detect. SVOC SIM – Several compounds were recovered outside acceptance criteria in several CCVs. Associated sample detections were J qualified as estimated and non-detects were UJ qualified as estimated non-detect.
Were any samples reanalyzed or diluted (see Table 8)? For any sample reanalysis or dilutions, is only one reportable result flagged?	Yes. VOC – Multiple samples were reanalyzed at dilution due to high concentrations of target analytes. No qualifications were made based on this, and no data usability issues were observed. SVOC – Multiple samples were reanalyzed at dilution due to high concentrations of target analytes. No qualifications were made based on this, and no data usability issues were observed. SVOC SIM – Multiple samples were reanalyzed at dilution due to high concentrations of target analytes. No qualifications were made based on this, and no data usability issues were observed.
For TICs are there any system related compounds that should not be reported?	No.

Volatile Organics and Semivolatile Organics by GC/MS	
Description	**Notes and Qualifiers**
Do field duplicate results show good precision for all compounds except TICs (see Table 9)?	No. VOC – 24D0460: Several compounds were recovered with high RPD between the parent sample OH-MW02I-2040405 and its field duplicate DUP01-20240405. The difference between results was >2x the PQL; therefore, results were J qualified and non-detects were UJ qualified as estimated non-detect. SVOC SIM – 24D0460: Acenaphthalene, anthracene, and naphthalene were recovered with high RPD between the parent sample OH-MW02I-2040405 and its field duplicate DUP01-20240405. The difference between results was >2x the PQL; therefore, results were J qualified and non-detects were UJ qualified as estimated non-detect.

Pesticides

Pesticides and PCBs by GC/ECD	
Description	**Notes and Qualifiers**
Any compounds present in method, trip, or field blanks (see Table 2)?	No. .
For samples, if results are < 5 times the blank or < 10 times the blank for common laboratory contaminants, then "U" flag data. Qualification also applies to TICs.	Not applicable.
Are surrogates for method blanks and LCS within limits?	No. PCB – 24D0731: Decachlorobiphenyl was recovered above acceptance criteria in method blank BD41255-BLK1. 24D0896: Decachlorobiphenyl was recovered above acceptance criteria in LCS and LCSD BD41623-BS2 and BD41623-BSD2.
Are surrogates for samples and MS/MSD within limits? (See Table 3). Matrix effects should be established.	No. Pest – 24D0460: Tetrachloro-m-xylene was recovered above acceptance criteria in sample OH-MW02I-20240405. Sample detection was J+ qualified as estimated biased high and non-detects did not require qualification. 24D0896: Tetrachloro-m-xylene was recovered above acceptance criteria in sample OH-MW05I-20240411. Sample was non-detect for all

Pesticides and PCBs by GC/ECD	
Description	**Notes and Qualifiers**
	compounds; therefore, no qualification was necessary. 24D0948: Decachlorobiphenyl and tetrachloro-m-xylene were recovered above acceptance criteria in sample OH-MW07I-20240415. Sample was non-detect for all compounds; therefore, no qualification was necessary. PCB – 24D0731: Tetrachloro-m-xylene was recovered below acceptance criteria in sample MW-06D-20240409. Sample was non-detect for all compounds; therefore, results were UJ qualified as estimated non-detect. Tetrachloro-m-xylene was recovered below acceptance criteria in sample MW-06S-20240409. Sample detection was J- qualified as estimated biased low and non-detects were UJ qualified as estimated non-detect. 24D0948: Decachlorobiphenyl and tetrachloro-m-xylene were recovered above acceptance criteria in sample OH-MW07I-20240415. Sample was prepared at a 40x dilution; therefore, no qualification was required.
Are pesticide breakdowns within limits?	Yes.
Is Laboratory QC frequency at least one blank and LCS with each batch and one set of MS/MSD per 20 samples?	Yes.
Is MS/MSD within QC criteria (see Table 5)? If out and LCS is compliant, then "J" flag positive data in original sample due to matrix.	No. Pest – 24D0460: Endrin aldehyde was recovered above acceptance criteria in MS BD40920-MS1. Heptachlor, and methoxychlor were recovered above acceptance criteria in MS and MSD BD40920-MS1 and BD40920-MSD1. Parent sample MW-04D-20240404 was non-detect for these compounds; therefore, no qualification was made. PCB – 24D0369: Aroclor 1016 was recovered below acceptance criteria in MS BD40779-MS2. Parent sample OH-MW01I-20240404 was non-detect for these compounds and the LCS was within acceptable criteria; therefore, no qualification was made. Aroclor 1016 and aroclor 1260 were recovered with high RPD between the MS and MSD BD40779-MS2 and BD40779-MSD2. Parent sample OH-MW01I-

Pesticides and PCBs by GC/ECD	
Description	**Notes and Qualifiers**
	20240404 was non-detect for these compounds; therefore, no qualification was made. 24D0460: Aroclor 1016 and aroclor 1260 were recovered below acceptance criteria in MSD BD40920-MSD2. The LCS and MS were within acceptable criteria; therefore, no qualification was made.
Is LCS within QC criteria (see Table 6)? If out, and the recovery is high with no positive values, then no data qualification is required.	No. Pest – 24D0731: Several compounds were recovered with high RPD between the LCS and LCSD BD41513-BS1 and BD41513-BSD1. Sample MW-06I-20240409 was non-detect for these compounds; therefore, results did not require qualification. 24D0948: Several compounds were recovered with high RPD between the LCS and LCSD BD41513-BS1 and BD41513-BSD1. Sample OH-MW08I-20240415 was non-detect for these compounds; therefore, results did not require qualification.
Are dual column results within 40% of each other? (see Table 9)	No. Pest – 24D0460: Heptachlor epoxide dual column result difference was above acceptance criteria in sample OH-MW01S-20240404. Sample result was J qualified as estimated.
Is initial calibration for target compounds <20 %RSD or curve fit? (See Table 7)	Yes.
Is the initial calibration verification for target compounds between laboratory limits or 75-125%? (See Table 7)	Yes.
Is continuing calibration for target compounds < 25%D. (See Table 7)	Yes. Pest – 24D0460: 4,4'-DDE and methoxychlor were recovered above acceptance criteria in CCV S4D1551-CCV4. All samples were non-detect for these compounds; therefore, results were UJ qualified as estimated non-detect. 24D0948: Methoxychlor was recovered above acceptance criteria in CCV S4D2270-CCV4. 4,4-DDE, 4,4-DDT, and methoxychlor were recovered above acceptance criteria in CCV S4D2270-CCV5. Samples OH-MW08I-20240415 and OH-MW07I-20240415 were non-detect for these compounds; therefore, results were UJ qualified as estimated non-detect.

Pesticides and PCBs by GC/ECD	
Description	**Notes and Qualifiers**
	PCB – Aroclor 1260 (3) was recovered above acceptance criteria in several CCVs. Associated sample detections were J qualified as estimated and non-detects were UJ qualified as estimated non-detect. Aroclor 1260 (5) was recovered above acceptance criteria in CCV S4D1751-CCV7. Samples MW-05S-20240410 and MW-05I-20240410 were non-detect for this compound; therefore, results were UJ qualified as estimated non-detect.
Were any samples reanalyzed or diluted (see Table 8)? For any sample reanalysis or dilutions, is only one reportable result flagged?	Yes. 24D0948: Sample OH-MW07I-20240415 was prepared at a 40x dilution. No qualifications were made based on this, and no data usability issues were observed.
For TICs are there any system related compounds that should not be reported?	No.
Do field duplicate results show good precision for all compounds except TICs (see Table 9)?	Yes.

Metals

Metals by ICP/AES and ICP/MS	
Description	**Notes and Qualifiers**
Are any compounds present in method and field blanks as noted on Table 2? (See Table 2)	Yes. 24D0460: Magnesium was detected above the MDL in blank BD40991-BLK1. 24D0731: Calcium was detected above the reporting limit in method blank BD41225-BLK1. 24D0896: Sodium was detected above the reporting limit in method blank BD41517-BLK1. 24D0948: Calcium and zinc were detected above the reporting limit in rinsate blank GWRinse Blank.
For samples, if results are < 5 times the blank then "U" flag data.	All sample were greater than 5x the associated blank contamination.
Is laboratory QC frequency one blank and LCS with each batch and one set of MS/MSD per 20 samples?	Yes.
Are MS/MSD within QC criteria (see Table 5)? QC limits are not applicable to sample results greater than 4 times spike amount.	No. 24D0369: Potassium and sodium were recovered outside acceptance criteria in MS BD40894-MS1. Parent sample OH-MW01I-20240404 results were

Metals by ICP/AES and ICP/MS	
Description	**Notes and Qualifiers**
	greater than 4x the spike concentration; therefore, no qualification was made. Beryllium was recovered less than the acceptance criteria in MS BD40678-MS1. Sample OH-MW01I-20240404 detected beryllium less than 4x the spike concentration; therefore, result was J qualified as estimated. 24D0460: Silver was within acceptance criteria in the MS and was recovered below acceptance criteria in the post-digestion spike. Sample MW-04D-20240404 was non-detect for this compound; therefore, result was UJ qualified as estimated non-detect. 24D0731: Calcium and silver were within acceptance criteria in the MS BD41225-MS1 and was recovered below acceptance criteria in the post-digestion spike. Sample MW-05S-20240410 was non-detect for silver; therefore, result was UJ qualified as estimated non-detect. Sample MW-05S-20240410 detected calcium greater than 4x the spike concentration; therefore, no qualification was necessary. Magnesium, potassium, and sodium were recovered outside acceptance criteria in MS BD41225-MS1. Sample MW-05S-20240410 detected these compounds greater than 4x the spike concentration; therefore, no qualification was necessary. 24D0948: Several compounds were recovered below acceptance criteria in MS BD41628-MS1. When the post-digestion spike recovery was acceptable, sample GWRinse Blank detections were J qualified as estimated and non-detects were UJ qualified as estimated non-detect. Silver was recovered below acceptance criteria in the post-digestion spike. Sample GWRinse Blank was non-detect for this compound; therefore, results were UJ qualified as estimated non-detect.
Are laboratory duplicates within limits? (see Table 9)	No. 24D0369: Aluminum and copper were recovered with high RPD between sample OH-MW01I-20240404 and its laboratory duplicate BD40894-DUP01. Sample result differences were less than 2x the PQL; therefore, no qualification was made. Arsenic was recovered with high RPD between sample OH-MW01I-20240404 and its laboratory duplicate BD40678-BLK1. Sample result difference

Metals by ICP/AES and ICP/MS	
Description	**Notes and Qualifiers**
	was greater than 2x the PQL; therefore, result was J qualified. 24D0948: Calcium was recovered with high RPD between the sample GWRinse Blank and the laboratory duplicate BD41628-DUP1. Sample result difference was less than 2x the PQL; therefore, no qualification was made.
Were elements recovered ≤30%? If so, "R" flag associated NDs.	No.
Is LCS within QC criteria (see Table 6)? If out, and the recovery high with no positive values, then no data qualification is required.	No. 24D0731: Potassium and sodium were recovered above acceptance criteria in LCS BD41341-BS1. Sample MW-05D-20240410 and MW-05I-20240410 detections were J qualified as estimated. 24D0807: Copper was recovered above acceptance criteria in LCS BD41421-BS1. Sample detections were J qualified as estimated and non-detects were not qualified. 24D0896: Potassium and sodium were recovered above acceptance criteria in LCS BD41517-BS1. Associated sample detections were J qualified as estimated. 24D0948: Sodium was recovered below acceptance criteria in LCS BD41628-BS1. Sample OH-MW07I-20240415 and OH-MW08I-20240415 detections were J qualified as estimated and sample GWRinse Blank was non-detect; therefore, result was UJ qualified as estimated non-detect.
Were any samples reanalyzed or diluted (see Table 8)? For any sample reanalysis or dilutions, is only one reportable result flagged?	Yes. Several samples were analyzed to bring sodium concentrations within the calibration range. The reporting limits have been adjusted accordingly. No qualification was made based on dilutions. No data usability issues were observed. OH-MW04S-20240411 was analyzed at a 10x dilution to bring iron concentrations within the calibration range. The reporting limits have been adjusted accordingly. No qualification was made based on dilutions. No data usability issues were observed.
Is there one serial dilution per 20 samples? Flag all data reported with an "E" as "J".	Yes.

Metals by ICP/AES and ICP/MS	
Description	**Notes and Qualifiers**
Is calibration low level verification (CCVL) within QC criteria of 70-130% recovery? If not was sample re-analyzed to establish criteria?	No. Lead and selenium were recovered outside acceptance criteria in several CCVLs. When recovery was high, associated sample detections were J+ qualified as biased high. When recovery was low, associated sample detections were J- qualified as estimated biased low.
Spot check ICS recoveries 80-120%. Contact lab if unacceptable.	No. Aluminum was recovered above criteria in several interference checks. All sample detections were J+ qualified as estimated biased high.
Spot check ICV 90-110%. Contact lab if unacceptable.	Yes.
Spot check CCV 90-110%. Contact lab if unacceptable.	No. Several compounds were recovered outside acceptance criteria in several CCVs. When recovery was high, associated sample detections were J+ qualified as estimated biased high and non-detects were not qualified. When recovery was low, associated sample detections were J- qualified as estimated biased low and non-detected were UJ qualified as estimated non-detect.
Spot check ICB and CCB +/- RL. Contact lab if unacceptable. (See Table 2)	No. Several compounds were detected above the reporting limit in several CCBs. When associated sample results were non-detect or greater than 5x the blank contamination, no qualification was made.
Do field duplicate results show good precision for all compounds (see Table 9)?	No. 24D0460: Aluminum and selenium were recovered with high RPD between the parent sample OH-MW02I-20240405 and its field duplicate DUP01-20240405. The difference between results was >2x the PQL; therefore, results were J qualified. 24D0807: Lead was recovered with high RPD between the parent sample OH-MW03D-20240410 and its field duplicate DUP02-20240410. The difference between the results was <2x the PQL; therefore, no qualification was made.

Mercury by CVAA	
Description	**Notes and Qualifiers**
Any compounds present in method, trip, or, field blanks (see Table 2)?	No.

Mercury by CVAA	
Description	**Notes and Qualifiers**
For samples, if results are < 5 times the blank or < 10 times the blank for common laboratory contaminants, then "U" flag data. Qualification also applies to TICs.	Not Applicable.
Is Laboratory QC frequency at least one blank, LCS and MS/MSD with each batch?	Yes.
Is MS/MSD within QC criteria (see Table 5)? If out and LCS is compliant, then "J" flag positive data in original sample due to matrix.	No. 24D0460: Mercury was recovered above acceptance criteria in MS and MSD BD41046-MS1 and BD41046-MSD1. The parent sample MW-04D-20240404 was non-detect for this compound and the LCS was within criteria; therefore, no qualification was made based on these results.
Is LCS within QC criteria (see Table 6)? If out, and the recovery is high with no positive values, then no data qualification is required.	Yes.
Is initial calibration for target compounds <10 %RSD or curve fit? Is initial calibration verification for target compound <20 %D?	Yes.
Spot check CCV 80-120%. Contact lab if unacceptable.	Acceptable.
Is %D in the continuing calibration for target compounds less than method specifications?	Yes.
Are laboratory duplicates within limits? (see table 9)	Yes.
Were any samples reanalyzed or diluted (see Table 8)? For any sample reanalysis or dilutions, is only one reportable result flagged?	No.
Do field duplicate results show good precision for all compounds (see Table 9)?	Yes.

Cyanide	
Description	**Notes and Qualifiers**
Are any compounds present in method and field blanks as noted on Table 2?	No.
For samples, if results are < 5 times the blank then "U" flag data.	Not applicable.
Is laboratory QC frequency one blank and LCS with each batch per 20 samples and one set of MS/MSD per 20 samples?	Yes.
Are MS/MSD within QC criteria (see Table 4)? QC limits are not applicable to sample results greater than 4 times spike amount. All N flagged data for MS are flagged J as estimated.	Yes.
Is LCS within QC criteria (see Table 6)? If out, and the recovery high with no positive values, then no data qualification is required.	Yes.

Cyanide	
Description	**Notes and Qualifiers**
Spot check ICV 90-110%. Contact lab if unacceptable.	Acceptable.
Spot check CCV 80-120%. Contact lab if unacceptable.	Acceptable.
Spot check ICB and CCB +/- RL. Contact lab if unacceptable.	No.
Do field and/or laboratory duplicates results show good precision for all compounds (see Table 9)?	No. 24D0807: Cyanide was recovered with high RPD between the parent sample OH-MW03D-20240410 and its field duplicate DUP02-20240410. The difference between the results was <2x the PQL; therefore, no qualification was made.

PFAS

Perfluorinated Compounds by LC/MS/MS	
Description	**Notes and Qualifiers**
Any compounds present in method, trip, or field blanks (see Table 2)?	24D0460: Perfluorononanoic acid (PFNA) was detected above the MDL in blank BD41075-BLK1. 24D0731: Perfluorobutanoic acid (PFBA) was detected above the MDL in blank BD41147-BLK1.
For samples, if results are < 5 times the blank contaminants, then "U" flag data.	24D0460: Samples DUP01-20240405 and MW-07I-20240405 results were less than 5 times the blank concentration and qualified as non-detect. 24D0731: Samples MW-05D-20240410 and MW-05I-20240410 were detected less than the reporting limit; therefore, samples were U qualified as non-detect and the MDL raised to the sample concentration.
Are Extracted Internal Standards (EIS) for method blanks and LCS within limits?	No. Several EIS compounds were recovered outside acceptance criteria in several method blanks and LCSs. When recovery was outside criteria, associated samples were also recovered outside criteria and were qualified based on sample EIS recovery.
Are secondary ion ratio limits within laboratory limits?	Yes.
Are Extracted Internal Standards for samples and MS/MSD within limits? (See Table 3).	No. Several surrogates were recovered outside acceptance criteria in several samples. Associated sample detections were J qualified as estimated and non-detects were not qualified. When recovery was less than the lowest acceptance criteria of 10%, associated sample results were rejected and considered unusable.

Perfluorinated Compounds by LC/MS/MS	
Description	**Notes and Qualifiers**
Is Laboratory QC frequency at least one blank and LCS with each batch and one set of MS/MSD per 20 samples?	Yes.
Is MS/MSD within QC criteria (see Table 5)? If out and LCS is compliant, then "J" flag positive data in original sample due to matrix.	No. 24D0369: Several compounds were recovered above acceptance criteria in MS and MSD BD40705-MS1 and BD40705-MSD1. Sample OH-MW01I-20240404 detections were J qualified as estimated and non-detects were UJ qualified as estimated. N-MEFOSA and PFOS were recovered with high RPD between MS and MSD BD40705-MS1 and BD40705-MSD1. Parent sample OH-MW01I-20240404 was non-detect for these compounds; therefore, results were UJ qualified as estimated. 24D0460: PFMPA was recovered below acceptance criteria in MS and MSD BD41075-MS1 and BD41075-MSD1. N-EtFOSAA and PFMBA were recovered above acceptance criteria in MSD BD41075-MSD1. Parent sample MW-04D-20240404 was non-detect for this compound; therefore, result was UJ qualified as estimated.
Is LCS within QC criteria (see Table 6)? If out, and the recovery is high with no positive values, then no data qualification is required.	No. Several compounds were recovered outside acceptance criteria in several samples. Associated sample detections were J qualified as estimated and non-detects were UJ qualified as estimated non-detect.
Do Non-Extracted Internal Standards areas and retention time meet criteria? (See Table 4)	No. d3-N-MeFOSA was recovered outside the acceptable retention time range in method blank BD41531-BLK1. All associated samples were recovered within acceptable retention time range; therefore, using professional judgement, no qualification was made. MPFHxA was recovered below acceptance criteria in sample OH-MW06S-202404012. The sample was not reanalyzed to confirm failure. The case narrative provided by the laboratory did not indicate the reason. Using professional judgement, associated analyte was J qualified as estimated.
Is initial calibration for compounds by isotope dilution <20 %RSD or curve fit; and compounds quantitated by internal standard analytes <50% RSD? Is the initial calibration verification within or equal to 70-130% for all natives quantitated by	No. 24D0369: 8:2 FTS, 4:2 FTS, and 6:2 FTS did not meet curve fit requirements in calibrations SC40058 and SD40022. Sample detections were J qualified as

Perfluorinated Compounds by LC/MS/MS	
Description	**Notes and Qualifiers**
isotope dilution or 50-150% for isotopes quantitated by internal standards.	estimated and non-detects were UJ qualified as estimated non-detect. PFDS, 8:2 FTS, and 4:2 FTS were recovered outside acceptance criteria in ICV S4C2954-SCV1. All samples were non-detect for these compounds; therefore, results were UJ qualified as estimated non-detect.
Is continuing calibration for compounds by isotope dilution equal to or within 70-130% for all natives quantitated by isotope dilution or 70-130% for isotopes quantitated by internal standard. (See Table 7)	No. Several compounds were recovered outside acceptance criteria in several CCVs. Associated sample detections were J qualified as estimated and non-detects were not qualified.
Are laboratory duplicates within limits? (see table 9)	No. 24D0731: Several compounds were recovered with high RPD between the parent sample MW-06D-20240409 and its duplicate BD41147-DUP1. When the difference between results was <2x the PQL, no qualification was made. When the difference was >2x PQL, sample detections were J qualified as estimated. 24D0896: N-EtFOSAA and PFOS were recovered with high RPD between the parent sample OH-MW05S-20240411 and its duplicate BD41531-DUP01. When the difference between results was <2x the PQL, no qualification was made. When the difference was >2x the PQL, sample detection was J qualified as estimated.
Were any samples reanalyzed or diluted (see Table 8)? For any sample reanalysis or dilutions, is only one reportable result flagged?	Yes. 24D0460: MW-04S-20240405, MW-07S-20240405, and OH-MW01S-2040404 were analyzed at a 5x dilution. Reporting limits were adjusted accordingly, no qualifications were made based on this dilution, and no data usability issues were observed. 24D0731: MW-06I-20240409 was reextracted by the laboratory. The laboratory did not note the reason. All analytes were reported from the reextraction. No qualifications were made based on this, and no data usability issues were observed. 24D0948: OH-MW07I-20240415 and OH-MW08I-20240415 were reextracted by the laboratory. The laboratory did not note the reason. All analytes were reported from the reextraction. No qualifications were made based on this and no data usability issues were observed.

Perfluorinated Compounds by LC/MS/MS	
Description	**Notes and Qualifiers**
Do field duplicate results show good precision for all compounds (see Table 9)?	No. 24D0460: Several compounds were recovered with high RPD between the parent sample OH-MW02I-20240405 and its field duplicate DUP01-20240405. The difference between results for PFNA and PFOS was >2x the PQL; therefore, results were J qualified and non-detects were UJ qualified as estimated non-detect. When the difference between the results was <2x the PQL, no qualification was made. 24D0807: Several compounds were recovered with high RPD between the parent sample OH-MW03D-20240410 and its field duplicate DUP02-20240410. The difference between results for PFNA was >2x the PQL; therefore, results were J qualified and non-detects were UJ qualified as estimated non-detect. When the difference between the results was <2x the PQL, no qualification was made.

Quantitation Limits and Data Assessment: Results were reported which were below the reporting limit (RL) and above the method detection limit (MDL) in the VOC analysis. These results were qualified as estimated (J) by the laboratory.

Data Validation Qualifiers Definitions:

J – The analyte QC analysis fails outside the primary acceptance limits. The qualified "J" data are not excluded from further review or consideration. The 'J' qualified data may be biased high (+) or low (-) or the direction of the bias may be indeterminable.

UJ - The analyte was not detected above the reported sample quantitation limit. The analyte QC analysis fails outside the primary acceptance limits. The "UJ" qualified data are not excluded from further review or consideration. The 'UJ' qualified data may be biased low.

U – The analyte was analyzed for, but due to blank contamination was flagged as non-detect (U). The result is usable as a non-detect.

UR – The analyte was analyzed for but due to quality control anomalies, sample is considered unusable.

Summary of Findings

VOC –

- Chloroform was U qualified as non-detect in samples DUP01-20240405, OH-MW01S-20240404, and OH-MW02I-20240405 due to trip blank contamination.
- Acetone was U qualified in several samples due to trip blank contamination.
- Chloroform was U qualified in several samples due to trip blank contamination. Methylene chloride was U qualified in samples DUP02-20240410 and OH-MW03D-20240410 due to method blank contamination.
- Several compounds were UJ qualified in several samples due to low LCS recovery.
- Several compounds were J qualified in several samples due to low LCS recovery.
- Tert-butyl alcohol was J qualified in sample MW-04S-20240405 and UJ qualified in samples MW-04D-20240404, OH-MW01S-20240404, and OH-MW02I-20240405 due to poor LCS/LCD RPD.
- Acrolein was UJ qualified in several samples due to poor LCS/LCSD RPD.
- Butylbenzene and tetrachloroethylene were UJ qualified in sample OH-MW01I-20240404 due to poor MS/MSD recovery.
- Tetrachloroethylene was UJ qualified in sample MW-04D-20240404 due to poor MS/MSD recovery.
- Several compounds were J qualified in several samples due to poor CCV recovery.
- Several compounds were J qualified in several samples due to poor ICV recovery.
- Several compounds were UJ qualified in several samples due to poor CCV recovery.
- Several compounds were UJ qualified in several samples due to poor ICV recovery.
- Acetone was J+ qualified in samples OH-MW02I-20240405 due to poor surrogate recovery.
- 1,1-Dichloroethane, cis-1,2-dichloroethylene, and 2-butanone were J- qualified as estimated in sample OH-MW05I-20240411 due to low surrogate recovery.
- 1,2,4-Trimethylbenzene, 4-ethyltoluene, m,p-xylene, o-xylene, styrene, toluene, and xylenes were J qualified in samples OH-MW02I-20240405 and DUP02-20240405 due to poor field duplicate recovery.
- Butylbenzene was UJ qualified in sample OH-MW02I-20240405 and UJ qualified in DUP02-20240405 due to poor field duplicate recovery.

- Several compounds were UJ qualified in sample OH-MW05I-20240411 due to low surrogate recovery.
- Benzene was J+ qualified in sample OH-MW06S-20240412 due high surrogate recovery.
- Using professional judgement, naphthalene results were not included in final result tables due to the DNAPL characterization and continuity throughout data reporting for nearby sites.

SVOC/SVOCSIM-

- All SVOC SIM detections were J qualified in sample MW-04S-20240404 due to hold time exceedance.
- Several compounds were U qualified in sample OH-MW06S-20240412 due to method blank contamination.
- Bis(2-ethylhexyl)phthalate and naphthalene were U qualified in sample MW-04D-20240404 due to method blank contamination.
- Several compounds were UJ qualified in sample OH-MW01I-20240404 due to poor MS/MSD recovery.
- Several compounds were UR qualified as rejected and considered unusable in several samples due to no LCS recovery.
- Benzoic acid was UJ qualified in several samples due to low LCS recovery.
- Fluoranthene and naphthalene were J qualified in sample OH-MW01S-20240404 due to high LCS recovery.
- Several compounds were UJ qualified in several samples due to poor RPD between the LCS and LCSD.
- Several compounds were UJ qualified in samples OH-MW01I-20240404 and MW-07D-20240405 due to low surrogate recovery.
- Several compounds were UR qualified in samples OH-MW01I-20240404 and MW-07D-20240405 due to no surrogate recovery.
- Dibenzofuran, carbazole, and 4-nitrophenol were J+ qualified in sample MW-05I-20240410 due to high surrogate recovery.
- 2-Methylnaphthalene was J+ qualified in samples DUP01-20240405, OH-MW05D-20240411 and OH-MW06I-20240412 due to high surrogate recovery.
- Several compounds were J qualified in several samples due to poor ICV recovery.
- Several compounds were UJ qualified in several samples due to poor ICV recovery.
- Several compounds were J qualified in several samples due to poor CCV recovery.
- Several compounds were UJ qualified in several samples due to poor CCV recovery.
- Acenaphthylene and naphthalene were UJ qualified in sample OH-MW02I-20240405 and J qualified in DUP02-20240405 due to poor field duplicate recovery.
- Anthracene was J qualified in samples OH-MW02I-20240405 and DUP02-20240405 due to poor field duplicate recovery.

Pest/PCB –

- Beta BHC was J+ qualified in sample OH-MW02I-20240405 due to high surrogate recovery.
- Aroclor 1260 was J- qualified in sample MW-06S-20240409 due to low surrogate recovery.
- Several compounds were UJ qualified in samples MW-06D-20240409 and MW-06S-20240409 due to low surrogate recovery.
- Heptachlor epoxide was J qualified in sample OH-MW01S-20240404 due to poor dual column precision.
- 4,4'DDE and methoxychlor were UJ qualified in several samples due to high CCV recovery.
- 4,4-DDT was UJ qualified in samples OH-MW08I-20240415 and OH-MW07I-20240415 due to high CCV recovery.
- Aroclor 1260 was UJ qualified in several samples due to high CCV recovery.

- Aroclor 1260 was J qualified in sample MW-07S-20240405 due to high CCV recovery.

Metals/Mercury/Cyanide –

- Aluminum and selenium were J+ qualified in samples OH-MW02I-20240405 and DUP02-20240405 due to field blank contamination.
- Beryllium was J qualified in sample OH-MW01I-20240404 due to poor MS/MSD recovery.
- Silver was UJ qualified in samples MW-04D-20240404 and MW-05S-20240410 due to poor MS/MSD recovery.
- Calcium and zinc were J qualified in sample GWRinse Blank due to poor MS/MSD recovery.
- Aluminum, iron, magnesium, potassium, and sodium were UJ qualified in sample GWRinse Blank due to poor MS/MSD recovery.
- Silver was UJ qualified in samples MW-04D-20240404 and MW-05S-20240410 due to poor post-digestion spike recovery.
- Potassium and sodium were J+ qualified in several samples due to high LCS recovery.
- Copper was J+ qualified in samples OH-MW03D-20240410, DUP02-20240410, OH-MW04I-20240411, and OH-MW04S-20240411 due to high LCS recovery.
- Sodium was UJ qualified in sample GWRinse Blank due to low LCS recovery.
- Sodium was J- qualified in samples OH-MW07I-20240415 and OH-MW08I-20240415 due to low LCS recovery.
- Aluminum was J+ qualified in samples OH-MW01I-20240404, MW-04I-20240404, MW-04D-20240404, OH-MW01S-20240404, MW-04S-20240405, OH-MW02I-20240405,DUP01-20240405, MW-07D-20240405, MW-07S-20240405, MW-07I-20240405, MW-05D-20240410, MW-05I-20240410, OH-MW07I-20240415, OH-MW08I-20240415, OH-MW03D-20240410, DUP02-20240410, OH-MW04I-20240411, OH-MW04S-20240411, OH-MW05I-20240411, OH-MW05S-20240411, OH-MW05D-20240411, OH-MW06I-20240412, OH-MW06S-20240412, OH-MW06D-20240412 due to high interference.
- Several compounds were J+ qualified in several samples due to high CCV and CCVL recovery.
- Beryllium and lead were UJ qualified in several samples due to high CCV recovery.
- Cadmium, selenium, and iron were UJ qualified in several samples due to low CCV and CCVL recovery.
- Lead, selenium, and iron were J- qualified in several samples to low CCV and CCVL recovery.
- Arsenic was J qualified in sample OH-MW01I-20240404 due to high laboratory duplicate RPD.

PFAS –

- PFNA was U qualified as non-detect in samples DUP01-20240405 and MW-07I-20240405 due to method blank contamination.
- PFBA was U qualified in samples MW-05I-20240410 and MW-05D-20240410 due to method blank contamination.
- PFNA was UJ qualified in sample OH-MW04I-20240404 due to high LCS recovery.
- PFNA was J qualified in sample OH-MW01I-20240404 due to high LCS and CCV recovery.
- 6:2 FTS was J qualified in samples OH-MW01I-20240404 and MW-04I-20240404 due to high LCS and CCV recovery.
- Several compounds were UJ qualified in several samples due to low LCS recovery. See Table 3 for list of analytes and samples.
- PFNA and PFOA were J qualified in sample OH-MW01I-20240404 due to poor MS/MSD recovery.
- Several compounds were UJ qualified in sample OH-MW01I-20240404 due to poor MS/MSD recovery.

- PFMPA, PFMBA, N-EtFOSAA were UJ qualified in sample MW-04D-02040404 due to poor MS/MSD recovery.

- PFHpA was J qualified in samples MW-04D-20240404, MW-07I-20240405, OH-MW04S-20240411, OH-MW05S-20240411, and OH-MW06S-20240412 due to high surrogate recovery.
- PFOS was J qualified in sample MW-04S-20240405 due to high surrogate recovery.
- 6:2 FTS was J qualified in samples MW-06D-20240409, DUP02-20240410, and OH-MW05D-20240411 due to high surrogate recovery.
- FPHxS and 6:2 FTS were J qualified in sample MW-04I-20240404 due to poor surrogate recovery.
- PFPeA was J qualified in sample OH-MW01S-20240404 due to low surrogate recovery.
- PFBA was UR qualified in several samples due to low surrogate recovery.
- PFDoA was UR qualified in sample DUP01-20240405 due to low surrogate recovery.
- PFBA was R qualified in samples MW-07D-20240405, OH-MW03D-20240410, OH-MW07I-20240415, and OH-MW08I-20240415 due to low surrogate recovery.
- PFTeA, N-EtFOSA, N-EtFOSE, and N-MeFOSE were UR qualified in samples OH-MW04S-20240411 and DUP01-20240405 due to low surrogate recovery.
- PFHxA was J qualified in sample OH-MW06S-20240412 due to low non-extracted isotope recovery.
- 4:2 FTS, 6:2 FTS, and 8:2 FTS were UJ qualified in several samples due to poor initial calibration.
- PFDA, 4:2 FTS, and 8:2 FTS were UJ qualified in samples OH-MW01I-20240404 and MW-04I-20240404 due to poor ICV recovery.
- PFOA was J qualified in samples OH-MW01I-20240404 and MW-04I-20240404 due to high CCV recovery.
- 6:2 FTS was J qualified in samples OH-MW01I-20240404, OH-MW01I-20240404, MW-04D-20240404, MW-07D-20240405, MW-05D-20240410, MW-06D-20240409, DUP02-20240410, and OH-MW04S-20240411 due to high CCV recovery.
- PFOS was J qualified several samples due to poor CCV recovery.
- PFHpA was J qualified in samples MW-06S-20240409, MW-06D-20240409, OH-MW05I-20240411, and OH-MW06I-20240412 due to low CCV recovery.
- PFHxA and PFOS were UJ qualified in sample OH-MW02I-20240405 and J qualified in DUP01-20240405 due to poor field duplicate recovery.
- PFNA was J qualified in sample OH-MW03D-20240410 and UJ qualified in DUP02-20240410 due to poor field duplicate recovery.
- PFHxA, PFOS, and PFOA were J qualified in sample MW-06D-20240409 due to poor laboratory duplicate RPD.
- PFOS was J qualified in sample OH-MW05S-20240411 due to poor laboratory duplicate RPD.

Table 2 - List of Positive Results for Blank Samples

Method	Sample ID	Sample Type	Analyte	Result	Qualifier	Units	MDL	PQL
8260	BD40797-BLK1	MB	Methylene Chloride	1.18	J	ug/L	0.397	2
8260	BD40797-BLK1	MB	Naphthalene	0.570	J	ug/L	0.212	2
8260	BD40882-BLK1	MB	Methylene Chloride	0.840	J	ug/L	0.397	2
8260	BD40882-BLK1	MB	Naphthalene	0.920	J	ug/L	0.212	2
8260	BD41018-BLK1	MB	Methylene Chloride	0.720	J	ug/L	0.397	2
8260	BD41018-BLK1	MB	Naphthalene	0.920	J	ug/L	0.212	2
8260	TRIP BLANK	TB	Chloroform	3.48		ug/L	0.243	0.5
8260	TRIP BLANK	TB	Bromodichloromethane	0.330	J	ug/L	0.245	0.5
SW8270DSIM	BD40875-BLK2	MB	Bis(2-Ethylhexyl) Phthalate	0.670		ug/L	0.5	0.5
SW8270DSIM	BD40875-BLK2	MB	Naphthalene	0.0500		ug/L	0.05	0.05
6010	BD40991-BLK1	MB	Magnesium	0.0944		ug/L	0.0556	0.0556
6010	S4D1512-CCBI	CCB	Magnesium	0.066		ug/L	0.0500	0.0500
6010	S4D1512-CCBI	CCB	Potassium	0.116		ug/L	0.0500	0.0500
6010	S4D1512-CCBI	CCB	Sodium	0.574		ug/L	0.500	0.500
E1633	BD41075-BLK1	MB	Perfluorononanoic acid (PFNA)	1.50	J	ng/L	1.04	4.0
8260	TB-20240410	TB	Acetone	1.37	J	ug/L	1.34	2
8260	TB-20240410	TB	Chloroform	0.820		ug/L	0.243	0.5
8260	BD40935-BLK1	MB	Methylene Chloride	0.570	J	ug/L	0.397	2
8260	BD41177-BLK1	MB	Naphthalene	0.240	J	ug/L	0.212	2
6010	BD41225-BLK1	MB	Calcium	0.00637		mg/L	0.0500	0.0500
6010	S4D1820-CCBG	CCB	Lead	0.00504		mg/L	0.00500	0.00500
6010	S4D1912-CCBG	CCB	Magnesium	0.0557		mg/L	0.0500	0.0500
6010	S4D1912-CCBK	CCB	Magnesium	0.0523		mg/L	0.0500	0.0500
6010	S4D1912-CCBK	CCB	Potassium	0.506		mg/L	0.0500	0.0500
6010	S4D1912-CCBK	CCB	Sodium	10.8		mg/L	0.500	0.500
1633	BD41147-BLK1	MB	PFBA	0.727	J	ng/L	0.330	0.800

Method	Sample ID	Sample Type	Analyte	Result	Qualifier	Units	MDL	PQL
8260	TB-20240411	TB	Acetone	1.50	J	ug/L	1.34	2.00
8260	TB-20240411	TB	Chloroform	1.08		ug/L	0.243	0.500
8260	BD41432-BLK1	MB	Methylene Chloride	0.840	J	ug/L	0.397	2.00
8260	BD41141-BLK1	MB	Methylene Chloride	0.580	J	ug/L	0.397	2.00
8270 SIM	BD41412-BLK2	MB	Naphthalene	0.060		ug/L	0.05	0.05
6010	S4D2209-CCB9	CCB	Calcium	0.113		mg/L	0.0500	0.0500
6010	S4D2209-CCBA	CCB	Sodium	0.551		mg/L	0.500	0.500
8260	TB-20240412	TB	Acetone	1.52	J	ug/L	1.34	2.00
8260	TB-20240412	TB	Chloroform	1.11		ug/L	0.243	0.500
8260	BD41230-BLK1	MB	Naphthalene	0.280	J		0.212	2.00
8260	BD41535-BLK1	MB	Naphthalene	0.720	J		0.212	2.00
6010	S4D2219-CCBB	CCB	Sodium	1.57		mg/L	0.500	0.500
6010	S4D2219-CCBC	CCB	Potassium	0.0812		mg/L	0.0500	0.0500
6010	S4D2219-CCBC	CCB	Sodium	2.14		mg/L	0.500	0.500
6010	S4D2219-CCBD	CCB	Potassium	0.0559		mg/L	0.0500	0.0500
6010	S4D2219-CCBD	CCB	Sodium	1.13		mg/L	0.500	0.500
8260	GWRinse Blank	RB	1,4-Dioxane	620		ug/L	35.3	80
8260	GWRinse Blank	RB	Acetone	3		ug/L	1.34	2
8260	GWRinse Blank	RB	Acrolein	6.87		ug/L	0.447	0.5
8260	GWRinse Blank	RB	Bromodichloromethane	0.520		ug/L	0.245	0.5
8260	GWRinse Blank	RB	Chloroform	5.95		ug/L	0.243	0.5
8260	GWRinse Blank	RB	Unknown Semivolatile With 1st Highest Conc.	21	J	ug/L	0	0
8260	GWRinse Blank	RB	Unknown Semivolatile With 3rd Highest Conc.	7.5	J	ug/L	0	0
8260	GWRinse Blank	RB	Unknown Semivolatile With 2nd Highest Conc.	10	J	ug/L	0	0
8260	BD41537-BLK1	MB	Methylene Chloride	0.500	J	ug/L	0.397	2.00

Method	Sample ID	Sample Type	Analyte	Result	Qualifier	Units	MDL	PQL
8270 SIM	GWRinse Blank	RB	Acenaphthene	0.330	B	ug/L	0.05	0.05
8270 SIM	GWRinse Blank	RB	Acenaphthylene	0.480	B	ug/L	0.05	0.05
8270 SIM	GWRinse Blank	RB	Anthracene	0.360	B	ug/L	0.05	0.05
8270 SIM	GWRinse Blank	RB	Benzo(a)anthracene	0.320		ug/L	0.05	0.05
8270 SIM	GWRinse Blank	RB	Chrysene	0.250		ug/L	0.05	0.05
8270 SIM	GWRinse Blank	RB	Fluoranthene	0.440	B	ug/L	0.05	0.05
8270 SIM	GWRinse Blank	RB	Fluorene	0.380	B	ug/L	0.05	0.05
8270 SIM	GWRinse Blank	RB	Naphthalene	2.14	B	ug/L	0.05	0.05
8270 SIM	GWRinse Blank	RB	Phenanthrene	1.11	B	ug/L	0.05	0.05
8270 SIM	GWRinse Blank	RB	Pyrene	0.430	B	ug/L	0.05	0.05
8270 SIM	BD41530-BLK1	MB	Acenaphthene	0.120		ug/L	0.05	0.05
8270 SIM	BD41530-BLK1	MB	Acenaphthylene	0.120		ug/L	0.05	0.05
8270 SIM	BD41530-BLK1	MB	Anthracene	0.120		ug/L	0.05	0.05
8270 SIM	BD41530-BLK1	MB	Fluoranthene	0.0800		ug/L	0.05	0.05
8270 SIM	BD41530-BLK1	MB	Fluorene	0.150		ug/L	0.05	0.05
8270 SIM	BD41530-BLK1	MB	Naphthalene	2.59		ug/L	0.05	0.05
8270 SIM	BD41530-BLK1	MB	Phenanthrene	0.360		ug/L	0.05	0.05
8270 SIM	BD41530-BLK1	MB	Pyrene	0.10		ug/L	0.05	0.05
6010	BD41517-BLK1	MB	Sodium	0.638		mg/L	0.500	0.500
6010	GWRinse Blank	RB	Calcium	0.114		mg/L	0.05	0.05
6010	GWRinse Blank	RB	Zinc	0.0427		mg/L	0.025	0.025
6010	S4D2352-ICB1	ICB	Magnesium	0.0709		mg/L	0.05	0.05

Table 2A - List of Samples Qualified for Method Blank Contamination

Method	Lab Blank	Matrix	Analyte	Blank Result	Sample Result	Lab Qualifier	PQL	Affected Sample	Sample Flag
E1633	BD41075-BLK1	GW	PFNA	1.50	0.519	J	2.1	DUP01-20240405	U Flag
E1633	BD41075-BLK1	GW	PFNA	1.50	1.92	J	2.1	MW-07I-20240405	U Flag

Method	Lab Blank	Matrix	Analyte	Blank Result	Sample Result	Lab Qualifier	PQL	Affected Sample	Sample Flag
SW8270D SIM	BD40875-BLK2	GW	Bis(2-Ethylhexyl) Phthalate	0.670	0.740	B	0.5	MW-04D-20240404	U Flag
SW8270D SIM	BD40875-BLK2	GW	Naphthalene	0.0500	0.0900	B	0.05	MW-04D-20240404	U Flag
8260	TRIP BLANK	GW	Chloroform	3.48	1.05		0.5	DUP01-20240405	U Flag
8260	TRIP BLANK	GW	Chloroform	3.48	1.02		0.5	OH-MW02I-20240405	U Flag
8260	TRIP BLANK	GW	Chloroform	3.48	0.74		0.5	OH-MW01S-20240404	U Flag
8260	TB-20240410	WQ	Acetone	1.37	2.33		1.34	MW-05I-20240410	U Flag
8260	TB-20240410	WQ	Acetone	1.37	3.5		1.34	MW-06D-20240409	U Flag
1633	BD41147-BLK1	MB	PFBA	0.727	0.645	J	8.76	MW-05D-20240410	U Flag
1633	BD41147-BLK1	MB	PFBA	0.727	0.475	J	8.75	MW-05I-20240410	U Flag
8260	TB-20240411	TB	Acetone	1.50	1.48	J	1.34	DUP02-20240410	U Flag
8260	TB-20240411	TB	Chloroform	1.08	1.78		0.243	DUP02-20240410	U Flag
8260	BD41432-BLK1	MB	Methylene Chloride	0.840	0.820	JB	0.397	DUP02-20240410	U Flag
8260	TB-20240411	TB	Acetone	1.50	1.43	J	1.34	OH-MW03D-20240410	U Flag
8260	TB-20240411	TB	Chloroform	1.08	1.72		0.243	OH-MW03D-20240410	U Flag
8260	BD41432-BLK1	MB	Methylene Chloride	0.840	0.820	JB	0.397	OH-MW03D-20240410	U Flag
8260	TB-20240411	TB	Chloroform	1.08	1.42		0.243	OH-MW04I-20240411	U Flag
8260	TB-20240411	TB	Acetone	1.50	7.99		1.34	OH-MW04S-20240411	U Flag
8260	TB-20240411	TB	Chloroform	1.08	1.03		0.243	OH-MW04S-20240411	U Flag
8260	TB-20240412	TB	Acetone	1.52	1.79	J	1.34	OH-MW05D-20240411	U Flag
8260	TB-20240412	TB	Chloroform	1.11	0.370	J	0.243	OH-MW05D-20240411	U Flag
8260	TB-20240412	TB	Chloroform	1.11	2.25		0.243	OH-MW06D-20240412	U Flag
8270 SIM	BD41530-BLK1	MB	Acenaphthylene	0.120	0.460	B	0.05	OH-MW06S-20240412	U Flag
8270 SIM	BD41530-BLK1	MB	Anthracene	0.120	0.110	B	0.05	OH-MW06S-20240412	U Flag
8270 SIM	BD41530-BLK1	MB	Fluoranthene	0.0800	0.0800	B	0.05	OH-MW06S-20240412	U Flag
8270 SIM	BD41530-BLK1	MB	Fluorene	0.150	0.110	B	0.05	OH-MW06S-20240412	U Flag

Method	Lab Blank	Matrix	Analyte	Blank Result	Sample Result	Lab Qualifier	PQL	Affected Sample	Sample Flag
8270 SIM	BD41530-BLK1	MB	Naphthalene	2.59	0.190	B	0.05	OH-MW06S-20240412	U Flag
8270 SIM	BD41530-BLK1	MB	Phenanthrene	0.360	0.060	B	0.05	OH-MW06S-20240412	U Flag
8270 SIM	BD41530-BLK1	MB	Pyrene	0.100	0.080	B	0.05	OH-MW06S-20240412	U Flag

Table 3 - List of Samples with Surrogates/Isotope Dilution Standards outside Control Limits

Method	Sample ID	Sample Type	Analyte	Rec. %	Low Limit	High Limit	Dilution Factor	Sample Qualifier
8270	BD40785-MS1	MS	Terphenyl-d14	119	30.7	106	1	None – QC
8270	BD40785-MSD1	MSD	Nitrobenzene-d5	119	50.2	113	1	None – QC
8270	BD40785-MSD1	MSD	Terphenyl-d14	114	30.7	106	1	None – QC
8270	OH-MW01I-20240404	N	2-Fluorophenol	7.50	19.7	63.1	1	UR
8270	OH-MW01I-20240404	N	Phenol-d6	9.78	10.1	41.7	1	UR
8270	OH-MW01I-20240404	N	2,4,6-Tribromophenol	23.0	39.3	151	1	UJ
8270	OH-MW01I-20240404	N	Terphenyl-d14	109	30.7	106	1	None
1633	MW-04I-20240404	N	M3PFHxS	174	25	150	1	J
1633	MW-04I-20240404	N	MPFBA	12.5	25	150	1	None
1633	MW-04I-20240404	N	M2-6:2 FTS	301	25	200	1	J
1633	MW-04I-20240404	N	M2-8:2 FTS	243	25	200	1	None
1633	MW-04I-20240404	N	M2-4:2 FTS	382	25	150	1	None
1633	OH-MW01I-20240404	N	MPFBA	21.3	25	150	1	None
1633	OH-MW01I-20240404	N	M2-4:2 FTS	221	25	150	1	None
1633	OH-MW01I-20240404	N	d-N-EtFOSA	23.8	25	150	1	None
1633	OH-MW01I-20240404	N	M3HFPO-DA	159	25	150	1	None
8260	OH-MW02I-20240405	N	1,2-Dichloroethane-d4	144	69	133	1	J+
8260	DUP01-20240405	N	1,2-Dichloroethane-d4	146	69	133	1	None
8260	MW-07D-20240405	N	1,2-Dichloroethane-d4	133	69	133	1	None
8270	MW-04S-20240405	N	Nitrobenzene-d5	123	50.2	113	1	None
8270	OH-MW02I-20240405	N	2-Fluorophenol	18.8	19.7	63.1	20	None

Method	Sample ID	Sample Type	Analyte	Rec. %	Low Limit	High Limit	Dilution Factor	Sample Qualifier
8270	OH-MW02I-20240405	N	Phenol-d6	0	10.1	41.7	20	None
8270	OH-MW02I-20240405	N	Nitrobenzene-d5	132	50.2	113	20	None
8270	OH-MW02I-20240405	N	2-Fluorobiphenyl	111	39.9	105	20	None
8270	OH-MW02I-20240405	N	Terphenyl-d16	110	30.7	106	20	None
8270	DUP01-20240405	N	2-Fluorophenol	6	19.7	63.1	20	None
8270	DUP01-20240405	N	Phenol-d56	0	10.1	41.7	20	None
8270	DUP01-20240405	N	Nitrobenzene-d5	114	50.2	113	20	J+
8270	MW-07D-20240405	N	2-Fluorophenol	15.2	19.7	63.1	10	UJ
8270	MW-07D-20240405	N	Phenol-d6	0	10.1	41.7	10	UR
8270	MW-07I-20240405	N	2-Fluorophenol	0	19.7	63.1	50	None
8270	MW-07I-20240405	N	Phenol-d6	0	10.1	41.7	50	None
8270	MW-07I-20240405	N	2,4,6-Tribromophenol	0	39.3	151	50	None
8081	OH-MW02I-20240405	N	Tetrachloro-m-xylene	157	30	150	1	J+
1633	MW-04D-20240404	N	M4PFHpA	233	25	150	1	J
1633	MW-04D-20240404	N	M3PFHxS	153	25	150	1	None
1633	MW-04D-20240404	N	MPFBA	0.773	25	150	1	UR
1633	MW-04D-20240404	N	M9PFNA	151	25	150	1	None
1633	BD41075-MS1	MS	M4PFHpA	154	25	150	1	None – QC
1633	BD41075-MS1	MS	MPFBA	1.4	25	150	1	None - QC
1633	BD41075-MSD1	MSD	MPFBA	1.37	25	150	1	None - QC
1633	OH-MW02I-20240405	N	MPFBA	0.858	25	150	1	UR
1633	DUP01-20240405	FD	M7PFUdA	20.3	25	150	1	None
1633	DUP01-20240405	FD	MPFDoA	6.97	25	150	1	UR
1633	DUP01-20240405	FD	M2PFTeDA	0.551	25	150	1	UR
1633	DUP01-20240405	FD	MPFBA	0.799	25	150	1	UR
1633	DUP01-20240405	FD	d3-N-MeFOSAA	18.7	25	150	1	None
1633	DUP01-20240405	FD	d5-N-EtFOSAA	16.5	25	150	1	None
1633	DUP01-20240405	FD	d-N-MeFOSA	10.2	25	150	1	None

Method	Sample ID	Sample Type	Analyte	Rec. %	Low Limit	High Limit	Dilution Factor	Sample Qualifier
1633	DUP01-20240405	FD	d-N-EtFOSA	0.638	25	150	1	UR
1633	DUP01-20240405	FD	d9-N-EtFOSE	1	25	150	1	UR
1633	DUP01-20240405	FD	d7-N-MeFOSE	0.0668	25	150	1	UR
1633	MW-07D-20240405	N	M4PFHpA	213	25	150	1	None
1633	MW-07D-20240405	N	MPFBA	1.87	25	150	1	R
1633	MW-07I-20240405	N	M4PFHpA	213	25	150	1	J
1633	MW-07I-20240405	N	MPFBA	1.87	25	150	1	UR
1633	MW-07I-20240405	N	M2-4:2 FTS	178	25	150	1	None
1633	OH-MW01S-20240405	N	MPFBA	2.91	25	150	1	UR
1633	OH-MW01S-20240405	N	M5PFPeA	21.1	25	150	1	J
1633	OH-MW01S-20240405	N	M2-6:2 FTS	367	25	200	1	None
1633	OH-MW01S-20240405	N	M2-4:2 FTS	441	25	150	1	None
1633	OH-MW01S-20240405	N	d9-N-EtFOSE	22.7	25	150	1	None
1633	MW-04S-20240405	N	MPFBA	3.61	25	150	5	UR
1633	MW-04S-20240405	N	M8PFOS	156	25	150	5	J
1633	MW-04S-20240405	N	M2-6:2 FTS	423	25	200	5	None
1633	MW-04S-20240405	N	M2-4:2 FTS	529	25	150	5	None
1633	MW-07S-20240405	N	M4PFHpA	213	25	150	1	None
1633	MW-07S-20240405	N	MPFBA	2.91	25	150	1	UR
1633	MW-07S-20240405	N	M2-6:2 FTS	423	25	200	5	None
1633	MW-07S-20240405	N	M2-4:2 FTS	529	25	150	5	None
1633	MW-07S-20240405	N	d-N-EtFOSA	23.8	25	150	1	None
1633	MW-07S-20240405	N	d9-N-EtFOSE	14.9	25	150	1	None
8270	MW-06I-20240409	N	2-Fluorophenol	0	19.7	63.1	100	None
8270	MW-06I-20240409	N	Phenol-d6	0	10.1	41.7	100	None
8270	MW-06I-20240409	N	Nitrobenzene-d5	140	50.2	113	100	None
8270	MW-06I-20240409	N	2-Fluorobiphenyl	136	39.9	105	100	None
8270	MW-06I-20240409	N	Terphenyl-d14	0	30.7	106	100	None

Method	Sample ID	Sample Type	Analyte	Rec. %	Low Limit	High Limit	Dilution Factor	Sample Qualifier
8270	MW-06D-20240409	N	2-Fluorophenol	0	19.7	63.1	50	None
8270	MW-06D-20240409	N	Phenol-d6	0	10.1	41.7	50	None
8270	MW-06D-20240409	N	Nitrobenzene-d5	0	50.2	113	50	None
8270	MW-06D-20240409	N	2,4,6-Tribromophenol	0	39.3	151	50	None
8270	MW-05D-20240410	N	Nitrobenzene-d5	126	50.2	113	1	None
8270	MW-05D-20240410	N	Terphenyl-d14	118	30.7	106	1	None
8270	MW-05I-20240410	N	2-Fluorophenol	69.7	19.7	63.1	1	None
8270	MW-05I-20240410	N	Nitrobenzene-d5	156	50.2	113	1	None
8270	MW-05I-20240410	N	2-Fluorobiphenyl	115	39.9	105	1	J+
8270	MW-05I-20240410	N	2,4,6-Tribromophenol	163	39.3	151	1	J+
8270	MW-05I-20240410	N	Terphenyl-d14	131	30.7	106	1	None
8270	MW-06I-20240409	DIL	Phenol-d6	1080	10.1	41.7	1000	None
8270	MW-06I-20240409	DIL	Nitrobenzene-d5	40	50.2	113	1000	None
8270	MW-05I-20240410	DIL	Nitrobenzene-d5	0	50.2	113	100	None
8082	MW-06S-20240409	N	Tetrachloro-m-xylene	25	30	150	1	J- / UJ
8082	MW-06D-20240409	N	Tetrachloro-m-xylene	22.5	30	150	1	UJ
1633	MW-05D-20240410	N	MPFBA	4	25	150	1	UR
1633	MW-05D-20240410	N	M2-4:2 FTS	269	25	150	1	None
1633	MW-06S-20240409	N	MPFBA	15.1	25	150	1	None
1633	MW-06S-20240409	N	M2-6:2 FTS	280	25	200	1	None
1633	MW-06S-20240409	N	M2-4:2 FTS	422	25	150	1	None
1633	MW-06I-20240409	N	M2-6:2 FTS	209	25	200	1	None
1633	MW-06I-20240409	N	M2-4:2 FTS	516	25	150	1	None
1633	MW-06I-20240409	N	d-N-EtFOSA	21.1	25	150	1	None
1633	MW-06D-20240409	N	MPFBA	1.57	25	150	1	UR
1633	MW-06D-20240409	N	M2-6:2 FTS	273	25	200	1	J
1633	MW-06D-20240409	N	M2-4:2 FTS	400	25	150	1	None
1633	MW-05S-20240410	N	MPFBA	21.5	25	150	1	None

Method	Sample ID	Sample Type	Analyte	Rec. %	Low Limit	High Limit	Dilution Factor	Sample Qualifier
1633	MW-05S-20240410	N	M2-6:2 FTS	227	25	200	1	None
1633	MW-05S-20240410	N	M2-4:2 FTS	361	25	150	1	None
1633	MW-05I-20240410	N	MPFBA	21.0	25	150	1	None
1633	MW-05I-20240410	N	M2-6:2 FTS	212	25	200	1	None
1633	MW-05I-20240410	N	M2-4:2 FTS	357	25	150	1	None
8260	OH-MW03D-20240410	N	1,2-Dichloroethane-d4	135	69	130	1	None
8260	DUP02-2040410	N	1,2-Dichloroethane-d4	140	69	130	1	None
8270	OH-MW03I-20240410	N	2-Fluorophenol	0	19.7	63.1	100	None
8270	OH-MW03I-20240410	N	Phenol-d6	0	10.1	41.7	100	None
8270	OH-MW03I-20240410	N	Nitrobenzene-d5	124	50.2	113	100	None
8270	OH-MW03I-20240410	N	2-Fluorobiphenyl	112	39.9	105	100	None
8270	OH-MW03I-20240410	N	Terphenyl-d14	0	30.7	106	100	None
8270	OH-MW03D-20240410	N	2-Fluorophenol	4.4	19.7	63.1	20	None
8270	OH-MW03D-20240410	N	Phenol-d6	0	10.1	41.7	20	None
8270	DUP02-2040410	N	2-Fluorophenol	0	19.7	63.1	20	None
8270	DUP02-2040410	N	Phenol-d6	0	10.1	41.7	20	None
8270	OH-MW04I-20240411	N	Nitrobenzene-d5	126	50.2	113	1	None
8270	OH-MW04S-20240411	N	Nitrobenzene-d5	116	50.2	113	1	None
8270	OH-MW03I-20240410	DIL	Nitrobenzene-d5	0	50.2	113	500	None
8270	OH-MW04I-20240411	DIL	Nitrobenzene-d5	0	50.2	113	100	None
1633	OH-MW03I-20240410	N	M4PFHpA	163	25	150	1	None
1633	OH-MW03I-20240410	N	M2-4:2 FTS	444	25	150	1	None
1633	OH-MW03D-20240410	N	MPFBA	3.81	25	150	1	R
1633	OH-MW03D-20240410	N	M2-4:2 FTS	207	25	150	1	None
1633	DUP02-2040410	N	MPFBA	2.57	25	150	1	UR
1633	DUP02-2040410	N	M2-6:2 FTS	203	25	200	1	J
1633	DUP02-2040410	N	M2-4:2 FTS	368	25	150	1	None
1633	OH-MW04I-20240411	N	MPFBA	1.29	25	150	1	UR

Method	Sample ID	Sample Type	Analyte	Rec. %	Low Limit	High Limit	Dilution Factor	Sample Qualifier
1633	OH-MW04I-20240411	N	M2-6:2 FTS	363	25	200	1	None
1633	OH-MW04I-20240411	N	M2-4:2 FTS	453	25	150	1	None
1633	OH-MW04S-20240411	N	MPFDoA	13.1	25	150	1	None
1633	OH-MW04S-20240411	N	M2PFTeDA	2.69	25	150	1	UR
1633	OH-MW04S-20240411	N	MPFBA	5.63	25	150	1	UR
1633	OH-MW04S-20240411	N	M2-6:2 FTS	314	25	200	1	None
1633	OH-MW04S-20240411	N	M2-4:2 FTS	370	25	150	1	None
1633	OH-MW04S-20240411	N	d-N-MeFOSA	12.0	25	150	1	None
1633	OH-MW04S-20240411	N	d-N-EtFOSA	7.26	25	150	1	UR
1633	OH-MW04S-20240411	N	d9-N-EtFOSE	1.86	25	150	1	UR
1633	OH-MW04S-20240411	N	d7-N-MeFOSE	2.94	25	150	1	UR
8260	OH-MW05I-20240411	N	1,2-Dichloroethane-d4	53	69	130	1	J- / UJ
8260	OH-MW06S-20240412	N	1,2-Dichloroethane-d4	134	69	130	1	J+
8260	OH-MW06I-20240412	N	1,2-Dichloroethane-d4	139	69	130	1	None
8270	OH-MW05I-20240411	N	2-Fluorophenol	0	19.7	63.1	200	None
8270	OH-MW05I-20240411	N	Phenol-d6	0	10.1	41.7	200	None
8270	OH-MW05I-20240411	N	Nitrobenzene-d5	0	50.2	113	200	None
8270	OH-MW05I-20240411	N	2-Fluorobiphenyl	0	39.9	105	200	None
8270	OH-MW05I-20240411	N	2,4,6-Tribromophenol	0	39.3	151	200	None
8270	OH-MW05S-20240411	N	2,4,6-Tribromophenol	155	39.3	151	1	None
8270	OH-MW05D-20240411	N	Nitrobenzene-d5	130	50.2	113	2	J+
8270	OH-MW05D-20240411	N	Terphenyl-d14	111	30.7	106	2	None
8270	OH-MW06D-20240412	N	2,4,6-Tribromophenol	181	39.3	151	1	None
8270	OH-MW06I-20240412	N	2-Fluorophenol	74.9	19.7	63.1	1	None
8270	OH-MW06I-20240412	N	Phenol-d6	48.8	10.1	41.7	1	None
8270	OH-MW06I-20240412	N	2,4,6-Tribromophenol	161	39.3	151	1	None
8270	OH-MW06I-20240412	DIL	Nitrobenzene-d5	0	50.2	113	10	J+
8081	OH-MW05I-20240411	N	Tetrachloro-m-xylene	162	30	150	1	None

Method	Sample ID	Sample Type	Analyte	Rec. %	Low Limit	High Limit	Dilution Factor	Sample Qualifier
1633	OH-MW05S-20240411	N	M4PFHpA	188	25	150	1	J
1633	OH-MW05S-20240411	N	MPFBA	1.71	25	150	1	UR
1633	OH-MW05S-20240411	N	M2-6:2 FTS	282	25	200	1	None
1633	OH-MW05S-20240411	N	M2-4:2 FTS	263	25	150	1	None
1633	OH-MW05D-20240411	N	M4PFHpA	172	25	150	1	None
1633	OH-MW05D-20240411	N	MPFBA	3.64	25	150	1	UR
1633	OH-MW05D-20240411	N	M2-6:2 FTS	206	25	200	1	J
1633	OH-MW05D-20240411	N	M2-4:2 FTS	328	25	150	1	None
1633	OH-MW05I-20240411	N	MPFBA	5.85	25	150	1	UR
1633	OH-MW05I-20240411	N	M2-6:2 FTS	458	25	200	1	None
1633	OH-MW05I-20240411	N	M2-4:2 FTS	653	25	150	1	None
1633	OH-MW06S-20240412	N	M4PFHpA	161	25	150	1	J
1633	OH-MW06S-20240412	N	M2-6:2 FTS	426	25	200	1	None
1633	OH-MW06S-20240412	N	M2-4:2 FTS	565	25	150	1	None
1633	OH-MW06D-20240412	N	M4PFHpA	194	25	150	1	None
1633	OH-MW06D-20240412	N	M2-4:2 FTS	220	25	150	1	None
1633	OH-MW06I-20240412	N	MPFBA	2.6	25	150	1	UR
1633	OH-MW06I-20240412	N	M2-6:2 FTS	586	25	200	1	None
1633	OH-MW06I-20240412	N	M2-4:2 FTS	709	25	150	1	None
8270	OH-MW08I-20240415	DIL	Nitrobenzene-d5	0	50.2	113	100	None
8270	OH-MW07I-20240415	DIL	Nitrobenzene-d5	0	50.2	113	200	None
8081	OH-MW07I-20240415	N	Decachlorobiphenyl	12300	30	150	40	None
8081	OH-MW07I-20240415	N	Tetrachloro-m-xylene	5770	30	150	40	None
8081	OH-MW07I-20240415	N	Decachlorobiphenyl	0	30	150	20	None
8081	OH-MW07I-20240415	N	Tetrachloro-m-xylene	0	30	150	20	None
1633	OH-MW07I-20240415	N	M4PFHpA	195	25	150	1	None
1633	OH-MW07I-20240415	N	MPFBA	1.37	25	150	1	R
1633	OH-MW07I-20240415	N	M2-6:2 FTS	247	25	200	1	None

Method	Sample ID	Sample Type	Analyte	Rec. %	Low Limit	High Limit	Dilution Factor	Sample Qualifier
1633	OH-MW07I-20240415	N	M2-4:2 FTS	279	25	150	1	None
1633	OH-MW08I-20240415	N	M4PFHpA	178	25	150	1	None
1633	OH-MW08I-20240415	N	MPFBA	8.43	25	150	1	R
1633	OH-MW08I-20240415	N	M2-4:2 FTS	189	25	150	1	None

Table 4 – Internal Standards outside Control Limits

Method	Sample	Internal Standard	%R	Low Limit	High Limit	Associated Analytes	Qualifier
1633	OH-MW06S-20240412	MPFHxA	49	50	150	PFHxA	J

Table 5 – List of MS/MSD Recoveries and RPDs outside Control Limits

Method	Sample ID	Sample Type	Analyte	Orig. Result	Spike Amount	MS/MSD Rec. (%)	Low Limit	High Limit	Sample Qualifier
8260	OH-MW01I-20240404	N	1,1,1-Trichloroethane	ND	10	168 175	70	146	None
8260	OH-MW01I-20240404	N	1,1,2,2-Tetrachloroethane	ND	10	162 170	74	121	None
8260	OH-MW01I-20240404	N	1,1,2-Trichloroethane	ND	10	141 149	59	146	None
8260	OH-MW01I-20240404	N	1,1-Dichloroethane	ND	10	152 161	54	146	None
8260	OH-MW01I-20240404	N	1,2,3-Trichloropropane	ND	10	151 159	74	127	None
8260	OH-MW01I-20240404	N	1,2-Dibromo-3-chloropropane	ND	10	164 177	31	151	None

Method	Sample ID	Sample Type	Analyte	Orig. Result	Spike Amount	MS/MSD Rec. (%)	Low Limit	High Limit	Sample Qualifier
8260	OH-MW01I-20240404	N	1,2-Dibromoethane	ND	10	148 154	75	125	None
8260	OH-MW01I-20240404	N	1,2-Dichlorobenzene	ND	10	124 126	63	122	None
8260	OH-MW01I-20240404	N	1,2-Dichloroethane	ND	10	172 182	68	131	None
8260	OH-MW01I-20240404	N	1,2-Dichloropropane	ND	10	150 158	77	121	None
8260	OH-MW01I-20240404	N	1,3,5-Trimethylbenzene	ND	10	126 127	69	126	None
8260	OH-MW01I-20240404	N	1,3-Dichloropropane	ND	10	150 158	77	119	None
8260	OH-MW01I-20240404	N	2-Hexanone	ND	10	163 172	53	133	None
8260	OH-MW01I-20240404	N	4-Methyl-2-pentanone	ND	10	173 184	38	150	None
8260	OH-MW01I-20240404	N	Bromochloromethane	ND	10	153 162	75	121	None
8260	OH-MW01I-20240404	N	Bromodichloromethane	ND	10	161 171	70	129	None
8260	OH-MW01I-20240404	N	Bromoform	ND	10	134 145	66	136	None
8260	OH-MW01I-20240404	N	Chlorobenzene	ND	10	146 154	81	117	None
8260	OH-MW01I-20240404	N	Chloroethane	ND	10	147 147	51	145	None
8260	OH-MW01I-20240404	N	Chloroform	0.930	10	149 159	80	124	None
8260	OH-MW01I-20240404	N	Chloromethane	ND	10	155 174	16	163	None

Method	Sample ID	Sample Type	Analyte	Orig. Result	Spike Amount	MS/MSD Rec. (%)	Low Limit	High Limit	Sample Qualifier
8260	OH-MW01I-20240404	N	Cis-1,2-dichloroethylene	ND	10	150 160	76	125	None
8260	OH-MW01I-20240404	N	Cis-1,3-dichloropropylene	ND	10	140 150	58	131	None
8260	OH-MW01I-20240404	N	Dibromochloromethane	ND	10	136 144	71	129	None
8260	OH-MW01I-20240404	N	Dibromomethane	ND	10	147 156	76	120	None
8260	OH-MW01I-20240404	N	Ethylbenzene	ND	10	148 154	72	128	None
8260	OH-MW01I-20240404	N	Isopropylbenzene	ND	10	138 141	66	139	None
8260	OH-MW01I-20240404	N	Methyl Tert-Butyl Ether	ND	10	149 159	75	128	None
8260	OH-MW01I-20240404	N	Methylene Chloride	0.320 J	10	137 146	57	128	None
8260	OH-MW01I-20240404	N	Butylbenzene	ND	10	159 82.1	61	138	UJ
8260	OH-MW01I-20240404	N	o-Xylene	ND	10	146 152	69	126	None
8260	OH-MW01I-20240404	N	m,p-Xylene	ND	20	152 157	67	130	None
8260	OH-MW01I-20240404	N	Ethyltoluene	ND	10	132 132	76	127	None
8260	OH-MW01I-20240404	N	Styrene	ND	10	135 141	69	125	None
8260	OH-MW01I-20240404	N	Tert-butyl alcohol	ND	50	158 168	10	130	None
8260	OH-MW01I-20240404	N	Tetrachloroethylene	ND	10	52.4 52.6	64	139	UJ

Method	Sample ID	Sample Type	Analyte	Orig. Result	Spike Amount	MS/MSD Rec. (%)	Low Limit	High Limit	Sample Qualifier
8260	OH-MW01I-20240404	N	Toluene	ND	10	146 153	76	123	None
8260	OH-MW01I-20240404	N	Trans-1,2-dichloroethylene	ND	10	153 159	79	131	None
8260	OH-MW01I-20240404	N	Trans-1,3-dichloroethylene	ND	10	150 160	55	130	None
8260	OH-MW01I-20240404	N	Trichlorofluoromethane	ND	10	150 140	61	142	None
8270	OH-MW01I-20240404	N	1,1-Biphenyl	ND	25	100 116	26	79	None
8270	OH-MW01I-20240404	N	1,2,4,5-Tetrachlorobenzene	ND	25	95.8 111	33	90	None
8270	OH-MW01I-20240404	N	1,2,4-Trichlorobenzene	ND	25	87.9 106	31	88	None
8270	OH-MW01I-20240404	N	1,2-Dichlorobenzene	ND	25	78.2 96.8	24	93	None
8270	OH-MW01I-20240404	N	1,2-Diphenylhydrazine	ND	25	121 127	21	107	None
8270	OH-MW01I-20240404	N	1,3-Dichlorobenzene	ND	25	75.0 92.9	28	86	None
8270	OH-MW01I-20240404	N	1,4-Dichlorobenzene	ND	25	76.8 95.4	25	85	None
8270	OH-MW01I-20240404	N	2,3,4,6-Tetrachlorophenol	ND	25	84 132	30	130	None
8270	OH-MW01I-20240404	N	2,4,5-Trichlorophenol	ND	25	73.7 114	43	96	None
8270	OH-MW01I-20240404	N	2,4,6-Trichlorophenol	ND	25	81.1 125	46	94	None
8270	OH-MW01I-20240404	N	2,4-Dichlorophenol	ND	25	84.9 125	26	101	None

Method	Sample ID	Sample Type	Analyte	Orig. Result	Spike Amount	MS/MSD Rec. (%)	Low Limit	High Limit	Sample Qualifier
8270	OH-MW01I-20240404	N	2,4-Dimethylphenol	ND	25	99.1 111	10	104	None
8270	OH-MW01I-20240404	N	2,4-Dinitrophenol	ND	25	48.0 158	10	146	None
8270	OH-MW01I-20240404	N	2,4-Dinitrotoluene	ND	25	164 178	30	108	None
8270	OH-MW01I-20240404	N	2,6-Dinitrotoluene	ND	25	163 174	38	98	None
8270	OH-MW01I-20240404	N	2-Chloronaphthalene	ND	25	96.8 112	30	89	None
8270	OH-MW01I-20240404	N	2-Chlorophenol	ND	25	65 102	24	98	None
8270	OH-MW01I-20240404	N	2-Methylnaphthalene	ND	25	102 120	10	112	None
8270	OH-MW01I-20240404	N	2-Nitroaniline	ND	25	150 163	25	110	None
8270	OH-MW01I-20240404	N	2-Nitrophenol	ND	25	94.4 149	10	139	None
8270	OH-MW01I-20240404	N	3-Nitroaniline	ND	25	120 104	22	111	None
8270	OH-MW01I-20240404	N	4,6-Dinitro-2-methylphenol	ND	25	134 227	10	140	None
8270	OH-MW01I-20240404	N	4-Bromophenyl Phenyl Ether	ND	25	127 133	30	108	None
8270	OH-MW01I-20240404	N	4-Chloro-3-methylphenol	ND	25	117 133	11	109	None
8270	OH-MW01I-20240404	N	4-Chlorophenyl Phenyl Ether	ND	25	113 122	39	85	None
8270	OH-MW01I-20240404	N	4-Nitroaniline	ND	25	134 145	11	132	None

Method	Sample ID	Sample Type	Analyte	Orig. Result	Spike Amount	MS/MSD Rec. (%)	Low Limit	High Limit	Sample Qualifier
8270	OH-MW01I-20240404	N	4-Nitrophenol	ND	25	29 0	10	82	UJ
8270	OH-MW01I-20240404	N	Acetophenone	ND	25	97.7 0	14	102	UJ
8270	OH-MW01I-20240404	N	Aniline	ND	25	123 120	10	80	None
8270	OH-MW01I-20240404	N	Benzaldehyde	ND	25	93.4 116	13	87	None
8270	OH-MW01I-20240404	N	Benzoic Acid	ND	25	0 49.4	10	162	UJ
8270	OH-MW01I-20240404	N	Bis(2-chloroethoxy)methane	ND	25	108 126	18	105	None
8270	OH-MW01I-20240404	N	Bis(2-chloroethyl)ether	ND	25	155 151	10	108	None
8270	OH-MW01I-20240404	N	Bis(2-chloroisopropyl)ether	ND	25	101 123	13	116	None
8270	OH-MW01I-20240404	N	Carbazole	ND	25	121 131	36	108	None
8270	OH-MW01I-20240404	N	Dibenzofuran	ND	25	109 119	34	92	None
8270	OH-MW01I-20240404	N	Diethyl Phthalate	ND	25	119 126	33	98	None
8270	OH-MW01I-20240404	N	Dimethyl Phthalate	ND	25	120 126	18	116	None
8270	OH-MW01I-20240404	N	Di-n-butyl Phthalate	ND	25	128 135	25	97	None
8270	OH-MW01I-20240404	N	Di-n-octyl Phthalate	ND	25	139 146	10	137	None
8270	OH-MW01I-20240404	N	Hexachlorocyclopentadiene	ND	25	67.6 80	10	79	None

Method	Sample ID	Sample Type	Analyte	Orig. Result	Spike Amount	MS/MSD Rec. (%)	Low Limit	High Limit	Sample Qualifier
8270	OH-MW01I-20240404	N	Isophorone	ND	25	126 139	25	103	None
8270	OH-MW01I-20240404	N	N-Nitroso-di-n-propylamine	ND	25	106 122	19	115	None
8270	OH-MW01I-20240404	N	N-Nitrosodiphenylamine	ND	25	131 143	31	112	None
8082	OH-MW01I-20240404	N	Aroclor 1016	ND	1	38 68.1	40	140	None
6010	OH-MW01I-20240404	N	Potassium	33.3	1.11	68.1	75	125	None
6010	OH-MW01I-20240404	N	Silver	1080	1.11	418	75	125	None
6020	OH-MW01I-20240404	N	Beryllium	1.37	50	66.9	75	125	J
1633	OH-MW01I-20240404	N	FHpPA	ND	733	17.7 18.2	25	150	UJ
1633	OH-MW01I-20240404	N	FPrPA	ND	147	448 435	25	150	UJ
1633	OH-MW01I-20240404	N	PFHpS	ND	35	137 156	25	150	None
1633	OH-MW01I-20240404	N	PFNA	0.638	36.7	175 149	25	150	J
1633	OH-MW01I-20240404	N	PFOA	2.80	36.7	143 151	25	150	J
1633	OH-MW01I-20240404	N	PFTrDA	ND	36.7	140 174	25	150	UJ
8260	MW-04D-20240404	N	Cyclohexane	ND	10	157 170	70	130	None
8260	MW-04D-20240404	N	Chloromethane	ND	10	173	70	163	None
8260	MW-04D-20240404	N	Didchlorodifluoromethane	ND	10	213 240	30	147	None

Method	Sample ID	Sample Type	Analyte	Orig. Result	Spike Amount	MS/MSD Rec. (%)	Low Limit	High Limit	Sample Qualifier
8260	MW-04D-20240404	N	Methylcyclohexane	ND	10	143 156	70	130	None
8260	MW-04D-20240404	N	Tetrachloroethylene	ND	10	51.3 55.7	64	139	UJ
8260	MW-04D-20240404	N	Trichlorofluoromethane	ND	10	158 174	61	142	None
8270	MW-04D-20240404	N	Aniline	ND	25	83.9	10	80	None
8270	MW-04D-20240404	N	Bis(2-chloroethoxy)ether	ND	25	130	10	108	None
8270	MW-04D-20240404	N	Caprolactam	ND	25	0	10	75	None
8270	MW-04D-20240404	N	Hexachlorocyclopentadiene	ND	25	0 0	10	79	None
8081	MW-04D-20240404	N	Endrin aldehyde	ND	0.1	152	30	150	None
8081	MW-04D-20240404	N	Heptachlor	ND	0.1	337 311	30	150	None
8081	MW-04D-20240404	N	Methoxychlor	ND	0.1	172 154	30	150	None
6010	MW-04D-20240404	N	Silver	ND	0.0556 0.0500	97.2 30.6	75	125	UJ
1633	MW-04D-20240404	N	PFMPA	ND	81.6 77.6	10.6 11.2	25	150	UJ
1633	MW-04D-20240404	N	PFMBA	ND	77.6	155	25	150	UJ
1633	MW-04D-20240404	N	N-EtFOSAA	ND	38.8	161	25	150	UJ
6010	MW-05S-20240410	N	Calcium	112	1.11 1	92.1 311	75	125	None
6010	MW-05S-20240410	N	Magnesium	58.2	1.11	-2.66	75	125	None
6010	MW-05S-20240410	N	Potassium	37.5	1.11	137	75	125	None
6010	MW-05S-20240410	N	Silver	ND	0.0556 0.0500	96.6 24.5	75	125	UJ
6010	MW-05S-20240410	N	Sodium	878	1.11	-241	75	125	None
6010	GWRinse Blank	RB	Aluminum	ND	2.22	70.1	75	125	UJ

Method	Sample ID	Sample Type	Analyte	Orig. Result	Spike Amount	MS/MSD Rec. (%)	Low Limit	High Limit	Sample Qualifier
6010	GWRinse Blank	RB	Calcium	0.114	1.11	69.5	75	125	J
6010	GWRinse Blank	RB	Iron	ND	1.11	73.0	75	125	UJ
6010	GWRinse Blank	RB	Magnesium	ND	1.11	68.8	75	125	UJ
6010	GWRinse Blank	RB	Potassium	ND	1.11	69.0	75	125	UJ
6010	GWRinse Blank	RB	Silver	ND	0.0556	70.2	75	125	UJ
6010	GWRinse Blank	RB	Zinc	0.0427	0.556	72.5	75	125	J

Method	Sample ID	Sample Type	Analyte	RPD	RPD Limit	Sample Qual.
8260	OH-MW01I-20240404	N	Bromomethane	66.3	30	None
8260	OH-MW01I-20240404	N	Butylbenzene	64.0	30	None
8270	OH-MW01I-20240404	N	2,3,4,6-Tetrachlorophenyl	44.1	25	None
8270	OH-MW01I-20240404	N	2,4,5-Trichlorophenol	42.7	25	None
8270	OH-MW01I-20240404	N	2,4,6-Trichlorophenol	42.5	25	None
8270	OH-MW01I-20240404	N	2,4-Dichlorophenol	38.0	25	None
8270	OH-MW01I-20240404	N	2,4-Dinitrophenol	107	25	None
8270	OH-MW01I-20240404	N	2-Chlorophenol	44.8	25	None
8270	OH-MW01I-20240404	N	2-Nitrophenol	45.2	25	None
8270	OH-MW01I-20240404	N	4,6-Dinitro-2-methylphenol	51.2	25	None
8270	OH-MW01I-20240404	N	4-Chloroaniline	33.7	25	None
8270	OH-MW01I-20240404	N	4-Nitrophenol	NC	25	None
8270	OH-MW01I-20240404	N	Acetophenone	NC	25	None
8270	OH-MW01I-20240404	N	Pyridine	120	25	None
8270	OH-MW01I-20240404	N	Benzaldehyde	21.3	25	None
8082	OH-MW01I-20240404	N	Aroclor 1016	56.8	20	None
8082	OH-MW01I-20240404	N	Aroclor 1260	25.1	20	None
1633	OH-MW01I-20240404	N	N-MeFOSA	39.4	30	UJ
1633	OH-MW01I-20240404	N	PFOS	44.7	30	UJ

Method	Sample ID	Sample Type	Analyte	RPD	RPD Limit	Sample Qual.
8260	MW-04D-20240404	N	1,4-Dioxane	62.9	30	None
8270	MW-04D-20240404	N	1,2,4,5-Tetrachlorobenzene	26.2	25	None
8270	MW-04D-20240404	N	1,2,4-Trichlorobenzene	26.8	25	None
8270	MW-04D-20240404	N	1,2-Dichlorobenzene	27.7	25	None
8270	MW-04D-20240404	N	1,3-Dichlorobenzene	28.3	25	None
8270	MW-04D-20240404	N	1,4-Dichlorobenzene	26.6	25	None
8270	MW-04D-20240404	N	2,4-Dichlorophenol	28.0	25	None
8270	MW-04D-20240404	N	2,6-Dimethylphenol	27.9	25	None
8270	MW-04D-20240404	N	2,4-Dinitrophenol	33.8	25	None
8270	MW-04D-20240404	N	2-Chloronaphthalene	25.2	25	None
8270	MW-04D-20240404	N	2-Chlorophenol	29.8	25	None
8270	MW-04D-20240404	N	2-Methylnaphthalene	27.3	25	None
8270	MW-04D-20240404	N	2-Methylphenol	30.5	25	None
8270	MW-04D-20240404	N	2-Nitrophenol	29.3	25	None
8270	MW-04D-20240404	N	3&4-Methylphenols	33.2	25	None
8270	MW-04D-20240404	N	3,3-Dichlorobenzidine	31.5	25	None
8270	MW-04D-20240404	N	4,6-Dinitro-2-methylphenol	25.8	25	None
8270	MW-04D-20240404	N	4-Nitrophenol	25.7	25	None
8270	MW-04D-20240404	N	Benzaldehyde	25.8	25	None
8270	MW-04D-20240404	N	Benzoic Acid	34.3	25	None
8270	MW-04D-20240404	N	Benzyl Alcohol	27.2	25	None
8270	MW-04D-20240404	N	Bis(2-chloroethoxy)methane	26.4	25	None
8270	MW-04D-20240404	N	Bis(2-chloroisopropyl)ether	30.1	25	None
8270	MW-04D-20240404	N	Isophorone	26.5	25	None
8270	MW-04D-20240404	N	N-Nitropsodi-n-propylamine	26.4	25	None
8270	MW-04D-20240404	N	Phenol	32.2	25	None
8082	MW-04D-20240404	N	Aroclor 1016	28.6	20	None
8082	MW-04D-20240404	N	Aroclor 1260	34.1	20	None

Table 6 - List of LCS Recoveries and RPDs outside Control Limits

Method	Sample ID	Analyte	Rec.	Low Limit	High Limit	Associated Samples	Sample Qualifier
8260	BD40642-BS1	1,1,1,2-Tetrachloroethane	81.9	82	126	MW-04I-20240404 OH-MW01I-20240404	UJ
8260	BD40642-BS1 BD40642-BSD1	1,3-Dichlorobenzene	73.8 77.1	86	122		UJ
8260	BD40642-BS1 BD40642-BSD1	Butylbenzene	76.3 146	79	132		UJ
8260	BD40642-BS1 BD40642-BSD1	Tetrachloroethylene	36.2 37.5	81	131		UJ
1633	BD40705-BS2	6:2 FTS	168	50	150	MW-04I-20240404 OH-MW01I-20240404	J
1633	BD40705-BS1 BD40705-BS2	FHpPA	15.5 8.77	50	150		UJ
1633	BD40705-BS1	N-MeFOSA	155	50	150		UJ
1633	BD40705-BS1 BD40705-BS2	FPrPA	490 462	50	150		UJ
1633	BD40705-BS1 BD40705-BS2	PFMPA	21.2 29.1	50	150		UJ
1633	BD40705-BS2	PFNA	178	50	150	MW-04I-20240404	UJ
						OH-MW01I-20240404	J
8260	BD40624-BS1 BD40624-BSD1	1,3-Dichlorobenzene	83.3 81.8	86	122	MW-04D-20240404 OH-MW01S-20240404 MW-04S-202405 OH-MW02I-20240405	UJ
8260	BD40624-BS1 BD40624-BSD1	1,4-Dichlorobenzene	82.3 79.3	85	124		UJ
8260	BD40624-BSD1	Chlorobenzene	86.8	88	120		UJ
8260	BD40624-BS1 BD40624-BSD1	Dichlorodifluoromethane	168 159	44	144		None – High and ND
8260	BD40624-BS1 BD40624-BSD1	Tetrachloroethylene	47.9 45.3	82	131		UJ
8260	BD40624-BS1	Trichlorofluoromethane	145	67	139		None – High and ND
8260	BD40731-BSD1	1,1,1,2-Tetrachloroethane	80.7	82	126	DUP01-20240405	UJ

Method	Sample ID	Analyte	Rec.	Low Limit	High Limit	Associated Samples	Sample Qualifier
8260	BD40731-BSD1	1,1,1-Trichloroethane	75.6	78	136	MW-07D-20240405 MW-07S-20240405 MW-07I-20240405 MW-07S-20240405	UJ
8260	BD40731-BSD1	1,2,3-Trichlorobenzene	75.1	76	136		UJ
8260	BD40731-BSD1	1,2,4-Trichlorobenzene	75.2	76	137		UJ
8260	BD40731-BSD1	1,2-Dibromoethane	81.2	83	124		UJ
8260	BD40731-BS1 BD40731-BSD1	1,3-Dichlorobenzene	84.4 77.9	86	122		UJ
8260	BD40731-BS1 BD40731-BSD1	1,4-Dichlorobenzene	82.7 76.6	85	124		UJ
8260	BD40731-BSD1	Carbon Tetrachloride	73.4	77	141		UJ
8260	BD40731-BSD1	Chlorobenzene	83.9	88	120		UJ
8260	BD40731-BSD1	Chloroform	80.8	82	128		UJ
8260	BD40731-BSD1 BD40731-BSD1	Tetrachloroethylene	41 37.4	82	131		UJ
8260	BD40731-BSD1	Trichloroethylene	79.5	82	128		UJ
8260	BD40731-BSD1	Benzene	83.1	85	126		UJ
8260	BD40797-BS1 BD40797-BSD1	1,3-Dichlorobenzene	79.3 75.5	86	122	Trip Blank	UJ
8260	BD40797-BS1 BD40797-BSD1	Tetrachloroethylene	40.2 37.3	82	131		UJ
8270	BD40785-BSD1	1,1-Biphenyl	116	33	95	MW-04I-20240404 OH-MW01I-20240404 OH-MW01S-20240404 MW-04D-20240404 MW-07S-20240405 MW-07I-202404065	None – High and ND
8270	BD40785-BSD1	2,4-Dichlorophenol	121	25	116		None – High and ND
8270	BD40785-BSD1	2,4-Dinitrophenol	ND	10	170		UR
8270	BD40785-BS1 BD40785-BSD1	2,4-Dinitrotoluene	136 165	41	128		None – High and ND
8270	BD40785-BS1 BD40785-BSD1	2,6-Dinitrotoluene	133 169	45	116		None – High and ND
8270	BD40785-BSD1	2-Methylnaphthalene	119	24	118		None – High and ND
8270	BD40785-BSD1	2-Nitroaniline	156	34	129		None – High and ND
8270	BD40785-BSD1	2-Nitrophenol	127	38	118		None – High and ND

Method	Sample ID	Analyte	Rec.	Low Limit	High Limit	Associated Samples	Sample Qualifier
8270	BD40785-BSD1	4-Bromophenyl Phenyl Ether	126	34	120		None – High and ND
8270	BD40785-BSD1	4-Chloro-3-methylphenol	131	20	120		None – High and ND
8270	BD40785-BSD1	4-Nitroaniline	146	13	134		None – High and ND
8270	BD40785-BSD1	4-Nitrophenol	202	10	131		None – High and ND
8270	BD40785-BSD1	Acetophenone	122	25	110		None – High and ND
8270	BD40785-BSD1	Aniline	123	10	117		None – High and ND
8270	BD40785-BS1 BD40785-BSD1	Benzoic Acid	ND ND	30	130		UR
8270	BD40785-BSD1	Bis(2-chloroethyl)ether	155	17	125		None – High and ND
8270	BD40785-BSD1	Dibenzofuran	116	36	113		None – High and ND
8270	BD40785-BSD1	Diethyl Phthalate	118	38	115		None – High and ND
8270	BD40785-BSD1	Isophorone	135	25	127		None – High and ND
8270	BD40785-BS1 BD40785-BSD1	Pyridine	7.23 ND	10	90		UR
8270	BD40875-BS1	Benzoic Acid	21.6	30	130		UJ
8270	BD40875-BS1	Hexachlorocyclopentadiene	ND	10	130		UR
8270	BD41001-BS1	4-Nitrophenol	134	10	131	MW-04S-20240405 OH-MW02I-20240405 DUP01-20240405 MW-07D-20240405	None – High and ND
8270	BD41001-BS1	Benzoic Acid	ND	30	130	MW-04S-20240405 OH-MW02I-20240405 DUP01-20240405 MW-07D-20240405	UR
8270	BD41001-BS1	Bis(2-chloroethyl)ether	142	17	125		None – High and ND
8270 SIM	BD40785-BS2	Fluoranthrene	122	32	121	OH-MW01S-20240404 MW-04D-20240404 MW-07S-20240405 MW-07I-202404065 MW-04S-2040405 OH-MW02I-20240405	J
8270 SIM	BD40785-BS2	Hexachlorobenzene	146	23	124		None – High and ND
8270 SIM	BD40785-BS2	Hexachloroethane	359	18	115		None – High and ND
8270 SIM	BD40785-BS2	Naphthalene	274	18	120		J
8270 SIM	BD40785-BS2	N-Nitrosodimethylamine	ND	10	124		UR

Method	Sample ID	Analyte	Rec.	Low Limit	High Limit	Associated Samples	Sample Qualifier
8270 SIM	BD40875-BS2	Hexachlorobenzene	131	23	124	DUP01-20240405 MW-07D-20240405	None – High and ND
8270 SIM	BD40875-BS2	Hexachloroethane	406	18	115		None – High and ND
8270 SIM	BD40875-BS2	N-Nitrosodimethylamine	ND	10	124		UR
8270 SIM	BD40875-BS2	Pentachlorophenol	163	10	156		None – High and ND
8270 SIM	BD41001-BS2	Hexachloroethane	415	18	115		None – High and ND
8270 SIM	BD41001-BS2	N-Nitrosodimethylamine	ND	10	124		UR
8270 SIM	BD41001-BS2	Pentachlorophenol	172	10	156		None – High and ND
8260	BD40935-BS1 BD40935-BSD1	1,3-Dichlorobenzene	83.8 80.6	86	122	MW-05D-20240410 MW-05I-20240410 MW-05S-20240410 MW-06D-20240409 MW-06I-20240409 MW-06S-20240409 Trip Blank	UJ
8260	BD40935-BS1 BD40935-BSD1	1,4-Dichlorobenzene	82.2 78.7	85	124		UJ
8260	BD40935-BSD1	Chlorobenzene	86.4	88	120		UJ
8260	BD40935-BS1 BD40935-BSD1	Tetrachloroethylene	42.7 41.2	82	131		UJ
8260	BD40935-BSD1	p-Ethyltoluene	86.5	88	129	Trip Blank	J / UJ
						MW-05D-20240410 MW-05S-20240410 MW-06S-20240409	J
8270	BD41111-BS1 BD41111-BSD1	4-Nitrophenol	154 159	10	131	MW-06D-20240409 MW-06I-20240409 MW-06S-20240409	None – High and ND
8270	BD41111-BS1 BD41111-BSD1	Benzoic Acid	ND ND	30	130		UR
8270	BD41111-BSD1	Bis(2-chloroethyl)ether	129	17	125		None – High and ND
8270	BD41321-BS1	2,6-Dinitrotoluene	120	45	116	MW-05D-20240410 MW-05I-20240410 MW-05S-20240410 MW-05D-20240410 MW-05S-20240410	None – High and ND
8270	BD41321-BS1 BD41321-BSD1	Benzoic Acid	28.8 26.8	30	130		UJ
8270	BD41321-BS1 BD41321-BSD1	Caprolactam	ND ND	10	137		UR
8270	BD41321-BS1 BD41321-BSD1	4-Nitrophenol	150 139	10	131		UJ

Method	Sample ID	Analyte	Rec.	Low Limit	High Limit	Associated Samples	Sample Qualifier
8270SIM	BD41111-BS2	Hexachloroethane	336	18	115	MW-05I-20240410	None – High and ND
8270SIM	BD41111-BS2	Hexachloroethane	336	18	115	MW-06D-20240409 MW-06I-20240409 MW-06S-20240409	None – High and ND
8270SIM	BD41111-BS2	N-Nitrosodimethylamine	ND	10	124	MW-05D-20240410	UR
8270SIM	BD41321-BS2	Hexachlorobutadiene	ND	15	123	MW-05I-20240410 MW-05S-20240410	UR
8270SIM	BD41321-BS2	Hexachloroethane	225	18	115	MW-05D-20240410 MW-05I-20240410 MW-05S-20240410	None – High and ND
8270SIM	BD41321-BS2	N-Nitrosodimethylamine	ND	10	124	MW-05D-20240410	UR
6010	BD41341-BS1	Potassium	121	80	120	MW-05I-20240410 MW-05D-20240410 MW-05I-20240410	J
6010	BD41341-BS1	Sodium	192	80	120	MW-05D-20240410 MW-05I-20240410 MW-05S-20240410	J
1633	BD41147-BS1 BD41147-BS2	FPrPA (3:3 FTCA)	47 46.1	50	150	MW-06D-20240409 MW-06I-20240409 MW-06S-20240409 MW-05D-20240410 MW-05I-20240410 MW-05S-20240410 MW-06D-20240409 MW-06I-20240409 MW-06S-20240409	UJ
1633	BD41147-BS1 BD41147-BS2	PFMPA	28.7 21.5	50	150	DUP02-20240410 OH-MW03D-20240410	UJ
8260	BD41141-BS1 BD41141-BSD1	1,1,1,2-Tetrachloroethane	80.7 77.4	82	126	OH-MW03I-20240410 OH-MW04I-20240411	UJ
8260	BD41141-BS1 BD41141-BSD1	1,3-Dichlorobenzene	71.3 68.6	86	122	OH-MW04S-20240411 DUP02-20240410 OH-MW03D-20240410	UJ
8260	BD41141-BS1	Bromomethane	40.3	43	168	OH-MW03I-20240410	UJ

Method	Sample ID	Analyte	Rec.	Low Limit	High Limit	Associated Samples	Sample Qualifier
	BD41141-BSD1					OH-MW04I-20240411 OH-MW04S-20240411	
8260 8260	BD41141-BS1 BD41141-BSD1 BD41141-BS1 BD41141-BSD1	Tetrachloroethylene Butylbenzene	36.1 33.7 75.0 134	82 79	131 132	DUP02-20240410 OH-MW03D-20240410 OH-MW03I-20240410 OH-MW04I-20240411	UJ
						DUP02-20240410 OH-MW03D-20240410 OH-MW03I-20240410 OH-MW04I-20240411	J
8270	BD41412-BSD1	2,4-Dinitrotoluene	139	41	128	OH-MW04S-20240411 OH-MW04I-20240411 OH-MW04S-20240411	UJ
8270	BD41412-BSD1	2,4-Dinitrotoluene	139	41	128		None – High and ND
8270	BD41412-BSD1	2,6-Dinitrotoluene	135	45	116		None – High and ND
8270	BD41412-BSD1	2-Nitrophenol	121	28	118		None – High and ND
8270	BD41412-BS1 BD41412-BSD1	4-Nitrophenol	135 165	10	131		None – High and ND
8270	BD41412-BS1 BD41412-BSD1	Benzoic Acid	25.2 ND	30	130		UR
8270	BD41412-BSD1	Bis(2-chloroethyl)ether	138	17	125		None – High and ND
8270	BD41412-BS1 BD41412-BSD1	Caprolactam	ND ND	10	137	DUP02-20240410 OH-MW03D-20240410 OH-MW03I-20240410 DUP02-20240410 OH-MW03D-20240410 OH-MW03I-20240410	UR
8270 SIM	BD41321-BS2	Hexachlorobutadiene	ND	15	123		UR
8270 SIM	BD41321-BS2	Hexachloroethane	225	18	115		None – High and ND
8270 SIM	BD41321-BS2	N-Nitrosodimethylamine	ND	10	124	OH-MW04I-20240411	UR
8270 SIM	BD41412-BS2	Hexachloroethane	358	18	115	OH-MW04S-20240411 OH-MW04I-20240411 OH-MW04S-20240411 OH-MW05I-20240411 OH-MW05S-20240411 OH-MW05D-20240411	None – High and ND

Method	Sample ID	Analyte	Rec.	Low Limit	High Limit	Associated Samples	Sample Qualifier
8270 SIM	BD41412-BS2	N-Nitrosodimethylamine	ND	10	124	DUP02-20240410 OH-MW03D-20240410 OH-MW03I-20240410 OH-MW04I-20240411 OH-MW04S-20240411	UR
6010	BD41421-BS1	Copper	121	80	120	DUP02-20240410 OH-MW03D-20240410 OH-MW04I-20240411 OH-MW04S-20240411	J+
1633	BD41288-BS1 BD41288-BS2	PFMPA	31.2 34.2	50	150	OH-MW03D-20240410 OH-MW03I-20240410	UJ
1633	BD41325-BS1	N-EtFOSA	46.9	50	150	DUP02-20240410 OH-MW04I-20240411 OH-MW04S-20240411	UJ
1633	BD41325-BS1 BD41325-BS2	PFMPA	21.3 20.3	50	150	OH-MW06S-20240412 OH-MW05S-20240411	UJ
8260	BD41230-BS1	1,1,1,2-Tetrachloroethane	78.6	82	126	OH-MW05D-20240411 OH-MW05I-20240411	UJ
8260	BD41230-BS1 BD41230-BSD1	1,3-Dichlorobenzene	69.1 71.2	86	122	OH-MW06D-20240412 OH-MW06I-20240412 OH-MW06S-20240412 OH-MW05S-20240411 OH-MW05D-20240411 OH-MW05I-20240411 OH-MW06D-20240412 OH-MW06I-20240412	UJ
8260 8260	BD41230-BS1 BD41230-BSD1 BD41230-BS1 BD41230-BSD1	Tetrachloroethylene Butylbenzene	35.8 38.4 72.6 78.2	82 79	131 132	OH-MW06S-20240412 OH-MW05S-20240411 OH-MW06S-20240412 OH-MW05S-20240411	UJ UJ
8260 8260	BD41230-BS1 BD41230-BS1	1,4-Diethylbenzene 1,4-Diethylbenzene	83.4 83.4	84 84	134 134	OH-MW05D-20240411 OH-MW05I-20240411 OH-MW06D-20240412	J

Method	Sample ID	Analyte	Rec.	Low Limit	High Limit	Associated Samples	Sample Qualifier
						OH-MW06I-20240412	
						OH-MW06S-20240412 OH-MW05S-20240411	UJ
8260	BD41535-BSD1	Naphthalene	169	70	147	OH-MW05D-20240411 OH-MW05I-20240411 OH-MW06D-20240412 OH-MW06I-20240412	J
8260	BD41535-BSD1	Naphthalene	169	70	147	OH-MW05I-20240411 OH-MW06D-20240412	J
8270	BD41412-BSD1	2,4-Dinitrotoluene	139	41	128	OH-MW05S-20240411 OH-MW05D-20240411 OH-MW05I-20240411	None – High and ND
6010	BD41517-BS1	Potassium	123	80	120	OH-MW06S-20240412 OH-MW05S-20240411 OH-MW05D-20240411 OH-MW05I-20240411 OH-MW06D-20240412 OH-MW06I-20240412	J
6010	BD41517-BS1	Sodium	207	80	120	OH-MW07I-20240415 OH-MW08I-20240415	J
8260	BD41537-BS1	Dichlorodifluoromethane	152	44	144		None – High and ND
8260	BD41537-BS1 BD41537-BSD1	Tetrachloroethylene	68 64	82	130	OH-MW07I-20240415 OH-MW08I-20240415	UJ
8260	BD41697-BS1	Naphthalene	38.1	70	147	OH-MW07I-20240415 OH-MW08I-20240415 GW Rinse Blank	J
8260	BD41767-BS1	1,2,4-Trichlorobenzene	79.9	82	132		UJ
8260	BD41767-BS1	1,3,5-Trimethylbenzene	78.4	80	131		UJ
8260	BD41767-BS1	1,3-Dichlorobenzene	79.1	86	122		UJ
8260	BD41767-BS1	1,4-Dichlorobenzene	78.9	85	124		UJ
8260	BD41767-BS1	Acrolein	157	10	153		J
8260	BD41767-BS1	Cis-1,3-Dichloropropylene	79.8	80	131		UJ
8260	BD41767-BS1	p-Ethyltoluene	86.3	88	129		UJ
8260	BD41767-BS1	Tetrachloroethylene	43.7	82	131		UJ

Method	Sample ID	Analyte	Rec.	Low Limit	High Limit	Associated Samples	Sample Qualifier
8260	BD41767-BS1	Trichloroethylene	76.1	82	128	OH-MW07I-20240415	UJ
8270	BD41530-BS1 BD41530-BSD1	Benzoic Acid	18.8 17.0	30	130	OH-MW08I-20240415 GW Rinse Blank OH-MW06S-20240412 OH-MW06I-20240412 OH-MW06D-20240412	UJ
8270	BD41530-BS1	Bis(2-chloroethyl)ether	139	17	125		None – High and ND
8270	BD41530-BSD1	Hexachlorocyclopentadiene	ND	10	130		UR
8270 SIM	BD41530-BS2	Hexachloroethane	356	18	115	OH-MW07I-20240415 OH-MW08I-20240415 GW Rinse Blank	None – High and ND
8270 SIM	BD41530-BS2	N-Nitrosodimethylamine	ND	10	124	GW Rinse Blank	UR
6010	BD41628-BS1	Sodium	73.3	80	120	GW Rinse Blank	UJ
1633	BD41531-BS1	PFMPA	39.4	50	150	OH-MW07I-20240415 OH-MW08I-20240415 OH-MW06S-20240412	J
1633	BD41531-BS1	PFMPA	39.4	50	150	OH-MW05S-20240411 OH-MW05D-20240411	UJ
1633	BD41531-BS1	PFDoS	44.0	50	150	OH-MW05I-20240411 OH-MW06D-20240412 OH-MW06I-20240412 OH-MW07I-20240415 OH-MW08I-20240415	UJ

Method	Sample ID	Sample Type	Analyte	RPD	RPD Limit	Associated Samples	Sample Qual.
8260	BD40642-BS1 BD40642-BSD1	LCS LCSD	Butylbenzene	62.9	30	MW-04I-20240404 OH-MW01I-20240404	UJ
8260	BD40624-BS1 BD40624-BSD1	LCS LCSD	tert-Butyl Alcohol	98.2	30	MW-04D-20240404 OH-MW01S-20240404 MW-04S-20240405 OH-MW02I-20240405	J / UJ
8270	BD40785-BS1 BD40785-BSD1	LCS LCSD	1,1-Biphenyl	26.1	20	MW-04I-20240404 OH-MW01I-20240404	UJ

Method	Sample ID	Sample Type	Analyte	RPD	RPD Limit	Associated Samples	Sample Qual.
8270	BD40785-BS1 BD40785-BSD1	LCS LCSD	1,2,4,5-Tetrachlorobenzene	26.8	20	OH-MW01S-20240404	UJ
8270	BD40785-BS1 BD40785-BSD1	LCS LCSD	1,2,4-Trichlorobenzene	28.8	20		UJ
8270	BD40785-BS1 BD40785-BSD1	LCS LCSD	1,2-Dichlorobenzene	30.4	20		UJ
8270	BD40785-BS1 BD40785-BSD1	LCS LCSD	1,3-Dichlorobenzene	29.1	20		UJ
8270	BD40785-BS1 BD40785-BSD1	LCS LCSD	1,4-Dichlorobenzene	30.4	20		UJ
8270	BD40785-BS1 BD40785-BSD1	LCS LCSD	2,4-Dichlorophenol	28.2	20		UJ
8270	BD40785-BS1 BD40785-BSD1	LCS LCSD	2,4-Dimethylphenol	30.4	20		UJ
8270	BD40785-BS1 BD40785-BSD1	LCS LCSD	2,6-Dinitrotoluene	23.9	20		UJ
8270	BD40785-BS1 BD40785-BSD1	LCS LCSD	2-Chloronaphthalene	24.9	20		UJ
8270	BD40785-BS1 BD40785-BSD1	LCS LCSD	2-Chlorophenol	26.0	20		UJ
8270	BD40785-BS1 BD40785-BSD1	LCS LCSD	2-Methylnaphthalene	27.4	20		UJ
8270	BD40785-BS1 BD40785-BSD1	LCS LCSD	2-Methylphenol	30.5	20		UJ
8270	BD40785-BS1 BD40785-BSD1	LCS LCSD	2-Nitroaniline	24.4	20		UJ
8270	BD40785-BS1 BD40785-BSD1	LCS LCSD	3&4-Methylphenols	25.7	20		UJ
8270	BD40785-BS1 BD40785-BSD1	LCS LCSD	3,3-Dichlorobenzidine	33.6	20	MW-04I-20240404 OH-MW01I-20240404	UJ
8270	BD40785-BS1	LCS	3-Nitroaniline	29.0	20	OH-MW01S-20240404	UJ

Method	Sample ID	Sample Type	Analyte	RPD	RPD Limit	Associated Samples	Sample Qual.
	BD40785-BSD1	LCSD					
8270	BD40785-BS1 BD40785-BSD1	LCS LCSD	4,6-Dinitro-2-methylphenol	168	20		UJ
8270	BD40785-BS1 BD40785-BSD1	LCS LCSD	4-Bromophenyl Phenyl Ether	20.4	20		UJ
8270	BD40785-BS1 BD40785-BSD1	LCS LCSD	4-Chloro-3-methylphenol	24.2	20		UJ
8270	BD40785-BS1 BD40785-BSD1	LCS LCSD	4-Chloroaniline	38.5	20		UJ
8270	BD40785-BS1 BD40785-BSD1	LCS LCSD	4-Chlorophenyl Phenyl Ether	21.9	20		UJ
8270	BD40785-BS1 BD40785-BSD1	LCS LCSD	4-Nitroaniline	23.2	20		UJ
8270	BD40785-BS1 BD40785-BSD1	LCS LCSD	4-Nitrophenol	148	20		None - High and ND
8270	BD40785-BS1 BD40785-BSD1	LCS LCSD	Acetophenone	28.6	20		UJ
8270	BD40785-BS1 BD40785-BSD1	LCS LCSD	Aniline	27.5	20		UJ
8270	BD40785-BS1 BD40785-BSD1	LCS LCSD	Benzaldehyde	29.7	20		UJ
8270	BD40785-BS1 BD40785-BSD1	LCS LCSD	Benzyl Alcohol	22.6	20		UJ
8270	BD40785-BS1 BD40785-BSD1	LCS LCSD	Benzyl Butyl Phthalate	20.5	20		UJ
8270	BD40785-BS1 BD40785-BSD1	LCS LCSD	Bis(2-chlorethoxy)methane	27.1	20		UJ
8270	BD40785-BS1 BD40785-BSD1	LCS LCSD	Bis(2-chloroethyl)ether	27.5	20	MW-04I-20240404 OH-MW01I-20240404 OH-MW01S-20240404	UJ
8270	BD40785-BS1 BD40785-BSD1	LCS LCSD	Bis(2-chloroisopropyl)ether	30.2	20		UJ

Method	Sample ID	Sample Type	Analyte	RPD	RPD Limit	Associated Samples	Sample Qual.
8270	BD40785-BS1 BD40785-BSD1	LCS LCSD	Dibenzofuran	22.1	20		UJ
8270	BD40785-BS1 BD40785-BSD1	LCS LCSD	Diethyl Phthalate	20.3	20		UJ
8270	BD40785-BS1 BD40785-BSD1	LCS LCSD	Dimethyl Phthalate	20.4	20		UJ
8270	BD40785-BS1 BD40785-BSD1	LCS LCSD	Hexachlorocyclopentadiene	31.9	20		UJ
8270	BD40785-BS1 BD40785-BSD1	LCS LCSD	Isophorone	27.0	20		UJ
8270	BD40785-BS1 BD40785-BSD1	LCS LCSD	N-Nitrosodi-n-propylamine	27.9	20		UJ
8270	BD40785-BS1 BD40785-BSD1	LCS LCSD	Phenol	20.8	20		UJ
8260	BD40935-BS1 BD40935-BSD1	LCS LCSD	Acrolein	77.4	20	MW-06D-20240409 MW-06I-20240409 MW-06S-20240409 MW-05D-20240410 MW-05I-20240410 MW-05S-20240410	UJ
8270	BD41111-BS1 BD41111-BSD1	LCS LCSD	2,4-Dinitrophenol	35.2	20	MW-06D-20240409 MW-06I-20240409 MW-06S-20240409	UJ
8270	BD41111-BS1 BD41111-BSD1	LCS LCSD	2-Methylphenol	97.4	20		UJ
8270	BD41321-BS1 BD41321-BSD1	LCS LCSD	2-Methylnaphthalene	20.1	20	MW-05S-20240410	UJ
						MW-05D-20240410 MW-05I-20240410	J
8270	BD41321-BS1 BD41321-BSD1	LCS LCSD	1,1-Biphenyl	20.4	20	DUP02-20240410 OH-MW03I-20240410	UJ
8270	BD41321-BS1 BD41321-BSD1	LCS LCSD	1,2,4,5-Tetrachlorobenzene	21.3	20	OH-MW03D-20240410 MW-05D-20240410	UJ

Method	Sample ID	Sample Type	Analyte	RPD	RPD Limit	Associated Samples	Sample Qual.
8270	BD41321-BS1 BD41321-BSD1	LCS LCSD	1,2,4-Trichlorobenzene	21.9	20	MW-05I-20240410 MW-05S-20240410	UJ
8270	BD41321-BS1 BD41321-BSD1	LCS LCSD	1,2-Dichlorobenzene	22.9	20		UJ
8270	BD41321-BS1 BD41321-BSD1	LCS LCSD	1,2-Diphenylhydrazine	25.4	20		UJ
8270	BD41321-BS1 BD41321-BSD1	LCS LCSD	1,3-Dichlorobenzene	24.3	20		UJ
8270	BD41321-BS1 BD41321-BSD1	LCS LCSD	1,4-Dichlorobenzene	22.0	20		UJ
8270	BD41321-BS1 BD41321-BSD1	LCS LCSD	Hexachlorocyclopentadiene	24.3	20		UJ
8270	BD41321-BS1 BD41321-BSD1	LCS LCSD	Pyridine	40.8	20		UJ
8081	BD41513-BS1 BD41513-BSD1	LCS LCSD	4,4'-DDE	26.7	20	OH-MW08I-20240415	None
8081	BD41513-BS1 BD41513-BSD1	LCS LCSD	Aldrin	24.0	20		None
8081	BD41513-BS1 BD41513-BSD1	LCS LCSD	Alpha-BHC	24.6	20		None
8081	BD41513-BS1 BD41513-BSD1	LCS LCSD	Alpha-Chlordane	21.1	20		None
8081	BD41513-BS1 BD41513-BSD1	LCS LCSD	Beta-BHC	32.0	20		None
8081	BD41513-BS1 BD41513-BSD1	LCS LCSD	Delta-BHC	25.2	20		None
8081	BD41513-BS1 BD41513-BSD1	LCS LCSD	Dieldrin	23.6	20		None
8081	BD41513-BS1 BD41513-BSD1	LCS LCSD	Endosulfan I	22.7	20		None
8081	BD41513-BS1	LCS	Endosulfan II	20.8	20		None

Method	Sample ID	Sample Type	Analyte	RPD	RPD Limit	Associated Samples	Sample Qual.
	BD41513-BSD1	LCSD					
8081	BD41513-BS1 BD41513-BSD1	LCS LCSD	Gamma-BHC	23.8	20		None
8081	BD41513-BS1 BD41513-BSD1	LCS LCSD	Gamma-Chlordane	25.6	20		None
8081	BD41513-BS1 BD41513-BSD1	LCS LCSD	Heptachlor	26.5	20		None
8081	BD41513-BS1 BD41513-BSD1	LCS LCSD	Heptachlor Epoxide	24	20		None
8260	BD41141-BS1 BD41141-BSD1	LCS LCSD	Butylbenzene	56.5	30	OH-MW04S-20240411 Trip Blank	UJ
						DUP02-20240410 OH-MW03D-20240410 OH-MW03I-20240410 OH-MW04I-20240411	J
8270	BD41412-BS1 BD41412-BSD1	LCS LCSD	2-Methylphenol	21.4	20	OH-MW04I-20240411 OH-MW04S-20240411 OH-MW05I-20240411 OH-MW05S-20240411 OH-MW05D-20240411	UJ
8270	BD41412-BS1 BD41412-BSD1	LCS LCSD	3&4-Methylphenol	21.4	20		UJ
8270	BD41412-BS1 BD41412-BSD1	LCS LCSD	4,6-Dinitro-2-methylphenol	22.4	20		UJ
8270	BD41412-BS1 BD41412-BSD1	LCS LCSD	4-Chloroaniline	21.2	20		UJ
8270	BD41412-BS1 BD41412-BSD1	LCS LCSD	Benzyl Alcohol	21.2	20		UJ
8270	BD41412-BS1 BD41412-BSD1	LCS LCSD	Di-n-Octyl Phthalate	21.4	20		UJ
8270	BD41412-BS1 BD41412-BSD1	LCS LCSD	Hexachlorocyclopentadiene	28.5	20		UJ
8270	BD41412-BS1 BD41412-BSD1	LCS LCSD	Phenol	34.6	20		UJ

Method	Sample ID	Sample Type	Analyte	RPD	RPD Limit	Associated Samples	Sample Qual.
8270	BD41530-BS1 BD41530-BSD1	LCS LCSD	3-Nitroaniline	24.4	20	OH-MW06S-20240412 OH-MW06D-20240412 OH-MW06I-20240412 OH-MW07I-20240415 OH-MW08I-20240415 GWRINSE BLANK	UJ
8270	BD41530-BS1 BD41530-BSD1	LCS LCSD	4-Chloroaniline	26.2	20		UJ
8270	BD41530-BS1 BD41530-BSD1	LCS LCSD	Caprolactam	23.0	20		UJ
8270	BD41530-BS1 BD41530-BSD1	LCS LCSD	Phenol	22.6	20		UJ
8270	BD41530-BS1 BD41530-BSD1	LCS LCSD	Pyridine	29.6	20		UJ

Table 7 – ICAL/ICV/CCV Outside Limits

Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
8260	S4C2726-SCV1	ICV	Acetone	-40.4	30	MW-04D-20240404 MW-04S-20240405 MW-07D-20240405 MW-07I-20240405 MW-07S-20240405MW-05D-20240410 MW-05S-20240410 MW-05I-20240410 MW-06D-20240409 MW-06I-20240409	UJ
					30	DUP01-020240405 OH-MW01S-20240404 OH-MW02I-20240405 MW-06S-20240409 TB-20240410	J
8260	S4C2726-SCV1	ICV	Tetrachloroethylene	-50.5	30	MW-04D-20240404 MW-04S-20240405	UJ

Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
						MW-07D-20240405 MW-07I-20240405 MW-07S-20240405 DUP01-020240405 OH-MW01S-20240404 OH-MW02I-20240405 MW-05D-20240410 MW-05S-20240410 MW-05I-20240410 MW-06D-20240409 MW-06S-20240409 MW-06I-20240409 TB-20240410	
8260	S4D0923-CCV1	CCV	1,3-Dichlorobenzene	-22.5	20	OH-MW01I-20240404 MW-04I-20240404	UJ
8260	S4D0923-CCV1	CCV	2-Hexanone	24.0	20		UJ
8260	S4D0923-CCV1	CCV	Bromomethane	-53.0	20		UJ
8260	S4D0923-CCV1	CCV	Tetrachloroethylene	-34.5	20		UJ
8082	S4D1239-CCV2	CCV	Aroclor 1260 (3)	20.3	20	OH-MW01I-20240404 MW-04I-20240404	UJ
6010	S4D1214-CRL1	CCVL	Lead	35	30	OH-MW01I-20240404 MW-04I-20240404	J+
1633	SC40058	CAL	4:2 FTS	52.1	20	OH-MW01I-20240404 MW-04I-20240404	None
1633	SC40058	CAL	6:2 FTS	46.4	20		J
1633	SC40058	CAL	8:2 FTS	38.2	20		None
1633	S4C2954-SCV1	ICV	PFDS	35.5	30	OH-MW01I-20240404 MW-04I-20240404	UJ
1633	S4C2954-SCV1	ICV	8:2 FTS	-42.1	30		UJ
1633	S4C2954-SCV1	ICV	4:2 FTS	31.1	30		UJ
1633	S4D1047-CCV2	CCV	6:2 FTS	42.9	30	OH-MW01I-20240404 MW-04I-20240404	J
1633	S4D1047-CCV2	CCV	11C1-PF3OUdS	-40.2	30	OH-MW01I-20240404 MW-04I-20240404	None
1633	S4D1047-CCV2	CCV	FHpPA	-75.3	30		None

Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
1633	S4D1047-CCV2	CCV	FPrPA	433	30		None
1633	S4D1047-CCV2	CCV	ADONA	-31.9	30		None
1633	S4D1047-CCV2	CCV	NFDHA	32.1	30		None
1633	S4D1047-CCV2	CCV	PFNA	67.8	30	MW-04I-20240404	None
						OH-MW01I-20240404	J
1633	S4D1047-CCV3	CCV	11CL-PF3OUdS	-40.7	30	OH-MW01I-20240404 MW-04I-20240404	None
1633	S4D1047-CCV3	CCV	FHpPA	-78.2	30		None
1633	S4D1047-CCV3	CCV	FPrPA	307	30		None
1633	S4D1047-CCV3	CCV	ADONA	-36.8	30		None
1633	S4D1047-CCV3	CCV	N-EtFOSA	85.6	30		None
1633	S4D1047-CCV3	CCV	PFNS	86.2	30		None
1633	S4D1047-CCV3	CCV	PFNA	56.0	30	MW-04I-20240404	None
						OH-MW01I-20240404	J
1633	S4D1047-CCV3	CCV	6:2 FTS	36.7	30	OH-MW01I-20240404 MW-04I-20240404	J
1633	S4D1047-CCV3	CCV	PFOA	30.4	30		J
8260	S4D0930-CCV1	CCV	1,1,2-Trichlorotrifluoroethane	25.3	20	MW-04D-20240404 OH-MW01S-20240404 MW-04S-20240405 OH-MW02I-20240405	UJ
8260	S4D0930-CCV1	CCV	1,2,3-Trichlorobenzene	-59.5	20	MW-04D-20240404 OH-MW01S-20240404 MW-04S-20240405 OH-MW02I-20240405	UJ
8260	S4D0930-CCV1	CCV	1,4-Dioxane	-29.7	20	MW-04D-20240404 OH-MW01S-20240404 MW-04S-20240405 OH-MW02I-20240405	UJ
8260	S4D0930-CCV1	CCV	Acrolein	-100	20	MW-04D-20240404 OH-MW01S-20240404 MW-04S-20240405	UJ

Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
						OH-MW02I-20240405	
8260	S4D0930-CCV1	CCV	Bromomethane	-26.5	20	MW-04D-20240404 OH-MW01S-20240404 MW-04S-20240405 OH-MW02I-20240405	UJ
8260	S4D0930-CCV1	CCV	Chloromethane	29.5	20	MW-04D-20240404 OH-MW01S-20240404 MW-04S-20240405 OH-MW02I-20240405	UJ
8260	S4D0930-CCV1	CCV	Cyclohexane	28.4	20	MW-04D-20240404 OH-MW01S-20240404 MW-04S-20240405 OH-MW02I-20240405	UJ
8260	S4D0930-CCV1	CCV	Dichlorodifluoromethane	47.4	20	MW-04D-20240404 OH-MW01S-20240404 MW-04S-20240405 OH-MW02I-20240405	UJ
8260	S4D0930-CCV1	CCV	Methylcyclohexane	20.6	20	MW-04D-20240404 OH-MW01S-20240404 MW-04S-20240405 OH-MW02I-20240405	UJ
8260	S4D0930-CCV1	CCV	tert-Butyl Alcohol	-31.7	20	MW-04D-20240404 OH-MW01S-20240404 OH-MW02I-20240405	UJ
						MW-04S-20240405	J
8260	S4D0930-CCV1	CCV	Trichlorofluoromethane	25.3	20	MW-04D-20240404 OH-MW01S-20240404 OH-MW02I-20240405 MW-04S-20240405	UJ
8260	S4D1038-CCV1	CCV	1,1,2,2-Tetrachloroethane	-20.5	20	MW-07D-20240405 MW-07I-20240405 MW-07D-20240405	UJ
8260	S4D1038-CCV1	CCV	1,3-Dichlorobenzene	-21.2	20		UJ
8260	S4D1038-CCV1	CCV	1,4-Dichlorobenzene	-22.2	20		UJ

Data Usability Summary Report	Project: Gowanus Canal Owl's Head Investigation
Date Completed: June 25, 2024	Prepared by: Sayward Gohman-Kramer Reviewed by: Danielle Sylvia Cofelice

Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
8260	S4D1038-CCV1	CCV	Acrolein	-83.3	20	DUP01-020240405	UJ
8260	S4D1038-CCV1	CCV	Bromomethane	-26.7	20		UJ
8260	S4D1038-CCV1	CCV	Chlorobenzene	-20.4	20		UJ
8260	S4D1038-CCV1	CCV	Chloromethane	28.5	20		UJ
8260	S4D1038-CCV1	CCV	Dichlorodifluoromethane	53.7	20		UJ
8260	S4D1038-CCV1	CCV	Tetrachloroethylene	-20.4	20		UJ
8260	S4C2910-SCV1	ICV	Acetone	-36.3	30	OH-MW01I-20240404 Trip Blank DUP02-20240410 OH-MW03D-20240410 OH-MW03I-20240410 OH-MW04I-20240411 OH-MW04S-20240411 OH-MW05I-20240411 OH-MW05S-20240411 OH-MW05D-20240411 OH-MW06I-20240412 OH-MW06S-20240412 OH-MW06D-20240412	UJ
						MW-04I-20240404 TB-20240410 TB-20240411 TB-20240412	J
8260	S4C2910-SCV1	ICV	Bromomethane	-30.4	30	OH-MW01I-20240404 MW-04I-20240404 Trip Blank DUP02-20240410 OH-MW03D-20240410 OH-MW03I-20240410 OH-MW04I-20240411 OH-MW04S-20240411 TB-20240411 TB-20240410	UJ

Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
						OH-MW05I-20240411 OH-MW05S-20240411 OH-MW05D-20240411 OH-MW06I-20240412 OH-MW06S-20240412 OH-MW06D-20240412 TB-20240412	
8260	S4C2910-SCV1	ICV	Tetrachloroethylene	-63.7	30	OH-MW01I-20240404 MW-04I-20240404 Trip Blank DUP02-20240410 OH-MW03D-20240410 OH-MW03I-20240410 OH-MW04I-20240411 OH-MW04S-20240411 TB-20240411 TB-20240410 OH-MW05I-20240411 OH-MW05S-20240411 OH-MW05D-20240411 OH-MW06I-20240412 OH-MW06S-20240412 OH-MW06D-20240412 TB-20240412	UJ
8260	S4D1038-CCV1	CCV	1,2-Dichloroethane	25.5	20	Trip Blank	UJ
8260	S4D1038-CCV1	CCV	1,3-Dichlorobenzene	-23.0	20	Trip Blank	UJ
8260	S4D1038-CCV1	CCV	Chloromethane	24.5	20	Trip Blank	UJ
8260	S4D1038-CCV1	CCV	Dichlorodifluoromethane	23.0	20	Trip Blank	UJ
8260	S4D1038-CCV1	CCV	Tert-Butyl Alcohol	22.9	20	Trip Blank	UJ
8260	S4D1038-CCV1	CCV	Tetrachloroethylene	-51.8	20	Trip Blank	UJ
8260	S4D1038-CCV1	CCV	Trichlorofluoromethane	33.5	20	Trip Blank	UJ

Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
8270	SC40028	CAL	2,4-Dinitrophenol	40.2	20	OH-MW01I-20240404 MW-04I-20240404 OH-MW01S-20240404 MW-04S-20240405 OH-MW02I-20240405 DUP01-2040405 MW-07D-20240405 MW-07S-20240405 MW-07I-20240405 MW-05D-20240410 MW-05S-20240410 MW-05I-20240410 MW-06D-20240409 MW-06S-20240409 MW-06I-20240409 OH-MW03I-20240410 OH-MW03D-20240410 DUP02-20240410 OH-MW04I-20240411 OH-MW04S-20240411	None
8270	SC40028	CAL	4,6-Dinitro-2-methylphenol	39.7	20		None
8270	S4C1317-SCV1	ICV	2,4-Dimethylphenol	-35.5	30		UJ
8270	S4C1317-SCV1	ICV	Hexachlorocyclopentadiene	-55.9	30		UJ
8270	S4C1317-SCV1	ICV	Pyridine	-34.0	30		UJ

Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
						MW-06I-20240409 OH-MW03I-20240410 OH-MW03D-20240410 DUP02-20240410 OH-MW04I-20240411 OH-MW04S-20240411 OH-MW05I-20240411 OH-MW05S-20240411 OH-MW05D-20240411	
8270	SD40020	CAL	2,4-Dinitrophenol	26.5	20	MW-04D-20240404	None
8270	SD40020	CAL	2,4-Dinitrotoluene	27.0	20		None
8270	SD40020	CAL	2,6-Dinitrotoluene	20.1	20		None
8270	SD40020	CAL	4,6-Dinitro-2-methylphenol	37.4	20		None
8270	SD40020	CAL	Benzidine	27.5	20		None
8270	SD40020	CAL	Benzoic Acid	26.9	20		None
8270	SD40020	CAL	Di-n-octyl Phthalate	27.8	20		None
8270	S4D1236-SCV1	ICV	2,4-Dimethylphenol	-41.3	30	MW-04D-20240404	UJ
8270	S4D1236-SCV1	ICV	Hexachlorocyclopentadiene	-53.3	30		UJ
8270	S4D1132-CCV1	CCV	2,4-Dinitrotoluene	37.7	20	OH-MW01I-20240404 MW-04I-20240404 OH-MW01S-20240404	UJ
8270	S4D1132-CCV1	CCV	2,6-Dinitrotoluene	37.0	20		UJ
8270	S4D1132-CCV1	CCV	2-Nitroaniline	28.7	20		UJ
8270	S4D1132-CCV1	CCV	3,3-Dichlorobenzidine	33.3	20		UJ
8270	S4D1132-CCV1	CCV	3-Nitroaniline	22.0	20		UJ
8270	S4D1132-CCV1	CCV	4,6-Dinitro-2-methylphenol	69.0	20		UJ
8270	S4D1132-CCV1	CCV	4-Nitroaniline	27.7	20		UJ
8270	S4D1132-CCV1	CCV	4-Nitrophenol	-96.5	20		UJ
8270	S4D1132-CCV1	CCV	Aniline	82.3	20		UJ
8270	S4D1132-CCV1	CCV	Benzidine	38.7	20		UJ
8270	S4D1132-CCV1	CCV	Benzoic Acid	-44.3	20		UJ

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Date Completed: June 25, 2024	Prepared by: Sayward Gohman-Kramer Reviewed by: Danielle Sylvia Cofelice

Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
8270	S4D1132-CCV1	CCV	Bis(2-chloroethyl)ether	230	20		UJ
8270	S4D1132-CCV1	CCV	Caprolactam	-20.3	20		UJ
8270	S4D1514-CCV1	CCV	2,4-Dinitrophenol	71.1	20	MW-04S-20240405	UJ
8270	S4D1514-CCV1	CCV	2,4-Dinitrotoluene	39.2	20		UJ
8270	S4D1514-CCV1	CCV	2,6-Dinitrotoluene	37.4	20		UJ
8270	S4D1514-CCV1	CCV	2-Nitroaniline	31.0	20		UJ
8270	S4D1514-CCV1	CCV	3,3-Dichlorobenzidine	30.8	20		UJ
8270	S4D1514-CCV1	CCV	3-Nitroaniline	24.6	20		UJ
8270	S4D1514-CCV1	CCV	4,6-Dinitro-2-methylphenol	82.2	20		UJ
8270	S4D1514-CCV1	CCV	4-Nitroaniline	33.1	20		UJ
8270	S4D1514-CCV1	CCV	4-Nitrophenol	-95.5	20		UJ
8270	S4D1514-CCV1	CCV	Aniline	87.0	20		UJ
8270	S4D1514-CCV1	CCV	Benzidine	31.0	20		UJ
8270	S4D1514-CCV1	CCV	Bis(2-chloroethyl)ether	140	20		UJ
8270	S4D1534-CCV1	CCV	2,4-Dinitrophenol	27.9	20	MW-04D-20240404	UJ
8270	S4D1534-CCV1	CCV	2-Methylphenol	60.0	20		UJ
8270	S4D1534-CCV1	CCV	4,6-Dinitro-2-methylphenol	21.1	20		UJ
8270	S4D1534-CCV1	CCV	Di-n-octyl Phthalate	34.9	20		UJ
8270	S4D1544-CCV1	CCV	2,4-Dinitrophenol	54.7	20	OH-MW02I-20240405 DUP01-2040405 MW-07D-20240405 MW-07S-20240405 MW-07I-20240405	UJ
8270	S4D1544-CCV1	CCV	2,4-Dinitrotoluene	39.5	20		UJ
8270	S4D1544-CCV1	CCV	2,6-Dinitrotoluene	37.7	20		UJ
8270	S4D1544-CCV1	CCV	2-Nitroaniline	31.1	20		UJ
8270	S4D1544-CCV1	CCV	3,3-Dichlorobenzidine	32.9	20		UJ
8270	S4D1544-CCV1	CCV	3-Nitroaniline	25.0	20		UJ
8270	S4D1544-CCV1	CCV	4,6-Dinitro-2-methylphenol	78.9	20		UJ
8270	S4D1544-CCV1	CCV	4-Nitroaniline	35.5	20		UJ
8270	S4D1544-CCV1	CCV	Aniline	88.2	20		UJ

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Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
8270	S4D1544-CCV1	CCV	Benzidine	42.1	20		UJ
8270	S4D1544-CCV1	CCV	Bis(2-chloroethyl)ether	141	20		UJ
8270	S4D1544-CCV1	CCV	4-Nitrophenol	-95.9	20		UJ
8270 SIM	S4D0813-SCV1	ICV	Bis(2-ethylhexyl)phthalate	32.0	30	OH-MW01I-20240404 OH-MW01S-20240404	J
						OH-MW01I-20240404 MW-04I-20240404 OH-MW02I-20240405 DUP01-2040405 MW-07D-20240405 MW-07S-20240405 MW-07I-20240405 MW-04D-20240404 MW-04S-20240405 OH-MW08I-20240415 OH-MW07I-20240415 GWRinse Blank MW-05D-20240410 MW-05S-20240410 MW-05I-20240410 MW-06D-20240409 MW-06S-20240409 MW-06I-20240409 OH-MW04S-20240411 OH-MW04I-20240411 OH-MW03I-20240410 OH-MW03D-20240410 DUP02-2040410 OH-MW05S-20240411 OH-MW05D-20240411 OH-MW05I-20240411 OH-MW06S-20240412 OH-MW06D-20240412 OH-MW06I-20240412	UJ
8270 SIM	S4D0813-SCV1	ICV	Hexachlorobenzene	63.0	30		UJ
8270 SIM	S4D0813-SCV1	ICV	Hexachloroethane	508	30		UJ
8270 SIM	S4D0813-SCV1	ICV	Nitrobenzene	-44.0	30		UJ
8270 SIM	S4D0813-SCV1	ICV	Pentachlorophenol	56.0	30		UJ

Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
8270 SIM	S4D1136-CCV1	CCV	Benzo(g,h,i)perylene	-38.0	30	OH-MW01I-20240404 MW-04I-20240404	UJ
						OH-MW01S-20240404	J
8270 SIM	S4D1136-CCV1	CCV	Nitrobenzene	125	30	OH-MW01I-20240404 MW-04I-20240404 OH-MW01S-20240404	UJ
8270 SIM	S4D1504-CCV1	CCV	Nitrobenzene	98.8	30	MW-04D-20240404	UJ
8270 SIM	S4D1528-CCV1	CCV	Nitrobenzene	105	30	MW-04S-20240405	UJ
8270 SIM	S4D1528-CCV1	CCV	Pentachlorophenol	36.1	30		UJ
8270 SIM	S4D1548-CCV1	CCV	Nitrobenzene	105	30	OH-MW02I-20240405 DUP01-2040405 MW-07D-20240405 MW-07S-20240405	UJ
8270 SIM	S4D1548-CCV1	CCV	Pentachlorophenol	36.1	30		UJ
8270 SIM	S4D1648-CCV1	CCV	Nitrobenzene	124	30	MW-07I-20240405	UJ
8081	S4D1551-CCV4	CCV	4,4'-DDE	22.2	20	OH-MW02I-20240405 DUP01-2040405 MW-07D-20240405 MW-07S-20240405 MW-07I-20240405 MW-04D-20240404 OH-MW01S-20240404 MW-04S-20240405	UJ
8081	S4D1551-CCV4	CCV	Methoxychlor	24.0	20		UJ
8082	S4D1565-CCV5	CCV	Aroclor 1260 (3)	21.0	20	OH-MW02I-20240405 DUP01-2040405 MW-07D-20240405 MW-07I-20240405	UJ
						MW-07S-20240405	J
6010	S4D1512-CRL1	CCVL	Lead	35	30	OH-MW02I-20240405 DUP01-2040405 MW-07D-20240405 MW-07S-20240405 MW-07I-20240405 MW-04D-20240404	J+

Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
						OH-MW01S-20240404 MW-04S-20240405	
6020	S4D1226-CCV2	CCV	Cadmium	10.3	10	MW-04D-20240404	UJ
6020	S4D1226-CCV4	CCV	Beryllium	17	10	OH-MW02I-20240405 DUP01-2040405 MW-07D-20240405	UJ
						OH-MW01S-20240404 MW-04S-20240405 MW-07S-20240405 MW-07I-20240405	J
1633	SD40022	CAL	8:2 FTS	36.2	30	OH-MW02I-20240405 DUP01-2040405 MW-07D-20240405 MW-07S-20240405 MW-07I-20240405 MW-04D-20240404 OH-MW01S-20240404 MW-04S-20240405 MW-05D-20240410 MW-05S-20240410 MW-05I-20240410 MW-06D-20240409 MW-06S-20240409 MW-06I-20240409 OH-MW07I-20240415 OH-MW08I-20240415 OH-MW03D-20240410 OH-MW03I-20240410 OH-MW04I-20240411 DUP02-20240410 OH-MW04S-20240411 MW-06I-20240409 OH-MW05I-20240411 OH-MW05S-20240411	UJ

Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
						OH-MW05D-20240411 OH-MW06I-20240412 OH-MW06S-20240412 OH-MW06D-20240412	
1633	SD40022	CAL	4:2 FTS	34.1	30	OH-MW02I-20240405 DUP01-2040405 MW-07S-20240405 MW-07I-20240405 OH-MW01S-20240404 MW-04S-20240405 MW-05S-20240410 MW-05I-20240410 MW-06S-20240409 MW-06I-20240409 OH-MW07I-20240415 OH-MW08I-20240415 OH-MW03D-20240410 OH-MW03I-20240410 OH-MW04I-20240411 MW-04D-20240404 MW-07D-20240405 MW-05D-20240410 MW-06D-20240409 DUP02-20240410 OH-MW04S-20240411 MW-06I-20240409 OH-MW05I-20240411 OH-MW05S-20240411 OH-MW05D-20240411 OH-MW06I-20240412 OH-MW06S-20240412 OH-MW06D-20240412	UJ
1633	SD40022	CAL	6:2 FTS	34.5	30	OH-MW02I-20240405 DUP01-2040405	UJ

Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
						MW-07S-20240405 MW-07I-20240405 OH-MW01S-20240404 MW-04S-20240405 MW-05S-20240410 MW-05I-20240410 MW-06S-20240409 MW-06I-20240409 OH-MW07I-20240415 OH-MW08I-20240415 OH-MW03D-20240410 OH-MW03I-20240410 OH-MW04I-20240411 MW-06I-20240409 OH-MW05I-20240411 OH-MW05S-20240411 OH-MW06I-20240412 OH-MW06S-20240412	
						MW-04D-20240404 MW-07D-20240405 MW-05D-20240410 MW-06D-20240409 DUP02-20240410 OH-MW04S-20240411 OH-MW05D-20240411 OH-MW06D-20240412	J
1633	S4D1545-CCV1	CCV	9Cl-PF3ONS	43.2	30	OH-MW02I-20240405 DUP01-2040405 MW-07D-20240405 MW-07S-20240405 MW-07I-20240405 MW-04D-20240404 OH-MW01S-20240404 MW-04S-20240405	None

Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
1633	S4D1545-CCV1	CCV	PFOS	35.4	30	OH-MW02I-20240405 MW-04D-20240404	None
						DUP01-2040405 MW-07S-20240405 MW-07I-20240405 OH-MW01S-20240404 MW-04S-20240405	J
1633	S4D1545-CCV2	CCV	9Cl-PF3ONS	37.1	30	OH-MW02I-20240405 DUP01-2040405 MW-07D-20240405 MW-07S-20240405 MW-07I-20240405 MW-04D-20240404 OH-MW01S-20240404 MW-04S-20240405	None
1633	S4D1545-CCV2	CCV	NFDHA	-32.9	30	OH-MW02I-20240405 DUP01-2040405 MW-07D-20240405 MW-07S-20240405 MW-07I-20240405 MW-04D-20240404 OH-MW 01S-20240404 MW-04S-20240405	None
1633	S4D1545-CCV2	CCV	PFOS	45.8	30	OH-MW02I-20240405 MW-04D-20240404	None
						DUP01-2040405 MW-07S-20240405 MW-07I-20240405 OH-MW01S-20240404 MW-04S-20240405	J
1633	S4D1545-CCV3	CCV	9CL-PF3ONS	38.5	30	OH-MW02I-20240405 DUP01-2040405 MW-07D-20240405	None

Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
						MW-07S-20240405 MW-07I-20240405 MW-04D-20240404 OH-MW01S-20240404 MW-04S-20240405	
1633	S4D1545-CCV3	CCV	PFDA	41.4	30	OH-MW02I-20240405 DUP01-2040405 MW-07D-20240405 MW-07S-20240405 MW-07I-20240405 MW-04D-20240404 OH-MW01S-20240404 MW-04S-20240405	None
1633	S4D1545-CCV3	CCV	PFOS	37.1	30	OH-MW02I-20240405 MW-04D-20240404	None
						MW-07D-20240405 MW-07I-20240405	J
8260	S4D1222-CCV1	CCV	1,1,2-Trichlorotrifluoroethane	41.5	20	MW-05D-20240410 MW-05S-20240410 MW-05I-20240410 MW-06D-20240409 MW-06S-20240409 MW-06I-20240409 TB-20240410	UJ
8260	S4D1222-CCV1	CCV	Acrolein	-59.5	20		UJ
8260	S4D1222-CCV1	CCV	Bromomethane	-59.0	20		UJ
8260	S4D1222-CCV1	CCV	Chloromethane	35.8	20		UJ
8260	S4D1222-CCV1	CCV	Cyclohexane	40.5	20		UJ
8260	S4D1222-CCV1	CCV	Dichlorodifluoromethane	83.3	20		UJ
8260	S4D1222-CCV1	CCV	Methylcyclohexane	28.2	20		UJ
8260	S4D1222-CCV1	CCV	Trichlorofluoromethane	41.5	20		UJ
8260	S4D1222-CCV1	CCV	Vinyl Chloride	27.7	20		UJ
8270	S4D1641-CCV1	CCV	2,4-Dinitrophenol	80.5	20	MW-06S-20240409	UJ
8270	S4D1641-CCV1	CCV	2,4-Dinitrotoluene	42.2	20		UJ
8270	S4D1641-CCV1	CCV	2,6-Dinitrotoluene	38.2	20		UJ
8270	S4D1641-CCV1	CCV	2-Nitroaniline	29.6	20		UJ

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Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
8270	S4D1641-CCV1	CCV	3,3-Dichlorobenzidine	34.1	20		UJ
8270	S4D1641-CCV1	CCV	3-Nitroaniline	24.6	20		UJ
8270	S4D1641-CCV1	CCV	4,6-Dinitro-2-methylphenol	89.8	20		UJ
8270	S4D1641-CCV1	CCV	4-Nitroaniline	32.9	20		UJ
8270	S4D1641-CCV1	CCV	4-Nitrophenol	-94.6	20		UJ
8270	S4D1641-CCV1	CCV	Aniline	84.6	20		UJ
8270	S4D1641-CCV1	CCV	Bis(2-chloroethyl)ether	136	20		UJ
8270	S4D1729-CCV1	CCV	2,4-Dinitrophenol	56.9	20	MW-05I-20240410 MW-05S-20240410 MW-05D-20240410 MW-06D-20240409 MW-06I-20240409 OH-MW03I-20240410 OH-MW03D-20240410 DUP02-20240410 OH-MW04I-20240411 OH-MW04S-20240411	UJ
8270	S4D1729-CCV1	CCV	2,4-Dinitrotoluene	43.5	20		UJ
8270	S4D1729-CCV1	CCV	2,6-Dinitrotoluene	40.0	20		UJ
8270	S4D1729-CCV1	CCV	2-Methylphenol	-40.21	20		UJ
8270	S4D1729-CCV1	CCV	2-Nitroaniline	30.3	20		UJ
8270	S4D1729-CCV1	CCV	2-Nitrophenol	21.5	20		UJ
8270	S4D1729-CCV1	CCV	3&4-Methylphenols	-29.3	20		UJ
8270	S4D1729-CCV1	CCV	3,3-Dichlorobenzidine	34.4	20		UJ
8270	S4D1729-CCV1	CCV	3-Nitroaniline	23.6	20		UJ
8270	S4D1729-CCV1	CCV	4,6-Dinitro-2-methylphenol	81.1	20		UJ
8270	S4D1729-CCV1	CCV	4-Nitroaniline	30.4	20		UJ
8270	S4D1729-CCV1	CCV	Aniline	94.5	20		UJ
8270	S4D1729-CCV1	CCV	Bis(2-chloroethyl)ether	150	20		UJ
8270	S4D1729-CCV1	CCV	4-Nitrophenol	-94.6	20	MW-05S-20240410 MW-05D-20240410 MW-06D-20240409 MW-06I-20240409	UJ
						MW-05I-20240410	J
8270SIM	S4D1733-CCV1	CCV	Nitrobenzene	125	30	MW-06D-20240409 MW-06S-20240409	UJ
8270SIM	S4D1838-CCV1	CCV	Nitrobenzene	113	30	OH-MW04S-20240411	UJ

Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
						MW-05D-20240410 MW-05S-20240410 MW-05I-20240410 MW-06I-20240409	
8082	S4D151-CCV7	CCV	Aroclor 1260 (3)	23.1	20	MW-05I-20240410 MW-05S-20240410	UJ
8082	S4D151-CCV7	CCV	Aroclor 1260 (5)	22.0	20	MW-05D-20240410 MW-06D-20240409	UJ
6010	S4D1912-CRL1	CCVL	Lead	34.4	30	MW-05I-20240410 MW-05D-20240410	J-
6010	S4D1820-CCVG	CCV	Calcium	11.2	10	MW-06D-20240409 MW-06S-20240409	J+
6010	S4D1820-CCVG	CCV	Iron	11.9	10	MW-06I-20240409 MW-05S-20240410	J+
6010	S4D1820-CCVG	CCV	Sodium	11	10	MW-06D-20240409 MW-06I-20240409 MW-05S-20240410	J+
6010	S4D1912-CCVF	CCV	Sodium	13	10	MW-05I-20240410	J+
6010	S4D1912-CCVG	CCV	Sodium	18	10	MW-05I-20240410 MW-05D-20240410	J+
6010	S4D1912-CCH	CCV	Barium	13	10	MW-05D-20240410	J+
6010	S4D1912-CCH	CCV	Cobalt	11	10	MW-05D-20240410	None
6010	S4D1912-CCH	CCV	Lead	15	10	MW-05D-20240410	J+
6010	S4D1912-CCH	CCV	Manganese	11	10	MW-05D-20240410	J+
6010	S4D1912-CCH	CCV	Nickel	12	10	MW-05D-20240410	None
6010	S4D1912-CCH	CCV	Potassium	20	10	MW-05D-20240410	J+
6010	S4D1912-CCH	CCV	Sodium	14	10	MW-05D-20240410	J+
6010	S4D1912-CCH	CCV	Zinc	14	10	MW-05D-20240410	None
6020	S4D1713-CRL1	CCVL	Selenium	39	25	MW-05D-20240410 MW-05S-20240410 MW-05I-20240410 MW-06D-20240409	J+

Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
						MW-06S-20240409	
6020	S4D1713-CCV4	CCV	Antimony	12	10	MW-05I-20240410 MW-05D-20240410	None
6020	S4D1713-CCV4	CCV	Beryllium	20	10		None
1633	S4D1745-CCV2	CCV	PFHpA	-35.8	20	MW-06S-20240409	J
						MW-06I-20240409 MW-05D-20240410	None
1633	S4D1745-CCV3	CCV	FHpPA (7:3 FTCA)	53.9	20	MW-05D-20240410 MW-05S-20240410 MW-05I-20240410 MW-06D-20240409 MW-06S-20240409 MW-06I-20240409	None
1633	S4D1745-CCV3	CCV	PFHpA	-36.0	20	MW-05D-20240410 MW-05S-20240410 MW-05I-20240410 MW-06I-20240409	None
						MW-06S-20240409 MW-06D-20240409	J
1633	S4D1745-CCV3	CCV	FHpPA (7:3 FTCA)	49.5	20	MW-05S-20240410 MW-06D-20240409 MW-05I-20240410	None
1633	S4D1745-CCV3	CCV	PFHpA	-38.2	20	MW-05S-20240410 MW-05I-20240410	None
						MW-06D-20240409	J
8260	S4D1615-CCV1	CCV	1,2-Dibromo-3-chloropropane	28.2	20	DUP02-20240410 OH-MW03D-20240410 OH-MW03I-20240410 OH-MW04I-20240411 OH-MW04S-20240411 TB-20240411	UJ
8260	S4D1615-CCV1	CCV	1,2-Dichloroethane	27.4	20		UJ
8260	S4D1615-CCV1	CCV	1,3-Dichlorobenzene	-25.7	20		UJ
8260	S4D1615-CCV1	CCV	2-Hexanone	27.3	20		UJ
8260	S4D1615-CCV1	CCV	4-Methyl-2-pentanone	22.2	20		UJ
8260	S4D1615-CCV1	CCV	Acrolein	-22.6	20		UJ
8260	S4D1615-CCV1	CCV	Bromomethane	-75.6	20		UJ

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Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
8260	S4D1615-CCV1	CCV	Butylbenzene	43.3	20		UJ
8260	S4D1615-CCV1	CCV	Tetrachloroethylene	-50.5	20		UJ
8260	S4D1615-CCV1	CCV	Trans-1,3-dichloropropylene	20.4	20		UJ
8260	S4D1615-CCV1	CCV	Tert-butyl Alcohol	26.2	20	DUP02-20240410 OH-MW03D-20240410 OH-MW03I-20240410 OH-MW04I-20240411 TB-20240411	UJ
						OH-MW04S-20240411	J
8270	S4D1906-CCV1	CCV	2,4-Dinitrophenol	50.2	20	DUP02-20240410 OH-MW03D-20240410 OH-MW03I-20240410 OH-MW04I-20240411 OH-MW04S-20240411	UJ
8270	S4D1906-CCV1	CCV	2,4-Dinitrotoluene	47.0	20		UJ
8270	S4D1906-CCV1	CCV	2,6-Dinitrotoluene	41.0	20		UJ
8270	S4D1906-CCV1	CCV	2-Nitroaniline	32.5	20		UJ
8270	S4D1906-CCV1	CCV	3,3-Dichlorobenzidine	35.7	20		UJ
8270	S4D1906-CCV1	CCV	3-Nitroaniline	25.9	20		UJ
8270	S4D1906-CCV1	CCV	4,6-Dinitro-2-methylphenol	63.4	20		UJ
8270	S4D1906-CCV1	CCV	4-Nitrophenol	-95.2	20		UJ
8270	S4D1906-CCV1	CCV	Aniline	103	20		UJ
8270	S4D1906-CCV1	CCV	Benzidine	61.8	20		UJ
8270	S4D1906-CCV1	CCV	Bis(2-chloroethyl)ether	160	20		UJ
8270	S4D1906-CCV1	CCV	Bis(2-chloroisopropyl)ether	24.9	20		UJ
8270	S4D1906-CCV1	CCV	Hexachlorocyclopentadiene	-39.8	20		UJ
8270SIM	S4D1928-CCV1	CCV	Nitrobenzene	142	30	DUP02-20240410 OH-MW03D-20240410 OH-MW03I-20240410 OH-MW04I-20240411 OH-MW05S-20240411 OH-MW05D-20240411	UJ
8082	S4D1940-CCV4	CCV	Aroclor 1260 (3)	21.4	20	OH-MW03D-20240410	UJ

Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
						OH-MW03I-20240410 OH-MW05I-20240411	
6010	S4D2209-CRL1	CCVL	Lead	34.4	30	OH-MW03D-20240410 OH-MW04I-20240411 OH-MW04S-20240411	J-
6010	S4D2209-CCV9	CCV	Lead	111	30	OH-MW03D-20240410 OH-MW04I-20240411 OH-MW04S-20240411	J
						DUP02-20240410 OH-MW03I-20240410	UJ
6010	S4D2209-CCVA	CCV	Lead	111	30	OH-MW03D-20240410 OH-MW04I-20240411 OH-MW04S-20240411	J
						DUP02-20240410 OH-MW03I-20240410	UJ
6020	S4D1905-CRL1	CCVL	Selenium	76	25	DUP02-20240410 OH-MW03D-20240410 OH-MW04I-20240411 OH-MW04S-20240411	J+
1633	S4D1854-CCV5	CCV	4:2 FTS	35.1	30	OH-MW03D-20240410 OH-MW03I-20240410	None
1633	S4D1854-CCV5	CCV	6:2 FTS	36.2	30		None
1633	S4D1854-CCV5	CCV	PFDA	34.2	30		None
1633	S4D1854-CCV5	CCV	PFHpA	-35.4	30	OH-MW03D-20240410	None
						OH-MW03I-20240410	J
1633	S4D1854-CCV6	CCV	4:2 FTS	34.3	30	OH-MW03D-20240410 OH-MW03I-20240410	None
1633	S4D1854-CCV6	CCV	6:2 FTS	39.6	30		None
1633	S4D1854-CCV6	CCV	PFHpA	-38.8	30	OH-MW03D-20240410	None
						OH-MW03I-20240410	J
1633	S4D1937-CCV1	CCV	4:2 FTS	34.5	30	DUP02-20240410 OH-MW04I-20240411 OH-MW04S-20240411	None

Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
1633	S4D1937-CCV1	CCV	6:2 FTS	43.2	30	OH-MW04I-20240411	None
						DUP02-20240410 OH-MW04S-20240411	J
1633	S4D1937-CCV1	CCV	PFHpA	-37.6	30	DUP02-20240410 OH-MW04I-20240411	None
						OH-MW04S-20240411	J
1633	S4D1937-CCV2	CCV	4:2 FTS	35.8	30	DUP02-20240410 OH-MW04I-20240411 OH-MW04S-20240411	None
1633	S4D1937-CCV2	CCV	6:2 FTS	31.2	30	OH-MW04I-20240411	None
						DUP02-20240410 OH-MW04S-20240411	J
1633	S4D1937-CCV2	CCV	PFHpA	-37.1	30	DUP02-20240410 OH-MW04I-20240411	None
						OH-MW04S-20240411	J
8260	S4D1711-CCV1	CCV	1,2-Dichloroethane	30.2	20	OH-MW05I-20240411 OH-MW05S-20240411 OH-MW05D-20240411 OH-MW06I-20240412 OH-MW06S-20240412 OH-MW06D-20240412 TB-20240412	UJ
8260	S4D1711-CCV1	CCV	1,3-Dichlorobenzene	-28.8	20		UJ
8260	S4D1711-CCV1	CCV	Acrolein	-47.8	20		UJ
8260	S4D1711-CCV1	CCV	Bromomethane	-56.1	20		UJ
8260	S4D1711-CCV1	CCV	Chloromethane	-20.3	20		UJ
8260	S4D1711-CCV1	CCV	Tetrachloroethylene	-23.1	20		UJ
8260	S4D1711-CCV1	CCV	Tert-Butyl Alcohol	23.1	20	OH-MW05I-20240411 OH-MW05S-20240411 OH-MW06I-20240412 OH-MW06S-20240412 OH-MW06D-20240412 TB-20240412	UJ
						OH-MW05D-20240411	J
8260	S4D1711-CCV1	CCV	Butylbenzene	-26.1	20	OH-MW05S-20240411 OH-MW06S-20240412 TB-20240412	UJ

Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
						OH-MW05I-20240411 OH-MW05D-20240411 OH-MW06I-20240412 OH-MW06D-20240412	J
8260	S4D1914-CCV1	CCV	Naphthalene	33.9	20	OH-MW05I-20240411 OH-MW06D-20240412	J
8260	S4D2236-CCV1	CCV	Naphthalene	21.4	20	OH-MW05D-20240411 OH-MW06I-20240412	J
8270	S4D1925-CCV1	CCV	2,4-Dinitrophenol	55.7	20	OH-MW05I-20240411 OH-MW05S-20240411 OH-MW05D-20240411	UJ
8270	S4D1925-CCV1	CCV	2,4-Dinitrotoluene	44.8	20		UJ
8270	S4D1925-CCV1	CCV	2,6-Dinitrotoluene	39.7	20		UJ
8270	S4D1925-CCV1	CCV	2-Methylphenol	-43.2	20		UJ
8270	S4D1925-CCV1	CCV	3,3-Dichlorobenzidine	35.2	20		UJ
8270	S4D1925-CCV1	CCV	4,6-Dinitro-2-methylphenol	78.9	20		UJ
8270	S4D1925-CCV1	CCV	4-Nitroaniline	29.8	20		UJ
8270	S4D1925-CCV1	CCV	4-Nitrophenol	27.7	20		UJ
8270	S4D1925-CCV1	CCV	Aniline	94.3	20		UJ
8270	S4D1925-CCV1	CCV	Bis(2-chloroethyl)ether	149	20		UJ
8270	S4D2231-CCV1	CCV	2,4-Dinitrophenol	106	20	OH-MW06I-20240412 OH-MW06S-20240412 OH-MW06D-20240412	UJ
8270	S4D2231-CCV1	CCV	2,4-Dinitrotoluene	34.9	20		UJ
8270	S4D2231-CCV1	CCV	2,6-Dinitrotoluene	28.3	20		UJ
8270	S4D2231-CCV1	CCV	2-Nitroaniline	23.4	20		UJ
8270	S4D2231-CCV1	CCV	4,6-Dinitro-2-methylphenol	91.2	20		UJ
8270	S4D2231-CCV1	CCV	4-Nitroaniline	21.8	20		UJ
8270	S4D2231-CCV1	CCV	Bi(2-chloroethyl)ether	79.3	20		UJ
8270	S4D2231-CCV1	CCV	Bis(2-chloroisopropyl)ether	-24.8	20		UJ
8270	S4D2231-CCV1	CCV	Caprolactam	31.8	20		UJ
8270	S4D2231-CCV1	CCV	Hexachlorocyclopentadiene	-22.8	20		UJ

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Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
8270	S4D2231-CCV1	CCV	Phenol	28.8	20		UJ
8270	S4D2231-CCV1	CCV	Pyridine	38.8	20		UJ
6010	S4D2219-CRL1	CCVL	Lead	34.4	30	OH-MW06I-20240412 OH-MW06D-20240412	UJ
						OH-MW05I-20240411 OH-MW05S-20240411 OH-MW05D-20240411 OH-MW06S-20240412	J-
6010	S4D2219-CCVB	CCV	Lead	11	10	OH-MW05I-20240411 OH-MW05S-20240411 OH-MW05D-20240411 OH-MW06S-20240412	J+
6010	S4D2219-CCVB	CCV	Potassium	21		OH-MW05I-20240411 OH-MW05S-20240411 OH-MW05D-20240411 OH-MW06S-20240412	J+
6010	S4D2219-CCVB	CCV	Sodium	20		OH-MW05I-20240411	J+
6010	S4D2219-CCVC	CCV	Iron	11.8	10	OH-MW05S-20240411	UJ
						OH-MW05I-20240411 OH-MW05D-20240411 OH-MW06S-20240412 OH-MW06I-20240412 OH-MW06S-20240412 OH-MW06D-20240412	J-
6010	S4D2219-CCVC	CCV	Lead	13	10	OH-MW05I-20240411 OH-MW05S-20240411 OH-MW05D-20240411 OH-MW06S-20240412	J+
						OH-MW06I-20240412 OH-MW06D-20240412	None
6010	S4D2219-CCVC	CCV	Potassium	25	10	OH-MW05I-20240411 OH-MW05S-20240411 OH-MW05D-20240411	J+

Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
						OH-MW06S-20240412	
6010	S4D2219-CCVC	CCV	Sodium	27	10	OH-MW05I-20240411 OH-MW06I-20240412	J+
6010	S4D2219-CCVC	CCV	Zinc	11	10	OH-MW05I-20240411 OH-MW05S-20240411 OH-MW05D-20240411 OH-MW06I-20240412 OH-MW06D-20240412	None
						OH-MW06S-20240412	J+
6010	S4D2219-CCVD	CCV	Iron	11.1	10	OH-MW06I-20240412 OH-MW06D-20240412	J-
6010	S4D2219-CCVD	CCV	Lead	13	10	OH-MW06I-20240412 OH-MW06D-20240412	None
6010	S4D2219-CCVD	CCV	Potassium	26	10	OH-MW06I-20240412 OH-MW06D-20240412	J+
6010	S4D2219-CCVD	CCV	Sodium	20	10	OH-MW06I-20240412	J+
6010	S4D2219-CCVD	CCV	Zinc	11	10	OH-MW06I-20240412 OH-MW06D-20240412	None
6020	S4D2237-CRL1	CCVL	Selenium	26.6	25	OH-MW05I-20240411 OH-MW05D-20240411 OH-MW06I-20240412 OH-MW06S-20240412 OH-MW06D-20240412	UJ
						OH-MW05S-20240411	J-
1633	S4D2262-CCV2	CCV	4:2 FTS	34.3	30	OH-MW05I-20240411 OH-MW05S-20240411 OH-MW05D-20240411 OH-MW06I-20240412 OH-MW06S-20240412 OH-MW06D-20240412	None
1633	S4D2262-CCV2	CCV	FHpPA	46.8	30		None
1633	S4D2262-CCV3	CCV	FHpPA	36.7	30		None
1633	S4D2262-CCV2	CCV	PFHpA	-40.2	30	OH-MW05D-20240411 OH-MW06D-20240412	None
1633	S4D2262-CCV3	CCV	PFHpA	-36.5	30		

Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
						OH-MW05I-20240411 OH-MW05S-20240411 OH-MW06I-20240412 OH-MW06S-20240412	J
1633	S4D2262-CCV3	CCV	PFDA	34.4	30	OH-MW05I-20240411 OH-MW05D-20240411 OH-MW06I-20240412 OH-MW06D-20240412	None
						OH-MW05S-20240411 OH-MW06S-20240412	J
8260	SD40032	CAL	1,2,3-Trichlorobenzene	22.14	20	OH-MW07I-20240415 OH-MW08I-20240415 TB-20240415	None
8260	SD40032	CAL	Methylene Chloride	95.8	20	OH-MW07I-20240415 OH-MW08I-20240415 TB-20240415	None
8260	S4D1818-SCV1	ICV	Tetrachloroethylene	-45.9	30	OH-MW07I-20240415 OH-MW08I-20240415 TB-20240415	UJ
8260	S4D2212-CCV1	CCV	1,2,3-Trichlorobenzene	-21.5	20	OH-MW07I-20240415 OH-MW08I-20240415 TB-20240415	UJ
8260	S4D2212-CCV1	CCV	Cyclohexane	26.8	20	OH-MW07I-20240415 OH-MW08I-20240415 TB-20240415	UJ
8260	S4D2212-CCV1	CCV	Dichlorodifluoromethane	36.9	20	OH-MW07I-20240415 OH-MW08I-20240415 TB-20240415	UJ
8260	S4D2212-CCV1	CCV	Tetrachloroethylene	24.0	20	OH-MW07I-20240415 OH-MW08I-20240415 TB-20240415	UJ
8260	S4D2212-CCV1	CCV	Vinyl Chloride	24.4	20	OH-MW07I-20240415 OH-MW08I-20240415 TB-20240415	UJ

Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
8260	SD40046	CAL	Dichlorodifluoromethane	25.3	20	GWRinse Blank	None
8260	SD40046	CAL	Methylcyclohexane	26.9	20	GWRinse Blank	None
8260	S4D2541-SCV1	ICV	Acetone	-45.3	30	GWRinse Blank	J
8260	S4D2541-SCV1	ICV	Tetrachloroethylene	-47.9	30	GWRinse Blank	UJ
8260	S4D2319-CCV1	CCV	Naphthalene	-47.4	20	OH-MW08I-20240415	J
8260	S4D2331-CCV1	CCV	1,1,2-Trichlorotrifluoroethane	32.0	20	GWRinse Blank	UJ
8260	S4D2331-CCV1	CCV	1,2-Dibromo-3-chloropropane	-20.3	20	GWRinse Blank	UJ
8260	S4D2331-CCV1	CCV	2-Hexanone	-24.2	20	GWRinse Blank	UJ
8260	S4D2331-CCV1	CCV	Acetone	-31.7	20	GWRinse Blank	J
8260	S4D2331-CCV1	CCV	Acrolein	31.6	20	GWRinse Blank	J
8260	S4D2331-CCV1	CCV	Chloromethane	-25.8	20	GWRinse Blank	UJ
8260	S4D2331-CCV1	CCV	Naphthalene	-21.1	20	GWRinse Blank	UJ
						OH-MW07I-20240415	J
8260	S4D2331-CCV1	CCV	Tetrachloroethylene	-42.1	20	GWRinse Blank	UJ
8260	S4D2331-CCV1	CCV	Trichloroethylene	-20.1	20	GWRinse Blank	UJ
8260	S4D2331-CCV1	CCV	Trichlorofluoromethane	25.7	20	GWRinse Blank	UJ
8270	SD40001	CAL	2,4-Dinitrophenol	37.4	20	OH-MW07I-20240415 OH-MW08I-20240415 GWRinse Blank	None
8270	SD40001	CAL	4,6-Dinitro-2-methylphenol	33.2	20		None
8270	SD40001	CAL	Benzaldehyde	22.6	20		None
8270	S4C3101-SCV1	ICV	2,4-Dimethylphenol	-34.0	30	OH-MW06I-20240412 OH-MW06S-20240412 OH-MW06D-20240412 OH-MW07I-20240415 OH-MW08I-20240415 GWRinse Blank	UJ
8270	S4C3101-SCV1	ICV	2,4-Dinitrophenol	41.6	30		UJ
8270	S4C3101-SCV1	ICV	4,6-Dinitro-2-methylphenol	36.7	30		UJ
8270	S4C3101-SCV1	ICV	Hexachlorocyclopentadiene	-52.5	30		UJ
8270	S4D2231-CCV1	CCV	2,4-Dinitrophenol	106	20	OH-MW07I-20240415 OH-MW08I-20240415	UJ
8270	S4D2231-CCV1	CCV	2,4-Dinitrotoluene	34.9	20		UJ

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Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
8270	S4D2231-CCV1	CCV	2,6-Dinitrotoluene	28.3	20	GWRinse Blank	UJ
8270	S4D2231-CCV1	CCV	2-Nitroaniline	23.4	20		UJ
8270	S4D2231-CCV1	CCV	4,6-Dinitro-2-methylphenol	91.2	20		UJ
8270	S4D2231-CCV1	CCV	4-Nitroaniline	21.8	20		UJ
8270	S4D2231-CCV1	CCV	Bis(2-chloroethyl)ether	79.3	20		UJ
8270	S4D2231-CCV1	CCV	Bis(2-chloroisopropyl)ether	-24.8	20		UJ
8270	S4D2231-CCV1	CCV	Caprolactam	31.8	20		UJ
8270	S4D2231-CCV1	CCV	Hexachlorocyclopentadiene	-22.8	20		UJ
8270	S4D2231-CCV1	CCV	Phenol	28.8	20		UJ
8270	S4D2231-CCV1	CCV	Pyridine	38.8	20		UJ
8270 SIM	S4D2211-CCV1	CCV	Nitrobenzene	182	30	GWRinse Blank OH-MW06S-20240412	UJ
8270 SIM	S4D2242-CCV1	CCV	Nitrobenzene	157	30	OH-MW07I-20240415 OH-MW08I-20240415 OH-MW05I-20240411 OH-MW06D-20240412 OH-MW06I-20240412	UJ
8081	S4D2270-CCV4	CCV	Methoxychlor	21.5	20	OH-MW07I-20240415 OH-MW08I-20240415	UJ
8081	S4D2270-CCV5	CCV	4,4-DDE	24.2	20	OH-MW07I-20240415 OH-MW08I-20240415	UJ
8081	S4D2270-CCV5	CCV	4,4-DDT	22.2	20		UJ
8081	S4D2270-CCV5	CCV	Methoxychlor	29.3	20		UJ
8082	S4D2252-CCV2	CCV	Aroclor 1260 (3)	20.5	20	GWRinse Blank OH-MW07I-20240415 OH-MW05D-20240411 OH-MW05S-20240411 OH-MW06D-20240412 OH-MW06S-20240412	UJ
6010	S4D2352-CCV7	CCV	Potassium	13.3	10	GWRinse Blank	UJ
						OH-MW07I-20240415	J-

Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
						OH-MW08I-20240415	
6010	S4D2352-CCV7	CCV	Sodium	16.6	10	GWRinse Blank	UJ
						OH-MW07I-20240415 OH-MW08I-20240415	J-
6010	S4D2352-CCV8	CCV	Potassium	12.6	10	GWRinse Blank	UJ
						OH-MW07I-20240415 OH-MW08I-20240415	J-
6010	S4D2352-CCV8	CCV	Sodium	16.4	10	GWRinse Blank	UJ
						OH-MW07I-20240415 OH-MW08I-20240415	J-
6020	S4D2350-CRL1	CCVL	Selenium	36	25	GWRinse Blank OH-MW07I-20240415 OH-MW08I-20240415	None
1633	S4D2262-CCV3	CCV	FHpPA	36.7	30	OH-MW07I-20240415 OH-MW08I-20240415	None
1633	S4D2262-CCV3	CCV	PFDA	34.4	30		None
1633	S4D2262-CCV3	CCV	PFHpA	-36.5	30		None
1633	S4D2262-CCV4	CCV	4:2 FTS	33.7	30	OH-MW07I-20240415 OH-MW08I-20240415	None
1633	S4D2262-CCV4	CCV	6:2 FTS	31.7	30		None
1633	S4D2262-CCV4	CCV	FHpPA	40.8	30		None
1633	S4D2262-CCV4	CCV	PFHpA	-40.7	30		None

Table 8 –Samples that were Diluted/Reanalyzed

Sample ID	Lab ID	Method	Sample Type	Analytes	Action
OH-MW02I-20240405	24D02406-04RE1	8260	DIL	1,2,4-Trimethylbenzene 4-Ethyltoluene m,p-Xylene O-Xylene (1,2-Dimethylbenzene) Styrene Toluene	Reextracted at a 10x Dilution

Sample ID	Lab ID	Method	Sample Type	Analytes	Action
				Xylenes	
OH-MW02I-20240405	24D02406-04RE2	8260	DIL	Benzene Ethylbenzene	Reextracted at a 100x Dilution
DUP01-20240405	24D02460-05RE1	8260	DIL	1,2,4-Trimethylbenzene 4-Ethyltoluene Benzene Ethylbenzene m,p-Xylene O-Xylene (1,2-Dimethylbenzene) Styrene Toluene Xylenes	Reextracted at a 25x Dilution
MW-07D-20240405	24D02460-06RE1	8260	DIL	1,2,4-Trimethylbenzene 4-Ethyltoluene Benzene Ethylbenzene m,p-Xylene O-Xylene (1,2-Dimethylbenzene) Styrene Toluene Xylenes	Reextracted at a 25x Dilution
MW-07I-20240405	24D02460-08	8260	N	All Analytes	Prepared at a 10x Dilution
MW-07I-20240405	24D02460-08RE1	8260	DIL	Ethylbenzene	Reextracted at a 50x Dilution
MW-07I-20240405	24D02460-08RE2	8260	DIL	Benzene	Reextracted at a 200x Dilution
DUP01-20240405	24D0460-05RE1	6010	DIL	Sodium	10x Dilution
MW-04S-20240405	24D0460-03RE1	6010	DIL	Sodium	10x Dilution
MW-07D-20240405	24D0460-06RE1	6010	DIL	Sodium	10x Dilution
MW-07S-20240405	24D0460-07RE1	6010	DIL	Sodium	10x Dilution
OH-MW02I-20240405	24D0460-04RE1	6010	DIL	Sodium	10x Dilution
MW-05D-20240410	24D0731-06RE1	8260	DIL	Naphthalene	Reextracted at a 500x Dilution
MW-05I-20240410	24D0731-07RE1	8260	DIL	Ethylbenzene	Reextracted at a 25x Dilution

Sample ID	Lab ID	Method	Sample Type	Analytes	Action
				Toluene Xylenes m,p-Xylene Benzene O-Xylene (1,2-Dimethylbenzene) 1,2,4-Trimethylbenzene 4-Ethyltoluene	
MW-05I-20240410	24D0731-07RE2	8260	DIL	Naphthalene	Reextracted at a 500x Dilution
MW-05S-20240410	24D0731-05	8260	N	All Analytes	Prepared at a 5x Dilution
MW-05S-20240410	24D0731-05RE1	8260	DIL	Naphthalene	Reextracted at a 500x Dilution
MW-06D-20240410	24D0731-03RE1	8260	DIL	Ethylbenzene Toluene Xylenes m,p-Xylene O-Xylene (1,2-Dimethylbenzene) 1,2,4-Trimethylbenzene 4-Ethyltoluene	Reextracted at a 25x Dilution
MW-06D-20240410	24D0731-03RE2	8260	DIL	Naphthalene	Reextracted at a 500x Dilution
MW-06I-20240410	24D0731-02	8260	N	All Analytes	Prepared at a 5x Dilution
MW-06I-20240410	24D0731-02RE1	8260	DIL	Ethylbenzene Toluene Xylenes m,p-Xylene Benzene O-Xylene (1,2-Dimethylbenzene) 4-Ethyltoluene	Reextracted at a 25x Dilution
MW-06I-20240410	24D0731-02RE2	8260	DIL	Naphthalene	Reextracted at a 500x Dilution
MW-05D-20240410	24D0731-06RE1	8270	DIL	2-Methylnaphthalene	Reextracted at a 10x Dilution
MW-05I-20240410	24D0731-07RE1	8270	DIL	2-Methylnaphthalene	Reextracted at a 100x Dilution
MW-06D-20240410	24D0731-03	8270	N	All Analytes	Prepared at a 50x Dilution
MW-06I-20240410	24D0731-02	8270	N	All Analytes	Prepared at a 100x Dilution
MW-06I-20240410	24D0731-02RE1	8270	DIL	Phenanthrene	Reextracted at a 1000x Dilution

Sample ID	Lab ID	Method	Sample Type	Analytes	Action
				2-Methylnaphthalene	
MW-06I-20240409	24D0731-02RE1	1633	N	All Analytes	Reextracted
OH-MW03I-20240410	24D0807-01	8260	N	All Analytes	Prepared at a 10x Dilution
OH-MW03I-20240410	24D0807-01RE1	8260	DIL	Ethylbenzene Toluene Benzene	Reextracted at a 50x Dilution
OH-MW03I-20240410	24D0807-01RE2	8260	DIL	Naphthalene	Reextracted at a 500x Dilution
OH-MW03D-20240410	24D0807-02RE1	8260	DIL	Ethylbenzene Toluene Xylenes m,p-Xylene 4-Ethyltoluene Benzene O-Xylene (1,2-Dimethylbenzene) 1,2,4-Trimethylbenzene	Reextracted at a 10x Dilution
OH-MW03D-20240410	24D0807-02RE2	8260	DIL	Naphthalene	Reextracted at a 500x Dilution
DUP02-20240410	24D0087-03RE1	8260	DIL	Ethylbenzene Toluene Xylenes m,p-Xylene 4-Ethyltoluene Benzene O-Xylene (1,2-Dimethylbenzene) 1,2,4-Trimethylbenzene	Reextracted at a 25x Dilution
DUP02-20240410	24D0807-03RE2	8260	DIL	Naphthalene	Reextracted at a 500x Dilution
OH-MW04I-20240411	24D0807-04RE1	8260	DIL	Ethylbenzene Toluene Xylenes m,p-Xylene 4-Ethyltoluene Benzene O-Xylene (1,2-Dimethylbenzene) 1,2,4-Trimethylbenzene	Reextracted at a 25x Dilution

Sample ID	Lab ID	Method	Sample Type	Analytes	Action
OH-MW04I-20240411	24D0807-04RE2	8260	DIL	Naphthalene	Reextracted at a 500x Dilution
OH-MW04S-20240411	24D0807-05RE1	8260	DIL	Naphthalene	Reextracted at a 25x Dilution
OH-MW03I-20240410	24D0807-01	8270	N	All Analytes	Prepared at a 100x Dilution
OH-MW03I-20240410	24D0807-01RE1	8270	DIL	2-Methylnaphthalene	Reextracted at a 500x Dilution
DUP02-20240410	24D0807-03	8270	N	All Analytes	Prepared at a 20x Dilution
OH-MW03D-20240410	24D0807-02	8270	N	All Analytes	Prepared at a 20x Dilution
OH-MW04I-20240411	24D0807-04RE1	8270	DIL	2-Methylnaphthalene	Reextracted at a 100x Dilution
DUP02-20240410	24D0807-03	8270 SIM	N	All Analytes	Prepared at a 500x Dilution
OH-MW03D-20240410	24D0807-02	8270 SIM	N	All Analytes	Prepared at a 500x Dilution
OH-MW03I-20240410	24D0807-01	8270 SIM	N	All Analytes	Prepared at a 1000x Dilution
OH-MW04I-20240411	24D0807-04	8270 SIM	N	All Analytes	Prepared at a 1000x Dilution
DUP02-20240410	24D0807-03RE1	6010	DIL	Sodium	10x Dilution
OH-MW03D-20240410	24D0807-02RE1	6010	DIL	Sodium	10x Dilution
OH-MW04I-20240411	24D0807-04RE1	6010	DIL	Sodium	10x Dilution
OH-MW04S-20240411	24D0807-05RE1	6010	DIL	Iron	10x Dilution
OH-MW05S-20240411	24D0896-01	8260	N	All Analytes	Prepared at a 5x Dilution
OH-MW05D-20240411	24D0896-02RE1	8260	DIL	Ethylbenzene 4-Ethyltoluene	Reextracted at a 5x Dilution
OH-MW05D-20240411	24D0896-02RE2	8260	DIL	Naphthalene	Reextracted at a 100x Dilution
OH-MW05I-20240411	24D0896-03RE1	8260	DIL	1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene (Mesitylene) 4-Ethyltoluene Ethylbenzene Isopropylbenzene (Cumene) m,p-Xylene O-Xylene (1,2-Dimethylbenzene) Xylenes	Reextracted at a 25x Dilution
OH-MW05I-20240411	24D0896-03RE3	8260	DIL	Benzene Naphthalene	Reextracted at a 500x Dilution
OH-MW06S-20240412	24D0896-04RE1	8260	DIL	Naphthalene	Reextracted at a 50x Dilution

Sample ID	Lab ID	Method	Sample Type	Analytes	Action
OH-MW06D-20240412	24D0896-05RE1	8260	DIL	Naphthalene	Reextracted at a 50x Dilution
OH-MW06I-20240412	24D0896-06RE1	8260	DIL	m,p-Xylene 4-Ethyltoluene O-Xylene (1,2-Dimethylbenzene) Xylenes	Reextracted at a 10x Dilution
OH-MW06I-20240412	24D0896-06RE2	8260	DIL	Ethylbenzene Toluene Benzene	Reextracted at a 200x Dilution
OH-MW06I-20240412	24D0896-06RE3	8260	DIL	Naphthalene	Reextracted at a 1000x Dilution
OH-MW05D-20240411	24D0896-02	8270	N	All Analytes	Prepared at a 2x Dilution
OH-MW05I-20240411	24D0896-03	8270	N	All Analytes	Prepared at a 200x Dilution
OH-MW06D-20240412	24D0896-05RE1	8260	DIL	2-Methylnaphthalene	Reextracted at a 10x Dilution
OH-MW06I-20240412	24D0896-06RE1	8260	DIL	2-Methylnaphthalene	Reextracted at a 10x Dilution
OH-MW05D-20240411	24D0896-02	8270 SIM	N	All Analytes	Prepared at a 200x Dilution
OH-MW05I-20240411	24D0896-03	8270 SIM	N	All Analytes	Prepared at a 500x Dilution
OH-MW06D-20240412	24D0896-05	8270 SIM	N	All Analytes	Prepared at a 50x Dilution
OH-MW06I-20240412	24D0896-06	8270 SIM	N	All Analytes	Prepared at a 500x Dilution
OH-MW05S-20240411	24D0896-01RE1	6010	DIL	Sodium	10x Dilution
OH-MW05D-20240411	24D0896-02RE1	6010	DIL	Sodium	10x Dilution
OH-MW06S-20240412	24D0896-04RE1	6010	DIL	Sodium	10x Dilution
OH-MW06D-20240412	24D0896-05RE1	6010	DIL	Sodium	10x Dilution
OH-MW08I-20240415	24D0948-01	8260	N	All Analytes	Prepared at a 10x Dilution
OH-MW08I-20240415	24D0948-01RE1	8260	DIL	Naphthalene	Reextracted at a 500x Dilution
OH-MW07I-20240415	24D0948-02	8260	N	All Analytes	Prepared at a 10x Dilution
OH-MW07I-20240415	24D0948-02RE1	8260	DIL	4-Ethyltoluene Benzene Ethylbenzene Toluene	Reextracted at a 50x Dilution
OH-MW07I-20240415	24D0948-02RE2	8260	DIL	Naphthalene	Reextracted at a 5000x Dilution
GWRinse Blank	24D0948-03RE1	8260	N	All Analytes	Reextracted

Sample ID	Lab ID	Method	Sample Type	Analytes	Action
OH-MW08I-20240415	24D0948-01	8270	N	2-Methylnaphthalene	Reextracted at a 100x Dilution
OH-MW07I-20240415	24D0948-02	8270	N	2-Methylnaphthalene	Reextracted at a 200x Dilution
OH-MW08I-20240415	24D0948-01	8270 SIM	N	All Analytes	Prepared at a 500x Dilution
OH-MW07I-20240415	24D0948-02	8270 SIM	N	All Analytes	Prepared at a 500x Dilution
OH-MW07I-20240415	24D0948-02	8081	N	All Analytes	Prepared at a 40x Dilution
OH-MW07I-20240415	24D0948-02	1633	N	All Analytes	Reextracted
OH-MW08I-20240415	24D0948-01	1633	N	All Analytes	Reextracted

Table 9 – Summary of Duplicate Results

Method	Analyte	Units	PQL	OH-MW01I-20240404	BD40894-DUP1	RPD	Sample Qualifier
6010	Aluminum	mg/L	0.0500	0.176	0.226	24.5	None - <2x PQL
6010	Copper	mg/L	0.0200	0.0312	0.0236	27.9	None - <2x PQL

Method	Analyte	Units	PQL	OH-MW01I-20240404	BD40678-DUP1	RPD	Sample Qualifier
6020	Arsenic	mg/L	1.0	1.77	4.36	84.3	J

Method	Analyte	Units	PQL	OH-MW02I-20240405	DUP01-20240405	RPD (%)	Sample Qualifier
8260	1,2,4-Trimethylbenzene	ug/l	12.5	327	142	78.89	J
8260	4-Ethyltoluene	ug/l	12.5	136	59.0	78.97	J
8260	m,p-Xylene	ug/l	25	1010	402	86.11	J
8260	N-Butylbenzene	ug/l	0.5	ND	1.31	200	UJ / J
8260	O-Xylene (1,2-Dimethylbenzene)	ug/l	12.5	572	237	82.81	J
8260	Styrene	ug/l	12.5	302	122	84.9	J
8260	Toluene	ug/l	12.5	328	144	77.96	J
8260	Xylenes	ug/l	37.5	1590	638	85.45	J
8270 SIM	Acenaphthylene	ug/l	10	ND	150	200	UJ / J

8270 SIM	Anthracene	ug/l	10	12.0	48.0	120	J
8270 SIM	Naphthalene	ug/l	10	ND	150	200	UJ / J
SW6010	Aluminum	mg/l	0.0556	0.476	1.32	93.98	J
SW6020	Selenium	ug/l	1.11	ND	4.63	200	UJ / J
E1633	3-Perfluoropropyl propanoic acid (3:3 FTCA)	ng/l	4.76	ND	2.02	200	None - <2x PQL
E1633	Perfluoro-4-methoxybutanoic acid (PFMBA)	ng/l	3.81	ND	0.410	200	None - <2x PQL
E1633	Perfluorohexanoic acid (PFHxA)	ng/l	1.9	ND	17.4	200	UJ / J
E1633	Perfluorononanoic acid (PFNA)	ng/l	1.9	ND	0.519	200	None - <2x PQL
E1633	Perfluorooctanesulfonic acid (PFOS)	ng/l	1.77	ND	4.05	200	UJ / J

Method	Analyte	Units	PQL	OH-MW03D-20240410	DUP02-20240410	RPD (%)	Sample Qualifier
SW6010	Lead	mg/l	0.00556	0.00594	ND	200.0%	None - <2x PQL
SW9014	Cyanide	mg/l	0.01	ND	0.010	200.0%	None - <2x PQL
E1633	1H,1H, 2H, 2H-Perfluorooctane sulfonic acid	ng/l	7.24	ND	7.51	200.0%	None - <2x PQL
E1633	Perfluorobutanesulfonic acid (PFBS)	ng/l	1.69	ND	0.561	200.0%	None - <2x PQL
E1633	Perfluorobutanoic Acid	ng/l	7.62	5.65	ND	200.0%	None - <2x PQL
E1633	Perfluorohexanoic acid (PFHxA)	ng/l	1.9	ND	0.613	200.0%	None - <2x PQL
E1633	Perfluorononanoic acid (PFNA)	ng/l	1.9	5.46	ND	200.0%	J / UJ
E1633	Perfluoropentanoic Acid (PFPeA)	ng/l	3.81	ND	9.35	200.0%	None - <2x PQL

Method	Sample	Analyte	Units	Column 1	Column 2	%Diff	Sample Qualifier
8081	OH-MW01S-20240404	Heptachlor epoxide	ug/L	0.00655	0.0101	42.64	J

Method	Analyte	Units	PQL	MW-06D-20240409	BD41147-DUP1	RPD	Sample Qualifier
1633	PFHpA	ng/L	2.08	2.79	1.78	44.3	None - <2x PQL
1633	PFHxA	ng/L	2.08	7.89	4.02	64.9	J
1633	PFOS	ng/L	1.93	6.64	3.91	51.9	J
1633	PFOA	ng/L	2.08	15.1	9.01	50.8	J
1633	PFPeA	ng/L	4.16	3.62	1.85	64.9	None - <2x PQL

Method	Analyte	Units	PQL	GWRinse Blank	BD41628-DUP1	RPD	Sample Qualifier
6010	Calcium	mg/L	0.0500	0.114	0.0859	28.3	None - <2x PQL

Method	Analyte	Units	PQL	OH-MW05S-20240411	BD41531-DUP1	RPD	Sample Qualifier
1633	N-EtFOSAA	ng/L	1.03	1.36	2.28	50.4	None - <2x PQL
1633	PFOS	ng/L	0.820	10.2	13.8	30.4	J

Data Usability Summary Report	Project: Citizens-Carroll Gardens MGP Off-Site Investigation, Owl's Head Site, Brooklyn, NY
Date Completed: June 24, 2024	Prepared by: Sayward Gohman-Kramer Reviewed by: Eridania Marte

The analytical data provided by the laboratory were reviewed for precision, accuracy, and completeness based on applicable sections of the following guidelines.

- NYSDEC Division of Environmental Remediation Guidance for Data Deliverables and the Development of Data Usability Summary Reports (in DER-10, May 2010)
- EPA Region 2 Data Validation SOPs
  - *SOP No. HW-34A, Rev. 1, Trace Volatile Data Validation*
  - *SOP No. HW-35A, Rev. 1, Semivolatile Data Validation*
  - *SOP No. HW-36A, Rev. 1, Pesticide Data Validation*
  - *SOP No. HW-37A, Polychlorinated Biphenyls (PCB) Aroclor Data Validation*
  - *SOP No. HW-3a, Rev. 1, ICP-AES Data Validation*
  - *SOP No. HW-3b, Rev. 1, ICP-MS Data Validation*
- NYSDEC Division of Environmental Remediation, Appendix I – Data Review Guidelines for Analysis of PFAS in Non-Potable Water and Solids (in DER-10, January 2020)
- USDOD Data Validation Module 6: Procedure for Per- and Polyfluoroalkyl Substances Analysis by QSM Table B-24 (November 1, 2022)

Specific criteria for QC limits were obtained from the master QAPP. Compliance with the project QA program is indicated in the checklist and tables below. Any major or minor concerns affecting data usability are listed below. The checklist and tables also indicate whether data qualification is required and/or the type of qualifier assigned.

Reference:

Project ID	Lab Work Order	Laboratory Report
EE1705007.0031	24C1174 24C1265 24C1399 24C1526 24C1658 24C1785 24C1926 24D0140 24D0369 24D0460 24D0593 24D0731 24D0807 24D0896 24D0948	York Analytical Laboratory – Richmond Hill, New York

Table 1 – Sample Listing Summary

Work Order	Matrix	Sample ID	Lab ID	Sample Date	Lab QC	ID Corrections
24C1174	SO	OH-SB01-Z44-45	24C1174-01	3/19/2024		
24C1174	SO	OH-SB01-Z94-95	24C1174-02	3/19/2024		
24C1265	SO	OH-SB02-Z37-39	24C1265-01	3/20/2024		
24C1265	SO	OH-SB02-Z64-65	24C1265-02	3/20/2024		
24C1399	SO	OH-SB06-Z37-38	24C1399-01	3/21/2024		
24C1399	SO	OH-SB06-Z78-79	24C1399-02	3/21/2024		
24C1399	SO	OH-SB06-Z71-72	24C1399-03	3/21/2024		
24C1526	SO	OH-SB07-Z31-32	24C1526-01	3/25/2024		
24C1526	SO	OH-SB07-Z52-53	24C1526-02	3/25/2024		
24C1658	SO	OH-SB08-Z31-32	24C1658-01	3/26/2024		
24C1658	SO	OH-SB08-Z41-42	24C1658-02	3/26/2024		
24C1658	SO	OH-SB08-Z47-48	24C1658-03	3/26/2024		

Data Usability Summary Report	Project: Citizens-Carroll Gardens MGP Off-Site Investigation, Owl's Head Site, Brooklyn, NY
Date Completed: June 24, 2024	Prepared by: Sayward Gohman-Kramer Reviewed by: Eridania Marte

Work Order	Matrix	Sample ID	Lab ID	Sample Date	Lab QC	ID Corrections
24C1785	SO	OH-SB05-Z32-33	24C1785-01	3/27/2024		
24C1785	SO	OH-SB05-Z41-42	24C1785-03	3/27/2024		
24C1785	SO	OH-SB05-Z41-42-Q	24C1785-04	3/27/2024	FD	
24C1785	SO	OH-SB05-Z71-72	24C1785-05	3/27/2024		
24C1785	SO	OH-SB05-Z75-76	24C1785-06	3/27/2024		
24C1785	WQ	Trip Blank	24C1785-07	3/27/2024	TB	TB-20240327
24C1926	SO	OH-SB03-Z37-39	24C1926-01	3/29/2024		
24C1926	SO	OH-SB03-Z51-52	24C1926-02	3/29/2024		
24C1926	SO	OH-SB03-Z67-69	24C1926-03	3/29/2024		
24D0140	SO	OH-SB04-Z33-34	24D0140-01	4/1/2024		
24D0140	SO	OH-SB04-Z62-63	24D0140-02	4/1/2024		
24D0140	SO	OH-SB04-Z52-53	24D0140-03	4/1/2024		

Table 1A – Sample Test Summary

Work Orders	Matrix	Test Method	Method Name	Number of Samples	Sample Type
24C1174	SO	8260	Volatile Organic Compounds by GC/MS	2	N
24C1174	SO	8270	Semivolatile Organic Compounds by GC/MS	2	N
24C1174	SO	8081B	Organochloride Pesticides by GC/ECD	2	N
24C1174	SO	8082	Polychlorinated Biphenyls by GC/ECD	2	N
24C1174	SO	6010	Metals (ICP)	2	N
24C1174	SO	7473	Mercury (CVAA)	2	N
24C1174	SO	9014	Cyanide	2	N
24C1174	SO	1633	PFAS by LCMS/MS	2	N
24C1265	SO	8260	Volatile Organic Compounds by GC/MS	2	N
24C1265	SO	8270	Semivolatile Organic Compounds by GC/MS	2	N
24C1265	SO	8081B	Organochloride Pesticides by GC/ECD	2	N
24C1265	SO	8082	Polychlorinated Biphenyls by GC/ECD	2	N
24C1265	SO	6010	Metals (ICP)	2	N
24C1265	SO	7473	Mercury (CVAA)	2	N
24C1265	SO	9014	Cyanide	2	N
24C1265	SO	1633	PFAS by LCMS/MS	2	N
24C1399	SO	8260	Volatile Organic Compounds by GC/MS	3	N
24C1399	SO	8270	Semivolatile Organic Compounds by GC/MS	3	N
24C1399	SO	8081B	Organochloride Pesticides by GC/ECD	3	N
24C1399	SO	8082	Polychlorinated Biphenyls by GC/ECD	3	N
24C1399	SO	6010	Metals (ICP)	3	N
24C1399	SO	7473	Mercury (CVAA)	3	N
24C1399	SO	9014	Cyanide	3	N
24C1399	SO	1633	PFAS by LCMS/MS	3	N

Work Orders	Matrix	Test Method	Method Name	Number of Samples	Sample Type
24C1526	SO	8260	Volatile Organic Compounds by GC/MS	2	N
24C1526	SO	8270	Semivolatile Organic Compounds by GC/MS	2	N
24C1526	SO	8081B	Organochloride Pesticides by GC/ECD	2	N
24C1526	SO	8082	Polychlorinated Biphenyls by GC/ECD	2	N
24C1526	SO	6010	Metals (ICP)	2	N
24C1526	SO	7473	Mercury (CVAA)	2	N
24C1526	SO	9014	Cyanide	2	N
24C1526	SO	1633	PFAS by LCMS/MS	2	N
24C1658	SO	8260	Volatile Organic Compounds by GC/MS	3	N
24C1658	SO	8270	Semivolatile Organic Compounds by GC/MS	3	N
24C1658	SO	8081B	Organochloride Pesticides by GC/ECD	3	N
24C1658	SO	8082	Polychlorinated Biphenyls by GC/ECD	3	N
24C1658	SO	6010	Metals (ICP)	3	N
24C1658	SO	7473	Mercury (CVAA)	3	N
24C1658	SO	9014	Cyanide	3	N
24C1658	SO	1633	PFAS by LCMS/MS	3	N
24C1785	SO	8260	Volatile Organic Compounds by GC/MS	3	N
24C1785	SO	8270	Semivolatile Organic Compounds by GC/MS	3	N
24C1785	SO	8081B	Organochloride Pesticides by GC/ECD	3	N
24C1785	SO	8082	Polychlorinated Biphenyls by GC/ECD	3	N
24C1785	SO	6010	Metals (ICP)	3	N
24C1785	SO	7473	Mercury (CVAA)	3	N
24C1785	SO	9014	Cyanide	3	N
24C1785	SO	1633	PFAS by LCMS/MS	3	N
24C1785	SO	8260	Volatile Organic Compounds by GC/MS	1	FD
24C1785	SO	8270	Semivolatile Organic Compounds by GC/MS	1	FD
24C1785	SO	8081B	Organochloride Pesticides by GC/ECD	1	FD
24C1785	SO	8082	Polychlorinated Biphenyls by GC/ECD	1	FD
24C1785	SO	6010	Metals (ICP)	1	FD
24C1785	SO	7473	Mercury (CVAA)	1	FD
24C1785	SO	9014	Cyanide	1	FD
24C1785	SO	1633	PFAS by LCMS/MS	1	FD
24C1785	SO	8260	Volatile Organic Compounds by GC/MS	1	TB
24C1785	SO	8270	Semivolatile Organic Compounds by GC/MS	1	TB
24C1785	SO	8081B	Organochloride Pesticides by GC/ECD	1	TB
24C1785	SO	8082	Polychlorinated Biphenyls by GC/ECD	1	TB
24C1785	SO	6010	Metals (ICP)	1	TB
24C1785	SO	7473	Mercury (CVAA)	1	TB
24C1785	SO	9014	Cyanide	1	TB

Work Orders	Matrix	Test Method	Method Name	Number of Samples	Sample Type
24C1785	SO	1633	PFAS by LCMS/MS	1	TB
24C1926	SO	8260	Volatile Organic Compounds by GC/MS	3	N
24C1926	SO	8270	Semivolatile Organic Compounds by GC/MS	3	N
24C1926	SO	8081B	Organochloride Pesticides by GC/ECD	3	N
24C1926	SO	8082	Polychlorinated Biphenyls by GC/ECD	3	N
24C1926	SO	6010	Metals (ICP)	3	N
24C1926	SO	7473	Mercury (CVAA)	3	N
24C1926	SO	9014	Cyanide	3	N
24C1926	SO	1633	PFAS by LCMS/MS	3	N
24D0140	SO	8260	Volatile Organic Compounds by GC/MS	3	N
24D0140	SO	8270	Semivolatile Organic Compounds by GC/MS	3	N
24D0140	SO	8081B	Organochloride Pesticides by GC/ECD	3	N
24D0140	SO	8082	Polychlorinated Biphenyls by GC/ECD	3	N
24D0140	SO	6010	Metals (ICP)	3	N
24D0140	SO	7473	Mercury (CVAA)	3	N
24D0140	SO	9014	Cyanide	3	N
24D0140	SO	1633	PFAS by LCMS/MS	3	N

General Sample Information	
Do Samples and Analyses on COC check against Lab Sample Tracking Form?	No.
Did coolers arrive at lab between 2 and 6ºC and in good condition as indicated on COC and Cooler Receipt Form?	No. 24C1174: Upon receipt at the laboratory, cooler temperature was recorded as 1.3°C using a NIST traceable digital infrared thermometer. No indication of sample being frozen; therefore, no qualifications were made.
Frequency of Field QC Samples Correct? Field Duplicate - 1 sample per 20 MS/MSD – 1 sample per 20 Trip Blank - Every cooler with VOCs waters only Equipment Blank - 1/ set per equipment per matrix?	Yes – 1 Field Duplicate per 22 samples. Four samples used as MS/MSD by laboratory for varying tests. Only one cooler has associated trip blank. No qualification was made based on these findings. No equipment blanks collected.
Case narrative present and complete?	Yes.
Any holding time violations?	No.

The following tables are presented at the end of this DUSR and provide summaries of results outside QC criteria:

- Method Blanks Results (Table 2)
- Surrogates/Isotope Dilution Standards Outside Limits (Table 3)
- Internal Standards Outside Limits (Table 4)
- MS/MSD Outside Limits (Table 5)
- LCS Outside Limits (Table 6)
- CCV Outside Limits (Table 7)
- Reanalysis Results (Table 8)
- Duplicate Results (Table 9)

Go to Tables List

Volatile Organics and Semivolatile Organics by GC/MS	
Description	**Notes and Qualifiers**
Any compounds present in method, trip, or, field blanks (see Table 2)?	Yes. VOC – Methylene chloride was detected above the MDL in several method blanks. SVOC – Naphthalene was detected above the MDL in method blank BC61633-BLK1.
For samples, if results are < 5 times the blank or < 10 times the blank for common laboratory contaminants, then "U" flag data. Qualification also applies to TICs. (see Table 2B)	VOC – Samples OH-SB08-Z31-32, OH-SB08-Z41-42, and OH-SB08-Z47-48 detected methylene chloride less than 10x the blank concentration; therefore, sample results were qualified U and the PQL was raised to the sample result concentration. Sample OH-SB05-Z71-72 detected methylene chloride less than 10x the blank concentration; therefore, sample result was qualified U as non-detect and the PQL raised to the sample result concentration.
Are surrogates for method blanks and LCS within limits?	Yes.
Are surrogates for samples and MS/MSD within limits? (See Table 3). If not, were all samples reanalyzed for VOCs? Semivolatile samples should reanalyzed if more than one base-neutral and/or more than one acid phase compound for semivolatiles is out. Matrix effects should be established.	No. SVOC – When surrogate recovery was outside acceptance criteria and the sample was analyzed at a 20x dilution or greater, no qualification was made. 24C1265: 2-Fluorobiphenyl and terphenyl-d14 were recovered below the acceptance criteria in sample OH-SB02-Z37-38. Sample was prepared at a 10x dilution; therefore, associated results were UJ qualified as estimated non-detect. 24C1658: 2,4,6-Tribromophenol was recovered above the acceptance criteria in sample OH-SB08-Z47-48. Sample was prepared at a 2x dilution; therefore, associated detections were J+ qualified as

Volatile Organics and Semivolatile Organics by GC/MS	
Description	**Notes and Qualifiers**
	estimated biased high and non-detects did not require qualification. 24D0140: Nitrobenzene-d5 was recovered above acceptance criteria in sample OH-SB04-Z33-34. Associated compounds were non-detect; therefore, no qualification was made.
Is Laboratory QC frequency at least one blank and LCS with each batch and one set of MS/MSD per 20 samples?	Yes
Is MS/MSD within QC criteria (see Table 5)? If out and LCS is compliant, then "J" flag positive data in original sample due to matrix.	No. SVOC – When compounds were not recovered from the MS/MSD and the parent sample was non-detect, no qualification was made. 2,4,6-Trichlorophenol had high %RSD between the MS and MSD BC41834-MS1 and BC41834-MSD1. The parent sample OH-SB07-Z52-53 was non-detect for this compound; therefore, no qualification was necessary.
Is LCS within QC criteria (see Table 6)? If out, and the recovery is high with no positive values, then no data qualification is required.	No. VOC – Several compounds were recovered outside acceptance criteria throughout the lab reports. When recovery was high, sample detections were J qualified as estimated and non-detects were not qualified. When recovery was low, sample detections were J qualified as estimated and non-detects were UJ qualified as estimated non-detect. Acetone had high %RSD between LCS BC42114-BS1 and LCSD BC42114-BSD1. Samples OH-SB07-Z31-32 and OH-SB07-Z52-53 were non-detect for these compounds; therefore, samples were UJ qualified as estimated non-detect. Dichlorodifluoromethane had high RSD between LCS and LCSD BD40157-BS2 and BD40157-BSD2. Samples OH-SB08-Z31-32 and OH-SB08-Z41-42 were non-detect for this compound; therefore, results were UJ qualified as estimated non-detect. SVOC – Several compounds were recovered outside acceptance criteria throughout the lab reports. When recovery was high, sample detections were J qualified as estimated and non-detects were not qualified. When recovery was low, sample detections

Volatile Organics and Semivolatile Organics by GC/MS	
Description	**Notes and Qualifiers**
	were J qualified as estimated and non-detects were UJ qualified as estimated non-detect. 2,4-Dinitrophenol and 4,6-dinitro-2-methylphenol were not recovered in LCS BD40403-BS1. Samples OH-SB04-Z33-34, OH-SB04-Z52-53, and OH-SB04-Z62-63 were non-detect for these compounds; therefore, results were rejected and considered unusable.
Do internal standards areas and retention time meet criteria? If not was sample re-analyzed to establish matrix (see Table 4)?	Yes.
Is initial calibration for target compounds <20 %RSD or curve fit? (See Table 7)	No. VOC - When compounds did not meet the curve fit requirement or had high %RSD, associated sample detections were J qualified as estimated and non-detects did not require qualification. SVOC – When compounds had high %RSD, associated sample detections were J qualified as estimated and non-detects did not require qualification.
Is the initial calibration verification for target compounds between laboratory limits or 70-130%? (See Table 7)	No. VOC – Several compounds were recovered outside acceptance criteria throughout the lab reports. Associated sample detections were J qualified as estimated and non-detects were UJ qualified as estimated non-detect. SVOC – Several compounds were recovered outside acceptance criteria throughout the lab reports. Associated sample detections were J qualified as estimated and non-detects were UJ qualified as estimated non-detect.
Is continuing calibration for target compounds < 20.5%D. (See Table 7)	No. VOC – Several compounds were recovered outside acceptance criteria throughout the lab reports. Associated sample detections were J qualified as estimated and non-detects were UJ qualified as estimated non-detect.

Volatile Organics and Semivolatile Organics by GC/MS	
Description	**Notes and Qualifiers**
	SVOC – Several compounds were recovered outside acceptance criteria throughout the lab reports. Associated sample detections were J qualified as estimated and non-detects were UJ qualified as estimated non-detect.
Were any samples reanalyzed or diluted (see Table 8)? For any sample reanalysis or dilutions, is only one reportable result flagged?	Yes. VOC – Several samples were initially prepared at a dilution or were reextracted at a greater dilution to bring sample concentrations within calibration range or to dilute out matrix effects. No qualifications were made based on this, and no data usability issues were observed. SVOC – Several samples were initially prepared at a dilution or were reextracted at a greater dilution to bring sample concentrations within calibration range or to dilute out matrix effects. No qualifications were made based on this, and no data usability issues were observed.
For TICs are there any system related compounds that should not be reported?	No.
Do field duplicate results show good precision for all compounds except TICs (see Table 9)?	No. VOC – Toluene was recovered with an RPD greater than 50% between parent sample OH-SB05-Z41-42 and its field duplicate OH-SB05-Z41-42-Q. Samples were J qualified as estimated. Methyl acetate, n-butylbenzene, and sec-butylbenzene were recovered with an RPD greater than 50% between parent sample OH-SB05-Z41-42 and its field duplicate OH-SB05-Z41-42-Q. Results were less than 2x the PQL; therefore, no qualification was required. SVOC – Benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and benzo(g,h,i)perylene were recovered with an RPD greater than 50% between parent sample OH-SB05-Z41-42 and its field duplicate OH-SB05-Z41-42-Q. Samples were J qualified as estimated.

Pesticides and PCBs by GC/ECD	
Description	**Notes and Qualifiers**
Any compounds present in method, trip, or field blanks (see Table 2)?	No. .
For samples, if results are < 5 times the blank or < 10 times the blank for common laboratory contaminants, then "U" flag data. Qualification also applies to TICs.	Not applicable.
Are surrogates for method blanks and LCS within limits?	Yes.
Are surrogates for samples and MS/MSD within limits? (See Table 3). Matrix effects should be established.	Yes. Pest - 24C1785: Decachlorobiphenyl was recovered above acceptance criteria in samples OH-SB05-Z41-42 and OH-SB05-Z41-42-Q. Samples were non-detect; therefore, no qualification was made. PCB – 24C1785: Tetrachloro-m-xylene was recovered above acceptance criteria in sample OH-SB05-Z75-76. Sample was non-detect; therefore, no qualification was made.
Are pesticide breakdowns within limits?	No. 24C1785: Endrin breakdown was above acceptance criteria in sequence S4D0145. Samples OH-SB05-Z71-72 and OH-SB05-Z75-76 were non-detect; therefore, no qualification was made.
Is Laboratory QC frequency at least one blank and LCS with each batch and one set of MS/MSD per 20 samples?	Yes.
Is MS/MSD within QC criteria (see Table 5)? If out and LCS is compliant, then "J" flag positive data in original sample due to matrix.	No.
Is LCS within QC criteria (see Table 6)? If out, and the recovery is high with no positive values, then no data qualification is required.	No.
Is initial calibration for target compounds <20 %RSD or curve fit? (See Table 7)	Yes.
Is the initial calibration verification for target compounds between laboratory limits or 75-125%? (See Table 7)	Yes.
Is continuing calibration for target compounds < 25%D. (See Table 7)	Yes. PCBs – 24C1174: Multiple Aroclor 1016 and Aroclor 1260 peaks were recovered above acceptance criteria in column 1 of CCV S4C2162-CCV5. As a result, the peak averages were above acceptance criteria as well. Samples OH-SB01-Z44-45 and OH-SB01-Z94-

Pesticides and PCBs by GC/ECD	
Description	**Notes and Qualifiers**
	95 were non-detect; therefore, results were UJ qualified as estimated non-detect. PCB – 24C1174: Several compounds were recovered outside acceptance criteria in column 1 of the closing CCV S4C2162-CCV5. Samples OH-SB01-Z44-45 and OH-SB01-Z94-95 were non-detect for this compound. Results were UJ qualified as estimated non-detected.
Were any samples reanalyzed or diluted (see Table 8)? For any sample reanalysis or dilutions, is only one reportable result flagged?	No.
For TICs are there any system related compounds that should not be reported?	No.
Do field duplicate results show good precision for all compounds except TICs (see Table 9)?	Yes.

Metals by ICP/AES	
Description	**Notes and Qualifiers**
Are any compounds present in method and field blanks as noted on Table 2? (See Table 2)	Yes. Several compounds were detected in in method blanks throughout the lab reports.
For samples, if results are < 5 times the blank then "U" flag data.	When associated sample results were greater than 5x the method blank contamination, no qualification was made. Samples OH-SB08-Z31-32 and OH-SB08-Z41-42 detected beryllium less than 5x greater the blank contamination. Results were qualified U as non-detect and the quantitation limit raised to the sample concentration. Sample OH-SB05-Z32-33 detected beryllium less than 5x the blank contamination; therefore, result was U qualified as non-detect and the PQL raised to the sample concentration.
Is laboratory QC frequency one blank and LCS with each batch and one set of MS/MSD per 20 samples?	Yes.
Are MS/MSD within QC criteria (see Table 5)? QC limits are not applicable to sample results greater than 4 times spike amount.	No. 24C1926: Several compounds were recovered outside acceptance criteria in MS BD40502-MS1. When parent sample OH-SB03-Z67-68 results were greater than 4x the spike amount, results were not qualified. Antimony was recovered below

Metals by ICP/AES	
Description	**Notes and Qualifiers**
	acceptance criteria in the MS and was within acceptance criteria in the post-digestion spike. Parent sample OH-SB03-Z67-68 was non-detect for this compound; therefore, results were UJ qualified as estimated non-detect. Silver was recovered below the lowest acceptance criteria in the MS and post-digestion spike. Parent sample OH-SB03-Z67-68 was non-detect for this compound; therefore, results were rejected and considered unusable.
Are laboratory duplicates within limits? (see Table 9)	Yes.
Were elements recovered ≤30%? If so, "R" flag associated NDs.	No.
Is LCS within QC criteria (see Table 6)? If out, and the recovery high with no positive values, then no data qualification is required.	No. Several compounds were recovered below acceptance criteria throughout the lab reports. Associated sample detections were J qualified as estimated and non-detects were UJ qualified as estimated non-detect.
Were any samples reanalyzed or diluted (see Table 8)? For any sample reanalysis or dilutions, is only one reportable result flagged?	No.
Is there one serial dilution per 20 samples? Flag all data reported with an "E" as "J".	Yes.
Is calibration low level verification (CCVL) within QC criteria of 70-130% recovery? If not was sample re-analyzed to establish criteria?	Yes.
Spot check ICS recoveries 80-120%. Contact lab if unacceptable.	No. Aluminum was recovered above acceptance criteria in several interference checks. Associated sample detections were J+ qualified as estimated biased high.
Spot check ICV 90-110%. Contact lab if unacceptable.	No. Antimony was recovered above acceptance criteria in several ICVs. Associated samples were non-detect for this compound; therefore, no qualification was made.
Spot check CCV 90-110%. Contact lab if unacceptable.	No. Several compounds were recovered outside acceptance criteria. When recovery was high, sample detections were J qualified as estimated and non-detects were not qualified. When recovery was low, sample detections were J qualified as estimated and non-detects were UJ qualified as estimated non-detect.
Spot check ICB and CCB +/- RL. Contact lab if unacceptable. (See Table 2)	No. Several compounds were detected above the MDL in CCBs throughout the lab reports. When

Metals by ICP/AES	
Description	**Notes and Qualifiers**
	associated samples had detections greater than 10x the blank contamination, no qualification was made. Samples OH-SB08-Z31-32 and OH-SB08-Z41-42 detected beryllium less than 10x greater the blank contamination. Results were qualified U as non-detect and the quantitation limit raised to the sample concentration.
Do field duplicate results show good precision for all compounds (see Table 9)?	No. Arsenic was recovered with an RPD greater than 50%. Results were less than 2x the PWL; therefore, no qualification was required.

Mercury by CVAA	
Description	**Notes and Qualifiers**
Any compounds present in method, trip, or, field blanks (see Table 2)?	No.
For samples, if results are < 5 times the blank or < 10 times the blank for common laboratory contaminants, then "U" flag data. Qualification also applies to TICs.	Not Applicable.
Is Laboratory QC frequency at least one blank, LCS and MS/MSD with each batch?	Yes.
Is MS/MSD within QC criteria (see Table 5)? If out and LCS is compliant, then "J" flag positive data in original sample due to matrix.	Yes.
Is LCS within QC criteria (see Table 6)? If out, and the recovery is high with no positive values, then no data qualification is required.	Yes.
Is initial calibration for target compounds <10 %RSD or curve fit? Is initial calibration verification for target compound <20 %D?	Yes.
Spot check CCV 80-120%. Contact lab if unacceptable.	Acceptable.
Is %D in the continuing calibration for target compounds less than method specifications?	Yes.
Are laboratory duplicates within limits? (see table 9)	Yes.
Were any samples reanalyzed or diluted (see Table 8)? For any sample reanalysis or dilutions, is only one reportable result flagged?	No.
Do field duplicate results show good precision for all compounds (see Table 9)?	Yes.

Cyanide	
Description	**Notes and Qualifiers**
Are any compounds present in method and field blanks as noted on Table 2?	No.
For samples, if results are < 5 times the blank then "U" flag data.	
Is laboratory QC frequency one blank and LCS with each batch per 20 samples and one set of MS/MSD per 20 samples?	Yes.
Are MS/MSD within QC criteria (see Table 4)? QC limits are not applicable to sample results greater than 4 times spike amount. All N flagged data for MS are flagged J as estimated.	Yes.
Is LCS within QC criteria (see Table 6)? If out, and the recovery high with no positive values, then no data qualification is required.	Yes.
Spot check ICV 90-110%. Contact lab if unacceptable.	Acceptable.
Spot check CCV 80-120%. Contact lab if unacceptable.	Acceptable.
Spot check ICB and CCB +/- RL. Contact lab if unacceptable.	No.
Do field and/or laboratory duplicates results show good precision for all compounds (see Table 9)?	Yes.

Perfluorinated Compounds by LC/MS/MS	
Description	**Notes and Qualifiers**
Any compounds present in method, trip, or, field blanks (see Table 2)?	Yes. 24C1174: PFHxA, PFBA, and PFPeA were detected above the MDL in method blank BC41508-BLK1.
For samples, if results are < 5 times the blank contaminants, then "U" flag data.	PFHxA, PFBA, and PFPeA were detected above the MDL and below the reporting limit in samples OH-SB01-Z44-45 and OH-SB01-Z94-95. Samples are qualified U as non-detect.
Are Extracted Internal Standards (EIS) for method blanks and LCS within limits?	No. Several surrogates were recovered outside acceptance criteria in method blanks and LCSs. Samples were not qualified based on these findings; samples were instead qualified when the LCS concentration was out of acceptance limits.
Are secondary ion ratio limits within laboratory limits?	No. 24C1174: PFTeDA ion ratio was below acceptance criteria. Sample OH-SB01-Z44-45 result is considered estimated maximum concentration and qualified EMPC.
Are Extracted Internal Standards for samples and MS/MSD within limits? (See Table 3).	No. M5PFPeA and MPFBA were recovered below the lowest acceptance criteria of 10% in several samples.

Perfluorinated Compounds by LC/MS/MS	
Description	**Notes and Qualifiers**
	Samples were non-detect for these compounds; therefore, results were rejected and considered unusable. d-N-MeFOSA was recovered below the lowest acceptance criteria of 10% in sample OH-SB08-Z31-32. Sample was non-detect for this compound; result was rejected and considered unusable. Several surrogates were recovered outside acceptance criteria in several samples throughout the lab reports. Associated sample detections were J qualified as estimated and non-detects did not require qualification.
Is Laboratory QC frequency at least one blank and LCS with each batch and one set of MS/MSD per 20 samples?	Yes.
Is MS/MSD within QC criteria (see Table 5)? If out and LCS is compliant, then "J" flag positive data in original sample due to matrix.	No. 24C1926: N-EtFOSA was recovered with high RPD between the MS and MSD of sample OH-SB03-Z67-68. Sample was non-detect for this compound; therefore, results were UJ qualified as estimated non-detect.
Is LCS within QC criteria (see Table 6)? If out, and the recovery is high with no positive values, then no data qualification is required.	No. Several compounds were recovered outside acceptance criteria in LCSs throughout the lab reports. Associated sample detections were J qualified as estimated and non-detects wee UJ qualified as estimated non-detect.
Do Non-Extracted Internal Standards areas and retention time meet criteria? (See Table 4)	No. MPFDA was recovered outside the acceptable retention time range in LCS BD40925-BS1 and BD40925-BS2. All associated samples were recovered within acceptable retention time range; therefore, using professional judgement, no qualification was made. 24C1265: MPFOS was recovered below the lowest acceptance criteria of 30% in sample OH-SB02-Z37-38. Sample was non-detect for the associated compound; therefore, result was rejected and considered unusable. MPFDA was recovered below acceptance criteria in sample OH-SB02-Z64-65. Sample was non-detect for the associated compound; therefore, result was UJ qualified as estimated non-detect. 24D0140: MPFHxS, MPFOA, and M2-6:2FTS-EIS were recovered above acceptance criteria in sample

Perfluorinated Compounds by LC/MS/MS	
Description	**Notes and Qualifiers**
	OH-SB04-Z33-34. The sample was not reanalyzed to confirm failure. The case narrative provided by the laboratory did not indicate the reason. Using professional judgement, associated analytes were UJ qualified as estimated.
Is initial calibration for compounds by isotope dilution <20 %RSD or curve fit; and compounds quantitated by internal standard analytes <50% RSD? Is the initial calibration verification within or equal to 70-130% for all natives quantitated by isotope dilution or 50-150% for isotopes quantitated by internal standards.	No. 8:2 FTS, 4:2 FTS, and 6:2 FTS did not meet curve fit requirements in several calibrations. Associated samples were non-detect for these compounds; therefore, results were UJ qualified as estimated non-detect. PFDS, 8:2 FTS, and 4:2 FTS were recovered outside acceptance criteria in ICV S4C2954-SCV1. Associated samples were non-detect; therefore, results were UJ qualified as estimated non-detect.
Is continuing calibration for compounds by isotope dilution equal to or within 70-130% for all natives quantitated by isotope dilution or 70-130% for isotopes quantitated by internal standard. (See Table 7)	No. Several compounds were recovered above acceptance criteria in several CCVs throughout the lab reports. Associated sample detections were J qualified as estimated and non-detects were UJ qualified as estimated non-detect.
Were any samples reanalyzed or diluted (see Table 8)? For any sample reanalysis or dilutions, is only one reportable result flagged?	No.
Do field duplicate results show good precision for all compounds (see Table 9)?	No. PFBA, PFNS, PFPeS, and PFPeA were recovered with an RPD greater than 30%. Results were less than 2x the PQL; therefore, no qualification was required.

Quantitation Limits and Data Assessment: Results were reported which were below the reporting limit (RL) and above the method detection limit (MDL) in the VOC analysis. These results were qualified as estimated (J) by the laboratory.

Data Validation Qualifiers Definitions:

J – The analyte QC analysis fails outside the primary acceptance limits. The qualified "J" data are not excluded from further review or consideration. The 'J' qualified data may be biased high (+) or low (-) or the direction of the bias may be indeterminable.

UJ - The analyte was not detected above the reported sample quantitation limit. The analyte QC analysis fails outside the primary acceptance limits. The "UJ" qualified data are not excluded from further review or consideration. The 'UJ' qualified data may be biased low.

U – The analyte was analyzed for, but due to blank contamination was flagged as non-detect (U). The result is usable as a non-detect.

Summary of Findings

VOC -

- Tetrachloroethylene was UJ qualified in samples OH-SB01-Z44-45, OH-SB01-Z94-95, OH-SB02-Z37-38, OH-SB08-Z31-32, OH-SB08-Z41-42, OH-SB08-Z47-48, OH-SB03-Z51-52, OH-SB03-Z67-68, OH-SB03-Z37-38, OH-SB04-Z33-34, OH-ZB04-Z52-53, and OH-SB04-Z62-63, OH-SB05-Z32-33, OH-SB05-Z41-42, OH-SB05-Z41-42-Q, OH-SB05-Z71-72, OH-SB05-Z75-76 due to low LCS recovery.
- Several compounds were UJ qualified in several samples due to poor ICV and CCV recovery. See Table 7 for list of analytes.
- Several compounds were UJ qualified in several samples due to poor CCV recovery. See Table 7 for list of compounds and samples.
- 4-Methyl-2-pentanone and tert-butylbenzene were UJ qualified in samples OH-SB06-Z37-39, OH-SB06-Z78-79, and OH-SB06-Z71-72 due to low LCS recovery.
- 1,2-Dibromo-3-chloropropane and 2-hexanone were qualified UJ in samples OH-SB07-Z31-32 and OH-SB06-Z52-53 due to low LCS recovery.
- Tetrachloroethylene was UJ in samples OH-SB07-Z31-32 and OH-SB06-Z52-53 due to low LCS and LCSD recovery.
- Acetone was UJ in samples OH-SB07-Z31-32 and OH-SB07-Z52-53 due to high LCS/LCSD RPD.
- Methylene chloride was qualified U and reported as non-detect in samples OH-SB08-Z31-32, OH-SB08-Z41-42, OH-SB08-Z47-48, and OH-SB05-Z71-72 due to method blank contamination.
- Dichlorodifluoromethane was UJ qualified in samples OH-SB08-Z31-32 and OH-SB08-Z41-42 due to high RPD between the LCS and LCSD.
- Methylene Chloride was J qualified in sample OH-SB03-Z67-68 due to poor initial calibration.

SVOC-

- Several compounds were UJ qualified in several samples due to poor ICV and CCV recovery. See Table 7 for list of analytes.
- Indeno(1,2,3-c,d)pyrene was J qualified in samples OH-SB06-Z78-79, OH-SB04-Z33-34, and OH-SB04-Z52-53 due to high CCV recovery.

- Dibenzo(a,h)anthracene and indeno(1,2,3-c,d)pyrene were J qualified in samples OH-SB08-Z31-31, OH-SB08-Z41-42, OH-SB03-Z37-38, and OH-SB03-Z51-52 due to poor CCV recovery.
- N-Nitrosodiphenylamine was J qualified in sample OH-SB05-Z32-33 due to poor initial calibration.
- Several compounds were UJ qualified in sample OH-SB02-Z37-38 due to poor surrogate recovery.
- 2,4-Dinitrophenol and 4,6-dinitro-2-methylphenol were UR qualified as rejected and considered unusable in samples OH-SB04-Z33-34, OH-SB04-Z52-53, and OH-SB04-Z62-63 due to poor LCS recovery.
- Phenanthrene and anthracene were J+ qualified in sample OH-SB08-Z47-48 due to high surrogate recovery.

Pest/PCB –

- Aroclor 1016 and Aroclor 1260 were qualified UJ in samples OH-SB01-Z44-45 and OH-SB01-Z94-95 due to poor CCV recovery.

Metals/Mercury/Cyanide –

- Cadmium was UJ qualified in several samples due to low LCS recovery.
- Aluminum was J+ qualified in several samples due to high interferences.
- Sodium was J qualified in sample OH-SB07-Z52-53 due to high LCS recovery.
- Potassium and sodium were J qualified in several samples due to low CCV recovery.
- Beryllium was U qualified as non-detect in samples OH-SB08-Z31-32, OH-SB08-Z41-42, and OH-SB05-Z32-33 due to method blank and CCB contamination.
- Lead was J qualified in samples OH-SB08-Z31-32, OH-SB08-Z41-42, and OH-SB08-Z47-48 due to high CCV recovery.
- Selenium and thallium were UJ qualified in samples OH-SB08-Z31-32, OH-SB08-Z41-42, and OH-SB08-Z47-48 due to high CCV recovery.
- Antimony was UJ qualified in sampled OH-SB03-Z67-68 due to poor MS recovery.
- Silver was UR qualified as rejected and considered unusable in sample OH-SB03-Z67-68 due to poor MS and post-digestion spike recovery.
- Antimony was UJ qualified in samples OH-SB03-Z37-38, OH-SB03-Z51-52, and OH-SB03-Z67-68 due to poor and CCV recovery.
- Beryllium was J qualified in samples OH-SB04-Z33-34, OH-SB04-Z52-53, and OH-SB04-Z62-63 due to high LCS recovery.
- Antimony and selenium were UJ qualified in samples OH-SB04-Z33-34, OH-SB04-Z52-53, and OH-SB04-Z62-63 due to poor LCS recovery.
- Several compounds were UJ qualified in samples OH-SB05-Z32-33, OH-SB05-Z41-42, OH-SB05-Z41-42-Q, OH-SB05-Z71-72, and OH-SB05-Z75-76 due to low LCS recovery.
- Several compounds were J qualified in samples OH-SB05-Z32-33, OH-SB05-Z41-42, OH-SB05-Z41-42-Q, OH-SB05-Z71-72, and OH-SB05-Z75-76 due to low LCS recovery.

PFAS -

- PFTA was J qualified in sample OH-SB01-Z44-45 due to high LCS recovery.
- Several compounds were UJ qualified as estimated non-detect in samples OH-SB01-Z44-45, OH-SB01-Z94-95, OH-SB04-Z33-34, OH-SB04-Z52-53, and OH-SB04-Z62-63 due to poor LCS recovery.

- PFBA, PFHxA, and PFPeA were U qualified as non-detect in samples OH-SB01-Z44-45 and OH-SB01-Z94-95 due to method blank contamination.
- 4:2 FTS, 6:2 FTS, and 8:2 FTS were UJ qualified in samples OH-SB01-Z44-45, OH-SB01-Z94-95, OH-SB02-Z37-38, OH-SB02-Z64-65, OH-SB08-Z31-32, OH-SB08-Z41-42, OH-SB08-Z47-48, OH-SB05-Z32-33, OH-SB05-Z41-42, OH-SB05-Z41-42-Q, OH-SB05-Z71-72, and OH-SB05-SB05-Z75-76, OH-SB03-Z37-38, OH-SB03-Z51-52, and OH-SB03-Z67-68 due to poor initial calibration.
- N-EtFOSE, PFDS, PFNS, PFDoS, PFNA, and PFOA were UJ qualified in samples OH-SB02-Z37-38 and OH-SB02-Z64-65 due to low LCS recovery.
- N-EtFOSA was UJ qualified in sample OH-SB03-Z67-68 due to poor MS/MSD RPD.
- PFBA was qualified R as rejected and considered unusable in samples OH-SB02-Z37-38, OH-SB02-Z64-65, OH-SB06-Z71-72, OH-SB08-Z31-32, OH-SB05-Z32-33, OH-SB05-Z41-42, OH-SB04-Z62-63, OH-SB04-Z52-53 due to poor Extracted Internal Standard recovery.
- PFTeA was R qualified as rejected and considered unusable in samples OH-SB02-Z37-38 and OH-SB05-Z41-42 due to poor Extracted Internal Standard recovery.
- PFOS was UR qualified in sample OH-SB02-Z37-38 due to low non-extracted internal standard.
- PFDA was UJ qualified in sample OH-SB02-Z64-65 due to low non-extracted internal standard.
- PFHxS, PFOA, and 6:2 FTS were UJ qualified in sample OH-SB04-Z33-34 due to high non-extracted internal standard.
- PFNS was UJ qualified in samples OH-SB06-Z37-38, OH-SB06-Z71-72, and OH-SB06-Z78-79 due to high LCS recovery.
- 4:2 FTS, 6:2 FTS, and 8:2 FTS were UJ qualified in samples OH-SB06-Z37-38, OH-SB06-Z71-72, OH-SB06-Z78-79, OH-SB04-Z33-34, OH-SB04-Z52-53, OH-SB04-Z62-63 due to poor initial calibration curve fit and poor ICV recovery.
- PFDS was UJ qualified in samples OH-SB06-Z37-38, OH-SB06-Z71-72, and OH-SB06-Z78-79 due to high ICV recovery.
- 6:2 FTS and PFNS were UJ qualified in samples OH-SB06-Z37-38, OH-SB06-Z71-72, and OH-SB06-Z78-79 due to high CCV recovery.
- Several compounds were UJ qualified in samples OH-SB07-Z31-32, OH-SB07-Z52-53, OH-SB08-Z31-32, OH-SB08-Z41-42, and OH-SB08-Z47-48 due to high CCV recovery.
- PFPeS was J qualified in samples OH-SB07-Z31-32 and OH-SB08-Z31-32 due to high CCV recovery.
- 9Cl-PF3ONS was UJ qualified in samples OH-SB08-Z41-42 and OH-SB08-Z47-48 due to high LCS recovery.
- N-EtFOSA was UJ qualified in sample OH-SB08-Z31-32 due to low LCS recovery.
- N-MeFOSA was R qualified as rejected and considered unusable in sample OH-SB08-Z31-32.
- PFOS was UJ qualified in samples OH-SB03-Z37-38 and OH-SB03-Z51-52 due to high CCV recovery.
- N-EtFOSA was UJ qualified in samples OH-SB03-Z37-38, OH-SB03-Z51-52, and OH-SB03-Z67-68 due to high CCV recovery.
- PFDoS was UJ qualified in samples OH-SB05-Z41-42-Q, OH-SB05-Z71-72, and OH-SB05-SB05-Z75-76 due to high CCV recovery.
- PFTeDA was qualified EMPC as estimated maximum concentration in sample OH-SB01-Z44-45 due to poor ion ratio.

Table 2 - List of Positive Results for Blank Samples

Method	Sample ID	Sample Type	Analyte	Result	Qualifier	Units	MDL	PQL
1633	BC41508-BLK1	MB	PFHxA	0.124	J	ug/kg	0.0350	0.200
1633	BC41508-BLK1	MB	PFBA	0.601	J	ug/kg	0.109	0.800
1633	BC41508-BLK1	MB	PFPeA	0.265	J	ug/kg	0.109	0.4
6010	S4C2807-CCBG	CCB	Magnesium	0.157	J	ug/mL	0.050	4.17
8260	BC41633-BLK1	MB	Naphthalene	0.0262	J	mg/kg	0.0208	0.0416
6010	BC41775-BLK1	MB	Magnesium	10.0		ug/mL	0.050	4.17
6010	BD42055-BLK1	MB	Zinc	2.24		ug/mL	2.08	2.08
6010	S4C2961-CCB6	CCB	Antimony	0.026	J	ug/mL	0.025	2.08
6010	S4C2961-CCB6	CCB	Copper	0.062	J	ug/mL	0.020	1.67
6010	S4C2961-CCB7	CCB	Antimony	0.026	J	ug/mL	0.026	2.08
6010	S4C2961-CCB7	CCB	Copper	0.041	J	ug/mL	0.041	1.67
6010	S4D0222-CCBH	CCB	Antimony	0.033		ug/mL	0.025	0.025
6010	S4D0222-CCBH	CCB	Beryllium	0.001		ug/mL	0.0005	0.0005
6010	S4D0222-CCBI	CCB	Antimony	0.03		ug/mL	0.025	0.025
6010	S4D0222-CCBI	CCB	Beryllium	0.0007		ug/mL	0.0005	0.0005
6010	S4D0222-CCBI	CCB	Lead	0.009		ug/mL	0.005	0.005
6010	S4D0237-CCB1	CCB	Antimony	0.044		ug/mL	0.025	0.025
6010	S4D0237-CCB2	CCB	Antimony	0.033		ug/mL	0.025	0.025
8260	BD41057-BLK2	MB	Methylene Chloride	0.87	JD	mg/kg	0.50	1
8260	BD40158-BLK1	MB	Methylene Chloride	0.0052	J	mg/kg	0.0050	0.01
6010	BD40170-BLK1	MB	Beryllium	0.062		mg/kg	0.042	0.042
6010	S4D0351-ICB1	CCB	Magnesium	0.052		ug/mL	0.050	0.050
6010	S4D0351-CCB6	CCB	Antimony	0.037		ug/mL	0.025	0.025
6010	S4D0351-CCB6	CCB	Beryllium	0.0009		ug/mL	0.0005	0.0005
6010	S4D0351-CCB6	CCB	Magnesium	0.115		ug/mL	0.050	0.050
6010	S4D0351-CCB7	CCB	Antimony	0.043		ug/mL	0.025	0.025

Method	Sample ID	Sample Type	Analyte	Result	Qualifier	Units	MDL	PQL
6010	S4D0351-CCB7	CCB	Beryllium	0.0009		ug/mL	0.0005	0.0005
6010	S4D0351-CCB7	CCB	Magnesium	0.140		ug/mL	0.050	0.050
6010	BD40307-BLK1	MB	Beryllium	0.064		mg/kg	0.042	0.042
6010	BD40307-BLK1	MB	Lead	0.461		mg/kg	0.417	0.417
6010	S4D1009-CCBF	CCB	Antimony	0.029		ug/mL	0.025	0.025
6010	S4D1009-CCBF	CCB	Beryllium	0.002		ug/mL	0.0005	0.0005
6010	S4D1009-CCBF	CCB	Lead	0.015		ug/mL	0.005	0.005
6010	S4D1009-CCBG	CCB	Antimony	0.029		ug/mL	0.025	0.025
6010	S4D1009-CCBG	CCB	Beryllium	0.002		ug/mL	0.0005	0.0005
6010	S4D1009-CCBG	CCB	Lead	0.015		ug/mL	0.005	0.005
8260	BD40256-BLK1	MB	Methylene Chloride	0.56	JD	mg/kg	0.43	0.86

Table 2A - List of Samples Qualified for Method Blank Contamination

Method	Lab Blank	Matrix	Analyte	Blank Result	Sample Result	Lab Qualifier	PQL	Affected Samples	Sample Flag
1633	BC41508-BLK1	MB	PFHxA	0.124	0.167	J	0.245	OH-SB01-Z44-45	U
1633	BC41508-BLK1	MB	PFBA	0.601	0.771	J	0.981	OH-SB01-Z44-45	U
1633	BC41508-BLK1	MB	PFPeA	0.265	0.342	J	0.49	OH-SB01-Z44-45	U
1633	BC41508-BLK1	MB	PFHxA	0.124	0.173	J	0.236	OH-SB01-Z94-95	U
1633	BC41508-BLK1	MB	PFBA	0.601	0.881	J	0.944	OH-SB01-Z94-95	U
1633	BC41508-BLK1	MB	PFPeA	0.265	0.339	J	0.472	OH-SB01-Z94-95	U
8260	BD41057-BLK2	MB	Methylene Chloride	0.97	4.9	D	1.7	OH-SB08-Z31-32	U
8260	BD41057-BLK2	MB	Methylene Chloride	0.97	7.3	D	2.5	OH-SB08-Z41-42	U
8260	BD40158-BLK1	MB	Methylene Chloride	0.0052	0.019	--	0.0086	OH-SB08-Z47-48	U
6010	BD40170-BLK1	MB	Beryllium	0.062	0.00235	B	0.051	OH-SB08-Z31-32	U

Method	Lab Blank	Matrix	Analyte	Blank Result	Sample Result	Lab Qualifier	PQL	Affected Samples	Sample Flag
6010	BD40170-BLK1	MB	Beryllium	0.062	0.00214	B	0.049	OH-SB08-Z41-42	U
6010	S4D0351-CCB6	CCB	Beryllium	0.0009	0.00235	B	0.051	OH-SB08-Z31-32	U
6010	S4D0351-CCB6	CCB	Beryllium	0.0009	0.00214	B	0.049	OH-SB08-Z41-42	U
6010	S4D0351-CCB7	CCB	Beryllium	0.0009	0.00235	B	0.051	OH-SB08-Z31-32	U
6010	S4D0351-CCB7	CCB	Beryllium	0.0009	0.00214	B	0.049	OH-SB08-Z41-42	U
8260	BD40256-BLK1	MB	Methylene Chloride	0.56	2.1	D	0.086	OH-SB05-Z71-72	U
6010	BD40307-BLK1	MB	Beryllium	0.064	0.00171	B	0.048	OH-SB05-Z32-33	U

Table 3 - List of Samples with Surrogates/Isotope Dilution Standards outside Control Limits

Method	Sample ID	Sample Type	Analyte	Rec. %	Low Limit	High Limit	Dilution Factor	Associated Analytes	Sample Qualifier
1633	BC41508-BS1	LCS	M2-8:2 FTS	24.5	25	200	1	8:2 FTS	None - QC
1633	BC41508-BS1	LCS	d3-N-MeFOSAA	24.1	25	150	1	N-MeFOSAA	None - QC
1633	BC41508-BS1	LCS	M2-8:2 FTS	19.9	25	200	1	8:2 FTS	None - QC
1633	BC41508-BS1	LCS	d-N-EtFOSA	23.3	25	150	1	N-EtFOSA	None - QC
1633	BC41508-BS1	LCS	d9-N-EtFOSE	21.5	25	150	1	N-EtFOSE	None - QC
1633	BC41508-BS1	LCS	d7-N-MeFOSE	22.6	25	150	1	N-MeFOSE	None - QC
8270	OH-SB02-Z37-38	N	2-Fluorophenol	20.8	21	113	10	4-Nitroaniline 4-Nitrophenol 2,4-Dinitrotoluene Dimethyl Phthalate 2,4-Dinitrophenol 2,3,4,6-Tetrachlorophenol	UJ

Method	Sample ID	Sample Type	Analyte	Rec. %	Low Limit	High Limit	Dilution Factor	Associated Analytes	Sample Qualifier
								2,6-Dinitrotoluene 4-Chlorophenyl Phenyl Ether Hexachlorocyclopentadiene Diethyl Phthalate 2,4,6-Trichlorophenol 2-Nitroaniline 2-Chloronaphthalene 1,2,4,5-Tetrachlorobenzene 2,4,5-Trichlorophenol 3-Nitroaniline	
8270	OH-SB02-Z37-38	N	Terphenyl-d14	4.4	24	116	10	Bis(2-Ethylhexyl) Phthalate Di-N-Octylphthalate Benzyl Butyl Phthalate 3,3'-Dichlorobenzidine	UR
8270	OH-SB02-Z37-38RE1	DIL	Terphenyl-d14	16	24	116	100	--	None
8270	OH-SB02-Z37-38RE2	DIL	2,4,6-Tribromophenol	0	19	110	100	--	None
1633	BC41717-BLK1	MB	MPFBA	5.75	25	150	1	PFBA	None - QC
1633	BC41717-BLK1	MB	d9-N-EtFOSE	20.6	25	150	1	N-EtFOSE	None - QC
1633	BC41717-BLK1	MB	d7-N-MeFOSE	22.7	25	150	1	N-MeFOSE	None - QC
1633	OH-SB02-Z37-38	N	M3PFBS	19.1	25	150	1	--	None
1633	OH-SB02-Z37-38	N	M5PFHxA	16.1	25	150	1	PFHxA	J
1633	OH-SB02-Z37-38	N	MFPBA	4.11	25	150	1	PFBA	R
1633	OH-SB02-Z37-38	N	M8PFOS	284	25	150	1	--	None
1633	OH-SB02-Z37-38	N	M5PFPeA	5.4	25	150	1	PFPeA	R
1633	OH-SB02-Z37-38	N	M8PFOSA	193	10	150	1	--	None

Method	Sample ID	Sample Type	Analyte	Rec. %	Low Limit	High Limit	Dilution Factor	Associated Analytes	Sample Qualifier
1633	OH-SB02-Z37-38	N	d3-N-MeFOSAA	326	25	150	1	--	None
1633	OH-SB02-Z37-38	N	d5-N-EtFOSAA	348	25	150	1	--	None
1633	OH-SB02-Z37-38	N	M2-4:2 FTS	11.6	25	150	1	--	None
1633	OH-SB02-Z37-38	N	d-N-MEFOSA	170	25	150	1	--	None
1633	OH-SB02-Z37-38	N	d-N-EtFOSA	167	25	150	1	--	None
1633	OH-SB02-Z37-38	N	M3HFPO-DA	18.6	25	150	1	--	None
1633	OH-SB02-Z37-38	N	d9-N-EtFOSE	217	25	150	1	--	None
1633	OH-SB02-Z37-38	N	d7-N-MeFOSE	196	25	150	1	--	None
1633	OH-SB02-Z64-65	N	MPFBA	2.04	25	150	1	PFBA	R
8270	OH-SB06-Z78-79RE3	DIL	Nitrobenzene-d5	8	22	108	200x	--	None
1633	OH-SB06-Z71-72	N	M4PFBA	1.9	25	150	1x	PFBA	R
8270	OH-SB07-Z31-32RE1	DIL	2,4,6-Tribromophenol	0	19	110	200x	--	None
8270	OH-SB07-Z31-32RE2	DIL	Nitrobenzene-d5	20	22	108	500x	--	None
8270	OH-SB07-Z31-32RE2	DIL	2,4,6-Tribromophenol	0	19	110	500x	--	None
1633	BC42127-BLK1	MB	MPFBA	1.79	25	150	1	PFBA	None - QC
1633	BC42127-BLK1	MB	M5PFPeA	6.95	25	150	1	PFPeA	None - QC
1633	BC42127-BLK1	MB	M2-4:2 FTS	18.2	25	150	1	4:2 FTS	None - QC
1633	BC42127-BS2	LCS	MPFBA	1.95	25	150	1	PFBA	None - QC
1633	BC42127-BS2	LCS	M2-6:2 FTS	15.6	25	200	1	6:2 FTS	None - QC
1633	BC42127-BS2	LCS	M2-8:2 FTS	24.9	25	200	1	8:2 FTS	None - QC
1633	BC42127-BS2	LCS	M2-4:2 FTS	13.3	25	150	1	4:2 FTS	None - QC
1633	OH-SB07-Z52-53	N	M5PFPeA	160	25	150	1	--	None

Method	Sample ID	Sample Type	Analyte	Rec. %	Low Limit	High Limit	Dilution Factor	Associated Analytes	Sample Qualifier
1633	OH-SB07-Z52-53	N	M9PFNA	163	25	150	1	--	None
8270	OH-SB08-Z47-48	N	2,4,6-Tribromophenol	148	19	110	2	Anthracene Phenanthrene	J+
8270	OH-SB08-Z31-32	N	Terphenyl-d14	7.2	24	116	20	--	None
8270	OH-SB08-Z41-42	N	Terphenyl-d14	4.8	24	116	20	--	None
8270	OH-SB08-Z31-32RE1	DIL	Terphenyl-d14	4	24	116	100	--	None
8270	OH-SB08-Z31-32RE2	DIL	Nitrobenzene-d5	0	22	108	500	--	None
8270	OH-SB08-Z31-32RE2	DIL	2-Fluorobiphenyl	0	21	113	500	--	None
8270	OH-SB08-Z31-32RE2	DIL	2,4,6-Tribromophenol	0	19	110	500	--	None
8270	OH-SB08-Z41-42RE2	DIL	Nitrobenzene-d5	0	22	108	500x	--	None
8270	OH-SB08-Z41-42RE2	DIL	2,4,6-Tribromophenol	0	19	110	500x	--	None
1633	OH-SB08-Z41-42	N	MPFBA	10.2	25	150	1	--	None
1633	OH-SB08-Z31-32	N	d-N-MeFOSA	2.43	25	150	1	N-MeFOSA	R
1633	BD40031-BS1	LCS	d-N-EtFOSA	277	25	150	1	N-EtFOSA	None - QC
1633	OH-SB08-Z31-32	N	Terphenyl-d14	8	24	116	100	--	None
1633	OH-SB08-Z31-32	N	2-Fluorophenol	0	20	108	100	--	None
8270	OH-SB05-Z41-42	N	Terphenyl-d14	12	24	116	100	--	None
8270	OH-SB05-Z41-42-Q	N	2-Fluorophenol	10	20	108	100	--	None
8270	OH-SB05-Z41-42-Q	N	Phenol-d6	14	23	114	100	--	None
8270	OH-SB05-Z41-42-Q	N	Terphenyl-d14	20	24	116	100	--	None
8270	OH-SB05-Z32-33	DIL	Nitrobenzene-d5	0	22	108	500	--	None
8270	OH-SB05-Z32-33	DIL	2-Fluorobiphenyl	0	21	113	500	--	None
8270	OH-SB05-Z32-33	DIL	2,4,6-Tribromophenol	0	19	110	500	--	None
8270	OH-SB05-Z32-33	DIL	Terphenyl-d14	0	24	116	500	--	None
8270	OH-SB05-Z41-42	DIL	Nitrobenzene-d5	0	22	108	500	--	None
8270	OH-SB05-Z41-42	DIL	2-Fluorobiphenyl	0	21	113	500	--	None
8270	OH-SB05-Z41-42	DIL	2,4,6-Tribromophenol	0	19	110	500	--	None

Method	Sample ID	Sample Type	Analyte	Rec. %	Low Limit	High Limit	Dilution Factor	Associated Analytes	Sample Qualifier
8270	OH-SB05-Z41-42	DIL	Terphenyl-d14	0	24	116	500	--	None
8270	OH-SB05-Z41-42-Q	DIL	Nitrobenzene-d5	0	22	108	500	--	None
8270	OH-SB05-Z41-42-Q	DIL	2-Fluorobiphenyl	0	21	113	500	--	None
8270	OH-SB05-Z41-42-Q	DIL	2,4,6-Tribromophenol	0	19	110	500	--	None
8270	OH-SB05-Z41-42-Q	DIL	Terphenyl-d14	0	24	116	500	--	None
8081	OH-SB05-Z41-42	N	Decachlorobiphenyl	160	30	150	5	--	None
8081	OH-SB05-Z41-42-Q	N	Decachlorobiphenyl	166	30	150	5	--	None
8082	OH-SB05-Z75-76	N	Tetrachloro-m-xylene	122	30	120	1	--	None
1633	OH-SB05-Z32-33	N	MPFBA	4.11	25	150	1	PFBA	R
1633	OH-SB05-Z32-33	N	M5PFPeA	16.4	25	150	1	--	None
1633	OH-SB05-Z41-42	N	M3PFBS	22.9	25	150	1	--	None
1633	OH-SB05-Z41-42	N	M5PFHxA	18.2	25	150	1	--	None
1633	OH-SB05-Z41-42	N	MPFBA	3.21	25	150	1	PFBA	R
1633	OH-SB05-Z41-42	N	PFPeA	3.46	25	150	1	PFPeA	R
1633	OH-SB05-Z41-42	N	M2-4:2 FTS	12.7	25	150	1	--	None
1633	OH-SB05-Z41-42	N	M3HFPO-DA	19.9	25	150	1	--	None
8270	OH-SB03-Z37-38RE2	DIL	Terphenyl-d14	8	24	116	100	--	None
8270	OH-SB03-Z37-38RE3	DIL	Nitrobenzene-d5	140	22	108	500	--	None
8270	OH-SB03-Z37-38RE3	DIL	2,4,6-Tribromophenol	0	19	110	500	--	None
1633	BD40095-BS1	LCS	MPFBA	13.8	25	150	1	PFBA	None - QC
1633	BD40095-BS2	LCS	MPFBA	10.8	25	150	1	PFBA	None - QC
1633	OH-SB03-Z37-38	N	d5-N-EtFOSAA	160	25	150	1	--	None
1633	OH-SB03-Z37-38	N	M2-8:2 FTS	203	25	150	1	--	None
1633	OH-SB03-Z37-38	N	d7-N-MeFOSE	167	25	150	1	--	None
1633	OH-SB03-Z51-52	N	d7-N-MeFOSE	163	25	150	1	--	None
8270	OH-SB04-Z33-34	N	Nitrobenzene-d5	116	22	108	2	--	None

Method	Sample ID	Sample Type	Analyte	Rec. %	Low Limit	High Limit	Dilution Factor	Associated Analytes	Sample Qualifier
1633	BD40549-BLK1	MB	M3PFBS	213	25	150	1	PFBS	None - QC
1633	BD40549-BLK1	MB	M3PFHxS	237	25	150	1	PFHxS	None - QC
1633	BD40549-BLK1	MB	MPFBA	4.54	25	150	1	PFBA	None - QC
1633	BD40549-BLK1	MB	M2-8:2 FTS	284	25	200	1	8:2 FTS	None - QC
1633	BD40549-BLK1	MB	M2-4:2 FTS	160	25	150	1	4:2 FTS	None - QC
1633	BD40549-BS1	LCS	MPFBA	3.23	25	150	1	PFBA	None - QC
1633	BD40549-BS2	LCS	M3PFBS	213	25	150	1	PFBS	None - QC
1633	BD40549-BS2	LCS	M3PFHxS	237	25	150	1	PFHxS	None - QC
1633	BD40549-BS2	LCS	MPFBA	4.54	25	150	1	PFBA	None - QC
1633	BD40549-BS2	LCS	M2-4:2 FTS	160	25	150	1	4:2 FTS	None - QC
1633	BD40549-BLK1	MB	MPFBA	11.5	25	150	1	PFBA	None - QC
1633	BD40549-BLK1	MB	d-N-MeFOSA	22.0	25	150	1	N-MeFOSA	None - QC
1633	BD40549-BLK1	MB	M3HFPO-DA	19.1	25	150	1	HFPO-DA	None - QC
1633	BD40925-BS1	LCS	MPFBA	12.1	25	150	1	PFBA	None - QC
1633	BD40925-BS1	LCS	d-N-MeFOSA	21.0	25	150	1	N-MeFOSA	None - QC

Method	Sample ID	Sample Type	Analyte	Rec. %	Low Limit	High Limit	Dilution Factor	Associated Analytes	Sample Qualifier
1633	BD40925-BS1	LCS	d-N-EtFOSA	23.1	25	150	1	N-EtFOSA	None - QC
1633	BD40925-BS1	LCS	M3HFPO-DA	20.4	25	150	1	HFPO-DA	None - QC
1633	BD40925-BS2	LCS	d-N-MeFOSA	21.1	25	150	1	N-MeFOSA	None - QC
1633	BD40925-BS2	LCS	d-N-EtFOSA	24.1	25	150	1	N-EtFOSA	None - QC
1633	OH-SB04-Z62-63	N	MPFBA	1.38	25	150	1	PFBA	R
1633	OH-SB04-Z52-53	N	MPFBA	3.31	25	150	1	PFBA	R
1633	OH-SB04-Z52-53	N	M3PFHxS	154	25	150	1	--	None
1633	OH-SB04-Z52-53	N	M7PFUdA	167	25	150	1	--	None
1633	OH-SB04-Z52-53	N	d5-N-EtFOSAA	163	25	150	1	--	None
1633	OH-SB04-Z52-53	N	M2-8:2 FTS	241	25	150	1	--	None

Table 4 – Internal Standards outside Control Limits

Method	Sample	Internal Standard	%R	Low Limit	High Limit	Associated Analytes	Qualifier
1633	OH-SB02-Z37-38	MPFOS	11	50	150	PFOS	UR
1633	OH-SB02-Z64-65	MPFDA	43	50	150	PFDA	UJ

Method	Sample	Internal Standard	%R	Low Limit	High Limit	Associated Analytes	Qualifier
1633	OH-SB04-Z33-34	MFPHxS	187	50	150	PFHxS	UJ
1633	OH-SB04-Z33-34	MPFOA	157	50	150	PFOA	UJ
1633	OH-SB04-Z33-34	M2-6:2FTS-EIS	515	50	150	6:2 FTS	UJ

Table 5 – List of MS/MSD Recoveries and RPDs outside Control Limits

Method	Sample ID	Sample Type	Analyte	Orig. Result	Spike Amount	MS/MSD Rec. (%)	Low Limit	High Limit	Sample Qualifier
8270	OH-SB07-Z52-53	MS MSD	Benzoic acid	ND	1.03	0 0	10	166	None
6010	OH-SB03-Z67-68	MS	Aluminum	7330	219	-19.7	75	125	None
6010	OH-SB03-Z67-68	MS	Antimony	ND	27.4	38.6	75	125	UJ
6010	OH-SB03-Z67-68	MS	Calcium	17200	110	-606	75	125	None
6010	OH-SB03-Z67-68	MS	Iron	12600	110	-398	75	125	None
6010	OH-SB03-Z67-68	MS	Magnesium	7400	110	-96.3	75	125	None
6010	OH-SB03-Z67-68	MS	Potassium	2020	110	44.8	75	125	None

Method	Sample ID	Sample Type	Analyte	Orig. Result	Spike Amount	MS/MSD Rec. (%)	Low Limit	High Limit	Sample Qualifier
6010	OH-SB03-Z67-68	MS	Silver	ND	5.48	29.2	75	125	UR
6010	OH-SB03-Z67-68	MS	Sodium	1270	110	209	75	125	None
8260	OH-SB03-Z67-68	MS MSD	Methylcyclohexane	55.1	50	79.9 55.1	70	130	None
8260	OH-SB03-Z67-68	MS MSD	Cyclohexane	63.8	50	79.7 63.8	70	130	None
8270	OH-SB03-Z67-68	MS	2,4-Dinitrophenol	ND	1.09	0	10	171	None
8270	OH-SB03-Z67-68	MS	Benzoic Acid	ND	1.09	0	10	166	None

Method	Sample ID	Sample Type	Analyte	RPD	RPD Limit	Sample Qual.
8260	OH-SB03-Z67-68	MS/MSD	1,1,2-Trichlorotrifluoroethane	43.8	31	None
8260	OH-SB03-Z67-68	MS/MSD	1,1-Dichloroethylene	43.5	31	None
8260	OH-SB03-Z67-68	MS/MSD	Hexachlorobutadiene	54.2	45	None
8260	OH-SB03-Z67-68	MS/MSD	Methylcyclohexane	36.7	30	None
1633	OH-SB03-Z67-68	MS/MSD	N-EtFOSA	32	30	UJ
8260	OH-SB07-Z52-53	MS/MSD	2,4,6-Trichlorophenol	31.6	30	None

Table 6 - List of LCS Recoveries and RPDs outside Control Limits

Method	Sample ID	Analyte	Rec.	Low Limit	High Limit	Associated Samples	Sample Qualifier
8260	BC41759-BS1 BC41759-BSD1	Tetrachloroethylene	61.6 61.6	80	129	OH-SB01-Z44-45 OH-SB01-Z94-95	UJ
8260	BC41759-BS1 BC41759-BSD1	Vinyl Acetate	139 143	67	136		None – High and ND
6010	BC41653-SRM1	Cadmium	82.2	88.1	104.9		UJ
1633	BC14508-BS1 BC41508-BS2	11CL-PF3OUdS	ND ND	50	150		UR
1633	BC14508-BS1 BC41508-BS2	9CL-PF3ONS	ND ND	50	150		UR

Method	Sample ID	Analyte	Rec.	Low Limit	High Limit	Associated Samples	Sample Qualifier
1633	BC14508-BS1 BC41508-BS2	ADONA	ND ND	50	150		UR
1633	BC14508-BS1 BC41508-BS2	HFPO-DA	ND ND	50	150		UR
1633	BC41508-BS1	N-MeFOSA	151	50	150		UJ
1633	BC41508-BS2	8:2 FTS	205	50	150		UJ
1633	BC41508-BS2	4:2 FTS	167	50	150		UJ
1633	BC41508-BS2	6:2 FTS	213	50	150		UJ
1633	BC41508-BS2	FPrPA	165	50	150		UJ
1633	BC41508-BS2	N-EtFOSA	250	50	150		UJ
1633	BC41508-BS2	N-EtFOSAA	213	50	150		UJ
1633	BC41508-BS2	N-MeFOSA	228	50	150		UJ
1633	BC41508-BS2	N-MeFOSAA	183	50	150		UJ
1633	BC41508-BS2	PFEESA	222	50	150		UJ
1633	BC41508-BS2	PFDS	152	50	150		UJ
1633	BC41508-BS2	PFHpS	208	50	150		UJ
1633	BC41508-BS2	PFNS	212	50	150		UJ
1633	BC41508-BS2	FOSA	194	50	150		UJ
1633	BC41508-BS2	PFPeS	206	50	150		UJ
1633	BC41508-BS2	PFMPA	173	50	150		UJ
1633	BC41508-BS2	PFMBA	183	50	150		UJ
1633	BC41508-BS2	PFBS	180	50	150		UJ
1633	BC41508-BS2	PFDA	189	50	150		UJ
1633	BC41508-BS2	PFDoA	195	50	150		UJ
1633	BC41508-BS2	PFHpA	217	50	150		UJ
1633	BC41508-BS2	PFHxS	216	50	150		UJ
1633	BC41508-BS2	PFHxA	199	50	150		J
1633	BC41508-BS2	PFBA	211	50	150		J

Method	Sample ID	Analyte	Rec.	Low Limit	High Limit	Associated Samples	Sample Qualifier
1633	BC41508-BS2	PFNA	174	50	150		UJ
1633	BC41508-BS2	PFOS	237	50	150		UJ
1633	BC41508-BS2	PFOA	165	50	150		UJ
1633	BC41508-BS2	PFPeA	214	50	150		UJ
1633	BC41508-BS2	PFTA	203	50	150		J / UJ
1633	BC41508-BS2	PFTrDA	170	50	150	OH-SB02-Z37-38 OH-SB02-Z64-65 OH-SB02-Z37-38 OH-SB02-Z64-65	UJ
1633	BC41508-BS2	PFUnA	176	50	150		UJ
8260	BC41677-BS1 BC41677-BSD1	Vinyl Acetate	147 147	67	136		None – High and ND
8260	BC41677-BS2 BC41677-BSD2	Chloroethane	239 267	51	142		None – High and ND
8260	BC41677-BS2 BC41677-BSD2	Tetrachloroethylene	67.7 69	80	129		UJ
8260	BC41677-BS2 BC41677-BSD2	Vinyl Acetate	162 165	67	136		None – High and ND
6010	BC41775-BS1	Cadmium	81.3	88.1	104.9		UJ
1633	BC41717-BS1	FHpPA (7:3 FTCA)	37.5	50	150		UJ
1633	BC41717-BS1	PFDS	33.2	50	150		UJ
1633	BC41717-BS1	PFNS	40.6	50	150		UJ
1633	BC41717-BS1	PFDoS	20.7	50	150		UJ
1633	BC41717-BS1	PFNA	46.9	50	150	OH-SB06-Z37-38 OH-SB06-Z71-72 OH-SB06-Z78-79 OH-SB06-Z37-38 OH-SB06-Z71-72 OH-SB06-Z78-79	UJ
1633	BC41717-BS1	PFOA	49	50	150		UJ
8260	BC42085-BS1 BC42085-BS2	4-Methyl-2-pentanone	64.8 65.5	72	132		UJ
8260	BC42085-BS1	tert-Butylbenzene	76.9	80	127		UJ
6010	BC42055-SRM1	Cadmium	78.7	88.1	104.9		UJ
1633	BC41864-BS1 BC41864-BS2	FHpPA (7:3 FTCA)	15.7 15.8	50	150		UJ
1633	BC41864-BS1	FPrPA (3:3 FTCA)	422	50	150	OH-SB07-Z31-32	UJ

Method	Sample ID	Analyte	Rec.	Low Limit	High Limit	Associated Samples	Sample Qualifier
	BC41864-BS2		419			OH-SB07-Z52-53 OH-SB07-Z31-32 OH-SB07-Z52-53	
1633	BC41864-BS2	PFNS	177	50	150		UJ
8260	BC42114-BS1 BC42114-BS2	1,2-Dibromo-3-chloropropane	68.9 73.7	74	142		UJ
8260	BC42114-BS1 BC42114-BSD1 BC42114-BS2 BC42114-BSD2	Tetrachloroethylene	71.2 78.8 68.8 67.8	80	129		UJ
8260	BC42114-BS2 BC42114-BSD2	Vinyl Acetate	162 157	67	136		None – High and ND
8260	BC42114-BSD2	Chloroethane	50.9	51	142		UJ
8270	BC41834-BS1	2,4-Dimethylphenol	3.44	14	132	OH-SB07-Z31-32	UJ
6010	BC42189-SRM1	Cadmium	82	88.1	104.9	OH-SB07-Z31-32 OH-SB07-Z52-53	UJ
6010	BC40090-SRM1	Cadmium	75.9	88.1	104.9		UJ
6010	BD40090-SRM1	Sodium	154	70.6	118.1	OH-SB08-Z31-32	J
8260	BD40157-BS2 BD40157-BSD2	Tetrachloroethylene	65.3 65.5	80	129	OH-SB08-Z41-42 OH-SB08-Z31-32 OH-SB08-Z41-42	UJ
8260	BD40157-BS2 BD40157-BSD2	Vinyl Acetate	170 171	67	136	OH-SB08-Z47-48	None – High and ND
8260	BD40158-BS1 BD40158-BSD1	Tetrachloroethylene	78.7 77.4	80	129	OH-SB08-Z47-48 OH-SB08-Z31-32 OH-SB08-Z41-42 OH-SB08-Z47-48	UJ
8270	BC42000-BS1	2,3,4,6-Tetrachlorophenol	164	30	130		None – High and ND
8270	BC42000-BS1	2,4,5-Trichlorophenol	122	27	118/		None – High and ND
8270	BC42000-BS1	2,4-Dinitrophenol	216	10	171		None – High and ND
8270	BC42000-BS1	2,4-Dinitrotoluene	159	34	131		None – High and ND
8270	BC42000-BS1	2,6-Dinitrotoluene	143	31	128		None – High and ND
8270	BC42000-BS1	2-Nitroaniline	135	27	132		None – High and ND
8270	BC42000-BS1	2-Nitrophenol	150	17	129		None – High and ND
8270	BC42000-BS1	4-Nitrophenol	154	10	141		None – High and ND

Method	Sample ID	Analyte	Rec.	Low Limit	High Limit	Associated Samples	Sample Qualifier
8270	BC42000-BS1	Di-n-octyl Phthalate	138	26	136		None – High and ND
8270	BC42000-BS1	Pyridine	108	10	91		None – High and ND
6010	BD40170-SRM1	Cadmium	87.1	88.1	104.9	OH-SB08-Z31-32	UJ
1633	BC42127-BS2	9Cl-PF3ONS	164	50	150	OH-SB08-Z41-42 OH-SB07-Z31-32 OH-SB07-Z52-53 OH-SB08-Z41-42 OH-SB08-Z47-48	UJ
1633	BC42127-BS2	PFMPA	12	50	150	OH-SB08-Z47-48	UJ
6010	BD40307-SRM1	Arsenic	63.9	70.4	102.2	OH-SB05-Z41-41 OH-SB05-Z71-72 OH-SB05-Z75-76	UJ
						OH-SB05-Z32-33 OH-SB05-Z41-42-Q	J
6010	BD40307-SRM1	Barium	72.1	77.9	110.8	OH-SB05-Z32-33 OH-SB05-Z41-41 OH-SB05-Z41-42-Q OH-SB05-Z71-72 OH-SB05-Z75-76 OH-SB08-Z31-32 OH-SB05-Z32-33 OH-SB05-Z41-42 OH-SB05-Z41-42-Q OH-SB05-Z71-72 OH-SB05-Z75-76	J
6010	BD40307-SRM1	Beryllium	64.9	76.3	107.6		UJ
6010	BD40307-SRM1	Cadmium	66.6	88.1	104.9		UJ
6010	BD40307-SRM1	Calcium	74.4	78.3	111.9		J
6010	BD40307-SRM1	Chromium	69.0	73.5	107		J
6010	BD40307-SRM1	Cobalt	69.0	74.8	105.8		J
6010	BD40307-SRM1	Lead	67.1	74.2	108		J
6010	BD40307-SRM1	Manganese	72.3	80.3	114.6		J
6010	BD40307-SRM1	Nickel	67.8	72	104.2		J
6010	BD40307-SRM1	Selenium	68.7	70.9	108.8		UJ
6010	BD40307-SRM1	Silver	65.7	72	110.1		UJ
6010	BD40307-SRM1	Thallium	64.5	70.9	106.7		UJ
6010	BD40307-SRM1	Zinc	66.7	75.9	111.5		J
1633	BS40031-BS1	N-EtFOSA	33.3	50	150		UJ
8260	BD40256-BS2 BD40256-BSD2	Tetrachloroethylene	71.4 72.5	80	129	OH-SB05-Z32-33 OH-SB05-Z41-41	UJ

Data Usability Summary Report	Project: Citizens-Carroll Gardens MGP Off-Site Investigation, Owl's Head Site, Brooklyn, NY
Date Completed: June 24, 2024	Prepared by: Sayward Gohman-Kramer Reviewed by: Eridania Marte

Method	Sample ID	Analyte	Rec.	Low Limit	High Limit	Associated Samples	Sample Qualifier
8260	BD40256-BS2 BD40256-BSD2	Vinyl Acetate	151 148	67	136	OH-SB05-Z41-42-Q OH-SB05-Z71-72	None – High and ND
8260	BD40258-BS2 BD40258-BSD2	Tetrachloroethylene	76.1 77.6	80	129	OH-SB05-Z75-76	UJ
8260	BC42193-BSD1	1,2,3-Trichlorobenzene	176	76	136	TB-20240327	None – High and ND
8260	BC42193-BS1	2-Butanone	48.0	49	152		UJ
8260	BC42193-BSD1	Naphthalene	159	70	147	OH-SB03-Z37-38	None – High and ND
8260	BC42193-BS1 BC42193-BSD2	Tetrachloroethylene	46.9 47.2	82	131	OH-SB03-Z37-38	UJ
8260	BD40384-BS1 BD40384-BSD1 BD40384-BS2 BD40384-BSD2	Tetrachloroethylene	69.0 75.3 69.0 65.6	80	129	OH-SB03-Z51-52 OH-SB03-Z67-68 OH-SB03-Z51-52 OH-SB03-Z67-68	UJ
8260	BD40384-BS2 BD403384-BSD2	Vinyl Acetate	163	67	136	OH-SB04-Z33-34 OH-SB04-Z62-63 OH-SB04-Z52-53	None – High and ND
6010	BD40502-SRM1	Cadmium	81.6	88.1	104.9		UJ
1633	BD40095-BS1 BD40095-BSD1	PFMPA	23.4 29.9	50	150	OH-SB03-Z37-38 OH-SB03-Z51-52	UJ
8260	BD40467-BS1 BD40467-BSD1	Tetrachloroethylene	78.6 79.6	80	129	OH-SB03-Z67-68 OH-SB03-Z37-38	UJ
8260	BD40467-BS2 BD40467-BSD2	Tetrachloroethylene	72.4 73.5	80	129	OH-SB04-Z33-34 OH-SB04-Z62-63 OH-SB04-Z52-53	UJ
8270	BD40403-BS1	2,4-Dinitrophenol	0	10	171		UR
8270	BD40403-BS1	4,6-Dinitro-2-methylphenol	0	10	143	OH-SB04-Z62-63 OH-SB04-Z52-53 OH-SB04-Z62-63 OH-SB04-Z52-53	UR
6010	BD40625-SRM1	Beryllium	75.8	76.3	107.6		J
6010	BD40625-SRM1	Cadmium	75.9	88.1	104.9		UJ
1633	BD40549-BS1 BD40549-BS2	11CL-PF3OUdS	45.6 37.2	50	150		UJ
1633	BD40549-BS1	FHpPA (7:3 FTS)	16.1	50	150		UJ

Method	Sample ID	Analyte	Rec.	Low Limit	High Limit	Associated Samples	Sample Qualifier
	BD40549-BS2		17.3				
1633	BD40549-BS1 BD40549-BS2	FPrPA (3:3 FTS)	404 499	50	150		UJ
1633	BD40549-BS1 BD40549-BS2	PFMPA	11.0 26.5	50	150		UJ
1633	BD40549-BS1	PFDS	44.0	50	150		UJ
1633	BD40549-BS1 BD40549-BS2	PFDoS	42.4 0	50	150		UR
1633	BD40549-BS1 BD40549-BS2	PFNA	167 215	50	150		UJ
1633	BD40549-BS2	N-MeFOSAA	49.3	50	150		UJ
1633	BD40549-BS2	PFOS	0	50	150	OH-SB04-Z33-34 OH-SB04-Z33-34	UR
1633	BD40549-BS2	PFTrDA	152	50	150		UJ
1633	BD40925-BS1 BD40925-BS2	11CL-PF3OUdS	376 244	50	150		UJ
1633	BD40925-BS1 BD40925-BS2	FPrPA (3:3 FTS)	15.9 0	50	150		UR
1633	BD40925-BS1 BD40925-BS2	9Cl-PF3ONS	416 285	50	150		UJ

Method	Sample ID	Sample Type	Analyte	RPD	RPD Limit	Associated Samples	Sample Qual.
8260	BC42114-BS1 BC42114-BSD1	N	Acetone	41.1	30	OH-SB07-Z31-32 OH-SB07-Z52-53	UJ
8260	BC42114-BS2 BC42114-BSD2	N	Chloroethane	91.2	30		UJ
8260	BD40157-BS2 BD40157-BSD2	N	Dichlorodifluoromethane	75	30	OH-SB08-Z31-32 OH-SB08-Z41-42	UJ
8260	BC42193-BS1	TB	1,2,3-Trichlorobenzene	53.4	30	TB-20240327	UJ

Method	Sample ID	Sample Type	Analyte	RPD	RPD Limit	Associated Samples	Sample Qual.
	BC42193-BSD1						
8260	BC42193-BS1 BC42193-BSD1	TB	1,4-Dioxane	80.4	30	TB-20240327	UJ
8260	BC42193-BS1 BC42193-BSD1	TB	2-Butanone	70.6	30	TB-20240327	UJ
8260	BC42193-BS1 BC42193-BSD1	TB	Naphthalene	32.6	30	TB-20240327	UJ

Table 7 – ICAL/ICV/CCV Outside Limits

Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
8260	S4C1923-SCV1	ICV	Tetrachloroethylene	-34.4	30	OH-SB01-Z44-45 OH-SB01-Z94-95	UJ
8260	S4C2521-CCV1	CCV	Tetrachloroethylene	-26.3	20		UJ
8270	SB40030	ICAL	2,4-Dinitrophenol	45.1	20	OH-SB01-Z44-45 OH-SB01-Z94-95 OH-SB02-Z37-38 OH-SB02-Z64-65 OH-SB06-Z37-38 OH-SB06-Z71-72 OH-SB06-Z78-79 OH-SB07-Z52-53 OH-SB07-Z31-32 OH-SB08-Z47-48 OH-SB03-Z37-38 OH-SB03-Z51-52 OH-SB03-Z67-68	None
8270	SB40030	ICAL	2,4-Dinitrotoluene	28.7	20		None
8270	SB40030	ICAL	2,6-Dinitrotoluene	23.2	20		None
8270	SB40030	ICAL	4,6-Dinitro-2-methylphenol	43.8	20		None
8270	SB40030	ICAL	Benzoic Acid	36.5	20		None
8270	SB40030	ICAL	Di-n-octyl Phthalate	27.1	20		None
8270	SB40030	ICAL	Pentachlorophenol	27.4	20		None
8270	S4B2615-SCV1	ICV	2,4-Dinitrophenol	49.1	20	OH-SB01-Z44-45 OH-SB01-Z94-95 OH-SB02-Z37-38 OH-SB02-Z64-65 OH-SB06-Z37-38	UJ
8270	S4B2615-SCV1	ICV	4,6-Dinitro-2-methylphenol	43.9	20		UJ
8270	S4B2615-SCV1	ICV	Hexachlorocyclopentadiene	-45.5	20		UJ

Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
						OH-SB06-Z71-72 OH-SB06-Z78-79 OH-SB07-Z52-53 OH-SB07-Z31-32 OH-SB08-Z47-48 OH-SB03-Z37-38 OH-SB03-Z51-52 OH-SB03-Z67-68	
8270	S4C2221-CCV1	CCV	2,3,4,6-Tetrachlorophenol	53.9	20	OH-SB01-Z44-45 OH-SB01-Z94-95	UJ
8270	S4C2221-CCV1	CCV	2,4-Dinitrophenol	99.2	20		UJ
8270	S4C2221-CCV1	CCV	2,4-Dinitrotoluene	46.8	20		UJ
8270	S4C2221-CCV1	CCV	2,6-Dinitrotoluene	33.5	20		UJ
8270	S4C2221-CCV1	CCV	2-Nitrophenol	24.5	20		UJ
8270	S4C2221-CCV1	CCV	4-Bromophenyl Phenyl Ether	-36.4	20		UJ
8270	S4C2221-CCV1	CCV	4-Nitrophenol	62.8	20		UJ
8270	S4C2221-CCV1	CCV	Benzoic Acid	34.2	20		UJ
8270	S4C2221-CCV1	CCV	Di-n-octyl Phthalate	33.0	20		UJ
8270	S4C2221-CCV1	CCV	N-Nitrosodimethylamine	23.8	20		UJ
8270	S4C2221-CCV1	CCV	N-Nitrosodiphenylamine	-39.5	20		UJ
8270	S4C2221-CCV1	CCV	Pyridine	42.8	20		UJ
8082	S4C2162-CCV5	CCV	Aroclor 1016 – C1 Average	20.1	20	OH-SB01-Z44-45 OH-SB01-Z94-95	UJ
8082	S4C2162-CCV5	CCV	Aroclor 1260 – C1 Average	25.7	20		UJ
6010	S4C2709-CCV6	CCV	Thallium	111	110	OH-SB01-Z44-45 OH-SB01-Z94-95	UJ
6010	S4C2709-CCV7	CCV	Thallium	111	110	OH-SB01-Z94-95	UJ

Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
1633	SA40047	ICAL	8:2 FTS	0.988	0.995	OH-SB01-Z44-45 OH-SB01-Z94-95 OH-SB02-Z37-38 OH-SB02-Z64-65 OH-SB07-Z31-32 OH-SB07-Z52-53 OH-SB08-Z31-32 OH-SB08-Z41-42 OH-SB08-Z47-48 OH-SB03-Z37-38 OH-SB03-Z51-52 OH-SB03-Z67-68 OH-SB05-Z32-33 OH-SB05-Z41-42 OH-SB05-Z41-42-Q OH-SB05-Z71-72 OH-SB05-Z75-76	UJ
1633	SA40047	ICAL	4:2 FTS	0.991	0.995		UJ
1633	SA40047	ICAL	6:2 FTS	0.986	0.995		UJ
8260	SC40032	ICAL	Methylene Chloride	66.5	20	OH-SB02-Z64-65 OH-SB07-Z52-53	None
						OH-SB03-Z67-68	J
8260	SC40033	ICAL	Chloroethane	79.1	20	OH-SB02-Z37-38 OH-SB07-Z31-32 OH-SB03-Z51-52	None
8260	SC40033	ICAL	Methylene Chloride	72.4	20	OH-SB02-Z37-38 OH-SB03-Z51-52	J
						OH-SB07-Z31-32 OH-SB08-Z31-32 OH-SB08-Z41-42	None
8260	S4C1804-SCV1	ICV	Vinyl Acetate	32.7	30	OH-SB02-Z64-65 OH-SB07-Z52-53 OH-SB03-Z67-68	UJ
8260	S4C1806-SCV1	ICV	Chloroethane	161	30	OH-SB02-Z37-38	UJ
8260	S4C1806-SCV1	ICV	Tetrachloroethylene	-41.8	30	OH-SB07-Z31-32 OH-SB08-Z31-32	UJ

Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
						OH-SB08-Z41-42 OH-SB03-Z51-52	
8260	S4C2402-CCV1	CCV	Bromoform	22.9	20	OH-SB02-Z64-65	UJ
8260	S4C2402-CCV1	CCV	Bromomethane	-28.2	20		UJ
8260	S4C2402-CCV1	CCV	Carbon Disulfide	23.0	20		UJ
8260	S4C2403-CCV1	CCV	1,2-Dibromo-3-chloropropane	-23.0	20	OH-SB02-Z37-38	UJ
8260	S4C2403-CCV1	CCV	2-Hexanone	-26.5	20		UJ
8260	S4C2403-CCV1	CCV	Chloroethane	-33.5	20		UJ
8260	S4C2403-CCV1	CCV	Tetrachloroethylene	-28.8	20		UJ
8260	S4C2403-CCV1	CCV	Vinyl Acetate	32.9	20		UJ
8270	S4C2638-CCV1	CCV	2,3,4,6-Tetrachlorophenol	41.9	20	OH-SB02-Z37-38 OH-SB02-Z64-65	UJ
8270	S4C2638-CCV1	CCV	2,4-Dinitrophenol	100	20		UJ
8270	S4C2638-CCV1	CCV	2,4-Dinitrotoluene	44.0	20		UJ
8270	S4C2638-CCV1	CCV	2,6-Dinitrotoluene	34.2	20		UJ
8270	S4C2638-CCV1	CCV	2-Nitrophenol	23.2	20		UJ
8270	S4C2638-CCV1	CCV	4-Bromophenyl Phenyl Ether	-26.8	20		UJ
8270	S4C2638-CCV1	CCV	4-Nitrophenol	45.3	20		UJ
8270	S4D2742-CCV1	CCV	Benzo(g,h,i)perylene	24.3	20	OH-SB02-Z37-38	J
8270	S4D2742-CCV1	CCV	Indeno(1,2,3-c,d)pyrene	73.7	20		J
8270	S4D2742-CCV1	CCV	Benzo(a)pyrene	20.6	20		J
8270	S4D2742-CCV1	CCV	Dibenzo(a,h)anthracene	21.1	20		J
8260	S4B0612-SCV1	ICV	Acrolein	-51.2	30	OH-SB06-Z37-38 OH-SB06-Z71-72 OH-SB06-Z78-79	UJ
8260	S4B0612-SCV1	ICV	Dichlorodifluoromethane	31.8	30		UJ
8260	S4C2932-CCV1	CCV	Acrolein	-72.1	30		UJ
8260	S4C2932-CCV1	CCV	Chloroethane	26.3	30		UJ
8260	S4C2932-CCV1	CCV	Dichlorodifluoromethane	-22.8	30		UJ
8260	S4C2932-CCV1	CCV	Tert-Butyl Alcohol	-33.3	30		UJ

Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
8260	S4C2932-CCV1	CCV	Trichlorofluoromethane	35.3	30		UJ
8260	S4C2932-CCV1	CCV	Vinyl Acetate	-91.2	30		UJ
8270	S4C2747-CCV1	CCV	2,3,4,6-Tetrachlorophenol	52.4	20		UJ
8270	S4C2747-CCV1	CCV	2,4-Dinitrophenol	136	20		UJ
8270	S4C2747-CCV1	CCV	2,4-Dinitrotoluene	53.6	20		UJ
8270	S4C2747-CCV1	CCV	2,6-Dinitrotoluene	39.6	20		UJ
8270	S4C2747-CCV1	CCV	2-Nitroaniline	29.2	20		UJ
8270	S4C2747-CCV1	CCV	3-Nitroaniline	24.8	20		UJ
8270	S4C2747-CCV1	CCV	4,6-Dinitro-2-methylphenol	35.6	20		UJ
8270	S4C2747-CCV1	CCV	4-Bromophenyl Phenyl Ether	-29.4	20		UJ
8270	S4C2747-CCV1	CCV	4-Nitrophenol	59.6	20		UJ
8270	S4C2747-CCV1	CCV	Di-n-octyl Phthalate	37.9	20		UJ
8270	S4C2747-CCV1	CCV	N-Nitrosodiphenylamine	-37.2	20		UJ
8270	S4C2945-CCV1	CCV	Indeno(1,2,3-c,d)pyrene	48.6	20	OH-SB06-Z78-79	J
6010	S4C2961-ICV1	ICV	Antimony	111	110	OH-SB06-Z37-38 OH-SB06-Z71-72 OH-SB06-Z78-79	None – High and ND
6010	S4C2961-CCV6	CCV	Antimony	89.1	90		UJ
1633	SC40058	ICAL	8:2 FTS	0.968	0.995	OH-SB06-Z37-38 OH-SB06-Z71-72 OH-SB06-Z78-79 OH-SB04-Z52-53 OH-SB04-Z62-63	UJ
1633	SC40058	ICAL	4:2 FTS	0.979	0.995		UJ
1633	SC40058	ICAL	6:2 FTS	38.29	20		UJ
1633	S4C2954-SCV1	ICV	PFDS	35.5	30		UJ
1633	S4C2954-SCV1	ICV	8:2 FTS	-42.1	30		UJ
1633	S4C2954-SCV1	ICV	4:2 FTS	31.1	30		UJ
1633	S4C2956-CCV3	CCV	6:2 FTS	34.8	30	OH-SB06-Z37-38 OH-SB06-Z71-72 OH-SB06-Z78-79	UJ
1633	S4C2956-CCV4	CCV	6:2 FTS	63	30		UJ
1633	S4C2956-CCV4	CCV	PFNS	33.2	30		UJ

Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
8260	S4C2943-CCV2	CCV	1,2-Dibromo-3-chloropropane	-29.8	20	OH-SB07-Z31-32	UJ
8260	S4C2943-CCV2	CCV	2-Butanone	-21.5	20		UJ
8260	S4C2943-CCV2	CCV	2-Hexanone	-32.3	20		UJ
8260	S4C2943-CCV2	CCV	Chloroethane	84.9	20		UJ
8260	S4C2943-CCV2	CCV	Methyl Acetate	-24.6	20		UJ
8260	S4C2943-CCV2	CCV	tert-Butyl Alcohol	-20.3	20		UJ
8260	S4C2943-CCV2	CCV	Tetrachloroethylene	-32.5	20		UJ
8260	S4C2943-CCV2	CCV	Trichlorofluoromethane	-29.3	20		UJ
8260	S4C2943-CCV2	CCV	Vinyl Acetate	48.7	20		UJ
8260	S4C2943-CCV2	CCV	Vinyl Chloride	-26.5	20		UJ
8260	S4D0101-CCV1	CCV	1,2-Dibromo-3-chloropropane	-33.5	20	OH-SB07-Z52-53	UJ
8260	S4D0101-CCV1	CCV	2-Chlorotoluene	-22.8	20		UJ
8260	S4D0101-CCV1	CCV	2-Hexanone	-34.3	20		UJ
8260	S4D0101-CCV1	CCV	4-Methyl-2-pentanone	-31.9	20		UJ
8260	S4D0101-CCV1	CCV	Bromomethane	-39.2	20		UJ
8260	S4D0101-CCV1	CCV	Chloroethane	-30.2	20		UJ
8260	S4D0101-CCV1	CCV	tert-Butyl Alcohol	-22.8	20		UJ
8260	S4D0101-CCV1	CCV	Tetrachloroethylene	-25.8	20		UJ
8260	S4D0101-CCV1	CCV	Trichlorofluoromethane	-27.0	20		UJ
8260	S4D0101-CCV1	CCV	Vinyl Chloride	-29.9	20		UJ
8270	S4C2911-CCV1	CCV	2,3,4,6-Tetrachlorophenol	47.8	20	OH-SB07-Z52-53	UJ
8270	S4C2911-CCV1	CCV	2,4-Dinitrophenol	131	20		UJ
8270	S4C2911-CCV1	CCV	2,4-Dinitrotoluene	48.9	20		UJ
8270	S4C2911-CCV1	CCV	2,6-Dinitrotoluene	37.6	20		UJ
8270	S4C2911-CCV1	CCV	2-Nitroaniline	21.4	20		UJ
8270	S4C2911-CCV1	CCV	2-Nitrophenol	20.6	20		UJ
8270	S4C2911-CCV1	CCV	4,6-Dinitro-2-methylphenol	35.3	20		UJ

Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
8270	S4C2911-CCV1	CCV	4-Bromophenyl Phenyl Ether	-26.7	20		UJ
8270	S4C2911-CCV1	CCV	4-Nitrophenol	48.0	20		UJ
8270	S4C2911-CCV1	CCV	Bis(2-chloroisopropyl)ether	-20.3	20		UJ
8270	S4C2911-CCV1	CCV	Di-n-octyl Phthalate	31.6	20		UJ
8270	S4C2911-CCV1	CCV	N-Nitrosodiphenylamine	-37.3	20		UJ
8270	S4D0247-CCV1	CCV	2,3,4,6-Tetrachlorophenol	37.3	20	OH-SB07-Z31-32	UJ
8270	S4D0247-CCV1	CCV	2,4-Dinitrophenol	153	20		UJ
8270	S4D0247-CCV1	CCV	2,4-Dinitrotoluene	56.5	20		UJ
8270	S4D0247-CCV1	CCV	2,6-Dinitrotoluene	43.8	20		UJ
8270	S4D0247-CCV1	CCV	2-Nitroaniline	23.4	20		UJ
8270	S4D0247-CCV1	CCV	2-Nitrophenol	34.4	20		UJ
8270	S4D0247-CCV1	CCV	4,6-Dinitro-2-methylphenol	71.1	20		UJ
8270	S4D0247-CCV1	CCV	4-Nitrophenol	31.8	20		UJ
8270	S4D0247-CCV1	CCV	Benzoic Acid	21.2	20		UJ
8270	S4D0247-CCV1	CCV	Bis(2-chloroisopropyl)ether	-25.4	20		UJ
8270	S4D0247-CCV1	CCV	Di-n-octyl Phthalate	31.0	20		UJ
8270	S4D0247-CCV1	CCV	Hexachlorocyclopentadiene	-32.2	20		UJ
8270	S4D0247-CCV1	CCV	N-Nitrosodiphenylamine	-24.6	20		UJ
6010	S4D0237-ICV1	ICV	Antimony	115	90-110	OH-SB07-Z52-53	None – High and ND
6010	S4D0222-CCVH	CCV	Antimony	74.3	90-110	OH-SB07-Z31-32	UJ
6010	S4D0222-CCVI	CCV	Antimony	74.8	90-110	OH-SB07-Z31-32	UJ
6010	S4D0237-CCV2	CCV	Antimony	81.8	90-110	OH-SB07-Z52-53	UJ
6010	S4D0237-CCV2	CCV	Potassium	89.4	90-110		UJ
6010	S4D0237-CCV2	CCV	Sodium	88.2	90-110		UJ
1633	S4D0139-CCV6	CCV	8:2 FTS	43.5	30	OH-SB07-Z31-32	UJ

Data Usability Summary Report	Project: Citizens-Carroll Gardens MGP Off-Site Investigation, Owl's Head Site, Brooklyn, NY
Date Completed: June 24, 2024	Prepared by: Sayward Gohman-Kramer Reviewed by: Eridania Marte

Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
1633	S4D0139-CCV6	CCV	4:2 FTS	35.8	30	OH-SB07-Z52-53 OH-SB08-Z41-42 OH-SB08-Z47-48	UJ
1633	S4D0139-CCV6	CCV	FPePA (3:3 FTS)	52.4	30	OH-SB07-Z31-32 OH-SB07-Z52-53 OH-SB08-Z41-42 OH-SB08-Z47-48	UJ
						OH-SB08-Z31-32	J
1633	S4D0139-CCV6	CCV	9CL-PF3ONS	34.3	30	OH-SB07-Z31-32 OH-SB07-Z52-53 OH-SB08-Z41-42 OH-SB08-Z47-48	UJ
1633	S4D0139-CCV6	CCV	N-EtFOSA	67.5	30		UJ
1633	S4D0139-CCV6	CCV	N-EtFOSAA	32.1	30		UJ
1633	S4D0139-CCV6	CCV	N-MeFOSA	32.3	30		UJ
1633	S4D0139-CCV6	CCV	N-MeFOSAA	31.7	30		UJ
1633	S4D0139-CCV6	CCV	N-MeFOSE	37.8	30		UJ
1633	S4D0139-CCV6	CCV	PFEESA	65.8	30		UJ
1633	S4D0139-CCV6	CCV	PFDS	31.5	30		UJ
1633	S4D0139-CCV6	CCV	PFNS	43.9	30		UJ
1633	S4D0139-CCV6	CCV	FOSA	34.1	30		UJ
1633	S4D0139-CCV6	CCV	PFPeS	41.5	30	OH-SB07-Z31-32 OH-SB08-Z31-32	J
						OH-SB07-Z52-53 OH-SB08-Z41-42 OH-SB08-Z47-48	UJ
1633	S4D0139-CCV6	CCV	PFBS	32.9	30	OH-SB07-Z31-32 OH-SB07-Z52-53 OH-SB08-Z41-42 OH-SB08-Z47-48	UJ
1633	S4D0139-CCV6	CCV	PFHpA	30.9	30		UJ
1633	S4D0139-CCV6	CCV	PFHxS	33.4	30		UJ
1633	S4D0139-CCV6	CCV	PFBA	31.6	30		UJ
1633	S4D0139-CCV6	CCV	PFNA	41.0	30		UJ
1633	S4D0139-CCV6	CCV	PFOS	30.6	30		UJ

Data Usability Summary Report	Project: Citizens-Carroll Gardens MGP Off-Site Investigation, Owl's Head Site, Brooklyn, NY
Date Completed: June 24, 2024	Prepared by: Sayward Gohman-Kramer Reviewed by: Eridania Marte

Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
1633	S4D0139-CCV6	CCV	PFTA	41.5	30		UJ
1633	S4D0139-CCV7	CCV	8:2 FTS	30.9	30	OH-SB07-Z31-32 OH-SB07-Z52-53 OH-SB08-Z41-42 OH-SB08-Z47-48	UJ
1633	S4D0139-CCV7	CCV	4:2 FTS	38.6	30		UJ
1633	S4D0139-CCV7	CCV	FPePA (3:3 FTS)	51.8	30		UJ
1633	S4D0139-CCV7	CCV	N-EtFOSA	49.1	30		UJ
1633	S4D0139-CCV7	CCV	N-EtFOSAA	35.4	30		UJ
1633	S4D0139-CCV7	CCV	N-MeFOSA	42.6	30		UJ
1633	S4D0139-CCV7	CCV	N-MeFOSAA	38.2	30		UJ
1633	S4D0139-CCV7	CCV	N-MeFOSE	34.3	30		UJ
1633	S4D0139-CCV7	CCV	PFEESA	61.2	30		UJ
1633	S4D0139-CCV7	CCV	PFNS	45.1	30		UJ
1633	S4D0139-CCV7	CCV	FOSA	36.3	30		UJ
1633	S4D0139-CCV7	CCV	PFPeS	31.3	30	OH-SB07-Z31-32 OH-SB08-Z31-32	J
						OH-SB07-Z52-53 OH-SB08-Z41-42 OH-SB08-Z47-48	UJ
1633	S4D0139-CCV7	CCV	PFDoA	31.1	30	OH-SB07-Z31-32 OH-SB07-Z52-53 OH-SB08-Z41-42 OH-SB08-Z47-48	UJ
1633	S4D0139-CCV7	CCV	PFHpA	30.7	30		UJ
1633	S4D0139-CCV7	CCV	PFBA	32.8	30		UJ
1633	S4D0139-CCV7	CCV	PFTA	54.4	30		UJ
1633	S4D0139-CCV7	CCV	PFUnA	33.4	30		UJ
8260	S4C2711-SCV1	ICV	Dichlorodifluoromethane	-45.0	30	OH-SB08-Z47-48 OH-SB05-Z75-76	UJ
8260	S4D0307-CCV	CCV	Chloroethane	-45.7	20	OH-SB08-Z31-32 OH-SB08-Z41-42	UJ
8260	S4D0307-CCV	CCV	Tetrachloroethylene	-32.5	20		UJ
8260	S4D0307-CCV	CCV	Vinyl Acetate	58.2	20		UJ
8260	S4D0308-CCV	CCV	Tetrachloroethylene	-22.4	20	OH-SB08-Z47-48	UJ

Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
8270	SA40004	ICAL	2,4-Dinitrophenol	25.9	20	OH-SB08-Z31-32	None
8270	SA40004	ICAL	3&4-Methylpenols	26.8	20	OH-SB08-Z41-42 OH-SB04-Z33-34 OH-SB04-Z52-53 OH-SB05-Z32-33 OH-SB05-Z41-42 OH-SB05-Z41-42-Q OH-SB05-Z71-72	None
8270	SA40004	ICAL	N-Nitrosodimethylamine	31.1	20	OH-SB08-Z31-32 OH-SB08-Z41-42 OH-SB04-Z33-34 OH-SB04-Z52-53 OH-SB05-Z41-42 OH-SB05-Z41-42-Q OH-SB05-Z71-72	None
						OH-SB05-Z32-33	J
8270	SA40004	ICAL	Pyridine	21.0	20	OH-SB08-Z31-32 OH-SB08-Z41-42 OH-SB04-Z33-34 OH-SB04-Z52-53 OH-SB05-Z32-33 OH-SB05-Z41-42 OH-SB05-Z41-42-Q OH-SB05-Z71-72	None
8270	S3L2234-SCV1	ICV	2,4-Dimethylphenol	-43.2	30	OH-SB08-Z31-32	UJ
8270	S3L2234-SCV1	ICV	3&4-Methylphenols	44.0	30	OH-SB08-Z41-42	UJ
8270	S3L2234-SCV1	ICV	Aniline	-30.4	30	OH-SB04-Z33-34 OH-SB04-Z52-53	UJ
8270	S3L2234-SCV1	ICV	Hexachlorocyclopentadiene	-46.3	30	OH-SB05-Z32-33 OH-SB05-Z41-42 OH-SB05-Z41-42-Q OH-SB05-Z71-72	UJ
8270	S4C3103-CCV1	CCV	2,3,4,6-Tetrachlorophenol	42.9	20	OH-SB08-Z47-48	UJ

Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
8270	S4C3103-CCV1	CCV	2,4-Dinitrophenol	125	20		UJ
8270	S4C3103-CCV1	CCV	2,4-Dinitrotoluene	49.8	20		UJ
8270	S4C3103-CCV1	CCV	2,6-Dinitrotoluene	38.0	20		UJ
8270	S4C3103-CCV1	CCV	2-Nitroaniline	22.9	20		UJ
8270	S4C3103-CCV1	CCV	2-Nitrophenol	33.2	20		UJ
8270	S4C3103-CCV1	CCV	4,6-Dinitro-2-methylphenol	30.2	20		UJ
8270	S4C3103-CCV1	CCV	4-Bromophenyl Phenyl Ether	-26.1	20		UJ
8270	S4C3103-CCV1	CCV	4-Nitrophenol	42.4	20		UJ
8270	S4C3103-CCV1	CCV	Di-n-octyl Phthalate	25.5	20		UJ
8270	S4C3103-CCV1	CCV	Hexachlorocyclopentadiene	-21.0	20		UJ
8270	S4C3103-CCV1	CCV	N-Nitrosodiphenylamine	-37.5	20		UJ
8270	S4D0328-CCV1	CCV	2,4-Dinitrophenol	43.4	20	OH-SB08-Z31-32 OH-SB08-Z41-42	UJ
8270	S4D0328-CCV1	CCV	Benzoic Acid	42.5	20		UJ
8270	S4D0328-CCV1	CCV	Bis(2-chloroethoxy)methane	-20.5	20		UJ
8270	S4D0328-CCV1	CCV	Dibenzo(a,h)anthracene	31.7	20		J
8270	S4D0328-CCV1	CCV	Di-n-octyl Phthalate	43.5	20		UJ
8270	S4D0328-CCV1	CCV	Hexachlorobutadiene	-26.7	20		UJ
8270	S4D0328-CCV1	CCV	Hexachlorocyclopentadiene	-54.6	20		UJ
8270	S4D0328-CCV1	CCV	Indeno(1,2,3-c,d)pyrene	50.3	20		J
6010	S4D0351-ICV1	ICV	Antimony	117	90-110	OH-SB08-Z31-32 OH-SB08-Z41-42 OH-SB08-Z47-48	None – High and ND
6010	S4D0351-CCV6	CCV	Lead	112	90-110		J
6010	S4D0351-CCV6	CCV	Selenium	111	90-110		None – High and ND
6010	S4D0351-CCV6	CCV	Thallium	114	90-110		None – High and ND

Data Usability Summary Report	Project: Citizens-Carroll Gardens MGP Off-Site Investigation, Owl's Head Site, Brooklyn, NY
Date Completed: June 24, 2024	Prepared by: Sayward Gohman-Kramer Reviewed by: Eridania Marte

Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
6010	S4D0351-CCV7	CCV	Lead	112	90-110	OH-SB08-Z31-32 OH-SB08-Z41-42 OH-SB08-Z47-48	J
6010	S4D0351-CCV7	CCV	Thallium	114	90-110		UJ
8260	S4C2832-SCV1	ICV	Acrolein	-35.5	30	OH-SB03-Z37-38	UJ
8260	S4C2832-SCV1	ICV	Chloromethane	-30.2	30		UJ
8260	S4C2832-SCV1	ICV	Dichlorodifluoromethane	-60.4	30		UJ
8260	S4C2832-SCV1	ICV	Tetrachloroethylene	-30.3	30		UJ
8260	S4D0433-CCV2	CCV	Chloroethane	-25.8	20	OH-SB03-Z51-52	UJ
8260	S4D0433-CCV2	CCV	Tetrachloroethylene	-25.6	20		UJ
8260	S4D0433-CCV2	CCV	Vinyl Acetate	56.9	20		UJ
8260	S4D0502-CCV1	CCV	1,2-Dibromo-3-chloropropane	-24.7	20	OH-SB03-Z67-68	UJ
8260	S4D0502-CCV1	CCV	2-Hexanone	-23.9	20		UJ
8260	S4D0502-CCV1	CCV	4-Methyl-2-pentanone	-20.6	20		UJ
8260	S4D0502-CCV1	CCV	Bromomethane	-31.9	20		UJ
8260	S4D0502-CCV1	CCV	Chloroethane	-20.7	20		UJ
8260	S4D0502-CCV1	CCV	Tert-Butyl Alcohol	-22.2	20		UJ
8260	S4D0502-CCV1	CCV	Tetrachloroethylene	-20.6	20		UJ
8270	S4D0332-CCV1	CCV	2,3,4,6-Tetrachlorophenol	36.1	20		UJ
8270	S4D0332-CCV1	CCV	2,4-Dinitrophenol	150	20	OH-SB03-Z37-38 OH-SB03-Z51-52 OH-SB03-Z67-68	UJ
8270	S4D0332-CCV1	CCV	2,4-Dinitrotoluene	56.7	20		UJ
8270	S4D0332-CCV1	CCV	2,6-Dinitrotoluene	41.7	20		UJ
8270	S4D0332-CCV1	CCV	2-Nitroaniline	24.3	20		UJ
8270	S4D0332-CCV1	CCV	2-Nitrophenol	35.1	20		UJ
8270	S4D0332-CCV1	CCV	4,6-Dinitro-2-methylphenol	66.0	20		UJ
8270	S4D0332-CCV1	CCV	Bis(2-chloroisopropyl)ether	-27.1	20		UJ
8270	S4D0332-CCV1	CCV	Hexachlorocyclopentadiene	-27.1	20		UJ
8270	S4D0332-CCV1	CCV	N-Nitrosodiphenylamine	-24.8	20		UJ

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Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
8270	S4D0454-CCV1	CCV	Dibenzo(a,h)anthracene	20.8	20	OH-SB03-Z37-38 OH-SB03-Z51-52	J
8270	S4D0454-CCV1	CCV	Indeno(1,2,3-c,d)pyrene	37.3	20		J
6010	S4D0845-ICV1	ICV	Antimony	113	90-113	OH-SB03-Z37-38 OH-SB03-Z51-52 OH-SB03-Z67-68	None – High and ND
6010	S4D0845-CCV5	CCV	Antimony	86.9	90-113	OH-SB03-Z37-38 OH-SB03-Z51-52 OH-SB03-Z67-68	UJ
6010	S4D0845-CCV5	CCV	Antimony	89.0	90-113		UJ
1633	S4D0868-CCV1	CCV	PFOS	30.8	30	OH-SB03-Z37-38 OH-SB03-Z51-52	UJ
1633	S4D0868-CCV2	CCV	N-EtFOSA	38.3	30	OH-SB03-Z37-38 OH-SB03-Z51-52 OH-SB03-Z67-68	UJ
8260	S4C2805-SCV1	ICV	Bromomethane	-31.2	30	OH-SB04-Z52-53 OH-SB04-Z62-63 OH-SB05-Z32-33 OH-SB05-Z41-42 OH-SB05-Z41-42-Q OH-SB05-Z71-72	UJ
8260	S4C2805-SCV1	ICV	Dichlorodifluoromethane	-62.9	30		UJ
8260	S4C2805-SCV1	ICV	Vinyl Acetate	-33.4	30		UJ
8260	S4C2832-SCV1	ICV	Acrolein	-35.5	30	OH-SB04-Z33-34	UJ
8260	S4C2832-SCV1	ICV	Chloromethane	-30.2	30		UJ
8260	S4C2832-SCV1	ICV	Dichlorodifluoromethane	-60.4	30		UJ
8260	S4C2832-SCV1	ICV	Tetrachloroethylene	-30.2	30		UJ
8260	S4D0817-CCV1	CCV	Bromomethane	-23.8	20	OH-SB04-Z52-53 OH-SB04-Z62-63	UJ
8270	SD40008	ICAL	2,4-Dinitrophenol	46.0	20	OH-SB04-Z62-63	None
8270	SD40008	ICAL	2,4-Dinitrotoluene	29.3	20		None
8270	SD40008	ICAL	2,6-Dinitrotoluene	23.4	20		None
8270	SD40008	ICAL	2-Nitroaniline	22.7	20		None
8270	SD40008	ICAL	3-Nitroaniline	21.2	20		None
8270	SD40008	ICAL	4,6-Dinitro-2-methylphenol	43.5	20		None

Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
8270	SD40008	ICAL	Benzoic Acid	35.3	20		None
8270	S4D0701-SCV1	ICV	2,4-Dinitrophenol	49.5	30	OH-SB04-Z62-63	UJ
8270	S4D0701-SCV1	ICV	4,6-Dinitro-2-methylphenol	46.2	30		UJ
8270	S4D0701-SCV1	ICV	Hexachlorocyclopentadiene	-45.3	30		UJ
8270	S4L1913-SCV1	ICV	Pyridine	-35.4	30	OH-SB04-Z33-34	UJ
8270	S4D0918-CCV1	CCV	2,4-Dinitrophenol	21.0	20	OH-SB04-Z33-34 OH-SB04-Z52-53	UJ
8270	S4D0918-CCV1	CCV	Benzidine	20.9	20		UJ
8270	S4D0918-CCV1	CCV	Benzoic Acid	34.4	20		UJ
8270	S4D0918-CCV1	CCV	Di-n-octyl Phthalate	44.1	20		UJ
8270	S4D0918-CCV1	CCV	Hexachlorobutadiene	-29.9	20		UJ
8270	S4D0918-CCV1	CCV	Hexachlorocyclopentadiene	-53.9	20		UJ
8270	S4D0918-CCV1	CCV	Indeno(1,2,3-c,d)pyrene	40.1	20	OH-SB04-Z52-53	J
8270	S4D0934-CCV1	CCV	2,4-Dinitrophenol	93.3	20	OH-SB04-Z62-63	UJ
8270	S4D0934-CCV1	CCV	2,4-Dinitrotoluene	33.1	20		UJ
8270	S4D0934-CCV1	CCV	2,6-Dinitrotoluene	29.2	20		UJ
8270	S4D0934-CCV1	CCV	2-Nitroaniline	22.1	20		UJ
8270	S4D0934-CCV1	CCV	2-Nitrophenol	25.8	20		UJ
8270	S4D0934-CCV1	CCV	4,6-Dinitro-2-methylphenol	76.4	20		UJ
8270	S4D0934-CCV1	CCV	Benzoic Acid	51.1	20		UJ
8270	S4D0934-CCV1	CCV	Di-n-octyl Phthalate	31.2	20		UJ
8270	S4D0934-CCV1	CCV	Hexachlorocyclopentadiene	21.4	20		UJ
8270	S4D1044-CCV1	CCV	Indeno(1,2,3-c,d)pyrene	71.0	20	OH-SB04-Z33-34	J
6010	S4D1009-CCVH	CCV	Beryllium	112	90-110	OH-SB04-Z33-34 OH-SB04-Z52-53 OH-SB04-Z62-63	J
6010	S4D1009-CCVG	CCV	Antimony	85.8	90-110	OH-SB04-Z33-34 OH-SB04-Z52-53	UJ
6010	S4D1009-CCVG	CCV	Beryllium	111	90-110		J

Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
6010	S4D1009-CCVG	CCV	Selenium	111	90-110	OH-SB04-Z62-63	None – High and ND
1633	SD40022	ICAL	8:2 FTS	36.2	30	OH-SB04-Z33-34	UJ
1633	SD40022	ICAL	4:2 FTS	34.1	30		UJ
1633	SD40022	ICAL	6:2 FTS	34.5	30		UJ
8260	S4D0327-CCV1	CCV	Dichlorodifluoromethane	-22.5	20	OH-SB05-Z75-76	UJ
8260	S4D0327-CCV1	CCV	Tetrachloroethylene	-23.3	20		UJ
8260	S4D0408-CCV2	CCV	Bromoform	-20.5	20	OH-SB05-Z32-33 OH-SB05-Z41-42 OH-SB05-Z41-42-Q OH-SB05-Z71-72	UJ
8260	S4D0408-CCV2	CCV	Tetrachloroethylene	-24.0	20		UJ
8260	S4D0408-CCV2	CCV	Vinyl Acetate	43.9	20		UJ
8270	SD40001	ICAL	2,4-Dinitrophenol	37.4	20	OH-SB05-Z75-76	None
8270	SD40001	ICAL	4,6-Dinitro-2-methylphenol	33.2	20		None
8270	SD40001	ICAL	Benzaldehyde	22.6	20		None
8270	S4C3101-SCV1	ICV	2,4-Dimethylphenol	-34.0	30	OH-SB05-Z75-76	UJ
8270	S4C3101-SCV1	ICV	2,4-Dinitrophenol	41.6	30		UJ
8270	S4C3101-SCV1	ICV	4,6-Dinitro-2-methylphenol	36.7	30		UJ
8270	S4C3101-SCV1	ICV	Hexachlorocyclopentadiene	-52.5	30		UJ
8270	S4D0220-CCV1	CCV	2,4-Dinitrophenol	59.4	20		UJ
8270	S4D0220-CCV1	CCV	2,4-Dinitrotoluene	22.9	20		UJ
8270	S4D0220-CCV1	CCV	4,6-Dinitro-2-methylphenol	49.7	20		UJ
8270	S4D0220-CCV1	CCV	Pentachlorophenol	30.7	20		UJ
8270	S4D0246-CCV1	CCV	2,4-Dinitrophenol	47.3	30	OH-SB05-Z32-33 OH-SB05-Z41-42 OH-SB05-Z41-42-Q OH-SB05-Z71-72	UJ
8270	S4D0246-CCV1	CCV	3&4-Methylphenol	-21.6	30		UJ
8270	S4D0246-CCV1	CCV	Aniline	-21.4	30		UJ
8270	S4D0246-CCV1	CCV	Benzoic Acid	29.5	30		UJ
8270	S4D0246-CCV1	CCV	Bis(2-chloroethoxy)methane	-20.5	30		UJ

Method	Sample Name	Sample Type	Analyte	RRF, %RSD or %D	RRF, %RSD or %D Limit	Associated Samples	Qualifier
8270	S4D0246-CCV1	CCV	Dibenzo(a,h)anthracene	28.8	30	OH-SB05-Z32-33 OH-SB05-Z41-42 OH-SB05-Z41-42-Q	J
						OH-SB05-Z71-72	UJ
8270	S4D0246-CCV1	CCV	Di-n-octyl Phthalate	33.0	30	OH-SB05-Z32-33 OH-SB05-Z41-42 OH-SB05-Z41-42-Q OH-SB05-Z71-72	UJ
8270	S4D0246-CCV1	CCV	Hexachlorobutadiene	-26.1	30		UJ
8270	S4D0246-CCV1	CCV	Hexachlorocyclopentadiene	-43.5	30		UJ
8270	S4D0246-CCV1	CCV	Indeno(1,2,3-c,d)pyrene	46.4	30	OH-SB05-Z32-33 OH-SB05-Z41-42 OH-SB05-Z41-42-Q	J
						OH-SB05-Z71-72	UJ
6010	S4D0604-CCVD	CCV	Antimony	82.8	90-110	OH-SB05-Z32-33 OH-SB05-Z41-42 OH-SB05-Z41-42-Q OH-SB05-Z71-72	UJ
6010	S4D0604-CCVD	CCV	Potassium	82.3	90-110		J
6010	S4D0604-CCVD	CCV	Sodium	83.5	90-110		J
6010	S4D0604-CCVE	CCV	Antimony	83.8	90-110	OH-SB05-Z32-33 OH-SB05-Z41-42 OH-SB05-Z41-42-Q OH-SB05-Z71-72	UJ
6010	S4D0604-CCVE	CCV	Potassium	83.5	90-110		J
6010	S4D0604-CCVE	CCV	Sodium	83.3	90-110		J
1633	S4D0348-CCV4	CCV	PFDoS	31.7	30	OH-SB05-Z41-42-Q OH-SB05-Z71-72 OH-SB05-Z75-76	UJ

Table 8 –Samples that were Diluted/Reanalyzed

Sample ID	Lab ID	Method	Sample Type	Analytes	Action
OH-SB02-Z37-38	24C1265-01	8260	N	All Analytes	Prepared at a 100x Dilution
OH-SB02-Z37-38	24C1265-01RE1	8260	N	1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene Ethylbenzene m,p-Xylene o-Xylene	Reextracted with 500x Dilution

Sample ID	Lab ID	Method	Sample Type	Analytes	Action
				Xylenes083093	
OH-SB06-Z78-79	24C1399-02RE1	8260	N	1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene Benzene Ethylbenzene m,p-Xylene o-Xylene Xylenes	Reextracted
OH-SB06-Z78-79	24C1399-02RE1	8270	N	Acenaphthylene Benzo(B)Fluoranthene Benzo(G,H,I)Perylene Benzo(K)Fluoranthene Biphenyl (Diphenyl or 1,1'-Biphenyl) Dibenz(A,H)Anthracene Dibenzofuran Indeno(1,2,3-C,D)Pyrene	Reextracted with 10x Dilution
OH-SB06-Z78-79	24C1399-02RE2	8270	N	Acenaphthene Anthracene Benzo(A)Anthracene Benzo(A)Pyrene Chrysene Fluoranthene Fluorene Pyrene	Reextracted with 50x Dilution
OH-SB06-Z78-79	24C1399-02RE3	8270	N	2-Methylnaphthalene Naphthalene Phenanthrene	Reextracted with 200x Dilution
OH-SB07-Z31-32	24C1526-01	8260	N	All Analytes	Prepared at a 500x Dilution
OH-SB07-Z31-32	24C1526-01RE1	8260	DIL	Ethylbenzene Toluene Xylenes m,p-Xylene O-Xylene (1,2-Dimethylbenzene)	Reextracted with 1,000x Dilution

Sample ID	Lab ID	Method	Sample Type	Analytes	Action
OH-SB07-Z31-32	24C1526-01	8270	N	All Analytes	Prepared at a 50x Dilution
OH-SB07-Z31-32	24C1526-01RE1	8270	DIL	Acenaphthene Acenaphthylene Anthracene Benzo(A)Anthracene Benzo(A)Pyrene Biphenyl (Diphenyl or 1,1'-Biphenyl) Chrysene Fluoranthene Fluorene Pyrene	Reextracted at a 200x Dilution
OH-SB07-Z31-32	24C1526-01RE2	8270	DIL	2-Methylnaphthalene Naphthalene Phenanthrene	Reextracted at a 500x Dilution
OH-SB07-Z52-53	24C1526-02	8270	N	All Analytes	Prepared at a 2x Dilution
OH-SB08-Z31-32	24C1658-01	8260	N	All Analytes	Prepared at a 200x Dilution
OH-SB08-Z41-42	24C1658-02	8260	N	All Analytes	Prepared at a 100x Dilution
OH-SB08-Z41-42	24C1658-02RE1	8260	DIL	Ethylbenzene 1,2,4-Trimethylbenzne	Reextracted at a 500x Dilution
OH-SB08-Z31-32	24C1658-01	8270	N	All Analytes	Prepared at a 20x Dilution
OH-SB08-Z31-32	24C1658-01RE1	8270	DIL	Acenaphthylene Anthracene Benzo(A)Anthracene Benzo(A)Pyrene Benzo(B)Fluoranthene Biphenyl (Diphenyl or 1,1'-Biphenyl) Chrysene Fluoranthene Fluorene Pyrene	Reextracted at a 100x Dilution
OH-SB08-Z31-32	24C1658-01RE2	8270	DIL	2-Methylnaphthalene Acenaphthene Naphthalene	Reextracted at a 500x Dilution

Sample ID	Lab ID	Method	Sample Type	Analytes	Action
				Phenanthrene	
OH-SB08-Z41-42	24C1658-02	8270	N	All Analytes	Prepared at a 20x Dilution
OH-SB08-Z41-42	24C1658-02RE1	8270	DIL	Acenaphthene Acenaphthylene Anthracene Benzo(A)Anthracene Benzo(A)Pyrene Benzo(B)Fluoranthene Biphenyl (Diphenyl or 1,1'-Biphenyl) Chrysene Fluoranthene Fluorene Pyrene	Reextracted at a 100x Dilution
OH-SB08-Z41-42	24C1658-02RE2	8270	DIL	2-Methylnaphthalene Naphthalene Phenanthrene	Reextracted at a 500x Dilution
OH-SB08-Z47-48	24C1658-03	8270	N	All Analytes	Prepared at a 2x Dilution
OH-SB05-Z32-33	24C1785-01	8270	N	All Analytes	Prepared at a 200x Dilution
OH-SB05-Z32-33	24C1785-01RE1	8270	DIL	Ethylbenzene Xylenes m,p-Xylene O-Xylene (1,2-Dimethylbenzene) 1,2,4-Trimethylbenzene	Reextracted at a 2000x Dilution
OH-SB05-Z41-42	24C1785-02	8270	N	All Analytes	Prepared at a 200x Dilution
OH-SB05-Z41-42	24C1785-02RE1	8270	DIL	Ethylbenzene 1,3,5-Trimethylbenzene (Mesitylene) Xylenes m,p-Xylene O-Xylene (1,2-Dimethylbenzene) 1,2,4-Trimethylbenzene	Reextracted at a 2000x Dilution
OH-SB05-Z41-42-Q	24C1785-03	8270	N	All Analytes	Prepared at a 200x Dilution
OH-SB05-Z41-42-Q	24C1785-03RE1	8270	DIL	Ethylbenzene	Reextracted at a 5000x Dilution

Sample ID	Lab ID	Method	Sample Type	Analytes	Action
				1,3,5-Trimethylbenzene (Mesitylene) Toluene Xylenes m,p-Xylene Benzene O-Xylene (1,2-Dimethylbenzene) 1,2,4-Trimethylbenzene	
OH-SB05-Z71-72	24C1785-04	8270	N	All Analytes	Prepared at a 100x Dilution
OH-SB05-Z32-33	24C1785-01	8270	N	All Analytes	Prepared at a 100x Dilution
OH-SB05-Z32-33	24C1785-01RE1	8270	DIL	Anthracene Pyrene Fluoranthene Acenaphthene Phenanthrene Fluorene Naphthalene 2-Methylnaphthalene	Reextracted at a 500x Dilution
OH-SB05-Z41-42	24C1785-02	8270	N	All Analytes	Prepared at a 100x Dilution
OH-SB05-Z41-42	24C1785-02RE1	8270	DIL	Anthracene Pyrene Fluoranthene Acenaphthene Phenanthrene Fluorene Naphthalene 2-Methylnaphthalene	Reextracted at a 500x Dilution
OH-SB05-Z41-42-Q	24C1785-03	8270	N	All Analytes	Prepared at a 100x Dilution
OH-SB05-Z41-42-Q	24C1785-03RE1	8270	DIL	Anthracene Pyrene Fluoranthene Acenaphthene Phenanthrene Fluorene	Reextracted at a 500x Dilution

Sample ID	Lab ID	Method	Sample Type	Analytes	Action
				Naphthalene 2-Methylnaphthalene	
OH-SB05-Z71-72	24C1785-04	8270	N	All Analytes	Prepared at a 10x Dilution
OH-SB05-Z75-76	24C1785-05	8270	N	All Analytes	Prepared at a 2x Dilution
OH-SB03-Z37-38	24C1926-01RE1	8260	DIL	Ethylbenzene Toluene Xylenes m,p-Xylene O-Xylene (1,2-Dimethylbenzene) 1,2,4-Trimethylbenzene	Prepared at a 1000x Dilution
OH-SB03-Z37-38	24C1926-01	8260	N	All Analytes	Reextracted at a 200x Dilution
OH-SB03-Z51-52	24C1926-02	8260	N	All Analytes	Prepared at a 100x Dilution
OH-SB03-Z37-38	24C1926-01	8270	N	All Analytes	Prepared at a 2x Dilution
OH-SB03-Z37-38	24C1926-01RE1	8270	DIL	Dibenzofuran Benzo(G,H,I)Perylene Benzo(B)Fluoranthene Benzo(K)Fluoranthene Dibenz(A,H)Anthracene Acenaphthene Carbazole	Reextracted at a 20x Dilution
OH-SB03-Z37-38	24C1926-01RE2	8270	DIL	Anthracene Fluoranthene Chrysene Benzo(A)Pyrene Benzo(A)Anthracene Biphenyl (Diphenyl or 1,1'-Biphenyl)	Reextracted at a 100x Dilution
OH-SB03-Z37-38	24C1926-01RE3	8270	DIL	Pyrene Acenaphthylene Phenanthrene Fluorene Naphthalene 2-Methylnaphthalene	Reextracted at a 500x Dilution

Sample ID	Lab ID	Method	Sample Type	Analytes	Action
OH-SB03-Z51-52	24C1926-02	8270	N	All Analytes	Prepared at a 2x Dilution
OH-SB03-Z51-52	24C1926-02RE1	8270	DIL	Indeno(1,2,3-C,D)Pyrene Benzo(B)Fluoranthene Fluoranthene Benzo(K)Fluoranthene Chrysene Benzo(A)Pyrene Benzo(A)Anthracene Acenaphthene Fluorene Biphenyl (Diphenyl or 1,1'-Biphenyl)	Reextracted at a 20x Dilution
OH-SB03-Z51-52	24C1926-02RE2	8270	DIL	Pyrene Acenaphthylene Phenanthrene Naphthalene 2-Methylnaphthalene	Reextracted at a 100x Dilution
OH-SB03-Z67-68	24C1926-03	8270	N	All Analytes	Prepared at a 2x Dilution
OH-SB04-Z33-34	24D0140-01	8260	N	All Analytes	Prepared at a 200x Dilution
OH-SB04-Z33-34	24D0140-01RE1	8260	DIL	Styrene 1,3,5-Trimethylbenzene (Mesitylene) Toluene	Reextracted at a 500x Dilution
OH-SB04-Z33-34	24D0140-01RE2	8260	DIL	Ethylbenzene Xylenes m,p-Xylene O-Xylene (1,2-Dimethylbenzene) 1,2,4-Trimethylbenzene	Reextracted at a 10,000x Dilution
OH-SB04-Z52-53	24D0140-03RE1	8260	DIL	Ethylbenzene Xylenes m,p-Xylene O-Xylene (1,2-Dimethylbenzene) 1,2,4-Trimethylbenzene	Reextracted at a 200x Dilution
OH-SB04-Z33-34	24D0140-01	8270	N	All Analytes	Prepared at a 2x Dilution

Sample ID	Lab ID	Method	Sample Type	Analytes	Action
OH-SB04-Z33-34	24D0140-01RE1	8270	DIL	Anthracene Pyrene Fluoranthene Acenaphthylene Phenanthrene Fluorene Naphthalene 2-Methylnaphthalene	Reextracted at a 100x Dilution
OH-SB04-Z33-34	24D0140-01RE2	8270	DIL	Pyridine Dibenzofuran Benzo(G,H,I)Perylene Indeno(1,2,3-C,D)Pyrene Benzo(B)Fluoranthene Benzo(K)Fluoranthene Chrysene Benzo(A)Pyrene Dibenz(A,H)Anthracene Benzo(A)Anthracene Acenaphthene Biphenyl (Diphenyl or 1,1'-Biphenyl)	Reextracted at a 1000x Dilution
OH-SB04-Z52-53	24D0140-03	8270	N	All Analytes	Prepared at a 2x Dilution
OH-SB04-Z52-53	24D0140-03RE1	8270	DIL	Phenanthrene Naphthalene 2-Methylnaphthalene	Reextracted at a 5x Dilution
OH-SB04-Z62-63	24D0140-02	8270	N	All Analytes	Prepared at a 2x Dilution

Table 9 – Summary of Duplicate Results

Method	Analyte	Units	PQL	OH-SB05-Z41-42	OH-SB05-Z41-42-Q	RPD	Sample Qualifier
6010	Arsenic	mg/kg	1.53	ND	1.46	NC	None
8270	Benzo(A)Anthracene	mg/kg	10.2	322	154	70.6%	J
8270	Benzo(A)Pyrene	mg/kg	10.2	264	126	70.8%	J

8270	Benzo(B)Fluoranthene	mg/kg	10.2	197	94.0	70.8%	J
8270	Benzo(G,H,I)Perylene	mg/kg	10.2	77.8	36.9	71.3%	J
8260	Methyl Acetate	mg/kg	1.1	ND	0.57	NC	None
8260	N-Butylbenzene	mg/kg	1.1	19	ND	NC	None
1633	PFBA	ug/kg	0.971	ND	0.0349	NC	None
1633	PFNS	ug/kg	0.233	0.163	ND	NC	None
1633	PFPeS	ug/kg	0.228	0.209	ND	NC	None
1633	PFPeA	ug/kg	0.486	ND	0.220	NC	None
8260	sec-Butylbenzene	mg/kg	1.1	ND	1.4	NC	None
8260	Toluene	mg/kg	1.1	14	270	180.3%	J

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Full Laboratory Analytical Data

(will be provided on a CD with Final Report)