

Washington Middle School
Green Infrastructure Information Sheet

Location: 1 North 5 th Street Harrison, NJ 07029	Site Use: School
	Watershed Name: Lower Passaic River
	Targeted Pollutants: total nitrogen (TN), total phosphorus (TP), and total suspended solids (TSS) in surface runoff
Green Infrastructure Description: Bioretention system (rain garden) Rainwater harvesting (cistern)	Estimated Stormwater Captured and/or Treated Per Year: Bioretention system (rain garden): 57,800 gal. Rainwater harvesting (cistern): 3,270 gal.
Implementation Date: 9/12/2019 Green Infrastructure System: one (1) 205-gallon cistern Drainage Area: ~270 sq. ft. (rooftop) Green Infrastructure System: one (1) 700-square-foot rain garden Drainage Area: ~2,600 sq. ft. (pavement)	
Funding Sources: Passaic Valley Sewerage Commission	
Partners/Stakeholders: Passaic Valley Sewerage Commission, Rutgers Cooperative Extension Water Resources Program, Washington Middle School	
Appendix A: Site Photographs – Previous Conditions Appendix B: Washington Middle School Design Plans and Rendering Appendix C: Site Photographs – Completed Projects	

Washington Middle School
Green Infrastructure Information Sheet

Appendix A

Site Photographs – Previous Conditions

Site Photograph August 8, 2018



Site Photograph September 21, 2018



Washington Middle School
Green Infrastructure Information Sheet

Appendix B

Washington Middle School Design Plans and Rendering

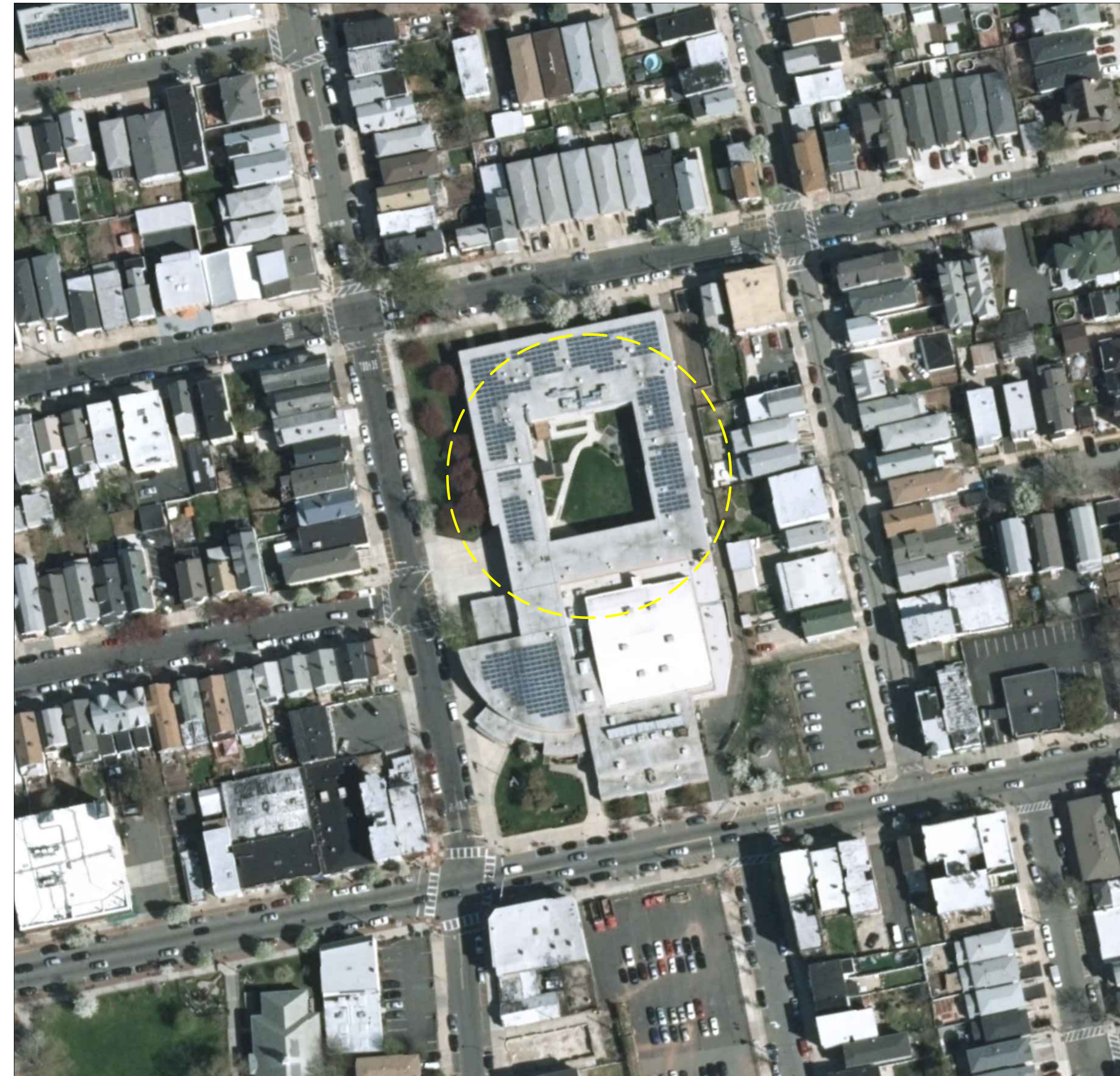
WASHINGTON MIDDLE SCHOOL

GREEN INFRASTRUCTURE IMPLEMENTATION PROJECT 1 N 5TH ST, HARRISON, HUDSON COUNTY, NEW JERSEY BLOCK 33, LOT 1

PROJECT DESCRIPTION:

A 700 SF RAIN GARDEN WAS INSTALLED INTO THE SCHOOL COURTYARD AROUND AN EXISTING CATCH BASIN. A RAINWATER CISTERN WAS CONNECTED TO AN EXISTING DOWNSPOUT TO COLLECT WATER FOR USE IN THE SCHOOL GARDEN. ADDITIONAL SPACE MAY BE UTILIZED FOR A GREENHOUSE AND AN OUTDOOR CLASSROOM AREA.

LOCATION MAP:



LEGEND:

-----	EXISTING DRAINAGE AREA
————	EDGE OF PAVEMENT
←-----	EXISTING CENTERLINE
----->	EXISTING FENCE
~~~~~	EXISTING TREELINE
○	EXISTING TREE
▭	EXISTING BUILDING
⊕	EXISTING UTILITY POLE
▨	EXISTING CATCH BASIN
⌒	EXISTING CONTOURS
+ 100.00 CODE	EXISTING SPOT ELEVATIONS
SPOT ELEVATION CODES:	
CB - CATCH BASIN	SW - SIDEWALK
F - FENCE	PLTR - PLANTER
GS - GROUND SHOT	
-----	PROPERTY LINES
- - - - -	LIMIT OF WORK
▨	AREA TO BE DEPAVED
▤	PROPOSED GREEN INFRASTRUCTURE
○	PROPOSED TREE
⌒	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	CISTERN DETAILS

### GENERAL NOTES:

1. SURVEY CONDUCTED BY RUTGERS COOPERATIVE EXTENSION WATER RESOURCES PROGRAM.
2. 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  
*Christopher C. Obropta*  
DATE 09/23/19  
DRAWN MAL  
CHECKED MH  
APPROVED COO

REVISIONS	No.	DATE	DESCRIPTION

WASHINGTON MIDDLE SCHOOL  
GREEN INFRASTRUCTURE IMPLEMENTATION PROJECT  
1 NORTH 5TH STREET, HARRISON  
HUDSON COUNTY, NJ  
COVER SHEET



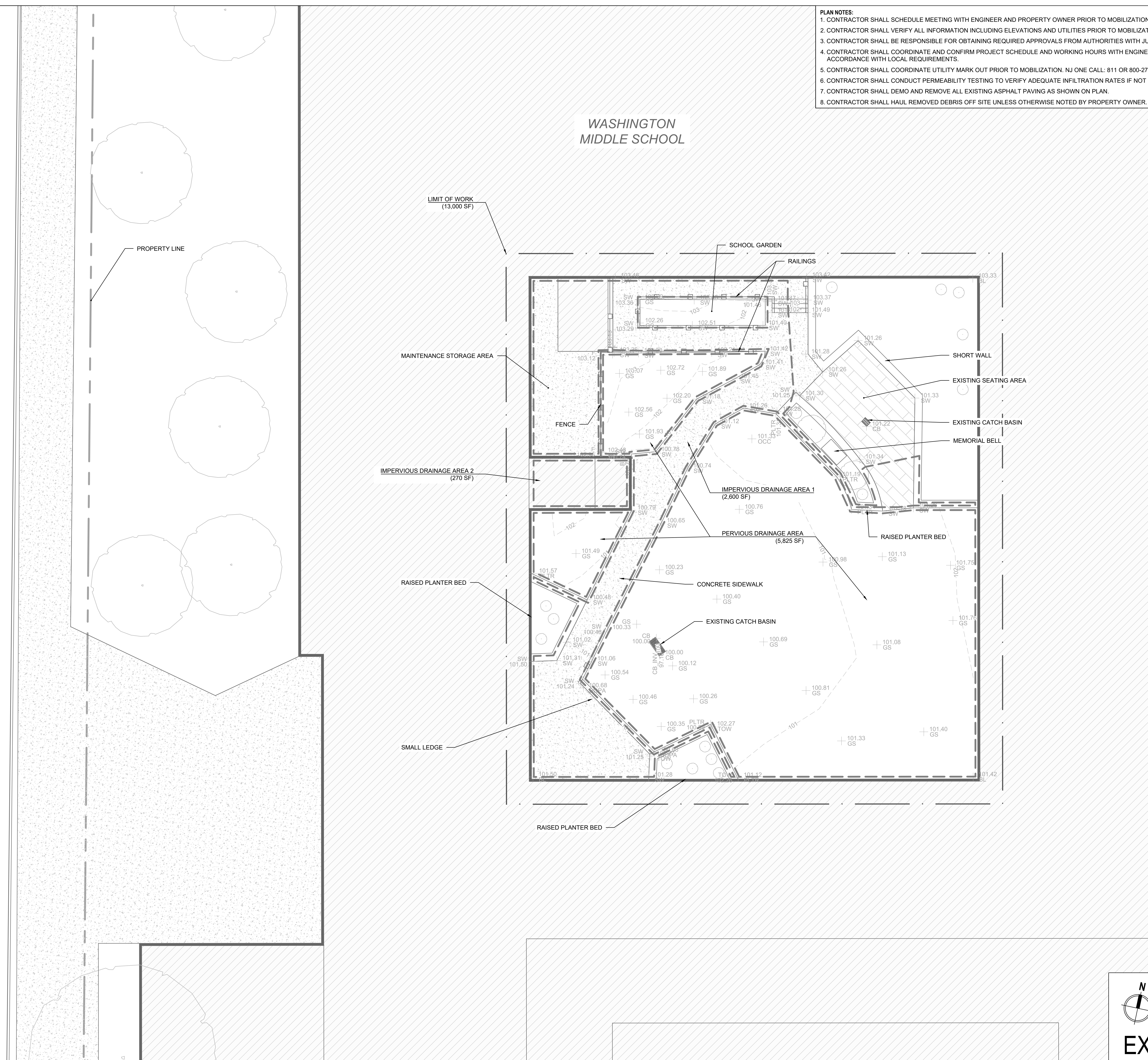
SHEET NAME  
COVER

CLEVELAND AVENUE

NORTH 5TH STREET

# WASHINGTON MIDDLE SCHOOL

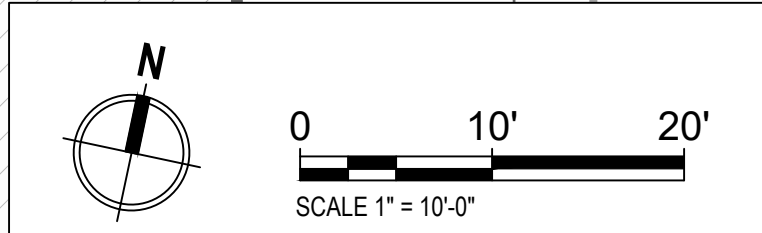
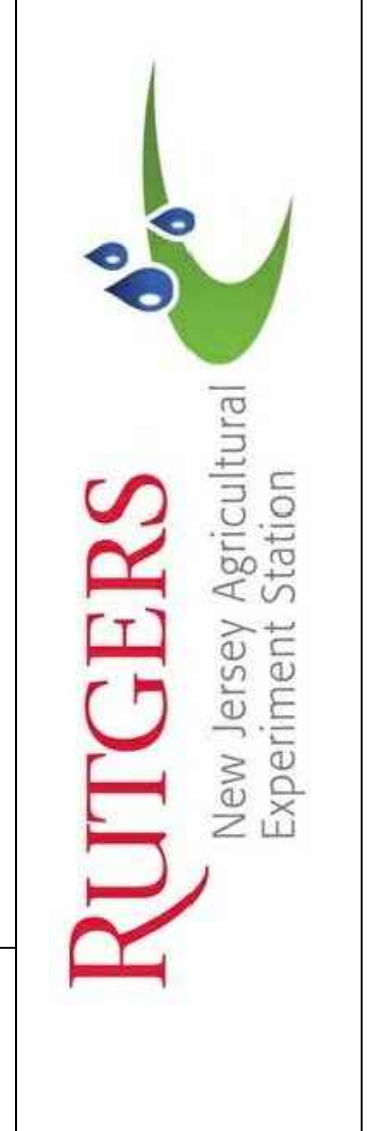
- PLAN NOTES:**
1. CONTRACTOR SHALL SCHEDULE MEETING WITH ENGINEER AND PROPERTY OWNER PRIOR TO MOBILIZATION.
  2. CONTRACTOR SHALL VERIFY ALL INFORMATION INCLUDING ELEVATIONS AND UTILITIES PRIOR TO MOBILIZATION.
  3. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING REQUIRED APPROVALS FROM AUTHORITIES WITH 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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**WASHINGTON MIDDLE SCHOOL  
 GREEN INFRASTRUCTURE IMPLEMENTATION PROJECT**  
 1 NORTH 5TH STREET, HARRISON  
 HUDSON COUNTY, NJ  
**EXISTING CONDITIONS AND DEMOLITION PLAN**



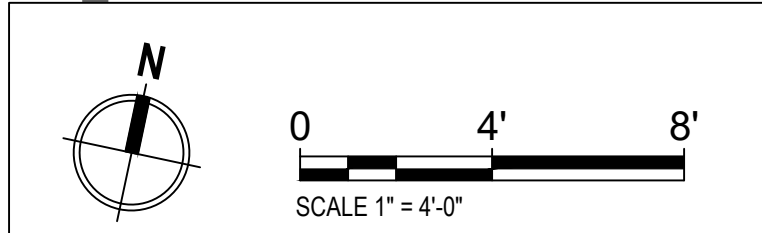
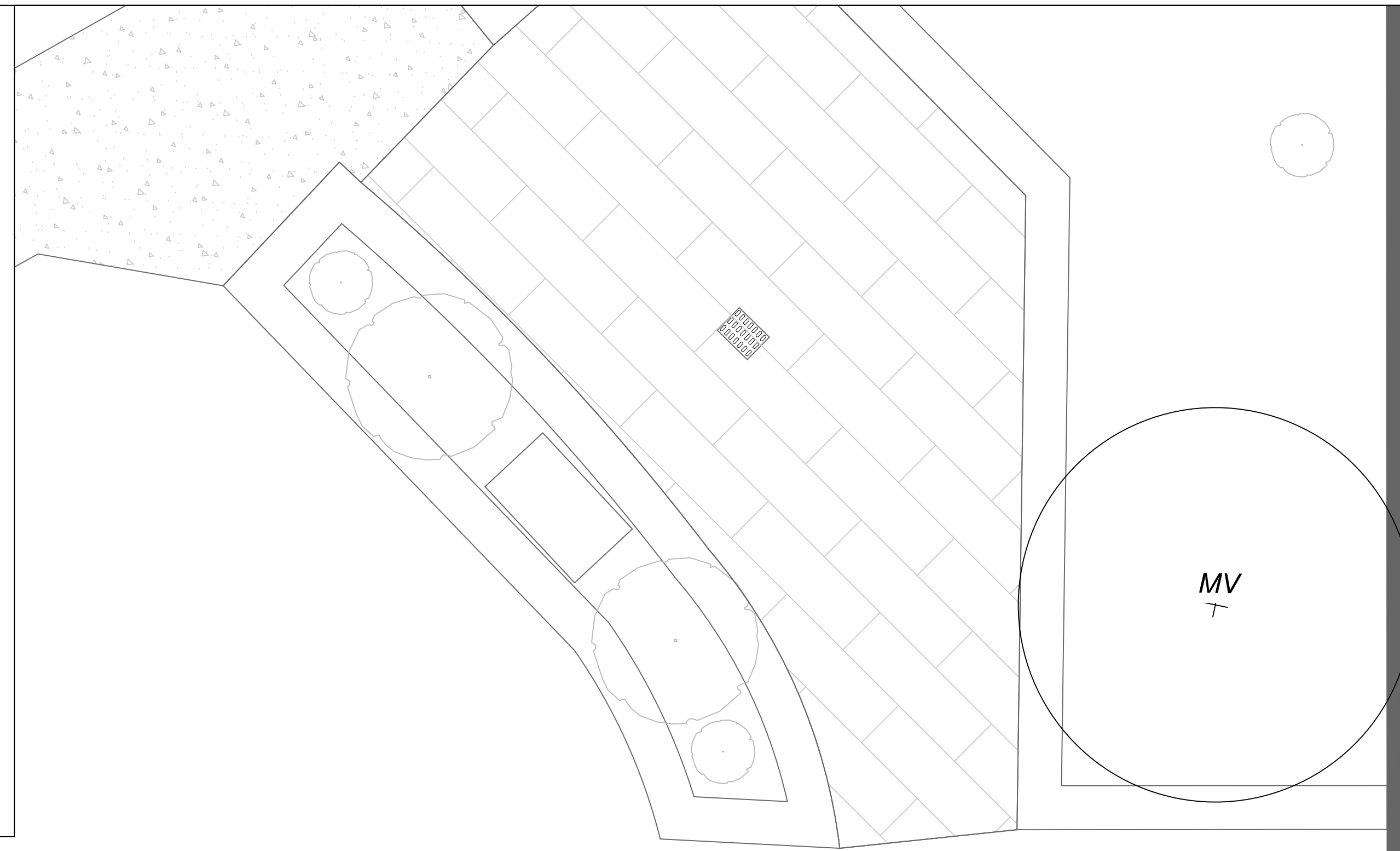
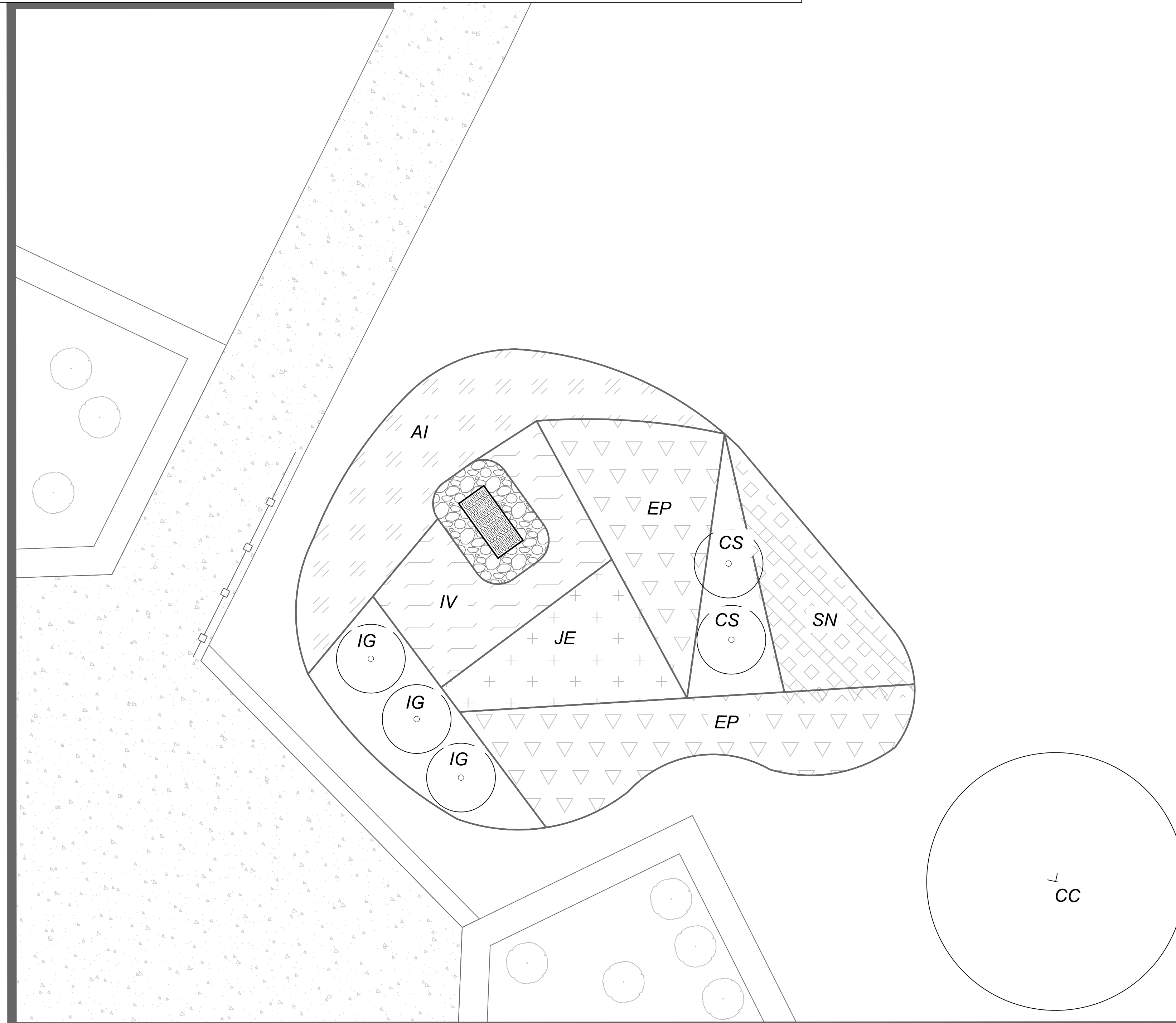
## EXISTING PLAN

SHEET NAME  
P-1





PLANTING SCHEDULE						
PLANT SPECIES					QUANTITY	SIZE
TYPE	KEY	BOTANICAL NAME	COMMON NAME			
RAIN GARDEN						
PERENNIALS	AI	<i>Asclepias incarta</i>	BUTTERFLY WEED	45	1 QUART	
	EP	<i>Echinacea purpurea</i>	PURPLE CONEFLOWER	50	PLUG	
	IV	<i>Iris versicolor</i>	BLUE FLAG IRIS	30	1 QUART	
	JE	<i>Juncus effusus</i>	SOFT RUSH	50	PLUG	
	SN	<i>Sorghastrum nutans</i>	INDIAN GRASS	50	PLUG	
SHRUBS	CS	<i>Cornus sericea</i>	RED TWIG DOGWOOD	2	#2 CONT.	
	IG	<i>Ilex glabra</i>	INKBERRY HOLLY	3	#2 CONT.	
TREES	CC	<i>Cercis canadensis</i>	EASTERN REDBUD	1	2-3" CAL.	
	MV	<i>Magnolia virginiana</i>	SWEETBAY MAGNOLIA	1	2-3" CAL.	



**PLANTING PLAN**

**WASHINGTON MIDDLE SCHOOL  
GREEN INFRASTRUCTURE IMPLEMENTATION PROJECT**  
1 NORTH 5TH STREET, HARRISON  
HUDSON COUNTY, NJ

**RUTGERS**  
New Jersey Agricultural  
Experiment Station

**PLANTING PLAN**

SHEET NAME  
P-3

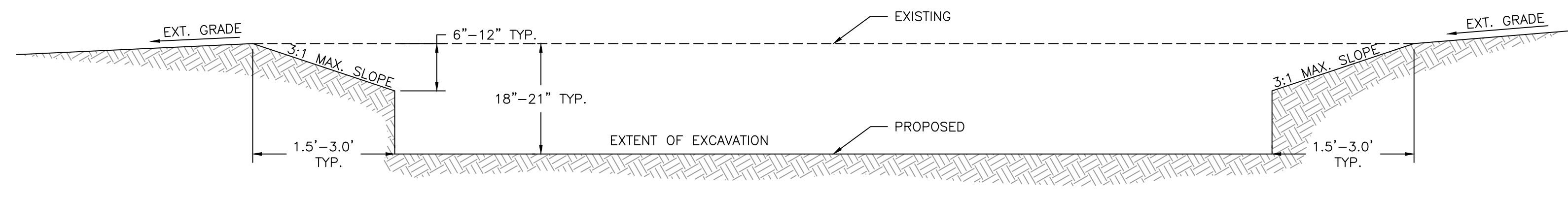
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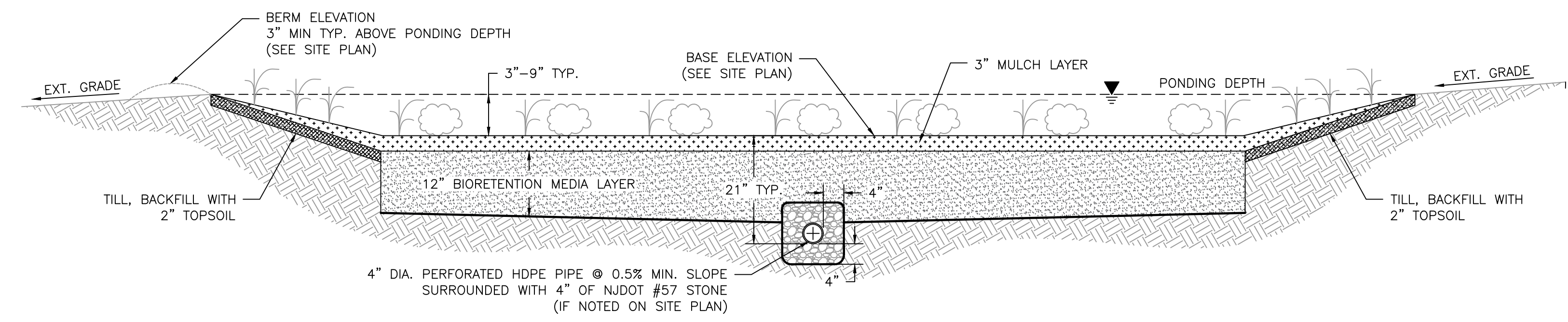
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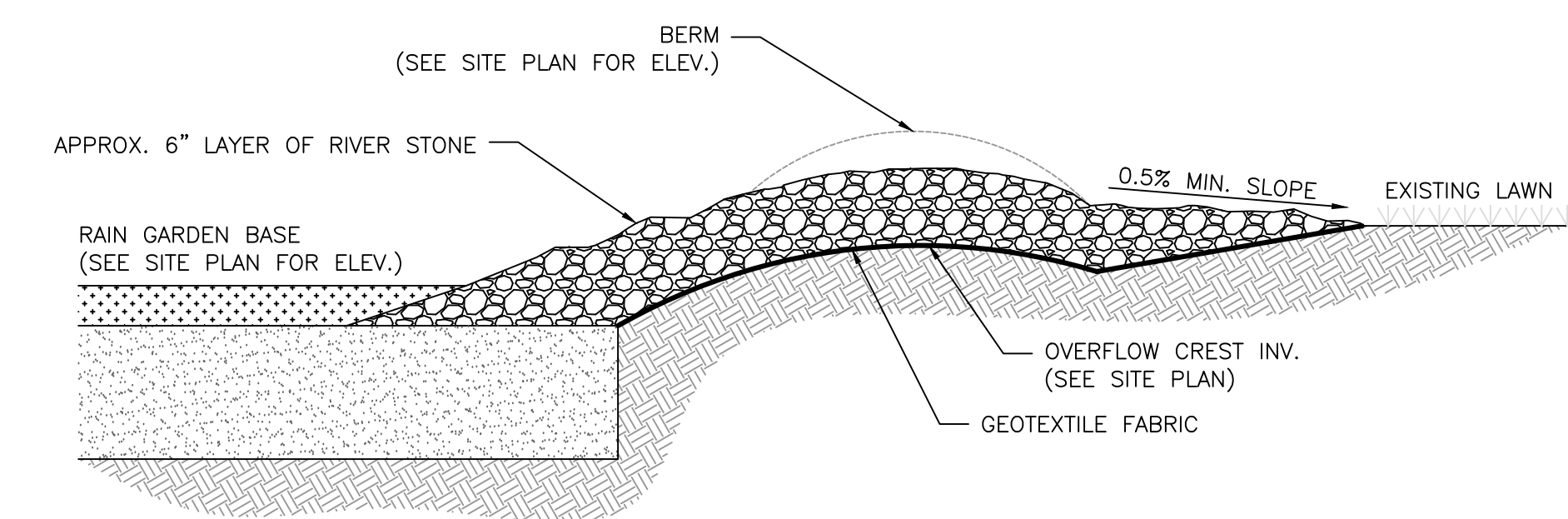
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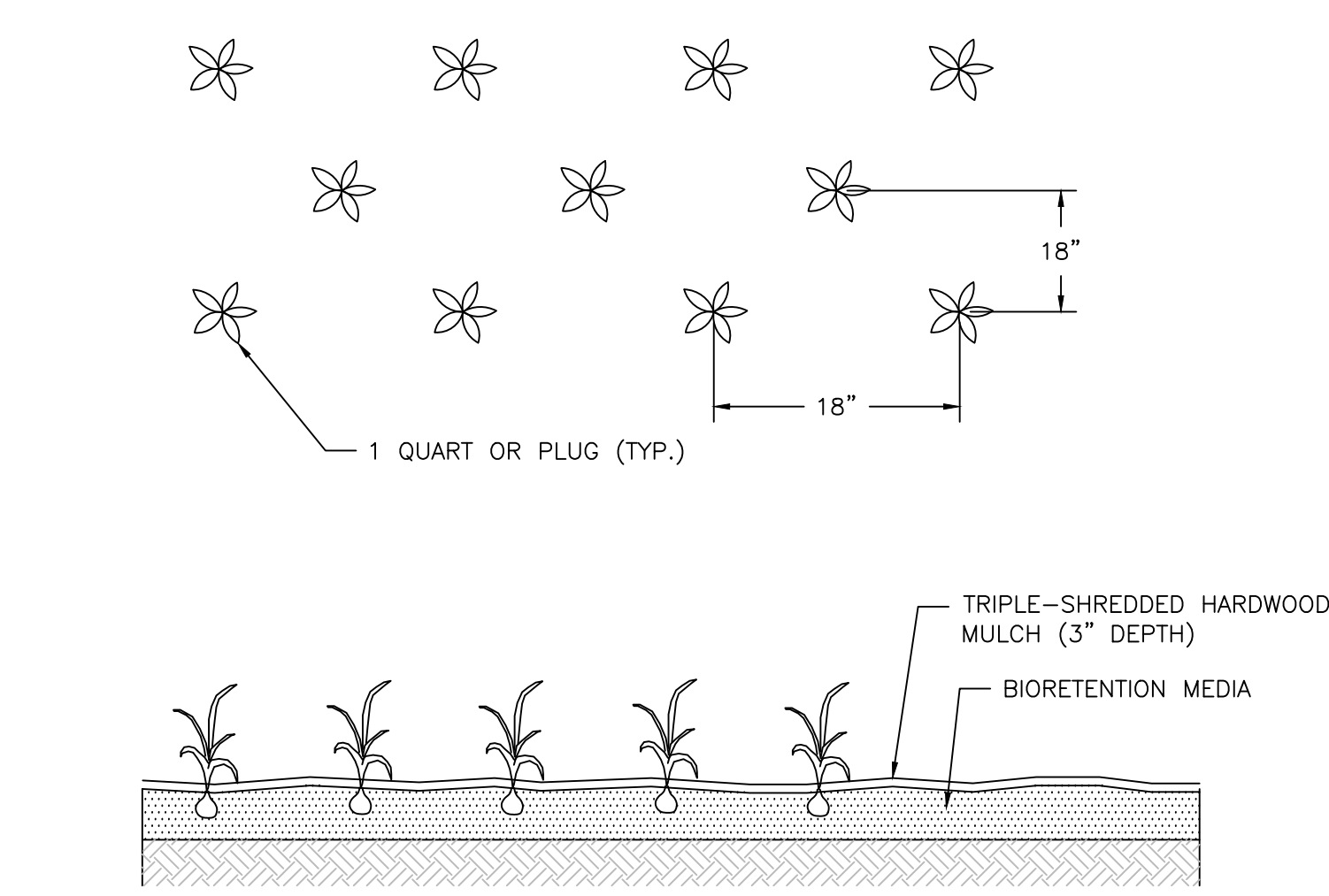
1 RAIN GARDEN EXCAVATION SECTION  
DT-1 N.T.S.



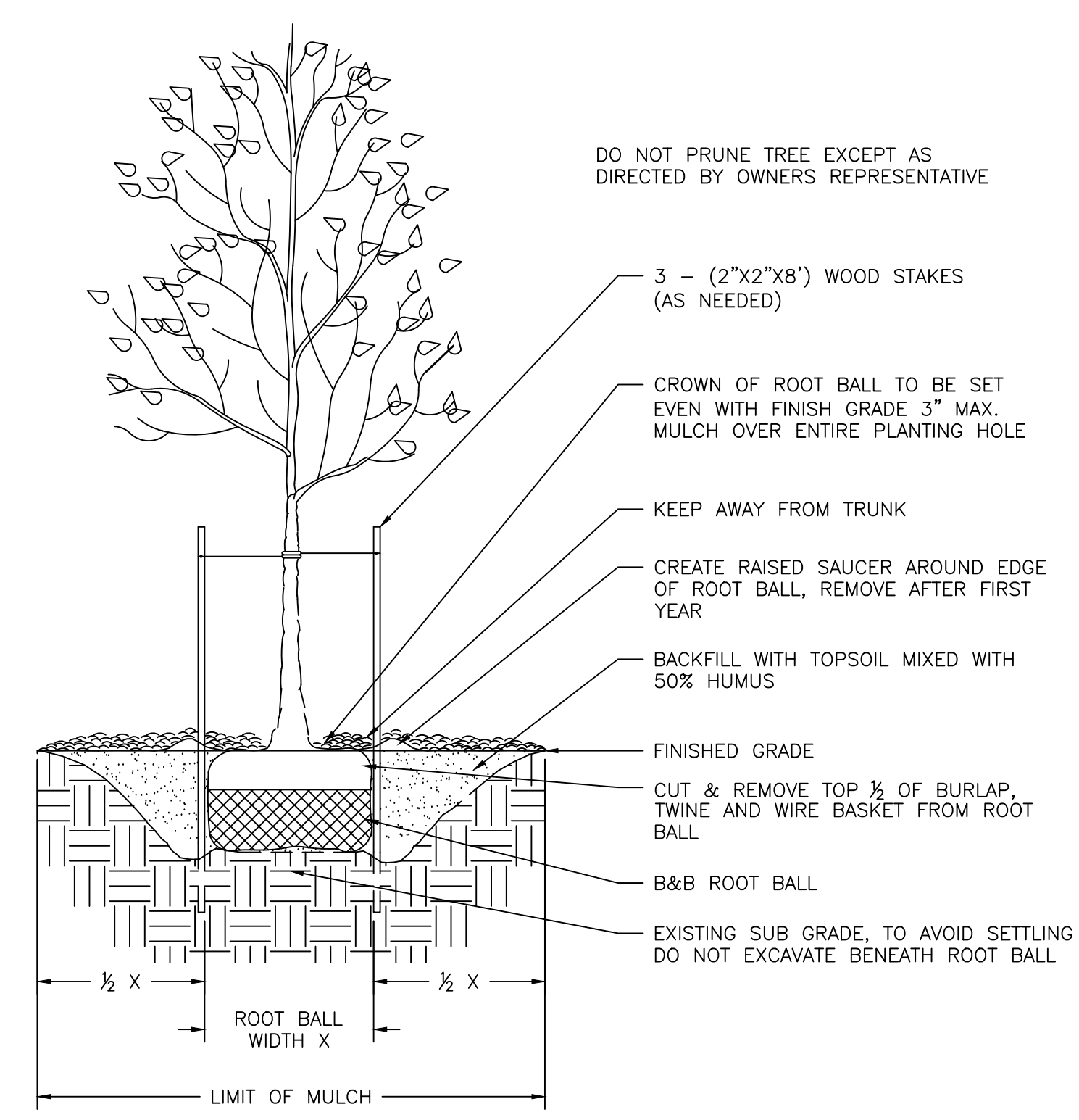
2 RAIN GARDEN CROSS-SECTION  
DT-1 N.T.S.



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



4 HERBACEOUS PLUG PLANTING DETAIL  
DT-1 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.

5 TREE PLANTING 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 DRAINTCH 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.

OPEN LAWN AND TURF AREAS

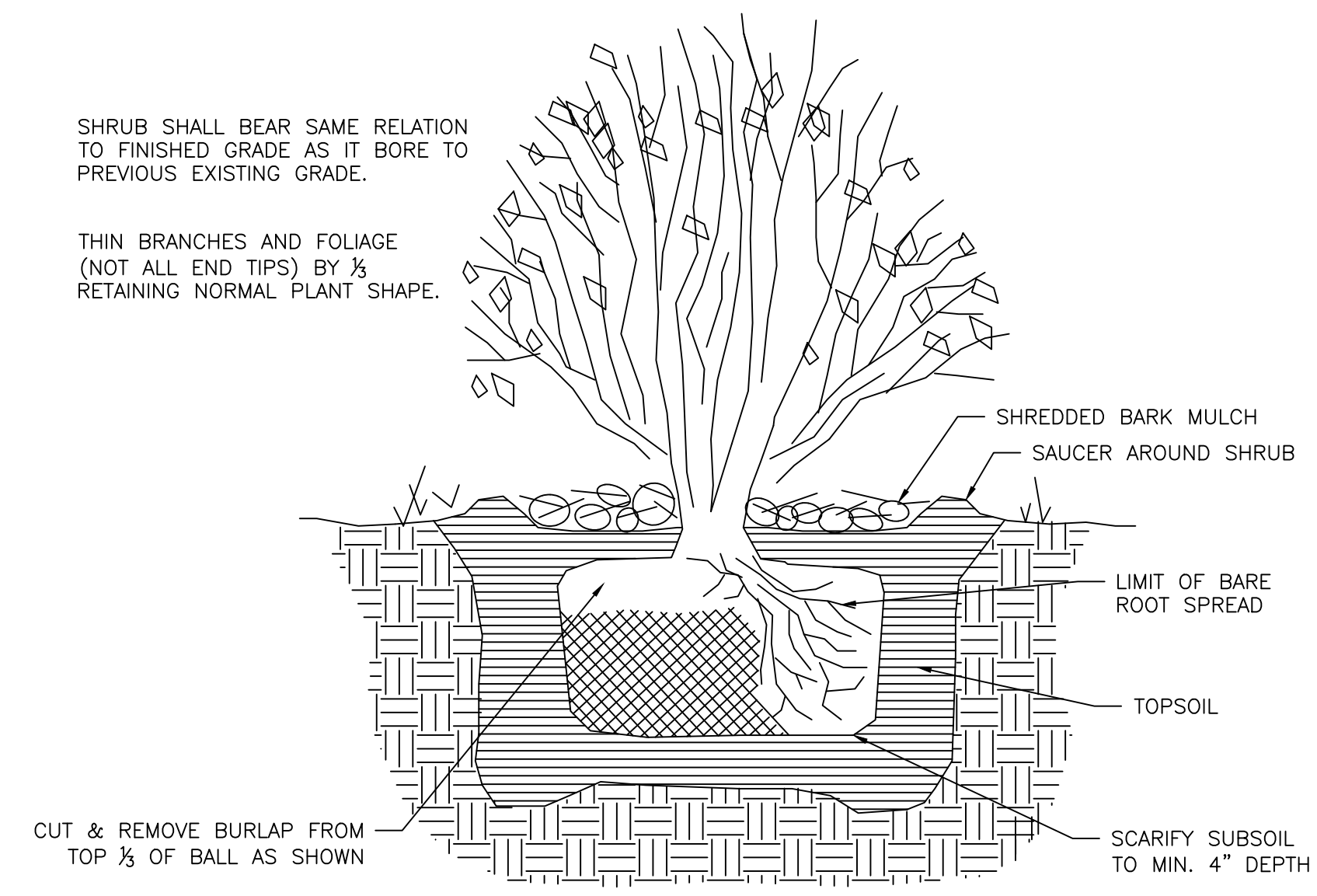
1. SEED ALL REMAINING PARK AREAS WITH TURF TYPE FALL FESCUE AND PERENNIAL RYEGRASS BLEND (LOFTS - SUMMER STRESS MIX II OR APPROVED EQUIVALENT). INSTALL AT A RATE OF 350 LBS. PER ACRE PER MANUFACTURERS SPECIFICATIONS.

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 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 INSURE 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. ALL HERBACEOUS PLUG PLANTINGS SHALL BE A MINIMUM 3 INCH DEPTH. PLUGS SHALL BE PLANTED 1 FOOT O.C. AS INDICATED ON PLAN.
4. ALL TREES, SHRUBS, AND GROUND COVER SHALL BE PLACED IN CONTINUOUS MULCHED BEDS 4" IN DEPTH. MULCH SHALL BE TRIPLE SHREDDED HARDWOOD.
5. 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.
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: 1/3 COMPOST, 2/3 TOPSOIL
8. ALL HERBACEOUS PLUG PLANTINGS SHALL BE MINIMUM 3 INCH DEPTH. PLUGS SHALL BE PLANTED 1 FOOT O.C. AS INDICATED ON PLAN.



NOTES:  
1. DEER PROTECTION REQUIRED AROUND SHRUB PLANTINGS.

6 SHRUB PLANTING DETAIL  
DT-1 N.T.S.

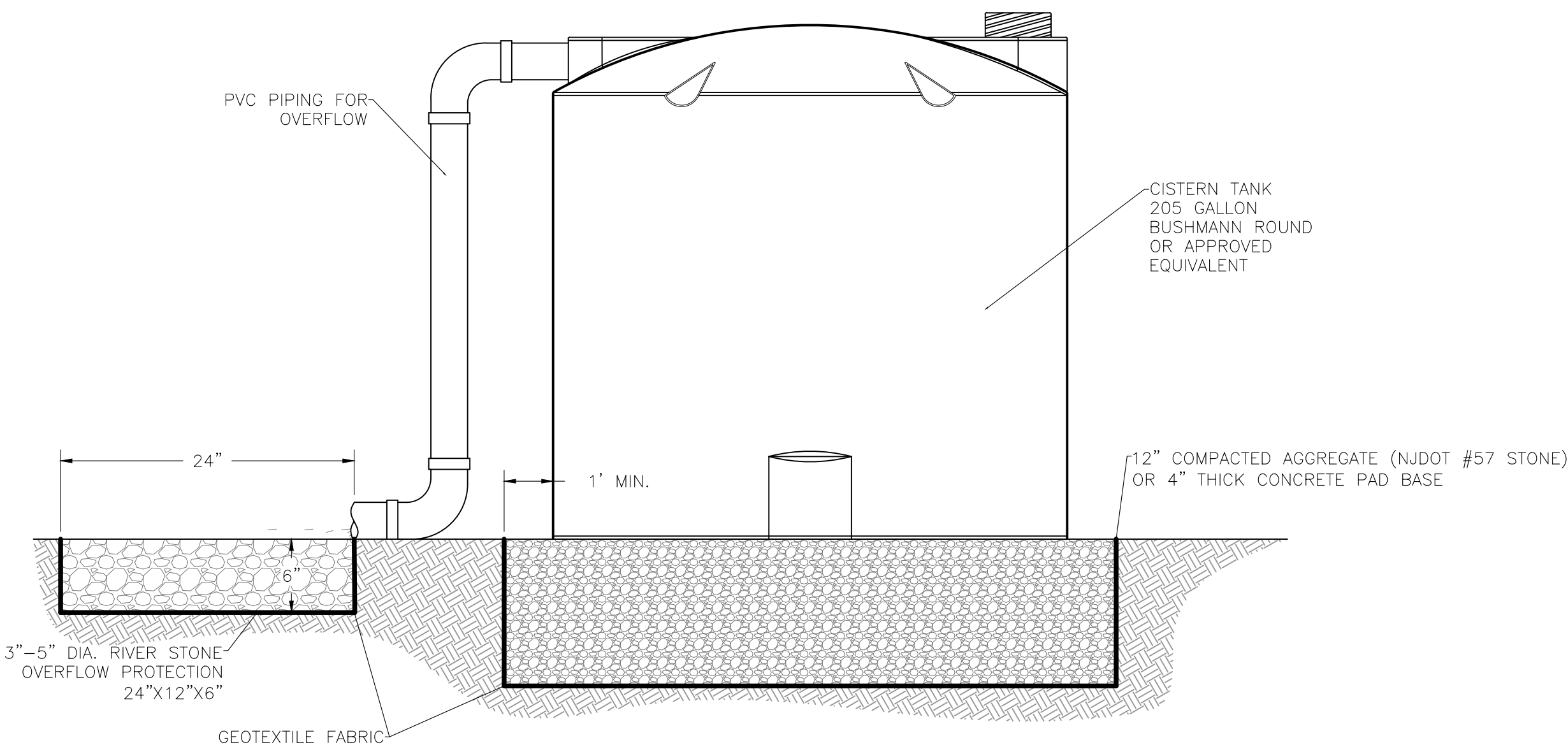
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GREEN INFRASTRUCTURE IMPLEMENTATION PROJECT  
1 NORTH 5TH STREET, HARRISON  
HUDSON COUNTY, NJ

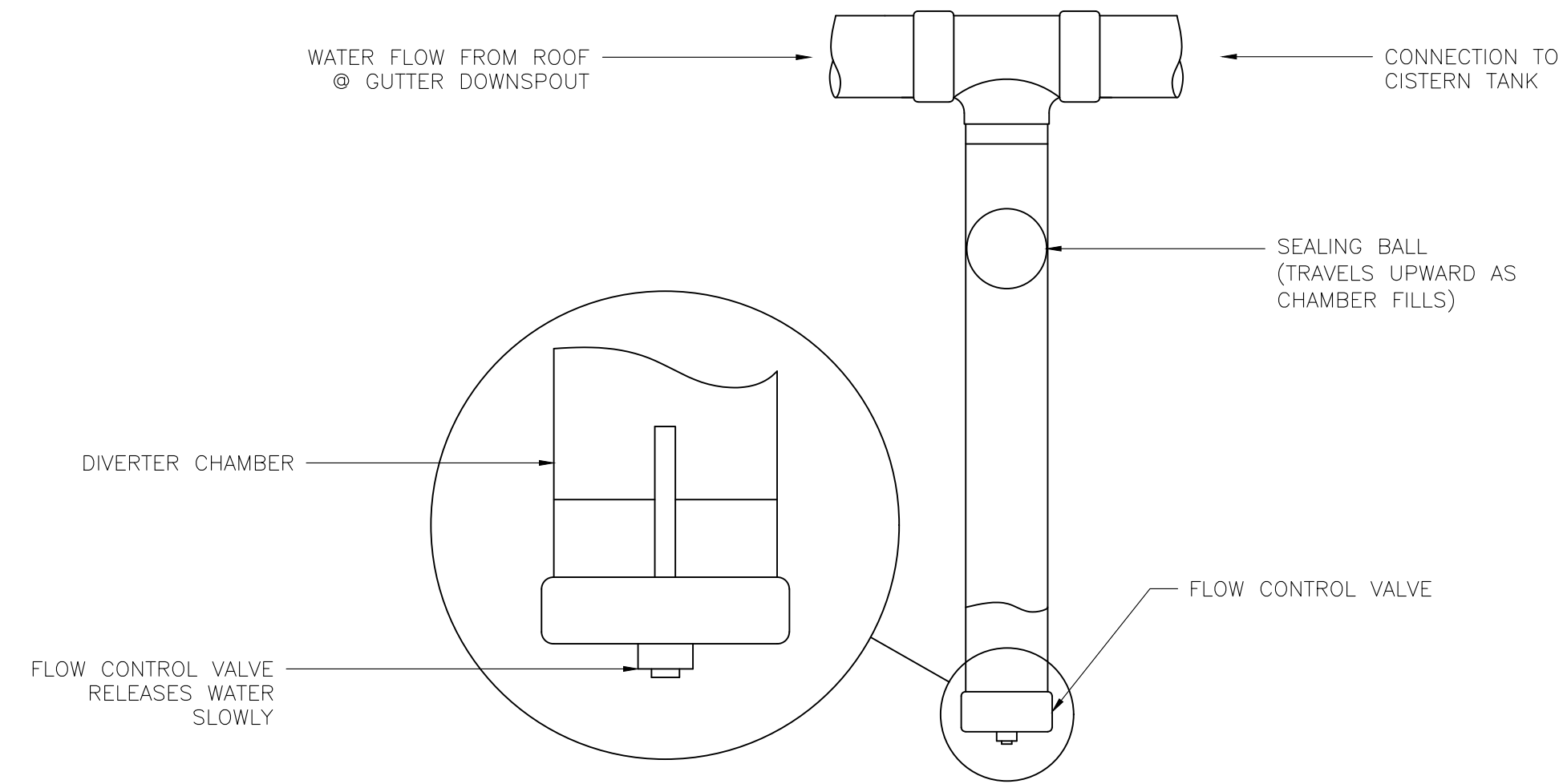
RUTGERS  
New Jersey Agricultural  
Experiment Station

SHEET NAME  
DT-1

DATE 09/23/19  
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1 CISTERN TANK (TYP.)  
DT-2 N.T.S.



2 DOWNSPOUT FIRST FLUSH DIVERTER DETAIL  
DT-2 N.T.S.

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL VERIFY ALL INFORMATION PRIOR TO INSTALLATION 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 HAVE A PRE-CONSTRUCTION MEETING WITH THE ENGINEER PRIOR TO ANY WORK ON SITE.
4. THE CONTRACTOR SHALL AVOID DISTURBING EXISTING AREA, ANY DISTURBANCE TO SIDEWALKS OR LANDSCAPED VEGETATION AND TREES MUST BE COORDINATED WITH THE PROPERTY OWNER.
5. THE CONTRACTOR SHALL USE PVC PIPING FOR CONNECTION FROM ROOF TO CISTERN.
6. ALL PIPES USED FOR CONNECTION FROM ROOFTOP TO CISTERN SHALL BE CLEAR OF ANY CLOGS OR OBSTRUCTIONS. ALL PIPES SHALL BE FITTED AND SECURED WITH ADHESIVE IN CONFORMANCE WITH LOCAL PLUMBING CODES.
7. THE CONTRACTOR SHALL PROVIDE A CRUSHED AGGREGATE BASE OR CONCRETE SLAB WITH 4,500 PSI STRENGTH TO SUPPORT THE CISTERN AS INDICATED ON THE PLAN.
8. THE OVERFLOW FROM THE CISTERN SHALL CONNECT TO THE NEAREST STORM SEWER CATCH BASIN INLET.
9. THE CONTRACTOR SHALL NOT MAKE ANY MODIFICATIONS AT THE SITE UNTIL CONSULTING WITH THE ENGINEER.
10. THE CONTRACTOR IS REQUIRED TO SUBMIT SHOP DRAWINGS OF ALL MATERIALS AND CONSTRUCTION METHODS TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO PURCHASE AND INSTALLATION.
11. ALL SYSTEMS SHALL BE TESTED BY THE ENGINEER FOR LEAKS AND WATER TIGHT FITTINGS PRIOR TO ACCEPTANCE AND PAYMENT.
12. THE CONTRACTOR SHALL USE SIMPSON TIE IN CONNECTORS FOR THE SHADE STRUCTURE.
13. THE CONTRACTOR SHALL USE PRESSURE TREATED LUMBER.
14. THE CONTRACTOR SHALL INSTALL CONCRETE FOOTINGS WITH A MINIMUM 3 FOOT DEPTH.
15. THE CONTRACTOR SHALL NOT MAKE ANY MODIFICATIONS AT THE SITE UNTIL CONSULTING WITH THE ENGINEER.

SPECIFICATIONS:

1. CRUSHED AGGREGATE BASE SHALL BE COMPRISED OF NO. 57 STONE. ALTERNATIVE CONCRETE PAD SHALL BE CONCRETE WITH 4,500 PSI STRENGTH.
2. ALL DISTURBED AREAS EXCLUSIVE OF THE CISTERN SHALL BE RESTORED TO ORIGINAL CONDITIONS BY THE CONTRACTOR.
3. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS OF DOWNSPOUT CONNECTIONS TO CISTERN FOR ENGINEERS APPROVAL PRIOR TO INSTALLATION.
4. DIVERTER FILTER BOX SHALL BE RAINHARVESTING@FIRST FLUSH DOWNSPOUT DIVERTER (PRODUCT CODE: WDD59X) OR EQUIVALENT.
5. OVERFLOW SHALL DISCHARGE TO LAWN AREA UNLESS SPECIFIED OTHERWISE. STONE PROTECTION COMPRISED OF 3"-5" DIA. CLEAN RIVER STONE SHALL BE INSTALLED AS SHOWN IN DETAIL.

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*Christopher C. Obropta*

DATE 09/23/19

CHECKED: [Signature] DATE 09/23/19

APPROVED: [Signature] DATE 09/23/19

DRAWN: MAL

REVISIONS	No.	DATE	DESCRIPTION

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GREEN INFRASTRUCTURE IMPLEMENTATION PROJECT  
1 NORTH 5TH STREET, HARRISON  
HUDSON COUNTY, NJ

CISTERN DETAILS

RUTGERS  
New Jersey Agricultural  
Experiment Station

# Site Rendering



Washington Middle School  
Green Infrastructure Information Sheet

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**Appendix C**

Site Photographs – Completed Projects

# Site Photograph September 12, 2019



# Site Photograph November 14, 2019

