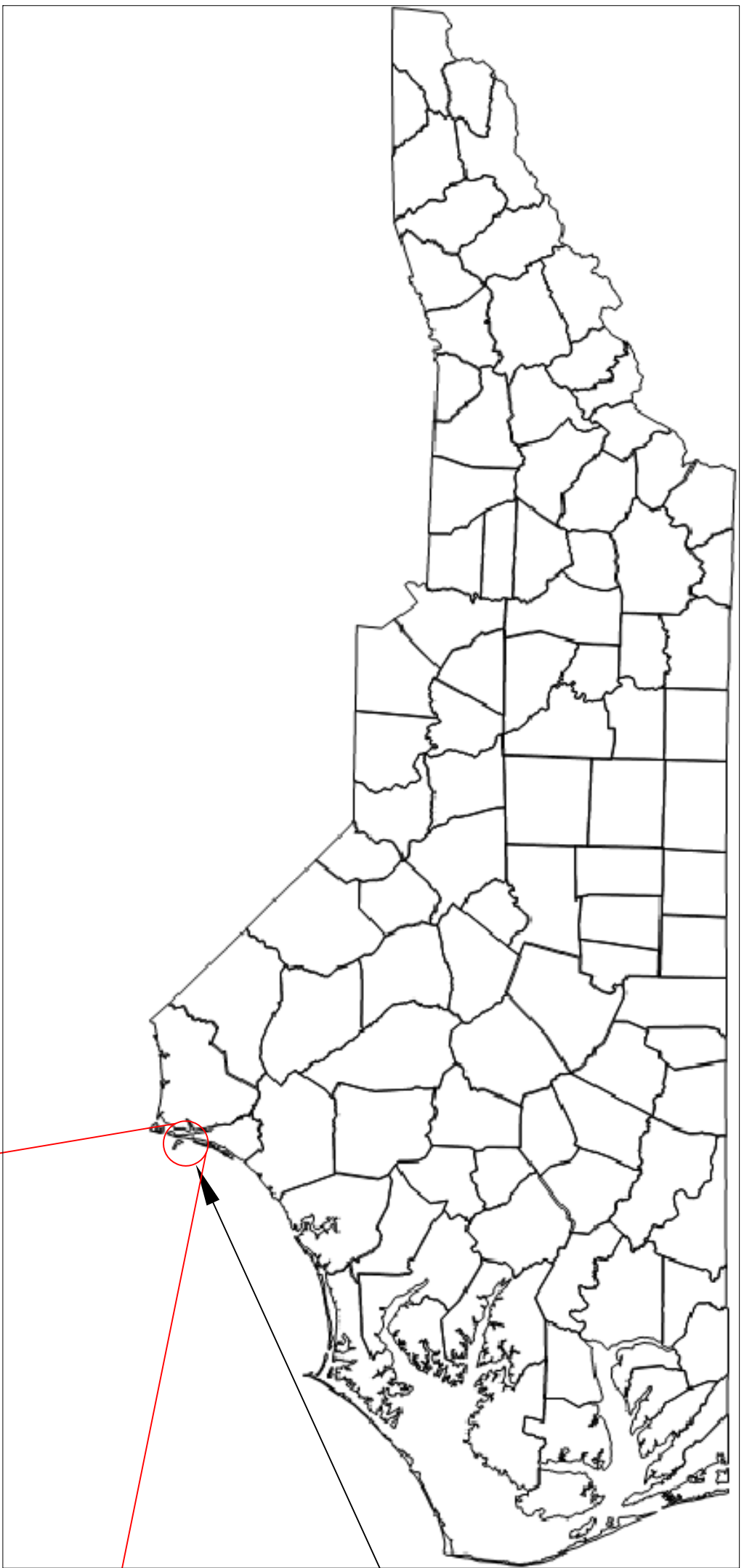


Wilmington

SilvaCell Retrofit Design

Corners of 10th St. and Ann St.,
10th St. and Orange St.
Wilmington, NC 28401



Wilmington

Prepared by:
Jonathan L Page, EI
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Raleigh, NC 27695-7625
(919) 515-8595
jlpag3@ncsu.edu

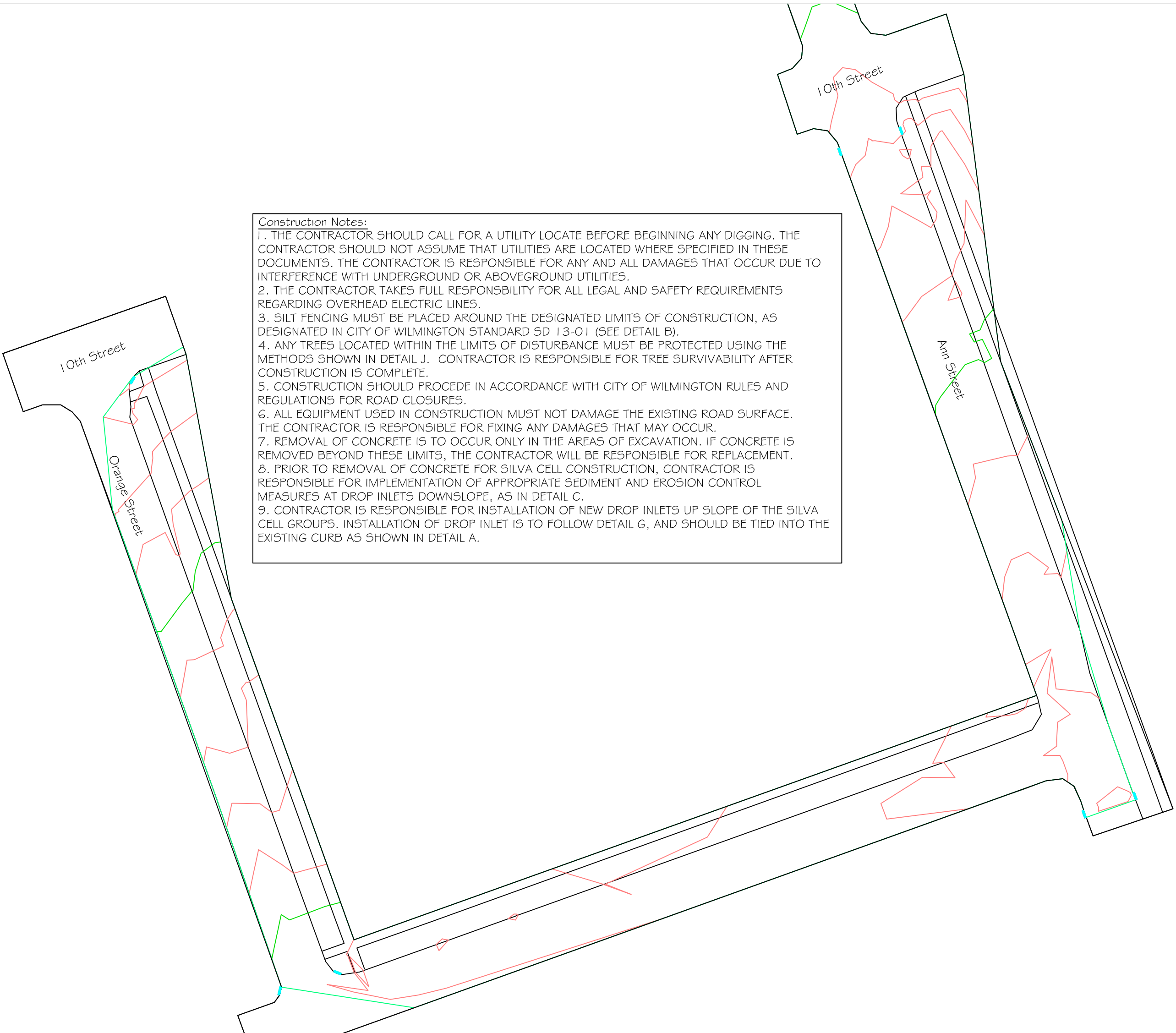
Sheet Index

- Sheet 1: Cover & Sheet Index
- Sheet 2: Existing Contours
- Sheet 3: Plan Sheet
- Sheet 4: System Profiles
- Sheet 5: Section A-A
- Sheet 6: Section B-B
- Sheet 7: Details
- Sheet 8: Details

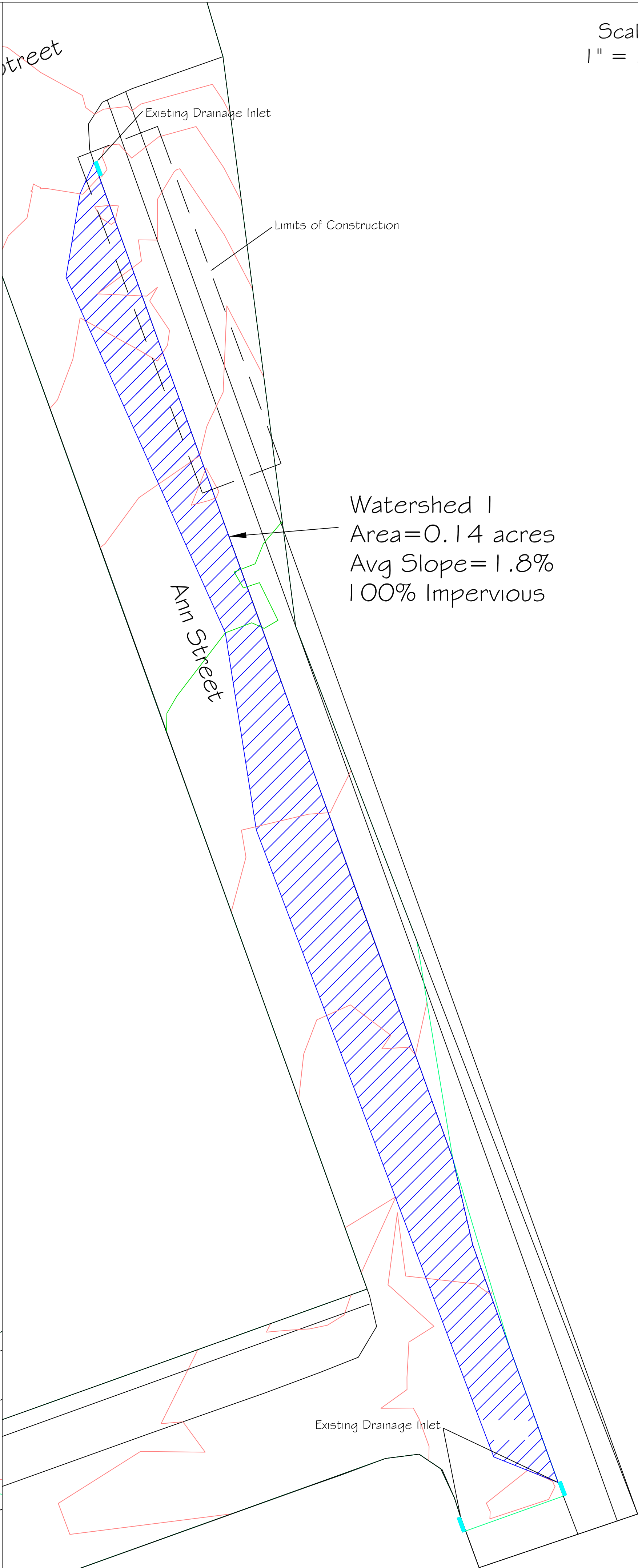


Scale:
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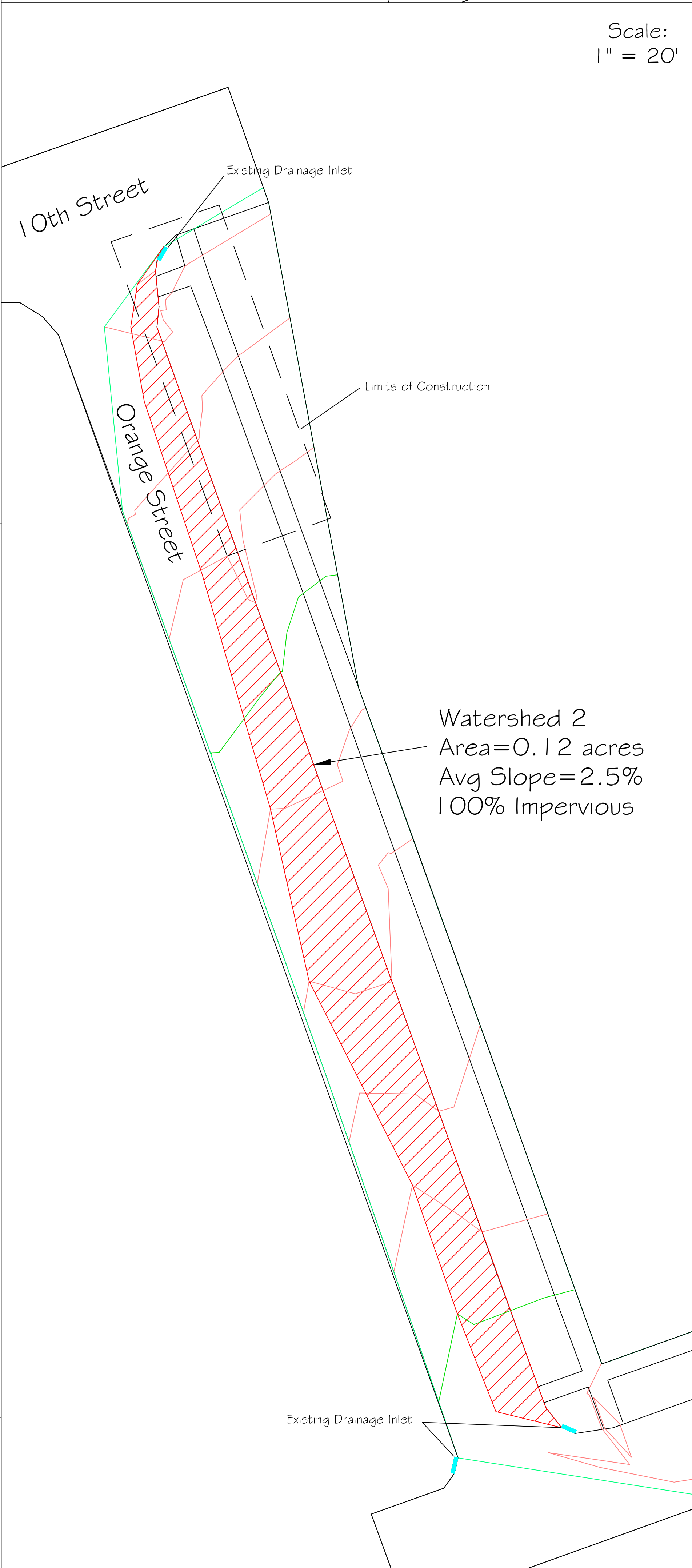
- Construction Notes:
1. THE CONTRACTOR SHOULD CALL FOR A UTILITY LOCATE BEFORE BEGINNING ANY DIGGING. THE CONTRACTOR SHOULD NOT ASSUME THAT UTILITIES ARE LOCATED WHERE SPECIFIED IN THESE DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR ANY AND ALL DAMAGES THAT OCCUR DUE TO INTERFERENCE WITH UNDERGROUND OR ABOVEGROUND UTILITIES.
 2. THE CONTRACTOR TAKES FULL RESPONSIBILITY FOR ALL LEGAL AND SAFETY REQUIREMENTS REGARDING OVERHEAD ELECTRIC LINES.
 3. SILT FENCING MUST BE PLACED AROUND THE DESIGNATED LIMITS OF CONSTRUCTION, AS DESIGNATED IN CITY OF WILMINGTON STANDARD SD 13-01 (SEE DETAIL B).
 4. ANY TREES LOCATED WITHIN THE LIMITS OF DISTURBANCE MUST BE PROTECTED USING THE METHODS SHOWN IN DETAIL J. CONTRACTOR IS RESPONSIBLE FOR TREE SURVIVABILITY AFTER CONSTRUCTION IS COMPLETE.
 5. CONSTRUCTION SHOULD PROCEED IN ACCORDANCE WITH CITY OF WILMINGTON RULES AND REGULATIONS FOR ROAD CLOSURES.
 6. ALL EQUIPMENT USED IN CONSTRUCTION MUST NOT DAMAGE THE EXISTING ROAD SURFACE. THE CONTRACTOR IS RESPONSIBLE FOR FIXING ANY DAMAGES THAT MAY OCCUR.
 7. REMOVAL OF CONCRETE IS TO OCCUR ONLY IN THE AREAS OF EXCAVATION. IF CONCRETE IS REMOVED BEYOND THESE LIMITS, THE CONTRACTOR WILL BE RESPONSIBLE FOR REPLACEMENT.
 8. PRIOR TO REMOVAL OF CONCRETE FOR SILVA CELL CONSTRUCTION, CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTATION OF APPROPRIATE SEDIMENT AND EROSION CONTROL MEASURES AT DROP INLETS DOWNSLOPE, AS IN DETAIL C.
 9. CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF NEW DROP INLETS UP SLOPE OF THE SILVA CELL GROUPS. INSTALLATION OF DROP INLET IS TO FOLLOW DETAIL G, AND SHOULD BE TIED INTO THE EXISTING CURB AS SHOWN IN DETAIL A.



Scale:
1" = 20'



Scale:
1" = 20'



EXISTING SITE CONDITIONS

Designed By: JLP
Reviewed By: RJW

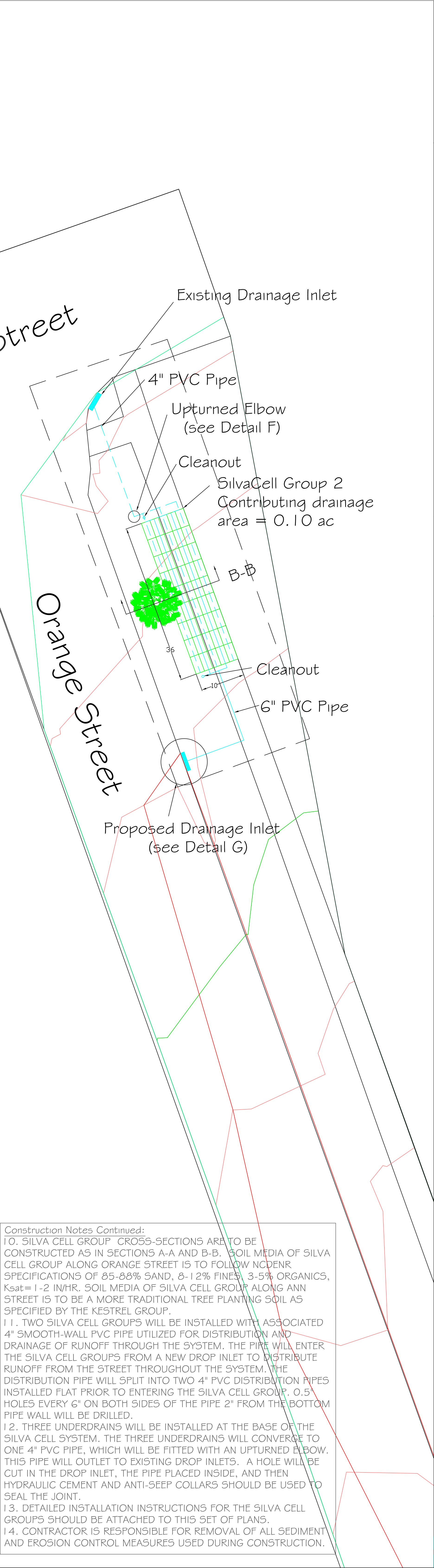
Date:
APRIL 12, 2012

Scale:
AS NOTED

Wilmington SilvaCell Retrofits
Corners of 10th St. and Ann St., 10th and Orange St.
Wilmington, NC 28401

Page Number
2 of 8

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Construction Notes Continued:

10. SILVA CELL GROUP CROSS-SECTIONS ARE TO BE CONSTRUCTED AS IN SECTIONS A-A AND B-B. SOIL MEDIA OF SILVA CELL GROUP ALONG ORANGE STREET IS TO FOLLOW MCDENR SPECIFICATIONS OF 85-88% SAND, 8-12% FINES, 3-5% ORGANICS, $K_{sat}=1-2$ IN/HR. SOIL MEDIA OF SILVA CELL GROUP ALONG ANN STREET IS TO BE A MORE TRADITIONAL TREE PLANTING SOIL AS SPECIFIED BY THE KESTREL GROUP.

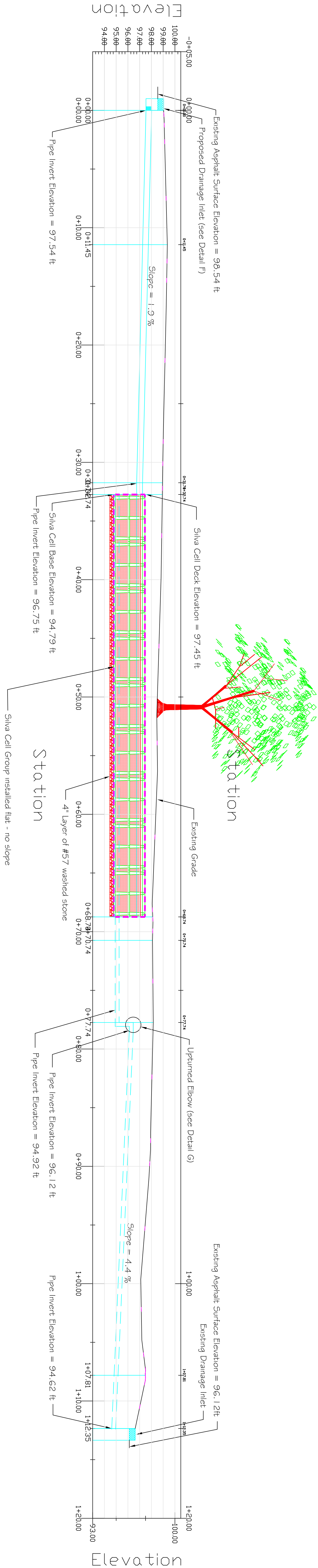
11. TWO SILVA CELL GROUPS WILL BE INSTALLED WITH ASSOCIATED 4" SMOOTH-WALL PVC PIPE UTILIZED FOR DISTRIBUTION AND DRAINAGE OF RUNOFF THROUGH THE SYSTEM. THE PIPE WILL ENTER THE SILVA CELL GROUPS FROM A NEW DROP INLET TO DISTRIBUTE RUNOFF FROM THE STREET THROUGHOUT THE SYSTEM. THE DISTRIBUTION PIPE WILL SPLIT INTO TWO 4" PVC DISTRIBUTION PIPES INSTALLED FLAT PRIOR TO ENTERING THE SILVA CELL GROUP. 0.5" HOLES EVERY 6" ON BOTH SIDES OF THE PIPE 2" FROM THE BOTTOM PIPE WALL WILL BE DRILLED.

12. THREE UNDERDRAINS WILL BE INSTALLED AT THE BASE OF THE SILVA CELL SYSTEM. THE THREE UNDERDRAINS WILL CONVERGE TO ONE 4" PVC PIPE, WHICH WILL BE FITTED WITH AN UPTURNED ELBOW. THIS PIPE WILL OUTLET TO EXISTING DROP INLETS. A HOLE WILL BE CUT IN THE DROP INLET, THE PIPE PLACED INSIDE, AND THEN HYDRAULIC CEMENT AND ANTI-SEEP COLLARS SHOULD BE USED TO SEAL THE JOINT.

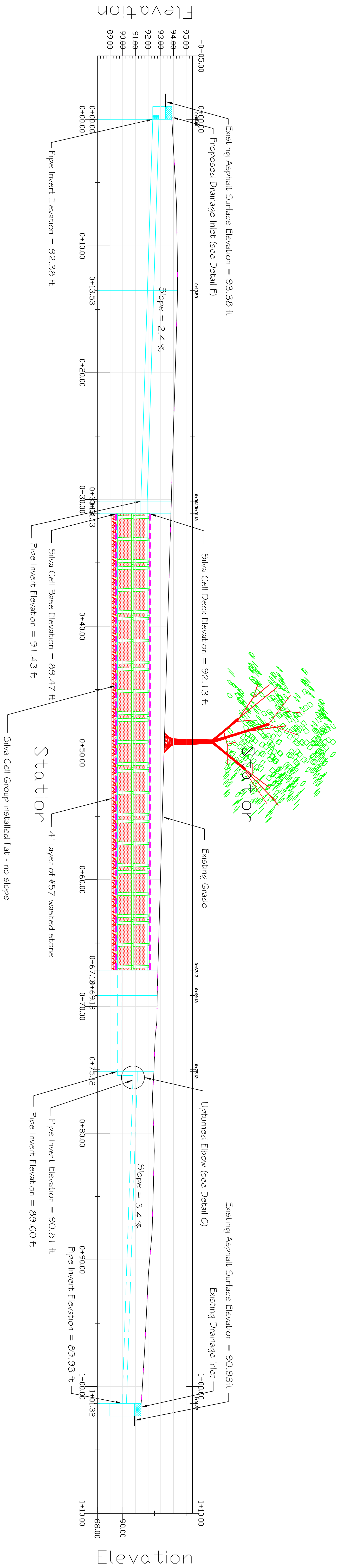
13. DETAILED INSTALLATION INSTRUCTIONS FOR THE SILVA CELL GROUPS SHOULD BE ATTACHED TO THIS SET OF PLANS.

14. CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL SEDIMENT AND EROSION CONTROL MEASURES USED DURING CONSTRUCTION.

PROPOSED SILVACELL GROUP 1 PROFILE



PROPOSED SILVACELL GROUP 2 PROFILE



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SILVACELL PROFILE VIEWS

Designed By: JLP
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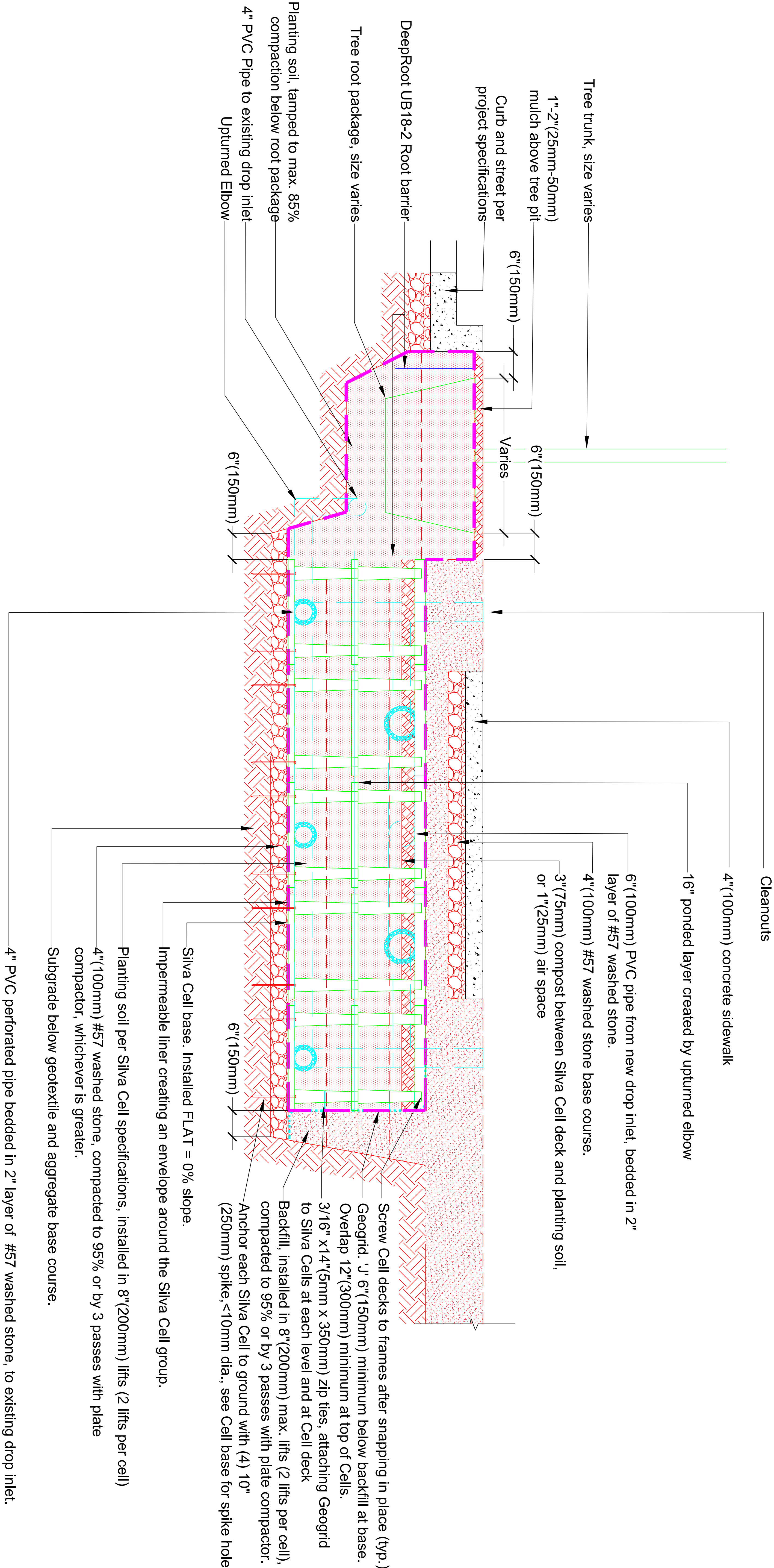
Date:
APRIL 12, 2012

Scale:
1" = 4'

Wilmington Silvacell Retrofits

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SECTION A-A



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SILVACELL CROSS-SECTION

Designed By: JLP

Reviewed By: RJW

Date:

APRIL 12, 2012

Scale:

1" = 12'

Wilmington SilvaCell Retrofits

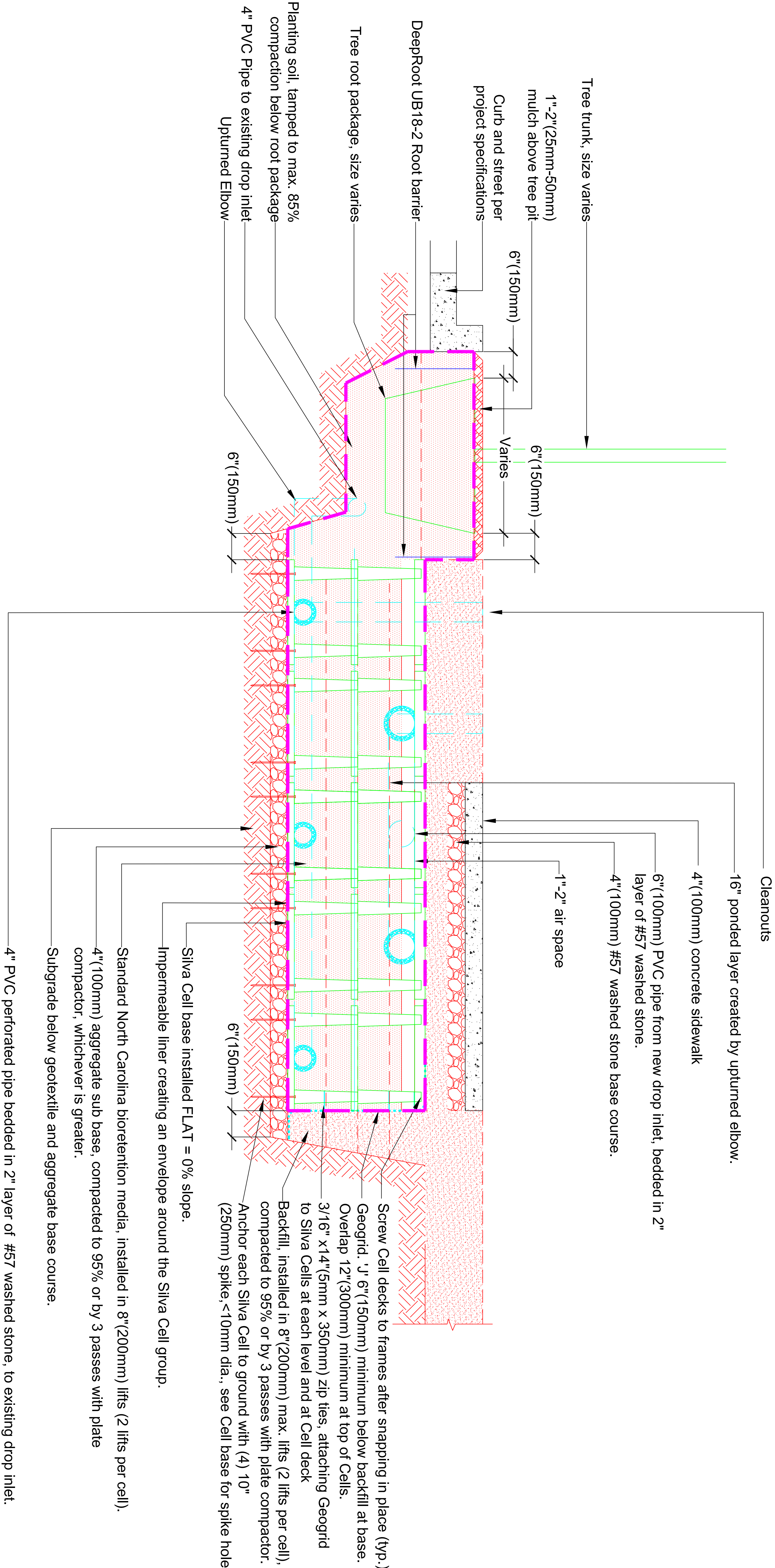
Corners of 10th St. and Ann St., 10th and Orange St.

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Page Number

5 of 8

SECTION B-B



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SILVACELL CROSS-SECTION

Designed By: JLP
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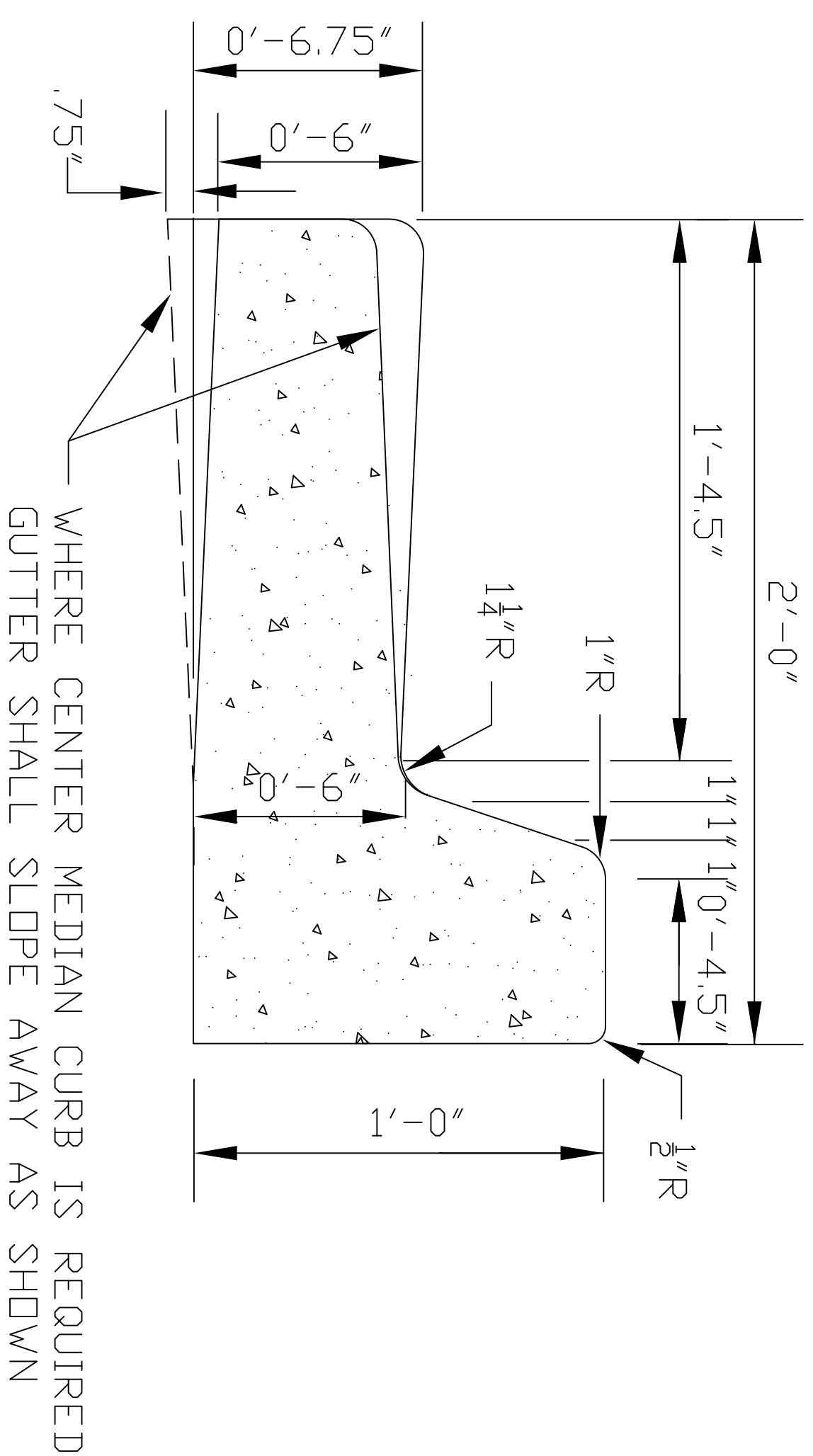
Date:
APRIL 12, 2012

Scale:
1" = 12'

Wilmington SilvaCell Retrofits

Corners of 10th St. and Ann St., 10th and Orange St.
Wilmington, NC 28401

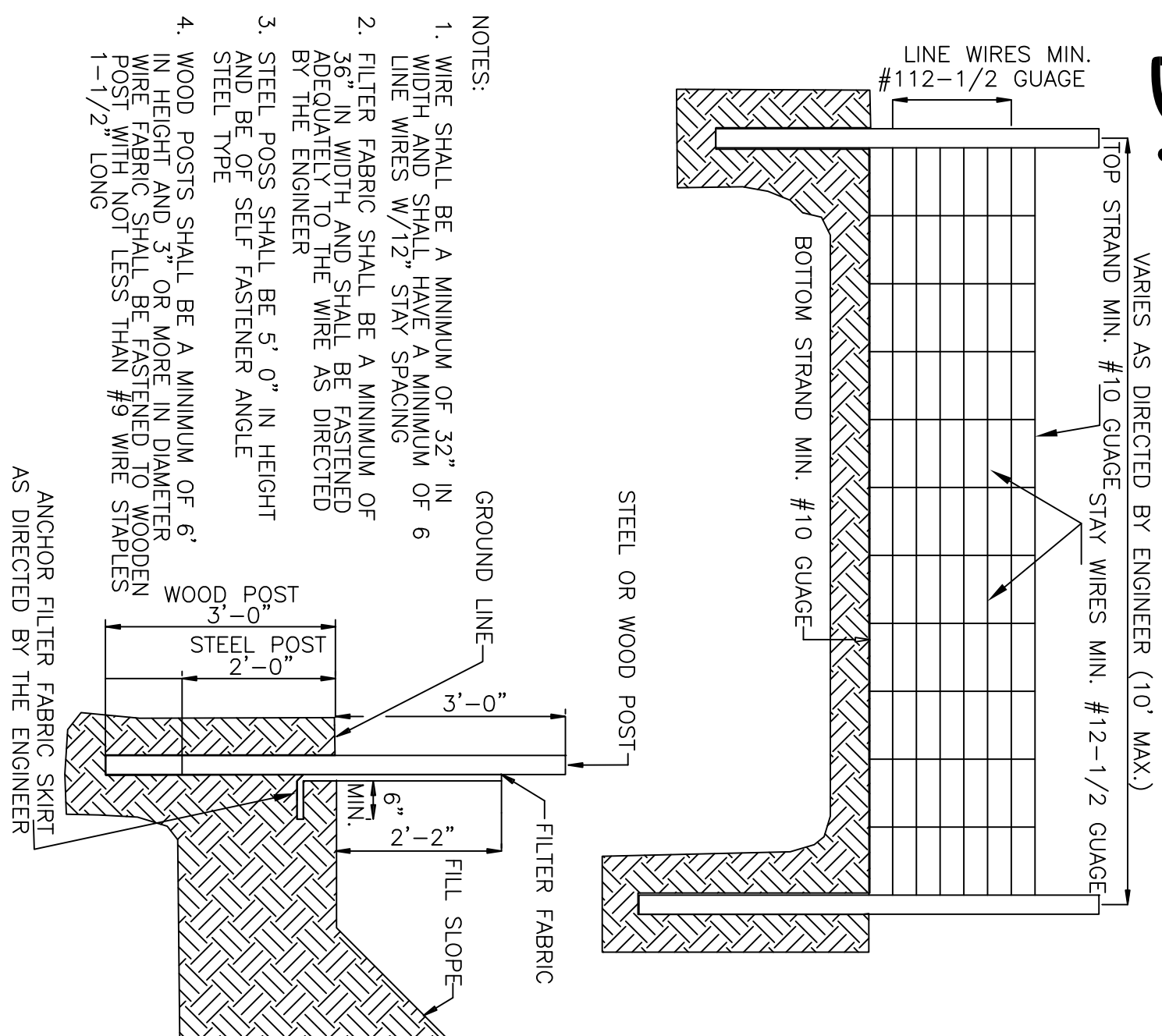
Detail A:



STANDARD CURB SECTION TYPE "A"
SD 7-01

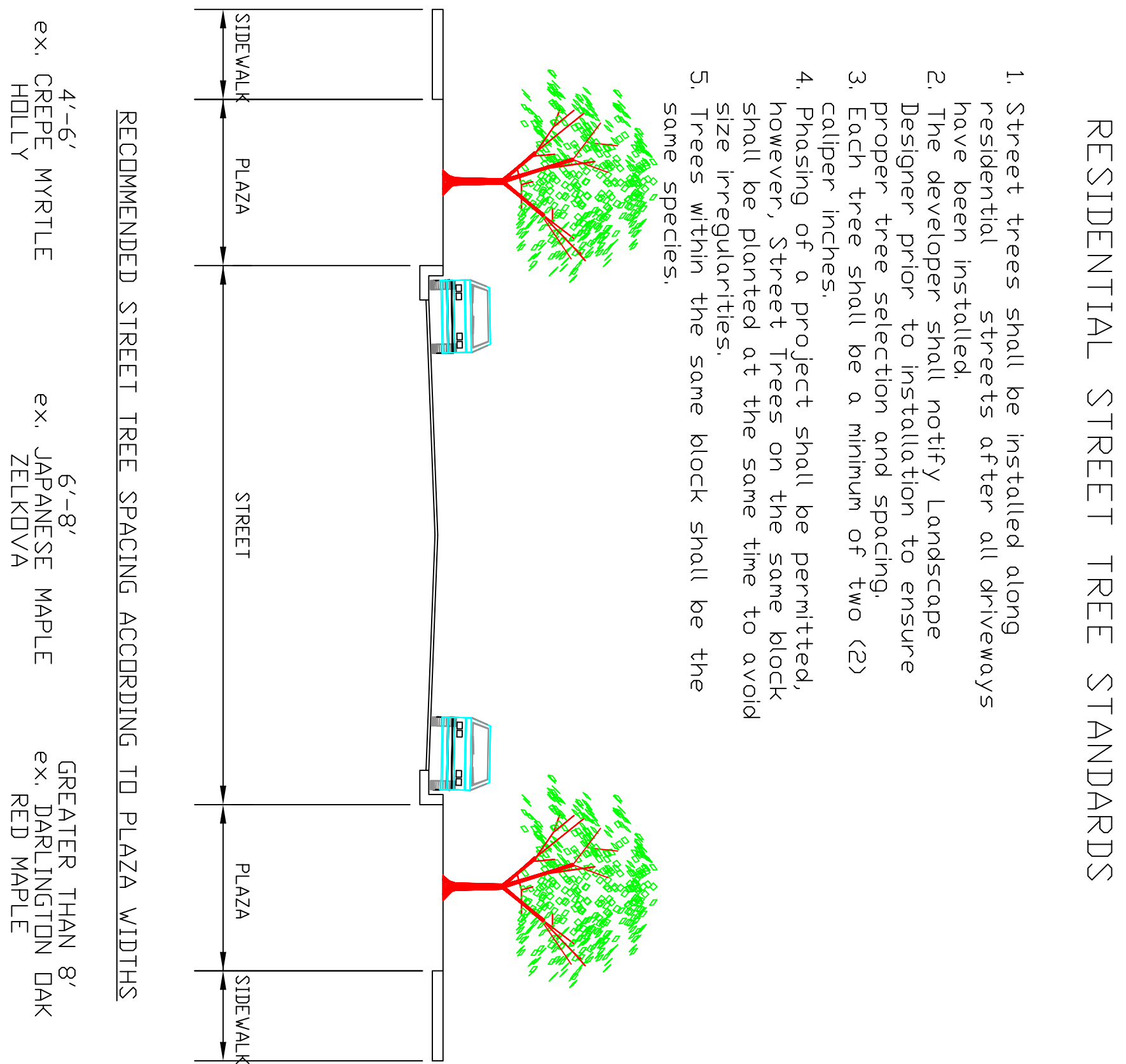
Detail D:

Detail B:



GUIDELINES FOR TEMPORARY SILT FENCE DETAIL
SD 13-01

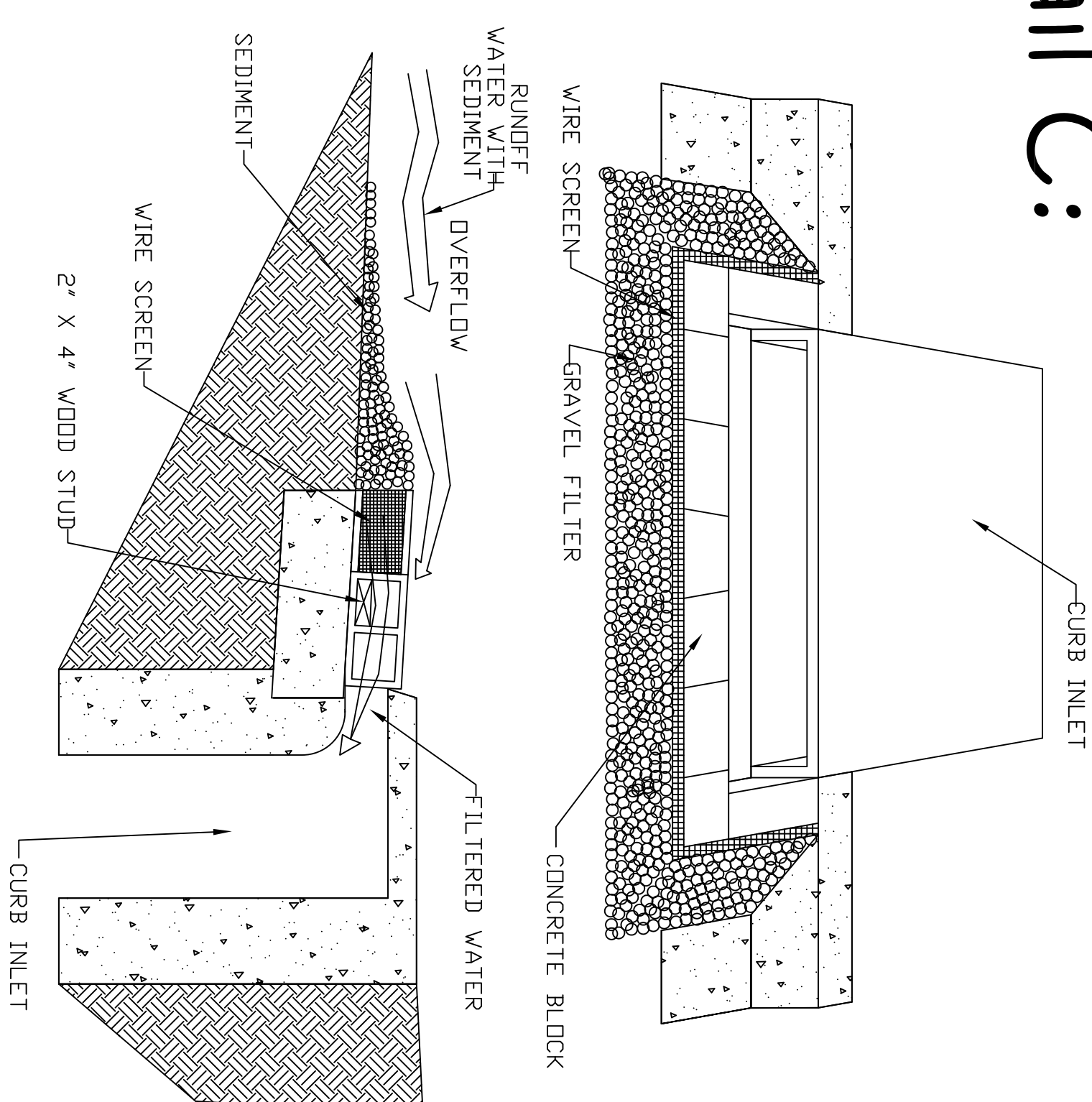
Detail E:



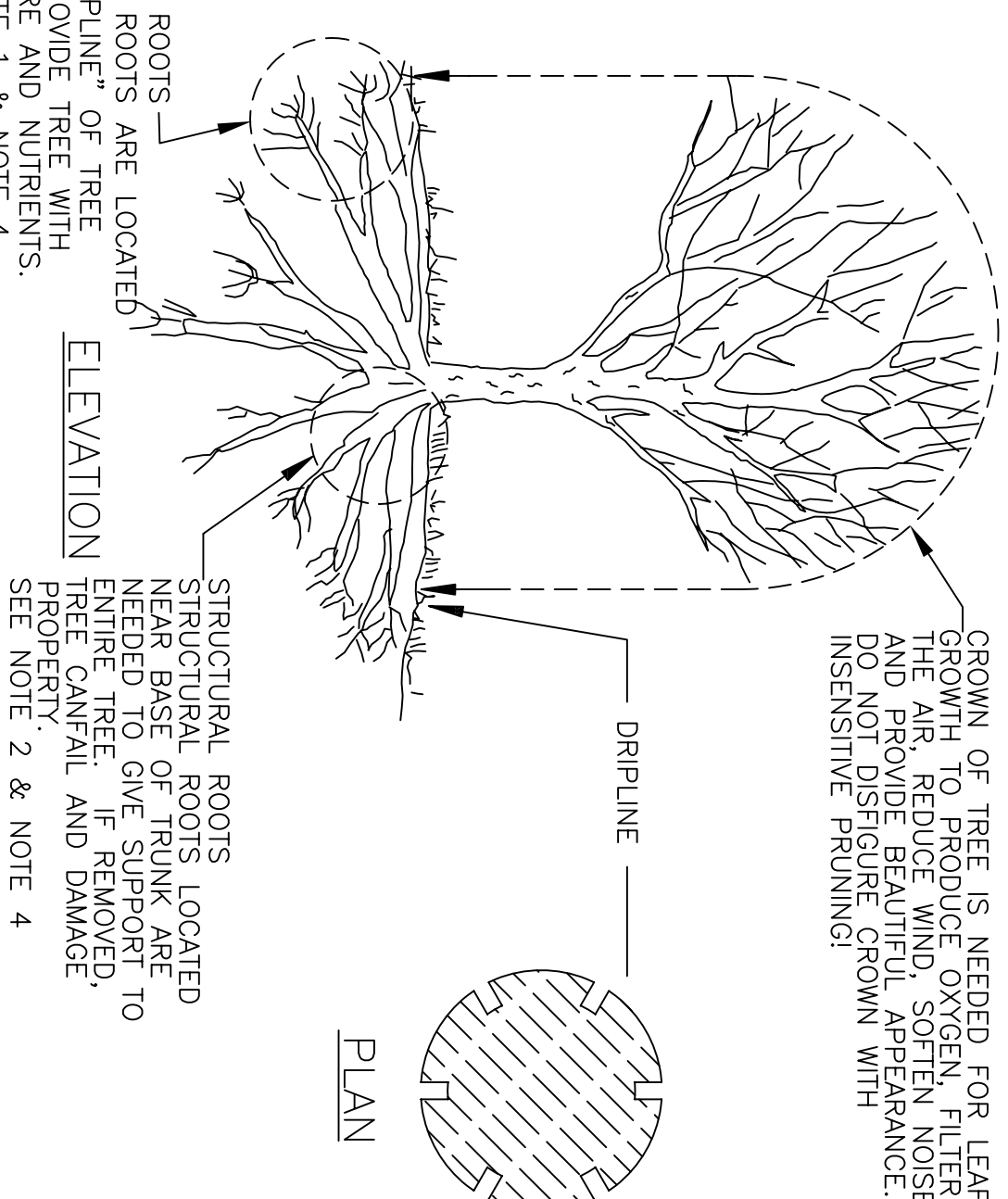
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Detail C:



CURB INLET PROTECTION
SD 13-02



TREE PROTECTION DURING CONSTRUCTION

1. DO NOT COMPACT SOIL BENEATH TREES. NO VEHICLE SHALL BE ALLOWED TO PARK UNDER TREES. NO HEAVY MATERIALS SHALL BE STORED BENEATH TREES. RESULTS OF COMPACTION CAUSE WATER AND AIR NOT TO REACH THE ROOTS AND THE TREE WILL DIE. THESE "FEEDING ROOTS" OCCUR WELL AWAY FROM THE BASE OF THE TREE TO THE EDGE OF THE OVERHEAD BRANCH CANOPY. DAMAGING THE BARK WITH LAWNMOWERS, CONSTRUCTION EQUIPMENT, OR ANYTHING ELSE IS PROHIBITED. PROTECTIVE BARRIER SHOULD PREVENT DAMAGE FROM OCCURRING DURING CONSTRUCTION.
2. NO CUTTING OF LARGE STRUCTURAL ROOTS LOCATED NEAR THE BASE OF THE TRUNK. THESE ARE ESSENTIAL IN SUPPORTING THE TREE AND HOLDING IT UPRIGHT IN HIGH WINDS. REMOVAL OF THESE ROOTS ALONG ONE SIDE IS OFTEN DONE BECAUSE OF A WALK, PAVING OR BUILDING WHICH IS BEING CONSTRUCTED.
3. AVOID CUT AND FILL WITHIN DIAMETER OF TREE CROWN DURING EXCAVATION.

METHOD OF TREE PROTECTION DURING CONSTRUCTION

SD 15-09

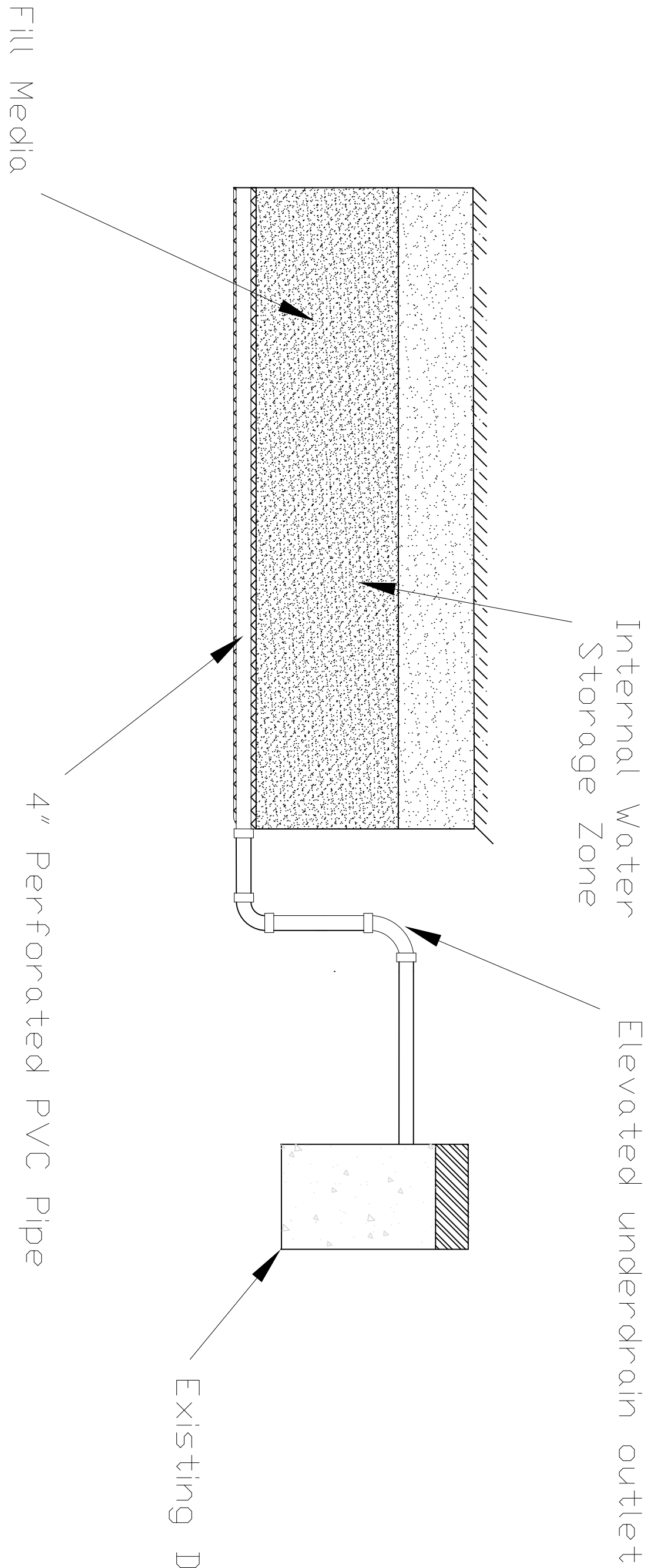
Wilmington SilvaCell Retrofits

Corners of 10th St. and Ann St., 10th and Orange St.

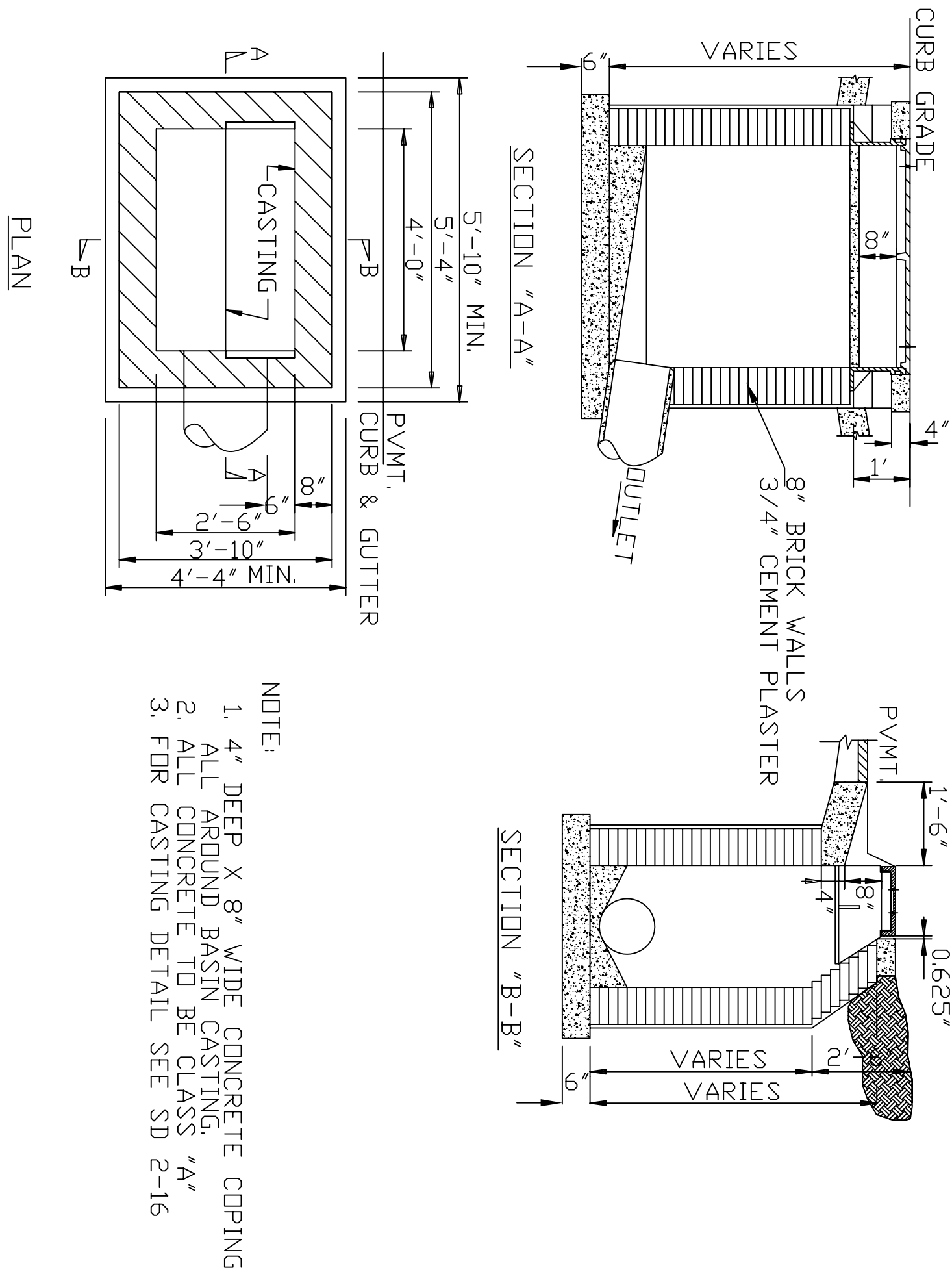
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Detail F:

UPTURNED ELBOW CONFIGURATION



Detail G:



Detail H:

SILVA CELL TECHNICAL SHEET

DeepRoot's new Silva Cell supports traffic loads while providing uncompacted soil volumes for large tree growth and on-site stormwater management. The modular framework provides unlimited access to healthy soil — a critical component of tree growth in urban environments — allowing them to manage storm-water, reduce heat-island effect, and improve air quality.

The modular design of the Silva Cell makes using increased quantities of native or specialized soils simple and easy, ensuring high quality soils and expanded rooting zones to grow vibrant, healthy trees with long life expectancies.

Silva Cell systems can also easily be sized to treat the water quality volume of surrounding impermeable surfaces in a typical urban setting. For example, a 1,200 cubic foot volume (34 m³) of Silva Cells can be designed for 0% runoff from a 3,000 square foot (279 m²) Type II rain event.

By combining on-site stormwater management with expanded rooting volumes for large, healthy trees, Silva Cells create an unparalleled opportunity to improve the environmental and aesthetic functioning of our urban spaces.

MATERIAL SPECIFICATIONS
Fiberglass reinforced, chemically-coupled, impact modified polypropylene. Galvanized steel tubes.

FRAME DIMENSIONS
Length: 48" (1200 mm)
Width: 24" (600 mm)
Height: 16" (400 mm)

DECK DIMENSIONS
Length: 48" (1200 mm)
Width: 24" (600 mm)
Height: 2" (51.5 mm)

CAPACITY
Void capacity: approximately 92%
Soil capacity: approximately 10 ft³ (.28 m³)

Deck
The top member of the Silva Cell assembly.

Steel Reinforcing Tubes
Galvanized steel tubes inserted in the channel on the underside of the deck increase rigidity and loading capability.

Tab
Connector clips molded into the underside of the deck to secure the deck to the frame.

Cup
The depression molded into the underside of the deck which fits on to the post below.

Screw
Securely attaches deck to frame.

Post
The vertical member of the Silva Cell frame that transfers paving loads vertically downwards.

Frame
The base member of the Silva Cell assembly, which includes posts and beams.

Beam
The horizontal bars connecting the posts to the frame.

Deep Root Partners, L.P.
530 Washington Street
San Francisco, CA 94111
Tel: 415/781-9700 Fax: 415/781-0191 www.deeproot.com
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CATCH BASIN
SD 2-01
NOT TO SCALE

CITY OF WILMINGTON DETAILS

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Designed By: JLP
Reviewed By: RJW

Date:
APRIL 12, 2012

Scale:
NOT TO SCALE

Wilmington SilvaCell Retrofits

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