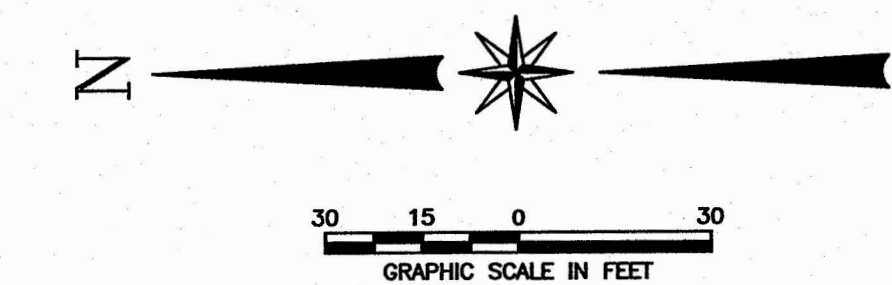
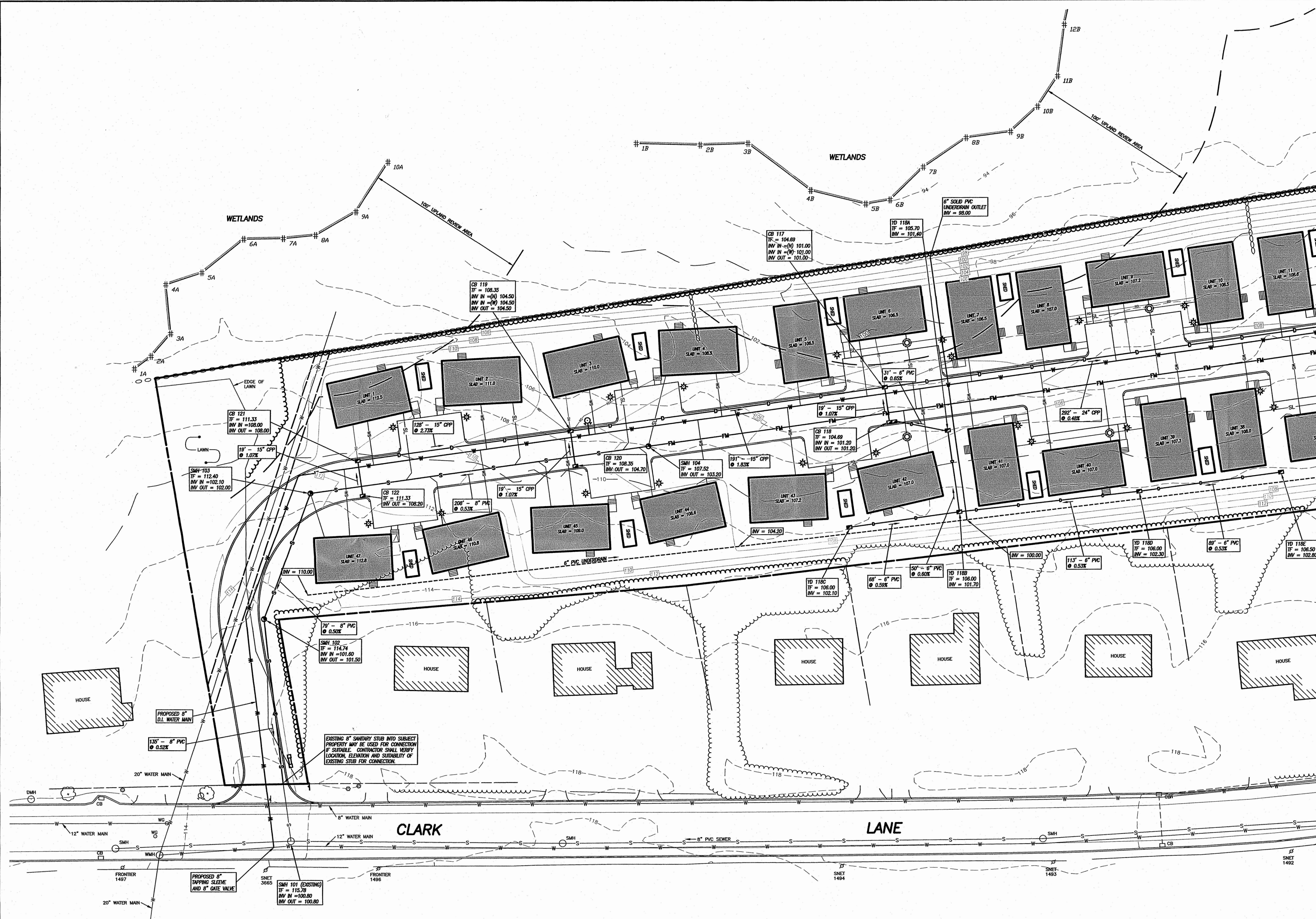
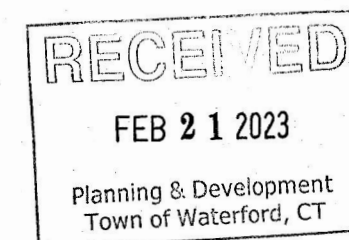


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UTILITY CONSTRUCTION NOTES:

- Gravity sanitary sewer mains shall be constructed of 8" SDR 35 PVC with rubber gasket joints.
- Water mains shall be constructed of 8" cement lined class 52 ductile iron pipe in accordance with the town of Waterford and city of New London requirements. All water mains shall be installed with 54" minimum cover.
- Roadway storm sewers shall be constructed of ADS N-12 or equivalent HDPE with a smooth wall interior.
- Roadway storm sewers shall be equipped with tee fittings to allow connection of house roof drains from units 1 through 23 where roof drains cannot be connected directly to catch basins or manholes. House roof drains for units 1 through 23 shall be connected to the roadway storm sewer system. Roof drain connections shall be made with 4" diameter (one unit) or 6" diameter (two or more units) SDR 35 PVC.
- House roof drains for units 24-47 shall be directed to yard areas to the rear of each unit. Downspout discharges shall be equipped with splash blocks to prevent localized erosion at the downspout.
- Yard drain structures designated "YD" shall be Nyloplast inline drain structures or similar.
- The low pressure sanitary force main shall be constructed of 2" Schedule 40 PVC with solvent welded joints and fittings.
- Sanitary grinder pump stations shall be Barnes EcoTRAN. Pump stations serving single units may be simplex (single pump) or duplex (double pump) systems. Pump stations serving multiple units shall be duplex systems.
- Pole mounted site lights shall be Valiant Full Cutoff fixtures, series AVPL2 by American Electric Lighting or equivalent. Fixtures shall be mounted on 7' poles to provide a 10' height between ground level and the top of the fixture. Colors shall be coordinated with the site owner. See Detail Sheet No. 5 for further information.



UTILITIES PLAN No. 1
PREPARED FOR
KINGSTOWN PROPERTIES LLC
PROPOSED AFFORDABLE HOUSING DEVELOPMENT
CLARK LANE
WATERFORD, CONNECTICUT

Provost & Rovero, Inc.
Civil Engineering • Surveying • Site Planning
Structural • Mechanical • Architectural Engineering
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Plainfield, Connecticut 06374
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REVISIONS	
DATE	DESCRIPTION
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12/5/2022	I.W. APPLICATION SUBMISSION
2/5/2023	I.W. REVIEW COMMENTS
2/21/2023	ENV. PLANNER COMMENTS
DATE: 5/14/2022 DRAWN: DJH	
SCALE: 1" = 30' DESIGN: DJH	
SHEET: 7 OF 21 CHK BY: ---	
DWG. No: Client File JOB No: 213009	

ENGINEER _____ DATE _____

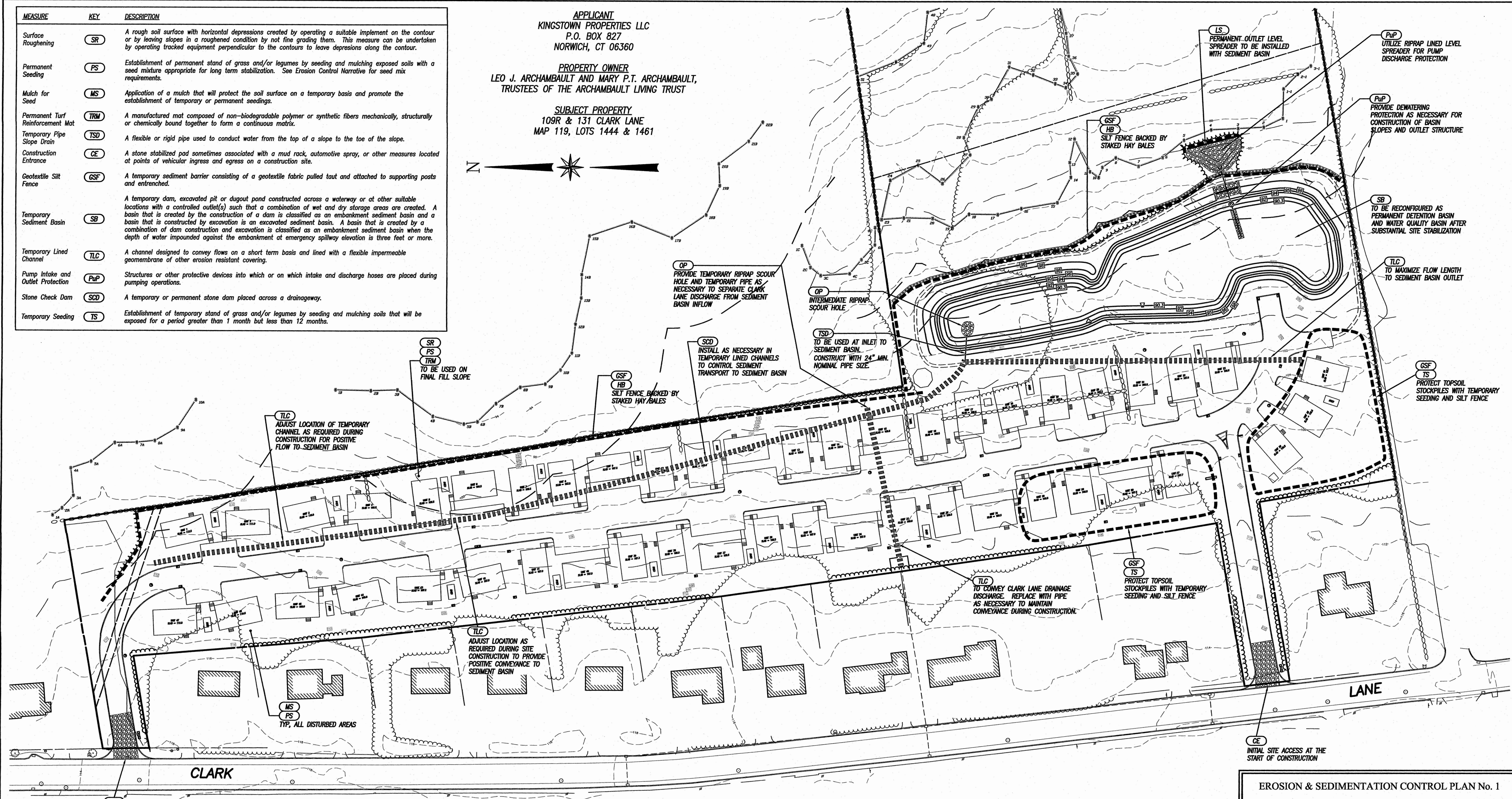
C-22-14
109R & 131 CLARK LANE
PUBLIC HEARING 01-26-23
EXHIBIT #57

MEASURE	KEY	DESCRIPTION
Surface Roughening	SR	A rough soil surface with horizontal depressions created by operating a suitable implement on the contour or by leaving slopes in a roughened condition by not fine grading them. This measure can be undertaken by operating tracked equipment perpendicular to the contours to leave depressions along the contour.
Permanent Seeding	PS	Establishment of permanent stand of grass and/or legumes by seeding and mulching exposed soils with a seed mixture appropriate for long term stabilization. See Erosion Control Narrative for seed mix requirements.
Mulch for Seed	MS	Application of a mulch that will protect the soil surface on a temporary basis and promote the establishment of temporary or permanent seedings.
Permanent Turf Reinforcement Mat	TRM	A manufactured mat composed of non-biodegradable polymer or synthetic fibers mechanically, structurally or chemically bound together to form a continuous matrix.
Temporary Pipe Slope Drain	TSD	A flexible or rigid pipe used to conduct water from the top of a slope to the toe of the slope.
Construction Entrance	CE	A stone stabilized pad sometimes associated with a mud rack, automotive spray, or other measures located at points of vehicular ingress and egress on a construction site.
Geotextile Silt Fence	GSF	A temporary sediment barrier consisting of a geotextile fabric pulled taut and attached to supporting posts and entrenched.
Temporary Sediment Basin	SB	A temporary dam, excavated pit or dugout pond constructed across a waterway or at other suitable locations with a controlled outlet(s) such that a combination of wet and dry storage areas are created. A basin that is created by the construction of a dam is classified as an embankment sediment basin and a basin that is constructed by excavation is an excavated sediment basin. A basin that is created by a combination of dam construction and excavation is classified as an embankment sediment basin when the depth of water impounded against the embankment at emergency spillway elevation is three feet or more.
Temporary Lined Channel	TLC	A channel designed to convey flows on a short term basis and lined with a flexible impermeable geomembrane or other erosion resistant covering.
Pump Intake and Outlet Protection	PuP	Structures or other protective devices into which or on which intake and discharge hoses are placed during pumping operations.
Stone Check Dam	SCD	A temporary or permanent stone dam placed across a drainageway.
Temporary Seeding	TS	Establishment of temporary stand of grass and/or legumes by seeding and mulching soils that will be exposed for a period greater than 1 month but less than 12 months.

APPLICANT
KINGSTOWN PROPERTIES LLC
P.O. BOX 827
NORWICH, CT 06360

PROPERTY OWNER
LEO J. ARCHAMBAULT AND MARY P.T. ARCHAMBAULT,
TRUSTEES OF THE ARCHAMBAULT LIVING TRUST

SUBJECT PROPERTY
109R & 131 CLARK LANE
MAP 119, LOTS 1444 & 1461

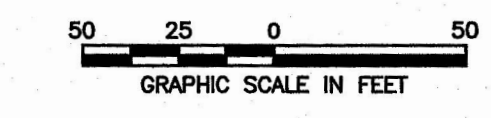


EROSION AND SEDIMENT CONTROL PLAN
CERTIFIED BY VOTE OF THE WATERFORD
PLANNING & ZONING COMMISSION

CHAIRMAN/SECRETARY _____ DATE _____

SEE STORM DRAINAGE REPORT
FOR THE DESIGN OF THE
TEMPORARY SEDIMENT BASIN

ENGINEER _____ DATE _____



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EROSION & SEDIMENTATION CONTROL PLAN No. 1

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PROPOSED AFFORDABLE HOUSING DEVELOPMENT

CLARK LANE
WATERFORD, CONNECTICUT

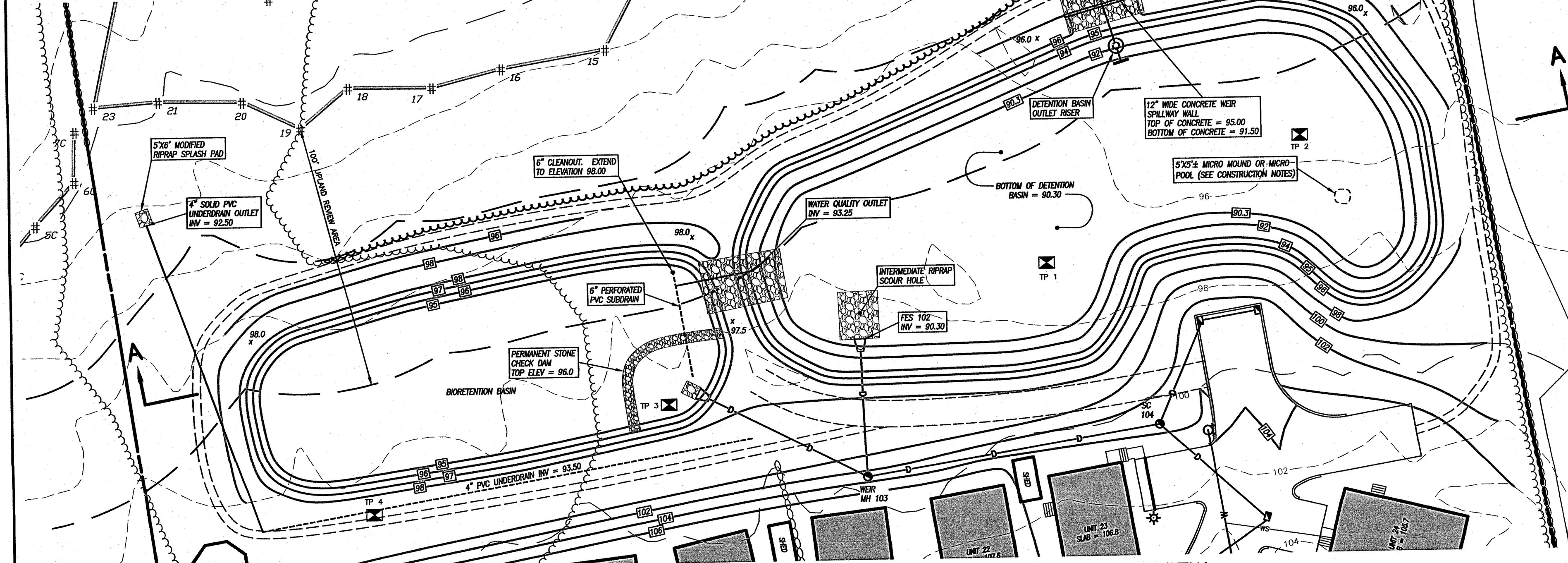
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TEST PIT OBSERVATIONS
Observed by: David J. Held, P.E., Provost & Rovers, Inc.
April 25, 2022

TEST PIT	DEPTH	SOIL PROFILE
1	0-12" 12-30" 30-96" Mottling GWT Ledge	topsoil tan sandy loam mottled loamy sand 30" seeping @ 47" N/A
2	0-12" 12-24" 24-92" Mottling GWT Ledge	topsoil tan sandy loam mottled loamy sand 24" seeping @ 54" N/A
3	0-12" 12-24" 24-100" Mottling GWT Ledge	topsoil tan sandy loam mottled sandy till 24" seeping @ 72" N/A
4	0-10" 10-22" 22-88" Mottling GWT Ledge	topsoil tan sandy loam mottled sandy till 22" seeping @ 45" N/A

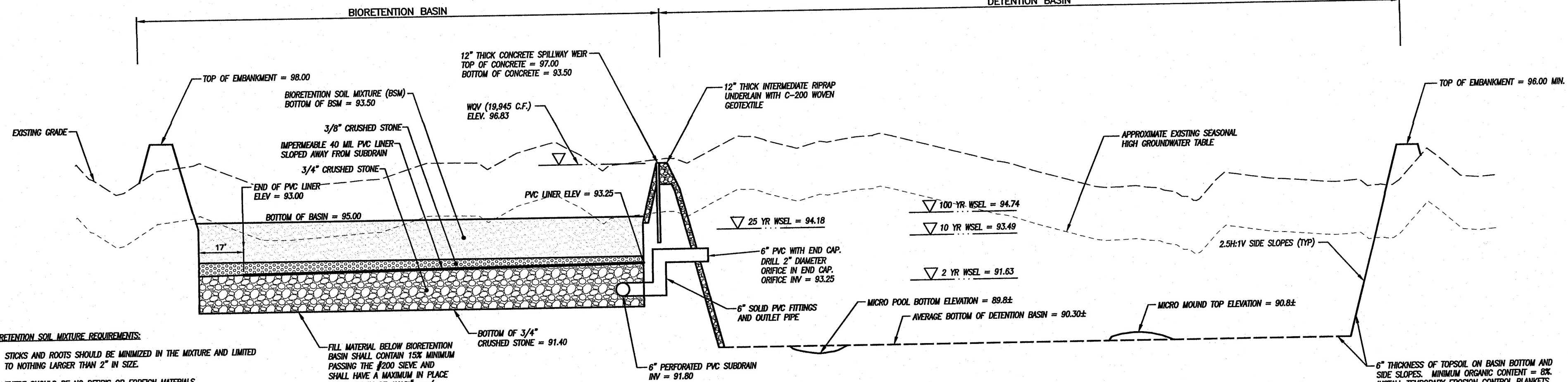


STORMWATER MANAGEMENT SYSTEM DETAIL PLAN VIEW

SCALE: 1" = 30'

DETENTION BASIN

BIORETENTION BASIN



DETENTION BASIN AND BIORETENTION BASIN CROSS SECTION A-A

NOT TO SCALE

STORMWATER BASIN SEEDING PLAN

DETENTION BASIN GROUND COVER/HERBACEOUS PLANTINGS

Elevation bottom-91: seed with "New England Wetmix" at 18 lbs./acre
Elevation 91-95: seed with "New England Wetmix" at 10 lbs./acre and turf type tall fescue at 175 lbs./acre
Elevation >95: seed with turf type tall fescue at 175 lbs./acre

BIORETENTION BASIN GROUND COVER/HERBACEOUS PLANTINGS

Elevation 95-97: seed with "Detention Basin Mix" at 18 lbs./acre and turf type tall fescue at 175 lbs./acre
Elevation >97: seed with turf type tall fescue at 175 lbs./acre

DETENTION BASIN SHRUB PLANTING PLAN

VARIETY	SIZE @ PLANTING	WETLAND STATUS	LOCATION	QUANTITY
Buttonbush (Cephalanthus occidentalis)	18"-24"	OBL	micro pool and basin bottom	20
Sweet Pepperbush (Clethra alnifolia)	18"-24"	FAC+	western bank	20
Silky Dogwood (Cornus amomum)	18"-24"	FACW	micro mound	20
Red-osier Dogwood (Cornus sericea)	18"-24"	FACW+	micro mound	20
Mountain Holly (Ilex mucronata)	18"-24"	OBL	basin bottom	20
Common Spicebush (Lindera benzoin)	18"-24"	FACW-	micro mound	20
Bayberry (Morella pensylvanica)	18"-24"	FAC	western bank	20
Rhodora (Rhododendron canadense)	18"-24"	FACW	micro mound	10
Swamp Rose (Rosa palustris)	18"-24"	OBL	micro pool and basin bottom	20

DETENTION BASIN AND BIORETENTION BASIN CONSTRUCTION NOTES:

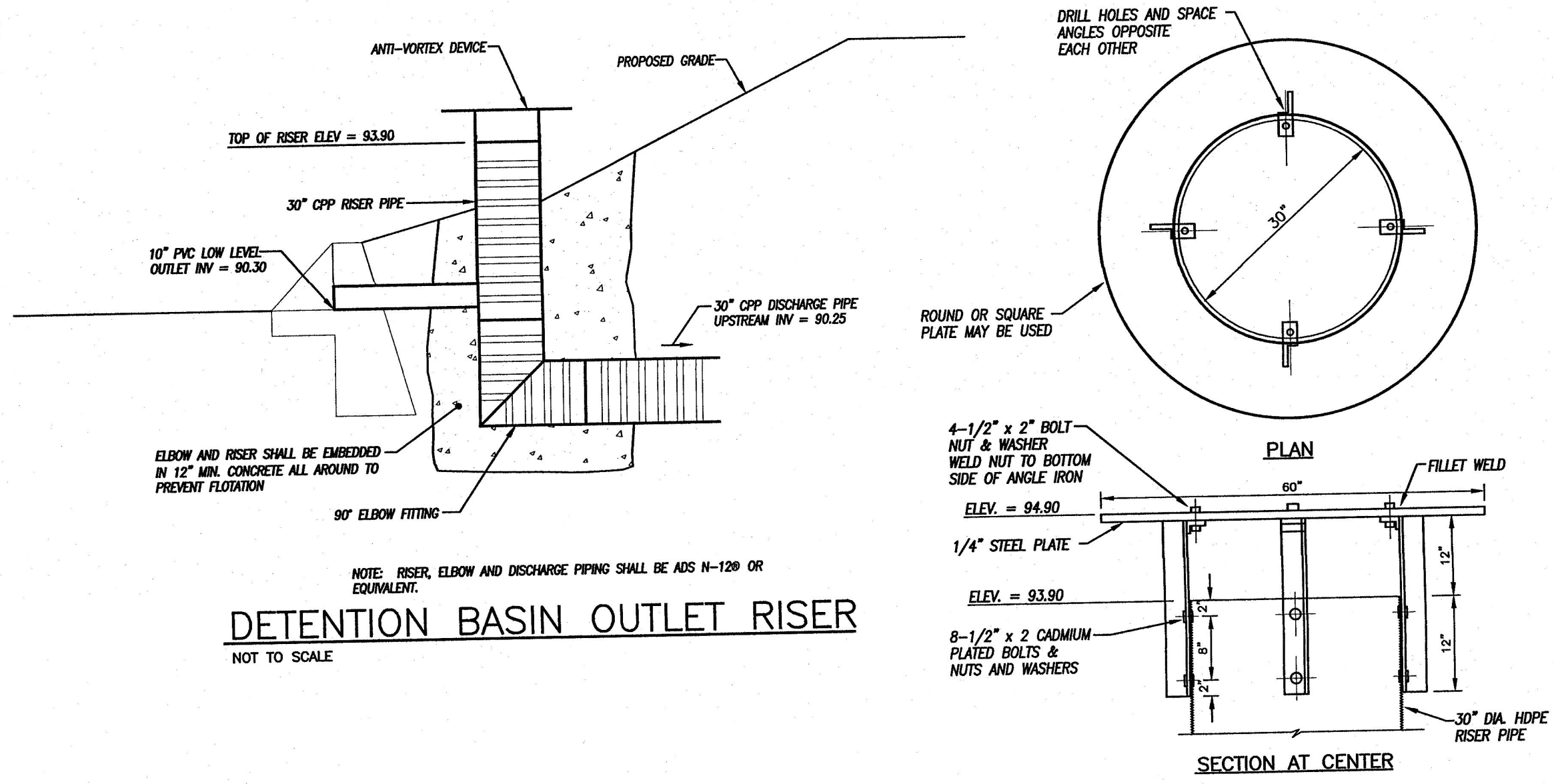
- Basin embankments shall be constructed of silty sand and/or clayey sand materials. On-site borrow material may be used if suitable deposits are found. Embankment fill shall contain at least 15% by weight of material passing the #200 sieve and not more than 50% passing the #200 sieve.
- Embankment fill shall have no stones larger than 6" in their greatest dimension. No stones larger than 3" in their greatest dimension shall be allowed within 2 feet of structures or pipes.
- All fill material shall be free of topsoil, roots, stumps, organics, frozen material and other deleterious matter.
- The contractor shall submit the results of laboratory testing certified by a professional engineer licensed in the State of Connecticut verifying that all proposed fill material meets the required specifications. Any change in source or apparent change in character of material from the same source will require additional testing to ensure conformance with the required specifications.
- All embankment material shall be compacted to 95% minimum relative compaction as determined by ASTM D1557 - Modified Proctor. The maximum loose lift thickness of embankment fill shall be 12".
- Sufficient dewatering equipment shall be provided to dewater excavations for proposed embankments, cutoff trenches and other construction.
- All topsoil, organics, roots and other deleterious matter shall be removed from the existing ground surface prior to construction of the proposed embankments. The subgrade shall be proof rolled prior to placement of fill. Any soft or yielding material shall be replaced with suitable material.
- All embankments and disturbed areas of the basin shall be permanently stabilized with 6" of topsoil, seed and mulch with the exception of the bottom of the bioretention basin. Suitable hydroseeding equipment may be used for application of seed, mulch and/or fertilizer. The seeding shall be in accordance with the Stormwater Basin Planting Plan.
- The bottom of the detention basin shall include 25 micro mounds and 25 micro pools randomly distributed across the bottom of the basin.

DETENTION BASIN AND BIORETENTION BASIN OPERATION AND MAINTENANCE NOTES:

- Upon completion of the project, the basins shall be maintained by the site owner. The contractor shall be responsible for all maintenance and inspections during the construction period.
- During the first year of operation, the basins shall be inspected on a weekly basis or within 24 hours after a rainfall event of 0.5" or greater. Any erosion of embankments or outlet areas shall be repaired promptly. Any debris shall be removed from trash racks and disposed of. Sedimentation that would interfere with proper operation of the basin shall be removed and disposed of and the area restored and stabilized as required.
- After the basins have been in operation for one year, inspections shall be performed quarterly or within 24 hours after a storm event of 4.0" or greater. Quarterly inspections shall include the following items:
 - Noxious weeds shall be removed. Perform any mowing or pruning operations required.
 - Inspect constructed embankments for any woody growth. All trees, vines and other woody plants shall be removed and voids left from their removal shall be repaired.
 - Inspect embankments for animal burrows. All burrows and voids shall be repaired immediately.
 - Accumulated sediment shall be removed from the riprap inlets and other areas to restore original design grades. Disturbed areas shall be restabilized as required after removal of sediment.
 - Inlets and outlets shall be inspected for scour damage and erosion and repaired as required.
 - Outlet structures shall be cleaned of accumulated sediment.
 - Any evidence of piping or seepage at the toe of the embankments or around inlet/outlet structures shall be investigated by a qualified professional engineer. Required repairs shall be implemented as soon as possible.

STORM DRAINAGE SYSTEM OPERATION AND MAINTENANCE NOTES:

- The stormwater conveyance system (catch basins, manholes and hydrodynamic separator) shall be inspected quarterly to determine any maintenance needs.
- Street sweeping shall be performed in early spring each year after any anticipated need for spreading of road sand. Catch basin sumps shall be cleaned of accumulated sediment concurrently with street sweeping operations.
- The hydrodynamic separator shall be cleaned of accumulated sediment at least once per year in the early spring.



DETENTION BASIN ANTI-VORTEX & TRASH RACK DEVICE

NOT TO SCALE

STONE CHECK DAM

NOT TO SCALE

DETAIL SHEET No. 2

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