

ALMA E. PAGEL SCHOOL

DRAFT

RAIN GARDEN IMPLEMENTATION PROJECT 26 BENHAM HILL ROAD, WEST HAVEN NEW HAVEN COUNTY, CONNECTICUT

PROJECT DESCRIPTION:

A RAIN GARDEN WILL BE IMPLEMENTED IN THE SOUTH-EAST GRASSED AREA FACING BENHAM HILL ROAD COLLECTING STORMWATER RUNOFF FROM THE ADJACENT DRIVEWAY OF THE ALMA E. PAGEL SCHOOL.

LOCATION MAP:



LEGEND:

-----	EXISTING DRAINAGE AREA
————	EDGE OF PAVEMENT
←-----	EXISTING CENTERLINE
○	EXISTING TREE
▭	EXISTING BUILDING
⊕	EXISTING UTILITY POLE
▨	EXISTING CATCH BASIN
~100~	EXISTING CONTOURS
-----	PROPERTY LINES
-----	LIMIT OF WORK
▨	PROPOSED GREEN INFRASTRUCTURE
○	PROPOSED TREE
---100---	PROPOSED TOP OF BERM
~100~	PROPOSED CONTOURS

LIST OF DRAWINGS:

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

GENERAL NOTES:

- ELEVATION DATA OBTAINED FROM NOAA DIGITAL COASTAL LIDAR.
- ANY OVERHEAD AND UNDERGROUND UTILITIES SHOWN ARE FROM FIELD OBSERVATIONS AND ARE NOT A COMPLETE REPRESENTATION. A UTILITY MARKOUT NEEDS TO BE CONDUCTED PRIOR TO MOBILIZATION. NJ ONE CALL: 811 OR 800-272-1000

CHRISTOPHER C. OBROPTA, Ph.D., P.E.
PROFESSIONAL ENGINEER - NJ LICENSE # 37532

DATE: 04/25/19

APPROVED: COO

CHECKED: MAL

DRAWN: MT

REVISIONS	DESCRIPTION
No.	DATE

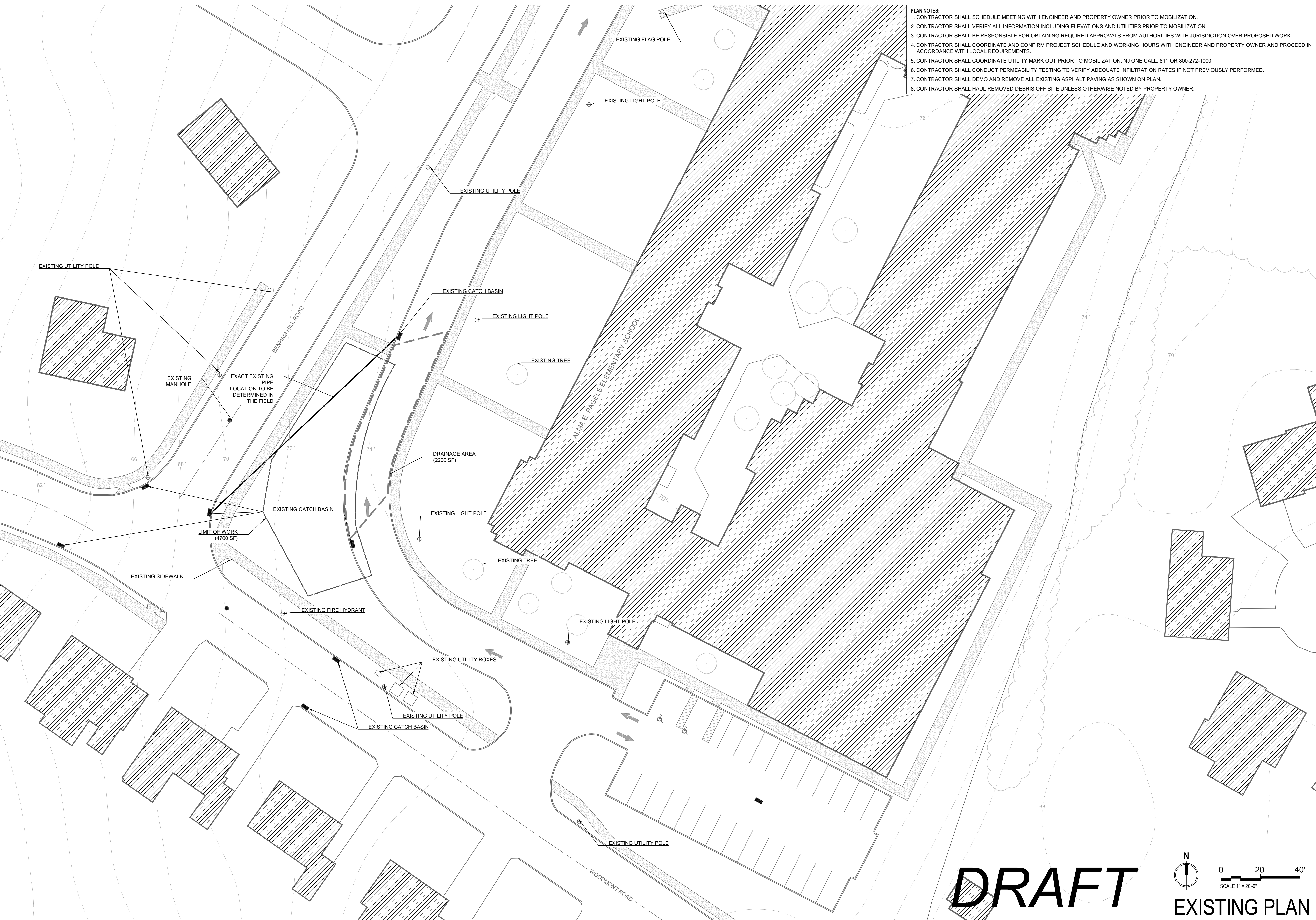
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RAIN GARDEN IMPLEMENTATION PROJECT
26 BENHAM HILL ROAD, WEST HAVEN
NEW HAVEN COUNTY, CT

COVER SHEET



SHEET NAME
COVER

- PLAN NOTES:**
1. CONTRACTOR SHALL SCHEDULE MEETING WITH ENGINEER AND PROPERTY OWNER PRIOR TO MOBILIZATION.
 2. CONTRACTOR SHALL VERIFY ALL INFORMATION INCLUDING ELEVATIONS AND UTILITIES PRIOR TO MOBILIZATION.
 3. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING REQUIRED APPROVALS FROM AUTHORITIES WITH JURISDICTION OVER PROPOSED WORK.
 4. CONTRACTOR SHALL COORDINATE AND CONFIRM PROJECT SCHEDULE AND WORKING HOURS WITH ENGINEER AND PROPERTY OWNER AND PROCEED IN ACCORDANCE WITH LOCAL REQUIREMENTS.
 5. CONTRACTOR SHALL COORDINATE UTILITY MARK OUT PRIOR TO MOBILIZATION. NJ ONE CALL: 811 OR 800-272-1000
 6. CONTRACTOR SHALL CONDUCT PERMEABILITY TESTING TO VERIFY ADEQUATE INFILTRATION RATES IF NOT PREVIOUSLY PERFORMED.
 7. CONTRACTOR SHALL DEMO AND REMOVE ALL EXISTING ASPHALT PAVING AS SHOWN ON PLAN.
 8. CONTRACTOR SHALL HAUL REMOVED DEBRIS OFF SITE UNLESS OTHERWISE NOTED BY PROPERTY OWNER.



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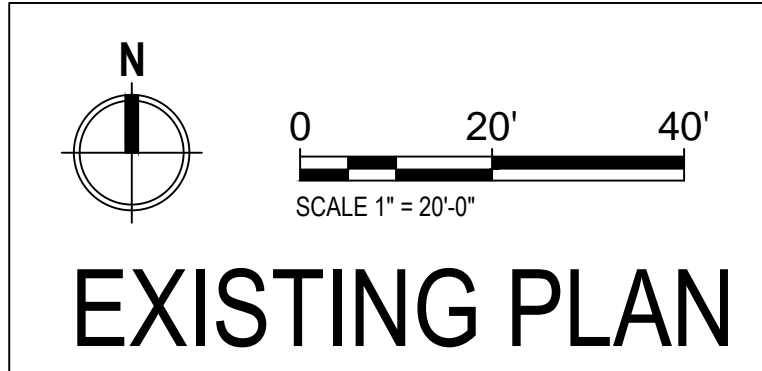
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EXISTING CONDITIONS AND DEMOLITION PLAN

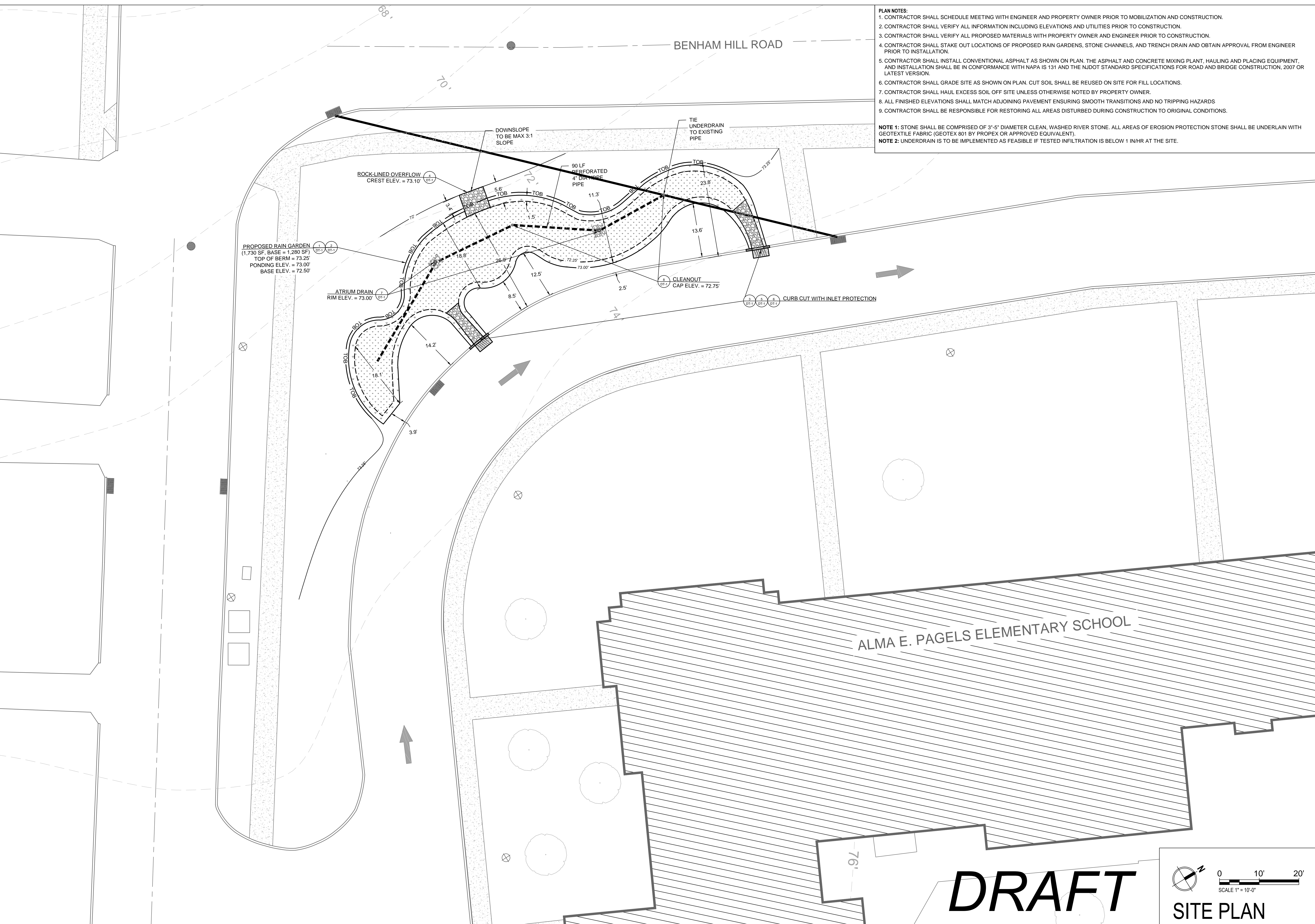


SHEET NAME
 P-1

DRAFT



EXISTING PLAN



PLAN NOTES:

1. CONTRACTOR SHALL SCHEDULE MEETING WITH ENGINEER AND PROPERTY OWNER PRIOR TO MOBILIZATION AND CONSTRUCTION.
2. CONTRACTOR SHALL VERIFY ALL INFORMATION INCLUDING ELEVATIONS AND UTILITIES PRIOR TO CONSTRUCTION.
3. CONTRACTOR SHALL VERIFY ALL PROPOSED MATERIALS WITH PROPERTY OWNER AND ENGINEER PRIOR TO CONSTRUCTION.
4. CONTRACTOR SHALL STAKE OUT LOCATIONS OF PROPOSED RAIN GARDENS, STONE CHANNELS, AND TRENCH DRAIN AND OBTAIN APPROVAL FROM ENGINEER PRIOR TO INSTALLATION.
5. CONTRACTOR SHALL INSTALL CONVENTIONAL ASPHALT AS SHOWN ON PLAN. THE ASPHALT AND CONCRETE MIXING PLANT, HAULING AND PLACING EQUIPMENT, AND INSTALLATION SHALL BE IN CONFORMANCE WITH NAPA IS 131 AND THE NJDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2007 OR LATEST VERSION.
6. CONTRACTOR SHALL GRADE SITE AS SHOWN ON PLAN. CUT SOIL SHALL BE REUSED ON SITE FOR FILL LOCATIONS.
7. CONTRACTOR SHALL HAUL EXCESS SOIL OFF SITE UNLESS OTHERWISE NOTED BY PROPERTY OWNER.
8. ALL FINISHED ELEVATIONS SHALL MATCH ADJOINING PAVEMENT ENSURING SMOOTH TRANSITIONS AND NO TRIPPING HAZARDS
9. CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING ALL AREAS DISTURBED DURING CONSTRUCTION TO ORIGINAL CONDITIONS.

NOTE 1: STONE SHALL BE COMPRISED OF 3'-5" DIAMETER CLEAN, WASHED RIVER STONE. ALL AREAS OF EROSION PROTECTION STONE SHALL BE UNDERLAIN WITH GEOTEXTILE FABRIC (GEOTEX 801 BY PROPEX OR APPROVED EQUIVALENT).

NOTE 2: UNDERDRAIN IS TO BE IMPLEMENTED AS FEASIBLE IF TESTED INFILTRATION IS BELOW 1 IN/HR AT THE SITE.

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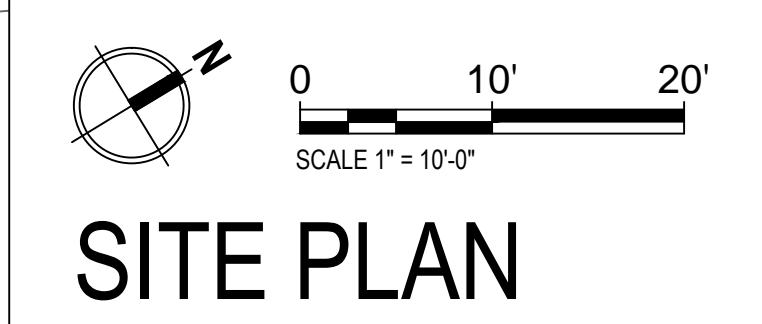
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PROPOSED SITE PLAN

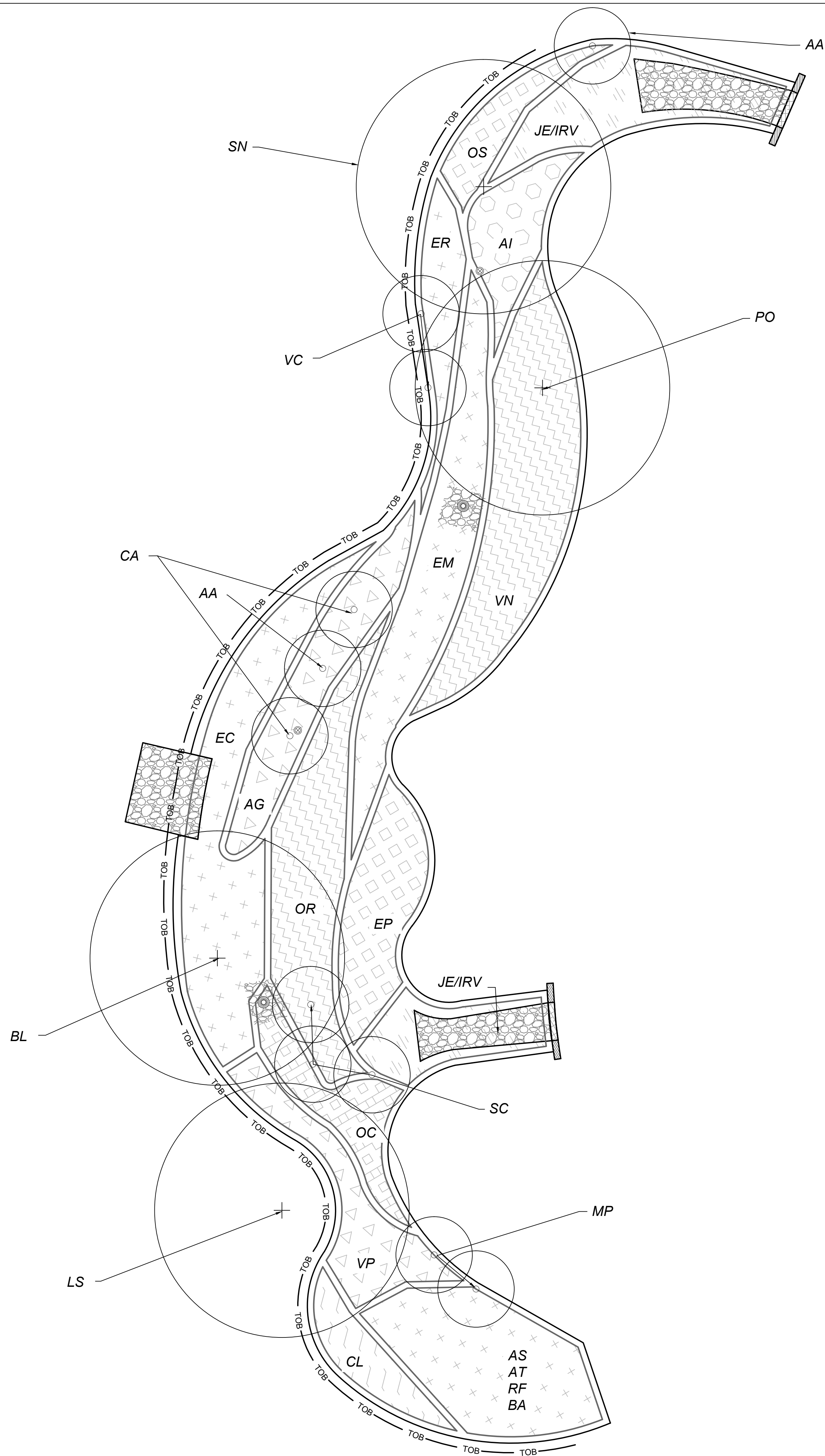


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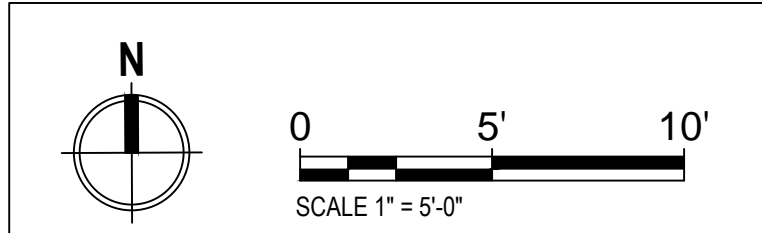


SITE PLAN



PLANTING SCHEDULE					
PLANT SPECIES				QUANTITY	SIZE
TYPE	KEY	BOTANICAL NAME	COMMON NAME		
RAIN GARDEN					
PERENNIALS	AG	<i>Andropogon gerardii</i>	BIG BLUESTEM	35	1 QUART
	AI	<i>Asclepias incarnata</i>	SWAMP MILKWEED	20	1 QUART
	AS	<i>Asclepias syriaca</i>	COMMON MILKWEED	15	1 QUART
	AT	<i>Asclepias tuberosa</i>	BUTTERFLY WEED	15	1 QUART
	BA	<i>Baptisia australis</i>	BLUE FALSE INDIGO	15	1 QUART
	CL	<i>Coreopsis lanceolata</i>	LANCE-LEAVED COREOPSIS	20	1 QUART
	EC	<i>Eupatorium coelestinum</i>	BLUE MISTFLOWER	60	1 QUART
	EM	<i>Eupatorium maculatum</i>	SPOTTED JOE PYE WEED	50	1 QUART
	EP	<i>Eupatorium perfoliatum</i>	COMMON BONESET	30	1 QUART
	ER	<i>Elymus riparius</i>	RIVERBANK WILD RYE	15	1 QUART
	IRV	<i>Iris versicolor</i>	BLUG FLAG	30	1 QUART
	JE	<i>Juncus effusus</i>	SOFT RUSH	30	1 QUART
	OC	<i>Osmunda cinnamomea</i>	CINNAMON FERN	20	1 QUART
	OR	<i>Osmunda regalis</i>	ROYAL FERN	50	1 QUART
	OS	<i>Onoclea sensibilis</i>	SENSITIVE FERN	15	1 QUART
	RF	<i>Rudbeckia fulgida</i>	ORANGE CONEFLOWER	15	1 QUART
VN	<i>Vernonia noveboracensis</i>	NEW YORK IRONWEED	65	1 QUART	
VP	<i>Viola pallens</i>	SMOOTH WHITE VIOLET	30	1 QUART	
SHRUBS	AA	<i>Rudbeckia fulgida</i>	RED CHOKEBERRY	2	1 GAL.
	CA	<i>Clethra alnifolia</i>	SWEET PEPPERBUSH	2	1 GAL.
	MP	<i>Morrela pensylvanica</i>	NORTHERN BAYBERRY	2	1 GAL.
	SC	<i>Sambucus canadensis</i>	BLACK ELDERBERRY	3	1 GAL.
	VC	<i>Vaccinium corymbosum</i>	HIGHBUSH BLUEBERRY	2	1 GAL.
TREES	BL	<i>Betula lutea</i>	YELLOW BIRCH	1	2"-3" CAL.
	LS	<i>Liquidambar styraciflua</i>	SWEET GUM	1	2"-3" CAL.
	PO	<i>Platanus occidentalis</i>	AMERICAN SYCAMORE	1	2"-3" CAL.
	SN	<i>Salix nigra</i>	BLACK WILLOW	1	2"-3" CAL.

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PLANTING PLAN

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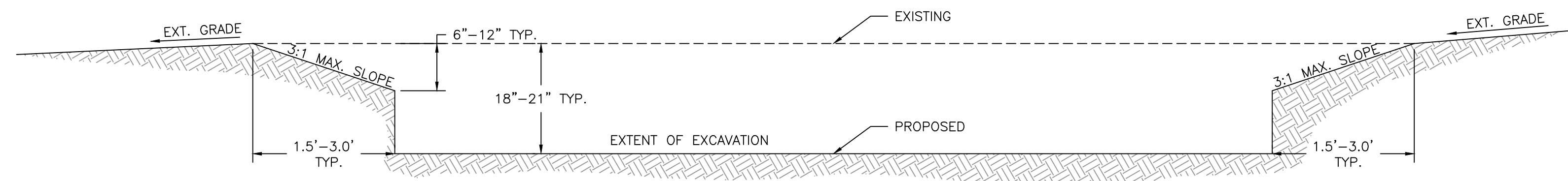
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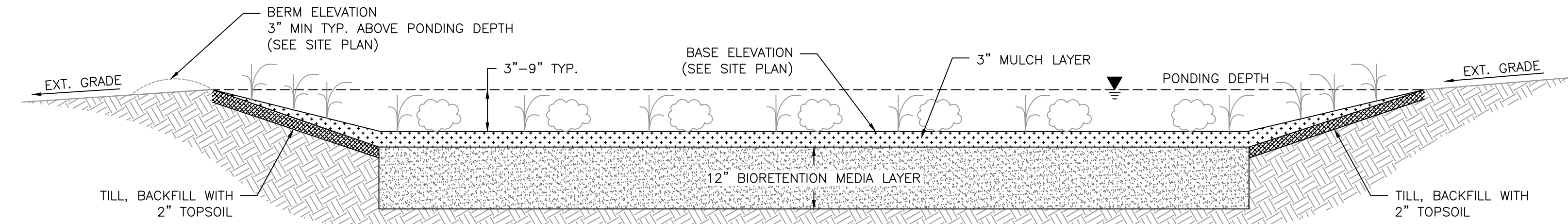
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PLANTING PLAN

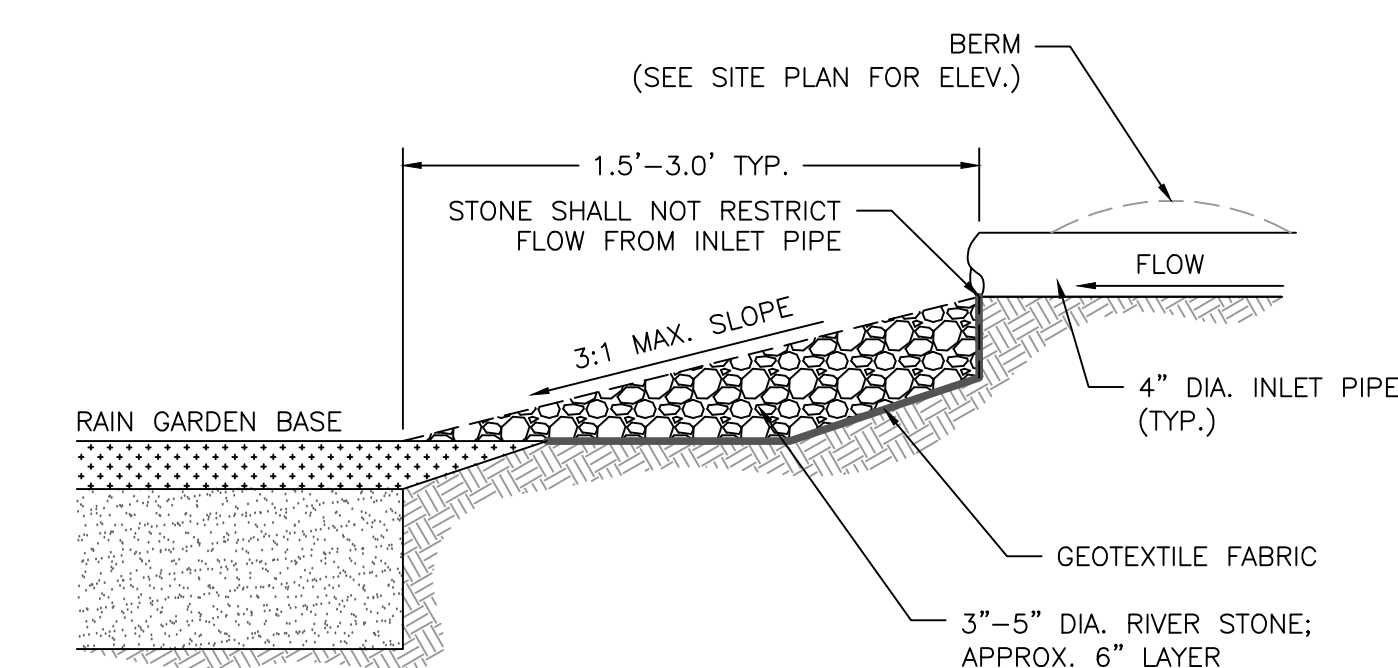
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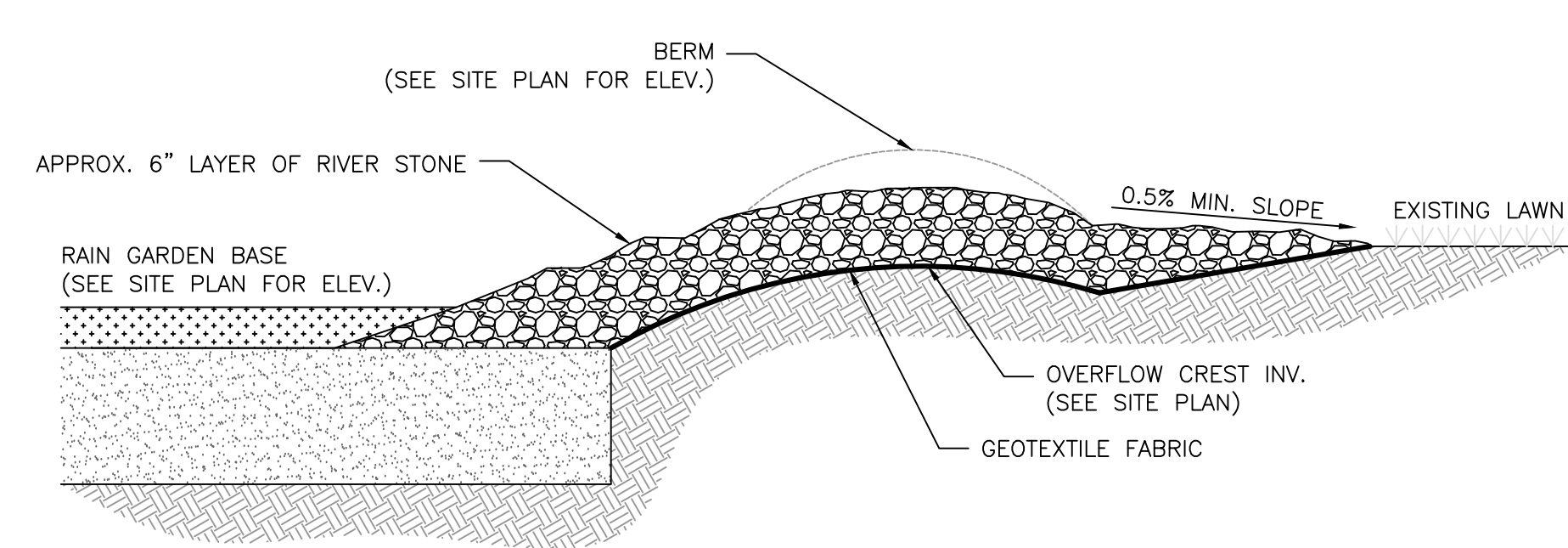
1 RAIN GARDEN EXCAVATION SECTION
DT-1 N.T.S.



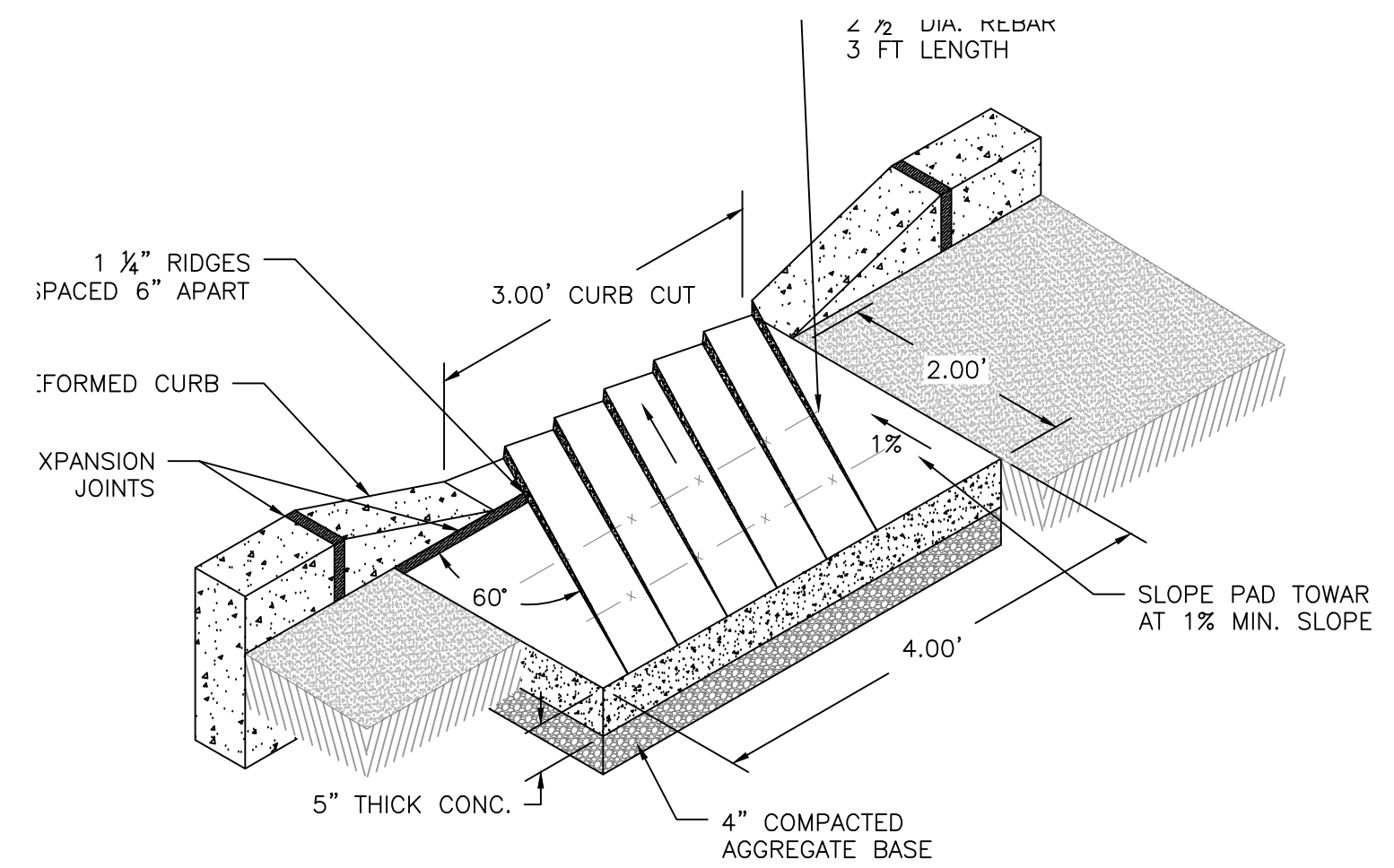
2 RAIN GARDEN CROSS-SECTION
DT-1 N.T.S.



3 INLET PROTECTION CROSS-SECTION
DT-1 N.T.S.



4 ROCK-LINED OVERFLOW DETAIL
DT-1 N.T.S.



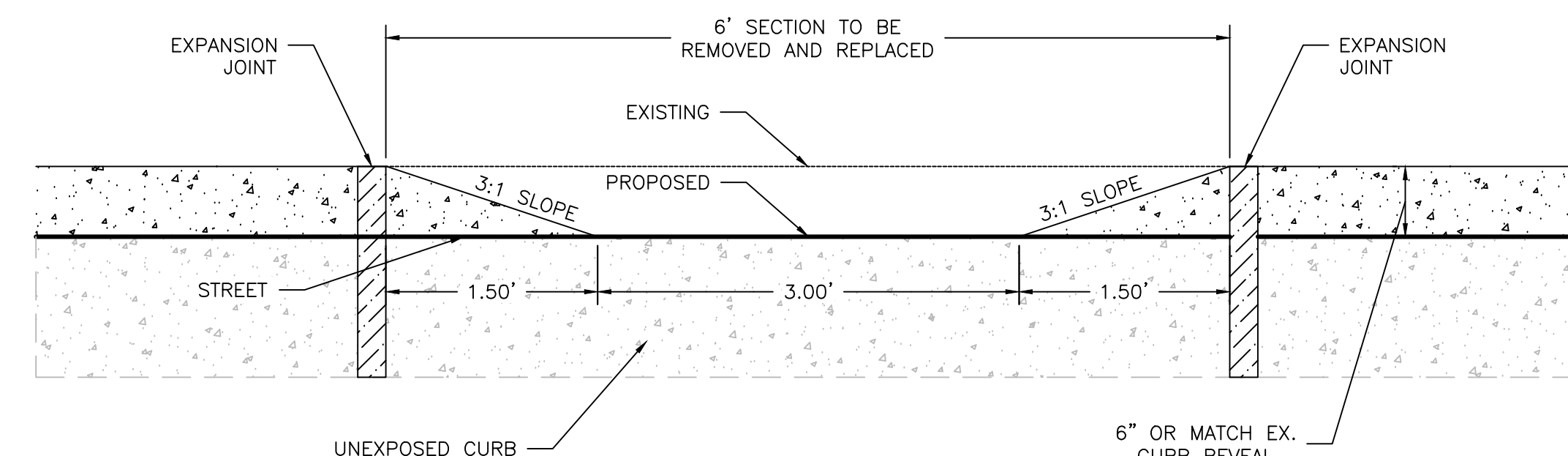
5 CONCRETE FLOW PAD DETAIL
DT-1 N.T.S.

- 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 SHALL BE INFORMED OF THE RESULTS.

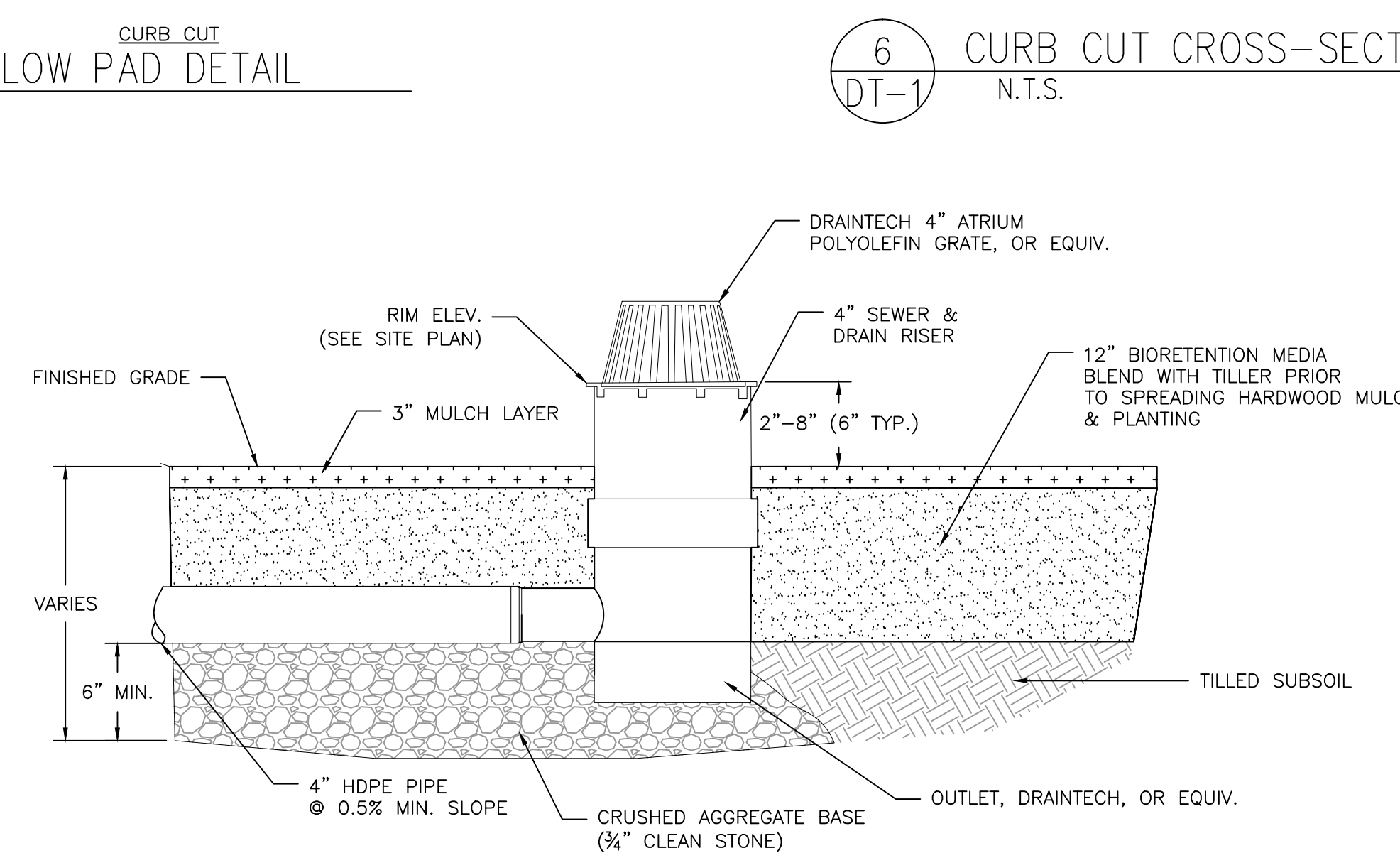
- SPECIFICATIONS:**
1. MAX COVER OVER TOP OF PIPES IS 4 FT. CONTACT ADS IF OTHERWISE GREATER.
 2. THE APPROVAL OF MATERIALS AND MIXING OF SAND, COMPOST, AND SOIL SHALL BE DONE UNDER THE SUPERVISION OF THE PROJECT ENGINEER/LANDSCAPE ARCHITECT. BIORETENTION MEDIA SHALL CONSIST OF 70% SAND AND 30% COMPOST 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 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.

- 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 CONTRACTOR SHALL AVOID DISTURBING ALL EXISTING TREES. ANY DISTURBANCE TO TREES OR TREE ROOTS MUST BE COORDINATED WITH THE BOROUGH DEPARTMENT OF PUBLIC WORKS.
 4. INLET AND OUTLET PROTECTION SHALL BE UNDERLAIN WITH GEOTEXTILE FABRIC.
 5. INLET AND OUTLET CURB CUTS SHALL NOT INHIBIT THE FLOW OF WATER FROM THE STREET. THE CURB CUT SHALL BE SLIGHTLY LOWER THAN THE ROAD. THE CONCRETE SLAB SHALL BE PLACED JUST BELOW THE BOTTOM OF THE CURB CUT.
 6. THE CONTRACTOR SHALL SAWCUT, REMOVE AND REPLACE A 6 FOOT SECTION OF CURB FOR THE CONCRETE FUNNEL. THE ENTIRE CURB SHALL BE REINSTALLED WITH A 3 FOOT DEPRESSED SECTION FLUSH WITH THE PAVEMENT AND ADJOINING 18" 3:1 SLOPED SECTIONS.
 7. THE CONTRACTOR SHALL POUR THE CONCRETE FLOW PAD AS SHOWN WITH 60' RIDGES. THE RIDGES SHALL BE 1 1/4" IN HEIGHT.
 8. ALL AREAS EXCLUSIVE FROM THE TRENCH DRAIN AND/OR CURB CUT SHALL BE RESTORED TO ORIGINAL CONDITIONS.
 9. THE CONTRACTOR SHALL HAVE A PRE-CONSTRUCTION MEETING WITH THE ENGINEER PRIOR TO ANY WORK ON SITE.

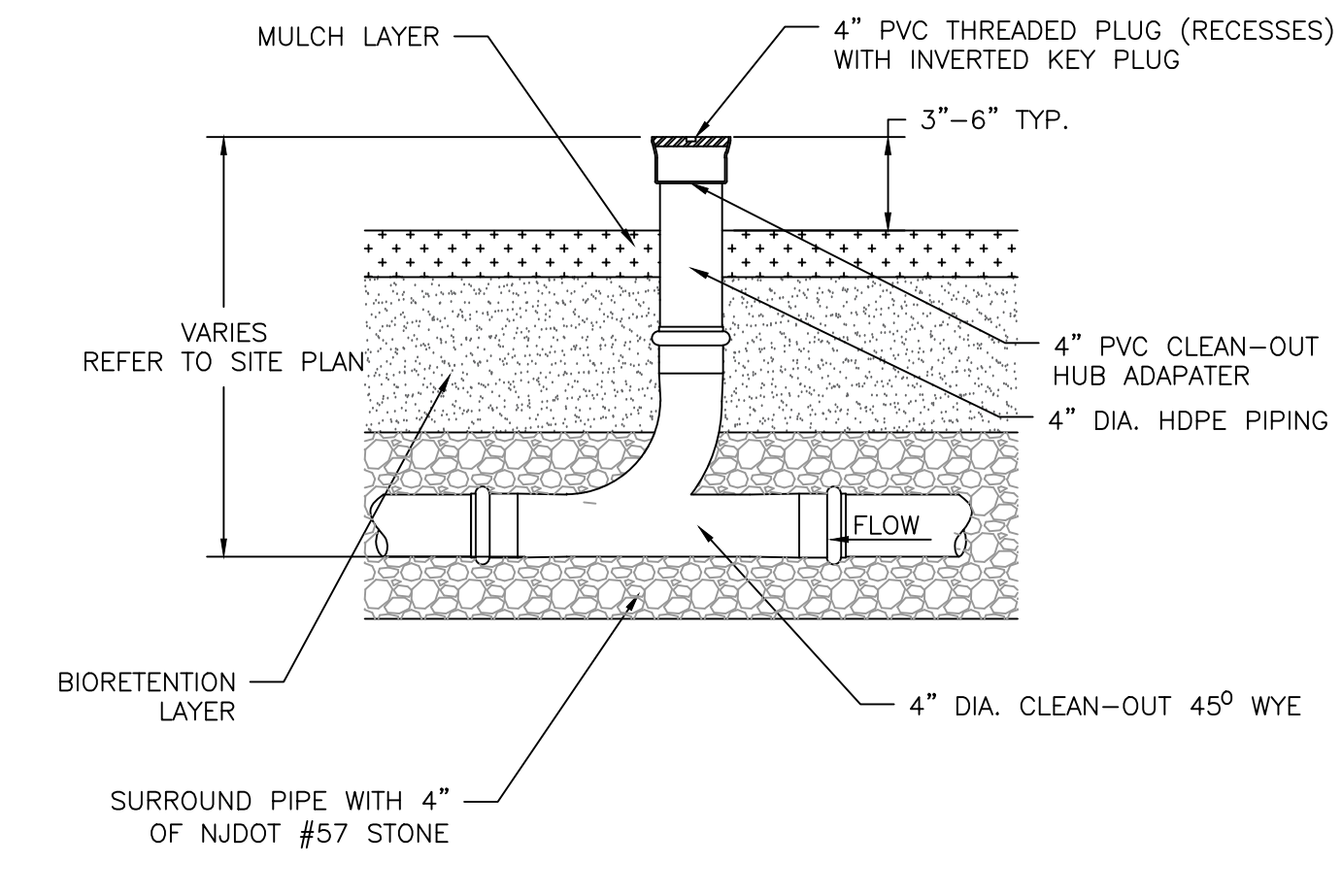
- SPECIFICATIONS:**
1. TRENCH DRAIN SHALL BE ECONODRAIN® SERIES #12 AS MANUFACTURED BY ECONODRAIN®, OR APPROVED EQUIVALENT.
 2. GRATE FOR TRENCH DRAIN SHALL BE CAST IRON ADA GRATE #EG14242CIADA WITH LOCKING FASTENERS, OR EQUAL.
 3. END CAP CUTOUTS TO BE REMOVED UPON APPROVAL.
 4. STONE FOR PROTECTION SHALL BE 3"-5" DIAMETER WASHED RIVER STONE.
 5. THE CONTRACTOR SHALL BE PERFORMED IN CONFORMANCE WITH THE NJDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2007 OR LATEST VERSION.
 6. THE CONTRACTOR SHALL ONLY USE CONCRETE WITH 4,500 PSI STRENGTH.



6 CURB CUT CROSS-SECTION
DT-1 N.T.S.



7 DRAINTech OUTLET DETAIL
DT-1 N.T.S.



8 CLEAN OUT DETAIL
DT-1 N.T.S.

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RUTGERS
New Jersey Agricultural
Experiment Station

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OPEN LAWN AND TURF AREAS

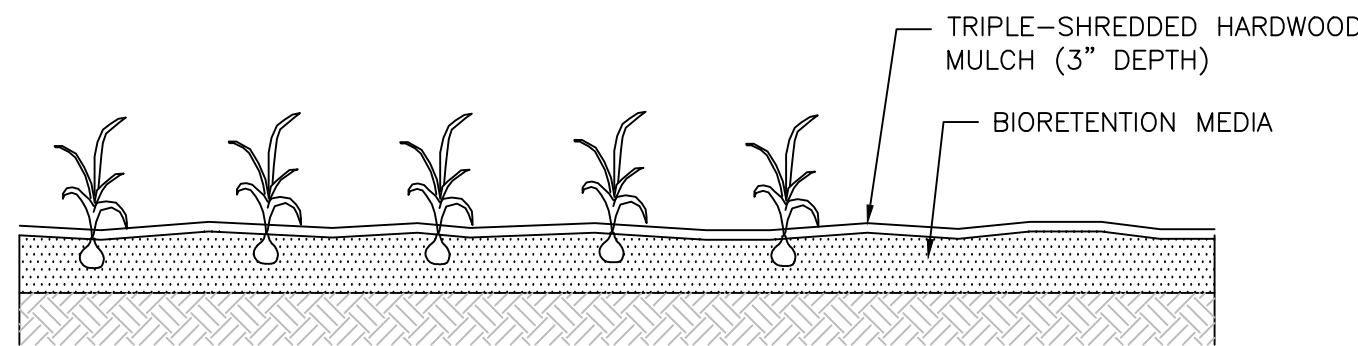
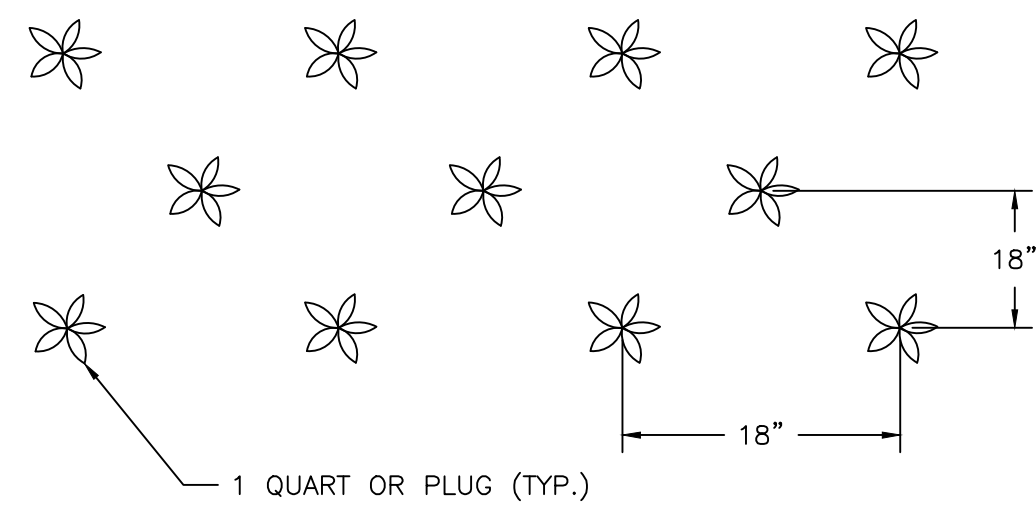
- SEED ALL REMAINING PARK AREAS WITH TURF TYPE FESCUE AND PERENNIAL RYEGRASS BLEND (LOFTS – SUMMER STRESS MIX II OR APPROVED EQUIVALENT). INSTALL AT A RATE OF 350 LBS. PER ACRE PER MANUFACTURERS SPECIFICATIONS.

TOPSOILING, SEEDING AND MULCHING NOTES

- 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.
- DIVERSIONS, CHANNELS, SEDIMENTATION BASINS, SEDIMENT TRAPS, AND STOCKPILES MUST BE SEEDED AND MULCHED IMMEDIATELY.
- 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.
- 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.
- 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).
- 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.
- ESTABLISH PERMANENT SEEDING AS SOON AS POSSIBLE AFTER FINAL GRADING IS COMPLETE. UNLESS OTHERWISE INDICATED, PERMANENT SEEDING SHALL BE SEED MIXTURE SPECIFIED IN TABLE.
- SEE TABLES FOR SEED SPECIES MIXTURE AND APPLICATION RATES.
- SEED MIXES ARE AVAILABLE AT ERNST CONSERVATION SEEDS IN MEADVILLE, PA. WEBSITE: WWW.ERNSTSEED.COM OR PHONE: 1-800-873-3321.
- 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

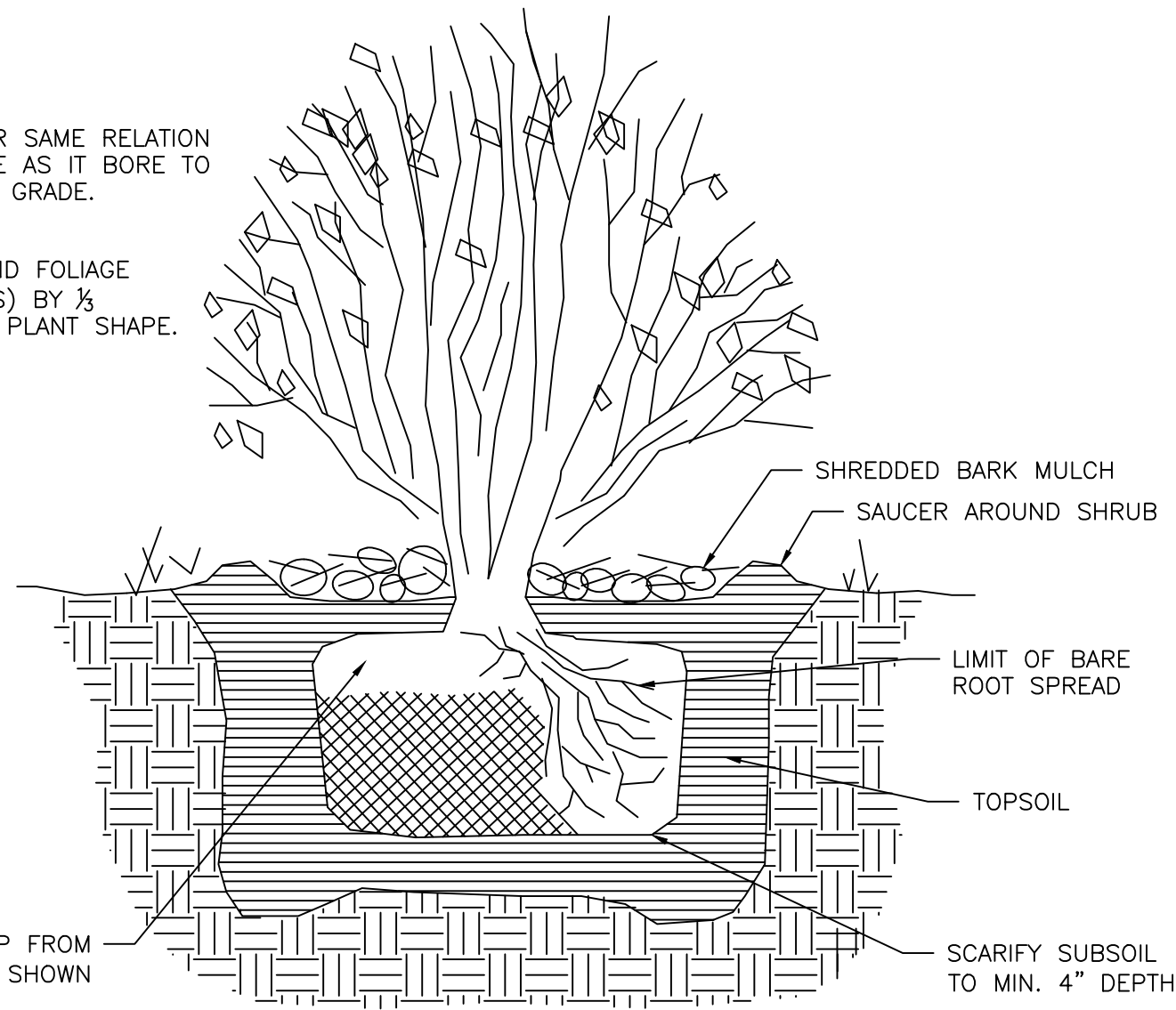
- ALL PLANT MATERIALS SHALL CONFIRM TO THE AMERICAN ASSOCIATION OF NURSERYMEN'S AMERICAN STANDARD FOR NURSERY STOCK (LATEST EDITION)
- INSPECTION OF PLANTING BEDS – THE LANDSCAPE ARCHITECT SHALL INSPECT ALL PLANTING AREAS BEFORE ANY TOPSOILING OR PLANTING IS BEGUN TO ENSURE THAT ADEQUATE DRAINAGE EXISTS. IF ANY AREAS TO BE LANDSCAPED SHOW EVIDENCE OF POOR DRAINAGE, THE LANDSCAPE ARCHITECT SHALL NOTIFY THE OWNER IMMEDIATELY FOR CORRECTIVE ACTION
- THE LANDSCAPE ARCHITECT SHALL APPROVE ALL PLANT MATERIAL AND STAKED PLANT LOCATIONS PRIOR TO INSTALLATION.
- ALL TREES, SHRUBS, AND GROUND COVER SHALL BE PLACED IN CONTINUOUS MULCHED BEDS 4" IN DEPTH. MULCH SHALL BE TRIPLE SHREDDED HARDWOOD.
- ALL TREES, SHRUBS, AND GROUND COVER SHALL BE AS SPECIFIED AND SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS AND COMMENTS NOTED ON THE DRAWINGS.
- TOPSOIL SHALL BE PROVIDED BY THE LANDSCAPE CONTRACTOR FOR PLANTING ACCORDING TO THE PLANS AND DETAILS.
- PREPARED TOPSOIL FOR BACKFILLING AROUND TREE BALLS SHALL BE A MIXTURE OF VOLUME OF THE FOLLOWING MATERIALS IN QUANTITIES SPECIFIED: ½ COMPOST, ¼ TOPSOIL
- ALL HERBACEOUS PLUG PLANTINGS SHALL BE MINIMUM 3 INCH DEPTH. PLUGS SHALL BE PLANTED 1 FOOT O.C. AS INDICATED ON PLAN.



1 HERBACEOUS PLUG PLANTING DETAIL
DT-2 N.T.S.

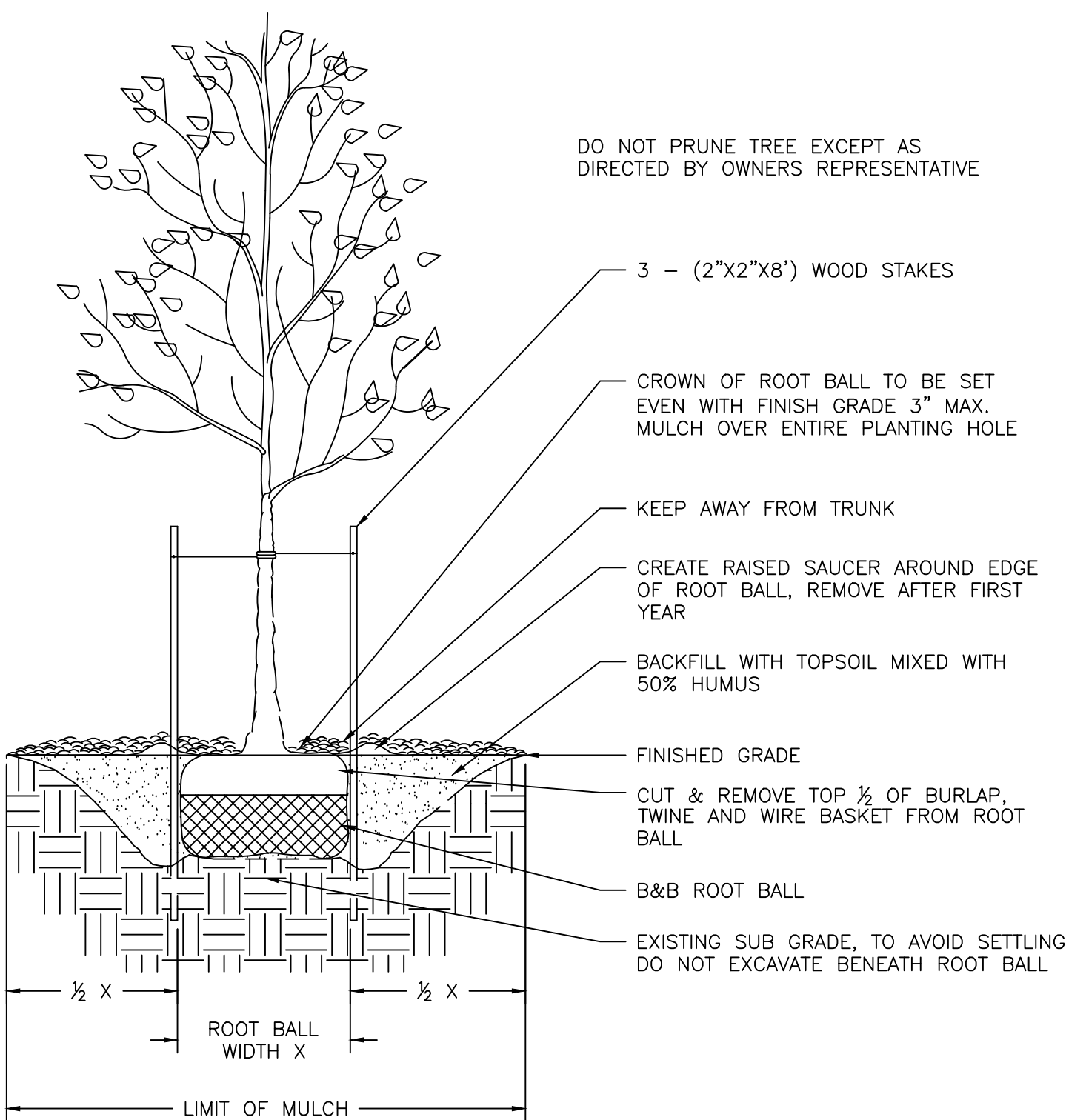
SHRUB SHALL BEAR SAME RELATION TO FINISHED GRADE AS IT BORE TO PREVIOUS EXISTING GRADE.

THIN BRANCHES AND FOLIAGE (NOT ALL END TIPS) BY ½ RETAINING NORMAL PLANT SHAPE.



- NOTES:
1. DEER PROTECTION REQUIRED AROUND SHRUB PLANTINGS.

2 SHRUB PLANTING DETAIL
DT-2 N.T.S.



- 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.

3 TREE PLANTING DETAIL
DT-2 N.T.S.

PLANTING SCHEDULE					
		PLANT SPECIES		QUANTITY	SIZE
TYPE	KEY	BOTANICAL NAME	COMMON NAME		
RAIN GARDEN 1					
PERENNIALS	AG	<i>Andropogon gerardii</i>	BIG BLUESTEM	35	1 QUART
	AI	<i>Asclepias incarnata</i>	SWAMP MILKWEED	20	1 QUART
	AS	<i>Asclepias syriaca</i>	COMMON MILKWEED	15	1 QUART
	AT	<i>Asclepias tuberosa</i>	BUTTERFLY WEED	15	1 QUART
	BA	<i>Baptisia australis</i>	BLUE FALSE INDIGO	15	1 QUART
	CL	<i>Coreopsis lanceolata</i>	LANCE-LEAVED COREOPSIS	20	1 QUART
	EC	<i>Eupatorium coelestinum</i>	BLUE MISTFLOWER	60	1 QUART
	EM	<i>Eupatorium maculatum</i>	SPOTTED JOE PYE WEED	50	1 QUART
	EP	<i>Eupatorium perfoliatum</i>	COMMON BONESET	30	1 QUART
	ER	<i>Elymus riparius</i>	RIVERBANK WILD RYE	15	1 QUART
	IRV	<i>Iris versicolor</i>	BLUG FLAG	30	1 QUART
	JE	<i>Juncus effusus</i>	SOFT RUSH	30	1 QUART
	OC	<i>Osmunda cinnamomea</i>	CINNAMON FERN	20	1 QUART
	OR	<i>Osmunda regalis</i>	ROYAL FERN	50	1 QUART
	OS	<i>Onoclea sensibilis</i>	SENSITIVE FERN	15	1 QUART
	RF	<i>Rudbeckia fulgida</i>	ORANGE CONEFLOWER	15	1 QUART
VN	<i>Vernonia noveboracensis</i>	NEW YORK IRONWEED	65	1 QUART	
VP	<i>Viola pallens</i>	SMOOTH WHITE VIOLET	30	1 QUART	
SHRUBS	AA	<i>Rudbeckia fulgida</i>	RED CHOKEBERRY	2	1 GAL.
	CA	<i>Clethra alnifolia</i>	SWEET PEPPERBUSH	2	1 GAL.
	MP	<i>Morrela pensylvanica</i>	NORTHERN BAYBERRY	2	1 GAL.
	SC	<i>Sambucus canadensis</i>	BLACK ELDERBERRY	3	1 GAL.
	VC	<i>Vaccinium corymbosum</i>	HIGHBUSH BLUEBERRY	2	1 GAL.
TREES	BL	<i>Betula lutea</i>	YELLOW BIRCH	1	2"-3" CAL.
	LS	<i>Liquidambar styraciflua</i>	SWEET GUM	1	2"-3" CAL.
	PO	<i>Platanus occidentalis</i>	AMERICAN SYCAMORE	1	2"-3" CAL.
	SN	<i>Salix nigra</i>	BLACK WILLOW	1	2"-3" CAL.

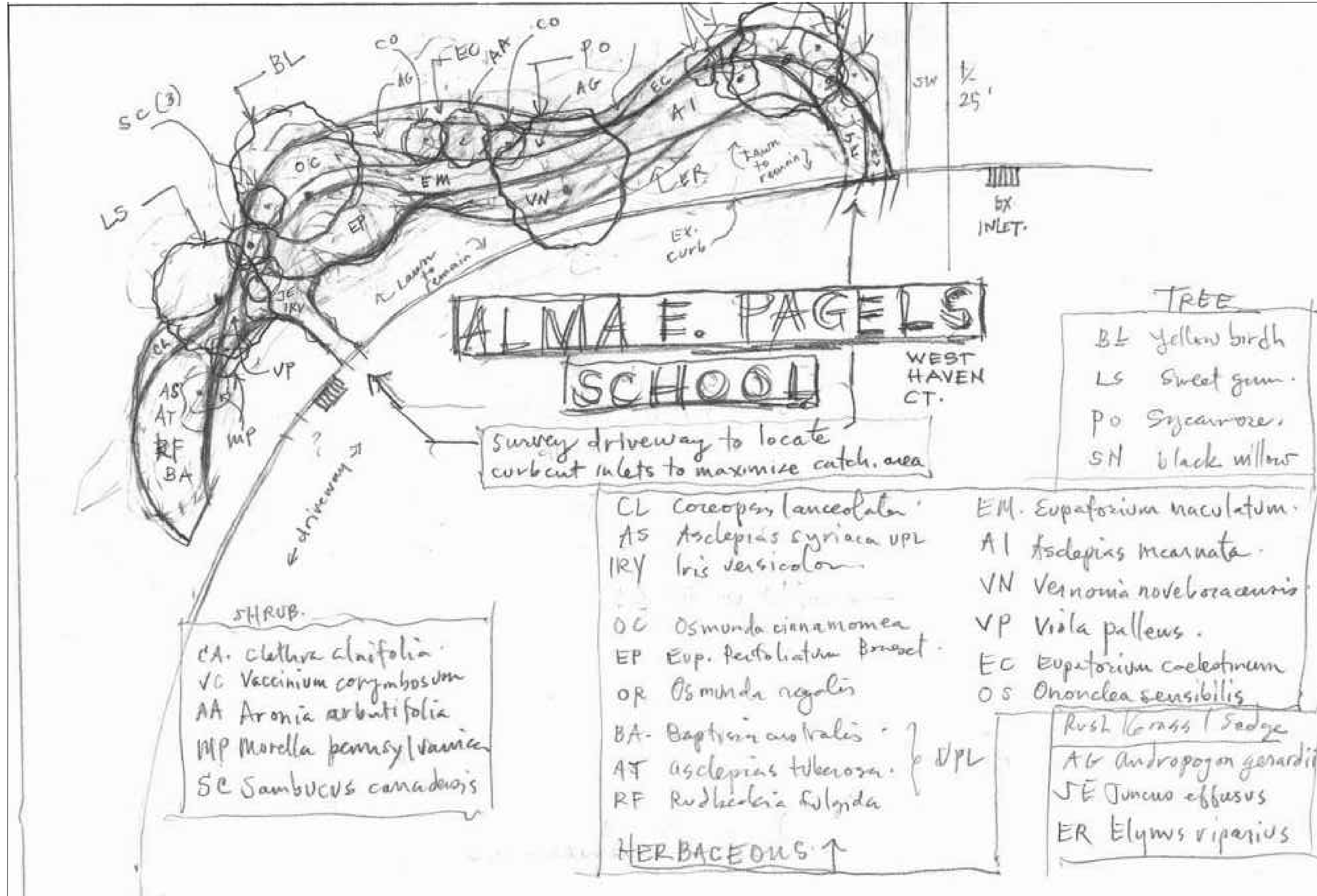
CHRISTOPHER C. OBROPTA, Ph.D., P.E.
PROFESSIONAL ENGINEER - NJ LICENSE # 37532

REVISIONS
No. DATE DESCRIPTION

ALMA E. PAGEL SCHOOL
RAIN GARDEN IMPLEMENTATION PROJECT
26 BENHAM HILL ROAD, WEST HAVEN
NEW HAVEN COUNTY, CT

PLANTING AND LANDSCAPING DETAILS





1 CONCEPTUAL DESIGN
DT-3 N.T.S.

REVISIONS	DESCRIPTION
No.	DATE