EAST SHORE MIDDLE SCHOOL

RAIN GARDEN IMPLEMENTATION PROJECT 240 CHAPEL STREET, MILFORD NEW HAVEN COUNTY, CONNECTICUT

PROJECT DESCRIPTION:

TWO RAIN GARDENS ARE TO BE IMPLEMENTED IN THE NORTHERN GRASSED AREA OF THE MIDDLE SCHOOL TO COLLECT STORMWATER RUNOFF FROM THE ROOF.

LIST OF DRAWINGS:

GENERAL NOTES:

SHEET NAME	TITLE
COVER	COVER SHEET
P-1	EXISTING CONDITIONS AND DEMOLITION PLAN
P-2	PROPOSED SITE PLAN
P-3	PLANTING PLAN
DT-1	RAIN GARDEN DETAILS
DT-2	PLANTING AND LANDSCAPING DETAILS
DT-3	CONCEPTUAL DESIGN

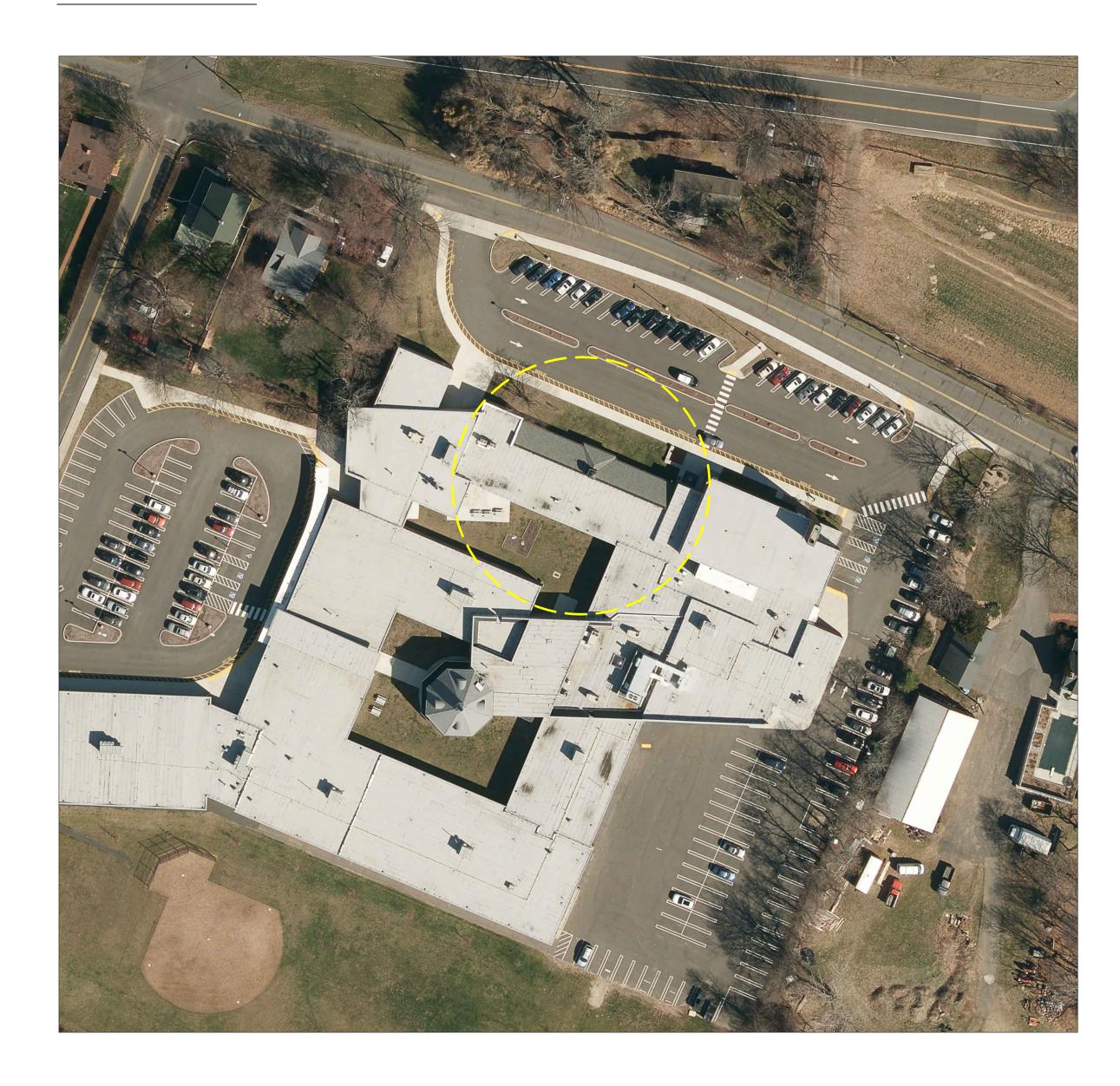
LOCATION MAP:

ELEVATION DATA OBTAINED FROM NOAA DIGITAL COASTAL LIDAR. ELEVATION ARE HEIGHT ABOVE MEAN SEA LEVEL SET BY NAVD1988.

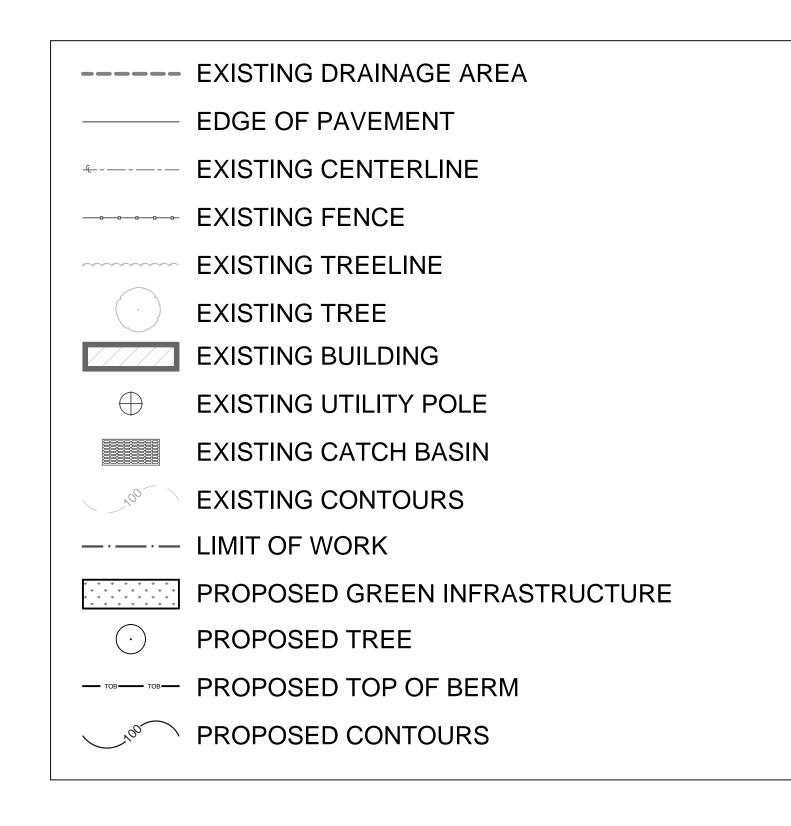
UTILITY MARKOUT NEEDS TO BE CONDUCTED PRIOR TO MOBILIZATION. NJ ONE CALL: 811 OR 800-272-1000

EXISTING SOILS ARE HSG B BASED ON THE NRCS WEB SOIL SURVEY WHICH HAVE MODERATE INFILTRATION (websoilsurvey.sc.egov.usda.gov).

ANY OVERHEAD AND UNDERGROUND UTILITIES SHOWN ARE FROM FIELD OBSERVATIONS AND ARE NOT A COMPLETE REPRESENTATION. A



LEGEND:



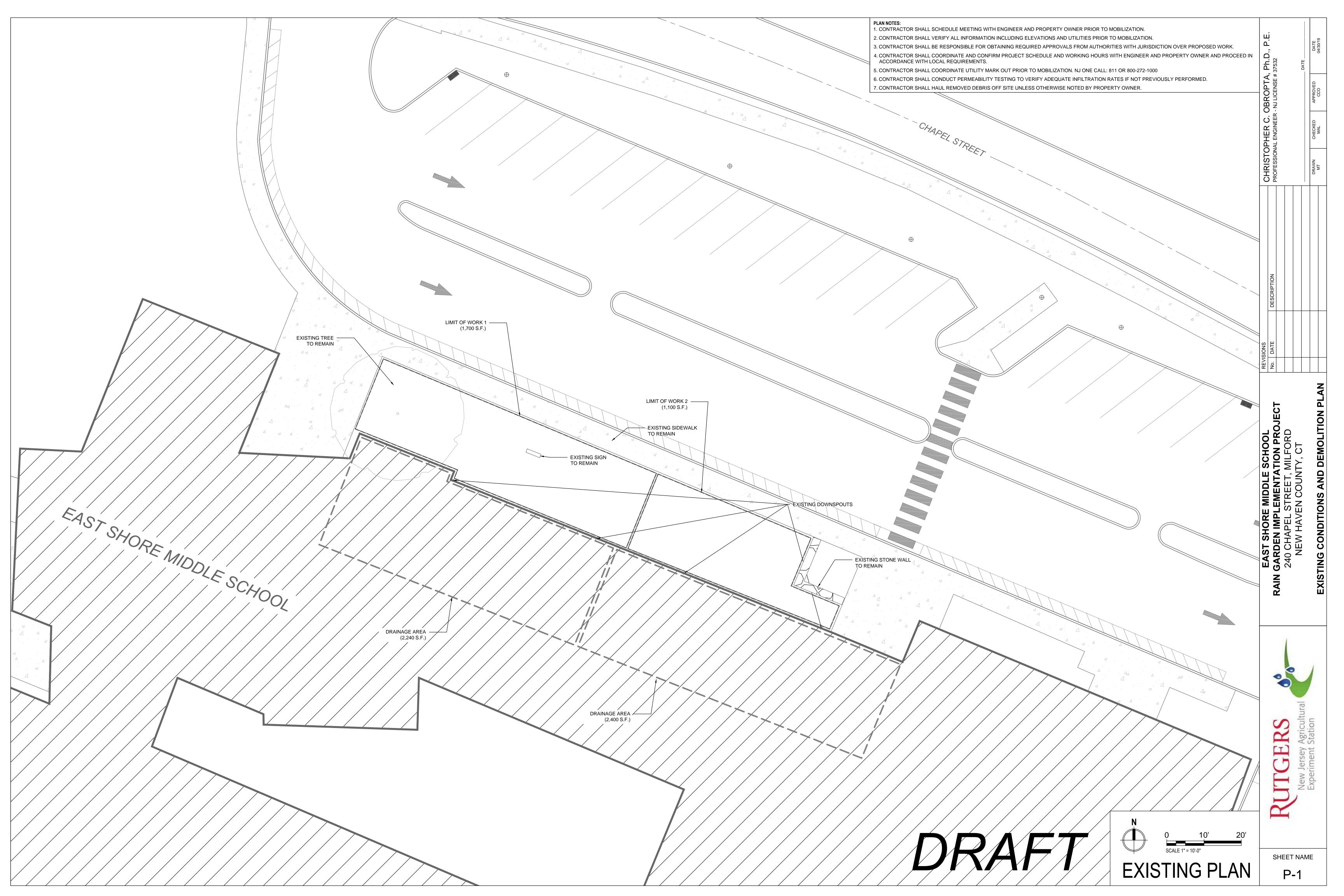


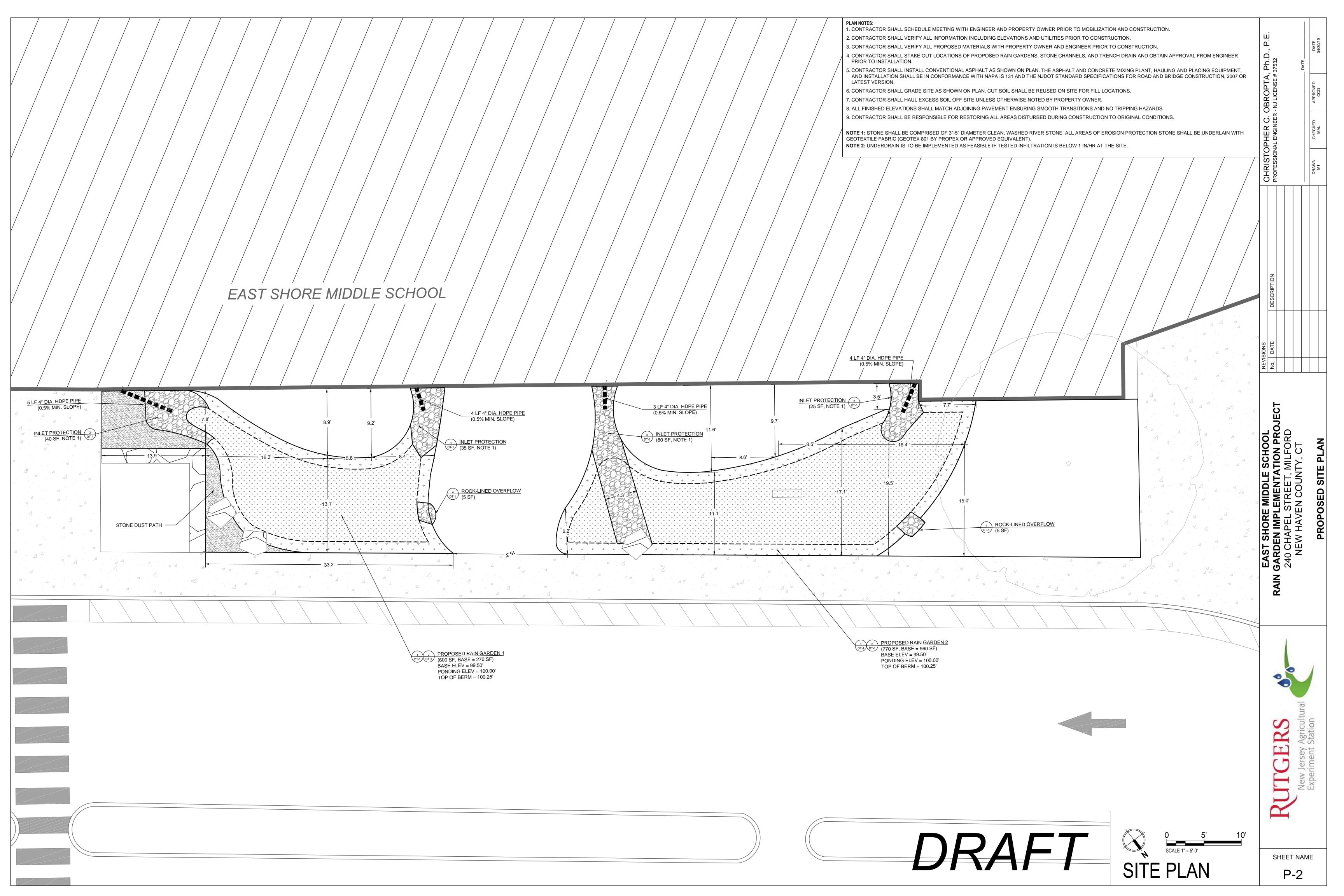




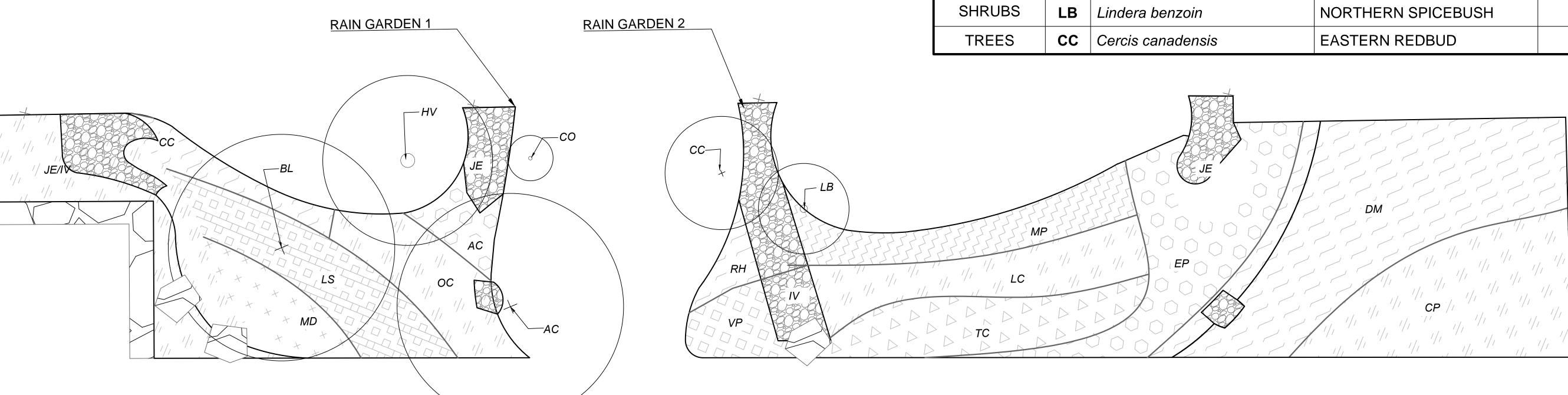
DRAFT

SHEET NAME COVER

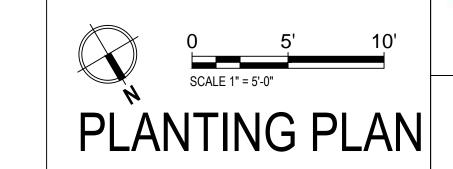




PLANT SPECIES					
TYPE	KEY	BOTANICAL NAME	COMMON NAME	QUANTITY	SIZE
			RAIN GARDEN 1		
PERENNIALS	AC	Aquilegia canadensis	RED COLUMBINE	20	1 QUART
	СС	Cornus canadensis	CREEPING DOGWOOD	20	1 QUART
	JE	Juncus effusus	SOFT RUSH	50	1 QUART
	IV	Iris versicolor	BLUG FLAG	35	1 QUART
	LS	Lobelia siphilitica	BLUE CARDINAL FLOWER	50	1 QUART
	MD	Monarda didyma	SCARLET BEEBALM	25	1 QUART
	ОС	Osmunda cinnamomea	CINNAMON FERN	35	1 QUART
SHRUBS	СО	Cephalanthus occidentalis	BUTTONBUSH	1	1 GAL.
	HV	Hamamels virginiana	AMERICAN WITCH HAZEL	1	1 GAL.
TREES	AC	Amelancher canadensis	SERVICEBERRY	1	2"-3" CAL
	BL	Betula nigra	RIVER BIRCH	1	2"-3" CAL
			RAIN GARDEN 2		
PERENNIALS	СР	Carex pensylvanica	PENNSYLVANIA SEDGE	75	1 QUART
	DM	Dryopteris marginalis	MARGINAL WOOD FERN	130	1 QUART
	EP	Eupatorium perfoliatum	COMMON BONESET	50	1 QUART
	JE	Juncus effusus	SOFT RUSH	50	1 QUART
	IV	Iris versicolor	BLUG FLAG	30	1 QUART
	LC	Lobelia cardinalis	CARDINAL FLOWER	50	1 QUART
	MP	Monarda punctata	SPOTTED BEEBALM	40	1 QUART
	RH	Rudbeckia hirta	BLACK EYED SUSANS	10	1 QUART
	тс	Tiarella cordifolia	HEARTLEAF FOAMFLOWER	50	1 QUART
	VP	Viola pallens	VIOLA MACLOSKEYI	10	1 QUART
SHRUBS	LB	Lindera benzoin	NORTHERN SPICEBUSH	1	1 GAL.
TREES	CC	Cercis canadensis	EASTERN REDBUD	1	2"-3" CAL



DRAFT

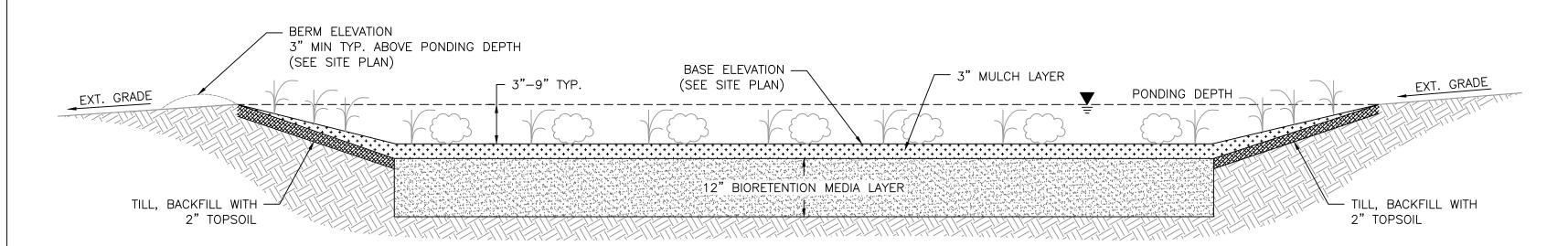


10'

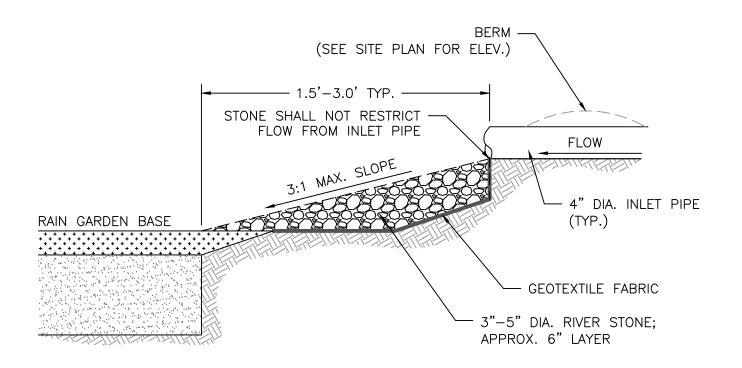
SHEET NAME

P-3

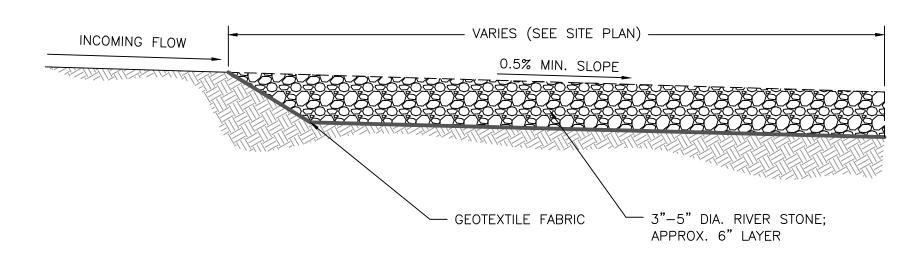
1 RAIN GARDEN EXCAVATION SECTION N.T.S.



RAIN GARDEN CROSS—SECTION N.T.S.









CONSTRUCTION NOTES:

- 1. THE CONTRACTOR SHALL VERIFY ALL INFORMATION PRIOR TO EXCAVATION INCLUDING ELEVATIONS AND LOCATIONS OF EXISTING UTILITIES.
- 2. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY IF ANY FIELD CONDITIONS DIFFER MATERIALLY FROM THOSE REPRESENTED ON THESE DRAWINGS AND THE SPECIFICATIONS OR IF, IN THE CONTRACTOR'S OPINION, SAID CONDITIONS CONFLICT WITH THE DESIGNS SHOWN HEREON.
- 3. THE ENGINEER SHALL INSPECT ALL PLANTING BED AREAS BEFORE MULCHING TO ENSURE THAT ADEQUATE DRAINAGE EXISTS. IF ANY AREAS TO BE MULCHED SHOW EVIDENCE
- OF POOR DRAINAGE, THE CONTRACTOR SHALL TAKE CORRECTIVE ACTION.
 4. THE CONTRACTOR SHALL AVOID DISTURBING ALL EXISTING TREES. ANY DISTURBANCE TO TREES OR TREE ROOTS MUST BE COORDINATED WITH THE PROPERTY OWNER.
- 5. DIMENSIONS AND SHAPE WILL VARY, REFER TO SITE PLAN.
 6. RIVER STONE PROTECTION DIMENSIONS ARE TYPICAL AND MAY VARY PER SITE. CONSULT THE ENGINEER AND SITE PLAN FOR DIMENSIONS ON A PER SITE BASIS.
- 7. RIVER STONE PROTECTION SHALL SLOPE TO RAIN GARDEN BASE.
- 8. REFER TO SITE PLAN TO DETERMINE OUTLET TYPE (ROCK-LINED OVERFLOW OR DRAINTECH RISER).
 9. REFER TO SITE PLAN FOR ALL ELEVATIONS AND INVERTS.
- 10. THE CONTRACTOR SHALL EXCAVATE 15" LOWER THAN THE BASE ELEVATION SHOWN ON THE SITE PLANS. THE SLOPES OF THE RAIN GARDEN SHALL BE AT A 3:1 MAXIMUM.

 11. THE SUBGRADE OF THE RAIN GARDEN SHALL BE LEVEL TO ENSURE PROPER DRAINAGE. CONTRACTOR SHALL OBTAIN ENGINEER APPROVAL PRIOR TO BACKFILLING WITH 12" OF
- BIORETENTION MEDIA.

 12. THE CONTRACTOR SHALL INSTALL OVERFLOW IF SPECIFIED IN SITE PLANS PRIOR TO BACKFILLING WITH BIORETENTION MEDIA.
- 13. THE BIORETENTION LAYER SHALL BE LEVEL TO ENSURE PROPER DRAINAGE. CONTRACTOR SHALL OBTAIN ENGINEER APPROVAL PRIOR TO SPREADING MULCH AND PLANTING.
- 14. INLET AND OUTLET PROTECTION SHALL BE UNDERLAIN WITH GEOTEXTILE FABRIC.
- 15. INLETS AND OUTLETS SHALL NOT INHIBIT THE FLOW OF WATER FROM THE STREET. THE RIVER STONE SHALL BE PLACED BELOW THE BOTTOM OF THE PIPE.
- 16. THE CONTRACTOR SHALL TILL THE BERM SECTION AND BACKFILL WITH TOPSOIL.
 17. ALL DISTURBED AREAS EXCLUSIVE OF RAIN GARDEN AND SLOPED BERM SHALL BE RESTORED TO ORIGINAL CONDITIONS BY CONTRACTOR.
- 18. THE CONTRACTOR SHALL HAVE A PRE—CONSTRUCTION MEETING WITH THE PROJECT ENGINEER PRIOR TO ANY WORK ON SITE.

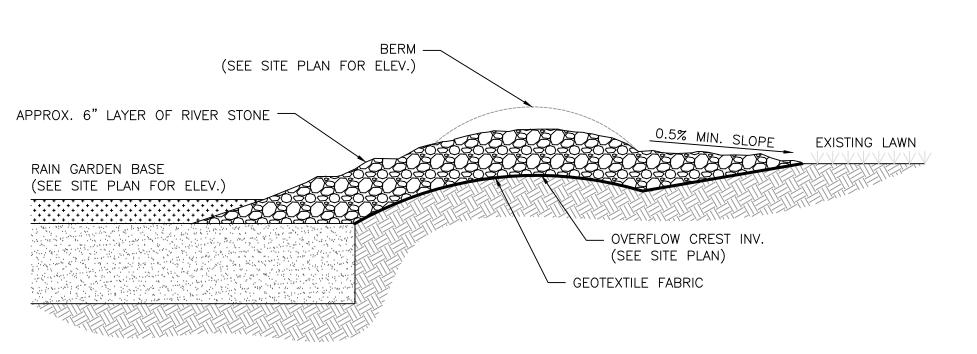
 19. CONTRACTOR SHALL PERFORM REQUIRED TESTING TO DETERMINE SOIL PERMEABILITY AND SEASONAL HIGH WATER TABLE ELEVATION AT THE SITE TO VERIFY INFILTRATION CAPABILITIES. TESTING SHALL BE DONE PRIOR TO EXCAVATION AND INSTALLATION OF THE PROPOSED PROJECTS. PROJECT ENGINEER SHALL BE PRESENT DURING TESTING AND

SPECIFICATIONS:

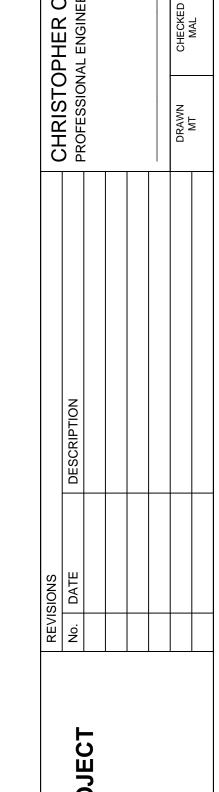
SHALL BE INFORMED OF THE RESULTS.

- 1. MAX COVER OVER TOP OF PIPES IS 4 FT. CONTACT ADS IF OTHERWISE GREATER.
- 2. THE APPROVAL OF MATERIALS AND MIXING OF SAND, COMPOST, AND SOIL SHALL BE DONE UNDER THE SUPERVISION OF THE PROJECT ENGINEER/LANDSCAPE ARCHITECT.
 BIORETENTION MEDIA SHALL CONSIST OF 70% SAND AND 30% COMPOST MIXTURE.
- 3. SAND SHALL AT THE MINIMUM CONFORM TO THE SIEVE ANALYSIS FOR CONCRETE AGGREGATE SAND (ASTM C-33). USGA TEE/GREEN SIEVE GRADATION MIX IS PREFERABLE WHERE AVAILABLE.
- 4. UNDERLYING SOILS SHALL BE TILLED/SCARIFIED PRIOR TO SPREADING/MIXING OF BIORETENTION MEDIA.

 5. ALL BIORETENTION MEDIA SHALL BE BLACED FROM THE SIDES OF THE FACILITIES AND IN NO EVENT SHALL ANY TRACKED OR WHEELED FOLLIBMENT BE REPMITTED TO CRO
- 5. ALL BIORETENTION MEDIA SHALL BE PLACED FROM THE SIDES OF THE FACILITIES, AND IN NO EVENT SHALL ANY TRACKED OR WHEELED EQUIPMENT BE PERMITTED TO CROSS THE RAIN GARDEN.
- 6. RAIN GARDEN SHALL BE CONSTRUCTED TO DIMENSIONS INDICATED ON THE SITE PLAN.
- 7. 3-5 INCH DELAWARE RIVER STONE SHALL BE USED FOR STONE CHANNEL AND INLET/OUTLET PROTECTION.
- 8. NON-DYED, TRIPLE-SHREDDED HARDWOOD MULCH SHALL BE USED.
 9. PLANTING OF RAIN GARDEN AND SLOPED BERM SHALL BE COMPLETED AS INDICATED ON THE SITE PLAN.
- 10. THE CONTRACTOR SHALL PERFORM ALL WORK IN CONFORMANCE WITH THE NJDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2007 OR LATEST VERSION.







EAST SHORE MIDDLE SCHOOL
RAIN GARDEN IMPLEMENTATION PRC
240 CHAPEL STREET, MILFORD
NEW HAVEN COUNTY, CT
RAIN GARDEN DETAILS



RUTGERS
New Jersey Agricultura
Experiment Station

SHEET NAME

OPEN LAWN AND TURF AREAS

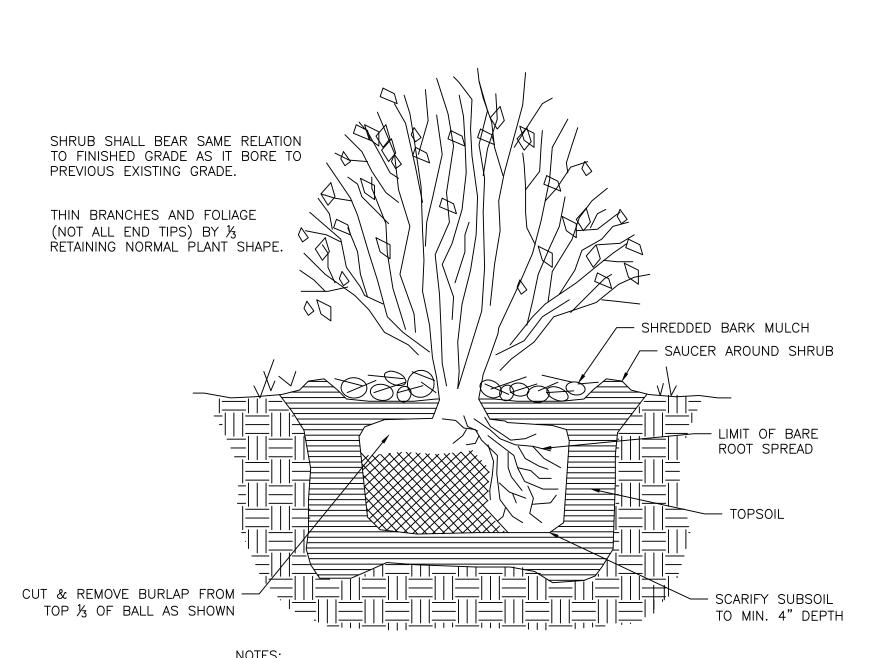
1. SEED ALL REMAINING PARK AREAS WITH TURF TYPE FALL FESCUE AND PERENNIAL RYEGRASS BLEND (LOFTS — SUMMER STRESS MIX II OR APPROVED EQUIVALENT). INSTALL AT A RATE OF 350 LBS. PER ACRE PER MANUFACTURERS SPECIFICATIONS.

TOPSOILING, SEEDING AND MULCHING NOTES

- 1. ANY UNDISTURBED AREA ON WHICH ACTIVITY HAS CEASED AND WHICH WILL REMAIN EXPOSED FOR MORE THAN 10 DAYS MUST BE SEEDED AND MULCHED IMMEDIATELY. DURING NON—GERMINATING PERIODS, MULCH MUST BE APPLIED AT THE REQUIRED RATES. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE REDISTURBED WITHIN 1 YEAR SHALL BE SEEDED AND MULCHED WITH A QUICK GROWING TEMPORARY SEEDING MIXTURE AND MULCH. DISTURBED AREAS WHICH ARE EITHER AT FINISHED GRADE OR WILL NOT BE REDISTURBED WITHIN 1 YEAR MUST BE SEEDED AND MULCHED WITH A PERMANENT SEED MIXTURE AND MULCH.
- 2. DIVERSIONS, CHANNELS, SEDIMENTATION BASINS, SEDIMENT TRAPS, AND STOCKPILES MUST BE SEEDED AND MULCHED IMMEDIATELY.
- 3. GRADED AREAS SHALL BE TEMPORARILY SEEDED AND MULCHED IMMEDIATELY FOLLOWING EARTH MOVING PROCEDURES. TEMPORARY SEED SHALL BE ANNUAL RYE GRASS APPLIED AT A RATE OF 3 LBS. PER 1000 SQ. FT.
- 4. AFTER SEEDING, HAY OR STRAW MULCH MUST BE APPLIED AT A RATE OF AT LEAST 3.0 TONS PER ACRE. MULCH SHALL BE ANCHORED BY EITHER CRIMPING WITH A COULTER IMPLEMENT, OR BY STAPLING BIODEGRADABLE NETTING TO THE SURFACE.
- 5. SITE PREPARATION TO UPLAND AREAS: APPLY 1 TON OF AGRICULTURAL—GRADE LIMESTONE PER ACRE PLUS 10-20-10 FERTILIZER AT THE RATE OF 500 LB. PER ACRE. WORK IN WHERE POSSIBLE. SEEDING OF DISTURBED UPLAND AREAS (BEYOND LIMITS OF RIPARIAN ENHANCEMENT AREA) TO BE DONE USING MIX OF FINE FESCUE AT 35 LBS/ACRE (PURE LIVE SEED) PLUS PERENNIAL RYEGRASS AT 15 LBS/ACRE (PURE LIVE SEED).
- 6. TOPSOIL SHALL BE A CLEAN FRIABLE LOAM WITH SUFFICIENT ORGANIC CONTENT (2.75%) TO PROMOTE PLANT VIGOR. AMENDMENTS SHALL BE ADDED AS NEEDED TO IMPROVE DEFICIENT SOILS. TOPSOIL SHALL BE RETURNED AT A LOOSE DEPTH OF FIVE INCHES TO ALLOW FOR SETTLEMENT.
- 7. ESTABLISH PERMANENT SEEDING AS SOON AS POSSIBLE AFTER FINAL GRADING IS COMPLETE. UNLESS OTHERWISE INDICATED, PERMANENT SEEDING SHALL BE SEED MIXTURE SPECIFIED IN TABLE.
- 8. SEE TABLES FOR SEED SPECIES MIXTURE AND APPLICATION RATES.
- 9. SEED MIXES ARE AVAILABLE AT ERNST CONSERVATION SEEDS IN MEADVILLE, PA. WEBSITE: WWW.ERNSTSEED.COM OR PHONE: 1-800-873-3321.
- 10. NATIVE SHRUBS AND HERBACEOUS PLUGS ARE AVAILABLE AT PINELANDS NURSERY AND SUPPLY, COLUMBUS NJ. WEBSITE: WWW.PINELANDSNURSERY.COM OR PHONE 1-800-667-2729

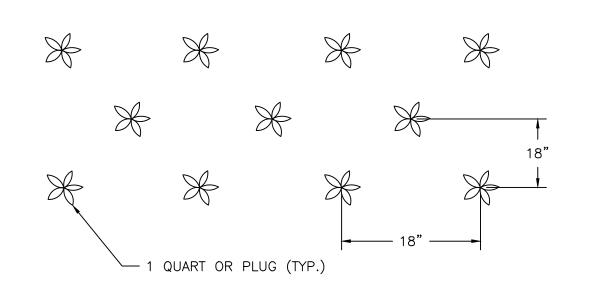
GENERAL LANDSCAPING NOTES

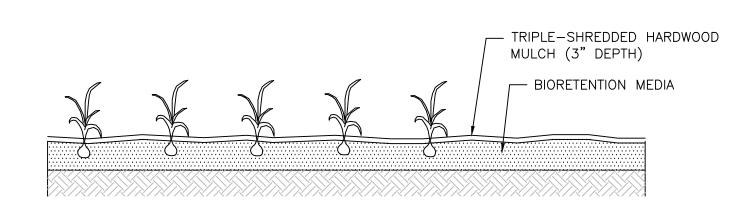
- 1. ALL PLANT MATERIALS SHALL CONFIRM TO THE AMERICAN ASSOCIATION OF NURSERYMEN'S AMERICAN STANDARD FOR NURSERY STOCK (LATEST EDITION)
- 2. INSPECTION OF PLANTING BEDS THE LANDSCAPE ARCHITECT SHALL INSPECT ALL PLANTING AREAS BEFORE ANY TOPSOILING OR PLANTING IS BEGUN TO ENSURE THAT ADEQUATE DRAINAGE EXISTS. IF ANY AREAS TO BE LANDSCAPED SHOW EVIDENCE OF POOR DRAINAGE, THE LANDSCAPE ARCHITECT SHALL NOTIFY THE OWNER IMMEDIATELY FOR CORRECTIVE ACTION
- 3. THE LANDSCAPE ARCHITECT SHALL APPROVE ALL PLANT MATERIAL AND STAKED PLANT LOCATIONS PRIOR TO INSTALLATION.
- 4. ALL TREES, SHRUBS, AND GROUNDCOVER SHALL BE PLACED IN CONTINUOUS MULCHED BEDS 4" IN DEPTH. MUCH SHALL BE TRIPLE SHREDDED HARDWOOD.
- 5. ALL TREES, SHRUBS, AND GROUNDCOVER SHALL BE AS SPECIFIED AND SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS AND COMMENTS NOTED ON THE DRAWINGS.
- 6. TOPSOIL SHALL BE PROVIDED BY THE LANDSCAPE CONTRACTOR FOR PLANTING ACCORDING TO THE PLANS AND DETAILS.
- 7. PREPARED TOPSOIL FOR BACKFILLING AROUND TREE BALLS SHALL BE A MIXTURE OF VOLUME OF THE FOLLOWING MATERIALS IN QUANTITIES SPECIFIED: 沒 COMPOST, 沒 TOPSOIL
- 8. ALL HERBACEOUS PLUG PLANTINGS SHALL BE MINIMUM 3 INCH DEPTH. PLUGS SHALL BE PLANTED 1 FOOT O.C. AS INDICATED ON PLAN.



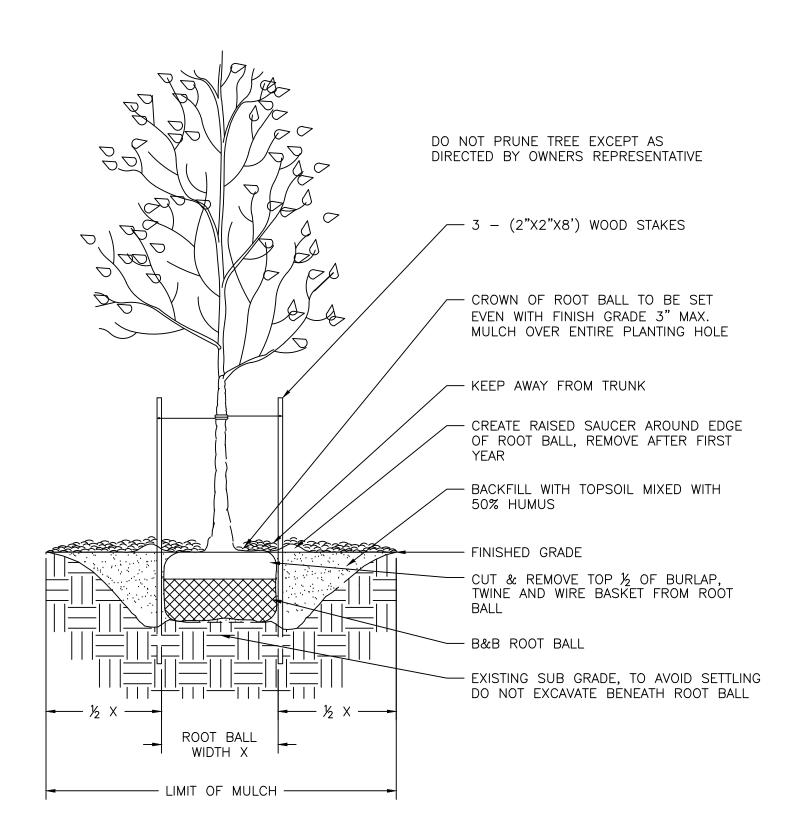
1. DEER PROTECTION REQUIRED AROUND SHRUB PLANTINGS.











NOTES:

1. DO NOT DAMAGE MAIN ROOTS OR ROOT BALL WHEN INSTALLING TREE STAKE.

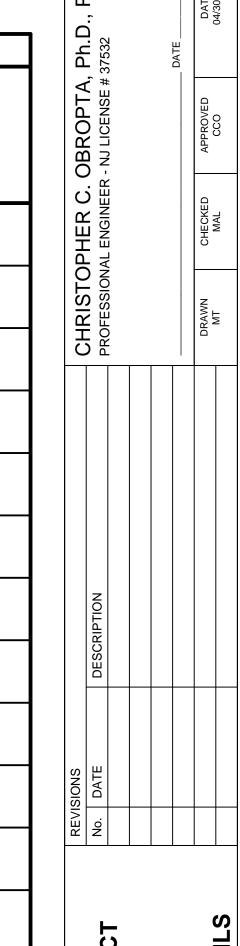
2. WATER THOROUGHLY AFTER INSTALLATION.

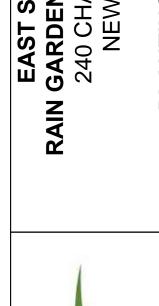
3. REMOVE SAUCER AND STAKES TWO YEARS OR LESS AFTER INSTALLATION.

4. CONTRACTOR IS NOT TO USE TREE WRAP.



PLANTING SCHEDULE									
PLANT SPECIES									
TYPE	KEY	BOTANICAL NAME	COMMON NAME	TOTAL QUANTITY	SIZE				
PERENNIALS	AC	Aquilegia canadensis	RED COLUMBINE	20	1 QUART				
	СС	Cornus canadensis	CREEPING DOGWOOD	20	1 QUART				
	СР	Carex pensylvanica	PENNSYLVANIA SEDGE	75	1 QUART				
	DM	Dryopteris marginalis	MARGINAL WOOD FERN	130	1 QUART				
	EP	Eupatorium perfoliatum	COMMON BONESET	50	1 QUART				
	JE	Juncus effusus	SOFT RUSH	100	1 QUART				
	IV	Iris versicolor	BLUG FLAG	65	1 QUART				
	LC	Lobelia cardinalis	CARDINAL FLOWER	50	1 QUART				
	LS	Lobelia siphilitica	BLUE CARDINAL FLOWER	50	1 QUART				
	MD	Monarda didyma	SCARLET BEEBALM	25	1 QUART				
	MP	Monarda punctata	SPOTTED BEEBALM	40	1 QUART				
	ос	Osmunda cinnamomea	CINNAMON FERN	35	1 QUART				
	RH	Rudbeckia hirta	BLACK EYED SUSANS	10	1 QUART				
	тс	Tiarella cordifolia	HEARTLEAF FOAMFLOWER	50	1 QUART				
	VP	Viola pallens	VIOLA MACLOSKEYI	10	1 QUART				
SHRUBS	со	Cephalanthus occidentalis	BUTTONBUSH	1	1 GAL.				
	HV	Hamamels virginiana	AMERICAN WITCH HAZEL	1	1 GAL.				
	LB	Lindera benzoin	NORTHERN SPICEBUSH	1	1 GAL.				
TREES	AC	Amelancher canadensis	SERVICEBERRY	1	2"-3" CAL.				
	BL	Betula nigra	RIVER BIRCH	1	2"-3" CAL.				
	СС	Cercis canadensis	EASTERN REDBUD	1	2"-3" CAL.				

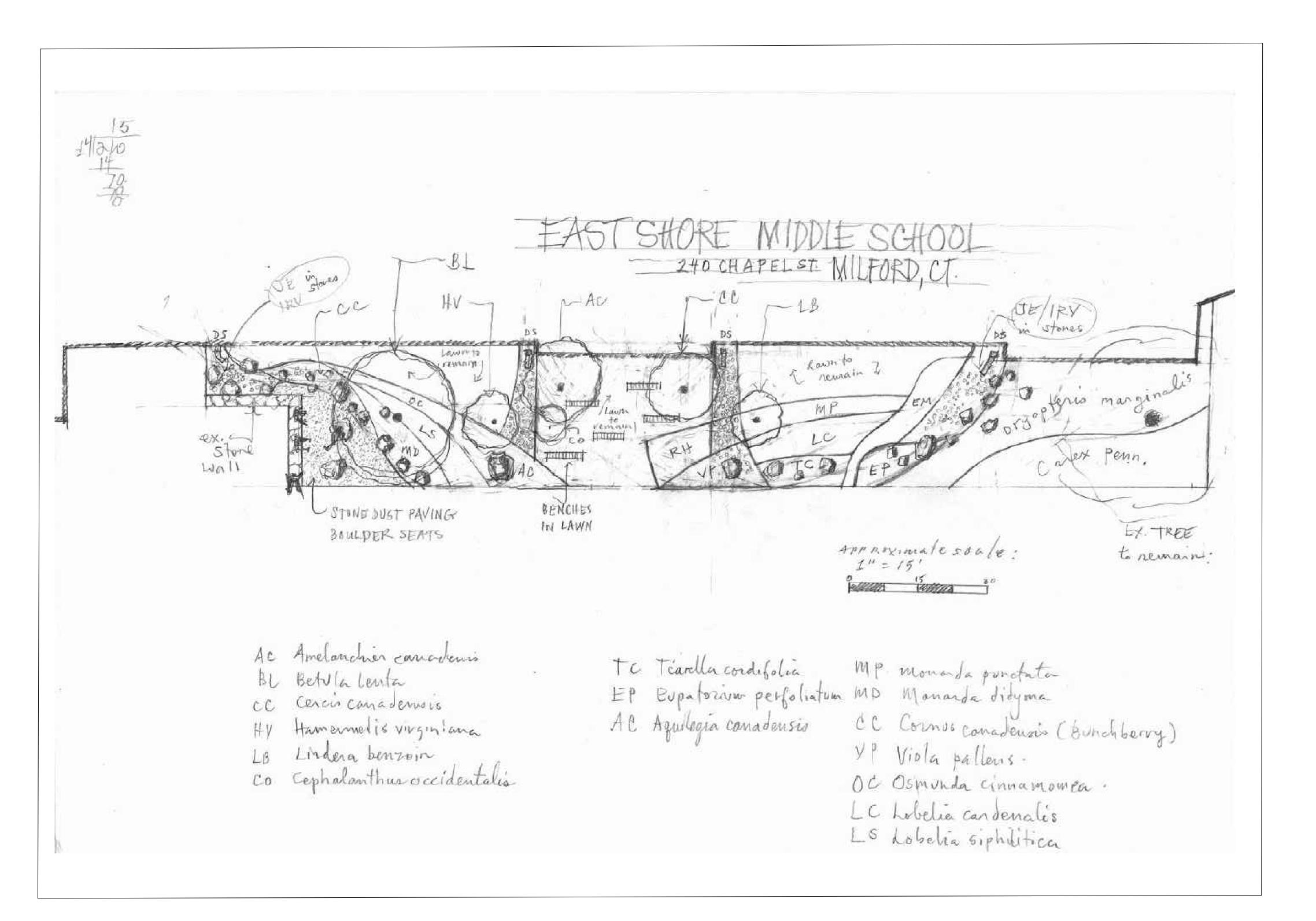




ANDSC,



DT-2





REVISIONS

No. DATE

DESCRIPTION

PROFESSIONAL ENGINEER - NJ LICENSE # 37532

PROFESSIONAL ENGINEER - NJ LICENSE # 37532

DATE

DATE

DRAWN

DATE

DATE

DATE

DRAWN

DRAWN

DRAWN

DRAWN

DATE

RAIN GARDEN IMPLEMENTATION PROJE
240 CHAPEL STREET, MILFORD
NEW HAVEN COUNTY, CT

