and installing groundwater sampling equipment as specified in specification and Amendments to Section 01590.

6. Demolition (Existing Sheds) will not be measured for payment and will be paid for on a lump sum basis. Lump sum payment will include removal of the sheds superstructure, removal of substructures to a minimum of two (2) feet below finish grade, processing, handling, stockpiling, placing and compacting demolition debris in the Random Soil Class 1 zone.

7. Remove and Disposal (Curtain Drain and Pipe,Pond B) will be paid on a unit price per lineal foot basis. Measurement will include excavation, pipe removal, backfill with clean onsite material; processing, handling, stockpiling, placing and compacting removed materials and debris in the Random Soil Class 1 zone.

8. Remove and Dispose (Gravel Drain,Pond B) will be paid on a unit price per lineal foot basis. Measurement will include excavation, gravel and debris removal, backfill with clean onsite material; processing, handling, stockpiling, placing and compacting removed materials and debris in the Random Soil Class 1 zone.

9. Abandon (Underground Storage Tank) will be paid on a unit price per each basis. Measurement will include abandoned of each tank complete in place. Should contaminated soil be encountered, the change order process described in Chapter 6 of Section 00100 will be followed.

10. Site Clearing will be paid on a unit price per acre basis. Measurement will include clearing and grubbing vegetation and debris; processing, handling, stockpiling, placing and compacting vegetation and debris in the Random Soil Class 1 zone; excavating, loading, hauling and stockpiling the top six (6) inches of soil and handling, spreading and compacting the soil material in the first twelve (12) inches of fill above the geomembrane liner.

11. Gas Extraction Well will be paid on a unit price per lineal foot basis. Measurement will include installed drive point casing and screen, inner casing and screen and well packing materials complete in place. Limits for measurement will be from the top of the geomembrane liner to the termination point of the outer casing and screen.

12. Gas Extraction Well (Well Head) will be paid on a unit price per each basis. Measurement will included all well parts from the top of the geomembrane liner to the outlet end of the flexible coupling.

13 Gas Monitoring Well will be paid on a unit price per lineal foot basis. Measurement will include drilling and installation of well casing, screen and packing materials. Limits for measurement will be from finish grade elevation to the point of termination as determined by the Resident Engineer.

14. Gas Monitoring Well (Well Guard) will be paid on a unit price per each basis. Measurement will include concrete, guard casing, locking cap, pad lock, sanitary seal and painting of above ground steel casing.

15. Excavate Cover Soil will be paid on a unit price per cubic yard basis. Measurement will include test pit excavation and backfill, soil depth indicators, excavating, loading, hauling, stockpiling, spreading and compacting onsite cover soil in its final position. The volume of Cover Soil measured for payment will be determined in its original position. The volume will be determined by a minimum of one hundred depth test pits provided by the Contractor and calculated by cross section average end area method.

16. Excavate Waste will be paid on a unit price per cubic yard basis. Measurement will include providing temporary cover material, excavating, loading, hauling, stockpiling, spreading and compacting waste in its final position. The volume of Waste measured for payment will be determined in its original position. The volume of Waste will be determined by surveyed elevations taken in conjunction with test pit operations and calculated by cross section average end area method.

17. Borrow (Loamy Soil, Imported) will be paid on a unit price per cubic yard basis. Measurement will include royalties, hauling, handling spreading and compacting imported loamy soil. The volume measured for payment will be determined in its final position. The volume of Borrow will be determined by average end area method from thickness measured by Soil Depth Indicators installed under the Excavate Cover Soil item.

18. Crushed Aggregate Base Course will be paid on a unit price per square yard basis. Measurement will include subgrade preparation, proof rolling, undercutting and recompacting, providing crushed aggregate base course to the depths indicated in the Drawings and specifications, hauling, spreading, compacting and finish grading. The area measured for payment will be measured parallel with the crushed aggregate surface.

19. Crushed Stone Base will be paid on a unit price per square yard basis. Measurement will include subgrade preparation, proof rolling, undercutting and recompacting, providing crushed stone base to the depths indicated in the Drawings and specifications, hauling, spreading, compacting and finish

grading. The area measured for payment will be measured parallel with the crushed stone base surface.

20. Delineators will be paid on a unit price per each basis. Measurement will include providing and installing delineators.

21. Geotextile Fabric (10oz Non-Woven,Roadway) will be paid on a unit price per square foot basis. Measurement will include providing and installing geotextile fabric. Over lapping and material placed in anchor trenches will not be measured for payment but will considered incidental to the work. Limits for measurement and payment of geotextile fabric will be areas under roadway surfacing.

22. Rip Rap (Class I) will be paid on a unit price per square yard basis. Measurement will include providing and placing rip rap and geotextile fabric underlayment material, excavating, fine grading compacting. Limits for measurement and payment are as indicated on the Drawings.

23. Rip Rap (Class II) will be paid on a unit price per square yard basis. Measurement will include providing and placing rip rap and geotextile fabric underlayment material, excavating, fine grading compacting. Limits for measurement and payment are as indicated on the Drawings.

24. Rip Rap (Class III) will be paid on a unit price per square yard basis. Measurement will include providing and placing rip rap and geotextile fabric underlayment material, excavating, fine grading compacting. Limits for measurement and payment are as indicated on the Drawings.

25. Rip Rap (Class IV) will be paid on a unit price per square yard basis. Measurement will include providing and placing rip rap material, excavating, fine grading compacting. Limits for measurement and payment are as indicated on the Drawings.

26. Rip Rap Bedding (6") will be paid on a unit price per square yard basis. Measurement will include providing and placing rip rap and geotextile fabric underlayment material, excavating, fine grading compacting. Limits for measurement and payment are as indicated on the Drawings.

27. Pipe (24" Ductile Iron MJ C1 52 150 psi, Cement Lined) will be paid on a unit price per lineal foot basis. Measurement will include providing and installing pipe and polyethylene sleeve complete in place.

28. Pipe (20" Ductile Iron MJ C1 52 150 psi, Cement Lined) will be paid on a unit price per lineal foot basis. Measurement will include providing and installing pipe and polyethylene sleeve complete in place.

29. Pipe (12" Ductile Iron MJ C1 52 150 psi, Cement Lined) will be paid on a unit price per lineal foot basis. Measurement will include providing and installing pipe and polyethylene sleeve complete in place.

30. Pipe (6" Ductile Iron MJ C1 52 150 psi, Cement lined) will be paid on a unit price per lineal foot basis. Measurement will include providing and installing pipe and polyethylene sleeve complete in place.

31. Coupling (24" Baker) will be paid on a unit price per each basis. Measurement will include providing and installing coupling and polyethylene sleeve complete in place.

32. Fittings (Ductile Iron MJ C1 52 150 psi) will be paid on a unit price per ton basis. Measurement will include providing and installing fittings and polyethylene sleeve complete in place.

33. Valve (20" Gate Cast Iron MJ, Installation) will be paid on a unit price per each basis. Measurement will include handling and installing valve and retainer gland.

34. Valve (20" Gate Cast Iron MJ, Furnish and Deliver) will be paid on a unit price per each basis. Measurement will include furnishing valve and retainer gland and delivering to the Site.

35. Valve (12" Gate Cast Iron MJ Installation) will be paid on a unit price per each basis. Measurement will include handling and installing valve and retainer gland.

36. Valve (12" Gate Cast Iron MJ, Furnish and Deliver) will be paid on a unit price per each basis. Measurement will include furnishing valve and retainer gland and delivering to the Site.

37. Valve (6" Gate Cast Iron MJ, Installation) will be paid on a unit price per each basis. Measurement will include handling and installing valve and retainer gland.

38. Valve (6" Gate Cast Iron MJ, Furnish and Deliver) will be paid on a unit price per each basis. Measurement will include furnishing valve and retainer gland and delivering to the Site.

39. Trench Safety System (Tight Sheeting) will be paid on a unit price per square foot basis. Measurement will include providing and installing tight sheeting and bracing to OSHA standards. Limits for measurement and payment will be for placed tight sheeting each trench face from natural ground elevation to the bottom of the excavation.

40. Saw Cutting (Pavement) will be paid on a unit price per lineal foot basis. Measurement will include saw cutting to a minimum of one (1) inch depth or greater depth as necessary to provide a neat break line in existing pavement. Limits for measurement and payment will approved by the Resident Engineer.

41. Remove Pavement (All Types) will be paid on a unit price per cubic yard basis.

42. Excavation (Soil) will be paid on a unit price per cubic yard basis. Measurement will include excavating and dewatering; loading, hauling, spreading and compacting of clean trenching spoils in Random Soil Class 1 zone. Limits of excavation for measurement and payment are indicated on the Drawings.

43. Excavation (Soil and Pavement) will be paid on a unit price per cubic yard basis. Measurement will include excavating and dewatering; loading, hauling, spreading and compacting of soil and pavement spoils in the Waste and below Random Soil Class 2 zone. Limits of excavation for measurement and payment are indicated on the Drawings.

44. Excavation (Rock) will be paid on a unit price per cubic yard basis. Measurement will include excavating and dewatering; loading, hauling, spreading and compacting of rock in the Waste and below Random Soil Class 2 zone. Limits of excavation for measurement and payment will be determined by the Resident Engineer.

45. Aggregate (Gravel Bedding) will be paid on a unit price per cubic yard basis. Measurement will include providing, placing and compacting Gravel Bedding. Limits for measurement and payment are indicated on the Drawings.

46. Aggregate (Clean Sand) will be paid on a unit price per cubic yard basis. Measurement will include providing, placing and compacting Clean Sand bedding. Limits for measurement and payment are indicated on the Drawings.

47. Backfill (Satisfactory Material) will be paid on a unit price per cubic yard basis.

48. Geotextile (10 oz Non-Woven,24" Water Main) will be paid on a unit price per square foot basis. Measurement will include providing and installing geotextile fabric. Over lapping and material placed in anchor trenches will not be measured for payment but will considered incidental to the work. Limits for measurement and payment of geotextile fabric will be as indicated on the Drawings for the twenty four (24) inch water main relocation.

49. Remove and Reset (Fire Hydrant) will be paid on a unit price per each basis. Measurement will include removal and installation of existing fire hydrant.

50. Remove (Fire Hydrant) will be paid on a unit price per each basis. Measurement will include removal of existing fire hydrant, cleaning and delivery to the Owners storage yard.

51. Fire Hydrant Fenders will be paid on a unit price per each basis. Measurement will include providing and installing fire hydrant fenders complete in place.

52. Sidewalk (Concrete) will be paid on a unit price per square foot basis. Measurement will include excavation, fine grading, sand cushion, forming, reinforcing, concrete and finishing. Limits for measurement and payment will be as directed by the Resident Engineer.

53. Concrete Base (6" Class B-32) will be paid on a unit price per square yard basis. Measurement will include excavation, fine grading, forming, reinforcing steel, concrete, concrete finishing and curing.

54. Asphalt Pavement (3" Asph Cone or Sheet Asph) will be paid on a unit price per square yard basis.

55. Tree removal will be paid on a unit price per each basis. Measurement will include tree removal, chipping and placing the debris in the landfill Waste material. Limits for measurement and payment will be as directed by Resident Engineer.

56. Well Abandonment will be paid on a unit price per each basis. Measurement will include removal of the well to two (2) feet below finish grade and plugging the well with grout.

57. Gas Extraction Well Pipe (3" HDPE) will be paid on a unit price per lineal foot basis. Measurement will include HDPE pipe and installation, excavation, fine grading and pipe bedding.

58. Gas Extraction Well Pipe (4" HDPE) will be paid on a unit price per lineal foot basis. Measurement will include HDPE pipe and installation, excavation, fine grading and pipe bedding.

59. Gas Extraction Well Pipe (6" HDPE) will be paid on a unit price per lineal foot basis. Measurement will include HDPE pipe and installation, excavation, fine grading and pipe bedding,.

60. Gas Extraction Well Pipe (8" HDPE) will be paid on a unit price per lineal foot basis. Measurement will include HDPE pipe and installation, excavation, fine grading and pipe bedding.

61. Gas Extraction Well Pipe (10" HDPE) will be paid on a unit price per lineal foot basis. Measurement will include HDPE pipe and installation, excavation, fine grading and pipe bedding.

62. Gas Condensate Pipe (2"x4" HDPE) will be paid on a unit price per lineal foot basis.

63. Gas Collection Pipe (4" HDPE) will be paid on a unit price per lineal foot basis. Measurement will include HDPE pipe and installation, excavation, fine grading and crushed stone base.

64. Gas Extraction Valve Box will be paid on a unit price per each basis. Measurement will include each valve complete in place.

65. Gas Condensate Separator will not be measured for payment but will be paid on a lump sum basis.

66. Gas Collection Riser Connection (VB-6) will not be measured for payment but will be paid on a lump sum basis.

67. Gas Condensate Conveyance Connection (MH-D2) will not be measured for payment but will be paid on a lump sum basis.

68. Pipe (24" HDPE SDR21, Corrugated) will be paid on a unit price per lineal foot basis. Measurement will include providing and installing pipe, excavation, grading, fine grading, pipe bedding, geogrid, 60 mil HDPE liner, geotextile fabric, backfill.

69. Pipe (30" HDPE SDR21, Smooth) will be paid on a unit price per lineal foot basis. Measurement will include providing and installing pipe, excavation, grading, fine grading, pipe bedding, geogrid, 60 mil HDPE liner, geotextile fabric, backfill.

70. Manhole-Inlet (48" HDPE Class 160, All Depths) will be paid on a unit price per each basis. Measurement will include providing and installing HDPE manhole, excavation, grading, fine grading, pipe bedding, geogrid, 60 mil HDPE liner, geotextile fabric, backfill.

71. Infiltration Drainage Trench will be paid on a unit price per lineal ft. basis.

72. Curtain Drain will be paid on a unit price per lineal ft. basis.

73. Reinforced Concrete Pipe (24") will be paid on a unit price per lineal ft. basis. Measurement will include providing and installing pipe, excavation, bedding and backfill.

74. Reconstruction of Sewer (30" RCP) will be paid on a unit price per lineal ft. basis. Measurement will include cleaning of existing pipe and slip lining the interior.

75. Reconstruction of Sewer (72" RCP) will be paid on a unit price per lineal ft. basis. Measurement will include cleaning of existing pipe and slip lining the interior.

76. Geomembrane Liner (60 mil HDPE, Smooth) will be paid on a unit price per square ft. basis.

77. Geomembrane Liner (60 mil HDPE, Textured) will be paid on a unit price per square foot basis. Measurement will include fine grading, providing and placing the liner, heat fusion weld the seams, seam testing and anchor trench. Seam overlap, anchor trench, materials in anchor trenches will not be measured for payment and will be considered incidental to the work.

78. Geocomposite Liner will be paid on a unit price per square foot basis. Measurement will include fine grading, providing and placing the liner, heat fusion weld the seams, seam testing and anchor trench. Seam overlap, anchor trench, materials in anchor trenches will not be measured for payment and will be considered incidental to the work.

79. Chain Link Fence (8 ft. x 6 ga, Spiral Razor Wire Top) will be paid on a unit price per lineal foot basis.

80. Spiral Razor Wire Top (Existing Chain Link Fence) will be paid on a unit price per lineal foot basis.

81. Gate (8 ft. x 6 ga x 4 ft. Single Leaf, Spiral Razor Wire Top) will be paid on a unit price per each basis.

82. Gate (8 ft. x 6 ga x 6 ft. Single Leaf, Spiral Razor Wire Top) will be paid on a unit price per each basis.

83. Gate (8 ft. x 6 ga x 24 ft. Double Lead, Spiral Razor Wire Top) will be paid on a unit price per each basis.

84. Remove Fence (Chain Link) will be paid on a unit price per lineal ft. basis.

85. Remove Gate (Chain Link) will be paid on a unit price per each basis.

86. Landscaping Work (Vegetation Islands) will be paid on a unit price per each basis. Measurement will include providing and placing top soil as directed by the Resident Engineer, soil amendments, topical mulching, bedding preparation for plant materials and photographs.

87. Landscaping Work (Perimeter Bedding) will be paid on a unit price per square yard basis. Measurement will include soil amendments, topical mulching, bedding preparation for plant materials and photographs.

88. Topsoiling (6", Imported, Cap) will be paid on a unit price per cubic yard basis. Measurement will include providing, hauling, placing, spreading top soil on the cap area.

89. Topsoiling (6", Imported, Landscaping) will be paid on a unit price per cubic yard basis. Measurement will include providing, hauling, placing, spreading top soil for planting materials.

90. Seeding and Fertilizer will be paid on a unit price per acre basis. Measurement will include seeding, fertilizing, bedding preparation, soil amending and guarantee. Planting guarantee is subject to special payment conditions per specification Section 02910, paragraph 1.8.

91. Grass & Wildflower Seed Drilling (Herbaceous Seeding) will be paid on a unit price per acre basis. Measurement will include seeding, fertilizing, bedding preparation, soil amending and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

92. Tree (Pitch Pine, 5'- 6' B&B) will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per specification Section 02910, paragraph 1.8.

93. Tree (Scrub Oak, 1.5" Caliper) will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per specification Section 02910, paragraph 1.8.

94. Tree (Eastern Red Cedar, 4'-5' B&B) will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

95. Tree (Black Cherry, 2" Caliper) will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

96. Tree (Gray Birch, 2" Caliper) will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

97. Tree (Hackberry, 1.5" Caliper) will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

98. Tree (Quaking Aspen, 6'-8' B&B) will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

99. Tree (Big-Tooth Aspen, 6'-8' B&B) will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

100. Tree (Chestnut Oak, 1.5" Caliper) will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

101. Tree (White Pine, 8'-10' B&B) will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

102. Tree (Flowering Dogwood, 6'-8' B&B) will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

103. Shrub (Beach Plum, 2 Gallon) will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

104. Shrub (Staghorn Sumac, 2 Gallon) will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

105. Shrub (Arrowwood Viburnum, 2 Gallon) will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

106. Shrub (Arrowwood Viburnum, 3 Gallon) will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

107. Shrub (Northern Bayberry, 2 Gallon) will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

108. Shrub (Northern Bayberry, 3 Gallon) will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

109. Shrub (American Elderberry, 2 Gallon) will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

110. Shrub (American Elderberry, 3 Gallon) will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

111. Shrub (Lowbush Blueberry, 1 Gallon) will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

112. Shrub (New Jersey Tea, 1 Gallon) will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

113. Shrub (Gray Dogwood, 2 Gallon) will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

114. Shrub (Black Huckleberry, 1 Gallon) will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

115. Shrub (Swamp Rose, 2 Gallon) will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

116. Shrub (Carolina Rose, 2 Gallon) will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

117. Live Stakes will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

118. Outlet Structure will be paid on a unit price per each basis. Measurement will include structural excavation and backfill, fine grading, forming, reinforcing steel, concrete, miscellaneous metal, fasteners and flap gate; installed complete in place.

119. Outlet-Inlet Structure will be paid on a unit price per each basis. Measurement will include structural excavation and backfill, fine grading, forming, reinforcing steel, concrete, miscellaneous metal, fasteners and trash rack; installed complete in place.

120. Baffled Outlet Structure will be paid on a unit price per each basis. Measurement will include structural excavation and backfill, fine grading, forming, reinforcing steel, concrete, miscellaneous metal, fasteners, trash rack and galvanized railing; installed complete in place.

121. Concrete Encasement Block will be paid on a unit price per each basis. Measurement will include fine grading, 60 mil HDPE liner pad, forming, providing and placing concrete.

122. Adjust Manhole (+/- 5 ft., Existing) will be paid on a unit price per each basis. Measurement will include excavation and backfill, removal and replacement of existing manhole ring and cover, extending manhole structure with formed concrete or masonry to planned elevation.

123. Temporary Storage Structure (Tractor Building) will not be measured for payment but will be paid on a lump sum basis. Lump sum payment will include erecting a wood structure as specified in Section 13141 complete in place.

124. Gas Flare Process Unit will not be measured for payment but will be paid on a lump sum basis. Lump sum payment will include structural excavation to a point two (2) feet below bottom of concrete foundation, backfill and compact subgrade to bottom of concrete slab, fine grading, balance of backfilling, forming, reinforcing steel, concrete, embedded items, pouring and finishing concrete, curing concrete; providing and installing flaring unit, blowers, piping, stainless steel piping, valves, fittings, pipe supports, propane storage tank, gas pressure regulator; provided, installed and tested.

125. Electrical (Gas Flare Unit) will not be measured for payment but will be paid on a lump sum basis.

126. Instrumentation and Controls (Gas Flare Unit) will not be measured for payment but will be paid on a lump sum basis.

127. Electrical Grounding (Chain Link Fence) will not be measured for payment but will be paid on a lump sum basis.

1.6 PAYMENT

A. Payment includes: Full compensation for all required labor, products, tools, equipment, plant, transportation, services and incidentals; erection, application or installation of an item of the Work; overhead and profit.

B. Measurement and payment for items listed in Bid Form shall be for all work in place as shown on the Drawings and specified in the Specifications.

C. Measurement and Payment for all work described in General Specifications is considered to be work that is incidental or subsidiary to the work as defined in the Detailed Specifications.

1.7 NON-PAYMENT

A. Payment will not be made for any of the following:

1. Products wasted or disposed of in a manner that is not in conformance with the contract documents.

2. Products determined as not in conformance with the contract documents before or after placement.

3. Products not completely unloaded from the transporting vehicle.

4. Products placed beyond the lines and levels of the required Work.

5. Products remaining on hand after completion of the Work.

6. Loading, hauling, and disposing of rejected Products.

7. Multiple handling of on-site and off-site materials.

PART 2 PRODUCTS

(Not Used)

PART 3 EXECUTION

(Not Used)

END OF SECTION 01025

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 23 - Specification Section 01380

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Page 613 of the Specifications, paragraph 1.3A... Change "three (3) prints" to "two (2) prints and one (1) slide".

2. Page 614 of the Specifications, paragraph 1.3E... Delete "mounted on cloth with a flap for binding".

3. Page 614 of the Specifications, paragraph 1.3G... Change "Furnish three (3) hard-back binders for each set of prints" to "The prints, slides, and negatives shall be suitably mounted and labelled in loose-leaf type binders which have protective covers for the prints, slides, and negatives.

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 24 - Specification Section 01528

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

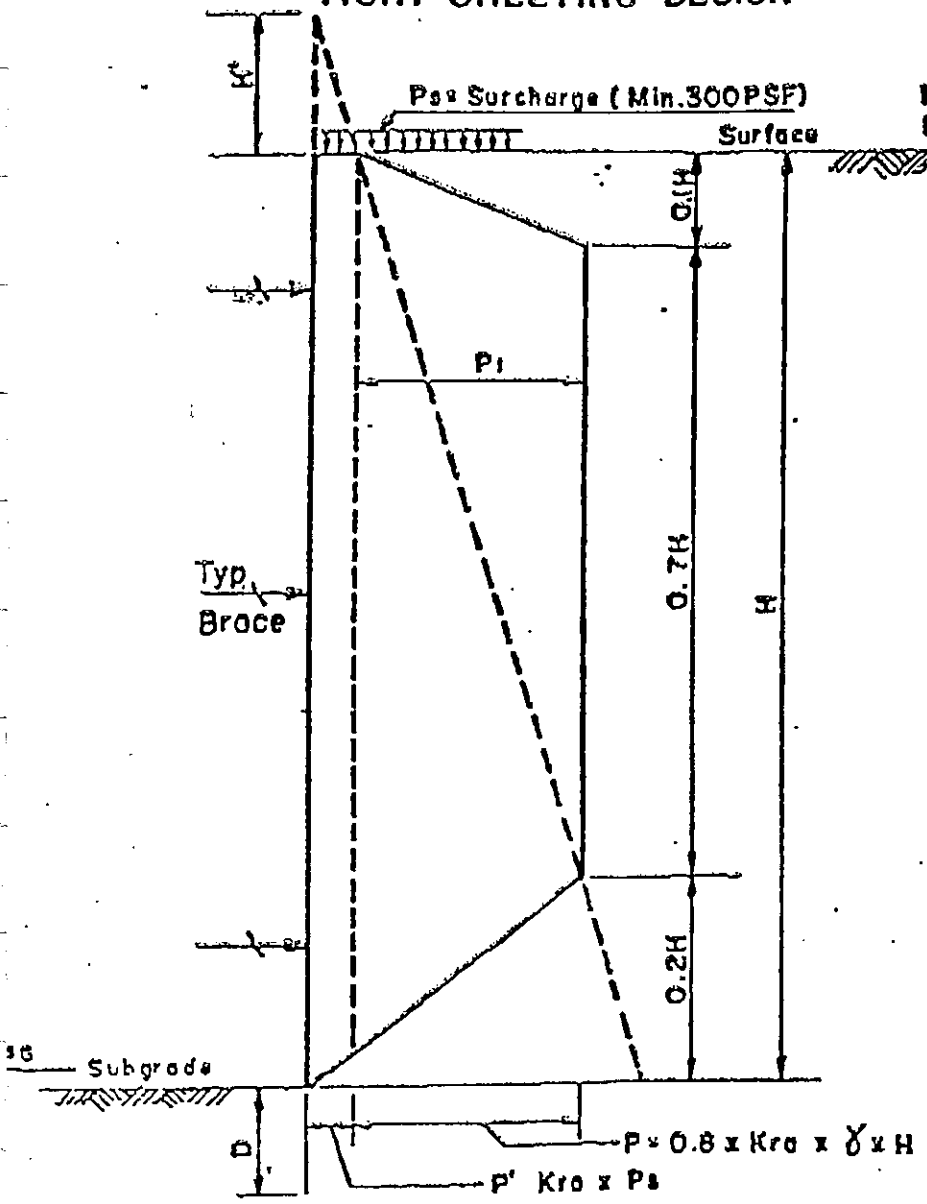
1. Page 628 of the Specifications, paragraph 1.8 - Open Excavations... Add the following paragraphs:

   C. The sheeting and bracing working drawings submitted by the Contractor shall include, but not be limited to, the following: the density of the soil, the internal angle of friction of the soil, the stress grade and type of lumber, the allowable stresses, and sequence of construction operation where required.

   D. In designing the sheeting, the Contractor's engineer shall take note of the following minimum load diagram requirements of the Department of Environmental Protection, attached.

(Revised 9/88)

MINIMUM LOAD DIAGRAM FOR NON-WATER TIGHT SHEETING DESIGN



γ = Unit Weight of Soil

γ_w = Unit Weight of Water

γ_s = Unit Weight of Submerged Soil

ϕ = Angle of Internal Friction of Soil

$Kra = \frac{(1 - \sin\phi)}{(1 + \sin\phi)}$ For Active Earth Pressure

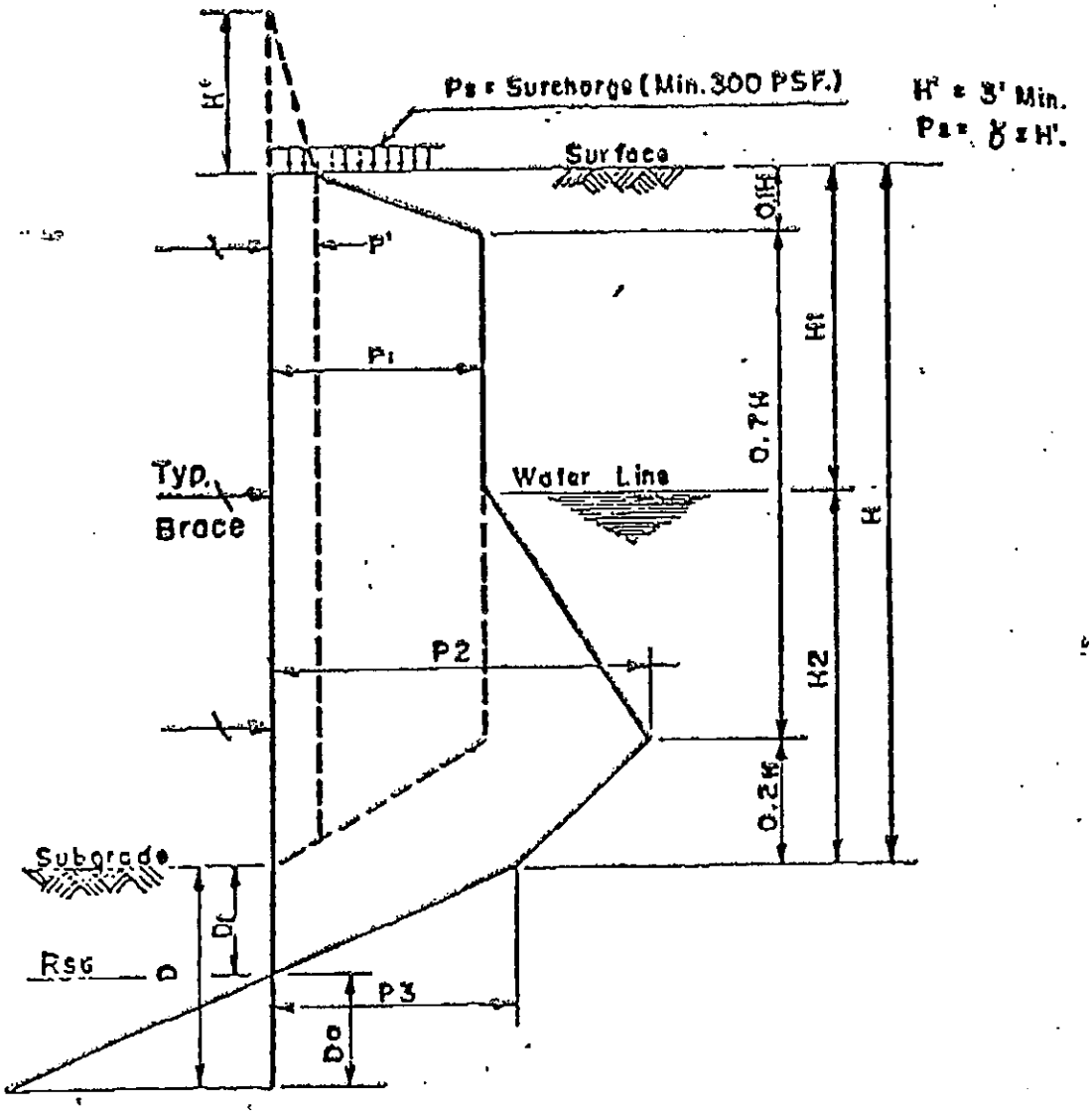
$Krp = \frac{(1 + \sin\phi)}{(1 - \sin\phi)}$ For Passive Earth Pressure

$D = \sqrt{\frac{2\,Rsg}{\gamma(Krp - Kra)}}$ (1.3)

(Min. 2'-0")

(Revised 9/85)

MINIMUM LOAD DIAGRAM FOR WATER TIGHT SHEETING DESIGN



$P' = Kra \times Ps$

$P1 = P' + 0.8 \times Kra \times (\gamma H1 + \gamma s H2)$

$P2 = P1 + \gamma w (H2 - 0.2H)$

$P3 = \gamma w \times H2$

$$D1 = \frac{P3}{\gamma c (Krp - Kra)}$$

$$Do = \sqrt{\frac{2\,Rsg}{\gamma c (Krp - Kra)}}$$

$D = (D1 + Do)(1.3)$

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 25 - Specification Section 01590

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Delete Section 01590 and replace with the revised version, attached. Revisions made to this Section occurred in paragraphs 1.3, 3.6, and 3.8.

SECTION 01590
FIELD OFFICES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Rental, operation and maintenance of existing field offices, furnishing and maintaining Resident Engineer's vehicles, Contractor's field offices, sheds, and employee shelters, and allowance for existing field offices.

1.2 EXISTING FACILITIES

A. Field offices for the Engineer, Resident Engineer, and the New York State Department of Environmental Conservation (NYSDEC) have been provided under separate contract (Contract Number 875-HP). Utilities (electric, water, sanitary, etc.) and equipment (telephones, fax machines, etc.) have also been furnished.

B. A complete fire, panic, and intrusion alarm system for the Resident Engineer's office has been furnished and installed under separate contract (Contract Number 875-HP).

1.3 CONTRACTOR'S RESPONSIBILITIES

A. Rent, for the duration of the Work, the Resident Engineer field offices from the Contractor for Contract 875-HP. The rental fee shall be $1,150 per month. Contractor shall not be responsible for the rental of field offices of the Engineer and the NYSDEC. Rental agreement shall begin at date of Notice to Proceed.

B. Maintain and service existing facilities and all three (3) field offices for the duration of the Work in accordance with Part 3 of this Section.

PART 2 PRODUCTS

2.1 MATERIALS

A. Materials, equipment, and furnishings shall be new and serviceable, adequate for intended purposes, and shall meet applicable codes and regulations.

PART 3 EXECUTION

3.1 RESIDENT ENGINEER'S VEHICLE SPECIFICATION

A. Provide two (2) vehicles for use by the Resident Engineer for the duration of the Contract.

B. Each vehicle shall be a new four-door GMC Jimmy, or approved equal, equipped with: a six- cylinder engine, four-wheel drive, automatic transmission, power steering, anti-lock brake system, steel-belted all-weather black radial tires, heavy duty suspension, heavy duty battery, air conditioning, driver's side air bag, passenger side air bag (if available), AM/FM radio, intermittent wipers, electric rear window defroster, left and right side view mirrors, and front and rear floor mats. The vehicles shall be one of the following colors: White or Dark Blue.

C. Provide fuel, oil, proper maintenance, tires, and replacement parts to keep the vehicles in a safe operating condition. Undertake all repairs, including repairs arising from vandalism, accidents, or other damages. In the event that any vehicle requires maintenance or repairs which cannot be completed the same day, provide a comparable replacement vehicle while the vehicle is out of service. If the vehicles are lost or stolen, replace the vehicles within 5 business days with comparable vehicles.

D. Provide the vehicles for the entire duration of this Contract. The vehicles will be returned to the Contractor within thirty days after Contract completion. Vehicles shall be leased by the Contractor and shall remain the property of the lessor throughout the Contract period, but shall be registered in the City's name and liability insurance afforded through the City's "self-insurance" program. The City's self-insurance program pertains only to third party insurance, arising from the Department's use of the vehicles, and does not include any damage to the vehicles.

E. Within 5 days of receipt of notice to provide specified vehicles, make the vehicles available for inspection by the Department. Upon inspection and determination by Fleet Administration that the vehicles meet specifications, make arrangements through the Department's Fleet Administration for transmission to the Department. Submit to Fleet Administration a signed MV-82 (4/90) "Vehicle Registration/Title Application," authorizing registration in the unregistered vehicles, the Manufacturer's Certification of Origin, Odometer Verification, New York State Sales Tax clearance or, in the case of a currently registered vehicle, a copy of the Title.

F. The garage designated for repair and maintenance shall be subject to the approval of the Department's Fleet Administration, and may not be changed without the prior written approval of the Department's Fleet Administration. The garage must maintain and show evidence of insurance as provided in Section II and Section III of garage form CA 99 95 91/87, as set forth in Schedule A of the General Conditions.

G. Make all required transmittals to Fleet Administration as follows:

Michael Murphy
Director, Fleet Administration
56-01, 55th Avenue
Maspeth, NY 11378
Telephone: 718-326-2981
Fax: 718-326-3031

H. No direct payment will be made for the vehicles, or associated costs. All costs shall be included in the lump sum price bid for the Contract, except that Auto Liability insurance for vehicles registered in the City's name may not be included in the lump sum costs. The Contractor may, if desired, include the costs of comprehensive insurance, theft, and collision insurance for loss or damage of the vehicles provided under this Contract.

3.2 CONTRACTOR'S OFFICE AND FACILITIES

A. Contractor shall determine size, furnishings, equipment, and facilities for his own and provide space for project meetings.

B. Provide at a minimum a conference table and chairs to seat at least eight (8) persons and racks and files for Contract Documents, submittals, and Project Record Documents.

C. A minimum of four (4) sets of personnel protective health and safety field equipment for visitors shall be provided by the Contractor.

3.3 STORAGE AREAS AND SHEDS

A. Size to storage requirements for products of individual Sections. Allow for access and orderly provision for maintenance and for inspection of products.

3.4 EMPLOYEE SHELTERS

A. Provide a room where employees can eat and drink. Smoking within the limits of the Site is strictly prohibited at all times for the duration of the Work.

3.5 MAINTENANCE AND CLEANING

A. Maintain copy and facsimile machines, and furnish ancillary supplies for the duration of the Work. Maintain and service as necessary the fire, panic, and intrusion alarm system installed in the Resident Engineer's office.

B. Insure, maintain, and repair trailers (i.e., Engineer's, Resident Engineer's, and NYSDEC's trailers) and their equipment to the satisfaction of the Resident Engineer during the performance of the Work. Keep trailers in first class condition. Promptly replace any damaged or defective parts (electrical, structural, and plumbing), including appliances and fixtures directed by the Resident Engineer.

C. Provide and pay in full for heat, sanitary, water, and telephone services for calls within New York City, as well as outside the City limits until the end of the Contract. Submit a monthly tabulation of all long distance charges and the Resident Engineer will reimburse the Contractor for any calls not deemed to be for official business. Expenses associated with heat, sanitary, water, and telephone services after the completion of the Contract shall not be the responsibility of the Contractor.

D. Provide janitorial services daily for all offices. Janitorial personnel must be health and safety briefed as appropriate. Wash windows, hang, remove, and store screens, storm windows, and screen and storm doors as requested by the Resident Engineer. Provide paper products for the bathroom and kitchen as well as bottled water and cups.

E. Provide for satisfactory disposal of sanitary and other wastes.

F. Maintain approach walks and parking areas free of mud, water, and snow.

3.6 ALLOWANCES

A. As stipulated in the Bid Form, Contractor shall include in his bid the rental cost of the Resident Engineer's field offices at the fixed fee of $1,150 per month for the duration of the Work.

B. Contractor shall also include in his bid the fixed sum of $15,000 to cover the cost of miscellaneous equipment and office supplies required for the Engineer's, Resident Engineer's, and NYSDEC's offices. If the sum of $15,000 is exceeded, the excess will be paid to the Contractor by the Change Order procedure. The balance of monies not expended shall be returned to the City as a credit.

C. Contractor will be reimbursed for maintaining and servicing (Operation and Maintenance) all three (3) field offices, as specified in this Section, based on the Unit Price stipulated in the Bid Form.

3.7 WELL SAMPLING EQUIPMENT

A. When directed by the Resident Engineer the Contractor shall purchase and have Shipped to the Site the following well sampling equipment.

1. Seventeen (17) Well Wizard Bladder Pumps, model No. P-1201, or approved equal.

2. Seven hundred (700) feet of Well Wizard Teflon Lined Tubing, Model No. PT-5100, or approved equal.

3. Seventeen (17) Well Wizard Well Cap Assemblies, model No. 2120-C, or approved equal.

4. Well Wizard Well Controller and Driver, model No. 3111HR or approved equal.

5. Well Wizard Portable Water Level Meter Model No. 6000MSS (300 foot length) or approved equal.

Well Wizard equipment is manufactured by QED Environmental Systems Inc., 6095 Jackson Road, PO Box 3726, Ann Arbor, MI 48106. Phone: (800) 624-2026.

3.8 REMOVAL

A. At completion of Work, remove and disconnect utilities to Contractor's field offices and sheds only. Removal of the Engineer's, Resident Engineer's, and NYSDEC's offices and facilities as well as utilities connected to such offices and facilities shall not be the responsibility of the Contractor.

END OF SECTION 01590

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 26 - Specification Section 02169

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Page 667 of the Specifications, Part 2 - Materials.... Add paragraph 2.5 as follows:

   2.5 CRUSHED STONE

   A. Crushed stone material shall consist of 1/2 inch to 1-1/2 inch diameter stone and shall be washed and free of fine materials.

   B. A sample of the crushed stone material shall be retained and placed in a 50-pound bag and stored onsite with the soil samples for a one year period.

2. Page 667 of the Specifications, paragraph 3.2A should read as follows:

   A. "A 36-inch diameter, heavy wall, steel casing shall be installed at the location of each gas extraction well shown on the Drawings. The installation method, such as augering or driving, shall be the responsibility of the Contractor.

3. Page 667 of the Specifications, paragraph 3.2B... Delete the word "driven" from the first sentence.

ADDENDUM NO. 26 - Specification Section 02169 (continued)

4. Page 668 of the Specifications, paragraph 3.2D... Delete "by reversing the action of the impact driver" and "and leaving the drive point at the bottom of the well bore."

5. Page 668 of the Specifications, paragraph 3.3E... Delete "A No. 1".

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 27 - Specification Section 02210

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Page 676 of the Specifications... Add paragraph 3.12 as shown on next page.

Soil Test	Standard	Minimum Frequency
Maximum Dry Density	ASTM D698	1 per structure and when material changes
In-Place Density	ASTM D1556 or ASTM D2922	1 per lift per structure, up to 5 per structure

E. If tests indicate Work does not meet specified requirements, remove Work, replace, and retest at no additional cost to the City.

3.12 GAS FLARE SYSTEM SUBGRADE PREPARATION

A. Overexcavate the subgrade of the gas flare and the 100-gallon propane tank shown on the Drawings by two (2) feet below design bottoms of the foundation systems. Extend the overexcavation to a minimum of five (5) feet beyond the lateral limits of the concrete slabs for the flare and the propane tank. Once the bottom of the excavation is reached, proof-roll the subgrade with a minimum of six (6) passes of a 10-ton smooth drum vibratory roller under the observation of the Engineer. Soft or loose areas that cannot be improved by additional compaction shall be undercut, replaced with Crushed Stone Base material specified in Section 02231 of the Specifications, and compacted as described above. Repeat as necessary until the subgrade is firm and acceptable to the Engineer.

B. Place Structural Backfill material specified in paragraph 2.1D of this Section in the overexcavated area. Place in a maximum 6-inch thick loose lifts and compact to at least 95 percent of maximum dry density and within two (2) percent of optimum moisture content as determined by ASTM D698.

C. Upon completion of the placement of Structural Backfill material in the overexcavated area, proceed with the installation of the foundation elements for the gas flare and propane tank as shown on the Drawings.

END OF SECTION 02210

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 28 - Specification Section 02831

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Page 763 of the Specifications, paragraph 2.2A... Change "Class 25" to "2,500 psi".

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 29 - Specification Section 02920

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. In Specification Section 02920 presented as Addendum No. 5 (in Addenda Volume No. 1), at the end of paragraph 3.1A, add the following:

"Topsoil shall be compacted with two (2) passes of a dozer having track pressure of 10 pounds per square inch (psi)."

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 30 - Contract Drawing C.1

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Replace Contract Drawing C.1 with revised version (Drawing C.1R1), attached at the end of this package. Revisions made to this Drawing are described below:

   A. All three legs of the "3' WIDE CURTAIN DRAIN" are constructed as shown on "EXISTING CURTAIN DRAIN - SECTION D" of Drawing C.13R1 (revised version of Drawing C.13 as per addendum No. 35).

   B. The note referring to the middle leg as "BELOW GRADE CONVEYANCE PIPE" has been removed.

   C. Monitoring wells MW-115B and MW-120B shall remain as part of the final landfill closure and shall be extended to meet final cap elevation.

   D. Monitoring well MW-121B, previously identified to remain as part of the final landfill closure, shall be plugged and abandoned.

   E. Locations of gas extraction wells EW-1, EW-2, and EW-3 were added to the Drawing. These wells shall be abandoned as described in the Specifications.

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 31 - Contract Drawing C.2

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Revise Contract Drawing C.2 to show that monitoring well MW-119B, previously identified to remain as part of the final landfill closure, shall be plugged and abandoned.

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 32 - Contract Drawing C.8

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Note 5 on Contract Drawing C.8 is herein revised and should read as follows (underlined text has been added):

   "Soil depth indicators to be safe-hit Type 3 approximately 48" in length with a 15" diameter twist lock base or equivalent placed on the HDPE geomembrane. The indicators are to be black colored with the surveyor being responsible for placing different color reflecting tape at depths for placement of Loamy Soil and Vegetated Topsoil. These indicators are to be spaced at a distance no greater than 100 feet in each direction. Place at the grade break points and 5 feet from the upslope limit of the stormwater drainage ditch. Upon completion of soil placement, remove and properly dispose of the vertical post of the depth indicator; base is to remain in place. Fill resulting void with Loamy Soil and Vegetated Topsoil material and hand compact in place."

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 33 - Contract Drawing C.9

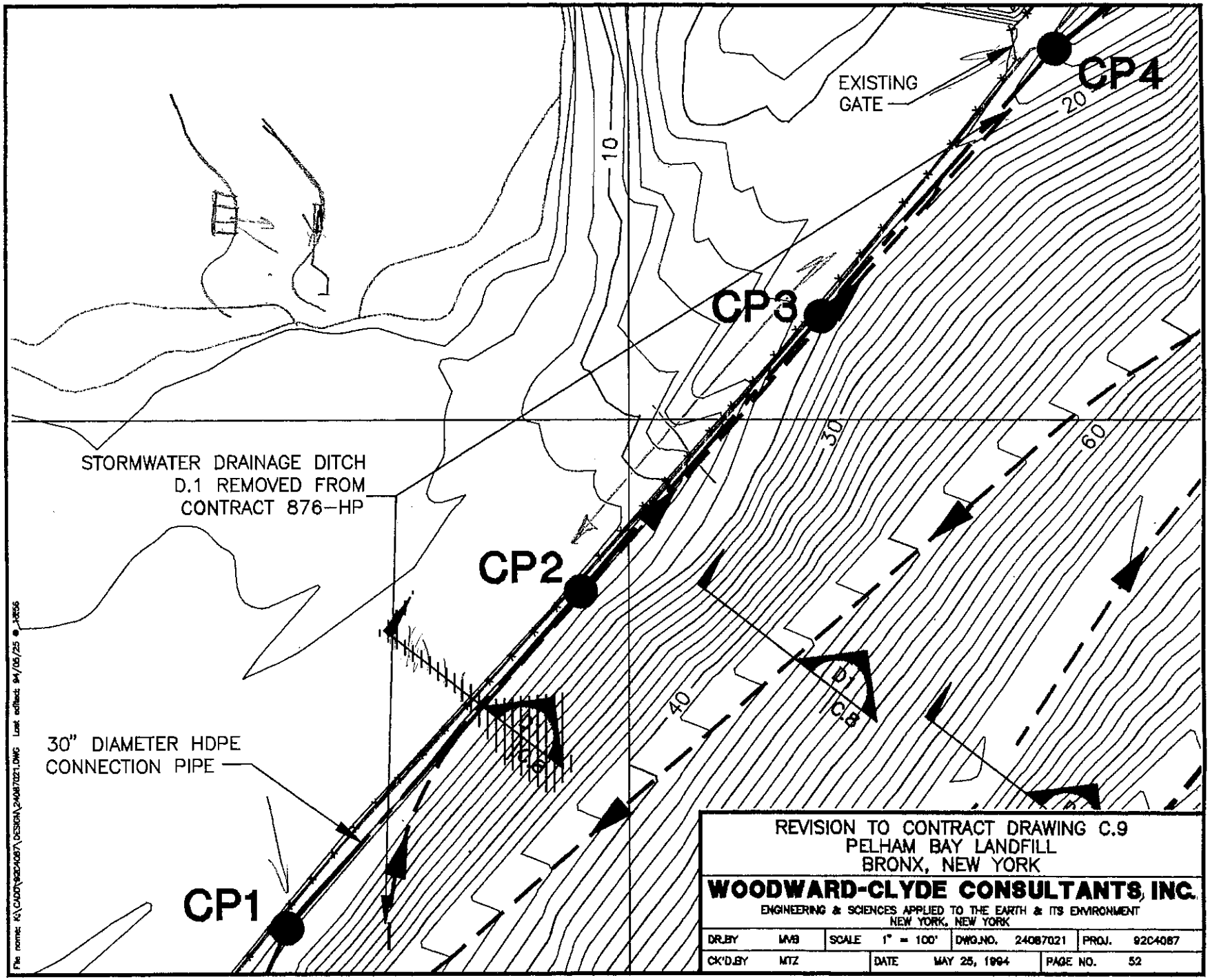
TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Revise Contract Drawing C.9 as described below and shown on the drawing attached on the following page.

   A. Remove the stormwater drainage ditch shown adjacent to Pelham Bridge Road along the northwest boundary of the landfill, extending from manhole CP1 to CP4.



REVISION TO CONTRACT DRAWING C.9
PELHAM BAY LANDFILL
BRONX, NEW YORK

WOODWARD-CLYDE CONSULTANTS, INC.
ENGINEERING & SCIENCES APPLIED TO THE EARTH & ITS ENVIRONMENT
NEW YORK, NEW YORK

DR.BY	MW	SCALE	1" = 100'	DWG.NO. 24087021	PROJ. 92C4087
CK'D.BY	MTZ	DATE	MAY 25, 1994	PAGE NO.	52

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THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 34 - Contract Drawing C.11

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Replace Contract Drawing C.11 with revised version (Drawing C.11R1), attached at the end of this package. Revisions made to this Drawing are described below:

   A. New details (mainly spacing) for the Welded Pipe Railing.

   B. Revisions to "BAFFLED OUTLET - SECTION A".

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 35 - Contract Drawing C.13

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Replace Contract Drawing C.13 with revised version (Drawing C.13R1), attached at the end of this package. Revisions made to this Drawing are described below:

   A. "EXISTING CURTAIN DRAIN SEE TYPICAL SECTION D THIS SHEET" and "EXISTING GRAVEL DRAIN SEE TYPICAL SECTION E THIS SHEET" were added to the "SEDIMENTATION POND B - PLAN".

   B. EXISTING CURTAIN DRAIN - SECTION D and EXISTING GRAVEL DRAIN - SECTION E were added to clarify the existing drains at the location of Sedimentation Pond B.

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 36 - Contract Drawing C.14

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Replace Contract Drawing C.14 with revised version (Drawing C.14R1), attached at the end of this package. Revisions made to this Drawing are described below:

   A. A note regarding final grading at base of slope was added to "SEDIMENTATION POND B TO C CONNECTION PIPE - PLAN".

   B. Notes 5 and 6 were added to clarify final grading and contouring associated with the sedimentation pond connection piping.

   C. The note referring to the trashrack attachment detail was deleted from "30" CONNECTION PIPE OUTLET OR INLET".

   D. Notes were added to "CONNECTION PIPE OUTLET OR INLET - SECTION A" to show the location of trashrack details.

   E. A note in the "TYPICAL MANHOLE INSTALLATION" detail and Note 2 were modified to provide for drain inlets at manholes CP1 and CP4.

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

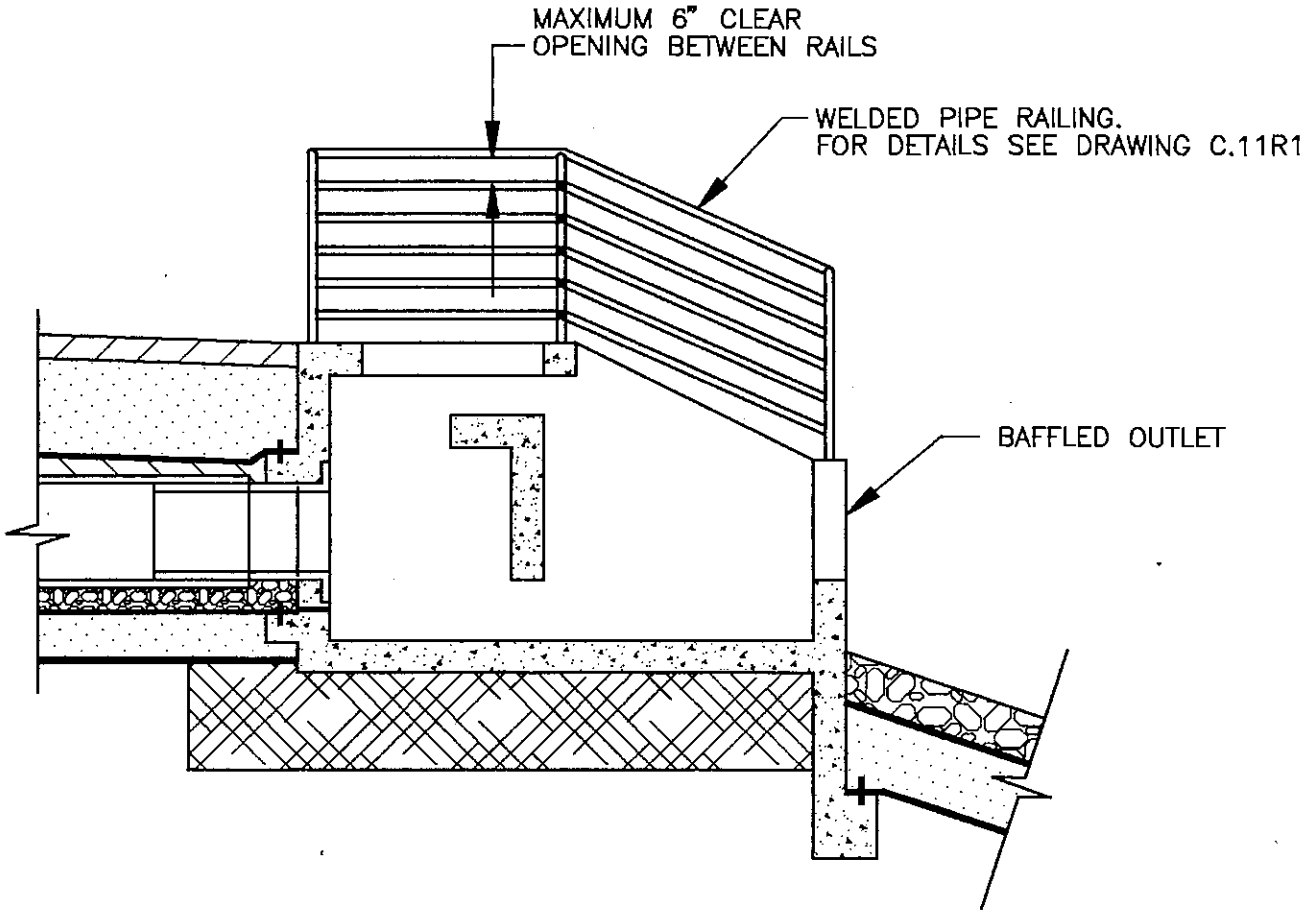
ADDENDUM NO. 37 - Contract Drawing C.16

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Replace the Welded Pipe Railing details for Baffled Outlets BO1, BO2, BO3, and BO4 with the revised version, attached on the following page.



NOTE:

1. TYPICAL HANDRAIL DETAIL FOR BAFFLED OUTLETS B01, B02, B03 AND B04.

REVISION TO CONTRACT DRAWING C.16
PELHAM BAY LANDFILL, BRONX, NEW YORK

WOODWARD-CLYDE CONSULTANTS, INC.

ENGINEERING & SCIENCES APPLIED TO THE EARTH & ITS ENVIRONMENT
NEW YORK, NEW YORK

DR.BY	MVB	SCALE 1/4" =1'-0"	DWG.NO. 24087016	PROJ.	92C4087
CK'D.BY	MTZ	DATE MAY 25, 1994	PAGE NO.	57	

File name: K:\CADD\92C4087\DESIGN\24087016.DWG Last edited: 94/05/25 @ 14:10

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 38 - Contract Drawing C.17

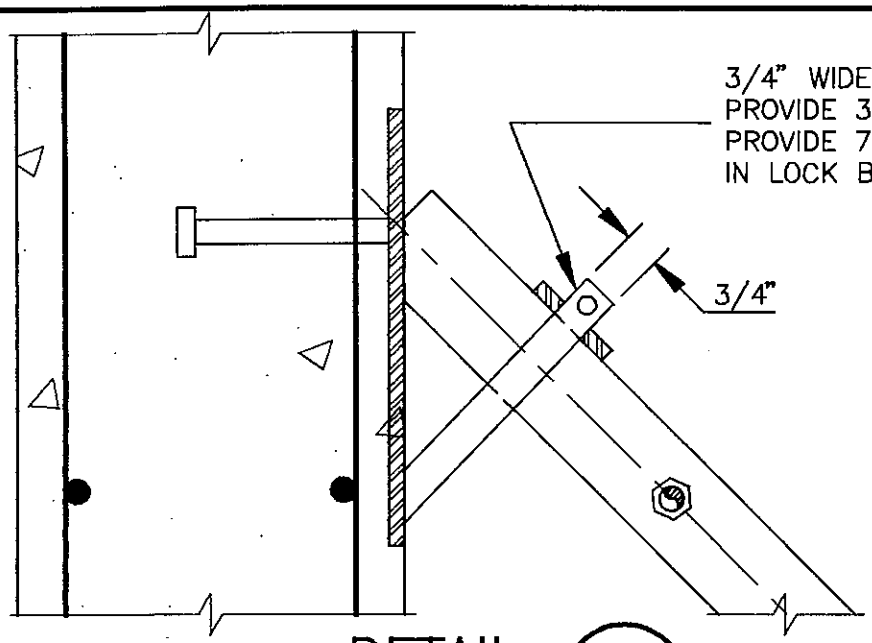
TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

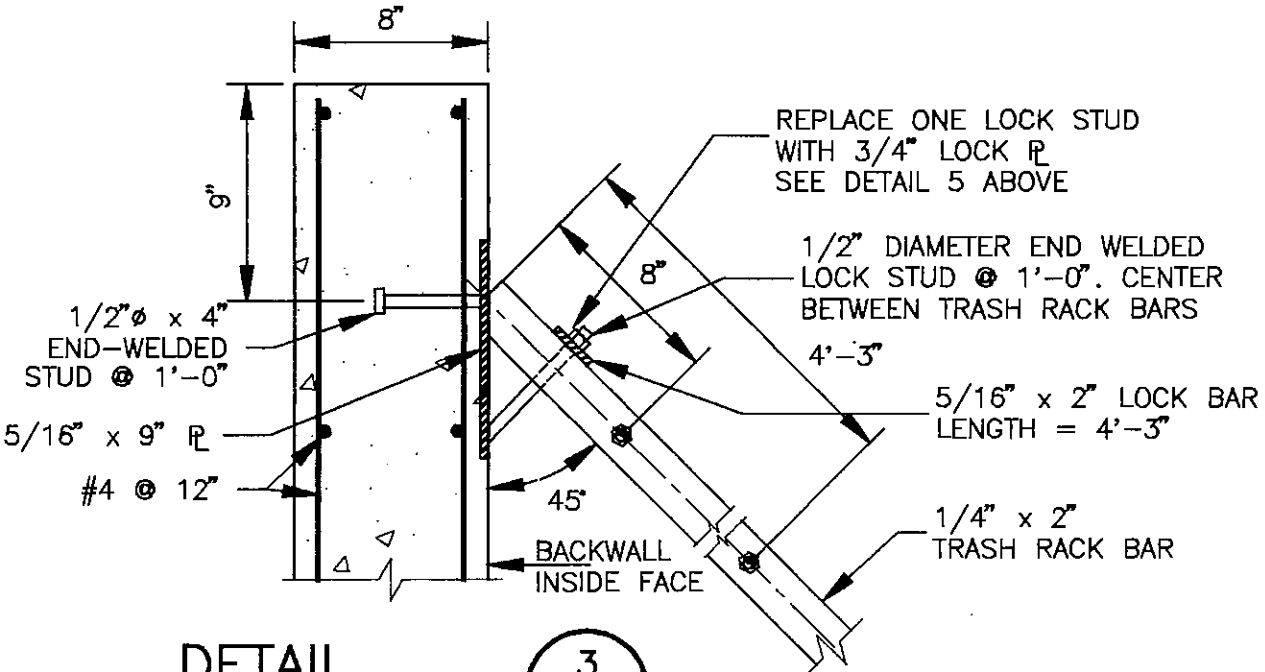
This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Replace Detail 3 and Detail 4 with the revised versions, attached on the following pages.

2. Delete Lighting Plan - 5 from Contract 876-HP.



DETAIL 5
SCALE 3" = 1'-0"



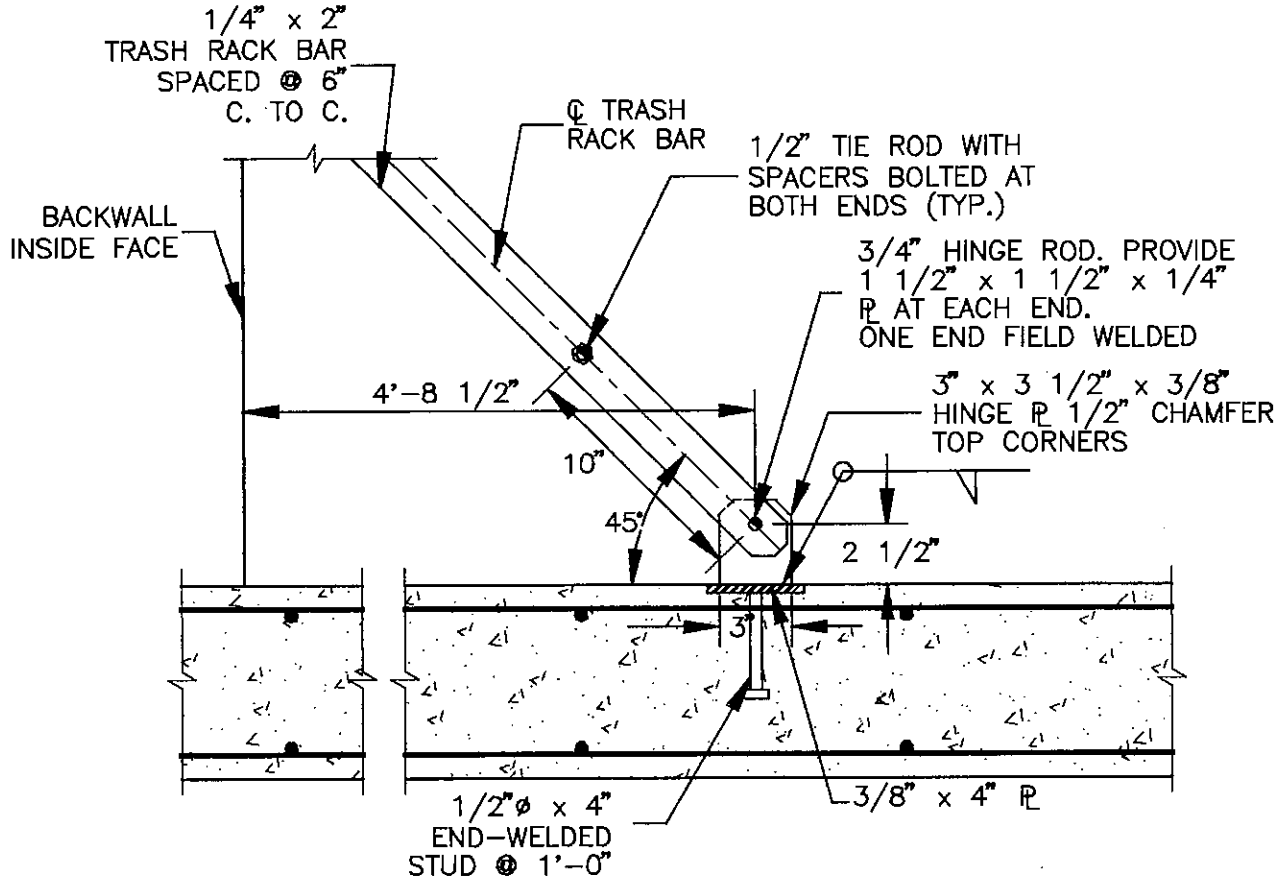
DETAIL 3
SCALE 1-1/2" = 1'-0"
C.14

REVISED DETAIL 3
CONTRACT DRAWING C.17
PELHAM BAY LANDFILL, BRONX, NEW YORK

WOODWARD-CLYDE CONSULTANTS, INC.
ENGINEERING & SCIENCES APPLIED TO THE EARTH & ITS ENVIRONMENT
NEW YORK, NEW YORK

DR.BY	MWB	SCALE	AS SHOWN	DWG.NO. 24087028	PROJ. 92C4087
CK'D.BY	MTZ	DATE	MAY 25, 1994	FIG.NO.	59

File name: K:\CADD\92C4087\DESIGN\24087028.DWG Last edited: 94/05/25 @ 14:08



DETAIL 4

SCALE 1-1/2"=1'-0" C.14

NOTE:

1. CONTRACTOR SHALL PROVIDE DISCONTINUOUS HINGE ROD FOR TRASH RACK OR POUR STRUCTURE SIDEWALLS AFTER INSTALLATION OF TRASH RACK TO AVOID CONFLICT.

REVISED DETAIL 4
CONTRACT DRAWING C.17
PELHAM BAY LANDFILL, BRONX, NEW YORK

WOODWARD-CLYDE CONSULTANTS, INC.
ENGINEERING & SCIENCES APPLIED TO THE EARTH & ITS ENVIRONMENT
NEW YORK, NEW YORK

DR.BY	MVB	SCALE 1-1/2"=1'-0"	DWG.NO. 24087024	PROJ.	92C4087
CK'D.BY	MTZ	DATE MAY 25, 1994		PAGE NO.	50

File name: K:\CADD\92C4087\DESIGN\24087024.DWG Last edited: 94/05/25 @ 14:09

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 39 - Contract Drawing C.18

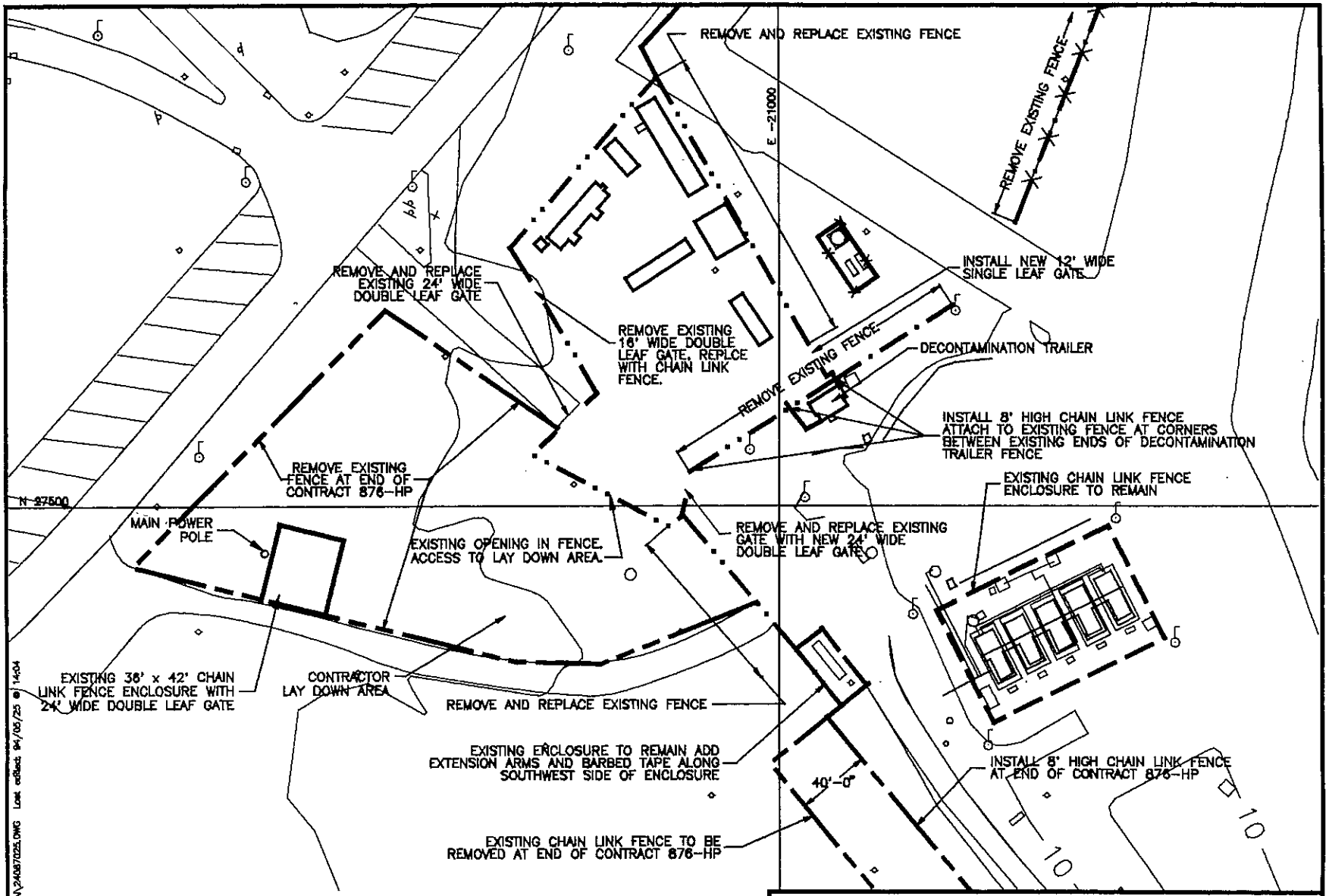
TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Replace Trailer Area Fence Plan with the revised version, attached on the following page. Revision made to this Plan is described below:

   A. Existing fence condition around the contractor's lay-down area has been modified.



TRAILER AREA FENCE PLAN 1

NOT TO SCALE

REVISED PLAN 1
CONTRACT DRAWING C.18
PELHAM BAY LANDFILL, BRONX, NEW YORK

WOODWARD-CLYDE CONSULTANTS, INC.

ENGINEERING & SCIENCES APPLIED TO THE EARTH & ITS ENVIRONMENT
NEW YORK, NEW YORK

DR.BY	MVB	SCALE NOT TO SCALE	DWG.NO. 24087025	PROJ.	92C4087
CK'D.BY	MTZ	DATE MAY 25, 1994		PAGE NO.	62

File name: K:\CADD\92C4087\DESIGN\24087025.DWG Last edited: 94/05/25 @ 14:04

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 40 - Contract Drawing LS.1

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Replace Contract Drawing LS.1 with revised version (Drawing LS.1R1), attached at the end of this package. Revisions made to this Drawing are described below:

   A. Add "SECTION - LIVE STAKE PLANTING" and "LIVE STAKE DETAIL".

   B. Add "VEGETATION ISLAND FINAL CONFIGURATION - DETAIL 3".

   C. Add "Plant Schedule for Vegetation Islands Only".

   D. Add Notes 1, 2, 3, and 4.

   E. Add additional planting areas on north and west sides of the landfill on the "LANDSCAPE PLAN".

   F. Delete Vegetation Island No. 22 and renumber vegetation islands 23 through 27 to 22 through 26, respectively.

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 41 - Contract Drawing GS.1

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Replace Contract Drawing GS.1 with revised version (Drawing GS.1R1), attached at the end of this package. Revisions made to this Drawing are described below:

   A. Delete fence shown within Sedimentation Pond B.

   B. Delete "IRM MAIN" located adjacent to the intersection of grid E-20500 and N27000.

   C. Modify location of extraction wells EW-11 and EW-20.

   D. Change northing and easting coordinates for extraction wells EW-11 and EW-20 in Gas Extraction Well Schedule.

   E. Adjust Well Depth numbers in Gas Extraction Well Schedule.

   F. Show 2-ft contour lines.

   G. Add Note 9.

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

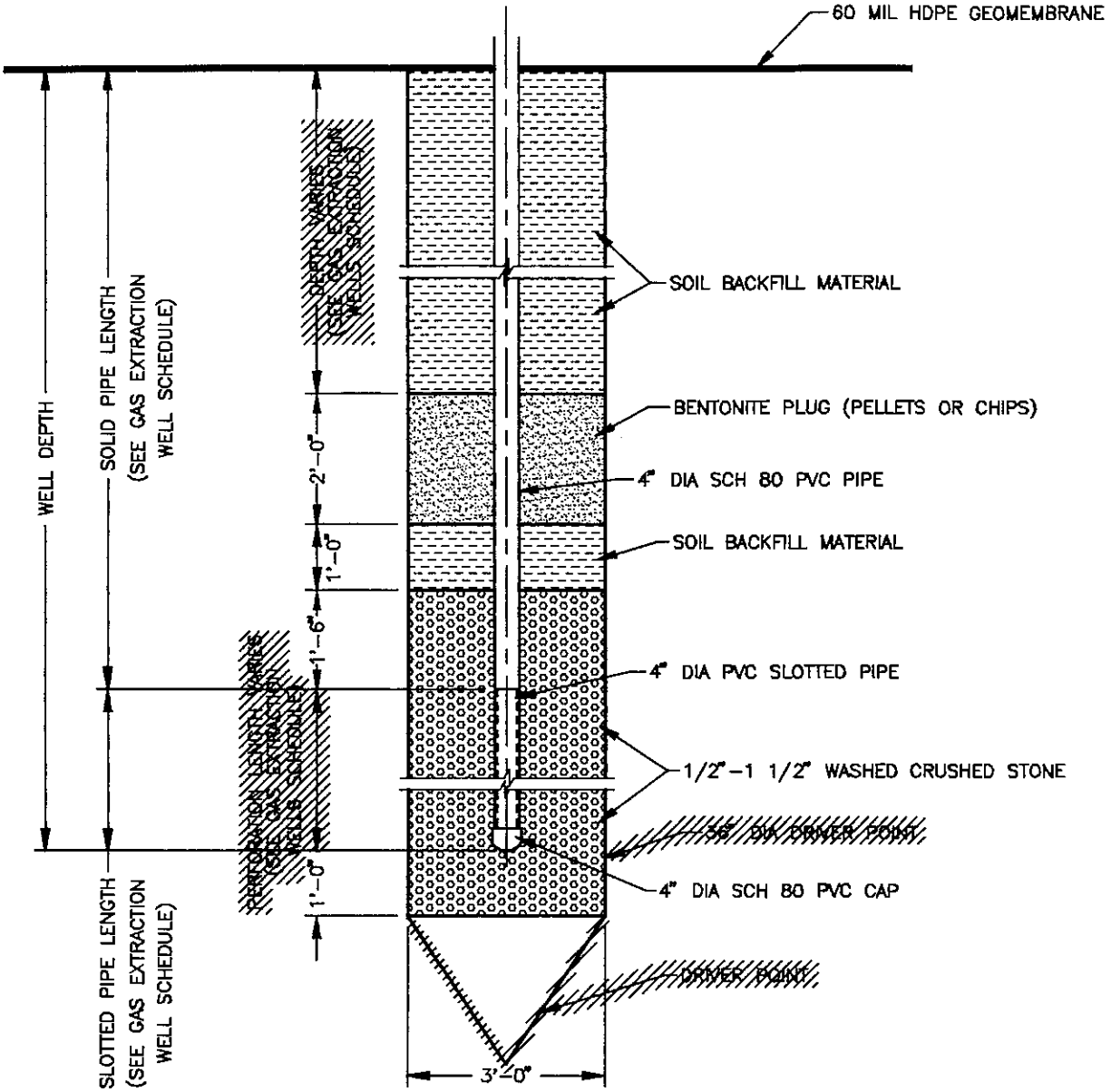
ADDENDUM NO. 42 - Contract Drawing GS.3

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Replace Detail 2 and Detail 4 with the revised versions, attached on the following pages.



GAS EXTRACTION WELL DETAIL 2

SCALE 3/8"=1'-0"

GS.1

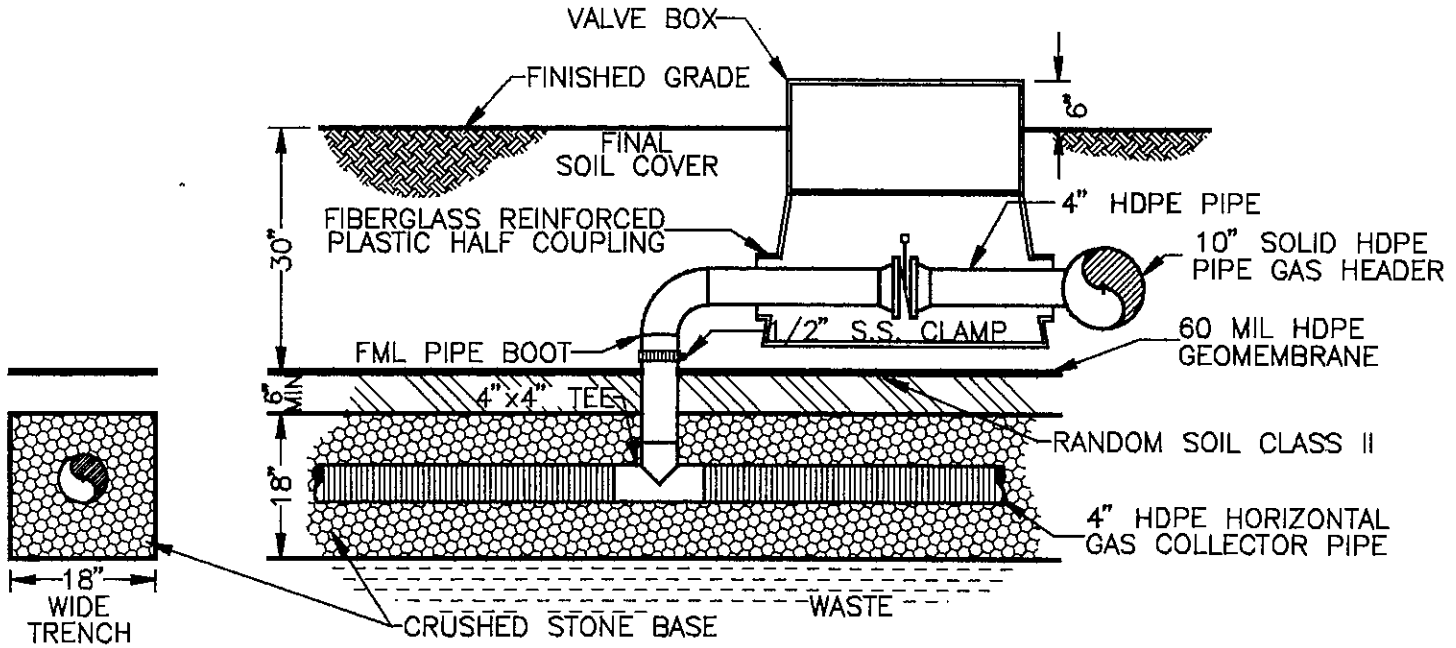
REVISED DETAIL 2
CONTRACT DRAWING GS.3
PELHAM BAY LANDFILL, BRONX, NEW YORK

WOODWARD-CLYDE CONSULTANTS, INC.

ENGINEERING & SCIENCES APPLIED TO THE EARTH & ITS ENVIRONMENT
NEW YORK, NEW YORK

DR.BY	MVB	SCALE 3/8"=1'-0"	DWG.NO. 24087028	PROJ.	92C4087
CK'D.BY	MTZ	DATE MAY 25, 1994		PAGE NO.	56

File name: K:\CADD\92C4087\DESIGN\24087028.DWG Last edited: 94/05/25 @ 14:57



HDPE CORRUGATED HORIZONTAL GAS COLLECTION PIPE/RISER CONNECTION DETAIL 4

SCALE 1/2"=1'-0"

GS.1

REVISED DETAIL 4
CONTRACT DRAWING GS.3
PELHAM BAY LANDFILL, BRONX, NEW YORK

WOODWARD-CLYDE CONSULTANTS, INC.

ENGINEERING & SCIENCES APPLIED TO THE EARTH & ITS ENVIRONMENT
NEW YORK, NEW YORK

DR.BY	MVB	SCALE 1/2" = 1'-0"	DWG.NO. 24087027	PROJ.	92C4087
CK'D.BY	MTZ	DATE MAY 25, 1994		PAGE NO.	67

File name: K:\CADD\92C4087\DESIGN\24087027.DWG Last edited: 94/05/25 @ 14:05

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

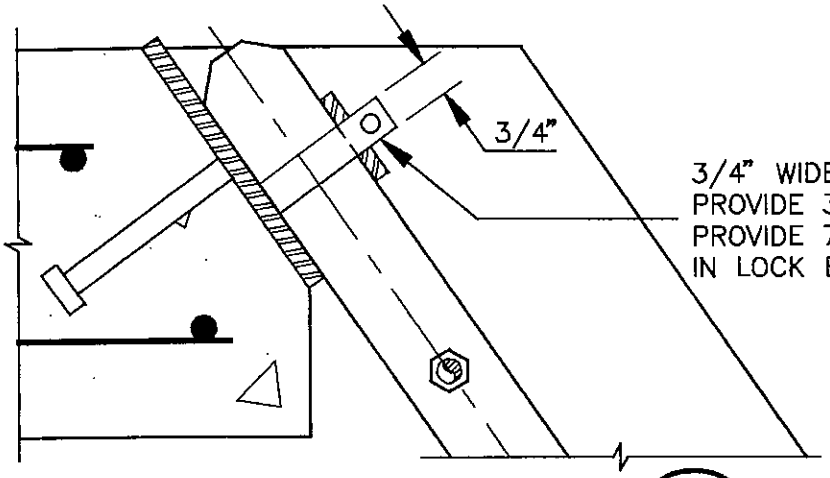
ADDENDUM NO. 43 - Contract Drawing C.12

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

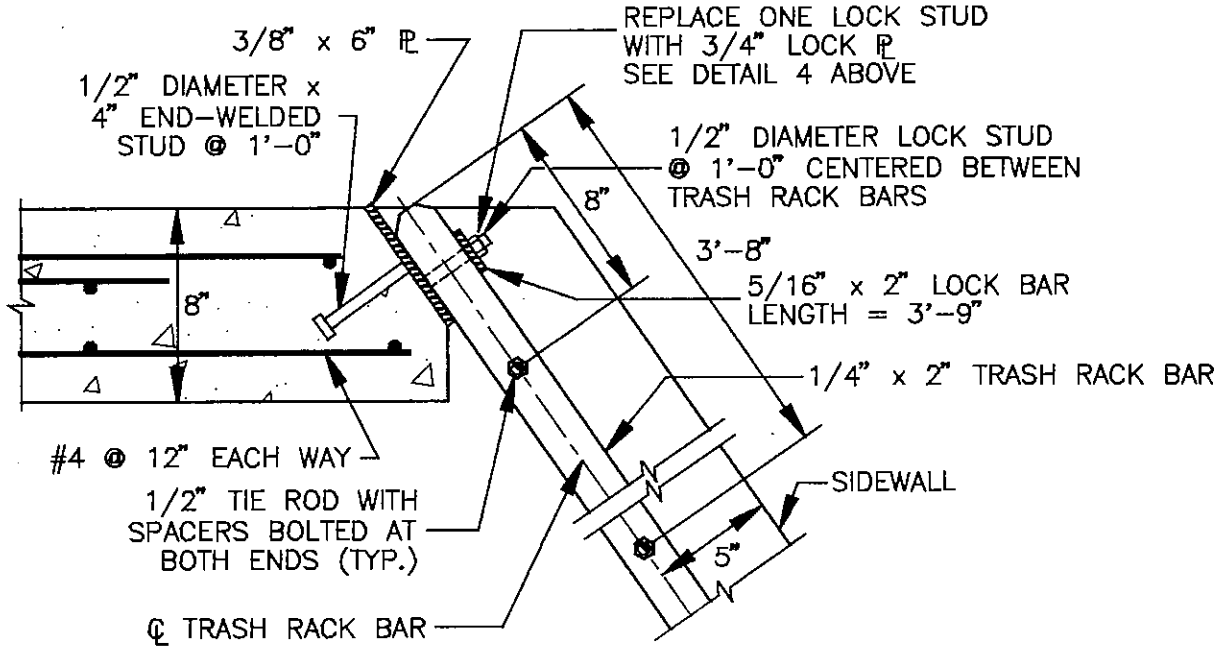
CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Replace Detail 2 with the revised version, attached on the following page.



DETAIL 4
SCALE 3"=1'-0"



DETAIL 2
SCALE 1-1/2"=1'-0"

REVISED DETAIL 2
CONTRACT DRAWING C.12
PELHAM BAY LANDFILL, BRONX, NEW YORK

WOODWARD-CLYDE CONSULTANTS, INC.
ENGINEERING & SCIENCES APPLIED TO THE EARTH & ITS ENVIRONMENT
NEW YORK, NEW YORK

DR.BY	MVB	SCALE AS SHOWN	DWG.NO. 24087029	PROJ.	92C4087
CK'D.BY	MTZ	DATE MAY 25, 1994	FIG.NO.	69	

File name: K:\CADD\92C4087\DESIGN\24087029.DWG Last edited: 94/05/25 ● 14:08

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 44 - Specification Section 02779

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Delete Section 02779 and replace with the revised version, attached on the following pages. Revisions made to this Section are described below:

   A. Paragraph 1.3, add ASTM D1777 and ASTM D4595 to the list of reference standards and renumber references accordingly.

   B. Paragraph 2.1A, delete the last sentence "The geocomposite material..., or equal".

   C. Paragraph 2.2A, geotextile properties have been changed.

   D. Paragraph 2.2B, model number and manufacturer of geotextile have been changed.

   E. Paragraph 2.3A, add "Thickness" requirements in table of geonet properties.

   F. Paragraph 2.3B, modify the sentence.

   G. Paragraph 3.1, add paragraph C and renumber accordingly.

   H. Paragraph 3.3A, modify first sentence.

SECTION 02779
GEOCOMPOSITE

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Manufacture, fabrication, furnishing, and installation of geocomposite composed of geotextile/geonet to provide drainage above the geomembrane.

1.2 RELATED SECTIONS

A. Section 02210 - Earthwork.

1.3 REFERENCE STANDARDS

A. ASTM D413: Standard Test Methods for Rubber Property - Adhesion to Flexible Substrate.

B. ASTM D792: Test Method for Specific Gravity (Relative Density) and Density of Plastics by Displacement.

C. ASTM D1238: Standard Test Method for Flow Rates of Thermoplastics by Extrusion Plastometer.

D. ASTM D1505: Test Method for Density of Plastics by the Density-Gradient Technique.

E. ASTM D1603: Test Method for Carbon Black in Olefin Plastics.

F. ASTM D1777: Method for Measuring Thickness of Textile Materials.

G. ASTM D3786: Standard Test Method for Hydraulic Bursting Strength of Knitted Goods and Nonwoven Fabrics - Diaphragm Bursting Strength Tester Method.

H. ASTM D4355: Standard Test Method for Deterioration of Geotextiles from Exposure to Ultraviolet Light and Water (Xenon-Arc Type Apparatus).

I. ASTM D4491: Standard Test Methods for Water Permeability of Geotextiles by Permittivity.

J. ASTM D4533: Test Method for Trapezoidal Tearing Strength of Geotextiles.

K. ASTM D4595: Test Method for Tensile Properties of Geotextiles by the Wide Width Strip Method.

L. ASTM D4632: Test Method for Breaking Load and Elongation of Geotextiles (Grab Method).

M. ASTM D4716: Standard Test Method for Constant Head Hydraulic Transmissivity (In-plane Flow) of Geotextiles and Geotextile Related Products.

N. ASTM D4751: Test Method for Determining Apparent Opening Size of Geotextile.

O. ASTM D4833: Test Method for Index Puncture Resistance of Geotextiles, Geomembrane, and Related Products.

P. ASTM D4873: Standard Guide for Identification, Storage, and Handling of Geotextiles.

Q. GRI (Geosynthetic Research Institute) GS6: Standard Test Method for Interface Friction Determination by Direct Shear Testing.

1.4 SUBMITTALS

A. Submit to the Engineer for review and comment geocomposite samples and list of minimum property values, including certified test results . Material properties shall be in conformance with those defined in Part 2 of this Section. Any deviation shall be documented. Submit thread properties to the Engineer if thread is used for sewing seams.

B. Submit, if requested by the Resident Engineer, a list of completed facilities for which Contractor has installed a minimum of 100,000 square feet (sq.ft) of geocomposite.

C. Submit to the Engineer a copy of warranty obtained from Manufacturer and/or Installer, if requested by Engineer.

D. Submit written documentation to the Engineer that the geocomposite has been installed according to the Drawings and Specifications and that in-place materials meet generally accepted standards of practice.

E. Prior to delivery to Site, submit samples of the geocomposite to the Engineer for interface friction angle and transmissivity conformance testing listed in Part 2 of this Section. No geocomposite shall be delivered to Site until approval is given by the Engineer.

F. Submit a layout plan indicating roll numbers and corresponding lengths similar to those for the geomembrane.

1.5 QUALITY CONTROL

A. Geocomposite shall be free of defects, rips, holes, or flaws.

B. Geocomposite shall be manufactured in widths and lengths that will permit installation of geocomposite with as few laps as possible. Geocomposite shall be of such length to allow installation from one anchor trench to the next, up or down slope, on slopes greater than 12 percent to avoid seaming cross slope.

C. During shipment and storage, geocomposite shall be wrapped in relatively impermeable and opaque protective covers.

D. Geocomposite shall be marked with Manufacturer's name, product identification, lot number, roll number, and roll dimensions.

E. Storage area shall be such that geocomposite is protected from mud, dirt, dust, debris, moisture, and exposure to ultraviolet (UV) light and heat.

1.6 QUALIFICATIONS

A. Manufacturer shall have at least five (5) years continuous experience in manufacture of geonets and geotextiles and/or experience totaling a minimum of two (2) million sq. ft of geonet and geotextile manufacture.

B. Installation shall be performed under direction of Contractor's installation supervisor who shall remain onsite and be in responsible charge throughout geocomposite installation. A replacement supervisor acceptable to the Resident Engineer shall be available when the supervisor cannot be present. Notify the Resident Engineer when the replacement supervisor is in charge. Contractor's installation supervisor shall have installed or supervised installation of a minimum of 100,000 sq. ft of geocomposite.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Transportation of geocomposite is responsibility of Contractor, who shall be liable for all damages to geocomposite prior to and during transportation to Site.

B. Storage, handling, and care of geocomposite onsite is responsibility of Contractor prior to, during, and after geocomposite installation. Contractor shall be liable for all damages to geocomposite incurred prior to final acceptance of installation by the

Resident Engineer, except for those due to negligent actions on part of the Resident Engineer.

C. Contractor shall retain ownership of geocomposite until installation is accepted by the Resident Engineer.

PART 2 PRODUCTS

2.1 MANUFACTURE

A. The geocomposite shall be manufactured by heat bonding the geotextile to the top side of the geonet. No burn through geotextile nor glue or adhesive shall be permitted.

B. The bond between the geotextiles and the geonet shall exhibit a minimum peel strength of 2 pounds per inch (lb/in) (ASTM D413).

2.2 GEOTEXTILE

A. Provide products for the geotextile portions of the geocomposite comprised of polyester or polypropylene. Provide a nonwoven product for the geotextile portions of the geocomposite meeting the following minimum average roll values:

GEOTEXTILE PROPERTIES

PROPERTY	UNITS	VALUE[2]	TEST
Apparent opening size	Standard Sieve Size	No. 100-140	ASTM D4751
Grab Strength, MD/CD[3]	lb	≥500/380	ASTM D4632
Grab Elongation,MD/CD[3]	%	≥65/65	ASTM D4632
Trapezoidal Tear Strength, MD/CD[3]	lb	≥150/130	ASTM D4533
Puncture Resistance	lb	≥150	ASTM D4833
Mullen Burst Strength	lb/sq in.	≥600	ASTM D3786
Wide Width Tensile Strength, MD/CD[3]			
Ultimate	lb/in	≥175	ASTM D4595
Secant modulus @ 10% strain	lb/in	≥400	ASTM D4595
Permeability	cm/s	$\geq 1 \times 10^{-1}$	ASTM D4491
UV Resistance	% strength retained after 500 hours exposure	≥70	ASTM D4355
Porosity	%	≥30	Volume of voids divided by total volume
Interface Friction Angle with Geomembrane	degrees	24	GRI GS6[1]
Interface Friction Angle with Loamy Soil Layer Material	degrees	24	GRI GS6[1]

[1] GRI GS6, normal stress = 180-720 lb/sq ft, wet interface
[2] Typical or average values
[3] MD = Machine Direction, CD = Cross machine Direction

B. Provide TREVIRA 1145 as manufactured by Hoechst Celanese Corporation of Spartanburg, South Carolina, or equal.

2.3 GEONET

A. Provide products for the geonet portion of the geocomposite to be comprised of high-density polyethylene (HDPE). The geonet shall be manufactured by extruding two sets of stands to form a three dimensional structure providing planar flow and shall meet the following minimum average roll values except as noted:

GEONET PROPERTIES

PROPERTY	UNITS	VALUE[1]	TEST
Density	g/cc	0.93	ASTM D792 or D1505
Melt Flow Index	g/10 min.	1.0 max.	ASTM D1238
Carbon Black Content	%	2-3 range	ASTM D1603
Transmissivity	m^2/s	$2x10^{-4}$	ASTM D4716[2]
Thickness	in	≥0.25	ASTM D1777

NOTES:

[1] Typical or average values

[2] ASTM D4716; using normal stresses of 240, 360, and 720 lb/sq ft; hydraulic gradients of 0.04, 0.5, and 1, respectively; and HDPE geomembrane material below geocomposite and loamy soil material above geocomposite.

B. Provide Poly-Net 4000 heat bonded with Trevira 1145 geotextile filter fabric as furnished by National Seal Company of Aurora, Illinois, or equal.

PART 3 EXECUTION

3.1 GEOCOMPOSITE PLACEMENT AND HANDLING

A. Handle all geocomposite in such a manner as to ensure it is not damaged in any way. Follow manufacturer's written instructions.

B. Install geocomposite with the machine direction parallel to the lines of maximum slope. Geocomposite rolls shall be numbered similar to the rolls indicated on the layout plans.

C. Geocomposite rolls shall be of such length as to extend from the anchor trench at the top of slope to the toe of slope in a single continuous section. Cross-slope seams or breaks in the continuity of the geocomposite on the side slope are not permitted.

D. Completely cover geocomposite with a minimum 12-inch thick layer of earthen material within 20 days of removing protective wrapping from geocomposite.

E. In the presence of wind, geocomposites shall be weighted with sandbags or equivalent. Such sandbags shall be installed during placement and shall remain until replaced with earthen cover material.

F. Cut geocomposites using an approved cutter only. If in place, take special care to protect geomembrane from damage which could be caused by cutting of geocomposites.

G. During placement, take care not to entrap in geocomposite stones, excessive dust, or moisture that could hamper subsequent seaming. If geocomposite is not free of debris and soil prior to installation, Installer shall clean geocomposite prior to installation.

H. Examine geocomposite over entire surface, after installation, to ensure that no potentially harmful foreign objects, such as needles, are present. Remove any foreign objects so encountered, or remove geocomposite from the Site and replace.

I. Take precautions against "snowblindness" of personnel if light or white-colored geotextile is used for the geocomposite.

J. Do not weld or tack weld geocomposite to the underlying geomembrane.

3.2 GEOCOMPOSITE CONFORMANCE TESTING

A. Samples of geocomposite delivered to Site may be collected for testing to confirm conformance with geotextile and geonet properties in Part 2 of this Section, at the Resident Engineer's discretion.

B. Samples, if required, shall be taken across entire width of geocomposite roll and shall not include the first three (3) feet. Samples shall be three (3) ft long by roll width. Machine direction shall be marked on sample with an arrow. Include in the roll length sufficient material to reach from anchor trench to anchor trench and allow a sample to be taken in the first and last 10 feet.

C. Samples of on-site geocomposite, when required, shall be taken at rate of one per lot or one per 100,000 sq. ft, whichever is less.

3.3 GEOCOMPOSITE SEAMS AND OVERLAPS

A. Overlap the geonet portion of geocomposite approximately two (2) to four (4) inches where adjacent rolls abut. Join the geonet by plastic ties every five (5) ft along the roll length six (6) inches along end to end seams and in anchor trench, or by methods meeting Manufacturer's written recommendations for joining geocomposite material.

B. Overlap the geotextile portion of the geocomposite a minimum of two (2) inches. Continuously sew or thermally bond the geotextile portion.

C. Perform any sewing using polymeric thread with chemical resistance properties equal to or exceeding those of geotextile.

D. Anchor geocomposite materials in anchor trenches with geomembrane as indicated on the Drawings.

3.4 GEOTEXTILE REPAIR

A. Repair any holes or tears in geotextile as follows:

1. A patch made from same geotextile shall be thermally bonded into place.

2. Should any tear exceed 10% of width of roll on a sideslope, that roll shall be removed from slope and replaced.

3.5 PLACEMENT OF EARTHEN MATERIALS OVER GEOCOMPOSITE

A. Place all earthen materials, such as Loamy Soil, located on top of geocomposite in such a manner as to ensure:

1. No damage to geocomposite or underlying geomembrane.

2. Minimal slippage of geocomposite on underlying layers.

3. No excess tensile stresses in geocomposite.

4. No unnecessary wrinkles in geocomposite or geomembrane.

B. Place Loamy Soil material over geocomposite by pushing material out over geocomposite ahead of equipment in 12-inch thick loose lifts in accordance with Section 02210. On sideslopes, earthen material placement shall begin at toe of slope and proceed upslope to top of slope. Equipment used to install earthen material over the geocomposite shall have a maximum contact pressure of 10

pounds per square inch (psi) on earthen material. Thickness of earthen material over geocomposite shall be 12 inches or more before tracked equipment used to place earthen material shall be permitted to cross areas where geocomposite has been installed. On access roads and slopes less than 12 percent, thickness of cover material over geocomposite shall be a minimum of two (2) feet before vehicles with contact pressure greater than 10 psi shall be permitted to cross areas where geocomposite has been installed.

C. On slopes steeper than 12 percent, only Caterpillar Model D4 dozers, or equal, will be permitted based on overall weight and track pressure regardless of cover thickness over geosynthetics. Dozers shall not work within 100 feet horizontally of each other in the same reach between slope benches. Avoid excessive braking and braking in a down slope direction during and following soil placement operations.

END OF SECTION 02779

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 45 - Answers to Contractors' Questions

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

Question 1

Is a Performance and Payment Bond required, and if so, what form of security is acceptable, i.e., Treasury Listed, etc.

Answer

A Performance and Payment Bond is not required by the City.

Question 2

It was stated that "No off-site disposal will be allowed." Does it mean that spent protective clothing, miscellaneous trash, etc. will be disposed of on site?

Answer

Spent protective clothing, miscellaneous trash, etc. shall be disposed of offsite. Construction-related materials (e.g., debris from demolition work, unsuitable soils) shall be disposed of onsite; in other words, shall not leave the Site. The Site has been classified as an Inactive Hazardous Waste Site Class 2 - Significant threat to public health and the environment - because the New York State Department of Environmental Conservation

possessed information that hazardous waste was disposed of at the landfill. As such, any material obtained and/or unearthed from the landfill shall remain onsite.

Question 3

It was stated that no permits will be required of the Contractor. Does it include general construction permits, discharge permits, wetland permits, fuel storage permits, or any waterfront/USACOE permitting?

Answer

The New York State Department of Environmental Conservation will not require the Contractor to obtain all permits normally needed to complete a job of this type. However, the Contractor will have to work in the "spirit" of the permits, i.e., apply for the permit, fill out the required forms, and submit to the NYSDEC all forms without fees for review. The permits will not be issued. Contractor is required to obtain New York City permits, but no fees will be assessed. New York City permits will be issued.

Question 4

Will work be allowed to proceed on a 24-hour-per-day, 7-day-per-week basis if required by the Contractor?

Answer

Normally, construction does not occur on a 24-hour basis. However, if the Contractor can show a considerable advantage in time and money saved by a 24-hour work day, the proposal will be seriously considered. Normal approved hours for construction are 7 AM thru 6 PM monday thru friday. Any time after that will require written permission from the Commissioner.

Question 5

For process design of the landfill gas flare system, what is the Methane Percentage and BTU content expected for gas extraction?

Answer

Methane Percentage expected for gas extraction is 54 percent by volume.
BTU content expected for gas extraction is 540 BTU/scf.

Question 6

Will an extension of time for the bid due date be granted if requested?

Answer

An extension of time for the bid due date will not be granted, if requested. However, the bid due date has been changed from May 24, 1994 to June 7, 1994 as per Addendum No. 14.

Question 7

During waste excavation, if high levels of Methane Gas release is encountered which would require equipment operators to upgrade personal protective equipment from Level "D" to Level "C" or "B", how will the Contractor be compensated for these additional costs?

Answer

The Contractor shall be aware of the inherent nature of the Work and price his bid accordingly and, under certain conditions, Section 00100 Information for Bidders and Contract Agreement, Chapter VI, Article 25 will apply.

Question 8

Under General Conditions, Schedule "A", subcontracting is not to exceed 40% of contract price. Would the procurement of the liners on an installed basis be considered a material purchase?

Answer

The procurement of the liner on an installed basis would be classified as subcontracting work. The total price for the subcontracting work will be used for the MBE/WBE percentage goals (if qualified). For the 40% subcontracting limit, only the installation cost and not the material cost will be considered.

Question 9

Section 02221, Page 3, Part 3, Item 3.2 - Transportation. This section states that there may be a limit imposed for the total daily transportation (import) of offsite borrow material. Please advise as to what this limit (if any) will be.

Answer

There will be no imposed limit on the total daily import of off-site borrow material.

Question 10

Reference Item #9 Gas Extraction Wells. On drawing sheet GS.3 Detail 2 (gas extraction well detail) indicates to work this detail with drawing GS.1 which has on it the Gas Extraction Well Schedule.

A. Is the well depth indicated on the schedule the depth of the well measured from the 60-mil HDPE geomembrane liner to the bottom of the well? Or is the well depth measured along the PVC pipe length?

B. Or do we work the schedule and detail by inserting the liner footage at the indicated portions?

Example EW-1, Well depth 45 LF
Slotted Pipe Length 23 LF
Solid Pipe Length 23 LF

Depth Varies (see Gas Extraction Schedule)	23	LF
Bentonite Pellet Plug	2	LF
Soil Backfill	1	LF
Crushed Stone	1.5	LF
Perforation Length Varies (see Gas Extraction Schedule)	23	LF
Crushed Stone	1	LF
	51.5	LF?

Answer

A. The well depth is measured from the 60-mil HDPE geomembrane liner.

B. Backfilling is independent of the depth of the extraction well. See drawing entitled "Revised Detail 2, Contract Drawing GS.3", on page 66 of this package. The revised detail addresses modifications below the 60-mil HDPE geomembrane liner only.

Question 11

Section 01025 Measurement and Payment page 01025-2 item J states gas extraction and monitoring wells will be paid on a unit price per linear foot basis, complete in place.

However, item 9 gas extraction well and item 10 gas monitoring well are paid by the each. Please clarify as to which is correct.

Answer

Refer to Addenda Nos. 22 and 49 for revised versions of Specification Section 01025 and Bid Form, respectively.

Question 12

Section 01025 Measurement and Payment page 01025-3 items R and U state that material will be paid on a unit price per ton basis, compacted to specifications, in place. However, item 15 crushed aggregate base course and items 19, 20, 21, 22, and 23 Rip Rap are paid by the square yard. Please clarify as to which is correct.

Answer

Refer to Addenda Nos. 22 and 49 for revised versions of Specification Section 01025 and Bid Form, respectively.

Question 13

Section 01025 Measurement and Payment page 01025-2 item L states that topsoil stripping will be paid on a per cubic yard basis. Does Item #11 excavate cover soil include this quantity?

Answer

Refer to Addendum No. 22, revised Section 01025, Item #10 and Item #15.

Question 14

Section 02210 Earthwork page 02210-3, Part 3 Execution, 3.1 Preparation outlines a procedure for excavating and grading of the existing landfill area. Will this procedure be followed? If so, does Item #11 include all of this excavation? This procedure also appears to be in conflict with Detail D5 shown on sheet C.8 which shows a 9" min. soil cover over the waste layer.

Answer

Refer to Addendum No. 22, the specification and procedure have been revised.

Question 15

Reference the geocomposite specification Part 2, Paragraph 2.1B. Could you please define the minimum property value required for peel strength. Is this a minimum average roll value, a minimum based on the average results from any sampling unit (per ASTM D4769-88), or the minimum of any single peel test result? The latter definition causes extreme difficulty for manufacturers due to the variable nature of the peel test.

Answer

The minimum property value required for peel strength is the minimum average roll value.

Question 16

Refer to Section A Cover Page and Invitation to Bid instructions, p. 1, and Schedule "A", p. 000257: with regards to the performance and payment bonds, what is the meaning of N/AP?

Answer

N/AP stands for Not Applicable. A Performance and Payment Bond is not required by the City.

Question 17

Refer to Add. #1 thru #13 and the BID FORM pages 1 thru 7: There are several new "items" of work (i.e., water main relocation, warm season grass and wildflower seed drilling, live stakes, etc.) which have been added by addenda for which there are no bid items. Please add items to the BID FORM or describe how the Contractor is to be compensated for these additions.

Answer

Refer to Addendum No. 49 for revised Bid Form.

Question 18

Refer to p. 000014, TABLE OF CONTENTS p. xiv: Reference is made at bottom of the page to "CONTRACTOR'S QUALIFICATIONS". Gentlemen, we picked up 3 sets of bid documents and none has p. 000578 and 000579. Please provide us with these pages A.S.A.P.

Answer

Contractor's Qualifications is provided as Addendum No. 17.

Question 19

Refer to p. 000585, Section 01010, p. 01010 - 3 and 4: In Art. 1.4, A.2. (actually starts on p. 000584) reference is made to "A second access...". Shall this entrance be available for Contractor's use.

Answer

The second access, located at the northern end of the landfill, is available for Contractor's use provided that the Contractor ensures Site security and prevent unauthorized entry, vandalism, or theft as specified in paragraph 1.10 of Section 01510 (page 626 of the Specifications).

Question 20

Refer to p. 000588, Sect. 01025, #1.4, B: There seems to be a conflict between # 1.4.B and #/§ 36. UNIT PRICE CONTRACTS, of the info. for bidders and constr. agreement on p. 000035 and 000036. Please clarify. Without clarification we shall assume that the "...unit sum/prices contracted." shall prevail.

Answer

The statement in paragraph 1.4B of Section 01025 has been modified as per Addendum No. 22. The requirements of paragraph 36 "UNIT PRICE CONTRACTS" of the Information for Bidders and Construction Agreement on p. 000035 and 000036 shall prevail. In other words, the Contractor will be compensated at the unit price bid in the Bid Form up to 125 percent of the estimated quantities listed on the Bid Form. If the actual quantities exceed 125 percent of the estimated quantities listed on the Bid Form, the requirements of paragraph 36 of the Information for Bidders and Construction Agreement will be enforced.

Question 21

Refer to p. 000589, Sect. 01025, p. 01025-2: it seems rather odd to pay for "earthwork....on a unit price per cubic yard basis, compacted to specifications, in place" as indicated in #K. Likewise for #L with regards to topsoil and cover soil materials stripping. In #L reference is made to agreeing to a depth prior to excavation. This subject was raised at the mandatory pre-bid meeting on 9 May 1994 and those in attendance were told the Owner's

representative(s) would look into this. It seems to me the most practical way would be to measure excavation at the cut. Please clarify.

Answer

Refer to Addendum No. 22, revised Section 01025.

Question 22

Refer to p. 000590, Sect. 01025, p. 01025-3: "N. Borrow excavation and transportation will be considered subsidiary to the Work." Please describe how measurement shall be made for compensation of borrow excavation. It is normal to pay for borrow excavation by sections in the borrow pit.

Answer

Refer to Addendum No. 22, revised Section 01025; cross-sectioning the borrow pit would require a dedicated pit, the Engineer has opted to install soil depth indicators to determine the soil thickness.

Question 23

Refer to p. 000590, Sect. 01025, p. 01025-3: My comments, regarding excavation, in Questions 21 and 22 above would also apply to # O regarding handling of waste.

Answer

Refer to Addendum No. 22, revised Section 01025.

Question 24

Refer to p. 000590, Sect. 01025, p. 01025-3, # R: Paying for crushed aggregate base course on a per ton, compacted, basis an only lead to problems. There will be constant disagreement regarding the factors. The BID FORM, p. 2, Items 15 and 16, it says that this material is paid by the square yard. A much more practical way. Please clarify.

Answer

Refer to Addenda Nos. 22 and 49 for revised versions of Specification Section 01025 and Bid Form, respectively.

Question 25

Refer to p. 000590, Section 01025, p. 01025-3, # U: How can you pay for Rip Rap per ton, in place? Bid Form Item 19, 20, 21, 22, and 23. It's by the square yard. A much more practical way. Please clarify.

Answer

Refer to Addenda Nos. 22 and 49 for revised versions of Specification Section 01025 and Bid Form, respectively.

Question 26

Refer to p. 000589, #1.5 MEASUREMENT OF QUANTITIES and the BID FORM: The more I read the more problems I see. Please compare the methods of payment on the Bid Form with those on p. 000589 to 000591. Seems to be some differences. Please clarify.

Answer

Refer to Addenda Nos. 22 and 49 for revised versions of Specification Section 01025 and Bid Form, respectively.

Question 27

Refer to p. 0000594, Sect. 01026, P. 01026-2, # 1.4.D: In the 4th line reference is made to "... Article 40b of Section 00100" which relates to LBE or maybe it's Article 40b on p. 000007/000087 which relates to certification of prices.

Answer

"Article 40b of Section 00100" refers to Certification of Prices, page 000087 of the Specifications.

Question 28

Refer to p. 000643, Sect. 01590, #3.2.B: In #1.2.A it states that field offices for the Engineer, Resident Engineer and NYSDEC shall be provided under separate contract. At the mandatory pre-bid it was disclosed that the Contractor for 876-HP would assume responsibility (I guess that is the word) at $575.00/mo/ea. In # 3.5.B it states that the Contractor shall insure the trailers.

Answer

The answer to this question is addressed in Addendum No. 25.

Question 29

Refer to Bid Form, p. 1, Item 1: Is there a maximum amount that a Contractor can bid on Item 1, General Requirements? If there is could you please call it to my attention as I have been unable to find a maximum.

Answer

There is no maximum amount that a Contractor can bid on Item 1, General Requirements. However, all bids will be reviewed to ensure that they are not "front-end" loaded. Refer to Section 00100, Article 22, REJECTION OF BIDS.

Question 30

Refer to p. 000671, 02210-2, # 2.1.B: In the space between subparagraphs A & B it appears as though someone has written in something about topsoil. It is difficult to read! If it does in fact belong there please tell us what it is supposed to say. Please make it legible.

Answer

Disregard handwritten notes in paragraph 2.1B of Section 02210.

Question 31

Refer to Addenda # 13: Note 5 on the NEW TEMPORARY [24"] WATER MAIN. Drawing refers to the shut down time of the existing main being kept at "...an extreme minimum." Unless otherwise informed by addenda prior to bid we shall assume that we can shut down at the Contractor's option and/or convenience keeping in mind the"... extreme minimum."

Answer

The shut down time of the existing water main should be kept to an extreme "minimum" not to exceed a continuous two hour period.

Question 32

Refer to Bid Form, Item 1: I see no method of payment for item 1. Normally the Owner sets forth a schedule of payment. Attached is a copy of the schedule of payment for the recently bid Fresh Kills Landfill Project.

Answer

After the award of the Contract, the Contractor will produce a Detailed Estimate Breakdown. The Detailed Estimate Breakdown will contain all items that are covered in the lump sum price (Bid Item No. 1). It will also contain all unit price items found on the Bid Form. The City will review and approve the Detailed Estimate Breakdown. Once approved, the Detailed Estimate Breakdown will become the basis for all partial payments submitted by the Contractor.

Question 33

Refer to sheets 21 and 23/28. Horizontal perimeter gas collection pipe, Section 02715 and Bid Form p. 4, Item 31: Item 31 indicates the horizontal perimeter gas collection pipe is 4" HDPE. The pipe is sown on sheet 21/28 as being a 4" HDPE CORRUGATED GAS COLLECTION PIPE. On detail 4 of sheet 23/28 this pipe is shown as a 6" HDPE pipe. Which size is correct? Also, there is nothing to indicate if this pipe is solid or perforated. Further, are the joints on the horizontal perimeter gas collection pipe to be fusion welded, coupling (as shown on detail 4) or slip-on?

Answer

The horizontal perimeter gas collection pipe shall be 4-inch diameter, HDPE perforated and corrugated pipe. Joints on the horizontal perimeter gas collection pipe shall be fusion welded. See drawing entitled "Revised Detail 4, Contract Drawing GS.3", attached on page 67 of this package to reflect changes to the diameter of the pipe as well as the connecting tee.

Question 34

Refer to p. 000710, Sect. 02715, p. 02715-4, # 2.5.A: Do you really want "... a 2-inch thick...." metallic-lined tape? Perhaps it should be 2-inch wide. Please clarify.

Answer

The metallic-lined warning tape shall be 2-inch wide.

Question 35

Refer to sheet 23/28, Detail 2: How does one put a 4" test port on a 4" x 4" x 3" PVC tee?

Answer

Change "4" TEST PORT" to "3/4" TEST PORT".

Question 36

Refer to p. 000713, Sect. 02715, p. 02715-7, # 3.8: The Contractor is responsible for testing "...all the gas pipes." One of the required tests is the pressure test. How do you do a pressure test on a perforated pipe? How do you do a hydrostatic test on the perforated pipe?

Answer

Pressure testing shall be conducted on all solid portions of the gas pipes.

Question 37

Refer to p. 000710, Sect. 02715, p. 02715-4, #2.6: A 12" diameter or 16" diameter steel pipe is to be provided at road and swale crossings. There is no drawing showing the size required at each location. Is the purpose of this pipe to act as a sleeve or is it to be connected, at either side of the crossing, to the "through" pipe?

Answer

For gas pipe diameters of three (3) to eight (8) inches, use a 12-inch diameter Schedule 80 carbon steel pipe (i.e., sleeve). For gas pipe diameters larger than eight (8) inches, use a 16-inch diameter Schedule 80 carbon steel pipe (sleeve). Each sleeve shall be a minimum of 20 ft long. The gas pipe shall be centered in the sleeve with supports at minimum 10 ft spacing. The annular space between the gas pipe and the sleeve shall be filled using Structural Backfill material specified in Section 02210 of the Specifications, paragraph 2.1D.

Question 38

Refer to sheets 14 and 17/28, SEDIMENTATION POND B-PLAN, NEW CURTAIN DRAIN DETAIL 1 and NEW 6" DIAMETER PIPE CONVEYANCE TRENCH DETAIL 2: What is the type of pipe to be used in the conveyance trench, solid or slotted? Is the conveyance pipe to be included with Item 40, curtain drain? If not please indicate payment

method for the conveyance pipe.

Answer

The pipe in the conveyance trench shall be 6-inch diameter solid HDPE as shown on Sheet 17 of 29, Detail 2. Refer to Addenda Nos. 22 and 49 for revised versions of Specification Section 01025 and Bid Form, respectively.

Question 39

Refer to Bid Form, Item 42 and Sheet 3/28: On Bid Form p. 5 the Spec. No. for Item 42 is 02722. This spec. sect. refers to reinforced concrete piping. The description is "Reconstruction of Sewer (30" RCP)". The only item for new RCP seems to be Item 40 which is for 24" diameter RCP. Section 02722 refers only to 24" diameter RCP. Is it possible that something got a bit messed up and the spec. no. for Item 42 should be 02766 rather than 02722 and that the existing 30" diameter RCP should be lined as is Item 43, Sect. 02766, Reconstr. of Sewer (72" RCP)? In the event it is a new 30" diameter RCP from MH-1 to MH-4 how will the Contractor be compensated?

Answer

Refer to Addendum No. 49 for revised Bid Form.

Question 40

Refer to sheets 6, 7 and 8/28: The notes indicate that Woodward-Clyde anticipated settlement. Please provide the Contractor with the amount/depth of settlement W.C.C.I. anticipated.

Answer

Based on recent landfill settlement rates (1987-1992), WCCI is anticipating an average of about two (2) feet of settlement in the upper reaches of the landfill between October 1992 and June 1995.

Question 41

Refer to drawings and specifications: Is it necessary to excavate the existing cover soil in the fill area?

Answer

Yes. The waste material must be graded first.

Question 42

Refer to Sheets 6, 7 and 8/28: There is a note w/leader which indicates Estimated Top of Waste Surface. Please describe the meaning of Estimated Top of Waste Surface. Is this the top of the MSW or is it the top of the existing cover material.

Answer

Estimated top of waste surface is the estimated top of landfill refuse (which you refer to in your question as Municipal Solid Waste). It was estimated based on a limited amount of data (approximately 50 test pits and borings).

Question 43

Refer to Section 02910: On p. 02910-13 there is reference to WOOD EDGING AND GRAVEL. Reference is also made to these items, plus others, as being shown on the drawings. I have only one (1) landscaping drawing, that being Sheet 27/28, LANDSCAPE PLAN, which shows the location, only, of the Vegetation Islands. Please provide the Contractor with the necessary drawings to bid and build the project.

Answer

Section 02910, paragraph 2.8 "WOOD EDGING" and paragraph 2.9 "GRAVEL" are not necessary and shall be deleted in their entirety. Sheet 27/28 of the Drawings "LANDSCAPE PLAN" has been revised as per addendum No. 40.

Question 44

Refer to Section 02930, 02940 and Bid Form p. 6, Item 54: The word "Meadow" is used throughout. Please define "Meadow" with regard to its use in these specifications. Next, I am confused, along with others, on when to seed, with which seeds and how payment will be made. I realize there is one seeding item, Item 54, but do not understand how many or what to seed with, not to mention how the Contractor gets paid. Please clarify!

Answer

The term "Meadow" refers to all areas of the final cover other than the vegetation islands.

The proper seed to use is defined by Section 02930, paragraph 2.3 H: Meadows. Payment for seeding will be covered under Bid Item 1 in a lump sum price.

Question 45

Refer to Section 02950: I reckon someone must know the various species and sizes of the trees and shrubs described, but, I can't seem to find the list. Please, help!

Answer

The species, sizes, and number of trees and shrubs required are located on Drawing LS.1R1 (issued as per addendum No. 40) in addition to Section 02960 Live Stakes.

Question 46

A. You should ask the engineer about the Bentonite Pellets for the seal in the gas extraction holes. The standard practice in the field is to use Bentonite Chips because the annular space is so large between the outside of the 4 inch pvc pipe and the wall of the 36 inch diameter hole and the void space in the landfill waste will take many more buckets of pellets. See Section 02169, Part 2, item 2.2 A & B. This specification is written for monitoring wells, not landfill gas extraction wells. Item 2.2 A reads "less than one-half the width of the annular space". Pellet sizes are small 3/8 inch diameter, 1/2 inch diameter, etc.

B. Item 2.2B says "Tremie method". The annular space will be so large that tremie method is not a standard practice. Also "30 minute set time before placement of any grout". No grout is specified on the drawings for the gas extraction wells. Also see part 3, 3.2 Item E. "backfilling with bentonite pellets."

Answer

A. Bentonite chips are acceptable in lieu of the specified bentonite pellets for the gas extraction wells. The chips shall be hydrated during installation. For gas monitoring wells, bentonite pellets shall be used.

B. No grout shall be used in the installation of the gas extraction wells. Grout shall be used in the installation of the gas monitoring wells (refer to Detail 1, Sheet 23 of 28).

Question 47

A. It is not clear how we will be paid for the well installation, by each or by the foot.

We have been pricing by the foot.

B. What happens because of field conditions, leachate in hole, construction debris, refusal, etc. and you have to abandon the hole and redrill, cut the hole short or go beyond the depth specified? Are there adds and deducts? Is there an abandon well price?

C. The bottom of the well in the drawings show a 1 foot distance between the bottom of the cap and the top of the casing point. Is this distance added into the footage on sheet 21 of the drawings? Is the hole depth measured from the steel tip which may be another 2 feet, plus or minus? Is the total depth of the hole measured from the 60 mil HDPE Geomembrane to the tip of the driver point? There is an additional few feet of Schedule 80, 4" Diameter PVC riser pipe above the 60 mil HDPE Geomembrane to the well head. We would price to the 60 mil HDPE Geomembrane and put a cap on top.

D. The stone for the slotted well section should be clean, washed stone. Non-washed stone may clog up the slots. It does not specify.

E. Under Material Disposal, Part 3, Item 3.4 A & B. If drilling the hole with Standard industry methods, landfill buckets or augers, there may be liquids that come to the surface. How do you want these liquids contained and who will dispose of the contaminated materials? The spec's say, the liquids be considered contaminated unless we can show otherwise? There should be no well development for the gas extraction wells?

F. If we do not cover all of the potential questions now and leave something out, how will we handle additional questions at a later date, prior to bid opening?

Answer

A. Refer to Addendum No. 22, revised Section 01025.

B. Refer to Section 00100 Information for Bidders and Contract Agreement, Chapter VI, Article 25.

C. Refer to Question 10, above.

D. Stone for the slotted well section shall be washed crushed stone as per addendum No. 26 and drawing entitled "Revised Detail 2, Contract Drawing GS.3", attached on page 66 of this package.

E. The Contractor shall be responsible for the collection and disposal of liquids generated during the installation of the gas extraction and monitoring wells. Disposal

shall be in accordance with Sections 01528 and 02222 of the Specifications. There shall be no well development for the gas extraction wells.

F. The City will entertain additional questions from contractors but does not guarantee written responses in the form of an addendum given the relatively short period of time remaining until the bid date. Outstanding issues will have to be resolved with the City during negotiation upon award of the Contract.

Question 48

Refer to Sheet 28/28, Proposed Construction Schedule: Must the Contractor strictly adhere to this schedule?

Answer

No, the Contractor should not strictly adhere to this schedule. The schedule is a Proposed Construction Schedule prepared by the Engineer and reflects the Engineer's understanding of the project. Contractor shall submit his own construction schedule as specified in Section 01310 of the Specifications.

Question 49

Refer to various specifications regarding topsoil: On p. 02910-10, # 2.1C, it states "All topsoil shall be free from subsoil, clay, brush, weeds, stones larger than one (1) inch diameter..." On p. 02920-1, # 2.1A it states "..., stones larger than two (2) inches materials..." Refer to p. 000672, p. 02210-3, # 2.1 E it states "Topsoil meeting the requirements of NYSDOT 713.01." Please clarify which topsoil specification is to be used for this project.

Answer

Section 02910, paragraph 2.1 "TOPSOIL": This specification applies to the vegetation islands and other areas of tree and shrub planting only. Section 02920, paragraph 2.1 "TOPSOIL": This specification applies to all remaining areas of the landfill cover (i.e., applies to the 6-inch thick layer of topsoil comprising the 30-inch thick landfill cover above the geomembrane liner). Section 02210, paragraph 2.1 E "Vegetated Topsoil" shall be deleted in its entirety (refer to addendum No. 21).

Question 50

Refer to p. 02910-10, # 2.1A: If stripped topsoil from the site does not meet the topsoil specification (see question 49 above) is it to be amended or does it become cover material?

Answer

No, Refer to Addendum No. 22, revised Section 01025.

Question 51

Section 02779, Paragraph 2.1B. Is the listed minimum peel strength of 2 (two) pounds per inch (lb/in) ASTM D413 interpreted as Minimum Average Roll Value (MARV) acceptable?

Answer

Yes.

Question 52

Section 02779, Paragraph 2.2A. The table lists the performance parameters for transmissivity as $2x10^{-4}$ m^2/sec without specifying product thickness. Are we correct in assuming that a product of sufficient thickness to meet the specified transmissivity under the stated conditions would be acceptable?

Answer

Yes, provided the product also meets other requirements of the Specifications.

Question 53

A. Under what payment item does Geogrid get paid?

B. The quantities for item No. 36 - 24"Pipe and item 37 - 30" Pipe seem to be inaccurate based on the drawings we received.

Answer

Refer to Addendum No. 22, revised Section 1025 and Bid Items #68 and 69.

Question 54

A. Gas Extraction and Monitoring Wells

1. What is the basis of payment? The Measurement and Payment Section of the Specs (#1025, Para. J) states "per linear foot", while Bid Form Items 02169 state units are "each."

2. If payment is to be via LF, define upper and lower payment limits.

3. Our gas wells' subcontractor advises that the 36" steel casing and drivepoint is not industry standard practice. He requests a change to the standard method - using either a landfill bucket rig or auger rig to advance the hole. Please advise if this is permissible.

4. Our sub also requests permission to use bentonite chips rather than the specified pellets to seal the extraction holes. The annular space to seal is quite large and the chips, which are larger than the pellets, provide for a faster installation without comprising quality of the seal.

Answer

A1. Refer to Addendum No. 22, revised Section 01025.

A2. Refer to Addendum No. 22, revised Section 01025.

A3 The use of either a landfill bucket rig or auger rig to advance the hole will be allowed. Refer to addendum No. 26, paragraph 2.

A4 Question similar to that in Question 46A, above.

Question 55

A. Other Conflicts in Payment Units between "Measurement and Payments" (Section 01025) and Bid Form

1. Underground Storage Tank Abandonment - L.S. v. Ea.
2. Geosynthetics - SF v. SY
3. Crushed Aggregate Base - SY v. Ton
4. Rip Rap - SY v. Ton
5. Well Abandonment - L.S. v. Ea.
6. Fence and Gate Removals - L.S. v. LF or Ea.

Answer

Refer to Addenda Nos. 22 and 49 for revised versions of Specification Section 01025 and Bid Form, respectively.

Question 56

A. Scope Clarification between Paragraph L of "Measurement and Payment (Section 01025) and Bid Form

1. Para. L. states that test pits are to be excavated to determine thickness to be excavated.

a. How many test pits will be required?

b. Test pits will determine depth of existing cover soil, as well as topsoil?

2. Item 11 "Excavate Cover Soil"

a. Cut to stockpile of existing topsoil and cover soil?

b. After cut and fill of waste, does this item include placement of 9" of Class II soil?

c. Is the subsequent placement of loamy soil and topsoil from the on-site stockpile, paid separately under Items 13 and 14? The term "Imported" in the Bid Form description is confusing.

Answer

Refer to Addenda Nos. 22 and 49 for revised versions of Specification Section 01025 and Bid Form, respectively.

Question 57

Detail 4 Sheet No. 23 indicates 6" HDPE horizontal gas collection pipe. Sheet No. 21 indicates 4" HDPE corrugated gas collection pipe. Please clarify as to the proper size of this piping?

Answer

Question similar to that in Question 33, above.

Question 58

A. Addendum No. 3 deleted Specification Section 02936 in its entirety. However, items 54 and 55 in the proposal which refer to Spec No. 02936 were not deleted. Are these items still included in the proposal? Also Specification Sections 02910, 02930, 02940, 02950 and 02960 which were added by addendum and relate to landscaping work. Should these items of work be included in items 54 and 55? Where is the contractor paid for this work?

B. Also, Specification Section 02950 plant material outlines trees and shrubs to be planted. Will a planting schedule be issued for this project?

Answer

A. Refer to Addenda Nos. 22 and 49 for revised versions of Specification Section 01025 and Bid Form, respectively.

B. Refer to Drawing LS.1R1 (Addendum No. 40).

Question 59

Drawing GS.3: Section 4: Do you want the crushed stone base material for the horizontal gas collection pipe wrapped with geotextile? If yes, under which item will payment be made?

Answer

No, the crushed stone base material for the horizontal gas collection pipe shall not be wrapped with geotextile.

Question 60

Item 36: Pipe (24" HDPE, SDR21, Corrugated) and Item 37: Pipe (30" HDPE, SDR21, Smooth) have substantial underruns in quantity. Is there piping that is not shown on these plans?

Answer

No, there is no piping not shown on these plans. Refer to Addendum No. 49 for revised Bid Form.

Question 61

Volume Number 1. Addenda to Contracts: Many changes are made in the Specifications and a new drawing showing a Water Main is included. Are there changes to the bid items? Are new bid items added? Where is payment for the water main to be included?

Answer

Yes, refer to Addendum No. 49 for revised Bid Form.

Question 62

Much mention is made in the Landscaping Specifications to plant materials, example: trees, shrubs, and plants. The only trees or shrubs to be listed on the drawings are in note 5 on Sheet GS.3. Is it your intent to include other planting on the vegetation islands? If so, where would payment be made? Also a list of materials with sizes would be required.

Answer

Refer to Addenda Nos. 22 and 49 for revised versions of Specification Section 01025 and Bid Form, respectively. Refer to Drawing LS.1R1 (Addendum No. 40).

Question 63

Is the project a Superfund site project?

Answer

No, the project is not a Superfund site project. Refer to page 585 of the Specifications, Section 01010, paragraph 1.4B for background information on the Site.

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 46 - Specification Section 13141

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Add Section 13141 - Temporary Storage Structure to the Detailed Specifications of the Contract Documents. This section includes the following:

   A. Earthwork
   B. Cast-in-Place Concrete
   C. Unit Masonry
   D. Rough Carpentry
   E. Building Insulation
   F. Asphalt Shingle Roofing
   G. Flashing and Sheet Metal
   H. Overhead Coiling Doors
   I. Finish Hardware
   J. Gypsum Board
   K. Painting and Finishing
   L. Louvers and Vents
   M. Electrical

2. The Drawings associated with the construction of the Temporary Storage Structure are attached at the end of this package (Drawings TSS.1, TSS.2, and TSS.3).

SECTION A
EARTHWORK

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Foundation excavation for installation of footings.

B. Preparation of subgrade.

C. Grading.

D. Fill and backfill.

PART 2 PRODUCTS

A. Satisfactory Soil Materials: soils complying with ASTM D2487 soil classification groups GW, GP, GM, SW, SP and SM, subject to approval of the Engineer.

B. Backfill and Fill Materials: Satisfactory materials, as shown on contract documents.

PART 3 EXECUTION

A. Soil Excavation: Excavate to firm undisturbed soil at elevation, shown on Drawing.

B. Compaction: Compact subgrade to achieve specified percentages of maximum dry density.

C. Grading: Provide uniform, smooth grading on all areas, including excavated and filled sections and adjacent transition areas.

D. Field Quality Control:

1. Geotechnical engineer to inspect and approve the following:

a. Soil materials.

b. Foundation subgrade.

c. Construction below finish grade.

d. Contractor's compaction methods.

2. Field Tests:

   a. Field density tests.

END OF SECTION A

SECTION B
CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Formwork.

B. Reinforcing.

C. Concrete materials, mixing, placing, and curing.

D. Concrete accessories.

PART 2 PRODUCTS

2.1 FORMWORK

A. Plywood, metal, or other panel-type material providing continuous smooth surfaces, non-reactive with form release agent or water.

2.2 REINFORCING

A. Bars: ASTM A615, Grade 60.

B. Steel Wire: ASTM A82.

C. Welded Wire Fabric: Welded steel; ASTM A185.

2.3 CONCRETE

A. Portland cement: ASTM C150, Type I.

B. Normal weight aggregate; ASTM C33.

C. Water: Clean, fresh and portable.

D. Admixtures:

1. Only use admixtures which have been tested and accepted in mix designs.

2. Types:

a. Air entraining: ASTM C260.

b. Water-reducing: ASTM C494, Type A.

2.4 CURING MATERIALS

A. Liquid membrane forming compound: Comply with ASTM C309.

2.5 MIX DESIGNS

A. Minimum compressive strength: 3,000 psi @ 28 days.

B. Concrete Air Entrainment shall be 6%.

PART 3 EXECUTION

A. Install forms in accordance with ACI 301, except for more stringent requirements of these specifications.

1. Forms for the exposed concrete:

B. Placing Reinforcing: Comply with CRSI recommended practice for "Placing Reinforcing Bars".

C. Mix and place concrete according to ACI 301 and 304.

D. Curing: Comply with requirements of ACI 301.

END OF SECTION B

SECTION C
UNIT MASONRY

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Concrete masonry units for interior masonry wall construction.

B. Mortar and grout.

C. Reinforcing and accessories.

D. Fire Rated Construction: Provide assemblies identical to those listed by UL or tested according to ASTM E119.

PART 2 PRODUCTS

2.1 CONCRETE MASONRY UNITS (CMU)

A. Medium-weight load-bearing CMU, Type I, Grade N.

B. Lightweight load-bearing CMU, Type I, Grade N.

C. Size: Nominal 16"L x 8"H x thickness as indicated.

D. Do not use masonry units which have chips, cracks, voids, discoloration or other defects which might be visible or cause stains in finished Work.

E. Provide fire-rated units where required.

2.2 MORTAR AND GROUT

A. Mortar: Portland cement, Type N.

B. Color: Gray.

C. Reinforced masonry grouts: Minimum 3,000 psi compressive strength.

2.3 REINFORCING AND ACCESSORIES

A. Continuous horizontal joint reinforcing: Truss or ladder type; hot-dripped galvanized.

B. Anchors and ties: Dovetail slots with triangular wire ties.

C. Fasteners and pins to anchor garage perimeter CMU walls to slurry walls: Stainless steel.

D. Reinforcing bars: ASTM A615, Grade 60.

E. Control joint fillers: Preformed elastomeric type.

F. Acoustic isolation accessories at FOB masonry walls and other locations indicated.

PART 3 EXECUTION

A. Install according to recommendations of National concrete Masonry Association.

B. Locate control joints spaced at maximum of 30'-0" on center and at points of natural weakness in masonry Work and as indicated.

END OF SECTION C

SECTION D
ROUGH CARPENTRY

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Wood framing, wall and roof sheating, blocking, sleepers, nailers and grounds, pressure preservative.

PART 2 PRODUCTS

2.1 LUMBER

A. Sound, thoroughly seasoned, well manufactured and free from warp that cannot be corrected in process of bridging or nailing.

2.2 PLYWOOD

A. U.S. Product Standard PS 1, bearing grade-trademark of American Plywood Association.

2.3 ROUGH HARDWARE

A. Provide type, material, finish and quantity required for proper installation of carpentry, millwork and other specified items; and where necessary to coordinate, secure and complete Work.

2.4 PRESERVATION TREATMENT FOR LUMBER ABOVE GROUND AND EXPOSED TO MOISTURE

A. AWPA Standard C2.; AWPB Mark LP2 for waterborne salt treated wood.

2.5 FIRE RETARDANT TREATMENT

A. AWPA C20 for lumber and AWPA C27 for plywood, and meeting Underwriter's Laboratories FR-2 rating.

B. Provide treatment chemicals free of halogens, sulfates, ammonium phosphate and formaldehyde.

PART 3 EXECUTION

3.1 INSTALLING ROUGH CARPENTRY

A. Lay out Work carefully.

B. Cut materials to fit; level, plumb, and brace to hold wood in proper position.

C. Frame openings and provide blocking and sleepers for Work of other trades.

END OF SECTION D

SECTION E
BUILDING INSULATION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Batt insulation.

PART 2 PRODUCTS

2.1 BATT INSULATION (TYPE 1)

A. Glass fiber batts, aluminum foil-faced.

B. Thickness: 5 1/2" and 9 1/4".

C. Acceptable product: Owens-Corning Fiberglass Corp.; "Flame Spread 25 Insulation".

D. Locations:

1. Between studs framing interior gypsum board.

2. Between roof wood joists.

PART 3 EXECUTION

A. Comply with manufacturer's directions for particular conditions of installation in each case.

END OF SECTION E

SECTION F
ASPHALT SHINGLE ROOFING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Asphalt shingle roofing and accessories.

B. Metal flashings.

C. Sealants and joint fillers in conjunction with the above.

1.2 INSTALLER QUALIFICATIONS

A. Firm specializing in installation of roofing systems similar to those required for this Project who is acceptable to or licensed by shingle manufacturer.

B. Provide roofing manufacturer's standard combined ten-year warranty for roof.

PART 2 PRODUCTS

2.1 ROOFING SYSTEM

A. Asphalt shingles, strip, mineral granule surfaced type 240 lb./square self sealing. Color to be selected by Resident Engineer.

2.2 ROOF FLASHING

A. Flashings:

1. Sheet metal: See Section G "FLASHING AND SHEET METAL".

PART 3 EXECUTION

3.1 INSTALLATION

A. Install all materials in accordance with manufacturers' instructions and final shop drawings.

3.2 INSPECTION

A. Flood test roof system.

B. Inspect completed roof along with roofing manufacturer to evaluate roofing application.

C. Prepare report of roof inspection. Note conditions not in accordance with manufacturer's standards and evidence of deterioration or damage.

END OF SECTION F

SECTION G
FLASHING AND SHEET METAL

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Cap flashing.

B. Louver flashing.

C. Flashing trim and accessories.

1.2 WARRANTY

A. Provide combined warranty for flashing used in conjunction with roofing.

PART 2 PRODUCTS

2.1 METALS AND LOCATIONS

A. Stainless steel

1. AISI 302/304; 26 gage.

2. Locations: Concealed flashing, and counterflashing in conjunction with roofing and waterproofing systems.

B. Aluminum

1. Locations: Exposed flashing at roof edges and eaves.

PART 3 EXECUTION

3.1 INSTALLATION

A. Comply with recommendations and instructions of SMACNA and manufacturer of sheet metal being installed.

B. Separate dissimilar metals.

C. Install work with provisions for thermal expansion.

END OF SECTION G

SECTION H
OVERHEAD COILING DOORS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Exterior coiling door for garage entrance.

B. Accessories.

1.2 SHOP DRAWINGS

A. Submit Shop Drawings for fabrication and installation of overhead rolling doors.

B. Include locations, configuration, details, elevations, conditions at openings and anchoring and support systems.

C. Include provisions for operation requirements.

D. Samples: Submit 12 inch square samples of finished slats for each required profile, material and finish.

1.3 CYCLES OF OPERATION REQUIREMENTS

A. Design, fabricate and install exterior doors for 50,000 cycles of operation.

1.4 WARRANTY

A. Provide two year warranty for doors.

PART 2 PRODUCTS

2.1 EXTERIOR INSULATED DOORS

A. Curtain: 22 gage double interlocking flat slats rolled from hot-dipped galvanized steel, with fully insulated core.

B. Provide with full weatherstripping, seals and hood baffle, end locks and wind locks.

2.2 OPERATION

A. Electric motor.

B. Garage: Operate in conjunction with requirements of security system.

2.3 FINISHES

A. Exterior doors and exterior insulated doors: Shop finish slats and hoods after fabrication, with Dynar 500-based fluorocarbon coating suitable for galvanized steel; custom colors.

PART 3 EXECUTION

A. Erect coiling doors as complete units in accordance with final Shop Drawings and manufacturer's instructions.

END OF SECTION H

SECTION I
FINISH HARDWARE

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Hardware for wood or fiberglass and overhead coiling doors.

B. Keys and keying system.

1.2 RELATED SECTIONS

A. Section H - Overhead Coiling Doors.

PART 2 PRODUCTS

2.1 HINGES, BUTTS, AND PIVOTS

A. Provide template-produced units.

B. Non-removable pins at exterior doors.

C. Butts: 2 knuckle bearing type.

D. Electric hinges as required for security system.

2.2 LOCKSETS

A. Acceptable product: Equivalent to 8100 Line Mortise Locks, LNE Design, by Sargent or similar by Schlage.

B. Electric locks or electric strikes as required for operating overhead coiling door from outside.

2.3 CLOSERS

A. Acceptable manufacturer: LCN, Norton or Rixson.

2.4 SEALS AND WEATHERSTRIPPING

A. Weatherstripping on exterior doors.

2.5 KEYING

A. Provide Grand Master and Master keys for all locks, keyed in different sets as directed by the Resident Engineer.

2.6 FINISHES

A. Brushed chrome, US26D.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install each hardware item in compliance with manufacturer's instructions and recommendations, and in coordination with security system.

B. Adjust and check each operating item of hardware and each door, to ensure proper operation of function of every unit.

END OF SECTION I

SECTION J
GYPSUM BOARD

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Gypsum board and accessories.

1.2 PERFORMANCE REQUIREMENTS

A. Deflection

1. Standard systems: Maximum 1/240 of wall height.

2. Systems to receive water resistant gypsum board, backer board or veneer plaster base: Maximum 1/360 or partition height.

B. Fire rated construction: Provide assemblies identical to those listed by UL or tested according to ASTM E119.

PART 2 PRODUCTS

2.1 GYPSUM BOARD

A. Typical walls and cathedral ceilings: Water Resistant; 5/8 inch thick, unless otherwise noted.

2.2 TYPICAL TRIM

A. Equivalent to the following products by USG:

1. Edge beads: 200A or 200B. Use back-to-back edge beads as control joints where practicable.

2. Corner beads: Dur-A-Bead.

3. Control joints: 093.

2.3 ADHESIVES AND JOINT TREATMENT MATERIALS

A. Joint compounds:

1. Provide asbestos-free products.

2. Drying-type (ready-mixed):

   a. ASTM C475; ready-mixed taping and topping compounds, regular.

   b. Acceptable products and manufacturer: Equivalent to SHEETROCK Taping Joint Compound and Topping Joint Compound, or SHEETROCK All Purpose Joint Compound, all by USG.

3. Setting (chemically-hardening) type: Acceptable products and manufacturer: Equivalent to SHEETROCK Setting-Type Joint Compound by USG.

4. For backer board, use joint compound material recommended by backer board manufacturer.

B. Reinforcing joint tape:

1. ASTM C475, 2 inch nominal width.

2. For backer board, provide fiberglass tape as recommended by backer board manufacturer.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install according to manufacturer's instructions.

B. Install on plywood panels behind gypsum board on inside spaces. See Section D ROUGH CARPENTRY.

C. Control Joints

1. Install control joints at junction of wallboard partitions with walls or ceilings.

END OF SECTION J

SECTION K
PAINTING AND FINISHING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Painting and coating systems for field application; typically 3 coat systems (primer plus 2 finish coats).

1.2 SUBMITTALS

A. Submit color samples on 6 x 18 inch boards of designated material.

PART 2 PRODUCTS

2.1 ACCEPTABLE PRODUCTS AND MANUFACTURERS

A. Polyurethane: Tnemec.

1. Provide VOC-complaint products.

2. First field coat: Series 69 Hi-build Epoxoline.

3. Top coat: Series 75 Endurashield aliphatic polyurethane.

B. Spray-textured finish: Polomyx or Zolatone.

C. Alkyd and acrylic-latex: Benjamin Moore.

2.2 INTERIOR SYSTEMS

A. Louvers.

1. Polyurethane.

B. Gypsum board and plaster.

C. Metal Doors: Alkyd enamel.

2.3 COLOR

A. The Resident Engineer will provide Color Schedule.

END OF SECTION K

SECTION L
LOUVERS AND VENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Exterior louvers.

PART 2 PRODUCTS

2.1 EXTERIOR LOUVERS

A. Extruded aluminum blades and frame, in custom profiles.

B. Provide concealed vertical millions and stiffeners.

C. Finish:

1. Kynar 5000-based 3-coat system (including clear Kynar topcoat), custom color.

2. Acceptable product: Duranar XL by PPG.

D. Provide bird screens.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install according to manufacturer's directions and final Shop Drawings.

END OF SECTION L

SECTION M
ELECTRICAL

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Quality Control.

B. Reference Standards.

C. Submittals.

D. Testing

1.2 RELATED SECTIONS

A. General Specifications 1S - Excavation.

B. General Specification 23 - Miscellaneous Wrought Metals.

C. General Specification 35 - Hangers and Supports.

D. General Specification 95 - Painting

E. General Specification 96 - Galvanizing.

F. General Specifications 103 - Electric Conduit System.

G. General Specification 105 - Electric Wires and Cables.

H. Section 01300 - Submittals.

I. Section 01600 - Material and Equipment.

J. Section 01720 - Project Record Documents.

1.3 QUALITY CONTROL

A. Provide in accordance with Section 01400.

B. Conform to General Specifications 23, 35, 103, and 105 except as specified and/or modified herein.

C. All material and equipment supplied by the Contractor shall be new and in perfect condition. It shall, where applicable, bear the Underwriter's Laboratories, Inc. label and comply with current standards.

D. Material and equipment shall be the standard product of a manufacturer regularly engaged in the production of such products, and shall be the latest design that complies with the Specifications.

E. The equipment furnished under these Specifications shall be essentially the standard product of the manufacturer. Where two or more units of the same class of equipment are required, these units shall be products of a single manufacturer.

F. The specification of equipment and material of a particular manufacturer is not intended to preclude the use of equal equipment and material of other manufacturers; however, substitutions may be made only with the written approval of the Engineer.

G. The Contractor shall submit to the Engineer a list of material and equipment which he intends to supply. The list shall be submitted and approved by the Engineer prior to installation. The list shall include manufacturer and catalog number, cuts, diagrams, drawings, and such other descriptive data as may be required to indicate compliance with the Construction Plans and Specifications.

1.4 REFERENCE STANDARDS

A. American Society for Testing and Materials (ASTM).

B. American National Standards Institute (ANSI).

C. Electronic Institute of America (EIA)

D. Industrial Cable Engineers Association.

E. Institute of Electronic and Electrical Engineers (IEEE)

F. National Electrical Code.

G. New York City Electrical Code.

H. Underwriter's Laboratories. (UL)

I. National Electrical Manufacturers Association (NEMA).

1.5 SUBMITTALS

A. Provide in accordance with Section 01300.

B. Prior to installation, submit to the engineer for review and approval manufacturer's product data, certified test data sheets, catalog cuts and shop drawings that shall include but not necessarily be limited to the following:

1. Conduit and wiring diagrams for power, control and lighting.
2. Control panel.
3. Transformer.
4. Grounding equipment.
5. Lighting fixtures

1.6 TESTING AND COMPLETION OF WORK

A. All materials and manner of installation shall be strictly in accordance with the requirements of the Ordinances of the Local and State Board, the Code of the National Board of Fire Underwriters, must pass all inspections, and also be subject to the approval of the Engineer.

B. When any public authority, by-laws, or ordinances required any work to be tested or approved, the Contractor shall provide proper facilities for such test and inspection and all costs of same shall be borne by the Contractor.

C. All tests shall be made before any conduit, mains switch, or line is energized. Circuits shall be phased out and connected to the panel or main switch in the proper manner. Loads shall be distributed as evenly as possible on all phases. All wires shall be entirely free from unintentional grounds and short circuits.

D. All circuits and equipment specified or ordered by the Engineer shall be tested by the Contractor and resistance recorded and approved by the Engineer or his authorized representative before current is applied.

E. The ground or ground grid shall be tested and resistance to the ground approved. All costs of testing shall be borne by the Contractor.

F. On completion of his work, the Contractor shall remove all temporary equipment and wiring. All temporary fuses and lamps for construction use shall be replaced with proper size fuses and lamps.

G. The Contractor shall retain in his possession and shall be responsible for all portable and detachable portions of the installation such as fuses, keys, locks, etc., until completion of the work, and he then shall deliver them to the Owner and

obtain an itemized receipt. This receipt, together with the Certificate of Approval and as-built diagrams of installation, shall be delivered to the Owner prior to or at the time of the Owner's final inspection of the work.

1.7 RULES, PERMITS, AND STANDARDS

A. The Contractor shall perform and execute the electrical work in accordance with the existing rules, requirements, and specifications of the Insurance Rating Organization having jurisdiction, the National Electrical Code, the National Electrical Safety Code, and all Federal, State, and local laws or ordinances. In the event that any requirements of the Construction Plans and Specifications are in conflict with the applicable rules, requirements, and specifications of the above-listed organizations, such requirements of the Construction Plans and Specifications shall be invalid, and the rules, requirements, and specifications of the listed organizations shall take precedence.

B. The Contractor shall take the necessary measures to insure that his employees comply with all local and State "Electrical Workers Safety Rules."

C. Permits and licenses of temporary nature necessary for the execution of the work shall be secured and paid for by the Contractor.

D. In the event that it proves difficult or impossible to install outlets, panels, or conduits in the locations shown in the Construction Plans due to interference with the structural or mechanical element, the Contractor shall relocate such equipment as approved by the Engineer.

1.8 FAMILIARIZATION WITH PROJECT

A. The Contractor shall thoroughly familiarize himself with the extent and nature of the work contained in the Construction Plans and Specifications of this Contract, before submitting a bid for this project.

B. The Contractor will be held responsible for a thorough first-hand knowledge of conditions and their implications for the work of this project. Any additional costs resulting from the Contractor's failure to familiarize himself shall be his responsibility and shall be paid by him.

PART 2 PRODUCTS

2.1 CONDUITS

A. Rigid Conduit

1. Steel conduit shall be hot-dipped galvanized as manufactured by the Youngstown Steel and Tube Company, Triangle Conduit and Cable, Republic Steel, Pittsburgh Standard, GE, or approved equal.

B. Flexible Conduit, Couplings, and Fittings

1. In Division 2 and non-hazardous areas, liquidtight, flexible metal conduit shall be Sealtite, Type UA, manufactured by the Anaconda Metal Hose Division, American Brass Company, or equal by American Flexible Conduit, or Universal Metal Hose Company, or approved equal.

2. Fittings used with flexible conduit shall be of the screw-in type as manufactured by the Thomas and Betts Company, Appleton Electrical, Triangle Conduit and Cable, Electrical Fittings, or approved equal.

3. Flexible couplings shall be Crouse-hinds Company, Appleton Electrical Company, Thomas and Betts Company, or approved equal.

4. In Division 1 areas, flexible metal conduit shall be suitable for the area classification and shall be Type ECLK as manufactured by Crouse-Hinds, or approved equal.

C. Boxes and Fittings

1. Cast iron boxes and fittings shall be galvanized with case galvanized covers and corrosion-proof screws as manufactured by the Crouse-Hinds Company, Appleton Electrical Company, Killark Electrical Company, or approved equal.

2. Conduit hubs shall be as manufactured by Myers Electric Products, Inc., Raco Division, Appleton Electrical Company, or approved equal.

2.2 WIRES AND CABLES

A. Conductors

1. Conductors before stranding shall meet the physical and electrical requirements of the latest edition of ANSI Specifications C7.1 for soft or annealed copper wire and ASTM Class B stranding designation.

2. All wire shall be stranded.

3. Wire sizes shall conform to the regulations of the National Electrical Code. Wire sizes indicated on the drawing represent the minimum size wire acceptable; the actual requirements of the circuit as installed or as required under the applicable code or ordinance shall determine the size of the conductor to be installed.

B. Minimum Wire Sizes

1. Lighting, motor, and convenience outlet circuits shall be No. 12 AWG minimum. No. 10 AWG shall be used to first outlets where distance from panel to first outlet exceeds 60 feet.

C. Cable Application

1. Insulated cable, single conductor, for power, lighting and control shall be Underwriter's Laboratories labelled, Type THWN, moisture and heat resistant thermoplastic. Insulation shall be color coded as specified herein. Tabs or tape, paintings, etc., will not be acceptable except that tape may be used on cables larger than No. 4.

2. All above wires shall be manufactured by Anaconda, Okonite, General Cable, American, Triangle, or approved equal.

PART 3 EXECUTION

3.1 GENERAL

A. Furnish all labor, materials and equipment, and perform all operations in connection with the installation of electrical systems, complete, in strict accordance with these Specifications and the Construction Plans, and subject to the terms and conditions of the Contract.

B. The principal items of work to be installed include, but are not necessarily limited to, the following:

1. Power service to the facility, including transformer, conduits, cable and grounding.

2. System distribution equipment, unit heaters, motor, lighting, and control cabinets.

3. Complete conduit and wiring systems for all power, control and lighting, systems.

3.2 CONDUIT INSTALLATION

A. No conduit smaller than 3/4-inch electrical trade size shall be used, no shall any conduit have more than three 90-degree bends in any one run. Pull boxes shall be provided as required or directed.

B. No wire shall be pulled until the conduit system is complete in all details; in the case of concealed work, until all masonry has been completed; in the case or exposed work, until the conduit system has been completed in every detail.

C. The ends of all conduits shall be tightly plugged to exclude dust and moisture while the facility is under construction.

D. All conduits and fittings on exposed work shall be secured by means of cast metal clips and backplates.

E. Single conduits shall be supported by mens of one-hole pipe clamps in combination with one-screw backplates, to raise conduits from the surface.

F. Conduits terminating in all outdoor enclosures shall be terminated with conduit hubs.

G. All conduits shall be run exposed except where otherwise noted.

H. All conduits entering motors, control devices, panels, etc., above grade shall have explosion-proof seal fittings, whether area is hazardous or not.

3.3 OUTLET, PULL, AND JUNCTION BOXES

A. For wet and outdoor locations, cast boxes of appropriate size and type shall be used in accordance with the National Electrical Code.

B. Pull boxes shall be of ample size to receive, without crowding, all conduits entering them. Boxes shall be accessible when in place. Boxes shall be sized in accordance with the National Electrical Code as a minimum size.

C. Boxes and conduit system shall conform to Class 1, Division 1 or Division 2, Group D hazardous area requirements as noted in the Construction Plans, below grade (NEMA 4 and 7D), and outdoor watertight, above grade (NEMA 4 or 4X).

3.4 WIRES AND CABLES

A. Wires shall be pulled into raceways carefully so as not to damage insulation or strain conductors. Splices of wires smaller than No. 8 may be made with Ideal insulated wire-nuts. Splices of wires No. 8 and larger shall be made with solderless connectors, and covered with tape to 150 percent of insulation level of the cable. Tape shall be "Scotch No. 88," or approved equal. Connectors shall be covered with "Scotchfill" before taping. Splicing shall be done only by experienced splicers using new high quality approved materials.

B. Where wires are terminated on screw terminals, compression-type fork tongue lugs, Burndy Insulug, shall be used, or equivalent by T&B.

C. A lubricant may be used for pulling wires into conduit provided the lubricant is approved, and compatible with wire sheath and conduit material.

3.5 CONTRACT CLOSEOUT

A. Provide in accordance with Section 01700.

END OF SECTION M

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 47 - Data on Monitoring Wells to be Abandoned

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. The following is a monitoring well data summary for abandonment purposes:

WELL NO.	DIAMETER, in	DEPTH, ft[1]
MW-101	4	45.00
MW-102	4	56.00
MW-103	4	13.62
MW-105	4	17.40
MW-107	4	15.83
MW-111	4	34.86
MW-112	4	12.00
MW-113B	4	83.98
MW-114B	4	91.48
MW-116	4	12.20
MW-116B	4	73.37
MW-118B	4	112.20
MW-119B	4	113.51
MW-121B	4	69.25
MW-122B	4	80.25
MW-123	4	14.50
MW-125	4	19.58
MW-125B	4	103.04

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 47 - Data on Monitoring Wells to be Abandoned (Continued)

WELL NO.	DIAMETER, in	DEPTH, ft[1]
PZ-1B	2	106.22
PZ-2F	2	97.73
PZ-3S	2	160.00
PZ-3B	2	172.00
PZ-4F	2	77.83
PZ-5B	2	165.00
CP-1	2	44.35
CP-2	2	41.07
CB-1	2	77.72
HP-1	2	45.40
HP-2	2	48.24
HP-3	2	25.19

Note

1. Well depths measured below existing ground surface.

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 48 - Clarification on Addendum No. 11

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Addendum 11, Paragraph 25 on page GC-22 infers that the City will furnish valves, hydrants, valve box castings, etc.. for the installation of the 24-inch diameter water main. The City will not furnish any of the appurtenances associated with the water main. The Contractor shall supply and install all the appurtenances needed for the installation of the water main.

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 49 - Revised Bid Forms - Invitation To Bid

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Replace the Bid Form included in the Invitation To Bid document with the revised version, attached on the following pages.

Bid Form - Contract No. 876-HP - Revised 5/25/94

Geomembrane Capping and Gas Collection System

Pelham Bay Landfill Remediation

Bronx, New York

Item No.	Spec No.	Description	Quantity	Unit	Unit Price	Amount
1	01000	General Requirements	1.00	LS	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
2	01590	Field Offices (Office Trailer Rental)	20.00	Mo	$1,150.00	$23,000.00
	Unit Price in words	_____ Dollars and _____ Cents				
3	01590	Field Offices (Operation and Maintenace)	20.00	Mo	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
4	01590	Field Offices (Supply Allowance)	1.00	LS	$15,000.00	$15,000.00
	Unit Price in words	_____ Dollars and _____ Cents				
5	01590	Groundwater Sampling Equipment	1.00	LS	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
6	02060	Demolition (Existing Sheds)	1.00	LS	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
7	02060	Remove and Dispose (Curtain Drain and Pipe,Pond B)	1,120.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
8	02060	Remove and Dispose (Gravel Drain,Pond B)	200.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
9	02078	Abandon Underground Storage Tank	1.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
10	02110	Site Clearing	88.80	Ac	$	$
	Unit Price in words	_____ Dollars and _____ Cents				

Bid Form - Contract No. 876-HP - Revised 5/25/94

Geomembrane Capping and Gas Collection System

Pelham Bay Landfill Remediation

Bronx, New York

Item No.	Spec No.	Description	Quantity	Unit	Unit Price	Amount
11	02169	Gas Extraction Well	1,249.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
12	02169	Gas Extraction Well (Well Head)	22.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
13	02169	Gas Monitoring Well	60.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
14	02169	Gas Monitoring Well (Well Guard)	3.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
15	02210	Excavate Cover Soil	175,656.00	Cy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
16	02210	Excavate Waste	215,890.00	Cy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
17	02221	Borrow (Loamy Soil,Imported)	224,208.00	Cy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
18	02231	Crushed Aggregate Base Course	25,183.00	Sy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
19	02231	Crushed Stone Base	32,687.00	Sy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
20	02231	Delineators	296.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents.				

Bid Form - Contract No. 876-HP - Revised 5/25/94

Geomembrane Capping and Gas Collection System

Pelham Bay Landfill Remediation

Bronx, New York

Item No.	Spec No.	Description	Quantity	Unit	Unit Price	Amount
21	02245	Geotextile Fabric (10oz Non-Wovn,Roadway)	606,230.00	Sf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
22	02277	Rip Rap (Class I)	1,277.00	Sy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
23	02277	Rip Rap (Class II)	182.00	Sy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
24	02277	Rip Rap (Class III)	364.00	Sy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
25	02277	Rip Rap (Class IV)	16.00	Sy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
26	02277	Rip Rap Bedding (6")	251.00	Sy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
27	02660	Pipe (24" Ductile Iron MJ Cl 52 150 psi,Cement Lined)	660.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
28	02660	Pipe (20" Ductile Iron MJ Cl 52 150 psi,Cement Lined)	50.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
29	02660	Pipe (12" Ductile Iron MJ Cl 52 150 psi,Cement Lined)	40.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
30	02660	Pipe (6" Ductile Iron MJ Cl 52 150 psi,Cement Lined)	20.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				

Bid Form - Contract No. 876-HP - Revised 5/25/94

Geomembrane Capping and Gas Collection System

Pelham Bay Landfill Remediation

Bronx, New York

Item No.	Spec No.	Description	Quantity	Unit	Unit Price	Amount
31	02660	Coupling (24" Baker)	2.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
32	02660	Fittings (Ductile Iron MJ Cl 52 150 psi)	9.00	Ton	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
33	02660	Valve (20" Gate Cast Iron MJ,Installation)	2.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
34	02660	Valve (20" Gate Cast Iron MJ,Furnish and Deliver)	2.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
35	02660	Valve (12" Gate Cast Iron MJInstallation)	1.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
36	02660	Valve (12" Gate Cast Iron MJ,Furnish and Deliver)	1.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
37	02660	Valve (6" Gate Cast Iron MJ,Installation)	2.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
38	02660	Valve (6" Gate Cast Iron MJ,Furnish and Deliver)	2.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
39	02660	Trench Safety System (Tight Sheeting)	12,000.00	Sf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
40	02660	Saw Cutting (Pavement)	150.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				

Bid Form - Contract No. 876-HP - Revised 5/25/94

Geomembrane Capping and Gas Collection System

Pelham Bay Landfill Remediation

Bronx, New York

Item No.	Spec No.	Description	Quantity	Unit	Unit Price	Amount
41	02660	Remove Pavement (All Types)	10.00	Cy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
42	02660	Excavation (Soil)	1,420.00	Cy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
43	02660	Excavation (Soil and Pavement)	10.00	Cy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
44	02660	Excavation (Rock)	5.00	Cy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
45	02660	Aggregate (Gravel Bedding)	335.00	Cy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
46	02660	Aggregate (Clean Sand)	500.00	Cy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
47	02660	Backfill (Satisfactory Material)	505.00	Cy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
48	02660	Geotextile (10oz Non-Woven,24" Water Main)	32,000.00	Sf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
49	02660	Remove and Reset (Fire Hydrant)	2.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
50	02660	Remove (Fire Hydrant)	1.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				

Bid Form - Contract No. 876-HP - Revised 5/25/94

Geomembrane Capping and Gas Collection System

Pelham Bay Landfill Remediation

Bronx, New York

Item No.	Spec No.	Description	Quantity	Unit	Unit Price	Amount
51	02660	Fire Hydrant Fenders	5.00	Ea		$
	Unit Price in words	_____ Dollars and _____ Cents				
52	02660	Sidewalk (Concrete)	250.00	Sf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
53	02660	Concrete Base (6" Class B-32)	50.00	Sy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
54	02660	Asphalt Pavement (3" Asph Conc or Sheet Asph)	60.00	Sy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
55	02660	Tree Removal	5.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
56	02677	Well Abondonment	30.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
57	02715	Gas Extraction Well Pipe (3" HDPE)	1,398.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
58	02715	Gas Extraction Well Pipe (4" HDPE)	3,694.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
59	02715	Gas Extraction Well Pipe (6" HDPE)	2,311.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
60	02715	Gas Extraction Well Pipe (8" HDPE)	2,800.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents.				

Bid Form - Contract No. 876-HP - Revised 5/25/94

Geomembrane Capping and Gas Collection System

Pelham Bay Landfill Remediation

Bronx, New York

Item No.	Spec No.	Description	Quantity	Unit	Unit Price	Amount
61	02715	Gas Extraction Well Pipe (10" HDPE)	322.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
62	02715	Gas Condensate Pipe (2"x4"HDPE Dbl Wall)	493.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
63	02715	Gas Collection Pipe (4" HDPE)	6,781.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
64	02715	Gas Extraction Valve Box	6.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
65	02715	Gas Condensate Separator	1.00	LS	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
66	02715	Gas Collection Riser Connection (VB-6)	1.00	LS	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
67	02715	Gas Condensate Conveyance Connection (MH-D2)	1.00	LS	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
68	02720	Pipe (24" HDPE SDR21,Corrugated)	2,145.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
69	02720	Pipe (30" HDPE SDR21,Smooth)	1,675.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
70	02720	Manhole-Inlet (48" HDPE Class 160,All Depths)	16.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				

Bid Form - Contract No. 876-HP - Revised 5/25/94

Geomembrane Capping and Gas Collection System

Pelham Bay Landfill Remediation

Bronx, New York

Item No.	Spec No.	Description	Quantity	Unit	Unit Price	Amount
71	02720	Infiltration Drainage Trench	19,700.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
72	02720	Curtain Drain	665.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
73	02722	Reinforced Concrete Pipe (24")	45.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
74	02766	Reconstruction of Sewer (30"RCP)	690.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
75	02766	Reconstruction of Sewer (72"RCP)	595.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
76	02778	Geomembrane Liner (60 mil HDPE,Smooth)	788,178.00	Sf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
77	02778	Geomembrane Liner (60 mil HDPE,Textured)	3,155,741.00	Sf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
78	02779	Geocomposite Liner	3,943,919.00	Sf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
79	02831	Chain Link Fence (8ft x 6ga,Spiral Razor Wire Top)	8,678.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
80	02831	Spiral Razor Wire Top (Existing Chain Link Fence)	40.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents.				

Bid Form - Contract No. 876-HP - Revised 5/25/94

Geomembrane Capping and Gas Collection System

Pelham Bay Landfill Remediation

Bronx, New York

Item No.	Spec No.	Description	Quantity	Unit	Unit Price	Amount
81	02831	Gate (8ft x 6ga x 4ft Single Leaf,Spiral Razor Wire Top)	23.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
82	02831	Gate (8ft x 6ga x 6ft Single Leaf,Spiral Razor Wire Top)	1.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
83	02831	Gate (8ft x 6ga x 24ft Double Leaf,Spiral Razor Wire Top	1.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
84	02831	Remove Fence (Chain Link)	5,100.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
85	02831	Remove Gate (Chain Link)	3.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
86	02910	Landscaping Work (Vegetation Islands)	26.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
87	02910	Landscaping Work (Perimeter Bedding)	13,400.00	Sy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
88	02920	Topsoiling (6",Imported,Cap)	59,347.00	Cy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
89	02920	Topsoiling (6",Imported,Landscaping)	745.00	Cy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
90	02930	Seeding and Fertilizer	75.28	Ac	$	$
	Unit Price in words	_____ Dollars and _____ Cents				

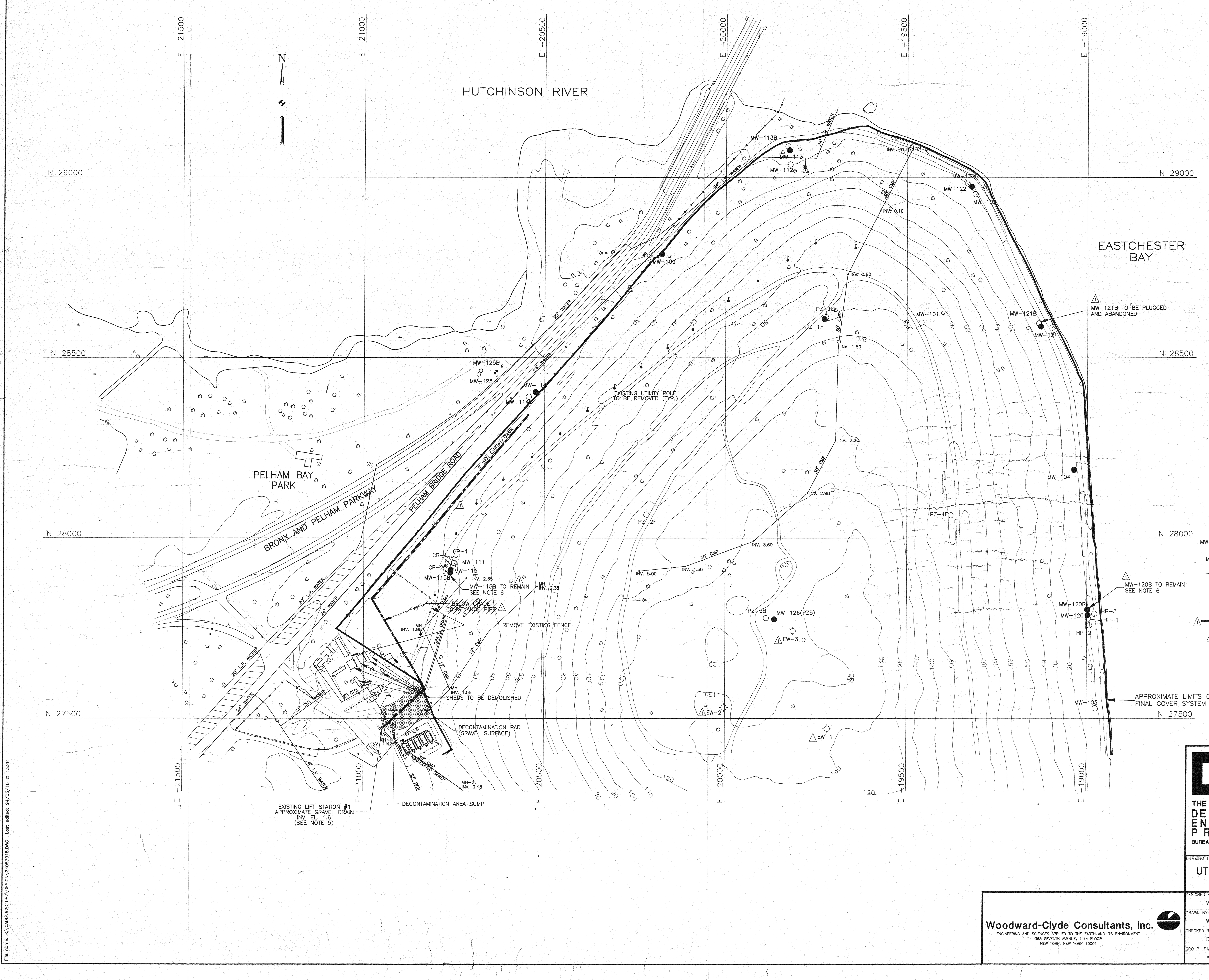
Bid Form - Contract No. 876-HP - Revised 5/25/94

Geomembrane Capping and Gas Collection System

Pelham Bay Landfill Remediation

Bronx, New York

Item No.	Spec No.	Description	Quantity	Unit	Unit Price	Amount
101	02950	Tree (White Pine,8'-10' B&B)	210.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
102	02950	Tree (Flowering Dogwood,6'-8' B&B)	15.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
103	02950	Shrub (Beach Plum,2 Gallon)	87.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
104	02950	Shrub (Staghorn Sumac,2 Gallon)	36.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
105	02950	Shrub (Arrowwood Viburnum,2 Gallon)	40.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
106	02950	Shrub (Arrowwood Viburnum,3 Gallon)	33.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
107	02950	Shrub (Northern Bayberry,2 Gallon)	45.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
108	02950	Shrub (Northern Bayberry,3 Gallon)	28.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
109	02950	Shrub (American Elderberry,2 Gallon)	50.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
110	02950	Shrub (American Elderberry,3 Gallon)	23.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				



NOTES:

1. MAP PREPARED FROM FOLLOWING REFERENCES:

   A. CITY OF NEW YORK DEPARTMENT OF PARKS, TOPOGRAPHIC DIVISION, TOPOGRAPHICAL MAP, PORTION OF PELHAM BAY PARK.
   DRAWINGS NUMBER X-T-39-103 DATED 1/22/1937
   X-T-39-107 DATED 7/5/1935
   X-T-39-108 DATED 1/14/1937
   X-T-39-118 DATED 10/18/1934
   X-T-39-119 DATED 3/25/1937
   X-T-39-128 DATED 10/17/1934
   X-T-39-129 DATED 5/6/1935
   X-T-39-130 DATED 6/28/1935

   B. 2 DRAWINGS NUMBERED P-4 AND P-7, UNTITLED, UNDATED, SHOWING LOCATIONS OF WATER LINES IN A PORTION OF THE PELHAM BAY LANDFILL.

   C. CITY OF NEW YORK DEPARTMENT OF SANITATION, BUREAU OF WASTE DISPOSAL.
   DRAWINGS NUMBER W-190 DATED 1/24/1963
   W-208 DATED 11/13/1964
   W-252 DATED 2/24/1972
   UNTITLED AND UNDATED

   D. CITY OF NEW YORK DEPARTMENT OF ENVIRONMENTAL PROTECTION, BUREAU OF CLEAN WATER, RESIDUALS MANAGEMENT, LEACHATE CONTROL, PHASE 1, PREPARED BY STONE & WEBSTER ENGINEERING CORPORATION AND HAZEN AND SAWYER, P.C. ENGINEERS.
   DRAWINGS NUMBER PB-GC-001 DATED NOVEMBER 1991
   PB-GC-101 DATED NOVEMBER 1991

   E. REMEDIAL INVESTIGATION REPORT, PELHAM BAY LANDFILL, BRONX, NEW YORK (WCCI, APRIL 1993), FIGURE 3-1 "SURFACE FEATURES AND UTILITIES".

   F. OBSERVATIONS MADE DURING FIELD VISIT ON JULY 19, 1993.

   G. TELEVISION INSPECTION OF 30", 66" AND 72" RCP LINES OF EXISTING SEWER PIPE ON 9/13/1993.

2. BASE MAP PROVIDED BY GABRIEL SENOR (SURVEYORS), SITE SURVEY, OCTOBER 1992.

3. ELEVATIONS SHOWN ARE BASED ON THE BRONX BUREAU OF HIGHWAY DATUM IN WHICH ELEVATION ZERO IS 2.608 FT ABOVE THE UNITED STATES COAST AND GEODETIC SURVEY DATUM.

4. THE COORDINATE SYSTEM SHOWN IS THAT USED FOR THE EAST BRONX BY THE BRONX ENGINEERING BUREAU AND IS BASED ON THE USC&GS MERIDIAN WHICH IS TRUE NORTH.

5. UTILITIES SHOWN ARE BASED ON FIELD INFORMATION AND/OR AVAILABLE MAPS AND SHOULD BE FIELD VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION.

6. EXTEND WELLS/PIEZOMETERS USING IDENTICAL MATERIALS TO THAT ORIGINALLY INSTALLED TO MATCH FINAL LANDFILL CAP ELEVATIONS.

LEGEND:

(AB) = ABANDONED
C.I. = CAST IRON
CMP = CORRUGATED METAL PIPE
L.P. = LOW PRESSURE
MH = MANHOLE
MW = MONITORING WELL
PZ = PIEZOMETER
RCP = REINFORCED CONCRETE PIPE
VIT. DRAIN = VITRIFIED DRAIN
W = WATER
EXISTING TREES
MW-114B ○ WELLS/PIEZOMETERS TO BE PLUGGED AND ABANDONED
MW-104 ● WELLS/PIEZOMETERS TO REMAIN, EXTEND WELL HEAD TO MEET CAP ELEVATIONS (SEE NOTE 6)
FENCE
EXISTING UTILITY POLE TO BE REMOVED
FIRE HYDRANT
EXISTING UTILITY POLE TO REMAIN IN PLACE
△1 CURTAIN DRAIN SEE DRAWING C.13R1 FOR TYPICAL SECTION
△1 EW-1 EXISTING GAS EXTRACTION WELL TO BE ABANDONED

NO.	DATE	DESCRIPTION	APPR'D.
1	5/18/94	AS PER ADDEMDUM NO. 30	SMM

REVISIONS

DEP
THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL ENGINEERING

CAPITAL PROJECT NAME & NO.: PELHAM BAY LANDFILL REMEDIATION

CONTRACT NAME & NO.: GEOMEMBRANE CAPPING AND GAS COLLECTION SYSTEM CONTRACT NO. 876-HP

DRAWING TITLE:

UTILITY, DEMOLITION, WELL AND PIEZOMETER ABANDONMENT PLAN – NORTH HALF

Woodward-Clyde Consultants, Inc.
ENGINEERING AND SCIENCES APPLIED TO THE EARTH AND ITS ENVIRONMENT
363 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10001

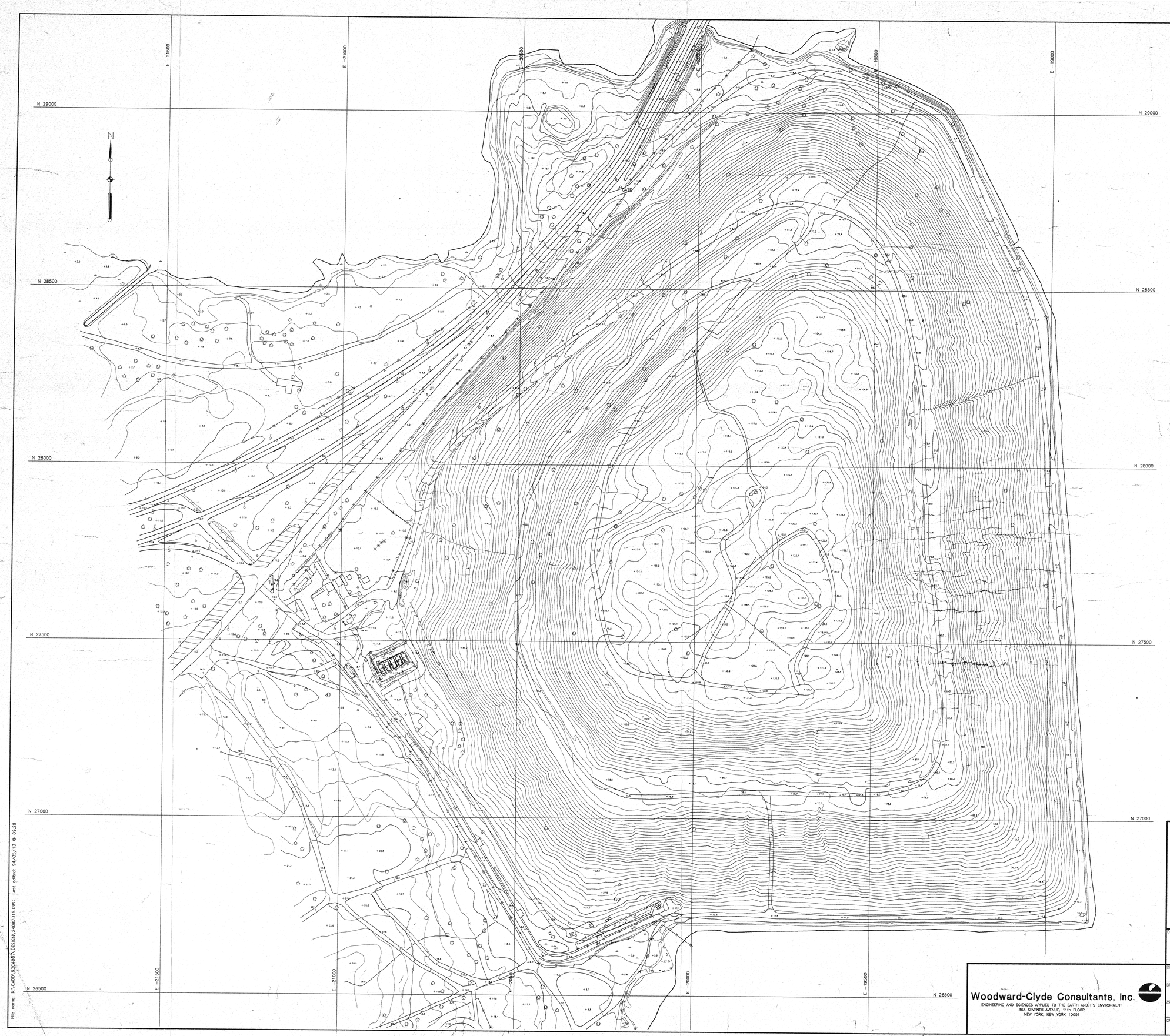
DESIGNED BY: WLP
DRAWN BY: WLP
CHECKED BY: DJH
GROUP LEADER: AJC

STATE OF NEW YORK · ANDREW J. CIANCIA · LICENSED PROFESSIONAL ENGINEER · No. 050151

DIVISION CHIEF: [signature] P.E.
PROJ MGR: [signature] P.E.

GRAPHIC SCALE: 0 25' 50' 100' 200' 300'

SCALE:	DWG. NO.:	SHEET NO:
1" = 100'	C.1R1	2
DATE: MAY 18, 1994	OF: C.19	OF: 28



NOTES:

1. ELEVATIONS SHOWN ARE BASED ON THE BRONX BUREAU OF HIGHWAY DATUM IN WHICH ELEVATION ZERO IS 2.608 FT ABOVE THE UNITED STATES COAST AND GEODETIC SURVEY DATUM.
2. THE COORDINATE SYSTEM SHOWN IS THAT USED FOR THE EAST BRONX BY THE BRONX ENGINEERING BUREAU AND IS BASED ON THE USC&GS MERIDIAN WHICH IS TRUE NORTH.
3. BASE MAP PROVIDED BY GABRIEL SENOR (SURVEYORS), SITE SURVEY, APRIL 5, 1994.

LEGEND:

- FENCE
- LIGHT POLES
- POLE
- MANHOLE
- SIGNS
- TREES
- EVERGREENS
- SWAMP & MARSH
- SPOT ELEVATION

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL ENGINEERING

NO.:	DATE	DESCRIPTION	APPR'D.

REVISIONS

CAPITAL PROJECT NAME & NO.:
PELHAM BAY LANDFILL REMEDIATION

CONTRACT NAME & NO.:
GEOMEMBRANE CAPPING AND GAS COLLECTION SYSTEM
CONTRACT NO. 876-HP

DRAWING TITLE:
TOPOGRAPHIC SURVEY APRIL 5, 1994

Woodward-Clyde Consultants, Inc.
ENGINEERING AND SCIENCES APPLIED TO THE EARTH AND ITS ENVIRONMENT
363 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10001

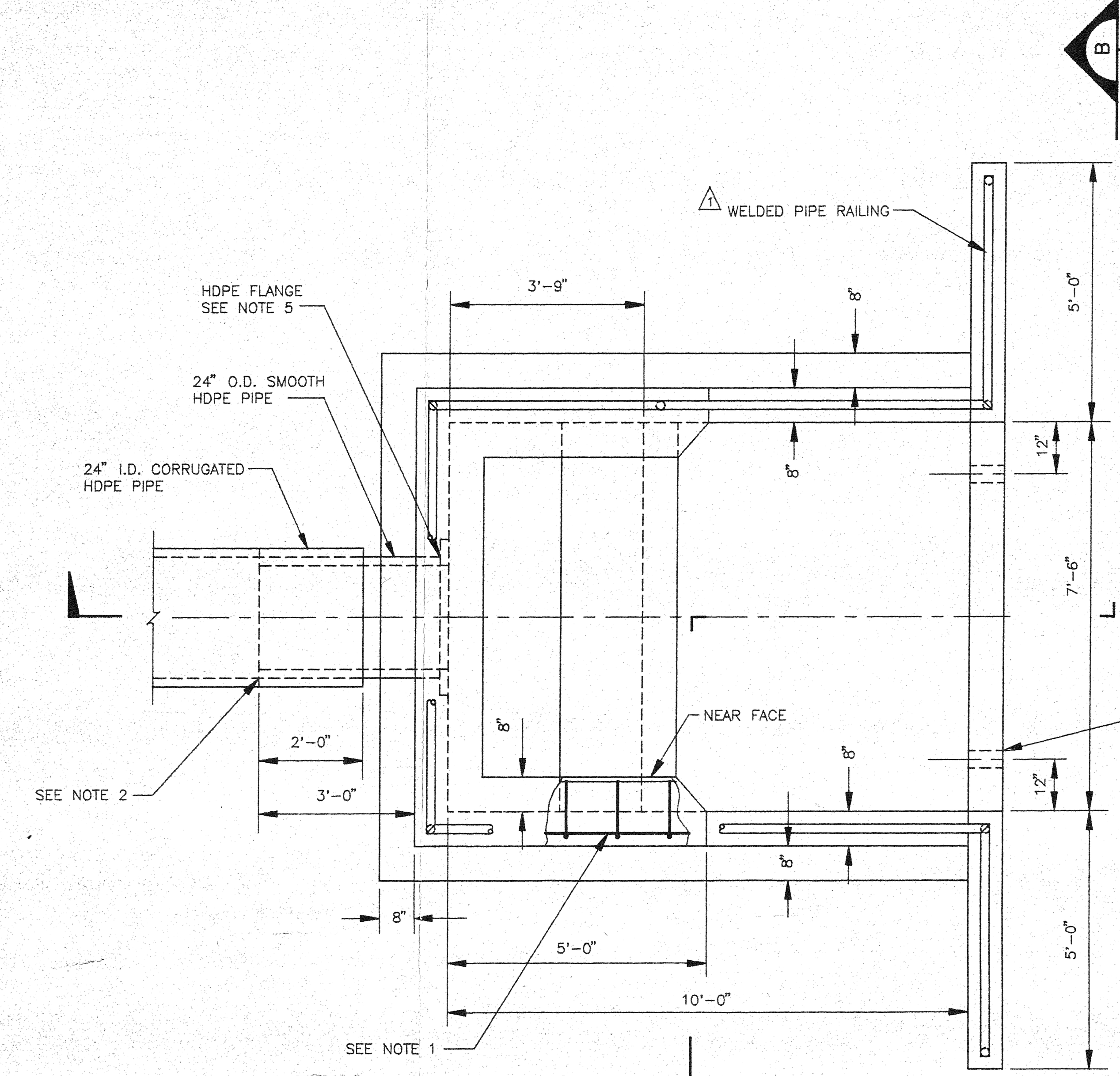
DESIGNED BY: MTZ
DRAWN BY: MVB
CHECKED BY: SMM
GROUP LEADER: AJC

DIVISION CHIEF:
PROJECTOR:

GRAPHIC SCALE: 0 25' 50' 100' 200' 300'

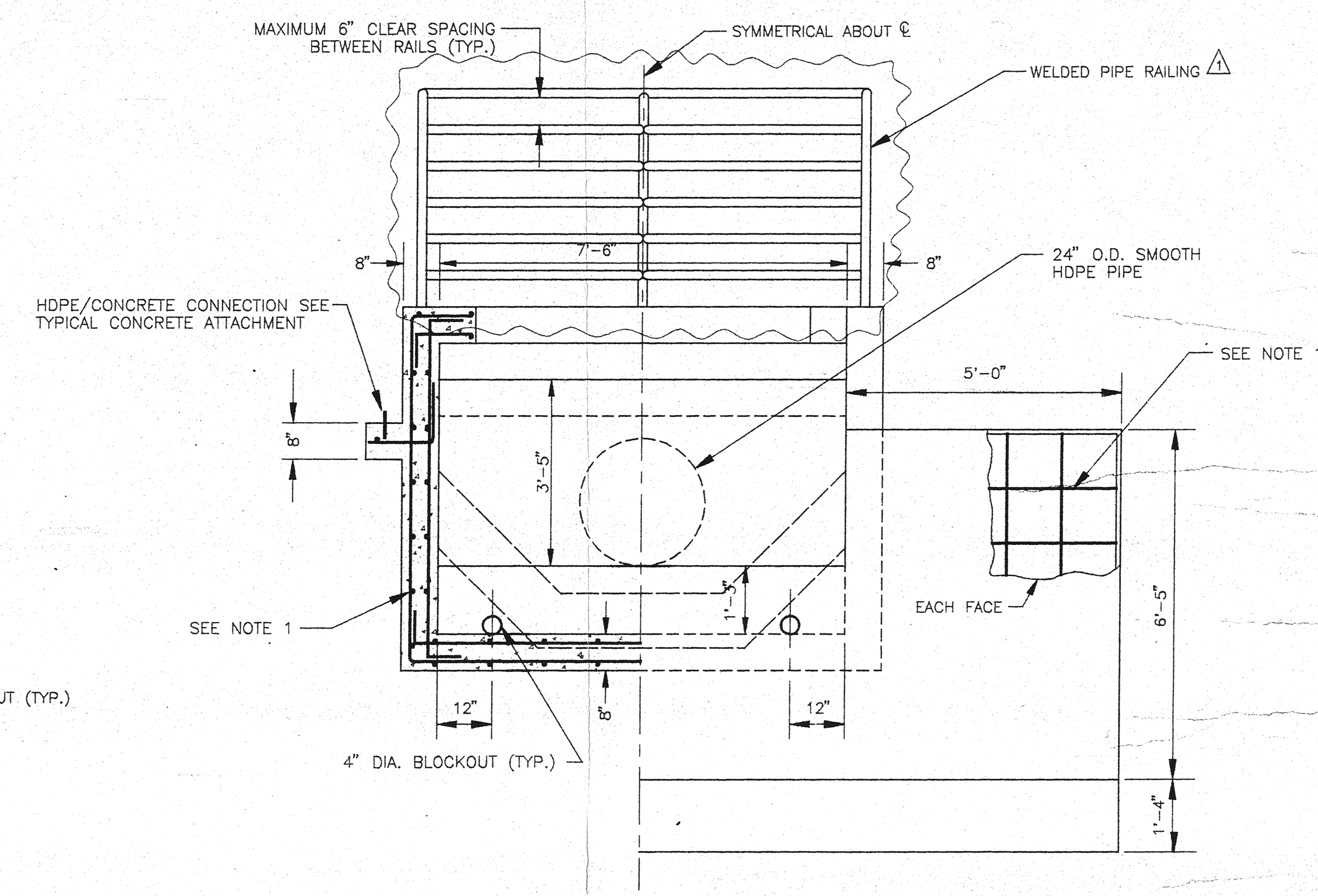
SCALE: 1" = 100'
DWG. NO.: TS.1
SHEET NO.: 1
DATE: MAY 12, 1994
OF: TS.1
OF: 1

File name: K:\CADD\91C468P\DESIGN\2409TP15.DWG Last edited: 94/05/13 @ 09:29



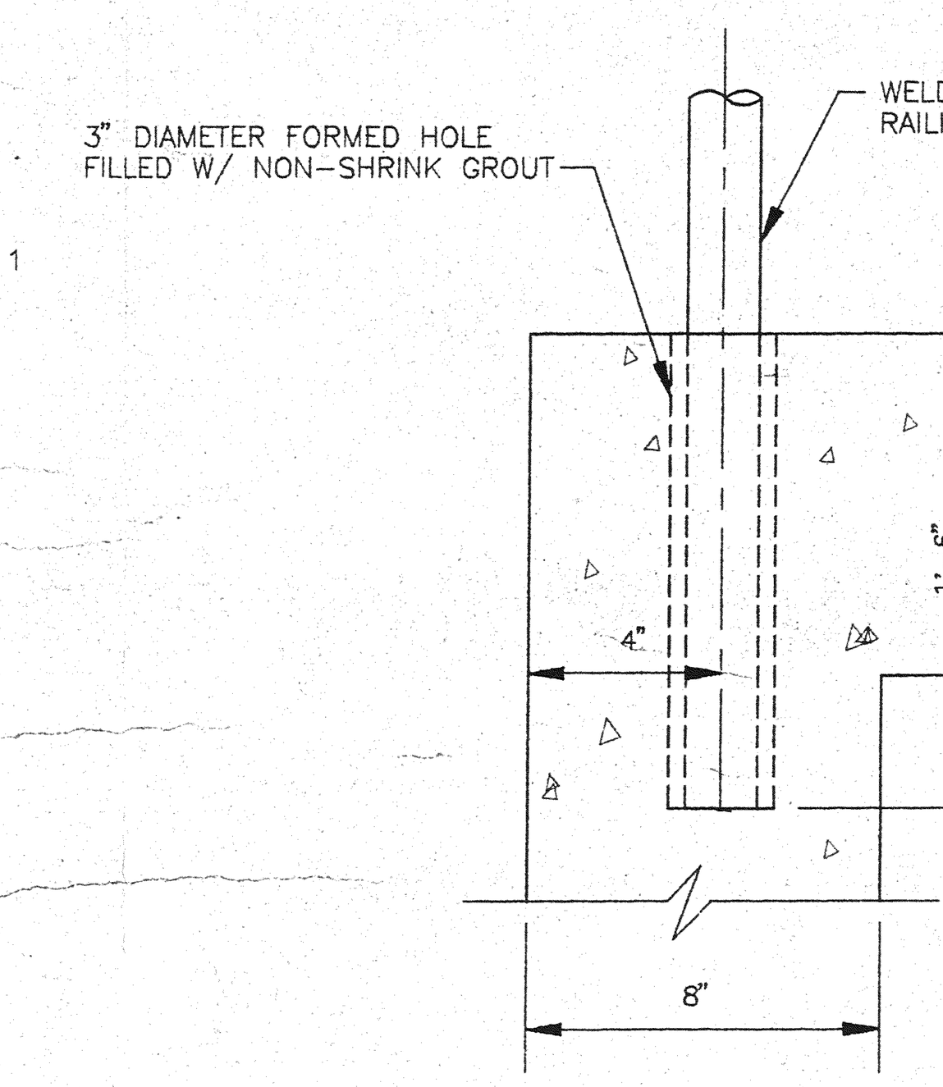
BAFFLED OUTLET-PLAN

SCALE: 1/2"=1'-0"



BAFFLED OUTLET-SECTION B

SCALE: 1/2"=1'-0"

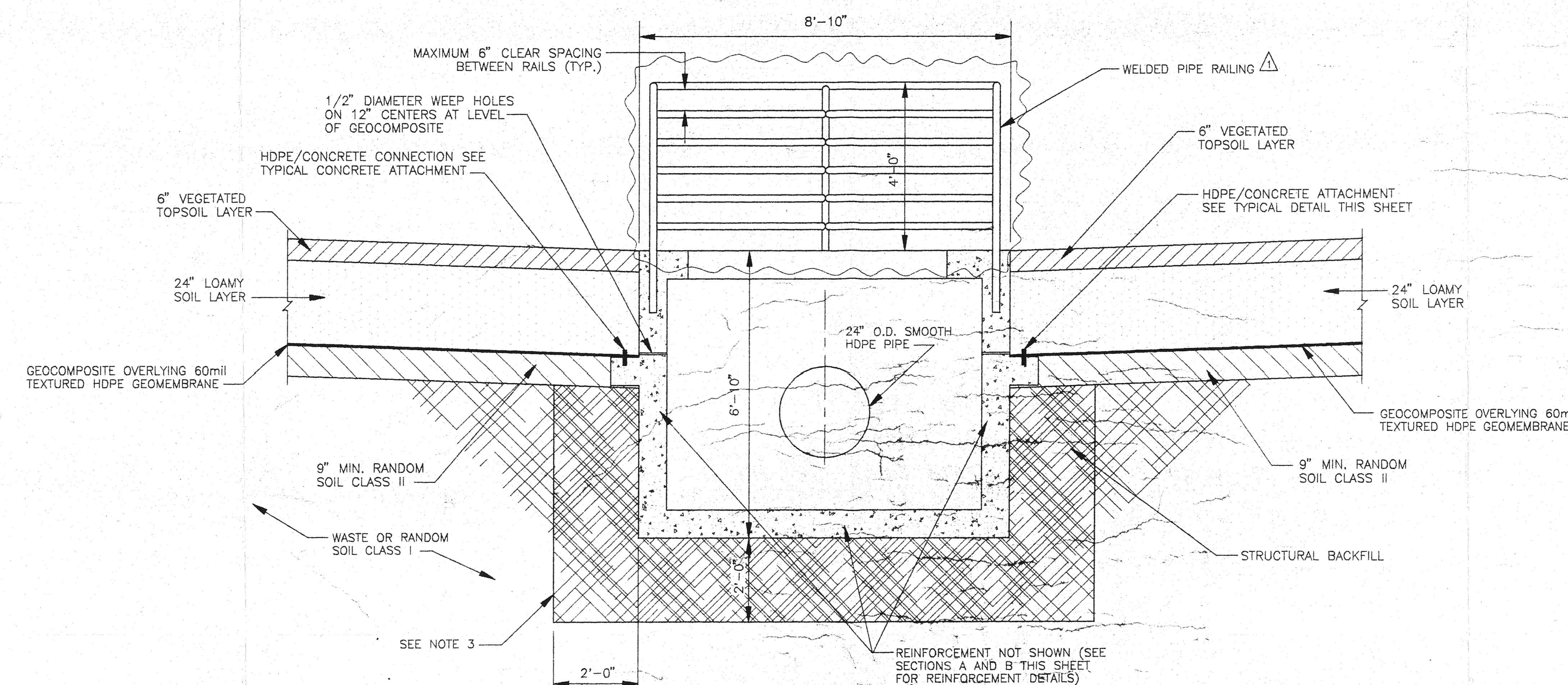


RAILING ANCHOR DETAIL

NOT TO SCALE

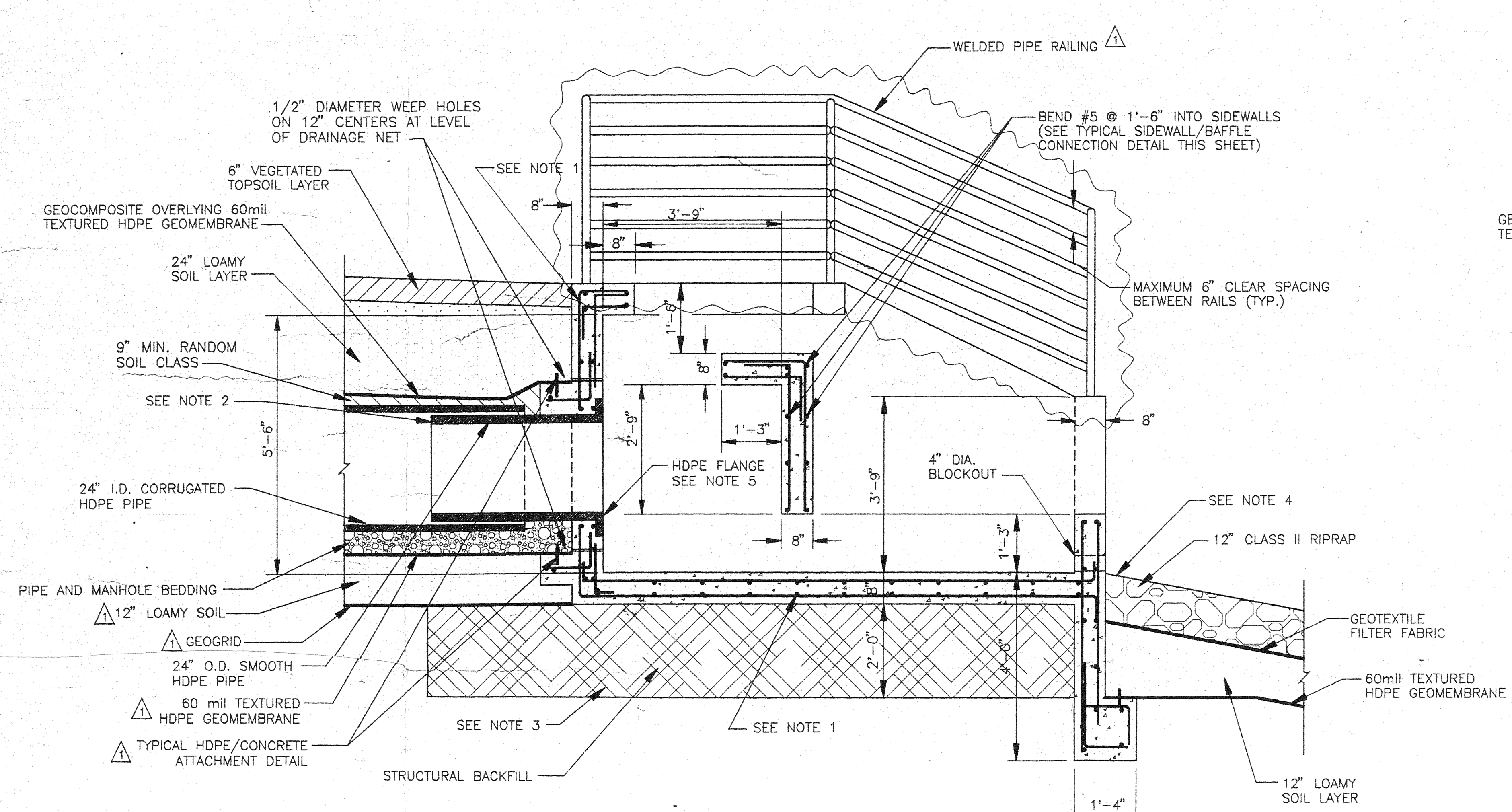
NOTES:

1. ALL REINFORCEMENT IS #5 @ 12" CENTERS EACH WAY, EACH FACE.
2. SEAL CORRUGATED HDPE PIPE TO SMOOTH HDPE PIPE USING TWO (2) HDPE 24" DIAMETER O-RINGS IN ACCORDANCE WITH MANUFACTURERS WRITTEN RECOMMENDATIONS.
3. EXCAVATION SLOPES AND LIMITS SHOWN REPRESENT PAY LIMITS FOR BACKFILL ADJACENT TO STRUCTURES. THE CONTRACTOR MAY ELECT TO USE DIFFERENT EXCAVATION SLOPES.
4. RIPRAP SECTION AT BAFFLED OUTLETS VARY DEPENDING ON LOCATION. FOR SECTIONS AT STRUCTURES BO1 THROUGH BO4 SEE DRAWING C.16.
5. FACTORY WELDED 1" THICK HDPE FLANGE CAST FLUSH WITH INSIDE WALL OF BAFFLED OUTLET.
6. FOR LOCATIONS OF BAFFLED OUTLETS, SEE DRAWING C.9.



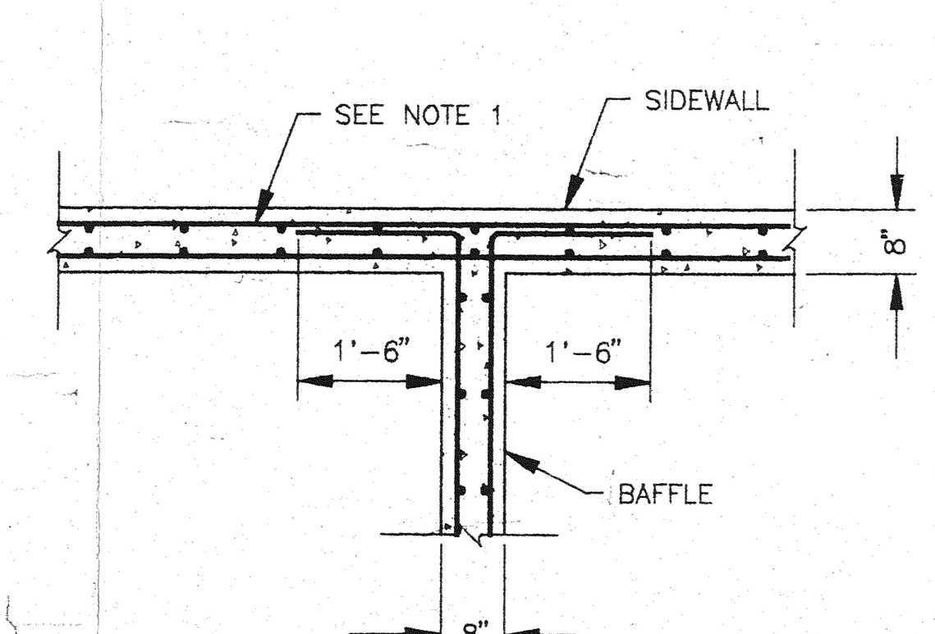
BAFFLED OUTLET SECTION SHOWING TYPICAL EARTHWORK

SCALE: 1/2"=1'-0"



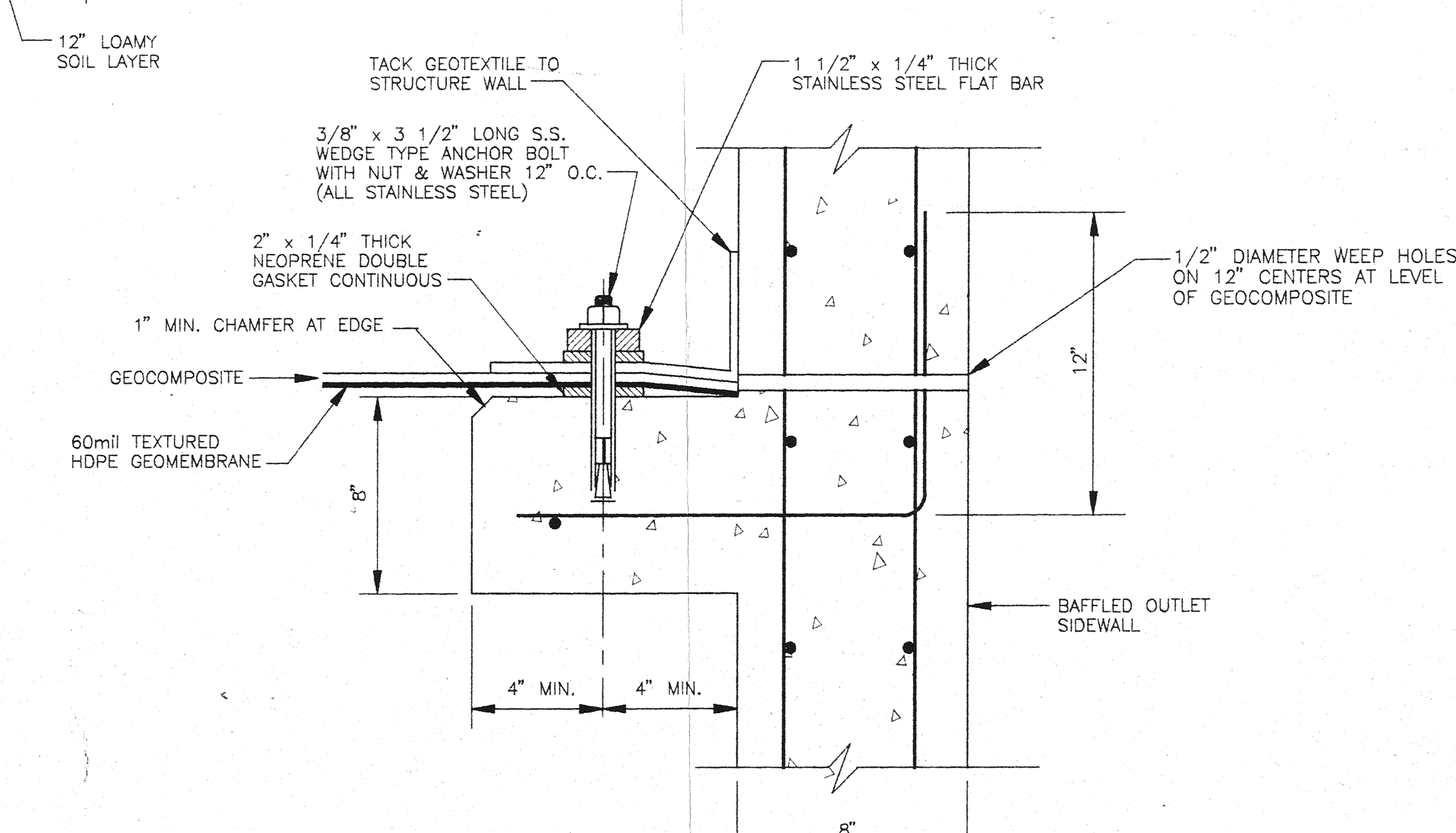
BAFFLED OUTLET-SECTION A

SCALE: 1/2"=1'-0"



TYPICAL SIDEWALL/BAFFLE CONNECTION DETAIL

SCALE: 1/2"=1'-0"



TYPICAL HDPE/CONCRETE ATTACHMENT DETAIL FOR BAFFLED OUTLETS

NOT TO SCALE

File name: K:\CADD\9204087\DESIGN\24087022.DWG Last edited: 94/05/18 @ 13:40

Woodward-Clyde Consultants, Inc.
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363 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10001

DEP
THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL ENGINEERING

NO.	DATE	DESCRIPTION	APPR'D.
1	5/18/94	AS PER ADDENDUM 34	SMM

REVISIONS

CAPITAL PROJECT NAME & NO.: PELHAM BAY LANDFILL REMEDIATION

CONTRACT NAME & NO.: GEOMEMBRANE CAPPING AND GAS COLLECTION SYSTEM CONTRACT NO. 876-HP

DRAWING TITLE: BAFFLED OUTLET PLAN AND SECTIONS

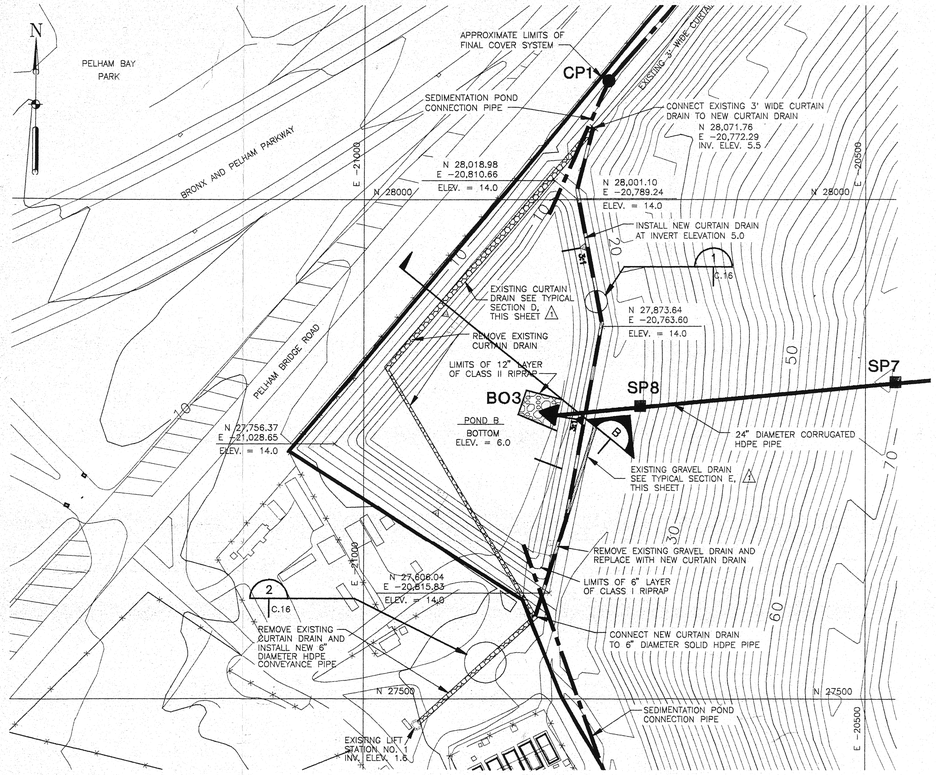
DESIGNED BY: JGS
DRAWN BY: GER
CHECKED BY: DJH
GROUP LEADER: AJC

STATE OF NEW YORK ANDREW J. CIANCIA LICENSED PROFESSIONAL ENGINEER No. 050161

DIVISION CHIEF: [signature] P.G.
PROJ. MGR.: [signature] P.E.

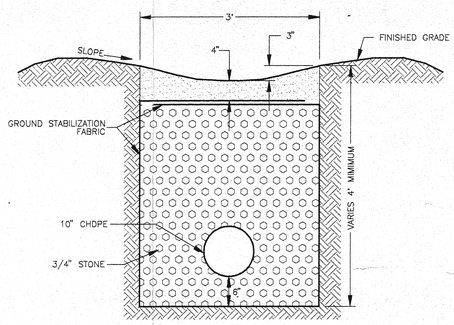
GRAPHIC SCALE: IF THIS BAR DOES NOT MEASURE 3" THEN DRAWING IS NOT TO SCALE.

SCALE: AS NOTED
DATE: MAY 18, 1994
DWG. NO.: C.11R1 OF: C.19
SHEET NO: 12 OF: 28



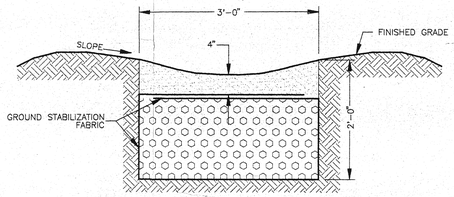
SEDIMENTATION POND B—PLAN

SCALE 1"=60'



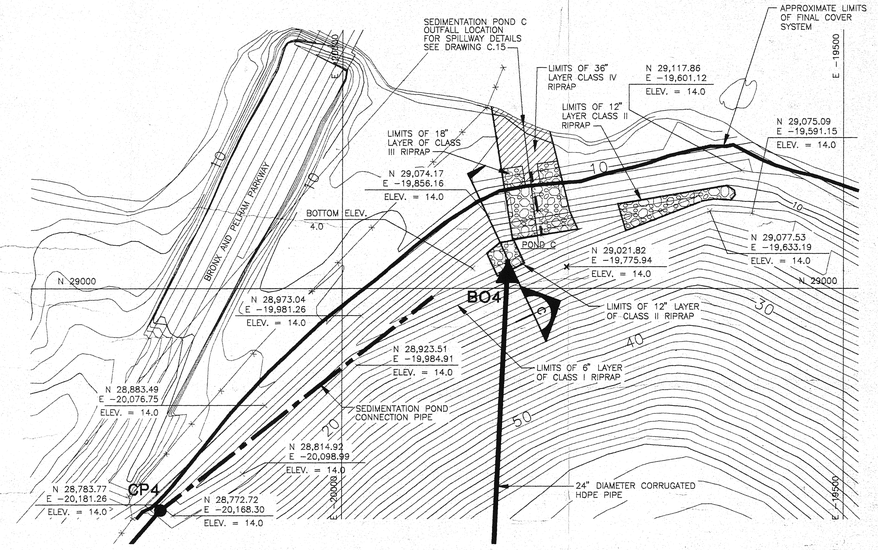
⚠ EXISTING CURTAIN DRAIN—SECTION D

NOT TO SCALE



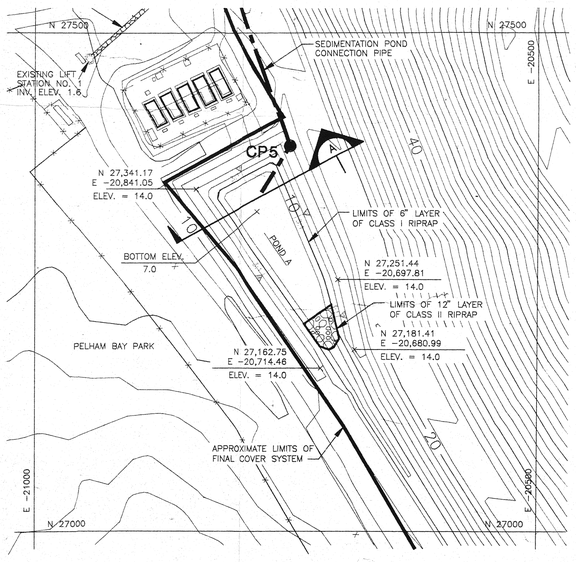
⚠ EXISTING GRAVEL DRAIN—SECTION E

NOT TO SCALE



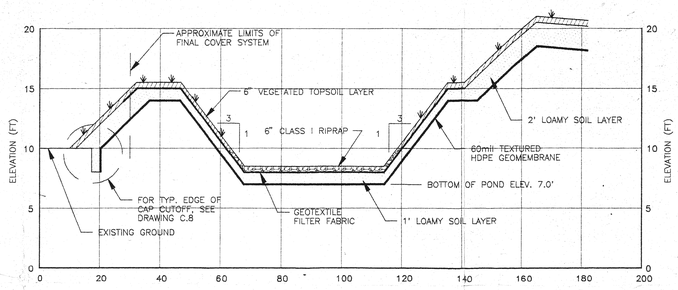
SEDIMENTATION POND C—PLAN

SCALE 1"=60'



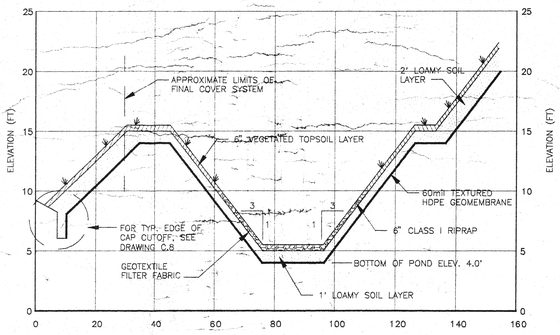
SEDIMENTATION POND A—PLAN

SCALE 1"=60'



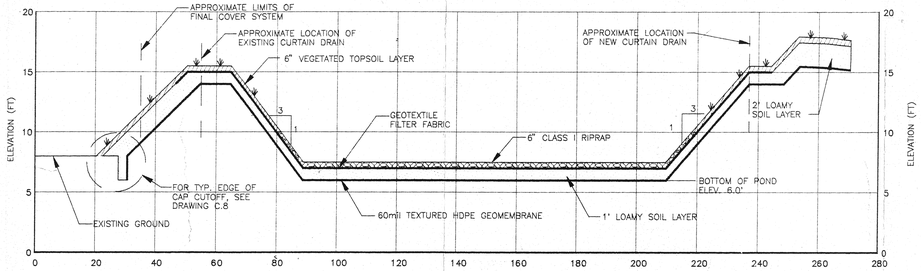
SEDIMENTATION POND A—SECTION A

HORIZONTAL SCALE 1"=20'
VERTICAL SCALE 1"=5'



SEDIMENTATION POND C—SECTION C

HORIZONTAL SCALE 1"=20'
VERTICAL SCALE 1"=5'



SEDIMENTATION POND B—SECTION B

HORIZONTAL SCALE 1"=20'
VERTICAL SCALE 1"=5'

NOTES:

1. BASE MAP PROVIDED BY GABRIEL SENOR (SURVEYORS), SITE SURVEY, OCTOBER 1992.
2. ELEVATIONS SHOWN ARE BASED ON THE BRONX BUREAU OF HIGHWAY DATUM IN WHICH ELEVATION IS 2.608 FT ABOVE THE UNITED STATES COAST AND GEODETIC SURVEY DATUM.
3. THE COORDINATE SYSTEM SHOWN IS THAT USED FOR THE EAST BRONX BY THE BRONX ENGINEERING BUREAU AND IS BASED ON THE USC&GS MERIDIAN WHICH IS TRUE NORTH.
4. THE CONTOURS SHOWN REPRESENT THE PROPOSED SURFACE OF THE LANDFILL AFTER THE INSTALLATION OF THE HDPE GEOMEMBRANE AND PRIOR TO THE INSTALLATION OF THE LOAMY SOIL AND VEGETATED TOPSOIL LAYERS.

LEGEND:

- SEDIMENTATION POND CONNECTION PIPE
- SP7 - COMBINATION STORMWATER COLLECTION MANHOLE/INLET
- BO4 ▲ BAFFLED OUTLET
- CP1 ● SEDIMENTATION POND CONNECTION MANHOLE

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NO.	DATE	DESCRIPTION	APPR'D.
⚠	5/18/94	AS PER ADDENDUM NO. 35	SHM

REVISIONS

CAPITAL PROJECT NAME & NO.: PELHAM BAY LANDFILL REMEDIATION

CONTRACT NAME & NO.: GEOMEMBRANE CAPPING AND GAS COLLECTION SYSTEM CONTRACT NO. 876-HP

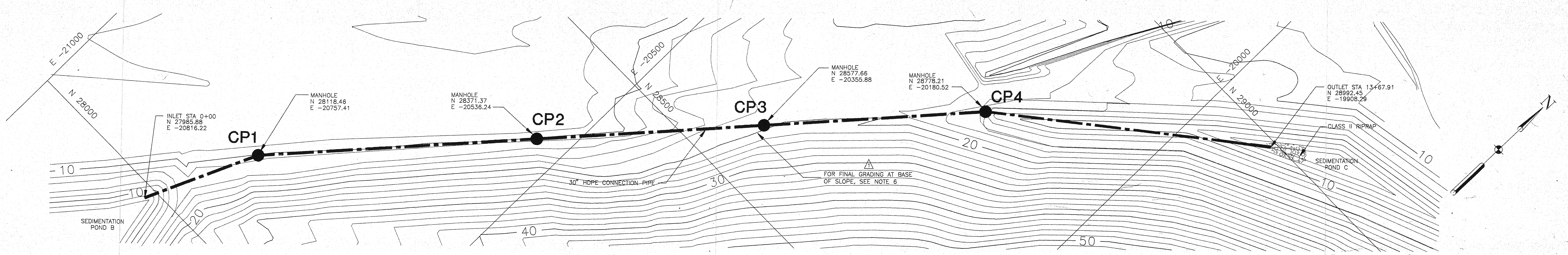
DRAWING TITLE:

SEDIMENTATION POND PLANS AND SECTIONS

Woodward-Clyde Consultants, Inc.
ENGINEERING AND SCIENCES APPLIED TO THE EARTH AND ITS ENVIRONMENT
363 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10001

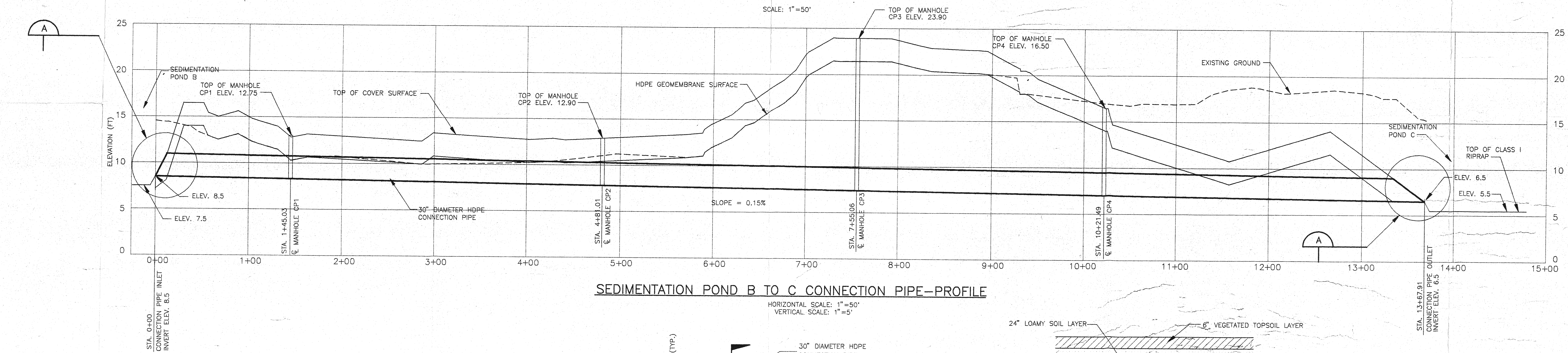
DESIGNED BY:	MDL
DRAWN BY:	WLP
CHECKED BY:	DJH
GROUP LEADER:	AJC
DIVISION CHIEF:	
PROJ. MGR.	
ORIGINAL SCALE IS	IF THIS BAR DOES NOT MEASURE 3" THEN DRAWING IS NOT TO SCALE
SCALE:	AS NOTED
DWG. NO.:	C.13R1
SHEET NO:	14
DATE:	MAY 18, 1994
OF:	C.19
OF:	28

File name: K:\CADD\92C4087\DESIGN\24087019.DWG Last edited: 94/05/18 @ 14:48



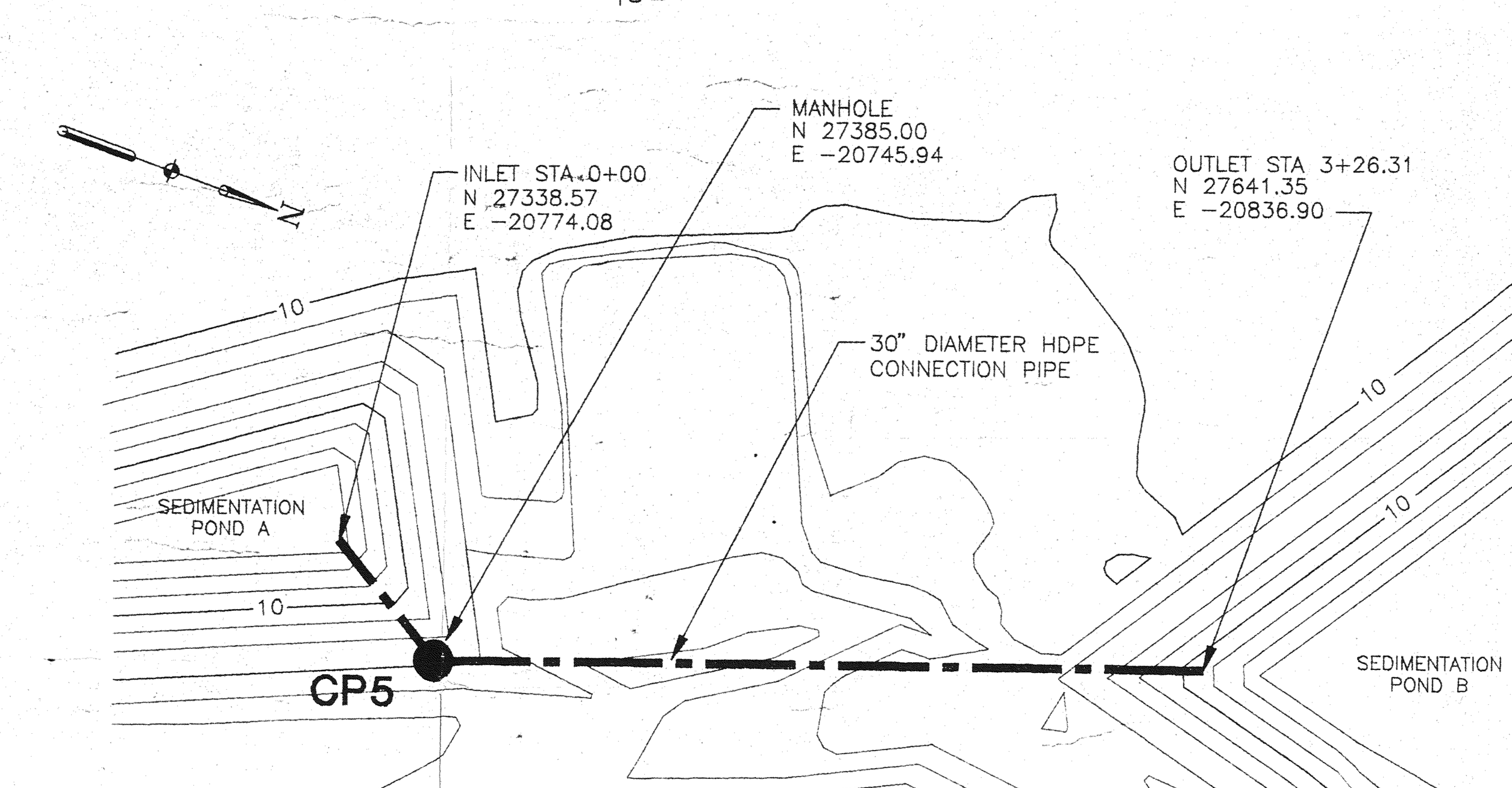
SEDIMENTATION POND B TO C CONNECTION PIPE–PLAN

SCALE: 1"=50'



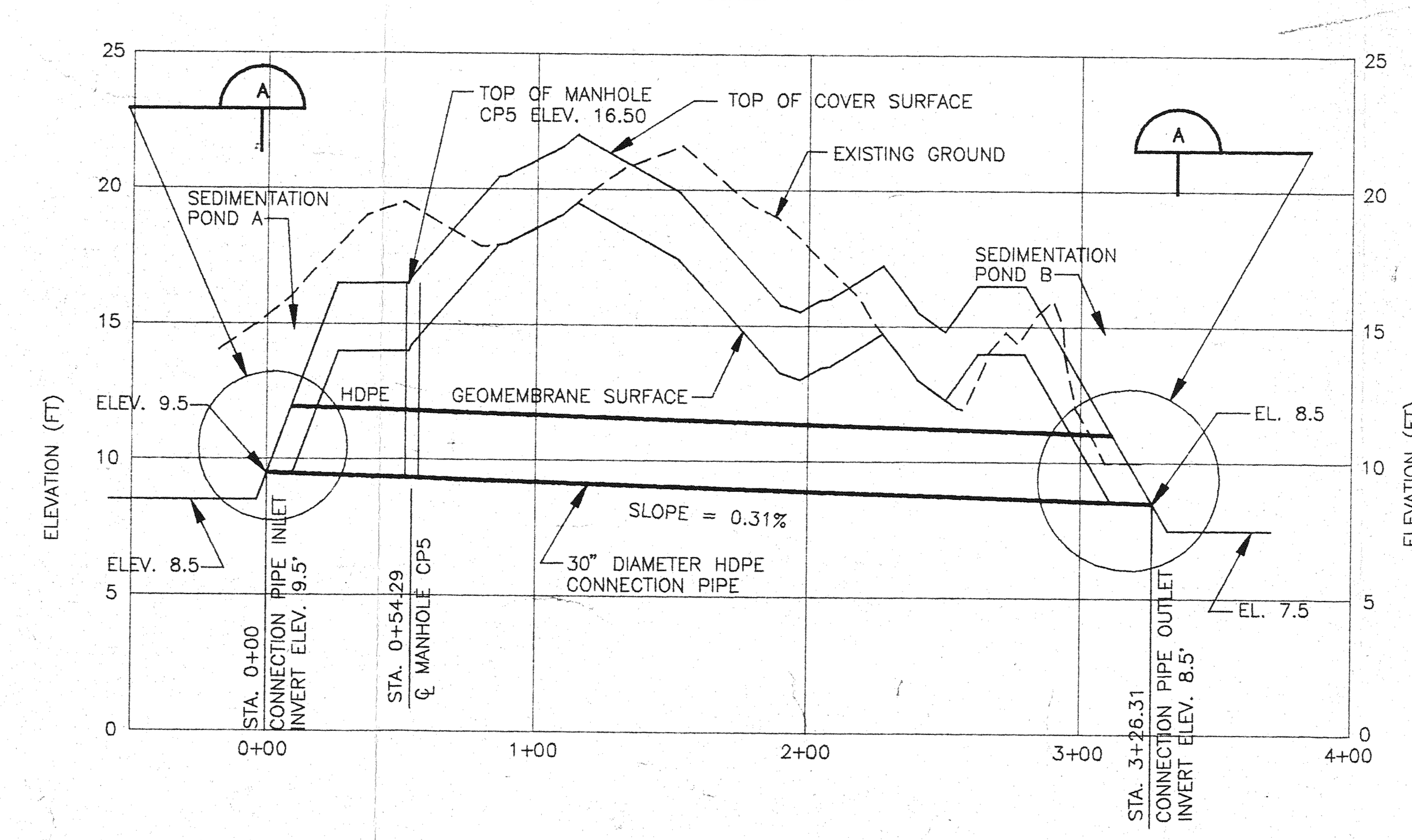
SEDIMENTATION POND B TO C CONNECTION PIPE–PROFILE

HORIZONTAL SCALE: 1"=50'
VERTICAL SCALE: 1"=5'



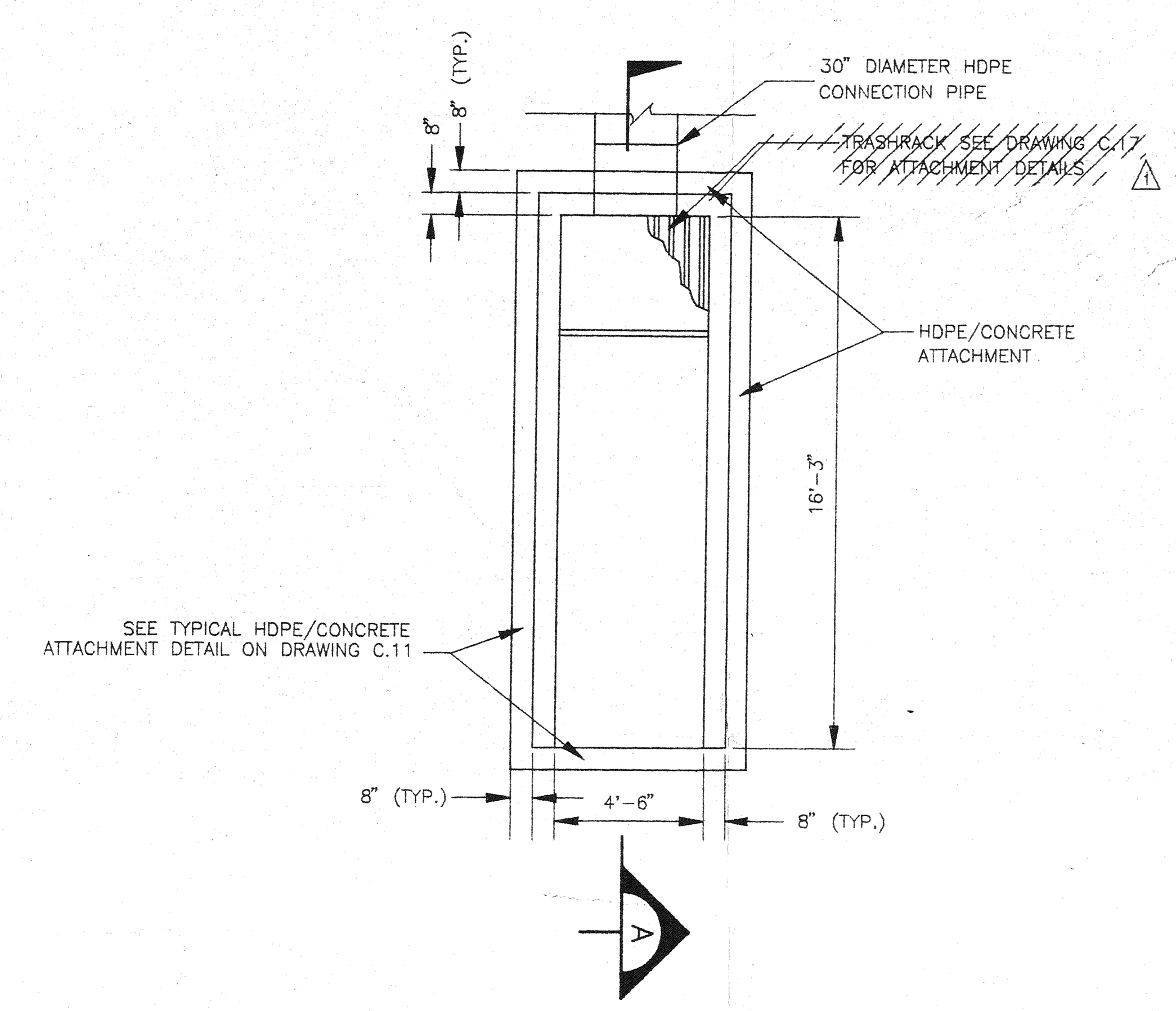
SEDIMENTATION POND A TO B–PLAN

POND A TO POND B
SCALE: 1" = 50'



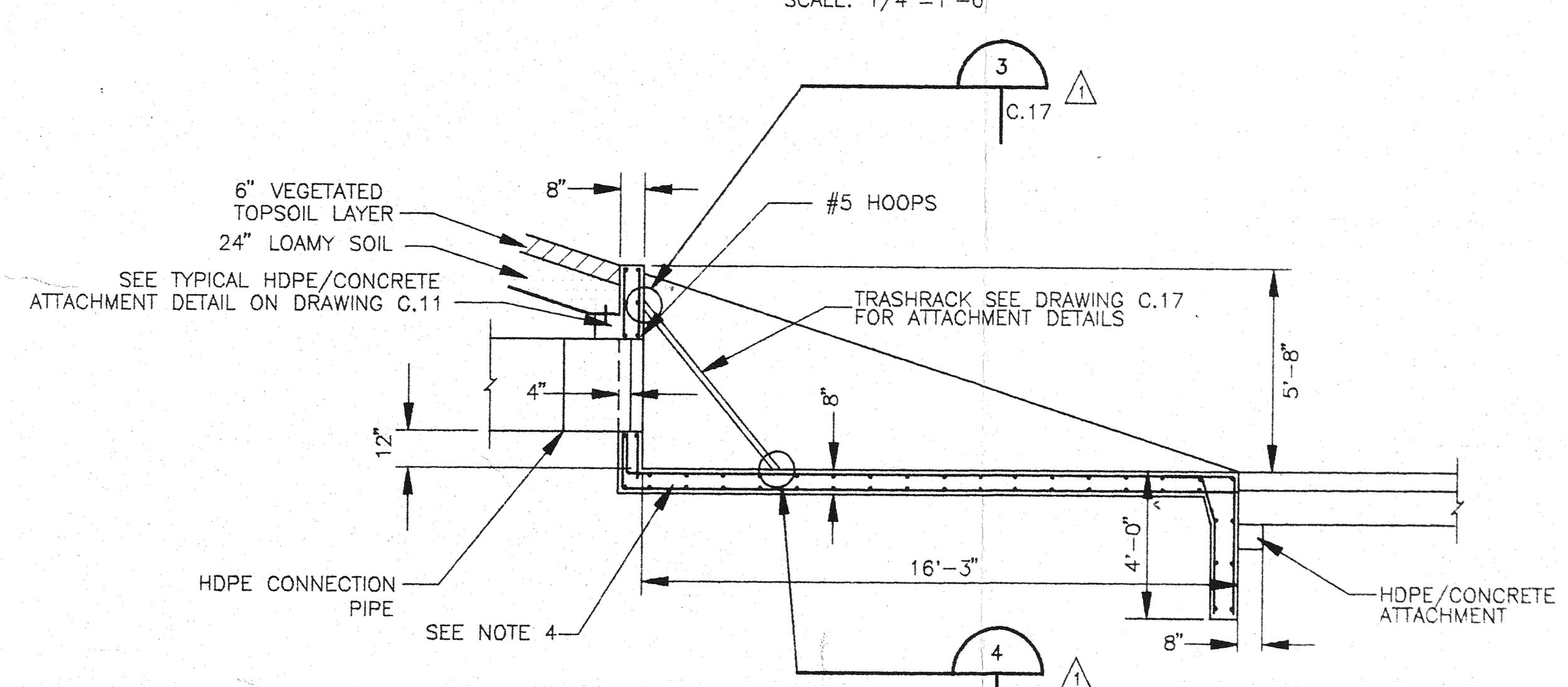
SEDIMENTATION POND A TO B–PROFILE

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



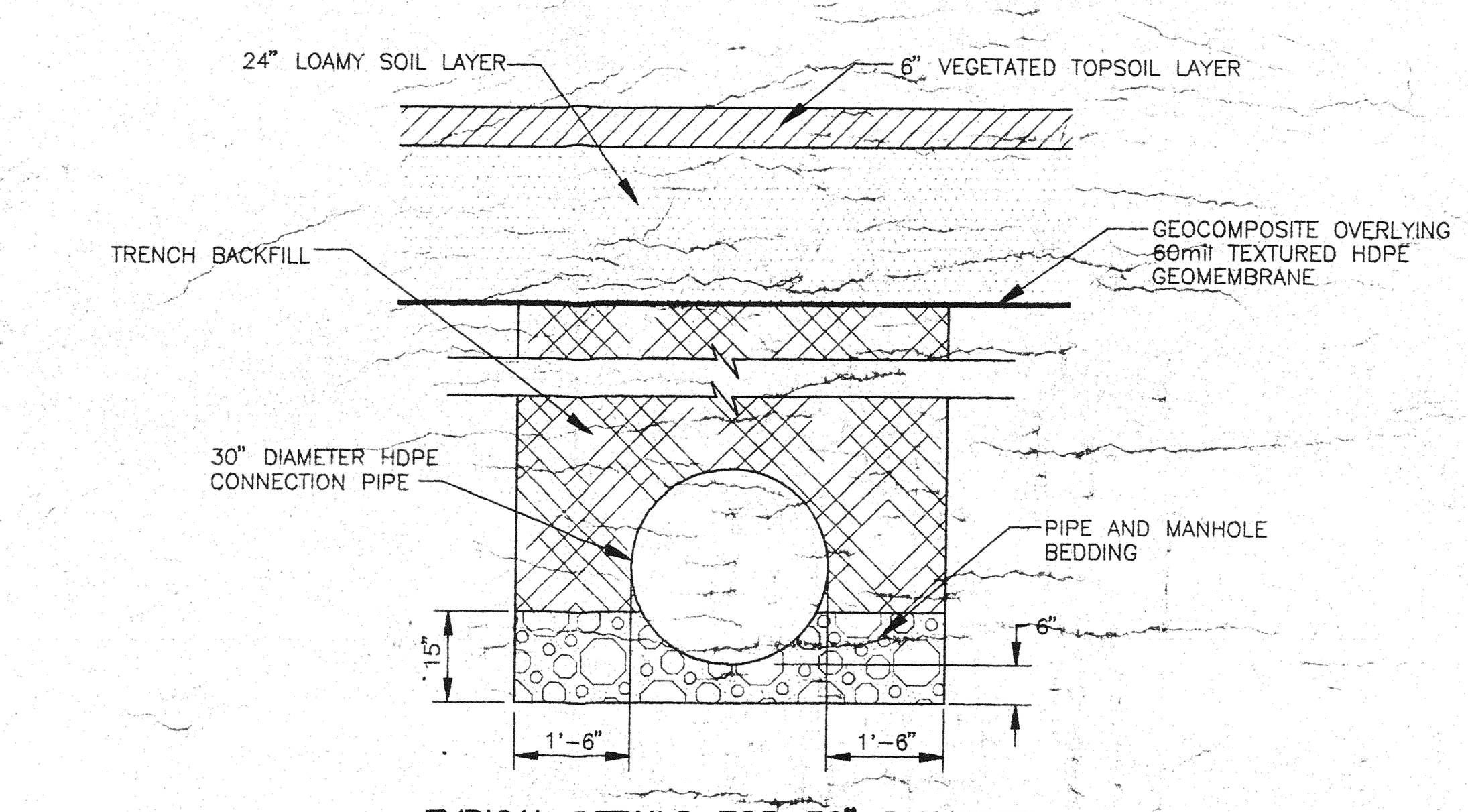
30" CONNECTION PIPE OUTLET OR INLET

SCALE: 1/4"=1'-0"



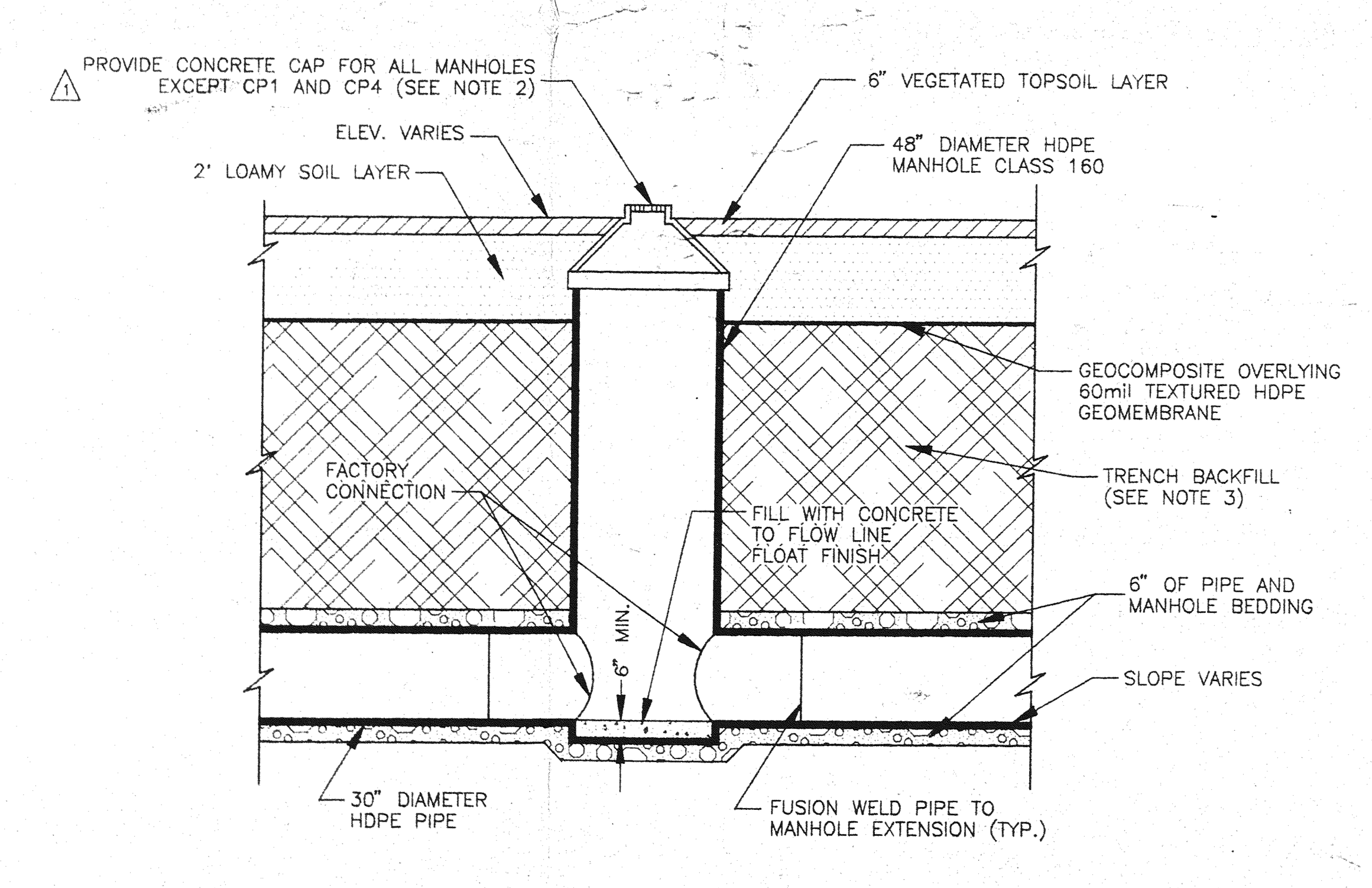
CONNECTION PIPE OUTLET OR INLET – SECTION

SCALE: 1/4"=1'-0"



TYPICAL DETAILS FOR 30" DIAMETER SEDIMENTATION POND CONNECTION PIPES

SCALE: 1/2"=1'-0"



TYPICAL MANHOLE INSTALLATION

NOT TO SCALE

NOTES:

1. CONTRACTOR SHALL FIELD VERIFY MANHOLE MEASUREMENT AND ADJUST HEIGHT TO MEET FINAL GRADE.
2. COVER FOR MANHOLE CP1 AND CP4 SHALL BE A DRAIN INLET.
3. PLACE TRENCH BACKFILL MINIMUM 3' AROUND SEDIMENTATION POND CONNECTION MANHOLE IN ALL DIRECTIONS.
4. ALL REINFORCEMENT ARE #5 @ 12" EACH WAY, EACH FACE.
5. THE CONTOURS SHOWN REPRESENT THE PROPOSED SURFACE OF THE LANDFILL AFTER THE INSTALLATION OF THE HDPE GEOMEMBRANE AND PRIOR TO THE INSTALLATION OF THE ROADS, DITCHES AND LOAMY SOIL AND VEGETATED TOPSOIL LAYERS.
6. GRADE THE FINAL LANDFILL SURFACE AT THE BASE OF THE WESTERN SLOPE OF THE LANDFILL ALONG THE ALIGNMENT OF THE CONNECTION PIPE BETWEEN SEDIMENTATION PONDS B AND C TO ALLOW SURFACE WATER TO DRAIN TOWARDS MANHOLES CP1 AND CP4.

LEGEND:

CP5 ● SEDIMENTATION POND CONNECTION MANHOLE

NO.	DATE	DESCRIPTION	APPR'D
1	5/18/94	AS PER ADDENDUM NO. 36	SMM

REVISIONS

DEP
THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL ENGINEERING

CAPITAL PROJECT NAME & NO.: PELHAM BAY LANDFILL REMEDIATION

CONTRACT NAME & NO.: GEOMEMBRANE CAPPING AND GAS COLLECTION SYSTEM CONTRACT NO. 876-HP

DRAWING TITLE: SEDIMENTATION POND CONNECTION PIPING AND STRUCTURES

Woodward-Clyde Consultants, Inc.
ENGINEERING AND SCIENCES APPLIED TO THE EARTH AND ITS ENVIRONMENT
363 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10001

DESIGNED BY:	JGS
DRAWN BY:	GER
CHECKED BY:	DJH
GROUP LEADER:	AJC

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SCALE:	DWG. NO.:	SHEET NO:
AS NOTED	C.14R1	15
DATE:	OF:	OF:
MAY 18, 1994	C.19	28

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NOTES:

1. CONTRACTOR SHALL COORDINATE WORK ON THE GAS COLLECTION SYSTEM WITH WORK ON THE CAPPING SYSTEM.
2. ALL GAS PIPING SHALL BE HDPE AND SLOPED MINIMUM 2% FROM THE MOST REMOTE POINT TO THE BLOWER AND FLARE PAD.
3. LOCATION OF WELLS MAY REQUIRE FIELD ADJUSTMENT AS A RESULT OF CONDITIONS ENCOUNTERED DURING DRILLING.
4. CONDENSATE PIPING SHALL BE DOUBLE WALL HDPE.
5. NEW FENCE AROUND GAS FLARING SYSTEM IS SHOWN ON SHEET GS-2.
6. CONTRACTOR SHALL RUN AND CONNECT CONDENSATE PIPE TO EXISTING MANHOLE AT STATION 0+34. SEE SHEET GS-3.
7. CONCRETE ENCASEMENTS, VALVE BOXES AND PIPE FITTINGS SHOWN FOR CLARITY AND ARE NOT TO SCALE.
8. CONTRACTOR SHALL INSTALL ALL NECESSARY AND REQUIRED HDPE FITTINGS.
9. ⚠1 THE CONTOURS SHOWN REPRESENT THE PROPOSED SURFACE OF THE LANDFILL AFTER THE INSTALLATION OF THE HDPE GEOMEMBRANE AND PRIOR TO THE INSTALLATION OF THE LOAMY SOIL AND VEGETATED TOPSOIL LAYER.

⚠1 GAS EXTRACTION WELL #	NORTHING (FT)	EASTING (FT)	WELL DEPTH (FT)	SLOTTED PIPE LENGTH (FT)	SOLID PIPE LENGTH (FT)
EW-1	28702.231	-19319.090	46	23	23
EW-2	28836.884	-19427.660	46	23	23
EW-3	28809.457	-19683.859	40	20	20
EW-4	27661.787	-19703.668	82	41	41
EW-5	28020.383	-19618.141	74	37	37
EW-6	28315.520	-19671.320	64	32	32
EW-7	27724.006	-20174.978	80	40	40
EW-8	28019.291	-20021.491	76	38	38
EW-9	28199.495	-19862.856	72	36	36
EW-10	28613.204	-19826.641	46	23	23
EW-11	28346.927	-20126.178	42	21	21
EW-12	28037.929	-20370.160	42	21	21
EW-13	27653.434	-20481.971	42	21	21
EW-14	27318.521	-20484.583	42	21	21
EW-15	27395.457	-20199.993	78	39	39
EW-16	27033.699	-20192.593	42	21	21
EW-17	27345.683	-19784.834	78	39	39
EW-18	27021.197	-19795.608	42	21	21
EW-19	27044.288	-19414.229	46	23	23
EW-20	27439.212	-19520.863	78	39	39
EW-21	27429.580	-19264.648	46	23	23
EW-22	27807.134	-19272.508	46	23	23

LEGEND

- GAS TRANSMISSION LINE AND FLOW DIRECTION
- HORIZONTAL PERIMETER GAS COLLECTION PIPE
- VB-1 VALVE BOX
- REDUCER
- CONCRETE PIPE ENCASEMENT
- PIPE CLEAN OUT
- EW-11 GAS EXTRACTION WELL NO. 11
- GMW-1 GAS MONITORING WELL NO. 1
- 80 FINAL GRADE CONTOUR LINE
- EXISTING FENCE

THE CITY OF NEW YORK
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BUREAU OF ENVIRONMENTAL ENGINEERING

NO.	DATE	DESCRIPTION	APPR'D.
⚠1	5/20/94	AS PER ADDENDUM NO. 41	SMM

REVISIONS

CAPITAL PROJECT NAME & NO.: PELHAM BAY LANDFILL REMEDIATION

CONTRACT NAME & NO.: GEOMEMBRANE CAPPING AND GAS COLLECTION SYSTEM CONTRACT NO. 876-HP

DRAWING TITLE:

GAS COLLECTION AND FLARING SYSTEM PLAN

Woodward-Clyde Consultants, Inc.
ENGINEERING AND SCIENCES APPLIED TO THE EARTH AND ITS ENVIRONMENT
363 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10001

DESIGNED BY: SA	DIVISION CHIEF:	PROJ MGR.:	
DRAWN BY: MVB	GRAPHIC SCALE 0 50' 100' 200' 300'		
CHECKED BY: AKM	SCALE: 1" = 100'	DWG. NO.: GS.1R1	SHEET NO: 21
GROUP LEADER: AJC	DATE: MAY 20, 1994	DF: GS.3	OF: 28

STATE OF NEW YORK — No. 050191 — LICENSED PROFESSIONAL ENGINEER

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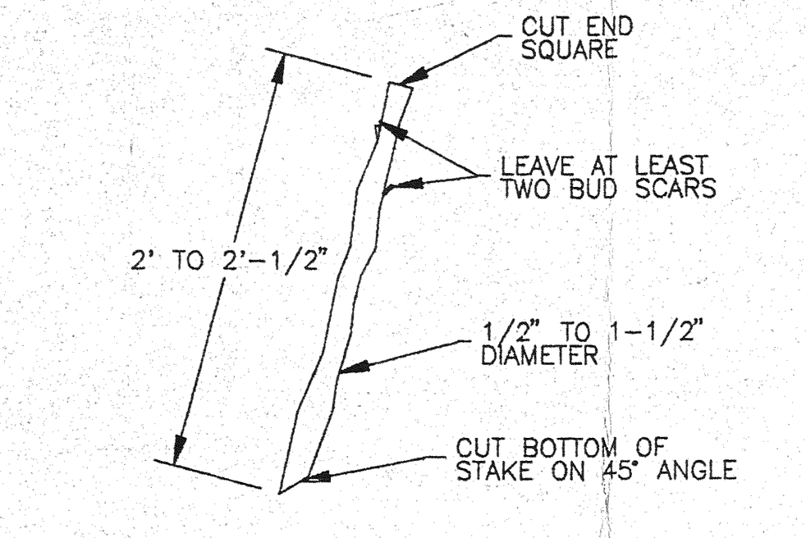
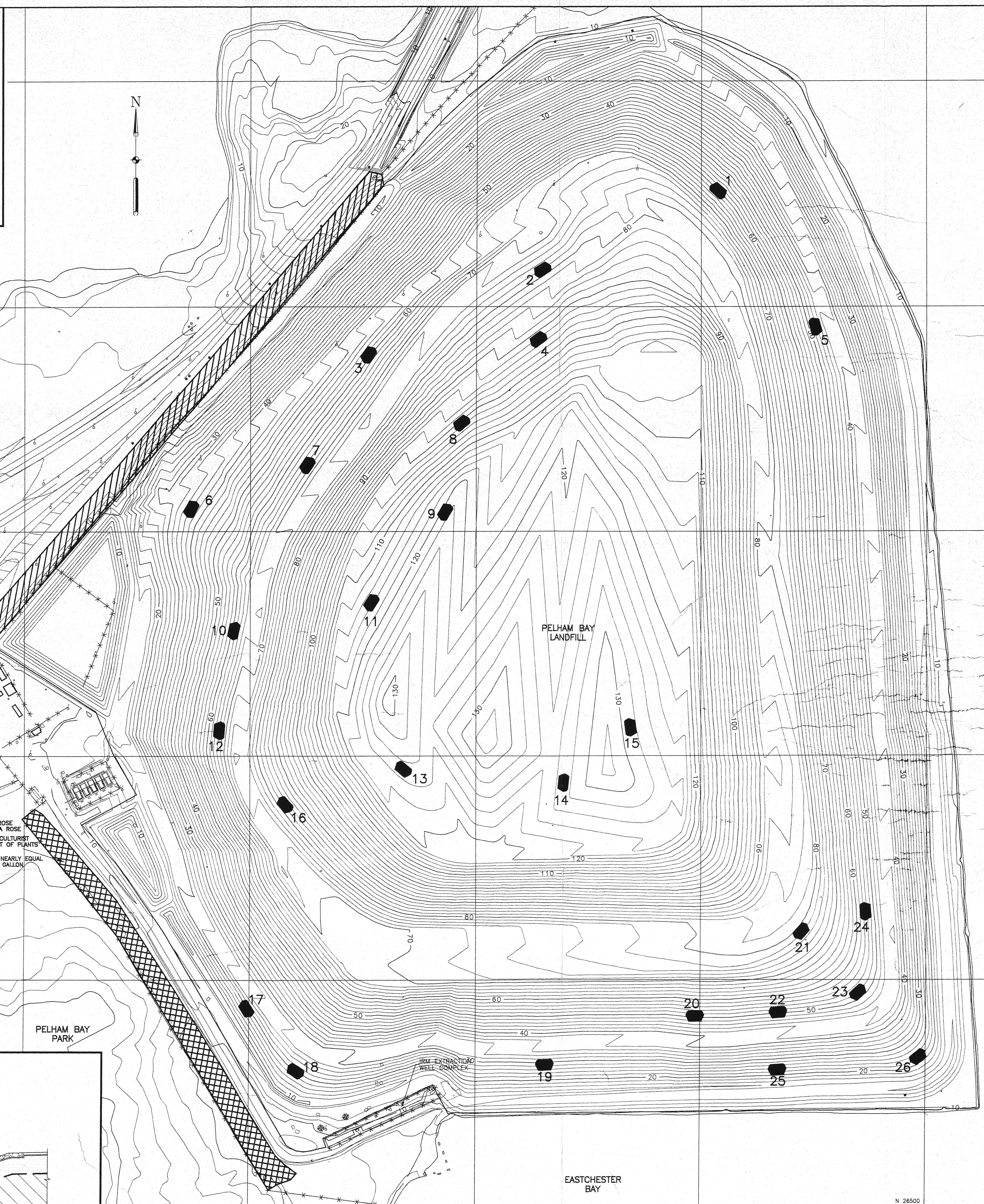
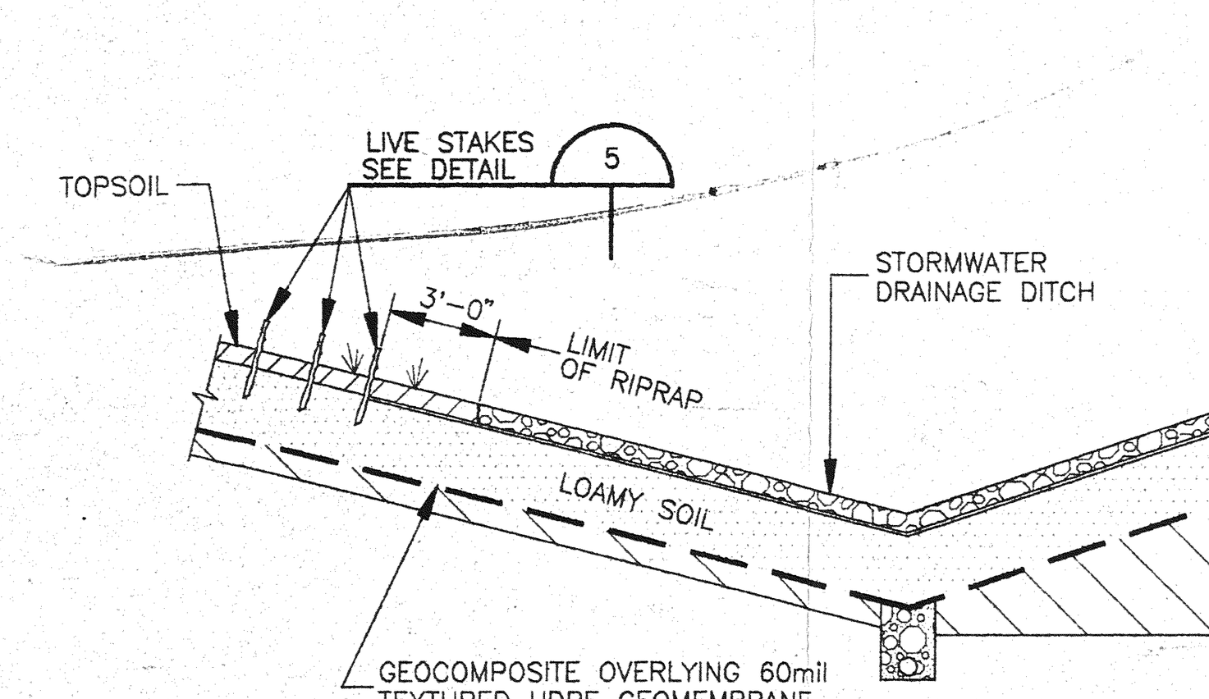


LIVE STAKE DETAIL (5)
NOT TO SCALE





SECTION–LIVE STAKE PLANTING (4)
SCALE: 3/16" = 1'-0"

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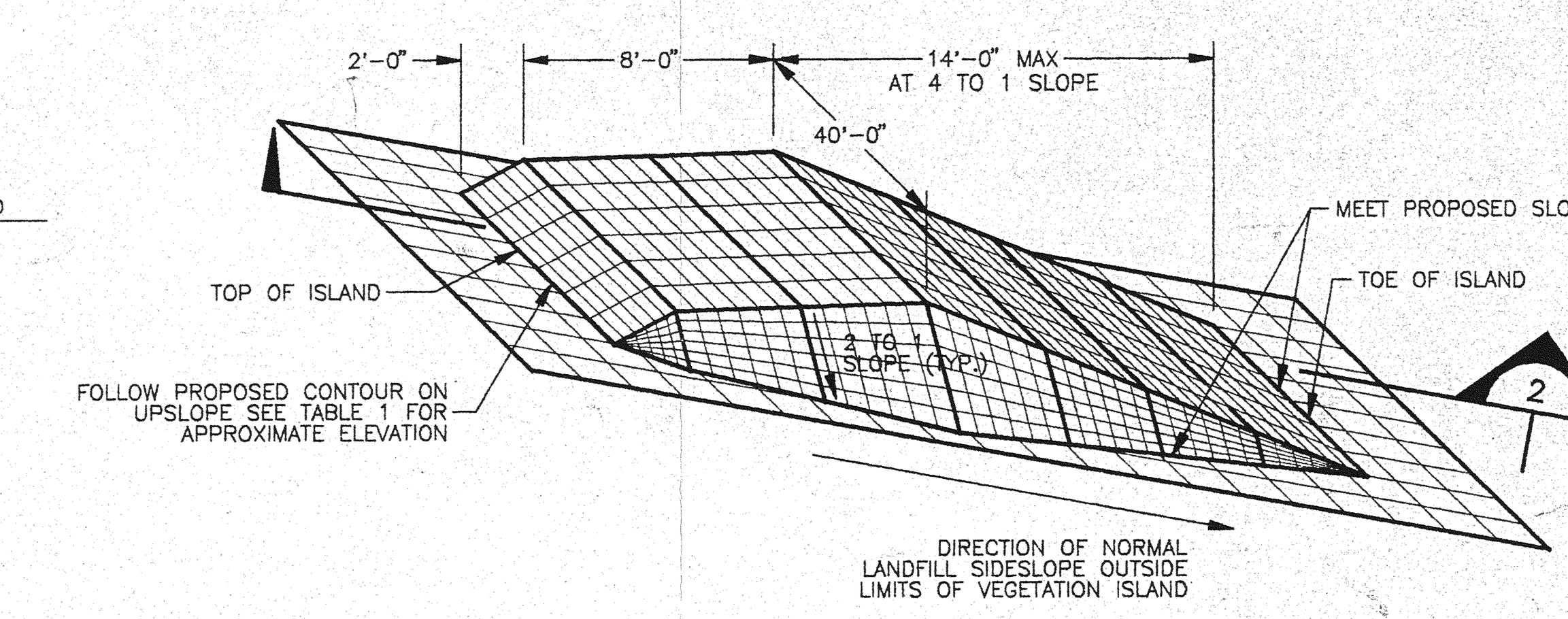
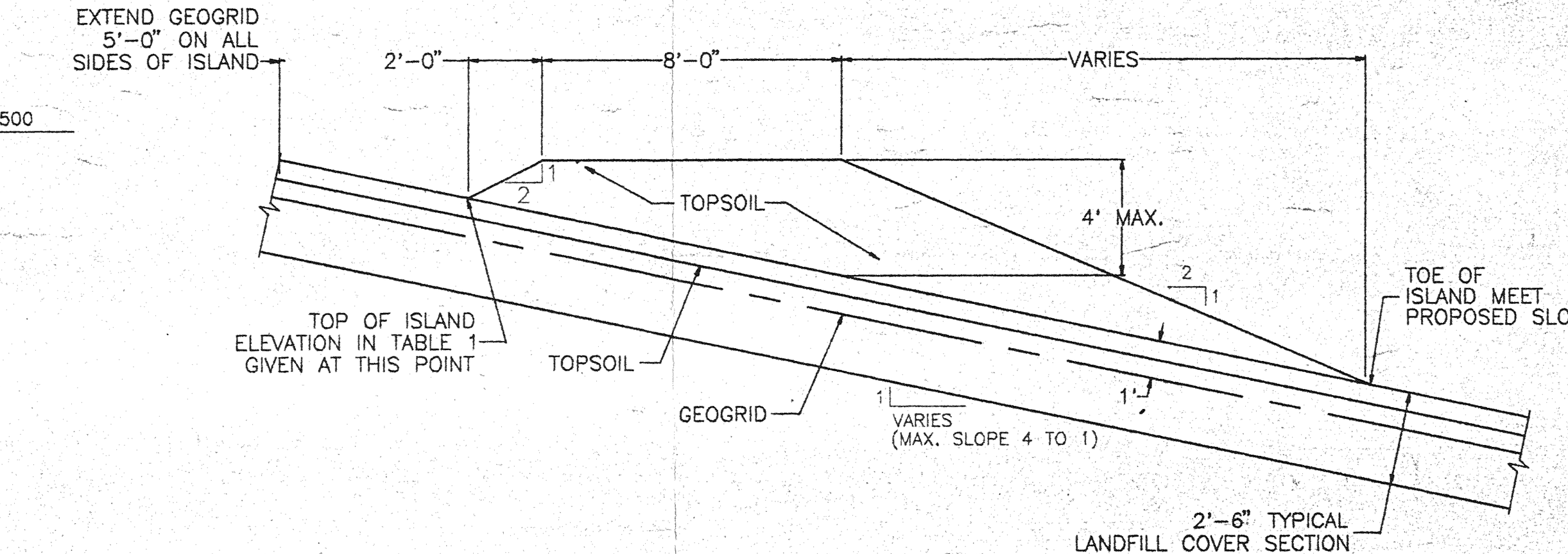
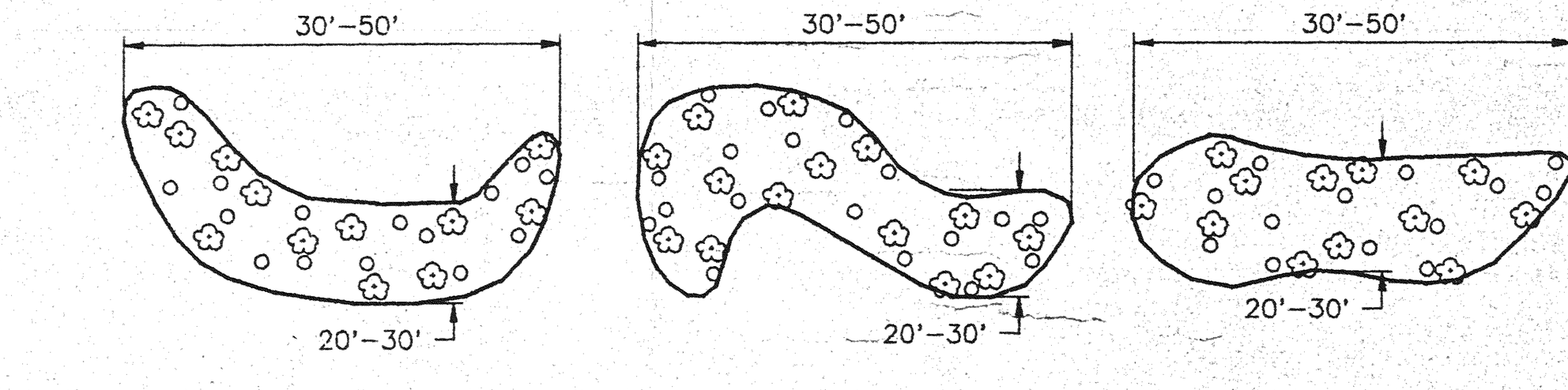


VEGETATION ISLAND (1)
NOT TO SCALE



VEGETATION ISLAND SECTION (2)
SCALE 1/4" = 1'-0"



VEGETATION ISLAND FINAL CONFIGURATION (3)
NOT TO SCALE

PLANT SCHEDULE FOR VEGETATION ISLANDS ONLY:

TREES:

BOTANICAL NAME/COMMON NAME	QUANTITY	SIZE
Pinus rigida/Pitch Pine	49	5'-6' b&b
Quercus illicifolia/Scrub Oak	73	1.5" caliper
Juniperus virginina/Eastern Red Cedar	40	4'-5' b&b
Prunus serotina/Black Cherry	20	2" caliper
Betula populifolia/Gray Birch	65	2" caliper
Celtis occidentalis/Hackberry	53	1.5" caliper
Populus tremuloides/Quaking Aspen	24	6'-8' b&b
Populus grandidentata/Big-Tooth Aspen	36	6'-8' b&b
Quercus montana/Chestnut Oak	45	1.5" caliper

SHRUBS:

	QUANTITY	SIZE
Prunus maritima/Beach Plum	87	2 gallon cont.
Rhus typhina/Staghorn Sumac	36	2 gallon cont.
Viburnum dentatum/Arrowwood Viburnum	73	40@2 gallon, 33@3 gallon
Myrica pensylvanica/Northern Bayberry	73	45@2 gallon, 28@3 gallon
Sambucus canadensis/American Elderberry	73	50@2 gallon, 23@3 gallon
Vaccinium angustifolium/Lowbush Blueberry	109	1 gallon cont.
Ceanothus americanus/New Jersey Tea	146	1 gallon cont.
Cornus racemosa/Gray Dogwood	87	2 gallon cont.
Gaylussacia baccata/Black Huckleberry	52	1 gallon cont.

HERBACEOUS:

Asclepias tuberosa/Butterfly Weed	1.5 lbs./acre	seeding
Lespedeza capitata/Bush Clover	.75 lbs./acre	"
Euthamia graminifolia/Lance-leaf Goldenrod	.50 lbs./acre	"
Solidago rugosa/Rough-stemmed Goldenrod	.75 lbs./acre	"
Solidago sempervirens/Seaside Goldenrod	.50 lbs./acre	"
Solidago speciosa/Showy Goldenrod	.50 lbs./acre	"
Andropogon gerardii/Big Bluestem	1 lbs./acre	"
Schizachyrium scoparius/Little Bluestem	2 lbs./acre	"
Sorghastrum nutans/Indiangrass	1.5 lbs./acre	"
Panicum virgatum/Switchgrass	.50 lbs./acre	"
Rudbeckia hirta/Black-eyed Susan	.50 lbs./acre	"

VEGETATION ISLAND NO.	ELEVATION, TOP OF VEGETATION ISLAND (ROUGH GRADE +2.5')
1	65
2	82
3	65
4	97
5	57
6	40
7	71
8	106
9	125
10	67
11	120
12	71
13	129
14	131
15	132
16	88
17	21
18	24
19	34
20	55
21	82
22	57
23	55
24	61
25	30
26	28

LEGEND

- PROPOSED VEGETATION ISLAND LOCATION
- 80 — ROUGH GRADED SURFACE CONTOUR
- X X X — EXISTING FENCE

NOTE:

1. VEGETATION ISLAND DETAILS 1 & 2 REPRESENT THE PAY LIMITS FOR THE ISLAND.
2. VEGETATION ISLAND DETAIL 3 REPRESENT EXAMPLES OF THE APPROXIMATE FINAL CONFIGURATION OF THE ISLANDS. THE FINAL SHAPE WILL BE DETERMINED IN THE FIELD UNDER THE DIRECTION OF THE RESIDENT ENGINEER AND/OR LANDSCAPE ARCHITECT.
3. DRAINAGE DITCHES TO BE PLANTED WITH 1,000 LIVE STAKES AS SHOWN IN SECTION 4. LOCATION AND SPACING AS DIRECTED BY THE RESIDENT ENGINEER AND/OR LANDSCAPE ARCHITECT. SEE SPECIFICATION SECTION 02960 FOR FURTHER DETAILS ON TECHNIQUES AND CORRECT SEASON FOR PLANTING.
4. THE CONTOURS SHOWN REPRESENT THE PROPOSED SURFACE OF THE LANDFILL AFTER THE INSTALLATION OF THE HDPE GEOMEMBRANE AND PRIOR TO THE INSTALLATION OF THE ROADS, DITCHES AND LOAMY SOIL AND VEGETATED TOPSOIL LAYERS.

DEP
THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL ENGINEERING

NO.	DATE	DESCRIPTION	APPR'D.
1	5/18/94	AS PER ADDENDUM NO. 40	SMM

REVISIONS

CAPITAL PROJECT NAME & NO.: PELHAM BAY LANDFILL REMEDIATION

CONTRACT NAME & NO.: GEOMEMBRANE CAPPING AND GAS COLLECTION SYSTEM CONTRACT NO. 876-HP

DRAWING TITLE:

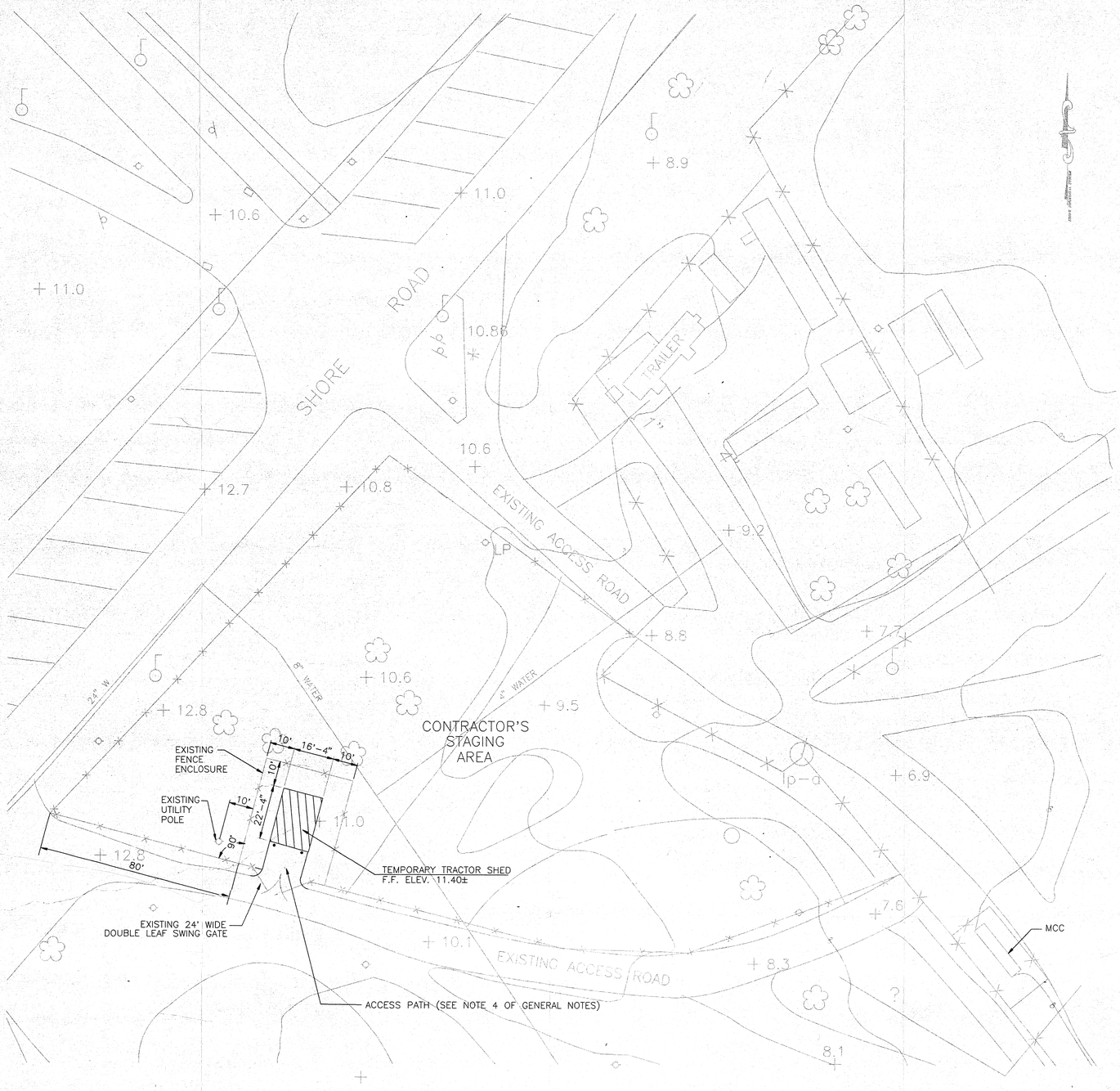
LANDSCAPE PLAN

Woodward-Clyde Consultants, Inc.
ENGINEERING AND SCIENCES APPLIED TO THE EARTH AND ITS ENVIRONMENT
363 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10001

DESIGNED BY: MTZ
DRAWN BY: MVB
CHECKED BY: MTZ
GROUP LEADER: AJC

STATE OF NEW YORK · ANDREW J. CIANCIA · No. 050161 · LICENSED PROFESSIONAL ENGINEER

DIVISION CHIEF: [signature] P.E.
PROJ MGR.: [signature] P.E.
GRAPHIC SCALE: 0 50' 100' 200' 300'
SCALE: 1" = 100'
DATE: MAY 18, 1994
DWG. NO.: LS.1R1 OF: LS.1R1
SHEET NO: 27 OF: 28



GENERAL NOTES:

1. ALL ELEVATIONS SHOWN IN THESE PLANS REFER TO THE BRONX BUREAU OF HIHGWAY DATUM IN WHICH ELEVATION IS 2.608 FT. ABOVE THE NATIONAL GEODETIC VERTICAL DATUM (N.G.V.D.) AT SANDY HOOK AS ESTABLISHED BY THE UNITED STATES COAST AND GEODETIC SURVEY.
2. EXISTING UNDERGROUND AND OVERHEAD UTILITIES AS SHOWN HERE HAVE BEEN DETERMINED BY STANDARD SURVEYING METHODS AND AVAILABLE RECORDS. NEITHER THE EXACT LOCATION NOR THE INFORMATION FOR THESE UTILITIES IS GUARANTEED TO BE COMPLETE OR CORRECT.
3. REGRADE THE AREA ADJACENT TO THE TRACTOR SHED IN SUCH FASHION TO PROVIDE POSITIVE DRAINAGE.
4. PROVIDE 3/4" CRUSHED STONE PAVEMENT (24" MIN.) ON GEOTEXTILE SEPARATION SHEET, "MIRAFI 600X" OR EQUAL.

CONCRETE NOTES:

1. CONCRETE DESIGN DETAIL AND CONSTRUCTION TO CONFORM TO THE LATEST PROVISIONS OF THE AMERICAN CONCRETE INSTITUTE BUILDING CODE.
2. ALL CONCRETE TO BE OF A MINIMUM COMPRESSIVE STRENGTH OF 3,000 P.S.I. CONCRETE AT 28 DAYS, UNLESS OTHERWISE NOTED.
3. REINFORCEMENT AND DOWELLING BARS TO CONSIST OF INTERMEDIATE GRADE DEFORMED BARS CONFORMING TO SPECIFICATIONS OF ASTM 615–60.
4. CONCRETE COVER OF MAIN REINFORCING STEEL SHALL BE A MINIMUM OF 2 INCHES.
5. CALCIUM CHLORIDE MAY NOT BE USED IN ANY CONCRETE MIX.

MASONRY NOTES

1. HOLLOW LOAD BEARING MASONRY UNITS SHALL MEET THE REQUIREMENTS OF ASTM C90–71. THE COMPRESSIVE STRENGTH SHALL BE NOT LESS THAN 2000 P.S.I.
2. SOLID LOAD – BEARING MASONRY UNITS SHALL MEET THE REQUIREMENTS OF ASTM C145–71. THE COMPRESSIVE STRENGTH SHALL BE NOT LESS THAN 1000 P.S.I. WITH COMPRESSIVE STRENGTH OF UNITS NOT LESS 2500 P.S.I.
3. USE GRADE "N" BLOCKS WHEN BLOCKS ARE IN CONTACT WITH GRADE OR EXPOSED TO WEATHER, USE GRADE "S" BLOCKS IN ALL OTHER CONDITIONS.

Woodward-Clyde Consultants, Inc.
ENGINEERING AND SCIENCES APPLIED TO THE EARTH AND ITS ENVIRONMENT
363 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10001

EWF EWELL W. FINLEY, & PARTNERS
CONSULTING ENGINEERS
34–18 NORTHERN BOULEVARD LONG ISLAND CITY, NY 11101

DEP
THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL ENGINEERING

NO.	DATE	DESCRIPTION	APPR'D.

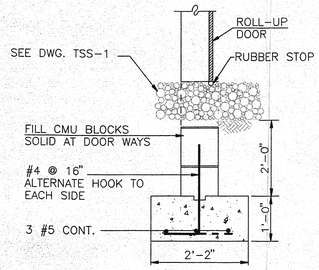
REVISIONS

CAPITAL PROJECT NAME & NO.: PELHAM BAY LANDFILL REMEDIATION

CONTRACT NAME & NO.: GEOMEMBRANE CAPPING AND GAS COLLECTION SYSTEM CONTRACT NO. 876–HP

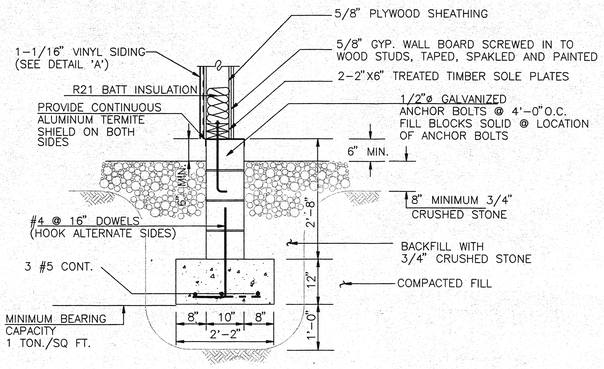
DRAWING TITLE: TEMPORARY TRACTOR SHED SITE PLAN

DESIGNED BY: SF	DIVISION CHIEF:	PROJ MGR.:	
DRAWN BY: SB	GRAPHIC SCALE 0 10 20 40 60		
CHECKED BY: CYY	SCALE: 1"=20'-0"	DWG. NO.: TSS–1	SHEET NO.: 1
GROUP LEADER: CJP	DATE: MAY 23, 1994	OF: TSS–3	OF: 3



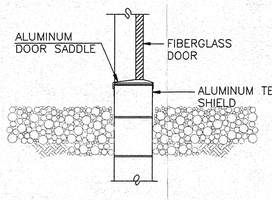
SECTION 1

SCALE: 3/4"= 1'-0"



SECTION 2

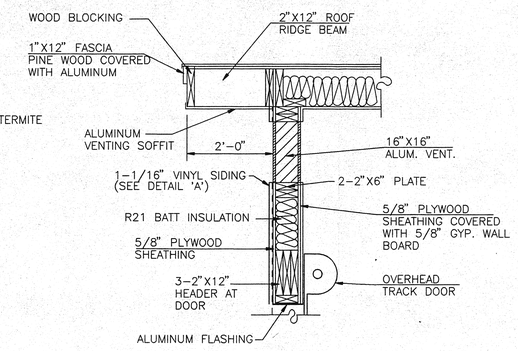
SCALE: 3/4"= 1'-0"



SECTION 3

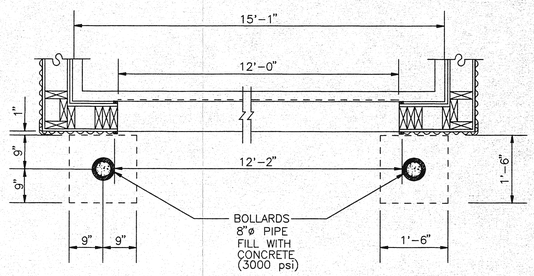
SCALE: 3/4"= 1'-0"

FOR INFO. NOT SHOWN SEE SECTION 2

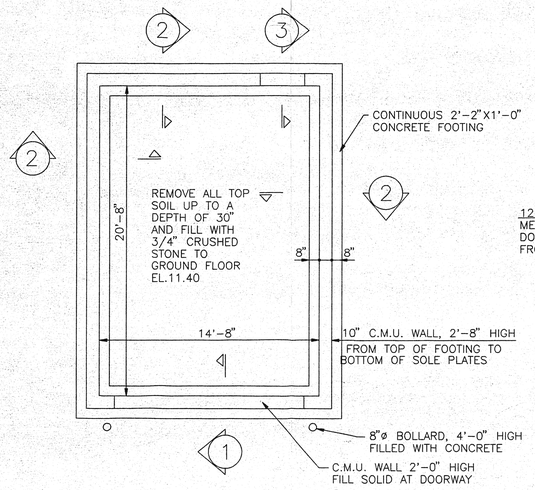


SECTION 4

SCALE: 3/4"= 1'-0"



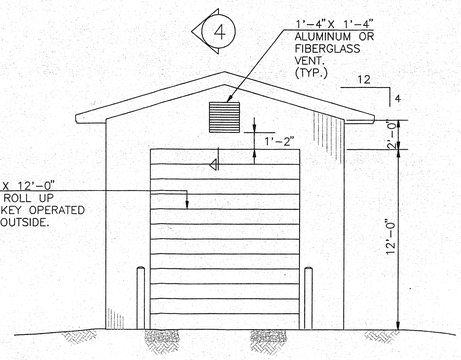
BOLLARDS LOCATION PLAN



FOUNDATION PLAN

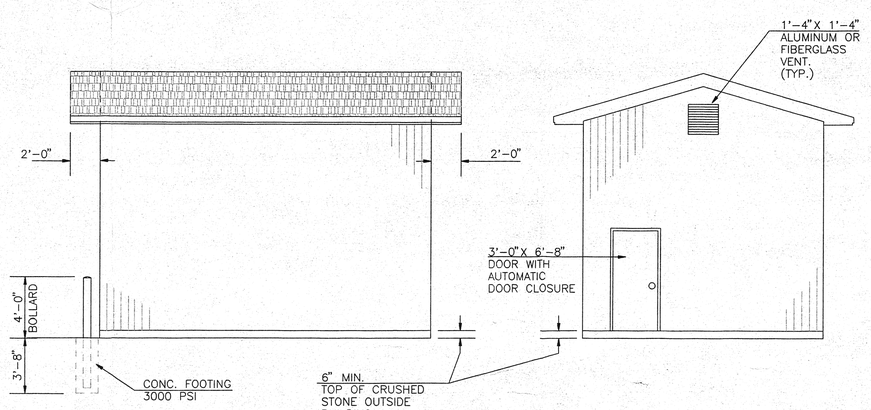
SCALE: 1/4"= 1'-0"

NOTE: BACKFILL WITH CRUSHED STONE ALL AROUND BUILDING.



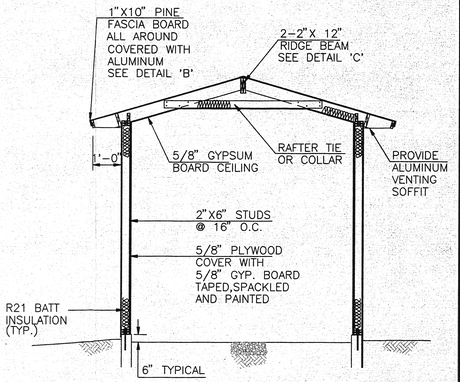
FRONT ELEVATION

SCALE: 1/4"= 1'-0"



SIDE ELEVATION

SCALE: 1/4"= 1'-0"

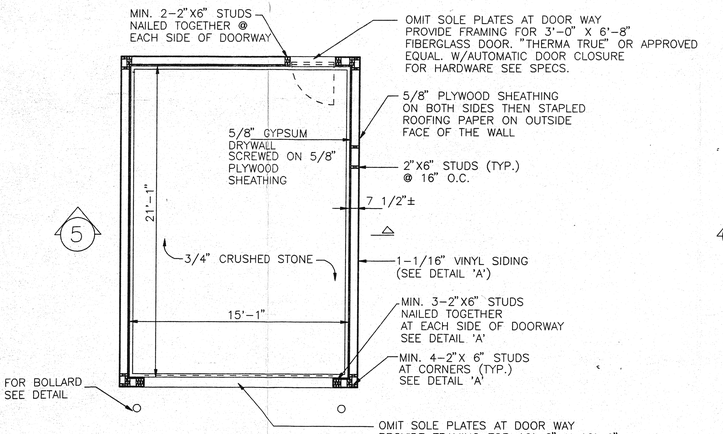


BACK ELEVATION

SCALE: 1/4"= 1'-0"

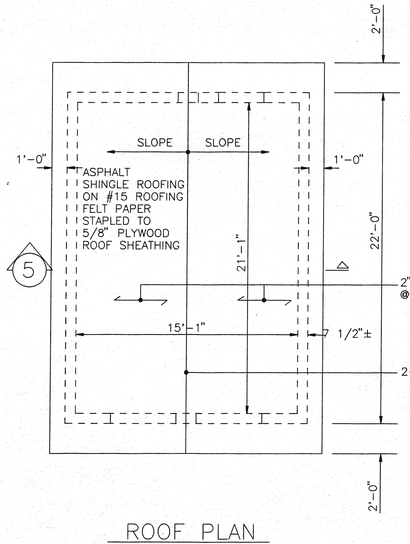
SECTION 5

SCALE: 1/4"= 1'-0"



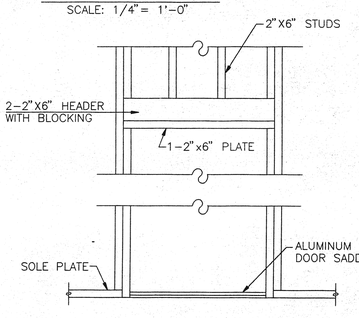
GROUND FLOOR PLAN

SCALE: 1/4"= 1'-0"



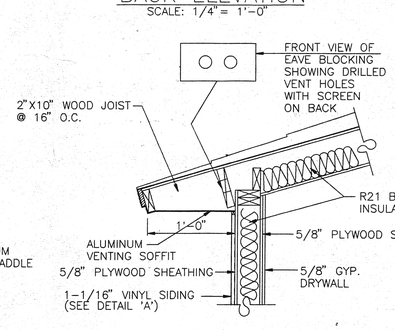
ROOF PLAN

SCALE: 1/4"= 1'-0"



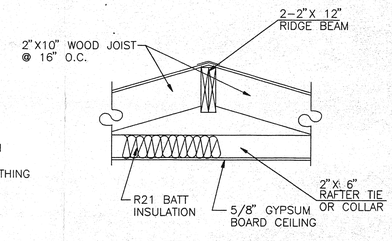
DOOR OPENING ELEVATION

SCALE: 3/4"= 1'-0"



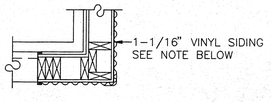
DETAIL 'B'

SCALE: 3/4"= 1'-0"



DETAIL 'C'

SCALE: 3/4"= 1'-0"



DETAIL 'A'

SCALE: 3/4"=1'-0"

NOTE: NAILS NOT SHOWN FOR CLARITY.

VINYL SIDING NOTE:

FIBERGLASS REINFORCED POLYESTER SHEETS IN CORRUGATED CONFIGURATION (4.2"X1-1/16") CONFORMING TO ASTM D-3841, COLOR AND MANUFACTURER SHALL BE AS APPROVED BY THE ARCHITECT OR ENGINEER.

DEP

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL ENGINEERING

NO.	DATE	DESCRIPTION	APP'RD.

REVISIONS

CAPITAL PROJECT NAME & NO.: PELHAM BAY LANDFILL REMEDIATION

CONTRACT NAME & NO.: GEOMEMBRANE CAPPING AND GAS COLLECTION SYSTEM CONTRACT NO. 876-HP

DRAWING TITLE:

TEMPORARY TRACTOR SHED PLANS, ELEVATIONS, SECTIONS AND DETAILS

Woodward-Clyde Consultants, Inc.
ENGINEERING AND SCIENCES APPLIED TO THE EARTH AND ITS ENVIRONMENT
363 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10001

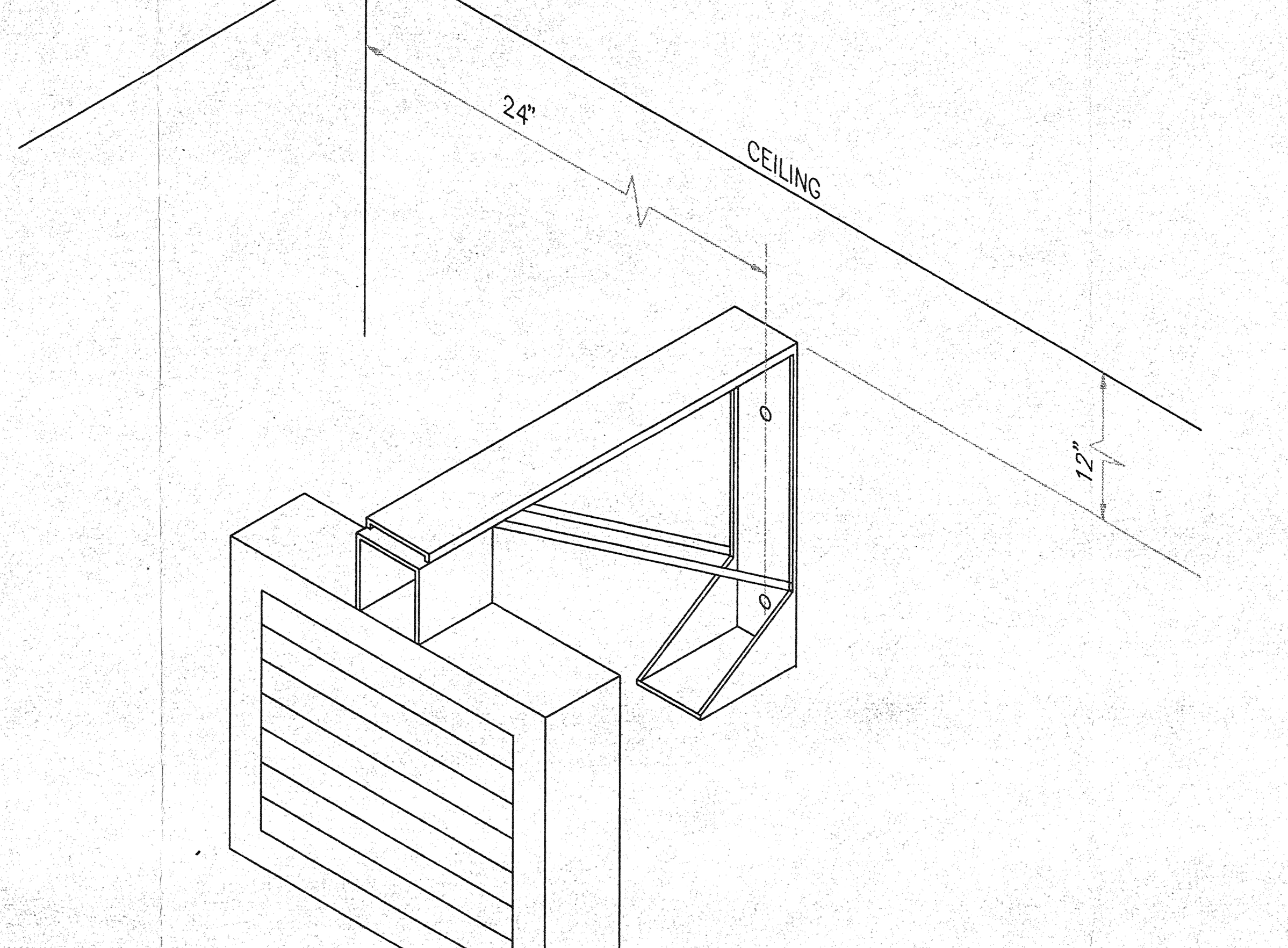
EWF EWELL W. FINLEY & PARTNERS, INC.
CONSULTING ENGINEERS
34-18 NORTHERN BOULEVARD LONG ISLAND CITY, NY 11101

DESIGNED BY:	AD
DRAWN BY:	DY
CHECKED BY:	SM
GROUP LEADER:	CJP

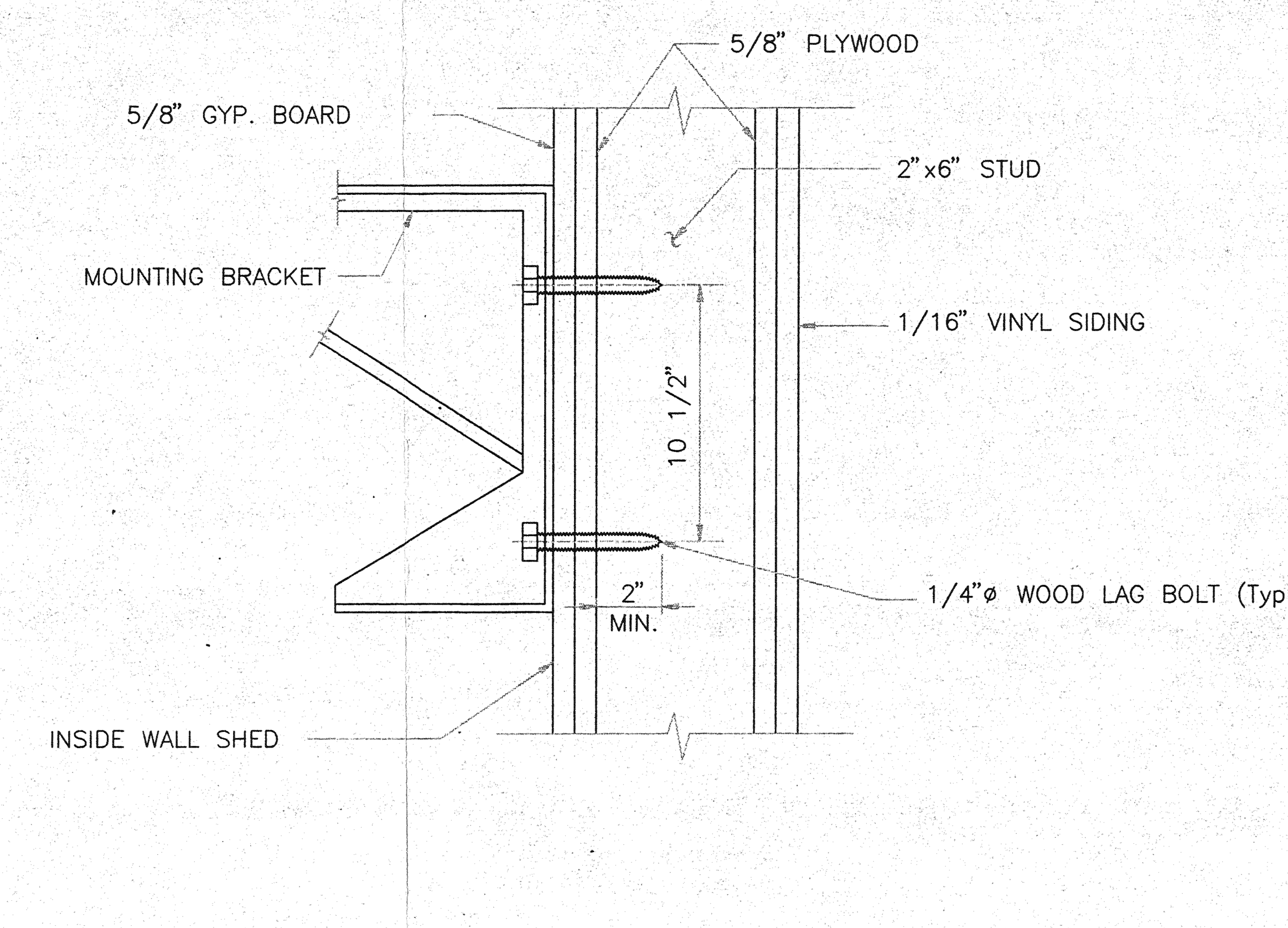
DIVISION CHIEF: PROJ MGR.:

GRAPHIC SCALE 0 1' 2' 4' 6'

SCALE:	DWG. NO.:	SHEET NO:
AS NOTED	TSS-2	2
DATE:	OF:	OF:
MAY 23, 1994	TSS-3	3



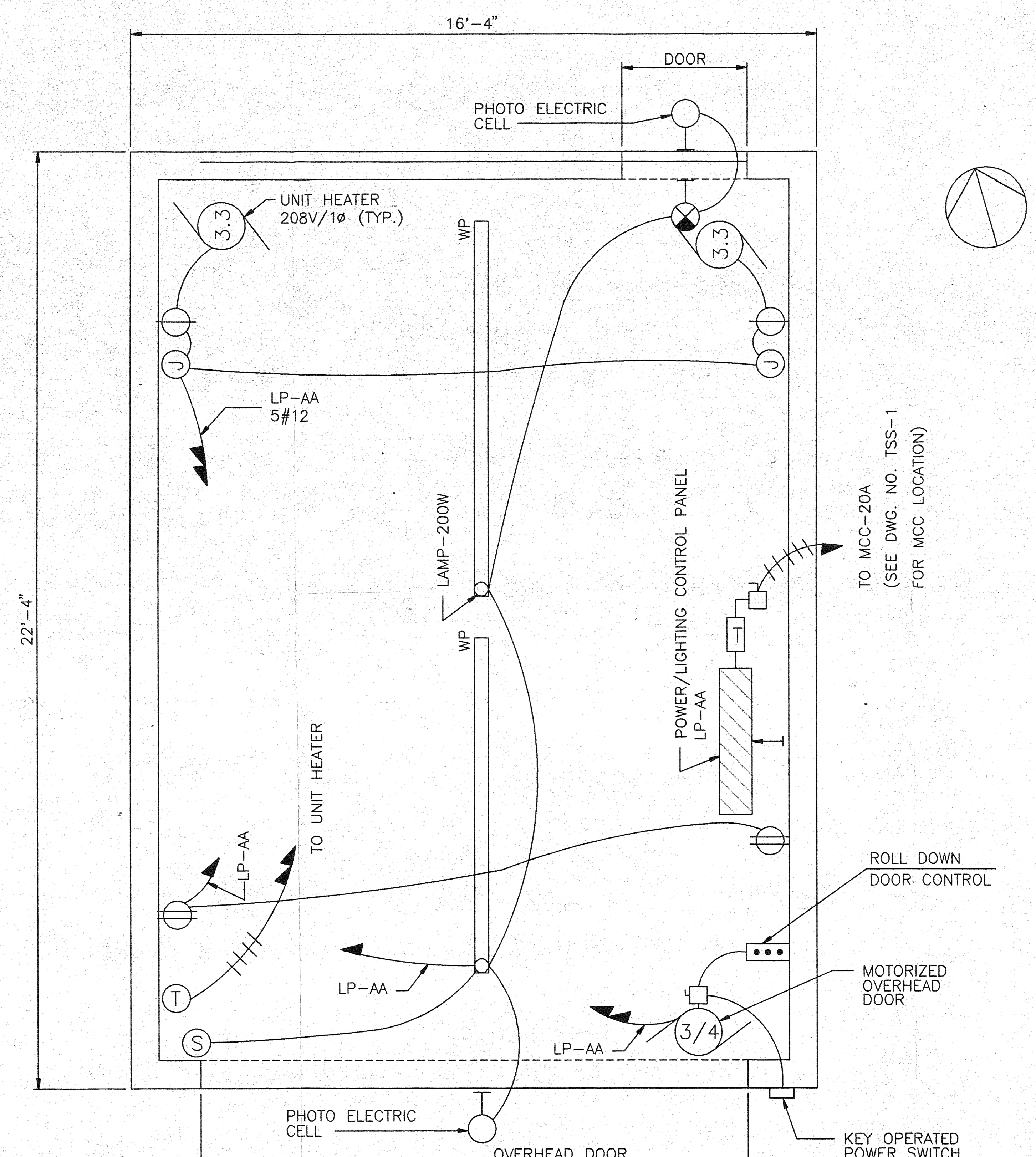
ELECTRIC UNIT HEATER
N.T.S.



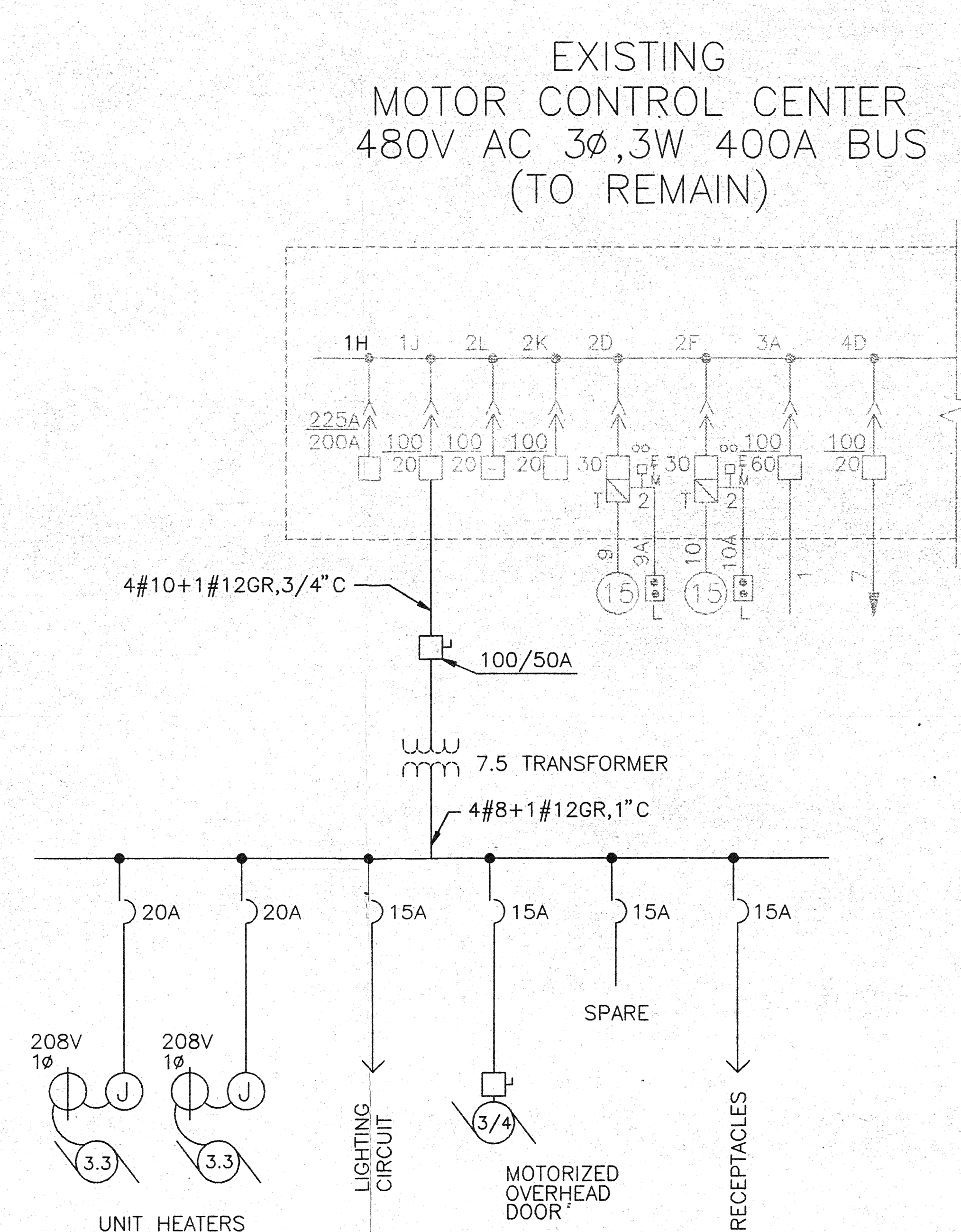
MOUNTING BRACKET
N.T.S.

SYMBOLS

- HOMERUN NO. CIRCUITS LPA PANEL
- NO. WIRES IN RUN
- 100/30 AIR CIRCUIT BREAKER, MOLDED CASE MANUALLY OPERATED 100 FRAME SIZE 30 TRIP ELEMENT RATING
- 15 AIR CIRCUIT BREAKER, ELECTRICALLY OPERATED WITH TRIP ELEMENT RATING
- (2) MOTOR WITH HORSEPOWER RATING
- PUSH BUTTON STATION, MOMENTARY CONTACT, LOCAL TO EQUIPMENT
- POWER TRANSFORMER
- NEW LOW VOLTAGE PANEL
- DUPLEX CONVENIENCE RECEPTACLE
- (J) JUNCTION BOX
- (S) SWITCH
- EXIT LIGHT (WALL MOUNTED)
- EXTERIOR DOOR LIGHT
- DISCONNECT SWITCH



POWER AND LIGHTING PLAN
SCALE: 1/2"=1'-0"



ONE LINE DIAGRAM
N.T.S.
LP-AA

DEP
THE CITY OF NEW YORK DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL ENGINEERING

NO.	DATE	DESCRIPTION	APPR'D.

REVISIONS

CAPITAL PROJECT NAME & NO.: PELHAM BAY LANDFILL REMEDIATION

CONTRACT NAME & NO.: GEOMEMBRANE CAPPING AND GAS COLLECTION SYSTEM CONTRACT NO. 876-HP

Woodward-Clyde Consultants, Inc.
ENGINEERING AND SCIENCES APPLIED TO THE EARTH AND ITS ENVIRONMENT
363 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10001

DRAWING TITLE: TEMPORARY TRACTOR SHED POWER AND LIGHTING PLAN/ONE-LINE DIAGRAM MISCELLANEOUS DETAILS

EWF EWELL W. FINLEY, & PARTNERS CONSULTING ENGINEERS
34-18 NORTHERN BOULEVARD LONG ISLAND CITY, NY 11101

DESIGNED BY: SF	DIVISION CHIEF:	PROJ MGR.:
DRAWN BY: SB	GRAPHIC SCALE	
CHECKED BY: CYY	SCALE: AS NOTED	DWG. NO.: TSS-3 / SHEET NO: 3
GROUP LEADER: CJP	DATE: MAY. 23, 1994	OF: TSS-3 / OF: 3

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

CONSTRUCTION CONTRACT

MARILYN GELBER
COMMISSIONER

ROBERT P. LEMIEUX
FIRST DEPUTY COMMISSIONER

BUREAU OF ENVIRONMENTAL ENGINEERING
DIVISION OF PLANT DESIGN

ADDENDA TO CONTRACT DOCUMENTS VOLUME NO. 5

FOR FURNISHING ALL LABOR AND MATERIAL
NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP

GEOMEMBRANE CAPPING AND GAS COLLECTION SYSTEM PELHAM BAY LANDFILL REMEDIATION HUNTS POINT DRAINAGE AREA

BOROUGH OF THE BRONX
NEW YORK

JUNE 1994

TABLE OF CONTENTS

This book contains addenda as listed below.

All bidders should check this book carefully to verify that all the addenda are included. Should any addenda be missing, notify the Commissioner in writing as soon as possible.

NOTE: This Table of Contents should be signed, dated, detached from the book and submitted by the bidder with his bid.

Marilyn Gelber
Commissioner

_____
NAME OF BIDDER

By_____

Date_____

CONTRACT 876-HP
GEOMEMBRANE AND GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX, NEW YORK

ADDENDA TO CONTRACT DOCUMENTS - VOLUME NO. 5 - JUNE 1994

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 51 - Change in Bid Date

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Addendum No. 14 that changed the bid due date from May 24, 1994 to June 7, 1994 is herein deleted.

2. Page 1 of the Invitation to Bid document, under "BID DATE, TIME, AND LOCATION:".... Change "May 24, 1994" to "June 21, 1994".

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 52 - General Conditions - Schedule "A"

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Addendum No. 19 that changed the number of Consecutive Calendar Days in the General Conditions - Schedule "A", Art. 14 from "546" to "517" is herein deleted.

2. Page 257 of the Specifications, for item that reads " Time of Completion" under "Requirements" (4th paragraph from the top) .... Replace "546" with "503".

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 53 - Addendum No. 4, Specification Section 02910

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Page 12 of the Addenda to Contract Documents Volume No. 1, Section 02910, paragraph 1.5. Delete item H and replace with the following:

   H. Survey of existing site conditions indicating total number, species, and size (caliper) of existing trees by surveyor licensed in the State of New York.

2. Page 16 of the Addenda to Contract Documents Volume No. 1, Section 02910, paragraph 2.1A. Delete first sentence and replace with the following:

   A. Topsoil for landscaping work (i.e., vegetation islands and perimeter planting) shall be imported from off-site sources.

3. Page 17 of the Addenda to Contract Documents Volume No. 1, Section 02910, paragraph 2.4. Delete item A and replace with the following:

   A. Mulch: Seeded areas shall be mulched with straw mulch only, uniformly spread at a maximum rate of one (1) ton per acre, and shall be held in place with a cellulose or non-asphaltic emulsion, natural vegetable gum binder blended with gelling or hardening agents Terra-tack, as manufactured by Grass Growers Company, or equal. Seeded areas shall be mulched within seven (7) days. All mulch shall be left in place and allowed to disintegrate,

except that excessive amounts of straw shall be removed.

4. Page 19 of the Addenda to Contract Documents Volume No. 1, Section 02910, paragraph 2.8. Delete in its entirety.

5. Page 20 of the Addenda to Contract Documents Volume No. 1, Section 02910, paragraph 3.2. In item I, delete "of shredded hardwood bark or other approved mulch".

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 54 - Addendum No. 6, Specification Section 02930

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Page 30 of the Addenda to Contract Documents Volume No. 1, Section 02930, paragraph 2.3. Delete item G in its entirety.

2. Page 31 of the Addenda to Contract Documents Volume No. 1, Section 02930, paragraph 2.3. Delete item H and replace with the following:

   H. Meadows: Warm-season grass seeding, seeding seasons from May 1 to July 15 shall have seed mixture as outlined in Addendum 55. Cool-season grass, seeding from August 15 to October 15 shall be either Sheep Fescue (Festuca Ovina) or Virginia Wild Rye (Elymus Virginicus). Virginia Wild Rye can be seeded up to December 1. Apply Sheep Fescue (Festuca Ovina) at 130 lbs/acre. Apply Virginia Wild Rye at 90 lbs/acre. If cool-season grass is seeded, then at the next warm-season grass seeding season, the cool-season grass shall be roto-tilled to a depth not less than six (6) inches. After roto-tilling, the area shall be seeded with warm-season grass.

3. Page 31 of the Addenda to Contract Documents Volume No. 1, Section 02930, paragraph 3.1A. In item 3, delete first sentence.

4. Page 31 of the Addenda to Contract Documents Volume No. 1, Section 02930, paragraph 3.1. Delete item 7 and replace with the following:

7. Cool-season grass shall be fertilized as per manufacturer's written specifications. Warm-season grass shall be fertilized using half the manufacturer's written specifications.

5. Page 32 of the Addenda to Contract Documents Volume No. 1, Section 02930, paragraph 3.1B. In item 1, delete "NO fertilizer is to be applied."

6. Page 33 of the Addenda to Contract Documents Volume No. 1, Section 02930, paragraph 3.2B. Delete item 3 and replace with the following:

   3. Seeding for meadows shall be placed throughout the landfill including the vegetation islands.

7. Page 35 of the Addenda to Contract Documents Volume No. 1, Section 02930, paragraph 3.6. Delete items A and B.

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 55 - Addendum No. 7, Specification Section 02940

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Page 39 of the Addenda to Contract Documents Volume No. 1, Section 02940, paragraph 2.4. Delete "Grass Seed Types.....no varieties" and replace with the following:

Grass Seed Type	Application Rate (lbs/acre)
Asclepias tuberosa/Butterfly Weed	3.0
Lespedeza capitala/Bush Clover	0.5
Euthamia graminifolia/Lance-leaf Goldenrod	0.25
Solidago rugosa/Rough-stemmed Goldenrod	0.25
Solidago sempervirens/Seaside Goldenrod	0.25
Solidago speciosa/Showy Goldenrod	0.25
Andropogon gerardii/Big Bluestem	5.0
Schizachyrium scoparius/Little Bluestem	4.5
Sorghastrom nutans/Indiangrass	3.5
Panicum virgatum/Switchgrass	1.5
Rudbeckia hirta/Black-eyed Susan	0.25
Festuca ovina/Sheep Fescue	60.0

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 56 - Addendum No. 11, Gen. Conditions-24" Water Main

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Page 86 of the Addenda to Contract Documents Volume No. 1, delete item 25 in its entirety.

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 57 - Addendum No. 12, Sec. 2660-Water Main Relocation

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Page 98 of the Addenda to Contract Documents Volume No. 1, Section 02660, paragraph 3. Delete references to Items "5, 6, 7, and 8" and refer to revised Bid Form presented in Addendum No. 64.

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 58 - Addendum No. 17, Contractor's Qualifications

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Delete Contractor's Qualifications in Addendum No. 17 and replace with the revised version on the following page.

PELHAM BAY LANDFILL
CONTRACT 876-HP

CONTRACTOR'S QUALIFICATIONS

All prospective bidders must submit a statement of qualifications addressing their experience in performing work, similar in scope and magnitude to that described herein and shown on the Contract Drawings.

As a minimum, the bidder must submit evidence of a minimum of five (5) years experience performing similar work, a list of three (3) completed projects within the past five (5) years, with appropriate references, similar in scope and magnitude to the proposed project, resumes of personnel that will be working on the project, and certification that the bidder has sufficient appropriate equipment and qualified personnel to perform the work. The certification shall include documentation showing the number and type of equipment owned by the Contractor or available to him to use on the project. It shall also include the number and qualifications of personnel to be used on the project and the percent of time they will be available.

Each bidder must also supply the Engineer with evidence, including operating procedures, training, and medical surveillance of personnel, and accident prevention, that he is familiar with all relevant safety protocols and associated regulations concerning performance of work on hazardous waste sites.

The requirement for bidders to demonstrate experience "in performing similar work", through documentation submitted with the bid includes corporate capability in managing the hazardous materials usually found in municipal landfills. This capability must reside within the corporation or, in the case of joint ventures, at least one partner corporation must have the required corporate capability in hazardous material handling. A firm or joint venture without qualifications, corporate capability , and experience in hazardous materials may not sub-contract for the hazardous materials handling nor may the qualifications of a subcontractor to demonstrate capability for purpose of this bid. A qualified corporation or joint venture partner may, however, sub-contract for such work with another properly qualified entity.

This submittal must be made to DEP after the bid opening and prior to the award of the Contract, within the time limits to be set by DEP. Failure to submit this information within the specified time period may result in a disqualification of the Contractor's bid.

The final determination and approval of the Contractor's qualifications shall be made by the DEP. Failure to meet these qualifications may result in a rejection of the Contractor's bid and non-award of Contract to him.

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 59 - Addendum No. 22, Spec. Section 01025

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Addendum No. 22 is herein deleted. Replace Section 01025 with the revised version attached.

SECTION 01025
MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Description of methods for measuring of and paying for work placed in accordance with the Contract Documents.

1.2 RELATED SECTIONS

A. Section 00100 - Information for Bidders and Contract Agreement.

1.3 AUTHORITY

A. Measurement methods delineated in the individual specification sections are intended to complement the criteria of this section.

B. Take all measurements and compute quantities. The Resident Engineer will verify measurements and quantities.

C. Assist Resident Engineer in verifying measurements and quantities by providing necessary equipment, workers, and survey personnel as required.

1.4 UNIT QUANTITIES SPECIFIED

A. Quantities and measurements indicated in the bid form are for bidding and contract purposes only. Quantities and measurements supplied or placed in the Work and verified by the Resident Engineer shall determine payment.

B. If the actual Work requires greater or fewer quantities than those quantities indicated, provide the required quantities at the unit sum/prices contracted, unless otherwise specified.

1.5 MEASUREMENT OF QUANTITIES

A. Measurement Devices:

1. Weight scales: inspected, tested, and certified by the New York State Weights and Measures department within the past year.

2. Platform scales: of sufficient size and capacity to accommodate the conveying vehicle.

3. Metering devices: inspected, tested, and certified by the applicable New York State Weights and Measures department within the past year.

B. Measurement by weight: Rolled or formed steel, or other metal shapes will be measured by handbook weights. Welded assemblies will be measured by handbook or scale weight.

C. Measurement by volume: Measured by cubic dimension using mean length, width, and height or thickness. Earthwork volumes will be calculated by the average end area method.

D. Measurement by area: Measured by square dimension using mean length and width or radius.

E. Linear measurement: Measured horizontally by linear dimension, at the item centerline or mean chord.

F. Lump sum item/price measurement: Items measured by weight, volume, area, or linear means or combination, as appropriate, as a completed items or unit of the Work in place.

G. The work measured for payment consists of furnishing all labor, supplies, materials, equipment, plant and incidentals and preforming all work in strict accordance with but not limited to the drawings, specifications, schedules, drawings and amendments forming part herein. The work will be measured for payment as follows:

1. **General Requirements** will not be measured for payment but will be paid on a lump sum basis. Lump Sum payment will include all other work not indicated in other items of work.

2. **Test Pits** will be paid on a unit price per each basis. Measurement will include excavation, loose backfilling and surface tamping by excavation equipment, furnishing and placing a three quarter (3/4) inch steel rod, cut/fill indicator not to exceed twenty (20) feet in length, in each test pit, surveying and supervision to determine test pit location and limits of existing soil cover materials. The contractor shall provide safe working conditions in and around the test pit area as required by OSHA.

3. **Personal Protect Equip (Upgrade to Level C, $10 max.)** will be paid on a manhour basis. Measurement will include Level C Personal Protection Equipment and other reasonable Health and Safety requirements established by the Contractor's Health and Safety Plan. For purposes of Bid preparation, the Contractor shall consider the work to be accomplished at Level D Personal Protection Equipment and that Modified Level D Personal

Protection Equipment should be anticipated by the Contractor for certain tasks due to the nature of the work. Therefore, Modified Level D Personal Protection Equipment will not be measured for payment but will be considered incidental to the work.

4. **Field Offices (Office Trailer Rental)** will be paid on a fixed fee unit price per month at the unit price indicated on the Bid Form. Measurement will be for each month and one time fractional month as a whole month, for the duration of the contract and excluding overlap due to delays by prior contracts.

5. **Field Offices (Operation and Maintenance)** will be paid on a unit price per month basis. Measurement will be for each month and one time fractional month as a whole month, for the duration of the contract and excluding overlap due to delays by prior contracts. Limits for measurement and payment will be as indicated in Specification and Amendments to Section 01590, Part 3 Execution.

6. **Field Offices (Supply Allowance)** will not be measured for payment but will be paid on a lump sum basis and subject to payment conditions under Specification Section 01590, Part 3, paragraph 3.6 for the amount indicated on the Bid Form.

7. **Groundwater Sampling Equipment** will not be measured for payment but will be paid for on a lump sum basis. Lump sum payment will include providing groundwater sampling equipment as specified in specification and amendments to Section 01590, paragraph 3.7.

8. **Demolition (Existing Sheds)** will not be measured for payment and will be paid for on a lump sum basis. Lump sum payment will include removal of the sheds superstructure, removal of substructures to a minimum of two (2) feet below finish grade, processing, handling, stockpiling, placing and compacting demolition debris in the Random Soil Class 1 zone.

9. **Remove and Disposal (Curtain Drain and Pipe,Pond B)** will be paid on a unit price per lineal foot basis. Measurement will include excavation, pipe removal, backfill with clean onsite material; processing, handling, stockpiling, placing and compacting removed materials and debris in the Random Soil Class 1 zone.

10. **Remove and Dispose (Gravel Drain,Pond B)** will be paid on a unit price per lineal foot basis. Measurement will include excavation, gravel and debris removal, backfill with clean onsite material; processing, handling, stockpiling, placing and compacting removed materials and debris in the Random Soil Class 1 zone.

11. **Abandon (Underground Storage Tank)** will be paid on a unit price per each basis. Measurement will include abandoned of each tank complete in place as indicated in specification Section 02078.

12. **Site Clearing** will be paid on a unit price per acre basis. Measurement will include clearing and grubbing vegetation and debris; processing, handling, stockpiling, placing and compacting vegetation and debris in the Random Soil Class 1 zone. The Contractor shall make every effort to separate suitable soil material from clearing and grubbing debris. If additional suitable soil materials can be attained in the opinion of the Engineer, the Contractor shall provide additional raking and turning of debris.

13. **Gas Extraction Well** will be paid on a unit price per lineal foot basis. Measurement will include installed drive point casing and screen, inner casing and screen and well packing materials complete in place. Limits for measurement will be from the top of the geomembrane liner to the termination point of the outer casing and screen.

14. **Gas Extraction Well (Well Head)** will be paid on a unit price per each basis. Measurement will included all well parts from the top of the geomembrane liner to the outlet end of the flexible coupling.

15 **Gas Monitoring Well** will be paid on a unit price per lineal foot basis. Measurement will include drilling and installation of well casing, screen and packing materials. Limits for measurement will be from finish grade elevation to the point of termination as determined by the Resident Engineer.

16. **Gas Monitoring Well (Well Guard)** will be paid on a unit price per each basis. Measurement will include concrete, guard casing, locking cap, pad lock, sanitary seal and painting of above ground steel casing.

17. **Excavate Cover Soil** will be paid on a unit price per cubic yard basis. Measurement will include soil depth indicators, excavating, loading, hauling and stockpiling the top six (6) inches of soil and handling, spreading and compacting the soil material in the first twelve (12) inches of fill above the geomembrane liner; and, excavating, loading, hauling, stockpiling, spreading and compacting the remainder of the onsite cover soil in the Loamy Soil Layer. The volume and limits of Cover Soil measured for payment will be determined by test pits in its original position and will be paid for when placed in its final position. The volume will be calculated by cross section average end area method. The limits to be determined will be from the existing top of the Waste to the existing top of Cover Soil. The existing cover soil will be excavated in its entirety within these limits to facilitate balanced cut/fill grading of the underlying Waste materials.

18. **Excavate Waste** will be paid on a unit price per cubic yard basis. Measurement will include providing, placing and removing temporary cover material, excavating, loading, hauling, stockpiling, spreading and compacting waste. The volume of Waste measured for payment will be determined in its original position and will be paid for when placed in its final position. The volume of Waste will be determined by surveyed elevations taken in conjunction with test pit operations and calculated by cross section average end area method. The use of onsite cover soil for purposes of temporary cover material will not be allowed. If the Contractor uses imported soil cover in lieu of other cover methods and elects not to remove the cover materials prior to placing additional waste fill, the Engineer will determine the volume of this material and deduct same volume from pay quantity for Excavate Waste.

19. **Borrow (Loamy Soil,Imported)** will be paid on a unit price per cubic yard basis. Measurement will include royalties, hauling, handling, spreading and compacting of imported loamy soil loamy soil layer. It is intended that the borrow material be used in the upper most portion of the loamy soil layer. The volume measured for payment will be determined in its final position. The volume of Borrow will be calculated by average end area method from thickness measured by Soil Depth Indicators installed under the Excavate Cover Soil item.

20. **Crushed Aggregate Base Course** will be paid on a unit price per square yard basis. Measurement will include subgrade preparation, proof rolling, undercutting, replacing and recompacting subgrade material, providing crushed aggregate base course to the depths indicated in the Drawings and specifications, hauling, spreading, compacting and finish grading. The area measured for payment will be measured parallel with the crushed aggregate surface.

21. **Crushed Stone Base** will be paid on a unit price per square yard basis. Measurement will include subgrade preparation, proof rolling, undercutting, replacing and recompacting subgrade material, providing crushed stone base to the depths indicated in the Drawings and specifications, hauling, spreading, compacting and finish grading. The area measured for payment will be measured parallel with the crushed stone base surface.

22. **Delineators** will be paid on a unit price per each basis. Measurement will include providing and installing delineators at spacing indicated in the drawings.

23. **Geotextile Fabric (10oz Non-Woven,Rdwy and Ditch)** will be paid on a unit price per square foot basis. Measurement will include providing and installing

geotextile fabric. Overlapping for purposes of jointing geotextile fabric and material placed in anchor trenches will not be measured for payment but will considered incidental to the work. Limits for measurement and payment of geotextile fabric will be areas under roadway surfacing and ditch lining and including twelve (12) inch lap between the loamy soil layer and top soil layer.

24. **Rip Rap (Class I)** will be paid on a unit price per square yard basis. Measurement will include providing and placing rip rap and geotextile fabric underlayment material, excavating, fine grading compacting. Limits for measurement and payment are as indicated on the Drawings.

25. **Rip Rap (Class II)** will be paid on a unit price per square yard basis. Measurement will include providing and placing rip rap and geotextile fabric underlayment material, excavating, fine grading compacting. Limits for measurement and payment are as indicated on the Drawings.

26. **Rip Rap (Class III)** will be paid on a unit price per square yard basis. Measurement will include providing and placing rip rap and geotextile fabric underlayment material, excavating, fine grading compacting. Limits for measurement and payment are as indicated on the Drawings.

27. **Rip Rap (Class IV)** will be paid on a unit price per square yard basis. Measurement will include providing and placing rip rap material, excavating, fine grading compacting. Limits for measurement and payment are as indicated on the Drawings.

28. **Rip Rap Bedding** will be paid on a unit price per square yard basis. Measurement will include providing and placing rip rap and geotextile fabric underlayment material, excavating, fine grading compacting. Limits for measurement and payment are as indicated on the Drawings.

29. **Pipe (24" DI, Cement Lined)** will be paid on a unit price per lineal foot basis. Measurement will include providing and installing pipe and polyethylene sleeve complete in place.

30. **Pipe (20" DI, Cement Lined)** will be paid on a unit price per lineal foot basis. Measurement will include providing and installing pipe and polyethylene sleeve complete in place.

31. **Pipe (12" DI, Cement Lined)** will be paid on a unit price per lineal foot basis. Measurement will include providing and installing pipe and polyethylene sleeve complete in place.

32. **Pipe (6" DI, Cement lined)** will be paid on a unit price per lineal foot basis. Measurement will include providing and installing pipe and polyethylene sleeve complete in place.

33. **Coupling (24" Baker)** will be paid on a unit price per each basis. Measurement will include providing and installing coupling and polyethylene sleeve complete in place.

34. **Fittings (Ductile Iron MJ)** will be paid on a unit price per ton basis. Measurement will include providing and installing fittings and polyethylene sleeve complete in place.

35. **Valve (20" Gate Cast Iron MJ, Installation)** will be paid on a unit price per each basis. Measurement will include handling and installing valve and retainer gland.

36. **Valve (20" Gate Cast Iron MJ, Furnish and Deliver)** will be paid on a unit price per each basis. Measurement will include furnishing valve and retainer gland and delivering to the Site.

37. **Valve (12" Gate Cast Iron MJ Installation)** will be paid on a unit price per each basis. Measurement will include handling and installing valve and retainer gland.

38. **Valve (12" Gate Cast Iron MJ, Furnish and Deliver)** will be paid on a unit price per each basis. Measurement will include furnishing valve and retainer gland and delivering to the Site.

39. **Valve (6" Gate Cast Iron MJ, Installation)** will be paid on a unit price per each basis. Measurement will include handling and installing valve and retainer gland.

40. **Valve (6" Gate Cast Iron MJ, Furnish and Deliver)** will be paid on a unit price per each basis. Measurement will include furnishing valve and retainer gland and delivering to the Site.

41. **Trench Safety System (Tight Sheeting)** will be paid on a unit price per square foot basis. Measurement will include providing and installing tight sheeting and bracing to OSHA standards. Limits for measurement and payment will be for placed tight sheeting each trench face from natural ground elevation to the bottom of the excavation.

42. **Saw Cutting (Pavement)** will be paid on a unit price per lineal foot basis. Measurement will include saw cutting to a minimum of one (1) inch depth or

greater depth as necessary to provide a neat break line in existing pavement. Limits for measurement and payment will approved by the Resident Engineer.

43. **Remove Pavement (All Types)** will be paid on a unit price per cubic yard basis. Measurement will include pavement breaking, excavating, loading, hauling, spreading and compacting of pavement spoils in the Waste and below Random Soil Class 2 zone. Limits of excavation for measurement and payment will be determined by the Resident Engineer.

44. **Excavation (Soil)** will be paid on a unit price per cubic yard basis. Measurement will include excavating and dewatering; loading, hauling, spreading and compacting of clean trenching spoils in Random Soil Class 1 zone. Limits of excavation for measurement and payment are indicated on the Drawings.

45. **Excavation (Soil and Pavement)** will be paid on a unit price per cubic yard basis. Measurement will include excavating and dewatering; loading, hauling, spreading and compacting of soil and pavement spoils in the Waste and below Random Soil Class 2 zone. Limits of excavation for measurement and payment are indicated on the Drawings.

46. **Excavation (Rock)** will be paid on a unit price per cubic yard basis. Measurement will include excavating and dewatering; loading, hauling, spreading and compacting of rock in the Waste and below Random Soil Class 2 zone. Limits of excavation for measurement and payment will be determined by the Resident Engineer.

47. **Aggregate (Gravel Bedding)** will be paid on a unit price per cubic yard basis. Measurement will include providing, placing and compacting Gravel Bedding. Limits for measurement and payment are indicated on the Drawings.

48. **Aggregate (Clean Sand)** will be paid on a unit price per cubic yard basis. Measurement will include providing, placing and compacting Clean Sand bedding. Limits for measurement and payment are indicated on the Drawings.

49. **Backfill (Satisfactory Material)** will be paid on a unit price per cubic yard basis. Measurement will include handling, placing and compacting satisfactory onsite backfill material. Limits for measurement and payment are indicated on the Drawings.

50. **Geotextile (10 oz Non-Woven,24" Water Main)** will be paid on a unit price per square foot basis. Measurement will include providing and installing geotextile fabric. Over lapping and material placed in anchor trenches will not

be measured for payment but will considered incidental to the work. Limits for measurement and payment of geotextile fabric will be as indicated on the Drawings for the twenty four (24) inch water main relocation.

51. **Remove and Reset (Fire Hydrant)** will be paid on a unit price per each basis. Measurement will include excavation and backfill, removal and installation of existing fire hydrant, providing and installing new gland and bolt set, and, cleaning and painting the exterior surfaces exposed to view.

52. **Remove (Fire Hydrant)** will be paid on a unit price per each basis. Measurement will include removal of existing fire hydrant, cleaning and delivery to the City's storage yard.

53. **Fire Hydrant Fenders** will be paid on a unit price per each basis. Measurement will include providing and installing fire hydrant fenders complete in place.

54. **Sidewalk (Concrete)** will be paid on a unit price per square foot basis. Measurement will include excavation, fine grading, sand cushion, forming, reinforcing, concrete and finishing. Limits for measurement and payment will be as directed by the Resident Engineer.

55. **Concrete Base (6" Class B-32)** will be paid on a unit price per square yard basis. Measurement will include excavation, fine grading, forming, reinforcing steel, concrete, concrete finishing and curing.

56. **Asphalt Pavement (3" Asph Cone or Sheet Asph)** will be paid on a unit price per square yard basis.

57. **Tree Removal** will be paid on a unit price per each basis. Measurement will include tree removal, chipping and placing the debris in the landfill Waste material. Limits for measurement and payment will be as directed by Resident Engineer.

58. **Well Abandonment** will be paid on a unit price per each basis. Measurement will include removal of the well to a point two (2) feet below finish grade and plugging the well with grout.

59. **Gas Extraction Well Pipe (3" HDPE)** will be paid on a unit price per lineal foot basis. Measurement will include HDPE pipe and installation, excavation, fine grading and pipe bedding.

60. **Gas Extraction Well Pipe (4" HDPE)** will be paid on a unit price per lineal foot basis. Measurement will include HDPE pipe and installation, excavation, fine grading and pipe bedding.

61. **Gas Extraction Well Pipe (6" HDPE)** will be paid on a unit price per lineal foot basis. Measurement will include HDPE pipe and installation, excavation, fine grading and pipe bedding,.

62. **Gas Extraction Well Pipe (8" HDPE)** will be paid on a unit price per lineal foot basis. Measurement will include HDPE pipe and installation, excavation, fine grading and pipe bedding.

63. **Gas Extraction Well Pipe (10" HDPE)** will be paid on a unit price per lineal foot basis. Measurement will include HDPE pipe and installation, excavation, fine grading and pipe bedding.

64. **Gas Condensate Pipe (2"x4" HDPE Dbl Wall)** will be paid on a unit price per lineal foot basis. Measurement will include HDPE pipe and installation, excavation and backfill, fine grading and pipe bedding .

65. **Gas Collection Pipe (4" HDPE)** will be paid on a unit price per lineal foot basis. Measurement will include HDPE pipe and installation, excavation, fine grading and crushed stone base.

66. **Gas Extraction Valve Box** will be paid on a unit price per each basis. Measurement will include each valve complete in place. Measurement will include HDPE pipe and installation, excavation and backfill and fine grading.

67. **Gas Condensate Separator** will not be measured for payment but will be paid on a lump sum basis. Measurement will include HDPE pipe and installation, excavation and backfill and fine grading.

68. **Gas Collection Riser Connection (VB-6)** will not be measured for payment but will be paid on a lump sum basis. Measurement will include HDPE pipe and installation, excavation and backfill and fine grading.

69. **Gas Condensate Conveyance Connection (MH-D2)** will not be measured for payment but will be paid on a lump sum basis. Measurement will include HDPE pipe and installation, excavation and backfill and fine grading.

70. **Pipe (24" HDPE,Corrugated)** will be paid on a unit price per lineal foot basis. Measurement will include providing and installing pipe, excavation, grading, fine grading, pipe bedding, geogrid, 60 mil HDPE liner, geocomposite, geotextile fabric and backfill. The limits for measurement and payment shall

extend from the intersection of the 60 mil Textured HDPE Geomembrane and the top of the 9" Random Soil Class II, symmetrically about the centerline of the pipes.

71. **Pipe (30" HDPE,Smooth)** will be paid on a unit price per lineal foot basis. Measurement will include providing and installing pipe, excavation, grading, fine grading, pipe bedding and backfill.

72. **Manhole-Inlet (48" HDPE Class 160, All Depths)** will be paid on a unit price per each basis. Measurement will include providing and installing HDPE manhole, excavation, grading, fine grading, pipe bedding, geocomposite, 60 mil HDPE liner, geotextile fabric, backfill.

73. **Infiltration Drainage Trench** will be paid on a unit price per lineal foot basis. Measurement will include HDPE pipe and installation, excavation, fine grading, pipe bedding, 60 mil HDPE Liner including overlap at the bottom and overlap on to cap liner, extrudate weld and four (4) foot wide strip of geotextile fabric.

74. **Curtain Drain** will be paid on a unit price per lineal ft. basis.Measurement will include HDPE pipe and installation, excavation, fine grading, geotextile filter fabric and pipe bedding.

75. **Reinforced Concrete Pipe (24")** will be paid on a unit price per lineal ft. basis. Measurement will include providing and installing pipe, excavation, fine grading, bedding and backfill.

76. **Reconstruction of Sewer (30" RCP)** will be paid on a unit price per lineal ft. basis. Measurement will include cleaning of existing pipe, proper disposal of sludges and debris in the landfill and slip lining the interior.

77. **Reconstruction of Sewer (72" RCP)** will be paid on a unit price per lineal ft. basis. Measurement will include cleaning of existing pipe, proper disposal of sludges and debris in the landfill and slip lining the interior.

78. **Geomembrane Liner (60 mil HDPE, Smooth)** will be paid on a unit price per square ft. basis. Measurement will include fine grading, providing and placing the liner, heat fusion welding the seams, seam testing, anchor trench excavation and backfill and seam overlap. Materials in anchor trenches and seam overlap will not be measured for payment and will be considered incidental to the work.

79. **Geomembrane Liner (60 mil HDPE, Textured)** will be paid on a unit price per square foot basis. Measurement will include fine grading, providing and

placing the liner, heat fusion welding the seams, seam testing, anchor trench excavation and backfill and seam overlap. Materials in anchor trenches and seam overlap will not be measured for payment and will be considered incidental to the work.

80. **Geocomposite Liner** will be paid on a unit price per square foot basis. Measurement will include fine grading, providing and placing the liner, heat fusion welding the seams, seam testing, anchor trench excavation and backfill and seam overlap. Materials in anchor trenches and seam overlap will not be measured for payment and will be considered incidental to the work.

81. **Chain Link Fence (8 ft. x 6 ga, Barb Wire/Tape Top)** will be paid on a unit price per lineal foot basis. Measurement will include installation and all materials indicated in the drawings and specifications. Limits for measurement and payment will not include the distance spanned by gates.

82. **Chain Link Fence (8 ft. x 6 ga, 3 Strn BarbWire Top)** will be paid on a unit price per lineal foot basis. Measurement will include installation of all materials indicated in the drawings and in the specifications. Limits for measurement and payment will not include the distance spanned by gates

83. **Barbed Wire and Tape Top (Existing Chain Link Fence)** will be paid on a unit price per lineal foot basis. Measurement will include installation of all materials indicated in the drawings and in the specifications. Limits for measurement and payment will not include the distance spanned by gates

84. **Gate (8 ft. x 6 ga x 4 ft. Single Leaf, 3 Strn BarbWire Top)** will be paid on a unit price per each basis. Measurement will include installation of all materials indicated in the drawings and in the specifications.

85. **Gate (8 ft. x 6 ga x 12 ft. Single Leaf, Barb Wire/Tape Top)** will be paid on a unit price per each basis. Measurement will include installation of all materials indicated in the drawings and in the specifications.

86. **Gate (8 ft. x 6 ga x 24 ft. Double Lead, Barb Wire/Tape Top)** will be paid on a unit price per each basis. Measurement will include installation of all materials indicated in the drawings and in the specifications.

87. **Remove Fence (Chain Link)** will be paid on a unit price per lineal ft. basis. Measurement will include removal of existing fence and proper disposal of fence materials. Limits for measurement and payment will not include the distance spanned by gates

88. **Remove Gate (Chain Link)** will be paid on a unit price per each basis. Measurement will include removal of existing gate and proper disposal of gate materials.

89. **Landscaping Work (Vegetation Islands)** will be paid on a unit price per each basis. Measurement will include providing and placing top soil as directed by the Resident Engineer, soil amendments, topical mulching, bedding preparation for plant materials and photographs.

90. **Landscaping Work (Perimeter Bedding)** will be paid on a unit price per square yard basis. Measurement will include soil amendments, topical mulching, bedding preparation for plant materials and photographs.

91. **Topsoiling (6", Imported, Landscaping)** will be paid on a unit price per cubic yard basis. Measurement will include providing, hauling, placing, spreading top soil on the landscaped area.

92. **Topsoiling (6", Imported, Meadows)** will be paid on a unit price per cubic yard basis. Measurement will include providing, hauling, placing, spreading top soil for planting materials.

93. **Seeding and Fertilizer** will be paid on a unit price per acre basis. Measurement will include seeding, fertilizing, bedding preparation, soil amending and guarantee. Limits for measurement and payment will include Vegetation Islands and Meadows (i.e.,Landfill Cap Surface) areas and as directed by the Engineer. Planting guarantee is subject to special payment conditions per specification Section 02910, paragraph 1.8.

94. **Tree (Pitch Pine, 5'- 6' B&B)** will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per specification Section 02910, paragraph 1.8.

95. **Tree (Scrub Oak, 1.5" Caliper)** will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per specification Section 02910, paragraph 1.8.

96. **Tree (Eastern Red Cedar, 4'-5' B&B)** will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

97. **Tree (Black Cherry, 2" Caliper)** will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

98. **Tree (Gray Birch, 2" Caliper)** will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

99. **Tree (Hackberry, 1.5" Caliper)** will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

100. **Tree (Quaking Aspen, 6'-8' B&B)** will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

101. **Tree (Big-Tooth Aspen, 6'-8' B&B)** will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

102. **Tree (Chestnut Oak, 1.5" Caliper)** will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

103. **Tree (White Pine, 8'-10' B&B)** will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

104. **Tree (Flowering Dogwood, 6'-8' B&B)** will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

105. **Shrub (Beach Plum, 2 Gallon)** will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

106. **Shrub (Staghorn Sumac, 2 Gallon)** will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

107. **Shrub (Arrowwood Viburnum, 2 Gallon)** will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

108. **Shrub (Arrowwood Viburnum, 3 Gallon)** will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

109. **Shrub (Northern Bayberry, 2 Gallon)** will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

110. **Shrub (Northern Bayberry, 3 Gallon)** will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

111. **Shrub (American Elderberry, 2 Gallon)** will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

112. **Shrub (American Elderberry, 3 Gallon)** will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

113. **Shrub (Lowbush Blueberry, 1 Gallon)** will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

114. **Shrub (New Jersey Tea, 1 Gallon)** will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

115. **Shrub (Gray Dogwood, 2 Gallon)** will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

116. **Shrub (Black Huckleberry, 1 Gallon)** will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

117. **Shrub (Swamp Rose, 2 Gallon)** will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

118. **Shrub (Carolina Rose, 2 Gallon)** will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

119. **Live Stakes** will be paid on a unit price per each basis. Measurement will include providing plant material, planting and guarantee. Planting guarantee is subject to special payment conditions per Specification Section 02910, paragraph 1.8.

120. **Outlet Structure** will be paid on a unit price per each basis. Measurement will include structural excavation and structural backfill, fine grading, forming, reinforcing steel, concrete, miscellaneous metal, fasteners and flap gate; installed complete in place.

121. **Outlet-Inlet Structure** will be paid on a unit price per each basis. Measurement will include structural excavation and structural backfill, fine grading, forming, reinforcing steel, concrete, miscellaneous metal, fasteners and trash rack; installed complete in place.

122. **Baffled Outlet Structure** will be paid on a unit price per each basis. Measurement will include structural excavation and structural backfill, fine grading, forming, reinforcing steel, concrete, miscellaneous metal, fasteners, trash rack and galvanized railing; installed complete in place.

123. **Concrete Encasement Block** will be paid on a unit price per each basis. Measurement will include fine grading, 60 mil HDPE liner pad, forming, providing and placing concrete.

124. **Adjust Manhole (+/- 5 ft., Existing)** will be paid on a unit price per each basis. Measurement will include excavation and backfill, removal and replacement of existing manhole ring and cover, extending manhole structure to planned elevation with formed concrete, reinforcing steel and miscellaneous metals and bolts for liner attachment.

125. **Temporary Storage Structure (Tractor Building)** will not be measured for payment but will be paid on a lump sum basis. Lump sum payment will include erecting a wood structure as specified in Section 13141 complete in place.

126. **Gas Flare Process Unit** will not be measured for payment but will be paid on a lump sum basis. Lump sum payment will include structural excavation to a point two (2) feet below bottom of concrete foundation, backfill and compact subgrade to bottom of concrete slab, fine grading, balance of backfilling, forming, reinforcing steel, concrete, embedded items, pouring and finishing concrete, curing concrete; providing and installing flaring unit, blowers, piping, stainless steel piping, valves, fittings, pipe supports, propane storage tank, gas pressure regulator; provided, installed and tested.

127. **Electrical (Gas Flare Unit)** will not be measured for payment but will be paid on a lump sum basis. The lump sum basis for payment will include providing and installing wire and cables, conduits, panels, metering, transformers and incidentals, startup and testing necessary to complete the work. The Contractor will be responsible for determining the status and bare the expense of upgrade requirements to the existing electrical distribution systems as necessary to support the new facilities.

128. **Instrumentation and Controls (Gas Flare Unit)** will not be measured for payment but will be paid on a lump sum basis. The lump sum basis for payment will include providing and installing wire and cables, conduits, panels, instrumentation and controls and incidentals, startup and testing necessary to complete the work.

129. **Electrical Grounding (Chain Link Fence)** will not be measured for payment but will be paid on a lump sum basis. Measurement will include providing and installing wire and cable, connectors, jumpers, grounding rods and incidentals necessary to complete the work.

1.6 PAYMENT

A. Payment includes: Full compensation for all required labor, products, tools, equipment, plant, transportation, services and incidentals; erection, application or installation of an item of the Work; overhead and profit.

B. Measurement and payment for items listed in Bid Form shall be for all work in place as shown on the Drawings and specified in the Specifications.

C. Measurement and Payment for all work described in General Specifications is considered to be work that is incidental or subsidiary to the work as defined in the Detailed Specifications.

1.7 NON-PAYMENT

A. Payment will not be made for any of the following:

1. Products wasted or disposed of in a manner that is not in conformance with the contract documents.

2. Products determined as not in conformance with the contract documents before or after placement.

3. Products not completely unloaded from the transporting vehicle.

4. Products placed beyond the lines and levels of the required Work.

5. Products remaining on hand after completion of the Work.

6. Loading, hauling, and disposing of rejected Products.

7. Multiple handling of on-site and off-site materials.

PART 2 PRODUCTS

(Not Used)

PART 3 EXECUTION

(Not Used)

END OF SECTION 01025

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 60 - Addendum No. 39, Contract Drawing C.18

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. On "Revised Plan 1, Contract Drawing C.18" presented in Addendum No. 39, page 62 of the Addenda to Contract Documents Volume No. 3...Delete note that says "REMOVE AND REPLACE EXISTING 24' WIDE DOUBLE LEAF GATE" and replace with "REMOVE AND REPLACE EXISTING GATE WITH NEW 24' WIDE DOUBLE LEAF GATE".

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 61 - Addendum No. 40, Contract Drawing LS.1

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

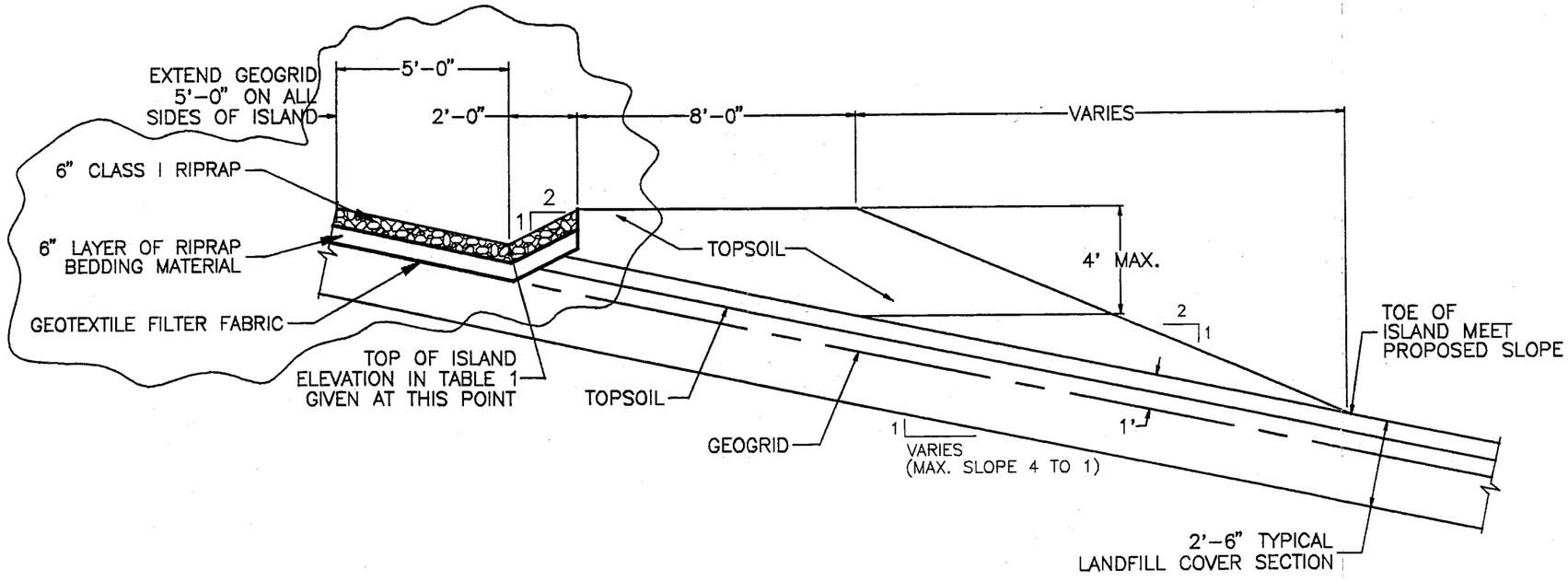
CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. On Drawing LS.1R1 issued in Addendum No. 40, delete table with the heading "HERBACEOUS".

2. Delete "VEGETATION ISLAND SECTION 2" and replace with revised version, attached on the following page.

3. Add "SLOPE PROTECTION VEGETATION ISLAND SECTION 1" attached on the following page.



VEGETATION ISLAND SECTION 2

SCALE 1/4" = 1'-0"

REVISED SECTION 1
CONTRACT DRAWING LS.1
PELHAM BAY LANDFILL, BRONX, NEW YORK

WOODWARD-CLYDE CONSULTANTS, INC.
ENGINEERING & SCIENCES APPLIED TO THE EARTH & ITS ENVIRONMENT
NEW YORK, NEW YORK

DR. BY	MVB	SCALE 1/4" = 1'-0"	DWG. NO. 24087037	PROJ. NO. 92C4087
CK'D. BY	MTZ	DATE JUNE 10, 1994		FIG. NO.

000033

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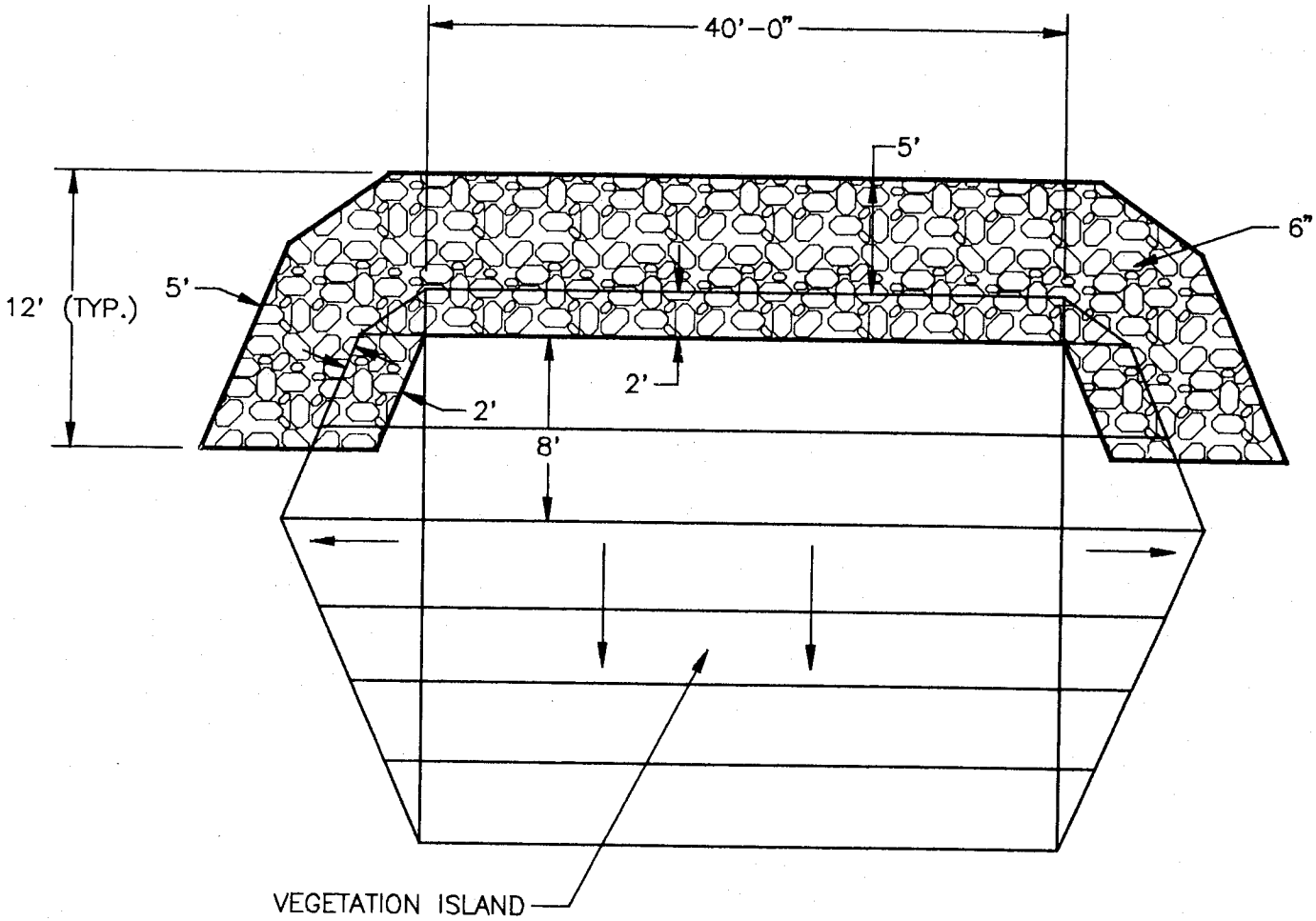

SLOPE PROTECTION
VEGETATION ISLAND

1

NOT TO SCALE

SLOPE PROTECTION PLAN
CONTRACT DRAWING C.10
PELHAM BAY LANDFILL, BRONX, NEW YORK

WOODWARD-CLYDE CONSULTANTS, INC.

ENGINEERING & SCIENCES APPLIED TO THE EARTH & ITS ENVIRONMENT
NEW YORK, NEW YORK

DR. BY	MVB	SCALE NOT TO SCALE	DWG. NO. 24087037	PROJ. NO. 92C4087
CK'D. BY	MTZ	DATE JUNE 10, 1994	PAGE NO.	

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THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 62 - Addendum No. 44, Spec. Section 02779

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Addendum No. 44 is herein revised. Revisions made to Addendum No. 44 are described below:

   A. Paragraph 1.3, add ASTM D1682 to the list of reference standards and renumber references accordingly.

   B. Paragraph 2.3A, add "Tensile Strength " and "Interface Friction Angle with Textured Geomembrane" requirements to the geonet properties and add note 3.

   C. Paragraph 2.3B, modify the sentence.

SECTION 02779
GEOCOMPOSITE

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Manufacture, fabrication, furnishing, and installation of geocomposite composed of geotextile/geonet to provide drainage above the geomembrane.

1.2 RELATED SECTIONS

A. Section 02210 - Earthwork.

1.3 REFERENCE STANDARDS

A. ASTM D413: Standard Test Methods for Rubber Property - Adhesion to Flexible Substrate.

B. ASTM D792: Test Method for Specific Gravity (Relative Density) and Density of Plastics by Displacement.

C. ASTM D1238: Standard Test Method for Flow Rates of Thermoplastics by Extrusion Plastometer.

D. ASTM D1505: Test Method for Density of Plastics by the Density-Gradient Technique.

E. ASTM D1603: Test Method for Carbon Black in Olefin Plastics.

F. ASTM D1682: Test Methods for Breaking Load and Elongation of Textile Fabrics.

G. ASTM D1777: Method for Measuring Thickness of Textile Materials.

H. ASTM D3786; Standard Test Method for Hydraulic Bursting Strength of Knitted Goods and Nonwoven Fabrics - Diaphragm Bursting Strength Tester Method.

I. ASTM D4355: Standard Test Method for Deterioration of Geotextiles from Exposure to Ultraviolet Light and Water (Xenon-Arc Type Apparatus).

J. ASTM D4491: Standard Test Methods for Water Permeability of Geotextiles by Permittivity.

K. ASTM D4533: Test Method for Trapezoidal Tearing Strength of Geotextiles.

L. ASTM D4595: Test Method for Tensile Properties of Geotextiles by the Wide Width Strip Method.

M. ASTM D4632: Test Method for Breaking Load and Elongation of Geotextiles (Grab Method).

N. ASTM D4716: Standard Test Method for Constant Head Hydraulic Transmissivity (In-plane Flow) of Geotextiles and Geotextile Related Products.

O. ASTM D4751: Test Method for Determining Apparent Opening Size of Geotextile.

P. ASTM D4833: Test Method for Index Puncture Resistance of Geotextiles, Geomembrane, and Related Products.

Q. ASTM D4873: Standard Guide for Identification, Storage, and Handling of Geotextiles.

R. GRI (Geosynthetic Research Institute) GS6: Standard Test Method for Interface Friction Determination by Direct Shear Testing.

1.4 SUBMITTALS

A. Submit to the Engineer for review and comment geocomposite samples and list of minimum property values, including certified test results . Material properties shall be in conformance with those defined in Part 2 of this Section. Any deviation shall be documented. Submit thread properties to the Engineer if thread is used for sewing seams.

B. Submit, if requested by the Resident Engineer, a list of completed facilities for which Contractor has installed a minimum of 100,000 square feet (sq.ft) of geocomposite.

C. Submit to the Engineer a copy of warranty obtained from Manufacturer and/or Installer, if requested by Engineer.

D. Submit written documentation to the Engineer that the geocomposite has been installed according to the Drawings and Specifications and that in-place materials meet generally accepted standards of practice.

E. Prior to delivery to Site, submit samples of the geocomposite to the Engineer for interface friction angle and transmissivity conformance testing listed in Part 2 of this

Section. No geocomposite shall be delivered to Site until approval is given by the Engineer.

F. Submit a layout plan indicating roll numbers and corresponding lengths similar to those for the geomembrane.

1.5 QUALITY CONTROL

A. Geocomposite shall be free of defects, rips, holes, or flaws.

B. Geocomposite shall be manufactured in widths and lengths that will permit installation of geocomposite with as few laps as possible. Geocomposite shall be of such length to allow installation from one anchor trench to the next, up or down slope, on slopes greater than 12 percent to avoid seaming cross slope.

C. During shipment and storage, geocomposite shall be wrapped in relatively impermeable and opaque protective covers.

D. Geocomposite shall be marked with Manufacturer's name, product identification, lot number, roll number, and roll dimensions.

E. Storage area shall be such that geocomposite is protected from mud, dirt, dust, debris, moisture, and exposure to ultraviolet (UV) light and heat.

1.6 QUALIFICATIONS

A. Manufacturer shall have at least five (5) years continuous experience in manufacture of geonets and geotextiles and/or experience totaling a minimum of two (2) million sq. ft of geonet and geotextile manufacture.

B. Installation shall be performed under direction of Contractor's installation supervisor who shall remain onsite and be in responsible charge throughout geocomposite installation. A replacement supervisor acceptable to the Resident Engineer shall be available when the supervisor cannot be present. Notify the Resident Engineer when the replacement supervisor is in charge. Contractor's installation supervisor shall have installed or supervised installation of a minimum of 100,000 sq. ft of geocomposite.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Transportation of geocomposite is responsibility of Contractor, who shall be liable for all damages to geocomposite prior to and during transportation to Site.

B. Storage, handling, and care of geocomposite onsite is responsibility of Contractor prior to, during, and after geocomposite installation. Contractor shall be liable for all damages to geocomposite incurred prior to final acceptance of installation by the Resident Engineer, except for those due to negligent actions on part of the Resident Engineer.

C. Contractor shall retain ownership of geocomposite until installation is accepted by the Resident Engineer.

PART 2 PRODUCTS

2.1 MANUFACTURE

A. The geocomposite shall be manufactured by heat bonding the geotextile to the top side of the geonet. No burn through geotextile nor glue or adhesive shall be permitted.

B. The bond between the geotextiles and the geonet shall exhibit a minimum peel strength of 2 pounds per inch (lb/in) (ASTM D413).

2.2 GEOTEXTILE

A. Provide products for the geotextile portions of the geocomposite comprised of polyester or polypropylene. Provide a nonwoven product for the geotextile portions of the geocomposite meeting the following minimum average roll values:

GEOTEXTILE PROPERTIES

PROPERTY	UNITS	VALUE[2]	TEST
Apparent opening size	Standard Sieve Size	No. 100-140	ASTM D4751
Grab Strength, MD/CD[3]	lb	≥500/380	ASTM D4632
Grab Elongation,MD/CD[3]	%	≥65/65	ASTM D4632
Trapezoidal Tear Strength, MD/CD[3]	lb	≥150/130	ASTM D4533
Puncture Resistance	lb	≥150	ASTM D4833
Mullen Burst Strength	lb/sq in.	≥600	ASTM D3786
Wide Width Tensile Strength, MD/CD[3]			
Ultimate	lb/in	≥175	ASTM D4595
Secant modulus @ 10% strain	lb/in	≥400	ASTM D4595
Permeability	cm/s	$\geq 1 \times 10^{-1}$	ASTM D4491
UV Resistance	% strength retained after 500 hours exposure	≥70	ASTM D4355
Porosity	%	≥30	Volume of voids divided by total volume
Interface Friction Angle with Geomembrane	degrees	24	GRI GS6[1]
Interface Friction Angle with Loamy Soil Layer Material	degrees	24	GRI GS6[1]

[1] GRI GS6, normal stress = 180-720 lb/sq ft, wet interface
[2] Typical or average values
[3] MD = Machine Direction, CD = Cross machine Direction

B. Provide TREVIRA 1145 as manufactured by Hoechst Celanese Corporation of Spartanburg, South Carolina, or equal.

2.3 GEONET

A. Provide products for the geonet portion of the geocomposite to be comprised of high-density polyethylene (HDPE). The geonet shall be manufactured by extruding two sets of stands to form a three dimensional structure providing planar flow and shall meet the following minimum average roll values except as noted:

GEONET PROPERTIES

PROPERTY	UNITS	VALUE[1]	TEST
Density	g/cc	0.93	ASTM D792 or D1505
Melt Flow Index	g/10 min.	1.0 max.	ASTM D1238
Carbon Black Content	%	2-3 range	ASTM D1603
Transmissivity	m^2/s	$2x10^{-4}$	ASTM D4716[2]
Thickness	in	≥0.20	ASTM D1777
Tensile Strength	lb/in.	≥40	ASTM D1682
Interface Friction Angle with Textured Geomembrane	degrees	≥18	GRI GS6[3]

NOTES:

[1] Typical or average values

[2] ASTM D4716; using normal stresses of 240, 360, and 720 lb/sq ft; hydraulic gradients of 0.04, 0.5, and 1, respectively; and HDPE geomembrane material below geocomposite and loamy soil material above geocomposite.

[3] GRI GS6, normal stress=240, 360, and 720 lb/sq ft. Interface friction angle properties shall be confirmed using actual materials for installation prior to delivery of materials to the Site.

B. Provide Poly-Net 3000 heat bonded with Trevira 1145 geotextile filter fabric as furnished by National Seal Company of Aurora, Illinois, or equal. Foaming agents or additives which might reduce the long term tensile strength of the geonet will not be permitted.

PART 3 EXECUTION

3.1 GEOCOMPOSITE PLACEMENT AND HANDLING

A. Handle all geocomposite in such a manner as to ensure it is not damaged in any way. Follow manufacturer's written instructions.

B. Install geocomposite with the machine direction parallel to the lines of maximum slope. Geocomposite rolls shall be numbered similar to the rolls indicated on the layout plans.

C. Geocomposite rolls shall be of such length as to extend from the anchor trench at the top of slope to the toe of slope in a single continuous section. Cross-slope seams or breaks in the continuity of the geocomposite on the side slope are not permitted.

D. Completely cover geocomposite with a minimum 12-inch thick layer of earthen material within 20 days of removing protective wrapping from geocomposite.

E. In the presence of wind, geocomposites shall be weighted with sandbags or equivalent. Such sandbags shall be installed during placement and shall remain until replaced with earthen cover material.

F. Cut geocomposites using an approved cutter only. If in place, take special care to protect geomembrane from damage which could be caused by cutting of geocomposites.

G. During placement, take care not to entrap in geocomposite stones, excessive dust, or moisture that could hamper subsequent seaming. If geocomposite is not free of debris and soil prior to installation, Installer shall clean geocomposite prior to installation.

H. Examine geocomposite over entire surface, after installation, to ensure that no potentially harmful foreign objects, such as needles, are present. Remove any foreign objects so encountered, or remove geocomposite from the Site and replace.

I. Take precautions against "snowblindness" of personnel if light or white-colored geotextile is used for the geocomposite.

J. Do not weld or tack weld geocomposite to the underlying geomembrane.

3.2 GEOCOMPOSITE CONFORMANCE TESTING

A. Samples of geocomposite delivered to Site may be collected for testing to confirm conformance with geotextile and geonet properties in Part 2 of this Section, at the Resident Engineer's discretion.

B. Samples, if required, shall be taken across entire width of geocomposite roll and shall not include the first three (3) feet. Samples shall be three (3) ft long by roll width. Machine direction shall be marked on sample with an arrow. Include in the roll length sufficient material to reach from anchor trench to anchor trench and allow a sample to be taken in the first and last 10 feet.

C. Samples of on-site geocomposite, when required, shall be taken at rate of one per lot or one per 100,000 sq. ft, whichever is less.

3.3 GEOCOMPOSITE SEAMS AND OVERLAPS

A. Overlap the geonet portion of geocomposite approximately two (2) to four (4) inches where adjacent rolls abut. Join the geonet by plastic ties every five (5) ft along the roll length six (6) inches along end to end seams and in anchor trench, or by methods meeting Manufacturer's written recommendations for joining geocomposite material.

B. Overlap the geotextile portion of the geocomposite a minimum of two (2) inches. Continuously sew or thermally bond the geotextile portion.

C. Perform any sewing using polymeric thread with chemical resistance properties equal to or exceeding those of geotextile.

D. Anchor geocomposite materials in anchor trenches with geomembrane as indicated on the Drawings.

3.4 GEOTEXTILE REPAIR

A. Repair any holes or tears in geotextile as follows:

1. A patch made from same geotextile shall be thermally bonded into place.

2. Should any tear exceed 10% of width of roll on a sideslope, that roll shall be removed from slope and replaced.

3.5 PLACEMENT OF EARTHEN MATERIALS OVER GEOCOMPOSITE

A. Place all earthen materials, such as Loamy Soil, located on top of geocomposite in such a manner as to ensure:

1. No damage to geocomposite or underlying geomembrane.

2. Minimal slippage of geocomposite on underlying layers.

3. No excess tensile stresses in geocomposite.

4. No unnecessary wrinkles in geocomposite or geomembrane.

B. Place Loamy Soil material over geocomposite by pushing material out over geocomposite ahead of equipment in minimum 12-inch thick loose lifts in accordance with Section 02210. On sideslopes, earthen material placement shall begin at toe of slope and proceed upslope to top of slope. Equipment used to install earthen material over the geocomposite shall have a maximum contact pressure of 10 pounds per square inch (psi) on earthen material. Thickness of earthen material over geocomposite shall be 12 inches or more before tracked equipment used to place earthen material shall be permitted to cross areas where geocomposite has been installed. On access roads and slopes less than 12 percent, thickness of cover material over geocomposite shall be a minimum of two (2) feet before vehicles with contact pressure greater than 10 psi shall be permitted to cross areas where geocomposite has been installed.

C. On slopes steeper than 12 percent, only Caterpillar Model D4 dozers, or equal, will be permitted based on overall weight and track pressure regardless of cover thickness over geosynthetics. Dozers shall not work within 100 feet horizontally of each other in the same reach between slope benches. Avoid excessive braking and braking in a down slope direction during and following soil placement operations.

END OF SECTION 02779

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 63 - Addendum No. 45, Answers to Contractors' Questions

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Page 93 of the Addenda to Contract Documents Volume No.3, delete the answer to Question 44 and replace with the following:

   Answer

   The term "Meadow" refers to all areas of the final cover including the vegetation islands. The proper seed to use is defined by Section 02930, paragraph 2.3 H: Meadows presented in Addendum No. 54.

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 64 - Addendum No. 49, Revised Bid Forms

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Addendum No. 49 is herein deleted. Replace the Bid Form included in the Invitation To Bid document with the revised version, attached on the following pages.

Bid Form - Contract No. 876-HP - Revised 6/9/94

Geomembrane Capping and Gas Collection System

Pelham Bay Landfill Remediation

Bronx, New York

Item No.	Spec No.	Description	Quantity	Unit	Unit Price	Amount
1	01000	General Requirements	1.00	LS	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
2	01000	Test Pits	400.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
3	01528	Personal Protect Equip (Upgrade to Level C,$10 max.)	2,000.00	Mhr	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
4	01590	Field Offices (Office Trailer Rental)	20.00	Mo	$1,150.00	$23,000.00
	Unit Price in words	_____ Dollars and _____ Cents				
5	01590	Field Offices (Operation and Maintenace)	20.00	Mo	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
6	01590	Field Offices (Supply Allowance)	1.00	LS	$15,000.00	$15,000.00
	Unit Price in words	_____ Dollars and _____ Cents				
7	01590	Groundwater Sampling Equipment	1.00	LS	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
8	02060	Demolition (Existing Sheds)	1.00	LS	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
9	02060	Remove and Dispose (Curtain Drain and Pipe,Pond B)	1,120.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
10	02060	Remove and Dispose (Gravel Drain,Pond B)	200.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				

000047

Bid Form - Contract No. 876-HP - Revised 6/9/94

Geomembrane Capping and Gas Collection System

Pelham Bay Landfill Remediation

Bronx, New York

Item No.	Spec No.	Description	Quantity	Unit	Unit Price	Amount
11	02078	Abandon Underground Storage Tank	1.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
12	02110	Site Clearing	88.80	Ac	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
13	02169	Gas Extraction Well	1,249.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
14	02169	Gas Extraction Well (Well Head)	22.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
15	02169	Gas Monitoring Well	60.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
16	02169	Gas Monitoring Well (Well Guard)	3.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
17	02210	Excavate Cover Soil	175,656.00	Cy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
18	02210	Excavate Waste	215,890.00	Cy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
19	02221	Borrow (Loamy Soil,Imported)	224,208.00	Cy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
20	02231	Crushed Aggregate Base Course	25,183.00	Sy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				

Bid Form - Contract No. 876-HP - Revised 6/9/94

Geomembrane Capping and Gas Collection System

Pelham Bay Landfill Remediation

Bronx, New York

Item No.	Spec No.	Description	Quantity	Unit	Unit Price	Amount
21	02231	Crushed Stone Base	32,687.00	Sy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
22	02231	Delineators	296.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
23	02245	Geotextile Fabric (10oz Non-Woven,Rdwy and Ditch)	606,230.00	Sf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
24	02277	Rip Rap (Class I)	2,473.00	Sy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
25	02277	Rip Rap (Class II)	182.00	Sy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
26	02277	Rip Rap (Class III)	364.00	Sy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
27	02277	Rip Rap (Class IV)	16.00	Sy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
28	02277	Rip Rap Bedding	1,447.00	Sy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
29	02660	Pipe (24" DI B&S,Cement Lined)	660.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
30	02660	Pipe (20" DI B&S,Cement Lined)	50.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				

Bid Form - Contract No. 876-HP - Revised 6/9/94

Geomembrane Capping and Gas Collection System

Pelham Bay Landfill Remediation

Bronx, New York

Item No.	Spec No.	Description	Quantity	Unit	Unit Price	Amount
31	02660	Pipe (12" DI B&S,Cement Lined)	40.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
32	02660	Pipe (6" DI B&S,Cement Lined)	20.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
33	02660	Coupling (24" Baker)	2.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
34	02660	Fittings (Ductile Iron MJ Cl 54 150 psi)	9.00	Ton	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
35	02660	Valve (20" Gate Cast Iron MJ,Installation)	2.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
36	02660	Valve (20" Gate Cast Iron MJ,Furnish and Deliver)	2.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
37	02660	Valve (12" Gate Cast Iron MJInstallation)	1.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
38	02660	Valve (12" Gate Cast Iron MJ,Furnish and Deliver)	1.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
39	02660	Valve (6" Gate Cast Iron MJ,Installation)	2.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
40	02660	Valve (6" Gate Cast Iron MJ,Furnish and Deliver)	2.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				

Bid Form - Contract No. 876-HP - Revised 6/9/94

Geomembrane Capping and Gas Collection System

Pelham Bay Landfill Remediation

Bronx, New York

Item No.	Spec No.	Description	Quantity	Unit	Unit Price	Amount
41	02660	Trench Safety System (Tight Sheeting)	12,000.00	Sf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
42	02660	Saw Cutting (Pavement)	150.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
43	02660	Remove Pavement (All Types)	10.00	Cy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
44	02660	Excavation (Soil)	1,420.00	Cy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
45	02660	Excavation (Soil and Pavement)	10.00	Cy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
46	02660	Excavation (Rock)	5.00	Cy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
47	02660	Aggregate (Gravel Bedding)	335.00	Cy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
48	02660	Aggregate (Clean Sand)	500.00	Cy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
49	02660	Backfill (Satisfactory Material)	505.00	Cy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
50	02660	Geotextile (10oz Non-Woven,Water Main)	32,000.00	Sf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				

Bid Form - Contract No. 876-HP - Revised 6/9/94

Geomembrane Capping and Gas Collection System

Pelham Bay Landfill Remediation

Bronx, New York

Item No.	Spec No.	Description	Quantity	Unit	Unit Price	Amount
51	02660	Remove and Reset (Fire Hydrant)	2.00	Ea		$
	Unit Price in words	_____ Dollars and _____ Cents				
52	02660	Remove (Fire Hydrant)	1.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
53	02660	Fire Hydrant Fenders	5.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
54	02660	Sidewalk (Concrete)	250.00	Sf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
55	02660	Concrete Base (6" Class B-32)	50.00	Sy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
56	02660	Asphalt Pavement (3" Asph Conc or Sheet Asph)	30.00	Sy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
57	02660	Tree Removal	5.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
58	02677	Well Abondonment	30.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
59	02715	Gas Extraction Well Pipe (3" HDPE)	1,398.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
60	02715	Gas Extraction Well Pipe (4" HDPE)	3,694.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				

Bid Form - Contract No. 876-HP - Revised 6/9/94

Geomembrane Capping and Gas Collection System

Pelham Bay Landfill Remediation

Bronx, New York

Item No.	Spec No.	Description	Quantity	Unit	Unit Price	Amount
61	02715	Gas Extraction Well Pipe (6" HDPE)	2,311.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
62	02715	Gas Extraction Well Pipe (8" HDPE)	2,800.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
63	02715	Gas Extraction Well Pipe (10" HDPE)	322.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
64	02715	Gas Condensate Pipe (2"x4"HDPE Dbl Wall)	493.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
65	02715	Gas Collection Pipe (4" HDPE)	6,781.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
66	02715	Gas Extraction Valve Box	6.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
67	02715	Gas Condensate Separator	1.00	LS	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
68	02715	Gas Collection Riser Connection (VB-6)	1.00	LS	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
69	02715	Gas Condensate Conveyance Connection (MH-D2)	1.00	LS	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
70	02720	Pipe (24" HDPE,Corrugated)	2,145.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				

Bid Form - Contract No. 876-HP - Revised 6/9/94

Geomembrane Capping and Gas Collection System

Pelham Bay Landfill Remediation

Bronx, New York

Item No.	Spec No.	Description	Quantity	Unit	Unit Price	Amount
71	02720	Pipe (30" HDPE,Smooth)	1,675.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
72	02720	Manhole-Inlet (48" HDPE Class 160,All Depths)	16.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
73	02720	Infiltration Drainage Trench	19,700.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
74	02720	Curtain Drain	665.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
75	02722	Reinforced Concrete Pipe (24")	45.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
76	02766	Reconstruction of Sewer (30"RCP)	690.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
77	02766	Reconstruction of Sewer (72"RCP)	595.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
78	02778	Geomembrane Liner (60 mil HDPE,Smooth)	788,178.00	Sf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
79	02778	Geomembrane Liner (60 mil HDPE,Textured)	3,155,741.00	Sf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
80	02779	Geocomposite Liner	3,943,919.00	Sf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				

Bid Form - Contract No. 876-HP - Revised 6/9/94

Geomembrane Capping and Gas Collection System

Pelham Bay Landfill Remediation

Bronx, New York

Item No.	Spec No.	Description	Quantity	Unit	Unit Price	Amount
81	02831	Chain Link Fence (8ft x 6ga,Barb Wire/Tape Top)	7,924.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
82	02831	Chain Link Fence (8ft x 6ga,3 Strn Barb Wire Top)	754.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
83	02831	Barbed Wire and Tape Top (Existing Chain Link Fence)	40.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
84	02831	Gate (8ft x 6ga x 4ft Single Leaf,3 Strn Barb Wire Top)	25.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
85	02831	Gate (8ft x 6ga x 12ft Single Leaf,Barb Wire/Tape Top)	1.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
86	02831	Gate (8ft x 6ga x 24ft Double Leaf,Barb Wire/Tape Top)	2.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
87	02831	Remove Fence (Chain Link)	5,100.00	Lf	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
88	02831	Remove Gate (Chain Link)	3.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
89	02910	Landscaping Work (Vegetation Islands)	26.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
90	02910	Landscaping Work (Perimeter Bedding)	13,400.00	Sy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				

Bid Form - Contract No. 876-HP - Revised 6/9/94

Geomembrane Capping and Gas Collection System

Pelham Bay Landfill Remediation

Bronx, New York

Item No.	Spec No.	Description	Quantity	Unit	Unit Price	Amount
91	02910	Topsoiling (6",Imported,Landscaping)	745.00	Cy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
92	02920	Topsoiling (6",Imported,Meadows)	59,347.00	Cy	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
93	02930	Seeding and Fertilizing	75.89	Ac	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
94	02950	Tree (Pitch Pine,5'-6' B&B)	49.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
95	02950	Tree (Scrub Oak,1.5" Caliper)	73.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
96	02950	Tree (Eastern Red Cedar,4'-5' B&B)	40.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
97	02950	Tree (Black Cherry,2" Caliper)	20.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
98	02950	Tree (Gray Birch,2" Caliper)	65.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
99	02950	Tree (Hackberry,1.5" Caliper)	53.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
100	02950	Tree (Quaking Aspen,6'-8' B&B)	24.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				

Bid Form - Contract No. 876-HP - Revised 6/9/94

Geomembrane Capping and Gas Collection System

Pelham Bay Landfill Remediation

Bronx, New York

Item No.	Spec No.	Description	Quantity	Unit	Unit Price	Amount
101	02950	Tree (Big-Tooth Aspen,6'-8' B&B)	36.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
102	02950	Tree (Chestnut Oak,1.5" Caliper)	45.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
103	02950	Tree (White Pine,8'-10' B&B)	210.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
104	02950	Tree (Flowering Dogwood,6'-8' B&B)	15.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
105	02950	Shrub (Beach Plum,2 Gallon)	87.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
106	02950	Shrub (Staghorn Sumac,2 Gallon)	36.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
107	02950	Shrub (Arrowwood Viburnum,2 Gallon)	40.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
108	02950	Shrub (Arrowwood Viburnum,3 Gallon)	33.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
109	02950	Shrub (Northern Bayberry,2 Gallon)	45.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
110	02950	Shrub (Northern Bayberry,3 Gallon)	28.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				

Bid Form - Contract No. 876-HP - Revised 6/9/94

Geomembrane Capping and Gas Collection System

Pelham Bay Landfill Remediation

Bronx, New York

Item No.	Spec No.	Description	Quantity	Unit	Unit Price	Amount
111	02950	Shrub (American Elderberry,2 Gallon)	50.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
112	02950	Shrub (American Elderberry,3 Gallon)	23.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
113	02950	Shrub (Lowbush Blueberry,1 Gallon)	109.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
114	02950	Shrub (New Jersey Tea,1 Gallon)	146.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
115	02950	Shrub (Gray Dogwood,2 Gallon)	87.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
116	02950	Shrub (Black Huckleberry,1 Gallon)	52.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
117	02950	Shrub (Swamp Rose,2 Gallon)	500.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
118	02950	Shrub (Carolina Rose,2 Gallon)	400.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
119	02960	Live Stakes	1,000.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
120	03300	Outlet Structure	1.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				

Bid Form - Contract No. 876-HP - Revised 6/9/94

Geomembrane Capping and Gas Collection System

Pelham Bay Landfill Remediation

Bronx, New York

Item No.	Spec No.	Description	Quantity	Unit	Unit Price	Amount
121	03300	Outlet-Inlet Structure	4.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
122	03300	Baffled Outlet Structure	4.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
123	03300	Concrete Encasement Block	23.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
124	03400	Adjust Manhole (+/- 5 ft,Existing)	2.00	Ea	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
125	13141	Temporary Storage Structure (Tractor Building)	1.00	LS	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
126	15846	Gas Flare Process Unit	1.00	LS	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
127	16050	Electrical (Gas Flare Unit)	1.00	LS	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
128	16050	Instrumentation and Controls (Gas Flare Unit)	1.00	LS	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
129	16050	Electrical Grounding (Chain Link Fence)	1.00	LS	$	$
	Unit Price in words	_____ Dollars and _____ Cents				
					TOTAL BASE BID	$

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 65 - Contract Drawing C.10

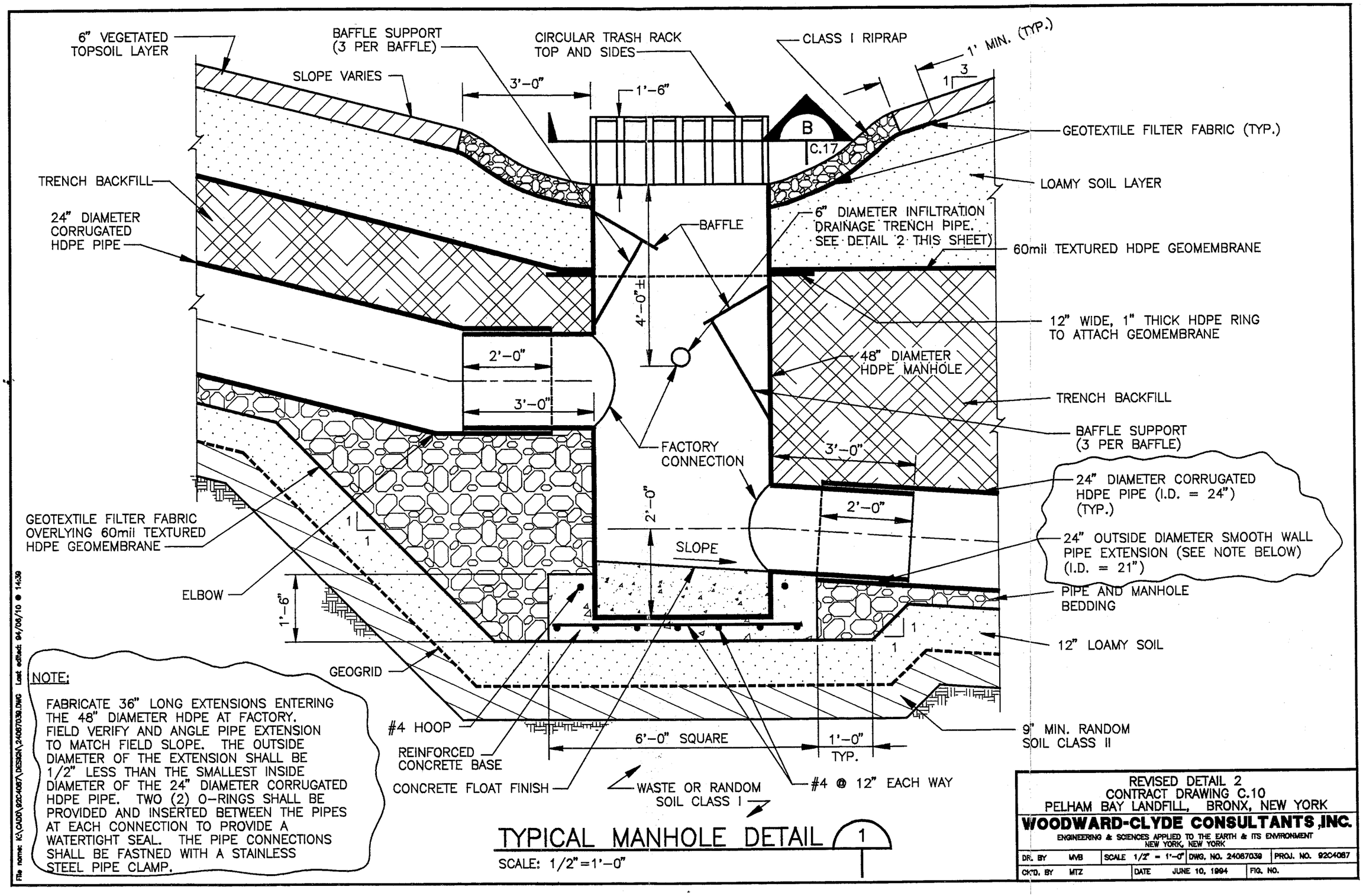
TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Delete "TYPICAL MANHOLE DETAIL 1" and replace with revised version, attached on the following page.

2. Delete "DETAIL 2" and replace with revised version, attached on the following page.



NOTE:

FABRICATE 36" LONG EXTENSIONS ENTERING THE 48" DIAMETER HDPE AT FACTORY. FIELD VERIFY AND ANGLE PIPE EXTENSION TO MATCH FIELD SLOPE. THE OUTSIDE DIAMETER OF THE EXTENSION SHALL BE 1/2" LESS THAN THE SMALLEST INSIDE DIAMETER OF THE 24" DIAMETER CORRUGATED HDPE PIPE. TWO (2) O-RINGS SHALL BE PROVIDED AND INSERTED BETWEEN THE PIPES AT EACH CONNECTION TO PROVIDE A WATERTIGHT SEAL. THE PIPE CONNECTIONS SHALL BE FASTNED WITH A STAINLESS STEEL PIPE CLAMP.

TYPICAL MANHOLE DETAIL 1

SCALE: 1/2"=1'-0"

REVISED DETAIL 2
CONTRACT DRAWING C.10
PELHAM BAY LANDFILL, BRONX, NEW YORK

WOODWARD-CLYDE CONSULTANTS, INC.
ENGINEERING & SCIENCES APPLIED TO THE EARTH & ITS ENVIRONMENT
NEW YORK, NEW YORK

DR. BY MVB	SCALE 1/2" = 1'-0"	DWG. NO. 24087039	PROJ. NO. 92C4087
CK'D. BY MTZ	DATE JUNE 10, 1994	FIG. NO.	

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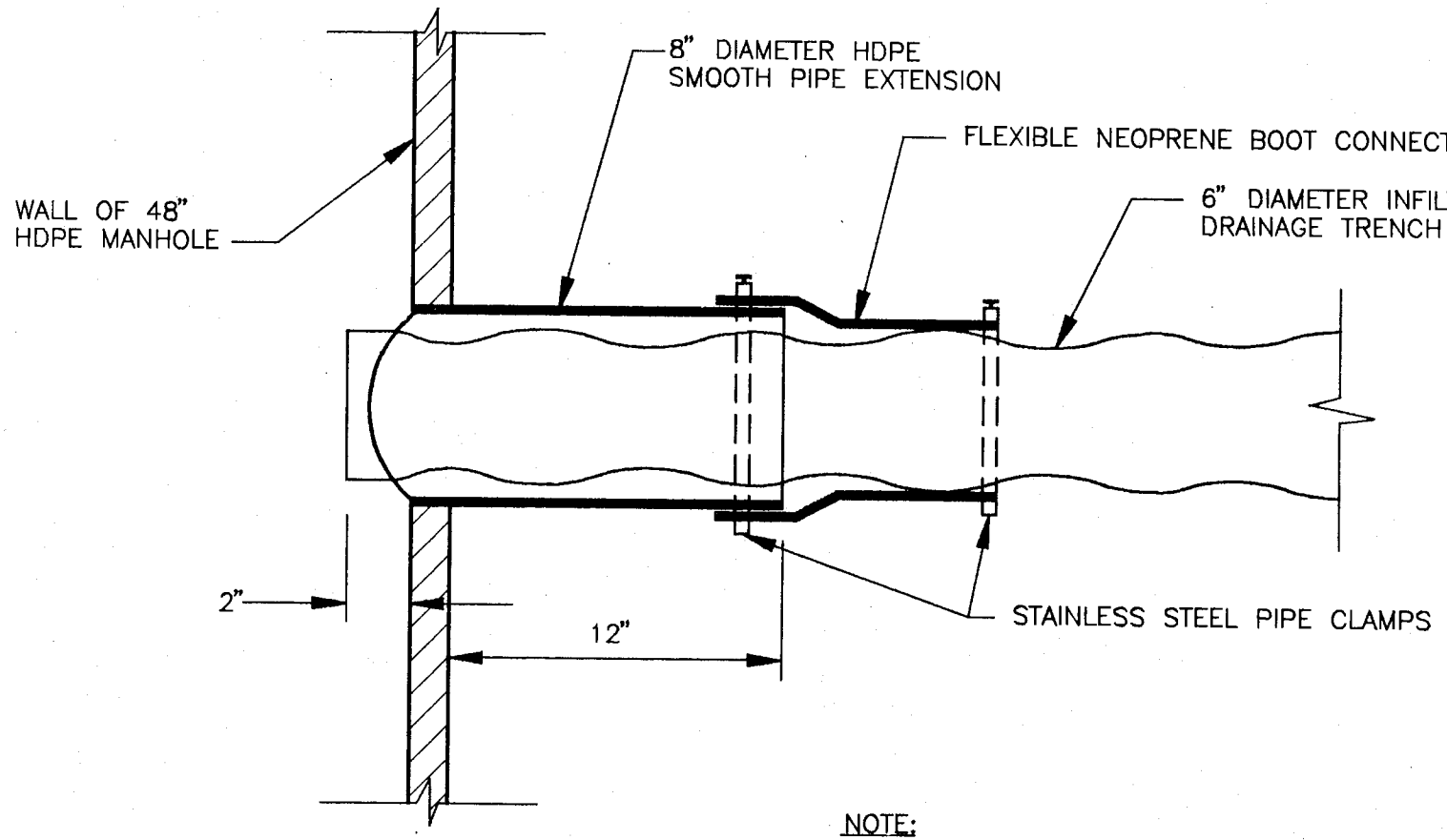


NOTE:

FABRICATE 12" LONG EXTENSION 8" DIAMETER PIPE ENTERING 48" DIAMETER HDPE AT FACTORY, AT LOCATIONS TO MATCH FLOWLINE OF THE 6" DIA. INFILTRATION DRAINAGE TRENCH PIPES. EXTEND INFILTRATION DRAINAGE TRENCH PIPE THROUGH 8" DIAMETER PIPE EXTENSION AND SEAL WITH NEOPRENE BOOT CONNECTION AND PIPE CLAMPS.

DETAIL 2

NOT TO SCALE

REVISED DETAIL 2
CONTRACT DRAWING C.10
PELHAM BAY LANDFILL, BRONX, NEW YORK

WOODWARD-CLYDE CONSULTANTS, INC.

ENGINEERING & SCIENCES APPLIED TO THE EARTH & ITS ENVIRONMENT
NEW YORK, NEW YORK

DR. BY MVB	SCALE NOT TO SCALE	DWG. NO. 24087036	PROJ. NO. 92C4087
CK'D. BY MTZ	DATE JUNE 10, 1994	PAGE NO.	

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

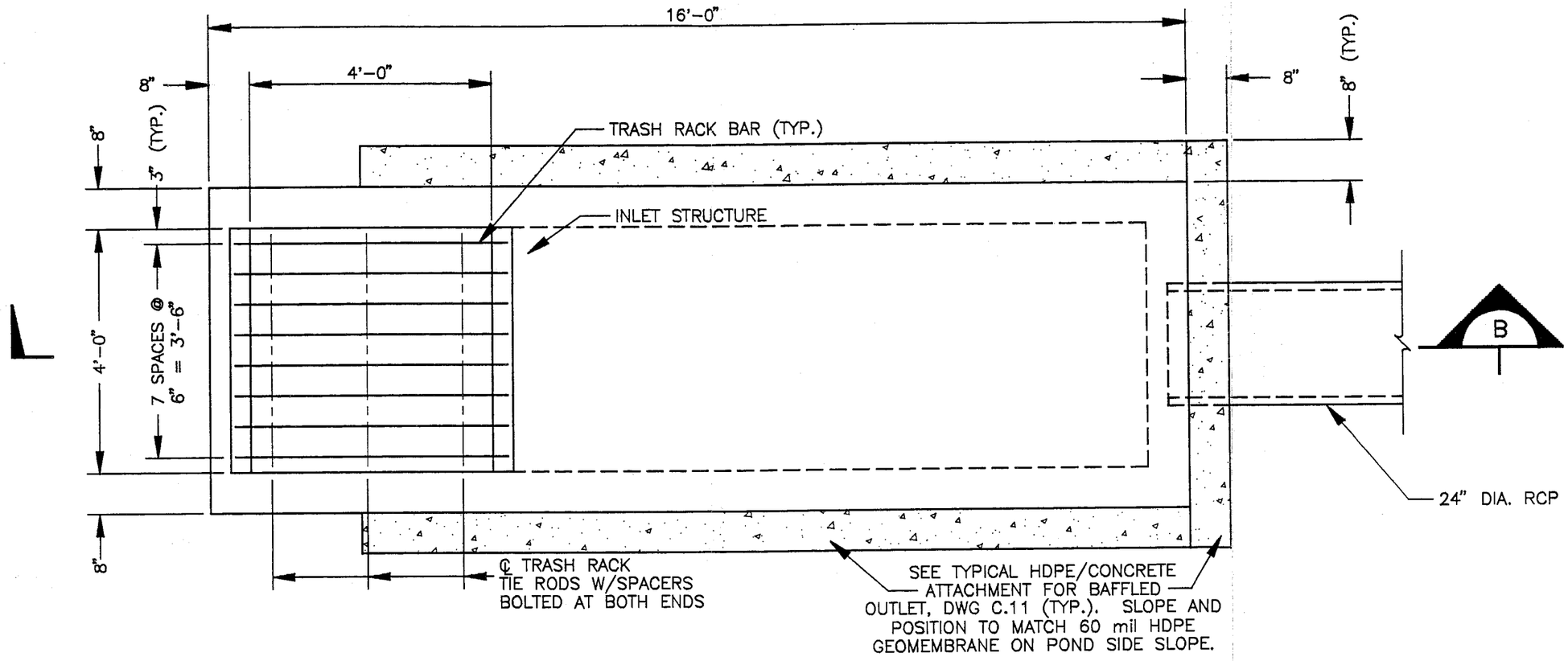
ADDENDUM NO. 66 - Contract Drawing C.12

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Delete "INLET PLAN POND C PIPE OUTLET- SECTION A" and replace with revised version, attached on the following pages.
2. Delete "INLET SECTION POND C PIPE OUTLET- SECTION B" and replace with revised version, attached on the following pages.
3. Delete "ELEVATION- SECTION C" and replace with revised version, attached on the following pages.
4. Delete "SEAT DETAIL 1" and replace with revised version, attached on the following pages.



INLET PLAN
POND C PIPE OUTLET

A

SCALE: 1/2"=1'-0"

C.15R1

REVISED PLAN A
CONTRACT DRAWING C.12
PELHAM BAY LANDFILL, BRONX, NEW YORK

WOODWARD-CLYDE CONSULTANTS, INC.
ENGINEERING & SCIENCES APPLIED TO THE EARTH & ITS ENVIRONMENT
NEW YORK, NEW YORK

DR. BY	MVB	SCALE 1/2" = 1'-0"	DWG. NO. 24087031	PROJ. NO. 92C4087	
CK'D. BY	MTZ	DATE JUNE 10, 1994	PAGE NO.		

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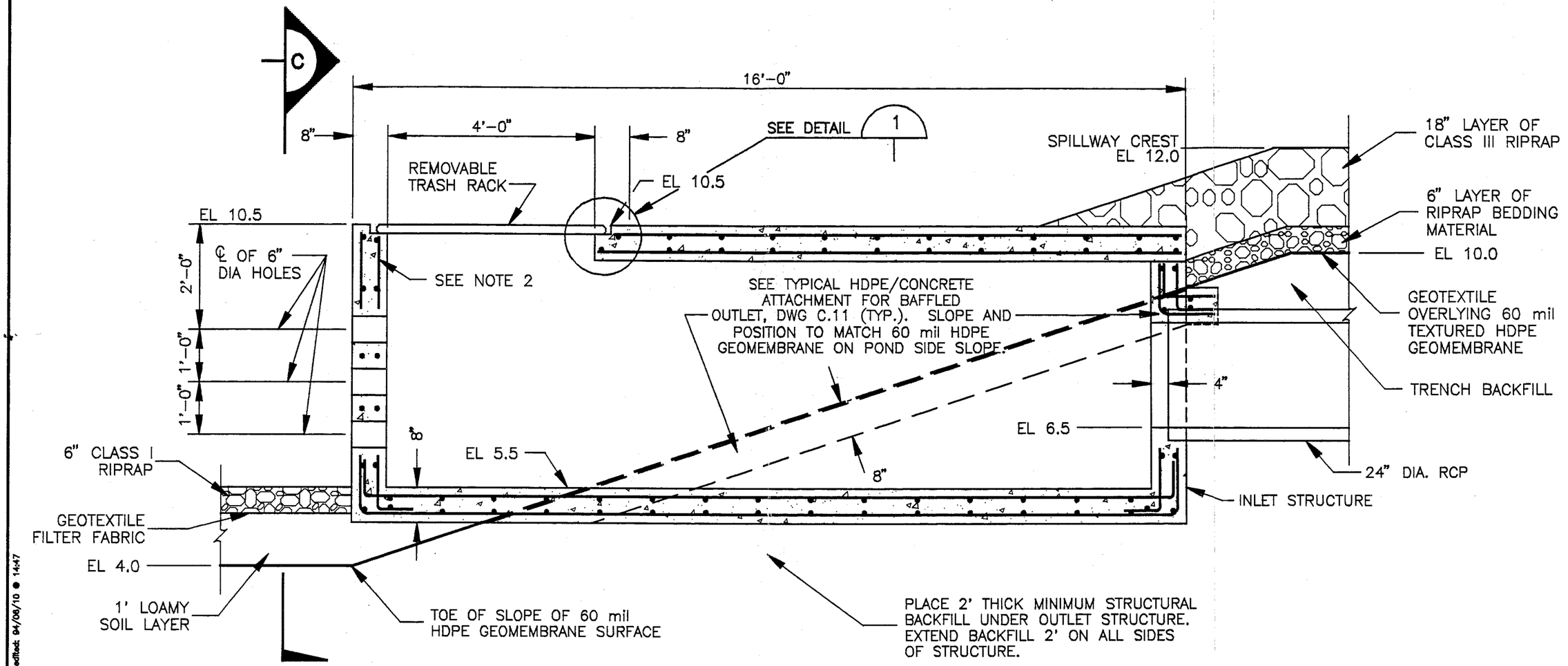

INLET SECTION
POND C PIPE OUTLET B

SCALE: 1/2"=1'-0"

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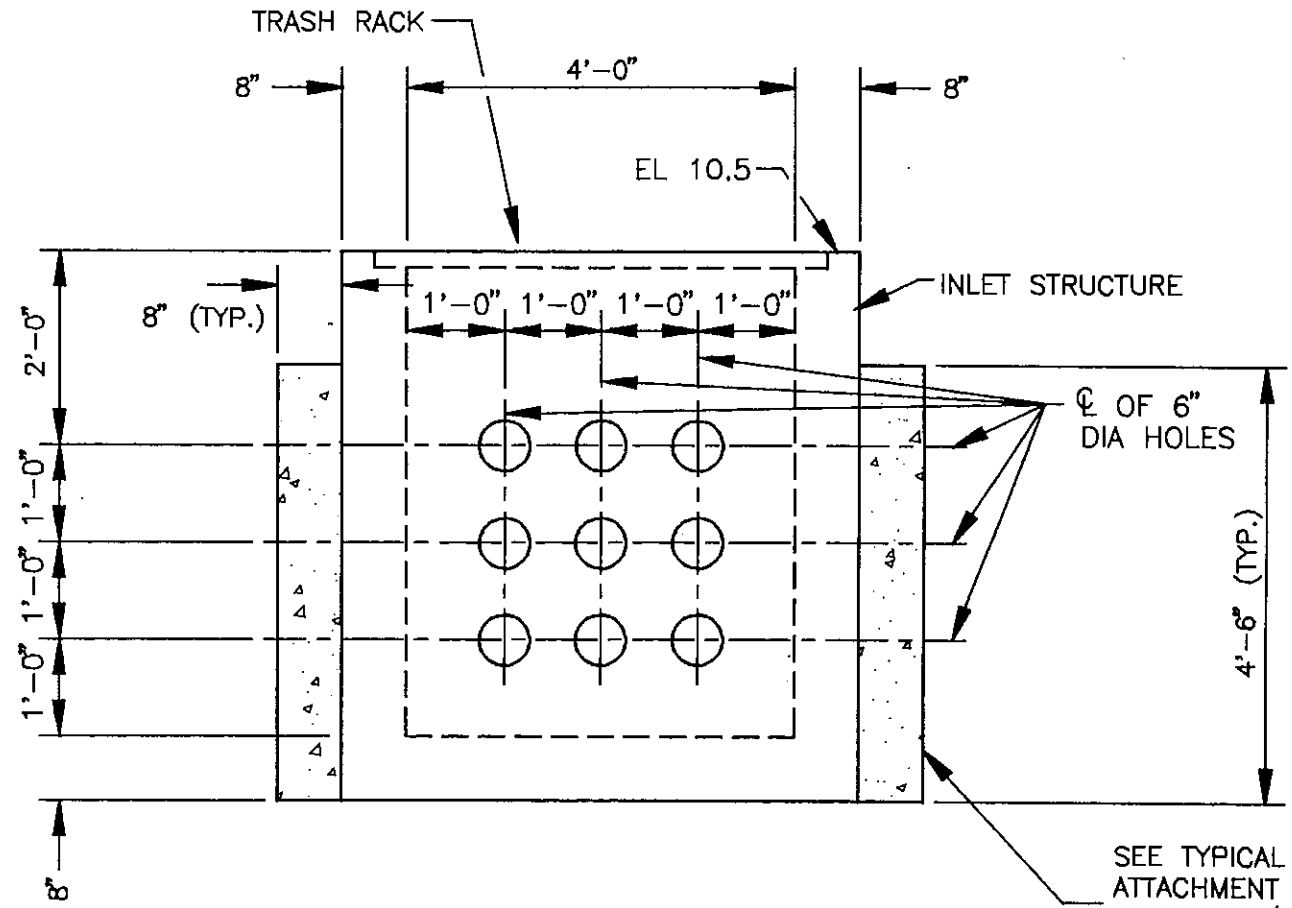
REVISED SECTION B
CONTRACT DRAWING C.12
PELHAM BAY LANDFILL, BRONX, NEW YORK

WOODWARD-CLYDE CONSULTANTS, INC.
ENGINEERING & SCIENCES APPLIED TO THE EARTH & ITS ENVIRONMENT
NEW YORK, NEW YORK

DR. BY	MVB	SCALE 1/2" = 1'-0"	DWG. NO. 24087032	PROJ. NO. 92C4087	
CK'D. BY	MTZ	DATE JUNE 10, 1994	FIG. NO.		



ELEVATION C

SCALE: 1/2"=1'-0"

REVISED ELEVATION C
CONTRACT DRAWING C.12
PELHAM BAY LANDFILL, BRONX, NEW YORK

WOODWARD-CLYDE CONSULTANTS, INC.
ENGINEERING & SCIENCES APPLIED TO THE EARTH & ITS ENVIRONMENT
NEW YORK, NEW YORK

DR. BY WB	SCALE 1/2" = 1'-0"	DWG. NO. 24087033	PROJ. NO. 92C4087
CK'D. BY MTZ	DATE JUNE 10, 1994	PAGE NO.	

File name: K:\CADD\92C4087\DESIGN\24087033.DWG Last edited: 94/06/10 @ 08:10

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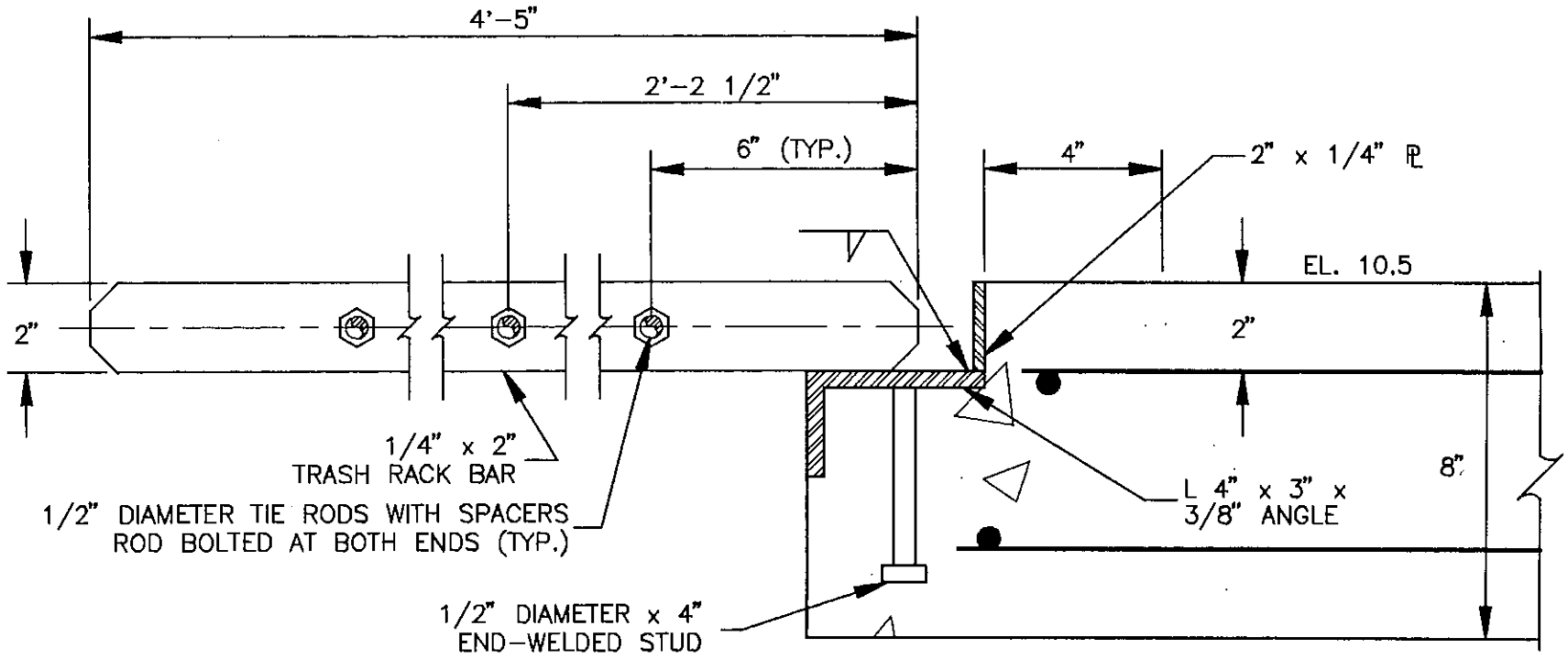


SEAT DETAIL 1

SCALE: 3"=1'-0"

REVISED DETAIL 1
CONTRACT DRAWING C.12
PELHAM BAY LANDFILL, BRONX, NEW YORK

WOODWARD-CLYDE CONSULTANTS, INC.

ENGINEERING & SCIENCES APPLIED TO THE EARTH & ITS ENVIRONMENT
NEW YORK, NEW YORK

DR. BY	MVB	SCALE 3" = 1'-0"	DWG. NO. 24067034	PROJ. NO. 92C4067
CK'D. BY	MTZ	DATE JUNE 10, 1994	PAGE NO.	

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 67 - Contract Drawing C.15

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Replace Contract Drawing C.15 with revised version (Drawing C.15R1), attached at the end of this package. Revisions made to this Drawing are described below:

   A. Revise "SECTION A".

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 68 - Specification Section 01010

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Page 583 of the Specifications, Section 01010, paragraph 1.3A. Delete item 6 and replace with the following:

   6. Remove existing cover soil materials to the top of waste in all areas of the site, even in the fill areas of the Work. Regrade surface in accordance with the grades indicated on the Drawings.

2. Page 583 of the Specifications, Section 01010, paragraph 1.3A. Delete item 7 and replace with the following:

   7. Remove top six (6) inches of existing topsoil and place in the first 12 inches of fill above the geomembrane liner.

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 69 - Specification Section 01100

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Page 600 of the Specifications, Section 01100, paragraph 1.7. Add the following:

   B. Provide rodent control measures along the perimeter of the site (excluding the sides of the site bordering on waterways) and in the area of the office trailers to prevent rodents from migrating offsite. Coordinate with the New York City Department of Parks and Recreation (NYCDPR) in preparing the rodent control plan and before the implementation of any rodent control measures on site.

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 70 - Specification Section 01528

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Delete Section 01528 in its entirety and replace with the revised version, attached on the following pages. The revisions to this Section include changes in paragraphs 1.1, 1.3, 1.9B, addition of a new paragraph 1.10.

SECTION 01528
HEALTH AND SAFETY

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Preparation and implementation of a Health and Safety Plan, Off-Site Monitoring Plan, and an Emergency Response and Contingency Plan in accordance with EPA and various OSHA requirements for various potential and anticipated workers' health and safety hazards.

1.2 RELATED SECTIONS

A. General Specification 1S - Excavation.

B. Section 00200 - Information Available to Bidders.

1.3 REGULATORY REQUIREMENTS

A. OSHA Title 29 CFR 1910.120 - Hazardous Waste Operations and Emergency Response.

B. OSHA Title 29 CFR 1910.1000 - Air Contaminants.

C. OSHA Title 29 CFR 1926 - Safety and Health for Construction.

D. United States Environmental Protection Agency (USEPA): On-Site Meteorological Program Guidance for Regulatory Modeling Applications, EPA Document EPA-450/4-87-013, June 1987.

1.4 POTENTIAL HAZARDS

A. Contractor shall become familiar with the potential hazardous health and safety conditions and risks associated with the Work. Detailed information on potentially hazardous conditions onsite (contaminants and chemicals of concern) can be obtained from the documents listed in Section 00200; namely, the Remedial Investigation and Feasibility Study reports and the Remedial Investigation/Feasibility Study Health and Safety Plan.

1.5 CONTRACTOR'S RESPONSIBILITIES

A. Contractor shall be solely and completely responsible to initiate, maintain, and supervise all safety precautions and programs in connection with the Work.

Precautions shall be taken to prevent injury to employees, Resident Engineer's personnel, Engineer's personnel, and other persons that may be at the Site or affected by the Contractor's actions. The Contractor's responsibility for safety is continuous throughout the duration of the Work and is not limited to the actual hours of construction operations.

1.6 ENGINEER'S AND RESIDENT ENGINEER'S RESPONSIBILITIES

A. Conform to the Contractor's Health and Safety Plan.

1.7 SITE SAFETY OFFICER

A. Contractor shall designate a qualified person as Site Safety Officer. The designated person shall have a thorough knowledge of the potential safety hazards, prevention and remedial actions concerning general construction activities, and construction activities at a hazardous waste site. The Site Safety Officer shall be trained in first aid.

B. Responsibilities of Site Safety Officer:

1. Be present onsite on a full-time basis, or provide a Deputy Site Safety Officer with qualifications in accordance with these Specifications, whenever construction operations are in progress.

2. Assure all Site personnel comply with the Health and Safety Plan prepared for the Work.

3. Monitor gases and other potentially harmful substances.

4. Provide health and safety training, as required by the applicable OSHA regulations, to the Contractor's employees or subcontractors.

1.8 OPEN EXCAVATIONS

A. All open cut work shall be completed in compliance with OSHA Title 29 CFR 1926. If Contractor elects to use vertical excavations, properly support the excavation with sheeting and bracing in conformance with the requirements of General Specification 1S. The use of sloped excavations will be permitted.

B. Water shall be handled using equipment compatible with anticipated contaminants which may be present.

1.9 HEALTH AND SAFETY PLAN (HASP)

A. Prepare and submit a HASP to the Engineer. The Plan shall meet the requirements of OSHA and establish guidelines and requirements for safety of personnel during the performance of field activities associated with this Work. The Plan shall also outline the health and safety procedures and equipment required for conducting activities at the Site to minimize the potential for exposure of field personnel to anticipated contaminants and hazards.

B. The HASP shall also detail the on-site health and safety monitoring programs to be implemented by the Contractor during field activities. Monitoring shall be performed on the downwind perimeter of the Exclusion Zone. At a minimum, monitoring shall be for methane, Volatile Organic Compounds, hydrogen sulfide, and particulates.

C. The use of the existing decontamination building and decontamination pad located west of the IRM tanks as shown on the Drawings will be permitted, subject to coordination with other construction activities at the Site.

D. The Plan shall also mention the number of trucks expected on-site on a daily basis and for the duration of the Work. The Plan shall clearly specify truck decontamination procedures.

E. The Plan shall clearly specify that smoking will not be permitted onsite at any time and at any location for the duration of the Work.

F. The Engineer will review the Plan for general conformance with the Specifications. The Engineer's review will not constitute an approval of the Plan nor will the Engineer's review relieve the Contractor of full responsibility for on-site and off-site health and safety.

1.10 OFF-SITE MONITORING PLAN (OSMP)

A. The OSMP shall detail the off-site health and safety monitoring programs to be implemented by the Contractor during field activities. Provide three (3) off-site continuous real-time ambient air monitoring stations to be installed in the area of Co-op City, Pelham Bay Park/Club House, and Rodman Neck (located across the Eastchester Bay, east of the landfill site). The final location of each monitoring station will be determined in the field by the Engineer. One (1) monitoring station shall have a co-located 10-meter high meteorological station that shall be designed and operated in accordance with USEPA Document EPA-450/4-87-013, June 1987. The monitoring system shall have a minimum data capture of 90 percent and sensitivity of the monitoring shall be a minimum of ten (10) parts per billion (ppb).

B. Each monitoring station shall be equipped to monitor, at a minimum, for the following compounds: 1,1,1 Trichloroethane, Benzene, Chlorobenzene, Cumene, Ethylbenzene, Hydrogen Sulfide, and Hexachlorobutadiene. Monitoring shall begin a minimum of one (1) month prior to the start of landfill refuse/grading operations onsite. The Contractor's cost shall cover equipment procurement, installation, security, and maintenance and operation during the time the landfill refuse is exposed.

C. The off-site monitoring system shall be capable of alerting the operator within a maximum of one-half (1/2) hour whenever action levels are exceeded. The Engineer will provide action levels to the Contractor. If action levels are exceeded, immediately notify the Resident Engineer. The Resident Engineer will, in conjunction with the Contractor's Site Safety Officer, investigate the incident and decide if stoppage of work is warranted. When action levels are exceeded, submit a written report to the Resident Engineer within a maximum of 48 hours. Submit air monitoring reports with all back-up data on a monthly basis with the Contractor's Request For Payment.

D. At the end of the Contract, remove all monitoring stations and the 10-meter high meteorological station. Air monitoring stations and the 10-meter high meteorological station shall be the property of the Contractor.

E. The OSMP shall include a Quality Assurance/Quality Control (QA/QC) for the monitoring system.

F. The Engineer will review the Plan and QA/QC document for general conformance with the Specifications. The Engineer's review will not constitute an approval of the Plan nor will the Engineer's review relieve the Contractor of full responsibility for off-site health and safety.

1.11 EMERGENCY RESPONSE AND CONTINGENCY PLAN (ERCP)

A. Prepare and submit to the Engineer an ERCP that details containment and clean-up measures to be taken in the event of potential spills of construction-related materials such as diesel fuels, accidental uncontrolled discharges from dewatering and decontamination procedures.

B. The Engineer will review the Plan for general conformance with the Specifications. The Engineer's review will not constitute an approval of the Plan nor will the Engineer's review relieve the Contractor of full responsibility for Site health and safety.

PART 2 PRODUCTS

(Not Used)

PART 3 EXECUTION

3.1 DECONTAMINATION

A. Without exception, decontaminate all Contractor's equipment and materials prior to final removal from the Site in accordance with the approved Contractor's HASP.

B. Decontamination shall take place within the equipment and materials decontamination area designated in the approved Contractor's HASP. At a minimum, the decontamination procedure shall consist of de-greasing followed by high pressure, hot water cleaning, supplemented by detergents or solvents as appropriate. Special attention shall be paid to removal of material on and within the tracks and sprockets of crawler equipment, and the tires and axles of trucks and rubber-mounted equipment.

C. If decontamination takes place on the existing Decontamination Pad shown on the Drawings, the decontamination water will drain into the existing Decontamination Area Sump and will then be pumped into the above ground IRM tanks.

D. Remove potentially contaminated surface materials on access roads and place in the fill areas of the Work.

END OF SECTION 01528

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 71 - Specification Section 01590

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Delete Section 01590 presented in Addendum No. 25 and replace with the revised version, attached. Revisions made to Addendum No. 25 occurred in paragraphs 1.2, 1.3, 3.5, and 3.6B.

SECTION 01590
FIELD OFFICES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Rental, operation and maintenance of existing field offices, furnishing and maintaining Resident Engineer's vehicles, Contractor's field offices, sheds, and employee shelters, and allowance for existing field offices.

1.2 EXISTING FACILITIES AND CONDITIONS

A. Field offices for the Engineer, Resident Engineer, and the New York State Department of Environmental Conservation (NYSDEC) have been provided under separate contract (Contract Number 875-HP). Utilities (electric, water, sanitary, etc.) and equipment (telephones, fax machines, etc.) have also been furnished.

B. A complete fire, panic, and intrusion alarm system for the Resident Engineer's office has been furnished and installed under separate contract (Contract Number 875-HP).

C. Electric power to all trailer offices (i.e., Engineer, Resident Engineer, and NYSDEC trailers) is supplied from an electrical sub-station located across from the above-ground IRM tanks.

D. Telephone service has been provided for all trailer offices.

1.3 CONTRACTOR'S RESPONSIBILITIES

A. Rent, for the duration of the Work, the Resident Engineer field offices from the Contractor for Contract 875-HP. The rental fee shall be $1,150 per month. Contractor shall not be responsible for the rental of field offices of the Engineer and the NYSDEC. Rental agreement shall begin at date of Notice to Proceed.

B. Disconnect all trailer offices from the electrical sub-station located across from the above-ground IRM tanks.

C. Arrange with the utility company to provide new electric meter with sufficient power for all trailer offices, including the Contractor's facilities.

D. Maintain and service existing facilities and all three (3) field offices for the duration of the Work in accordance with Part 3 of this Section.

E. Pay for all utilities for the duration of the Contract as specified in paragraph 3.5 of this Section.

PART 2 PRODUCTS

2.1 MATERIALS

A. Materials, equipment, and furnishings shall be new and serviceable, adequate for intended purposes, and shall meet applicable codes and regulations.

PART 3 EXECUTION

3.1 RESIDENT ENGINEER'S VEHICLE SPECIFICATION

A. Provide two (2) vehicles for use by the Resident Engineer for the duration of the Contract.

B. Each vehicle shall be a new four-door GMC Jimmy, or approved equal, equipped with: a six- cylinder engine, four-wheel drive, automatic transmission, power steering, anti-lock brake system, steel-belted all-weather black radial tires, heavy duty suspension, heavy duty battery, air conditioning, driver's side air bag, passenger side air bag (if available), AM/FM radio, intermittent wipers, electric rear window defroster, left and right side view mirrors, and front and rear floor mats. The vehicles shall be one of the following colors: White or Dark Blue.

C. Provide fuel, oil, proper maintenance, tires, and replacement parts to keep the vehicles in a safe operating condition. Undertake all repairs, including repairs arising from vandalism, accidents, or other damages. In the event that any vehicle requires maintenance or repairs which cannot be completed the same day, provide a comparable replacement vehicle while the vehicle is out of service. If the vehicles are lost or stolen, replace the vehicles within 5 business days with comparable vehicles.

D. Provide the vehicles for the entire duration of this Contract. The vehicles will be returned to the Contractor within thirty days after Contract completion. Vehicles shall be leased by the Contractor and shall remain the property of the lessor throughout the Contract period, but shall be registered in the City's name and liability insurance afforded through the City's "self-insurance" program. The City's self-insurance program pertains only to third party insurance, arising from the Department's use of the vehicles, and does not include any damage to the vehicles.

E. Within 5 days of receipt of notice to provide specified vehicles, make the vehicles available for inspection by the Department. Upon inspection and determination by Fleet Administration that the vehicles meet specifications, make arrangements

through the Department's Fleet Administration for transmission to the Department. Submit to Fleet Administration a signed MV-82 (4/90) "Vehicle Registration/Title Application," authorizing registration in the unregistered vehicles, the Manufacturer's Certification of Origin, Odometer Verification, New York State Sales Tax clearance or, in the case of a currently registered vehicle, a copy of the Title.

F. The garage designated for repair and maintenance shall be subject to the approval of the Department's Fleet Administration, and may not be changed without the prior written approval of the Department's Fleet Administration. The garage must maintain and show evidence of insurance as provided in Section II and Section III of garage form CA 99 95 91/87, as set forth in Schedule A of the General Conditions.

G. Make all required transmittals to Fleet Administration as follows:

Michael Murphy
Director, Fleet Administration
56-01, 55th Avenue
Maspeth, NY 11378
Telephone: 718-326-2981
Fax: 718-326-3031

H. No direct payment will be made for the vehicles, or associated costs. All costs shall be included in the lump sum price bid for the Contract, except that Auto Liability insurance for vehicles registered in the City's name may not be included in the lump sum costs. The Contractor may, if desired, include the costs of comprehensive insurance, theft, and collision insurance for loss or damage of the vehicles provided under this Contract.

3.2 CONTRACTOR'S OFFICE AND FACILITIES

A. Contractor shall determine size, furnishings, equipment, and facilities for his own and provide space for project meetings.

B. Provide at a minimum a conference table and chairs to seat at least eight (8) persons and racks and files for Contract Documents, submittals, and Project Record Documents.

C. A minimum of four (4) sets of personnel protective health and safety field equipment for visitors shall be provided by the Contractor.

3.3 STORAGE AREAS AND SHEDS

A. Size to storage requirements for products of individual Sections. Allow for access and orderly provision for maintenance and for inspection of products.

3.4 EMPLOYEE SHELTERS

A. Provide a room where employees can eat and drink. Smoking within the limits of the Site is strictly prohibited at all times for the duration of the Work.

3.5 MAINTENANCE AND CLEANING

A. Maintain copy and facsimile machines, and furnish ancillary supplies for the duration of the Work. Maintain and service as necessary the fire, panic, and intrusion alarm system installed in the Resident Engineer's office.

B. Insure, maintain, and repair trailers (i.e., Engineer's, Resident Engineer's, and NYSDEC's trailers) and their equipment to the satisfaction of the Resident Engineer during the performance of the Work. Keep trailers in first class condition. Promptly replace any damaged or defective parts (electrical, structural, and plumbing), including appliances and fixtures directed by the Resident Engineer.

C. Pay in full for all utilities (heat, air conditioning, sanitary, water, etc.) and telephone service for calls within New York City, as well as outside the City limits from the date of Notice to Proceed until the end of the Contract. Utilities have been provided under separate contract (Contract 875-HP) and utility and telephone bills will be the responsibility of the Contractor at date of Notice to Proceed. Submit a monthly tabulation of all long distance charges and the Resident Engineer will reimburse the Contractor for any calls not deemed to be for official business. Expenses associated with heat, sanitary, water, and telephone services after the completion of the Contract shall not be the responsibility of the Contractor.

D. Provide janitorial services daily for all offices. Janitorial personnel must be health and safety briefed as appropriate. Wash windows, hang, remove, and store screens, storm windows, and screen and storm doors as requested by the Resident Engineer. Provide paper products for the bathroom and kitchen as well as bottled water and cups.

E. Provide for satisfactory disposal of sanitary and other wastes.

F. Maintain approach walks and parking areas free of mud, water, and snow.

3.6 ALLOWANCES

A. As stipulated in the Bid Form, Contractor shall include in his bid the rental cost of the Resident Engineer's field offices at the fixed fee of $1,150 per month for the duration of the Work.

B. Contractor shall also include in his bid the fixed sum of $15,000 to cover the cost of miscellaneous equipment and office supplies required for the Engineer's, Resident Engineer's, and NYSDEC's offices. The fixed sum of $15,000 shall also cover the cost of eight (8) sets of personnel protective equipment for the Resident Engineer should an upgrade to the next Health and Safety operating level be necessary as described in the Contractor's Health and Safety Plan. If the sum of $15,000 is exceeded, the excess will be paid to the Contractor by the Change Order procedure. The balance of monies not expended shall be returned to the City as a credit.

C. Contractor will be reimbursed for maintaining and servicing (Operation and Maintenance) all three (3) field offices, as specified in this Section, based on the Unit Price stipulated in the Bid Form.

3.7 WELL SAMPLING EQUIPMENT

A. When directed by the Resident Engineer the Contractor shall purchase and have Shipped to the Site the following well sampling equipment.

1. Seventeen (17) Well Wizard Bladder Pumps, model No. P-1201, or approved equal.

2. Seven hundred (700) feet of Well Wizard Teflon Lined Tubing, Model No. PT-5100, or approved equal.

3. Seventeen (17) Well Wizard Well Cap Assemblies, model No. 2120-C, or approved equal.

4. Well Wizard Well Controller and Driver, model No. 3111HR or approved equal.

5. Well Wizard Portable Water Level Meter Model No. 6000MSS (300 foot length) or approved equal.

Well Wizard equipment is manufactured by QED Environmental Systems Inc., 6095 Jackson Road, PO Box 3726, Ann Arbor, MI 48106. Phone: (800) 624-2026.

3.8 REMOVAL

A. At completion of Work, remove and disconnect utilities to Contractor's field offices and sheds only. Removal of the Engineer's, Resident Engineer's, and NYSDEC's offices and facilities as well as utilities connected to such offices and facilities shall not be the responsibility of the Contractor.

END OF SECTION 01590

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 72 - Specification Section 02210

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Page 671 of the Specifications, Section 02210, paragraph 2.1. Delete item B and replace with the following:

   B. Random Soil Class II: Existing cover soil material or natural soil borrow free from debris, landfill waste, and frozen material. Debris and landfill waste material shall be either hand removed or screened/processed to the satisfaction of the Resident Engineer. Gravel particles in soil shall be non-angular and maximum size of soil particles shall be no larger than one (1) inch in any direction.

2. Page 672 of the Specifications, Section 02210, paragraph 3.1. Delete items B, C, and D, and replace with the following:

   B. Strip existing cover soil materials to a maximum depth of six (6) inches and place in the first 12 inches of fill above the geomembrane liner.

   C. After stripping existing cover soil materials to a maximum depth of six (6) inches, excavate and place the remaining cover soil materials to the top of waste in all areas of the site, even in the fill areas of the Work.

   D. Use existing cover soil materials to the extent practical for regrading and landfill cover construction provided that the materials meet the specification

requirements. Do not use materials that meet the requirements of Random Soil Class II or Loamy Soil as Random Soil Class I material, unless specifically approved by the Engineer.

E. Cap construction starting at the top of the landfill and progressing towards the bottom of the landfill will not be permitted.

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 73 - Specification Section 05520

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

7. Page 800 of the Specifications, Section 05520, paragraph 1.1.

   a. In item B, delete "aluminum" and replace with "stainless steel".

   b. In item C, delete "aluminum" and replace with "stainless steel".

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 74 - Specification Section 15846

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Page 823 of the Specifications, Section 15846, paragraph 2.1A, item 30. Add the following at the end of item 30: "Caged access ladder and safety platform shall be provided whether or not they are standard equipment on enclosed flares."

2. Page 825 of the Specifications, Section 15846, paragraph 2.6, item B, second line... Delete "Model 62S" and replace with "Microguard 482250".

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 75 - Test Pit Data

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

1. Summary data from the test pit excavation program is presented on the following pages. The test pits were excavated in August 1993. The summary data presented herein is provided as information for the bidders in assisting them in preparing their bids. This information shall not constitute a part of the Contract Documents.

TEST PIT DATA
PELHAM BAY LANDFILL
BRONX, NEW YORK

Test Pit Number	Coordinates[1]		Ground Elevation[2] (ft)	Depth of Test Pit (in)	Thickness of Cover Soil		Remarks
	Northing	Easting			Topsoil (in)	Fill (in)	
1A	29100(approx.)	-19630(approx.)	10 (approx.)	48	6	6	Pit not found at survey time
1B	29045(approx.)	-19635(approx.)	18 (approx.)	33	6	0	Refuse at surface of upslope area
							Pit not found at survey time
1C	28803.0009	-19532.7537	61.80	48	7	41	
1D	28586.9858	-19668.9544	82.07	54	6	42	
1E	28490.6027	-19726.0248	100.38	36	6	9	
2A	28523.6270	-19227.6418	40.35	54	6	36	
2B	28408.6029	-19339.6002	76.41	42	9	18	
2C	28263.6367	-19470.4882	97.52	48	6	6	
3A	27905.2873	-19023.6907	11.81	48	See remark	15	Root structure to about18 in.
3B	27899.1991	-19314.1775	78.71	48	6	15	
3C	27898.1120	-19366.8039	81.59	60	6	9	
3D	27879.8525	-19591.5014	128.42	42	6	6-12	
4A	27555.5948	-18995.2504	11.88	48	3	0	
4B	27534.5231	-19273.2047	79.87	54	6	18	
4C	27528.0727	-19351.5964	87.73	30	9	3-8	
4D	27535.0317	-19586.6433	131.54	24	3	0	
5A	28124.0662	-19767.3625	10.16	48	5	0	
5B	28059.1936	-19599.6566	37.71	36	6	0	
5C	27974.4102	-19355.9283	76.70	36	8	28	Refuse not exposed
5D	27924.0180	-19222.9410	85.04	48	6	0	
6A	26753.2301	-19771.8808	13.19	42	4	11	
6B	27008.1951	-19771.7381	74.21	48	9	39	
6C	27106.1157	-19762.0790	81.63	36	6	12	
6D	27301.6376	-19750.1237	126.39	42	7	17	

TEST PIT DATA
PELHAM BAY LANDFILL
BRONX, NEW YORK

Test Pit Number	Coordinates[1]		Ground Elevation[2] (ft)	Depth of Test Pit (in)	Thickness of Cover Soil		Remarks
	Northing	Easting			Topsoil (in)	Fill (in)	
7A	26717.0417	-20397.4317	14.03	40	12	12	
7B	26989.0258	-20204.2479	70.30	60	12	48	Refuse not exposed
7C	27113.1824	-20156.7265	78.09	36	9	6	
7D	27416.8971	-20063.7800	130.57	30	6	0	
8A	27106.9193	-20652.2147	18.96	42	3	21	
8B	27239.5307	-20427.7549	71.26	48	9	39	Refuse not exposed
8C	27285.6100	-20356.3116	80.73	48	6	24	
8D	27380.1885	-20231.1812	118.80	42	6	24	
9A	27704.3518	-20802.4589	10.32	30	0	30	Pit near existing gravel drain
9B	27662.9984	-20525.9362	67.40	48	6	42	Refuse not exposed
9C	27645.2504	-20450.9182	79.09	48	9	24	
9D	27620.0477	-20297.7829	118.53	24	4	0	
10A	28150.7438	-20346.5693	69.32	36	3	6	
10B	28102.0297	-20304.5218	74.57	36	9	6	
10C	27984.5716	-20191.1968	109.54	36	10	8	
11A	Not Excavated	Not Excavated	Not Excavated				
11B	Not Excavated	Not Excavated	Not Excavated				
11C	28480.4924	-20074.7626	74.17	36	12	24	Refuse not exposed
11D	28410.3333	-20026.4272	78.90	48	6	30	
11E	28276.2793	-19917.7834	108.92	36	6	12	
12A	28081.8326	-19640.7008	121.34	42	11	19	
12B	27728.5815	-19702.2357	133.69	30	6	0	
12C	27585.5152	-19887.1248	126.07	48	7	17	
12D	27732.5198	-20101.2338	125.12	48	11	37	

TEST PIT DATA
PELHAM BAY LANDFILL
BRONX, NEW YORK

Test Pit Number	Coordinates[1]		Ground Elevation[2] (ft)	Depth of Test Pit (in)	Thickness of Cover Soil		Remarks
	Northing	Easting			Topsoil (in)	Fill (in)	
12E	27844.6837	-20256.1242	108.46	30	8	2	
12F	28114.7886	-19844.3780	117.33	30	6	0	
13A	27787.4535	-21013.3050	9.50	42	8	34	
13B	27744.2334	-20933.9803	10.83	42	6	36	Refuse not exposed
13C	27848.6667	-20918.5927	11.07	48	9	45	Refuse not exposed
13D	27842.5544	-20857.5012	12.17	48	24	24	Refuse not exposed

Notes:

1. The coordinate system is that used for the east Bronx Engineering Bureau and is based on the United States Coast &Geodetic (USC&G) survey meridian which is true north.
2. Elevations are based on the Bronx Bureau of Highway Datum in which elevation zero is 2.608 ft above the USC&G survey datum.

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ADDENDUM NO. 76 - Answers to Contractors' Questions

TO ALL BIDDERS FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

CONTRACT 876-HP
GEOMEMBRANE CAPPING AND
GAS COLLECTION SYSTEM
PELHAM BAY LANDFILL REMEDIATION
BOROUGH OF THE BRONX
NEW YORK

This Addendum is issued for the purpose of amending the requirements of the Contract Documents and is hereby made a part of said Contract Documents to the same extent as though it were originally included therein.

Question 1

Refer to sheets Re: Pond C: No provisions are shown for pipe and/or structural penetration of geomembrane at pond C.

Answer

Refer to Addendum No. 66. The Pond C Pipe Outlet Structure has been revised to show the penetration of the Pond C HDPE geomembrane liner. The RCP pipe does not penetrate the HDPE geomembrane. The attachment detail for the structure is as shown on the TYPICAL HDPE/CONCRETE ATTACHMENT DETAIL FOR BAFFLED OUTLETS shown on Drawing No. C.11R1.

Question 2

Refer to sheet 10/28 and Proposal p. 000717 and 000718: Let's start with the drawing. Please look at the legend on the right side. There are symbols for "HDPE STORMWATER PIPE" and "HDPE SEDIMENTATION POND CONNECTION PIPE". Now look to the left side of the drawing and, in particular, the pipe between SP8 and SP6. Reference is that this pipe is a "24" DIAMETER CORRUGATED HDPE PIPE" but the symbol is for "HDPE SEDIMENTATION POND CONNECTION PIPE". Which is correct? Now, refer

to the HDPE drainage piping spec., Section 02720, p. 02720-4/000717 and 000718. The sedimentation pond connecting pipe is shown as 30"ϕ spirolite whereas the stormwater collection system piping is 24"ϕ N-12, ADS, pipe. Please clarify. It seems that all other stormwater pipes are 24"ϕ corrugated HDPE according to the drawing.

Answer

The symbol for the pipe between structures SP8 and SP6 is incorrect. The pipe between SP8 and SP6 is a 24-inch diameter corrugated HDPE pipe. On the legend of Drawing C.9, delete "HDPE STORMWATER PIPE" and replace with "24" DIAMETER CORRUGATED HDPE PIPE".

The 30-inch diameter HDPE pipes connecting ponds A to B and B to C are smooth-walled HDPE pipes as manufactured by the Spirolite Corporation or equal. The pipes specified for construction of the stormwater collection system to convey stormwater down the landfill slopes to the baffled outlet structures are 24-inch diameter corrugated HDPE pipes, model number N-12 as manufactured by Advanced Drainage Systems (ADS) (See Section 02720, paragraph 2.1B6). The N-12, ADS classification corresponds to the 24-inch diameter corrugated HDPE pipes shown on the drawings.

Question 3

Refer to sheets 21 and 23/28: The depth and length dimensions shown on Drawing GS.1 (in the table on right side of drawing) do not agree with those on the gas extraction well detail on Drawing GS.3. Please clarify.

Answer

Refer to Addendum No. 41 (which revised Contract Drawing GS.1) paragraph 1E. The revised Gas Extraction Well Detail is presented in Addendum No. 42 (page 66 of Addenda to Contract Documents Volume No. 3).

Question 4

Refer to sheet 15/28, SEDIMENTATION POND B TO C CONNECTION PIPE - PROFILE: There is a conflict, in grade, between the top of the 30"ϕ HDPE connection pipe and the proposed geomembrane between Sta. 1+40$\pm$ to 3+00$\pm$, Sta. 11+20$\pm$ to 11+95$\pm$ and in the vicinity of Sta. 4+00$\pm$. How shall this conflict be resolved?

Answer

The HDPE geomembrane will be raised in the field to pass over the 30-inch diameter sedimentation pond connection pipe in the referenced areas. The cover shall be installed to its full section in these areas. The resulting raise in the final surface will be incorporated in the grading adjustment required to draw surface water to the inlets at manholes CP1 and CP4 as noted on Drawing No. C.14R1 (Addendum No. 36).

Question 5

Refer to sheet 12/28, BAFFLED OUTLET SECTION SHOWING TYPICAL EARTHWORK: Note 3 is referenced in this section. Reference is made to "STRUCTURAL BACKFILL" on the right side of the section. There is no item for structural backfill. Please clarify and/or define what item(s) the payment limit lines represent.

Answer

Structural Backfill is incidental to the "**Outlet Structure**" work defined in item No. 120 of the revised Bid Form presented in Addendum No. 64 as is with other structure items. Note 3 on Drawing C.11 refers to the bid items, and structural excavation and structural backfill are incidental to that item.

Question 6

Refer to sheets 11 and 12/28: In section A on sheet 11 there is an upper and lower geomembrane. On sheet 12 there are basic details showing how the geomembrane is attached to the concrete structure. We cannot understand how the lower geomembrane will be attached where it slopes upward. Is it the intent to have the "attachment shelf" slope upward on the structure sides? Please clarify.

Answer

The intent is to have the "attachment shelf" slope upward on the structure sides. The slope of the attachment shelf shall match the slope of the adjacent membrane in each case to facilitate installation.

Question 7

Refer to sheet 16/28, section A at top: Where is the geomembrane with respect to the 24"ϕ RCP? If the pipe passes through the membrane, please provide detail for same. See also

section C on sheet 14/28.

Answer

See answer to Question 1.

Question 8

Refer to sheets 19, 22 and 23/28: In the trailer area fence plan, at upper right, reference is made to "install new 12' wide single leaf gate." Be advised there is no item for a 12' wide single leaf gate. If there is no clarification by addenda we shall assume that this gate shall be paid for as extra work. Further, the chain link gate items, number 47, 49, 50 and 51, refer to "...Spiral Razor Wire Top" details of the CLF on sheets 22 and 23 show a barbed wire extension on top of the CLF. Section 02831 of the specifications refers to barbed wire (#2.3.A and 2.3.B.) as well as barbed tape (#2.3.E.). Please clarify, barbed wire, barbed tape and/or razor ribbon?

Answer

A line item for the installation of the 12-ft wide single leaf gate has been added to the revised Bid Form presented in Addendum No. 64.

One-strand barbed wire and barbed tape shall be installed for all perimeter fences and gates, as shown on Drawing C.19. Perimeter fences and gates are those on the perimeter of the landfill as well as in and around the trailer area. Barbed wire extension arms and a single strand of barbed wire shall be provided for attachment of the barbed tape to the top of the fence or gate.

Three-strand barbed wire shall be installed for all interior fences and gates, as shown on Drawings GS.2 and GS.3. Interior fences and gates are those around each gas extraction well, around the gas flare and the propane tank.

The term "Spiral Razor Wire Top" has been deleted from the fence line items on the revised Bid Form.

Question 9

Refer to sheet 2/28: There is a legend on the right side of the site. What is a CP-1, a CB-1, a HP-2? What do we do with them? What are they? The CP might refer to HDPE sedimentation pond connection manhole.

Answer

As shown in the legend of Sheet 2 of 28, CP-1, CP-2, CB-1, HP-1, HP-2, and HP-3 are existing monitoring wells that shall be plugged and abandoned.

Question 10

Refer to sheets 10 and 11/28: The 6"ϕ infiltration piping shown on sheet 10 interconnects with the 24"ϕ HDPE stormwater piping at various HDPE MH's. This "connection" is shown in detail 2 on sheet 11/28. According to # 2.1.C.5, section 02720, the 6"ϕ pipe is ADS pipe. To the best of our knowledge there is no way to make the connection as shown in detail 2 on sheet 11. ADS pipe, to the best of our knowledge, is not available with a flange connection. Your clarification of this connection is requested.

Answer

Refer to Addendum No. 65. An 8-inch diameter HDPE smooth pipe extension shall be factory connected to the 48-inch diameter stormwater collection manholes as shown on the revised detail. The Contractor shall verify with field measurements the proper location of the penetration prior to fabrication. The 6-inch diameter infiltration drainage trench pipe shall be inserted into the pipe extension and connected with a flexible neoprene boot.

Question 11

Refer to sheet 10 and 11/28: We have spoken to the manufacturers representative.of both the spirolite 48"ϕ (Section 02720, #2.2, p. 02720-4) manhole and the 24"ϕ ADS pipe (Section 02720, #2.1B, p. 02720-4) shown in the connection in typical manhole detail 1 on sheet 11/28. Their feeling is that the 24"ϕ ADS to 24"ϕ HDPE MH spur piece is not possible as shown. We respectfully request that you clarify and/or confirm that these pipes are compatible as shown.

Answer

Refer to Addendum No. 65. The 24-inch diameter HDPE smooth extension shall be fabricated to a diameter to fit inside the 24-inch diameter corrugated HDPE pipe. The connection of the pipe extension to the 48-inch diameter HDPE manhole shall be fabricated at the factory in accordance with the revised detail. Two (2) O-rings shall be inserted and stainless steel pipe clamps installed as shown on the revised detail. Contractor shall submit shop drawings of the pipe extension fabrication and connection or alternate construction as required in the Specifications. An independent fabricator reviewed the design and believes this option to be constructible.

Question 12

Refer to sheet 12/28, BAFFLED OUTLET: On the plan, upper left this sheet, there is a note with regard to the handrail to see note 4. Note 4 refers to rip rap. Further, nowhere can we find the size of the handrail members. Please clarify.

Answer

Refer to Addendum No. 34 for revised drawing C.11R1. For the size of the handrails, see answer to question 15.

Question 13

Refer to sheet 9/28, note 5: The sections on sheet 9/28, as well as note 5 (upper right corner) prescribe the use of "soil depth indicators". Note 5 states "These indicators are to be placed at a distance no greater than 100 feet." The sections and note indicate their use at grade break points and 5 ft. from the upslope limit of the stormwater drainage ditch. Please clarify as to whether these indicators are to be placed on a 100 ft grid or 100 ft in line at the specified points.

Answer

This question has been answered in Addendum No. 32.

Question 14

Refer to Addendum No. 45, p. 93, answer to question 44: In the third sentence of the answer it states that "payment for seeding will be covered under bid item 1 in a lump sum price." If "... the "meadows" refers to all areas of final cover other than the vegetation islands," what is the purpose of bid item 90, seeding and fertilizer, 75.28 acres, and bid item 91, Grass and Wildflower Seed Drilling (Herbaceous Seeding), 0.61 acre. Please clarify.

Answer

Refer to Addendum No. 54. Previous items 90 and 91 have been combined in item No. 93 in the revised Bid Form presented in Addendum No. 64. The new quantity for Seeding and Fertilizing includes the meadows (landfill cover) and vegetation islands.

Question 15

Refer to sheets 12 and 17/28 (+now): Welded pipe railing is shown on the baffled outlet structures. There is no indication of the diameter of pipe to be used. Further, Section 5500 refers to both aluminum and stainless steel. Please provide rail size, type of material and finish on material.

Answer

Refer to Addendum No. 73. The pipe railing shall be stainless steel. The diameter of the railing is specified in paragraph G-36C.2 of General Specification 36C on page 401 of the Specifications.

Question 16

Refer to Addendum #45, Question 33 w/ answer: Your answer to this question indicates that the horizontal perimeter gas collection pipe shall be 4"ϕ, HDPE perforated and corrugated pipe with fusion welded joints. We have checked with our HDPE pipe supplier and they have no knowledge this type of pipe being manufactured. They suggest the use of 4"ϕ perforated corrugated HDPE pipe with "snap collar" joints as manufactured by Advanced Drainage Systems (ADS). Please clarify.

Answer

In Addendum No. 45, answer to question 33, second line: Delete ""fusion welded" and replace with "snap collar as manufactured by Advanced Drainage Systems (ADS), or equal".

Question 17

Refer to Addendum #26, paragraph 3.2: This paragraph includes the installation and removal of a 36"ϕ steel casing during the installation of gas extraction wells. Is this method of well installation mandatory?

Answer

The gas extraction well installation procedure described in Addendum No. 26 is recommended, not mandatory. The purpose of using a 36-inch diameter casing is to maintain an open, stable borehole during the installation of the well. However, if the Contractor elects not to use a casing during well installation, the Contractor shall be responsible for the integrity of the borehole. Any deficiency in the Contractor's means and procedures in installing the well (such as cave-ins) will not be the responsibility of the City. If the Contractor has to abandon a borehole as a result of construction deficiencies,

obstructions, Contractor shall plug and abandon the borehole and drill a new borehole in the proximity of the original gas extraction well location at Contractor's expense.

Question 18

Refer to bid items 27 thru 30: The bid items refer to the use of MJ (mechanical joint) pipe. The specifications refer to push-on joints with restraints on 12"ϕ or less and restraints on lager sizes where applicable. Class 52 does not meet NYCDEP BWS standards. Do you want Class 52 or Class 54 and 56 as specified? Please clarify.

Answer

The ductile iron pipe shall be as specified in Addendum No. 12, page 98 of the Addenda to Contract Documents Volume 1, page 98, paragraph 4. The reference to Class of pipe and pressure rating has been removed from the line items in the revised Bid Form presented in Addendum No. 64.

Question 19

Refer to bid item 19, Crushed Stone Base: p. 000685 and 02225-2, Section 02225, and 2.1B and sheet 9/28: The material specified for use in the drainage swales is a crushed stone or gravel with 2" as the largest size. We have found that this is not a desirable size material for swales in that the water will move this size stone. Seems to us that the material should be in the range of 3" to 5" minimum to prevent erosion. Please review.

Answer

The Crushed Stone Base material specified in the stormwater drainage ditches was sized to resist movement due to estimated stormwater runoff velocities. These velocities were calculated based on project design criteria using accepted methods of erosion analyses.

Question 20

Refer to p. 000059, Article 13, No Damage for Delay: A little history first. Back in the mid 1980's an article 13 with language quite similar to the article 13 on p. 000059 was inserted in practically every construction job to be bid by the City of New York. At that time all but one surety/bonding company refused to write bonds for any job having the infamous article 13. Now, here it is again. The bonding company that we use in taking a strong dislike to the article 13 on p. 000059 and it is not likely that they will write a bond for this job (be it a bid bond or payment and performance had you required them). It still is inconceivable, in our minds, that the City of New York is not requiring payment and performance bonds

for a project of this magnitude. Please reconsider your insertion of Article 13 on p. 000059.

Answer

Article 13 used in the mid 1980s has been replaced by the current Article 13 on page 59 of the Specifications. For years, the current Article 13 has been included in all contracts with the City of New York and, so far, no bonding problems have been reported.

Question 21

In the estimated waste cut plan, does the cut/fill include the 9" thick layer for Random Soil, type II?

Answer

No. The notes on Drawing C.5 indicate the surfaces which were compared in preparing this Drawing. The surfaces compared were the HDPE geomembrane grading plan (Drawing C.3) and an estimated waste surface prepared based on test pit information. The waste cut contours for a surface 9 inches below the HDPE geomembrane can be estimated by subtracting 9 inches from the contours shown on Drawing C.5.

Question 22

In spot checking between drawings G1, C3 and C5, it appears that the existing cap is part of the estimated waste cut plan. Please verify.

Answer

No. See Answer to Question 21.

Question 23

Is the data from the 50 test pits which was used to establish the cut/fill drawing available for review?

Answer

The data from the 50 test pits are presented in Addendum No. 75.

Question 24

1. What is the maximum allowable long-term compressibility of the geonet structure under the listed maximum load of 720 psf?

2. Are geonet structures allowed to contain any foaming agents or be manufactured using an air entrainment process?

If foamed products will be allowed, then two further questions are raised?

3. If foamed geonets are allowed to be used, is there a long-term tensile strength requirement as part of the structural stability design?

4. If foamed geonets are allowed, is there an increased requirement for bond strength between the geonet and the geotextile to counteract the shear force on the bonded area due to compression of the net strands?

Answer

Refer to Addendum No. 62.

1. The maximum allowable long-term compressibility is not used as a material selection criteria in the specifications because only light loads are imposed by the cover section.

2. No.

3. Not applicable.

4. Not applicable.

Question 25

Item No. 21 geotextile fabric 10 oz. non-woven, Roadway, 606,230 sf. Under the new Measurement and Payment addendum #22 this material is only under the roadway areas. How do you get paid for the geotextile under the storm water drainage ditches? There seems to be a large conflict in quantities between the roadway area and the geotextile area?

Answer

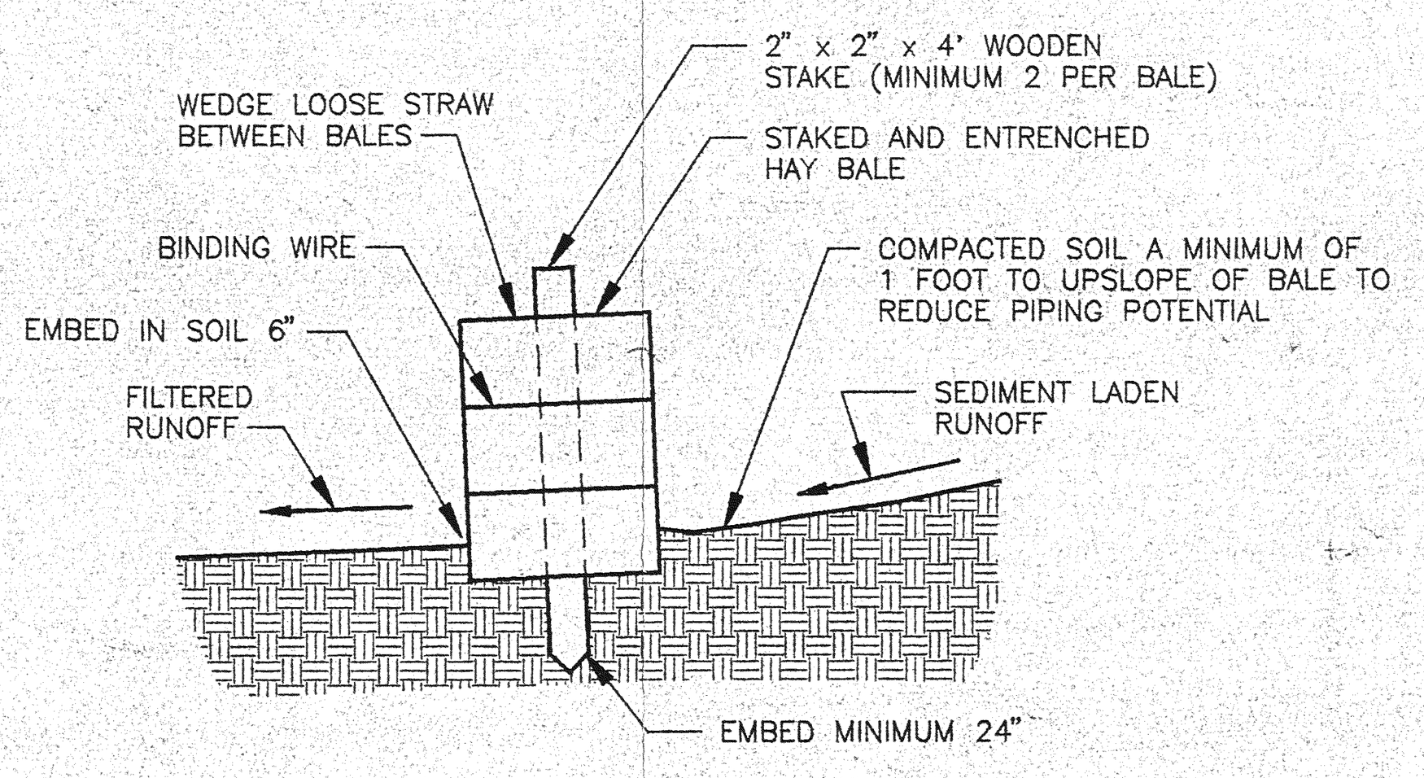
The reference to "Roadway" has been changed to include "Ditch". Refer to Addendum No. 59, item 23. All other geotextile will be incidental to other work items.

Question 29

One of the notes on the drawings for the enclosed flare indicate that ladders and platforms are not shown on the drawings. The specification do not mention ladder and platforms and we have been advised that ladders and platforms are not standard equipment on most enclosed flares.

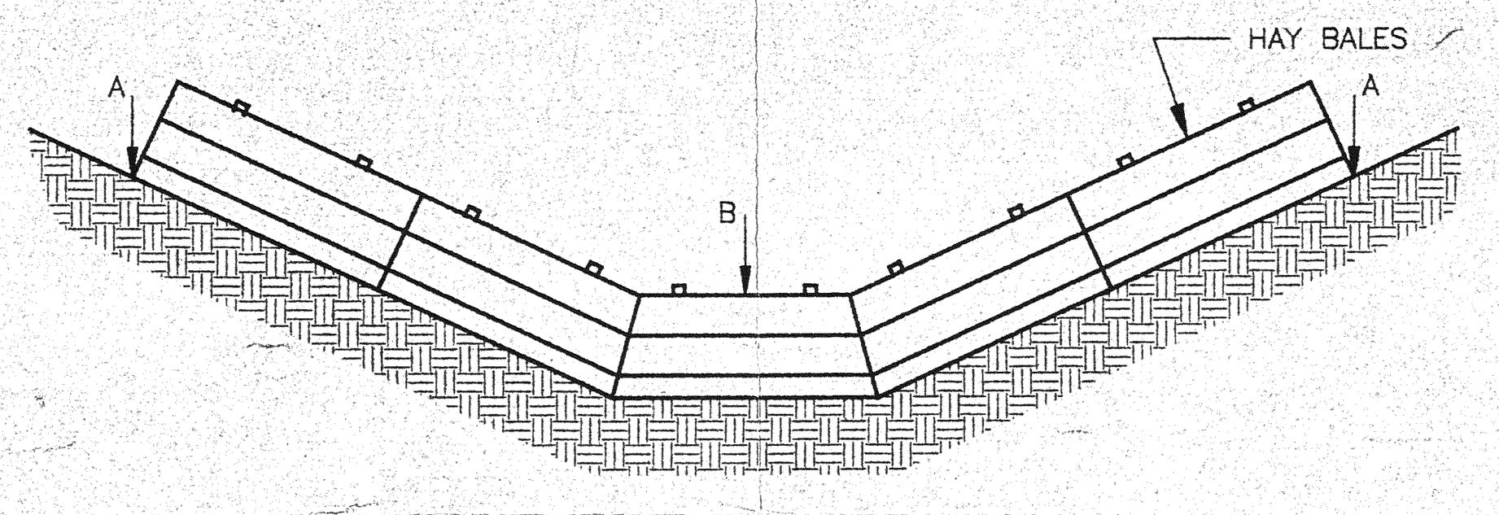
Answer

Refer to Addendum No. 74.



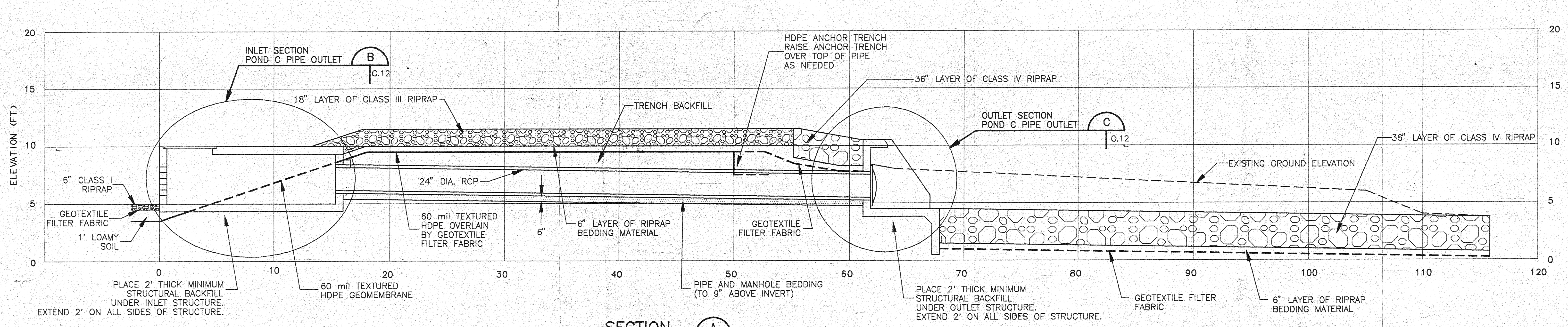
SCHEMATIC CROSS-SECTION OF INSTALLED HAY BALE

NOT TO SCALE



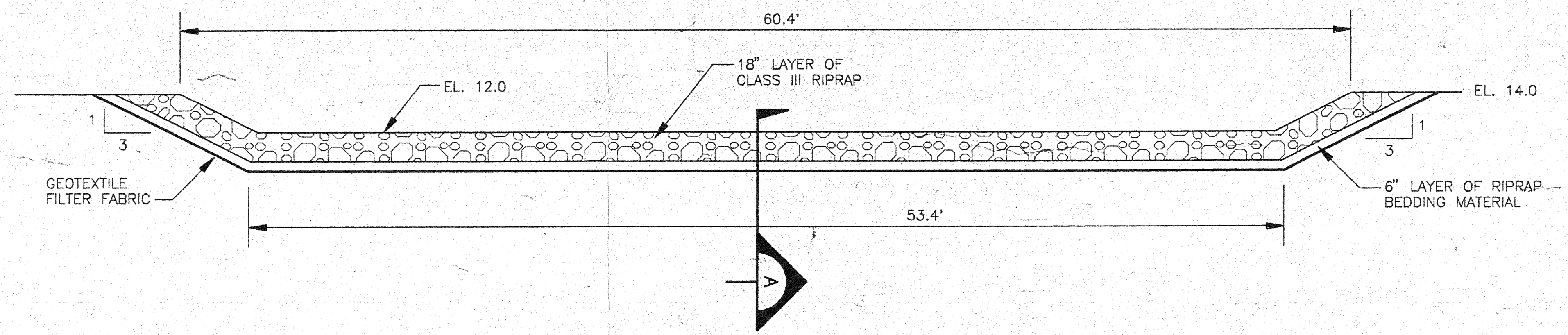
SCHEMATIC OF PLACEMENT OF HAY BALE BARRIER IN DRAINAGE WAY

NOT TO SCALE



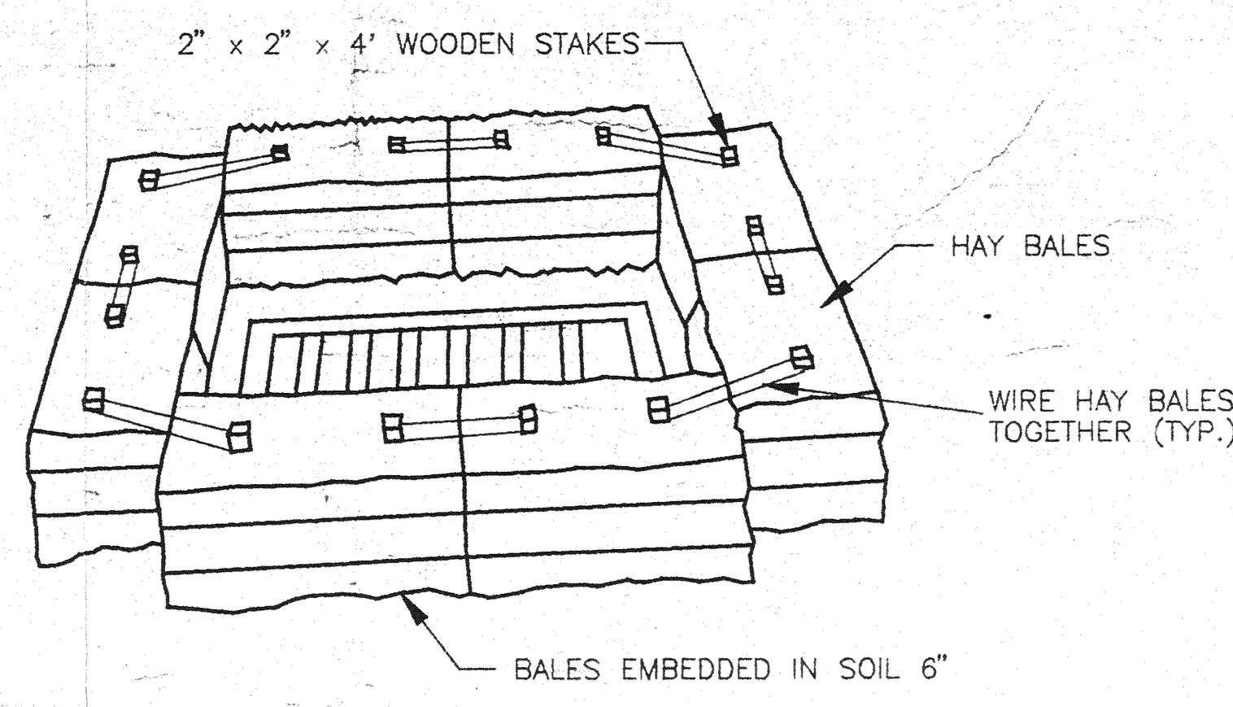
SECTION A

NOT TO SCALE



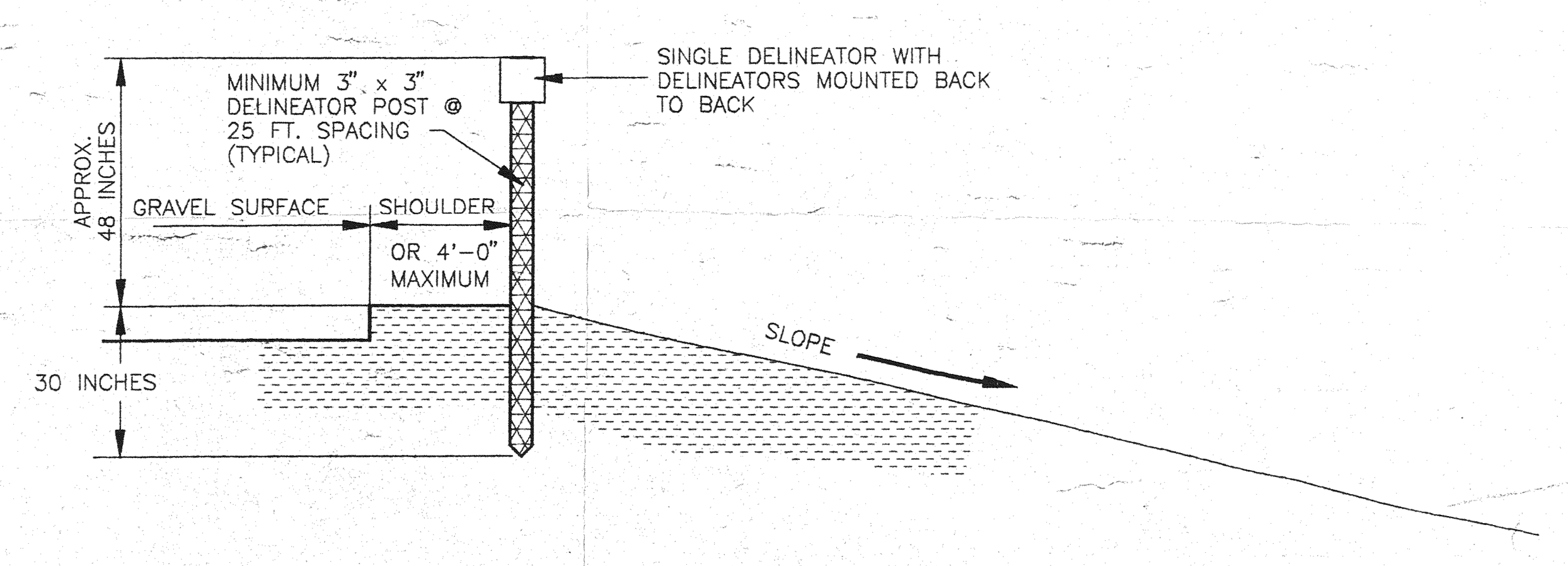
SECTION AT SPILLWAY

SCALE: 1"=5'-0"



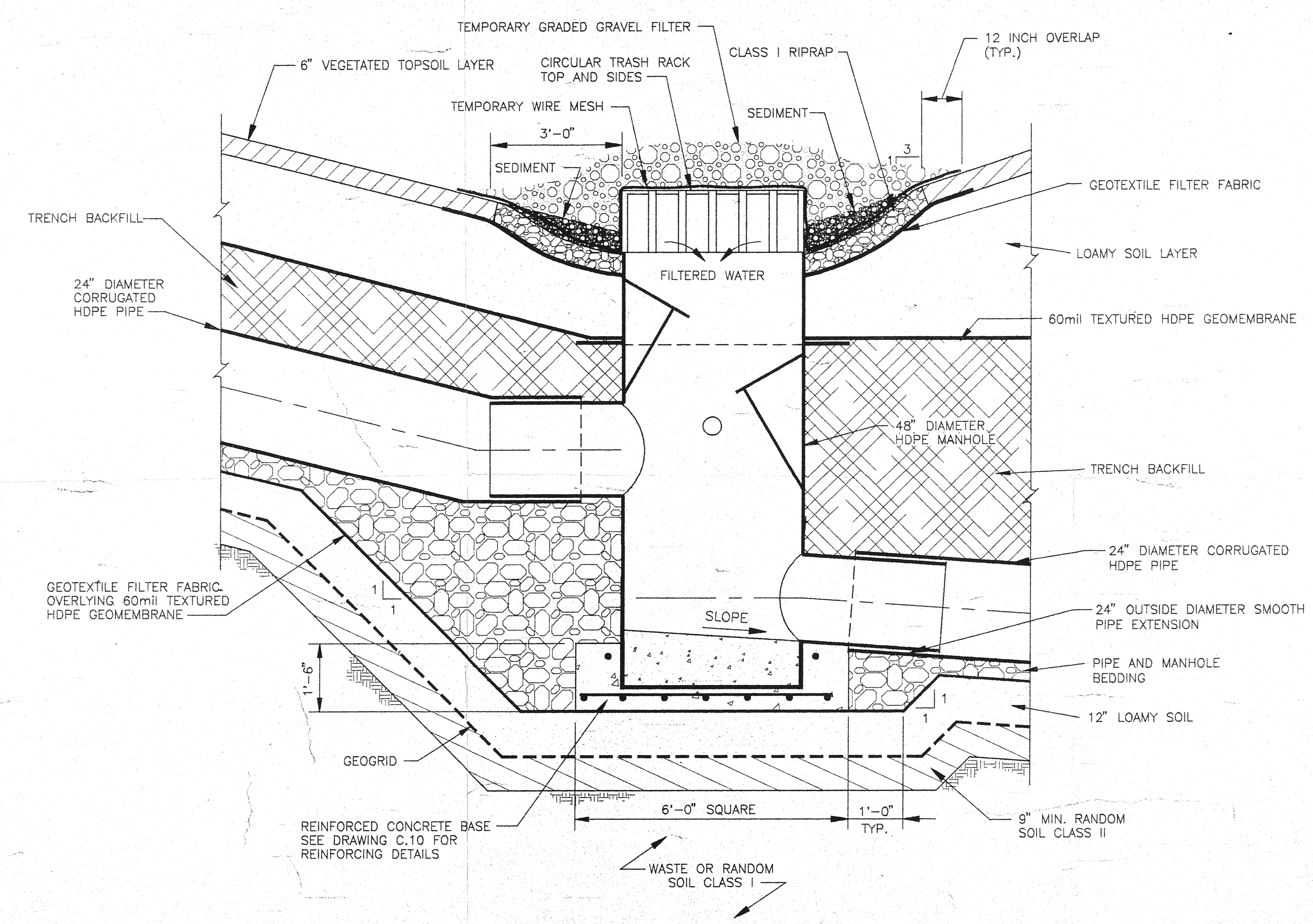
SCHEMATIC OF INLET PROTECTION

NOT TO SCALE



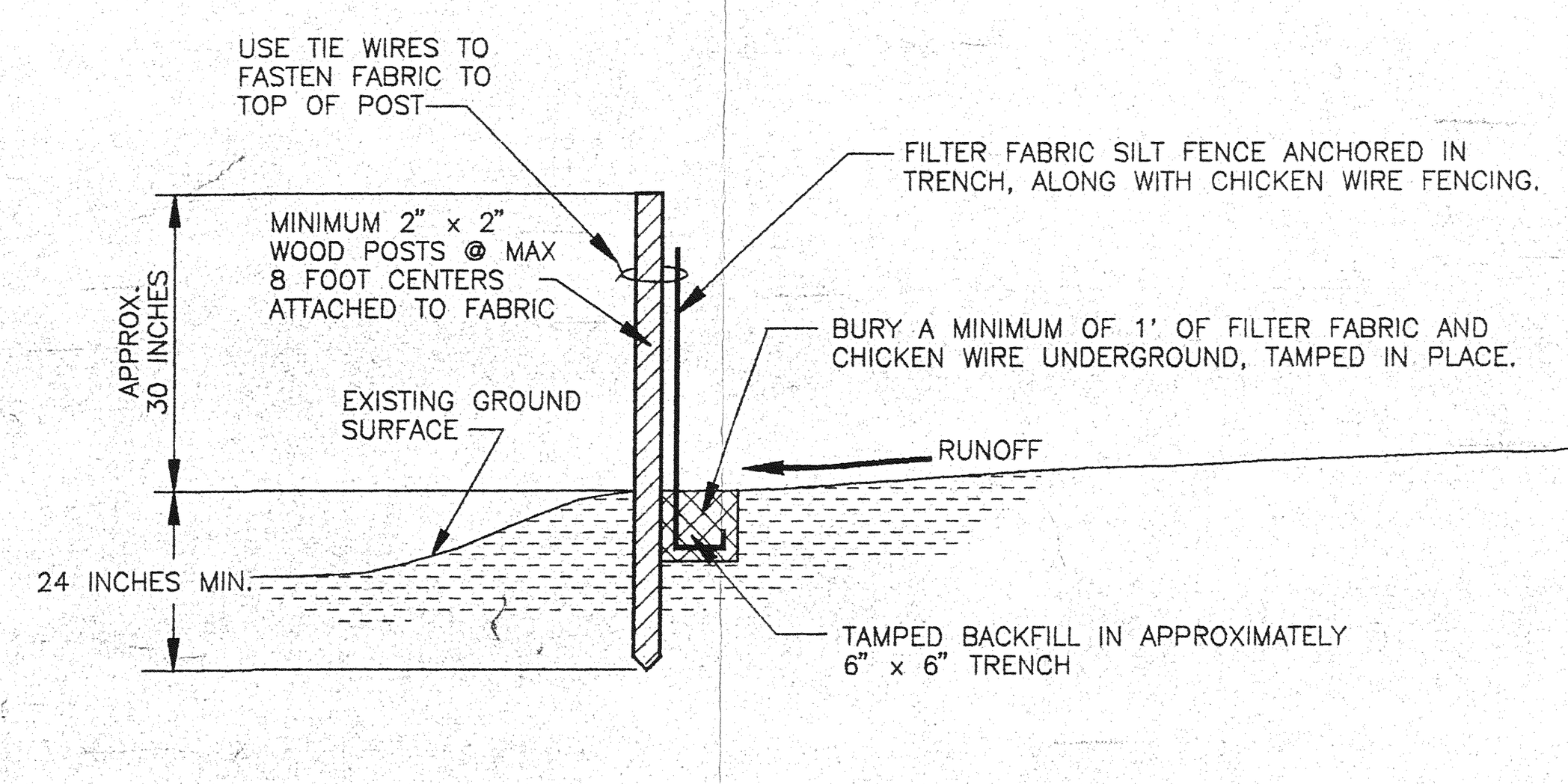
ROADWAY DELINEATOR DETAIL

NOT TO SCALE



TEMPORARY GRAVEL FILTER AT STORMWATER COLLECTION MANHOLE

NOT TO SCALE



SILT AND WIRE MESH FENCE INSTALLATION

NOT TO SCALE

NOTES

1. THE CONTRACTOR SHALL PROVIDE A STORMWATER AND EROSION CONTROL PLAN FOR STORMWATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITIES.
2. THE CONTRACTOR SHALL MAKE ROUTINE CHECKS ON ALL EROSION CONTROL MEASURES TO DETERMINE IF REPAIRS OR SEDIMENT REMOVAL IS NECESSARY. DUE TO CONDITIONS THAT MAY ARISE IN THE FIELD, ADDITIONAL CONTROL MEASURES MAY BE NECESSARY AND SHALL COMPLY WITH THE INTENT OF THE CONTRACTOR'S STORMWATER AND EROSION CONTROL PLAN.
3. AT ALL TIMES DURING CONSTRUCTION, EROSION AND SEDIMENT CONTROL SHALL BE MAINTAINED BY THE CONTRACTOR.
4. THE STORMWATER AND EROSION CONTROL SYSTEM SHALL BE INSTALLED AS GRADING PROGRESSES. THE CONTRACTOR SHALL PROVIDE A SCHEDULE FOR IMPLEMENTATION OF THE STORMWATER AND EROSION CONTROL SYSTEM.
5. DETAILS SHOWN ARE SCHEMATIC ONLY. ADJUSTMENTS WILL BE NECESSARY TO FIT FIELD CONDITIONS AND CONSTRUCTION SEQUENCE.
6. HAY BALES SHALL BE PLACED SUCH THAT RUNOFF WILL NOT FLOW BETWEEN, AROUND OR UNDER BALES. BALES SHOULD BE ANCHORED WITH 2" x 2" x 4' WOODEN STAKES, TWO PER BALE (SEE DETAIL THIS SHEET).
7. ALL AREAS DESIGNATED FOR GRADING AND ANY OTHER DISTURBED AREAS THAT ARE NOT TO BE CONSTRUCTED OR IMPROVED UPON FOR THIRTY DAYS AFTER GRADING ACTIVITIES ARE COMPLETED IN THE AREA SHALL BE SEEDED AND MULCHED IN ACCORDANCE WITH THE SPECIFICATIONS.
8. THE CONTRACTOR SHALL CHECK EROSION CONTROL MEASURES AFTER EACH RAINFALL. IF REPAIRS ARE NEEDED, THE CONTRACTOR SHALL IMPLEMENT THE MEASURES IMMEDIATELY.
9. SILT AND SEDIMENT SHALL BE REMOVED BY THE CONTRACTOR AFTER EACH SUBSTANTIAL RAINFALL. DEPOSITS SHALL BE REMOVED WHEN THEY REACH A HEIGHT OF ONE HALF OF THE BARRIER.
10. WHEN TEMPORARY MEASURES ARE TO BE REMOVED, ANY SILT AND SEDIMENT DEPOSITS SHALL BE REMOVED AND SPREAD EVENLY IN OPEN AREAS AND SEEDED AS NECESSARY.
11. USE A MINIMUM OF A DOUBLE ROW OF OVERLAPPING HAY BALES AT STORMWATER OUTFLOW POINTS. OTHER LOCATIONS SHALL ALSO UTILIZE HAY BALES ADEQUATELY TRENCHED AND STAKED. INSTALLATION SHALL BE IN ACCORDANCE WITH THE DETAILS AS SHOWN ON THE PLAN.
12. IN ROUGH CUT AREAS THAT WILL REMAIN UNIMPROVED FOR THIRTY DAYS OR LONGER, HAY BALES SHOULD BE STAGGERED AT 100 FOOT INTERVALS IN THE DITCHES TO AID IN EROSION PROTECTION. INLETS SHALL BE PROTECTED AS SHOWN ON THIS PLAN.
13. SILT FENCES SHALL BE USED AROUND ENTIRE SITE AS SHOWN ON PLANS. FENCES SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS . FENCES SHALL ALSO BE INSTALLED AT LOCATIONS NECESSARY TO FULFILL REGULATORY REQUIREMENTS.
14. INTERCEPTOR DITCHES TO DIVERT SITE RUNON WILL BE CONSTRUCTED AROUND THE WORK AREA, AS NECESSARY.
15. STAKED HAY BALES, INLET GRAVEL FILTERS OR STAKED FILTER CLOTH SILT FENCES SHALL BE PLACED IN NATURAL OR MAN-MADE DRAINAGE WAYS, AND AROUND STORM SEWER INLETS, OUTLETS AND CULVERTS IN THE PROJECT AREA AS NECESSARY TO FULFILL REGULATORY REQUIREMENTS.
16. THE CONTRACTOR SHALL FIELD VERIFY AND MEASURE THE LENGTH OF RCP PIPE FOR POND C OUTLET.
17. FOR TYPICAL STORMWATER COLLECTION MANHOLE DETAILS, SEE DRAWING C.10.

DEP
THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL ENGINEERING

NO.	DATE	DESCRIPTION	APPR'D
1	6/10/94	AS PER ADDENDUM NO. 1	SMM

REVISIONS

CAPITAL PROJECT NAME & NO.: PELHAM BAY LANDFILL REMEDIATION

CONTRACT NAME & NO.: GEOMEMBRANE CAPPING AND GAS COLLECTION SYSTEM CONTRACT NO. 876-HP

DRAWING TITLE:

EROSION CONTROL DETAILS

Woodward-Clyde Consultants, Inc.
ENGINEERING AND SCIENCES APPLIED TO THE EARTH AND ITS ENVIRONMENT
363 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10001

DESIGNED BY: WLP	DIVISION CHIEF:	PROJ. MGR.:	
DRAWN BY: WLP	GRAPHIC SCALE: IF THIS BAR DOES NOT MEASURE 3" THEN DRAWING IS NOT TO SCALE		
CHECKED BY: DJH	SCALE: AS NOTED	DWG. NO.: C.15R1	SHEET NO.: 16
GROUP LEADER: AJC	DATE: JUNE 9, 1994	C.19	OF: 28

I hereby certify that the Contract No. HP-877 for the Pelham Bay Landfill Closure and Final Remediation Project was constructed in accordance with the design drawings dated April 1996. This certification shall remain attached on the design drawings.

Respectfully Submitted,

New York City Department of Environmental Protection

Warren Gordon, PE

Licensed Professional Engineer

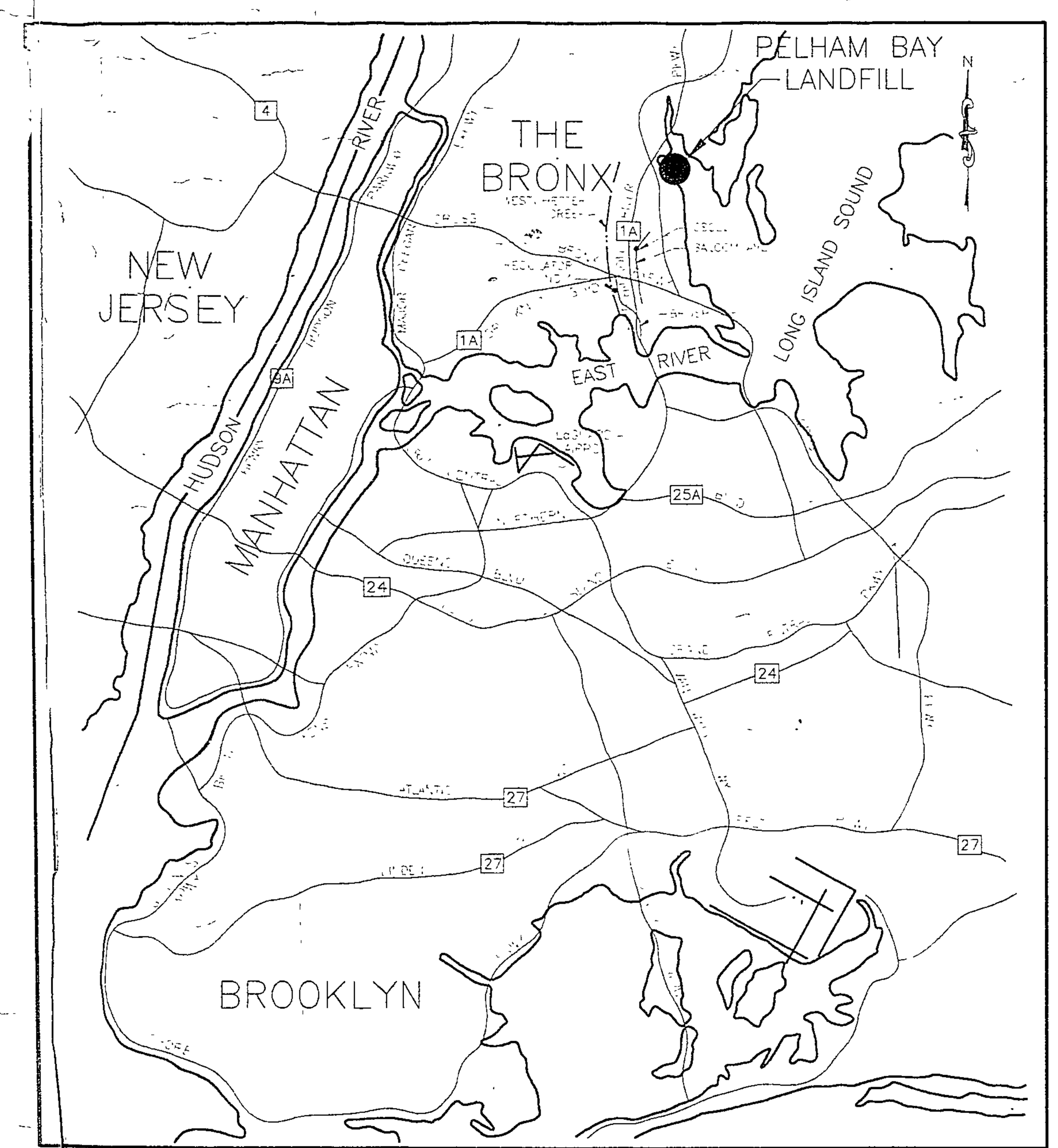
New York State License No. 070452-1

CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

CAPITAL PROJECT EP-8
HUNTS POINT WPCP DRAINAGE AREA
CONTRACT NO. HP-877

PELHAM BAY LANDFILL REMEDIATION
OFF-SITE FORCEMAIN

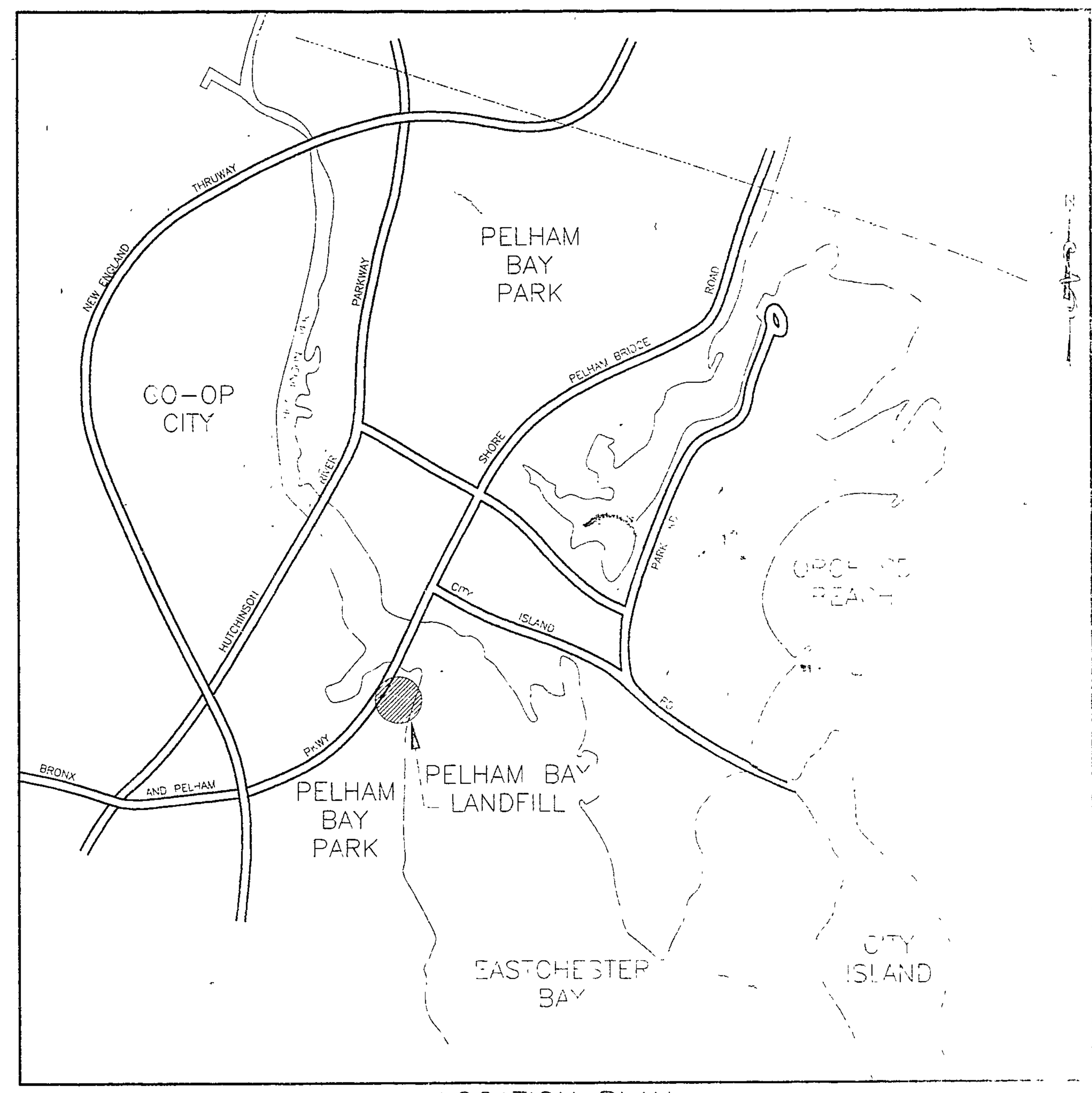
BOROUGH OF THE BRONX
APRIL 1996



KEY PLAN
SCALE:NONE

LIST OF DRAWINGS

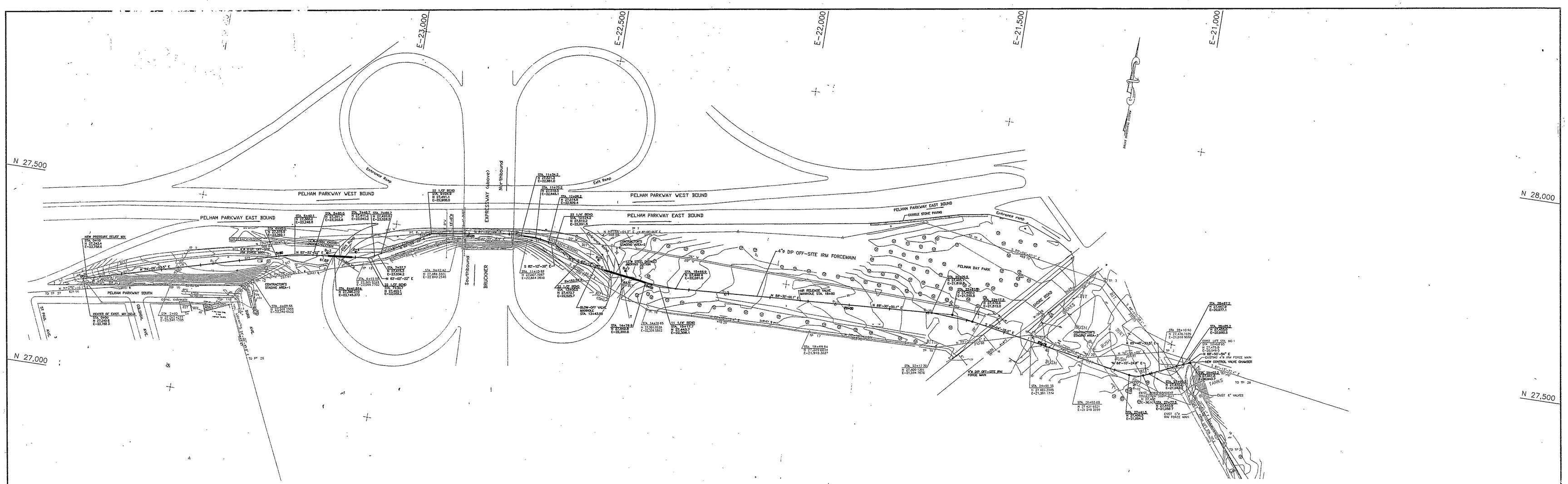
DRAWING NO.	DESCRIPTION
	CIVIL
C-1	OFF-SITE IRM FORCE MAIN – GENERAL PLAN LEGEND, ABBREVIATIONS & NOTES
C-2	OFF-SITE IRM FORCE MAIN – PLAN AND PROFILE STA. 0+00 TO STA. 10+00
C-3	OFF-SITE IRM FORCE MAIN – PLAN AND PROFILE STA. 10+00 TO STA. 20+00
C-4	OFF-SITE IRM FORCE MAIN – PLAN AND PROFILE STA. 20+00 TO STA. 29+00
C-5	OFF-SITE IRM FORCE MAIN – CONTROL VALVE CHAMBER AND PIPING PLAN AND DETAILS
C-6	OFF-SITE IRM FORCE MAIN – LEACHATE TANK DRAIN LINE PIPING DETAILS
C-7	OFF-SITE IRM FORCE MAIN – PELHAM BAY BRIDGE AND RAMP CROSSINGS
C-8	OFF-SITE IRM FORCE MAIN – M.H. NO.8 CONNECTION PLAN AND DETAILS PRESSURE RELIEF M.H. DETAILS
C-9	OFF-SITE IRM FORCE MAIN – PAVEMENT RESTORATION, TRENCH AND MISCELLANEOUS DETAILS
C-10	OFF-SITE IRM FORCE MAIN – MAINTENANCE AND PROTECTION OF TRAFFIC
C-11	OFF-SITE IRM FORCE MAIN – MISCELLANEOUS SITE WORK
	CONTROL SYSTEMS
CS-1	LEACHATE CONTROL SYSTEM – INSTRUMENTATION DIAGRAM
CS-2	LEACHATE CONTROL SYSTEM – CONTROL CHAMBER AT CSO 22 PLANS, SECTIONS AND DETAILS
CS-3	LEACHATE CONTROL SYSTEM – CONTROL AT REGULATOR NO. 4 PLANS, SECTIONS AND DETAILS
CS-4	LEACHATE CONTROL SYSTEM – INSTRUMENT CONTROL AND ELECTRICAL, PLANS AND SECTIONS
CS-5	LEACHATE CONTROL SYSTEM – ANNUNCIATOR PANEL, CONNECTION RISER
CS-6	LEACHATE CONTROL SYSTEM – MISCELLANEOUS DETAILS



LOCATION PLAN
SCALE:NONE

R.A.
ACTING DEPUTY DIRECTOR FOR FACILITIES DESIGN
BUREAU OF ENVIRONMENTAL ENGINEERING

P.E.
DEPUTY COMMISSIONER, DIRECTOR
BUREAU OF ENVIRONMENTAL ENGINEERING



GENERAL PLAN

SCALE: 1"=100'

LEGEND & ABBREVIATIONS

F 8" W	FIRE PROTECTION MAIN AND SIZE
8" W	WATER MAIN & SIZE
⚲	FIRE HYDRANT
Ⓦ	WATER VALVE
—△—	SURVEY MONUMENT
—○—	COMBINED SEWER MANHOLE
—Ⓢ—	SANITARY SEWER MANHOLE
✿	TREE
—x—x—x—	FENCE
☁	BUSH
▦	COBBLE STONE PAVING
—17—	CONTOUR
▨	STRUCTURE OUTLINE
☒	FIELD OR CURB INLET
═	CURB LINE
ø	DIAMETER
DIP	DUCTILE IRON PIPE
BIT	BITUMINOUS
E E.B.	ELECTRIC BOX
☼	LIGHT POLE
—o—o—o—	RAILING
STA	SURVEY STATION
HY	HYDRANT
○ DWS	WATER VALVE MANHOLE
☐ FA	FIRE ALARM
&	AND
EL.	ELEVATION
INV EL	INVERT ELEVATION
NTS	NOT TO SCALE
—▷◁—	GATE VALVE
—◁—	CHECK VALVE
—/—	BUTTERFLY VALVE
A.C.	ASPHALT CONCRETE
CONC.	CONCRETE
⌀	WOOD POLE
⎍	TREE STUMP
☒ CB.	CATCH BASIN / FIELD INLET
D.P R.	DEPARTMENT OF PARKS AND RECREATION
(FL)	FLANGE
10 00	PROPOSED ELEVATION
10.00	EXISTING ELEVA

BORING LEGEND

⊕	7'-0" BORING
◐	10'-0" BORING
●	30'-0" BORING
◪	4'-0"X4'-0" TEST PIT TO LOCATE THE 20"ø WATER MAIN

NOTE: FOR BORING LOCATION, SEE DRAWINGS C-2, C-3, AND C-4.

GENERAL NOTES

1. ALL ELEVATIONS REFER TO THE BRONX BUREAU OF HIGHWAY DATUM WHICH IS 2.608 FEET ABOVE MEAN SEA LEVEL, AT SANDY HOOK AS ESTABLISHED BY THE UNITED STATES COASTAL AND GEODETIC SURVEY, USC & GS.
2. HORIZONTAL CONTROL IS BASED ON THE BOROUGH OF THE BRONX COORDINATE SYSTEM.
3. LOCATION AND INFORMATION CONCERNING EXISTING UNDERGROUND UTILITIES ARE APPROXIMATE ONLY. NEITHER THE EXACT LOCATION NOR THE INFORMATION REGARDING THESE EXISTING UTILITIES IS GUARANTEED TO BE CORRECT OR COMPLETE.
4. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF EXISTING UTILITIES IN THE VICINITY OF HIS/HER CONSTRUCTION OPERATIONS AND PRIOR TO RELOCATING OR MAKING CONNECTIONS TO THEM.
5. THE CONTRACTOR SHALL NOT DISTURB ANY EXISTING UTILITIES SCHEDULED TO REMAIN IN PLACE WITHIN THE PROJECT LIMITS. DURING CONSTRUCTION, SHOULD UTILITIES FOR WHICH THERE ARE NO PROVISIONS ON THE PLANS BE ENCOUNTERED INTERFERING WITH WORK, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE RESIDENT ENGINEER OF THE EXISTENCE OF THE UTILITIES AND THE EXTENT OF THE CONFLICT WITH THE WORK. THE CONTRACTOR SHALL MAKE ARRANGEMENTS WITH THE RESIDENT ENGINEER TO MODIFY THE FACILITY OR THE RESIDENT ENGINEER MAY ELECT TO MODIFY THE PROPOSED WORK IN ORDER TO ALLOW THE CONTRACTOR TO PROCEED WITH THE WORK.
6. CONTRACTOR SHALL USE EXTREME CARE AND CAUTION WHEN WORKING UNDERNEATH THE PELHAM PARKWAY BRIDGE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE TYPE, SIZE AND WEIGHT OF THE EQUIPMENT TO BE USED FOR EXCAVATION WORK AND PIPING INSTALLATION.
7. THE CONTRACTOR SHALL EXERCISE CARE NOT TO DAMAGE OR DISTURB EXISTING EQUIPMENT, UTILITY LINES AND OTHER EXISTING SITE FEATURES THAT ARE TO REMAIN. ANY DAMAGES RESULTING FROM THE CONTRACTOR'S OPERATIONS ARE TO BE REPAIRED, OR REPLACED AT HIS OWN EXPENSE.
8. THE CONTRACTOR SHALL PROVIDE APPROPRIATE PROTECTION FOR ALL UTILITY LINES TO REMAIN.
9. THE CONTRACTOR SHALL VERIFY THE ELEVATIONS OF EXISTING STRUCTURE, PIPES AND MANHOLE PRIOR TO MAKING ANY CONNECTION.
10. EXCAVATION SUPPORT IS REQUIRED FOR THE INSTALLATION OF THE IRM OFF-SITE FORCE MAIN. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER SHOP DRAWINGS AND CALCULATIONS, INCLUDING ALL DETAILS OF THE EXCAVATION SUPPORT SYSTEM, PREPARED BY A NEW YORK STATE LICENSED PROFESSIONAL ENGINEER EMPLOYED BY THE CONTRACTOR, FOR REVIEW AND APPROVAL PRIOR TO THE WORK. THE ENGINEER'S APPROVAL SHALL NOT ACT AS A WAIVER OF LIABILITY FOR ANY DAMAGE THAT MAY RESULT FROM CONTRACTOR'S OPERATIONS.
11. THE COST OF DEWATERING, PUMPING, BAILING OR DRAINING NECESSARY DURING CONSTRUCTION TO KEEP THE EXCAVATION FREE OF WATER SHALL BE INCLUDED IN THE FORCE MAIN BID PRICE.
12. FOR DISPOSAL OF EXCAVATED MATERIAL, CONSTRUCTION DEWATER, REFER TO THE TECHNICAL SPECIFICATIONS.
13. BACK FILL OR FILL MATERIAL SHALL BE APPROVED BY THE ENGINEER PRIOR TO PLACEMENT. SOILS CONTAINING LARGE STONE OR ORGANIC MATERIALS ARE UNACCEPTABLE.
14. THE CONTRACTOR IS ADVISED THAT ADDITIONAL NOTES WILL BE FOUND ON SUBSEQUENT SHEETS OF THE CONTRACT PLANS AND SUCH NOTES, WHILE PERTAINING TO THE SPECIFIC DRAWINGS THEY ARE PLACED ON, ALSO SUPPLEMENT THE GENERAL NOTES LISTED HEREIN.

NOTES GOVERNING WORK WITHIN PARKS DEPARTMENT PROPERTIES

1. THE CONTRACTOR IS SUBJECT TO STRICT ADHERENCE TO NOT ONLY THE CITY AND STATE LAWS BUT ALSO THE RULES AND REGULATIONS OF THE NEW YORK CITY DEPARTMENT OF PARKS AND RECREATION INSOFAR AS THEY APPLY.
2. THE CHIEF OF OPERATION OF THE BOROUGH OF THE BRONX SHALL BE NOTIFIED BY THE CONTRACTOR AT LEAST FORTY-EIGHT (48) HOURS BEFORE WORK IS STARTED.
3. A PARKS CONSTRUCTION PERMIT PRIOR TO COMMENCEMENT OF ANY WORK ON PROPERTY SHALL BE SECURED BY NYCDEP. CONTACT MR. REX DIMOND, DIRECTOR OF PERMITS @ (718) 760-6737 FOR DETAILS.
4. A PERMIT FROM THE PARKS DEPARTMENT TO PERFORM WORK ON PARKS PROPERTY SHALL BE SECURED BY NYCDEP.
5. THE PERMIT IS ISSUED FOR PARKS LANDS UNDER THE JURISDICTION OF THE DEPARTMENT OF PARKS AND RECREATION. CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING PERMITS AS REQUIRED FROM OTHER AGENCIES HAVING JURISDICTION IN THE AREA OR ACCESS TO THE AREA OF OPERATIONS.
6. THE PERMIT DOES NOT GRANT THE CONTRACTOR EXCLUSIVE RIGHT TO THE SITE DESIGNATED HEREIN. THE CONTRACTOR SHALL COORDINATE HIS/HER WORK WITH OTHER WORK BEING DONE OR TO BE PERFORMED IN THE AREA BY THE PARKS DEPARTMENT, OTHER CONTRACTORS, OR SUBCONTRACTORS, UTILITY COMPANIES OR OTHER CITY OR STATE AGENCIES.
7. THE PARKS DEPARTMENT RESERVES THE RIGHT TO AMEND THIS PERMIT TO COVER NEW CONDITIONS AND TO CANCEL THIS PERMIT AT ANY TIME AND FOR ANY VALID REASON.
8. NO CONSTRUCTION WORK OTHER THAN NECESSARY MAINTENANCE, EMERGENCIES OR AS REQUIRED BY THE CITY OF NEW YORK, OR ITS APPROPRIATE AGENCY, IS TO BE PERFORMED ON PARKS PROPERTY ON SATURDAYS, SUNDAYS OR HOLIDAYS, EXCEPT BY WRITTEN PERMISSION FROM THE PARKS DEPARTMENT.
9. ORANGE-NETTING, BARRICADES, WARNING DEVICES, SIGNS, FLAGS, LIGHTS, SHALL BE PROVIDED AND MAINTAINED IN GOOD CONDITION AS REQUIRED FOR PUBLIC SAFETY THROUGHOUT THE DURATION OF THE WORK. THE CONTRACTOR IS RESPONSIBLE FOR THE ADEQUACY OF THE SAFETY DEVICES. THE PARKS DEPARTMENT SHALL HAVE THE RIGHTS TO ORDER THE CONTRACTOR TO VARY AND/OR INCREASE THE SAFETY DEVICES INSTALLED ON THE SITE OF THE WORK.
10. CONTRACTOR OPERATIONS SHALL BE PERFORMED IN SUCH MANNER SO THAT THE STABILITY OF THE EXISTING AND ADJACENT AREAS ARE NOT DISTURBED. ADJACENT PARKS AREAS OR APPURTENANCES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR INSOFAR AS ANY DAMAGES CAUSED BY HIS/HER OPERATION.
11. THE EXISTING DRAINAGE AND UTILITY SYSTEMS WITHIN PARKS PROPERTY SHALL BE MAINTAINED DURING THE DURATION OF THE WORK TO THE SATISFACTION OF THE PARKS DEPARTMENT.
12. THE CONTRACTOR SHALL MAINTAIN ALL AREAS USED FOR ACCESS TO THE PROJECT SITE IN A CONDITION ACCEPTABLE TO THE PARKS DEPARTMENT.
13. THE CONTRACTOR SHALL NOT USE ACCESS AREAS OR START WORK UNTIL THE REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED FROM ALL THE APPROPRIATE AGENCIES.
14. THE CONTRACTOR SHALL NOT ALLOW CONSTRUCTION DEBRIS TO ACCUMULATE ON THE PROJECT SITE AND SHALL CLEAN UP THE SITE ON A REGULAR BASIS.
15. THE CONTRACTOR SHALL NOT STOCKPILE ANY MATERIAL WITHIN THE DRIP LINE OF THE TREES.
16. THE CONTRACTOR SHALL REPLACE AND RESTORE WITHIN PARKS PROPERTY ALL PLANTED AREAS, TREES, SHRUBS AND OTHER EXISTING STRUCTURES OR SUBSTRUCTURES, UTILITY LINES, ROADS, WALKS AND/OR CURBS DAMAGED OR DESTROYED DURING CONSTRUCTION. SUCH REPLACEMENT AND RESTORATION SHALL BE IN ACCORDANCE WITH THE CITY OR PARKS DEPARTMENT STANDARDS AND MEET THE APPROVAL OF THE PARKS DEPARTMENT. ALL TEMPORARY STRUCTURES, EQUIPMENT AND MATERIAL OF THE CONTRACTOR NOT REQUIRED FOR INCORPORATION IN THE WORK UNDER THIS PERMIT SHALL BE REMOVED FROM THE SITE AT THE COMPLETION OF THE WORK.
17. NO TREES SHALL BE REMOVED WITHOUT THE EXPRESS WRITTEN PERMISSION OF THE COMMISSIONER OF PARKS & RECREATION. CONSIDERATION WILL BE MADE FOR EACH TREE PROPOSED TO BE REMOVED. RESTITUTION FOR TREES WHICH ARE PERMITTED FOR REMOVAL SHALL BE PER THE "BASAL FORMULA" WHICH REQUIRES AN EQUAL CROSS SECTIONAL AREA OF NEW TREES FOR TREES WHICH ARE REMOVED. RESTITUTION FOR TREES WHICH ARE KILLED OR SEVERELY DAMAGED DURING THE LENGTH OF THE CONSTRUCTION CONTRACT SHALL BE PER THE "BASAL FORMULA" AND AT THE EXPENSE OF THE CONTRACTOR. THE SIZES OF THE TREES TO BE USED FOR RESTITUTION SHALL BE 3"-3 1/2" CALIPER OR AS DIRECTED BY THE COMMISSIONER OF PARKS & RECREATION.
18. ALL GRASS AREAS DISTURBED SHALL BE RESTORED WITH SOD IN STRICT ACCORDANCE WITH PARKS SPECIFICATIONS AND DONE AT THE PROPER TIME OF THE SEASON. SOD MUST BE MAINTAINED BY THE CONTRACTOR UNTIL THE ROOT SYSTEM IS ESTABLISHED AND VERIFIED BY THE PARKS DEPARTMENT.
19. THE CONTRACTOR SHALL PERFORM COMPENSATORY PRUNING OF TREES ADVERSELY AFFECTED BY HIS WORK IF ANY. PRUNING SHALL BE DONE BY A DEPARTMENT OF PARKS AND RECREATION APPROVED LICENSED ARBORIST WHEN AND WHERE DIRECTED BY PARKS DEPARTMENT.
20. ALL RESTORATION ITEMS, SUBJECT TO SETTLEMENT, ON PARK PROPERTY SHALL BE MAINTAINED AND GUARANTEED BY THE CONTRACTOR FOR A PERIOD OF ONE YEAR AFTER THE FINAL INSPECTION AND ACCEPTANCE BY THE PARKS DEPARTMENT.
21. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN QUALIFIED SUPERVISION DURING ALL PHASES OF THE RESTORATION TO MAKE CERTAIN THAT ALL PARKS DEPARTMENT SPECIFICATIONS ARE BEING ADHERED TO.
22. THE CONTRACTOR SHALL NOTIFY THE PARKS DEPARTMENT WHEN THE AREA IS READY FOR FINAL INSPECTION TO VERIFY RESTORATION COMPLETENESS IN ACCORDANCE WITH THE TERMS OF THE PERMIT.
23. A PARKS FORESTRY PERMIT MAY BE REQUIRED PRIOR TO COMMENCEMENT OF ANY PHYSICAL WORK ON SITE. CONTACT RALPH ALFANO, BRONX FORESTRY AT (718) 430-1877 FOR DETAILS.

Woodward-Clyde Consultants, Inc.
ENGINEERING AND SCIENCES APPLIED TO THE EARTH AND ITS ENVIRONMENT
363 SEVENTH AVENUE, 11th FLOOR
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EWF
EWELL W. FINLEY, P.C.
CONSULTING ENGINEERS
34-18 NORTHERN BOULEVARD LONG ISLAND CITY, NY 11101

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL ENGINEERING

NO	DATE	DESCRIPTION	APPR'D

REVISIONS

CAPITAL PROJECT NAME & NO.:
CAPITAL PROJECT EP-8
PELHAM BAY LANDFILL REMEDIATION

CONTRACT NAME & NO.:
OFF-SITE FORCE MAIN
CONTRACT NO. HP-877

DRAWING TITLE:
OFF-SITE IRM FORCE MAIN
GENERAL PLAN
LEGEND, ABBREVIATIONS & NOTES

DESIGNED BY: SF
DRAWN BY: SB
CHECKED BY: CYY
GROUP LEADER: CJP
DIVISION CHIEF:
PROJ MGR.
GRAPHIC SCALE 0 50' 100' 200'
SCALE: AS SHOWN
DATE: APRIL 22, 199
DWG NO C-1
SHEET
OF: C-

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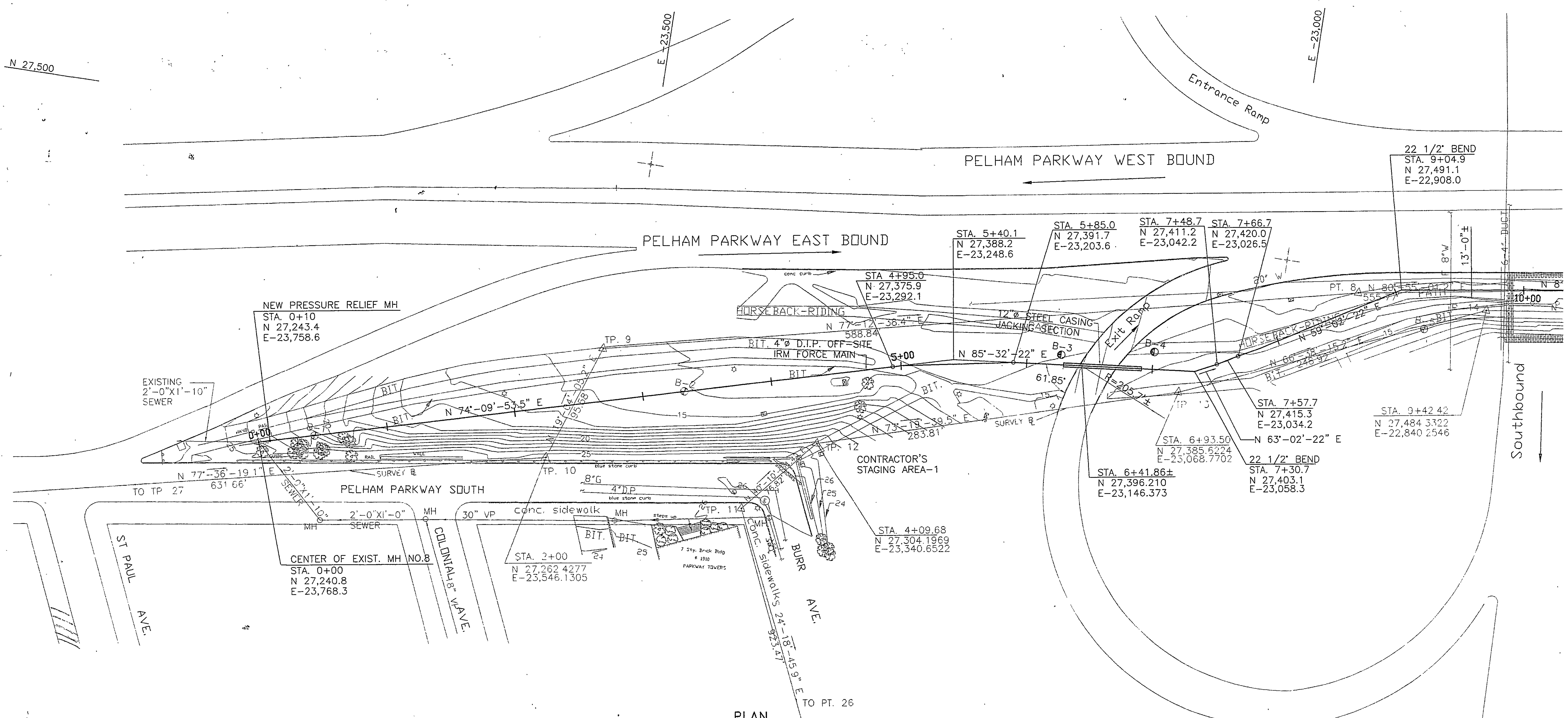
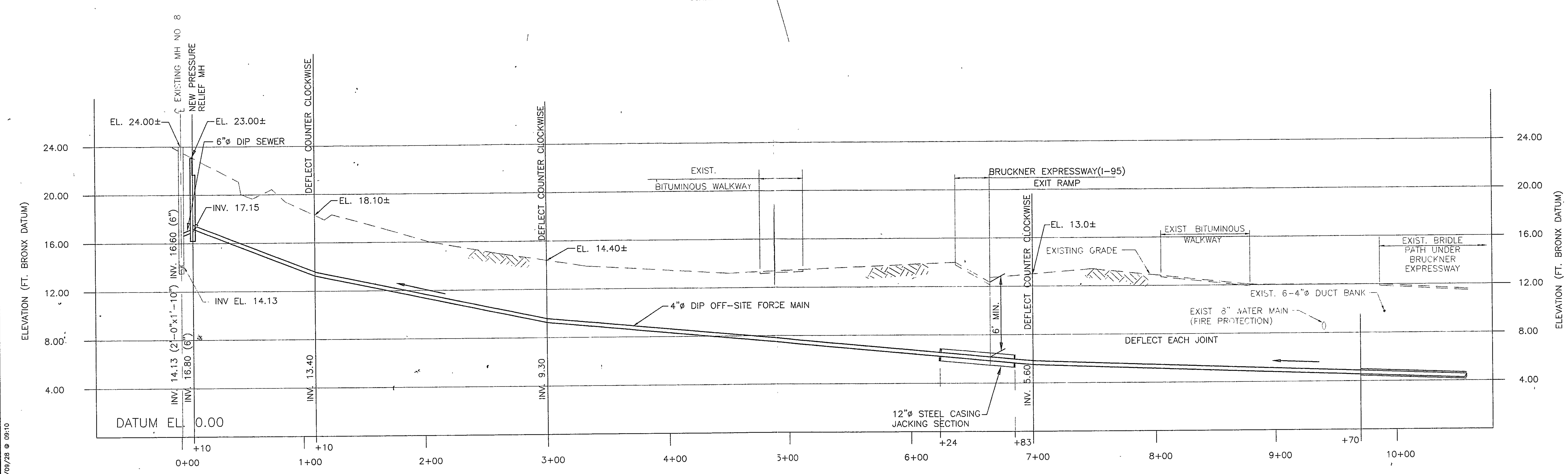


PLAN
4"ø DIP IRM OFF-SITE FORCE MAIN
SCALE: 1" = 40'



PROFILE
4"ø DIP OFF-SITE IRM FORCE MAIN
HORIZONTAL SCALE: 1" = 4'
VERTICAL SCALE: 1" = 4'

NOTES:

1. FOR GENERAL NOTES SEE DRAWING C-1.
2. OPEN CUTTING OF RAMP PAVEMENT IS NOT ALLOWED. THE CROSSING OF THE RAMPS SHALL BE BY JACKING METHOD. FOR DETAILS OF PELHAM BAY BRIDGE AND RAMP CROSSINGS SEE DRAWING C-7.
3. REFER TO DRAWING C-8 FOR DETAILS OF PRESSURE RELIEF MANHOLE AND CONNECTION TO EXISTING MANHOLE No.8.
4. REFER TO DRAWING C-10 FOR MAINTENANCE AND PROTECTION OF TRAFFIC.
5. ANY OPEN TRENCHES SHALL BE PROTECTED BY FENCING AND LIGHTED TIMBER BARRICADES WHENEVER THE WORK IS NOT IN PROGRESS AND/OR DURING OFF HOURS.
6. NO ACCESS IS ALLOWED FROM THE THRUWAY. NO EQUIPMENT OR EMPLOYEE VEHICLES SHOULD BE PARKED WITHIN 30 FEET OF THE THRUWAY.
7. THE FORCE MAIN SHALL BE FULLY ENCASED FROM STATION 11+70 TO STATION 9+70 WHERE 10 FOOT HORIZONTAL CLEARANCE FROM THE 20" WATER MAIN IS NOT MET. SEE DETAILS ON DRAWING C-7.
8. THE FORCE MAIN SHALL BE MECHANICAL JOINT TYPE, CEMENT-LINED DUCTILE IRON PIPE CLASS 56 CONFORMING TO THE LATEST REVISION OF ANSI/AWWA C 151/A 21.51.
9. ALL DUCTILE IRON PIPE FITTINGS SHALL BE MECHANICAL JOINT TYPE CONFORMING TO THE LATEST REVISION OF ANSI/AWWA C151/A 21.51.
10. CEMENT MORTAR LINING SHALL BE IN ACCORDANCE WITH ANSI/AWWA C 104/A 21.4.
11. RUBBER GASKET JOINTS FOR DUCTILE IRON PIPES AND FITTINGS SHALL BE ANSI/AWWA C 111/A 21.11.
12. PROVIDE BOLTLESS RETAINER GLANDS AT BELL END OF ALL MECHANICAL JOINT FITTINGS CONFORM TO ANSI A21.11.

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NEW YORK, NEW YORK 10001

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34-18 NORTHERN BOULEVARD LONG ISLAND CITY, NY 11101

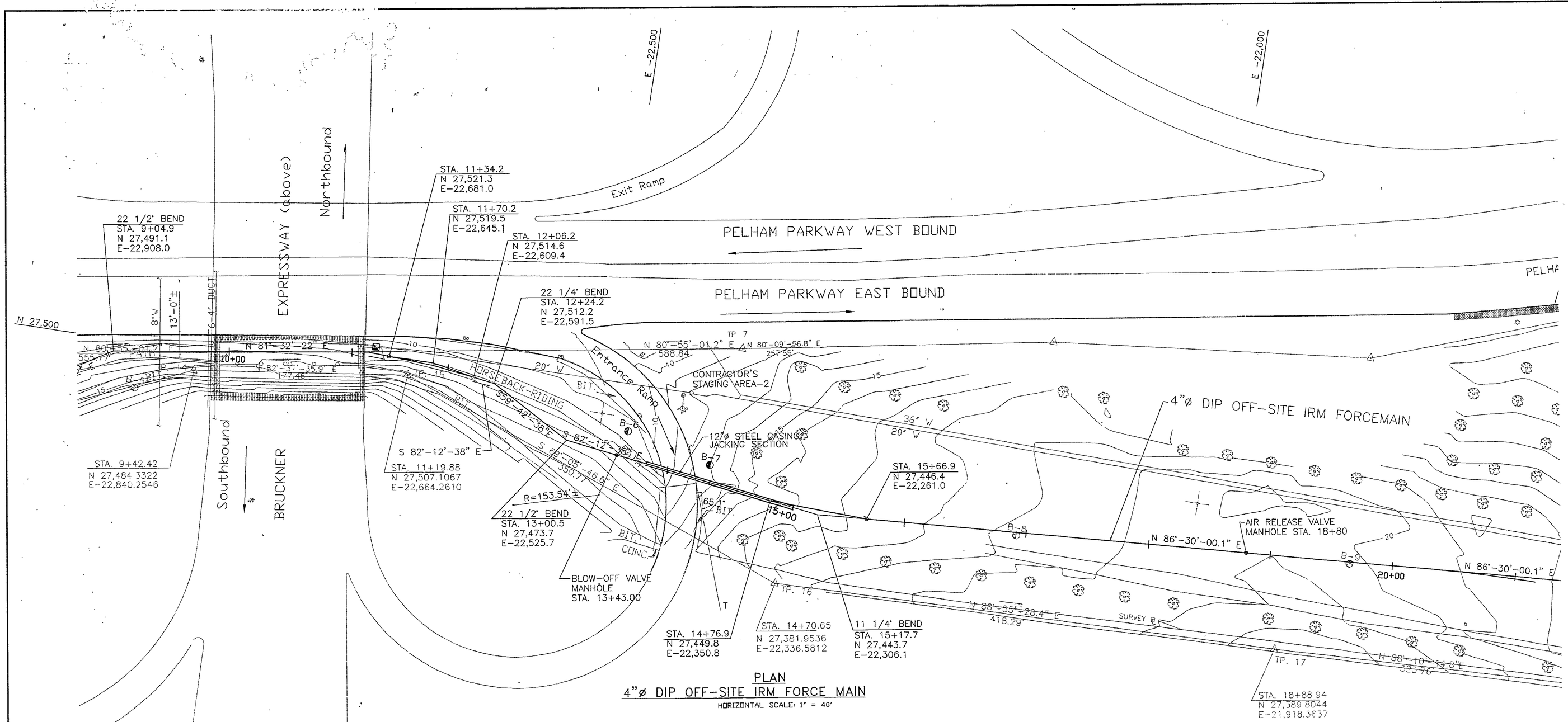
THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL ENGINEERING

NO.	DATE	DESCRIPTION	APPR'D.
		REVISIONS	

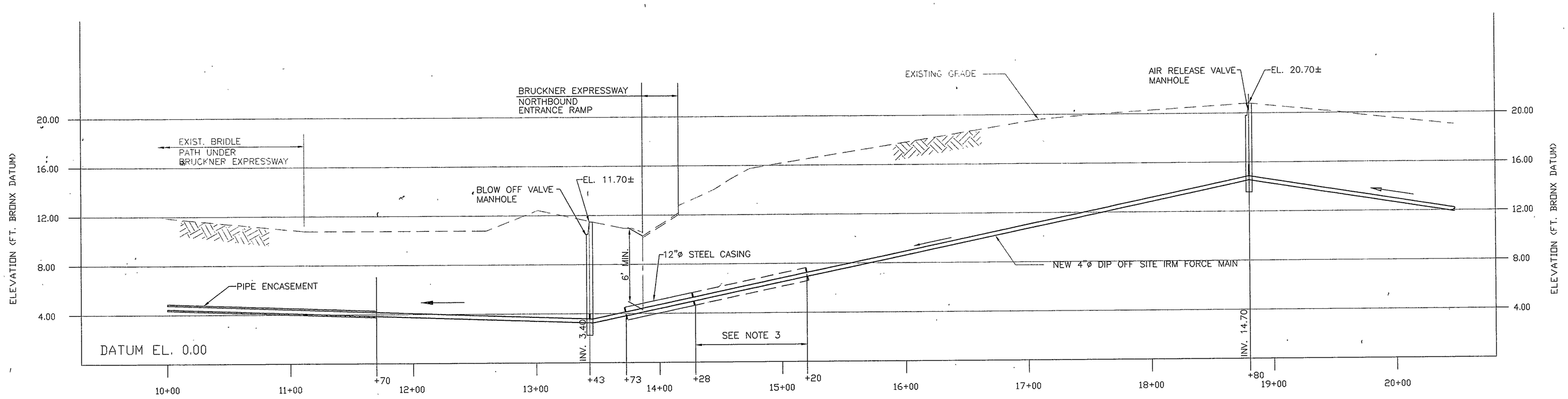
CAPITAL PROJECT NAME & NO.: CAPITAL PROJECT EP-8 PELHAM BAY LANDFILL REMEDIATION
CONTRACT NAME & NO.: OFF-SITE FORCE MAIN CONTRACT NO. HP-877

DRAWING TITLE: OFF-SITE IRM FORCE MAIN PLAN AND PROFILE STA. 0+00 TO STA. 10+00

DESIGNED BY:	SF
DRAWN BY:	MA/SB
CHECKED BY:	CYY
GROUP LEADER:	CJP
SCALE:	AS SHOWN
DATE:	APRIL 22, 1996
DWG. NO.:	C-2 OF C-11
SHEET NO.	2



PLAN
4"ø DIP OFF-SITE IRM FORCE MAIN
HORIZONTAL SCALE: 1" = 40'



PROFILE
4"ø DIP OFF - SITE IRM FORCE MAIN
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'

NOTES:

1. FOR GENERAL NOTES SEE DRAWING C-1.
2. OPEN CUTTING OF RAMP PAVEMENT IS NOT ALLOWED. THE CROSSING OF THE RAMPS SHALL BE BY JACKING METHOD. FOR DETAILS OF PELHAM BAY BRIDGE AND RAMP CROSSINGS SEE DRAWING C-7.
3. IF IN THE OPINION OF THE ENGINEER AND THE PARKS DEPARTMENT REPRESENTATIVE, THE OPEN TRENCH EXCAVATION OPERATIONS IMPACT ADVERSELY THE ROOT SYSTEM OF THE ADJACENT TREES, THE PIPE SHALL BE INSTALLED BY JACKING METHOD WITHIN THE LIMITS INDICATED. IN THIS CASE THE JACKING PIT SHALL BE LOCATED WESTERLY OF THE ENTRANCE RAMP TO MINIMIZE THE CONSTRUCTION ACTIVITIES WITHIN THE PARK'S PROPERTY.
4. REFER TO DRAWING C-9 FOR DETAILS OF PIPE BEDDING, AIR RELEASE VALVE AND BLOW-OFF VALVE MANHOLES.
5. REFER TO DRAWING C-10 FOR MAINTENANCE AND PROTECTION OF TRAFFIC.
6. ANY OPEN TRENCHES SHALL BE PROTECTED BY FENCING AND LIGHTED TIMBER BARRICADES WHENEVER THE WORK IS NOT IN PROGRESS AND/OR DURING OFF HOURS.
7. NO ACCESS IS ALLOWED FROM THE THRUWAY. NO EQUIPMENT OR EMPLOYEE VEHICLES SHOULD BE PARKED WITHIN 30 FEET OF THE THRUWAY.
8. THE FORCE MAIN SHALL BE FULLY ENCASED FROM STATION 9+70 TO STATION 11+70 WHERE 10 FOOT HORIZONTAL CLEARANCE FROM THE 20" WATER MAIN IS NOT MET. SEE DETAIL OF ENCASEMENT ON DRAWING C-8.
9. THE FORCE MAIN SHALL BE MECHANICAL JOINT TYPE, CEMENT-LINED DUCTILE IRON PIPE CLASS 56 CONFORMING TO THE LATEST REVISION OF ANSI/AWWA C 151/A 21.51.
10. ALL DUCTILE IRON PIPE FITTINGS SHALL BE MECHANICAL JOINT TYPE CONFORMING TO THE LATEST REVISION OF ANSI/AWWA C151/A 21.51.
11. CEMENT MORTAR LINING SHALL BE IN ACCORDANCE WITH ANSI/AWWA C 104/A 21.4.
12. RUBBER GASKET JOINTS FOR DUCTILE IRON PIPES AND FITTINGS SHALL BE ANSI/AWWA C 111/A 21.11.
13. PROVIDE BOLTLESS RETAINER GLANDS AT BELL END OF ALL MECHANICAL JOINT FITTINGS CONFORM TO ANSI A21.11.

DEP
THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL ENGINEERING

NO.	DATE	DESCRIPTION	APPR'D.

REVISIONS

CAPITAL PROJECT NAME & NO.:
CAPITAL PROJECT EP-8
PELHAM BAY LANDFILL REMEDIATION

CONTRACT NAME & NO.:
OFF-SITE FORCE MAIN
CONTRACT NO. HP-877

DRAWING TITLE:
OFF-SITE IRM FORCE MAIN
PLAN AND PROFILE
STA. 10+00 TO STA. 20+00

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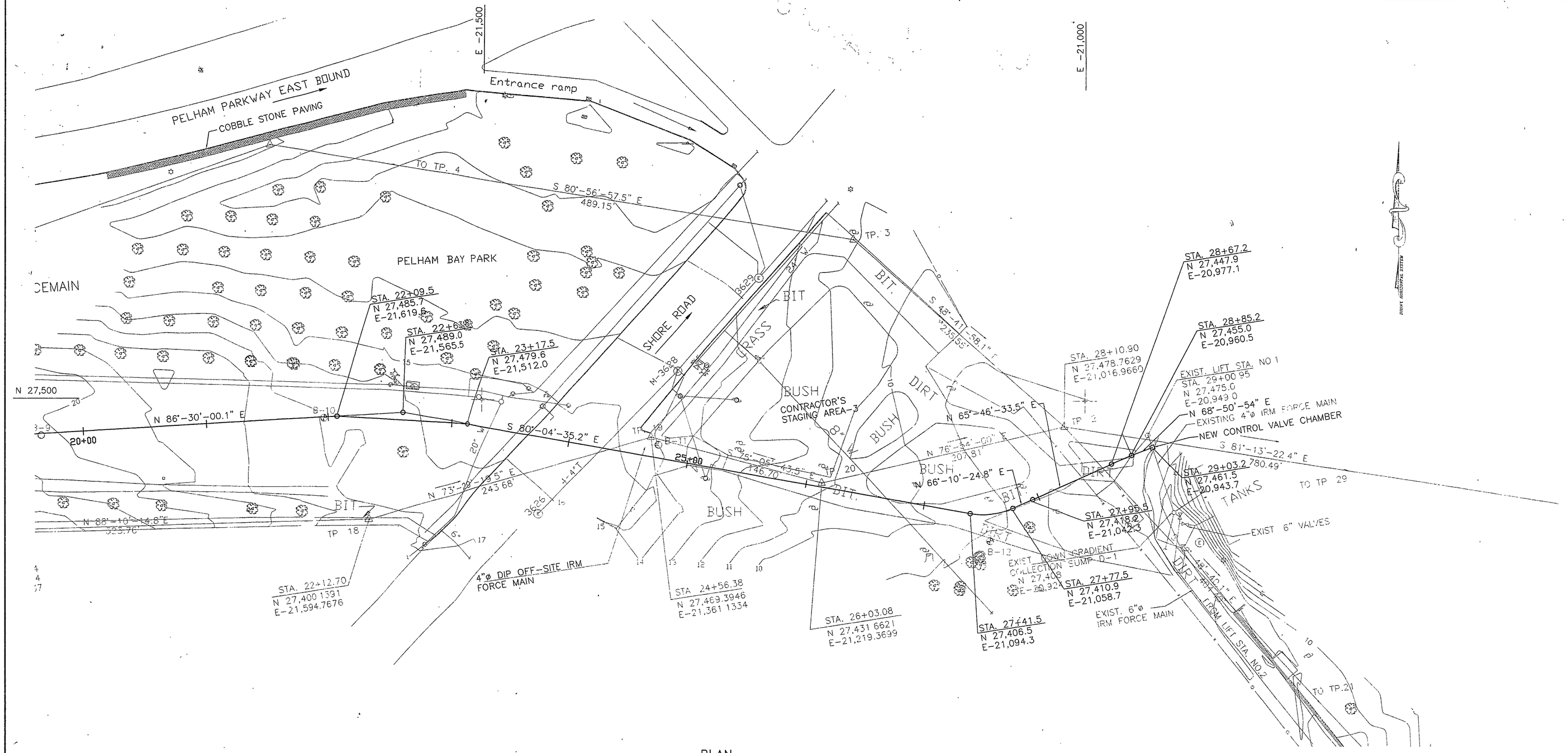
NEW YORK, NEW YORK 10001

EWF EWELL W. FINLEY, P.C.
CONSULTING ENGINEERS
34-18 NORTHERN BOULEVARD LONG ISLAND CITY, NY 11101

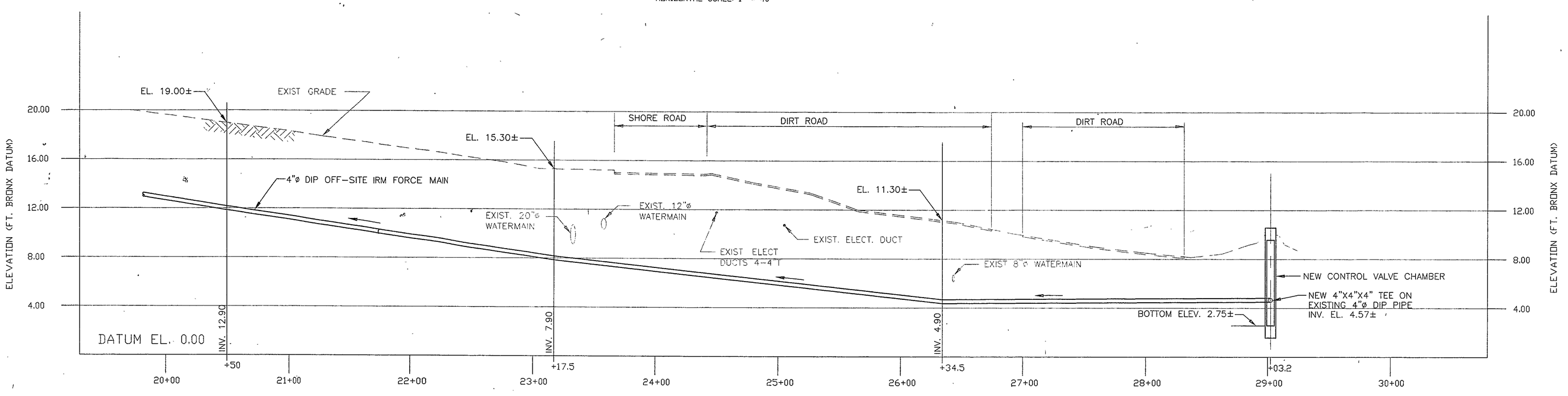
DESIGNED BY: SF
DRAWN BY: MA/SB
CHECKED BY: CYY
GROUP LEADER: CJP

DIVISION CHIEF: Paul D. Switzer
PROJ MGR.: Catherine Zuscha
GRAPHIC SCALE: 0 20 40 60 120'
SCALE: AS SHOWN
DWG. NO.: C-3
SHEET NO.: 3
DATE: APRIL 22, 1996
OF: C-11
OF 17

File name: J:\CADD\92S4087\DESIGN\C3.DWG Last edited: 93/09/28 @ 09:10



PLAN
4"ø DIP OFF – SITE IRM FORCE MAIN
HORIZONTAL SCALE: 1" = 40'



PROFILE
4"ø DIP OFF – SITE IRM FORCE MAIN
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'

NOTES

1. FOR GENERAL NOTES SEE DRAWING C-1.
2. REFER TO DRAWINGS C-5, C-6 AND C-8 FOR NEW CONTROL VALVE CHAMBER DETAILS AND RELATED PIPING MODIFICATIONS.
3. REFER TO DRAWING C-9 FOR SHORE ROAD PAVEMENT RESTORATION AND PIPE BEDDING DETAILS.
4. REFER TO DRAWING C-10 FOR MAINTENANCE AND PROTECTION OF TRAFFIC.
5. THE FORCE MAIN SHALL BE MECHANICAL JOINT TYPE, CEMENT-LINED DUCTILE IRON PIPE CLASS 56 CONFORMING TO THE LATEST REVISION OF ANSI/AWWA C 151/A 21.51.
6. ALL DUCTILE IRON PIPE FITTINGS SHALL BE MECHANICAL JOINT TYPE CONFORMING TO THE LATEST REVISION OF ANSI/AWWA C 151/A 21.51.
7. CEMENT MORTAR LINING SHALL BE IN ACCORDANCE WITH ANSI/AWWA C 104/A 21.4.
8. RUBBER GASKET JOINTS FOR DUCTILE IRON PIPES AND FITTINGS SHALL BE ANSI/AWWA C 111/A 21.11.

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL ENGINEERING

NO.	DATE	DESCRIPTION	APPR'D.
		REVISIONS	

CAPITAL PROJECT NAME & NO.:
CAPITAL PROJECT EP-8
PELHAM BAY LANDFILL REMEDIATION

CONTRACT NAME & NO.:
OFF-SITE FORCE MAIN
CONTRACT NO. HP-877

DRAWING TITLE:
OFF-SITE IRM FORCE MAIN
PLAN AND PROFILE
STA. 20+00 TO STA. 29+00

Woodward-Clyde Consultants, Inc.
ENGINEERING AND SCIENCES APPLIED TO THE EARTH AND ITS ENVIRONMENT
363 SEVENTH AVENUE, 11th FLOOR
NEW YORK, NEW YORK 10001

EWF EWELL W. FINLEY, P.C.
CONSULTING ENGINEERS
34-18 NORTHERN BOULEVARD LONG ISLAND CITY, NY 11101

DESIGNED BY:	SF
DRAWN BY:	MA/SB
CHECKED BY:	CYY
GROUP LEADER:	CJP
DIVISION CHIEF:	Paul D. Smith
PROJ. MGR.:	Johnnie Godahew
GRAPHIC SCALE	0 20 40 80 120
SCALE:	1" = 40'
DWG. NO.:	C-4
SHEET NO:	4
DATE:	APRIL 22, 1996
OF:	C-11
OF:	17

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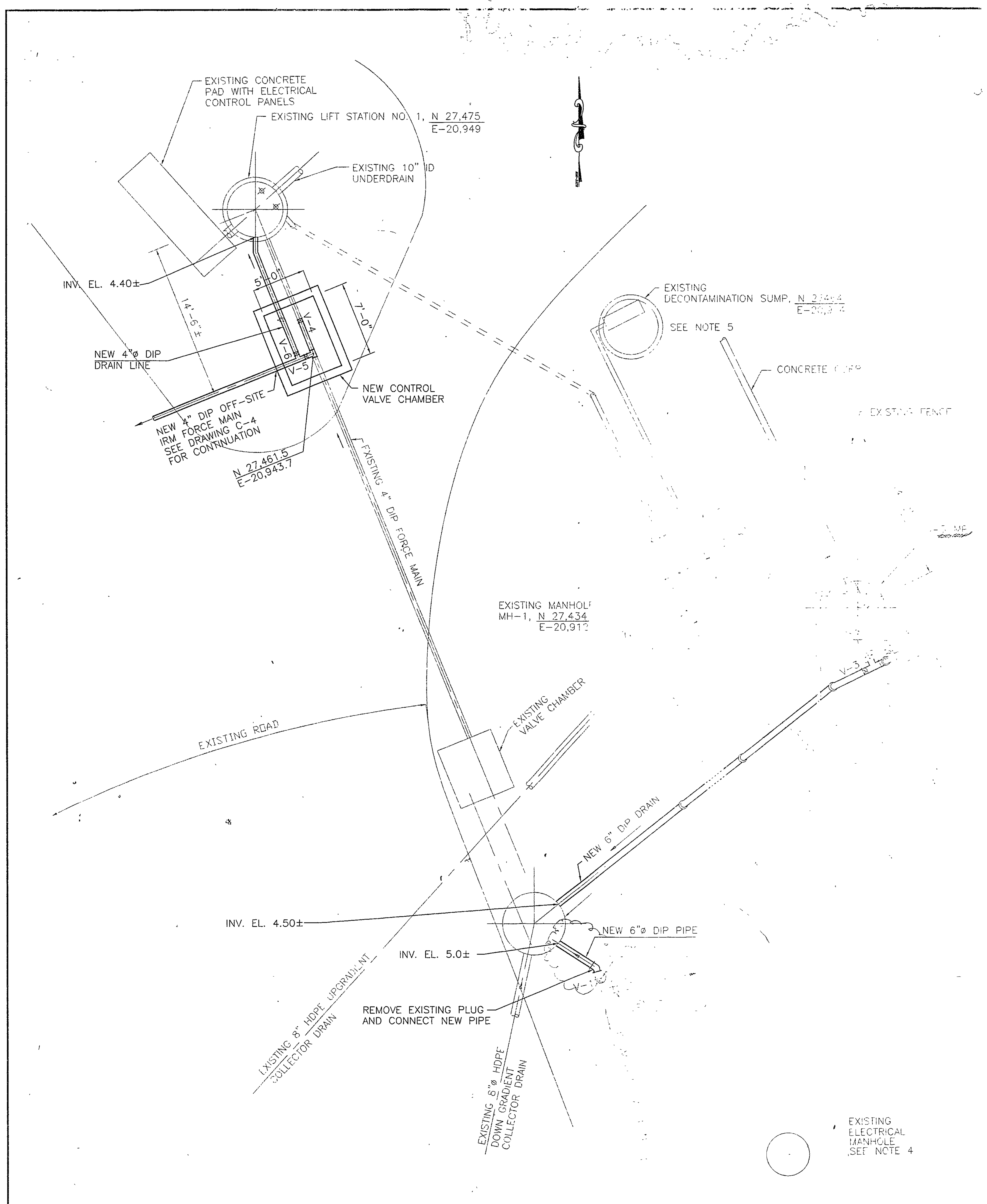
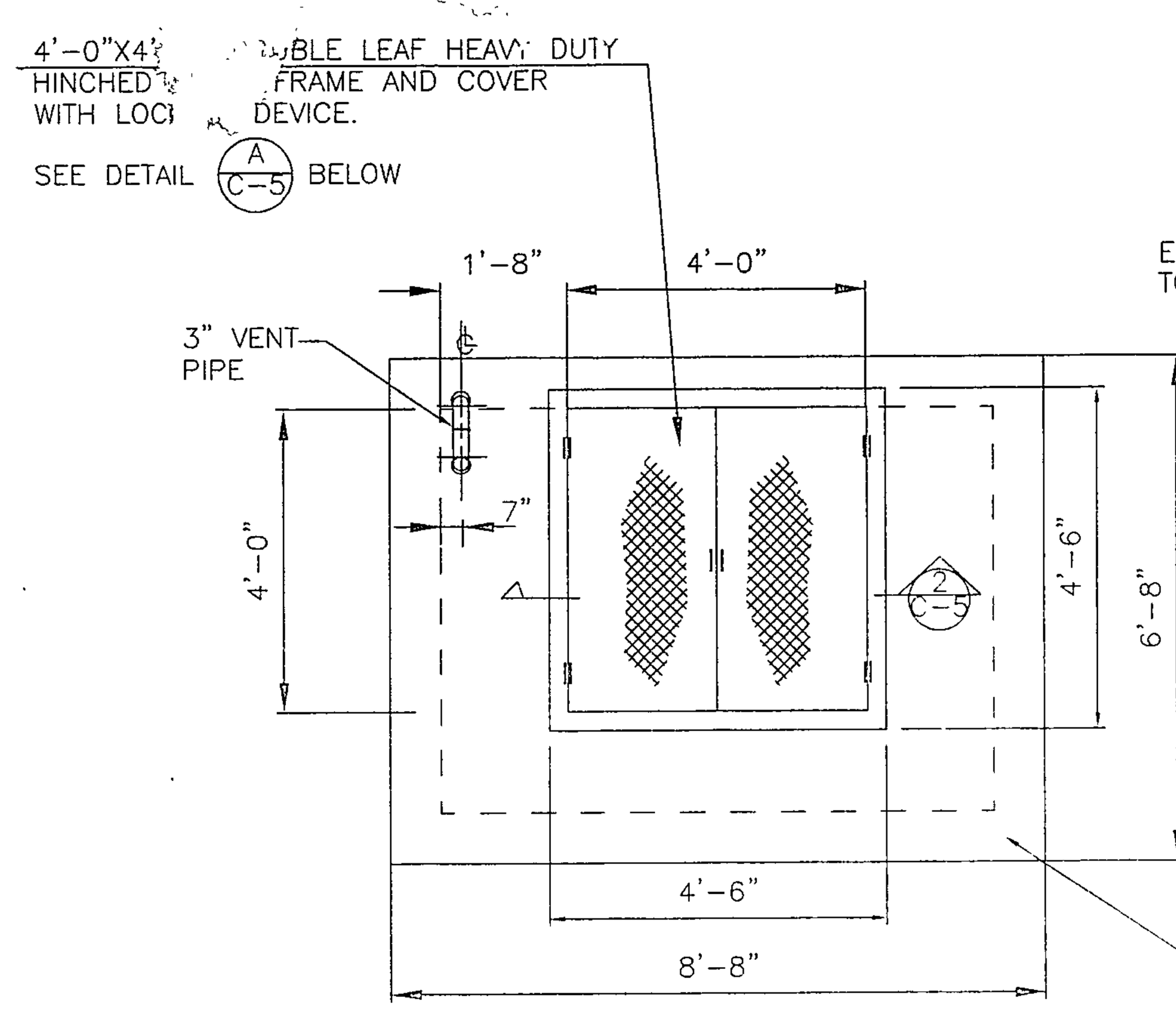


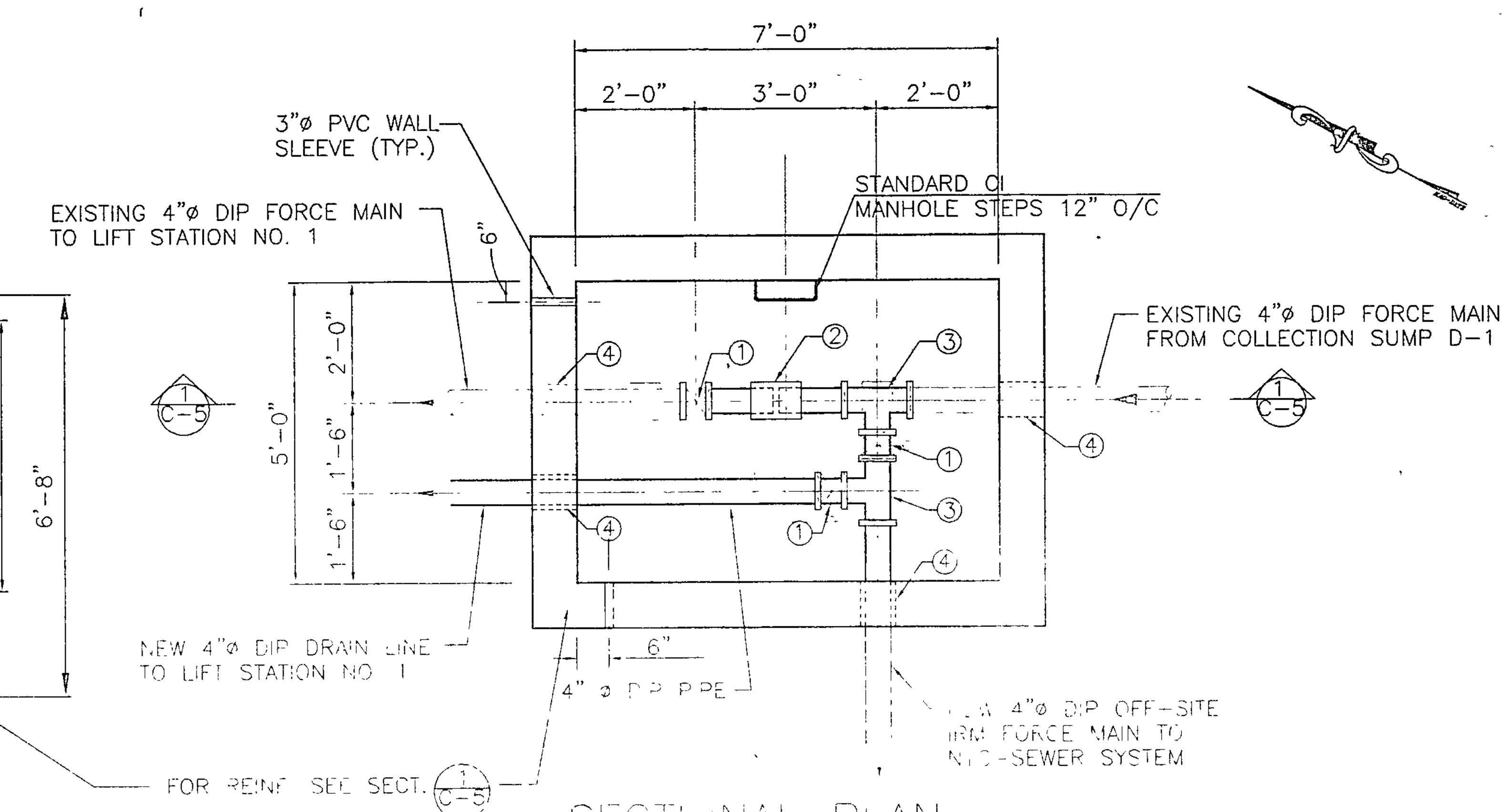
PLAN
SCALE: 3/16"=1'-0"

CONCRETE NOTES:

1. CONCRETE DESIGN MIX AND CONSTRUCTION TO CONFORM TO THE PROVISIONS OF THE AMERICAN CONCRETE INSTITUTE BUILDING CODE, NEW YORK CITY BUILDING CODE, AND NYCDEP GENERAL SPECIFICATIONS 11.
2. MINIMUM COMPRESSIVE STRENGTH OF CONCRETE TO BE 4,000 P.S.I. AT 28 DAYS, UNLESS OTHERWISE NOTED
3. REINFORCEMENT AND DOWELLING BARS TO CONSIST OF [illegible] GRADE DEFORMED BARS CONFORMING TO [illegible] ASTM 615-60.
4. CONCRETE COVER OVER MAIN REINFORCING [illegible] MINIMUM OF 2 INCHES.
5. CALCIUM CHLORIDE MAY NOT BE USED IN [illegible]

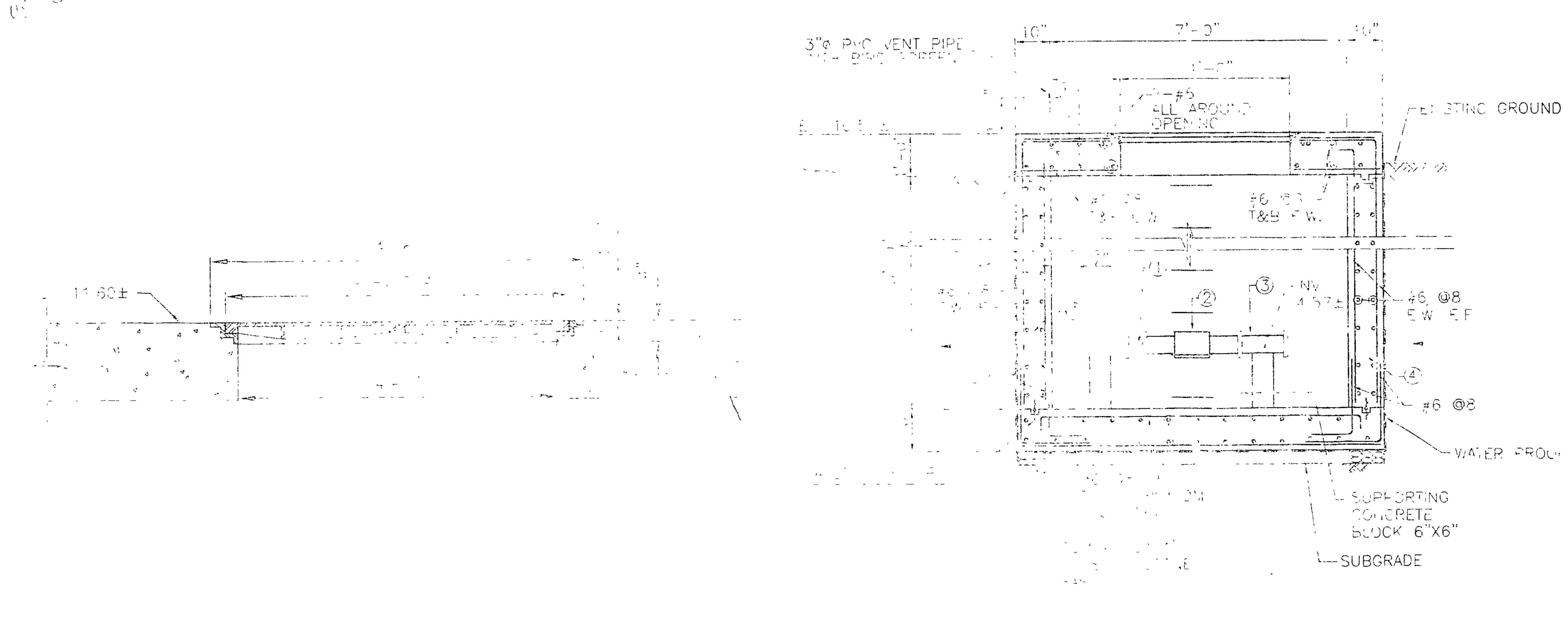


ROOF PLAN
SCALE: 1/2"=1'-0"



SECTIONAL PLAN
SCALE: 1/2"=1'-0"

1. 4"Ø BUTTERFLY VALVE WITH ELECTRICAL ACTUATOR
2. COUPLING
3. 4"X4"X4" TEE
4. SLEEVE FOR 4"Ø PIPE



SECTION
SCALE: 1/2"=1'-0"

NOTE:

DEP
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REVISIONS
CAPITAL PROJECT