



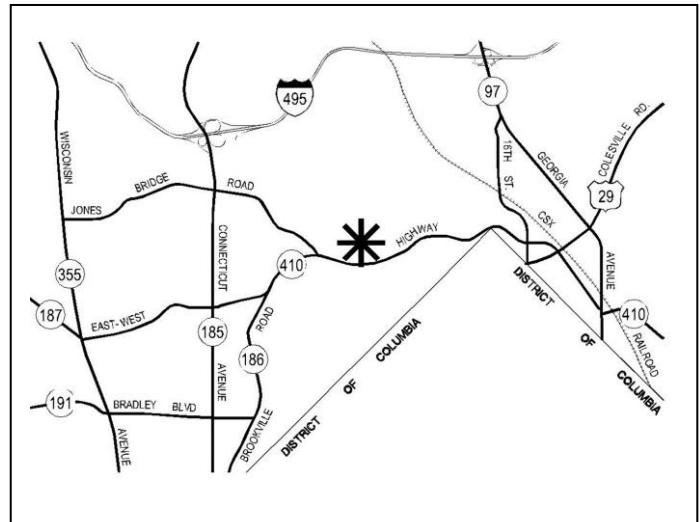
**Donnybrook Stream Restoration, Mandatory Referral and Preliminary Forest Conservation Plan, MR2012023**

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**Date of Report: 6/29/12**

**Description**

- Mandatory Referral with a Preliminary Forest Conservation Plan (PFCP) and associated stream restoration for Donnybrook Tributary within the Donnybrook subwatershed.
- Between Lyttonsville Place and East-West Highway, including public ROW and private property
- R-60, North and West Silver Spring Master Plan
- 3.88 acres
- Applicant: Montgomery County Department of Environment (DEP)
- Filing date: 04/25/12



**Summary**

- Staff recommends **approval of the Mandatory Referral and the Preliminary Forest Conservation Plan (PFCP)** with conditions
- The PFCP includes clearing of 0.97 acres of forest with a reforestation requirement of 1.11 acres of forest. The reforestation planting proposed is 1.67 acres of forest.
- The purpose of the Mandatory Referral and PFCP purpose is to execute a stream restoration project in efforts to stabilize the stream banks, provide in-stream measures for directing water flow, improve aquatic and forest habitat, and install Low Impact Development (LID) measures to reduce pollutants and runoff velocity prior to entering the Donnybrook Tributary. The Mandatory Referral also proposes the removal and replacement of a pedestrian bridge.
- The tree variance associated with the PFCP removes 10 specimen trees and impact 27 significant trees, all of which are necessary to execute the stream restoration project.

## Background

The Montgomery County Department of Environmental Protection (DEP) is proposing stream restoration and Low Impact Development (LID) stormwater management projects along the northern portion of the Donnybrook Tributary. The proposed 0.4 mile stream restoration project starts approximately 450 feet north of Grubb Road and continues south to East West Highway. The degraded first order stream channel is located on county owned property and was identified as a priority stream restoration project in the Rock Creek Watershed Feasibility Study (MC DEP, April 2001). Streambanks are eroding and in some instances private property is being worn away by scour and undercutting.



## Project History

As part of the County's Watershed Restoration Initiative and in response to their Municipal Separate Storm Sewer System (MS4) permit the Montgomery County Department of Environmental Protection evaluated over 14 miles of stream in the Rock Creek watershed. The Donnybrook Tributary was identified as one of the highest ranked streams proposed for restoration in the Rock Creek Watershed Feasibility Study (MC DEP, April 2001).

## Mandatory Referral Review

The Montgomery County Department of Environmental Protection (DEP) proposal for the Donnybrook Stream Restoration requires the Mandatory Referral review process as per the Montgomery County Department of Park and Planning Uniform Standards for Mandatory Referral Review. This regulation requires all federal, state, and local governments and public utilities to submit proposed projects for a Mandatory Referral review and approval by the Commission. The law requires the Planning Board to review and approve the proposed location, character, grade and extent of any road, park, public way or ground, public (including federal) building or structure, or public utility (whether publicly or privately owned) prior to the project being located, constructed or authorized.

## Project Description

Much of the Lower Rock Creek Watershed, including Donnybrook Tributary, was developed prior to regulations requiring stormwater management, and contains a high percentage of impervious surfaces. The Donnybrook Tributary sub-watershed is 35% impervious while the average imperviousness for the Rock Creek Watershed is about 18%. As the tributary watershed developed, uncontrolled stormwater runoff flushed into the stream eroding the streambed causing the stream channel to down-cut. Over time the channel incised and widened until storm flows in the channel could no longer access the original floodplain. This condition increased stress on the stream banks as well as the steep slopes along the terrace that runs along the stream corridor. The unstable channel conditions have undermined fences and retaining walls, damaged private property, and exposed the sanitary sewer lines. The habitat

necessary for diverse aquatic life has been compromised by the shallow channel as sediment from eroded banks and impervious surfaces have accumulated in the stream degrading stream habitat conditions.

The proposal focuses on creating a stable stream channel, enhancing riparian and stream conditions, improving aquatic habitat, and protecting sewer infrastructure. The restoration plans integrate in-stream structures (rock vanes and plunge pools), stream bank grading, and native riparian plantings to create a stable channel for maintaining sediment transport, protecting infrastructure, and enhancing aquatic habitat. In many areas the design will widen and angle the channel to allow the flow to spread over a larger area to reduce the streams velocity thus reducing the capacity for erosion.

In conjunction with the stream restoration, approximately twelve (12) LID projects are proposed to capture uncontrolled stormwater runoff from impervious surfaces along both sides of the tributary. Native trees and shrubs are proposed along the buffer.

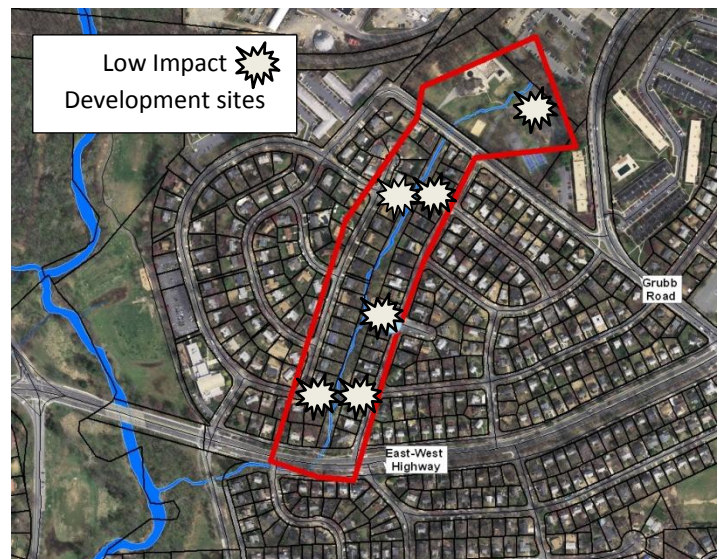
Decisions regarding tree impacts were carefully considered knowing that vegetation, especially mature trees, provide invaluable soil stability and often help to slow active stream bank and bed erosion. Conversely, in more extreme instances, erosion can undermine trees to the extent where they are unstable. This instability leads to tree collapse and channel blockages which, in turn, exacerbate active erosion that results in the loss of additional trees. The projected impacts to trees within the stream channel, its banks, and along access points total 114 trees, of which ten (10) are specimen trees. Tree loss to the stream valley buffer will be extensive. It is the anticipation of this restoration project that improved water quality, bank stability, and aquatic diversity benefits will override tree loss, and in time, a forest canopy will succeed.

### **Stream Restoration Techniques**

There will be a variety of stream restoration techniques used to stabilize the stream banks including grading the bank, designing bankfull benches to create low, gently sloping areas along the tow of the reconstructed slope making it more effective at transporting sediment from upstream sources. Other design features include in-stream structures known as J-Hooks, log boulders, and cross vanes that function to stabilize and protect the reconstructed channel by directing higher velocity flows away from reconstructed banks and dissipating energy in downstream scour pools. Each in-stream technique is intended to support the newly stabilized stream banks, reestablish the aquatic ecosystems and habitat, and prevent erosion and sediment pollution.

### **Low Impact Development Projects**

There will be twelve (12) Low Impact Development projects constructed in six (6) locations within the Donnybrook stream valley. An LID is a form of stormwater management



that focuses on retention, detention, or infiltration of precipitation to reduce peak runoff and improve water quality. The proposed LID treatments include two (2) grass swales, two (2) bioretention systems, two (2) curb extensions, and six (6) Filterra systems.

### **Invasive Plant Removal**

There are two dense clusters of the invasive plant, *Pueraria montana* (Kudzu), and scattered invasives in the understory throughout the stream corridor. As a part of this project, the two clusters will be removed on County property and on the adjacent private property with collaboration from the property owners. The first patch for removal begins at Grubb Road extending to Navarre Drive. The second patch is concentrated along the western bank from Freyman Drive north approximately 150' feet. These patches have been identified as priority removal areas due to growth and density into the crown of the mature trees. The smaller pockets of invasive vines and shrubs within the limits of disturbance will be removed during the clearing and grubbing stage of the project.

There will be a two year warranty period for all herbicide applications. At the end of the two-year warranty period if the herbicide application area does not meet the 95 percent kill rate, the contractor must reapply an approved herbicide in accordance with the FCP specifications. Kudzu treatment will be provided if needed to meet the project's reforestation goal up to 5 years after the completion of the project.

DEP will work with residents to prevent more invasive plants from entering into the stream corridor. The County will use both its maintenance contractor as well as trained volunteers from the neighboring community to help control invasive species. Other community outreach includes educating the citizens to prevent the dumping of yard trimmings within the new stream buffer.

### **Pedestrian and Bicycle Bridge Replacement**

DEP is working closely with Montgomery County Department of Transportation (DOT) to replace a pedestrian bridge in non-compliance with current standards at the stream crossing in the right-of-way on Spencer Road. Bridge construction requires the removal of two (2) specimen trees over 30" dbh and six (6) trees under 30" dbh. The existing pedestrian bridge will be closed during construction and a detour will be posted to direct pedestrians to use the existing pedestrian bridge located at East West Highway (1/2 block away to the south).

### **Pedestrian and vehicular circulation plan**

Temporary pedestrian and vehicular traffic control measures will be implemented for each phase of construction including traffic signage, flagging staff to direct street traffic and ensure safety. (See traffic control plan attachment C).

### **Traffic Impact Statement**

The DEP has applied for the right of way permits from the Montgomery County Department of Permitting Services ("MCDOT").

### **Maryland Historical Trust**

The Maryland Historical Trust has reviewed the project and determined that no historical properties are impacted by the improvements.

### **Public Meetings**

A public meeting was held on September 27, 2010, which provided adjacent residents the opportunity to review and comment on preliminary 30% plans for the project. A stream walk was held on March 26, 2011 where adjacent residents could learn more about the proposed 30% designs and provide comment. Residents who attended the meetings expressed gratification that DEP is proposing the project. On February 28, 2012, a public meeting was hosted where residents were given an opportunity to see the progress of the 60% restoration plans. DEP also mailed public notifications to adjacent property owners as part of the Maryland Department of the Environment (MDE) permitting process. Personal meetings and phone conversations with the residents within the Donnybrook tributary as well as the Rock Creek Pool Board have been conducted all along the design process of this project.

### **Funding**

The proposed stream restoration design and construction is being funded by the Montgomery County Capital Improvements Program. DEP applied for grant money from the State and has received initial confirmation that there is money available for this project.

### **Impacts to Parkland**

The site does not contain parkland.

### **Environmental Guidelines**

Staff approved a Natural Resource Inventory/Forest Stand Delineation (NRI/FSD #420110600) on March 25, 2011. The total tract area of the NRI/FSD was 5.5 acres with five (5) high priority forest stands within the floodplain. In an effort to reduce forest and tree impact, the total tract area was reduced to 3.29 acres, approximately 0.4 linear miles. The project is predominantly on County owned land including the LID projects and access routes at Navarre Drive, Ross and Spencer Road. The proposed project is in compliance with the *Environmental Guidelines*.

### **Natural Resource Inventory and Forest Stand Delineation (NRI/FSD)**

The NRI/FSD (420110600) was approved on March 25, 2011.

### **Forest Conservation**

This project is subject to the Montgomery County Forest Conservation law under Section 22A-4(d) which applies to "a government entity subject to mandatory referral on a tract of land 40,000 square feet or larger..." Impacts have been minimized by providing staging areas outside of the stream valley and minimizing temporary access routes, wherever possible. For example, existing roads, paths and ROWs are used to provide access at Navarre Drive, Ross Road, and Spensor Road. However, there will be extensive loss of trees within the narrow stream valley (0.4 linear acres) in order to achieve the goals of the hydrologic and geomorphic intentions of stabilizing the stream and reducing pollutants. Significant efforts were made to minimize tree impacts, never-the-less the proposed stream restoration will require the removal of 114 trees in the tributary buffer with abutting residents on both sides. Of these, ten (10)

specimen trees will be removed along with impacts to the critical root zone (CRZ) of twenty-seven (27) specimen trees.

**Forest Conservation Variance**

Section 22A-12(b) (3) of Montgomery County Forest Conservation Law provides criteria that identify certain individual trees as high priority for retention and protection. Any impact to these trees, including removal of the subject tree or disturbance within the tree’s critical root zone (“CRZ”) requires a variance. An applicant for a variance must provide certain written information in support of the required findings in accordance with Section 22A-21 of the County Forest Conservation Law. The law requires no impact to trees that: measure 30 inches or greater in DBH; are part of a historic site or designated with a historic structure; are designated as a national, State, or County champion trees; are at least 75 percent of the diameter of the current State champion tree of that species; or trees, shrubs, or plants that are designated as Federal or State rare, threatened, or endangered species. The applicant submitted a variance request on June 15, 2012 for the impacts and removal to trees with the proposed layout (Attachment A). The applicant proposes to remove ten (10) trees that are 30 inches and greater in DBH, and to impact the critical root zones but not remove twenty-seven (27) other significant trees. All are within a high priority retention area under Section 22A-12(b) (3) of the County Forest Conservation Law. The total number of trees to be removed within the stream valley is 114.

The following table identifies the trees to be removed and/or impacted. There will be a variety of tree protection measures taken including tree planking, root pruning, rock packing, wood and mulch matting for root protection.

ID	Common Name	DBH (in.)	Condition	Remove /Retain	Tree Within LOD	FCP Sheet No.	Remarks
3	Eastern Cottonwood	30	Fair	Retain	Yes	2	Grading and riprap placement within channel and opposite streambank to stabilize existing storm drain outfall and toe of existing bank. The portion of this tree that is under cut by the stream will be rockpacked by hand as part of the outfall stabilization.
4	Box Elder	30	Fair	Remove	Yes	3	Existing stream channel has shown considerable adjustment through incision and widening. Existing stream channel cross section must be adjusted in this area to accommodate storm flow and reduce stream velocity and sheer stress on streambanks.
6	Tulip Poplar	30	Poor	Remove	Yes	3	Existing stream channel has shown considerable adjustment through incision and widening. Existing stream channel cross section must be adjusted in this area to accommodate storm flow and reduce stream velocity and sheer stress on streambanks.

7	Sycamore	36	Fair	Retain	No	3	This tree is located on the right side of the stream (looking downstream). Although in the plan view Critical Root Zone (CRZ) of this tree extends into the Limits of Disturbance the roots of this tree due to field conditions terminate at the edge of the stream bank. All grading and revetments in this area are from the toe of this bank and to the left. No actual impacts to the roots of this tree are anticipated.
10	White Oak	35	Fair	Retain	No	2	This tree is located on the far side of the asphalt access drive for the Rockville Pool Parking Lot. A small portion of the plan view CRZ extends across the access drive into a turf area to be regraded as a grass swale.
14	Red Oak	36	Poor	Retain	No	2	This tree is located on the far side of the asphalt access drive for the Rockville Pool Parking Lot. A small portion of the plan view CRZ extends across the access drive into a turf area to be used for construction access. No actual impacts to the roots of this tree are anticipated.
25	Sycamore	49	Poor	Retain	No	3	Although in the plan view CRZ of this tree extends into the Limits of Disturbance the roots of this tree due to field conditions terminate at the edge of the stream bank. All grading and revetments in this area are from the toe of this bank and to the left. Some fill, topsoil, and stabilization may occur outward from the bank in this area to mitigate for localized erosion. No actual impacts to the roots of this tree are anticipated.
32	Sycamore	32	Good	Retain	No	3	This tree is uphill from the existing streambank but adjacent to an existing stormdrain outfall channel. This outfall is being retrofit to provide water quality through bioentention and the outfall channel is being replaced with a stormdrain pipe and outfall at the stream edge. The entire stream bank in this area will be reconstructed with fill material, topsoil and stabilized. Any exposed roots from Tree #32 will first be stabilized by hand prior to placement of fill material.
35	Slippery Elm	38	Fair	Retain	No	3	Although in the plan view CRZ of this tree extends into the Limits of Disturbance the roots of this tree due to field conditions terminate at the edge of the stream bank. All grading and revetments in this area are from the toe of this bank and to the left. Any exposed roots from tree #35 will be rock packed by hand during the construction of the adjacent J-hook revetment.
40	Black Locust	36	Poor	Retain	No	4	This tree is located on the right side of the stream (looking downstream). Although in the plan view the CRZ of these tree extends into the Limits of Disturbance the roots of this tree due to field conditions terminate at the edge of the stream bank. All grading and revetments in this area are from the toe of this bank and to the left. No actual impacts to the roots of this tree are anticipated.

43	Red Maple	39	Fair	Retain	No	4	This tree is located 30 feet outside LOD but the CRZ extends to within the stream channel. Minor grading to stabilize the stream bank will impact CRZ. Steps will be taken in the field to minimize impact to this tree's CRZ.
48	Black Locust	36	Good	Retain	No	4	Although in the plan view CRZ of this tree extends into the Limits of Disturbance the roots of this tree due to field conditions terminate at the edge of the stream bank. All grading and revetments in this area are from the toe of this bank and to the left. Any exposed roots from tree #48 will be rock packed by hand during the construction of the adjacent J-hook revetment.
49	Hickory	42	Poor	Remove	Yes	4	The stream channel is constricted in this location resulting in high stream velocities and scour to adjacent and downstream banks. The existing channel cross section must be adjusted in this area to accommodate increased storm flows and reduce stream velocity and sheer stress. Due to bedrock and topography of the opposite bank the new cross section requires the removal tree #49 and tree #50.
50	Tulip Poplar	60	Fair	Remove	Yes	4	The stream channel is constricted in this location resulting in high stream velocities and scour to adjacent and downstream banks. The existing channel cross section must be adjusted in this area to accommodate increased storm flows and reduce stream velocity and sheer stress. Due to bedrock and topography of the opposite bank the new cross section requires the removal tree #49 and tree #50.
51	Silver Maple	37	Fair	Retain	No	4	This tree is located on the right side of the stream (looking downstream) and is 20' vertically uphill of the proposed stream work. Although in the plan view the CRZ of these tree extends into the Limits of Disturbance the roots of this tree due to field conditions terminate at the edge of the stream bank. All grading and revetments in this area are from the toe of this bank and to the left. No actual impacts to the roots of this tree are anticipated.
55	Silver Maple	39	Fair	Remove	No	3	This street tree was determined on 06/12/12 to be structurally unsound and due to proposed improvements to the curb and sidewalk within the visible root mass it will be removed to address future safety concerns.
57	Silver Maple	36	Fair	Retain	No	3	Trees #57 and #58 are within the public right of way extension of Navarre Road, originally upgrades to the storm drain system were proposed int his area which would have severely impacted the root systems of these trees. The design of these areas is being reworked to avoid grading and trenching within the CRZ. A mulch access road will be used through the ROW to access the stream area.



58	Silver Maple	38	Fair	Retain	No	3	Trees #57 and #58 are within the public right of way extension of Navarre Road, originally upgrades to the storm drain system were proposed to his area which would have severely impacted the root systems of these trees. The design of these areas is being reworked to avoid grading and trenching within the CRZ. A mulch access road will be used through the ROW to access the stream area.
59	Green Ash	34	Fair	Retain	No	4	This tree is located 10' off the existing streambank in an overwidened section of the stream, all grading and revetments in this area will occur within the existing channel. Any exposed roots from tree #59 will be handpacked prior to the placement of fill or trimmed by hand if approved by M-NCPPC inspector.
66	Sycamore	30	Poor	Retain	No	4	This tree is located on the right side of the stream (looking downstream) and is 20' vertically uphill of the proposed stream work. Although in the plan view the CRZ of this tree extends into the Limits of Disturbance the roots of this tree due to field conditions terminate at the edge of the stream bank. All grading and revetments in this area are from the toe of this bank and to the left. No actual impacts to the roots of this tree are anticipated.
73	Hickory	32	Poor	Remove	Yes	4	The existing root mass of tree #73 has created a constriction to the stream channel in this area and the stream has shown considerable transition in this area over the past 3 years uncutting this tree by at least 5 feet. Due to the presence of bedrock and steep topography on the opposite bank this tree is being removed to allow regrading of the channel in this area provide a low terrace reducing velocity and shear stress on the adjacent and immediate downstream streambanks.
*74	River Birch	37	Fair	Remove	Yes	4	Tree #74 is immediately downstream and in line with tree #73 and leaning towards private property. Due to the presence of bedrock and steep topography on the opposite bank this tree is being removed to allow an extension of the new stream cross section in this area. Attempting to protect this tree in place will create a localized constriction increasing stream velocity and downstream erosion.
76	Tulip Poplar	30	Fair	Retain	No	4	This tree is located on the right side of the stream about 5' above the stream bank. All grading and revetments in this area are to occur from the toe of the bank and to the left, no actual impacts to the roots of this tree are anticipated. Any undercut roots will be hand packed with stone.

77	Sycamore	40	Fair	Retain	No	4	This tree is near the intersection of the stream and the Spencer Road pedestrian bridge crossing. Fill will be placed within the outer edge of the critical root zone of this tree for the relocation of the pedestrian path to the new pedestrian bridge. The plan view critical root zone of this tree also extends into the existing channel. Grading within the channel however will not impact the existing root system, any exposed roots will be hand packed prior to the placement of fill or hand trimmed with the approval of the M-NCPPC inspector.
78	Eastern Cottonwood	44	Good	Retain	No	4	Tree #78 is on the opposite bank of tree #77. The new bridge is being shifted to reduce impacts to the CRZ of this tree during installation. Since the stream has overwidened in this area an imbricated rock wall is also being constructed to protect the root system of this tree in the future.
82	Eastern Cottonwood	34	Fair	Remove	Yes	5	Trees #82 and #83 are immediately adjacent to the existing pedestrian bridge which was deemed unsafe by DOT and must be removed for installation of the new bridge.
83	Sycamore	36	Good	Remove	Yes	5	Trees #82 and #83 are immediately adjacent to the existing pedestrian bridge which was deemed unsafe by DOT and must be removed for installation of the new bridge.
84	Sycamore	36	Fair	Retain	No	5	Tree #84 is located downstream of the new pedestrian bridge and adjacent to an existing storm drain outfall. The new bridge is being shifted away from this tree to reduce impacts and the storm drain is being relocated with the existing line carefully removed where it is exposed then filled with concrete and abandoned in place to avoid impacts to this tree.
86	Tulip poplar	32	Good	Retain	No	5	This tree is located on the right side of the stream (looking downstream) and is 10' vertically uphill of the proposed stream work. All grading and revetments in this area are from the toe of this bank and to the left. No actual impacts to the roots of this tree are anticipated.
87	Sycamore	40	Fair	Retain	No	5	This tree is located on the right side of the stream immediately adjacent to the stream channel. The exposed roots of this tree will be hand packed with stone and fill as part of the grading of the opposite stream bank. Any trimming of the exposed roots of this tree will be approved by the M-NCPPC inspector.
88	Sycamore	32	Fair	Remove	Yes	5	The stream channel is constricted in this area and is actively widening causing tree #88 to become undercut. The existing stream channel cross section must be adjusted in this area to accommodate storm flow and reduce stream velocity and shear stress on streambanks. The presence of bedrock, steep topography and mature trees on the right bank requires grading on the left bank and removal of tree #88.
89	Sycamore	51	Good	Retain	No	5	Tree #89 is located 30' from the limits of grading along the existing left side stream bank. Minor grading to the stream bank in this area will occur within the CRZ of this tree. Root pruning is proposed to minimize impacts to the existing root system in this location.

92	Slippery Elm	30	Fair	Retain	No	5	Tree #92 is adjacent to an existing pedestrian path proposed for construction access with mulch mat protection. Minor grading along the existing stream channel will occur within the CRZ of this tree.
T1	Pin Oak	30	Good	Retain	No	5	Tree #T1 is on private property adjacent to Spencer Road. The installation of a water quality inlet behind the existing curb will impact approximately 10% of the actual CRZ for this tree. Root pruning in the immediate vicinity of the excavation for the inlet is proposed but will be reevaluated at the time of construction with the M-NCPPC inspector.

As per Section 22A-21, the applicant has offered the following justification for the variance request:

*(1) Describe the special conditions peculiar to the property which would cause the unwarranted hardship;*

**Response:** The tree loss to the Donnybrook Tributary will be extensive with the removal of 114 trees including ten (10) specimen trees. The trees are predominately located along the stream banks, access routes, and within the limits disturbance for the bridge replacement at Spenser Road. The tributary is severely degraded from untreated stormwater runoff causing stream surges during storm events. These surges have caused the streambanks to erode and the channel to incise. A few of the abutting residents are experiencing property loss from the scour and erosion of the stream. Additionally, many trees aligning the streambanks are being undercut jeopardizing their long-term survival.

In an effort to repair the stream tree removal is unavoidable. The applicant has reduced tree impacts by narrowing the work to within the stream channel and close to the top of the banks. The location and size of the staging areas and access routes have been minimized and take full advantage of existing impervious cover. It is the anticipation of this restoration project that improved water quality, bank stability, and aquatic diversity benefits will override tree loss, and in time, a forest canopy will succeed.

Staff has reviewed the variance application and agrees that denial of the variance would cause an unwarranted hardship.

Section 22A-21 of the County Forest Conservation Law sets forth the findings must be made by the Planning Board or Planning Director, as appropriate, in order for a variance to be granted.

**Variance Findings** - Staff has made the following determination based on the review of the variance request and the proposed Forest Conservation Plan. Granting the variance request requires the following findings:

1. *Granting the variance will not confer on the applicant a special privilege that would be denied to other applicants.*

Granting the variance will not confer a special privilege on the applicant as disturbance of the specified trees are due to the proposed restoration of the streams. The trees and/or their critical root zones lie directly adjacent to the streams. Granting a variance request for the disturbance within the CRZs of the trees for the purposes of stream restoration is not unique to

this applicant. This variance is necessary to achieve the County goals of improving water quality. Therefore, this variance will not provide a special privilege that would be denied to other applicants.

2. *The need for the variance is not based on conditions or circumstances which are the result of the actions by the applicant.*

The variance is not based on conditions or circumstances which are the result of actions by the applicant. The requested variance is based on the locations of the trees, the existing condition of the stream banks, the bank erosion undercutting, loss of residential land from erosion, and the techniques necessary to restore the stream and stabilize the banks.

3. *The need for the variance is not based on a condition relating to land or building use, either permitted or non-conforming, on a neighboring property.*

The requested variance is a result of the proposed stream restoration on the subject property and in parts, will touch on the edges of the abutting property owners who agree with this stream restoration project. The intention is to stop further loss of land the property owners are now experiencing due to erosion and stream undercutting.

4. *Granting the variance will not violate State water quality standards or cause measurable degradation in water quality.*

The proposed stream restoration plan should improve water quality by reducing erosion, improving floodplain access, and enhancing the stream valley buffer area. The variance will not violate State water quality standards or cause degradation in water quality.

**Mitigation for Trees Subject to the Variance Provisions** – A variance was requested on June 15, 2012 for the removal of ten (10) specimen trees with impacts to the critical root zones of twenty-seven (27) other significant trees. Generally, mitigation is not recommended for trees impacted but retained. All variance trees affected by construction located within the forest will be compensated for as part of the forest conservation worksheet. However, three (3) specimen trees slated for removal are located outside of the areas deemed a forest in the March 25, 2011 NRI/FSD. Therefore, additional mitigation is required for their loss at a rate that approximates the form and function of the trees removed. Staff is recommending that replacement occur at a ratio of approximately 1" DBH for every 4" DBH removed, planting trees that are a minimum of 3" DBH. This means that for the 100-inch diameter of trees removed (tree # 4, 82 and 83) the applicant must provide mitigation of 25" of caliper replacements. The minimum caliper of trees accepted for mitigation is a 3" inch tree. Therefore an additional 8 trees of 3" inches or greater must be planted to satisfy the mitigation requirements. Initially these trees will not be as large as the trees lost, however they will provide some immediate benefits and will ultimately fill the areas where large trees will have been removed.

### **County Arborist's Recommendation on the Variance**

In accordance with Montgomery County Code Section 22A-21(c), the Planning Department is required to refer a copy of the variance request to the County Arborist in the Montgomery County Department of Environmental Protection for a recommendation prior to acting on the request. On June 21, 2012 the County Arborist reviewed the variance and determined that it meets the qualifications for approval.

### **Montgomery County Noise Ordinance**

The activities associated with the project will comply with Montgomery County's Noise Ordinance, Section 31 (b) of the County Code, and with the Montgomery County Department of Park and Planning Noise Guidelines.

### **Maintenance and Monitoring**

All planted trees and shrubs that do not survive will be replaced during the 2-year monitoring period. Any dead specimens will be replaced by the next planting season and continued to be replaced during the entire 2 year warranty period. DEP is committed to the success of both the in-stream restoration work and the re-establishment of the stream buffer and will perform a restoration monitoring assessment at the end of year 1, 3, 5, and 10 years to ensure their goals have been met. At each of the post-restoration project milestones, a report will be generated for the Donnybrook Stream Restoration project and will be posted on DEP's website.

### **STAFF RECOMMENDATION ON VARIANCE**

As a result of the above findings, staff recommends the Board approve the applicant's request for a variance from Forest Conservation Law to remove ten (10) specimen trees with critical root zone impacts to twenty-seven (27) specimen trees associated with the site. The variance approval is assumed into the Planning Board's approval of the Forest Conservation Plan.

### **Conditions**

1. The proposed development shall comply with the conditions of the Preliminary Forest Conservation Plan. The applicant shall satisfy all conditions prior to Montgomery County Department of Permitting Services (MCDPS) issuance of sediment and erosion control permits.
2. The final sediment and erosion control plan must match the limits of disturbance as shown on the Final Forest Conservation Plan and be consistent with its recommendations for tree protection.
3. Approval of a Final Forest Conservation Plan must be consistent with the approved Preliminary Forest Conservation Plan and associated conditions, prior to any clearing, grading or demolition on the site.
4. The applicant must obtain the services of an ISA certified arborist, or a Maryland Licensed Tree Expert, to perform the required tree preservation measures.
5. Prior to any clearing, grading, or construction activity in the project area, the applicant must submit a Final Forest Conservation Plan which addresses the following items:
  - a. In the General Notes, remove parkland zoning reference.

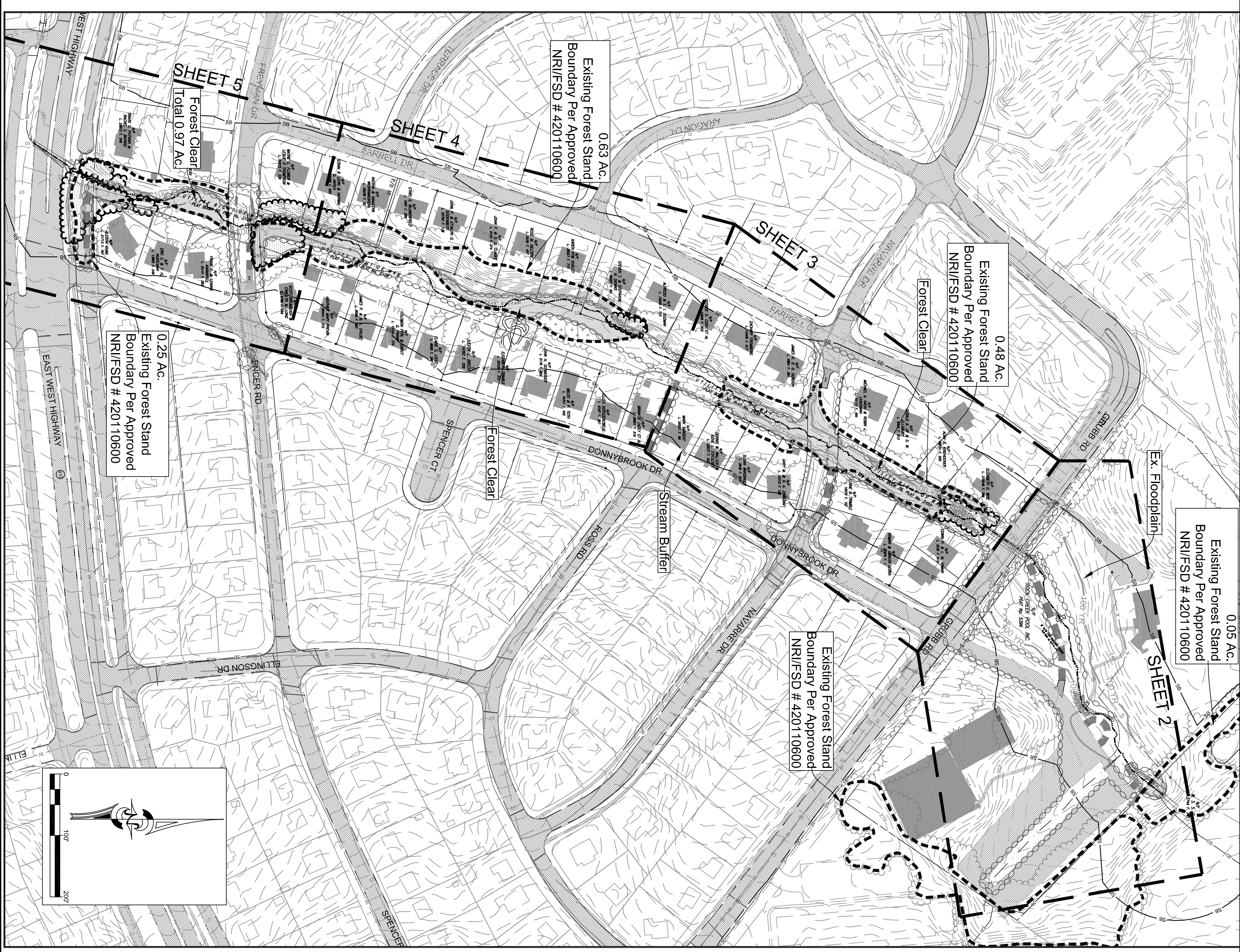
### **Conclusion**

Staff recommends that the Planning Board approve the Mandatory Referral and the Preliminary Forest Conservation Plan with the conditions cited in this staff report. The variance approval is assumed into

the Planning Board's approval of the Preliminary Forest Conservation Plan.

**Attachments**

- A. Preliminary Forest Conservation Plan
- B. Tree Variance
- C. Traffic Control
- D. LID Sites



Prepared for:  
 Montgomery County Department of  
 Environmental Protection  
 255 Rockville Pike, Suite 120  
 Rockville, Maryland 20850  
 Phone: (240) 777-7773  
 Attn: Mr. Craig Carson

MONTGOMERY COUNTY, MD  
 Donnybrook Stream  
 Plat# 5386 Plat# 2458 Plat# 2106  
 Tax Map HNS3

# Donnybrook Tributary Stream Restoration Project Preliminary Forest Conservation Title Sheet

**LEGEND**

- Tract Area
- - - Existing Forest Edge
- ~ Aerial Tree Canopy
- ⊞ Dense Stand Invasive Species (Bamboo, Ivy, Muli, Rose, etc)
- Forest Clear
- ▨ Stabilized Construction Entrance
- - - Temporary Access
- Ex. Road/Forest Area

- GENERAL NOTES**
- Site topography taken from Montgomery County GIS 5 foot interval & CPJ field work dated Fall 2009. Zoning are packeted and R-60.
  - The surrounding land uses around the site are high density residential areas.
  - Tree diameters measured using a diameter tape. Field work conducted on January 6th 2010 by James Felch, RLA and Hoanq T. of CPJ. There is 1 River Birch that is within 75% or greater of both County and State Champion tree within the study area. Please see (tree #74) sheet 4 for location and trees list on sheet 6.
  - Donnybrook Stream is within the Lower Rock Creek Watershed, a USE 1 class watershed.
- FOREST CONSERVATION AND PLANTING NOTES**
- All forest conservation work and any substitutions or other design changes must be approved by Forest Conservation Inspector.
  - Contractor to place 12 inch deep woodchip mulch on all temporary access within the forest stand to protect trees CRZ and/or as directed by Forest Conservation Inspector at pre-construction meeting.
  - The pruning and root pruning for construction access must be approved by Forest Conservation Inspector and to be performed under the supervision of a MD certified arborist.
  - Contractor to remove all invasive species within the limits of disturbance and planting areas prior to planting.
  - All planting areas shall be planted after all Stream Restoration such as grading and installations of stream banks protection are completed.
  - Contractor must obtain permission and approval of planting materials and locations from the Forest Conservation Inspector at pre-planting meeting prior to implement work.
  - All sediment control measures shall not be removed without the Sediment Control Inspector approval.
  - Any excavation work within the critical root zone of any SAVE specimen tree (24" or greater must be done under supervision of a certified arborist).

## LIST OF PROPERTY OWNERS

Property Owner	Usher	Parcel Plat
W.S.S.C.	2724	341,250/1/20/1986/1000 Road, Silver Spring MD 20910
Rock Creek Pool, Inc.	2724	338/Donnybrook Drive, Chevy Chase, Maryland 20815
Elizabeth D. Wise	318246	586 8606/Gamb Road, Chevy Chase, Maryland 20815
Edwin P. & L.M. Lyman	3235	612 8602/Gamb Road, Chevy Chase, Maryland 20815
Alan D. Rinehaver	28554	525 8605/Farrel Ct, Chevy Chase, Maryland 20815
Geordie B. Jr. & S.W. Hilsbury	6555	613 8603/Farrel Ct, Chevy Chase, Maryland 20815
Roman & Donna Letica	31476	1 8600/Donnybrook Drive, Chevy Chase, Maryland 20815
Michael A. Nash & Robin J. Lundstrom	15115	464 8601/Farrel Ct, Chevy Chase, Maryland 20815
Elaine B. Trimble	16701	157 8600/Donnybrook Drive, Chevy Chase, Maryland 20815
James & D. G. Zinkoff	4884	394 8515/Farrel Drive, Chevy Chase, Maryland 20815
Gary M. & K. A. Zinkoff	12310	162 8428/Donnybrook Drive, Chevy Chase, Maryland 20815
Susan Waininger	1348	617 8513/Farrel Drive, Chevy Chase, Maryland 20815
George D. Coody EAI	7648	257 8426/Donnybrook Drive, Chevy Chase, Maryland 20815
Dennis W. Wallick & Irene J. Smokely	14856	208 8501/Farrel Drive, Chevy Chase, Maryland 20815
Alfredo & E. L. Guzman	28537	627 8424/Donnybrook Drive, Chevy Chase, Maryland 20815
Mark Sargent	26551	153 8505/Farrel Drive, Chevy Chase, Maryland 20815
Brian T. Lacey EAI	38801	216 8420/Donnybrook Drive, Chevy Chase, Maryland 20815
Steven J. & Stephanie N. Dennis	32507	64 8601/Farrel Drive, Chevy Chase, Maryland 20815
Ellen Kesztenovec	8187	281 8418/Donnybrook Drive, Chevy Chase, Maryland 20815
Karen Kim Hurley	38527	310 8429/Farrel Drive, Chevy Chase, Maryland 20815
Milos & P. Toth	16341	442 8416/Donnybrook Drive, Chevy Chase, Maryland 20815
Rose M. Gillispie	2039	457 8425/Farrel Drive, Chevy Chase, Maryland 20815
John H. Schneider	5179	852 8414/Donnybrook Drive, Chevy Chase, Maryland 20815
John F. & D. D. Clarke	6191	724 8421/Donnybrook Drive, Chevy Chase, Maryland 20815
Judith L. Trimble	14992	309 8410/Donnybrook Drive, Chevy Chase, Maryland 20815
Elizabeth Birch	25792	138 8417/Farrel Drive, Chevy Chase, Maryland 20815
John P. & Ehsayia Q. Sedenteh	688	388 8408/Donnybrook Drive, Chevy Chase, Maryland 20815
Ethel S. Blumenthal	1647	309 8413/Farrel Drive, Chevy Chase, Maryland 20815
Solomon Perl & Doris G. Frank	15744	371 8406/Donnybrook Drive, Chevy Chase, Maryland 20815
Inoska & Sanjewa Wickramanatha	26739	57 8407/Farrel Drive, Chevy Chase, Maryland 20815
James P. & B. L. Ertow	9096	683 8408/Donnybrook Drive, Chevy Chase, Maryland 20815
Wayne C. Hoover & Leslie O. Thompson	9573	330 8401/Farrel Drive, Chevy Chase, Maryland 20815
Scott Burroughs & Carolyn M. Lewis	9785	549 2881/Spencer Road, Chevy Chase, Maryland 20815
Frank T. & Leanne Kampani	33681	721 8384/Donnybrook Drive, Chevy Chase, Maryland 20815
Mark & Kopskis & Jean - Fiscal Axis	51541	228 8384/Donnybrook Drive, Chevy Chase, Maryland 20815
Eric S. & T.L. Underman	18465	249 8382/Donnybrook Drive, Chevy Chase, Maryland 20815
Travis S. Purvan & Richard S. Bayard	28673	348 28657 East West Highway, Chevy Chase, Maryland 20815
Alvinah Khan	21713	797 2861 East West Highway, Chevy Chase, Maryland 20815
Valley Hill of Way	28444	372 8402/Donnybrook Drive, Chevy Chase, Maryland 20815
Heather Holly Preston	35269	162 8428/Donnybrook Drive, Chevy Chase, Maryland 20815
Kristin Leoni & Nathan D. Amilia	31028	441 744 2458 Block 3 2483 to 2485/Donnybrook Drive, Chevy Chase, Maryland 20815
Montgomery County	39486	128 744 2458 Block 1 & 3 and part of Block 10,0,8,7, Inock Creek Forest*
Montgomery County	39486	128 744 2458 Block 1 & 3 and part of Block 10,0,8,7, Inock Creek Forest*

## TREE MITIGATION PLANTING NOTE:

A minimum of (11) 3" caliper shade trees will be included in the final forest conservation planting plan to mitigate for impacts to existing specimen trees.

- Notes:**
- All planting areas within the LOD will be planted with trees and shrubs per County Guidelines following construction completion.
  - All temporary access routes to be protected with 12" thick mulch mats or as directed by County Forester (see detail).

**SHEET INDEX**

1. TITLE SHEET
2. PLAN VIEW
3. PLAN VIEW
4. PLAN VIEW
5. PLAN VIEW
6. TREE INVENTORY LIST
7. TREE VARIANCE REQUEST
8. DETAILS & NOTES
9. PLANTING PLAN
10. PLANTING PLAN
11. PLANTING PLAN
12. PLANTING PLAN
13. PLANTING PLAN
14. PLANTING DETAILS AND NOTES

**SUMMARY TABLE** (all values in acres unless noted)

Category	Value
A. Total area of tract = Project's LOD	3.29
B. Average of tract remaining in agriculture	0.00
C. Average of road and utility ROW which will not be improved	0.00
D. Total acreage of existing forest, within LOD	0.97
E. Forest retained	0.00
F. Net Tract Area	0.97
G. Land use category	HOR
H. Adversation threshold	15%
I. Conservation threshold	20%
J. Average of forest within wetlands	0.00
K. Retained	0.00
L. Planned	0.00
M. Average of forest within 100 year floodplains	0.72
N. Retained	0.00
O. Planned	0.72
P. Acreage within stream buffers:	
Q. Retained	0.99
R. Planned	0.00
S. Acreage within priority areas:	
T. Retained	0.99
U. Planned	0.00
V. Stream buffer:	
W. Length	125.175'
X. Average width	2.50 ft
Y. Average width	150 ft

**FOREST CONSERVATION WORKSHEET**

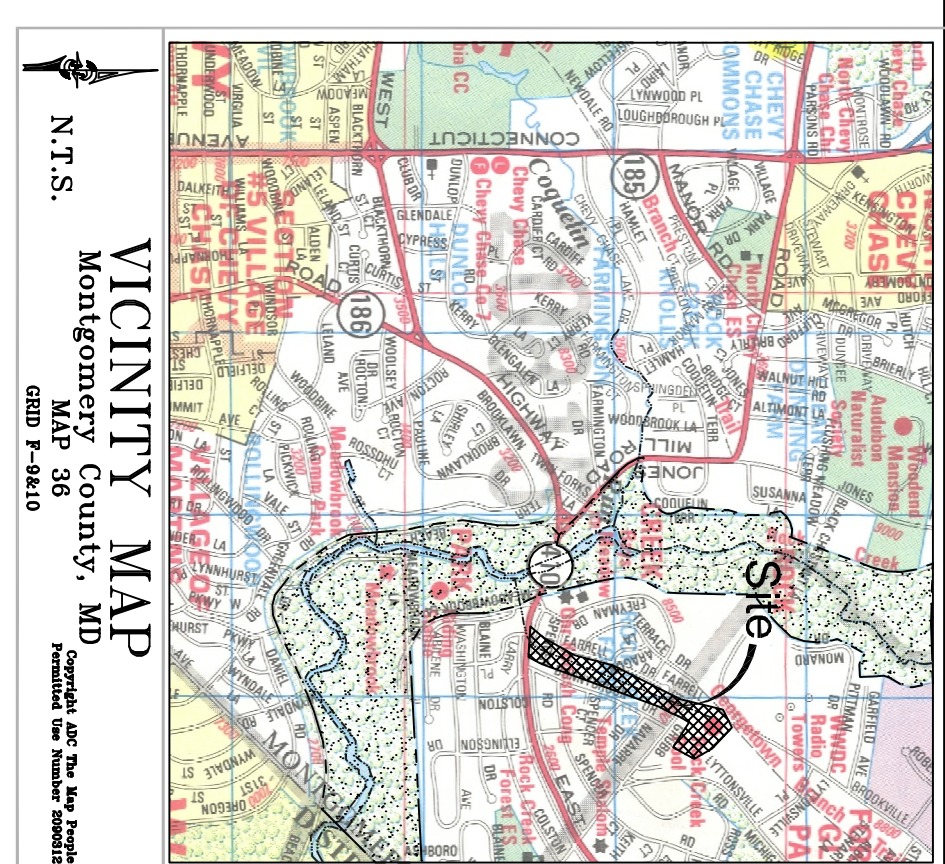
NET TRACT AREA:	ARA	MOR	IDA	HOR	MPD	CA
Total tract area ...	0	0	0	1	0	0
Land dedication for roads or utilities (not being constructed by this plan) ...	0	0	0	0	0	0
Area to remain in commercial agricultural production/use ...	0	0	0	0	0	0
Other deductions (specify) ...	0	0	0	0	0	0
Net Tract Area ...	0	0	0	1	0	0

**LAND USE CATEGORY:** (from "Trees Technical Manual")  
 Input the number "1" under the appropriate land use limit to only one entry.

Category	ARA	MOR	IDA	HOR	MPD	CA
Adversation Threshold ...	0	0	0	0	0	0
Conservation Threshold ...	0	0	0	0	0	0
Existing forest cover ...	0	0	0	0	0	0
Area of forest above adversation threshold ...	0	0	0	0	0	0
Area of forest above conservation threshold ...	0	0	0	0	0	0
Area of forest above conservation threshold ...	0	0	0	0	0	0
Forest retention above threshold with no mitigation ...	0	0	0	0	0	0
Cleaning permitted without mitigation ...	0	0	0	0	0	0
PROPOSED FOREST CLEARING:						
Total area of forest to be cleared ...	0	0	0	0	0	0
Total area of forest to be retained ...	0	0	0	0	0	0

**PLANTING REQUIREMENTS:**

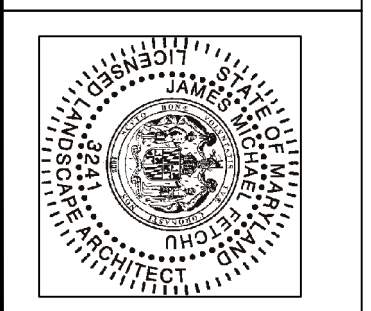
Requirement	Value
Replantation for clearing above conservation threshold ...	0.08
Replantation for clearing below conservation threshold ...	1.32
Credit for retention above conservation threshold ...	0.00
Total replantation required ...	1.39
Total replantation required ...	0.00
Credit for landscaping (may not exceed 20% of "S") ...	0.28
Total replantation and abatement required ...	1.11



**QUALIFIED PROFESSIONAL CERTIFICATION:**

I hereby certify that this plan is prepared in accordance with Montgomery County Forest Conservation Regulations.

Date: 6-27-2012  
 Signature: James M. Felch, RLA MD #2341  
 Charles P. Johnson Associates, 910 Copper Road Suite 215N, Gaithersburg, MD 20878, Tel: 301-208-8673, Email: jfelch@cpja.com



**CPJ Environmental Services Division**  
 STREAM RESTORATION - STORMWATER MANAGEMENT - INSPECTION  
 910 COPPER ROAD STE 215N GAITHERSBURG, MARYLAND 20878  
 PH:301.208.8673 FAX:301.208.8651  
 SILVER SPRING, MD FREDERICK, MD FAIRFAX, VA

SCALE AS SHOWN  
 SHEET 1  
 OF 14 SHEETS  
 JOB NO. 39-552







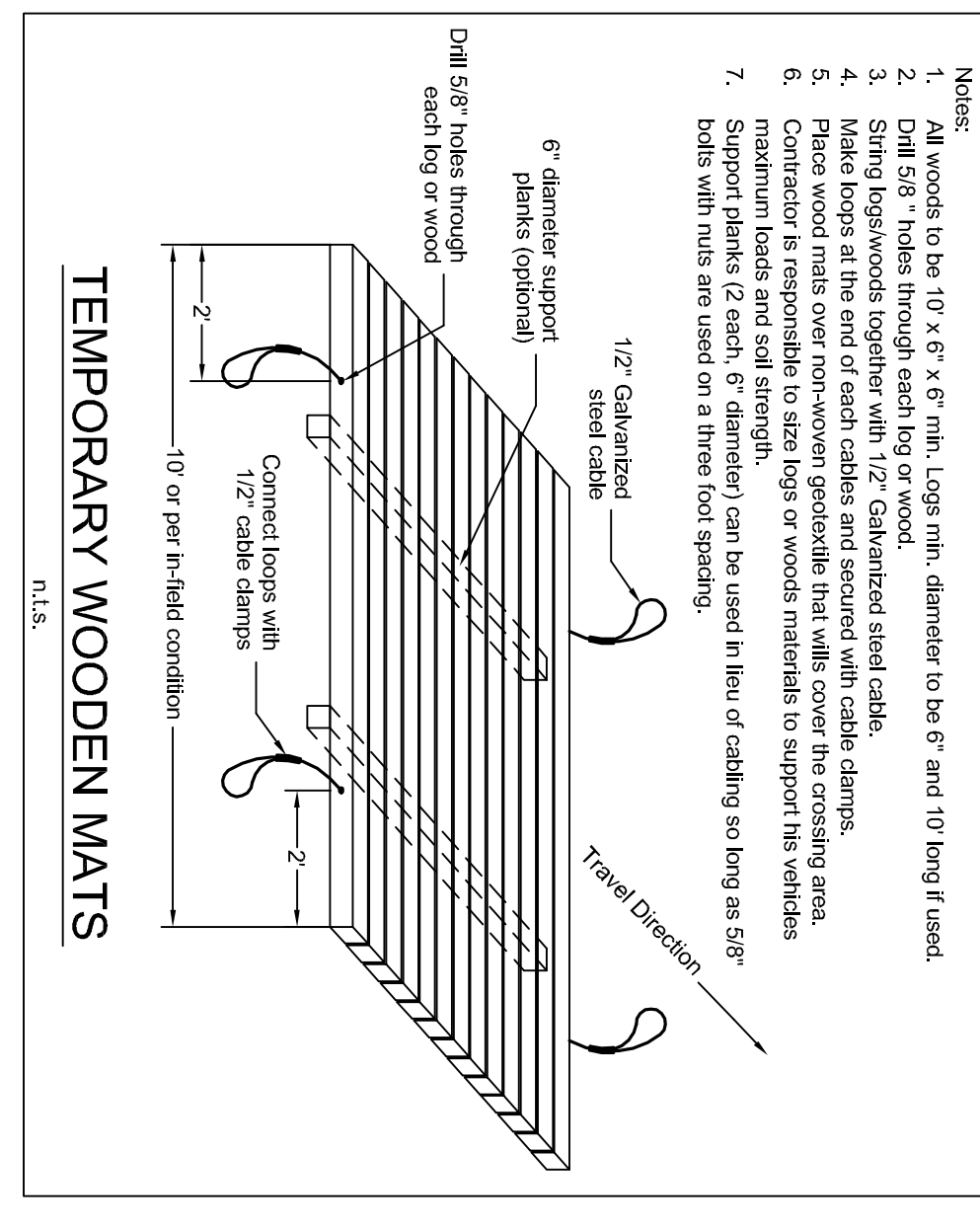
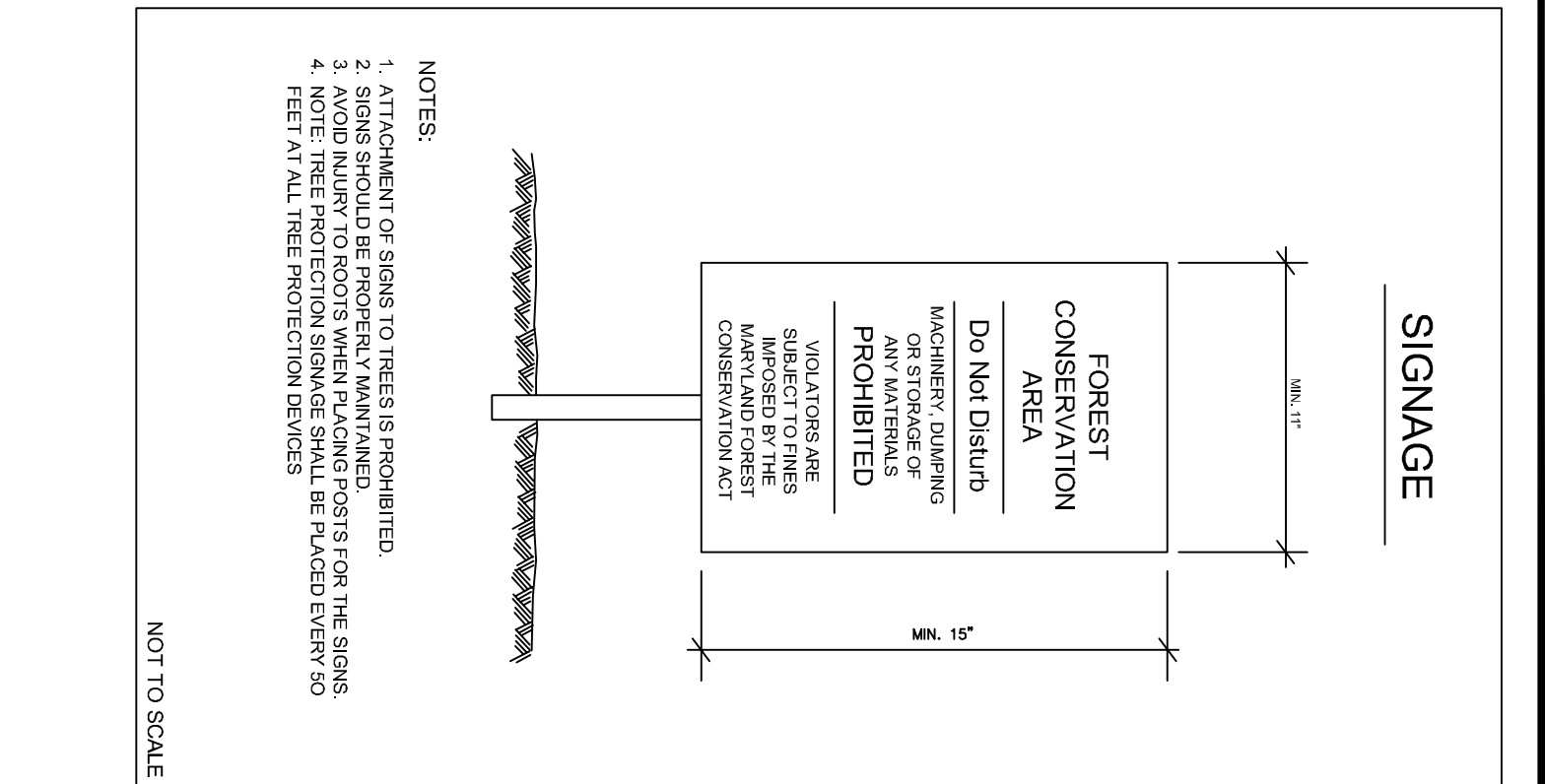
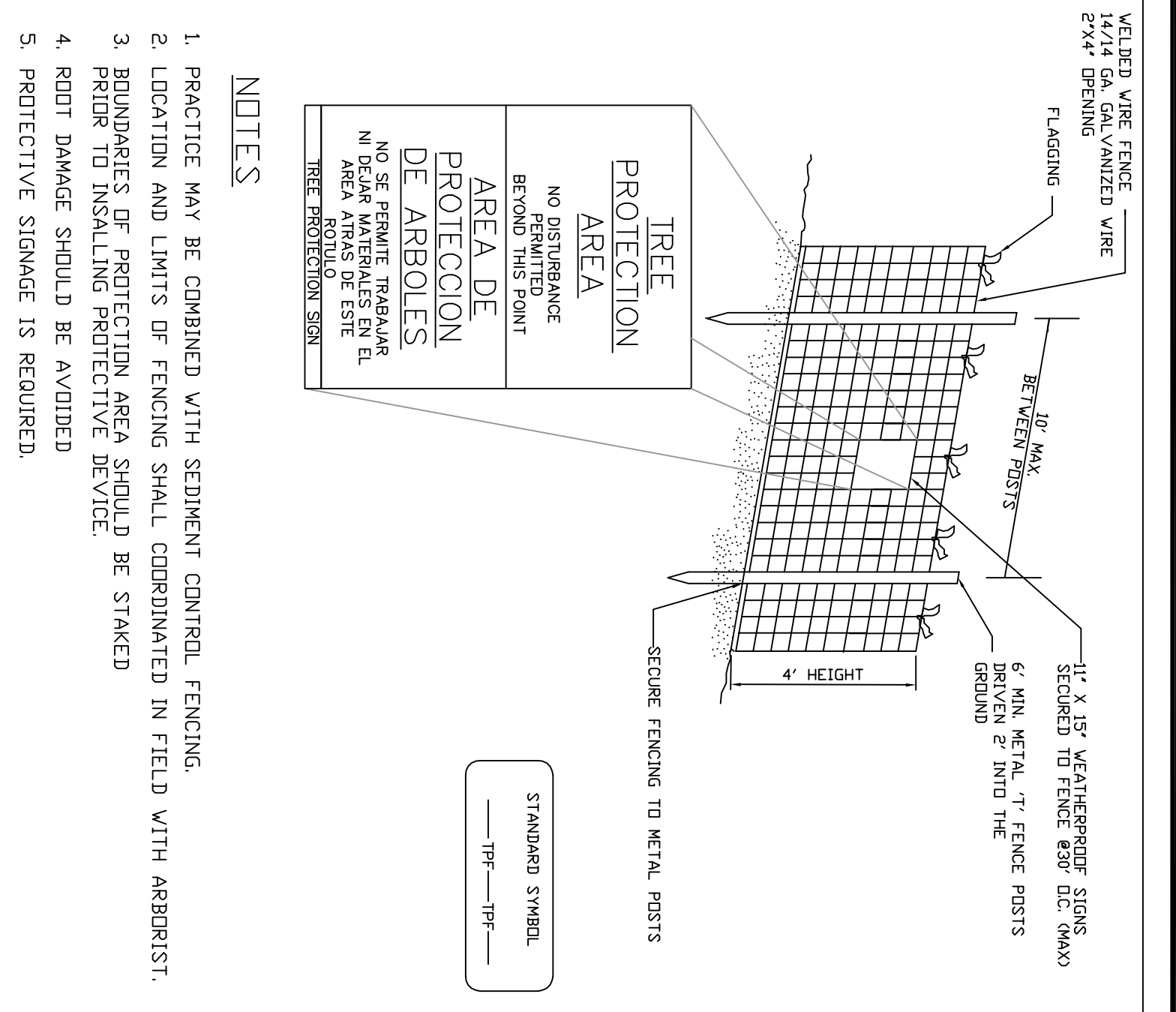
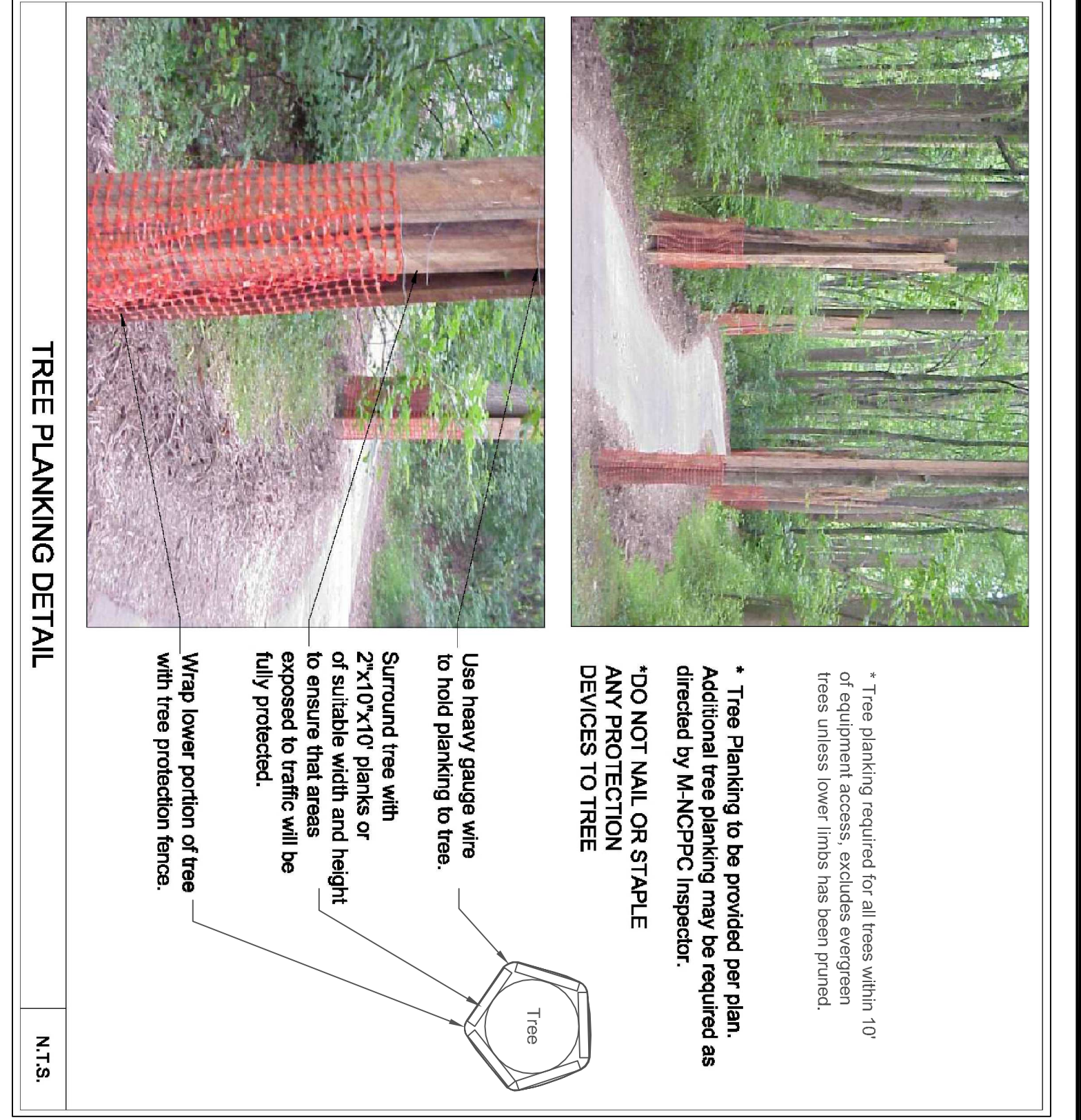
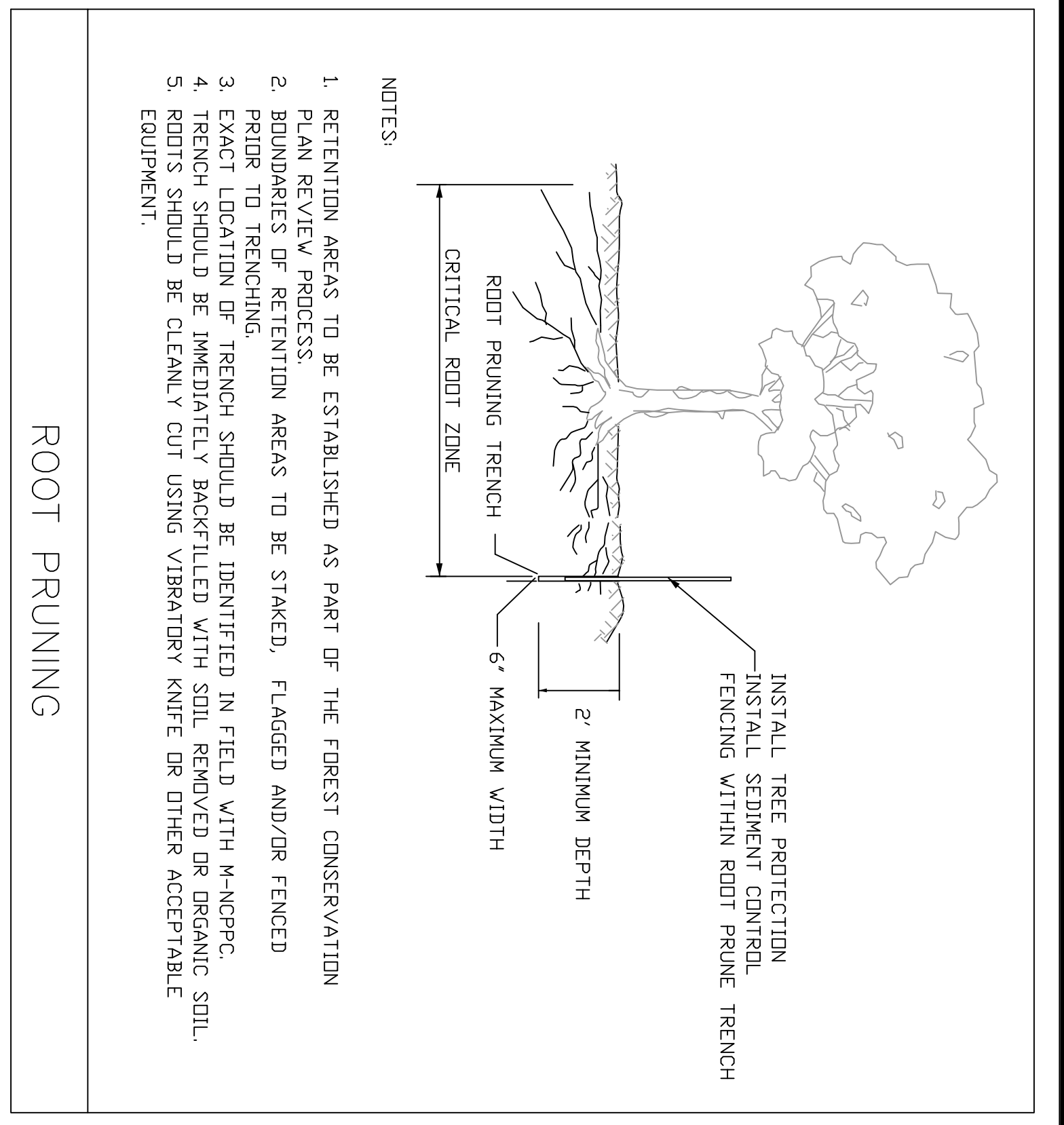




**SIGNIFICANT AND SPECIMEN TREES**

Donnybrook Significant (247) and Specimen Trees List (307)	DBH (in)	CRZ (ft)	Condition	Notes	Req. Variance
1 Black Gum	27	40.5	Fair	Dead branches, west	
2 Tulip Poplar	29	43.5	Fair	Pruned by, Dead branches	
3 Eastern Cottonwood	30	46	Fair	Laying some dead branches	Rain
4 Box Elder	30	46	Fair	Undercut bar stake	Remove
5 Red Maple	30	46	Fair	Undercut	Remove
6 Tulip Poplar	30	46	Fair	Yarns, undercut	Rain
7 Stramonice	38	54	Fair	Yarns, dead branches	Rain
8 Red Maple	38	54	Fair	Spine leaning	Rain
9 White Birch	37	40.5	Fair	Yarns, dead branches	Rain
10 White Oak	35	52.5	Fair	Dead branches	Rain
11 Red Oak	44	61	Fair	Hidden in trunk, limbs cut off	Rain
12 Red Oak	44	61	Fair	Hidden in trunk, limbs cut off	Rain
13 Red Oak	43	64.5	Poor	Call down	Rain
14 Red Oak	38	54	Fair	Hanging crown, dead branches	Rain
15 Black and Oak	42	63	Fair	Branches cut off	
16 Black and Oak	35	51	Fair	Branches cut off	
17 Black and Oak	35	51	Fair	Branches cut off	
18 Black and Oak	24	36	Good		
19 Fr. Oak	25	37.5	Good		
20 Fr. Oak	25	37.5	Good		
21 Fr. Oak	25	37.5	Good		
22 Stramonice - DEAD	31	46.5	DEAD	DEAD	
23 White Elm	28	36	Good	Yarns, well dead	
24 White Elm	28	36	Good	Yarns, well dead	
25 Stramonice	49	73.5	Poor	Dead branches, 50' high in trunk	Rain
26 Stramonice	24	36	Fair	Spine leaning, west	
27 Stramonice	24	36	Fair	Spine leaning, west	
28 Tulip Poplar	28	36	Poor	Undercut	
29 Black Locust	28	36	Good	Laying main, dead branches	Rain
30 Stramonice	28	36	Good	Laying main, dead branches	Rain
31 Stramonice	28	36	Good	Laying main, dead branches	Rain
32 Stramonice	32	44	Good	Undercut, leaning	Rain
33 Tulip Poplar	24	36	Fair	Laying dead branches	Rain
34 Black Locust	24	36	Fair	Laying dead branches	Rain
35 Stramonice	24	36	Fair	Laying dead branches	Rain
36 Stramonice	24	36	Fair	Laying dead branches	Rain
37 Red Maple	25	37.5	Good		
38 Silver Maple	25	37.5	Good		
39 Silver Maple	25	37.5	Good		
40 Silver Maple	25	37.5	Good		
41 Silver Maple	24	36	Fair	Undercut, west, dead branches	Rain
42 Silver Maple	24	36	Fair	Yarns, leaning	Rain
43 Black Locust	24	36	Fair	Yarns, leaning	Rain
44 Black Locust	24	36	Fair	Yarns, leaning	Rain
45 Black Locust	24	36	Fair	Yarns, leaning	Rain
46 Black Locust	24	36	Fair	Yarns, leaning	Rain
47 Black Locust	24	36	Fair	Yarns, leaning	Rain
48 Black Locust	24	36	Fair	Yarns, leaning	Rain
49 Black Locust	24	36	Fair	Yarns, leaning	Rain
50 Tulip Poplar	27	40.5	Fair	Hidden in trunk, some branches cut off	Rain
51 Red Maple	27	40.5	Fair	Hidden in trunk, some branches cut off	Rain
52 Red Maple	27	40.5	Fair	Hidden in trunk, some branches cut off	Rain
53 Red Maple	27	40.5	Fair	Hidden in trunk, some branches cut off	Rain
54 Red Maple	27	40.5	Fair	Hidden in trunk, some branches cut off	Rain
55 Silver Maple	27	40.5	Fair	Hidden in trunk, some branches cut off	Rain
56 Silver Maple	27	40.5	Fair	Hidden in trunk, some branches cut off	Rain
57 Silver Maple	27	40.5	Fair	Hidden in trunk, some branches cut off	Rain
58 Silver Maple	27	40.5	Fair	Hidden in trunk, some branches cut off	Rain
59 Silver Maple	27	40.5	Fair	Hidden in trunk, some branches cut off	Rain
60 White Mulberry	24	36	Fair	Yarns, dead branches	Remove
61 White Pine	24	36	Fair	Yarns, dead branches	Remove
62 White Pine	24	36	Fair	Yarns, dead branches	Remove
63 White Pine	24	36	Fair	Yarns, dead branches	Remove
64 White Pine	24	36	Fair	Yarns, dead branches	Remove
65 White Pine	24	36	Fair	Yarns, dead branches	Remove
66 White Pine	24	36	Fair	Yarns, dead branches	Remove
67 White Pine	24	36	Fair	Yarns, dead branches	Remove
68 White Pine	24	36	Fair	Yarns, dead branches	Remove
69 White Pine	24	36	Fair	Yarns, dead branches	Remove
70 White Pine	24	36	Fair	Yarns, dead branches	Remove
71 White Pine	24	36	Fair	Yarns, dead branches	Remove
72 White Pine	24	36	Fair	Yarns, dead branches	Remove
73 Hickory	32	44	Poor	Undercut	Remove
74 Hickory	37	55.5	Fair	Spine leaning	Remove
75 Tulip Poplar	26	36	Fair	Undercut	Rain
76 Tulip Poplar	26	36	Fair	Undercut	Rain
77 Stramonice	40	66	Fair	Hidden branches	Rain
78 Eastern Cottonwood	44	66	Good	Hidden branches	Rain
79 Red Oak	29	43.5	Good		
80 Black Walnut	24	36	Fair	Shorely undercut	Rain
81 Black Walnut	24	36	Fair	Shorely undercut	Rain
82 Black Walnut	24	36	Fair	Shorely undercut	Rain
83 Stramonice	35	54	Good	Yarns	Remove
84 Stramonice	35	54	Good	Yarns	Remove
85 Stramonice	35	54	Good	Yarns	Remove
86 DEAD STUMP	24	36	Good		
87 Tulip Poplar	32	44	Good	Slightly undercut	Rain
88 Stramonice	32	44	Good	Slightly undercut	Rain
89 Stramonice	32	44	Good	Slightly undercut	Rain
90 Stramonice	32	44	Good	Slightly undercut	Rain
91 Green Ash	24	36	Fair	Laying west	Rain
92 Green Ash	24	36	Fair	Laying west	Rain
93 Green Ash	24	36	Fair	Laying west	Rain
94 Green Ash	24	36	Fair	Laying west	Rain
95 Red Maple	24	36	Good		
96 Red Maple	24	36	Good		
97 Red Maple	24	36	Good		
98 Red Maple	24	36	Good		
99 Red Maple	24	36	Good		
100 Linden	24	36	Fair	Pruned by	Rain
101 Linden	24	36	Fair	Pruned by	Rain
102 Linden	24	36	Fair	Pruned by	Rain
103 Linden	24	36	Fair	Pruned by	Rain
104 Linden	24	36	Fair	Pruned by	Rain
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144 Linden	24	36	Fair	Pruned by	Rain
145 Linden	24	36	Fair	Pruned by	Rain
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147 Linden	24	36	Fair	Pruned by	Rain
148 Linden	24	36	Fair	Pruned by	Rain
149 Linden	24	36	Fair	Pruned by	Rain
150 Linden	24	36	Fair	Pruned by	Rain
151 Linden	24	36	Fair	Pruned by	Rain
152 Linden	24	36	Fair	Pruned by	Rain
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161 Linden	24	36	Fair	Pruned by	Rain
162 Linden	24	36	Fair	Pruned by	Rain
163 Linden	24	36	Fair	Pruned by	Rain
164 Linden	24	36	Fair	Pruned by	Rain
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209 Linden	24	36	Fair	Pruned by	Rain
210 Linden	24	36	Fair	Pruned by	Rain
211 Linden	24	36	Fair	Pruned by	Rain
212 Linden	24	36	Fair	Pruned by	Rain
213 Linden	24	36	Fair	Pruned by	Rain
214 Linden	24	36	Fair	Pruned by	Rain
215 Linden	24	36	Fair	Pruned by	Rain
216 Linden	24	36	Fair	Pruned	





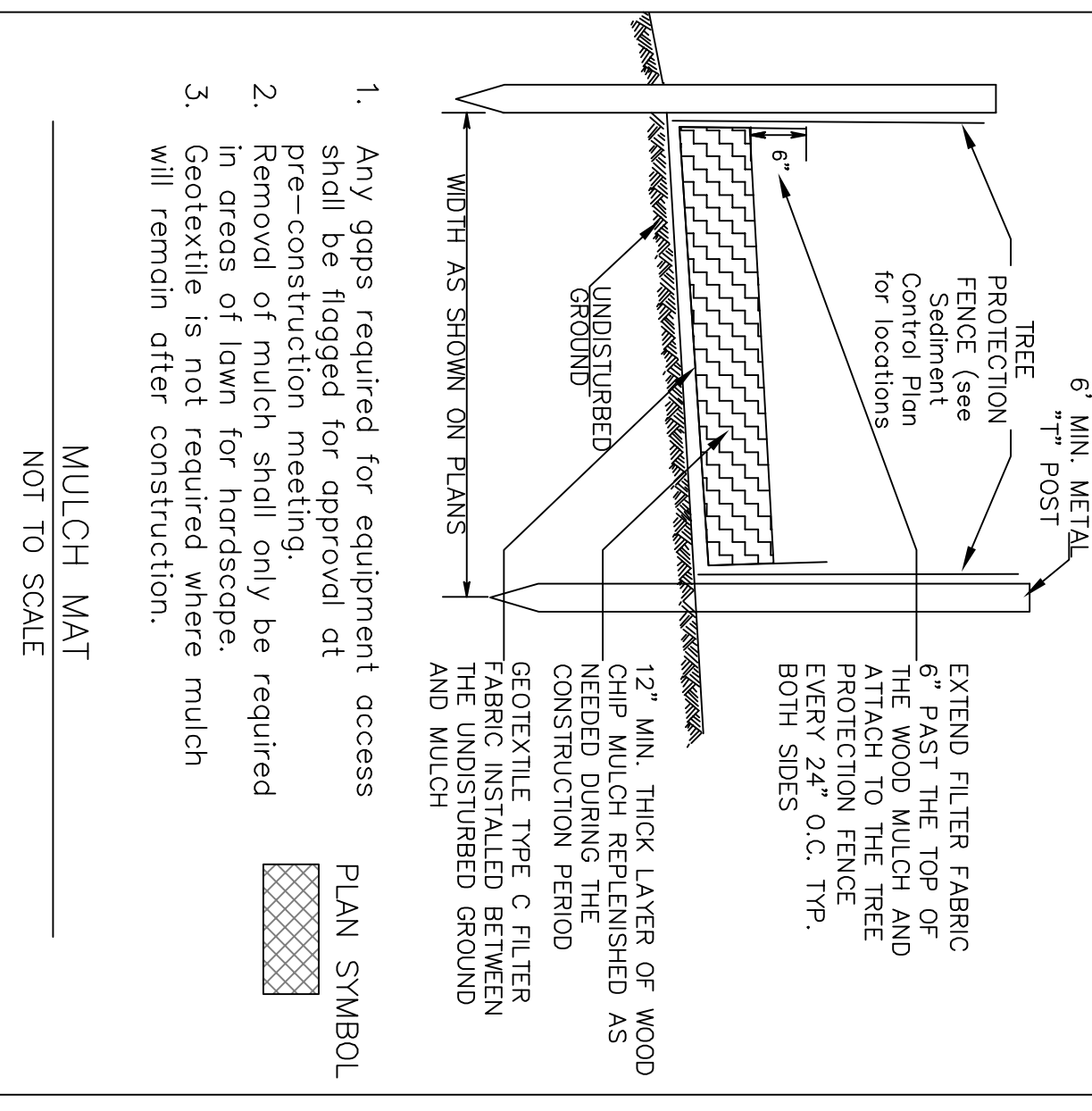
**SEQUENCE OF EVENTS FOR PROPERTY OWNERS REQUIRED TO COMPLY WITH FOREST CONSERVATION AND/OR TREE-SAVE PLANS**

**Pre-Construction**

- An on-site pre-construction meeting is required after the limits of disturbance have been staked and flagged, but before any clearing or grading begins. The property owner should contact the Montgomery County Department of Planning and Zoning for more information. The developer's responsible, construction superintendent, ISA certified arborist or Maryland-licensed tree expert that will implement the tree protection measures, forest conservation inspector, and Department of Permitting Services (DPS) sediment control inspector should attend this pre-construction meeting.
- No clearing or grading shall begin before stress-reduction measures have been implemented. Appropriate measures may include, but are not limited to:
  - Root pruning
  - Watering
  - Stem reduction or pruning
  - Vertical mulching
  - Vertical mulching
  - Root aeration meeting
- Measures not specified on the forest conservation plan may be required as determined by the forest conservation inspector in coordination with the arborist.
- A Maryland-licensed tree expert or an International Society of Arboriculture-certified arborist must perform all stress reduction measures. Documentation of stress reduction courses must be either by the tree expert or arborist. The forest conservation inspector will determine the exact method to convey the stress reduction measures during the pre-construction meeting.
- Temporary tree protection devices shall be installed per the Forest Conservation Plan/Tree Save Plan and prior to any construction activities. Tree protection fencing locations should be staked prior to the pre-construction meeting. The forest conservation inspector, in coordination with the DPS sediment control inspector, may make field adjustments to increase the survivability of trees and forest shown as saved on the approved plan. Temporary tree protect devices may include:
  - Slayer sill fence with wire strapping between support poles (minimum 4 feet high) with high visibility flagging.
  - Slayer sill fence with wire strapping between support poles (minimum 4 feet high) with high visibility flagging.
  - 14 gauge 2 inch x 4 inch welded wire fencing supported by steel "T" bar posts (minimum 4 feet high) with high visibility flagging.
- Temporary protection devices shall be maintained and installed by the contractor for the duration of construction project and must not be altered without prior approval from the forest conservation inspector. No equipment, trucks, materials, or debris may be stored within the tree protection fence areas during the entire construction period. No vehicle or equipment access to the forest area will be permitted. Tree protection shall not be removed without prior approval of forest conservation inspector.
- Forest retention area signs shall be installed as required by the forest conservation inspector, or as shown on the approved plan.
- Long-term protection devices will be installed per the Forest Conservation Plan/Tree Save Plan and attached details. Installation will occur at the appropriate time during the construction project. Refer to the plan drawing for long-term protection measures to be installed.

**DURING CONSTRUCTION**

- Periodic inspections by the forest conservation inspector will occur during the construction project. Corrections and repairs to all tree protection devices, as determined by the forest conservation inspector, must be made within the timeframe established by the inspector.



**PLAN SYMBOL**

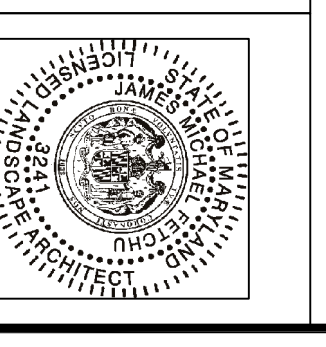
**PREPARED FOR:** Montgomery County Department of Environmental Protection  
 255 Rockville Pike, Suite 120  
 Rockville, Maryland 20850  
 Phone: (301) 777-7713  
 Attn: Mr. Craig Carson

**MONTGOMERY COUNTY, MD**  
 Donnybrook Stream  
 Plat# 5396 Plat# 2458 Plat# 2106  
 Tax Map HN53

**Donnybrook Tributary Stream**  
**Restoration Project**  
**Preliminary Forest Conservation**  
**Notes and Details**

DATE:	DESIGNED:	DRAFTED:	CHECKED:	BASE DATA:
6/12	HT/JF	HT	JF	CPJA

NO.	REVISIONS	BY	DATE



**QUALIFIED PROFESSIONAL CERTIFICATION:**

I hereby certify that this plan is prepared in accordance with Montgomery County Forest Conservation Regulations.

Date: 6-27-2012  
 Name: James M. Felton, RLA MD #3241  
 Address: Charles P. Johnson Associates, 910 Copper Road, Suite 215N, Gaithersburg, MD 20878, Tel: 301-208-9673, Email: jfelton@cpja.com

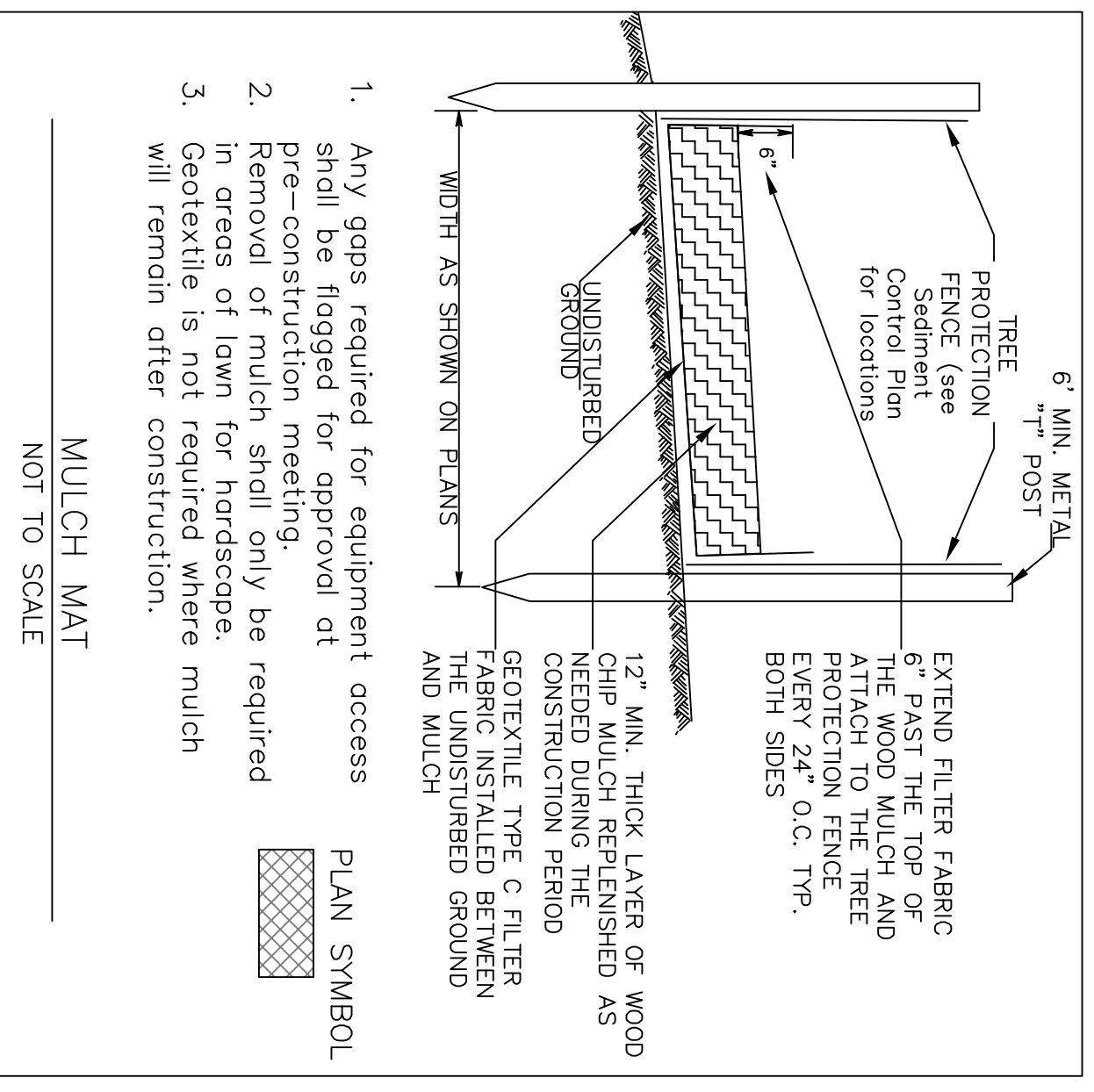
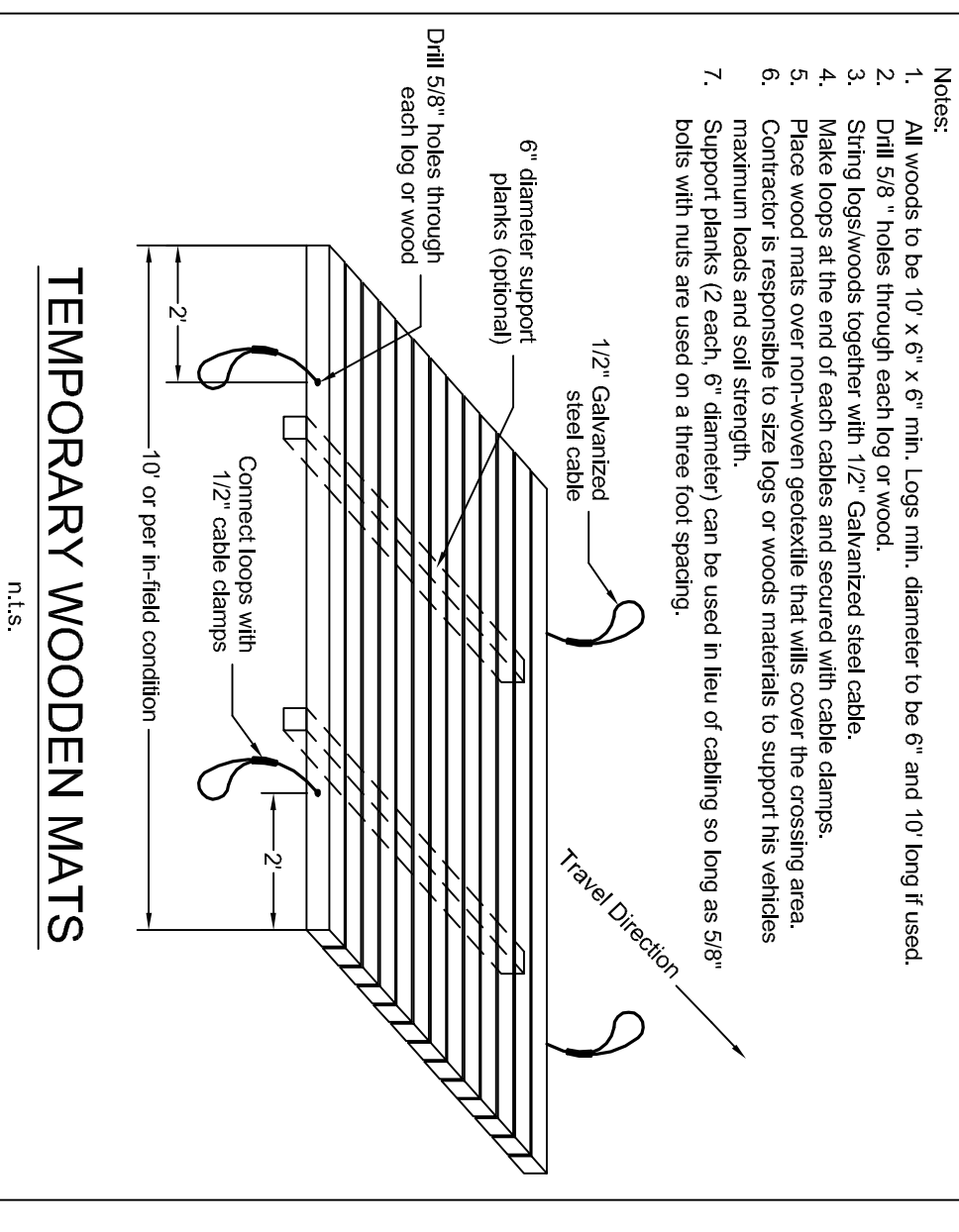
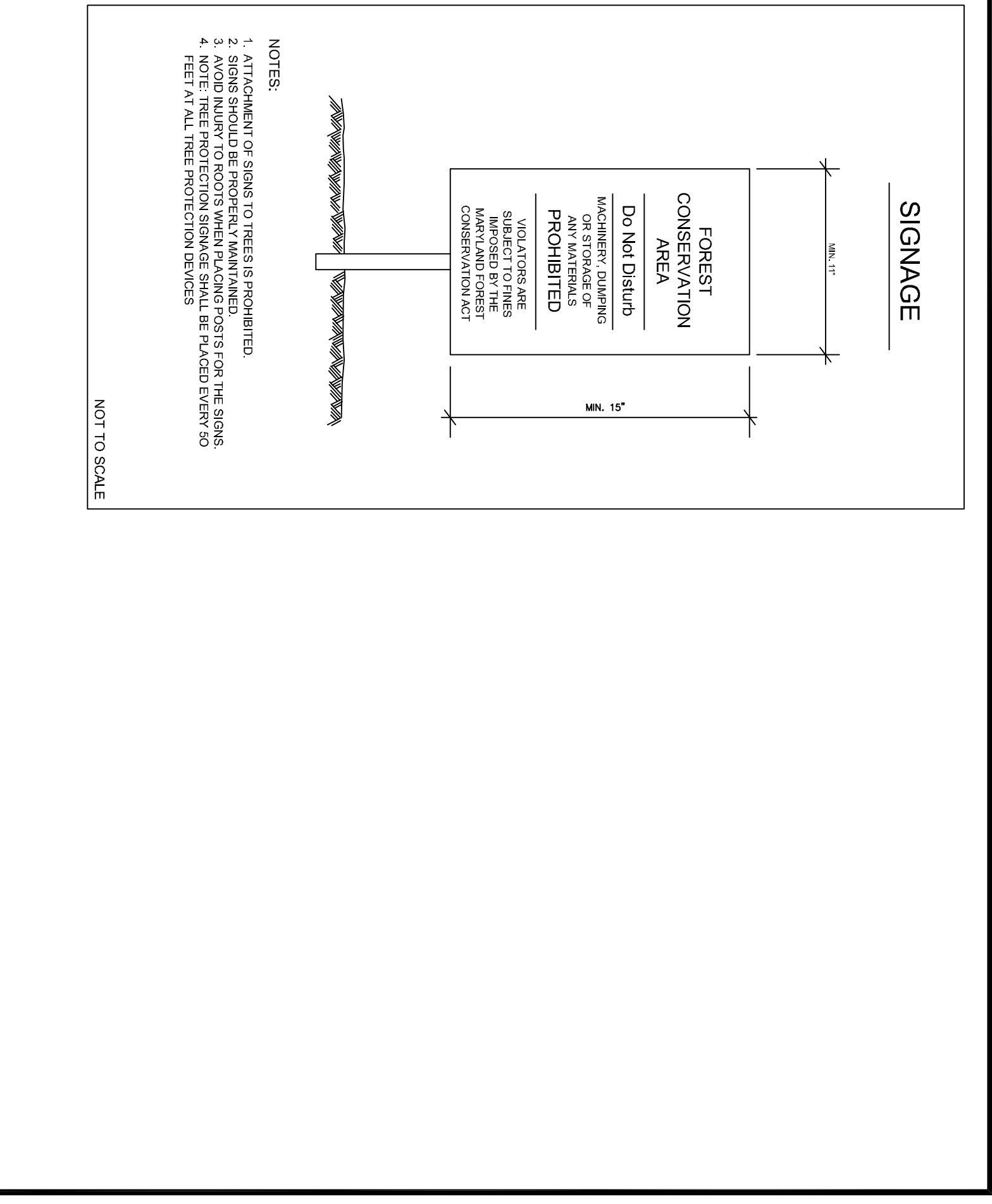
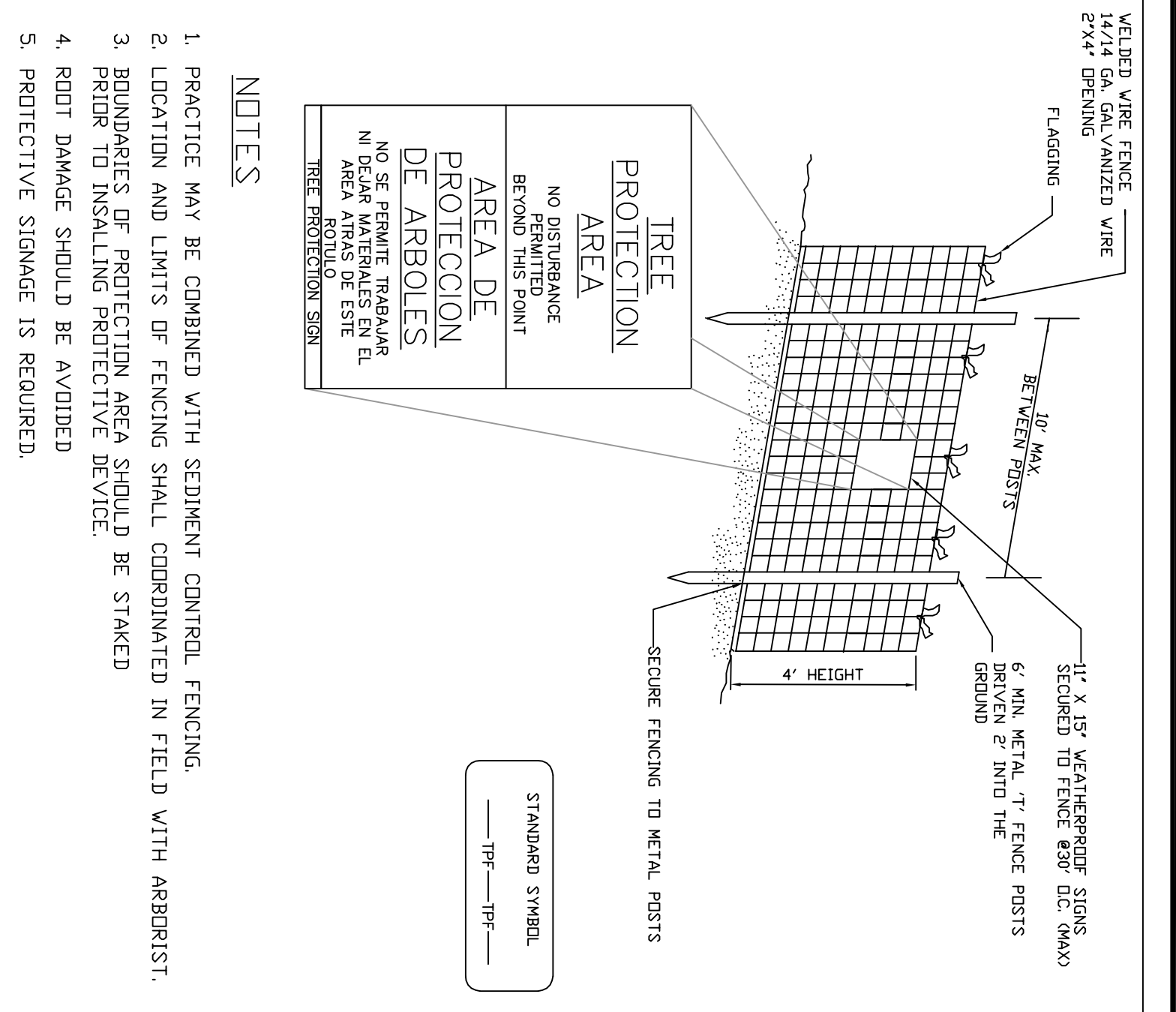
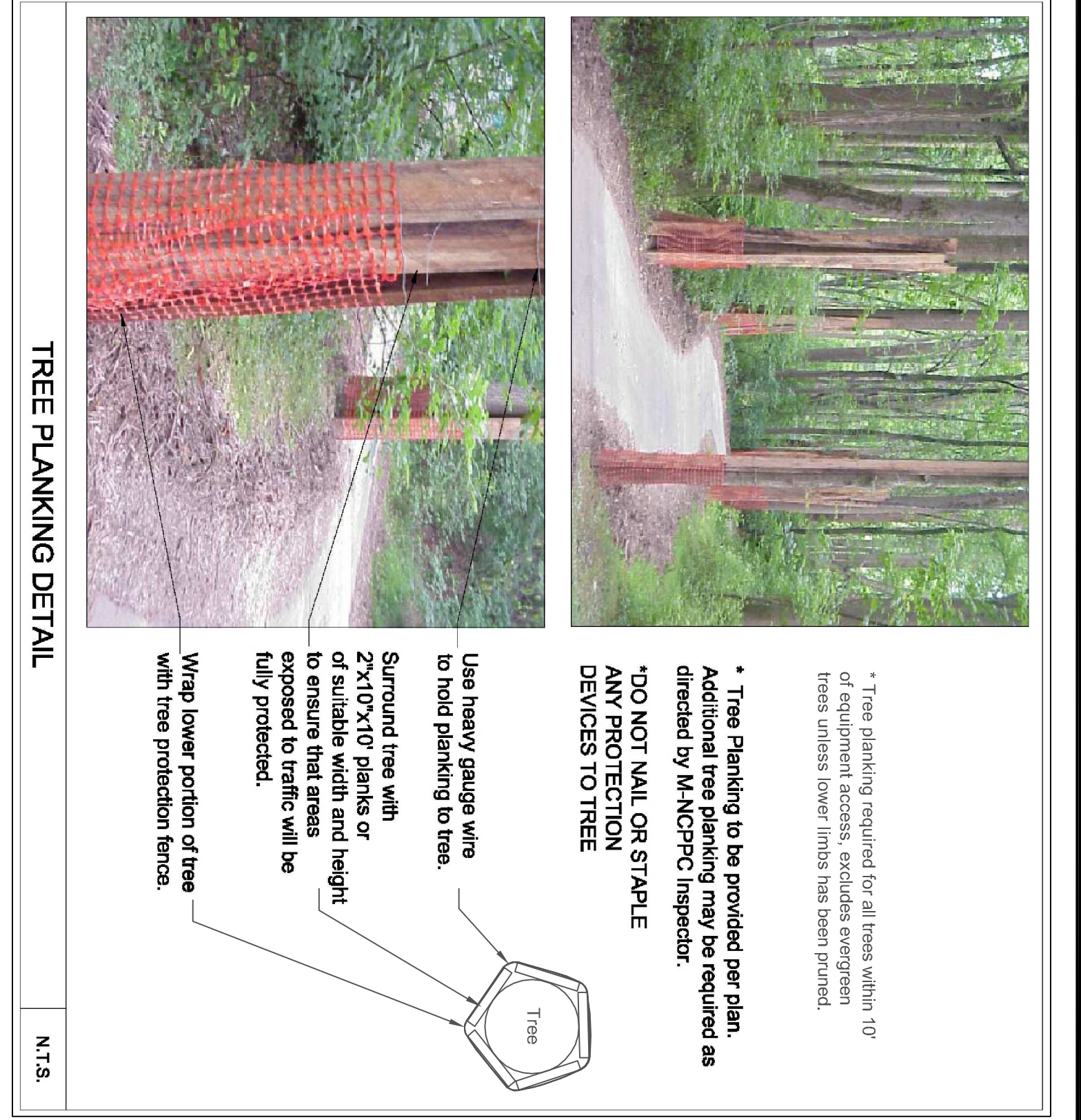
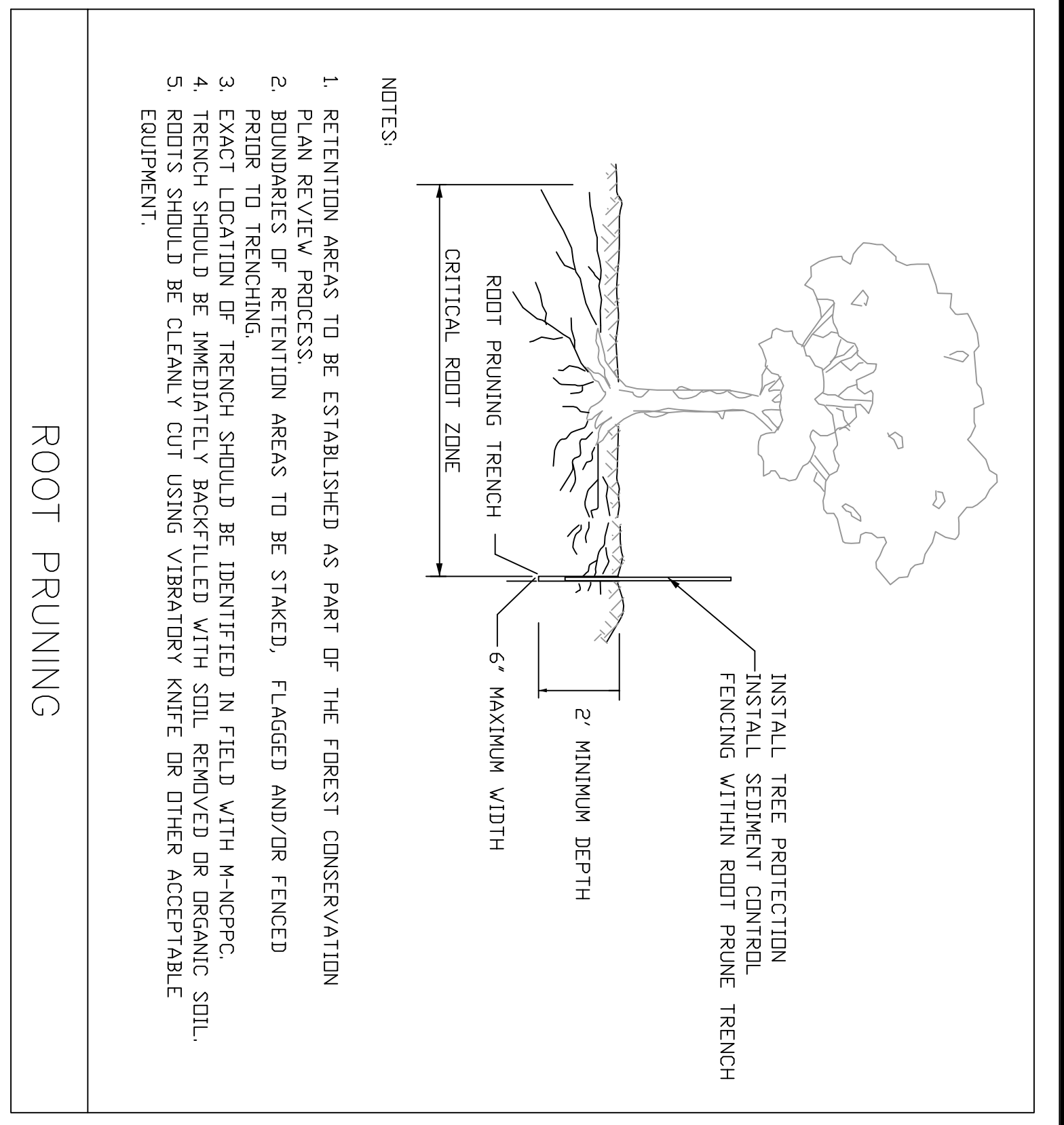
**CPJ Environmental Services Division**  
 STREAM RESTORATION • STREAM WATER MANAGEMENT • INSPECTION  
 910 COPPER ROAD, SUITE 215N, GAITHERSBURG, MARYLAND 20878  
 PHONE: 301-208-9673 • EMAIL: INFO@CPJ.COM • FAX: 301-208-9673  
 SILVER SPRING, MD • FREDERICK, MD • FAIRFAX, VA

**SCALE**  
 AS SHOWN

**SHEET**  
 8

**OF 14 SHEETS**

**JOB NO.**  
 39-382



**FOREST CONSERVATION NOTES**

**SEQUENCE OF EVENTS FOR PROPERTY OWNERS REQUIRED TO COMPLY WITH FOREST CONSERVATION AND/OR TREE-SAVE PLANS**

**Pre-Construction**

1. An on-site pre-construction meeting is required after the limits of disturbance have been staked and flagged, but before any clearing or grading begins. The property owner should contact the Montgomery County Department of Planning and Zoning (DPZ) at 4100 Rockville Pike, Room 200, Rockville, MD 20850, for more information.
2. No clearing or grading shall begin before stress-reduction measures have been implemented. Appropriate measures may include, but are not limited to:
  - a. Root pruning
  - b. Wound dressing
  - c. Soil aeration
  - d. Fertilization
  - e. Vertical mulching
3. A Maryland-licensed tree expert or an International Society of Arboriculture-certified arborist must perform all stress reduction measures. Documentation of stress reduction courses must be either provided to the Forest Conservation Inspector or made available to the Forest Conservation Inspector upon request. The Forest Conservation Inspector will determine the exact method to convey the stress reduction measures during the pre-construction meeting.
4. Temporary tree protection devices shall be installed per the Forest Conservation Plan/Tree Save Plan and prior to any construction activities. Tree protection fencing locations should be staked prior to the pre-construction meeting. The forest conservation inspector, in coordination with the DPZ sediment control inspector, may make field adjustments to increase the survivability of trees and forest shown as saved on the approved plan. Temporary tree protect devices may include:
  - a. Sliver sill fence with wire strapping between support poles (minimum 4 feet high) with high visibility flagging.
  - b. Sliver sill fence with wire strapping between support poles (minimum 4 feet high) with high visibility flagging.
  - c. 14 gauge 2 inch x 4 inch welded wire fencing supported by steel "T" bar posts (minimum 4 feet high) with high visibility flagging.
5. Temporary protection devices shall be maintained and installed by the contractor for the duration of construction project and must not be altered without prior approval from the forest conservation inspector. No equipment, trucks, materials, or debris may be stored within the tree protection fence areas during the entire construction period. No vehicle or equipment access to the fenced area will be permitted. Tree protection shall not be removed without prior approval of forest conservation inspector.
6. Forest retention area signs shall be installed as required by the forest conservation inspector, or as shown on the approved plan.
7. Long-term protection devices will be installed per the Forest Conservation Plan/Tree Save Plan and attached details. Installation will occur at the appropriate time during the construction project. Refer to the plan drawing for long-term protection measures to be installed.

**DURING CONSTRUCTION**

1. Periodic inspections by the forest conservation inspector will occur during the construction project. Corrections and repairs to all tree protection devices, as determined by the forest conservation inspector, must be made within the timeframe established by the inspector.

**TEMPORARY WOODEN MATS**

**NOTE:**

1. All woods to be 10' x 6' x 6' min. Long min. diameter to be 6' and 10' long if used.
2. Drill 5/8" holes through each leg or wood.
3. String logs/woods together with 1/2" galvanized steel cable.
4. Make loops at the end of each cables and secured with cable clamps.
5. Place wood mats over non-wooden gravel that will cover the crossing area.
6. Maximum loads and soil strength.
7. Support plants (if each, 6" diameter) can be used in lieu of cabling so long as 5/8" bolts with nuts are used on a three foot spacing.

**ROOT PRUNING**

**INSTALL TREE PROTECTION**

**INSTALL SEDIMENT CONTROL FENCING WITHIN ROOT PRUNE TRENCH**

**2' MINIMUM DEPTH**

**6' MAXIMUM WIDTH**

**CRITICAL ROOT ZONE**

**NOTES:**

1. RETENTION AREAS TO BE ESTABLISHED AS PART OF THE FOREST CONSERVATION PLAN REVIEW PROCESS.
2. BOUNDARIES OF RETENTION AREAS TO BE STAKED, FLAGGED AND/OR FENCED PRIOR TO TRENCHING.
3. EXACT LOCATION OF TRENCH SHOULD BE IDENTIFIED IN FIELD WITH M-NCPIC.
4. TRENCH SHOULD BE IMMEDIATELY BACKFILLED WITH SOIL, REMOVED OR ORGANIC SOIL.
5. ROOTS SHOULD BE CLEANLY CUT USING VIBRATORY KNIFE OR OTHER ACCEPTABLE EQUIPMENT.

**POST-CONSTRUCTION**

After construction is completed, an inspection shall be requested. Corrective measures may include:

- a. Removal and replacement of dead and dying trees
- b. Pruning of dead or declining limbs
- c. Soil aeration
- d. Fertilization
- e. Wound dressing
- f. Vertical mulch
- g. Clean up of retention areas

10. After inspection and completion of corrective measures have been undertaken, all temporary protection devices shall be removed from the site. Removal of tree protection devices that also operate for erosion and sediment control must be coordinated with both the Department of Permitting Services and the forest conservation inspector. No additional grading, sodding or dural may take place after the tree protection fencing is removed.

**INSPECTIONS**

All field inspections must be requested by the applicant. Inspections must be conducted as follows:

1. After the limits of disturbance have been staked and flagged, but before any clearing or grading begins
2. After necessary stress reduction measures have been completed and protection measures have been installed, but before any clearing and grading begins.
3. After completion of all construction activities, but before removal of tree protection fencing, to determine the level of compliance with the provision of the forest conservation.
4. Before the start of any required reforestation and afforestation planting
5. After the required reforestation and afforestation planting has been completed to verify that the planting is in accordance with the approved plan.
6. At the end of the maintenance period to determine the level of compliance with the provisions of the planting plan, and if appropriate, release of the performance bond.

**Additional Requirements for Plans with Planting Requirements**

1. All plant material shall be labeled by the nursery and delivered with tickets in place for inspection. Substitutions in order will material has been obtained. Contractor shall submit plant material as soon thereafter as is suitable under standard horticultural practices.
2. Contractor shall submit representative soil samples from both in-situ soils and soils brought in from off-site to a state results of the soil tests and recommendations by the architect.
3. It is of utmost importance that all plant material be set slightly higher in relation to grade than it was grown in the nursery and with good earth to root contact. Any materials or work may be rejected by the landscape architect if the contractor fails to follow the specifications, and rejected materials shall be removed from the site by the Contractor at Contractor's expense.
4. In case of discrepancies between quantities on the plant list and the plan, the plan shall govern.
5. Any plantings within a forest retention area, as designated on this forest conservation plan and shown on this plan, must be done to avoid any adverse impact to the roots of existing trees. The contractor's performing work on the site are responsible for protecting existing native and non-native planting during construction.
6. Seed or soil bare areas as directed by owner for all disturbed areas to be stabilized that are not landscaped or covered.
7. For tree pruning and care methods please refer to the NATIONAL ARBORIST STANDARDS, LATEST EDITION.

**TEMPORARY WOODEN MATS**

**NOTE:**

1. All woods to be 10' x 6' x 6' min. Long min. diameter to be 6' and 10' long if used.
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4. Make loops at the end of each cables and secured with cable clamps.
5. Place wood mats over non-wooden gravel that will cover the crossing area.
6. Maximum loads and soil strength.
7. Support plants (if each, 6" diameter) can be used in lieu of cabling so long as 5/8" bolts with nuts are used on a three foot spacing.

**ROOT PRUNING**

**INSTALL TREE PROTECTION**

**INSTALL SEDIMENT CONTROL FENCING WITHIN ROOT PRUNE TRENCH**

**2' MINIMUM DEPTH**

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**PLANTING GENERAL NOTES**

1. THIS PLAN IS FOR LANDSCAPING PURPOSES ONLY, AND ANY OTHER INFORMATION SHOWN IS FOR REFERENCE ONLY. SEE SITE PLAN FOR INFORMATION ABOUT ALL LAYOUT, GROUNDING AND OTHER SITE IMPROVEMENTS.
2. CALL MISS UTILITY AT 1-800-257-7777 TO MARK UTILITIES AT LEAST 48 HOURS BEFORE DIGGING.
3. All materials and planting procedures except as otherwise noted shall conform to the latest edition of "LANDSCAPE SPECIFICATION GUIDELINES" by the Landscape Contractors Association (MDC-CA).
4. Plants shall conform to the current edition of the American Standard for Nursery Stock. (ANSI Z60.1)
5. Plant names shall be those given in the latest edition of "Standard Plant Names," American Committee on Horticultural Nomenclature.
6. Topsoil shall meet specifications as per the 1994, MD Standards and Specifications for Soil Erosion and Sediment Control.
7. The Contractor shall apply grasses according to the 1994, MD Standard and Specifications for Soil Erosion and Sediment Control. Do not use Kentucky 31 tall fescue.
8. The Contractor shall mulch and water all plants well on the day they are planted.
9. Surface mulch layer shall consist of standard fine shredded aged hardwood mulch. The Contractor shall apply the mulch uniformly to a depth of 2 to 3 inches.
10. The contractor shall stake out all planting beds and tree locations and these must be approved by the landscape architect before digging. It is the contractor's responsibility to locate and coordinate planting with all existing underground utilities. The contractor shall be responsible for protecting existing underground utilities. The contractor shall verify the landscape architect immediately to coordinate any necessary adjustments.
11. All plant material shall be labeled by the nursery and delivered with tickets in place for inspection. Substitutions in order will material has been obtained. Contractor shall submit plant material as soon thereafter as is suitable under standard horticultural practices.
12. Contractor shall submit representative soil samples from both in-situ soils and soils brought in from off-site to a state results of the soil tests and recommendations by the architect.
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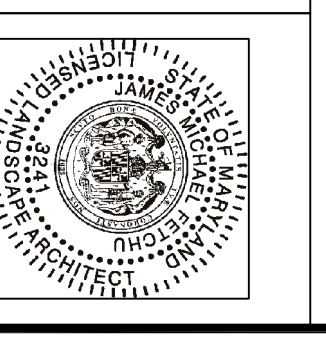
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**QUALIFIED PROFESSIONAL CERTIFICATION:**  
 I hereby certify that this plan is prepared in accordance with Montgomery County Forest Conservation Regulations.

James M. Felton, RLA MD #3241  
 Charles P. Johnson Associates, 910 Copper Road Suite 215N,  
 Gaithersburg, MD 20878, Tel: 301-208-9673, Email: jfelton@cpja.com

DATE: 6/12  
 DESIGNED: HT/JF  
 DRAFTED: HT  
 CHECKED: JF  
 BASE DATA: CPJA

NO. REVISIONS BY DATE

SCALE AS SHOWN  
 SHEET 8  
 OF 14 SHEETS  
 JOB NO. 39-382

Prepared for:  
 Montgomery County Department of Environmental Protection  
 255 Rockville Pike, Suite 120  
 Rockville, Maryland 20850  
 Phone: (301) 777-7713  
 Attn: Mr. Craig Carson

MONTGOMERY COUNTY, MD  
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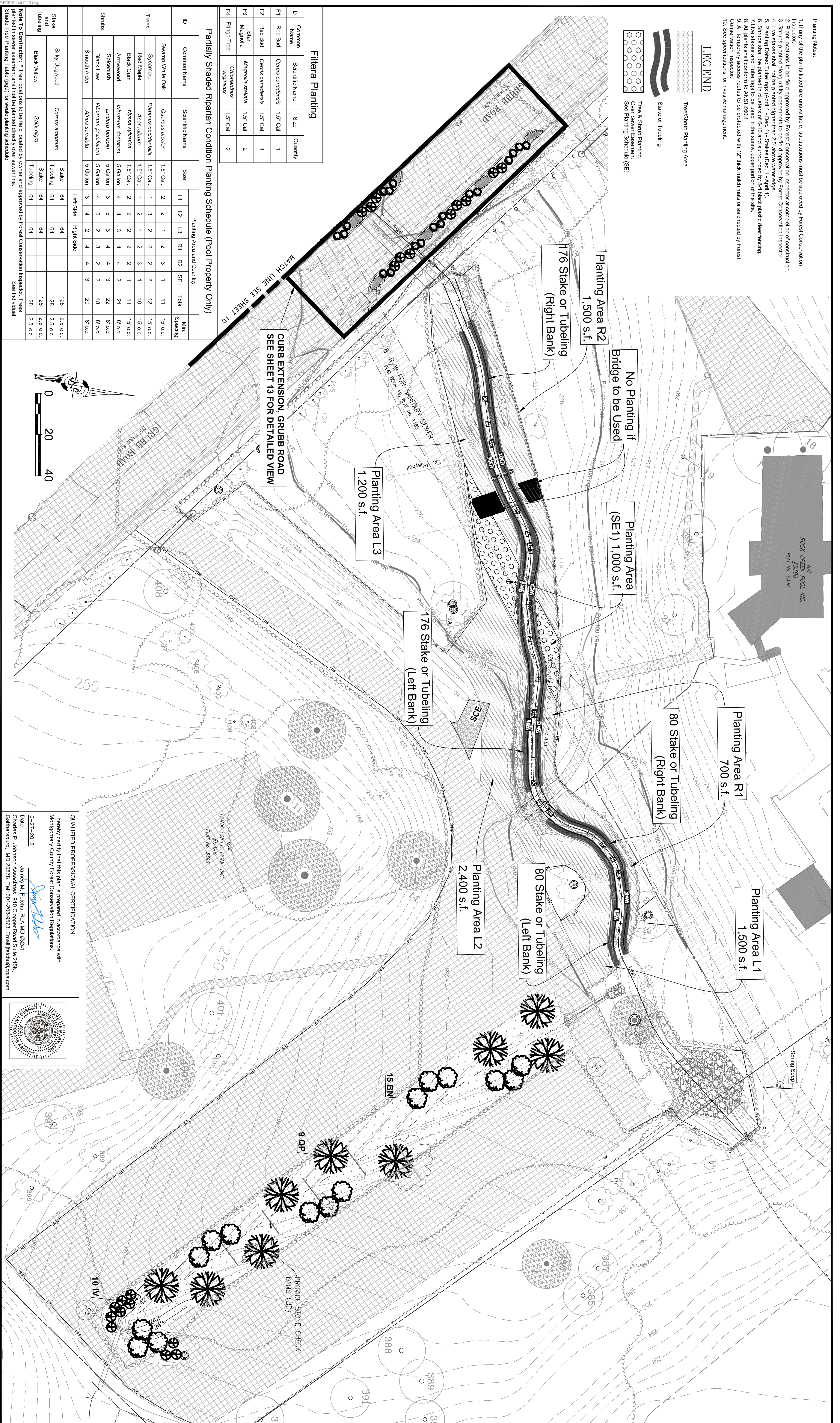
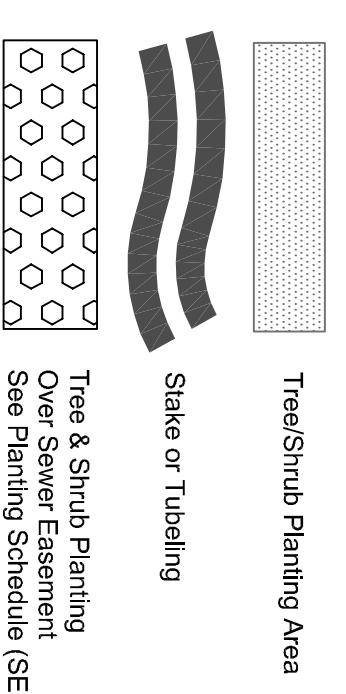
Donnybrook Tributary Stream  
 Restoration Project  
 Preliminary Forest Conservation  
 Notes and Details

CPJ Environmental Services Division  
 STEPHEN MONTGOMERY, STRONG WATER MANAGEMENT - INSPECTION  
 910 COPPER ROAD SUITE 215N, GAITHERSBURG, MARYLAND 20878  
 PHONE: 301-208-9673 EMAIL: smontgomery@cpja.com  
 SILVER SPRING, MD FREDERICK, MD FAIRFAX, VA

**Planting Notes:**

1. If any of the plants listed are unavailable, substitutions must be approved by Forest Conservation Inspector.
2. Plant locations to be field approved by Forest Conservation Inspector at completion of construction.
3. Live stakes shall not be planted higher than 2.5' above water edge.
4. Live stakes shall not be planted higher than 2.5' above water edge.
5. Planting Dates: Tubelings (April 1 - Dec. 31), Stakes (Dec. 1 - April 1).
6. Shrubs shall be planted in clusters of 6-10 and surrounded by 8-ft black plastic deer fencing.
7. Live stakes and Tubelings to be used in the sunny, upper portion of the site.
8. All plants shall conform to ANSI Z60.1
9. All temporary access routes to be protected with 12" thick mulch mats or as directed by Forest Conservation Inspector.
10. See specifications for invasive management.

**LEGEND**



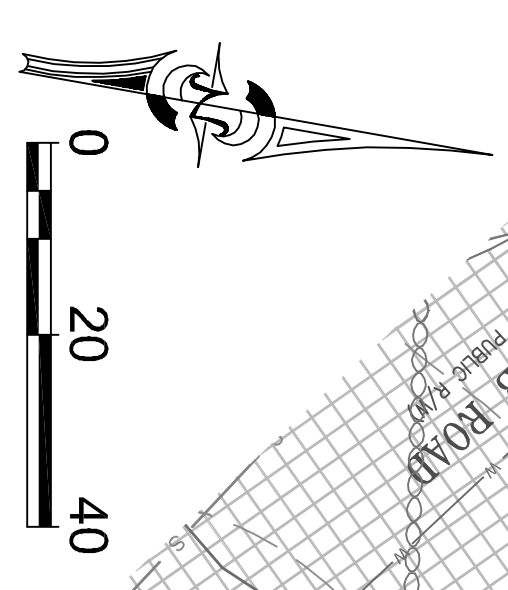
**Filterera Planting**

ID	Common Name	Scientific Name	Size	Quantity
F1	Red Bud	<i>Cornus canadensis</i>	1.5" Cal.	1
F2	Red Bud	<i>Cornus canadensis</i>	1.5" Cal.	1
F3	Star Magnolia	<i>Magnolia stellata</i>	1.5" Cal.	2
F4	Fringe Tree	<i>Chorizanthe virginiana</i>	1.5" Cal.	2

**Partially Shaded Riparian Condition Planting Schedule (Pool Property Only)**

ID	Common Name	Scientific Name	Size	Planting Area and Quantity					Min. Spacing		
				L1	L2	L3	R1	R2		SE1	Total
	Swamp White Oak	<i>Quercus bicolor</i>	1.5" Cal.	2	2	1	2	3	1	11	15' o.c.
	Sycamore	<i>Platanus occidentalis</i>	1.5" Cal.	1	3	2	2	2	2	12	15' o.c.
	Red Maple	<i>Acer rubrum</i>	1.5" Cal.	1	2	1	2	3	1	10	15' o.c.
	Black Gum	<i>Nyssa sylvatica</i>	1.5" Cal.	2	2	2	2	2	1	11	15' o.c.
	Arrowwood	<i>Viburnum dentatum</i>	5 Gallon	4	4	3	4	4	2	21	8' o.c.
	Spicebush	<i>Lindera benzoin</i>	5 Gallon	3	5	3	4	4	3	22	8' o.c.
	Black Haw	<i>Viburnum parvifolium</i>	5 Gallon	4	5	2	3	2	2	18	8' o.c.
	Smooth Alder	<i>Alnus serrulata</i>	5 Gallon	3	4	2	4	4	3	20	8' o.c.
	Silky Dogwood	<i>Cornus amomum</i>	Stakes	64						64	2.5' o.c.
	Tubelings		Tubelings	64						128	2.5' o.c.
	Black Willow	<i>Salix nigra</i>	Stakes	64						128	2.5' o.c.
	Tubelings		Tubelings	64						128	2.5' o.c.

**Note to Contractor:** \* Tree locations to be field located by owner and approved by Forest Conservation Inspector. Trees planted in sewer easement shall not be planted directly over sewer line. Stake Tree Planting Table (98) for invasive planting schedule. See individual



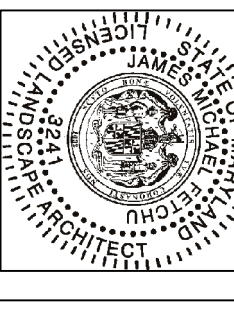
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**Donnybrook Tributary Stream Restoration Project**  
 Preliminary Forest Conservation Planting Plan

DATE: 6/12  
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 Charles P. Johnson Associates, 570 Copper Road Suite 215N, Gaithersburg, MD 20878, Tel: 301-208-9973, Email: jfelton@cpja.com



**CPJ Environmental Services Division**  
 STREAM RESTORATION • STREAM WATER MANAGEMENT • INSPECTION  
 910 COPPER ROAD STE 215N, GAITHERSBURG, MARYLAND 20878  
 Phone: 301-208-9973 E-mail: emontgomery@cpj.com Fax: 301-208-9973  
 SILVER SPRING, MD FREDERICK, MD FAIRFAX, VA

SCALE AS SHOWN  
 SHEET 9  
 OF 14 SHEETS  
 JOB NO. 39-552

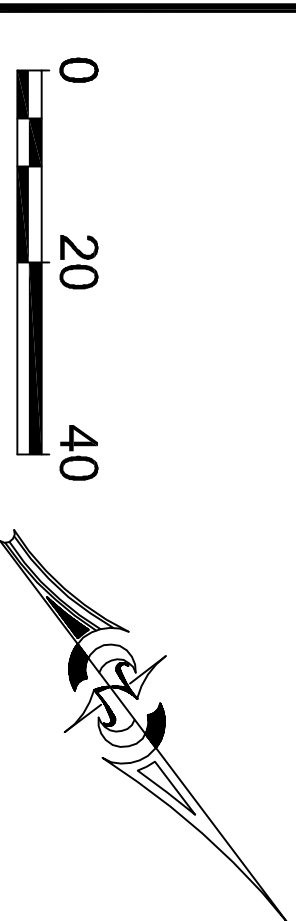
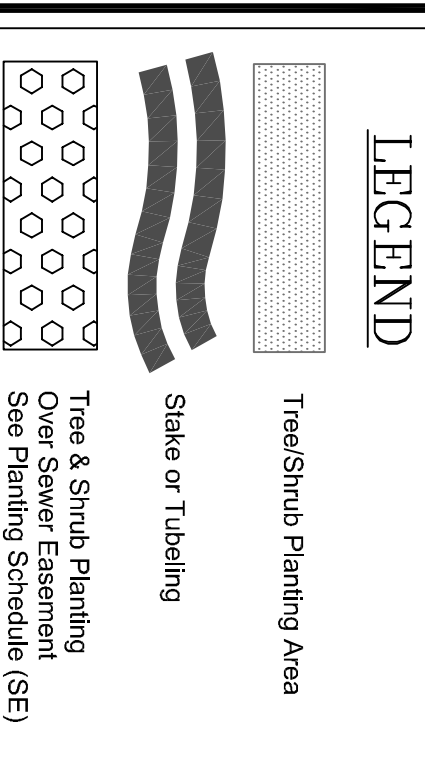


# Partially Shaded Riparian Condition Planting Schedule

ID	Common Name	Scientific Name	Size	Planting Area and Quantity							Total	Min. Spacing
				L4	L5	L6	L7	R3	R4	R5		
Swamp White Oak	Quercus bicolor	15" Cal.	1	6	0	2	2	8	1	1	21	15' o.c.
Sycamore	Platanus occidentalis	15" Cal.	1	7	0	1	3	7	2	1	22	15' o.c.
Bitternut Hickory	Carya cordiformis	15" Cal.	2	6	0	1	5	6	0	2	22	15' o.c.
Red Maple	Acer rubrum	15" Cal.	1	6	0	1	3	5	1	0	17	15' o.c.
Iron Wood	Carpinus betulus	15" Cal.	1	7	0	2	1	6	1	1	19	15' o.c.
Black Gum	Nyssa sylvatica	15" Cal.	1	6	1	0	4	7	1	0	20	15' o.c.
Arrowwood	Viburnum dentatum	5 Gallon	5	19	2	4	5	20	3	3	61	8' o.c.
Sweetbush	Lindera benzoin	5 Gallon	3	20	1	5	15	5	5	4	54	8' o.c.
Black Haw	Viburnum parvifolium	5 Gallon	5	19	2	4	5	20	3	2	60	8' o.c.
Smooth Alder	Alnus serrulata	5 Gallon	3	18	1	4	5	25	3	3	62	8' o.c.
Sliver Dogwood	Cornus amomum	Stake	292								561	2.5' o.c.
Black Willow	Salix nigra	Tubeling	292								561	2.5' o.c.
		Tubeling	292								561	2.5' o.c.

**Note to Contractor:**  
 \* Tree locations to be field located by owner and approved by Forest Conservation Inspector. For planting areas L6, L8 & L7, refer to individual shade tree planting table for additional plantings.

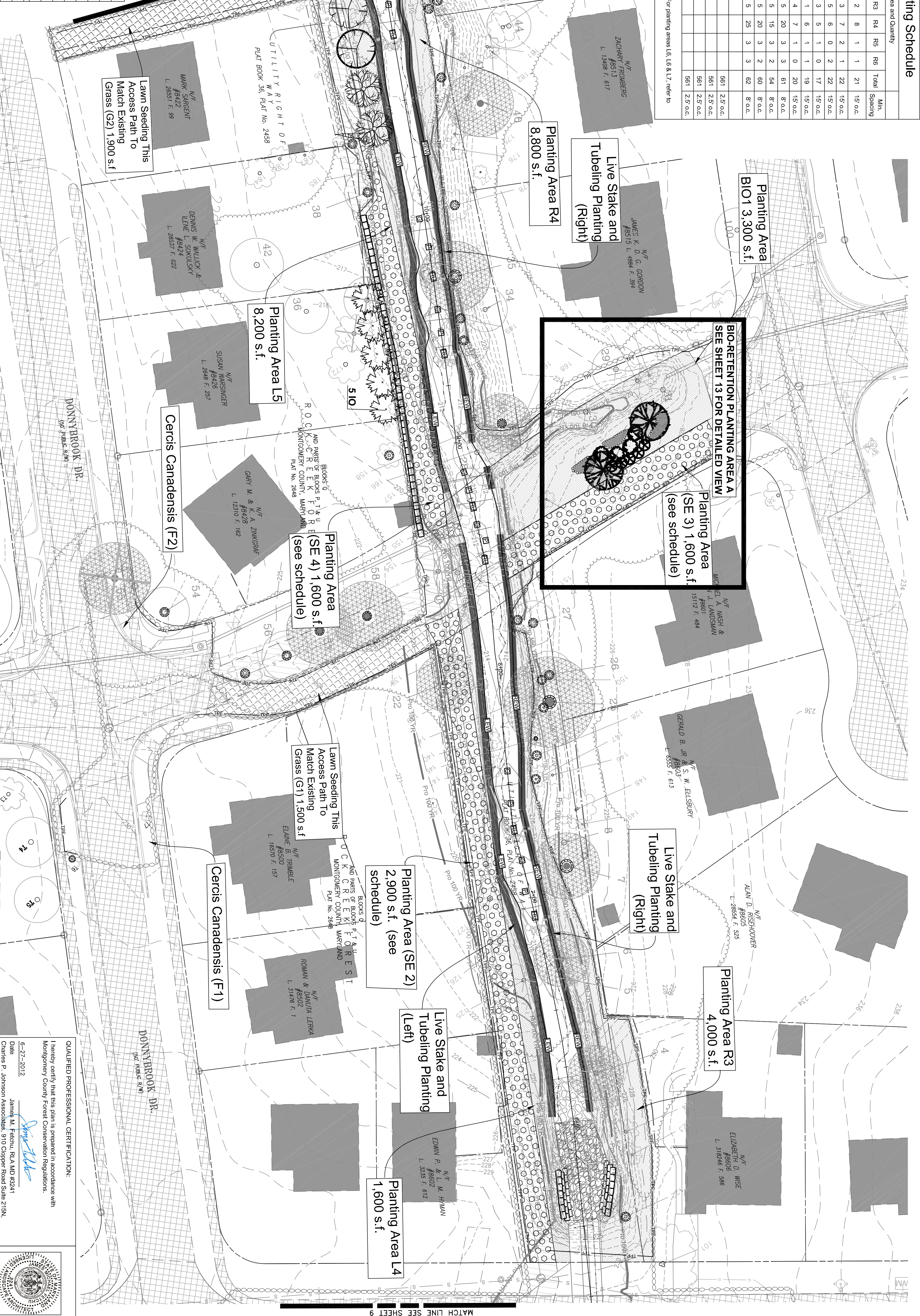
- Planting Notes:**
- If any of the plants listed are unavailable, substitutions must be approved by Forest Conservation Inspector.
  - Plant locations to be field approved by Forest Conservation Inspector at completion of construction.
  - Shrubs planted along utility easements to be field approved by Forest Conservation Inspector.
  - Line stakes shall not be painted higher than 25 above water edge.
  - Line stakes shall be painted with 25 above water edge.
  - Shrubs shall be planted in clusters of 6-10 and surrounded by 8-ft black plastic deer fencing.
  - Live stakes and Tubelings to be used in the sunny, upper portion of the site.
  - All plants shall conform to ANSI Z60.1
  - All temporary access routes to be protected with 12" thick mulch mats or as directed by Forest Conservation Inspector.
  - See specifications for invasive management.



**SEED MIX SCHEDULE**

Percent	Common Name	Scientific Name
25%	Annual Rye	Lolium multiflorum
10%	Bottlebrush	Elymus hystrix
20%	Deertongue	Dichanthium daneshianum
15%	Road Fescue	Festuca rubra L
10%	Riverbank Wild Rye	Elymus repens
20%	Virginia Wild Rye	Elymus virginicus
	Cereal Rye	

Note: New NIDE rules require re-seeding after every day of disturbance.



Prepared for:  
 Montgomery County Department of Environmental Protection  
 255 Rockville Pike, Suite 120  
 Rockville, Maryland 20850  
 Phone: (240) 777-7173  
 Attn: Mr. Craig Carson

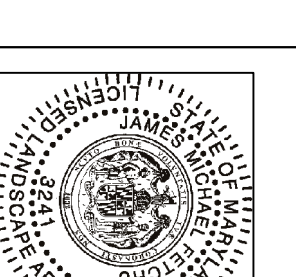
MONTGOMERY COUNTY, MD  
 Donnybrook Stream  
 Plat# 5396 Plat# 2458 Plat# 2106  
 Tax Map HNS3

Donnybrook Tributary Stream  
 Restoration Project  
 Preliminary Forest Conservation  
 Planting Plan

DATE: 6/12  
 DESIGNED: HT/JF  
 DRAFTED: HT  
 CHECKED: JF  
 BASE DATA: GPJA

NO. REVISIONS BY DATE

**QUALIFIED PROFESSIONAL CERTIFICATION:**  
 I hereby certify that this plan is prepared in accordance with Montgomery County Forest Conservation Regulations.  
 Date: 6-27-2012  
 Charles P. Johnson Associates, 910 Copper Road, Suite 218N, Gaithersburg, MD 20878, Tel: 301-208-8673, Email: jpland@cpja.com  
 James M. Fetcho, RIA MD #3241  
 Elaine B. Trumble, L 16570 F. 157



**CPJ Environmental Services Division**  
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 910 COPPER ROAD, STE 218N, GAITHERSBURG, MARYLAND 20878  
 Phone: 301-208-8673 E-mail: em@cpj.com Fax: 301-208-4651  
 SILVER SPRING, MD FREDERICK, MD FAIRFAX, VA

SCALE AS SHOWN  
 SHEET 10  
 OF 14 SHEETS  
 JOB NO. 39-552

**Sewer Easement Tree & Shrub Planting Area**

ID	Common Name	Scientific Name	Size	Planting Area and Quantity							Min. Spacing
				SE2	SE3	SE4	SE5	SE6	SE7	Total	
	Swamp White Oak	<i>Quercus bicolor</i>	1.5' Cal.	2	1	1	0	2	1	7	15' o.c.
	Stemware	<i>Platanus occidentalis</i>	1.5' Cal.	2	2	2	0	2	0	8	15' o.c.
	Bitternut Hickory	<i>Carya cordiformis</i>	1.5' Cal.	2	1	1	0	2	0	7	15' o.c.
	Red Maple	<i>Acer rubrum</i>	1.5' Cal.	2	1	1	0	2	1	9	15' o.c.
	Iron Wood	<i>Carpinus betulus</i>	1.5' Cal.	1	1	1	1	2	2	8	15' o.c.
	Black Gum	<i>Nyssa sylvatica</i>	1.5' Cal.	3	0	1	0	2	0	6	15' o.c.
	Arcwood	<i>Viburnum dentatum</i>	5 Gallon	4	3	1	1	4	2	18	8' o.c.
	Sheebush	<i>Lindera benzoin</i>	5 Gallon	3	3	3	2	4	2	17	8' o.c.
	Black Haw	<i>Viburnum parvifolium</i>	5 Gallon	4	3	2	1	2	2	14	8' o.c.
	Smooth Alder	<i>Alnus serrulata</i>	5 Gallon	3	4	6	0	4	2	19	8' o.c.

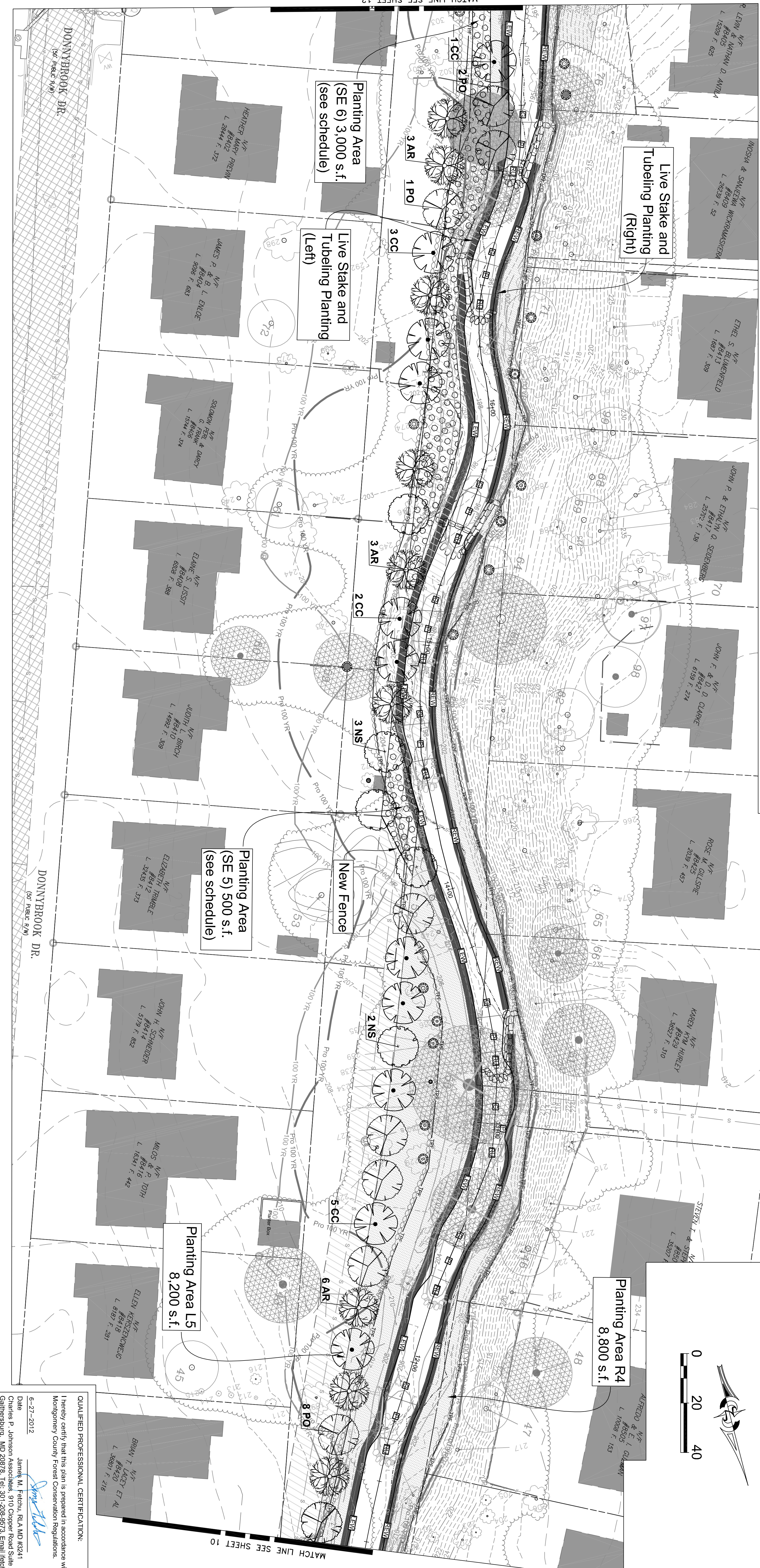
**Note To Contractor:** \* Tree locations to be field located by owner and approved by Forest Conservation Inspector. Trees planted in sewer easement shall not be planted directly over sewer line.

**Individual Shade Tree List**

ID	Botanical Name	Common Name	Qty.	Size
CC	<i>Carya cordiformis</i>	Bitternut Hickory	15	2.5' Cal.
ID	<i>Ilex opaca</i>	American Holly	16	6-8' hgt. Single Stem
NS	<i>Nyssa sylvatica</i>	Black Gum	11	2.5' Cal.
PO	<i>Platanus occidentalis</i>	American Sycamore	16	2.5' Cal.
QP	<i>Quercus palustris</i>	Pin Oak	9	*3.0' Cal.
BN	<i>Betula nigra</i>	River Birch Heritage*	15	2.5' Cal.
AR	<i>Acer rubrum</i>	Red Maple	15	13x2.5' Cal / 2x3.0' Cal
<b>Total</b>			<b>97.00</b>	

**Shrubs**  
**I** *Ilex verticillata* Red Spice  
**W** Winterberry  
**5** 5 Gallon

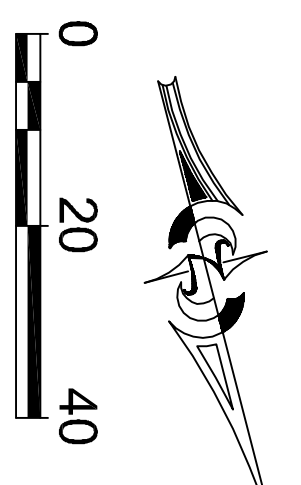
**Note To Contractor:** \* 11x3" Cal. Trees (6 Pin Oaks, 2 Red Maples) meet variance mitigation requirements. Tree locations to be field located by owner and approved by Forest Conservation Inspector.



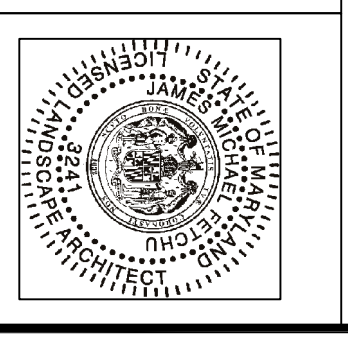
**LEGEND**

- Tree/Shrub Planting Area
- Stake or Tubing
- Tree & Shrub Planting (See Planting Schedule (SE))

**Note: See Sheet 9 for planting schedule**



**QUALIFIED PROFESSIONAL CERTIFICATION:**  
 I hereby certify that this plan is prepared in accordance with Montgomery County Forest Conservation Regulations.  
 Date: 6-27-2012  
 Charles P. Johnson Associates, 910 Copper Road Suite 218N, Gaithersburg, MD 20878, Tel: 301-208-9673, Email: jplac@cpja.com  
 James M. Fetich, RLA MD #3241



Prepared for:  
 Montgomery County Department of Environmental Protection  
 256 Rockville Pike, Suite 120  
 Rockville, Maryland 20850  
 Phone: (202) 777-7173  
 Attn: Mr. Craig Carson

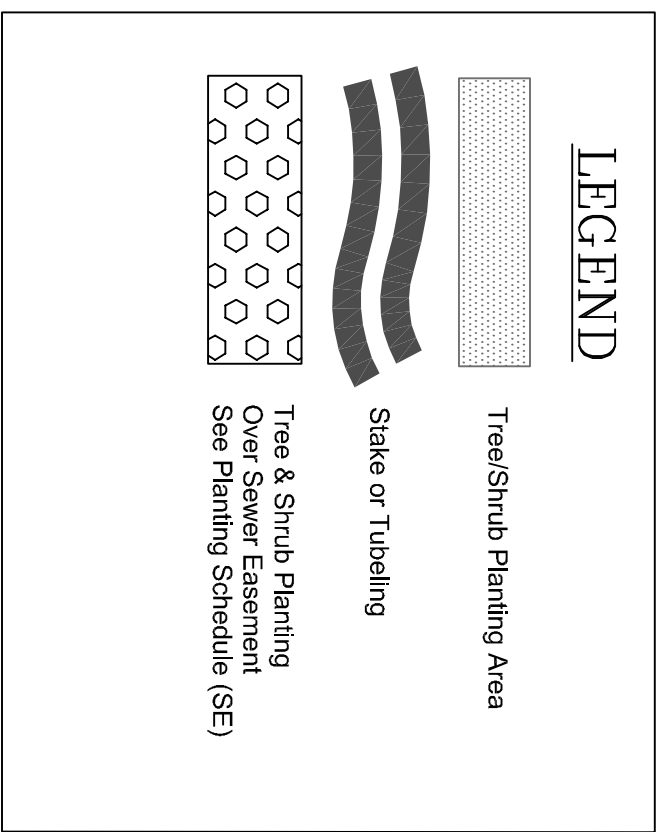
MONTGOMERY COUNTY, MD  
 Donnybrook Stream  
 Plat# 5396 Plat# 2458 Plat# 2106  
 Tax Map HNS3

**Donnybrook Tributary Stream Restoration Project**  
 Preliminary Forest Conservation Planting Plan

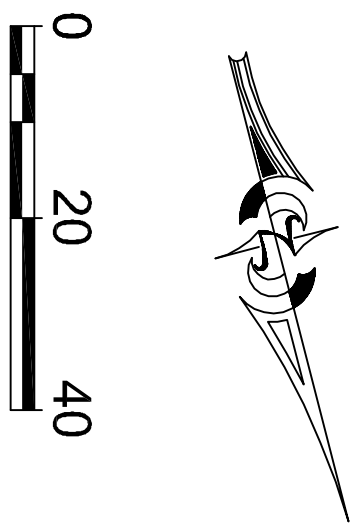
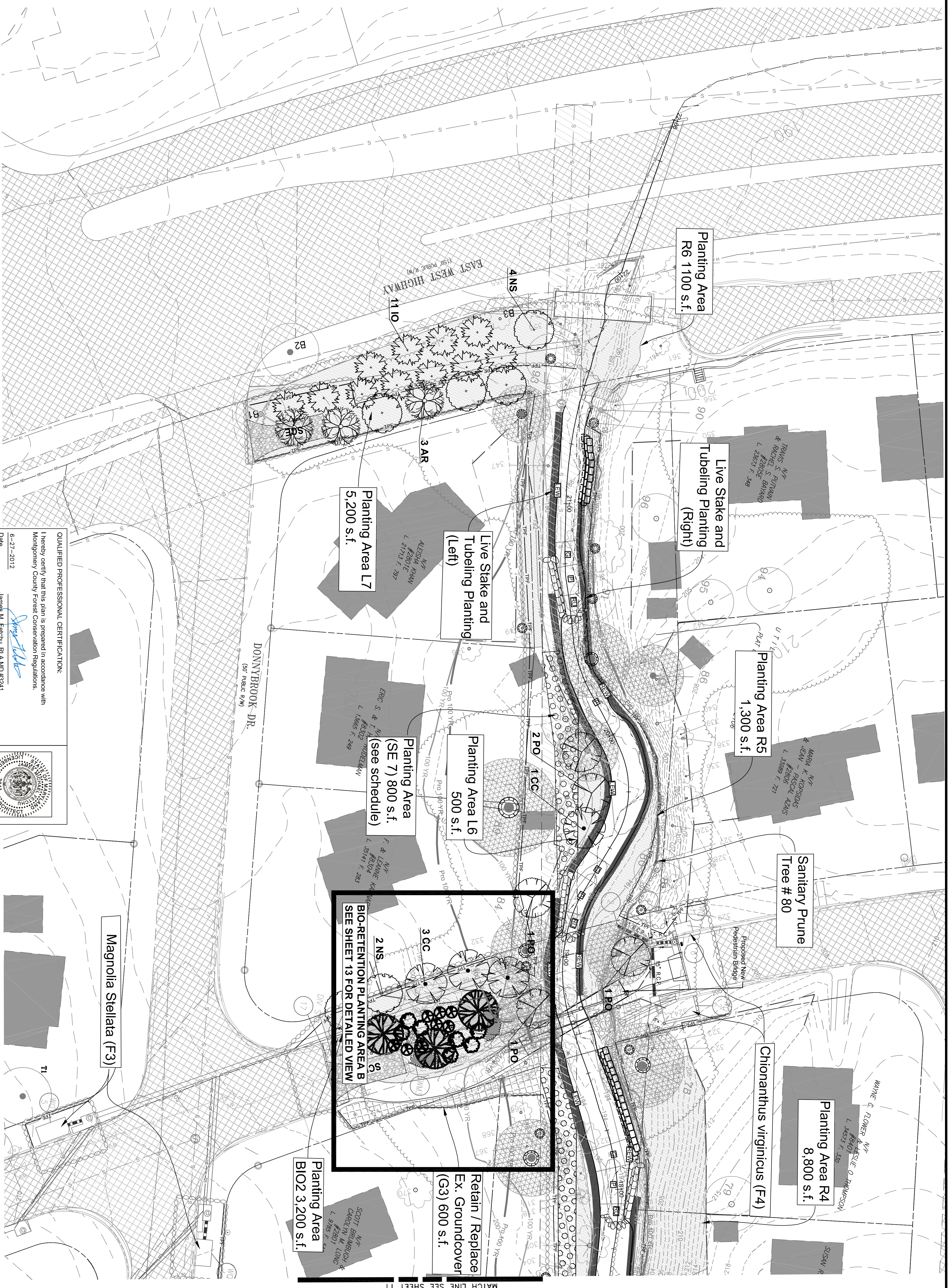
DATE:	6/12
DESIGNED:	HT/JF
DRAFTED:	HT
CHECKED:	JF
BASE DATA:	CPJA
NO.	
REVISIONS	
BY	DATE

**CPJ Associates**  
 CPJ Environmental Services Division  
 STREAM RESTORATION • STORMWATER MANAGEMENT • INSPECTION  
 910 COPPER ROAD STE 218N GAITHERSBURG MARYLAND 20878  
 Phone: 301-208-9673 E-mail: cpj@cpja.com Fax: 301-208-9650  
 SILVER SPRING, MD FREDERICK, MD FAIRFAX, VA

SCALE: AS SHOWN  
 SHEET: 11  
 OF 14 SHEETS  
 JOB NO.: 39-552



Note: See Sheet 9 for planting schedule



Prepared for:  
 Montgomery County Department of  
 Environmental Protection  
 256 Rockville Pike, Suite 120  
 Rockville, Maryland 20850  
 Phone: (202) 777-7713  
 Attn: Mr. Craig Carson

MONTGOMERY COUNTY, MD  
 Dorneybrook Stream  
 Plat# 5396 Plat# 2458 Plat# 2106  
 Tax Map HN53

**Dorneybrook Tributary Stream  
 Restoration Project  
 Preliminary Forest Conservation  
 Planting Plan**

DATE: 6/12

DESIGNED: HT/JF

DRAFTED: HT

CHECKED: JF

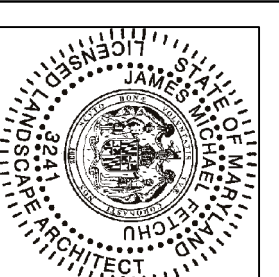
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NO.	REVISIONS	BY	DATE

**QUALIFIED PROFESSIONAL CERTIFICATION:**  
 I hereby certify that this plan is prepared in accordance with  
 Montgomery County Forest Conservation Regulations.

Date: 6-27-2012  
 Charles F. Johnson Associates, 9710 Copper Road Suite 215N,  
 Gaithersburg, MD 20878, Tel: 301-208-9573, Email: jfrehn@cpja.com

Date: 6-27-2012  
 Jamie M. Fechtel, R.L.A. MD #3241  
 Charles F. Johnson Associates, 9710 Copper Road Suite 215N,  
 Gaithersburg, MD 20878, Tel: 301-208-9573, Email: jfrehn@cpja.com



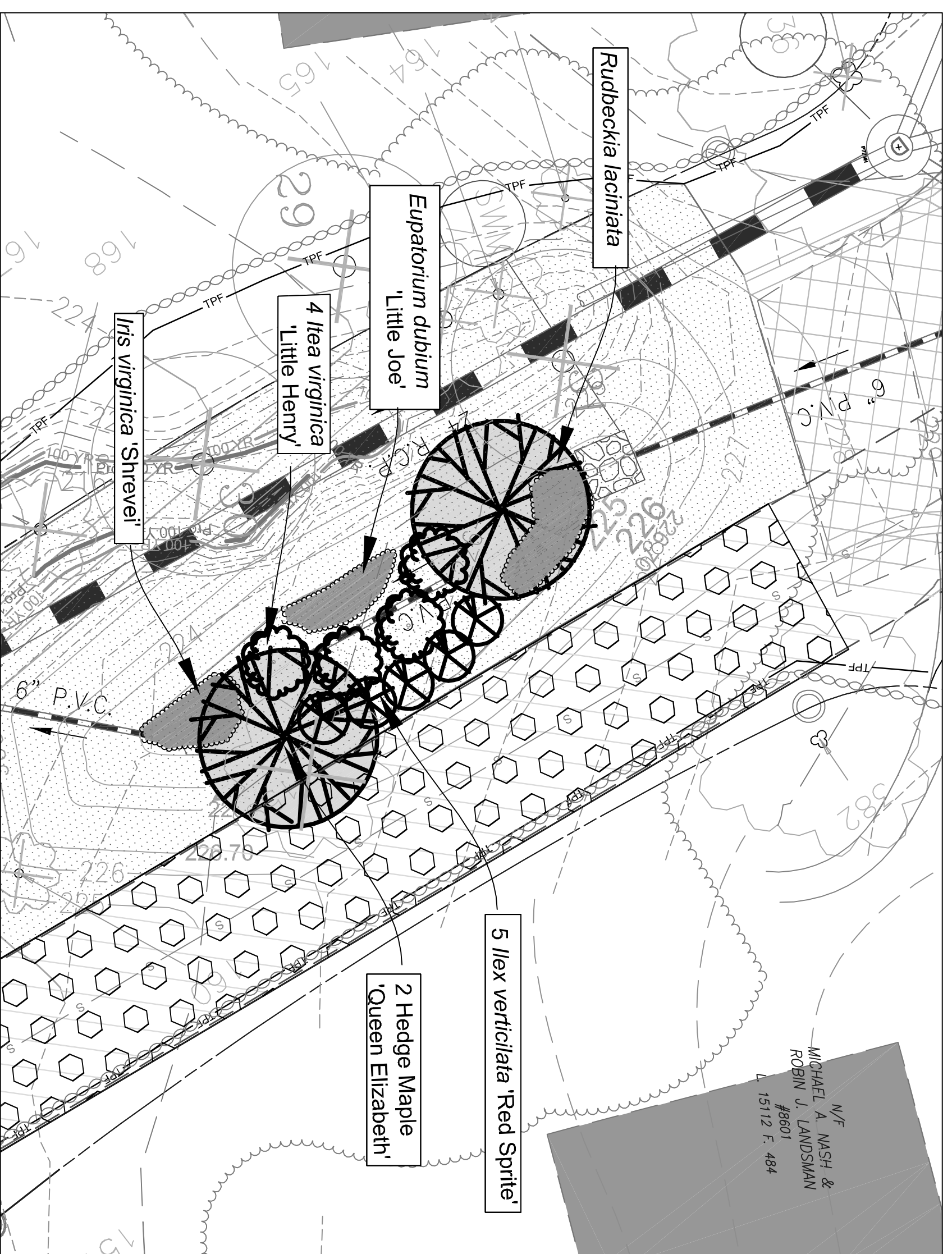
**CPJ Associates**  
 Environmental Services Division  
 STREAM RESTORATION • STREAMWATER MANAGEMENT • INSPECTION  
 910 COPPER ROAD STE 215N, GAITHERSBURG, MARYLAND 20878  
 Phone: 301-208-9573 E-mail: em@cpja.com Fax: 301-208-9574

SCALE AS SHOWN

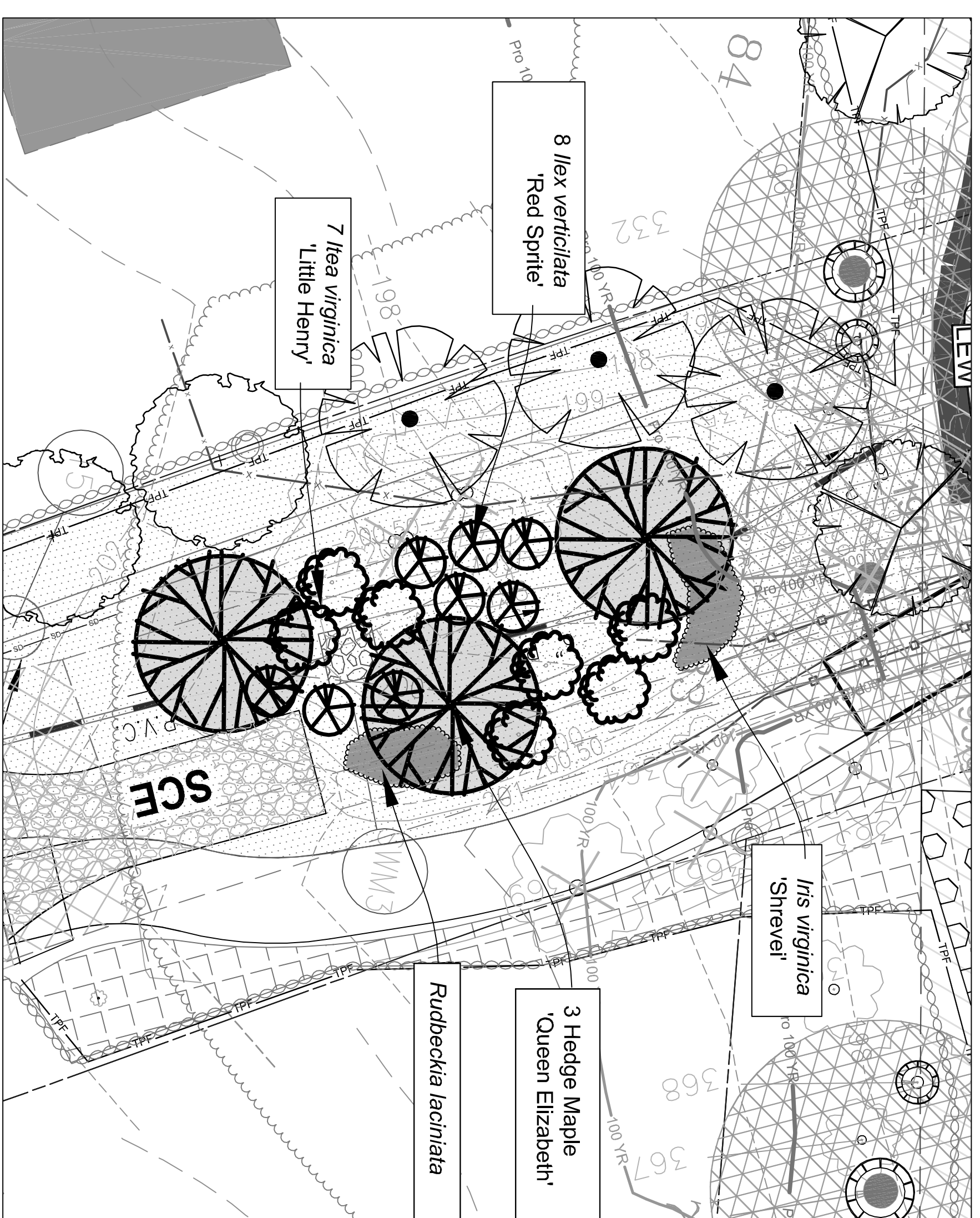
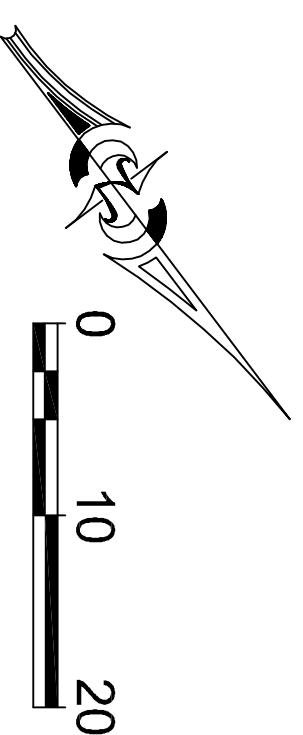
SHEET 12

OF 14 SHEETS

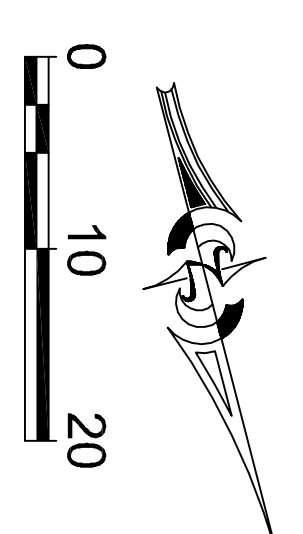
JOB NO. 39-552



Bio-retention Area "A"



Bio-retention Area "B"

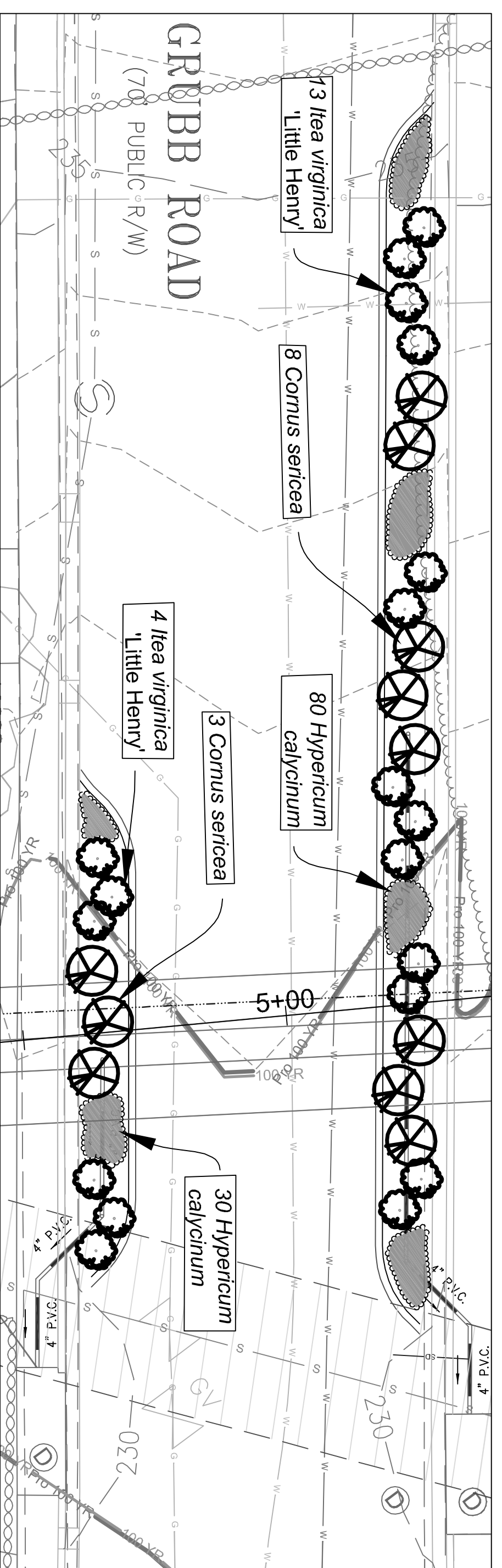


ID	Common Name	Scientific Name	Size	quantity	Min. Spacing
Trees	Hedge Maple	<i>Acer campestre</i> Queen Elizabeth'	1.5" Cal.	2	15' o.c.
Shrubs	Virginia Sweetspire	<i>Ilea virginica</i> 'Little Henry'	5 Gallon	4	8' o.c.
Shrubs	Winterberry	<i>Ilex verticillata</i> 'Red Sprite'	5 Gallon	5	8' o.c.
Herbaceous	Cullear Cornflower	<i>Rudbeckia laciniata</i>	1 Quart	50	1' o.c.
Herbaceous	Blue Flag Iris	<i>Iris virginica</i> 'Shrevei'	1 Quart	40	1' o.c.
Herbaceous	Joe Pye Weed	<i>Eupatorium dubium</i> 'Little Joe'	1 Quart	30	1' o.c.

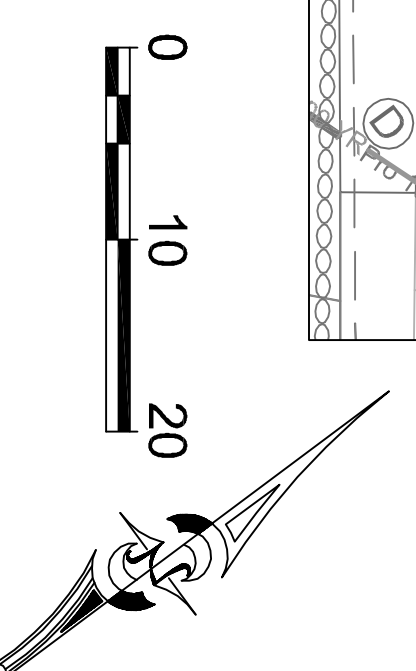
Note To Contractor: \* Tree locations to be field located by owner and approved by Forest Conservation Inspector.

ID	Common Name	Scientific Name	Size	quantity	Min. Spacing
Trees	Hedge Maple	<i>Acer campestre</i> Queen Elizabeth'	1.5" Cal.	3	15' o.c.
Shrubs	Virginia Sweetspire	<i>Ilea virginica</i> 'Little Henry'	5 Gallon	7	8' o.c.
Shrubs	Winterberry	<i>Ilex verticillata</i> 'Red Sprite'	5 Gallon	8	8' o.c.
Herbaceous	Cullear Cornflower	<i>Rudbeckia laciniata</i>	1 Quart	45	1' o.c.
Herbaceous	Blue Flag Iris	<i>Iris virginica</i> 'Shrevei'	1 Quart	55	1' o.c.

Note To Contractor: \* Tree locations to be field located by owner and approved by Forest Conservation Inspector.



Curb Extension Planting, Grubb Road (See pg. 9)



ID	Common Name	Scientific Name	Size	quantity	Min. Spacing
Shrubs	Virginia Sweetspire	<i>Ilea virginica</i> 'Little Henry'	5 Gallon	17	8' o.c.
Shrubs	Red Osier Dogwood	<i>Cornus sericea</i>	5 Gallon	11	8' o.c.
Shrubs	Creeping St. Johns Wort	<i>Hypericum calycinum</i>	1 Quart	110	1' o.c.

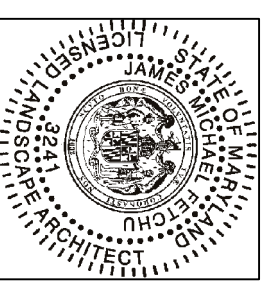
DATE:	6/12
DESIGNED:	HT/JF
DRAFTED:	HT
CHECKED:	JF
BASE DATA:	CPJA

NO.	REVISIONS	BY	DATE

QUALIFIED PROFESSIONAL CERTIFICATION:

I hereby certify that this plan is prepared in accordance with Montgomery County Forest Conservation Regulations.

5-27-2012  
 Date  
 James M. Fetchu, RUA MD #3241  
 Charles P. Johnson Associates, 910 Copper Road Suite 215N,  
 Gaithersburg, MD 20878, Tel: 301-208-9873, Email: jfetchu@cpja.com



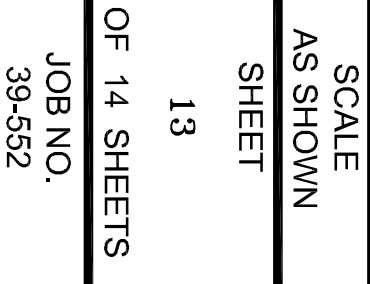
**CPJ Environmental Services Division**  
 STREAM RESTORATION • STORMWATER MANAGEMENT • INSPECTION  
 910 COPPER ROAD STE 215N, GAITHERSBURG, MARYLAND 20878  
 Phone: 301-208-9873 E-mail: em@cpj.com Fax: 301-208-9850  
 SILVER SPRING, MD FREDERICK, MD FAIRFAX, VA

SCALE AS SHOWN  
 SHEET 13  
 OF 14 SHEETS  
 JOB NO. 39-552

Prepared for:  
 Montgomery County Department of Environmental Protection  
 255 Rockville Pike, Suite 120  
 Rockville, Maryland 20850  
 Phone: (202) 777-7173  
 Attn: Mr. Craig Carson

MONTGOMERY COUNTY, MD  
 Donnybrook Stream  
 Plat# 5396 Plat# 2458 Plat# 2106  
 Tax Map HNS3

**Donnybrook Tributary Stream Restoration Project**  
 Preliminary Forest Conservation Planting Plan







DEPARTMENT OF ENVIRONMENTAL PROTECTION

Isiah Leggett  
County Executive

Robert G. Hoyt  
Director

June 21, 2012

Françoise Carrier, Chair  
Montgomery County Planning Board  
Maryland National Capital Park & Planning Commission  
8787 Georgia Avenue  
Silver Spring, Maryland 20910

RE: Donnybrook Stream Restoration, MR 2012023, NRI/FSD application accepted on 10/7/2010

Dear Ms. Carrier:

The County Attorney's Office has advised that Montgomery County Code Section 22A-12(b)(3) applies to any application required under Chapter 22A submitted after October 1, 2009. Accordingly, given that the application for the above referenced request was submitted after that date and must comply with Chapter 22A, and the Montgomery County Planning Department ("Planning Department") has completed all review required under applicable law, I am providing the following recommendation pertaining to this request for a variance.

Section 22A-21(d) of the Forest Conservation Law states that a variance must not be granted if granting the request:

1. Will confer on the applicant a special privilege that would be denied to other applicants;
2. Is based on conditions or circumstances which are the result of the actions by the applicant;
3. Arises from a condition relating to land or building use, either permitted or nonconforming, on a neighboring property; or
4. Will violate State water quality standards or cause measurable degradation in water quality.

Applying the above conditions to the plan submitted by the applicant, I make the following findings as the result of my review:

1. The granting of a variance in this case would not confer a special privilege on this applicant that would be denied other applicants as long as the same criteria are applied in each case. Therefore, the variance can be granted under this condition.
2. Based on a discussion on March 19, 2010 between representatives of the County, the Planning Department, and the Maryland Department of Natural Resources Forest Service, the disturbance of trees, or other vegetation, is not interpreted as a condition or circumstance that is the result of the actions by the applicant. Therefore, the variance can be granted under this condition, as long as appropriate mitigation is provided for the resources disturbed.

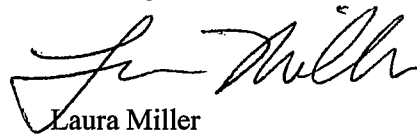
3. The disturbance of trees, or other vegetation, by the applicant does not arise from a condition relating to land or building use, either permitted or nonconforming, on a neighboring property. Therefore, the variance can be granted under this condition.
4. The disturbance of trees, or other vegetation, by the applicant will not result in a violation of State water quality standards or cause measurable degradation in water quality. Therefore, the variance can be granted under this condition.

Therefore, I recommend a finding by the Planning Board that this applicant qualifies for a variance conditioned upon the applicant mitigating for the loss of resources due to removal or disturbance to trees, and other vegetation, subject to the law based on the limits of disturbance (LOD) recommended during the review by the Planning Department. In the case of removal, the entire area of the critical root zone (CRZ) should be included in mitigation calculations regardless of the location of the CRZ (i.e., even that portion of the CRZ located on an adjacent property). When trees are disturbed, any area within the CRZ where the roots are severed, compacted, etc., such that the roots are not functioning as they were before the disturbance must be mitigated. Exceptions should not be allowed for trees in poor or hazardous condition because the loss of CRZ eliminates the future potential of the area to support a tree or provide stormwater management. Tree protection techniques implemented according to industry standards, such as trimming branches or installing temporary mulch mats to limit soil compaction during construction without permanently reducing the critical root zone, are acceptable mitigation to limit disturbance. Techniques such as root pruning should be used to improve survival rates of impacted trees but they should not be considered mitigation for the permanent loss of critical root zone. I recommend requiring mitigation based on the number of square feet of the critical root zone lost or disturbed. The mitigation can be met using any currently acceptable method under Chapter 22A of the Montgomery County Code.

In the event that revisions to the LOD are approved by the Planning Department, the mitigation requirements outlined above should apply to the removal or disturbance to the CRZ of all trees subject to the law as a result of the revised LOD.

If you have any questions, please do not hesitate to contact me directly.

Sincerely,



Laura Miller  
County Arborist

cc: Robert Hoyt, Director  
Walter Wilson, Associate County Attorney  
Mark Pfefferle, Chief

4/23/2012

Mr. Mark Pfefferle  
Acting Chief  
Environmental Planning, Community-Based Planning  
Maryland – National Capital Park and Planning Commission  
8787 Georgia Ave.  
Silver Spring, MD 20910

RE: Donnybrook Tributary Stream Restoration  
30" DBH Tree Variance

Dear Mr. Pfefferle:

The Montgomery County Department of Environmental Protection respectfully requests a variance from Section 22A-21 of the Montgomery County Code and from Title 5, Section 5-1607 of the Maryland code for Donnybrook Tributary Stream Restoration and Stabilization project.

Donnybrook Tributary is located in eastern Montgomery County, Maryland and is a first order tributary to Rock Creek. A tributary to the Potomac River, Rock Creek is the second largest watershed in Montgomery County (MC) with a drainage area of approximately 60 square miles. The Rock Creek Watershed is located in a highly developed area and has undergone rapid development changes over the years. Much of the development within the watershed occurred prior to requirements to mitigate the impacts from stormwater flows.

As a result Donnybrook Tributary was identified as a priority tributary for restoration by Montgomery County, Department of Environmental Protection (MC DEP) in their 2001 Rock Creek Watershed Feasibility Study. The goal of Montgomery County Department of Environmental Protection and the Watershed Restoration Program are to preserve, protect, and restore watersheds. More specifically, the goals of the Donnybrook Tributary Stream Restoration project are to utilize appropriate design restoration approaches that will stabilize erosive areas, improve floodplain access, enhance riparian and stream conditions, and improve overall aquatic resources. The study area for the current project include almost 0.5 miles of stream, beginning at the 66" RCP storm drain outfall, upstream of Grubb Road, to the culvert on the upstream side of East-West Highway.

All aspects of the restoration were designed based on a detailed geomorphic assessment, hydrologic and hydraulic studies. These studies allowed for the most appropriate stabilization measure to be chosen and designed specifically accordingly to the current hydrologic regime. Although during the design phases of the project existing trees were taken into account, in some instances, the most appropriate long-term stream channel stabilization measures will require impacts to, or the removal of selected existing trees. Decisions regarding tree impacts were carefully considered knowing that



vegetation, especially mature trees, provide invaluable soil stability and often help to slow active stream bank and bed erosion. Conversely however, in more extreme instances, erosion can undermine trees to the extent where they are unstable. This instability leads to tree collapse and channel blockages which, in turn, exacerbate active erosion that results in the loss of additional trees. Impacting or removing carefully selected trees as part of the Donnybrook Tributary Stream Restoration, will provide greater long-term benefits to stream and floodplain stability, riparian and aquatic habitat, to downstream reaches than if they were to remain.

The Stream Restoration plan requires that twenty seven (27) trees greater than 30" (dbh), incur minor impacts within their calculated CRZ's. Each impacted tree will be protected using specific measures as shown in the attached table. Tree numbered 10 and 14 on Pool property require impacts for construction access only. Please note that only nine (9) trees 4, 6, 49, 50, 73, 74, 82, 83, and 88 have been identified for removal.

All remaining 30 inches trees are located adjacent to Donnybrook Tributary where active erosion has severely exposed and undercut root systems. In these cases measures will be taken to prevent loss of additional trees and further channel degradation. Our Forest Conservation Plan and the attached tables identify the specimen trees and details information for tree protection methods that will be implemented in this project. These include mulch access, wooden mats, root pruning, and tree protection planking where temporary construction access, grading, and bioengineering structure cannot be established otherwise. In addition, no tree is impacted without consideration of environmental ethic and best management practice in this project and we are willing to further reduce tree impacts and improve our Forest Conservation Plan at time of construction.

It is our understanding that applicants for a variance must demonstrate the following criteria. Our responses follow each point:

- 1) *Describe the special conditions peculiar to the property which would cause unwarranted hardship.*

In April 2001, the Department of Environmental Protection (DEP) completed a watershed study of Rock Creek that included Donnybrook Tributary. The study evaluated stream conditions, identified opportunities to improve stormwater management controls in the watershed, and prioritized streams for restoration. To meet the goals and objectives of the watershed study and serve the public good the applicant requires access to Donnybrook Tributary and work in a vicinity of these trees. Access was designed to minimize tree loss to the extent possible.

- 2) *Describe how enforcement of these rules will deprive the landowner of rights commonly enjoyed by others in similar areas.*

Enforcement of these rules would deprive the Montgomery County DEP (owner) of their right and directive to improve stream conditions and enhance riparian stream buffers in order to create wildlife habitats, reduce erosion rates and provide stormwater management controls in the watershed. The proposed stream restoration and stabilization design has been carefully planned according to best management practices that allow for the preservation of as many existing trees as possible. Although un-forested areas were utilized wherever possible, some tree impacts were unavoidable due to their location along stream banks and density within the existing stream buffers.

- 3) *Verify that State water quality standards will not be avoided or that a measurable degradation in water quality will occur as a result of granting the variance.*

State water quality standards will not be avoided and a measurable degradation in water quality will not occur as a result of granting this variance. In this case, the proposed project will focus on stream restoration approaches that will stabilize erosive areas, improve floodplain access, enhances riparian buffers and stream conditions that will improve water quality and overall aquatic habitats. In addition, the Stormwater Management Concept and a Sediment Control Plan will be submitted for review and approval by Montgomery County Department of Permitting Services and the Maryland Department of the Environment to ensure that the proposed plans will meet the current State and County water quality standards and regulations.

- 4) *Provide any other information appropriate to the request.*

The approved NRI/FSD # 420110600 acknowledges that there are no rare, threatened or endangered species within the boundaries of the project site as delineated. Also, the Maryland Historical Trust has determined that there are no historic properties affected within the project site. Please note that all saved specimen trees will be retained upon project completion. Please also note that efforts to retain all trees were made, however due to the existing degraded stream conditions those trees proposed for removal are already under stress and are a safety concern for adjacent home owners. Should the current rate of stream erosion continue, trees proposed for removal will likely be undermined and fall in the future with greater impacts to the stream and adjacent property owners.

- 5) *Applicants must apply for and include mitigation in their requests for variances for all trees, and other vegetation, regulated under section 5-1607 that are removed or disturbed by the applicant's activity.*

A note has been added to the Preliminary Forest Conservation plan stating that "a minimum of eighteen (18) 2.5" caliper native shade trees must be included in the final forest conservation planting plan to mitigate for impacts to existing specimen trees".

Additional criteria in Section 22A-21(d) states that a variance must not be granted if granting the request:

- (1) Will confer on the applicant a special privilege that would be denied to other applicants;*
- (2) Is based on conditions or circumstances which are the result of the actions by the applicant*
- (3) Arises from a condition relating to land or building use, either permitted or nonconforming, on a neighboring property, or*
- (4) Will violate State water quality standards or cause measurable degradation in water quality.*

The purpose of the project, as proposed by the Montgomery County DEP is to perform maintenance and rehabilitation of a public water resource while minimizing impacts to the greatest extent possible. The existing conditions of Donnybrook Tributary are not the result of the applicant, nor did the existing conditions arise from land or building use on a neighboring property. Degraded channel conditions along Donnybrook Tributary are a cumulative result of extreme land use changes (i.e. the conversion of forested to impervious) throughout the watershed during a time when stormwater regulations were not in existence. As a result of the restoration project, significant improvements to water quality will occur through the reduction of bank erosion, reduction of sediment supply, creation and restoration of suitable stream substrate imperative for non-tidal aquatic habitat.

In addition to the information provided above, a paper copy of the Preliminary Forest Conservation Plan set and a CD containing a digital copy of this Variance Request letter and Preliminary Forest Conservation Plan are attached for your review and comment.

If you have any other questions or need additional information, please contact me at 301-208-9573 or via email at: JFetchu@cpja.com.

Sincerely,

A handwritten signature in blue ink, appearing to read "James Fetchu". The signature is fluid and cursive, with a large initial "J" and "F".

James Fetchu, RLA  
Environmental Services Division Manager  
CC: Daniel Harper, MDE  
Marco Fuster, M-NCPPC

**TABULATION OF 30 INCH OR GREATER POTENTIALLY IMPACTED SPECIMEN TREES**

<b>ID</b>	<b>Common Name</b>	<b>DBH (in.)</b>	<b>Condition</b>	<b>TPF</b>	<b>RP</b>	<b>CRZ Protection</b>	<b>Tree Within LOD</b>	<b>FCP Sheet No.</b>	<b>Remarks</b>
3	Eastern Cottonwood	30	Fair	PL	Yes	MM/WM	Yes	2	Grading to stabilize erosive area and widen stream bank requires this tree CRZ to be impacted. Arborist will be consulted and will be carefully worked around this tree CRZ to minimize impacts if possible.
7	Sycamore	36	Fair	PL	Yes		No	3	This tree is located about 5 feet inside TPF. About 25% of CRZ will be impacts by grading to stabilize stream channel. Arborist will be consulted and will be carefully worked around this tree CRZ to minimize impacts if possible.
10	White Oak	35	Fair	Yes	No	MM/WM	No	2	This tree is located approximately 25 feet inside TPF on pool property. CRZ extends into access route within the LOD therefore, contractor will place Mulch mats or Wooden mats to protect this tree's CRZ. Minor grading for (LID) filter proposed.
14	Red Oak	36	Poor	PL	No	MM/WM	No	2	This tree is located approximately 25 feet outside LOD on pool property. CRZ extends into access route within the LOD therefore, contractor will place Mulch mats or Wooden mats to protect this tree's CRZ. No grading proposed.
15	Red Oak	42	Poor	PL	No	MM/WM	No	2	This tree is located approximately 20 feet outside LOD on pool property. CRZ extends into access route within the LOD therefore, contractor will place Mulch mats or Wooden mats to protect this tree's CRZ. Minor grading for (LID) filter proposed.
25	Sycamore	49	Poor	Yes	Yes		No	3	This tree is located about 4 feet outside LOD. About 25% of CRZ will be impacts by grading to stabilize stream channel. Note, this tree had a large hole in the trunk.
32	Sycamore	32	Good	Yes	Yes		No	3	This tree is located 20 feet outside LOD. Minor grading to stabilize stream bank may impact approximately 10% of CRZ.

Terminology:

**(RP)** Root pruning is to be performed inside the tree protection fence. It is to be accomplished by a vibratory plow with a serrated cutting edge or a root cutter with a 36" wheel to a depth of 24". Chain driven trenchers are not acceptable.

**(RKP)** Rock Packing - exposed root to be hand packed with stone.

**(MM)** Mulch Mats Access - 12" minimum depth wood chip base to be placed for construction access.

**(WM)** Wooden Mats - 10' x 4"x4" wooden plank to be placed over access area for construction access.

**(PL)** Tree Protection Planking

**TABULATION OF 30 INCH OR GREATER POTENTIALLY IMPACTED SPECIMEN TREES**

<b>ID</b>	<b>Common Name</b>	<b>DBH (in.)</b>	<b>Condition</b>	<b>TPF</b>	<b>RP</b>	<b>CRZ Protection</b>	<b>Tree Within LOD</b>	<b>FCP Sheet No.</b>	<b>Remarks</b>
35	Slippery Elm	38	Fair	PL	Yes	RKP	No	3	Grading to stabilize stream bank and Jhook structures installation requires this tree CRZ to be impacted about 25%. Arborist will be consulted and will be carefully worked around this tree CRZ to minimize impacts if possible.
40	Black Locust	36	Poor	Yes	Yes		No	4	This tree is located 20 feet outside LOD and on higher elevation. Minor grading to stabilize stream bank may impact approximately 10% of CRZ.
43	Red Maple	39	Fair	Yes	Yes		No	4	This tree is located 9 feet outside LOD. Minor grading to stabilize stream bank may impact approximately 10% of CRZ. Steps will be taken where possible to minimize impact to tree's CRZ.
48	Black Locust	36	Good	Yes	Yes		No	4	This tree is located 28 feet outside LOD and on higher elevation. Minor grading to stabilize stream bank may impact approximately 8% of CRZ.
51	Silver Maple	37	Fair	Yes	Yes		No	4	This tree is located 19 feet outside LOD and on higher elevation. Minor grading to stabilize stream bank may impact approximately 10% of CRZ.
55	Silver Maple	39	Fair	PL	No	MM/WM	No	3	Tree is located about 2 feet outside LOD. CRZ extends into access route within the LOD therefore, contractor will place Mulch mats or Wooden mats to protect this tree's CRZ. No grading proposed.
57	Silver Maple	36	Fair	PL	No	MM/WM	No	3	Tree is located about 7 feet outside LOD. CRZ extends into access route within the LOD therefore, contractor will place Mulch mats or Wooden mats to protect this tree's CRZ. No grading proposed.

Terminology:

**(RP)** Root pruning is to be performed inside the tree protection fence. It is to be accomplished by a vibratory plow with a serrated cutting edge or a root cutter with a 36" wheel to a depth of 24". Chain driven trenchers are not acceptable.

**(RKP)** Rock Packing - exposed root to be hand packed with stone.

**(MM)** Mulch Mats Access - 12" minimum depth wood chip base to be placed for construction access.

**(WM)** Wooden Mats - 10' x 4"x4" wooden plank to be placed over access area for construction access.

**(PL)** Tree Protection Planking

**TABULATION OF 30 INCH OR GREATER POTENTIALLY IMPACTED SPECIMEN TREES**

<b>ID</b>	<b>Common Name</b>	<b>DBH (in.)</b>	<b>Condition</b>	<b>TPF</b>	<b>RP</b>	<b>CRZ Protection</b>	<b>Tree Within LOD</b>	<b>FCP Sheet No.</b>	<b>Remarks</b>
58	Silver Maple	38	Fair	PI	Yes	MM/WM	No	3	Tree is located about 3 feet outside LOD. CRZ extends into access route within the LOD therefore, contractor will place Mulch mats or Wooden mats to protect this tree's CRZ. Grading to stabilize stream may impact approximately 5% of CRZ.
59	Green Ash	34	Fair	PL	Yes		No	4	This tree is located long LOD line. Grading and Jhook installation to stabilize stream bank and Sewer line relocation may impact approximately 30% of CRZ.
63	Tulip Poplar	46	DEAD		No		No	4	Standing dead tree to remain for wildlife habitat (will not damaged any private property if fallen).
66	Sycamore	30	Poor	Yes	Yes		No	4	This tree is located 18 feet outside LOD and on higher elevation. Minor grading to stabilize stream bank may impact approximately 7% of CRZ.
76	Tulip Poplar	30	Fair	Yes	Yes	RKP	No	4	Tree is located about 4 feet outside LOD and on higher elevation. Stream erosion and channel down cutting had caused tree roots to expose and undercut. Grading and Jhook installation requires impact to this tree CRZ.
77	Sycamore	40	Fair	Yes	Yes		No	4	This tree is located inside forest retained area. About 20% of CRZ will be impacts by grading to stabilize stream channel.
78	Eastern Cottonwood	44	Good	Yes	Yes		No	4	This tree is located about 5 feet outside LOD and on higher elevation. About 20% of CRZ will be impacts by grading to stabilize stream channel and new pedestrian bridge installation. Arborist will be consulted and will be carefully worked around this tree CRZ to minimize impacts if possible.

Terminology:

**(RP)** Root pruning is to be performed inside the tree protection fence. It is to be accomplished by a vibratory plow with a serrated cutting edge or a root cutter with a 36" wheel to a depth of 24". Chain driven trenchers are not acceptable.

**(RKP)** Rock Packing - exposed root to be hand packed with stone.

**(MM)** Mulch Mats Access - 12" minimum depth wood chip base to be placed for construction access.

**(WM)** Wooden Mats - 10' x 4"x4" wooden plank to be placed over access area for construction access.

**(PL)** Tree Protection Planking

**TABULATION OF 30 INCH OR GREATER POTENTIALLY IMPACTED SPECIMEN TREES**

<b>ID</b>	<b>Common Name</b>	<b>DBH (in.)</b>	<b>Condition</b>	<b>TPF</b>	<b>RP</b>	<b>CRZ Protection</b>	<b>Tree Within LOD</b>	<b>FCP Sheet No.</b>	<b>Remarks</b>
<b>84</b>	<b>Sycamore</b>	<b>36</b>	<b>Fair</b>	<b>PL</b>	<b>Yes</b>		<b>No</b>	<b>5</b>	This tree is located about 3 feet outside LOD. About 30% of CRZ will be impacts by grading to stabilize stream channel and Jhook structure installation. Arborist will be consulted and will be carefully worked around this tree CRZ to minimize impacts if possible.
<b>86</b>	<b>Tulip poplar</b>	<b>32</b>	<b>Good</b>	<b>Yes</b>	<b>Yes</b>		<b>Yes</b>	<b>5</b>	This tree is located about 5 feet outside LOD and on higher elevation. Stream erosion and channel down cutting had caused tree roots to expose and undercut. Grading to stabilize stream bank requires 5% impact to CRZ.
<b>87</b>	<b>Sycamore</b>	<b>40</b>	<b>Fair</b>	<b>PL</b>	<b>Yes</b>	<b>RKP</b>	<b>No</b>	<b>5</b>	This tree is located about 2 feet outside LOD. About 20% of CRZ will be impacts by grading to stabilize stream channel. Arborist will be consulted and will be carefully worked around this tree CRZ to minimize impacts if possible.
<b>89</b>	<b>Sycamore</b>	<b>51</b>	<b>Good</b>	<b>Yes</b>	<b>Yes</b>		<b>No</b>	<b>5</b>	This tree is located about 5 feet outside LOD. About 25% of CRZ will be impacts by grading to stabilize stream channel and Jhook installation.
<b>92</b>	<b>Slippery Elm</b>	<b>30</b>	<b>Fair</b>	<b>PL</b>	<b>Yes</b>	<b>MM/MM</b>	<b>No</b>	<b>5</b>	Tree is located just outside LOD. CRZ extends into access route within the LOD therefore, contractor will place Mulch mats or Wooden mats to protect this tree's CRZ. About 20% of CRZ will be impacts by grading to stabilize stream channel.
<b>T1</b>	<b>Pin Oak</b>	<b>30</b>	<b>Good</b>	<b>Yes</b>	<b>Yes</b>		<b>No</b>	<b>5</b>	Tree is located 10 feet outside LOD and on private property. CRZ extends into existing public utilities such as stormdrain and watermain. About 5% of CRZ will be impacts by Proposed (LID) stormdrain retrofit.

Terminology:

**(RP)** Root pruning is to be performed inside the tree protection fence. It is to be accomplished by a vibratory plow with a serrated cutting edge or a root cutter with a 36" wheel to a depth of 24". Chain driven trenchers are not acceptable.

**(RKP)** Rock Packing - exposed root to be hand packed with stone.

**(MM)** Mulch Mats Access - 12" minimum depth wood chip base to be placed for construction access.

**(WM)** Wooden Mats - 10' x 4"x4" wooden plank to be placed over access area for construction access.

**(PL)** Tree Protection Planking

**TABULATION OF 30 INCH OR GREATER POTENTIALLY IMPACTED SPECIMEN TREES**

<b>Trees to be removed within the Limits of Disturbance</b>							
<b>ID</b>	<b>Common Name</b>	<b>DBH (in.)</b>	<b>Condition</b>	<b>Remove?</b>	<b>Tree Within LOD</b>	<b>FCP Sheet No.</b>	<b>Remarks</b>
4	Box Elder	30	Fair	To be removed	Yes	3	Grading to stabilize stream bank requires this tree to be removed. More than 70% CRZ will be impacted.
6	Tulip Poplar	30	Poor	To be removed	Yes	3	Grading to stabilize stream bank requires this tree to be removed. More than 60% CRZ will be impacted.
49	Hickory	42	Poor	To be removed	Yes	4	Stream channel is down cutting, has narrowed, and dropped stream bed elevation to expose tree roots. Grading to realign stream channel requires this tree to be removed. More than 90% CRZ will be impacted.
50	Tulip Poplar	60	Fair	To be removed	Yes	4	Grading to stabilize stream bank requires this tree to be removed. More than 50% CRZ will be impacted.
73	Hickory	32	Poor	To be removed	Yes	4	Stream channel is down cutting, has narrowed, and dropped stream bed elevation to expose tree roots. Grading to stabilize stream banks requires this tree to be removed. More than 80% CRZ will be impacted.
*74	River Birch	37	Fair	To be removed	Yes	4	This tree is within 75% of record State & County championship trees. This tree is in fair to poor condition due to severe leaning and grading to stabilize stream banks requires this tree to be removed. More than 60% CRZ will be impacted.
82	Eastern Cottonwood	34	Fair	To be removed	Yes	5	This tree is located inside the LOD and within the facilities of the proposed pedestrian bridge and LID practice. About 60% of CRZ will be impacts by grading to stabilize stream channel, new pedestrian bridge and LID facility installation.
83	Sycamore	36	Good	To be removed	Yes	5	Grading to stabilize stream bank and allow room for new bridge construction requires this tree to be removed. More than 40% CRZ will be impacted.
88	Sycamore	32	Fair	To be removed	Yes	5	Stream channel is down cutting, has narrowed, and dropped stream bed elevation to expose tree roots. Grading to realign stream channel requires this tree to be removed. More than 90% CRZ will be impacted.

Terminology:

**(RP)** Root pruning is to be performed inside the tree protection fence. It is to be accomplished by a vibratory plow with a serrated cutting edge or a root cutter with a 36" wheel to a depth of 24". Chain driven trenchers are not acceptable.

**(RKP)** Rock Packing - exposed root to be hand packed with stone.

**(MM)** Mulch Mats Access - 12" minimum depth wood chip base to be placed for construction access.

**(WM)** Wooden Mats - 10' x 4"x4" wooden plank to be placed over access area for construction access.

**(PL)** Tree Protection Planking



**TEMPORARY TRAFFIC CONTROL REQUIREMENTS**

- THE PERMITTEE SHALL REFER TO THE ATTACHED TEMPORARY TRAFFIC CONTROL PLAN (TTCP) DRAWINGS TO SELECT THE APPROPRIATE WORK ZONE TRAFFIC CONTROLS FOR EACH PHASE OF CONSTRUCTION. WORK ZONE SITUATIONS WHICH ARE NOT ADDRESSED IN THE ATTACHED TTCP SHALL CONFORM TO THE GUIDELINES SET FORTH IN SECTION 6 OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAY (MUTCD), MOST RECENT EDITION.
- THE PERMITTEE MUST HAVE A "CERTIFIED" TRAFFIC CONTROL MANAGER ON SITE DURING ALL PHASES OF CONSTRUCTION AT ALL TIMES.
- EACH PHASE OF CONSTRUCTION, INCLUDING THE FOLLOW UP RESTORATION OPERATIONS SHALL BE PROVIDED WITH APPROPRIATE WORK ZONE TRAFFIC CONTROLS.
- ROAD CLOSURES OF ANY DURATION SHALL REQUIRE THE SUBMITTAL OF A WRITTEN REQUEST TO THE TRAFFIC ENGINEERING DESIGN AND OPERATIONS SECTION WITH JUSTIFICATION AS TO WHY WORK ACTIVITY CANNOT OCCUR WHILE TRAFFIC IS BEING MAINTAINED. ROAD CLOSURE SHALL REQUIRE ADDITIONAL TRAFFIC CONTROLS INCLUDING ADVANCE NOTIFICATION, APPROACH, AND DETOUR SIGNAGE, AS APPROVED BY TRAFFIC ENGINEERING DESIGN AND OPERATIONS SECTION.
- ALL SIDEWALK CLOSURES SHALL REQUIRE THE APPROVAL OF THE TRAFFIC ENGINEERING DESIGN AND OPERATIONS SECTION. ANY SIDEWALK CLOSURE GREATER THAN TWO (2) WEEKS SHALL REQUIRE THE SUBMITTAL OF A WRITTEN REQUEST TO THE DIVISION OF TRAFFIC ENGINEERING AND OPERATIONS AND MAY REQUIRE ADDITIONAL TEMPORARY TRAFFIC CONTROLS AND/OR TEMPORARY SIDEWALK BY-PASS. ANY WORK AFFECTING SIDEWALK SHALL BE SPECIFIED AND A PROPER PEDESTRIAN DETOUR SHALL BE SHOWN ON PLANS AND SUBMITTED FOR REVIEW. SIDEWALK CLOSURES SHALL BE LIMITED TO OCCUR ONLY DURING THE ACTUAL WORK ACTIVITY. DURING CLOSURE, SIDEWALKS SHALL BE BARRICADED TO PHYSICALLY PREVENT PEDESTRIAN PASSAGE AND APPROPRIATE PEDESTRIAN DETOURS SHALL BE POSTED. DURING ALL OTHER TIMES, PROVISIONS FOR SAFE PEDESTRIAN ACCESS THROUGH THE WORK AREA, VIA A TEMPORARY WALKWAY SHALL BE PROVIDED.
- ANY WORK WITHIN THE TRAVELED PORTION OF ROADWAYS SHALL BE RESTRICTED TO THE HOURS OF 9:00 AM TO 3:30 PM, MONDAY THROUGH FRIDAY. WORK ON HOLIDAYS AND WEEKENDS SHALL NOT OCCUR UNLESS AN EXCEPTION IS GRANTED IN WRITING BY THE COUNTY'S DPS INSPECTOR.
- CONSTRUCTION ACTIVITY, LOADING OR UNLOADING OF EQUIPMENT SHALL NOT BLOCK ANY TRAFFIC LANE OTHER THAN THOSE DELINEATED WITHIN THE WORK ZONE.
- EXCLUSIVE OF EMERGENCY WORK, THE PERMITTEE SHALL CONTACT OCCUPANTS OF ALL ADJOINING PROPERTIES AND INFORM THEM OF THE SCOPE AND THE TIMING OF CONSTRUCTION. A MINIMUM OF 24 HOURS NOTIFICATION SHALL BE REQUIRED PRIOR TO THE COMMENCEMENT OF ANY ACTIVITY ON THE SITE.
- ACCESS SHALL BE MAINTAINED TO ALL DRIVEWAYS UNLESS PERMISSION FOR CLOSURE IS GRANTED BY THE PROPERTY OWNER/MANAGER. HOWEVER, ACCESSIBILITY FOR EMERGENCY VEHICLES SHALL BE MAINTAINED AT ALL TIMES.
- PAVEMENT EXCAVATION SHALL BE LIMITED TO A MAXIMUM OF ONE TRAVEL LANE AT ANY TIME UNLESS OTHERWISE SPECIFIED ON THE TTCP.
- IF ANY TRAFFIC CONTROL SIGNS ARE TO BE PLACED ALONG A MSHA ROADWAY OR WITHIN THE LIMITS OF AN INCORPORATED AREA, THE PERMITTEE SHALL NOTIFY THE APPROPRIATE AGENCY OF SIGNAGE TO BE INSTALLED.
- NO HAZARDOUS MATERIALS SHALL BE STORED WITHIN PUBLIC RIGHT-OF-WAY. NO MATERIALS OR EQUIPMENT SHALL BE STORED ON THE ROADWAY SURFACES OR SIDEWALK DURING NON-WORK HOURS.
- ALL EXISTING TRAFFIC CONTROL DEVICES (I.E. SIGNS, MARKING, ETC.) THAT MUST BE REMOVED SHALL BE REPLACED IN THEIR PROPER LOCATION PRIOR TO THE COMPLETION OF THE PROJECT. COST FOR THE REPLACEMENT AND/OR REPAIR OF DEVICES DAMAGED AS A RESULT OF THE PROJECT SHALL BE ASSESSED TO THE PERMITTEE.
- FOR MERGING, SHIFTING, SHOULDER TAPER, THE MAXIMUM SPACING BETWEEN DEVICES EQUALS THE POSTED SPEED IN FEET.
- ALL TEMPORARY TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MOST RECENT EDITION OF THE MUTCD. ALL SIGNS, TRAFFIC DRUMS AND CONES SHALL BE FULLY REFLECTORIZED WITH HIGH INTENSITY, REFLECTIVE SHEETING AS PER THE MUTCD.
- PROVISION SHALL BE MADE FOR SAFE MAINTENANCE OF PEDESTRIAN AND BICYCLE TRAFFIC, SUBJECT TO APPROVAL OF THE COUNTY'S DPS INSPECTOR. AT LEAST ONE 10-FOOT TRAVEL LANE SHALL BE AVAILABLE FOR TRAFFIC AT ALL TIMES.

- SIGNAGE, TRAFFIC DRUMS, TRAFFIC CONES, AND ARROW PANELS SHALL BE PLACED IN ACCORDANCE WITH THE APPROPRIATE TYPICAL AND SPACING CHART. WORK AREA AHEAD (W20-1 MODIFIED) SIGNS MUST BE INSTALLED AT THE END OF EACH WORKDAY WHEN TEMPORARY AGGREGATE RAMPING IS IMPLEMENTED. CHANNELIZING DEVICES SHALL BE PLACED ALONG EXCAVATIONS AT TEN (10) FOOT INTERVALS. ARROW PANELS (FLASHING MODE ONLY) SHALL BE USED AT THE BEGINNING OF ANY LANE CLOSURE ON A MULTI-LANE ROADWAY.
- APPROPRIATE DISTANCES FOR SIGN LEGENDS ARE "AHEAD", "500 FT", "1000 FT", "1500 FT", OR "1/2 MILE". FOR DISTANCES LESS THAN 500 FEET, "AHEAD" SHALL BE USED.
- ALL WARNING SIGNS, UNLESS OTHERWISE SPECIFIED, SHALL BE A MINIMUM OF 48" X 48", BLACK SYMBOL OR LEGEND ON ORANGE BACKGROUND AND DIAMOND SHAPED. ALL WARNING SIGNS NOT APPLICABLE TO THE ACTUAL SITUATION SHALL BE REMOVED OR COVERED DURING NON-APPLICABLE PERIODS. ALL PORTABLE SIGNS SHALL BE MOUNTED A MINIMUM OF ONE (1) FOOT ABOVE THE LEVEL OF THE ROADWAY, WITH HIGHER MOUNTING HEIGHTS DESIRABLE.
- DURING NIGHTTIME OPERATIONS TRAFFIC DRUMS SHALL BE USED. HOWEVER, FOR EMERGENCY WORK ACTIVITIES WHERE TRAFFIC DRUMS ARE NOT READILY AVAILABLE, REFLECTORIZED TRAFFIC CONES THAT ARE A MINIMUM OF TWENTY EIGHT (28) INCHES IN HEIGHT AND HAVING SIX (6) INCH AND FOUR (4) INCH REFLECTIVE COLLARS WITHIN THE TOP SIXTEEN (16) INCHES OF THE CONE MAY BE USED. ALL WORK AREAS LEFT UNATTENDED AT NIGHT SHALL BE DELINEATED WITH TRAFFIC DRUMS.
- WHEN TEMPORARY CONCRETE BARRIER (TCB) IS USED, REFLECTORIZED MARKERS ARE REQUIRED AS PER TTCP 109.02. ALSO, A 12" X 36" OBJECT MARKER (VERTICAL PANEL AS PER TCC 109.01) SHALL BE INSTALLED.
- WHEN PAVEMENT MARKINGS HAVE BEEN OBLITERATED BY THE WORK ACTIVITY, THE PERMITTEE SHALL INSTALL ANY CRITICAL INTERIM PAVEMENT MARKINGS PRIOR TO THE END OF THE WORKDAY AS SPECIFIED BY THE COUNTY'S DPS INSPECTOR AND/OR THE DIVISION OF TRAFFIC ENGINEERING AND OPERATIONS. ON ROAD SECTIONS THAT ARE NOT SCHEDULED TO BE OVERLAID, ALL TEMPORARY PAVEMENT MARKINGS SHALL BE (REMOVABLE) DETOUR GRADE MARKING TAPE. ANY CONFLICTING MARKINGS, WHICH NEED TO BE TEMPORARILY REMOVED, ARE TO BE MASKED USING "SM REMOVABLE BLACK LANE MASK" OR AN APPROVED EQUAL. ON ROAD SECTIONS THAT ARE TO BE OVERLAID, TEMPORARY MARKINGS CAN BE EITHER TAPE OR PAINT. ANY CONFLICTING MARKINGS SHOULD BE REMOVED WITH A PAVEMENT GRINDER.

**FLAGGING OPERATIONS**

- WHEN POSSIBLE, TWO-WAY TRAFFIC SHALL BE MAINTAINED, OTHERWISE, FLAGGERS SHALL BE USED TO CONTROL TRAFFIC.
- FLAGGERS SHALL BE MARYLAND STATE HIGHWAY ADMINISTRATION OR AATSA APPROVED FLAGGERS AND SHALL BE USED AT THE DIRECTION OF THE COUNTY INSPECTOR. FLAGGERS SHALL USE STOP/SLOW PADDLES TO DIRECT TRAFFIC.
- RADIO COMMUNICATION SHALL BE REQUIRED BETWEEN FLAGGERS AT THE DISCRETION OF THE COUNTY INSPECTOR OR UNDER THE FOLLOWING CONDITIONS:
  - IF THE FLAGGERS CANNOT SEE EACH OTHER.
  - IF THE LANE CLOSURE EXCEEDS 200 FEET.

**CONTACT INFORMATION**

- THE PERMITTEE SHALL CONTACT THE TRAFFIC ENGINEERING DESIGN & OPERATIONS SECTION (TEDO) AT 240-777-6000 AT LEAST TEN (10) WORKING DAYS IN ADVANCE OF THE FINAL PAVING OPERATION TO SCHEDULE THE INSTALLATION OF PERMANENT PAVEMENT MARKINGS AND SIGNS.
- FIELD ASSISTANCE BY THE MCDOT, DIVISION OF TRAFFIC ENGINEERING AND OPERATIONS IS AVAILABLE UPON REQUEST. CONTACT TRAFFIC ENGINEERING DESIGN & OPERATIONS SECTION (TEDO) AT 240-777-6000.

**PAVEMENT DROP-OFF**

- ANY EXCAVATION(S) IN THE ROADWAY SHALL BE PAVED TO LEVEL GRADE OR PLATED AND THE ROADWAY REOPENED TO ITS FULL CROSS-SECTION PRIOR TO THE END OF EACH WORKDAY. "STEEL PLATES" (W95-5(1)) SIGNS SHALL BE PLACED APPROXIMATELY 250 FEET IN ADVANCE OF ANY STEEL PLATE. ANY EXCAVATIONS IN THE SIDEWALK SHALL BE BACKFILLED OR PLATED PRIOR TO THE END OF EACH WORKDAY AND SIDEWALK REOPENED TO ITS FULL CROSS SECTION.
- TRAFFIC SHALL NOT BE PERMITTED WITHIN TEN (10) FEET OF ANY EXCAVATION THAT RESULTS IN A VERTICAL DROP-OFF OF MORE THAN FIVE (5) INCHES IN THE LEVEL OF PAVEMENT DURING NON-WORKING HOURS UNLESS PROTECTED BY TEMPORARY CONCRETE BARRIERS OR RAMPED WITH AGGREGATE MATERIAL AT A 3:1 OR FLATTER SLOPE FROM THE EDGE OF PAVEMENT. WHEN RAMPING IS UTILIZED, TEMPORARY TRAFFIC CONTROL DRUMS SHALL BE POSITIONED ADJACENT TO THE EDGE OF THE WORK AREA ON THE TRAFFIC SIDE OF THE SLOPE.
- TRAFFIC SHALL NOT BE PERMITTED WITHIN TWO (2) FEET OF ANY EXCAVATION THAT RESULTS IN A VERTICAL DROP-OFF OF MORE THAN TWO (2) INCHES BUT NO MORE THAN FIVE (5) INCHES IN THE LEVEL OF PAVEMENT DURING NON-WORKING HOURS UNLESS EITHER RAMPED WITH AGGREGATE MATERIAL AT A 3:1 OR FLATTER SLOPE, PROVIDED WITH AN ABUTTING WEDGE OF BITUMINOUS MATERIAL AT A 3:1 OR FLATTER SLOPE OR PROTECTED BY TRAFFIC DRUMS.
- IN AREAS WHERE A DROP-OFF IN THE LEVEL OF PAVEMENT IS TWO (2) INCHES OR LESS, TRAFFIC MAY BE ALLOWED TO FREELY CROSS UNDER THE FOLLOWING CONDITIONS:
  - WHERE LONGITUDINAL PAVING JOINTS OF TWO (2) INCHES OR LESS ARE EXPOSED TO TRAFFIC, WARNING SIGNS SHALL BE POSTED INDICATING "UNEVEN LANES" (W8-11). THESE SIGNS SHOULD BE PLACED 250 FEET IN ADVANCE OF THE UNEVEN JOINT AND BE SPACED AT APPROPRIATE INTERVALS THROUGHOUT THE AREA OF THE UNEVEN JOINT.
  - WHERE LATERAL PAVING JOINTS OF TWO (2) INCHES OR LESS ARE EXPOSED TO TRAFFIC, A "BUMP" (W8-1) SIGN SHALL BE POSTED 100 FEET IN ADVANCE OF THE JOINT.
  - WHEN MILLED PAVEMENT IS LEFT EXPOSED TO TRAFFIC A "ROUGH ROAD"(W8-8) OR "GROOVED PAVEMENT" (W8-8A) SIGN SHALL BE PLACED 250 FEET IN ADVANCE OF THE MILLED AREA.

**INSPECTOR AUTHORITY**

- THE COUNTY'S DEPARTMENT OF PERMITTING SERVICES (DPS) INSPECTOR HAS THE AUTHORITY TO MODIFY THE TTCP AS DEEMED NECESSARY. THE INSPECTOR HAS THE AUTHORITY TO ORDER THE PERMITTEE TO STOP WORK AND VACATE THE PUBLIC RIGHT-OF-WAY IF THE TTCP IS NOT COMPLIED WITH.
- THE IMPLEMENTATION DATE AND CONTINUANCE OF WORK ACTIVITIES MAY BE ALTERED AT THE DISCRETION OF THE COUNTY'S DPS INSPECTOR IN THE EVENT OF CONFLICTS WITH PREVIOUSLY APPROVED OR EMERGENCY ACTIVITIES.

**MISCELLANEOUS**

- THE PERMITTEE WILL BE SOLELY RESPONSIBLE FOR ALL ACCIDENTS AND/OR DAMAGE TO PERSONS AND/OR PROPERTY DAMAGE RESULTING FROM HIS OPERATIONS.
- HAZARDOUS MATERIALS SHALL NOT BE STORED WITHIN PUBLIC RIGHT-OF-WAY. NO MATERIALS OR EQUIPMENT SHALL BE STORED ON THE ROADWAY SURFACE OR SIDEWALK DURING NON-WORK PERIODS. ALL STORED MATERIALS AND EQUIPMENT SHALL BE SET BACK AT LEAST SIX (6) FEET BEHIND THE CURB ALONG A CLOSED SECTION ROADWAY AND AT LEAST TWELVE (12) FEET FROM THE EDGE OF AN OPEN SECTION ROADWAY.
- ALL TEMPORARY TRAFFIC CONTROL (TTC) DEVICES SHALL BE REMOVED AS SOON AS PRACTICAL WHEN THEY ARE NO LONGER NEEDED. WHEN WORK IS SUSPENDED FOR SHORT PERIODS OF TIME, TTC DEVICES THAT ARE NO LONGER APPROPRIATE SHALL BE REMOVED OR COVERED.
- AT THE COMPLETION OF WORK ACTIVITIES, CONDITIONS WITHIN THE PUBLIC SPACE SHALL BE FULLY RESTORED TO THOSE THAT EXISTED PRIOR TO THE WORK ACTIVITY.

**PARKING RESTRICTIONS**

- PERMITTEE SHALL CONTACT THE MCDOT, DIVISION OF PARKING MANAGEMENT AT 240-777-6000 A MINIMUM OF 48 HOURS IN ADVANCE TO ARRANGE FOR PAYMENT AND THE BAGGING OF ALL PARKING METERS WITHIN THE WORK ZONE. METER NUMBERS AND LOCATION MUST BE SPECIFIED.
- BAGGING AGREEMENT SHALL BE KEPT AVAILABLE BE THE CONTRACTOR/PERMITEE FOR INSPECTION BY THE DPS INSPECTOR AT ANY TIME. PROHIBITING THE USE OF METERED SPACES BY THE CONTRACTOR/PERMITTEE WITHOUT RECEIPT OF "BAGGING AGREEMENT" IS SUBJECT TO FINES.
- CONTRACTOR/PERMITTEE SHALL COORDINATE WITH DIVISION OF PARKING MANAGEMENT TO MAKE PAYMENT FOR ADDITIONAL BAGGING AND REMOVAL WHENEVER MORE SPACES ARE TEMPORARILY REQUIRED.
- ALL EXISTING MONTGOMERY COUNTY "PARKING" SIGNS SHALL BE COVERED OR BAGGED BY THE CONTRACTOR/PERMITTEE FOR THE DURATION OF WORK; AND A TEMPORARY "NO PARKING ANYTIME" (R7-4) SIGN SHALL BE INSTALLED IN THE AFFECTED PARKING SPACE(S). EXISTING MONTGOMERY COUNTY PARKING METER PIPES/POLES SHALL NOT BE USED FOR TEMPORARY INSTALLATION.
- WHEN IT IS NECESSARY TO RESTRICT PARKING IN A NON-METERED AREA TO FACILITATE WORK ACTIVITY, THE PERMITTEE SHALL CONTACT THE APPROPRIATE COUNTY POLICE STATION FOR TEMPORARY "NO PARKING" SIGNS.
- THE CONTRACTOR/PERMITTEE SHALL RESTORE ALL AFFECTED MONTGOMERY COUNTY PARKING SIGNAGE TO THEIR PREVIOUS CONDITION.

**SEQUENCE OF CONSTRUCTION**

- WATER QUALITY INLET 5 SHALL NOT BE INSTALLED WHILE ONE LANE IS CLOSED ON DONNYBROOK FOR THE INSTALLATION OF WATER QUALITY INLET 4 AND STORM DRAIN INSTALLATION.
- CONTRACTOR MUST MAINTAIN A MINIMUM OF ONE TRAVEL LANE AT ALL TIMES WHEN INSTALLING STORM DRAIN AT THE INTERSECTION OF DONNYBROOK DRIVE AND NAVARRE DRIVE BY UTILIZING STEEL PLATES, STANDARD TCP-105.07 AND STANDARD TCP-105.03 AS NECESSARY.
- ROADWAY EXCAVATIONS SHALL BE PAVED TO LEVEL GRADE OR PLATED AND THE ROADWAY REOPENED TO ITS FULL CROSS-SECTION PRIOR TO THE END OF EACH WORK DAY. "STEEL PLATES" (W95-5(1)) SIGNS SHALL BE PLACED APPROXIMATELY 250 FEET IN ADVANCE OF ANY STEEL PLATES.
- CURB EXTENSIONS ALONG GRUBB ROAD SHALL NOT BE INSTALLED SIMULTANEOUSLY. A MAXIMUM OF ONE LANE MAY BE CLOSED AT ANY ONE TIME.
- INSTALL STREET PARKING RESTRICTION SIGNS 2 WEEKS PRIOR TO WORK WITHIN THE ROADWAY.
- REOPEN ROADWAY TO EXISTING TRAFFIC PATTERNS.

Montgomery County, Maryland  
Traffic Engineering and Operations Section

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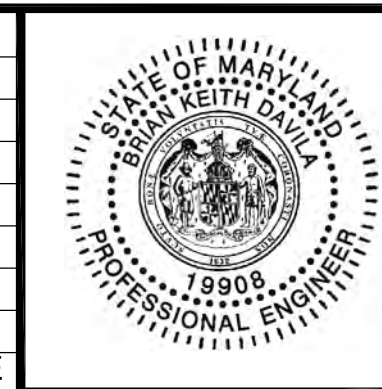
FOR \_\_\_\_\_  
BY \_\_\_\_\_ Date \_\_\_\_\_

**MISS UTILITY**

Call "Miss Utility" at 1-800-257-7777, 48 hours prior to the start of work. The excavator must notify all public utility companies with underground facilities in the area of proposed excavation and have those facilities located by the utility companies prior to commencing excavation. The excavator is responsible for compliance with requirements of Chapter 36A of the Montgomery County Code.

Prepared for: Montgomery County Department of Environmental Protection 255 Rockville Pike, Suite 120 Rockville, Maryland 20850 Phone: (240) 777-7709 Attn: Mr. Daniel Harper	MONTGOMERY COUNTY, MD Donnybrook Stream Plat# 5396 Plat# 2458 Plat# 2106 Tax Map HN53
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<h2 style="margin: 0;">Donnybrook Tributary Stream Restoration Project</h2> <h3 style="margin: 0;">TRAFFIC CONTROL PLAN</h3>	DATE: April, 2012				
	DESIGNED: RAB				
	DRAFTED: GC				
	CHECKED:				
	BASE DATA: CPJA	NO.	REVISIONS	BY	DATE



**CPJ Associates**

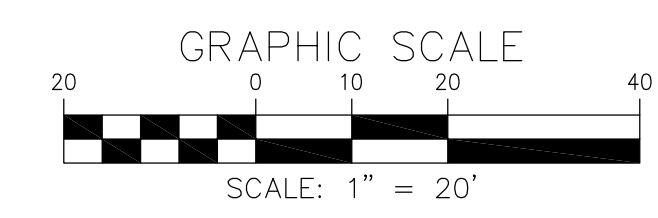
**CPJ Environmental Services Division**  
 STREAM RESTORATION • STORMWATER MANAGEMENT • INSPECTION  
 910 CLOPPER ROAD, STE 215N GAITHERSBURG MARYLAND 20878  
 Phone:(301)208-9573 E-mail: envcpj@a.com Fax:(301)926-4551  
 SILVER SPRING, MD FREDERICK, MD FAIRFAX, VA

SCALE  
AS-SHOWN

SHEET  
**1**  
OF 8 SHEETS

JOB NO.  
39-552-64.1

Montgomery County, Maryland  
Traffic Engineering and Operations Section



CONTRACTOR TO UTILIZE STANDARD TCP-105.07, FLAGGING CONTROL AT 3-LEG INTERSECTION FAR-SIDE CLOSURE (SEE SHEET 8 FOR DETAILS)

**LEGEND:**

- REFLECTORIZED TRAFFIC CONTROL DRUMS (CHANNELIZING DEVICES)
- SIGN
- WORK ZONE
- FLAG PERSON

**NOTE:**

- ENSURE THAT ACCESS IS MAINTAINED TO ALL DRIVEWAYS AT ALL TIMES
- MAINTAIN PEDESTRIAN ACCESS TO MAILBOXES AT ALL TIMES FOR DELIVERY AND PICK UP.

Montgomery County, Maryland  
Traffic Engineering and Operations Section

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FOR \_\_\_\_\_  
BY \_\_\_\_\_  
Date \_\_\_\_\_

**MISS UTILITY**

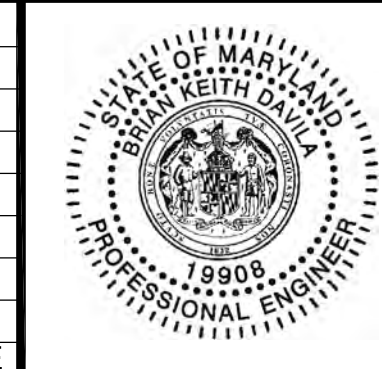
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Attn: Mr. Daniel Harper

MONTGOMERY COUNTY, MD  
Donnybrook Stream  
Plat# 5396 Plat# 2458 Plat# 2106  
Tax Map HN53

**Donnybrook Tributary Stream Restoration Project**  
TRAFFIC CONTROL PLAN  
DONNYBROOK DRIVE AT SPENCER ROAD - PHASE 1

DATE:	April, 2012				
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SCALE  
1" = 20'  
SHEET  
**2**  
OF 8 SHEETS  
JOB NO.  
39-552-64.1



CONTRACTOR TO UTILIZE STANDARD TCP-105.06, FLAGGING CONTROL AT 3-LEG INTERSECTION (4). (SEE SHEET 8 FOR DETAILS)

**LEGEND:**

REFLECTORIZED TRAFFIC CONTROL DRUMS (CHANNELIZING DEVICES) ——— •

SIGN ——— ○

WORK ZONE ——— ▨

FLAG PERSON ——— ●

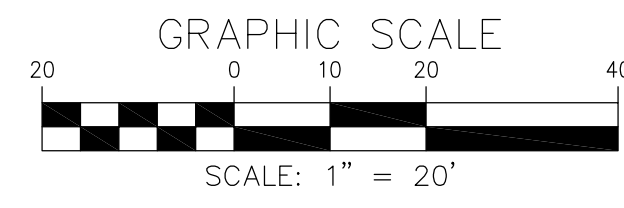
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Montgomery County, Maryland  
Traffic Engineering and Operations Section

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BY \_\_\_\_\_ Date \_\_\_\_\_



**MISS UTILITY**

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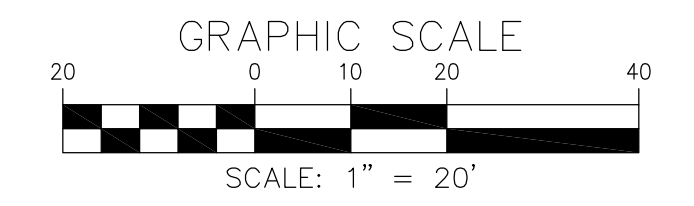
**Donnybrook Tributary Stream Restoration Project**  
TRAFFIC CONTROL PLAN  
DONNYBROOK DRIVE AT SPENCER ROAD - PHASE 2

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CONTRACTOR TO UTILIZE STANDARDS TCP-105.07, FLAGGING CONTROL AT 3-LEG INTERSECTION FAR-SIDE CLOSURE, AND TCP-105.03, FLAGGING CONTROL AT 3-LEG INTERSECTION (1). CONTRACTOR MUST MAINTAIN ONE LANE OF TRAFFIC AT ALL TIMES. CONTRACTOR TO UTILIZE STANDARD TCP-107.01, PEDESTRIAN CONTROL FOR TEMPORARY SIDEWALK CLOSURE. (SEE SHEET 8 FOR DETAILS)

**LEGEND:**

REFLECTORIZED TRAFFIC CONTROL DRUMS (CHANNELIZING DEVICES)	
SIGN	
WORK ZONE	
FLAG PERSON	

**NOTE:**

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Montgomery County, Maryland  
Traffic Engineering and Operations Section  
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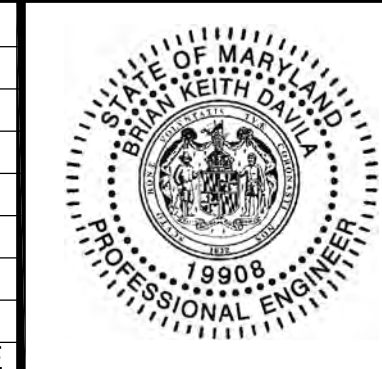
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Donnybrook Stream  
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**Donnybrook Tributary Stream  
Restoration Project**  
TRAFFIC CONTROL PLAN  
DONNYBROOK DRIVE AT NAVARRA DRIVE

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**LEGEND:**

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SIGN

WORK ZONE

FLAG PERSON

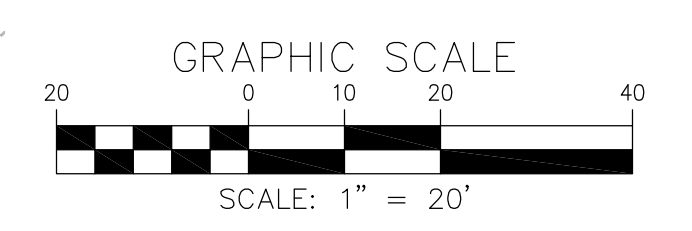
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Montgomery County, Maryland  
Traffic Engineering and Operations Section

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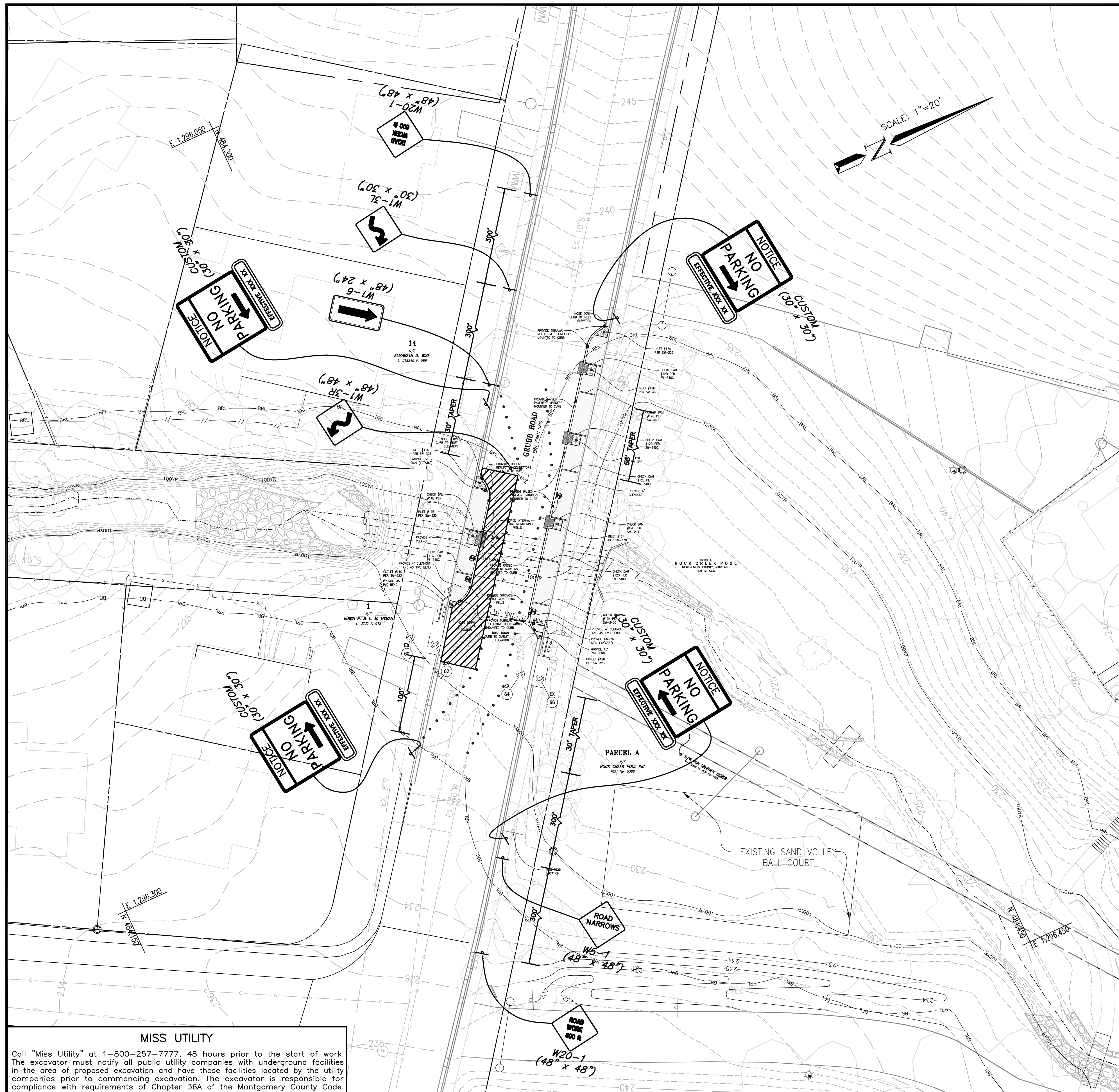
**Donnybrook Tributary Stream  
Restoration Project**  
TRAFFIC CONTROL PLAN  
FARRELL DRIVE AT NAVARRE DRIVE

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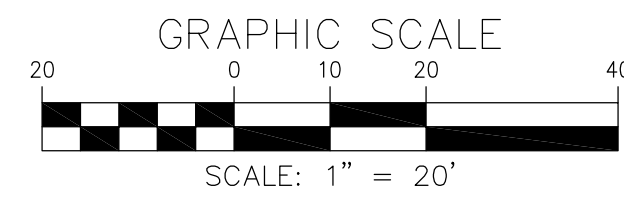


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SCALE  
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SHEET  
**5**  
OF 8 SHEETS  
JOB NO.  
39-552-64.1



SCALE: 1"=20'



CONTRACTOR TO UTILIZE STANDARDS TCP-102.03, TRAFFIC CONTROL FOR MAINTAINING TWO-WAY TRAFFIC BY ENCROACHING INTO OPPOSING TRAFFIC FLOW, AND TCP-107.01, PEDESTRIAN CONTROL FOR TEMPORARY SIDEWALK CLOSURE. (SEE SHEET 8 FOR DETAILS)

**LEGEND:**

REFLECTORIZED TRAFFIC CONTROL DRUMS (CHANNELIZING DEVICES)

SIGN

WORK ZONE

FLAG PERSON

**NOTE:**

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Montgomery County, Maryland  
Traffic Engineering and Operations Section

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FOR \_\_\_\_\_  
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Date \_\_\_\_\_

**MISS UTILITY**

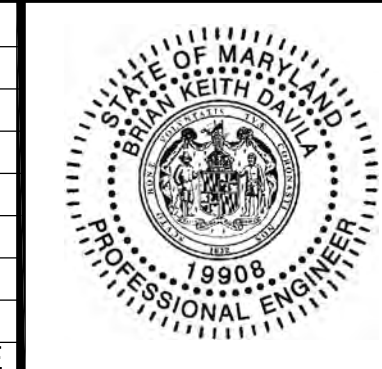
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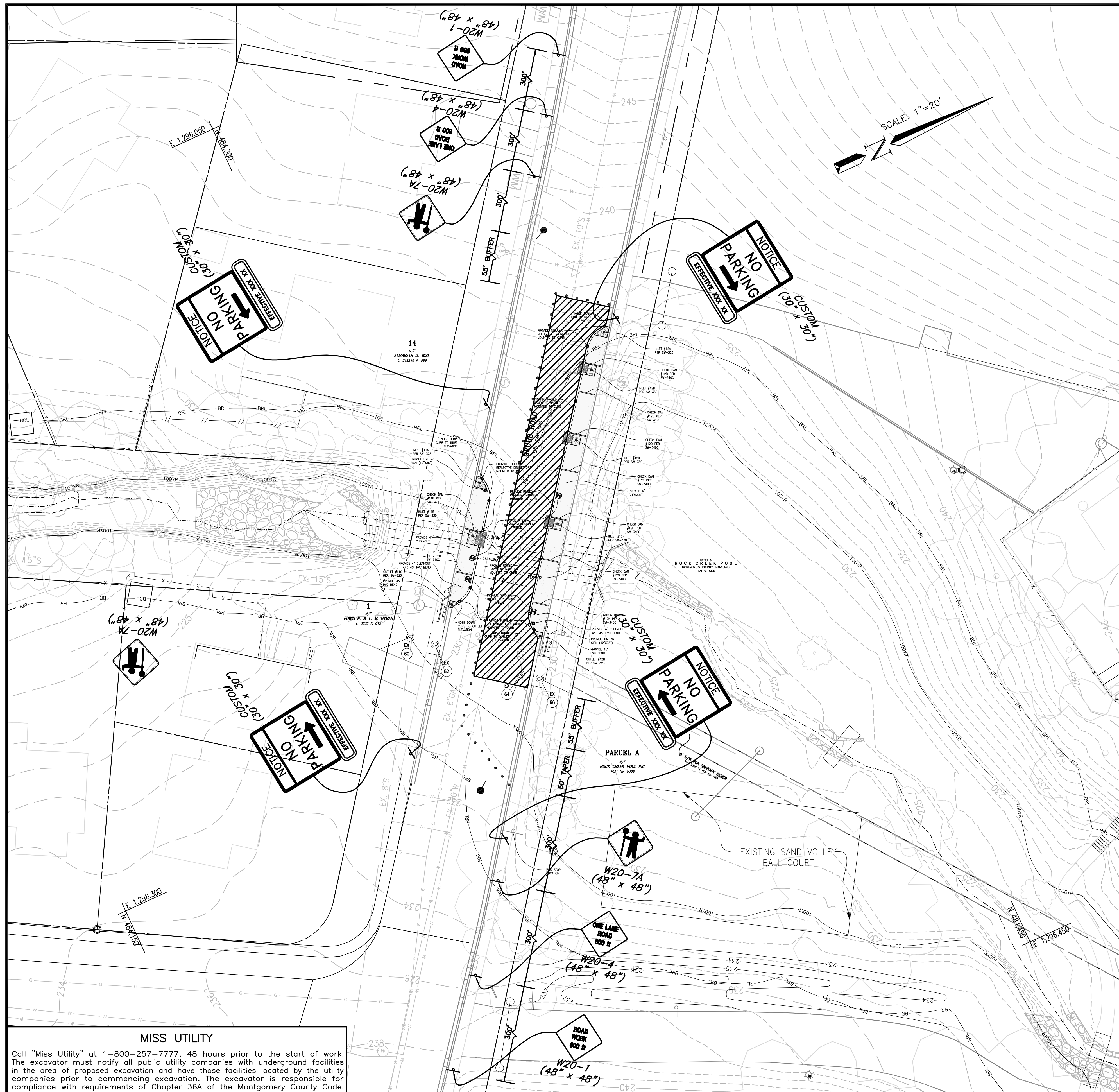
**Donnybrook Tributary Stream  
Restoration Project**  
TRAFFIC CONTROL PLAN  
GRUBB ROAD - PHASE 1

DATE:	April, 2012				
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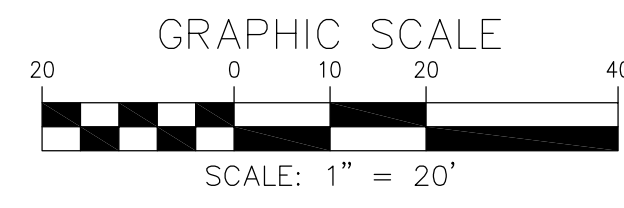


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OF 8 SHEETS  
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SCALE: 1"=20'



CONTRACTOR TO UTILIZE STANDARDS TCP-102.02, FLAGGING CONTROL NON-INTERSECTION, AND TCP-107.01, PEDESTRIAN CONTROL FOR TEMPORARY SIDEWALK CLOSURE. (SEE SHEET 8 FOR DETAILS)

**LEGEND:**

REFLECTORIZED TRAFFIC CONTROL DRUMS (CHANNELIZING DEVICES)

SIGN

WORK ZONE

FLAG PERSON

**NOTE:**

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Montgomery County, Maryland  
Traffic Engineering and Operations Section

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**Donnybrook Tributary Stream Restoration Project**  
TRAFFIC CONTROL PLAN  
GRUBB ROAD - PHASE 2

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