

West Side Park
Green Infrastructure Information Sheet

<p>Location: 600 S 17th Street Newark, NJ</p>	<p>Site Use: Park</p>
<p>Ward: West</p>	<p>Watershed Name: Newark Bay / Kill Van Kull / Upper NY Bay</p> <p>Targeted Pollutants: total nitrogen (TN), total phosphorus (TP), and total suspended solids (TSS) in surface runoff</p>
<p>Green Infrastructure Description: Rain garden Tree plantings</p>	<p>Estimated Stormwater Captured and Treated Per Year: Rain garden: ~20,584 gallons</p>
<p>Implementation Date: 10/9/15 Green Infrastructure System: one (1) 200 sq. ft. rain garden and 14 trees Drainage Area: ~790 sq. ft. (rooftop)</p>	
<p>Funding Sources: NJ Department of Environmental Protection 319 (h) Grant</p>	
<p>Partners/Stakeholders: Rutgers Cooperative Extension Water Resources Program. Essex County Parks. New Jersey Tree Foundation. Rutgers VETS Program. Rutgers University Center for Environmental and Estuarine Science (Rutgers CEEES)</p>	
<p>Appendix A: Project Completed – Photograph of green infrastructure practice</p> <p>Appendix B: PVSC/RCE Green Infrastructure Feasibility Study for the City of Newark</p>	

600 17th Street, Newark, NJ

West Side Park

Appendix A:

Completed Project Photograph

October 9, 2015

Project Completed October 9, 2015







600 S 17th Street, Newark, NJ

West Side Park

Appendix B:

West Side Park Rain Garden Demonstration

WEST SIDE PARK RAIN GARDEN DEMONSTRATION

GREEN INFRASTRUCTURE FOR THE CITY OF NEWARK
 623 S 13TH STREET, NEWARK
 ESSEX COUNTY, NEW JERSEY

LOCATION MAP:



SHEET INDEX:

NO.	SHEET	NAME
1	COVER	COVER SHEET
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3	P-2	PROPOSED SITE PLAN
4	P-3	PLANTING PLAN
5	DT-1	RAIN GARDEN DETAILS
6	DT-2	RENDERINGS

CHRISTOPHER C. OBROPTA, Ph.D., P.E.
 PROFESSIONAL ENGINEER - NJ LICENSE # 37532
 DATE 08/11/15
 APPROVED CCO
 CHECKED HWG
 DRAWN TEL
 DATE 08/11/15

REVISIONS	DATE	DESCRIPTION
No.		

WEST SIDE PARK
 GREEN INFRASTRUCTURE FOR THE CITY OF NEWARK
 623 S 13TH STREET, NEWARK
 ESSEX COUNTY, NJ
 COVER SHEET



SHEET #
 COVER

TOTAL # OF SHEETS
 6

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.
 6. CONTRACTOR SHALL HAUL REMOVED DEBRIS OFF SITE UNLESS OTHERWISE NOTED BY PROPERTY OWNER.

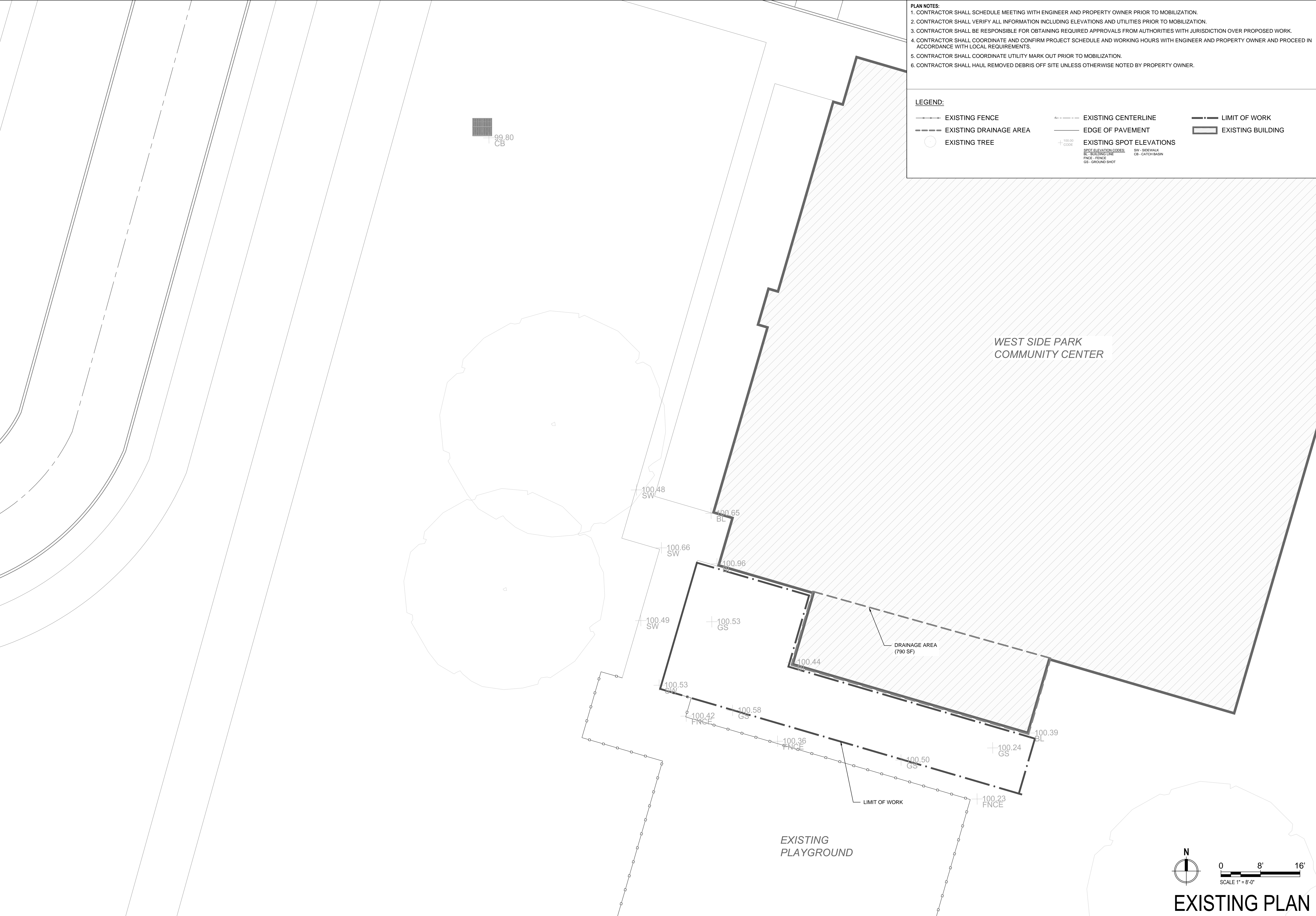
LEGEND:

EXISTING FENCE	EXISTING CENTERLINE	LIMIT OF WORK
EXISTING DRAINAGE AREA	EDGE OF PAVEMENT	EXISTING BUILDING
EXISTING TREE	EXISTING SPOT ELEVATIONS	

SPOT ELEVATION CODES:
 BL - BUILDING LINE
 FENCE - FENCE
 GS - GROUND SHOT
 SW - SIDEWALK
 CB - CATCH BASIN

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**WEST SIDE PARK
 GREEN INFRASTRUCTURE FOR THE CITY OF NEWARK**
 623 S 13TH STREET, NEWARK
 ESSEX COUNTY, NJ
EXISTING CONDITIONS PLAN



SHEET #
P-1
 TOTAL # OF SHEETS
6

EXISTING PLAN

PLAN NOTES:

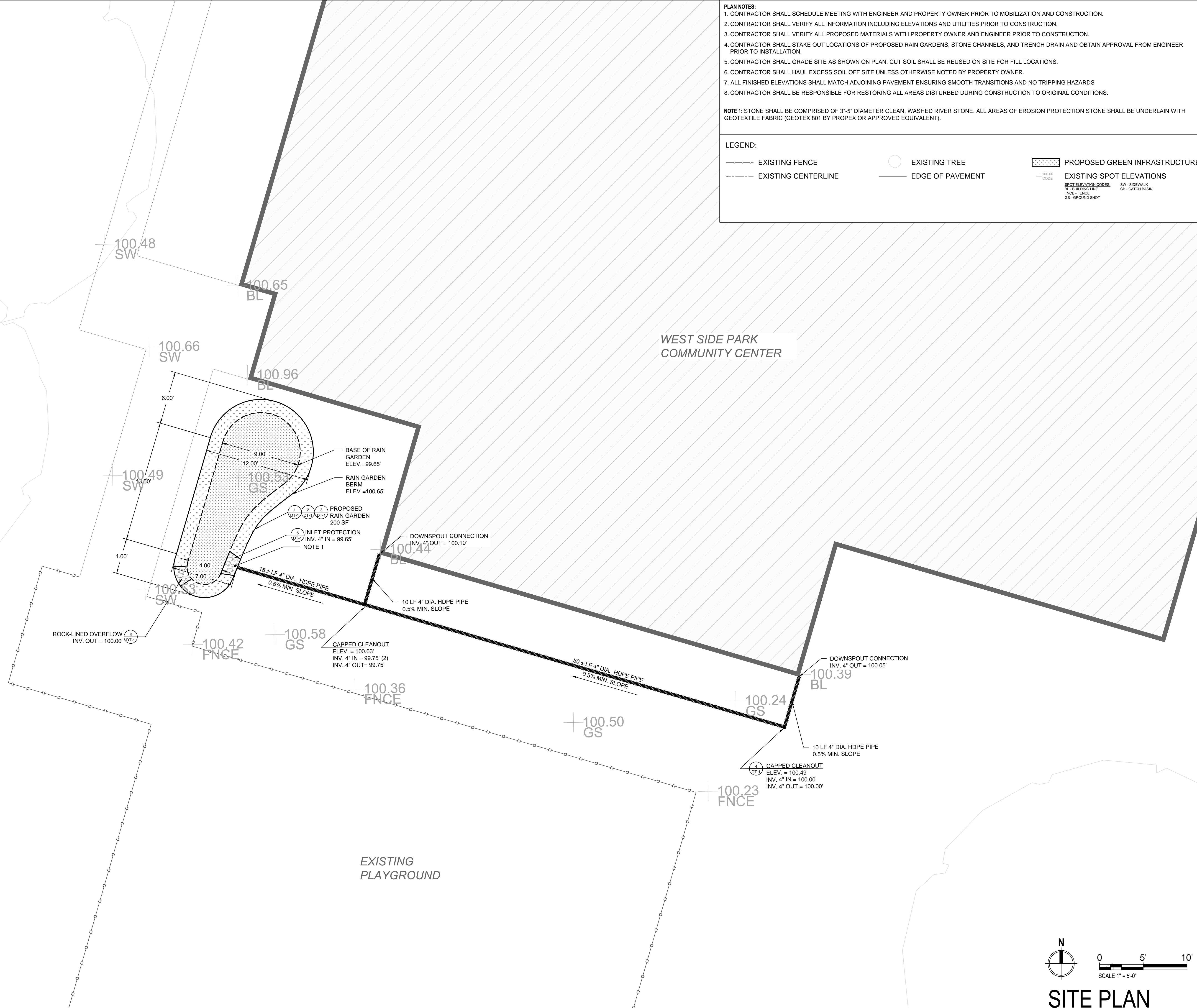
1. CONTRACTOR SHALL SCHEDULE MEETING WITH ENGINEER AND PROPERTY OWNER PRIOR TO MOBILIZATION AND CONSTRUCTION.
2. CONTRACTOR SHALL VERIFY ALL INFORMATION INCLUDING ELEVATIONS AND UTILITIES PRIOR TO CONSTRUCTION.
3. CONTRACTOR SHALL VERIFY ALL PROPOSED MATERIALS WITH PROPERTY OWNER AND ENGINEER PRIOR TO 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 GRADE SITE AS SHOWN ON PLAN. CUT SOIL SHALL BE REUSED ON SITE FOR FILL LOCATIONS.
6. CONTRACTOR SHALL HAUL EXCESS SOIL OFF SITE UNLESS OTHERWISE NOTED BY PROPERTY OWNER.
7. ALL FINISHED ELEVATIONS SHALL MATCH ADJOINING PAVEMENT ENSURING SMOOTH TRANSITIONS AND NO TRIPPING HAZARDS
8. 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).

LEGEND:

- EXISTING FENCE
- EXISTING TREE
- EXISTING CENTERLINE
- EDGE OF PAVEMENT
- PROPOSED GREEN INFRASTRUCTURE
- EXISTING SPOT ELEVATIONS

SPOT ELEVATION CODES:
 BL - BUILDING LINE
 FNCE - FENCE
 GS - GROUND SHOT
 SW - SIDEWALK
 CB - CATCH BASIN



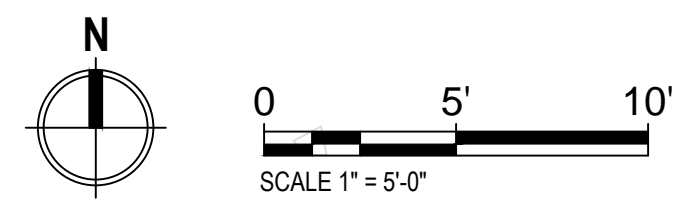
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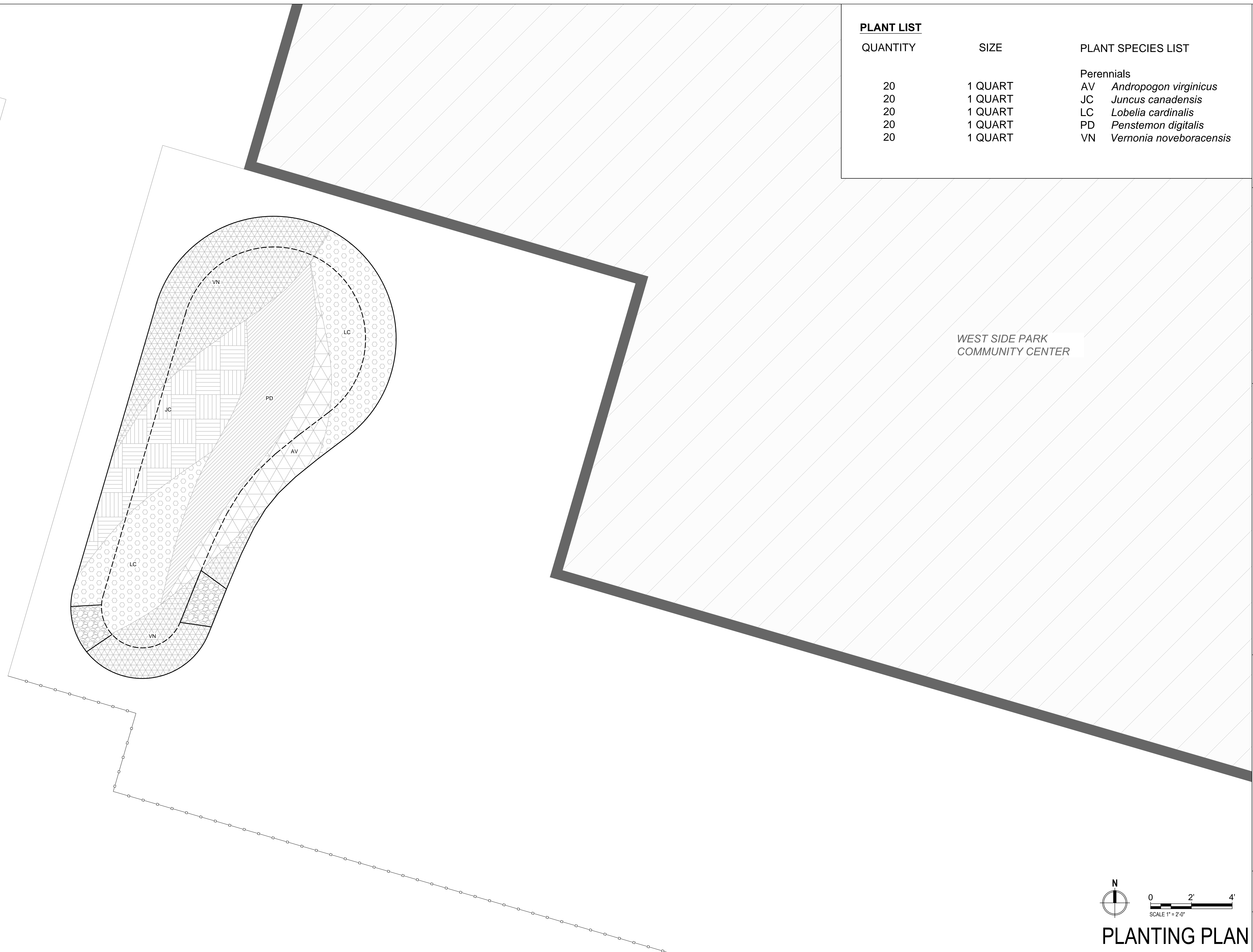
**WEST SIDE PARK
 GREEN INFRASTRUCTURE FOR THE CITY OF NEWARK**
 623 S 13TH STREET, NEWARK
 ESSEX COUNTY, NJ
PROPOSED SITE PLAN



SHEET #
P-2
 TOTAL # OF SHEETS
6



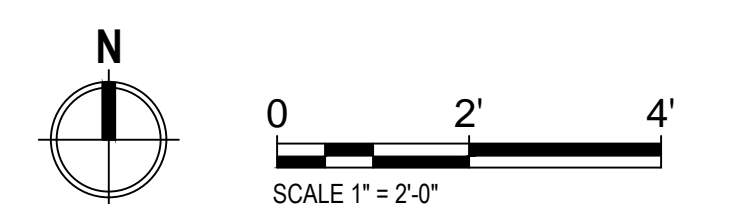
SITE PLAN



PLANT LIST

QUANTITY	SIZE	PLANT SPECIES LIST
20	1 QUART	Perennials
20	1 QUART	AV <i>Andropogon virginicus</i>
20	1 QUART	JC <i>Juncus canadensis</i>
20	1 QUART	LC <i>Lobelia cardinalis</i>
20	1 QUART	PD <i>Penstemon digitalis</i>
20	1 QUART	VN <i>Vernonia noveboracensis</i>

WEST SIDE PARK
COMMUNITY CENTER



PLANTING PLAN



**WEST SIDE PARK
GREEN INFRASTRUCTURE FOR THE CITY OF NEWARK**
623 S 13TH STREET, NEWARK
ESSEX COUNTY, NJ

PLANTING PLAN

REVISIONS	DATE	DESCRIPTION
No.		

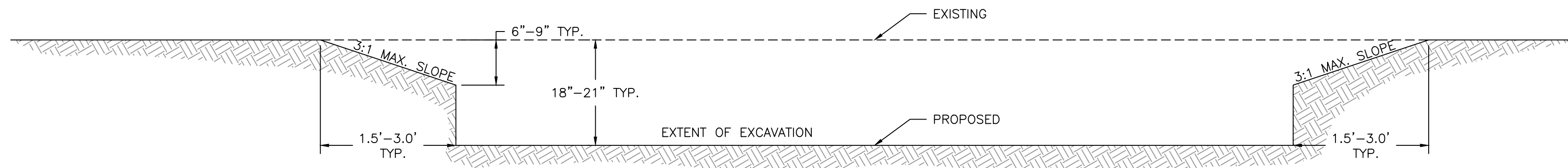
CHRISTOPHER C. OBROPTA, Ph.D., P.E.
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Christopher C. Obropta

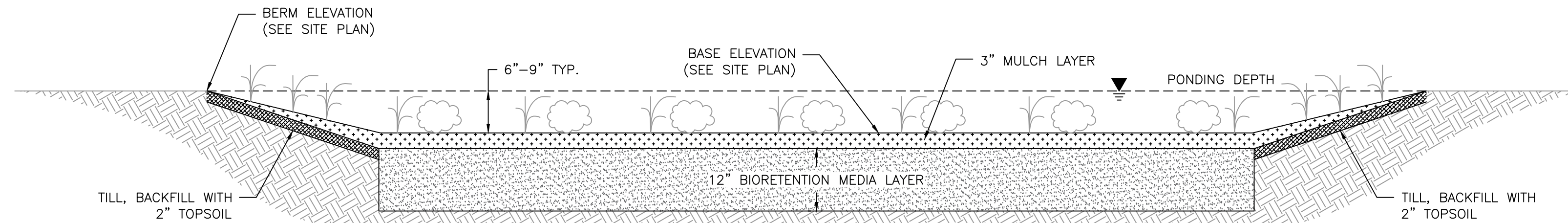
DATE 08/11/15

DRAWN	CHECKED	APPROVED	DATE
TJL	RWG	CCO	08.11.15

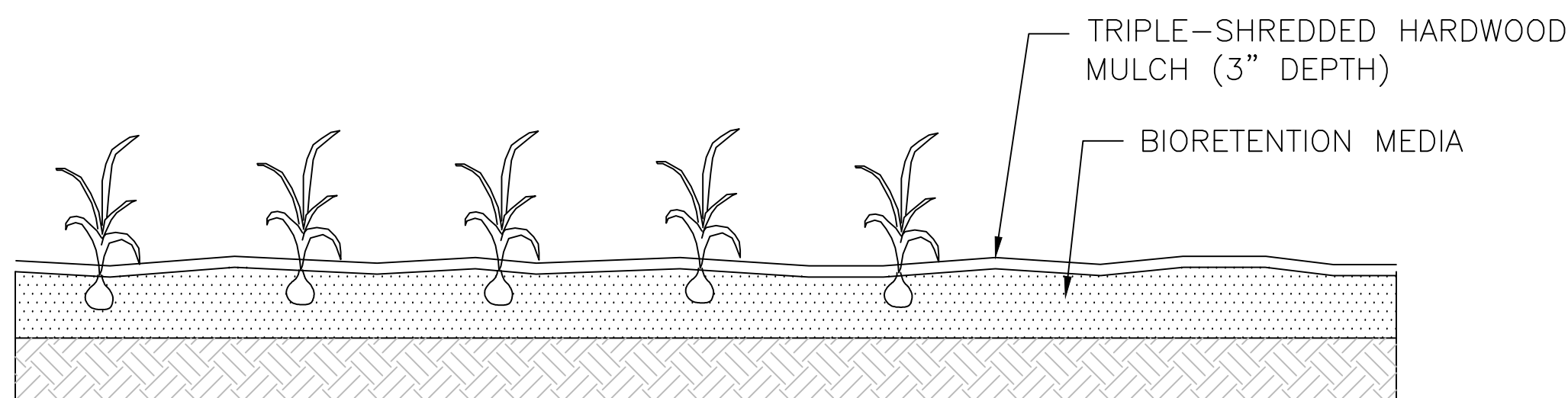
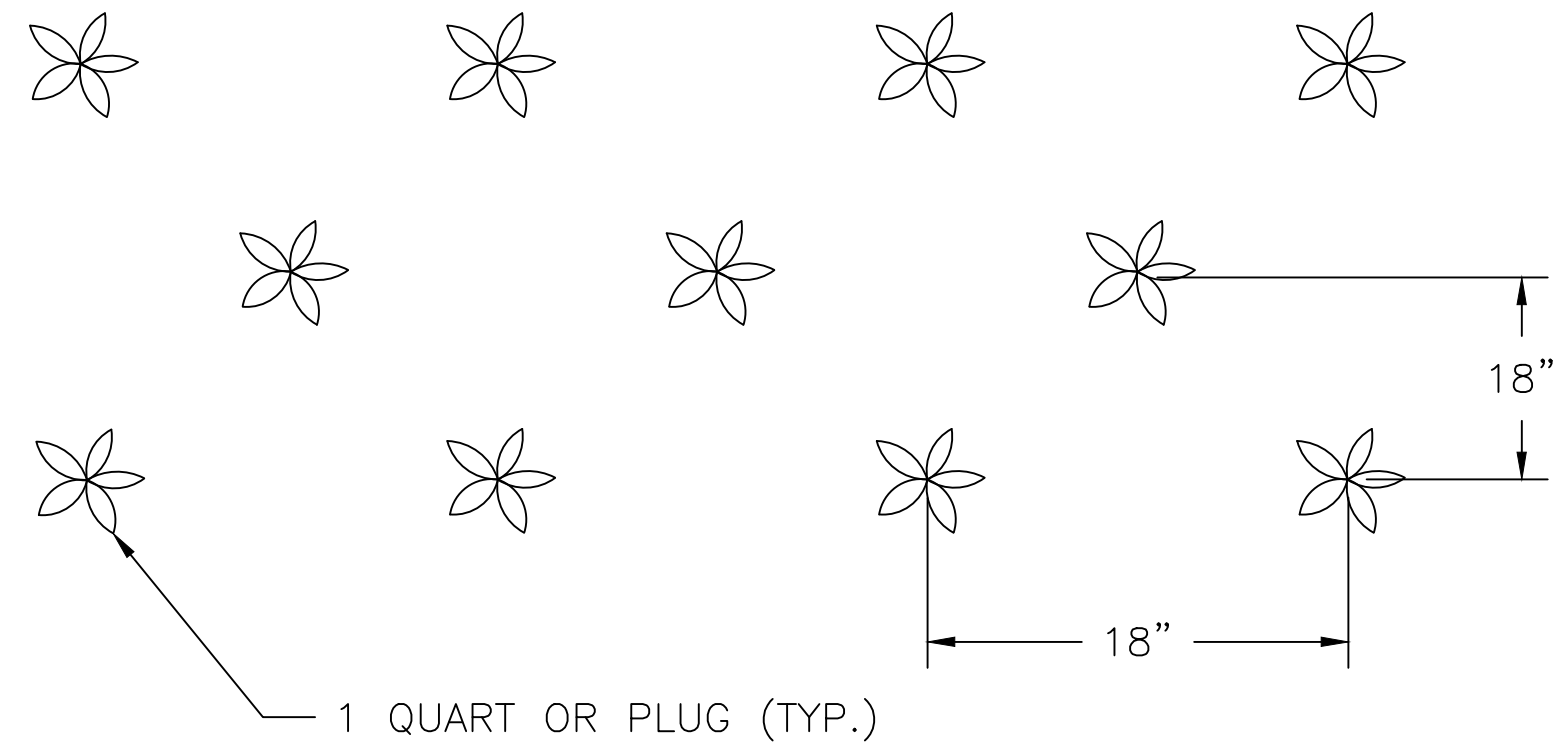
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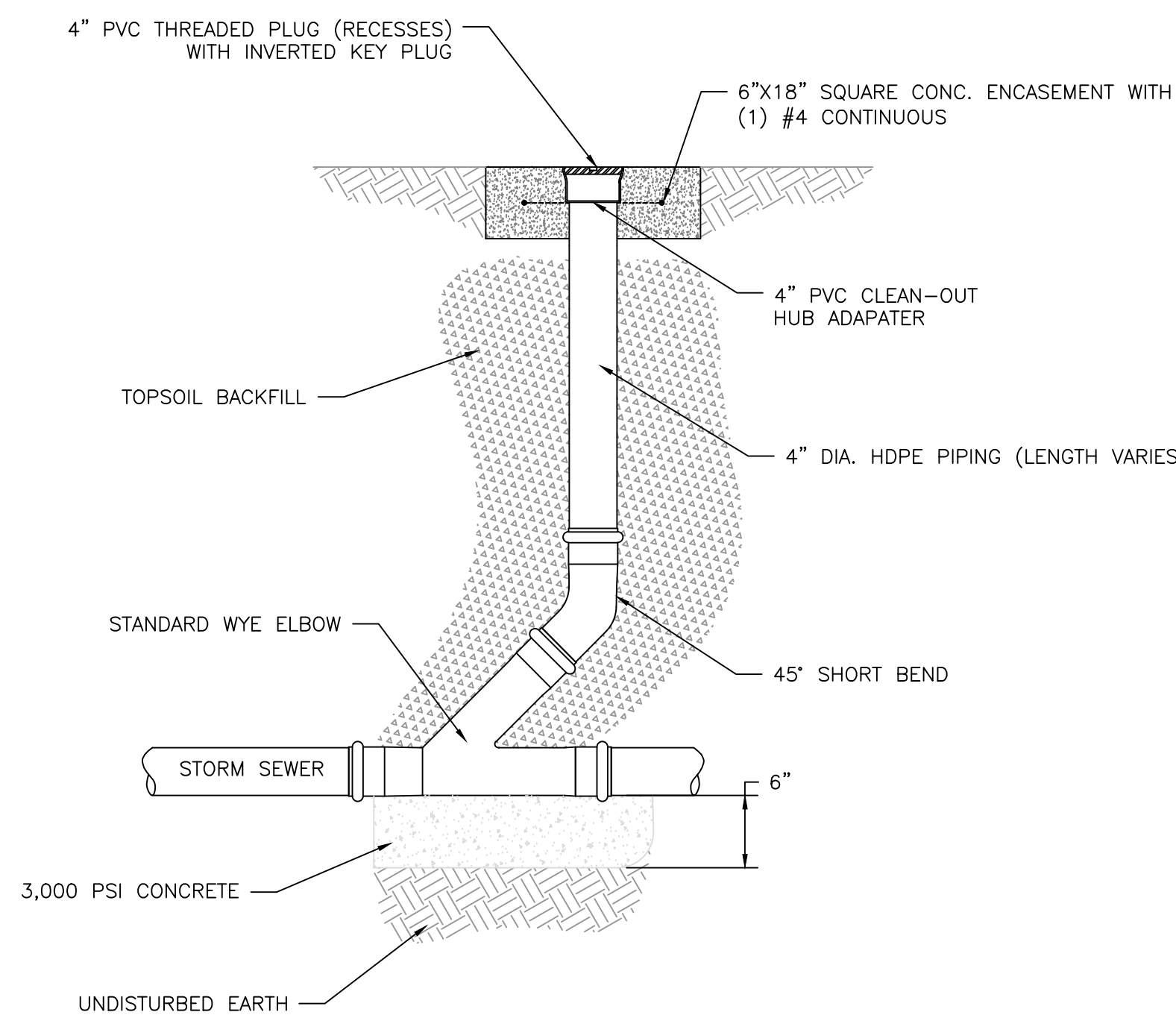
1 RAIN GARDEN EXCAVATION SECTION
DT-1 N.T.S.



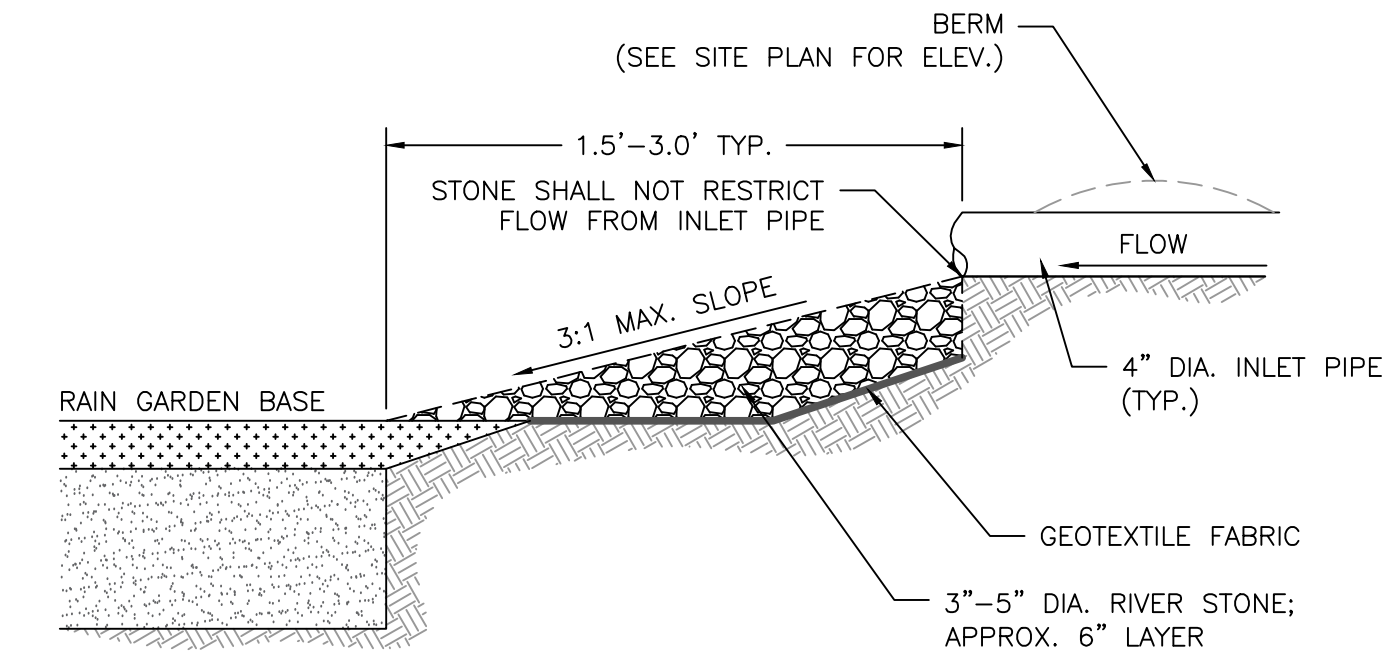
2 CURBED RAIN GARDEN CROSS-SECTION
DT-1 N.T.S.



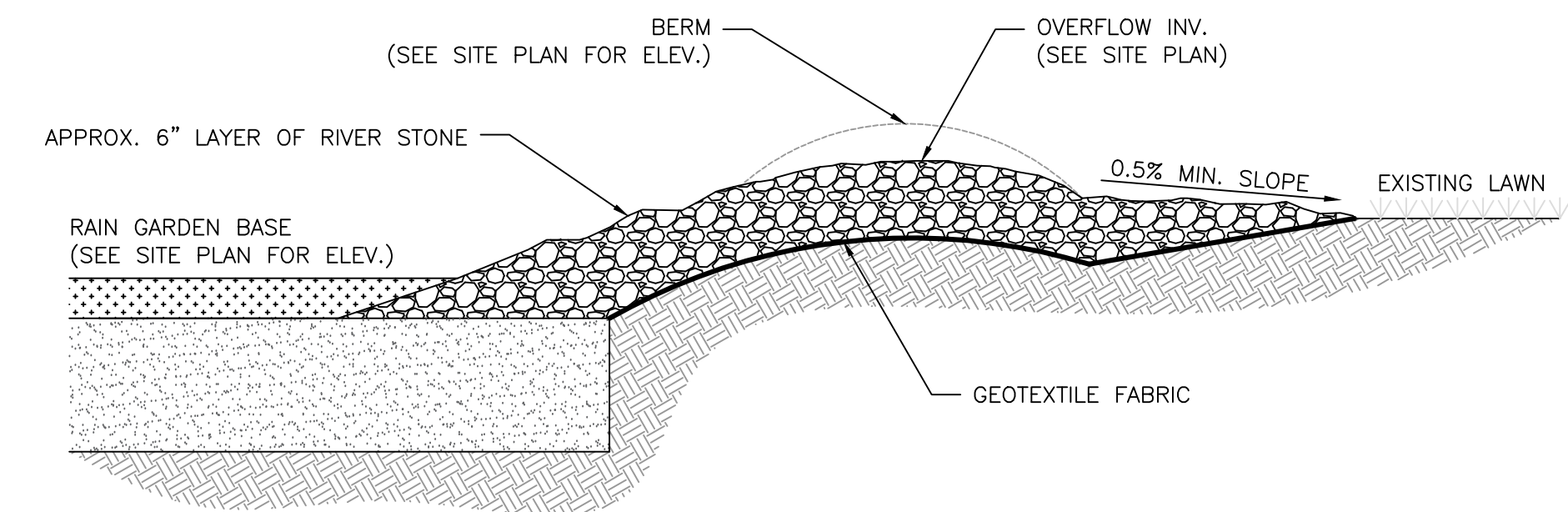
3 RAIN GARDEN PLANTING DETAIL
DT-1 N.T.S.



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



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



6 ROCK-LINED OVERFLOW 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 INSURE 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 12" LOWER THAN THE BASE ELEVATION SHOWN ON THE SITE PLANS. THE SLOPES OF THE RAIN GARDEN SHALL BE AT A 2:1 MINIMUM.
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.

SPECIFICATIONS:

1. MAX COVER OVER TOP OF PIPE 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-SHREDED 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.

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623 S 13TH STREET, NEWARK
ESSEX COUNTY, NJ

RAIN GARDEN DETAILS




SHEET #
DT-1

TOTAL # OF SHEETS

6



1 WEST SIDE PARK RAIN GARDEN RENDERING
DT-2 N.T.S.

		<p>WEST SIDE PARK GREEN INFRASTRUCTURE FOR THE CITY OF NEWARK 623 S 13TH STREET, NEWARK ESSEX COUNTY, NJ</p> <p align="right">RENDERING</p>		<p>REVISIONS</p> <table border="1"> <thead> <tr> <th>No.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>		No.	DATE	DESCRIPTION																<p>CHRISTOPHER C. OBROPTA, Ph.D., P.E. PROFESSIONAL ENGINEER - NJ LICENSE # 37532</p> <p><i>Christopher C. Obropta</i></p> <p>DATE 08/11/15</p>	
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<p>SHEET #</p> <p align="center">DT-2</p>		<p>CHECKED RWG</p>		<p>APPROVED CCO</p>		<p>DATE 08.11.15</p>																			
<p>TOTAL # OF SHEETS</p> <p align="center">6</p>		<p>DRAWN TEL</p>		<p>DATE 08/11/15</p>		<p>DATE 08/11/15</p>																			