Item 3
Variance Request
SAB 2/19/13

A **Variance Request** by Daniel Woods on behalf of The Addison Group to vary the Streamside Buffer for Waters of the State serving less than one (1) square mile of tributary area from sixty (60) feet to thirty (30) feet along Sharps Branch for the property located at 1319 West Main Street.

Summary of Action Taken (To be competed after item is heard)
Streamside Buffer Variance Request (1319 West Main St)
The Stormwater Appeals Board has reviewed and discussed this item, and has taken the following action:

____ Granted the variance because the statutory standards for granting a variance were established.
____ Denied the variance because one or more of the statutory standards to be granted a variance were not established.
____ Upheld staff's decision in the administrative review process.
____ Overturned staff's decision in the administrative review process.
____ Deferred the item.

_____ _____
SAB Chair Recording Secretary

_____ _____
Applicant Acknowledgement Date

Exhibits
1. Staff comments, 2/7/13
2. Statement of Hardship, 1/18/13
3. SAB Variance & Appeal Application, 1/18/13
4. Topography Map,
5. USGS Quadrangle Sheet,
6. Grading, Drainage, and Erosion Control Plan, 1/18/13
7. Proposed Buffer Disturbance Exhibit
8. Alternative Plan Exhibit
9. Buffer Management Plan, 1/18/13
10. Images (Photographs), 1/18/13
11. Preliminary Stormwater Management Plan, 12/5/12

Vicinity Base Zoning District
Site: OR, Office Residential
North: CI, Civic & Institutional
South: RX, Residential Variety
East: Historic Core Residential
West: OR, Office Residential

Vicinity Land Use
Site: Undeveloped
North: Office
South: Residential
East: Residential
West: Office

Applicable Stormwater Ordinance (FMC Title 23) Regulations

CHAPTER 1 SECTION 107
STREAM SIDE BUFFERS

23-107. Stream Side and Water Resources Buffer Requirements. (1) A Streamside Buffer shall be applied to all Water Bodies serving more than twenty-five (25.0) acres of Tributary Area and Waters of the State in, or adjacent to, New Construction, Development or Redevelopment. It shall require maintenance of existing buffers on all existing properties as determined by the City Engineer and/or by the State. It shall consist of Native Vegetation along both sides of a stream or around other Water Resources or Waters of the State measured linearly perpendicular from Top of Bank that shall be determined by the break in the Slope. Final determination shall be made by the City Engineer regarding buffer delineation, Top of Bank, areas where the Streamside Buffer shall apply and buffer width requirements.

(2) Buffer Sections**.** The Streamside Buffer will be applied in two sections: **Zone 1: Streamside Zone**, and **Zone 2: Stormwater Infiltration Zone**. All other uses, other than those allowable in each zone, shall be prohibited.

(a) Zone 1 - Streamside Zone. The function of the streamside zone is to protect the physical and Ecological Integrity of the stream ecosystem. The streamside zone shall be retained in its natural vegetative state or enhanced. No clearing of existing Native Vegetation in the Streamside Buffer shall be allowed, except as permitted in §23-710(4) of this Ordinance. The target vegetation is undisturbed mature forest. The Streamside Zone 1 shall begin at the top of the stream bank of the Active Channel and extend a minimum of thirty (30) linear feet perpendicular. This buffer shall be applied to Waters of the State, Wetlands, sinkholes, and springs.

(i) Allowable Uses within Zone 1

(A) Buffer Crossings for utilities and infrastructure**:** Attempts should be made to limit the number of road crossings across water bodies and to minimize the width of crossings. Direct right angles should be used to cross the water bodies.

(B) Passive Recreation, pervious footpaths and boardwalks, to approach the stream if approved by the City Engineer.

(C) Stormwater Channels as approved by the City Engineer: vegetated Channels and use of dissipating and sheet flow arrangements where appropriate to prevent Channelization and Erosion in the buffer from Stormwater runoff adjacent to the buffer from BMPs or any other aspect of the Site.

(D) Landscaping or other related revegetation using Native Vegetation to address Erosion, damaged vegetation, restoration, remove exotic species, or other problems identified by the City Engineer. Landscaping, bank Stabilization, or other restoration proposals to restore a natural stream corridor habitat shall be submitted as a Buffer Management Plan to the City, and any pertinent local, state, or federal permits shall be obtained. The City Engineer shall approve the specific requirements of such plan prior to the issuance of a Stormwater Management Permit or Grading Permit.

(E) Removal of individual trees within the forest buffer which are in danger of falling, causing damage to dwellings or other Structures, or causing blockage of the stream.

(b) Zone 2 – Stormwater Infiltration Zone (SIZ). The function of Zone 2 is to protect key components of the stream and to provide distance between upland Development and the Streamside Zone. The Stormwater Infiltration Zone (Zone 2) shall begin at the edge of the Streamside Zone 1 and extend a minimum of thirty (30) feet, plus any additional buffer width as specified above in "Streamside Zone 1 – Special Conditions". Zone 2 shall be managed as a forest using Native Vegetation, with some pruning and clearing allowed. Landowners shall submit a Buffer Management Plan to the City Engineer for this purpose. This shall be submitted along with the Stormwater Management Plan during either the Development review and/or permitting process. This buffer shall be applied to Waters of the State serving less than one (1) square mile of tributary area. Wetlands, sinkholes, and Waters of the State serving more than one (1) square mile of tributary area may be exempt from Zone 2.

(i) Allowable uses within Zone 2.

(A) Those uses allowed in Zone 1 - Streamside Zone.

(B) Biking or hiking paths and Greenways. Formal trail systems shall be allowed with closer viewing areas approved by the City Engineer. These shall be designed to prevent the channelization of Stormwater runoff.

(C) Limited Passive Recreation.

(D) There shall be no other permanent Structures with the exception of paths.

(E) Approved utilities.

(F) Change to vegetated Channels and use of dissipating BMPs (adjacent to and in the buffer) addressing Stormwater runoff and sheet flow, where appropriate, to prevent channelization, Erosion and Flooding. Details of these must be designated on construction plans, and should be located out of the Floodway.

(G) Cut and Fill for Floodplain compensations, as permitted in Section 23-106(2)(y) of this Title and as approved by the City Engineer.

(4) Streamside Buffer Width Reductions, Clearing Activities, and Crossings.

(a) The minimum buffer width may be reduced in conjunction with targeted restoration plans that make comparable improvements to water quality. Restoration plans may include stream bank restoration, revegetation, habitat improvements, or other bioengineering methods, as approved in a Buffer Management Plan by the City Engineer. Reduction of the minimum buffer width may apply to specific areas of an overall Development, and shall be approved on a case-by-case basis. In no case shall the minimum Streamside Buffer width be less than thirty (30) feet on both sides of the stream measured from Top of Bank in limited areas. In no case shall the average minimum Streamside Buffer width of Waters of the State serving more than one (1) square mile of tributary area be less than sixty (60) feet on both sides of the stream measured from Top of Bank in limited areas.

CHAPTER 3
STORMWATER APPEALS BOARD (SAB)

23-303. General duties of the SAB. In addition to any other duty or responsibility otherwise conferred upon the SAB by this Title, the SAB shall have the duty and power as follows:

(1) To recommend from time to time to the Board of Mayor and Aldermen that it amend or modify the provisions of this Title;

(2) To hold hearings upon Appeals from orders or actions of the City Engineer as may be provided under any provision of this Title relating to Stormwater;

(3) To hold hearings relating to the suspension, revocation, or modification of a Stormwater discharge permit and issue appropriate orders relating thereto;

(4) To hold hearings relating to an Appeal from a user concerning the accuracy of any fees imposed upon a Stormwater Management System user;

(5) To hold such other hearings as may be required in the administration of this Title and to make such determinations and issue such orders as may be necessary to effectuate the purposes of this Title;

(6) To request assistance from any officer, agent, or employee of the City or the Franklin Municipal Planning Commission and to obtain such information or other assistance as the SAB might need;

(7) The SAB acting through its chair shall have the power to issue subpoenas requiring attendance and testimony of witnesses and the production of documentary evidence relevant to any matter properly heard by the SAB; and

(8) The chair, vice chair or chair pro tem shall be authorized to administer oaths to those persons giving testimony before the SAB

23-304. Variances.

(1) The SAB may grant a variance from the requirements in this Title, provided to do so would not result in the violation of any state or federal law or regulation and if exceptional circumstances applicable to the Site exist such that strict adherence to the provisions of this Title will result in unnecessary hardship and will not result in a condition contrary to the intent of the Title.

(2) The appellant shall submit a written request containing specific justifications, and any other information necessary to the City Engineer for the variance request. The City Engineer shall conduct a review of the request for a variance within twenty-five (25) working days after receipt and may either support the petition or may object to the petition. The City Engineer may require additional information or an independent third party study or design analysis. If the City Engineer objects to the variance, the reasons therefore shall be stated. Once the City Engineer's review is complete or the twenty-five (25) working days for review have expired, the petition shall be subject to SAB action at the next regularly scheduled meeting or at a special meeting called at the discretion of the chair.

(3) Variance requests shall be reviewed by the SAB and may be granted using the following criteria:

1.1. Those projects or activities where it can be demonstrated that strict compliance with the ordinance would result in practical difficulty. Each of the following criteria must be satisfied to show practical difficulty:

1.1.1. The problem is not self-created.

1.1.2. The situation of the landowner is due to the unique conditions of the property. A unique condition is a condition that is

peculiar to the subject property that relates to a physical aspect of the subject property.

1.1.3. Compliance with the strict letter of the restrictions governing physical requirements such as lot area, setbacks, and lot coverage unreasonably prevent the owner from using the property for a permitted purpose or would render conformity with such restrictions unnecessarily burdensome.

1.2. Those projects or activities serving a public need where no feasible alternative is available.

1.3. The repair and maintenance of public improvements where avoidance and minimization of adverse impacts to Wetlands and associated aquatic ecosystems have been addressed.

1.4. Other considerations, such as:

1.4.1. The proximity of the facility to a waterfront location, in the case of a Functionally Dependent Facility.

1.4.2. The relationship of the proposed use to the Franklin Zoning Ordinance, comprehensive Land Use Plan, and master drainage plans for that area.

1.4.3. The safety of access to the property in times of Flood for ordinary and emergency vehicles.

1.4.4. The costs of providing governmental services during and after Flood conditions including maintenance and repair of public utilities and facilities such a sewer, gas, electrical, and water systems, and streets and Bridges.

1.4.5. Whether issuance of a variance is the minimum necessary so as not to destroy the character and design of a historic Building or feature.

(a) In approving a variance, the SAB may impose conditions on the approval. The conditions shall be identified in the variance approval.

(b) The decisions of the SAB shall be final and conclusive.

(4) Effect of a Variance. The issuance of a variance shall authorize only the particular variation that is approved. A variance, including any conditions, shall run with the land and shall not be affected by a change in ownership.

(5) Subsequent Development. Development authorized by the variance shall not be carried out until the applicant has secured all other approvals required by this Title or any other applicable local, state or federal law or regulation. A variance shall not ensure that the Development feature approved as a variance shall receive subsequent approval for other applications for Development approval unless the relevant and applicable portions of this Title's other applicable provisions are met.

(6) Time Limit. Unless otherwise specified in the variance, an application for a Stormwater Permit shall be applied for and approved within one (1) year of the date of the variance approval; otherwise the variance shall become invalid. Permitted time frames do not change with successive owners.

Staff Report and Analysis

The appellant requests a thirty (30) foot variance from the Streamside Zone 2 Buffer for Waters of the State serving less than one (1) square mile of tributary area for the property located at 1319 West Main St in order to provide parking for a proposed residential development (Fig 1). This property is adjacent to Sharps Branch, which is on the 303(d) List (EPA 2012) for impairment caused by alternation in stream-side or littoral vegetative cover and loss of biological integrity due to siltation. The identified pollutant source for both causes of impairment is discharges from the MS4 area.

To summarize an excerpt from the *Stormwater Management Ordinance*, which is noted in an earlier section of this staff report, in order for the SAB to grant a variance, three standards must be established and include the following:

1. The problem is not self-created.
2. The situation of the landowner is due to the unique conditions of the property. A unique condition is a condition that is peculiar to the subject property that relates to a physical aspect of the subject property.
3. Compliance with the strict letter of the restrictions governing physical requirements such as lot area, setbacks, and lot coverage unreasonably prevent the owner from using the property for a permitted purpose or would render conformity with such restrictions unnecessarily burdensome.
4. In addition to the above standards the following applies for variances regarding Streamside buffers: the minimum buffer width may be reduced in conjunction with targeted restoration plans that make comparable improvements to water quality. Restoration plans may include stream bank restoration, revegetation, habitat improvements, or other bioengineering methods, as approved in a Buffer Management Plan by the City Engineer. Reduction of the minimum buffer width may apply to specific areas of an overall Development, and shall be approved on a case-by-case basis. In no case shall the minimum Streamside Buffer width be less than thirty (30) feet on both sides of the stream measured from Top of Bank in limited areas. In no case shall the average minimum Streamside Buffer width of Waters of the State serving more than one (1) square mile of tributary area be less than sixty (60) feet on both sides of the stream measured from Top of Bank in limited areas.

The sections below address each of the four standards in relation to this request.

1. In regard to the first standard, the difficulty illustrated by the applicant is due to the intensity at which the applicant wishes to develop this property. Alternative designs are available to reduce amount of area needed to provide parking for a multi-family building, such as providing parking structures or parking underneath the building. Furthermore, the wet-weather conveyance appears to be a relic channel of Sharps Branch, based on historical USGS maps and an evaluation of existing contours which suggest the stream now flows along the property line instead of through the middle of the property (Fig 2).

2. In regard to the second standard, the property is larger than other neighboring properties along the southern side of West Main Street. Properties located at 1345 to 1331 West Main St have a lot length of approximately 230 linear ft., but the applicant's property, 1319 West Main St, has an approximate length of 530 linear ft. While Sharps Branch runs along the southern and eastern property lines and the buildable area of 1319 West Main St is similar to said neighboring properties which are also zoned as Office Residential (Fig 1). Adherence to the Streamside Buffer Requirements in the *Stormwater Management Ordinance* does not create a unique condition as it relates to the buildable area of surrounding properties.

3. As far as the third standard is concerned, the appellant notes in the request letter that hardship would result from applying the required sixty (60) feet Streamside Buffer because of the unique linear shape of the property and how Sharps Branch traverses the property in an atypical manner. Accepting the hypothesis that Sharps Branch was relocated from the center of the property to flow along the property line, this relocation increased the amount of

buildable area for the property at 1319 West Main St and reduced the difficulty that would have been rendered by complying with Streamside Buffer Requirements of the *Stormwater Management Ordinance*. Therefore, coupled staff's opinion of the first and second standards, staff believes the applicant's situation is not unnecessarily burdensome, and therefore does not meet third standard as set forth in the *Stormwater Management Ordinance.*

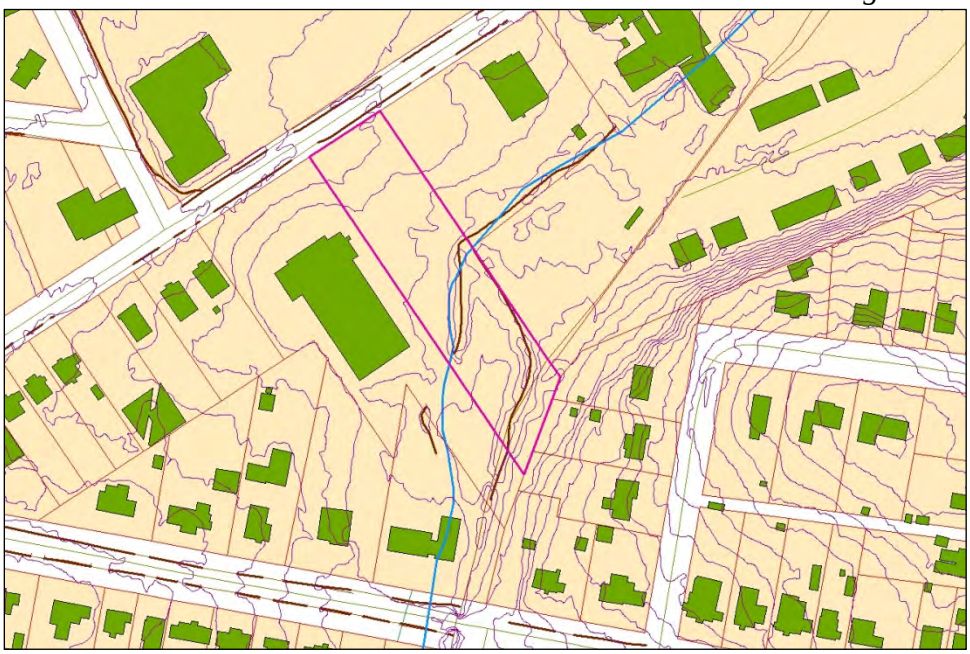


Figure 1: 1319 West Main St – Parcel Boundary (highlighted in pink)

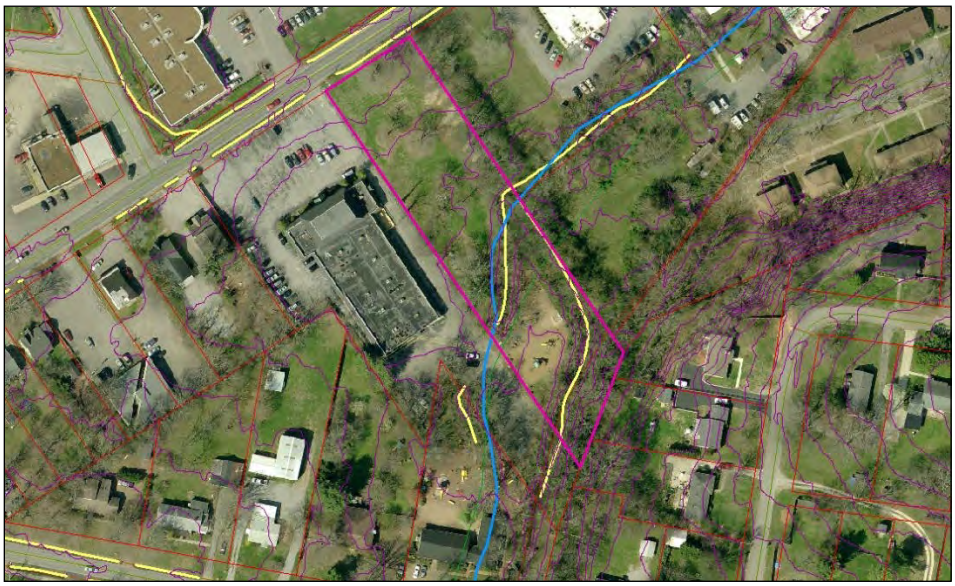


Figure 2: 1319 West Main St – Ariel Photo (altered channel highlighted in yellow)

4. Sharps Branch has the lowest Habitat Scores and second lowest Macroinvertebrate Index Scores of impaired streams assessed by City of Franklin Staff in 2010, 2011, and 2012, making it one of the lowest quality streams in the City. As previously stated, Sharps Branch is on the 303(d) List (EPA 2012) for impairment caused by alternation in stream-side or littoral vegetative cover and loss of biological integrity due to siltation. The identified pollutant source for both causes of impairment is discharges from the MS4 area. The City's MS4 permit states in *3.1 Discharges to Water Quality Impaired Waters* that discharges to Section 303(d) list impaired waters must have established BMPs to control the discharge of

pollutants of concern (e.g. sediment) and must demonstrate that the discharge will not cause or contribute to an impairment (e.g. erosion and loss of vegetation).

4.1. The applicant's stormwater management design proposes underground detention by using void spaces in the permeable paver sub-base for storage and an underground irrigation re-use storage tank. The Stormwater Management Plan (dated 12/5/12) developed by Civil and Environmental Consultants indicates permeable pavers along with bioretention areas are proposed to remove TSS from parking lot runoff , and the irrigation tank will capture building roof runoff. This design seems adequate for meeting detention requirements, but the irrigation tank is not an approved water quality BMP listed in the City of Franklin *Stormwater Management Best Management Practices Manual*. Without approval of the irrigation tank as an acceptable water quality BMP, the site does not meet the minimum TSS reduction requirements and does not have an established treatment train as required in the *Stormwater Management Ordinance*, thus failing to make improvements to water quality.

[FMC 23-106(2)(j): Development will be required to minimize the impact to Stormwater quality by applying structural and/or nonstructural management practices selected to address Site-specific conditions. The water quality treatment for the runoff resulting from a rainfall depth of 1.1 inches shall be a goal of ninety percent (90%) and a minimum of eighty percent (80%) total suspended solids removal through a BMP Treatment Train. A description of the BMP Treatment Train shall be included in the Stormwater Management Plan.]

4.2. A Buffer Management Plan was submitted along with the variance request in order to address riparian plantings and stream bank stabilization. Both riparian plantings and stream bank stabilization along Sharps Branch are very important to improving the health of this impaired waterbody; therefore, any development located adjacent to Sharps Branch that has submitted plans since the passage of Ordinance 2010-68 (*Stormwater Management Ordinance*) have been required to make such improvements regardless of requesting a streamside buffer variance. The Buffer Management Plan for this property is consistent with, but not of higher quality than other properties developed along Sharps Branch since the passage of Ordinance 2010-68.

In summary, the variance request does not meet the standards in which a streamside buffer variance may be granted. The situation of the property owner is self-created based on the intensity of the development, the property is not unique relative to the buildable area of neighboring properties, the relocated stream channel reduces hardships to the property, and the reduction of the streamside buffer promotes a known cause of impairment because it reduces streamside and littoral vegetative cover.

Staff Recommended Motion for Variance Request

Move to disapprove the variance request to vary the required thirty (30) feet Streamside Zone 2 Buffer because: 1) The situation of the property owner is self-created based on the intensity of the development, 2) the property is not unique relative to the buildable area of neighboring properties and the relocated stream channel reduces hardships to the property, and 3) the reduction of the streamside buffer promotes a known cause of impairment because it reduces streamside and littoral vegetative cover.

theaddisongroup
DESIGN + DEVELOPMENT

STATEMENT OF HARDSHIP

2805 Lafayette Drive
Thompson's Station, TN 37179

DATE: JANUARY 18, 2013

RE: VILLAGE AT WEST MAIN – STORMWATER APPEALS BOARD VARIANCE REQUEST

PROPERTY: 1319 West Main Street

Crystal,
Thank you for your time and your assistance to date in this project. We are respectfully requesting a variance to the **"30' Zone 2 buffer" requirements**, more specifically **23-107 (2) Buffer Sections, (iv) Allowable Uses in Zone 2** which states:

"There shall be no other permanent Structures with the exception of Paths"

Our request is **to allow parking on a permeable paver surface in the areas within the Zone 2 Buffer (as shown on attached plans).** Because of the unique, linear shape of the property and how Sharp's Branch traverses the property in an atypical manner (2 abrupt turns and a 225 LF portion that runs parallel to the property line), it makes development of any kind on this site very difficult. As shown in our previously submitted Stormwater Management Plan as well as in the following SAB submittal documents, our intention is to still meet/exceed City Stormwater requirements as well as improve the undisturbed streamside buffer area (as shown in the Buffer Management Plan).

Our site is a vacant, undeveloped 1.45 acre site located on West Main Street just across the street from the Williamson County Administration Facility and adjacent to the medical office, 'Pro Health'. Currently there is an existing stream (Sharp's Branch) on site, an existing wet weather conveyance, groups of existing trees (some of which are located along the wet weather and stream banks), and an existing playground, which is located within the zone 1 and 2 buffer areas. The property owner has had both TDEC and City Engineering Staff make a determination that the wet weather conveyance area is true to its definition and can be filled in, and that the stream is in fact a stream. In late 2012, you helped us by making a site determination to verify the information above. Both letters and hydrologic determination have been provided as exhibits with this package.

As you are aware through our Rezoning process, our plans call for a 3 story, multi-family building for +/- 40 units, targeted to be in an affordable price range. Because of the price points and its proximity to downtown Franklin, we feel that this project fulfills a "public housing need", which has not yet been met for Downtown Franklin. We are currently working with the Planning Department to meet all planning requirements for the Development Plan to meet or exceed the requirements for multi-family development. Our current plans show **more than 40% of our site to be left natural and its original state**. We have provided an alternative site plan, which has also been presented to Planning staff in previous meetings. The alternative site plan proposed a crossing across Sharps Branch and proposed placing parking on the neighboring Franklin Housing Authority property (a partner in this project). Although the alternative was an allowable, 90 degree creek crossing and did not impose on buffer zones 1 or 2, it was determined by City Engineering and Planning Staff that this was a less desirable option. (We would like to point out that we saw this as a less than desirable option as well, and are in full agreement with City Staff).

Sharps Branch makes 2 abrupt 90 degree turns in a small area, then parallels the property line for a span of **+/- 225' (which is over 45% of the property's total length. And the property's width is only 125' wide).**

Exhibit 2

Because of the unique shape of the property and the unique creek alignment, development on this site is extremely difficult for any use (commercial, civic or residential). It is our goal to **maintain and improve the drainage conditions of the existing stream**, as well as **improve the stormwater filtration characteristics through BMP's**, as described in both the attached documents and the previously provided Stormwater Management Plan (CEC Inc). In addition, our goal is to **provide a 'cutting edge' multi-family development that serves a missing need for affordable rentals near our city's core**. We look for guidance and direction from both City Engineering Staff and the Stormwater Appeals Board to accomplish these goals.

Thank you so much for your time and we look forward to working with you on this exciting project.

Sincerely,

Daniel Woods, RLA
Chief Executive Officer,
The Addison Group

HISTORIC FRANKLIN TENNESSEE

Stormwater Appeals Board

Appeal & Variance Application

APPLICATION TO APPEAR BEFORE THE STORMWATER APPEALS BOARD

APPLICANT INFORMATION

APPLICANT/OWNER OR AGENT OF OWNER:
The Addison Group

OFFICE USE ONLY:
VARIANCE NUMBER:
DATE RECEIVED:

REPRESENTED BY: Daniel Woods

#01300, District: 09,
MAP/PARCEL NO. Map 078J, Group B.

DEVELOPMENT INFORMATION

PROPERTY ADDRESS:
1319 West Main Street
Franklin, Tennessee

ENGINEER CEC Inc (Matt Bryant, PE)
DEVELOPER Community Housing Partnership
PROPERTY OWNER Matt & Julie Spencer

PLEASE SELECT ONE OF THE FOLLOWING:

1. VARIANCE REQUEST – The applicant requests a variance from the requirements of the Stormwater Management Ordinance (Franklin Municipal Code Title 23). Please state the section of the code and the requested variance from that code:

We are requesting a variance to section **23-107 (2) Buffer Sections, (iv) Allowable Uses in Zone 2** which states *"There shall be no other permanent Structures with the exception of paths."* We respectfully request a variance to allow for COF required parking in a portion of the Zone 2 buffer in which the proposed parking is a traffic-bearing, proven permeable paver surface. See attached drawings indicating proposed impacted area within the Zone 2 buffer.

The applicant shall show the variance request is justified for the following reasons (check all that apply, and attach a letter to the City Engineer and the Stormwater Appeals Board which fully states the grounds for the request, and all of the facts upon which the applicant is relying):

X Strict compliance with the ordinance would result in practical difficulty.
Applicant must be able to show the following:
- X The problem is not self-created.
- X The situation of the landowner is due to unique conditions of the property.
- X Compliance with the strict letter of the restrictions governing physical requirements unreasonably prevent the owner from using the property for a permitted purpose or would render conformity with such restrictions unnecessarily burdensome.

X The project or activity serves a public need where no feasible alternative is available.

The project is for Repair and Maintenance of public improvements where avoidance and minimization of adverse impacts to wetlands and associated aquatic ecosystems have been addressed.

For Variance Request – Please return this completed application along with all items requested on the checklist.

Exhibit 3

Stormwater Appeals Board

Appeal & Variance Application

2. APPEAL – The applicant hereby appeals an adverse decision of the City Engineer/authorized designee. Please describe the adverse decision and justification for the appeal:

We are respectfully requesting a variance to the "30' Zone 2 buffer" requirements, to allow parking on a permeable paver surface. Because of the unique, linear shape of the property and how Sharp's Branch traverses the property in an atypical manner (2 abrupt turns and a portion that runs parallel to the property line), it makes development of any kind on this site very difficult. As shown in our stormwater management plan as well as in the following SAB submittal documents, our intention is to still meet/exceed City stormwater requirements as well as improve the undisturbed streamside buffer area (as shown in the Buffer Management Plan).

Fee Appeal Only – Please remit the completed application along with the filing fee of $750.00 made payable to the City of Franklin

Unless otherwise specified in the variance, an application for a Stormwater Permit shall be applied for and approved within one (1) year of the date of the variance approval, otherwise the variance shall become invalid. Permitted time frames do not change with successive owners.

All specifications, plans and other supporting documents hereto filed with me by Engineer are incorporated herein by reference and made a part of this application.

JULIE SPENCER
Print Property Owner Name

Julie Spencer
Signature of Property Owner

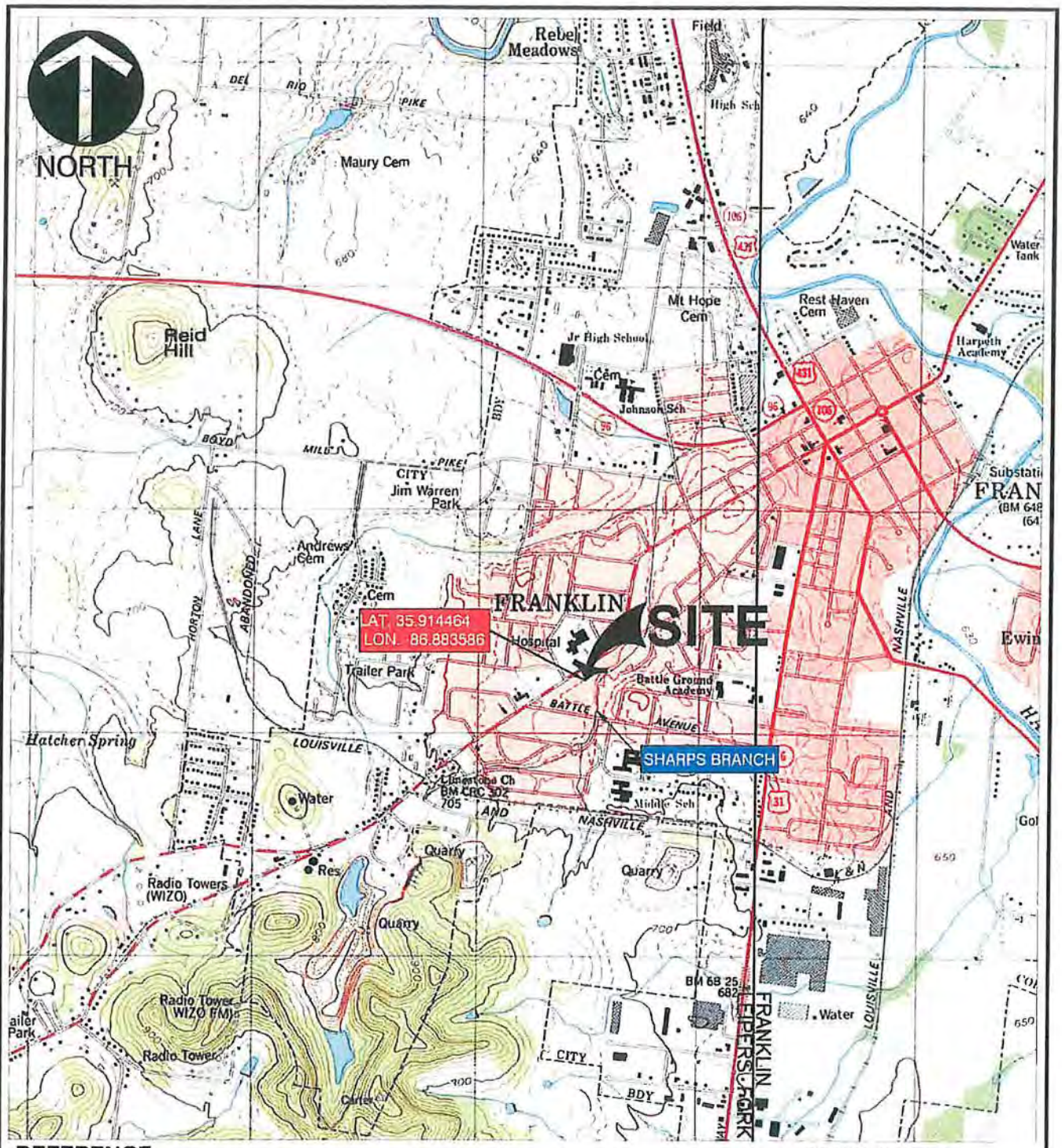
7 Foxvale Lane
Street Address

Nashville, TN 37211
City State Zip Code

615-504-6637
Phone Number Fax Number

mat@dxemed.com
Email Address

The Stormwater Appeals Board meets on the 3rd Tuesday of every month. Applications shall be submitted to the City Engineer's office within 30 days prior to the monthly scheduled meeting date.



REFERENCE

1. USGS 7.5 MIN. TOPOGRAPHIC QUADRANGLE LEIPERS FORK, TN AND FRANKLIN, TN DATED 1981.

SCALE IN FEET

0 2000' 4000'

Civil & Environmental Consultants, Inc.
405 Duke Drive, Suite 270 - Franklin, TN 37067
615-333-7797 · 800-763-2326
www.cecinc.com

WEST MAIN APTS
1319 WEST MAIN ST
CITY OF FRANKLIN
WILLIAMSON COUNTY, TENNESSEE

SITE LOCATION MAP

DRAWN BY:	MDK	CHECKED BY:	KU	APPROVED BY:	MDK	FIGURE NO.:	1
DATE:	01/17/13	DWG SCALE:	1"=2000'	PROJECT NO:	122-012		

Exhibit 4

REFERENCE

1. USGS 7.5 MIN. TOPOGRAPHIC QUADRANGLE LEIPERS FORK, TN DATED 2010.

SCALE IN FEET

0

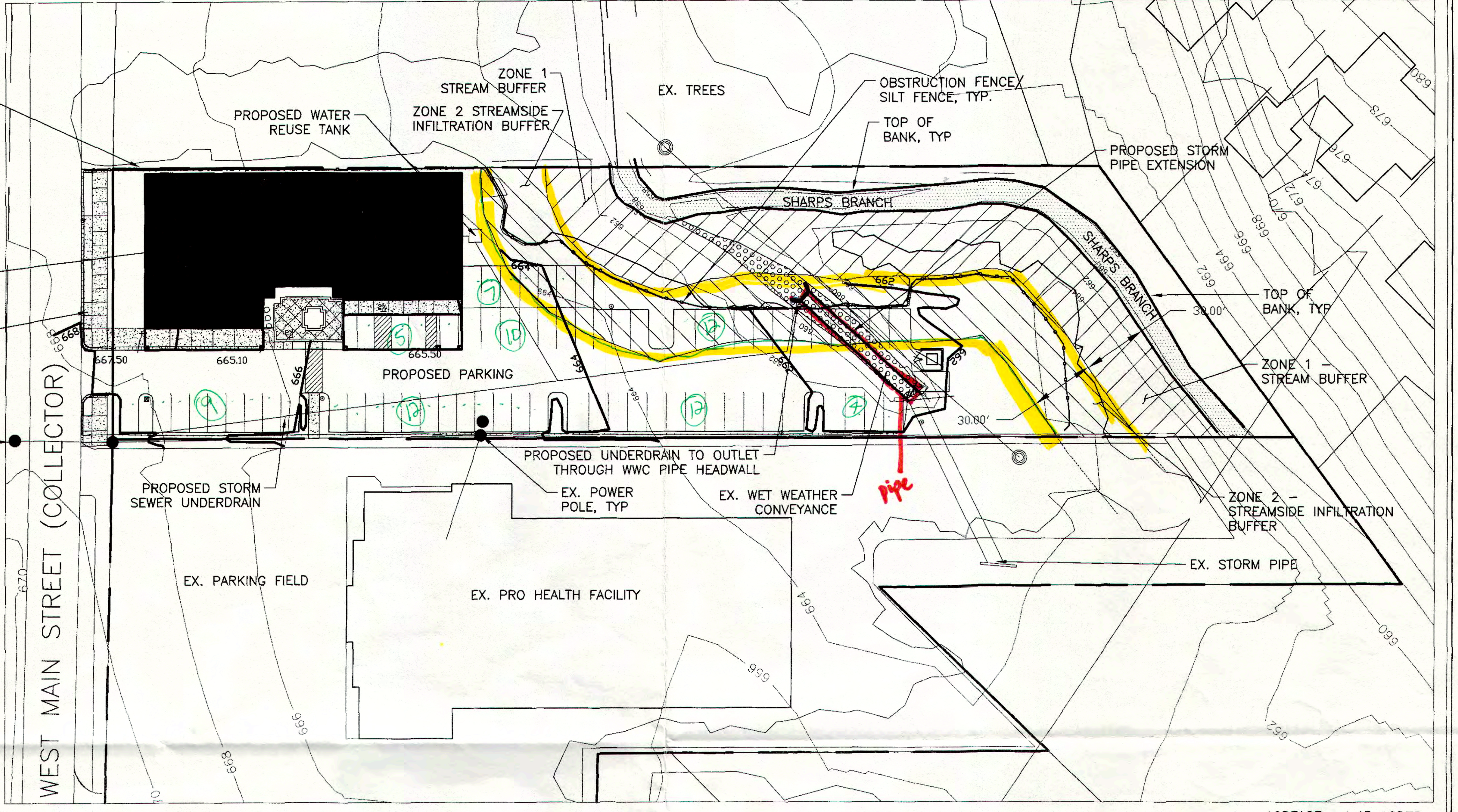
Civil & Environmental Consultants, Inc.
405 Duke Drive, Suite 270 - Franklin, TN 37067
615-333-7797 · 800-763-2326
www.cecinc.com

WEST MAIN APTS
1319 WEST MAIN ST
CITY OF FRANKLIN
WILLIAMSON COUNTY, TENNESSEE

SITE LOCATION MAP

DRAWN BY:	MDK	CHECKED BY:	KU	APPROVED BY:		FIGURE NO.:	2
DATE:	01/17/13	DWG SCALE:	1"=200'	PROJECT NO:	122-012		

Exhibit 5



ACREAGE: 1.45 ACRES
PARCEL #: 01300
DISTRICT: 09, MAP 078J,
GROUP: B

SITE DATA CHART
PROJECT NAME: VILLAGE AT WEST MAIN
PROJECT #: 2570
SUBDIVISION: N/A
LOT #: N/A
ADDRESS: 1319 WEST MAIN STREET
CITY: FRANKLIN
COUNTY: WILLIAMSON
STATE: TN
CIVIL DISTRICT: 9
PROPOSED # OF UNITS: 40 (3 STORIES TOTAL)
75% 1 BEDROOM (30 UNITS)
25% 2 BEDROOM (10 UNITS)

EXISTING ZONING AND CHARACTER AREA OVERLAY: OR
OTHER APPLICABLE OVERLAYS: CFCO-8
APPLICABLE DEVELOPMENT STANDARD: TRADITIONAL
ACREAGE OF SITE: 1.45 AC
SQUARE FOOTAGE OF SITE: 63,162 SF
MINIMUM REQ'D SETBACK LINES:
Min. Front Setback: 5-25' (See M.O.S. #1)
Min. Side Yard: 0'-5' minimum
Min. Rear Yard: 0' minimum

OPEN SPACE CHART

SITE ACREAGE:	1.45 AC (63,162 sf)
OPEN SPACE REQ'D:	5.0% (3,158 sf)
OPEN SPACE PROVIDED (formal):	6.4% (4,068 SF)

*Open Spaces 1 and 2 shall have benches and trash receptacles at a minimum. Final furnishing selections to be provided at site plan submittal level to city LA for review.

OWNER
MATHEW B SPENCER
P.O. BOX 969
FRANKLIN, TN 37065

PROJECT PARTNER 1
COMMUNITY HOUSING PARTNERSHIP OF WILLIAMSON COUNTY, TN
ADDRESS: 129 W. FOWLKES ST, STE. #128, FRANKLIN, TN 37064
PHONE: (615) 790-5556
CONTACT: STEVE MURRAY stephen@communityhousingpartnershipwc.org

PROJECT PARTNER 2
FRANKLIN HOUSING AUTHORITY
ADDRESS: 200 SPRING STREET, FRANKLIN, TN 37064
PHONE: (615) 794-1247
CONTACT: DERWIN JACKSON djackson@franklinhousingauthority.com

APPLICANT
THE ADDISON GROUP, LLC
2805 LAFAYETTE DR, THOMPSON'S STATION, TN 37179
PHONE: (615)440-7804
CONTACT: DANIEL WOODS, RLA, ULI daniel@theaddisongroupllc.com

BUILDING SQUARE FOOTAGE: +/- 20,000 SF
BUILDING HEIGHT: 3 STORIES
LANDSCAPE SURFACE RATIO: 0.30
MIN. LANDSCAPE SURFACE RATIO REQ'D: 0.10 min
INCOMPATIBLE-USE BUFER REQUIREMENT: N/A
MINIMUM PARKING LIMIT: SEE PARKING CHART (DP3.00)
MAXIMUM PARKING LIMIT: 120% OF MINIMUM
PARKING PROVIDED: SEE PARKING CHART (DP3.00)
RESIDENTIAL DENSITY: 40 Units total (1.45 ac) = 27.5 u/ac
TREE CANOPY: SEE TREE CANOPY CHART (DP2.00)
PARKLAND: TBD
OPEN SPACE: SEE CHART

LAND USE PLAN COMPLIANCE

The City's Central Franklin Area Plan has identified the West Main Corridor as a 'transitional area' and deemed appropriate for a mix of uses (see exhibit D of Central Franklin Area Plan).

The property at 1319 W Main St is located within the character area **CFCO-8.**

Land Use
Within the Land Use section of CFCO-8, it describes the use as follows:

"West Main Street has developed with smaller scale residential, commercial, civic and institutional uses. These existing uses are considered to be compatible with surrounding uses. Over time, additional redevelopment is likely to occur with similar types of uses. The eclectic mix of uses such as neighborhood retail and restaurants should remain, as they make this area unique to Franklin. ***Attached residential uses*** *and accessory dwellings* ***are appropriate in the area."***

Development Form
The intended development form within CFCO-8 is described as follows:
"The West Main corridor should follow standards for ***traditional areas****."*

"Development standards derived from the adopted Columbia Avenue Overlay District will further apply along the corridor. ***These standards will be unique to West Main****, as the area differs in character from Columbia Avenue."*
*"****Development standards provide for connectivity including sidewalks*** *. The* ***expansion and connection of sidewalks is encouraged for the area*** *, including already developed areas."*

*"****Open space will be minimal given the urban character of this area*** *. Established civic and institutional sites contribute to open space.* ***Future open space may include small greens or outdoor plaza spaces*** *."*

PROJECT IMPACT STATEMENTS

Water Utility District(s) and maximum capacity (in gpd) where site is located
The subject property is located within the City of Franklin Water District with an existing 8" watermain on the south side of West Main Street directly across the frontage of the property. An existing fire hydrant is located at the northwest corner of the subject parcel. This portion of the City of Franklin water district services many commercial and institutional facilities along this area of West Main Street. Historical data is not available for this portion of the C water system, thus, a pressure/flow test is being scheduled to be performed by the applicant (witnessed by the City Water Dept.) to verify pressure and flow capacities of the system. There is reason to believe that pressure and capacity will be adequate to service the proposed development.

Statement describing the anticipated impact on water, sewer, re-purified (re-use) water, and drainage facilities, included expected needs in total gallons per day
The proposed development consists of 40 apartment units, with 75% (30 units) being 1-bedroom units and 25% (1(units) being 2-bedroom units. Estimated water usage for a 1 bedroom apartment is 250 gpd and a 2 bedroom apartment is 300 gpd. Therefore, the total water usage anticipated (30 * 250 + 10 * 300 = 10,500 gpd) is 10,500 gp or approximately 263 gpd/unit. This is less than a typical single-family home in terms of water usage. The water an sanitary sewer systems have adequate capacity to handle these additional demands. This will be further verified during the course of final engineering design of the facility. No re-use water is proposed for this facility, other than t potential for rainwater harvesting from rooftop drainage that is being considered for irrigation purposes. The stormwater drainage facilities will consist of bio-retention areas, permeable pavers, and other items in the treatmen train to ensure that the post-developed runoff rates do not exceed the current conditions.

Statement describing the anticipated impact on streets shown in the Major Thoroughfare Plan, the Local Street Plan, or the Bike Pedestrian Plan
The subject property is located on West Main Street (SR 246)which is considered a Minor Arterial Road by the City' designation operating at a Level Of Service (LOS) D currently, which is defined as "acceptable". There are future plans to widen this road to 3 lanes, but not until 2025. The City's Local Street Plan indicates West Main Street is an existing transportation corridor. It is also considered a Pedestrian/Bike Greenway Route according to City informati Currently, West Main Street does not have any sidewalks and has open channel drainage ditches on either side in this area. The proposed development is going to enclose this open ditch and install sidewalks along the property frontage which will improve both pedestrian and vehicular safety in the area. The proposed development is not anticipated to have a significant impact on traffic counts in this area.

Statement describing the anticipated impact on police, fire, solid waste, and public recreational facilities
The proposed development consists of 40 apartment units, with 75% (30 units) being 1-bedroom units and 25% (1(units) being 2-bedroom units. With this number of units/bedrooms, it is not anticipated that a major impact will be generated for police, fire, and other safety personnel. The project is located along a major road which provides goo ingress/egress to the facility and is close in proximity to the Police Station and a Fire Station. There will be a centra solid waste/dumpster enclosure to maximize the efficiency of collecting solid waste generated by the facility, and th small increase in the number of residents that utilize public recreational facilities will not pose an undue burden.

Static and residual pressures at nearest fire hydrant
The subject property is located within the City of Franklin Water District with an existing 8" watermain on the south side of West Main Street directly across the frontage of the property. An existing fire hydrant is located at the northwest corner of the subject parcel. This portion of the City of Franklin water district services many commercial and institutional facilities along this area of West Main Street. Historical data is not available for this portion of the C water system, thus, a pressure/flow test is being scheduled to be performed by the applicant (witnessed by the City Water Dept.) to verify pressure and flow capacities of the system. There is reason to believe that pressure and capacity will be adequate to service the proposed development.

Affected school districts and projected impacts on student population resulting from the chance (categorized by elementary, middle, and high school impacts)
The proposed development consists of 40 apartment units, with 75% (30 units) being 1-bedroom units and 25% (1(units) being 2-bedroom units. With this number of units/bedrooms, it is not anticipated that a major impact will be generated for the local schools. The projected residents for this development will be single young professional and retirees looking to downsize from larger houses. Given that only 10 units will have the opportunity for a second

PROPOSED SPOT ELEV.	XX.XX'
*EXISTING SPOT ELEV.	(XX.XX)'
*SILT FENCE	
*TREE PROTECTION/ OBSTRUCTION FENCE	

*PLACE ALL OBSTRUCTION AND SILT FENCE OUTSIDE OF ZONE 1 BUFFER, TREE PROTECTION 2' OUTSIDE BUFFER, SILT FENCE 4' OUTSIDE ZONE 1 BUFFER.

EROSION CONTROL NOTES
Stormwater Erosion Prevention and Sediment Control Requirements:
- Erosion and sediment control measures shall be designed to control the rainfall and runoff from a 2 year, 24 hour storm, as a minimum.
- Erosion prevention and sediment controls must be inspected once a week and 24 hours before a rain event after a.25 inch rain event and documented on the inspection site checklist.
- Sediment that has escaped the construction site and has collected in the street or drainage structures must immediately be physically removed.
- Stabilization measures must be performed within seven (7) days in portions of the site where construction activities have temporarily or permanently ceased, and within fifteen (15) days after final grading. This is a cover crop with at least 75 % coverage.
- During non-germinating periods, mulch must be applied at the specified rates. Temporary Stabilization & Permanent Stabilization
- Straw mulch must be applied at 3.0 tons per acre.
- Straw mulch with mulch control netting or erosion control blankets must be installed on all slopes 3:1 and steeper.'
- Straw mulch shall be applied in long strands, not chopped or finely broken.
- Excavated topsoil to be reused must be stockpiled and encircled with silt fencing. Stockpile heights must not exceed 35 feet. Stockpile slopes must be 2:1 or flatter. Stockpiles which have not been used for 14 calendar days shall be stabilized through the application of sod, seed and anchored straw mulch, or other approved stabilization measures.
- Off-site spoil or borrow areas must have approved sediment control plans.
  Immediately upon discovering unforeseen circumstances posing the potential for accelerated erosion and/or sediment pollution, the operator shall implement appropriate best management practices to eliminate the potential for accelerated erosion and/or sediment pollution.

SCALE: 1" = 40'

0' 20' 40' 60' 120'

GRADING, DRAINAGE, AND EROSION CONTROL PLAN

Civil & Environmental Consultants, Inc.
theaddisongroup
DESIGN + DEVELOPMENT
dwoods@addison-group.com
Office 615.440.7854 - www.addison-group.com

VILLAGE AT WEST MAIN
STORMWATER APPEALS BOARD SUBMITTAL
1319 WEST MAIN STREET
FRANKLIN, TENNESSEE

C.O.F. PROJ #: 2570

PREPARED FOR:
chp community housing partnership of williamson county
FRANKLIN HOUSING AUTHORITY

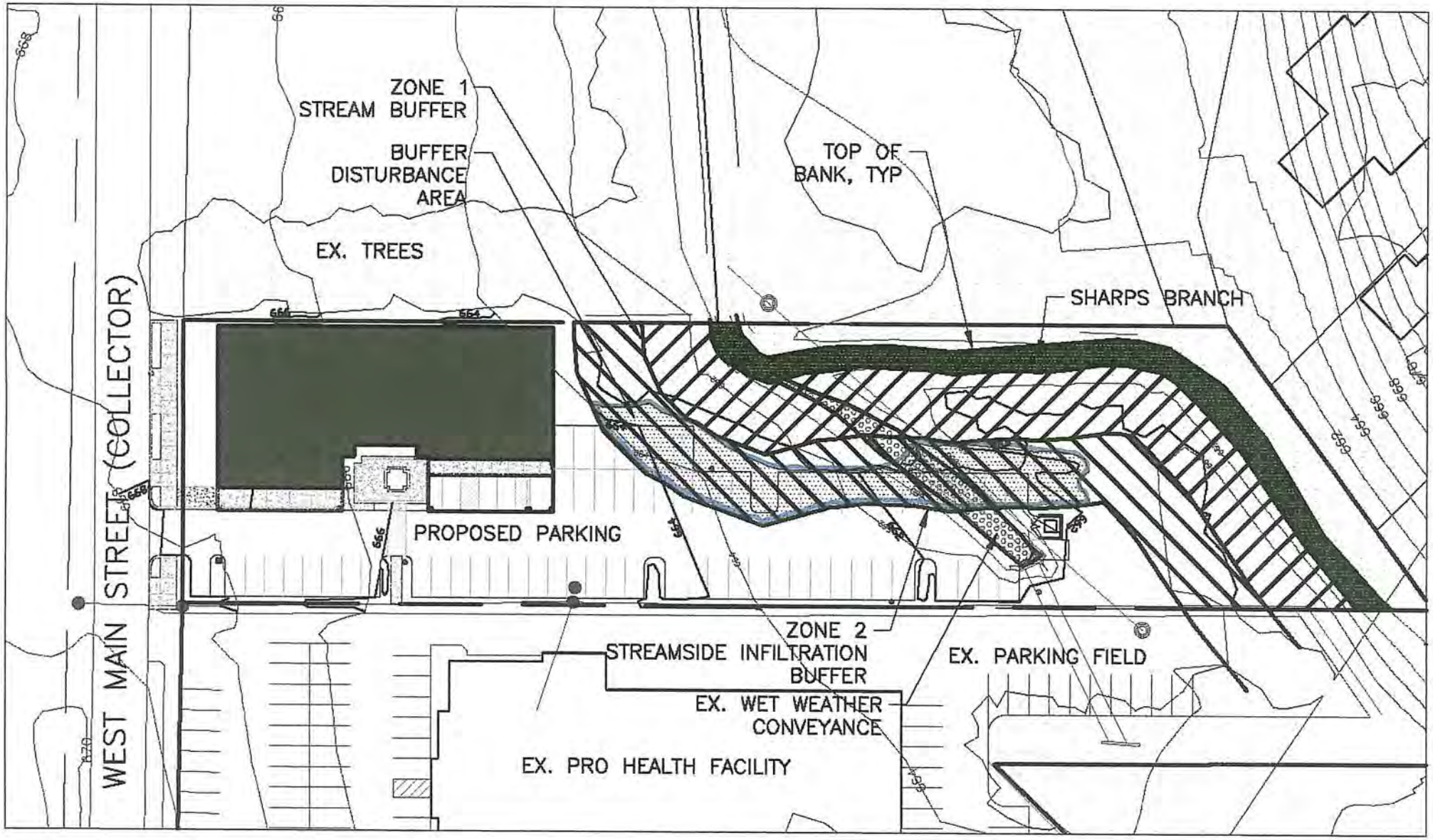
MATTHEW W. BRENT
REGISTERED ENGINEER
NO. 00110993
STATE OF TENNESSEE
1-18-13

DATE: 1.18.13

REVISIONS:

SHEET NO.
EXH 1.0

Exhibit 6



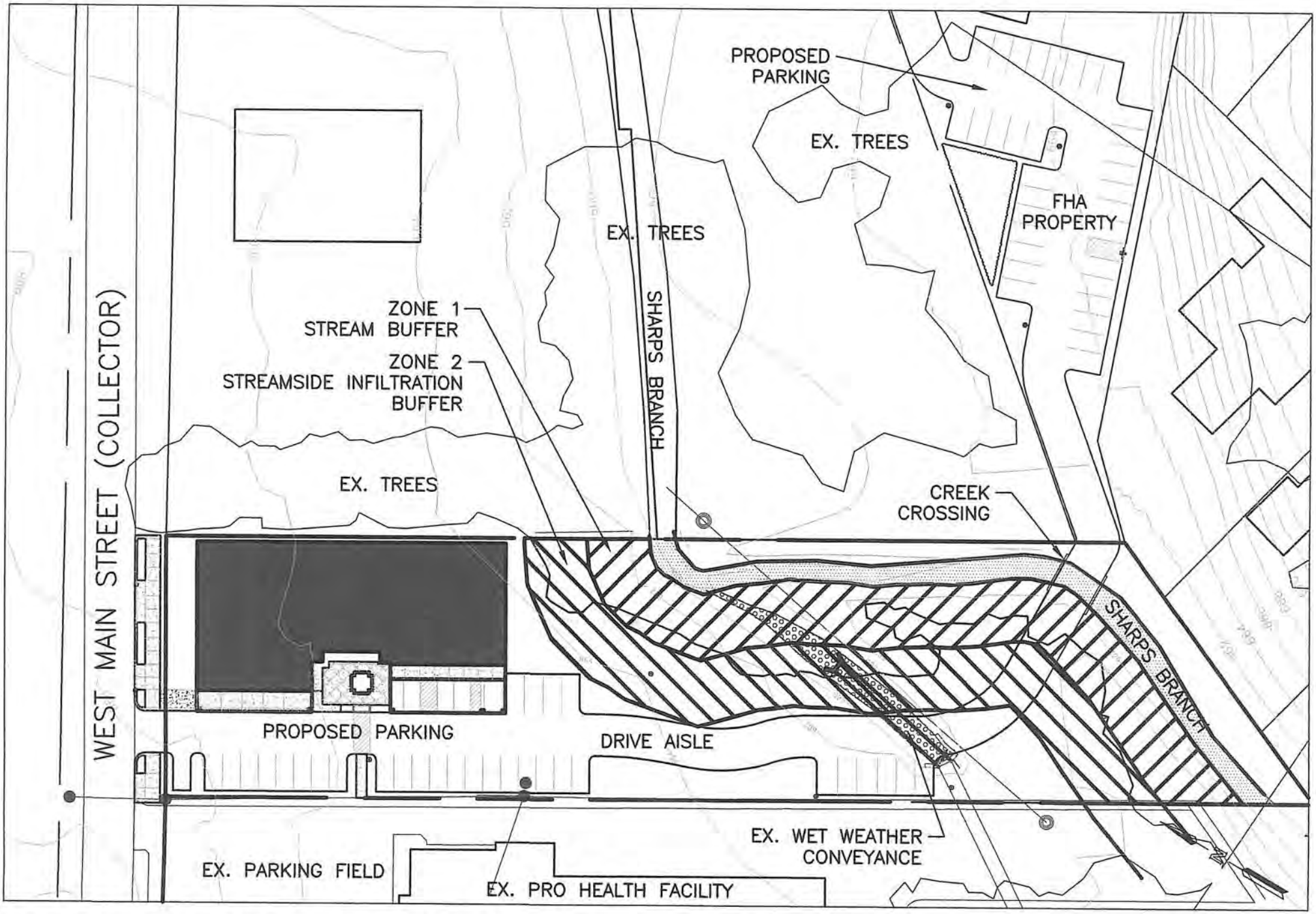
SCALE: 1" = 60'

BUFFER DISTURBANCE EXHIBIT

0' 30' 60' 90' 180'

EXH 2.0

Exhibit 7



ALTERNATIVE PLAN EXHIBIT

0' 30' 60' 90' 180'

SCALE: 1" = 60'

EXH 3.0

Exhibit 8

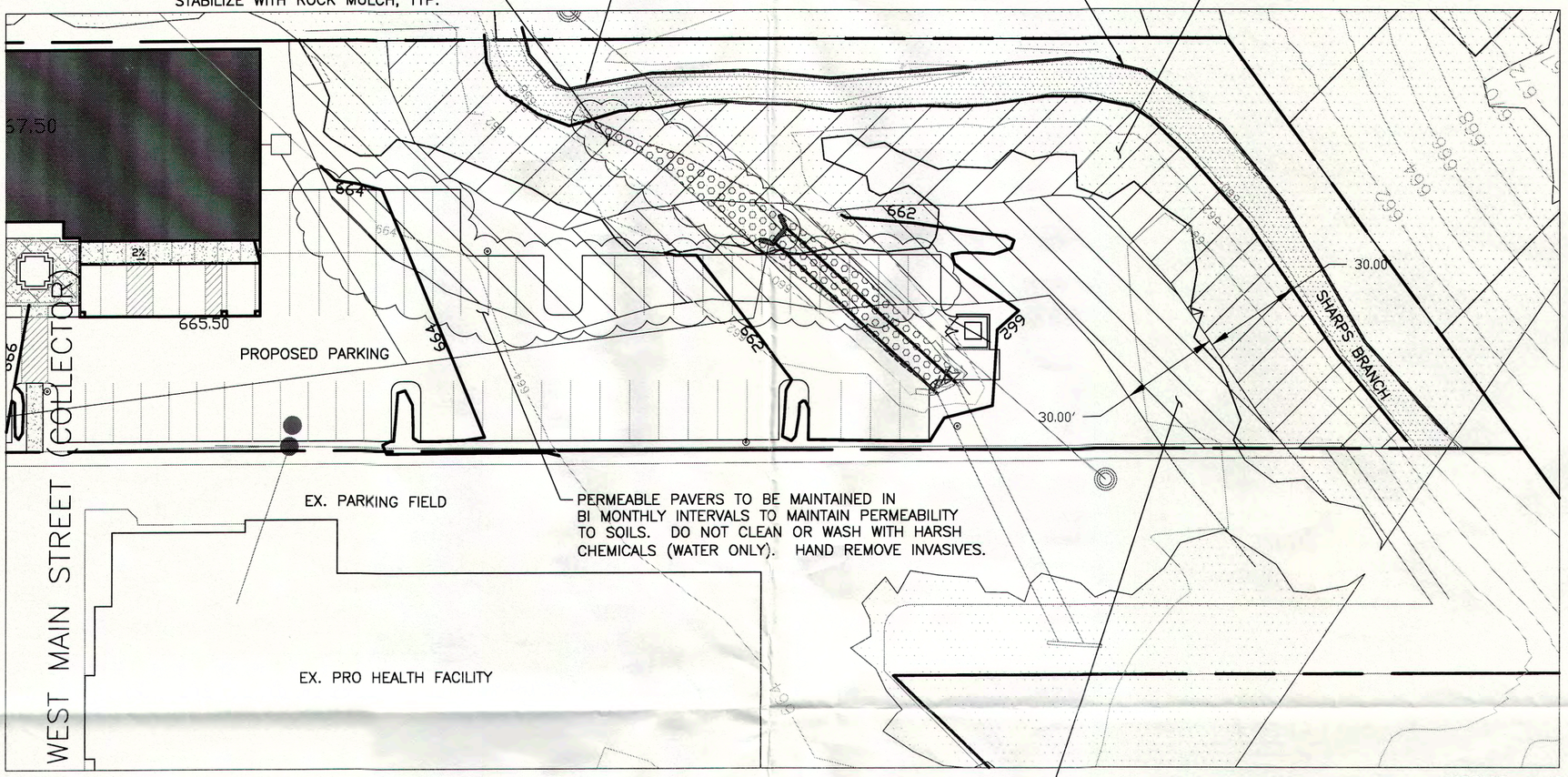
*ABRUPT CHANGES IN FLOW (I.E. 90d turns)

PROVIDE AQUATIC PLANTINGS (ITEA, MISCANTHUS, ETC) AT STORMPIPE OUTLET & EX. WET WEATHER CONVEYANCE. STABILIZE WITH ROCK MULCH, TYP.

STABILIZE STREAM BANKS IN LOCATIONS WHERE BANK SHOWS SIGNS OF EX. OR FUTURE EROSION. SITE VISIT WITH CITY ENGINEER TO DETERMINE LOCATIONS THAT NEED ADDRESSING

ZONE 1 BUFFER

LEAVE EXISTING STREAM AND ZONE 1 BUFFER NATURAL IN ALL CASES UNLESS OTHERWISE INSTRUCTED BY CITY ENGINEER.



PERMEABLE PAVERS TO BE MAINTAINED IN BI MONTHLY INTERVALS TO MAINTAIN PERMEABILITY TO SOILS. DO NOT CLEAN OR WASH WITH HARSH CHEMICALS (WATER ONLY). HAND REMOVE INVASIVES.

ZONE 2 BUFFER

ZONE 2 BUFFER TO BE PLANTED WITH BIO PLANTINGS THROUGHOUT ZONE 2 AREA, CONT. PLANTINGS TO BE A MIXTURE OF SHRUBS, GRASS, AND TREES. PLANTINGS MAY INCLUDE CYPRESS TREES, RIVER BIRCH, ITEA, MISCANTHUS, INKBERRY, ETC. FINAL MATERIAL PLANT SELECTION, SIZE, AND SPACING TO BE DETERMINED AT CONSTRUCTION DOCUMENT SUBMITTAL STAGE.

ACREAGE: 1.45 ACRES
PARCEL #: 01300
DISTRICT: 09, MAP 078J,
GROUP: B

SITE DATA CHART
PROJECT NAME: VILLAGE AT WEST MAIN
PROJECT #: 2570
SUBDIVISION: N/A
LOT #: N/A
ADDRESS: 1319 WEST MAIN STREET
CITY: FRANKLIN
COUNTY: WILLIAMSON
STATE: TN
CIVIL DISTRICT: 9
PROPOSED # OF UNITS: 40 (3 STORIES TOTAL)
75% 1 BEDROOM (30 UNITS)
25% 2 BEDROOM (10 UNITS)

EXISTING ZONING AND CHARACTER AREA OVERLAY: OR
OTHER APPLICABLE OVERLAYS: CFCO-8
APPLICABLE DEVELOPMENT STANDARD: TRADITIONAL
ACREAGE OF SITE: 1.45 AC
SQUARE FOOTAGE OF SITE: 63,162 SF
MINIMUM REQ'D SETBACK LINES:
Min. Front Setback: 5-25' (See M.O.S. #1)
Min. Side Yard: 0'-5' minimum
Min. Rear Yard: 0' minimum

OPEN SPACE CHART

SITE ACREAGE:	1.45 AC (63,162 sf)
OPEN SPACE REQ'D:	5.0% (3,158 sf)
OPEN SPACE PROVIDED (formal):	6.4% (4,068 SF)

*Open Spaces 1 and 2 shall have benches and trash receptacles at a minimum. Final furnishing selections to be provided at site plan submittal level to city LA for review.

OWNER
MATHEW B SPENCER
P.O. BOX 969
FRANKLIN, TN 37065

PROJECT PARTNER 1
COMMUNITY HOUSING PARTNERSHIP OF WILLIAMSON COUNTY, TN
ADDRESS: 129 W. FOWLKES ST, STE. #128, FRANKLIN, TN 37064
PHONE: (615) 790-5556
CONTACT: STEVE MURRAY stephen@communityhousingpartnershipwc.org

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FRANKLIN HOUSING AUTHORITY
ADDRESS: 200 SPRING STREET, FRANKLIN, TN 37064
PHONE: (615) 794-1247
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APPLICANT
THE ADDISON GROUP, LLC
2805 LAFAYETTE DR, THOMPSON'S STATION, TN 37179
PHONE: (615)440-7804
CONTACT: DANIEL WOODS, RLA, ULI daniel@theaddisongroupllc.com

BUILDING SQUARE FOOTAGE: +/- 20,000 SF
BUILDING HEIGHT: 3 STORIES
LANDSCAPE SURFACE RATIO: 0.30
MIN. LANDSCAPE SURFACE RATIO REQ'D: 0.10 min
INCOMPATIBLE-USE BUFER REQUIREMENT: N/A
MINIMUM PARKING LIMIT: SEE PARKING CHART (DP3.00)
MAXIMUM PARKING LIMIT: 120% OF MINIMUM
PARKING PROVIDED: SEE PARKING CHART (DP3.00)
RESIDENTIAL DENSITY: 40 Units total (1.45 ac) = 27.5 u/ac
TREE CANOPY: SEE TREE CANOPY CHART (DP2.00)
PARKLAND: TBD
OPEN SPACE: SEE CHART

MAINTENANCE

*NOTE: OVERALL SITE INCLUDING BUFFER, STREAM, DRAINAGE STRUCTURES, AND EXISTING AND PLANTED VEGETATION IS THE RESPONSIBILITY OF THE DEVELOPER, A SINGLE ENTITY. ONCE THE MULTI-FAMILY MANAGEMENT ASSOCIATION IS FORMED, DEVELOPER MUST FULLY DIVULGE AND MAKE ASSOCIATION AWARE OF THE PERMANENT RESPONSIBILITY OF ALL ENTITIES DESCRIBED ABOVE AND AS DICTATED BY CITY ENGINEER AND STORMWATER APPEALS BOARD.

ZONE 1
STREAM AND STREAM BANKS - MONITOR STREAM EVERY 2 MONTHS, REMOVE ANY OBSTRUCTIONS AND/OR DEBRIS. IF BANKS SHOW SIGNS OF EROSION, CONTACT CITY ENGINEER TO SCHEDULE A SITE VISIT TO DETERMINE IF ADDITIONAL RESTORATION EFFORTS NEED TO BE ENGAGED.

NO USE OF HEAVY EQUIPMENT OF ANY KIND.

ZONE 2

BUFFER TREES (REFORESTATION) - MONITOR TREES MONTHLY FOR 12 MONTHS. REMOVE DEAD WOOD. MONITOR OVERHEALTH OF TREES AND REPLACE PER WARRANTY AS NECESSARY.

BIOSWALE PLANTINGS - MONITOR PLANTINGS MONTHLY TO DETERMINE OVERALL HEALTH. REPLACE PER WARRANTY AS NECESSARY. ROCK MULCH SHOULD REMAIN IN PLACE TO MAINTAIN STABILITY OF SWALE. IF AREA SHOWS SIGNS OF EROSION, REPLACE ROCK MULCH AS NECESSARY.

STORMPIPE - MONITOR ALL CLEANOUTS AND STORMPIPE INLETS AND OUTLETS FOR OBSTRUCTIONS/DEBRIS MONTHLY. REMOVE DEBRIS AND OBSTRUCTIONS AS NECESSARY.

NO USE OF HEAVY EQUIPMENT OF ANY KIND.

EROSION CONTROL NOTES
Stormwater Erosion Prevention and Sediment Control Requirements:
- Erosion and sediment control measures shall be designed to control the rainfall and runoff from a 2 year, 24 hour storm, as a minimum.
- Erosion prevention and sediment controls must be inspected once a week and 24 hours before a rain event after a.25 inch rain event and documented on the inspection site checklist.
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- Immediately upon discovering unforeseen circumstances posing the potential for accelerated erosion and/or sediment pollution, the operator shall implement appropriate best management practices to eliminate the potential for accelerated erosion and/or sediment pollution.

SCALE: 1" = 30'

0' 15' 30' 45' 90'

BUFFER MANAGEMENT PLAN

theaddisongroup
PLANNING - DEVELOPMENT
dwoods@addison-group.com
Office 615.440.7804 - www.addison-group.com

VILLAGE AT WEST MAIN
STORMWATER APPEALS BOARD SUBMITTAL
1319 WEST MAIN STREET
FRANKLIN, TENNESSEE

SITE PROJ #: 2570

PREPARED FOR:
community housing partnership of williamson county
FRANKLIN HOUSING AUTHORITY

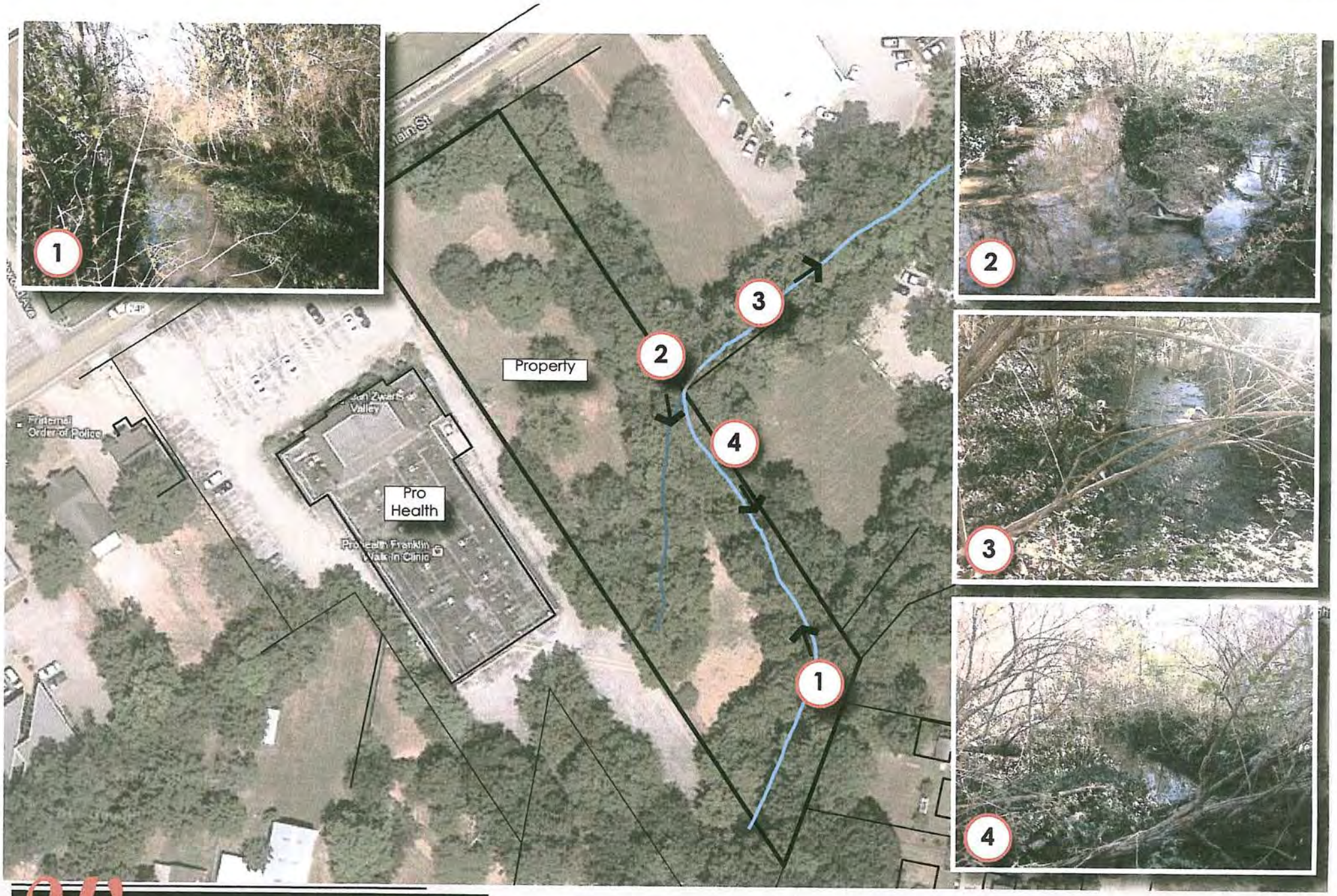
DANIEL WOODS REGISTERED LANDSCAPE ARCHITECT
01.18.13

DATE: 01.18.13

REVISIONS:

SHEET NO.
EXH 4.0

Exhibit 9



West Main

1319 West Main
Franklin, Tennessee

IMAGES

01.18.13

Exhibit 10

PRELIMINARY STORMWATER MANAGEMENT PLAN

For

West Main Apartment Complex
1319 West Main Street
City of Franklin, Williamson County
City of Franklin Project # TBD

Applicant:

The Addison Group, LLC
142 2nd Ave North
Franklin, Tennessee 37064

Engineering Firm:

Civil & Environmental Consultants, Inc.
405 Duke Drive, Suite 270
Franklin, Tennessee 37067
(615) 333-7797

Matthew W. Bryant, P.E.
Principal/Engineer of Record

12-05-12
Date

INTRODUCTION

The applicant is proposing to construct one apartment building, landscape areas and common area, parking, and associated appurtenances on a 1.45 acre parcel of land located at 1319 West Main Street in the City of Franklin, Williamson County, Tennessee. This project depends on the re-zoning of the parcel to provide affordable quality housing for City of Franklin residents.

The Sharps Creek traverses the southern end of the property flowing from West to East with a short jog along the eastern boundary until it leaves the property. A wet weather conveyance (WWC) also exists within the parcel that begins at the outlet of an existing pipe and ends at its confluence with Sharps Creek right where the stream leaves the property. A Hydrologic Determination of this WWC was performed on 8/1/12 by Crystal Bishop, the Stormwater Coordinator for the City of Franklin. In addition, TDEC had performed a Hydrologic Determination of both the WWC and the stream as documented in a letter dated 9/30/08 which concurrently identifies the depressed area as a WWC until it reaches the identified stream. The letter also states that alterations to the WWC may be performed without application or notification to TDEC as long as they conform to the provisions of the ***Alteration of Wet Weather Conveyances***. The City of Franklin Engineering Department accepted TDEC's determination in a letter dated 10/13/08. Any proposed grading within this WWC will meet TDEC's ***Alteration of Wet Weather Conveyances*** as well as the rules and regulations of the City.

The current FEMA Floodplain/Floodway boundaries, which match the City of Franklin's FFO/FWO Zoning District Boundaries, are depicted by the FEMA FIRM Map No. 47187C0192F, dated 9/29/2006. The subject parcel does not fall within a FEMA floodplain area with the closest floodplain delineation 700 ft downstream of the eastern property line. In addition, there is not a Letter of Map Revisions (LOMR) that impacts this site. The FEMA Firmette Map is included in the attached Background Data Exhibit.

A stream buffer from top of bank of Sharps Creek has also been provided in accordance with COF regulations, and as such, no clearing, grading, or disturbance of any kind is proposed in this buffer area. The tributary area of this stream at a point within the subject property is 0.83 square

miles which is less than 1.0 square mile and therefore only requires a 30 ft minimum Zone 1 buffer. The TN Streamstats report showing this drainage area is included in the attached Background Data Exhibit. The proposed stream buffer will include a 30 ft Zone 1 buffer and an additional 30 ft Zone 2 buffer in all areas feasible due to site required parking improvements. A streamside buffer is not required for the WWC based on a meeting with City, but the functionality of the conveyance will be preserved. A preliminary meeting with the City was conducted by others to assist in this phase of planning.

Runoff from the proposed building is proposed to be captured in an underground storage tank (design/spec not developed at this stage) to be used as irrigation water for on-site landscaped areas. An overflow pipe is proposed to connect to the permeable pavers underdrain system in the event that the tank is full at the time of a rainfall event. Final design of this system will be provided with the complete construction documents submittal. A potential "credit" may be achieved in the overall stormwater detention volumes based on capturing this roof runoff, but at this time, the entire site meets the COF requirements without assuming any credit for the Irrigation Re-Use Stormwater Storage Tank.

Section 1 – Water Quality

A treatment train is proposed to address the issue of water quality. Given the sensitive nature of the stream along the boundary of the site, several techniques have been incorporated to attempt to allow subsurface measures to attenuate runoff, as well as utilize voids in aggregate to treat water quality. Permeable pavers are being proposed in the parking lot for the site. Within the parking lot, median islands will be depressed bio-retention areas that will collect runoff from the site as well as any subsurface water from the permeable pavers and convey this water via an underdrain system to a controlled outlet into the existing WWC. Water will permeate through the pavers into the 40% void space of the minimum 12" aggregate sub-base where treated runoff that does not infiltrate will slowly travel through the aggregate and collect in the underdrain system. The underdrain system will be wrapped in geotextile to prevent any sediment transport in the system and further improve water quality. The underdrain system outlet into the WWC will be above normal high water marks and will have sufficient outlet protection to reduce discharge

velocities below erosive limits. This treatment train incorporates several different techniques to convey the runoff from the adjacent property to the west as well as onsite stormwater runoff to the southern end of the site, utilizing void spaces in the underground aggregate to assist in treating water quality.

Section 2 – Sensitive Natural Areas

There are several sensitive natural areas on the site that have been taken into consideration with the proposed engineering design. As previously mentioned, a stream exists along the southern property line as well as a wet weather conveyance traversing the lower end of the property. A no disturbance stream buffer has been provided for the stream with adequate water quality treatment onsite. There will be no thermal impacts to the stream due to the proposed design of the permeable pavers and subsurface drainage through aggregate. The WWC is being avoided to the maximum extent feasible to meet parking requirements while still maintaining functionality. Tree canopy has also been preserved as much as possible and in addition, the existing playground area open space located within the stream buffer will be re-forested with native vegetation and trees. A buffer management plan will be submitted to the City for approval. No wetlands exist on the property at this time based on previous investigations by TDEC and the City and information provided by The Addison Group. The overall site watershed is contained to the subject property (1.45 acres) and the adjacent property to the West that will share parking. There is only a minimal amount of off-site drainage from the west that will traverse the existing WWC and outlet into the stream where it leaves the eastern boundary of the subject property. No other off-site drainage enters the subject property.

Section 3 – Better Site Design

Given the geometrical and topographical constraints on the subject site, CEC has proposed to incorporate several storm water techniques into the design to utilize subsurface infiltration to attenuate on-site runoff. Both the Parking lot to be permeable pavers and median islands to be bio-retention areas have been incorporated to work together to treat both water quality, as well as water quantity. Disconnection from roof drains is also proposed to store stormwater runoff from the building in an underground irrigation re-use storage tank.

Section 4 – Detention Study

To meet the detention and water quality requirements for the City of Franklin, CEC has completed a stormwater analysis of the subject property and the adjacent property to the west where parking will be shared and slight improvements are proposed. The following is an explanation of the assumptions and methodology used in the analysis of this study area.

The SCS method was used to generate the runoff hydrographs for the stormwater quantity analysis. Rainfall information was taken from Franklin's Stormwater Management Manual where the provided NOAA rainfall depths were utilized. The 2-, 10-, 25-, 50-, and 100-year return frequencies were evaluated.

Storm water attenuation for this site will be accomplished through the use of multiple applications. Permeable pavers for parking spaces, coupled with bio-retention areas proposed in the median islands will collect stormwater and promote infiltration while excess runoff permeates through the aggregate sub-base and collects in an underdrain system that conveys this stormwater to the WWC.

A pre-developed runoff hydrograph was developed based on Web Soil Survey existing Hydrologic Soil groups B, C, and D. A Curve Number (CN) of 85 was developed based on the existing soils and ground cover. A time of concentration ($T_{c)}$ of 10 minutes was calculated using the TR-55 Segmental Approach and a pre-developed hydrograph was generated to determine the existing flows. These calculations and reports can be viewed in the Pre-Developed Conditions attached exhibit.

A post-developed hydrograph was generated for the study area taking into consideration existing areas to remain as well as the proposed building, permeable paver parking lot, bio-retention areas and street front grass. This generated a post-developed composite CN for the study area equal to the pre-developed CN of 85. The contributing factors to this post –developed CN were the permeable pavers proposed for the parking lot assuming a CN of 60 and bio-retention areas assuming a CN of 50. A time of concentration, T_c of 10 minutes was conservatively used in the post condition although drainage through the aggregate sub-base will significantly reduce this

time for all site runoff to contribute to site discharge. No infiltration was considered in the analysis as exfiltration as conservative accounting for infiltration was included in CNs for the permeable pavers and bio-retention areas. Offsite stormwater that discharges from outside of subject property and adjacent parcel was not analyzed as part of the study area. A summary of all discharge rates generated from within the study area using HydroCAD are listed in the table below and are less than or equal to pre-developed conditions:

Underdrain System Discharge Rates		
Design Year	Pre Rate (cfs)	Post Rate (cfs)
2	11.7	11.7
10	18.26	18.26
25	22.24	22.24
50	25.38	25.38
100	28.6	28.6

All discharge into the WWC will be conveyed by an internal storm underdrain system wrapped in geotextile with maintenance ports to prevent backwater in the system. The underdrain system to convey the stormwater runoff will be sized for the 10 year 24 hour storm peak runoff for the study area. This internal storm underdrain system design will be submitted with final engineering construction documents. The 100 year 24 hour storm event overland flow path in the post-developed condition will match that of pre-developed condition with no increase in discharge rate. These HydroCAD reports can be viewed in the Post-Developed Conditions attached exhibit.

Section 5 – Post Construction Stormwater Management

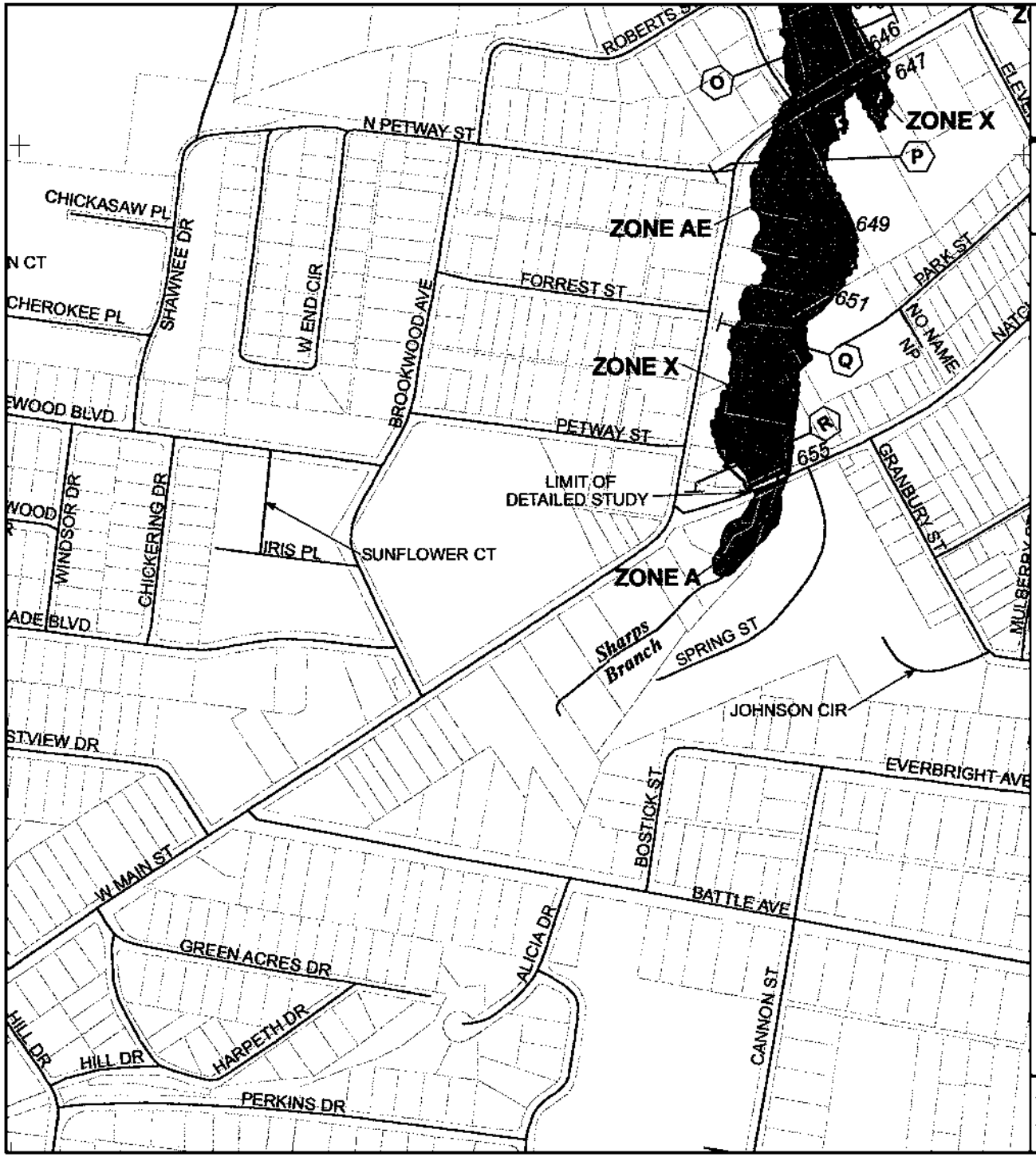
The technologies proposed for stormwater management provide for permanent post construction BMP applications. The permeable pavers and bio-retention areas provide dual purposes for treating water quality, as well as water quantity after the final construction has been completed. With no increase in the composite CN for the study area, this correlates to no net increase in runoff from the subject property from pre-developed to post-developed conditions.

Section 6 – Conclusions

The stormwater techniques proposed for this project incorporate the treatment train concept, promote permeable paver technology, and utilize bio-retention in available areas. These systems treat both the quantity and quality of water before it is released into the existing WWC onsite. The space constraints of the site have invoked the use of the proven permeable paver system to attain post-development runoff that matches pre-development conditions while treating water quality in the aggregate sub-base. A final water quality report using the City of Franklin program as well as details for the configuration of the underdrain system are being completed, and will be provided as part of the site plan approval process.

EXHIBITS AND CALCULATIONS

BACKGROUND DATA



MAP SCALE 1" = 500'

250 0 250 500 750 1,000 FEET

150 0 150 300 M

PANEL 0192F

FIRM

FLOOD INSURANCE RATE MAP

WILLIAMSON COUNTY, TENNESSEE

AND INCORPORATED AREAS

PANEL 192 OF 485

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
FRANKLIN, CITY OF	470206	0192	F
WILLIAMSON COUNTY	470204	0192	F

BEST AVAILABLE COPY AT THIS TIME

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER 47187C0192F

MAP REVISED SEPTEMBER 29, 2006

Federal Emergency Management Agency

USGS Tennessee StreamStats

Streamstats Ungaged Site Report

Date: Fri Oct 5 2012 14:37:56 Mountain Daylight Time
Site Location: Tennessee
NAD27 Latitude: 35.9142 (35 54 51)
NAD27 Longitude: -86.8832 (-86 52 59)
NAD83 Latitude: 35.9143 (35 54 51)
NAD83 Longitude: -86.8832 (-86 52 59)
Drainage Area: 0.83 mi2

Low Flow Region Basin Characteristics

100% Low-Flow Central and East (0.83 mi2)

Parameter	Value	Regression Equation Valid Range	
		Min	Max
Drainage Area (square miles)	0.83 (below min value 2.68)	2.68	2557
Recession Index (days per log cycle)	35	32	175

Warning: Some parameters are outside the suggested range. Estimates will be extrapolations with unknown errors.

Peak Flow Region Basin Characteristics

Area that contributes flow to a point on a stream in square miles=0.83

100% MultiVariable Area 3 CDA LT 30.2 (0.83 mi2)

Parameter	Value	Regression Equation Valid Range	
		Min	Max
Contributing Drainage Area (square miles)	0.83	0.173	30.2
Stream Slope 10 and 85 Method (feet per mi)	119.23	2.12	132

Low Flow Region Streamflow Statistics

Statistic	Flow (ft^3/s)	Estimation Error (percent)	Equivalent years of record	90-Percent Prediction Interval	
				Minimum	Maximum
M3D2Y	0.0125				
M3D10Y	0.00358				
M3D20Y	0.00244				
M7D10Y	0.00439				

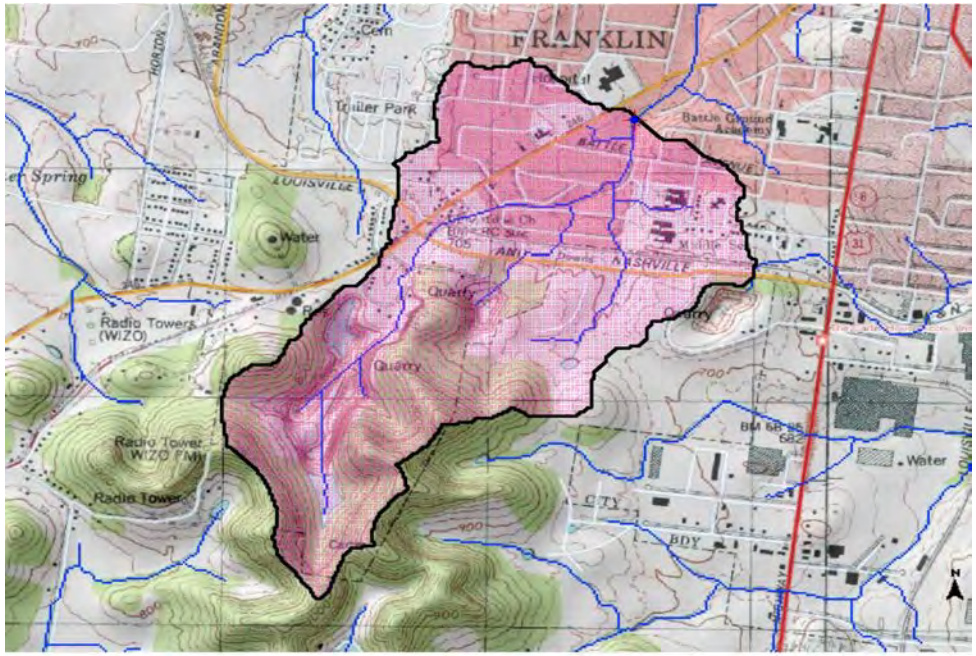
Peak Flow Region Streamflow Statistics

Statistic	Flow (ft^3/s)	Prediction Error (percent)	Equivalent years of record	90-Percent Prediction Interval	
				Minimum	Maximum
PK2	245	35	2.2	137	439
PK5	398	35	2.7	223	711
PK10	507	35	3.5	282	913
PK25	647	36	4.5	354	1190
PK50	758	37	5.2	407	1410
PK100	864	39	5.8	455	1640
PK500	1110	40	7	555	2220

USGS Tennessee StreamStats

StreamStats Sharps Creek

0.83 SQU MI



Explanation

- GlobalWatershedPoint
- Slp1085Point
- LongestFlowPath3D
- GlobalWatershed
- Stream Grid
- ExcludePoly
- Gaging Station, Continuous Record
- Low Flow, Partial Record
- Peak Flow, Partial Record
- Peak and Low Flow, Partial Record
- Stage Only
- Low Flow, Partial Record, Stage
- Miscellaneous Record
- Unknown

10/5/2012 3:16:22 PM

PRE-DEVELOPED CONDITIONS

CALCULATIONS

Hydrologic Soil Group—Williamson County, Tennessee
(West Main Apt and Parcel to West)

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Soil Ratings
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Political Features
- Cities

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:1,340 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:15,840.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 16N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Williamson County, Tennessee
Survey Area Data: Version 8, Sep 9, 2012

Date(s) aerial images were photographed: 8/16/2006

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — Williamson County, Tennessee (TN187)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
ArA	Armour silt loam, 0 to 2 percent slopes	B	0.7	18.6%
CaB	Captina silt loam, phosphatic, 2 to 5 percent slopes	C	1.5	39.5%
Hu	Huntington silt loam, phosphatic	B	0.0	0.7%
La	Lanton silt loam, phosphatic	D	1.6	41.1%
Totals for Area of Interest			**3.8**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Dominant Condition" first groups like attribute values for the components in a map unit. For each group, percent composition is set to the sum of the percent composition of all components participating in that group. These groups now represent "conditions" rather than components. The attribute value associated with the group with the highest cumulative percent composition is returned. If more than one group shares the highest cumulative percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher group value should be returned in the case of a percent composition tie.

The result returned by this aggregation method represents the dominant condition throughout the map unit only when no tie has occurred.

Component Percent Cutoff: None Specified

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

Tie-break Rule: Higher

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

Summary for Subcatchment 1S: Pre-Development CN

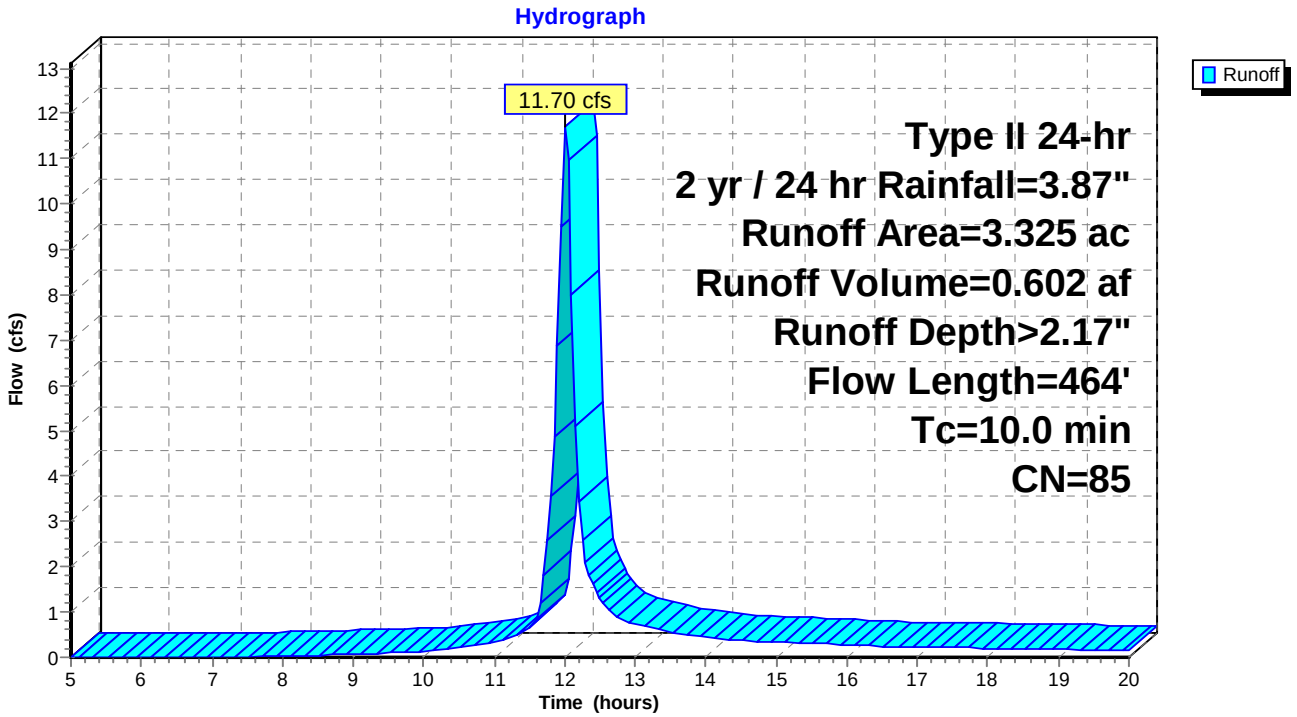
Runoff = 11.70 cfs @ 12.01 hrs, Volume= 0.602 af, Depth> 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 yr / 24 hr Rainfall=3.87"

Area (ac)	CN	Description
0.809	77	Woods, Good, HSG D
0.238	78	Meadow, non-grazed, HSG D
0.203	98	Paved roads w/curbs & sewers, HSG D
0.201	70	Woods, Good, HSG C
0.252	71	Meadow, non-grazed, HSG C
1.046	98	Paved roads w/curbs & sewers, HSG C
0.093	55	Woods, Good, HSG B
0.129	58	Meadow, non-grazed, HSG B
0.354	98	Paved roads w/curbs & sewers, HSG B
3.325	85	Weighted Average
1.722		51.79% Pervious Area
1.603		48.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	464		0.77		**Direct Entry, Estimation**

Subcatchment 1S: Pre-Development CN



Summary for Subcatchment 1S: Pre-Development CN

Runoff = 18.26 cfs @ 12.01 hrs, Volume= 0.962 af, Depth> 3.47"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10 yr / 24 hr Rainfall=5.38"

Area (ac)	CN	Description
0.809	77	Woods, Good, HSG D
0.238	78	Meadow, non-grazed, HSG D
0.203	98	Paved roads w/curbs & sewers, HSG D
0.201	70	Woods, Good, HSG C
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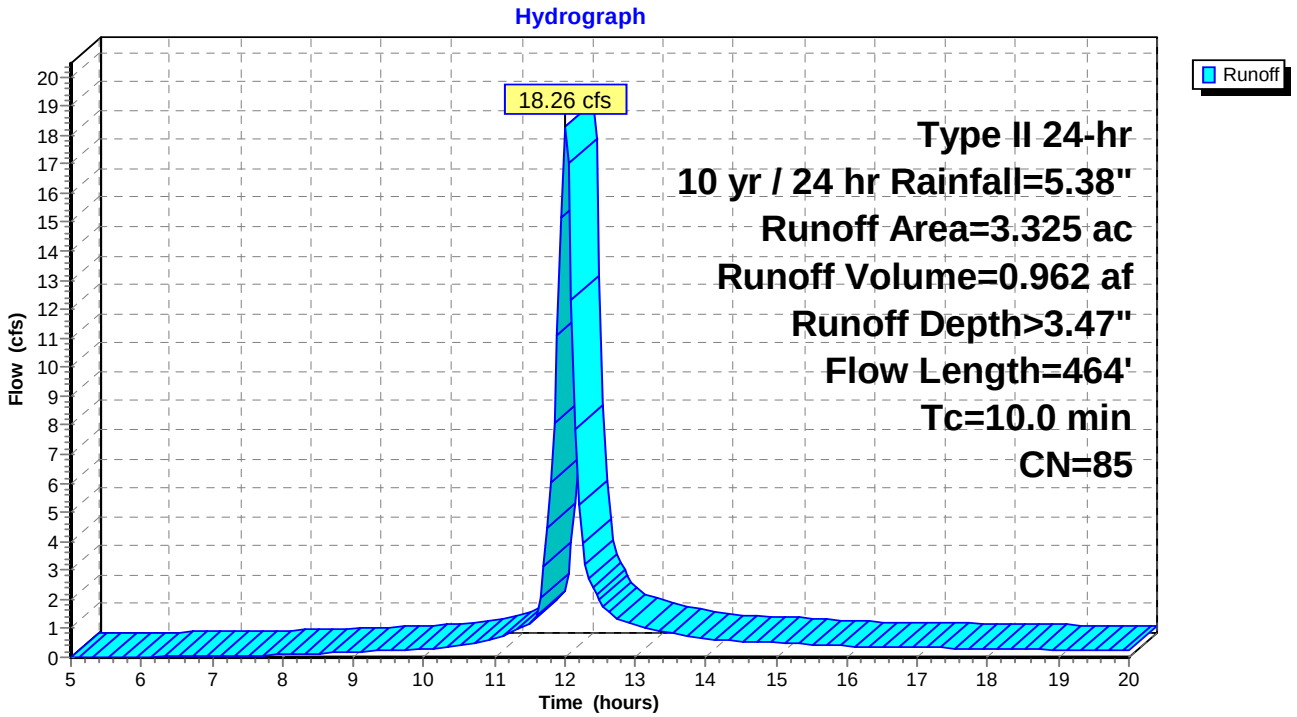
10.0	464		0.77		**Direct Entry, Estimation**

Subcatchment 1S: Pre-Development CN



Summary for Subcatchment 1S: Pre-Development CN

Runoff = 22.24 cfs @ 12.01 hrs, Volume= 1.186 af, Depth> 4.28"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 yr / 24 hr Rainfall=6.29"

Area (ac)	CN	Description
0.809	77	Woods, Good, HSG D
0.238	78	Meadow, non-grazed, HSG D
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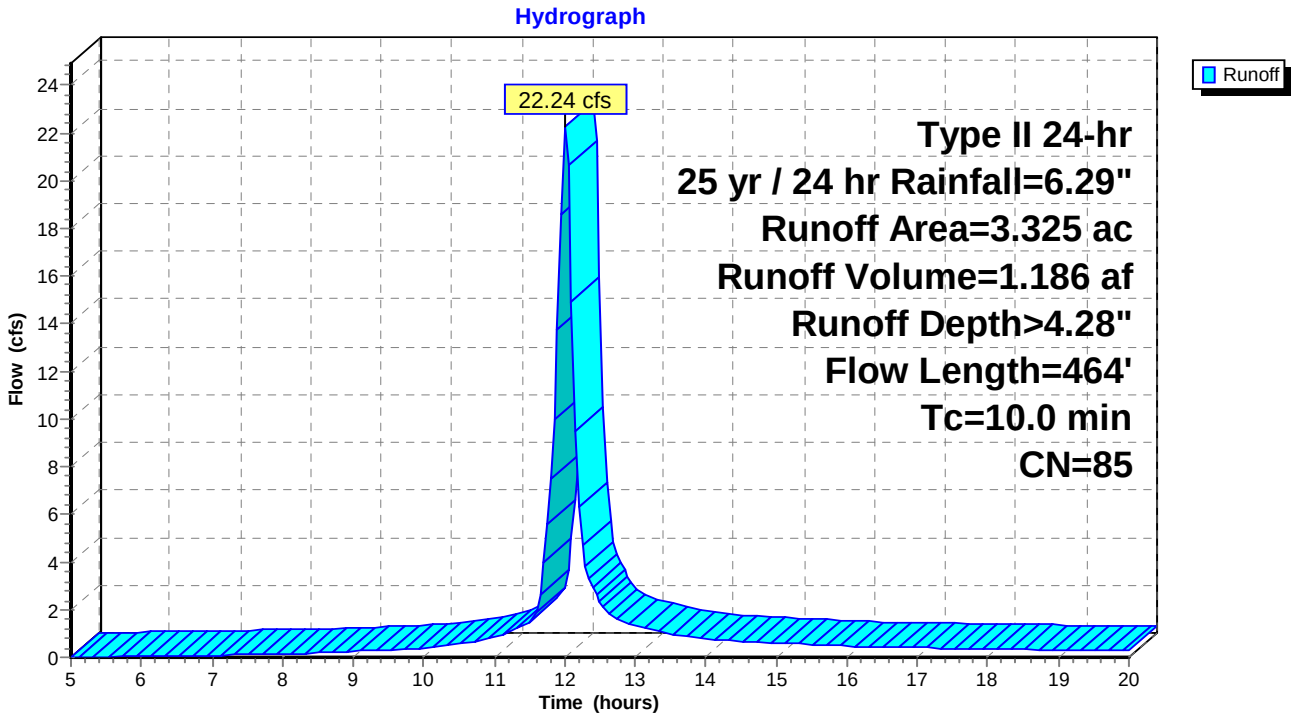
10.0	464		0.77		**Direct Entry, Estimation**

Subcatchment 1S: Pre-Development CN



Summary for Subcatchment 1S: Pre-Development CN

Runoff = 25.38 cfs @ 12.01 hrs, Volume= 1.365 af, Depth> 4.93"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 yr / 24 hr Rainfall=7.01"

Area (ac)	CN	Description
0.809	77	Woods, Good, HSG D
0.238	78	Meadow, non-grazed, HSG D
0.203	98	Paved roads w/curbs & sewers, HSG D
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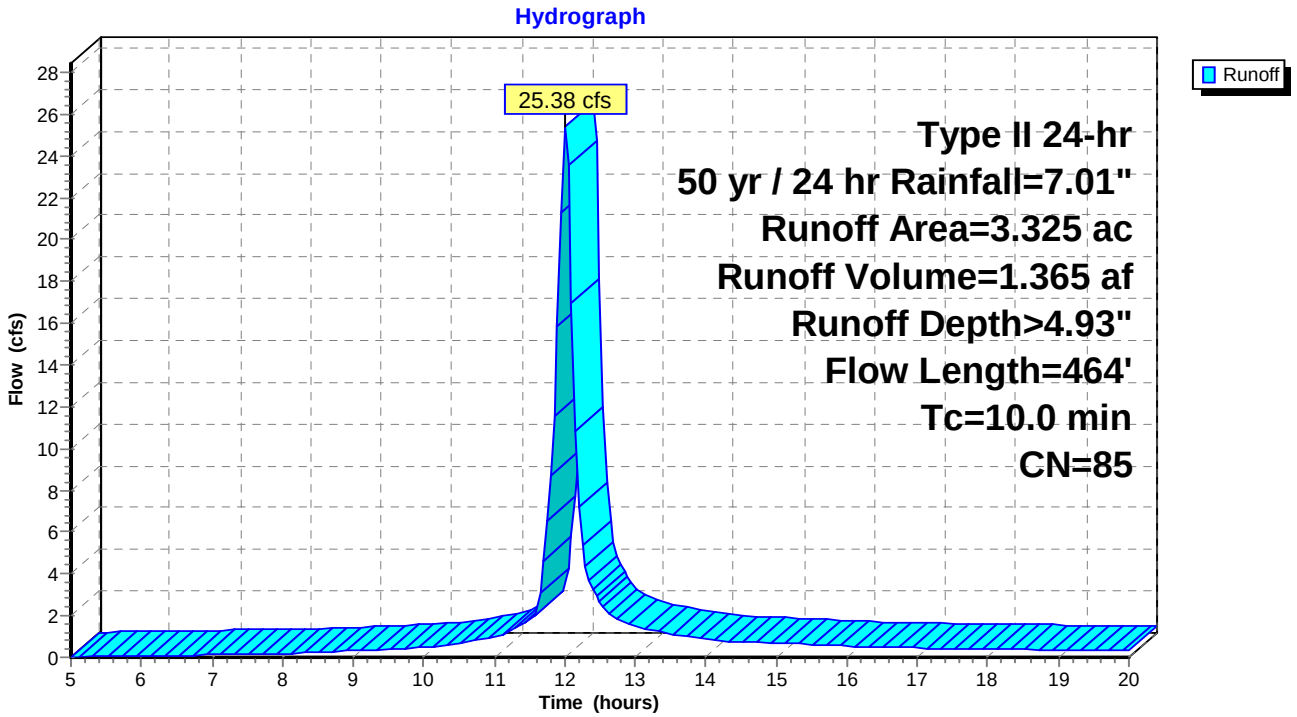
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	464		0.77		**Direct Entry, Estimation**

Subcatchment 1S: Pre-Development CN



Summary for Subcatchment 1S: Pre-Development CN

Runoff = 28.60 cfs @ 12.01 hrs, Volume= 1.550 af, Depth> 5.60"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100 yr / 24 hr Rainfall=7.75"

Area (ac)	CN	Description
0.809	77	Woods, Good, HSG D
0.238	78	Meadow, non-grazed, HSG D
0.203	98	Paved roads w/curbs & sewers, HSG D
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0.354	98	Paved roads w/curbs & sewers, HSG B
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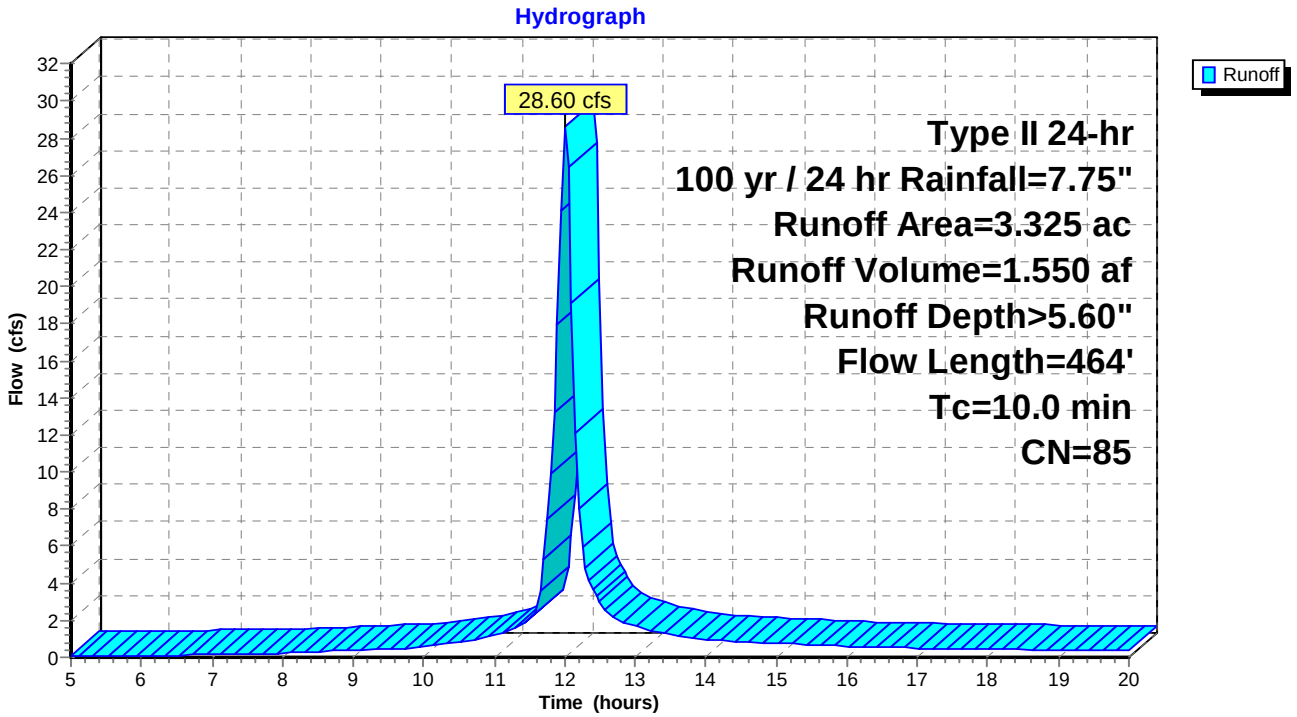
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	464		0.77		**Direct Entry, Estimation**

Subcatchment 1S: Pre-Development CN



POST-DEVELOPED CONDITIONS

CALCULATIONS

Summary for Subcatchment 2S: Post-Development CN Pavers

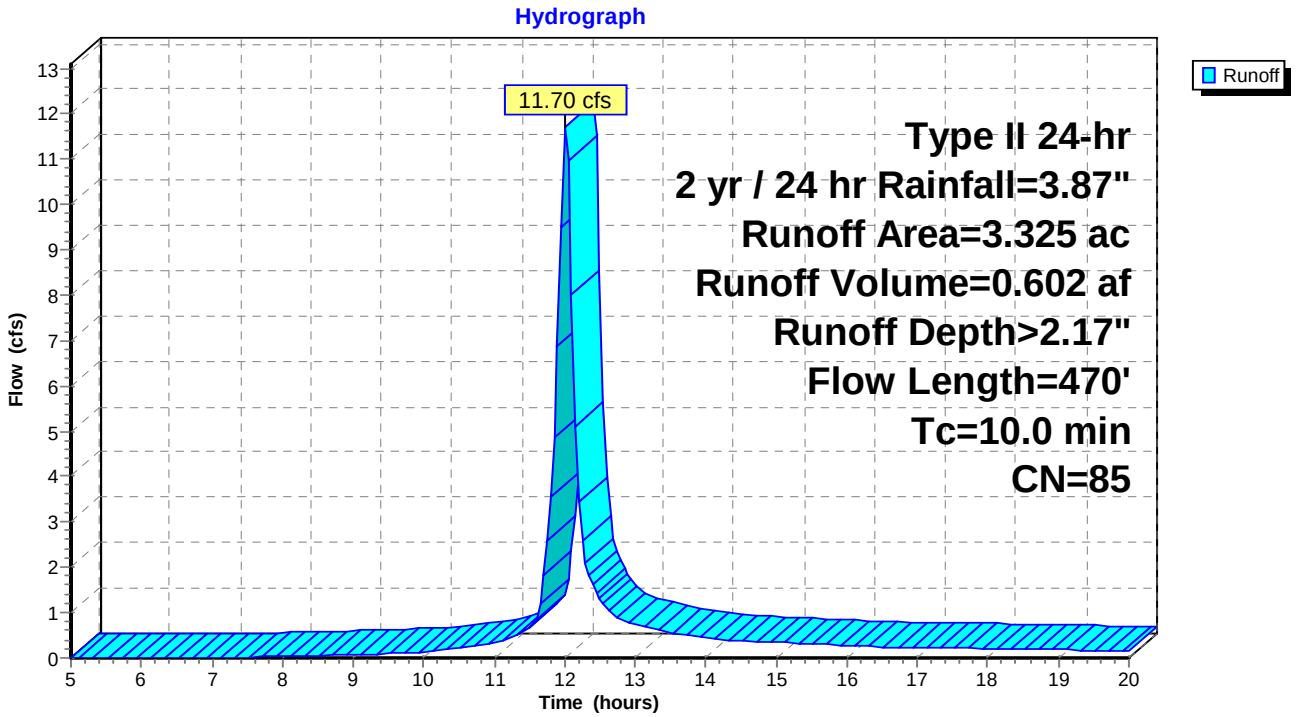
Runoff = 11.70 cfs @ 12.01 hrs, Volume= 0.602 af, Depth> 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2 yr / 24 hr Rainfall=3.87"

	Area (ac)	CN	Description
	1.879	98	Paved roads w/curbs & sewers, HSG D
	0.637	77	Woods, Good, HSG D
	0.141	78	Meadow, non-grazed, HSG D
	0.037	70	Woods, Good, HSG C
	0.035	71	Meadow, non-grazed, HSG C
	0.037	58	Meadow, non-grazed, HSG B
*	0.421	60	Permeable Pavers
*	0.138	50	Bio-Retention Areas
	3.325	85	Weighted Average
	1.446		43.49% Pervious Area
	1.879		56.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	470		0.78		**Direct Entry, Estimate**

Subcatchment 2S: Post-Development CN Pavers



Summary for Subcatchment 2S: Post-Development CN Pavers

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*	0.138	50	Bio-Retention Areas
	3.325	85	Weighted Average
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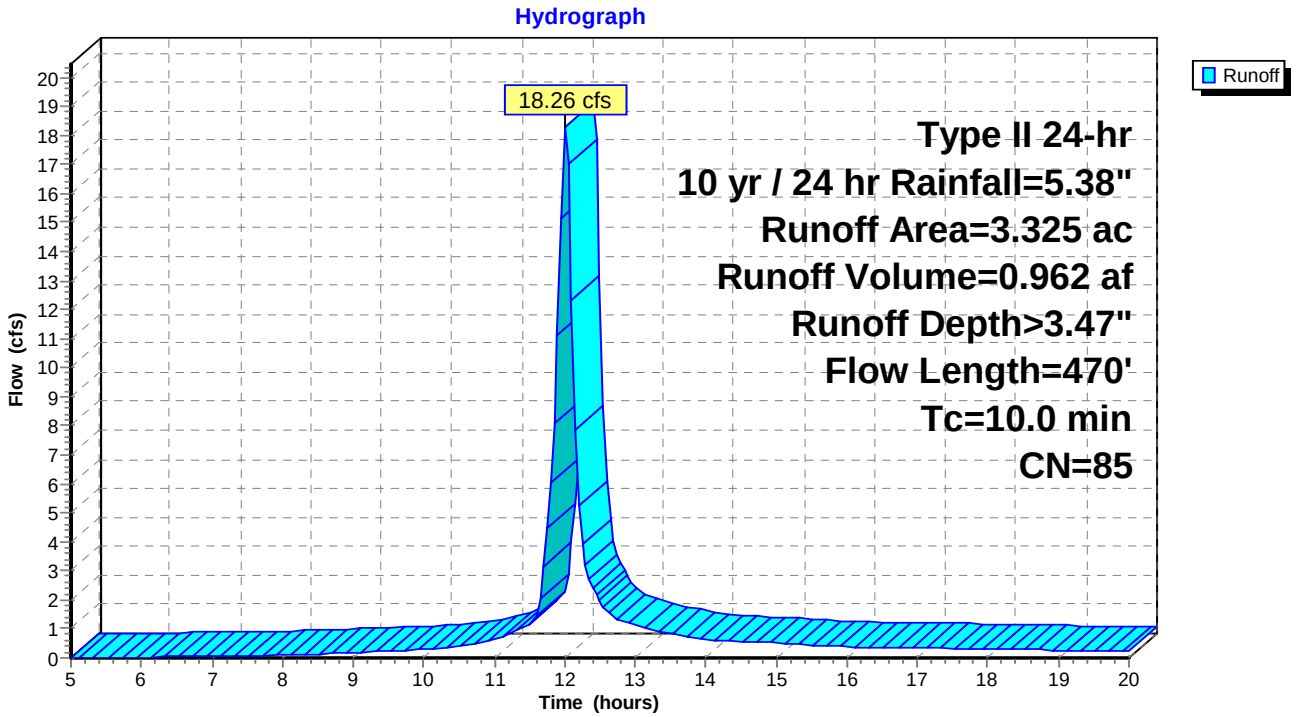
	1.879		56.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	470		0.78		**Direct Entry, Estimate**

Subcatchment 2S: Post-Development CN Pavers



Summary for Subcatchment 2S: Post-Development CN Pavers

Runoff = 22.24 cfs @ 12.01 hrs, Volume= 1.186 af, Depth> 4.28"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25 yr / 24 hr Rainfall=6.29"

	Area (ac)	CN	Description
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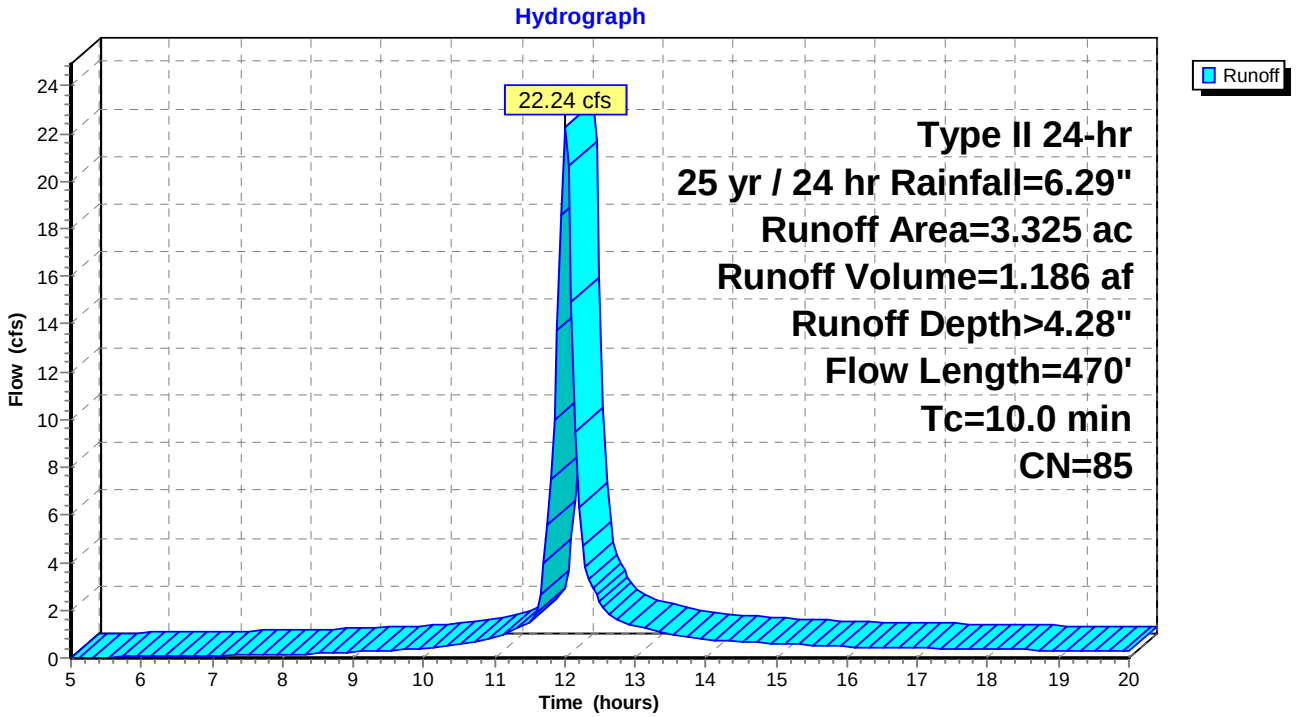
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	470		0.78		**Direct Entry, Estimate**

Subcatchment 2S: Post-Development CN Pavers



Summary for Subcatchment 2S: Post-Development CN Pavers

Runoff = 25.38 cfs @ 12.01 hrs, Volume= 1.365 af, Depth> 4.93"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 50 yr / 24 hr Rainfall=7.01"

	Area (ac)	CN	Description
	1.879	98	Paved roads w/curbs & sewers, HSG D
	0.637	77	Woods, Good, HSG D
	0.141	78	Meadow, non-grazed, HSG D
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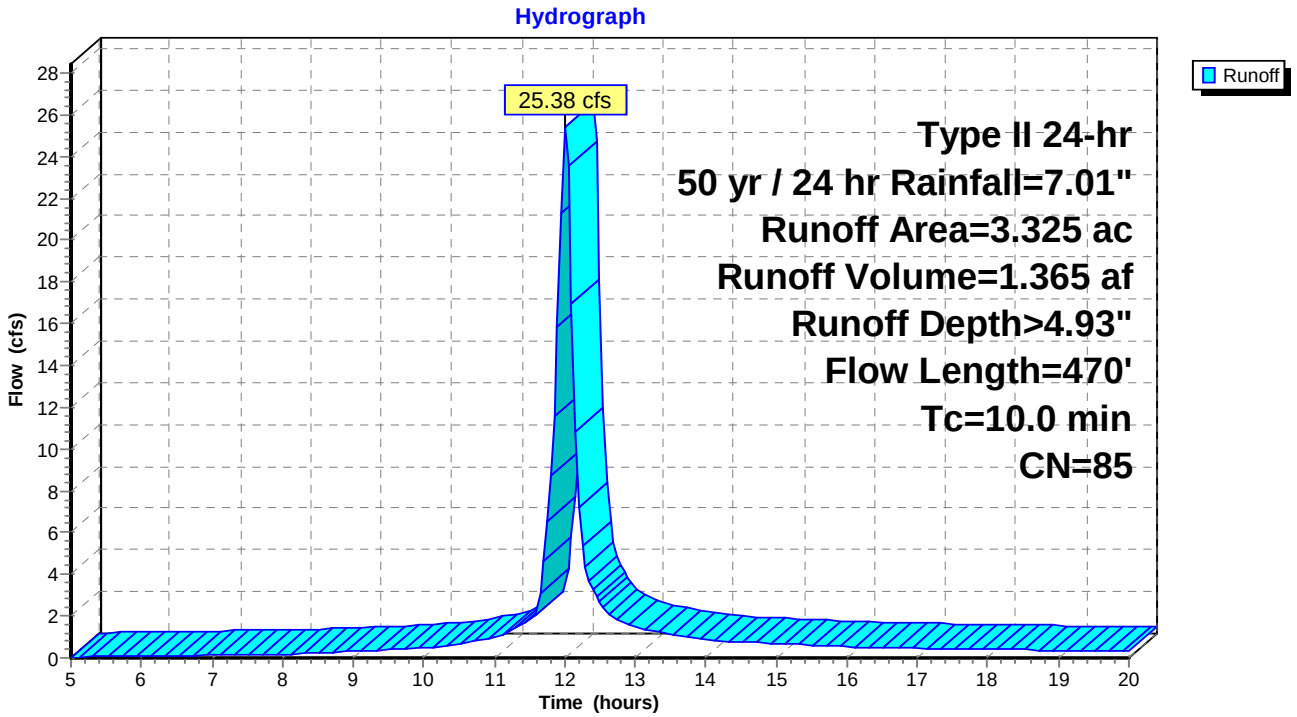
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	470		0.78		**Direct Entry, Estimate**

Subcatchment 2S: Post-Development CN Pavers



Summary for Subcatchment 2S: Post-Development CN Pavers

Runoff = 28.60 cfs @ 12.01 hrs, Volume= 1.550 af, Depth> 5.60"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100 yr / 24 hr Rainfall=7.75"

	Area (ac)	CN	Description
	1.879	98	Paved roads w/curbs & sewers, HSG D
	0.637	77	Woods, Good, HSG D
	0.141	78	Meadow, non-grazed, HSG D
	0.037	70	Woods, Good, HSG C
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	3.325	85	Weighted Average
	1.446		43.49% Pervious Area
	1.879		56.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	470		0.78		**Direct Entry, Estimate**

Subcatchment 2S: Post-Development CN Pavers