

MURFREESBORO CITY COUNCIL
Regular Meeting Agenda
Council Chambers – 6:00 PM
February 2, 2023

PRAYER

Mr. Shawn Wright

PLEDGE OF ALLEGIANCE

Consent Agenda

1. FY23 City Manager Approved Budget Amendments (Finance)
2. Contract Approval for ProphetPay Credit Card Processor (Golf)
3. Main Street Banner Request (Street)
4. Asphalt Purchases Report (Water Resources)
5. SSR Engineering Task Order 20-41-011.0 Amendment No. 1 (Water Resources)

Old Business

Land Use Matters

6. Ordinance 22-O-47 Amending the Sign Ordinance (2nd and final reading) (Planning)

New Business

Ordinance

7. Ordinance 23-O-06 Creating Community Investment Trust's Committee on Contributions (Administration)

First Reading: Ordinance 23-0-06

Land Use Matters

8. Planning Commission Recommendations (Planning)

On Motion

9. Contract for Roof Replacements (Facilities Maintenance)
10. Agreement for Soccer Complex Scoreboard Replacement (Parks)
11. Agreement for Greenways, Blueways, and Bikeways Master Plan Update (Parks)

Board & Commission Appointments

Licensing

Payment of Statements

Other Business

Adjourn

COUNCIL COMMUNICATION

Meeting Date: 02/02/2023

Item Title: FY23 City Manager Approved Budget Amendments

Department: Finance

Presented by: Jennifer Brown, Finance Director

Requested Council Action:

Ordinance	<input type="checkbox"/>
Resolution	<input type="checkbox"/>
Motion	<input type="checkbox"/>
Direction	<input type="checkbox"/>
Information	<input checked="" type="checkbox"/>

Summary

Notification to Council of City Manager approved budget amendments.

Background Information

Ordinance 15-O-48 requires notification to Council of City Manager approved budget amendments. The following budget amendments have been approved:

Drug Fund

For needed office furniture. Move \$15,000 from Repair & Maintenance – Buildings to Furniture & Fixtures.

Fire

For architectural services related to the station reroofing projects. Move \$13,000 from Salary – Full Time – Regular to Building Expense.

Bids for the roof replacements came back higher than anticipated. Move \$51,400 Unforeseen Grant Expense to Fire Building Expense.

Legal

New software has added to the subscription costs. Move \$7,015 from Salary - Full Time – Regular to Software Subscriptions.

Community Development

To correct clerical errors discovered on the Council approved budget amendment. All movement is within their Operating Budget.

Council Priorities Served

Responsible budgeting

Inter-Fund budget amendments reallocate resources in an efficient manner.

Fiscal Impact

The transfers within the General Funds will have no effect on fund balance. The transfer within the Drug Fund will have no effect on fund balance.

Attachments

Detailed Inter-Fund Budget Requests



Inter-Fund Budget Amendment Request

Mr. Tindall,

Submitted for your approval, per Ordinance 15-O-48, is the following budget amendment requesting a transfer within the same fund.

Budget Fiscal Year: 2023

Move funds from:

Org 1218
 Object 526600
 Acct Name Repair & Maintenance - Buildings
 Amount \$15,000.00

Move funds to:

Org 1219
 Object 594901
 Acct Name Furniture & Fixtures

Explanation: For the purchase of needed office furniture.

[Signature]
 Department Head Signature

11.8.22
 Date

Amanda DeRosia
 Reviewed by Finance

11/08/2022
 Date

Approved	<input checked="" type="checkbox"/>	<u>[Signature]</u>	<u>11.10.22</u>
Declined	<input type="checkbox"/>	City Manager	Date

Please return to Amanda DeRosia, Finance & Tax Dept., once all signatures have been obtained.



... creating a better quality of life

Inter-Fund Budget Amendment Request

Mr. Tindall,

Submitted for your approval, per Ordinance 15-O-48, is the following budget amendment requesting a transfer within the same fund.

Budget Fiscal Year: 2023

Move funds from:

Org 10211007
Object 511100
Acct Name Salary - Full-Time - Regular
Amount \$13,000.00

Move funds to:

Org 10211009
Object 592000
Acct Name Building Expense

Explanation: For architectural services related to the station reroofing projects

Mark McCluskey
Department Head Signature

12-12-22
Date

Amanda DeRosia
Reviewed by Finance

12/12/2022
Date

Approved	<input checked="" type="checkbox"/>	<u>[Signature]</u>	<u>12-14-22</u>
Declined	<input type="checkbox"/>	City Manager	Date

Please return to Amanda DeRosia, Finance & Tax Dept., once all signatures have been obtained.



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Inter-Fund Budget Amendment Request

Mr. Tindall,

Submitted for your approval, per Ordinance 15-O-48, is the following budget amendment requesting a transfer within the same fund.

Budget Fiscal Year: 2023

Move funds from:

Org 10130008

Object 599931-ARPA

Acct Name Unforeseen Grant Expenses

Amount \$51,400.00

Move funds to:

Org 10211009

Object 592000-ARPA

Acct Name Buildings Expense

Explanation: Bids for the roof replacements have come in higher than anticipated. Unallocated ARPA

designated for Public Safety are being transferred for this project.

Jennifer Beor
Department Head Signature

1/17/23
Date

Amanda DeRosia
Reviewed by Finance

01/17/2023
Date

Approved

Declined

[Signature]
City Manager

1/19/23
Date

Please return to Amanda DeRosia, Finance & Tax Dept., once all signatures have been obtained.



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Inter-Fund Budget Amendment Request

Mr. Tindall,

Submitted for your approval, per Ordinance 15-O-48, is the following budget amendment requesting a transfer within the same fund.

Budget Fiscal Year: 2023

Move funds from:

Org 10114007
Object 511100
Acct Name Salary - Full-Time - Regular
Amount \$7,015.00

Move funds to:

Org 10114008
Object 531201
Acct Name Software Subscriptions

Explanation: New software has added to the subscription costs.

[Signature]
Department Head Signature

January 12, 2022
Date

Amanda DeRosia
Reviewed by Finance

01/12/2022
Date

Approved	<input checked="" type="checkbox"/>	<u>[Signature]</u>	<u>1/13/22</u>
Declined	<input type="checkbox"/>	City Manager	Date

Please return to Amanda DeRosia, Finance & Tax Dept., once all signatures have been obtained.



Inter-Fund Budget Amendment Request

Mr. Tindall,

Submitted for your approval, per Ordinance 15-O-48, is the following budget amendment requesting a transfer within the same fund.

Budget Fiscal Year: 2023

Move funds from:

Org 10420008
 Object 571012-CD19
 Acct Name Affordable Housing
 Amount \$ 90,000.00

Move funds to:

Org 10420008
 Object 571012-CD22
 Acct Name Affordable Housing

Explanation: This amendment corrects a clerical error discovered on the CDBG budget.

Move funds from:

Org 10420008
 Object 571016-CD19
 Acct Name Public Facilities
 Amount \$ 1,500.00

Move funds to:

Org 10420008
 Object 571017-CD19
 Acct Name Fair Housing

Explanation: This amendment corrects a clerical error discovered on the CDBG budget.

Move funds from:

Org 10420008
 Object 571016-CD19
 Acct Name Public Facilities
 Amount \$ 27,795.15

Move funds to:

Org 10420008
 Object 571018-CD19
 Acct Name Economic Development

Explanation: This amendment corrects a clerical error discovered on the CDBG budget.

Inter-Fund Budget Amendment Request

Move funds from:

Org 10420008
 Object 571011-CD19
 Acct Name Housing Rehabilitation
 Amount \$ 22,204.85

Move funds to:

Org 10420008
 Object 571018-CD19
 Acct Name Economic Development

Explanation: This amendment corrects a clerical error discovered on the CDBG budget.

Move funds from:

Org 10420008
 Object 571016-CD20
 Acct Name Public Facilities
 Amount \$ 122,204.85

Move funds to:

Org 10420008
 Object 571011-CD20
 Acct Name Housing Rehabilitation

Explanation: This amendment corrects a clerical error discovered on the CDBG budget.

Move funds from:

Org 10420008
 Object 571018-CD20
 Acct Name Economic Development
 Amount \$ 50,000.00

Move funds to:

Org 10420008
 Object 571011-CD20
 Acct Name Housing Rehabilitation

Explanation: This amendment corrects a clerical error discovered on the CDBG budget.

Robert N. #
 Department Head Signature

1.23.23
 Date

Amanda DeRosia
 Reviewed by Finance

01/23/2023
 Date

Approved	<input checked="" type="checkbox"/>	<u><i>[Signature]</i></u> City Manager	<u>01/23/23</u> Date
Declined	<input type="checkbox"/>		

Please return to Amanda DeRosia, Finance & Tax Dept., once all signatures have been obtained.

COUNCIL COMMUNICATION

Meeting Date: 02/02/2023

Item Title: Golf Contract Approval – ProphetPay Credit Card Processor

Department: Golf Department

Presented by: Trey Adams, Golf Director

Requested Council Action:

- | | |
|-------------|-------------------------------------|
| Ordinance | <input type="checkbox"/> |
| Resolution | <input type="checkbox"/> |
| Motion | <input checked="" type="checkbox"/> |
| Direction | <input type="checkbox"/> |
| Information | <input type="checkbox"/> |
-

Summary

Contract for credit card processing with ProphetPay as it is now the only supported credit card processor for Old Fort Golf’s point of sale system, Club Prophet.

Staff Recommendation

Approve the contract for credit card processing with Prophet Pay.

Background Information

Currently, the Golf Department is using a credit card processor called Payroc. Credit cards are accepted and submitted to Payroc for processing through the Golf Department’s point-of-sale system Club Prophet. Club Prophet has partnered with Full Steam to offer their own credit card processor called ProphetPay.

In November 2022, the Golf Department was notified by Club Prophet that it would only be supporting its own payment processing system and we would not be able to update our software unless we switched to their credit card processor, ProphetPay. They have provided the City with competitive pricing that is more beneficial than that incurred with Payroc. Therefore, the Department proposes to transfer payment processing to ProphetPay and terminate the Payroc contract. The Department has confirmed with Purchasing, IT, and Legal that this would be a valid sole source procurement.

The Department will accrue a marginal benefit from lower credit card processing fees but pays approximately \$45,000 in credit card fees each year. The rate proposed by Prophet Pay is equivalent to 2.53% per credit card transaction which was slightly better than the 2.57% fee we were paying with Payroc. For reference, The Golf Department processed \$1,610,341 in credit sales in FY22. This would allow us to continue using our current point of sale system ProphetPay and not have to spend more time and money by switching to an entirely new system for tee times, inventory, reporting, sales, etc.

Council Priorities Served

Responsible Budgeting

Accepting credit card payment, which make up over 70% off all revenues, is necessary for continuing Old Fort Golf Course revenue and supporting the operations of the course.

Fiscal Impact

Slight decrease in credit card processing fees.

Attachments

ProphetPay Credit Card Processing Agreement

SUB-MERCHANT

PAYMENT PROCESSING AGREEMENT

This Sub-Merchant Payment Processing Agreement ("Agreement") is entered into by and between Fullsteam Operations LLC with its principal office at 540 Devall Drive, Suite 301, Auburn, AL 36832 ("Provider") and sub-merchant ("Sub-merchant"), in connection with Provider's payment processor ("Processor") and Processor's designated Member Bank.

Whereas, Provider as a Payment Service Provider ("PSP") and/or as a Payment Facilitator as defined in the Operating Regulations, in connection with Processor and/or Member Bank participates in programs affiliated with MasterCard, VISA, American Express, Discover, and Other Networks which enable Cardholders, by use of their Cards, to purchase goods and services from selected merchants located in the United States.

Whereas, Provider wishes to provide payment processing services to Sub-merchant for its United States locations, for sale of its goods and services to Cardholders by use of their Cards.

NOW, THEREFORE, IN CONSIDERATION OF THE FOREGOING RECITALS AND OF THE MUTUAL PROMISES CONTAINED HEREIN, BY CLICKING "I AGREE," AS AN AUTHORIZED REPRESENTATIVE OF SUB-MERCHANT, SUB-MERCHANT AND PROVIDER AGREE TO BE BOUND BY ALL TERMS AND CONDITIONS OF THIS AGREEMENT, INCLUDING, WITHOUT LIMITATION, ALL DOCUMENTS, POLICIES, AND PROCEDURES INCORPORATED HEREIN BY REFERENCE.

1. Definitions.

For the purposes of this Agreement, the following terms shall have the following meanings:

Account shall mean an open transaction account at a financial institution acceptable to Processor which Member Bank, Processor or their agents can access through the ACH system.

Account Change means a change in the Account or the financial institution where the Account is located.

ACH shall mean the Federal Reserve's Automated Clearing House ("ACH") system.

Agreement means this Sub-Merchant Payment Processing Agreement and each exhibit, schedule, and addendum attached hereto or referenced to in this Agreement, as well as all documents and other materials incorporated herein by reference.

American Express shall mean American Express Travel Related Services Company, Inc.

Application shall mean the Sub-merchant's application for payment processing services as required by Provider as a prerequisite for obtaining the Services.

Association means VISA, MasterCard, Discover, American Express, or any Other Network, as the same are defined herein.

Cardholder shall mean any person authorized to use a Card or the accounts established in connection with a Card.

Cards shall mean MasterCard, VISA, Discover, American Express and Other Network cards, account numbers assigned to a Cardholder or other methods of payment accepted by Processor on behalf of Provider, for which pricing is set forth in the Application.

Data Incident shall mean any alleged or actual compromise, unauthorized access, disclosure, theft, or unauthorized use of Card or Cardholder information, regardless of cause, including without limitation, a breach of or intrusion into any system, or failure, malfunction, inadequacy, or error affecting any server, wherever located, or hardware or software of any system, through which Card information resides, passes through, and/or could have been compromised.

Discover shall mean Discover Financial Services, LLC.

Event of Default shall mean each event listed in Section 7 below.

Float Event shall mean a circumstance where Provider or Processor, for whatever reason, advances settlement or any amounts and/or delays the assessment of any fees.

Force Majeure Event shall mean, labor disputes, fire, weather or other casualty, power outages, and funding delays, however caused, governmental orders or regulations, or any other cause, whether similar or dissimilar to the foregoing, beyond a party's reasonable control.

Initial Term shall mean a one (1) year period beginning on the date Provider processes the first transaction for Sub-merchant.

MasterCard shall mean MasterCard International, Inc.

Member Bank shall mean a member of VISA, MasterCard and/or Other Networks, as applicable, that provides sponsorship services in connection with this Agreement.

Merchant Supplier shall mean a third party other than Processor used by Provider or Sub-merchant in connection with the Services received hereunder, including but not limited to, Sub-merchant's software providers, equipment providers, and/or third party processors.

Operating Regulations means the by-laws, operating regulations and/or all other rules, guidelines, policies and procedures of VISA, MasterCard, Discover, American Express and/or Other Networks, and all other applicable rules, regulations and requirements of Processor, Member Bank, providers, banks, institutions, organizations, associations, or networks which govern or affect any services provided under this Agreement, and all state and federal laws, rules and regulations which govern or otherwise affect the activities of Sub-merchant, including, but not limited to, those of the National Automated Clearing House Association ("NACHA") and the Federal Trade Commission ("FTC"), as any or all of the foregoing may be amended and in effect from time to time.

Other Network shall mean any network or card association other than VISA, MasterCard, Discover or American Express that is identified in the Application or any subsequent amendment to this Agreement and in which Sub-merchant participates hereunder.

Payments shall mean payments initiated by Cardholders using a Card or by means of an ACH transfer.

Payor shall mean any customer of Sub-merchant who authorizes a payment to Sub-merchant.

PCI DSS shall mean the Payment Card Industry Data Security Standard.

Rules Summary means the Bank Card Merchant Rules and Regulations, as amended from time to time, which are incorporated into this Agreement by reference.

Service shall mean any and all services provided by Processor on behalf of Provider to Sub-merchant.

Service Delivery Process means Provider/Processor's then standard methods of communication, service and support, including but not limited to communication via an online Sub-merchant portal, email communication, statement notices, other written communications, etc.

Sub-merchant shall mean any entity (including a government agency) that contracts with Provider as a PSP and/or Payment Facilitator, as permitted in the Operating Regulations, to obtain payment services.

VISA shall mean VISA USA, Inc.

Website shall mean a website owned and/or provided/controlled by Provider.

2. Services.

2.1 Pursuant to Provider's agreement with Processor, Processor and/or Member Bank will provide Sub-merchant with certain payment processing services ("Services") in accordance with the terms and conditions of this Agreement. Pursuant to the Provider's agreement with Processor, Provider has arranged for Processor to acquire, process and settle payment for transactions initiated by Sub-merchant's Payors. Such Services shall be made in accordance with the Operating Regulations using the channels set forth in Sub-merchant's Application, which includes: credit/debit card payments and may include electronic check ("eCheck") payments (collectively "Payments"). Provider agrees that it will fully comply, and to the extent practicable will assure all Sub-merchants comply, with any and all confidentiality and security requirements of the USA PATRIOT Act (or similar law, rule or regulation), VISA, MasterCard, Discover, and/or Other Networks, including but not limited to PCI, the VISA Cardholder Information Security Program, the MasterCard Site Data Protection Program, and any other program or requirement that may be published and/or mandated by the Associations. In consideration of Sub-merchant's receipt of credit or debit card funded payments, and participation in programs affiliated with MasterCard International Inc. ("MasterCard"), VISA U.S. A. Inc. ("VISA"), Discover ("Discover"), and certain similar entities (collectively, "Associations"), Sub-merchant is required to comply with the Operating Regulations (defined below) as they pertain to applicable credit and debit card payments.

3. Sub-merchant Responsibilities.

3.1 Sub-merchant agrees to comply, and to cause third parties acting as Sub-merchant's agents ("Agents") to comply, with the Association's and other payment network's by-laws, operating regulations and/or all other rules, policies and procedures, including but not limited to the Payment Card Industry Data Security Standard, the VISA Cardholder Information Security Program, the MasterCard Site Data Protection Program, and any other program or requirement that may be published and/or mandated by the Associations or payment networks (collectively "Operating Regulations").

3.2 Sub-merchant may review excerpts from the VISA, MasterCard, American Express and Discover Operating Regulations online, including via:

<https://www.mastercard.us/en-us/business/overview/support/rules.html>;

<https://usa.visa.com/support/consumer/visa-rules.html>;

<https://www.americanexpress.com/merchantopguide>;

https://www.discoverglobalnetwork.com/content/dam/discover/en_us/dgn/pdfs/MIT-Implementation-Guide.pdf.

VISA, MasterCard, Discover, American Express, or any other applicable network's complete Operating Regulations are incorporated by reference into this Agreement and will control with respect to any conflict in terms between this Agreement and such Operating Regulation. Sub-merchant will not discriminate against Cards or Issuers (e.g., limited acceptance options) except in full compliance with the Operating Regulations, and will comply with all Operating Regulations, applicable laws, and regulations related to its business operations, PCI- DSS obligations, the use of VISA, MasterCard, Discover, American Express, or any other applicable network's marks, and each transaction acquired hereunder. Sub- merchant expressly agrees that it will accept Cards and protect, utilize, or restrict transaction data, including the magnetic stripe and CVV2, in accordance with the terms of this Agreement, applicable law or regulation, and the Operating Regulations, and will cooperate with any audit requested by VISA, MasterCard, Discover, American Express, or any other applicable network until such audit is completed.

3.3 Sub-merchant also agrees to comply with all applicable state, federal, and local laws, rules, and regulations. Without limiting the foregoing, Sub-merchant agrees that it will fully comply with any and all anti-money laundering laws and regulations, including but not limited to the Bank Secrecy Act, the US Treasury's Office of Foreign Assets Control (OFAC) and the Federal Trade Commission. For purposes of this section, Agents include, but are not limited to, Sub-merchant's software providers and/or equipment providers.

3.4 If appropriately indicated in Sub-merchant's agreement with Provider, Sub-merchant may be a limited-acceptance merchant, which means that Sub-merchant has elected to accept only certain Visa and MasterCard card types (i.e., consumer credit, consumer debit, and commercial cards) and must display appropriate signage to indicate the same. Provider and Processor have no obligations other than those expressly provided under the Operating Regulations and applicable law as they may relate to limited acceptance. Sub-merchant and not Provider or Processor, will be solely responsible for the implementation of its decision for limited acceptance, including but not limited to policing the card type(s) accepted at the point of sale.

3.5 In addition to complying with VISA, MasterCard, Discover, American Express, or any other applicable network's obligations or prohibitions related to acceptance, disbursement, or resubmission of a transaction, Sub-merchant]may not submit any illegal, fraudulent, or unauthorized transaction and shall only submit transactions for the sale of its own goods or services, and not any other person or company, and may not receive payment on behalf of or, unless authorized by law, redirect payments to any other party. Sub-merchant covenants that it is not a third-party beneficiary under any agreement with VISA, MasterCard, Discover, American

Express, or any other network, however, VISA, MasterCard, Discover, American Express, or any other applicable network may be a third-party beneficiary of this Agreement, and shall have the rights, but not any obligation, necessary to fully enforce the terms of this Agreement against the Sub-merchant.

3.6 Sub-merchant acknowledges and agrees that it is liable for all acts, omissions, customer disputes, and other customer service-related issues. Sub-merchant acknowledges and agrees that Provider, Processor and/or its Member Bank may refuse to process transactions for Sub-merchant's customers, and Sub-merchant agrees that Sub-merchant, and not Provider or Processor, shall be responsible for resolving any issues, problems, or disputes pertaining to its customers.

3.7 Sub-merchant agrees to notify Provider, Processor or its Member Bank by a detailed written communication, of any alleged breach by Provider, Processor or its Member Bank of this Agreement within thirty (30) days of the date on which the alleged breach first occurred. Failure to provide notice shall be deemed an acceptance by Sub-merchant and a waiver of all rights pertaining to the breach.

3.8 Sub-merchant may set a minimum transaction amount to accept a card that provides access to a credit account, under the following conditions: (i) the minimum transaction amount does not differentiate between card issuers; (ii) the minimum transaction amount does not differentiate between MasterCard, Visa, or any other acceptance brand; and (iii) the minimum transaction amount does not exceed ten dollars (or any higher amount established by the Federal Reserve). Sub-merchant may set a maximum transaction amount to accept a card that provides access to a credit account, under the following conditions: Sub-merchant is a (i) department, agency or instrumentality of the U.S. government; (ii) corporation owned or controlled by the U.S. government; or (iii) Sub-merchant whose primary business is reflected by one of the following MCCs: 8220, 8244, 8249 -Schools, Trade or Vocational; and the maximum transaction amount does not differentiate between MasterCard, Visa, or any other acceptance brand.

4. Sub-merchant Prohibitions.

4.1 Sale Transactions.

Sub-merchant agrees that it will not take any of the following Prohibited Actions and it will not permit any third party under its control to take the following actions in any situation where it has knowledge of such actions:

- (i) That adds any surcharge to the transaction, except to the extent authorized by the Operating Regulations or applicable law.
- (ii) That adds any tax to the transaction, unless applicable law expressly allows for the Sub-merchant to impose a tax. Any tax amount, if allowed, must be included in the transaction amount and not collected separately.
- (iii) That represents the refinancing or transfer of an existing Cardholder obligation that is deemed to be uncollectible or arises from the dishonor of a Cardholder's personal check or from the acceptance of a Card at a terminal that dispenses scrip.

- (iv) That is not a valid transaction between the Sub-merchant and a bona fide Cardholder.
- (v) That Sub-merchant knows or should have known to be fraudulent or not authorized by the Cardholder, or that it knows or should have known to be authorized by a Cardholder colluding with a third party for a fraudulent purpose.
- (vi) That Sub-merchant completes the transaction, and products were not shipped or the services were not performed, unless the Sub-merchant has obtained Cardholder consent for a recurring transaction.
- (vii) That a valid authorization was required but was not obtained.
- (viii) That is a transaction made up of multiple authorizations for amounts less than the total sale amount.
- (ix) That results in a disbursement of cash or cash equivalent to a Cardholder.
- (x) That establishes a maximum dollar sale transaction amount, except to the extent authorized by the Operating Regulations.

4.2 Refund Transactions.

Sub-merchant will not submit any refund transaction to Provider and/or Processor:

- (i) That does not correlate to an original sales transaction from the Cardholder.
- (ii) That exceeds the amount shown as the total on the original sale transaction, unless the excess represents the exact amount required to reimburse the Cardholder for postage paid by the Cardholder to return merchandise in accordance with a policy applied consistently by the Sub-merchant to all its customers.
- (iii) For returned products that were acquired in a cash purchase from the Sub-merchant.
- (iv) That would cause an overdraft.
- (v) More than three (3) business days following either: (i) a regulatory requirement granting a Cardholder's right to a refund; or (ii) a non-disputed Cardholder request.

4.3 Other Prohibited Activities.

Sub-merchant will not:

- (i) Use any Cardholder data or other transaction data received from a payor for any purpose not authorized by this Agreement.
- (ii) Disclose any Cardholder data or other transaction data to any entity except for necessary disclosures to affected Cardholders and Provider and through Processor to affected Association entities.
- (iii) Provide to Processor any inaccurate, incomplete, or misleading information.
- (iv) Transfer or attempt to transfer, its financial liability by asking or requiring Cardholders to waive their dispute rights.
- (v) Submit transactions on behalf of another entity that the Associations would consider a sub-ISO, Payment Service Sub-merchant (PSP), Payment Facilitator, or other third party payment Sub-merchant.

5. Authorization, Fees and Payment.

5.1 Sub-merchant will maintain a commercial transaction account (“Account”) with a financial institution for the crediting and debiting of all payments and fees. Sub-merchant hereby authorizes Provider to facilitate the debiting and crediting of the bank account entered in its Application (“Account”), for purposes of depositing Payments to Sub-merchant’s Account, debiting from Sub-merchant’s Account any chargebacks, refunds, or reversals, and debiting any payment network fees, including, but not limited to, dues, fees, assessments or other amounts due Provider, and such authority shall remain in effect for a period of one (1) calendar year following the date of termination of this Agreement. Sub-merchant shall always maintain the Account with sufficient cleared funds to meet its obligations under this Agreement. Sub-merchant agrees to maintain this Account information up-to-date with Provider at all times. Failure to do so may result in Payments being misdirected, withheld, or returned to its Payors. Provider shall in no event be liable for any damages directly or indirectly resulting from incorrect Account information.

5.2 Sub-merchant authorizes Provider to conduct checks of Sub-merchant’s background, credit, or banking information, as necessary, and agrees that all information obtained under this Agreement may be shared with VISA, MasterCard, Discover, American Express, or any other applicable network. Sub-merchant acknowledges and agrees that it is responsible for its employees’ actions, it will notify Provider of any 3rd party that will have access to cardholder data, and it will immediately report all instances of a data breach to Provider immediately after it reasonably identifies an incident. Sub-merchant also authorizes any person or credit reporting agency to compile information to answer those inquires of Provider and to furnish all requested information to Provider.

6. Reserve Account Upon Mutual Agreement; Right of Setoff.

6.1 Provider may upon mutual agreement with Sub-merchant, make one or more deductions or offsets to any payments otherwise due to Sub-merchant to fund the Reserve Account in an amount satisfactory to Provider based upon a reasonably anticipated risk of loss to Provider, Processor and/or Member Bank. To secure Sub-merchant’s obligations to Provider, Processor and/or Member Bank under this Agreement, Sub-merchant grants to Provider, Processor and/or Member Bank a lien and security interest in and to (i) any such Reserve Account, and (ii) any of Sub-merchant’s funds pertaining to the Card transactions contemplated by this Agreement now or hereafter in Provider, Processor and/or Member Bank’s possession, whether now or hereafter due or to become due to Sub-merchant. In addition, in the event of termination of this Agreement by either Provider or Sub-merchant, an immediate Reserve Account, if not already established, may be established by Provider and the Reserve Account will be held by Provider for six (6) months after termination of this Agreement or for such longer time as Provider may, in its sole discretion, deem necessary based upon Sub-merchant’s liability to Provider, Processor and/or Member Bank arising prior to or after termination of this Agreement, and Provider may deposit into and retain in the Reserve Account any and all amounts otherwise payable to Sub-merchant. Sub-merchant’s funds held in a Reserve Account may be held in a commingled account for the reserve funds

("Reserve Funds Account") of Provider's Sub-merchants, without involvement of an independent escrow agent. Sub-merchant agrees that it shall have no right, title or interest in or to the Reserve Funds Account. In addition to any rights now or hereafter granted under applicable law, and not by way of limitation of any such rights, Provider, Processor and/or Member Bank are hereby authorized by Sub-merchant at any time, without notice or demand to Sub-merchant or to any other person (and such notice and demand being hereby expressly waived), to set off, recoup and to appropriate and to apply any and all funds held in a Reserve Account established hereunder against and on account of obligations owed to Provider, Processor and/or Member Bank by Sub-merchant, whether such obligations are liquidated, unliquidated, fixed, contingent, matured or unmatured. Sub-merchant agrees to duly execute and deliver to Provider, Processor and/or Member Bank, as applicable, such instruments and documents as may reasonably be requested to perfect and confirm the lien or security interest set forth in this Agreement. The right of setoff shall be deemed to have been exercised immediately upon the occurrence of Sub-merchant's default under this Agreement without any action by Provider or notation in Provider's records, although Provider may thereafter enter such set off in its books and records. Any amount of Sub-merchant's Reserve Account remaining in the Reserve Funds Account when Provider determines that the Reserve Account may be closed, shall be released to Sub-merchant.

7. Default.

The following events shall be considered an "Event of Default":

- (i) Sub-merchant becomes subject to any voluntary or involuntary bankruptcy, insolvency, reorganization or liquidation proceeding, a receiver is appointed for Sub-merchant, or
- (ii) Sub-merchant makes an assignment for the benefit of creditors, or admits its inability to pay its debts as they become due; or
- (iii) Sub-merchant fails to pay or reimburse the fees, expenses or charges referenced herein when they become due; or
- (iv) Sub-merchant violates the Operating Regulations or applicable law; or
- (v) Sub-merchant is subject to any adverse legal or regulatory actions by governmental or non-governmental entities; or
- (vi) Sub-merchant fails to remediate and resolve risks identified by Provider in a timely fashion; or
- (vii) Provider reasonably believes that there has been a material deterioration in Sub-merchant's financial condition; or
- (viii) Any standby letter of credit, if and as may be required, will be cancelled, will not be renewed, or is not in full force and effect; or
- (ix) Sub-merchant ceases to do business as a going concern, or there is a change in ownership of Sub-merchant which changes the identity of any person or entity having, directly or indirectly, more than 25% of either the legal or beneficial ownership of Sub-merchant; or

- (x) Sub-merchant is otherwise in default of any terms or conditions of this Agreement whether by reason of its own action or inaction or that of another, and fails to cure such default within thirty (30) days of Provider's notice of default.

Upon the occurrence of an Event of Default, Provider may at any time thereafter terminate this Agreement by giving Sub-merchant written notice thereof, and all amounts owed to Provider shall be immediately due and payable with no further notice.

8 Term and Termination.

8.1 This Agreement shall be binding upon Sub-merchant upon Sub-merchant's clicking "I Agree" to this Agreement. The term of this Agreement shall begin, and the terms of the Agreement shall be deemed accepted and binding the date Provider processes the first transaction for Sub-merchant and shall continue for the Initial Term. Except as hereafter provided, unless either party gives written notice to the other party at least ninety (90) days prior to the expiration of any term, the Agreement shall be automatically extended for additional periods equal to the Initial Term.

8.2 Notwithstanding the foregoing, Provider may immediately cease providing Services and/or terminate this Agreement for cause, without notice if:

- (i) Sub-merchant fails to pay any amount to Provider or Processor when due; or
- (ii) Provider has received a request from Processor, Member Bank, or the Associations to terminate this Agreement; or
- (iii) Provider believes that the provision of a service to Sub-merchant may be a violation of the Operating Regulations or applicable law or regulation; or
- (iv) Provider believes that Sub-merchant has violated or is likely to violate the Operating Regulations or applicable law or regulation; or
- (v) Provider believes that Sub-merchant poses a financial or regulatory risk to Provider, Processor, Member Bank or an Association.

8.3 If Sub-merchant is terminated for cause, including but not limited to the reasons in Section 8.2 above, Provider may report Sub-merchant's business name and the names and other identification of its principals to the Terminated Merchant File. Sub-merchant expressly agrees and consents to such reporting, and Provider shall have no liability to Sub-merchant for any loss, expense or damage directly or indirectly sustained by Sub-merchant due to such reporting.

9. Indemnification.

9.1 Sub-merchant shall indemnify, defend, and hold harmless Provider, and its directors, officers, employees, affiliates and agents from and against all proceedings, claims, losses, damages, demands, liabilities and expenses whatsoever, including all reasonable legal and accounting fees and expenses and all reasonable collection costs, incurred by Provider, Processor and/or Member Bank, its directors, officers, employees, affiliates and agents resulting from or arising out of the

Services in this Agreement, Sub-merchant's processing activities, the business of Sub-merchant or its customers, any sales transaction acquired by Provider, Processor or Member Bank, any noncompliance with the Operating Regulations (or any rules or regulations promulgated by or in conjunction with the Associations) by Sub-merchant, or its agents (including any Merchant Supplier), any issue, problems, or disputes between Sub-merchant and its customers, any Data Incident, any infiltration, hack, breach, or violation of the processing system of Sub-merchant, Merchant Supplier, or any other third party processor or system, or by reason of any breach or nonperformance of any provision of this Agreement, on the part of the Sub-merchant, or its employees, agents, Merchant Suppliers or customers.

10. Limit of Liability; Force Majeure.

10.1 EXCEPT FOR THOSE EXPRESS WARRANTIES MADE IN THIS AGREEMENT, PROVIDER, PROCESSOR AND MEMBER BANK DISCLAIM ALL WARRANTIES, INCLUDING, WITHOUT LIMITATION, ANY EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SUB-MERCHANT HEREBY ACKNOWLEDGES THAT THERE ARE RISKS ASSOCIATED WITH THE ACCEPTANCE OF CARDS AND SUB-MERCHANT HEREBY ASSUMES ALL SUCH RISKS EXCEPT AS MAY BE EXPRESSLY SET FORTH HEREIN. WITHOUT LIMITING THE FOREGOING, NO PARTY HERETO SHALL BE LIABLE FOR LOST PROFITS, LOST BUSINESS OR ANY INCIDENTAL, SPECIAL, CONSEQUENTIAL OR PUNITIVE DAMAGES (WHETHER OR NOT ARISING OUT OF CIRCUMSTANCES KNOWN OR FORESEEABLE BY ANY PARTY HERETO) SUFFERED BY ANY PARTY, INCLUDING BUT NOT LIMITED TO SUB-MERCHANTS, THEIR CUSTOMERS OR ANY THIRD PARTY IN CONNECTION WITH THE SERVICES PROVIDED HEREUNDER. However, nothing in the foregoing sentence is in any way intended, and shall not be construed, to limit (i) Sub-merchant's obligation to pay any payment network fees, including, but not limited to, dues, fees, assessments or penalties due under this Agreement, including but not limited to those imposed by telecommunications services providers, VISA, MasterCard and/or Other Networks; or (ii) any damages due from Sub-merchant related to an early termination of this Agreement; or (iii) any damages due from Sub-merchant related to the failure by Sub-merchant to exclusively receive the Services from Provider to the extent required by the Agreement, and/or (iv) Sub-merchant's obligation to indemnify Provider pursuant to this Agreement. In no event shall Provider be liable for any damages or losses that are wholly or partially caused by Sub-merchants or its employees, agents, or Merchant Suppliers.

10.2 Sub-merchant's sole and exclusive remedy for any and all claims against Provider, Processor or its Member Bank arising out of or in any way related to this Agreement or the Services shall be termination of this Agreement.

10.3 Neither Provider, Processor or its Member Bank shall be deemed to be in default under this Agreement or liable for any delay or loss in the performance, failure to perform, or interruption of any Services to the extent resulting, from a Force Majeure Event. Upon such an occurrence,

performance shall be excused until the cause for the delay has been removed and Provider, Processor or its Member Bank have had a reasonable time to again provide the Services. No cause of action, regardless of form, shall be brought by a party hereto more than one (1) year after the cause of action arose, other than one for the nonpayment of fees and amounts due Provider under this Agreement. Any restriction on Provider or Processor's liability under this Agreement shall apply in the same manner to Member Bank.

11. Security, Data Incidents.

11.1 Sub-merchant will be solely responsible for the security, quality, accuracy, and adequacy of all transactions and information supplied hereunder, and will establish and maintain adequate audit controls to monitor the security, quality, maintenance, and delivery of such data. Without limiting the generality of the foregoing, Sub-merchant represents and warrants to Provider that it has implemented and will maintain secure systems for maintaining and processing information and for transmitting information via Provider to Processor. Neither Provider, Processor or Member Bank shall have any liability whatsoever for the security or availability of any communications connection used in connection with the Services provided hereunder. Sub-merchant acknowledges that Provider and Processor are responsible, respectively, only for the security of their own proprietary systems, and not for the systems of any third party, including without limitation any Merchant Supplier. Sub-merchant shall notify Provider immediately if Sub-merchant becomes aware of, or suspects a Data Incident. Sub-merchant agrees to fully cooperate with Provider, Processor and any Association with respect to any investigation and/or additional requirements related to a suspected Data Incident.

11.2 In the event that Sub-merchant receives such Card or other personal information in connection with the processing services provided under this Agreement, Sub-merchant agrees that it will not use it for any fraudulent purpose or in violation of any Card Organization Rules, including but not limited to Payment Card Industry Data Security Standards ("PCI DSS") or applicable laws or regulations. Sub-merchant must ensure compliance by itself and any third party service provider utilized by Sub-merchant, with all security standards and guidelines that are applicable to Sub-merchant and published from time to time, including without limitation those published by Visa, MasterCard or any other Card Organization, and including, without limitation, the Visa U.S.A. Cardholder Information Security Program ("CISP"), the MasterCard Site Data Protection ("SDP"), and (where applicable), the PCI Security Standards Council, Visa, and MasterCard PA-DSS ("Payment Application Data Security Standards") (collectively, the "Security Guidelines"). Provider will not be responsible for unauthorized use or access of Sub-merchant's customers' personal information or financial data, Sub-merchant's employees, or any other party associated with Sub-merchant, except to the extent such use or access is due to Provider's gross negligence or willful misconduct. Sub-merchant may not use any Card information other than for the sole purpose of completing the transaction authorized by the Payor for which the information was provided to Sub-merchant, or as specifically allowed by Card Organization Rules, Operating Regulations, or as required by applicable law. Provider may use any and all information gathered in the performance of the Services in accordance with its Privacy

Policy. In addition, Sub-merchant agrees that Provider may use such information for any lawful purpose, including marketing and advertising.

12. Investigations.

Sub-merchant will promptly notify Provider in the event Sub-merchant becomes aware of any unusual or suspicious activity regarding its customers and will cooperate with Provider, Processor, Member Bank and the Associations, as applicable, in connection with any investigation of the customer's background or activity.

13. Electronic Check ("eCheck") Services.

13.1 In the event that Sub-merchant, pursuant to its Application, receives eCheck services from Processor, the terms and conditions of this Section 13 will apply in addition to all other terms and conditions of the Agreement. The terms of this Section 13 do not modify Sub-merchant's due diligence obligations, including, without limitation, Sub-merchant's responsibility to satisfy all applicable anti-money laundering (AML) laws and regulations. Without limiting the generality of any other provision of the Agreement, Sub-merchant shall comply with Processor's and Member Bank's security procedures and any other requirements, including data retention and record-keeping requirements.

13.2 Sub-merchant will maintain a commercial transaction account ("Account") with a financial institution for the crediting and debiting of all payments and fees. Sub-merchant authorizes Processor and Member Bank to initiate and make transfers to and from the Account as contemplated by this Agreement. Any deficit in the Account shall be paid by Sub-merchant into the Account or as may be requested, directly to Processor or Member Bank to cover any deficit. Sub-merchant agrees to reimburse Provider, on demand, for any losses incurred as a result of insufficient funds in the Account. Provider will instruct Sub-merchant as to what data may be required by Provider to monitor the activity relative to the Account including any transfers to and from the Account.

13.3 During the term of this Agreement and for no less than one (1) year thereafter, Sub-merchant will maintain a positive balance in the Account, as defined in the Agreement at all times sufficient to accommodate all funding required by this Agreement. If at any time a deficit balance exists in the Account, Provider shall give Sub-merchant written notice of such deficit and Sub-merchant shall have two (2) business days to cure such deficit. Without limiting Sub-merchant's obligation to fund the Account as outlined in the first sentence of this Section, Provider reserves the right to require that Sub-merchant maintain a minimum balance in the Account in an amount to be reasonably determined by Provider. Any fees, interest expenses or other expenses with respect to the Account will be the sole responsibility of Sub-merchant and will be paid directly by Sub-merchant. If Processor or Provider incurs any fees, interest expenses or other expenses with respect to funding any deficit in the Account, such amount shall be reimbursed by Sub-merchant,

on demand by Provider. If Provider has required the establishment of a Reserve Account, Provider may, pursuant to Section 6 of this Agreement, offset such amount against the Reserve Account.

13.4 Processor has established a partitioned credit limit for eCheck transactions. In the event Sub-merchant receives eCheck Services from Processor, Processor may limit Sub-merchant's eCheck activity under this Agreement to maintain such limit. Sub-merchant acknowledges and agrees that Processor may at any time restrict the amount or type of transactions Processor, in its sole discretion, will accept. Processor and/or Member Bank may reject any ACH entry ("Entry") which does not comply with the requirements of this Agreement, the NACHA Operating Rules ("NACHA Rules"), applicable law or Member Bank's or Processor's requirements and specifications. Sub-merchant has no right to cancel or amend any Entry after its receipt by Processor or Member Bank. Sub-merchant agrees to be bound by the NACHA Rules and is responsible for payment for an Entry even if the Entry is erroneous or is a duplicate Entry. Sub-merchant agrees not to initiate any Entry or other transaction in violation of applicable United States law.

13.5 Sub-merchant ("Originator") must obtain the authorization of the applicable individual, corporation or other entity ("Receiver") to initiate a credit or debit Entry to the Receiver's account. This authorization must be in compliance with applicable law and the NACHA Rules. Sub-merchant will provide Processor with copies of any such authorizations upon request. Sub-merchant will maintain the original or a copy of each authorization for such period of time as may be required by the NACHA Rules or applicable law, whichever is longer.

13.6 Sub-merchant acknowledges and agrees that, if an Entry describes the Receiver inconsistently by name and account number, payment of the Entry transmitted by Member Bank to the Receiving Depository Financial Institution ("RDFI") may be made by the RDFI on the basis of the account number supplied by Sub-merchant, even if it identifies a person different from the named Receiver, and that Sub-merchant's obligation to pay the amount of the Entry to Processor and/or Member Bank is not excused in such circumstances. If Sub-merchant receives a Notification of Change ("NOC") Entry or corrected Notification of Change ("Corrected NOC") Entry, Sub-merchant shall ensure that changes requested by the NOC or Corrected NOC are made by, or on behalf of, the individual, corporation or other entity that initiated the entry within six (6) banking days of Sub-merchant's receipt of the NOC information or prior to initiating another entry to the Receiver's account, whichever is later. Sub-merchant shall retain data on file adequate to permit remaking of Entries, and shall provide such data to Processor upon its request.

13.7 Each time Sub-merchant transmits an Entry to Processor or Member Bank, Sub-merchant represents and warrants to Processor and Member Bank the following (i) that the Receiver has authorized Sub-merchant to transmit Entries to Processor and Member Bank in a manner that complies with the NACHA Rules, for processing and transmittal by Processor and Member Bank through the ACH system, which authorization has not been terminated and is in full force and effect, and Sub-merchant agrees to make payment for any credit Entries originated and for any debit Entries returned by the RDFI and that (ii) each Entry accurately reflects the entry data furnished to Sub-merchant and does not violate any agreement between Receiver and Sub-merchant.

13.8 Without limiting the generality of anything in the Agreement, Sub-merchant will be liable for, defend, hold harmless, and will indemnify Processor from and against all claims, losses, liabilities, damages, fines, fees, assessments, expenses (including attorneys' and collection fees and expenses) and other costs resulting from (i) inaccuracies in the Sub-merchants' bank account information provided to Processor, (ii) any instructions from Sub-merchant regarding the release or holding of Sub-merchants' settlement funds, and/or (iii) any breach by Sub-merchant of its obligations under the Agreement including this Section 13 or any misrepresentation by Sub-merchant under this Section 13.

14. Employee Non-Solicit.

During the term of this Agreement and for a one (1) year period following any termination of this Agreement, neither party will, either directly or indirectly, on its own behalf or on behalf of its affiliates or others, solicit, divert or hire away, or attempt to solicit, divert or hire away any person who is (or was, at any time during the term of the Agreement or such one (1) year period following) an employee of the other party. Notwithstanding the foregoing, it is understood that this employee non-solicitation provision shall not prohibit: (i) solicitation of any person who contacts a soliciting party on his or her own initiative without any solicitation by or encouragement from the soliciting party; (ii) generalized solicitations by advertising and the like which are not directed to specific individuals or employees of the protected party; (iii) solicitations of persons whose employment was previously terminated by the protected party; or (iv) solicitations of persons who have terminated their employment with the protected party without any prior solicitation by the soliciting party.

15. Audits.

At any reasonable time upon reasonable notice to Sub-merchant, Sub-merchant shall allow auditors, including the auditors of any Association or any third party designated by Provider or the applicable Association, to review the files held and the procedures followed by Sub-merchant at any or all of Sub-merchant's offices or places of business. Sub-merchant agrees that the cost of such audit shall be borne by Sub-merchant if the audit is conducted at the request of an Association or Member Bank. Sub-merchant will assist such auditors as may be necessary for them to complete their audit. In the event that a third-party audit is requested by an Association, Member Bank or regulatory agency, and/or required by the Operating Regulations or applicable law, Provider may, at its option, and at Sub-merchant's sole expense, either retain a third party to perform the audit, or require that Sub-merchant directly retain a specific third party auditor. If Provider requires that Sub-merchant directly retain the auditor, Sub-merchant shall arrange immediately for such audit to be performed, and will provide Provider and the Associations with a copy of any final audit report.

16. Amendment of Agreement or Modification of Services.

Provider may, without prior notice, amend this Agreement or modify the Services, including without limitation a change to the fees charged for the Services; provided that Provider will provide Sub-merchant at least thirty (30) calendar days' prior notice of such changes. Such notice may be made by means of email or a posting on the Website. Sub-merchant's continued use of the Services following notification of any change or amendment to this Agreement or the Services shall be taken as evidence of its consent and agreement to the modification and/or amendment. Posting notice of any modification or amendment on the Website shall be deemed adequate notification.

17. Choice of Law; Jurisdiction; Venue.

This Agreement shall be governed by, and construed and enforced in accordance with, the laws of the State of Delaware without regard to conflicts of law provisions. The parties hereby consent and submit to service of process, personal jurisdiction, and venue in the state and federal courts in the State of Delaware and select such courts as the exclusive forum with respect to any action or proceeding arising out of or in any way relating to this Agreement, and/or pertaining in any way to the relationship between Provider and Sub-merchant. PROVIDER AND SUB-MERCHANT HEREBY WAIVE THE RIGHT TO TRIAL BY JURY IN ANY MATTER UNDER, RELATED TO, OR ARISING OUT OF THIS AGREEMENT OR ANY TRANSACTIONS OR RELATIONSHIPS CONTEMPLATED HEREBY.

18. Headings and Construction.

The headings used in this Agreement are inserted for convenience only and will not affect the interpretation of any provision. The parties agree that the terms and conditions of this Agreement shall not be construed in favor of or against any party by reason of the extent to which any party or its professional advisors participated in the preparation of this document.

19. Entire Agreement; Parties to the Agreement.

This Agreement constitutes the agreement required by the Payment Facilitator Merchant Agreement between Provider and its Processor and Processor's Member Bank. VISA, MasterCard, Discover, American Express, or any other applicable networks may require that Sub-merchant also enter into a direct contractual relationship with Processor if Sub-merchant is categorized within certain MCC codes designated by VISA, MasterCard, Discover, American Express, or any other applicable network and Sub-merchant's card transaction volume exceeds \$1,000,000 for VISA, MasterCard, Discover, American Express, or any other applicable network or such other amount or criteria provided in the Operating Regulations. Where this direct contractual relationship is required by the Operating Regulations, by agreeing to this Agreement, Sub-merchant agrees to execute a direct processing agreement with Processor, in the form provided by Provider, and

Provider will provide Processor with a copy of such agreement. Moreover, in the event that this Agreement is assigned, Sub-merchant may be required to enter into a Direct Processing Agreement with a processor of the assignee's choice. Provider and Sub-merchant acknowledge and agree that Processor and Member Bank are hereby made parties to this Agreement for the purpose noted above and that upon an assignment of this Agreement a different processor and its member bank may become parties to this Agreement, and that Processor and Member Bank or processor and its member bank, as chosen by the assignee, each, as applicable, depending upon whether the Agreement has been assigned, shall have the right to enforce against Sub-merchant all terms and conditions of this Agreement, and any future amendments or addenda to which they are a party, that are set forth therein. This Agreement, its Exhibits and the Direct Processing Agreement, if applicable, shall constitute the entire agreement between the parties concerning the subject matter hereof. This Agreement shall not be superseded or replaced by the Direct Processing Agreement. In the event of a conflict between the terms of this Agreement and the Direct Processing Agreement, the terms of the Direct Processing Agreement shall control.

20. Authorization.

Each of the parties hereto represents and warrants on behalf of itself that it has full power and authority to enter into this Agreement; that the execution, delivery and performance of this Agreement has been duly authorized by all necessary corporate, limited liability company or partnership or other appropriate authorizing actions; that the execution, delivery and performance of this Agreement will not contravene any applicable by-law, corporate charter, operating agreement, partnership or joint venture agreement, law, regulation, order or judgment; that execution, delivery and performance of this Agreement will not contravene any provision or constitute a default under any other agreement, license or contract which such party is bound; and, that this Agreement is valid and enforceable in accordance with its terms.

21. Assignment & Successors.

Sub-merchant may not assign this Agreement or any of its rights or obligations hereunder without Provider's express written consent, and such consent shall not be unreasonably withheld. Provider may assign this Agreement at its sole discretion. The Agreement will be binding upon and inure to the benefit of the respective successors and assigns of the parties hereto.

22. Miscellaneous.

This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective successors, transferees and assignees. This Agreement is for the benefit of and may be enforced only by Provider and Sub-merchant and is not for the benefit of, and may not be enforced by, any other party. Notwithstanding the foregoing, Provider and Sub-merchant acknowledge and agree that Processor and Member Bank are hereby made parties to this Agreement for the purpose set forth in Section 19 above. If any provision of this Agreement is determined to be illegal or

invalid, such illegality or invalidity of that provision will not affect any of the remaining provisions and this Agreement will be construed as if such provision is not contained in the Agreement. "Member Bank" as used in this Agreement shall mean a member of VISA, MasterCard and/or Discover, as applicable, that provides sponsorship services in connection with this Agreement. The Member Bank is a party to this Agreement. The Member Bank may be changed, and its rights and obligations assigned to another party by Processor at any time without notice to Provider or Sub-merchant.

23. American Express Program Participation.

The following applies only if Sub-merchant participates in the American Express Program, as controlled by the American Express OptBlue Program Operating Regulations:

1. Sub-merchant must comply with, and accept Cards in accordance with, the terms of this Agreement and the American Express Merchant Operating Guide, as such terms may be amended from time to time.
2. Sub-merchant acknowledges that the American Express Merchant Operating Guide is incorporated by reference (available here: https://icm.aexp-static.com/content/dam/gms/en_us/optblue/us-mog.pdf).
3. Sub-merchant expressly authorizes Provider to submit transactions to, and receive settlement from, American Express on behalf of the Sub-merchant.
4. Sub-merchant expressly consents for (i) Provider to collect and disclose Transaction Data, Sub-merchant Data, and other information about the Sub-merchant to American Express; and (ii) American Express to use such information to perform its responsibilities in connection with the Program, promote the American Express Network, perform analytics and create reports, and for any other lawful business purposes, including commercial marketing communication purposes within the parameters of the Program Agreement, and important transactional or relationship communications from American Express.
5. Sub-merchant may opt-out of marketing messages by notifying Provider, however it will not preclude them from receiving important transactional or relationship communications from American Express. You may continue to receive marketing communications while American Express updates its records to reflect your choice. Opting out of commercial marketing communications will not preclude you from receiving important transactional or relationship messages from American Express.
6. Sub-merchant acknowledges and agrees that it may be converted from the OptBlue Program to a direct Card acceptance relationship with American Express if and when it becomes a High CV Merchant in accordance with the Operating Regulations. Sub-merchant further agrees that, upon conversion, (i) Sub-merchant will be bound by American Express' then-current Card Acceptance Agreement; and (ii) American Express will set pricing and other fees payable by the

Sub-merchant for Card acceptance. Additionally, with respect to commercial marketing communications from American Express:

By checking this box, Sub-merchant opts out of receiving future commercial marketing communications from American Express.

Note that you may continue to receive marketing communications while American Express updates its records to reflect your choice. Opting out of commercial marketing communications will not preclude you from receiving important transactional or relationship messages from American Express.

7. Sub-merchant acknowledges that American Express may use the information obtained in the Sub-merchant application at the time of setup to screen, communicate, and/or monitor Sub-merchant in connection with Card marketing and administrative purposes.

8. Sub-merchant acknowledges that it may not assign to any third party any payments due to it under this Agreement, and all indebtedness arising from Charges will be for bona fide sales of goods and services (or both) at its Establishments and free of liens, claims, and encumbrances other than ordinary sales taxes; provided, however, that the Sub-merchant may sell and assign future Transaction receivables to Provider, its affiliated entities and/ or any other cash advance funding source that partners with Provider or its affiliated entities, without consent of American Express.

9. American Express has third-party beneficiary rights, but not obligations, to this Agreement that will fully provide American Express with the ability to enforce the terms of the Agreement against the Sub-merchant.

10. Sub-merchant may opt out of accepting Cards at any time without directly or indirectly affecting its rights to accept Other Payment Products.

11. Provider may terminate Sub-merchant's right to accept Cards if it breaches any of the provisions in this Section or the American Express Merchant Operating Guide.

12. Provider has the right to immediately terminate a Sub-merchant for cause or fraudulent or other activity, or upon American Express' request.

13. Sub-merchant's refund policies for purchases on the Card must be at least as favorable as its refund policy for purchases on any Other Payment Products, and the refund policy be disclosed to Cardmembers at the time of purchase and in compliance with Applicable Law.

14. Sub-merchant is prohibited from billing or collecting from any Cardmember for any purchase or payment on the Card unless Chargeback has been exercised, the Sub-merchant has fully paid for such Charge, and it otherwise has the right to do so.

15. Sub-merchant shall comply with all Applicable Laws, rules and regulations relating to the conduct of the Sub-merchant's business.

16. Sub-merchant must comply with the DSR and PCI DSS, each as described in Chapter 15, "Data Security".

17. Sub-merchant must report all instances of a Data Incident immediately to Provider after discovery of the incident.

18. Sub-merchant shall cease all use of, and remove American Express Licensed Marks from the Sub-merchant's website and wherever else they are displayed upon termination of the Agreement or Sub-merchant's participation in the Program.

19. Sub-merchant shall ensure data quality and that Transaction Data and customer information is processed promptly, accurately and completely, and complies with the American Express Technical Specifications.

20. Sub-merchant is responsible for being aware of and adhering to privacy and data protection laws and provide specific and adequate disclosures to Cardmembers of collection, use, and processing of personal data.

EXHIBIT A

SUB-MERCHANT PAYMENT PROCESSING AGREEMENT

HARDWARE AND SUPPORT SERVICES

Hardware means the terminals, printers, readers, and hardware accessories necessary to support Sub-merchant's chosen payment processing solution. Sub-merchant may purchase or lease Hardware from Provider. This Exhibit A is an integral part of the Sub-merchant Payment Processing Agreement and is incorporated therein by reference.

1. Buy Hardware from Provider. Sub-merchant may, via email or phone, place an order to Provider to buy certain of its Hardware. Unless otherwise provided in the Hardware's documentation, Provider gives a one (1) year warranty, starting on the date of shipment to Sub-merchant, that the Hardware will be free from errors in workmanship or defects in materials. Hardware covered by this warranty, as stated above, will be repaired or replaced at no cost during the one (1) year warranty period, otherwise it may be repaired, if reasonably possible, or replaced and charged to Sub-merchant. Following the warranty period, at Sub-merchant's request, Provider will repair, if reasonably possible, or replace non-functioning Hardware and charge to Sub-merchant. If Sub-merchant returns Hardware which it bought from Provider within forty-five (45) days of purchase in original condition and never used, Provider will credit Sub-merchant the purchase price less a restocking fee of \$150. Provider cannot accept Hardware for credit after 45 days of the date of shipment to Sub-merchant.

2. Lease Hardware from Provider. Sub-merchant may, via email or phone, place an order to Provider to lease certain Hardware from Provider for a lease term of one (1) year ("Initial Term"). Except as hereafter provided, unless Sub-merchant gives notice to Provider at least ninety (90) days prior to the expiration of any Term, the lease shall renew for additional one (1) year terms ("Renewal Term") (collectively the "Term"). All Hardware which Provider may lease to Sub-merchant is the personal property of Provider and may not, under any circumstances, be considered fixtures. Sub-merchant may not sell, re-lease, encumber, or otherwise dispose of any Hardware leased from Provider and will keep the leased Hardware free of all liens, claims or encumbrances whatsoever. The leased Hardware will be replaced or repaired at no charge to Sub-merchant if the Hardware becomes inoperable through no fault of Sub-merchant, otherwise the Sub-merchant will be charged for the repairs. If the Hardware is damaged beyond repair, the Sub-merchant will be charged the current purchase price of the Hardware, minus any lease fees already paid. If the Sub-merchant requires new hardware, a new lease term or purchase agreement will be required. In the event that Sub-merchant wishes to return, or exchange hardware, Sub-merchant will be charged for the remainder of the lease for the returned or exchanged hardware and a new lease will be required for the new hardware. Sub-merchant must, within fifteen (15) days of receipt of any replacement Hardware, return the Hardware, which was replaced, to Provider at Merchant's expense. If Sub-merchant does not return the replaced Hardware, or if the Hardware became inoperative because of negligence or willful acts, Sub-merchant will be charged for the replacement value of the Hardware. If Sub-merchant terminates the Processing Agreement, which will automatically terminate the lease or terminates only the

lease prior to the end of its Term, payment for the remainder of the lease Term will be immediately due and payable to Provider. Upon termination of the lease, Sub-merchant must, within fifteen (15) days of the termination, return the leased Hardware to Provider at Merchant's expense or Merchant will be charged the replacement value of the Hardware.

3. Promotional Lease Hardware from Provider. Should a promotional lease offer be made available by Provider, Sub-merchant may, via email or phone, place an order for such Hardware to Provider to lease that certain Hardware from Provider for a lease term of one (1) year ("Initial Term"). Except as hereafter provided, unless Sub-merchant gives notice to Provider at least ninety (90) days prior to the expiration of any Term, the lease shall renew for additional one (1) year terms ("Renewal Term") (collectively the "Term"). With the exception of a replacement during the warranty period, as described below, any replacement or substitution of Hardware outside of the warranty period may be purchased or leased by the Sub-merchant from Provider at the then current pricing, terms and conditions. All Hardware which Provider may lease to Sub-merchant under such promotion is the personal property of Provider and may not, under any circumstances, be considered fixtures. Sub-merchant may not sell, re-lease, encumber, or otherwise dispose of any interest in any Hardware leased from Provider and will keep the leased Hardware free of all liens, claims or encumbrances whatsoever. During the manufacturer's warranty period only, the leased Hardware will be replaced at no charge to Sub-merchant if the Hardware becomes inoperable through no fault of Sub-merchant. If the required repairs were caused by negligence or willful acts, Sub-merchant will be charged for the repairs. Sub-merchant must, within fifteen (15) days of receipt of any replacement Hardware, return the Hardware, which was replaced, to Provider at Merchant's expense. If Sub-merchant does not return the replaced Hardware, or if the Hardware became inoperative because of negligence or willful acts, Sub-merchant will be charged for the replacement value of the Hardware. If Sub-merchant terminates the Processing Agreement, which will automatically terminate the lease or terminates only the lease prior to the end of its Term, payment for the remainder of the lease Term will be immediately due and payable to Provider. Upon termination of the lease, Sub-merchant must, within fifteen (15) days of the termination, return the leased Hardware to Provider at Merchant's expense or Merchant will be charged the replacement value of the Hardware.

4. Support Services. Provider's sole obligation with respect to a warranty claim received by Provider during the applicable warranty period shall be to repair or replace any malfunctioning Hardware, which may be with a refurbished product, provided that Sub-merchant has first utilized Provider's assistance services and has not resolved the problem. Hardware sent back to Provider for repair must be repairable for this service. From time to time, services may be interrupted for system maintenance and, furthermore, may also be interrupted for reasons beyond the control of Provider. Any extended warranty services, if any, shall be governed by the terms and conditions of such extended warranty.

5. LIMITATION OF LIABILITY. PROVIDER ACCEPTS NO LIABILITY TO SUB-MERCHANT FOR INCIDENTAL, SPECIAL, CONSEQUENTIAL, INDIRECT OR EXEMPLARY DAMAGES, INCLUDING WITHOUT LIMITATION LOST PROFITS, REVENUES AND BUSINESS OPPORTUNITIES, OR DAMAGES FOR INJURY TO PERSONS OR PROPERTY, ARISING OUT OF OR IN CONNECTION WITH ANY

HARDWARE OR SOFTWARE PURCHASED OR LEASED, OR SERVICE OBTAINED FROM PROVIDER. THE LIABILITIES LIMITED BY THIS SECTION APPLY (i) REGARDLESS OF THE FORM OF ACTION, WHETHER IN CONTRACT, TORT, STRICT PRODUCT LIABILITY, OR OTHERWISE; (ii) EVEN IF PROVIDER IS ADVISED IN ADVANCE OF THE POSSIBILITY OF THE DAMAGES IN QUESTION AND EVEN IF SUCH DAMAGES WERE FORESEEABLE; AND (iii) EVEN IF PROVIDER'S REMEDIES FAIL FOR THEIR ESSENTIAL PURPOSE. IF APPLICABLE LAW LIMITS THE APPLICATION OF THE PROVISIONS OF THIS SECTION, PROVIDER'S LIABILITY WILL BE LIMITED TO THE MAXIMUM EXTENT PERMISSIBLE.

6. LIMITED WARRANTY. EXCEPT FOR THE EXPRESS WARRANTIES, PROVIDER MAKES NO ADDITIONAL REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, BEYOND THOSE STATED HEREIN. PROVIDER DISCLAIMS ALL WARRANTIES AS TO THE MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY RIGHTS. PROVIDER DOES NOT WARRANT THAT THE HARDWARE, SERVICE OR SOFTWARE WILL OPERATE WITHOUT INTERRUPTION OR BE ERROR-FREE; AND EXCEPT AS PROVIDED IN THE EXPRESS WARRANTIES IN THIS EXHIBIT A, THE HARDWARE AND SOFTWARE ARE PROVIDED "AS IS."

U.S. GOVERNMENT RESTRICTED RIGHTS. The software and documentation are provided with RESTRICTED RIGHTS. Use, duplication, or disclosure by the Government is subject to restrictions as set forth in subparagraph (c) (1) (ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.227-7013 or subparagraphs (c) (1) and (2) of the Commercial Computer Software Restricted Rights at 48 CFR 52.22719, as applicable.

EXPORT RESTRICTIONS. Sub-merchant acknowledges that the software acquired hereunder may include technical data subject to U.S. export control laws and regulations. Sub-merchant confirms that it will not export or re-export the software, directly or indirectly, either to: (i) any countries that are subject to U.S. export restrictions, (ii) any end user who Sub-merchant knows or has reason to know will utilize them in the design, development or production of nuclear, chemical or biological weapons; or (iii) any end user who has been prohibited from participating in the U.S. export Transactions by any federal agency of the U.S. government.

EXHIBIT B

GIFT CARDS AND SERVICES

In the event that Sub-merchant, herein referred to as Merchant, receives gift cards and services from Provider, herein referred to as Reseller, via the service provider, Valutec Card Solutions, LLC (“Valutec”), Merchant acknowledges and agrees that the Gift Card Program, Gift Cards and Services provided to Merchant shall be governed by and subject to this Exhibit B, the application and the Gift Card Terms and Conditions attached hereto (collectively the “Agreement”). Merchant’s use of the Digital Physical eCommerce and Marketing features are additionally subject to third Party terms and conditions. Merchant agrees to be bound by this Agreement and authorizes Reseller, Valutec and/or its third-party service providers to debit and credit via ACH Merchant’s bank or other financial account(s) on file with Reseller or Valutec for any obligation owing from or to Merchant under this Agreement. Merchant acknowledges and agrees that Valutec may jointly with Reseller or separately perform activities under this Agreement whereby Valutec: (i) without imposing any obligation on Reseller, is hereby a third-party beneficiary under this Agreement for purposes of Valutec’s activities under this Agreement; (ii) may directly perform and/or enforce any and all rights and/or obligations of Reseller hereunder, and (iii) may jointly with Reseller or individually assert or exercise any rights or remedies in the Agreement available to Reseller related to Reseller’s rights under this Agreement, including but not limited to, any right to obtain indemnity from Merchant and to avail itself of any limits of liability. Merchant agrees that the financial institution(s) that hold Merchant’s bank or other financial account(s) shall not be liable for any loss or damage incurred as a result of any ACH debit or credit made pursuant to this authorization.

Gift Card Terms and Conditions

The following are the terms and conditions upon which Fullsteam Operations LLC (“Reseller”) via the service provider, Valutec Card Solutions, LLC, a Delaware limited liability company (“Valutec”) will provide Merchant Gift Cards and Services. Merchant agrees to be bound by these Gift Card Terms and Conditions and the Application effective as of the execution of the Application. References to Valutec below will mean, where applicable, Valutec and Reseller.

1. Gift Card Program. Merchant hereby requests and authorizes Valutec to provide the Services so that Merchant and, if applicable, any other Participating Merchant may process Gift Card Transactions under the Gift Card Program.

2. Services. Under the terms of this Agreement and any user documentation that may be furnished to Merchant by Valutec from time to time, Merchant will subscribe to, and Valutec will provide to Merchant, the services as set forth in this Section (collectively, the “Services”). As applicable, Valutec shall implement the Services at each of Merchant’s locations listed or referenced on the Application or a subsequent add location form or otherwise in accordance with an implementation schedule jointly developed by Valutec and Merchant. Merchant understands and agrees that some or all of the Services may be performed by Valutec’s third-party service providers and that Valutec may provide any and all data and information reasonably necessary for such service providers to provide the Services so long as such service providers are bound by the same or similar confidentiality obligations as set forth below in Section 12 applicable to Valutec. In the event (a) Merchant checks the box for any or all of the Valutec Services on the Application or any Valutec order form; or (b) Merchant is provided additional services by or through Valutec and Merchant does not object in writing to the provision of such services, Merchant subscribes to the applicable services, and Merchant agrees to be bound by and accept any and all terms and conditions provided or made available to Merchant applicable to the provision of the services, which services are part of the Services and may be provided directly by Valutec’s third-party service providers, Valutec, or a combination of Valutec’s third-party service providers and Valutec. Certain of the Services may require Merchant to have an active credit card processing service agreement with Valutec’s affiliated third-party processor and a member bank. Certain Gift Card Program features which are part of the Services include those set forth in the Application. Merchant acknowledges and agrees that Valutec may from time to time modify, expand, restrict, suspend, or terminate the Services or products that it offers to Merchant without obligation or liability to Merchant. As part of the Services Valutec will:

- i. Offer Merchant an electronic stored value payment instrument in the form of an electronic Gift Card and/or plastic Gift Card encoded with a magnetic stripe;
- ii. Increase or decrease, as applicable, the balance of a Gift Card upon the completion of a Gift Card Transaction;
- iii. Provide the capability for Cardholders to check their Gift Card balances online;
- iv. Decline a Gift Card Transaction if the then-current balance on the Gift Card is less than the transaction amount;
- v. Provide Merchant an online reporting package detailing the Gift Card Transactions for each Gift Card; and
- vi. Provide Merchant access to help desksupport for the Gift Card Program over the telephone.

3. Merchant Obligations.

A. **Transactions.** Merchant will honor, in accordance with the terms and conditions set forth in this Agreement, any Gift Card properly tendered by a Cardholder for use in a Gift Card Transaction. Merchant will not discriminate as to price, service or other conditions of sale with respect to any tendered Gift Card Transaction. Merchant will not present for processing any Gift Card Transaction not originated as a result of a transaction directly between Merchant and the Cardholder. If applicable, Merchant will check the signature and expiration date of each Gift Card presented and will not complete a Gift Card Transaction if the signature on the sales draft does not correspond with the signature on the Gift Card or if the Gift Card is not valid or has expired. Merchant will not request additional identification, or information, from a Cardholder unless necessary in order to complete the Gift Card Transaction or under the Rules. All disputes between Merchant and any Cardholder relating to any Gift Card Transaction will be settled between Merchant and the Cardholder. Valutec bears no responsibility for such disputes.

B. **Authorizations.** Merchant will obtain an authorization via a Valutec Integration when processing a Gift Card Transaction. Authorizations are not a guarantee of payment from a Participating Merchant and will not validate a fraudulent transaction.

C. **Process.** Merchant, at its sole cost and expense, shall maintain and be responsible for the Valutec Integration.

D. **Rules.** Merchant will comply with all rules and instructions provided to Merchant by Valutec. Merchant is responsible for ensuring that its Gift Cards, including the verbiage and terms contained on and that apply to the Gift Cards and Merchant’s issuance and usage of the Gift Cards, complies with all applicable local, state and federal laws, rules and regulations, including, but not limited to, the Credit Card Accountability Responsibility and Disclosure Act of 2009 and the Bank Secrecy Act of 1970, as amended, and its implementing regulations (collectively, the “Bank Secrecy Act”) (individually, a “Rule” and, collectively, the “Rules”). Merchant will redeem Gift Cards only for goods or services provided by Merchant and will not redeem Gift Cards for cash unless required under any Rule. Furthermore, Merchant specifically acknowledges and agrees that Valutec has not and is not expected to provide Merchant with any analysis, interpretation or advice regarding the compliance of any aspect of Merchant’s or Cardholder’s use of the Gift Card Program or other systems, services, products or programs of Merchant, with any third-party rights or Rules. Upon request, Merchant shall provide reasonable proof of compliance with the Rules and Valutec shall have no obligation to provide its services where Valutec reasonably believes that Merchant has not so complied.

E. **Content; Royalty Free License.** By Merchant’s submission to Valutec of images, brands, marks, verbiage, terms and/or other graphics (collectively the

“Content”), Merchant, hereby authorizes and permits Valutec and its affiliated entities to reproduce such Content on Gift Cards and other collateral used by Merchant under the Gift Card Program. This authorization and permission is granted royalty-free. Merchant represents and warrants that it has the requisite ownership, license, and/or rights to the Content for its use and reproduction of same by Valutec and that such use and reproduction will not violate any third party intellectual property rights.

F. **Exclusivity.** During the term of this Agreement, Merchant will not participate in any program similar to the Gift Card Program not administered or otherwise provided by Valutec or contract with any entity other than Valutec that provides services similar to the Services.

G. **Information.** Merchant will provide Valutec with financial information as requested from time to time. Merchant will not use, sell, exchange, or provide to any third party, and will keep strictly confidential, any information related to the Gift Card Program, including, but not limited to, sales slips, monthly statements, Valutec documents, and this Agreement.

H. **Review and Reconciliation of Accounts.** Merchant agrees to review its Gift Card Transactions, Valutec’s reports (including those made available online), notices, and invoices, and balance and reconcile Merchant’s bank account(s) associated with the Gift Card Program on a daily and monthly basis. Merchant agrees to notify Valutec immediately of any error in or dispute with any report, notice, invoice, Service deficiency, and/or billing or payment error. Valutec has no obligation to correct any errors, disputes, or Service deficiencies that flow from Merchant’s failure to comply with the duties and obligations in this section.

I. **Gift Cards.** Merchant agrees to redeem Gift Cards for eligible purchases of goods and services during all normal business hours. Merchant shall not condition the purchase or reload of any Gift Card on the purchase of another good or service and shall accept all forms of payment for purchases or reloads of Gift Cards, except a Gift Card, that it accepts for purchases of any other goods or services. Merchant agrees that Gift Cards may be used repeatedly by a Cardholder for a retail purchase of any amount less than or equal to the then-current Gift Card balance. Merchant furthermore agrees that Gift Cards may be redeemed by a Cardholder at any Participating Merchant location for up to the dollar amount loaded on the Gift Cards and may be reloaded at any Participating Merchant location.

J. **Non-Clearing; Unauthorized Purchases.** Merchant agrees that Valutec is not responsible for the non-clearing payment of a Gift Card purchase or for any subsequent unauthorized purchases or Gift Card Transactions and that Merchant is solely liable for these events. Merchant agrees that non-electronic authorizations are not permitted.

K. **Audit.** Merchant agrees to cooperate and provide all information requested as reasonably necessary for Valutec and/or its third-party service providers to audit or review the Gift Card Program and/or Gift Card Transactions and furthermore agrees that Valutec may adjust such audited or reviewed Gift Card Transactions and take such other actions or steps as it deems reasonable as a result of any finding from such audits or reviews.

L. **Payments.** Merchant does hereby agree and authorize any obligation owing under this Agreement (including, without limitation, any Fees) to be charged and deducted from Merchant’s bank or other account(s) on file with Valutec by Valutec via an ACH debit. Merchant’s payment obligations under this Agreement shall survive the termination of this Agreement.

4. Participating Merchants. Merchant requests and authorizes Valutec to provide the Services to Merchant and to each of the merchants set forth on the Application as well as any subsequently added merchant as set forth in Section 5 (Merchant, each merchant set forth on the Application, and any and all such added merchants shall be referred to individually as a “Participating Merchant” and collectively as the “Participating Merchants”) so that Gift Cards issued by one Participating Merchant may be redeemed by Cardholders at all of the Participating Merchants. Merchant agrees to indemnify and hold harmless Valutec and its officers, directors, employees, agents and representatives from any loss, damage or claim relating to or arising from any action or inaction of any Participating Merchant. Valutec agrees to provide the Services to the Participating Merchants as a group under the terms of this Agreement; provided, however, that each Participating Merchant shall execute an Application.

5. Additional Participating Merchants. Merchant agrees that Valutec may, at any time and without notice to Merchant, add as a Participating Merchant any merchant that (A) uses the same or similar trade name as Merchant or (B) is a part of a chain of independently owned stores, independently owned franchisees or some other group of merchants commonly connected by or through a brand, web-site, club, affiliation or some other commonality. Merchant additionally agrees that Valutec may add as a Participating Merchant any merchant approved in writing by Merchant.

6. Bank Secrecy Act Compliance. In the event that the Gift Card Program qualifies as a “prepaid program” (as defined in the Bank Secrecy Act), Merchant agrees that it shall serve as the “provider of prepaid access” (as defined in the Bank Secrecy Act) and comply with all of the requirements of a provider of prepaid access under the Bank Secrecy Act, including, without limitation, the requirement to register as a money services business with the Financial Crimes Enforcement Network of the United States Department of the Treasury and identify the prepaid programs for which it is serving as the provider of prepaid access. Merchant acknowledges and agrees that it shall be solely responsible for limiting the associated value of a Gift Card to \$2,000 per day and implementing any and all policies and procedures reasonably adapted to prevent the sale of prepaid access to funds of more than \$10,000 to one individual per day and that failure to so limit such associated value and/or implement such policies and procedures may result in additional data collection, reporting, registration and other requirements being applicable to Merchant under the Rules. Merchant further acknowledges and agrees that, other than Valutec’s obligation to provide an online reporting package in accordance with Section 2, Valutec shall have no obligation to provide any information or assistance to Merchant in connection with Merchant’s compliance with any Rule.

7. ACH Transfer Services.

A. **Use of ACH Transfer Services.** In the event (a) Valutec provides ACH Transfer Services to Merchant; and (b) Merchant accepts, permits, or does not object in writing to Valutec’s provision of such services, Merchant subscribes to the ACH Transfer Services, and the Services shall include the ACH Transfer Services. As part of Merchant’s subscription to the ACH Transfer Services, Merchant agrees to provide Valutec with its banking and bank account information to facilitate ACH transfers from the bank account of Merchant to the bank account of another Participating Merchant (directly or vis-à-vis a central merchant pooling bank account owned by Merchant, a Participating Merchant or another third party) in connection with Gift Card Transactions. In order to protect the Participating Merchants and their customers, Merchant agrees that it shall, at all times, have available funds in its bank account(s) to cover all outstanding Gift Card liability (directly or vis-à-vis a central merchant pooling bank account owned by Merchant, a Participating Merchant or another third party). Merchant authorizes Valutec to credit or debit Merchant’s bank account(s) for all payments on Valutec’s or a Participating Merchant’s behalf and to debit or credit Merchant’s bank account(s) for all Gift Card Transactions. If any type of overpayment to Merchant or other error occurs, Merchant’s bank account(s) may be debited or credited, without notice, and, if Merchant’s bank account(s) do not contain sufficient funds, Merchant agrees to immediately fund into such account(s) the amount owed. Merchant agrees not to, directly or indirectly, prevent, block or otherwise preclude any debit by Valutec to Merchant’s bank account(s) permitted hereunder. For purposes of this Agreement, the term “bank account” includes a financial account at a bank, a credit union or another financial institution.

B. **Non-Use of the ACH Transfer Services.** In the event that Merchant does not subscribe to the ACH Transfer Services, Merchant shall be solely responsible for reconciling and paying any amounts owed to any other Participating Merchant in connection with any Gift Card Transactions.

C. **General Terms, ACH Transfers.** Whether or not Merchant subscribes to the ACH Transfer Services, Merchant agrees that (i) it shall hold harmless and indemnify Valutec and its officers, directors, employees, agents, and representatives from any loss, damage, or claim relating to or arising out of any failure by Merchant or any other Participating Merchant to pay any amounts, or have adequate funds for ACH transfers, in connection with any Gift Card Transactions and (ii) Valutec, in the event of any such failure by Merchant or any other Participating Merchant, shall have no obligation to pay Merchant or any other Participating Merchant for any amounts owed to Merchant or any other Participating Merchant in connection with any Gift Card Transactions and shall have no liability for any failure of Merchant or any other Participating Merchant to pay such amounts.

8. Fees.

A. **Application.** Merchant agrees to pay Valutec the fees set forth on the Application (collectively, the “Fees”). Valutec shall have the right to determine and modify the Fees in its sole discretion upon notice to Merchant.

B. **Gift Card and Other Order Forms.** In addition to the Fees, Merchant agrees to pay Valutec all fees (including, without limitation, any shipping or handling fees) set forth in any Gift Card or other Valutec provided order form submitted by Merchant. The fees specified in a Gift Card or other Valutec provided order form are

based on Merchant's representations as to the anticipated number of Gift Cards under the Gift Card Program and the Gift Card Program features selected by Merchant.

9. Integration. Not all POS systems or terminals are integrated with Valutec's Gift Card Program processing systems. Merchant agrees that Valutec shall have no obligation: (A) to integrate its Gift Card Program processing system(s) or any or certain of its features with any POS system or terminal; and (B) for any cost associated with a Valutec Integration or any upgrades or service fees charged by any POS developer or reseller.

10. Information Security.

A. **Information Security.** Merchant shall be responsible for maintaining security for its own systems, servers, and communications links as necessary to (i) protect the security and integrity of Valutec's systems and servers on which Cardholder Data or Gift Card Transaction data is stored and (ii) protect against unauthorized access to or use of Valutec's systems and servers on which Cardholder Data or Gift Card Transaction data is stored.

B. **Data Backup.** Merchant shall maintain, for the longer of ten (10) business days or the number of days required under any Rule, adequate records, including backup on magnetic tape or other electronic media, of Gift Card Transactions from which lost or damaged items or data can be reconstructed. Merchant assumes all responsibility and liability for any loss or damage resulting from failure to maintain such records.

C. **Transmission of Data.** The responsibility and expense for transmission of Gift Card Transaction and other data between Valutec and Merchant, and the risk of loss for data and media transmitted between Valutec and Merchant, shall be borne by Merchant. Data lost by Valutec following receipt shall, at Valutec's election, either be (i) restored by Valutec from its backup media or (ii) reconstructed from Merchant's backup media at no additional charge to Merchant.

D. **Reliance on Data.** Valutec will provide the Services on the basis of information furnished by Merchant. Valutec shall be entitled to rely upon any such information or instructions as provided by Merchant. If any error results from incorrect input supplied by Merchant, Merchant shall be responsible for discovering and reporting such incorrect input and/or error and supplying the data necessary to correct such input and/or error to Valutec for processing at the earliest possible time. Valutec will rely on the instructions and directions of Merchant in administering the Gift Card Program and will not be responsible for any liability arising from Valutec's performance in accordance with Merchant's instructions.

11. Proprietary Interests. Merchant shall have no interest whatsoever, including copyright interests, franchise interests, license interests, patent rights, property rights or other interest in the Gift Card Program and/or Services. This Agreement is not to be construed as granting to Merchant any patent rights or patent license in any patent which Valutec may obtain in respect of the Gift Card Program, Services or Valutec's software or equipment. Merchant will make no attempt to duplicate or otherwise ascertain the components, circuit diagrams, logic diagrams, flow charts, source and object code, schematics or operation of, or otherwise attempt to reverse engineer any Valutec provided equipment or software.

12. Confidentiality.

A. **Valutec Systems and Information.** Merchant acknowledges that it has no rights in any Valutec software, systems, documentation, guidelines, procedures and similar related materials or information used to administer the Gift Card Program or provide the Services or any modifications thereto provided by Valutec, except with respect to Merchant's use of the same in accordance with and during the term of this Agreement to process the Gift Card Transactions. It is acknowledged and agreed that Merchant is the owner of its Cardholder Data and Gift Card Transaction data and that Valutec shall have the right to freely use such data during and after the term of this Agreement to administer and operate the Gift Card Program, perform its obligations under this Agreement and for any other legal purpose and may share such data with third parties, including, but not limited to, the Participating Merchants and Valutec's third-party service providers. Merchant agrees that Valutec may aggregate the Cardholder Data and Gift Card Transaction data with other Valutec data and that Valutec shall be the sole owner of such aggregated data and may rent, license, sell or otherwise use such aggregated data with third parties. Furthermore, by Merchant selecting or using the Go Mobile, Social Sharing or other Online Gifts Gift Card Program features, Merchant agrees that Valutec may provide Merchant's name, contact information, location, website address, and other Merchant credentials to Facebook for use in Facebook's gift card marketplace or other online social media program designed to drive consumers to local merchants.

B. **Confidentiality.** Except as otherwise set forth in this Agreement, Merchant and Valutec each agrees that it will not use for its own purposes, will not disclose to any third party, and will retain in strictest confidence all information and data owned by the other party (or for which the other party has an obligation of confidentiality) (including, without limitation, the terms of this Agreement, and any other information related to Valutec's administration of the Gift Card Program and the Services, all of which the parties agree belong to Valutec) and that it will safeguard such information and data by using the same degree of care and discretion that it uses to protect its own confidential information, which shall in no case be less than a commercially reasonable standard of care. No party will be obligated to maintain the confidentiality of information: (i) that is released in the public domain through no act of the receiving party in breach of this Agreement, (ii) that was in the possession of the receiving party prior to its disclosure under this Agreement, and the receiving party can prove such possession, (iii) that is received from another source that has no restriction on use or disclosure, or (iv) that is required to be disclosed by any Rule, provided that the receiving party provides the disclosing party with notice and an opportunity to oppose or condition the disclosure. Valutec shall have the right to inspect Merchant's premises to ensure that confidential information is properly protected from disclosure, damage or theft. Each party agrees to destroy or return any confidential information of the other party, upon the request of the other party or the termination of this Agreement, except that either party may retain a copy to comply with applicable Rules so long as such party continues to maintain the confidentiality of such confidential information.

13. Gift Card Production. The Gift Card order form specifies certain production-related prices for magnetic stripe Gift Cards to be used in connection with the Gift Card Program. Pricing for Gift Card orders shall be at Valutec's applicable pricing in effect at the time of the order (which shall be available from Valutec upon request at the time of the order). Notwithstanding anything to the contrary set forth in Section 3.F, Merchant shall not be obligated to purchase Gift Cards from Valutec; provided, however, that Gift Card data, transaction and other Fees (as set forth on the Application), as applicable, still apply to such Gift Cards. If Merchant elects to purchase Gift Cards from Valutec, Valutec will arrange for the Gift Card production, and Merchant will be charged for the Gift Cards. The form and content of, and any language on, Gift Cards shall be subject to Valutec's approval, which approval shall not be unreasonably withheld. To the extent permitted by applicable Rules, Merchant may provide for an expiration date for any Gift Card, so long as that expiration date and any other required disclosures are clearly printed on the Gift Card in compliance with all applicable Rules. Merchant shall be solely responsible for complying with all applicable Rules relating to the Gift Cards and the Gift Card Program. Valutec's approval of any or all limits, policies or procedures pertaining to the Gift Card Program or any language on, or content or form of, any Gift Cards shall in no way constitute or be construed as Valutec's warranty or endorsement that the Gift Card Program or such Gift Cards comply with any Rule.

14. Disclaimer of Warranties. EXCEPT AS EXPRESSLY SET FORTH HEREIN TO THE CONTRARY, THE SERVICES AND PRODUCTS ARE PROVIDED BY VALUTEC WITHOUT WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. NEITHER THIS AGREEMENT NOR ANY DOCUMENTATION FURNISHED UNDER IT (INCLUDING, WITHOUT LIMITATION, ANY GIFT CARD ORDER FORM OR OTHER FORM PROVIDED BY VALUTEC TO MERCHANT) IS INTENDED TO EXPRESS OR IMPLY ANY WARRANTY BY VALUTEC THAT THE SERVICES OR PRODUCTS WILL FUNCTION WITHOUT INTERRUPTION OR ERRORS. ANY SECURITY MECHANISMS INCORPORATED IN THE SERVICES HAVE INHERENT LIMITATIONS, AND MERCHANT AGREES THAT IT HAS INDEPENDENTLY DETERMINED THAT SUCH MECHANISMS ADEQUATELY MEET ITS SECURITY AND RELIABILITY REQUIREMENTS. FURTHERMORE, MERCHANT AGREES THAT IN THE EVENT THE CERTAIN OR ALL OF THE SERVICES AND/OR GIFT CARD PROGRAM IS DOWN OR OTHERWISE NON-FUNCTIONAL AND NOT ABLE TO VERIFY GIFT CARD TRANSACTIONS FOR CUSTOMERS, VALUTEC WILL NOT PROCESS SUCH TRANSACTIONS. MERCHANT ACKNOWLEDGES THAT VALUTEC SHALL NOT BE RESPONSIBLE FOR LOST PROFITS OR SALES DUE TO THE MALFUNCTION OF THE SERVICES AND/OR GIFT CARD PROGRAM. MERCHANT AGREES THAT IT WILL BE SOLELY RESPONSIBLE FOR ANY TRANSACTIONS THAT ARE AUTHORIZED BY MERCHANT WITHOUT THE KNOWLEDGE OR WRITTEN CONSENT OF VALUTEC, AND, IN ADDITION TO THE PROVISIONS OF SECTION 15, WILL WHOLLY INDEMNIFY AND HOLD HARMLESS VALUTEC FROM AND AGAINST ANY AND ALL DAMAGE, LOSS, LIABILITY, CONSEQUENTIAL DAMAGE, EXPENSE, CLAIM OR OBLIGATION ARISING IN CONNECTION THEREWITH.

15. Indemnification. Valutec and Merchant agree that they shall, as the "Indemnifying Party", each indemnify and hold harmless the other party and its officers,

directors and shareholders, as the "Indemnified Party", from any and all loss, cost, expense, claim, damage and liability (including attorney's fees and court costs) paid or incurred by the Indemnified Party, to the extent it arises from third party claims, caused by, or is attributable to (a) the failure or breach by the Indemnifying Party or its representatives to abide by the terms and/or provisions of this Agreement; (b) the violation by the Indemnifying Party or its representatives, of any applicable laws, regulations or court orders relating to this Agreement; or (c) gross negligence, willful misconduct or any act or omission by the Indemnifying Party or its representatives.

16. Term and Termination.

A. **Term.** The term of this Agreement shall commence on the date of execution of the Application by Merchant and continue in effect for the initial term set forth in the Application or where no such initial term is expressly provided in the Application, for a period of thirty-six months (36) months (the "Initial Term") and, after the Initial Term, automatically renew for consecutive twelve (12) month terms, unless either party provides written notice of termination to the other no less than sixty (60) days prior to the end of the then-current twelve (12) month term.

B. **Early Termination Fee.** If Merchant terminates this Agreement before the end of the Initial Term or any renewal term, unless otherwise prohibited by law, Merchant shall be liable for and charged an early termination fee of an amount equal to the average monthly fees assessed to Merchant under the Agreement for months during which Merchant processed any transactions multiplied by the number of months remaining in the then-current Initial Term or renewal term, as applicable.

C. **Valutec Termination, and Conversion.** Valutec may, in its sole discretion, terminate this Agreement at any time upon thirty (30) days' prior notice to Merchant. It is the sole responsibility of Merchant to accomplish the conversion of its Gift Card processing upon the termination of this Agreement.

D. **Post-Termination Duties.** Following the termination of this Agreement for any reason, Merchant will immediately cease selling Gift Cards. Valutec shall provide Merchant, at Merchant's expense, assistance to facilitate the orderly transition of the Gift Card Program to Merchant or its designee ("Conversion Assistance"). Before providing any Conversion Assistance, Merchant agrees to pay Valutec a conversion assistance fee equal to the greater of: (a) \$495.00 per location; or (b) up to a maximum of \$1,500.00, 10% of the aggregate amount of all unused account balances of all Gift Cards issued by Merchant for Valutec's standard conversion assistance plus, where applicable, the amount of Valutec's good faith estimate for any custom programming or other custom services requested by Merchant. Merchant agrees that, prior to or upon the termination of this Agreement, Merchant must either (A) refund the unused account balances of Gift Cards issued by Merchant to the Cardholders, (B) transfer the unused account balance of each Gift Card issued by Merchant to another gift card program providing the Cardholder with access to such unused account balance, or (C) reach a mutual agreement with Valutec to provide continuation of the Gift Card Program; provided, however, that, in the event there are one or more other Participating Merchants, Merchant must, prior to or upon the termination of this Agreement, pay the aggregate amount of all unused account balances of all Gift Cards issued by Merchant, in the form of a lump sum payment, to any other Participating Merchant or other third party designated by Valutec, for the benefit of the other Participating Merchants, so that funds will be available for all unused account balances of Gift Cards issued by Merchant to be redeemed at the other Participating Merchants. Merchant agrees and acknowledges that solely it is liable to the Cardholders of Gift Cards issued by Merchant for all account balances during and after the term of this Agreement.

E. **Merchant's Responsibility for Gift Card Usage.** Merchant understands and agrees that it shall be solely responsible and liable for all Gift Card usage including usage resulting from stolen, lost, expired or unauthorized Gift Cards. Notwithstanding anything in this Agreement to the contrary, Merchant further hereby understands and agrees that Valutec will not be responsible or liable for any funds incorrectly or not transferred as a result of: (A) insufficient funds in the account of Merchant or any of the Participating Merchants; (B) any change or changes in banking or bank account information of Merchant or any of the Participating Merchants; (C) errors that directly result from information provided by Merchant, any of the other Participating Merchants or any other third party; or (D) other unintentional errors made by Valutec in providing the Services.

17. Limitation of Liability. Neither Valutec nor anyone acting on Valutec's behalf shall be liable for failure to provide the Services if such failure is due to any cause or condition beyond such party's reasonable control, which shall include, but shall not be limited to, acts of God or of the public enemy, acts of the Government in either its sovereign or contractual capacity, fires, floods, epidemics, quarantine restrictions, strikes, shortages of labor or materials, freight embargoes, unusually severe weather, breakdowns, operational failures, electrical power failures, communications failures, unavoidable delays, the errors or failures of third-party systems, or other similar causes beyond such party's control. The liability of Valutec and anyone acting on Valutec's behalf for any loss arising out of or relating in any way to this Agreement, including, but not limited to, the unavailability or malfunction of the Services, shall, in the aggregate, be limited to actual, direct, and general money damages in an amount not to exceed the greater of:

(A) \$900.00; or (B) the aggregate amount of Fees paid by Merchant to Valutec for Services during the previous twelve (12) months or such lesser number of months as shall have elapsed subsequent to the effective date of this Agreement. This shall be the extent of liability of Valutec and anyone acting on Valutec's behalf arising out of or relating in any way to this Agreement, including alleged acts of negligence, breach of contract, or otherwise and regardless of the basis on which any legal or equitable action may be brought against Valutec or anyone acting on Valutec's behalf, and the foregoing shall constitute Merchant's exclusive remedy. Under no circumstances shall Valutec or anyone acting on Valutec's behalf be liable for any lost profits, lost interest, or special, consequential, punitive or exemplary damages arising out of or relating in any way to this Agreement. It is agreed that in no event will Valutec or anyone acting on Valutec's behalf be liable for any claim, loss, error, damage, or expense arising out of or relating in any way to this Agreement that is not reported in writing to Valutec by Merchant within forty-five (45) days of the act or omission to act that resulted in such claim, loss, error, damage, or expense. Merchant expressly waives any such claim not brought within the time period set forth in the immediately preceding sentence.

18. Taxes. All fees and prices charged to Merchant in connection with this Agreement, any Gift Card order form, or any other form provided by Valutec to Merchant, are exclusive of sales tax. Merchant shall be responsible for any federal, state, and local sales, use, property, and other taxes that may be imposed as a result of this Agreement, any Gift Card order form, or other form provided by Valutec to Merchant, or the Gift Card Program (except taxes imposed upon Valutec's taxable net income).

19.

Attorneys' Fees /Jury Trial Waiver /Choice of Law/Venue.

If Valutec defends or enforces any of its rights under this Agreement in any collection or legal action, Merchant agrees to reimburse Valutec for all costs and expenses, including reasonable attorneys' fees, as a result of such collection or legal action. Merchant waives trial by jury with respect to any litigation arising out of or relating to this Agreement. Valutec and Merchant agree that any any other parties. Merchant further agrees that Valutec may provide a copy of this Agreement and any and all amendments to any other Participating Merchant, who will be deemed a third-party beneficiary of this Agreement, for the purpose of bringing an action under this Agreement in the name of such Participating Merchant solely to enforce any breach by Merchant of a representation, warranty, term or provision in this Agreement. Complete Agreement. This Agreement (including any Gift Card order forms or other form provided by Valutec to Merchant subsequently submitted by Merchant and accepted by Valutec) embodies the parties' final, complete and exclusive agreement with respect to the Gift Card Program and the Services. This Agreement shall supersede all prior and contemporaneous agreements, understandings and representations, written or oral, with respect to the and all disputes or controversies of any nature whatsoever (whether in contract, tort or otherwise) arising out of or in connection with or relating to (A) this Agreement, (B) the relationships that result from this Agreement, or (C) the validity, scope, interpretation or enforceability of the choice of law and venue provisions of this Agreement, shall be governed by the laws of the State of Ohio notwithstanding any conflicts of laws rules and shall be brought in either the state or federal courts in Cincinnati, Ohio or Hamilton County, Ohio, and Valutec and Merchant expressly agree to the exclusive jurisdiction of such courts. Valutec and Merchant also agree that any and all such disputes or controversies shall be resolved on an individual basis without resort to any form of class action and shall not be consolidated with the claims of Gift Card Program and the Services.

20. Notices. All notices required by this Agreement shall be in writing. All notices sent to Valutec shall be sent by overnight courier, or regular or certified mail and shall be effective upon actual receipt by the General Counsel of Valutec at 8500 Governors Hill Drive, Symmes Township, Ohio 45249 (or at such other address provided in writing by Valutec to Merchant). All notices sent to Merchant shall be sent by email, facsimile, overnight courier, or regular or certified mail and shall be effective upon actual receipt at the email address, facsimile number, or physical address provided by Merchant in the Application (or at such other email address, facsimile number, or physical address for Merchant on file with Valutec).

21. Assignability. Merchant shall not assign, subrogate or transfer any interest, obligation or right arising out of this Agreement without prior written consent from Valutec, which shall not be unreasonably withheld.

22. Amendments. This Agreement may only be amended in a writing signed by Valutec and Merchant. Notwithstanding the previous sentence: (a) any and all fees and charges payable under this Agreement may be changed immediately by Valutec upon notice to Merchant in accordance with Section 8; and (b) Valutec may provide Merchant either an amendment to this Agreement or an entirely new Gift Card Terms and Conditions, which amendment or new Gift Card Terms and Conditions will be binding upon Merchant if Merchant or any other Participating Merchant submits to Valutec a Gift Card Transaction after the effective date of such amendment or new Gift Card Terms and Conditions.

23. Definitions. In addition to the capitalized terms defined elsewhere in this Agreement, the following terms when used in this Agreement will have the meanings set forth in this Section.

ACH Transfer Services means the processing by Valutec of ACH transfers between accounts of Participating Merchants in connection with Gift Card Transactions pursuant to the terms set forth in Section 7.

Cardholder means a person possessing a Gift Card.

Cardholder Data means the consumer profile information, if any, collected by the Gift Card Program software.

Card Services Agreement shall have the meaning set forth in Section 16.

Gift Card means any valid unexpired stored value card (in physical or digital form) bearing the name or trade name of Merchant issued as part of the Gift Card Program or the name or trade name of any other Participating Merchant issued as part of such Participating Merchant's Gift Card Program administered by Valutec.

Gift Card Program means the programs and systems administered and services provided by Valutec as set forth in this Agreement that allow (i) Cardholders to purchase goods or services from Participating Merchants using Gift Cards and consists of a POS-based authorization system for activating Gift Cards and authorizing subsequent Gift Card Transactions and (ii) Merchant to select certain or all of the Services and features set forth in the Application or other form provided by Valutec to Merchant.

Gift Card Transaction means a transaction in which a Cardholder via a Valutec Integration (i) purchases a Gift Card, (ii) adds monetary value to a Gift Card, (iii) debits the monetary value on a Gift Card by purchasing goods or services from Participating Merchants, and/or (iv) returns goods for a credit to the Gift Card.

Participating Merchant shall have the meaning set forth in Section 4.

POS means point-of-sale.

Rules shall have the meaning set forth in Section 3.D.

Valutec Integration means the integrated or stand-alone POS terminals, on-line gateways, or other integrated manual or automated transaction processing systems necessary to electronically transmit Gift Card Transaction information to Valutec and to route Valutec's electronic authorization to Merchant.

COUNCIL COMMUNICATION

Meeting Date: 02/02/2023

Item Title: Main Street Banner Request
Department: Street Department
Presented by: Raymond Hillis, Executive Director
Requested Council Action:

Ordinance	<input type="checkbox"/>
Resolution	<input type="checkbox"/>
Motion	<input checked="" type="checkbox"/>
Direction	<input type="checkbox"/>
Information	<input type="checkbox"/>

Summary

Request from Read to Succeed and Rutherford County Area Habitat for Humanity to hang banners over East Main Street.

Staff Recommendation

Approve banners to be displayed as follows:

1. Central Magnet Schools, February 21-March 3, 2023, to promote their annual Super Trivia Bowl Fundraiser.

Background Information

Central Magnets Annual Super Trivia Bowl fundraiser is an annual event that is held to raise funds for the needs of the school PTO.

Council Priorities Served

Establish strong City brand

Banners hung across East Main Street engages our community in various activities and communicates special events to general public thereby enhancing the city reputation through an active community involvement.

Fiscal Impact

None.

Attachments

1. Letter of request from Central Magnet School



Central Magnet School Parent Teacher Organization
701 East Main Street, Murfreesboro, TN 37130
(615) 904-6789



January 26, 2023

Murfreesboro Street Department
620 West Main Street
Murfreesboro, TN 37130
ATTN: Lisa Mangrum

In re: Request to hang banner across East Main Street for Central Magnet School's Annual Super Trivia Bowl Fundraiser

To Whom It May Concern:

I am writing to request permission as soon as possible to hang a banner across East Main Street in front of Central Magnet School from February 21 through March 3, 2023, for Central Magnet School's Annual Super Trivia Bowl fundraising event. I spoke with Ms. Lisa Mangrum on January 25, 2023, and she confirmed that those dates are available.

The banner we are requesting to hang is the same one that has been approved by the City of Murfreesboro in the past for Super Trivia Bowl, meets all the current requirements for a banner (such as size, hemmed edges, grommets, etc.), and has been hung there before year after year.

A photo is attached of the sign hanging across East Main Street in 2022.

If you need any further information, please do not hesitate to contact me either by e-mail at NicoleLesterRussell@gmail.com or at 615-977-8729. Thank you very much for your time and consideration. We look forward to hearing from you soon!

Sincerely,

Nicole Lester Russell
Corresponding Secretary
Central Magnet School PTO
615-977-8729

COUNCIL COMMUNICATION

Meeting Date: 02/02/2023

Item Title: Asphalt Purchases Report
Department: Water Resources
Presented by: Darren Gore, Assistant City Manager
Requested Council Action:

Ordinance
Resolution
Motion
Direction
Information

Summary

Report of asphalt purchases.

Staff Recommendation

The asphalt reporting of purchases, consistent with purchases associated as perishable, fuel-based commodity is provided as information only.

Background Information

Purchases of asphalt are made throughout the month and reported with MWRD's O&M's construction projects. The attached report is provided pursuant to City Code, § 2-10(E)(7) in compliance with this reporting requirement.

Pursuant to the City Code, a purchase of perishable commodities made on the open market does not require public advertisement and competitive bids if a record is made by the person authorizing the purchase which specifies the amount paid, the items purchased and from whom the purchase was made in accordance with T.C.A. § 6-56-304(7).

Council Priorities Served

Responsible budgeting

Proper procurement ensures best cost savings to the Department and our customers.

Maintain public safety

Maintaining safe drivability of roadways affected by water resources operations focuses on customer service.

Fiscal Impacts

The overall costs, \$150,000 to \$175,000 per year, are funded by MWRD's operating budget.

Attachments

Asphalt Purchases Report

MWRD - OPERATIONS & MAINTENANCE

Asphalt Quotes FY 2022

	Wire Grass Const Co.		Hawkins		Vulcan		Notes
	Binder	Topping	Binder	Topping	Binder	Topping	
Jul	\$65.00	\$75.00	\$69.00	\$78.50	\$73.54	\$86.22	
Aug	\$65.00	\$75.00	\$69.00	\$78.50	\$73.57	\$86.26	
Sep	\$65.00	\$75.00	\$69.00	\$78.50	\$73.17	\$85.73	
Oct	\$65.00	\$75.00	\$80.51	\$87.91	\$71.98	\$84.09	
Nov	\$65.00	\$75.00	\$80.29	\$87.62	\$70.86	\$82.65	
Dec	\$65.00	\$75.00	\$78.60	\$85.76	\$70.02	\$81.53	
Jan	\$65.00	\$75.00	\$77.80	\$84.78	\$0.00	\$0.00	Vulcan Plant closed till March
Feb	\$65.00	\$75.00					
Mar	\$65.00	\$75.00					
Apr	\$65.00	\$75.00					
May	\$65.00	\$75.00					
Jun	\$65.00	\$75.00					

MWRD OPERATIONS & MAINTENANCE

Asphalt Purchases FY 2022

<i>Invoice Date</i>	<i>Approval</i>	<i>Vendor</i>	<i>Type</i>	<i>Rate</i>	<i>Qty</i>	<i>Total</i>	<i>FY Total</i>
7/20	DH	Vulcan	307-BM	\$58.39	18.60	\$1,086.05	\$1,086.05
7/20	DH	Vulcan	307-BM	\$58.39	18.38	\$1,073.21	\$2,159.26
7/20	DH	Vulcan	307-BM	\$58.39	18.56	1,083.72	\$3,242.98
7/20	DH	Vulcan	307-BM	\$58.39	18.27	1,066.79	\$4,309.77
7/26	DH	Hawkins	411- E	\$66.50	18.70	1,243.55	\$10,074.44
7/26	DH	Hawkins	307-BM	\$59.00	13.60	802.40	\$10,876.84
8/10	DH	Vulcan	411-E	\$67.35	13.66	920.00	\$11,796.84
8/17	DH	Vulcan	307-BM	\$58.51	10.72	627.23	#REF!
10/15	DH	Hawkins	411-E	\$66.50	16.48	1,095.92	\$16,493.88
10/20	DH	Hawkins	307-BM	\$62.75	16.69	1,047.30	\$17,541.18
11/30	DH	Hawkins	307-BM	\$60.00	22.34	1,340.40	\$18,881.58
11/30	DH	Hawkins	307-BM	\$60.00	19.28	1,156.80	\$20,038.38
11/30	DH	Hawkins	307-BM	\$60.00	17.25	1,035.00	\$21,073.38
11/30	DH	Hawkins	307-BM	\$60.00	20.26	1,215.60	\$22,288.98
11/30	DH	Hawkins	307-BM	\$60.00	19.00	1,140.00	\$23,428.98
11/30	DH	Hawkins	411-E	\$67.50	17.31	1,168.43	\$24,597.41
11/30	DH	Hawkins	307-BM	\$65.00	22.37	1,454.05	\$26,051.46
11/30	DH	Hawkins	307-BM	\$65.00	19.89	1,292.85	\$27,344.31
11/30	DH	Hawkins	307-BM	\$65.00	22.86	1,485.90	\$28,830.21
11/30	DH	Hawkins	307-BM	\$65.00	17.69	1,149.85	\$29,980.06
11/30	DH	Hawkins	307-BM	\$65.00	3.06	198.90	\$30,178.96
12/13	DH	Hawkins	307-BM	\$60.50	21.02	1,271.71	\$31,450.67
12/13	DH	Hawkins	411-E	\$68.25	14.47	987.58	\$32,438.25
12/18	DH	Hawkins	411-E	\$68.25	17.62	1,202.57	\$33,640.82
12/18	DH	Hawkins	411-E	\$68.25	3.54	241.61	\$33,882.43
12/28	DH	Hawkins	307-BM	\$60.50	18.00	1,089.00	\$34,971.43
12/28	DH	Hawkins	307-BM	\$60.50	13.77	833.09	\$35,804.52
12/29	DH	Hawkins	307-BM	\$60.50	15.84	958.32	\$36,762.84
1/31	DH	Hawkins	411-E	\$68.25	11.80	805.35	\$39,868.19
2/18	DH	Hawkins	307-BM	\$60.75	11.91	723.53	\$40,591.72
2/18	DH	Hawkins	307-BM	\$58.00	20.29	1,176.82	\$41,768.54
5/23	DH	Hawkins	411-D	\$82.50	4.01	86.51	\$41,855.05

COUNCIL COMMUNICATION

Meeting Date: 02/02/2023

Item Title: SSR Engineering Task Order 20-41-011.0 Amendment No. 1

Department: Water Resources

Presented by: Darren Gore

Requested Council Action:

- Ordinance
 - Resolution
 - Motion
 - Direction
 - Information
-

Summary

Engineering Task Order 20-41-011.0 Amendment No. 1 with SSR is for additional onsite coordination and design services associated with replacing the primary power switchgear at the Stones River Water Treatment Plant.

Staff Recommendation

Approve Engineering Task Order 20-41-011.0 Amendment No. 1.

Background Information

The primary power switchgear for the Stones River Water Treatment Plant is at the end of its useful life and required replacement. Switchgears are designed to defend equipment connected to a power supply from the threat of electrical overload by controlling, protecting, and isolating power systems. In the event of an electrical surge, switchgear protects the electrical systems from damage. City Council approved this project for design in April 2021 and awarded the construction contract in March of 2022.

The project has been delayed due to lead time issues with getting the switchgear manufactured. In addition to the long lead-time for the equipment, the contractor and SSR have worked to identify issues that were discovered after excavation of the area for the underground conduit between existing switchgear and the location of the new switchgear. Amendment No. 1 is to cover labor and time is to cover contractor site visits, site explorations, coordination meetings, drawing revisions, and submittal reviews during construction.

Council Priorities Served

Responsible Budgeting

Maintaining plant infrastructure assures continued reliability of high-quality drinking water for the community.

Fiscal Impact

The original design agreement for this project is \$93,920. The cost for this amendment is \$19,660. If approved, funding will come from the Water Resource Department's working capital reserves.

Attachments

Amendment No. 1 SSR ETO 20-41-011.0

**AMENDMENT TO OWNER-ENGINEER AGREEMENT
Engineering Task Order 20-41-011.0
Amendment No. 1**

1. *Background Data:*

- a. Effective Date of Task Order 20-41-011.0: March 16, 2021
- b. Owner: Murfreesboro Water Resources Department (MWRD)
- c. Engineer: Smith Seckman Reid, Inc (SSR)
- d. Project: Stones River Water Treatment Plant – Switchgear Improvements

2. *Description of Modifications:*

- a. This amendment modifies the terms set forth in Task Order 20-41-011.0, in its entirety, as follows:
 - 1. Project management tasks related to construction schedule exceeding originally anticipated timeframe.
 - 2. On site coordination and services of MEP engineers related to construction schedule exceeding anticipated timeframe.
 - 3. Drawing updates in reaction to the discovery of underground site conditions after excavation that were not reflected in the survey.
 - 4. Drawing updates to the facility’s existing single line created in 2006.
 - 5. Site visit and associated reimbursable expenses for two (2) MWRD employees and one (1) SSR employee for witness testing of switchgear equipment in Asheville, North Carolina. Estimated reimbursable expenses are as follow:
 - a. Transportation (at cost): \$ 600.00
 - b. Meals and Lodging (at cost): \$1500.00

3. Task Order Summary (Reference only)

a. Task Order 20-41-011.0 amount:	\$ <u>93,920.00</u>
b. Net change for prior amendments:	\$ <u>0.00</u>
c. Amendment No. 1 amount:	\$ <u>19,660.00</u>
d. Adjusted Task Order amount:	\$ <u>113,580.00</u>

The foregoing Task Order Summary is for reference only and does not alter the terms of the Agreement.

Owner and Engineer hereby agree to modify the above-referenced Agreement as set forth in this Amendment. All provisions of the Agreement not modified by this or previous amendments remain in effect. The Effective Date of this Amendment is _____.

OWNER:

ENGINEER:

By: _____

By: Andrew Johnson

Title: _____

Title: Principal

Date Signed: _____

Date Signed: January 9, 2023

APPROVED AS TO FORM



DocuSigned by:

Adam F. Tucker

Adam F. Tucker, City Attorney

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Murfreesboro Water Resources Department
 SRWTP Switchgear Improvements
 Estimate of Manpower - Amendment No. 1



			TOTAL	Summary			
				Principal	Project Manager II	Engineer Intern II	Sr. Designer II
				215	180	115	155
Task 4- Construction Phase							
	SubTask 4.1	Submittal Review	4		2	2	
	SubTask 4.2	Address Requests for Information	29	4	5	24	
	SubTask 4.3	Construction Pay Estimates	7		4	3	
	SubTask 4.4	Construction Project Management Duties	8		5	3	
	SubTask 4.5	Final Inspections and Contract Closeout	18	4	9	9	
Task 4 Subtotal Hours			74	8	25	41	
Task 4 Subtotal Cost			\$10,935	\$ 1,720	\$ 4,500	\$ 4,715	\$ -
Task 5- Post Construction Phase							
	SubTask 5.1	Record Drawings	22	1	4	8	10
	SubTask 5.2	Operation and Maintenance Manuals	13	1	2	11	
	SubTask 5.3	Operations Assistance and Training	9	1	2	7	
Task 5 Subtotal Hours			47	3	8	26	10
Task 5 Subtotal Cost			\$6,625	\$ 645	\$ 1,440	\$ 2,990	\$ 1,550
LABOR HOURS			121	11	33	67	10
LABOR COST			\$17,560	\$ 2,365	\$ 5,940	\$ 7,705	\$ 1,550

COUNCIL COMMUNICATION

Meeting Date: 02/02/2023

Item Title: Amending the Sign Ordinance
[Second Reading]

Department: Planning

Presented by: Teresa Stevens, Sign Administrator

Requested Council Action:

- | | |
|-------------|-------------------------------------|
| Ordinance | <input checked="" type="checkbox"/> |
| Resolution | <input type="checkbox"/> |
| Motion | <input type="checkbox"/> |
| Direction | <input type="checkbox"/> |
| Information | <input type="checkbox"/> |
-

Summary

Ordinance amending the Sign Ordinance regarding electronic changeable graphic display signs.

Staff Recommendation

Enact the ordinance amendment.

The Planning Commission recommended approval of this ordinance amendment.

Background Information

The Development Services Division presented an ordinance amendment [2022-806] to amend the Sign Ordinance as it pertains electronic changeable graphic display signs. During its regular meeting on December 7, 2022, the Planning Commission conducted a public hearing on this matter and then voted to recommend its approval.

On January 19, 2023, Council held a public hearing and approved this matter on First Reading.

Council Priorities Served

Improve Economic Development

The proposed amendment makes provisions for electronic changeable graphic display signs in very limited instances, allowing an alternative sign type for potential economic development projects located within a PSO (Planned Signage Overlay District).

Attachments:

Ordinance 22-O-47

ORDINANCE 22-O-47 amending Murfreesboro City Code, Chapter 25.2 Signs, Section 25.2-26, for the purpose of allowing certain, electronic changeable graphic display signs, City of Murfreesboro Development Services Division, applicant [2022-806].

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF MURFREESBORO, TENNESSEE, AS FOLLOWS:

SECTION 1. Section 25.2-26, On-site permanent sign requirements, of the Murfreesboro City Code is hereby amended at subsection (C)(9), Allowable changeable signs, by adding the following subsection to the end thereof:

(h) Changeable sign – electronic graphic display (“EGD”) signs may be allowed on lots zoned MU subject to the following restrictions:

- [1] The EGD sign must be part of an approved planned sign overlay (PSO).
- [2] The EGD sign cannot display a white background; the display must appear to be white or colored letters, numbers, logos or other images “pushing through” a non-white background.
- [3] The EGD sign cannot change more often than hourly; it cannot move, scroll, or flash.
- [4] Brightness of the EGD sign must be controlled for ambient lighting, and cannot be of such intensity as to interfere with surrounding businesses or with traffic.

SECTION 2. This Ordinance shall take effect fifteen (15) days after its passage upon second and final reading, the public welfare and the welfare of the City requiring it.

Passed:

1st reading _____

2nd reading _____

Shane McFarland, Mayor

ATTEST:

Jennifer Brown
City Recorder

APPROVED AS TO FORM:

DocuSigned by:
Adam F. Tucker

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Adam F. Tucker
City Attorney

SEAL

COUNCIL COMMUNICATION

Meeting Date: 02/02/2023

Item Title: Ordinance Creating Community Investment Trust’s Committee on Contributions

Department: Administration

Presented by: Craig Tindall

Requested Council Action:

- Ordinance
 - Resolution
 - Motion
 - Direction
 - Information
-

Summary

Ordinance creates Community Investment Trust’s Committee on Contributions

Staff Recommendation

Approve Ordinance 23-O-06

Background Information

The amendment to the City Charter that authorized the creation of the Community Investment Trust allows the Council to create a committee on contributions within the Trust structure. The Committee is created by ordinance.

Council appointed individuals to serve on the Committee. The initial organization meeting of the Committee is February 28, 2023. Proposed Ordinance 23-O-6 completes the establishment of the Committee. The language of the ordinance, which will be codified in Chapter 2 of the City Code, parallels the language used in the Trust Agreement with respect to the Committee on Contributions.

Council Priorities Served

Responsible budgeting

Transferring the funding of charitable Strategic Partners to the Community Investment Trust provides an appropriate means for budgeting this means of community assistance.

Fiscal Impact

None

Attachments

Ordinance 23-O-06

ORDINANCE 23-O-06 amending the Murfreesboro City Code, Chapter 2, Administration, Article IX, Sections 2-161 through 2-165, creating the Murfreesboro Community Investment Trust's Committee on Contributions.

WHEREAS, Section 4C(9) of the Murfreesboro City Charter directs City Council to adopt an ordinance establishing a community board to identify and recommend on an annual basis one or more qualified nonprofit, charitable organizations to receive distributions from the Murfreesboro Community Investment Trust.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF MURFREESBORO, TENNESSEE, AS FOLLOWS:

SECTION 1. Chapter 2, Article IX of the Murfreesboro City Code is hereby amended by substituting the following in lieu of sections 2-161 through 2-165 currently reserved in the Code:

**“ARTICLE IX. MURFREESBORO COMMUNITY INVESTMENT TRUST’S
COMMITTEE ON CONTRIBUTIONS**

SECTION 2-161 Committee created.

The Committee on Contributions of the Murfreesboro Community Investment Trust is hereby created in accordance with section 4C(9) of the Charter. The Committee shall consist of not fewer than five or more than nine natural persons appointed by City Council as provided in Section 2-163.

SECTION 2-162. Purpose and duties.

The purpose of the Committee on Contributions is to make recommendations to the Murfreesboro Community Investment Trust's Board of Trustees regarding the annual distributions from the Trust to qualified nonprofit, charitable organizations. The Committee shall evaluate qualified nonprofit organizations and make such required recommendations in accordance with the terms of the Charter and the Trust Agreement between the City and the Murfreesboro Community Investment Trust's Board of Trustees.

SECTION 2-163 Committee member eligibility; term; vacancy; compensation

(A) *Eligibility.* Committee members shall be natural persons having attained the age of 35 years who are City residents and active members of the community with experience in and a history of participation in charitable and civic activities consistent with the organizations and activities that traditionally have been supported by the City.

(B) *Term.* The term of Committee members shall be three years; provided that the terms of the initial Committee Members shall be one to four years as designated in the appointment of the Committee Members with a goal of no more than 1/3 of the Committee Members terms to expire each year. Committee members shall serve until their term expires and until their successor is selected and qualified, or until their earlier resignation, removal, or death.

(C) *Vacancy*. Whenever a vacancy in the membership of the Committee occurs, that vacancy shall be filled by the City Council in accordance with the provisions of the Trust Agreement, and such appointee shall serve for the unexpired term of the Committee Member which such appointee replaces.

(D) *No compensation*. Committee members shall serve without compensation. Committee members, however, may be reimbursed from the Trust for expenses directly incurred as necessary to fulfill their duties as provided in the Trust Agreement or the Board of Trustee’s and Committee’s respective bylaws.

SECTION 2-164 Removal.

The Board of Trustees may remove a member from the Committee if the Committee member fails to fulfill the member’s duties as a Committee member or for other good cause as determined by the Board in its discretion.

SECTION 2-165 RESERVED.”

SECTION 2. That this Ordinance shall take effect fifteen (15) days after its passage upon second and final reading, the public welfare and the welfare of the City requiring it.

Passed:

Shane McFarland, Mayor

1st reading _____

2nd reading _____

ATTEST:

APPROVED AS TO FORM:

Jennifer Brown
City Recorder

DocuSigned by:
Adam F. Tucker

43A2095E51F0401...
Adam F. Tucker
City Attorney

SEAL

COUNCIL COMMUNICATION

Meeting Date: 02/02/2023

Item Title: Planning Commission Recommendations
Department: Planning
Presented by: Matthew Blomeley, AICP, Assistant Planning Director

Requested Council Action:

- Ordinance
 - Resolution
 - Motion
 - Direction
 - Information
-

Summary

Scheduling matter previously heard by the Planning Commission for a public hearing before Council.

Staff Recommendation

Schedule public hearing for the item below on March 2, 2023.

Background Information

During its regular meeting on October 5, 2023, the Planning Commission conducted a public hearing on the item listed below. After the public hearing, the Planning Commission discussed the matter and then voted to defer action. At its January 18, 2023 regular meeting, the Planning Commission considered this item under "Old Business" and then voted to recommend its approval.

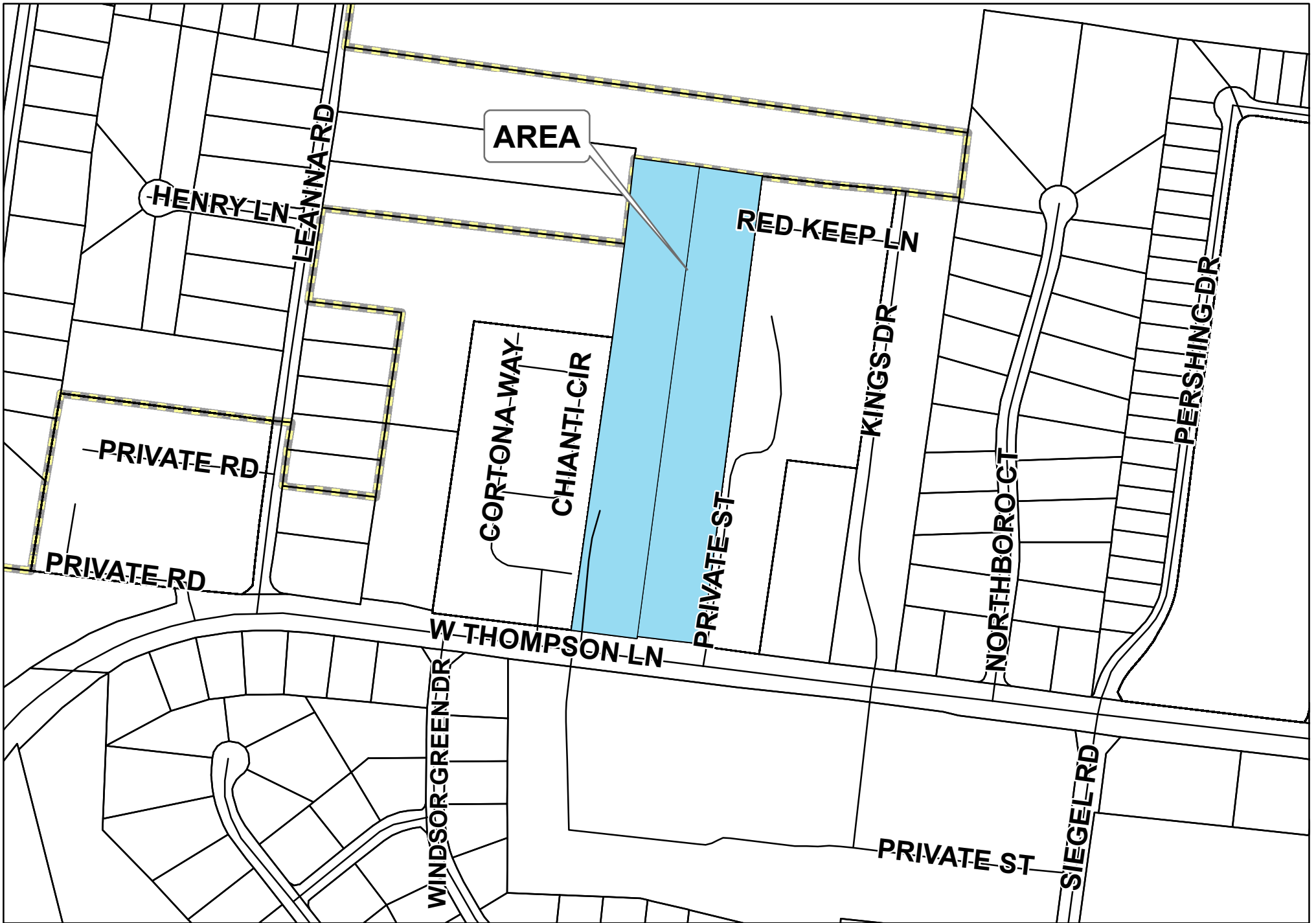
- a. Zoning application [2022-422] for approximately 10.1 acres located along West Thompson Lane to be rezoned from RS-15 to PRD (Cherry Blossom Downs PRD), BA Homes, LLC applicant.

Fiscal Impact

Advertising expense for notice publication in the newspaper, which is unknown at this time, is provided for in the Department Operating Budget.

Attachments:

Map for zoning application for approx. 10.1 acres located along West Thompson Lane



**Zoning request for property located along West Thompson Lane
RS-15 to PRD (Cherry Blossom Downs PRD)**

675 337.5 0 675 Feet



City of Murfreesboro
Planning Department
111 W. Vine St.
Murfreesboro TN 37130
www.murfreesborotn.gov

COUNCIL COMMUNICATION

Meeting Date: 02/02/2023

Item Title: Contract for Roof Replacements

Department: Facility Maintenance

Presented by: Brad Hennessee

Requested Council Action:

- Ordinance
 - Resolution
 - Motion
 - Direction
 - Information
-

Summary

Construction contract to replace roofs on several fire stations.

Staff Recommendation

Approve standard form construction contact with Caldwell Construction Company.

Background Information

A competitive bid process was conducted for work to replace aging roofs on several fire stations, Stations 2, 5, 7, 8, and 9. Caldwell Construction Company was the lowest responsible bidder at \$151,050.

Council Priorities Served

Responsibility budgeting

Proper building maintenance is necessary to protect the functionality and useful life of City buildings, which is the City's large asset group.

Fiscal Impacts

The cost, \$151,050, is funded by American Rescue Plan Act funds.

Attachments

AIA Standard form A101 for Caldwell Construction Company

 **AIA® Document A101® – 2017****Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum**

AGREEMENT made as of the day of in the year
(In words, indicate day, month and year.)

BETWEEN the Owner:
(Name, legal status, address and other information)

City of Murfreesboro, Tennessee, a municipality organized under the laws of the State of Tennessee
111 West Vine Street
Murfreesboro, Tennessee 37130

and the Contractor:
(Name, legal status, address and other information)

for the following Project:
(Name, location and detailed description)

Reroofing of Fire Stations
Murfreesboro Fire Rescue Department
Murfreesboro, Tennessee
J+B No. 2211

The Architect:
(Name, legal status, address and other information)

Johnson+Bailey Architects P.C.
100 East Vine Street
City Center, Suite 700
Murfreesboro, Tennessee 37130

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

The parties should complete A101®–2017, Exhibit A, Insurance and Bonds, contemporaneously with this Agreement. AIA Document A201®–2017, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

Init.

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User Notes:

(811104324)

TABLE OF ARTICLES

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- 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION**
- 4 CONTRACT SUM**
- 5 PAYMENTS**
- 6 DISPUTE RESOLUTION**
- 7 TERMINATION OR SUSPENSION**
- 8 MISCELLANEOUS PROVISIONS**
- 9 ENUMERATION OF CONTRACT DOCUMENTS**

EXHIBIT A INSURANCE AND BONDS

ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall

(Paragraphs deleted)

be the date specified in the Notice to Proceed issued by the Owner. Contractor is not authorized to undertake any Work until the date set forth in the Notice to Proceed.

§ 3.2 The Contract Time shall be measured from the date of commencement of the Work.

§ 3.3 Substantial Completion

§ 3.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion of the entire Work:

(Check one of the following boxes and complete the necessary information.)

Not later than sixty (60) calendar days from the date of commencement of the Work.

By the following date:

§ 3.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work are to be completed prior to Substantial Completion of the entire Work, the Contractor shall achieve Substantial Completion of such portions by the following dates:

Portion of Work

Substantial Completion Date

Init.

§ 3.3.3 If the Contractor fails to achieve Substantial Completion as provided in this Section 3.3, liquidated damages, if any, shall be assessed as set forth in Section 4.5.

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor’s performance of the Contract. The Contract Sum shall be (\$), subject to additions and deductions as provided in the Contract Documents.

§ 4.2 Alternates

§ 4.2.1 Alternates, if any, included in the Contract Sum:

Item	Price
------	-------

§ 4.2.2 Subject to the conditions noted below, the following alternates may be accepted by the Owner following execution of this Agreement. Upon acceptance, the Owner shall issue a Modification to this Agreement. *(Insert below each alternate and the conditions that must be met for the Owner to accept the alternate.)*

Item	Price	Conditions for Acceptance
------	-------	---------------------------

§ 4.3 Allowances, if any, included in the Contract Sum: *(Identify each allowance.)*

Item	Quantity
For removal of damaged existing wood roof deck, and replacement with new 19/32" performance category APA rated sheathing 40/20 exposure.	500 Square Feet

§ 4.4 Unit prices, if any: *(Identify the item and state the unit price and quantity limitations, if any, to which the unit price will be applicable.)*

Item	Units and Limitations	Price per Board Foot (\$0.00)
For removal of damaged existing wood roof deck, and replacement with new 19/32" performance category APA rated sheathing 40/20 exposure.		

§ 4.5 Liquidated Damages

§ 4.5.1 Because failure to complete the Project within the time fixed in Section 3.3 will result in substantial injury to the Owner, and as damages arising from such failure cannot be calculated with any degree of certainty, should the Contractor fails to achieve Substantial Completion of the Work within the time so fixed, or within such further time, if any, as shall be allowed for time extensions in accordance with the provisions of the Contract Documents, the Contractor or its Surety shall pay to the Owner as liquidated damages for such delay, and not as a penalty, \$300.00 for each and every calendar day elapsing between the date fixed for Substantial Completion in Section 3.3 and the date such Substantial Completion shall have been fully accomplished.

Init.

§ 4.5.2 Any liquidated damages assessed pursuant to Section 4.2.1. shall be payable in addition to any excess expenses or costs payable by the Contractor to the Owner under the provisions of Article 14 of the General Conditions, and shall not preclude the recovery of damages by the Owner under other provisions of the Contract Documents, except for Contractor's delays. This provision for liquidated damages for delay shall in no manner affect the Owner's right to terminate the Contract as provided in Article 14 of the General Conditions ("Termination or Suspension of the Contract") or elsewhere in the Contract Documents. The Owner may deduct from the balance of retainage the liquidated damages stipulated herein or in the next paragraph hereof, as the case may be, or such portion thereof as the retained balance will cover.

§ 4.6 Other:

(Insert provisions for bonus or other incentives, if any, that might result in a change to the Contract Sum.)

§ 4.6.1 The Owner shall not be liable for the Contractor or any Subcontractor for claims or damages of any nature caused by or arising out of any delays. The sole remedy of Contractor or any Subcontractor for delays of any cause shall be the allowance of addition time for completion of Work, provided such additional time is reflected in a written, signed Change Order.

ARTICLE 5 PAYMENTS

§ 5.1 Progress Payments

§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 5.1.2

(Paragraphs deleted)

At least every 30 calendar days after the Contractor's commencement of the Work, but not more frequently than once per calendar month, the Contractor shall submit an Application for Payment to the Architect requesting payment for labor, services, and materials rendered or delivered during the preceding 30 calendar days. Each Application for Payment request shall contain such detail and be supported by sufficient information for the Owner and Architect to fully assess the request. The Architect will review the Contractor's Application for Payment and the accompanying data, information, and schedules (which are submitted in accordance with the Contract Document or at the Architect's request) to determine the amount the Contractor is due and, based on such review, together with its inspections of the Work, shall authorize in writing the requested payment to the Contractor.

§ 5.1.3 Provided the Application for Payment and all required supporting documentation is received by the Architect not later than the fifth day of the month, within 30 calendar days following Architect's authorization of payment, the Owner shall pay the sum authorized to the Contractor. No payment nor any use or occupancy of the Project, whether in total or partially, by the Owner constitutes an acceptance of any Work not in accordance with the Contract Documents.

(Federal, state or local laws may require payment within a certain period of time.)

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Architect may require. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 In accordance with AIA Document A201™-2017, General Conditions of the Contract for Construction, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.6.1 The amount of each progress payment shall first include:

- .1 That portion of the Contract Sum properly allocable to completed Work;

- .2 That portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction, or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing; and
- .3 That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified.

§ 5.1.6.2 The amount of each progress payment shall then be reduced by:

- .1 The aggregate of any amounts previously paid by the Owner;
- .2 The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A201–2017;
- .3 Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;
- .4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A201–2017; and
- .5 Retainage withheld pursuant to Section 5.1.7.

§ 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold the following amount, as retainage, from the payment otherwise due:

(Insert a percentage or amount to be withheld as retainage from each Application for Payment. The amount of retainage may be limited by governing law.)

Five percent (5%)

§ 5.1.7.1.1 The following items are not subject to retainage:

(Insert any items not subject to the withholding of retainage, such as general conditions, insurance, etc.)

§ 5.1.7.2 Reduction or limitation of retainage, if any, shall be as follows:

(If the retainage established in Section 5.1.7.1 is to be modified prior to Substantial Completion of the entire Work, including modifications for Substantial Completion of portions of the Work as provided in Section 3.3.2, insert provisions for such modifications.)

§ 5.1.7.3 Except as set forth in this Section 5.1.7.3, upon Substantial Completion of the Work, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 5.1.7. The Application for Payment submitted at Substantial Completion shall not include retainage as follows:

(Insert any other conditions for release of retainage upon Substantial Completion.)

§ 5.1.8 [Intentionally omitted.]

§ 5.1.9 Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ 5.2 Final Payment

§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

- .1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Article 12 of AIA Document A201–2017, and to satisfy other requirements, if any, which extend beyond final payment;
- .2 a final Certificate for Payment has been issued by the Architect;

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- .3 the Contractor has submitted its final waiver of lien and final waivers of lien from all of its Subcontractors and suppliers in a form acceptable to the Owner; and
- .4 the Contractor has submitted to the Owner all close-out documents, including without limitation, all as-build plans, warranties, manuals, and other materials set forth in the Contract Documents.

§ 5.2.2 The Owner’s final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect’s final Certificate for Payment, or as follows:

§ 5.3 Interest

Payments due and unpaid under the Contract shall bear interest from the date payment is due at the *(Paragraphs deleted)* daily interest rate factor (365 days) of the prime interest rate reported by JP Morgan as of the payment due date.

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 Initial Decision Maker

The Architect will serve as the Initial Decision Maker pursuant to Article 15 of AIA Document A201–2017, unless the parties appoint below another individual, not a party to this Agreement, to serve as the Initial Decision Maker. *(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)*

§ 6.2 Binding Dispute Resolution

For any Claim subject to, but not resolved by, mediation pursuant to Article 15 of AIA Document A201–2017, the method of binding dispute resolution shall be as follows: *(Check the appropriate box.)*

- Arbitration pursuant to Section 15.4 of AIA Document A201–2017
- Litigation in a court of competent jurisdiction
- Other *(Specify)*

AIA Document A201 – 2017, General Conditions of the Contract for Construction Addendum B, Dispute Resolution Procedures

If the Owner and Contractor do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2017. In addition, the Owner may terminate this Contract in the event of the unavailability of appropriated funds or a determination by Owner of the absence of continued need for the Project.

(Paragraphs deleted)

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2017.

Init.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2017 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 The Owner’s representative:
(Name, address, email address, and other information)

Craig Tindall, City Manager
111 West Vine Street
Murfreesboro, TN 37130
Tel: (615) 849-2629
Email: ctindall@murfreesborotn.gov

or his designee as indicated in writing from time to time.

§ 8.3 The Contractor’s representative:
(Name, address, email address, and other information)

§ 8.4 Neither the Owner’s nor the Contractor’s representative shall be changed without ten days’ prior notice to the other party.

§ 8.5 Insurance and Bonds

§ 8.5.1 The Contractor shall purchase and maintain insurance as set forth in Exhibit A, and elsewhere in the Contract Documents.

§ 8.5.2 The Contractor shall provide bonds as set forth in Exhibit A, and elsewhere in the Contract Documents.

§ 8.6 Notice in electronic format, pursuant to Article 1 of AIA Document A201–2017, may be given in accordance with AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, if completed, or as otherwise set forth below:

(If other than in accordance with AIA Document E203–2013, insert requirements for delivering notice in electronic format such as name, title, and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)

§ 8.7 Other provisions:

None

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

- .1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor
- .2 Exhibit A, Contractor’s Insurance and Bonds Requirements
- .3 AIA Document A201™–2017, General Conditions of the Contract for Construction, including Addendum A, Contractor’s Standard Form Subcontract, and Addendum B, Dispute Resolution Procedures
- .4 [Intentionally Omitted]

Init.

.5 Drawings

Number	Title	Date
00 01 15	Drawing Index	December 5, 2022

.6 Specifications

Section	Title	Date	Pages
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.7 Addenda, if any:

Number	Date	Pages
--------	------	-------

Portions of Addenda relating to bidding or proposal requirements are not part of the Contract Documents unless the bidding or proposal requirements are also enumerated in this Article 9.

.8 Other Exhibits:

(Check all boxes that apply and include appropriate information identifying the exhibit where required.)

AIA Document E204™–2017, Sustainable Projects Exhibit, dated as indicated below:
(Insert the date of the E204-2017 incorporated into this Agreement.)

The Sustainability Plan:

Title	Date	Pages
-------	------	-------

Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
00 73 00	Supplementary Conditions	December 5, 2022	

.9 Other documents, if any, listed below:

(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201™–2017 provides that the advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor's bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)

- Section 00 11 16, Invitation to Bidders, December 5, 2022 (1 page)
- Section 00 21 13, Instructions to Bidders, December 5, 2022 (6 pages)
- Section 00 22 13, Supplementary Instructions to Bidders, December 5, 2022 (3 pages)
- Section 00 31 13, Bid Form, December 5, 2022 (6 pages)

This Agreement entered into as of the day and year first written above.

Init.

OWNER *(Signature)*

Shane McFarland, Mayor
(Printed name and title)

CONTRACTOR *(Signature)*

(Printed name and title)

APPROVED AS TO FORM:

Adam F. Tucker, City Attorney



AIA[®] Document A201[®] – 2017

General Conditions of the Contract for Construction

for the following PROJECT:

(Name and location or address)

Reroofing of Fire Stations
Murfreesboro Fire Rescue Department
Murfreesboro, Tennessee
J+B No. 2211

THE OWNER:

(Name, legal status and address)

City of Murfreesboro, Tennessee a municipality organized under the laws of the State of Tennessee
111 West Vine Street
Murfreesboro, TN 37130

THE ARCHITECT:

(Name, legal status and address)

Johnson + Bailey Architects, P.C.
100 East Vine Street, Suite 700
Murfreesboro, Tennessee 37130

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This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

For guidance in modifying this document to include supplementary conditions, see AIA Document A503[™], Guide for Supplementary Conditions.

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User Notes:

(1366248291)

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15 **CLAIMS AND DISPUTES**

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding or proposal requirements.

§ 1.1.2 The Contract

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, except as set forth in Sections 5.3 and 5.4, (3) between the Owner and the Architect or the Architect's consultants, or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.3 The Work

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 The Project

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by Separate Contractors.

§ 1.1.5 The Drawings

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

§ 1.1.6 The Specifications

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 Instruments of Service

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 Initial Decision Maker

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

§ 1.1.9 Knowledge

The terms "knowledge," "recognize," and "discover," their respective derivatives, and similar terms in the Contract Documents, as used in reference to the Contractor, shall be interpreted to mean that which the Contractor knows (or should know), recognizes (or should recognize), and discovers (or should discover) in exercising the care, skill and diligence required by the Contract Documents. Analogously, the expression "reasonably inferable" and similar terms in the Contract Documents shall be interpreted to mean reasonably inferable by a contractor familiar with the Project and exercising the care, skill, and diligence required of the Contractor by the Contract Documents.

§ 1.1.10 Owner Disclaimer of Warranty

The Owner has requested that the Architect prepare documents for the Project, including the Drawings and the Specifications for the Project, which are to be complete, accurate, coordinated, and adequate for bidding, negotiating and constructing the Work. However, the Owner makes no representation or warranty of any nature whatsoever to the Contractor concerning such documents. The Contractor hereby acknowledges and represents that it has not relied and does not and will not rely, upon any representations or warranties by the Owner concerning such documents, as no such representations or warranties have been or are hereby made.

§ 1.2 Correlation and Intent of the Contract Documents

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade. Instructions and other information furnished in the Specifications, including without limitation, items in connection with prefabricated or pre-finished items, are not intended to supersede work agreements between employers and employees. Should the Specifications conflict with such work agreements, the work agreements shall be followed, provided such items are provided and finished as specified. If necessary, such Work shall be performed on the Project site, instead of at the shop, by appropriate labor and in accordance with the requirements of the Drawings and Specifications.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.2.3.1 Whenever a product is specified in accordance with a Federal Specification, an ASTM Standard, an American National Standards Institute Specification, or other Association Standard, the Contractor shall request from the manufacturer or provider of the product when requested by the Architect or required in the Specifications, information that allows for an adequate assessment that the product complies with the particular Standard or Specification. When requested by the Architect or specified, support test data shall be submitted to substantiate compliance. Whenever a product is specified or shown by describing proprietary items, model numbers, catalog numbers, manufacturer, trade names, or similar reference, no substitutions may be made unless accepted prior to execution of the Contract or if accepted as a Change in Work in accordance with Section 3.44. Where two or more products are shown or specified, the Contractor has the option to use either of those shown or specified.

§ 1.2.3.2 Where reference is made to the Standard Specifications of the American Society for Testing and Materials (A.S.T.M) or other standard specifications in connection with the required quality of materials, methods, etc., then the applicable specifications shall be of the latest revised edition effective as of the date bids are opened by the Owner, unless expressly provided in the technical specifications.

§ 1.2.4 Inconsistencies in Contract Documents

§ 1.2.4.1 Except as otherwise provided in Sections 1.2.4.2 and 1.2.4.3, in the event of any conflict, inconsistency or other discrepancy between any of the Contract Documents, the Contract Documents shall be given priority in the following order: (1) executed Change Orders; (2) the addenda issued by the Architect; (3) the Agreement; (4) the General Conditions of the Contract; (5) the Drawings; and (6) the Specifications.

§ 1.2.4.2 In the event of inconsistencies between the Contract Documents and applicable standards, codes, and ordinances or within or between parts of the Contract Documents that cannot reasonably be resolved as provided in Section 1.2.4.1, the Contractor shall (i) provide the better quality or greater quality of Work or (ii) comply with the more stringent requirement; either or both in accordance with the Architect's interpretation. The terms and conditions of this Section 1.2.4.2 shall not relieve the Contractor of any of the obligations set forth in Sections 3.2 and 3.7; provided, however, unless Contractor knew or should

have known of inconsistencies, the Contractor shall not be precluded from submitting pursuant to Sections 7.1 and 7.2 for a Change Order with respect to any of the items referenced in this Section.

§ 1.2.4.3 In the event of any conflict, discrepancy, or inconsistency among any of the Contract Documents, the following shall control: as between figures given on plans and scaled measurements, the figures shall govern; as between large-scale plans and small-scale plans, the large-scale plans shall govern; and as between plans and specifications, the requirements of the specifications shall govern.

§ 1.3 Capitalization

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles, or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 Interpretation

§ 1.4.1 In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.4.2 All personal pronouns used in the Contract Documents, whether used in the masculine, feminine, or neuter genders shall include all other genders; and the singular shall include the plural and vice versa. Titles of articles, sections, and subsections are for convenience only and neither limit nor amplify the provisions of this Contract.

§ 1.4.3 The use in the Contract Documents of the word "including," when following any general statement, term, or matter, shall not be construed to limit such statement, term, or matter to the specific item or matters set forth immediately following such word or to similar items or matters, whether or not non-limiting language (such words as "without limitation," or "but not limited to," or words of similar import) is used with reference thereto, but rather shall be deemed to refer to all other items or matters that could reasonably fall within the broadest possible scope of such general statement, term, or matter.

§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service

§ 1.5.1 The Owner is the owner of all right, title and interest, including all rights under federal and state copyright and intellectual property laws, in the instruments of Service and the electronic methods of reproducing them. The Architectural Works of the Project, as defined by the federal Architectural Works Copyright Protection Act, are owned by Owner. The Contractor, Subcontractors, Sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Owner's ownership interest.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the following notice: "Copyrighted [Date]. City of Murfreesboro. All rights reserved. No portion of these materials may be reproduced by electronic or mechanical means without permission in writing from the City council of the City of Murfreesboro, Tennessee." Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' copyrights or other reserved rights. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

§ 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

§ 1.7 Digital Data Use and Transmission

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

§ 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document G202™–2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

§ 1.9 Confidentiality

§ 1.9.1 The Contractor warrants and represents that the Contractor shall not knowingly or negligently communicate or disclose at any time to any person or entity any information in connection with the Work or the Project, except (i) with prior written consent of the Owner, (ii) information that was in the public domain prior to the date of this Agreement, (iii) information that becomes part of the public domain by publication or otherwise not due to any unauthorized act or omission of the Contractor, or (iv) as may be required to perform the Work or by any applicable law, including the Record set of the Drawings, Specifications, and other documents which the Contractor is permitted to retain under Section 1.5 above. Specific information shall not be deemed to fall within the scope of the foregoing exceptions merely because it is embraced by more generic information which falls within the scope of one or more of those exceptions. The Contractor shall not disclose to others that specific information was received from the Owner even though it falls within the scope of one or more of those exceptions. The Contractor acknowledges and agrees that the existence of the Owner's particular interests and plans in the geographical area of the Project is a type of such specific information. In the event that the Contractor is required by any court of competent jurisdiction or legally constituted authority to disclose any Owner Information prior to any disclosure thereof, the Contractor shall notify the Owner and shall give the Owner the opportunity to challenge any such disclosure order or seek protection for those portions that it regards as confidential.

§ 1.9.2 The Contractor, at any time upon the request of the Owner, shall immediately return and surrender to the Owner all copies of any materials, records, notices, memoranda, recordings, drawings, specifications, and mock-ups any any other documents furnished by the Owner or the Architect to the Contractor.

§ 1.9.3 The Contractor shall cause all Subcontractors or any other person or entity performing any services, or furnishing any materials or equipment, for the Work to warrant and represent all items set forth in this Section 1.9.

§ 1.9.4 The representations and warranties contained in this Section 1.9 shall survive the complete performance of the Work or earlier termination of this Agreement.

§ 1.9.5 Any and all inventions and discoveries, whether or not patentable, conceived or made by the Contractor as a result of the Contractor's discussions with the Owner or performance of the Work which are based substantially on the Owner's proprietary information, shall be and shall become the sole and exclusive property of the Owner. The Contractor agrees to disclose fully and promptly to the Owner all such inventions and discoveries. Upon request by the Owner, the Contractor agrees to assign such inventions and discoveries to the Owner, or cause them to be so assigned by its personnel. Further, the Contractor shall execute, or cause to be executed by its personnel, all applications, assignments, or other instruments which the Owner may deem reasonably necessary in order to enable the owner at its expense, to apply for, prosecute, and obtain patents in any country for said inventions and discoveries, or in order to assign and transfer to the Owner the entire right, title, and interest thereto.

ARTICLE 2 OWNER

§ 2.1 General

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" refers to the City of Murfreesboro, a Tennessee municipal corporation. The City Manager is hereby designated by the Owner as its representatives and are authorized to act on behalf of the Owner, unless a new representative is subsequently designated in writing by the Owner.

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§ 2.1.2 [Intentionally Deleted]

§ 2.2 Evidence of the Owner's Financial Arrangements [Intentionally Deleted]

(Paragraphs deleted)

§ 2.3 Information and Services Required of the Owner

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.3.2 The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 2.3.3 If the employment of the Architect terminates, the Owner shall employ a successor to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 2.3.4 Owner shall furnish required surveys, legal limitation, and utility locations for the Project Site and may supply these through the Architect. Prior to commencing any excavation or grading the Contractor shall become satisfied as to the accuracy of all such information in the Contract Documents as provided by the Owner. Should the Contractor discover any inaccuracies, errors, or omissions in the survey data, the Contractor shall immediately notify the Architect in writing in order that proper adjustments can be made. Commencement by the Contractor of any excavation or grading shall be held as an acceptance of the survey data by the Contractor after which time the Contractor has no claims against the Owner resulting from alleged errors omissions, or inaccuracies of the said survey data.

§ 2.3.5 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.3.6 Upon request the selected Contractor shall be supplied with three (3) copies of specifications and construction documents for execution of work. Additional copies may be obtained at the Contractor's expense.

§ 2.3.7 If the Work involves the renovation or modification of existing construction, it is the obligation of the Contractor to avoid disposal of any and all equipment, fixtures, furnishings, appurtenances and other items the Owner desires to keep. The Drawings or Specifications may identify items the Owner desires to keep, but the Contractor shall not rely exclusively upon the Drawings and Specifications for its determination. Accordingly, the Owner, at the request of the Contractor, shall provide to the Contractor a list of any and all such items.

§ 2.4 Owner's Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within five business days after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

§ 2.6 Extent of Owner's Rights

The rights stated in this Article 2 and elsewhere in the Contract Documents are cumulative and not in limitation of any rights of the Owner (i) granted in the Contract Documents, (ii) at law, or (iii) in equity. In no event shall the Owner have control over, charge of, or any responsibility for construction means, methods, techniques, sequences, or procedures or for safety precautions and programs in connection with the Work, notwithstanding any of the rights and authority granted the owner in the Contract Documents.

ARTICLE 3 CONTRACTOR

§ 3.1 General

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents. Prior to execution of the Agreement, the Contractor and each Subcontractor have evaluated and satisfied themselves as to the conditions and limitations under which the Work is to be performed, including, without limitation, (i) the location, condition, layout, and nature of the Project site and surrounding areas, (ii) generally prevailing climatic conditions, (iii) anticipated labor supply and costs, (iv) availability and cost of materials, tools and equipment, and (v) other similar issues. The Owner assumes no responsibility or liability for the physical condition or safety of the Project site or any improvements located on the Project site. Except as set forth in Section 10.3, the Contractor shall be solely responsible for providing a safe place for the performance of the Work. The Owner shall not be required to make any adjustment in either the Contract Sum or the Contract Time in connection with any failure by the Contractor any Subcontractor to have complied with the requirements of this Section 3.2.1

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the design information contained in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.2.1 The exactness of grades, elevations, dimensions, or locations given on any Drawings issued by the Architect, or the work installed by other contractors, is not guaranteed by the Architect or the Owner, and, therefore, the Contractor shall satisfy itself as to the accuracy of all grades, elevations, dimensions, and locations.

§ 3.2.2.2 In all cases of interconnection of the Work with existing or other work, the Contractor shall verify at the site all dimensions relating to such existing or other work. Any errors due to the Contractor's failure to so verify all such grades, elevations, dimensions, or locations shall be promptly rectified by the Contractor without any additional cost to the Owner.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

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§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to Section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 Labor and Materials

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive. If the Contractor desires to submit an alternate product or method in lieu of what has been specified or shown in the Contract Documents, the following provisions apply:

- .1 The Contractor must submit to the Architect and the Owner (i) a full explanation of the proposed substitution and submittal of all supporting data, including technical information, catalog cuts, warranties, test results, installation instructions, operating procedures, and other like information necessary for a complete evaluation of the substitution; (ii) a written explanation of the reasons the substitution is advantageous and necessary, including benefits to the Owner and the Work in the event the substitution is acceptable; (iii) the adjustment, if any, in the Contract Sum, in the event the substitution is acceptable; (iv) the adjustment, if any, in the time of completion of the Contract and the construction schedule in the event the substitution is acceptable; and (v) an affidavit stating that (a) the proposed substitution conforms to and meets all the requirements of the pertinent Specifications and the requirements shown on the Drawings and (b) the Contractor accepts the warranty and correction obligations in connection with the proposed substitution as if originally specified by the Architect. Proposals for substitutions shall be submitted in triplicate to the Architect in sufficient time to allow the Architect no less than ten (10) working days for review. No substitutions will be considered or allowed without the Contractor's submittal of complete substantiating data and information as stated hereinbefore.
- .2 Substitutions and alternates may be rejected without explanation and will be considered only under one or more of the following conditions: (i) the proposal is required for compliance with interpretation of code

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requirements or insurance regulations then existing; (ii) specified products are unavailable though no fault of the Contractor; (iii) subsequent information discloses the inability of specified products to perform properly or to fit in the designated space; (iv) the manufacturer/fabricator refuses to certify or guarantee the performance of the specified product as required; and (v) when in the judgment of the Owner or the Architect, a substitution would be substantially in the Owner's best interests in terms of cost, time, or other considerations.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.4.4 The Contractor shall only employ or use labor in connection with the Work capable of working harmoniously with all trades, crafts, and any other individuals associated with the Project. The Contractor shall also use best efforts to minimize the likelihood of any strike, work stoppage, or other labor disturbance.

- .1 If the Work is to be performed by trade unions, the Contractor shall make all necessary arrangements to reconcile, without delay, damage, or cost to the Owner and without recourse to the Architect or the Owner, any conflict between the Contract Documents and any agreements or regulations of any kind at any time in force among members or councils that regulate or distinguish the activities that shall not be included in the work of any particular trade.
- .2 In case the progress of the Work is affected by any undue delay in furnishing or installing any items or materials or equipment required under the Contract Documents because of such conflict involving any such labor agreement or regulation, the Owner may require that other material or equipment of equal kind and quality be provided pursuant to a Change Order or Construction Change Directive.

§ 3.4.5 After the Contract has been executed, the Owner will consider a formal request for the substitution of products in place of those specified only under the conditions set forth in this paragraph. Where materials, equipment, apparatus, or other products are specified by manufacturer, brand name, type or catalog number, such designation shall establish standards of quality and style desired. Any reasonable request for substitution will be considered, if in the opinion of the Architect, such materials are equal to the material specified and entirely satisfactory for use in the project. The Architect shall be the sole judge of acceptability of substitution.

- .1 By making requests for substitutions in accordance with this Section, the Contractor:
 - a. Represents that he has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to that specified;
 - b. Represents that he will provide the same warranty for the substitution that the Contractor would for that specified;
 - c. Certifies that the cost data presented is complete and includes all related costs under this Contract but excludes the Architect's re-design costs, and waives all claims for additional costs related to the substitution which subsequently become apparent; and
 - d. Will coordinate the installation of the accepted substitute, making such changes as may be required for the work to be complete in all respects.

.2 The Architect will reply in writing to the Contractor stating whether the Owner, after due investigation, has reasonable objection to any such proposal. If adequate data on any proposed manufacturer or installer is not available, the Architect may state that action will be deferred until the Contractor provides further data. Failure of the Owner to reply will constitute notice of non-acceptance. Written acceptance of substitution will not constitute a waiver of any of the requirements of the Contract Documents, and all products furnished by the listed manufacturer must comply with such requirements. Any adjustment in contract price will be accurately reflected in the required AIA Document G701 Change Order and no adjustment will be made unless so reflected.

§ 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the

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Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.2 All material, equipment, labor, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4. The contractor further agrees to secure, assign, and deliver to the Owner at the time of final completion of the Work any and all manufacturer's warranties relating to materials and labor used in the Work and further agrees to perform the Work in such manner so as to preserve any and all such manufacturer's warranties. Such written warranties shall extend for the benefit of and be available to be asserted in the name of the Owner. Delivery of such written warranties is a condition precedent to final payment. If necessary as a matter of law, the Contractor may retain the right or the Owner may require Contractor to exercise the right to enforce directly any such manufacturers' warranties during the one-year period following the date of Substantial Completion.

§ 3.5.3 For a period of one year form the date of issuance of the Final Certificate of Payment for the work, the Contractor shall furnish and install, without cost to the Owner, any and all kinds of work which in the judgment of the Owner, proves defective in materials and or workmanship.

§ 3.6 Taxes

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 Permits, Fees, Notices and Compliance with Laws

§ 3.7.1 Except as set forth in Section 2.3.1, the Contractor shall secure, pay for, and, as soon as practicable, furnish the Owner with copies or certificates of all permits and fees, licenses, and inspections necessary for the proper execution and completion of the Work, including, without limitation, all building permits, licenses, inspection, observation, and testing reports assigned to Contractor, and other similar items. All connection charges, assessments, or inspection fees as may be imposed by any municipal agency or utility company are included in the Contract Sum and shall be the Contractor's responsibility.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders and all other requirements of public authorities applicable to performance of the Work. The Contractor shall procure and obtain all bonds required of the Owner or the Contractor by the municipality in which this Project is located or any other public or private body with jurisdiction over the Project. In connection with such bonds, the Contractor shall prepare all applications, supply all necessary backup material, and furnish the surety with any required personal undertakings. The Contractor shall also obtain and pay all charges for all approvals for street closings, parking meter removal, and other similar matters as may be necessary or appropriate from time to time for the performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 Concealed or Unknown Conditions

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may submit a Claim as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall

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continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 Allowances

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- .3 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.
- .4 the Contractor shall solicit from information provided by the Architect at least three bids or acceptable pricing from existing subcontractor for all allowance items from Subcontractors or material suppliers acceptable to the Owner, the Contractor and the Architect, unless otherwise directed by the Architect. The Architect shall review the bids/pricing and recommend to the Owner the acceptance or rejection of the lowest bid/pricing. If accepted the Architect shall issue a Change Order to the Contractor as provided in Section 3.8.2.3.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 Within thirty (30) days after the date of the Owner's issuance of a notice to proceed with performance of the Work, the Contractor shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project and include a graphic depiction of the contemplated activities which are necessary incidents to performance of the Work, showing the sequence the Contractor proposes for each activity to occur and the duration (dates of commencement and completion, respectively) of each such activity. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project. Following development and submittal of the construction schedule, the Contractor shall, at the end of each calendar month occurring thereafter during the period of the time required to finally complete the Work or at such earlier intervals as circumstances may require, update and/or revise the construction schedule to show the actual progress of the Work performed and the occurrence of all events which have affected the progress of performance of the Work already performed or which will affect the progress of performance of the Work yet to be performed. Failure of the Contractor to update, revise and submit the construction schedule as aforesaid shall be sufficient grounds for the Architect to find the Contractor in substantial default and certify to the Owner that sufficient cause exists to terminate the Contract or to withhold payment to the Contractor until a schedule or schedule update acceptable to the Architect is submitted.

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§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The Architect's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.10.4 The construction schedule shall be in a detailed precedence-style critical path management ("CPM") or primavera-type format satisfactory to the Owner and the Architect that shall also (i) provide a graphic representation of all activities and events that will occur during performance of the Work; (ii) identify each phase of construction and occupancy; and (iii) set forth dates that are critical in ensuring the timely and orderly completion of the Work in accordance with the requirements of the Contract Documents (hereinafter referred to as "Milestone Dates"). Upon review and acceptance by the Owner and the Architect of the Milestone Dates, the construction schedule shall be deemed part of the Contract Documents and attached to the Agreement. If not accepted, the construction schedule shall be promptly revised by the Contractor in accordance with the recommendations of the Owner and the Architect and resubmitted for acceptance. The Contractor shall monitor the progress of the Work for conformance with the requirements of the construction schedule and shall promptly advise the Owner of any delays or potential delays. The accepted construction schedule shall be updated to reflect actual conditions (sometimes referred to in these Supplementary Conditions as "progress reports") as set forth in Section 3.10.1 or if requested by either the Owner or the Architect. IN the event any progress report indicates any delays, the Contractor shall propose an affirmative plan to correct the delay, including overtime and/or additional labor, if necessary. In no event shall any progress report constitute an adjustment in the Contract Time, any Milestone Date, or the Contract Sum unless any such adjustment is agreed to by the Owner and authorized pursuant to Change Order.

§ 3.10.5 In the event the Owner determines that the performance of the Work, as of a Milestone Date, has not progressed or reached the level of completion required by the Contract Documents due to the fault of the Contractor, the Owner shall have the right to order the Contractor to take corrective measures necessary to expedite the progress of construction, including without limitation, (i) working additional shifts or overtime, (ii) supplying additional manpower, equipment, and facilities, and (iii) other similar measures (hereinafter referred to collectively as "Extraordinary Measures"). Such Extraordinary Measures shall continue until the progress of the Work complies with the stage of completion required by the Contract Documents. The Owner's right to require Extraordinary Measures is solely for the purpose of ensuring the Contractor's compliance with the construction schedule.

§ 3.10.5.1 The Contractor shall not be entitled to an adjustment in the Contract Sum in connection with Extraordinary Measures required by the Owner under or pursuant to this Section 3.10.5

§ 3.10.5.2 The Owner may exercise the rights furnished the Owner under or pursuant to this Section 3.10.5 as frequently as the Owner deems necessary to ensure that the Contractor's performance of the Work will comply with any Milestone Date or completion date set forth in the Contract Documents.

§ 3.10.6 The Owner shall have the right to direct a postponement or rescheduling of any date or time for the performance of any part of the Work that may interfere with the operation of the Owner's premises or any tenants or invitees thereof. The Contractor shall, upon the Owner's request, reschedule any portion of the Work affecting operation of the premises during hours when the premises are not in operation. Any postponement, rescheduling, or performance of the Work under this Section 3.10.6 may be grounds for an extension of the Contract Time, if permitted under Section 8.3.1, and an equitable adjustment in the Contract Sum if (i) the performance of the Work was properly scheduled by the Contractor in compliance with the requirements of the Contract Documents, (ii) such rescheduling or postponement is required for the convenience of the Owner.

§ 3.11 Documents and Samples at the Site

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner, and delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 Shop Drawings, Product Data and Samples

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment, or workmanship, and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Information submitted shall show the capacity, operating conditions and all engineering data and descriptive information necessary for comparison and to enable the Architect to determine compliance with the Specifications. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Architect, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of Separate Contractors.

§ 3.12.5.1 Shop Drawings shall be fully identified by Project name, location, supplier's name, date, drawing number and specifications section reference. The Contractor shall make no deviation from the approved drawings, and the changes made by the Architect if any.

§ 3.12.5.2 Five copies of the shop drawings and brochures shall be submitted, unless electronic documents are requested. Contractor shall properly schedule the submission of Shop Drawings for approval to allow adequate time for checking of drawing, manufacture and shipment of items to job site in sufficient time to prevent delay in the construction schedule.

§ 3.12.5.3 Contractor shall coordinate the preparation of Shop Drawings of items which will be furnished by more than one manufacturer but are designed to interface when installed.

§ 3.12.5.4 If and when required by the Architect, the Contractor shall prepare and submit to the Architect a completely itemized schedule of Shop Drawings, brochures and other descriptive literature, listing each and all such items as required under these specifications which schedule shall indicate for each required item:

- .1 Identification as to pertinent Specification Division
- .2 Item(s) involved
- .3 Name of pertinent Subcontractor or supplier and the name of pertinent manufacturer
- .4 Scheduled date of delivery of pertinent item to the project.

§ 3.12.5.5 The Contractor shall require all Subcontractors to submit to the Architect through the Contractor complete brochures covering all materials and/or equipment proposed for use in the execution of the Work as required by their respective Divisions of the Specifications. These brochures shall be indexed and properly cross-referenced to the plans and specifications for easy identification.

§ 3.12.5.6 A list of all materials and equipment, together with manufacturers' drawings and catalog information shall be submitted to the Architect for approval prior to ordering material or equipment, but not later than 90 days after the date of the award of the applicable subcontracts. Information submitted shall show the capacity, operating conditions and all engineering data and descriptive information. The Architect's approval will not relieve the Contractor of the responsibility for performance of any terms of the Contract Documents.

§ 3.12.5.7 Nothing in Section 3.12 shall be construed to require the Contractor to assume any responsibility or duty of a consultant hired by Owner so long as such responsibility or duty is not the express responsibility or duty of the Contractor under the Contract Documents.

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§ 3.12.6 By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.6.1 Shop Drawings submitted to the Architect for approval shall first be checked and approved by the Contractor, the evidence of which shall be a "checked" stamp marked "Approved," or "Approved as Noted" on each copy of each Shop Drawing, placed thereon by the Contractor. Submitting a Shop Drawing without the Contractor's "checked" stamp will be cause for immediate return without further action. Each drawing correctly submitted will be checked by the Architect and marked "Reviewed," "Reviewed as Noted" or "Not Approved."

§ 3.12.6.2 Resubmittals necessitated by required corrections due to Contractor's errors or omissions shall not constitute cause for an extension of Contract Time, provided the submittals or Shop Drawings are timely reviewed and returned by the Owner.

§ 3.12.6.3 All Shop Drawings and submittals will be maintained on site for record purposes, but at no time shall Shop Drawings which have not been approved by the Architect be allowed in the field.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Architect of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals, by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 3.12.10.2 If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the time and in the form specified by the Architect. Any design professional the Contractor shall cause to provide services or certifications under this Section shall comply with reasonable requirements of the Owner regarding qualifications and insurance.

§ 3.13 Use of Site

§ 3.13.1 The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.13.2 Only materials and equipment that are to be used directly in the Work shall be brought to and stored on the Project site by the Contractor. After equipment is no longer required for the Work, it shall be promptly removed from the Project site. Protection of construction materials and equipment stored at the Project site from weather, theft, damage, and all other adversity is solely the responsibility of the Contractor. The Contractor shall ensure that the Work, at all times, is performed in a manner that affords reasonable access, both vehicular and pedestrian, to the site of the Work and all adjacent areas. The Work shall be performed to the fullest extent reasonably possible in such a manner that public areas adjacent to the site of the Work shall be free from all debris, building materials, and equipment likely to cause hazardous conditions.

§ 3.13.3 The Contractor and any entity for whom the Contractor is responsible shall not erect any sign on the Project site without the prior written consent of the Owner, which may be withheld in the sole discretion of the Owner.

§ 3.13.4 Without limitation of any other provision of the Contract Documents, the Contractor shall use best efforts to minimize any interference with the occupancy or beneficial use of (I) any areas and buildings adjacent to the site of the Work and (ii) the Building in the event of partial occupancy, as more specifically described in Section 9.9. Without prior approval of the Owner, the Contractor shall not permit any workers to use any existing facilities at the Project site, including, without limitation, lavatories, toilets, entrances, and parking areas other than those designated by the Owner.

§ 3.13.4.1 Without limitation of any other provision of the Contract Documents, the Contractor shall use its best efforts to comply with all rules and regulations promulgated by the Owner in connection with the use and occupancy of the Project site and the Building, as amended from time to time. The Contractor shall immediately notify the Owner in writing if during the performance of the Work, the Contractor finds compliance of any portion of such rules and regulations to be impracticable, setting forth the problems of such compliance and suggesting alternatives through which the same results intended by such portions of the rules and regulations can be achieved. The Owner may, in the Owner's sole discretion, adopt such suggestions, develop new alternatives, or require compliance with the existing requirements of the rules and regulations.

§ 3.13.4.2 The Contractor shall also comply with all insurance requirements applicable to use and occupancy of the Project site and the Building.

§ 3.14 Cutting and Patching

§ 3.14.1 The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents. Existing structures and facilities, including but not limited to buildings, utilities, topography, streets, curbs, walks, landscape materials, and other improvements that are damaged or removed due to required excavations or Contractor's Work, shall be patched, repaired, or replaced by the Contractor to the satisfaction of the Architect, the owner of such structures and facilities, and authorities having jurisdiction as required by the Plans and Specifications. In the event that a local authority having jurisdiction requires that such repairing and patching be done with its own labor and/or materials, the Contractor shall abide by such regulations and pay for such work.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or Separate Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner or a Separate Contractor except with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Owner or a Separate Contractor, its consent to cutting or otherwise altering the Work.

§ 3.15 Cleaning Up

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 Access to Work

The Owner may need access to or use of certain areas of the site or Work prior to the Contractor's achievement of Substantial Completion, and that such occupancy, access or use shall not constitute the Owner's acceptance of any Work. The Contractor shall not enter any Owner-occupied area of the site or Project unless first approved and scheduled by the Owner. The Owner may incur damages if the Owner's operations on the Site are interrupted or impaired as a result of the Work. The Contractor shall afford the Architect and Owner's own forces, and the Architect's or Owner's other consultants, trade contractors, subcontractors and suppliers, access to the site for performance of their activities, and shall connect and coordinate its construction and operations with theirs as required by the Construction Documents.

§ 3.17 Royalties, Patents and Copyrights

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications, or other documents prepared by the Owner or Architect. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect.

§ 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner and Owner's agents and employees from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), including loss of use resulting therefrom, but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

§ 3.18.3 The Contractor's indemnity obligations under this Section 3.18 shall also specifically include, without limitation, all fines, penalties, damages, liability, costs, expenses (including, without limitation, reasonable attorney's fees), and punitive damages (if any) arising out of, or in connection with, any (i) violation of or failure to comply with any law, statute, ordinance, rule, regulation, code, or requirement of a public authority that bears upon the performance of the Work by the Contractor, a Subcontractor, or any person or entity for whom either is responsible, (ii) means, methods, procedures, techniques, or sequences of execution or performance of the Work, and (iii) failure to secure and pay for permits, fees, approvals, licenses, and inspections as required under the Contract Documents, or any violation of any permit or other approval of a public authority applicable to the Work by the Contractor, a Subcontractor, or any person or entity for whom either is responsible.

§ 3.18.4 The Contractor shall indemnify and hold harmless all of the Indemnitees from and against any costs and expenses (including reasonable attorney's fees) incurred by any of the Indemnitees in enforcing any of the Contractor's defense, indemnity, and hold-harmless obligations under this Contract.

ARTICLE 4 ARCHITECT

§ 4.1 General

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement. Any reference in the Contract Documents to the Architect's taking action or rendering a decision within a "reasonable time" is understood to mean no more than two (2) weeks.

§ 4.1.2 Duties, responsibilities, and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner and Architect. Consent shall not be unreasonably withheld.

§ 4.2 Administration of the Contract

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during Construction, until payment is due, and (with the owner's concurrence), from time to time during the one-year warranty period for correction of Work as set forth in Section 12.2.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts. The authorized representatives and agents of the Architect, Owner, and such other persons as the Owner may designate shall have access to and be permitted to inspect all Work, subcontracts, materials, payrolls, records of personnel, invoices of materials and other relevant data and records for the Project wherever they are in preparation and progress. The Contractor shall provide proper facilities for such access and inspection and, when required, exact duplicate copies of the aforementioned data shall be furnished.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may order minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

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§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect in connection with administration of the Contract will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a Separate Contractor or the subcontractors of a Separate Contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

§ 5.2.1 No later than 20 days after the full execution of the Agreement, the Contractor shall furnish the Owner and the Architect, in writing, with (i) the name, trade, and subcontract amount for each Subcontractor and (ii) the names of all persons or entities proposed as manufacturers of the products identified in the Specifications (including those who are to furnish materials or equipment fabricated to a special design, and where applicable, the name of the installing Subcontractor. If required the Contractor shall provide the owner with evidence that all proposed Subcontractors are competent to execute the various parts of the work assigned to them by their subcontracts. The Architect may reply within 14 days to the contractor in writing stating (1) additional information is needed to assess a subcontract or subcontractor; (2) whether the Owner or the Architect has reasonable objection to any such proposed person or entities or; (3) that the Owner has granted Architect additional time for review. Failure of the Owner or Architect to reply within the 14-day period shall constitute notice of no reasonable objection. No work shall be commenced until Subcontractors have been approved in writing by the Owner.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the

difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.3 Subcontractual Relations

§ 5.3.1 By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work that the Contractor, by these Contract Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.3.2 All subcontracts shall be in writing in form and substance substantially similar to the Contractor's standard form subcontract, attached to the Agreement and made a part thereof as Addendum A, and shall specifically provide that the Owner is and intended third-party beneficiary of such subcontract.

§ 5.4 Contingent Assignment of Subcontracts

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 If the Work in connection with a subcontract has been suspended for more than 30 days after termination of the Contract by the Owner pursuant to Section 14.2 and the Owner accepts assignment of such subcontract, the Subcontractor's compensation shall be equitably adjusted for any increase in direct costs incurred by such Subcontractor as a result of the suspension.

§ 5.4.3 Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

§ 5.4.4 Each subcontract shall specifically provide that the Owner shall only be responsible to the Subcontractor for those obligations that accrue subsequent to the Owner's exercise of any rights under this conditional assignment.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 Owner's Right to Perform Construction and to Award Separate Contracts

§ 6.1.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

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§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each Separate Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, Separate Contractors, and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11, and 12.

§ 6.1.5 The Contractor accepts assignment of, and liability for, all purchase orders and other agreements for procurement of materials and equipment that are identified as part of the Contract Documents. The Contractor shall be responsible for such pre-purchased items, if any, as if the Contractor were the original purchaser. The Contract Sum includes, without limitation, all costs and expenses in connection with delivery, storage, insurance, installation, and testing of items covered in any assigned purchase orders or agreements. All warranty and correction of the Work obligations under the Contract Documents shall also apply to any pre-purchased items, unless the Contract Documents specifically provide otherwise.

§ 6.2 Mutual Responsibility

§ 6.2.1 The Contractor shall afford the Owner and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a Separate Contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a Separate Contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or Separate Contractor as provided in Section 10.2.5.

§ 6.2.5 The Owner and each Separate Contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor, and Architect. A Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor. An order for a minor change in the Work may be issued by the Architect as provided in Section 7.4.

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§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order, Construction Change Directive, or order for a minor change in the Work. Except as permitted in Section 7.3 and Section 9.7.2, a change in the Contract Sum or the Contract Time shall be accomplished only by Change Order. Accordingly, no course of conduct or dealings between the parties, nor expressed or implied acceptance of alterations or additions to the Work, and no claim that Owner has been unjustly enriched by any alteration of or addition to the Work, whether or not there is, in fact, any unjust enrichment to the Work, shall be the basis of any claim to an increase in any amounts due under the Contract Documents or a change in any time period provided for in the Contract Documents.

§ 7.2 Change Orders

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor, and Architect stating their agreement upon all of the following:

- .1 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

§ 7.2.2 All Change Orders must be on the form designated by the Owner.

§ 7.2.3 Agreement on any Change Order shall constitute a final settlement of all matters relating to the change in the Work that is the subject of the Change Order, including, but not limited to, all direct and indirect costs and consequential damages associated with such change and any and all adjustments to the Contract Sum and the construction schedule.

§ 7.3 Construction Change Directives

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly. All Construction Change Directives must be on the form designated by Owner.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 The not-to-exceed unit prices stated in the Contract Documents or other unit prices subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a percentage fee as provided in Section 7.3.13; or
- .4 As provided in Section 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the method and the adjustment shall be determined by the Architect on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, the stipulated allowance for overhead and profit as stated in Section 7.3.13. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

- .1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;
- .2 Costs of materials, supplies, and equipment, including sales tax and cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and
- .5 Costs of supervision and field office personnel directly attributable to the change.

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.3.11 The cost of the change in the Work shall not include any cost not to be reimbursed as provided in the Agreement.

§ 7.3.12 The Contractor shall check all materials, equipment and labor entering into the Work as a result of changes in the Work and shall keep such full and detailed accounts as may be necessary for proper financial management under the Contract for Construction, and the system shall be satisfactory to the Owner. The Owner shall be afforded access to all the Contractor's records, books, correspondence, instructions, drawings, receipts, vouchers, memoranda and similar data relating to changes in the Contract.

§ 7.3.13 The percentage fee for overhead and profit combined, to be added to the cost of the change in the Work in determining the total cost to the Owner, shall be based upon the following schedule:

- .1 For the Contractor, for Work performed by the Contractor's own forces, 15 percent of the cost.
- .2 For the Contractor, for work performed by the Contractor's Subcontractor, 5 percent of the amount due the Subcontractor.
- .3 For each Subcontractor or Sub-Subcontractor involved, for Work performed by the Subcontractor's or Sub-Subcontractor's own forces, 5 percent of the cost.
- .4 For each Subcontractor, for Work performed by the Subcontractor's Sub-Subcontractors, 5 percent of the amount due the Sub-Subcontractor.
- .5 Cost to which overhead and profit is to be applied shall be determined in accordance with Subparagraph 7.3.6.
- .6 In order to facilitate checking of quotations for extras or credits, all proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs including labor, materials and Subcontracts. Labor and materials shall be itemized in the manner prescribed above. Where major cost items are Subcontracts, they shall be itemized also. In no case will a change involving over \$500.00 be approved without such itemization.

§ 7.3.14 If a change in the Work results in a credit to the Owner, the credit shall be the net cost of the change as defined in Sections 7.3.7 and 7.3.11 and shall not include any allowance for the Contractor's or Subcontractors' overhead and profit.

§ 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

ARTICLE 8 TIME

§ 8.1 Definitions

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the notice to proceed.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 Progress and Completion

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended by Change Order to the extent such delay will prevent the Contractor from achieving Substantial Completion within the Contract Time and if the performance of the Work is not, was not, or would not have been delayed by any other cause for which the Contractor is not entitled to an extension in the Contract Time under the Contract Documents. The Contractor further acknowledges and agrees that adjustments in the Contract Time will be permitted for a delay only to the extent such delay (i) is not caused, or could not have been anticipated, by the Contractor, (ii) could not be limited or avoided by the Contractor's timely notice to the Owner of the delay or reasonable likelihood that a delay will occur, and (iii) is of a duration not less than one day.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 Notwithstanding anything to the contrary in the Contract Documents, the Contractor's sole remedy for any (i) delay in the commencement, prosecution, or completion of the Work, (ii) hindrance, interference, suspension or obstruction in the performance of the Work, (iii) loss of productivity, or (iv) other similar claims (items I through iv herein collectively referred to in this Section 8.3.3 as "Delays"), whether or not such Delays are foreseeable, shall be an extension of time in which to complete the Work if permitted under Section 8.3.1 and, to the extent permitted under this Section 8.3.3, an adjustment in the Contract Sum. In no event shall the Contractor be entitled to any other compensation or recovery of any damages under or pursuant to this Section 8.3.3 in connection with any Delay, including without limitation, consequential damages, lost opportunity costs, impact damages, or other similar remuneration.

§ 8.3.3.1 The Contractor shall be permitted an adjustment in the Contract Sum if any Delays, either individually or taken in the aggregate, cause the Contract Time to be increased by more than 25 days (the "Elimination Period"). Any adjustment in the

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Contract Sum under or pursuant to this Section 8.3.3 shall be limited to the increase, if any, of direct costs incurred by the Contractor in performing the Work as a result of that portion of any Delay or Delays that cause the Contract Time to be increased in excess of the Elimination Period.

§ 8.3.3.2 Both the Owner and the Contractor acknowledge and agree that the Elimination Period shall not apply to a Delay caused by the Owner. Any extension in the Contract Time in connection with an Owner-caused Delay shall not be considered in determining whether or not the Contractor has incurred Delays that, in the aggregate, exceed the Elimination Period.

§ 8.3.3.3 Extended overhead profit or damages will not be allowed, including those relating to weather delays. If the Contractor neglects, fails or refuses to complete the work within the time herein specified, the Contractor must, as a part consideration for the awarding of this Contract, pay liquidated damages to the Owner.

§ 8.3.3.4 The Contractor shall assure that all of the Subcontractors and suppliers are bound to a contractual provision providing that they are entitled to no additional compensation or damages on account of delays arising from any cause and shall indemnify Owner from any claims arising from its failure to do so.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

§ 9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 9.2 Schedule of Values

§ 9.2.1 Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the Architect within 10 days of the full execution of the Agreement, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Architect. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. Any changes to the schedule of values shall be submitted to the Architect and supported by such data to substantiate its accuracy as the Architect may require, and unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

§ 9.2.2 The Contractor and each Subcontractor shall prepare a trade payment breakdown for the Work for which each is responsible, such breakdown being submitted on a uniform standardized form approved by the Architect and Owner. The form shall be divided in detail sufficient to exhibit areas, floors, and/or sections of the Work, and/or by convenient units and shall be updated as required by either the Owner or the Architect as necessary to reflect (i) description of Work (listing labor and material separately), (ii) total value, (iii) percent of the Work completed to date, (iv) value of Work completed to date, (v) percent of previous amount billed, (vi) previous amount billed, (vii) current percent completed, and (viii) value of Work completed to date. Any trade breakdown that fails to include sufficient detail is unbalanced, or exhibits "front-loading" of the value of the Work shall be rejected. If trade breakdown had been initially approved and subsequently used but later was found improper for any reason, sufficient funds shall be withheld from future Applications for Payment to ensure an adequate reserve (exclusive of normal retainage) to complete the Work.

§ 9.3 Applications for Payment

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. The application shall be notarized, if required, and supported by all data substantiating the Contractor's right to payment that the Owner or Architect require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

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§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.1.3 Each Application for Payment shall be accompanied by the following, all in form and substance satisfactory to the Owner: (i) a current Contractor's lien waiver and duly executed and acknowledged sworn statement showing all Subcontractors and material suppliers with whom the Contractor has entered into subcontracts, the amount of each such subcontract, the amount requested for any Subcontractor and material supplier in the requested progress payment, and the amount to be paid to the Contractor from such progress payment, together with similar sworn statements from all such Subcontractors and material suppliers; (ii) duly executed waivers of mechanics' and material suppliers' liens from all Subcontractors and, when appropriate, from material suppliers and lower tier Subcontractors establishing payment or satisfaction of payment of all amounts requested by the Contractor on behalf of such entities or persons in any previous Application for Payment; and (iii) all information and materials required to comply with the requirements of the Contract Documents or reasonably requested by the Owner or the Architect. If required by the Owner's title insurer, if any, the Contractor shall execute a personal gap undertaking in form and substance satisfactory to such title insurer.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored off the site. The Contractor shall also comply with the following specific requirements:

- .1 The aggregate cost of materials stored off site shall not exceed \$50,000.00 at any time without written approval of the Owner.
- .2 Title to such materials shall be vested in the Owner, as evidenced by documentation satisfactory in form and substance to the Owner and the Owner's Construction Lender, including, without limitation, recorded financing statements, UCC filings, and UCC searches.
- .3 With each Application for Payment, the Contractor shall submit to the Owner a written list identifying each location where materials are stored off the Project site and the value of materials at each location. The Contractor shall procure insurance satisfactory to the Owner for materials stored off the Project site in an amount not less than the total value thereof.
- .4 The consent of any surety shall be obtained to the extent required prior to payment for any materials stored off the Project site.
- .5 Representatives of the Owner and the Lender shall have the right to make inspections of the storage areas at any time.
- .6 Such materials shall be (i) protected from diversion, destruction, theft, and damage to the satisfaction of the Owner and the Lender, (ii) specifically marked for use on the Project, and (iii) segregated from other materials at the storage facility.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials, and equipment relating to the Work.

§ 9.3.3.1 The Contractor further expressly undertakes to defend the Indemnitees, at the Contractor's sole expense, against any actions, lawsuits, or proceedings brought against the Indemnitees as a result of liens filed against the Work, the site of any of the Work, the Project site and any improvements thereon, payments due the Contractor, or any portion of the property of any of the Indemnitees (referred to collectively as "liens" in this Section 9.3.3). The Contractor hereby agrees to indemnify and hold the Indemnitees harmless against any such liens or claims of lien and agrees to pay any judgment or lien resulting from any such actions, lawsuits, or proceedings.

§ 9.3.3.2 The Owner shall release any payments withheld due to a lien or claim of lien if the Contractor obtains security acceptable to the Owner or a lien bond that is (i) issued by a surety acceptable to the Owner, (ii) in form and substance satisfactory to the Owner, and (iii) in an amount not less than Two Hundred percent (200%) of such lien claim or such other

amount as required by applicable law. By posting a lien bond or other acceptable security, however, the Contractor shall not be relieved of any responsibilities or obligations under this Section 9.3.3, including, without limitation, the duty to defend and indemnify the Indemnitees. The cost of any premiums incurred in connection with such bonds and security shall be the responsibility of the Contractor and shall not be part of, or cause any adjustment to, the Contract Sum.

§ 9.3.3.3 Notwithstanding the foregoing, except in the event that (i) a bond surety has provided indemnification for and continues to actively pursue the full release of any lien through the most expedient means; and (ii) the lien is causing the Owner to incur no negative consequences or costs, the Owner reserves the right to settle any disputed mechanic's or material supplier's lien claim by payments to the lien claimant or by such other means as the Owner, in the Owner's sole discretion determines is the most economical or advantageous method of settling the dispute. The Contractor or surety shall promptly reimburse the Owner, upon demand, for any payments so made.

§ 9.4 Certificates for Payment

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.4.3 If, subsequent to issuing any certificate pursuant to this Section 9.4, Architect should determine that any previous certificate was in error (whether by review of additional conditions or documents, discovery of mathematical error, or any other reason), then Architect shall issue a Revised Certificate for Payment, setting forth the changes in the amounts due Contractor as well as the reason for such revision.

§ 9.5 Decisions to Withhold Certification

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a Separate Contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or

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.7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15. The Owner shall not be deemed in default by reason of withholding payment to the extent necessary in the Owner's reasonable opinion to protect the Owner while any of the conditions described in 9.5.1.1 through 9.5.1.7 remain.

§ 9.5.3 When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.4 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Contractor shall reflect such payment on its next Application for Payment.

§ 9.5.5 In the event the Contract causes the Architect to perform Additional Services and incur expenses concerning Change Order, interpretations of the Documents, or defect/deficiency in the Work, the Contract Amount will be reduced by the amount of compensation due the Architect and Owner will set off that amount from the next Payment to the Contractor.

§ 9.5.6 If any claim or lien is made or filed with or against the Owner, the Project or the Premises by: (i) (y) any person claiming that the Contractor or any Subcontractor; or (z) other person under it has failed to make payment for any labor, services, materials, equipment, taxes or other items or obligations furnished or incurred for or in connection with the work; or (ii) if at any time there shall be evidence of such nonpayment or of any claim or lien for which, if established the Owner might become liable and which is chargeable to the Contractor, or (iii) if the Contractor or any Subcontractor or other person under it causes damages to the Work or to any other work on the Project, or (iv) if the Contractor fails to perform or is otherwise in default under any of the terms or provisions of the Contract Documents, the Architect shall withhold certification and the Owner shall have the right to retain from any payment then due or thereafter to become due an amount which the Architect shall deem sufficient to (1) satisfy, discharge and/or defend against any such claim or lien or any action which may be brought or judgment which may be recovered thereon; (2) make good any such nonpayment, damage, failure or default; and (3) compensate the Owner for an indemnity if against any and all losses, liability, damage, costs and expenses, including reasonable attorney's fees and disbursements, which may be sustained or incurred by the Owner in connection therewith. The Owner shall have the right to apply and charge against the Contractor so much of the amount retained as may be required for the foregoing purposes and if such retained amount is insufficient therefore, the Contractor shall be liable for the difference and pay the same to the Owner.

§ 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

§ 9.6.4.1 Without creating any obligation to do so, the Owner may elect to make payments jointly to the Contractor and to the Subcontractor identified on the Contractor's Application for Payment, unless the Contractor has any reasonable objection based upon an event of default under the Subcontract Agreement. Payment by the Owner to the Contractor and Subcontractor jointly shall not create a contractual relationship between the Owner and the Subcontractor, obligate the Owner to pay the Subcontractor directly in the future, or create contractual rights under the Contract for Construction in the Subcontractor against the Owner.

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§ 9.6.4.2 Without creating any obligation to do so, the Owner may elect to make payments jointly to the Contractor and to the Subcontractor identified on the Contractor's Application for Payment, unless the Contractor has any reasonable objection based upon an event of default under the Subcontract Agreement. Payment by the Owner to the Contractor and Subcontractor jointly shall not create a contractual relationship between the Owner and the Subcontractor, obligate the Owner to pay the Subcontractor directly in the future, or create contractual rights under the Contract for Construction in the Subcontractor against the Owner.

§ 9.6.5 The Contractor's payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors or provided by suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.6.8 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

§ 9.7 Failure of Payment

§ 9.7.1 If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.7.2 If the Owner is entitled to reimbursement or payment from the Contractor under or pursuant to the Contract Documents, such payment shall be made timely upon demand by the Owner. Notwithstanding anything contained in the Contract Documents to the contrary, if the Contractor fails to timely make any payment due the Owner, in no event more than five business days from demand, or if the Owner incurs any costs and expenses to cure any default of the Contractor or to correct defective Work, the Owner shall have an absolute right to offset such amount against the Contract Sum and may, in the Owner's sole discretion, elect either to (i) deduct an amount equal to that which the Owner is entitled from any payment then or thereafter due the Contractor from the Owner, or (ii) issue a written notice to the Contractor reducing the Contract Sum by an amount equal to that which the Owner is entitled.

§ 9.8 Substantial Completion

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use; provided, however, that as a condition precedent to Substantial Completion, the Owner has received all certificates of occupancy and any other permits, approvals, licenses, and other documents from any governmental authority having jurisdiction thereof necessary for the beneficial occupancy of the Project.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

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§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion. The Architect will make only one inspection to determine Substantial Completion. If this inspection determines that the work is not substantially complete, either because of major items not completed or an excessive number of punch list items, successive inspections requested by the Contractor shall be charged to the Contractor at a rate of \$500.00 per person per day plus expenses.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate. Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.8.6 The acceptance of Substantial Completion and final payment shall constitute a waiver of all claims by the Contractor except those previously made in writing and identified by the Contractor as unsettled at the time of the Application for Payment for Substantial Completion, and except for the retainage sums due at final acceptance.

§ 9.8.7 The Contractor shall be responsible for collecting, identifying, indexing and collating the following materials from the Subcontractors, and will deliver the finished document to the Architect to verify completeness. The Architect will deliver three copies of the following to the Owner: Complete equipment diagrams, operating instructions, maintenance manuals, parts lists, wiring diagrams, pneumatic and/or electrical control diagrams, test and balance reports, inspection records, guarantees and warranties, as applicable, for each and every piece of fixed equipment furnished under this Contract to be supplied in a ring binder, hard-cover book, properly indexed for ready reference. Also, specific information regarding manufacturer's name and address, nearest distributor and service representative's names, addresses, office and home phone numbers, make and model numbers, operating design and characteristics, etc., will be required. All information submitted shall be current as of the time of submission.

§ 9.8.8 Subsequent to the time of Substantial Completion and receipt of contract record sets and operations and maintenance books, but prior to the date of final acceptance, the Contractor and/or Subcontractor shall provide a competent and experienced person (or persons) thoroughly familiar with the Work for a reasonable period of time but not less than 40 hours to instruct the Owner's personnel in operation and maintenance of equipment and control systems. This instruction will include normal start-up, run, stop, and emergency operations, location and operation of all controls, alarms and alarm systems, etc. The instruction will include tracing the system in the field and on the diagrams in the instruction booklets so that operation personnel will be thoroughly familiar with both the system and the data supplied.

§ 9.9 Partial Occupancy or Use

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor, and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.1.1 All warranties and guarantees required under or pursuant to the Contract Documents shall be assembled and delivered by the Contractor to the Architect as part of the final Application for Payment. The final Certificate for Payment will not be issued by the Architect until all warranties and guarantees have been received and accepted by the Owner. Liquidated damages to the date of Substantial Completion shall be deducted by Construction Change Directive from the Contract Sum and from the Substantial Completion payment. The Contractor's final Application for Payment shall be accompanied by a completed and notarized Certificate of Contract Completion in the form prescribed by the Owner. Any items required by the Contract Documents not previously submitted shall accompany the final Application for Payment.

§ 9.10.1.2 The Architect will make only one inspection to determine Final Completion. If this inspection determines that the work is not finally complete, successive inspections requested by the Contractor shall be charged to the Contractor at a rate of \$500.00 per person per day plus expenses.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees. Releases of liens shall be furnished by the Contractor on AIA Document G706 or a form approved by the Architect. Subcontractors and materials suppliers' lien releases may be provided by the Contractor.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- .1 liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents;
- .3 terms of special warranties required by the Contract Documents; or

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- .4 audits performed by the Owner, if permitted by the Contract Documents, after final payment.
- .5 damages including attorney's fees and costs incurred by the Owner resulting from lawsuits brought against the Owner, the Architect or their agents, employees or representatives because of acts or omissions on the part of the Contractor, any Subcontractor, or any of their employees, agents or representatives.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor, or a supplier, shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

§ 9.11 The Contractor and Owner recognize that time is of the essence of this Agreement and that the Owner will suffer financial loss or incurred additional expenses if Contractor does not achieve Substantial Completion upon the date set, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions, as amended by this Supplementary Conditions, and reflected in a written, signed Change Order. The parties also recognize the delays, expense, and difficulties will be unduly burdensome or impossible to determine with a reasonable degree of accuracy and, therefore, Owner and Contractor agree that Contractor will pay to Owner liquidated damages for such delay – which liquidated damages are recognized as a reasonable estimation of damages the Owner will incur and not a penalty – as specified in the Agreement for each day that expires after the Substantial Completion Date.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.1.1 The Contractor shall require all of its employees and the employees of Subcontractors to conduct themselves in a safe and professional manner and in conformity with all work procedures, either endorsed or prohibited, and utilizing all personal protection devices included, within OSHA and TOSHA Construction Safety Regulations. The Contractor shall take all necessary precautions for the safety of the persons on or near the site of the Work, and shall comply with all applicable laws, rules, regulations and orders to prevent accidents or injuries to persons on or in the proximity of the Project site. The Contractor shall put into place a meaningful and effective safety program comprised of regular safety training of its employees on site, focusing upon various topics which, from time to time, its employees are likely to encounter in performing the Work. The Owner will cooperate with all safety audits and recommendations with regard to improving worker's safety, but the Contractor hereby acknowledges and agrees that the Owner is not responsible, in whole or in part, for the Work, execution of the Work or initiating, maintaining and supervising any safety precautions and programs in connection with the Work or the Project.

§ 10.1.2 Without limiting or diminishing the Constructors responsibility for protection of the site of the Work as set forth in 10.1.1, Contractor shall:

- .1 Protect excavation, trenches, buildings and grounds from water damage of any sort, furnishing the necessary equipment to provide this protection during the life of the contract and Constructing and maintaining necessary temporary drainage to keep excavations free of water.
- .2 Provide protection for the work against wind, storms, cold or heat, including without limitation, at the end of each day's work, covering new work likely to be damaged, and if low temperatures make it impossible to continue operations safely in spite of cold weather precautions, cease work and notify Architect.
- .3 Provide shoring and bracing required for safety and for the proper execution of the work and have same removed when the work is completed.
- .4 Protect, maintain and restore any bench marks, monuments, etc. affected by the work. If bench marks or monuments are displaced or destroyed, points shall be re-established and markers reset under the supervision of a licensed surveyor, who shall furnish certificates of his work.

§ 10.2 Safety of Persons and Property

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.

§ 10.2.3 The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards. The Contractor shall also be responsible, at the Contractor's sole cost and expense, for all measures necessary to protect any property adjacent to the Project and improvements therein. Any damage to such property or improvements shall be promptly repaired by the Contractor.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel. When use or storage of explosives or other hazardous materials or equipment or unusual construction methods are necessary, the Contractor shall give the Owner and the Architect reasonable advance notice.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 Injury or Damage to Person or Property

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.2.9 The Contractor shall promptly report in writing to the Owner and Architect all accidents arising out of or in connection with the Work that cause death, personal injury, or property damage, giving full details and statements of any witnesses. In addition, if death, serious personal injuries, or serious damages are caused, the accident shall be reported immediately by telephone or messenger to the Owner and the Architect.

§ 10.2.10 When all or a portion of the Work is suspended for any reason, the Contractor shall securely fasten down all coverings and fully protect the Work, as necessary, from injury or damage by any cause.

§ 10.3 Hazardous Materials and Substances

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a concealed and undisclosed hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Architect of the condition.

§ 10.3.2 Upon receipt of the Contractor's notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish

in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up. The term "rendered harmless" shall be interpreted to mean that levels of asbestos and polychlorinated biphenyls are less than any applicable exposure standards set forth in OSHA regulations. In no event, however, shall the Owner have any responsibility for any substance or material that is brought to the Project site by the Contractor, any Subcontractor, any material supplier, or any entity for whom any of them is responsible. The Contractor agrees not to use any fill or other materials to be incorporated into the Work that are hazardous, toxic, or made up of any items that are hazardous or toxic.

§ 10.3.3 To the fullest extent permitted by law, including the Tennessee Governmental Tort Liability Act, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall reimburse the Contractor for all cost and expense thereby incurred.

§ 10.4 Emergencies

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

§ 11.1.2 The Contractor shall, for the protection and benefit of the Indemnitees and the Contractor and as part of the Contractor's efforts to satisfy the obligations set forth in Section 11.1.1, procure, pay for, and maintain in full force and effect, at all times during the performance of the Work until final acceptance of the Work or for such duration as required, policies of insurance issued by a responsible carrier or carriers acceptable to the Owner, and in form and substance reasonably satisfactory to the Owner, which afford the coverages set forth in the Schedule of Insurance, attached to the Supplementary Conditions as Addendum A and made a part of this Agreement. All such insurance shall be written on an occurrence basis. Information concerning reduction of coverage shall be furnished by the Contractor promptly.

§ 11.1.3 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

§ 11.1.4 **Notice of Cancellation or Expiration of Contractor's Required Insurance.** Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§ 11.2 Owner's Insurance

The Owner shall maintain the Owner's usual liability insurance; provided, however, that unless otherwise specifically provided by the Owner for the Work, the Contractor shall purchase and maintain insurance covering the Owner's contingent liability for claims which may arise from operations under the Contract.

(Paragraphs deleted)

§ 11.3 Waivers of Subrogation

§ 11.3.1 The Contractor hereby releases and discharges the Owner from all liability to the Contractor, and to anyone claiming by, through or under the Contractor, by subrogation or otherwise, on account of any loss or damage to tools, machinery, equipment, or other property, however caused. Contractor's policies of insurance shall not prohibit this waiver of subrogation, and the Contractor shall cause its Contractor's policies of insurance shall not prohibit this waiver of subrogation, and the Contractor shall cause its Contractor's risk and property insurance company to issue a waiver of subrogation consistent with this provision. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 11.3.2 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance

The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor and Architect for loss of use of the Owner's property, due to fire or other hazards however caused.

§ 11.5 Adjustment and Settlement of Insured Loss

§ 11.5.1 A loss insured under the property insurance required by the Agreement shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

§ 11.5.2 Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15.

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Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.

§ 11.6 Compliance with insurance requirements shall not relieve the Contractor of any responsibility to indemnify the Owner for any liability to the Owner as specified in any other provision of the Contract for Construction, and the Owner shall be entitled to pursue any remedy in law or equity if the Contractor fails to comply with the provisions of this Contract for Construction. Indemnity obligations specified elsewhere in this Contract for Construction shall not be negated or reduced by virtue of any insurance carrier's (i) denial of insurance coverage for the occurrence or event which is the subject matter of the claim; or (ii) refusal to defend any named insured.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense. If prior to the date of Substantial Completion the Contractor, a Subcontractor, or anyone for whom either is responsible uses or damages any portion of the Work, including, without limitation, mechanical, electrical, plumbing, and other building systems, machinery, equipment, or other mechanical device, the Contractor shall cause such item to be restored to "like new" condition at no expense to the Owner. In addition, the Contractor shall promptly remedy damage and loss arising in conjunction with the Project caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or anyone for whose acts they may be liable and for which the Contractor is responsible.

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. For purposes of the preceding sentence, Contractor shall correct such Work promptly if Contractor commences such correction within seven days following the date of written notice from the Architect and thereafter diligently prosecutes such correction to completion. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 Upon completion of any Work under or pursuant to his Section 12.2, the one-year correction period in connection with the Work requiring correction shall be renewed and recommence. The obligations under Section 12.2 shall cover any repairs and replacement to any part of the Work or other property that is damaged by the defective Work.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner or Separate Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 Acceptance of Nonconforming Work

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2 or elsewhere in the Contract Documents, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract. In case the Contractor, on written consent of the Owner, assigns all or any part of any money due or to become due under this Contract, the instrument of assignment shall contain a clause substantially to the effect that it is agreed that the right of the assignee to any money due or to become due to the Contractor shall be subject to prior claims of all persons, firms and corporations for services rendered or materials supplied for the performance of the Work called for in the Contract Documents.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender or other entity providing construction financing or credit enhancement for the Project. The Contractor shall execute all consents reasonably required to facilitate the assignment.

§ 13.3 Rights and Remedies

§ 13.3.1 Except as expressly provided in the Contract Documents, duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

§ 13.3.2 No action or failure to act by the Owner, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.

§ 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals

that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 13.4.2 If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Architect's services and expenses, shall be at the Contractor's expense. The Contractor also agrees the cost of testing services required for the convenience of the Contractor in his scheduling and performance of the Work, and the cost of testing services related to remedial operations performed to correct deficiencies in the Work, shall be borne by the Contractor.

§ 13.4.4 Required certificates of testing, inspection, or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.4.5 If the Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.4.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.5 Interest

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate the parties agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

§ 13.6 Severability

Wherever possible, each provision of this Agreement shall be interpreted in a manner as to be effective and valid under applicable law. If, however, any provision of this Agreement, or portion thereof, is prohibited by law or found invalid under any law, if only such provision or portion thereof shall be ineffective, without in any manner invalidating or affecting the remaining provisions of this Agreement or valid portions of such provision which are hereby deemed severable.

§ 13.7 Duty of Good Faith

Each party hereto agrees to act in good faith with respect to the Project and Work and to do all acts and things and to make, executive and deliver such written instruments, as shall from time to time be reasonably required to carry out the terms and provisions of the Contract Documents.

§ 13.8 Applicability to Subcontractors

Any specific requirement in this Contract that the responsibilities or obligations of the Contractor also apply to a Subcontractor is added for emphasis and is also hereby deemed to include a Subcontractor of any tier. The omission of a reference to a Subcontractor in connection with any of the Contractor's responsibilities or obligations shall not be construed to diminish, abrogate, or limit any responsibilities or obligations of a Subcontractor of any tier under the Contract Documents or the applicable subcontract.

§ 13.9 No Waiver

The provisions of the Contract Documents shall not be changed, amended, waived, or otherwise modified in any respect except by a written Change Order signed by a duly authorized representation of Owner. No "constructive" changes are permitted and no actions, omissions, course of conduct, or practice shall be deemed a change, amendment, or waiver to the Contract Documents. Other than the City Manager, or his written delegee, no person is authorized on behalf of Owner to orally change, amend, waive, or otherwise modify the terms of the Contract Documents. Any change, waiver, approval, or consent granted to the Contractor shall be limited to the specific matters stated in the writing signed by Owner and shall not relieve Contractor of any other of the duties and obligations under the Contract Documents.

§ 13.10 Notices Regarding Liens

§ 13.10.1 Contractor shall provide all notices required or permitted by the laws of the state in which the Project is located for protection of Owner from liens and claims of lien if permitted or required by applicable law. Contractor shall be responsible for filing in the appropriate court or other governmental office records all such notices as required or permitted by the laws of the state in which the Project is located.

§ 13.10.2 Contractor shall provide Owner with copies of all notices received by Contractor from subcontractors, sub-subcontractors, and/or suppliers to Contractor.

§ 13.11 Executed Non-Collusion Affidavit of Subcontractor

The Contractor shall require each of the Subcontractors to execute the attached Non-Collusion Affidavit of Subcontractor.

§ 13.12 Pre-Blast Survey

In the event that the Contractor must perform any blasting during construction operations, the Contractor shall be responsible for conducting his own pre-blast survey at no cost to the Owner.

13.13 Utility Service

Unless otherwise provided in the Contract Documents, the Contractor shall provide and maintain at Contractor's own expense any water, electric, or other utility service necessary for the performance of the Work.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped; and
- .2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped.
- .3

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, repeated suspensions, delays, or interruptions of the entire Work by the Owner as described in Section 14.3, constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit on Work not executed, and costs incurred by reason of such termination.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees or any other persons or entities performing portions of the Work because the Owner has persistently failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 persistently refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;
- .3 persistently disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, and upon certification by the Architect that sufficient cause exists to justify such action, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the sum of the costs of finishing the Work and other damages incurred by the Owner exceed the unpaid balance of the Contract Sum, the Contractor shall pay the difference to the Owner. The amount to be paid to the Owner shall be certified by the Architect, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.2.5 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall be liable to the Owner for the expenses for additional managerial and administrative services provided in Article 14 hereof and also for the per diem liquidated damages, if any, agreed upon in the Agreement:

- .1 for each day the contractor is in arrears in the Work at the time of said termination as determined by the Architect, and
- .2 for each day of thirty (30) additional calendar days hereby stipulated and agreed to be the time it will require the Surety to effect another contract for completion of the Work, including resumption of Work thereon,
- .3 provided, however, that the sum of Subparagraphs 14.2.5.1 and 14.2.5.2 shall not exceed the number of days beyond the original agreed completion date, or any extension thereof as herein provided, reasonably required for completion of the Work.

§ 14.2.6 If the Owner terminates the Contract for Construction for cause, and it is subsequently determined by a court of competent jurisdiction that such termination was without cause then in such event, said termination shall be deemed a termination for convenience as set forth in Section 14.4.

§ 14.3 Suspension by the Owner for Convenience

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- .1 that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 Termination by the Owner for Convenience

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 Upon such termination, the Contractor shall recover as its sole remedy payment for Work properly performed in connection with the terminated portion of the Work prior to the effective date of termination and for items properly and timely fabricated off the Project site, delivered and stored in accordance with the Owner's instructions. The Contractor hereby waives and forfeits all other claims for payment and damages including, without limitation, anticipated profits and overhead. The Owner shall be credited for (i) payments previously made to Contractor for the terminated portion of the Work, (ii) claims that the

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Owner has against the Contractor under the Contract, and (iii) the value of the materials, supplies, equipment, or other items that are to be disposed of by the Contractor that are part of the Contract Sum. Any such payment to contractor pursuant to this Section 14.4.3 constitutes the exclusive remedy Contractor may have against Owner for its work on the Project once Owner has terminated Contractor for convenience, and is in place of any other claim or recovery Contractor may have against Owner arising out of or in any way connected with the Project, including but not limited to any claim for breach of the Agreement.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

§ 15.1.2 Time Limits on Claims

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker; provided, however, that the claimant shall use its best efforts to furnish the Initial Decision Maker and the other party, as expeditiously as possible, with notice of any Claim including, without limitation, those in connection with concealed or unknown conditions, once such claim is recognized, and shall cooperate with the Architect and the party against whom the claim is made in any effort to mitigate the alleged or potential damages, delay, or other adverse consequences arising out of the condition that is the cause of such a Claim. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later. Claims may also be reserved in writing within the time limits set forth in this Section 15.1.2. If a Claim is reserved, the Resolution of Claims and Disputes procedures described in this Section 15.2 shall not commence until a written notice from the claimant is received by the Initial Decision Maker. Any notice of Claim or reservation of Claim must clearly identify the alleged cause and the nature of the Claim and include data and information then available to the claimant that will facilitate prompt verification and evaluation of the Claim.

§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

§ 15.1.5 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.6.2 Extensions of time will not be granted for delays caused by inadequate construction force or the failure of the Contractor to place orders for equipment or materials sufficiently in advance to insure delivery when needed. Extensions of time will not be granted for delays caused by weather or weather related conditions as follows unless properly documented and accepted per the project specifications.

§ 15.1.7 Waiver of Claims for Consequential Damages

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

Extensions of time will not be granted for delays caused by inadequate construction force or the failure of the Contractor to place orders for equipment or materials sufficiently in advance to insure delivery when needed. Extensions of time will not be granted for delays caused by weather or weather related conditions as follows unless properly documented and accepted per the project specifications.

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, a decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

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§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of receipt of an initial decision, demand in writing that the other party file for mediation. If such a demand is made and the party receiving the demand fails to file for mediation within 30 days after receipt thereof, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.2.9 The decision of the Initial Decision Maker in response to a Claim shall not be a condition precedent to mediation and binding dispute resolution in the event (1) the positions of the Initial Decision Maker and Architect are vacant, or (2) the Claim relates to a construction lien.

§ 15.3 Mediation

[Intentionally Omitted]

(Paragraphs deleted)

§ 15.4 Arbitration

All disputes shall be addressed in accordance with Addendum B.

ADDENDUM A

City of Murfreesboro Standard Agreement Between Owner and Contractor

[Cover page – See Specification Section 00 52 13 – City Standard Form of Agreement Between Owner and Contractor]

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ADDENDUM B

DISPUTE RESOLUTION PROCEDURES

1. Disputes

- 1.1 Each Dispute arising out of or related to this Agreement (including Disputes regarding any alleged breaches of this Agreement) must be initiated and decided under the provisions of this Exhibit.
- 1.2 Contractor and the Owner will each designate in writing to the other Party, from time to time, a member of senior management who is authorized to attempt to expeditiously resolve any Dispute relating to the subject matter of this Agreement in an equitable manner.
- 1.3 A Party initiates a Dispute by delivery of written Notice to the members of management designated by the respective parties under Section 1.2 hereof.
- 1.4 The parties must attempt to resolve all Disputes timely, equitably and in a good faith manner and provide each other with reasonable access during normal business hours to all non-privileged records, information and data pertaining to any such Dispute.
- 1.5 With respect to matters concerning Change Orders for modification of the Guaranteed Maximum Price or Project Schedule, Contractor must first follow the provisions of any Claim procedure established by the Contractor Agreement before seeking relief under these Procedures.

2. Emergency Arbitration

- 2.1 If the parties are unable to accomplish resolution of a Dispute, the expedited resolution of which either Party considers necessary to prevent or mitigate a material delay to the critical path of the Construction Services (a "Time Sensitive Dispute") within two days after the Time Sensitive Dispute has been initiated by a Party, either Party may thereafter seek emergency relief before an emergency arbitrator (the "Emergency Arbitrator") appointed as follows:
 - a. The parties will exercise best efforts to pre-select an Emergency Arbitrator within 20 days after entering into this Agreement;
 - b. If the Emergency Arbitrator has not been selected at the time a Party delivers Notice of a Time Sensitive Dispute, the parties will each select a representative within one day after the Notice is delivered and the two representatives will then select the Emergency Arbitrator by the third day following delivery of the Notice.
 - c. The Emergency Arbitrator must be an attorney with at least 10 years' experience with commercial construction legal matters in Tennessee, be independent, impartial, and not have engaged in any business for or adverse to either Party for at least 10 years.

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- 2.2 The Emergency Arbitrator will conduct a hearing and render a written determination on the Dispute to both parties within five business days of the matter being referred to him or her, all in accordance with Rules O-1 to O-8 of the American Arbitration Association ("AAA") Commercial Rules-Optional Rules for Emergency Protection Commercial Rules ("AAA Emergency Rules")
- 2.3 Although the hearing will be conducted using AAA rules, unless both parties agree otherwise, this dispute process will not be administered by the AAA but will be conducted by the parties in accordance with these procedures.
- 2.4 If, however, an Emergency Arbitrator has not selected within three days after delivery of the Notice, either Party may upon three days' additional notice, thereafter seek emergency relief before the AAA, in accordance with the AAA Emergency Rules, provided that the Emergency Arbitrator meets the qualifications set forth above.
- 2.5 All proceedings to arbitrate Time Sensitive Disputes will be conducted in Rutherford, Davidson, or Williamson counties, Tennessee.
- 2.6 Presentation, request for determination (i.e., a Party's prayer), and the Emergency Arbitrators decision will adhere to the procedures required in Section 3.5 hereof.
- 2.7 The finding of the Emergency Arbitrator with respect to any Time Sensitive Dispute will be binding upon the parties on an interim basis during progress of the Construction Services, subject to review *de novo* by arbitration after the Project Substantial Completion Date.
- 2.8 The time and extent of discovery will be as determined by the Emergency Arbitrator.
 - a. Discovery orders of the Emergency Arbitrator will consider the time sensitivity of the matter and the parties desire to resolve the issue in the most time and costs efficient manner;
 - b. The parties are obligated to cooperate fully and completely in the provision of documents and other information, including joint interviews of individuals with knowledge such that the matter moves toward resolution in the most time and costs efficient manner and the Emergency Arbitrator is empowered to fashion any equitable penalty against a Party that fail to meet this obligation

3. Non-Emergency Arbitration

- 3.1 Except as provided in Section 5 hereof, any Dispute that is either a non-emergency Dispute that has not been resolved by negotiation, or a *de novo* review of an emergency arbitration will be decided by binding arbitration by a panel of three arbitrators in accordance with, but not necessarily administered by, the Construction Industry Rules of the AAA.
 - a. The parties each select an arbitrator within 15 days after Notice that a Party desire to resolve a dispute by arbitration.
 - b. The two arbitrators then each select a third arbitrator.

- c. The arbitrator(s) must meet the qualifications of Emergency Arbitrators as provided in Section 2 hereof.
- 3.2 The arbitrators do not have the authority to consider or award punitive damages as part of the arbitrators' award.
- 3.3 In connection with such arbitration, each Party is entitled to conduct up to five depositions, and, no less than 90 days prior to the date of the arbitration hearing, each Party will deliver to the other Party copies of all documents in the delivering Party's possession that are relevant to the dispute.
- 3.4 The arbitration hearing must be held within 150 days of the appointment of the arbitrators.
- 3.5 At the arbitration hearing, each Party will argue its position to the arbitrators in support of one proposed resolution to the dispute (a "Proposed Resolution").
 - a. Each Party's Proposed Resolution must be fully dispositive of the dispute.
 - b. The arbitrators must select one of Proposed Resolution by majority consent and are not free to fashion any alternative resolutions.
 - c. The parties must submit their Proposed Resolution of the matter to the arbitrators and the other Party 15 days prior to the date set for commencement of the arbitration proceeding.
 - d. The decision of the arbitrators will be forwarded to the parties within 15 days after the conclusion of the arbitration hearing.
 - e. The decision of the arbitration panel is final and binding on the parties and may be entered in any court of competent jurisdiction for the purpose of securing an enforceable judgment.
 - f. All costs and expenses associated with the arbitration, including the reasonable legal fees and costs incurred by the prevailing Party, must be paid by the Party whose position was not selected by the arbitrators.
- 4. **Continuing Work.** Unless otherwise agreed to in writing, Contractor must continue to perform and maintain progress of the Work during any Dispute resolution or arbitration proceedings, and the Owner will continue to make payment to Contractor in accordance with the Contractor Agreement.
- 5. **Exceptions**
 - 5.1 Neither the Owner nor Contractor are required to arbitrate any third-party claim, cross-claim, counter claim, or other claim or defenses in any action that is commenced by a third-party who is not obligated by contract to arbitrate disputes with the Owner and Contractor.
 - 5.2 The Owner or Contractor may commence and prosecute a civil action to contest a lien or stop notice, or enforce any lien or stop notice (but only to the extent the lien or stop notice the Party seeks to enforce is enforceable under Tennessee law), without the necessity of initiating or exhausting the procedures of this Exhibit.

- 5.3 This Exhibit does not apply to, and may not be construed to require arbitration of, any claims, actions or other process undertaken, filed, or issued by the City of Murfreesboro Building Safety Department, Code Compliance Department, Police Department, Fire Department, or any other agency of the Owner (the City) acting in its governmental permitting, for the benefit of public health, safety, and welfare, or other regulatory capacity.
- 5.4 In connection with any arbitration, the arbitrators do not have the authority to, and may not enforce, any provision of the Federal or Tennessee Rules of Civil Procedure.

(Paragraphs deleted)

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EXHIBIT A

CONTRACTOR'S INSURANCE AND BOND REQUIREMENTS

Contractor must, as a material obligation to the Owner and a condition precedent to any payment otherwise due to Contractor, furnish and maintain, and cause its Subcontractors to furnish and maintain, the insurance and bonds required by this Exhibit.

Contractor must secure and maintain such insurance coverage and bonds, without interruption, from the date of commencement of the Work until the later of the date of Final Completion, the date of final payment, or the date until which this Agreement requires any coverage to be maintained after final payment, in accordance with the requirements set forth below.

1. **Commercial General Liability Insurance.**

1.1 The CGL policy must be written on an occurrence basis, on ISO form CG 001 or its equivalent, providing coverage for bodily injury, broad form property damage, personal injury (including coverage for contractual and employee acts), contractual liability, incidental professional liability, the hazards commonly referred to as XCU (explosion, collapse, and underground), and products and completed operations, with a combined single limit of liability of not less than \$1,000,000 for each occurrence applicable to the Work, and an annual aggregate limit of liability of not less than \$1,000,000 applicable solely to the Work, and meeting all other requirements of this Exhibit.

1.2 The general liability insurance may be accomplished with a combination of a general liability and an excess/umbrella liability policy.

1.3 Each general liability policy must be endorsed or written to:

- a. Include the per project aggregate endorsement;
- b. Name as additional insureds the following: the City of Murfreesboro and its elected officials, officers, employees, representatives and agents (collectively, the "Additional Insureds");
- c. Stipulate that the insurance afforded by the policies furnished by Contractor will be primary insurance and that any insurance, self-insured retention, deductibles, or risk retention programs maintained or participated in by the Additional Insureds, or their agents, officials or employees will be excess and not contributory to the liability insurance furnished by Contractor and by its Subcontractors;
- d. Includes a severability of interest clause; and
- e. Waive all rights of recovery against the Additional Insureds.

2. **Workers' Compensation Insurance.** Workers' Compensation policy must meet all Tennessee statutory requirements, including Employers' Liability Insurance with limits of at least \$ 1,000,000 per accident or disease per employee, both policies endorsed to waive subrogation against the Additional Insureds.

3. Auto Liability Insurance

- 3.1 Commercial auto liability must be carried with minimum combined single limit of \$1,000,000 per occurrence.
- 3.2 This policy must include a duty to defend and cover all owned, non-owned, leased, hired, assigned or borrowed vehicles.
- 3.3 This policy must be endorsed, by specific or blanket endorsement, to name the Additional Insureds as such, stipulate that any insurance carried by the Additional Insureds must be excess and not contributory, and to waive subrogation against the Additional Insureds.

4. Environmental Liability. Contractor must secure, pay for, and maintain Contractor's Pollution Liability (CPL) coverage, including mold coverage, in an amount not less than \$1,000,000 and endorsing the Owner as an Additional Insured. Contractor must also provide to the Owner proof of Contractor's Pollution Legal Liability (PLL) for sites owned or operated by Contractors and by any Subcontractors handling hazardous or potentially hazardous materials. Environmental liability coverage may be part of a package policy.

5. Professional Liability. Contractor must secure, pay for, and maintain professional liability coverage in the amount of not less than \$1,000,000 on a form acceptable to the Owner and with tail coverage of not less than two years.

6. Umbrella Coverage. Contractor must secure, pay for, and maintain umbrella coverage in the amount of not less than \$2,000,000 on a form acceptable to the Owner. Umbrella coverage must not be limited to excess coverage that merely follows form of underlying coverages.

7. Equipment Property Insurance. Contractor must secure, pay for, and maintain all-risk insurance as necessary and without exceptions in order to protect the Owner against loss of owned, non-owned, rented, or leased capital equipment and tools, equipment and scaffolding, staging, towers and forms owned or rented by Contractor, its Subcontractors, or Lower Tier Entities and any construction material in transit (unless shipped FOB destination Project Site or (Incoterm) DAP Project site) or materials stored in any location other than the Site.

8. Builder's Risk. Unless otherwise instructed by the Owner, Contractor will secure a completed value, all-risk Builder's Risk policy in manuscript form acceptable to Owner for the Project (not merely the Work), including appropriate, as determinate by the Owner, coverages, coverage amounts and limits, deductibles, and exclusions. The Owner must be a named insured and the policy may not terminate until Substantial Final Completion or a certificate of occupancy applicable to the entire property is issued, whichever is latest.

9. Waiver of Subrogation. Contractor hereby waives, and will require each of its Subcontractors and Lower Tier Entities to waive, all rights of subrogation under all policies against the Owner and other Additional Insureds for losses or damages covered by any policy of insurance. Contractor, Subcontractors, and Lower Tier Entities must provide notice of waiver to all insurance carriers.

10. Term of Coverage

- 10.1 The products and completed operations liability coverage required by this Agreement must extend for a period of not less than five years after the earlier of Final Payment for the Work, or the termination of the Agreement (the "Completed Operations Term").
- 10.2 If at any time during the Completed Operations Term Contractor cannot obtain equivalent coverage by replacement or renewal, Contractor must acquire a tail policy prior to expiration of the existing policy that will extend coverage until the end of the Completed Operations Term.
- 10.3 Contractor will furnish certificates of insurance and other evidence that the Owner may reasonably require during the Completed Operations Term to establish compliance with the requirements of this paragraph.
- 10.4 All other policies of insurance must be maintained continuously in force from commencement of the Work until the date of Final Payment.

11. Subcontractor and Lower-Tier Entities Insurance Requirements

- 11.1 Contractor must require all of Contractor's Subcontractors and must require its Subcontractors to require their Lower Tier Entities, as a condition of working on the Project, and of receiving payment, to:
 - a. Purchase and maintain Commercial General Liability, Workers' Compensation and Employer's Liability, and Automotive insurance policies, with the same coverages, endorsements, terms of coverage and other provisions as are required of Contractor under by this Exhibit, **EXCEPT THAT** the combined coverage limits of the general liability insurance to be furnished by Lower Tier Entities must be \$ 1,000,000 per occurrence, and \$ 1,000,000 as the annual aggregate limit; and
 - b. Timely furnish to the Owner proper certificates, endorsements, copies of declarations pages, and other documents necessary to establish the Subcontractor's compliance with this Exhibit.
 - c. The Lower Tier Entities' general liability policy must also be endorsed to provide the policy must be primary insurance, the general liability insurance furnished by Contractor must be the secondary and non-contributory, and any insurance carried by the Additional Insureds must be excess, tertiary and non-contributory to the insurance furnished by Contractor and Subcontractor.
 - d. The Owner has the right to inspect and copy all such certificates, endorsements, or other proof at any reasonable time.

12. Other Policy Provisions. Each policy to be furnished by Contractor and each Subcontractor must:

- 12.1 Be issued by an insurance carrier having a rating from A.M. Best Company of at least A-VII or better;
- 12.2 Provide that attorney's fees are outside of the policy's limits and be unlimited;
- 12.3 Include the Project per aggregate endorsement;

- 12.4 Waive all rights of subrogation against the Owner;
- 12.5 Provide a Certificate that contains a provision that coverages afforded under the policies will not be canceled, allowed to expire, or reduced in amount until at least thirty (30) days' prior written Notice has been given to the Owner; and
- 12.6 Be otherwise satisfactory to the Owner. The Owner agrees to consider alternatives to the requirements imposed by this Exhibit but only to the extent that the Owner is satisfied the insurance is not commercially available to the insured. In such event, the Owner has the right to set conditions for such waiver, including, but not limited to, additional indemnities, and the request that the Owner be a loss-payee under the policy.

13. Certificates and Endorsements

- 13.1 Within 10 days after the execution of this Agreement, Contractor must provide the Owner with certificates and endorsements;
- 13.2 Upon the Owner request, Contractor must provide the Owner with certificates and endorsements from each of its Subcontractors, in all cases evidencing compliance by Contractor, each Subcontractor, and Lower Tier Entities with the requirements of this Exhibit together with letters from the respective carriers (including, but not limited to, the Errors and Omissions insurance carriers) that there are no known or pending claims or incidents which have resulted in the establishment of a reserve or otherwise have reduced the amount of coverage potentially available to the Owner under the policy and that available coverage has not been reduced because of revised limits or payments made (or, in the event such representations cannot be given, Contractor, its Subcontractors, and its Lower Tier Entities must furnish the particulars thereof to the Owner.
- 13.3 If any of the foregoing insurance coverages are required to remain in force after Final Completion, Contractor must submit an additional certificate evidencing continuation of such coverage with its application for final payment.

14. Reduction in Coverage. Contractor must promptly inform the Owner of any reduction of coverage resulting from revised limits, claims paid, or both and must require its Subcontractors and Lower Tier Entities to promptly inform Contractor of same. The Owner has the right to require Contractor or the applicable Subcontractor to obtain supplemental or replacement coverage to offset such reduced coverage, at the sole cost or expense of Contractor or the applicable Subcontractor.

15. Suppliers and Materialmen Coverages

- 15.1 Contractor will endeavor to cause all suppliers and materialmen to deliver any equipment, machinery or other goods FOB Site.
- 15.2 With respect to any equipment, machinery or other goods for which the Owner or Contractor has paid a deposit, Contractor will cause the respective suppliers and materialmen to maintain personal property insurance in an amount equal to the value of such equipment, machinery or other goods (but in no event less than the amount of the applicable deposit) during fabrication, storage and transit, naming the Owner and Contractor as loss payee as their interests appear.

16. Condition Precedent to Starting Work

16.1 Prior to, and as a condition of its right to begin performing any Work on the Site, Contractor and each Subcontractor and Lower Tier Entities must deliver to the Owner certificates of insurance representing that the required insurance is in force, together with the additional insured endorsements and waivers of subrogation required above, and such other proof satisfactory to the Owner that the required insurance is in place; together with the original of each bond required under this Agreement. Contractor and each Subcontractor and Lower Tier Entities hereby authorize the Owner to communicate directly with the respective insurance agents, brokers and/or carriers and sureties to verify their insurance and bond coverage;

16.2 The Owner is under no obligation or duty to make any such inquiry and the Owner is entitled to rely on any proofs of insurance tendered by Contractor or its Subcontractors and Lower Tier Entities. The Owner's acceptance of any proof of insurance and bonds offered by Contractor or any Subcontractor or Lower Tier Entities will not be deemed a waiver of the obligations of Contractor and Subcontractors and Lower Tier Entities to furnish the insurance and bonds required by this Exhibit.

17. **Additional Proofs of Insurance.** Contractor must, within 10 days after request, provide the Owner with certified copies of all policies and endorsements obtained in compliance with this Agreement.

18. **Indemnity.** The fact that Contractor and its Subcontractors are required by this Agreement to purchase and maintain insurance in no way limits or restricts any other obligations or duties Contractor and its Subcontractors and Lower Tier Entities may have to indemnify, defend or hold harmless the Owner and the other Additional Insureds from and against any and all demands, liabilities, losses or expenses of whatever kind or nature.

19. **Interpretation.** In the event of any inconsistency between the provisions of this Exhibit and those of the other provisions of the Agreement, the terms of this Exhibit will govern.

20. Performance Bond and Payment Bond.

20.1 The Contractor shall provide surety bonds as follows:

Type	Penal Sum (\$0.00)
Performance Bond	100% of Contract Sum
Labor and Material Payment Bond	100% of Contract Sum

20.2 Bonds shall be issued by a surety licensed in the State of Tennessee and satisfactory to the Owner.

20.3 The Contractor must provide evidence of Bonds prior to the beginning of work. If the Performance and Payment Bonds are not furnished within ten (10) days of execution of the Agreement, the Owner, in its sole discretion, may elect to terminate the Agreement and award the Project to an alternate contractor.

20.4 The Owner will require the Contractor to increase the Performance and Payment Bonds to accommodate Change Orders that individually or cumulatively exceed 10% of the

original Contract Sum. The Contractor shall furnish to the Owner and keep in force during the term of the Contract, performance and labor and material payment bonds guaranteeing that the Contractor will perform its obligations under the Contract and will pay for all labor and materials furnished for the Work.

- 20.5 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Agreement, the Contractor shall promptly furnish a copy of the bonds or shall permit a copy to be made.

COUNCIL COMMUNICATION

Meeting Date: 02/02/2023

Item Title: Agreement for Soccer Complex Scoreboard Replacement

Department: Parks and Recreation

Presented by: Nate Williams, Director

Requested Council Action:

- | | |
|-------------|-------------------------------------|
| Ordinance | <input type="checkbox"/> |
| Resolution | <input type="checkbox"/> |
| Motion | <input checked="" type="checkbox"/> |
| Direction | <input type="checkbox"/> |
| Information | <input type="checkbox"/> |
-

Summary

Agreement with Electro-Mech Scoreboard Corporation for Soccer Complex Scoreboard Replacement.

Staff Recommendation

Approve Electro-Mech Scoreboard Agreement.

Background Information

The Siegel Soccer Complex was built in 2005. Scoreboards on Fields 1-11 are due for replacement with the recent improvements. Additionally, a scoreboard is needed for the stadium field. After a competitive bid process, the best proposal was received from Electro-Mech Scoreboard Corporation. Electro-Mech scoreboards are in operation in other City parks and have performed well.

Council Priorities Served

Responsible budgeting

Bids were solicited, and the winning proposal offers the best value.

Fiscal Impact

The cost of the project, \$78,768, is funded by the 2021 Capital Budget.

Attachment

Agreement for Installation and Replacement of Existing Scoreboards with Electro-Mech Scoreboard Corporation

**Agreement
for
Installation and Replacement of Existing Scoreboards
at
Richard Siegel Soccer Park**

This Agreement is entered into and effective as of the ____ day of _____ 2023, by and between the **City of Murfreesboro**, a municipal corporation of the State of Tennessee (the "City"), and **Electro-Mech Scoreboard Co.**, a corporation of the State of Georgia ("Contractor").

This Agreement consists of the following documents:

- This document
- ITB-16-2023 – Scoreboards for Richard Siegel Soccer Park, issued November 15, 2022 (the "Solicitation");
- Contractor's Proposal dated December 7, 2022 ("Contractor's Proposal");
- Contractor's Price Proposal dated December 7, 2022 (the "Price Proposal"); and,
- Any properly executed amendments to this Agreement.

In the event of conflicting provisions, all documents will be construed according to the following priorities:

- First, any properly executed amendment or change order to this Agreement (most recent amendment or change order given first priority);
- Second, this Agreement;
- Third, the Solicitation; and
- Last, Contractor's Proposal.

1. Duties and Responsibilities of Contractor.

Scope of Work. Contractor shall provide the City with the replacement of existing scoreboards at Richard Siegel Soccer Park located at 515 Cherry Lane, Murfreesboro, TN in accordance with the Contractor's Proposal, the Solicitation, and the Price Proposal.

a. Supervision and Superintendence of Work.

- i. Contractor will supervise and direct the work efficiently and with Contractor's best skill and attention. Contractor will be solely responsible for the means, methods, techniques, sequences and procedures of construction. Contractor will be responsible to see that the finished work complies accurately with the Contract documents.
- ii. Contractor will keep a competent superintendent on the work site at all times during work progress. The superintendent will be Contractor's representative at the site and shall have authority to act on behalf of Contractor. All communications given to the superintendent shall be as binding as if given to Contractor.

b. Labor, Materials, and Equipment.

- i. Contractor will provide competent, suitably qualified personnel to perform the work as set forth in Contractor's Proposal. The Contractor will at all times maintain good discipline and order at the site.
- ii. Contractor will furnish all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, and all other incidentals necessary for the execution, testing, initial operation and completion of the work. Prior to the start of the work, the Contractor shall submit to the Owner, the name of the

manufacturer and types of material to be used to complete the various items of work in this contract. Included with these submittals shall be all applicable technical data.

- iii. All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable manufacturer, fabricator or processors, except as otherwise provided in the Contract documents.
- c. Permits. Contractor will secure and pay for all construction permits and licenses and will pay all governmental charges and inspection fees necessary for the prosecution of the work, which are applicable at the time of Contractor's bid. Contractor will also pay all public utility charges.
- d. Use of Premises.
 - i. Contractor will confine Contractor's equipment, the storage of materials and equipment and the operations of Contractor's workers to areas permitted by law, ordinances, permits, or the requirements of the Contract documents, and shall not unreasonably encumber the premises with materials or equipment.
 - ii. Contractor will not load nor permit any part of the structure to be loaded with weights that will endanger the structure, nor will Contractor subject any part of the work to stresses or pressures that will endanger it.
- e. Mobilization. Mobilization consists of preparatory work and operations, including but not limited to, those necessary for the movement of personnel, equipment, supplies, and incidentals to the project site; and for all other work and operations which must be performed, or costs incurred prior to beginning work on the various contract items on the project site. The subsequent demobilization and removal from the site of equipment, supplies, etc., upon completion of the work shall be included in this item. Mobilization costs shall be included in the costs submitted within the bid.
- f. Safety and Protection.
 - i. Contractor will be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the work. Particular attention is to be directed to the requirements for fall protection, protective footwear, protective head gear (hard hats), and eye and face protection equipment (safety goggles or safety eyeglasses) as needed on each task. The Contractor shall ensure that their entire work force, including employees, agents, and subcontractors, comply fully with all applicable rules of OSHA and Safety requirements of the City of Murfreesboro. Contractor will take all necessary precautions for the safety of, and will provide the necessary protection to prevent damage, injury or loss to:
 1. All employees on the work and other persons who may be affected thereby,
 2. All the work and all materials or equipment to be incorporated there, whether in storage on or off the site, and
 3. Other property at the site or adjacent property, including trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation or replacement during the course of construction.Contractor will comply with all applicable laws, ordinances, rules, regulations and order of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss. Contractor will erect and maintain, as required by the conditions and progress of the work, all necessary safeguards for safety and protection. Contractor will notify the City of adjacent utilities when prosecution of the work may affect them. All damage, injury, or loss to any property referred to in subparagraph (2) or (3) of this section caused directly or indirectly, in

whole or in part, by Contractor, any subcontractor or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, will be remedied by Contractor; except damage or loss attributable to the fault of drawings or specifications or to the acts or omissions of the City or anyone employed by either of them or anyone for whose acts either of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor.

- ii. Contractor will designate a competent and responsible member of Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be Contractor's superintendent unless otherwise designated in writing by Contractor to the City.
- g. Emergencies. In emergencies affecting the safety of persons or the work or property at the site or adjacent property, Contractor, without special instruction or authorization from the City, is obligated to act, at Contractor's discretion, to prevent threatened damage, injury or loss.
- h. Cleaning Up. Contractor will keep the premises free from accumulations of waste materials, rubbish, and other debris resulting from the work, and at the completion of the work Contractor will remove all waste materials, rubbish, decking, and debris from and about the premises as well as all tools, construction equipment and machinery, and surplus materials, and will leave the site clean and ready for occupancy by the City. Contractor will restore to their original condition those portions of the site not designated for alteration by the Contract documents.
- i. Access to the Work. Representatives of the City will at all times have access to the work. Contractor will provide proper facilities for such access and observation of the work and also for any inspection or testing by others.
- j. Contractor's Continuing Obligation. Contractor's obligation to perform the work and complete the Project in accordance with the Contract documents shall be absolute. Neither any payment by the City to Contractor under the Contract documents, nor any use or occupancy of the Project or any part by the City, nor any act of acceptance by the City nor any failure to do so, nor any correction of defective work by the City shall constitute acceptance of work not in accordance with the Contract documents.
- k. Hours of Work. The Contractor shall have the option to work from 7:00 a.m. to 7:00 p.m. Monday-Sunday except as may otherwise be authorized by the Owner. The contractor can choose their actual schedule within the time frames listed.

2. Term. The term of this Contract shall be **60 days** from issuance of Notice to Proceed. The Contractor shall notify the Owner of the starting date a minimum of seven days prior to starting work. Contractor's performance may be terminated in whole or in part:

- i. Upon 30-day prior notice, for the convenience of the City.
- ii. For the convenience of Contractor, provided that Contractor notifies the City in writing of its intent to terminate under this paragraph at least 30 days prior to the effective date of the termination.
- iii. For cause, by either party where the other party fails in any material way to perform its obligations under this Agreement. Termination under this subsection is subject to the condition that the terminating party notifies the other party of its intent to terminate, stating with reasonable specificity the grounds therefore, and the other party fails to remedy the problem within 15 days after receiving the notice.

- iv. Should Contractor fail to fulfill in a timely and proper manner its obligations under this Agreement or if it should violate any of the terms of this Agreement, the City has the right to immediately terminate the Agreement. Such termination does not relieve Contractor of any liability to the City for damages sustained by virtue of any breach by Contractor.
 - v. Should the appropriation for Contractor's work be withdrawn or modified, the City has the right to terminate the Agreement immediately upon written notice to Contractor.
- 3. **Price; Compensation; Method of Payment.** The price for the goods and other services to be provided under this Agreement is set forth in the Contractor's Price Proposal, which reflects a total price of **Seventy-Eight Thousand, Seven Hundred and Sixty-Eight Dollars (\$78,768.00)**. Any compensation due Contractor under the Agreement shall be made upon submittal of an invoice after performance of the portion of the services which each payment represents. The City agrees to pay Contractor after goods and/or services have been received, accepted, and properly invoiced as indicated in the Agreement and/or purchase order. Invoices must bear the purchase order number. Final payment shall not be made until after performance is complete. Invoices should be submitted to accountspayable@murfreesborotn.gov.
- 4. **Work Product.** Except as otherwise provided herein, all data, documents and materials produced by Contractor under this Agreement are the property of the City, which retains the exclusive right to publish, disclose, distribute and otherwise use, in whole or in part, any such data, documents or other materials. Any of the City's property, including but not limited to books, records and equipment, that is in Contractor's possession must be maintained in good condition and repair and returned to the City by Contractor at the end of this Agreement.
- 5. **Insurance.** During the term of this Agreement, Contractor must maintain comprehensive general liability insurance with limits of not less than \$1,000,000, as well as automotive and workers' compensation insurance policies. Contractor will provide to the City: (i) a standard certificate of insurance evidencing this coverage prior to commencement of work and upon renewal or expiration of the policies reflected thereupon, (ii) upon request, an endorsement naming the City as additional insured under the terms of the policy as follows: "The City of Murfreesboro, Tennessee, its officers, employees, contractors, consultants, and agents."
- 6. **Indemnification.**
 - a. Contractor must indemnify, defend, and hold harmless the City, its officers, agents and employees from any claims, penalties, damages, costs and attorney fees ("Expenses") arising from injuries or damages resulting from, in part or in whole, the negligent or intentional acts or omissions of contractor, its officers, employees and/or agents, including its subcontractors or independent contractors, in connection with the performance of this Agreement, and, Expenses arising from any failure of Contractor, its officers, employees and/or agents, including its subcontractors or independent contractors, to observe applicable laws, including, but not limited to, labor laws and minimum wage laws.
 - b. Pursuant to Tennessee Attorney General Opinion 93-01, the City will not indemnify, defend or hold harmless in any fashion Contractor from any claims arising from any failure, regardless of any language in any attachment or other document that Contractor may provide.
 - c. Copyright, Trademark, Service Mark, or Patent Infringement.

- I. Contractor, at its own expense, is entitled to and has the duty to defend any suit which may be brought against the City to the extent that it is based on a claim that the products or services furnished infringe a copyright, Trademark, Service Mark, or patent. Contractor will indemnify, defend, and hold harmless the City against any award of damages and costs made against the City. The City will provide Contractor immediate notice in writing of the existence of such claim and full right and opportunity to conduct the defense thereof, together with all available information and reasonable cooperation, assistance and authority from the City in order to enable Contractor to do so. The City reserves the right to participate in the defense of any such action. Contractor has the right to enter into negotiations for and the right to effect settlement or compromise of any such action provided (i) any amounts due to effectuate fully the settlement are immediate due and payable and paid by Contractor; (ii) no cost or expense whatsoever accrues to the City at any time; and (iii) such settlement or compromise is binding upon the City upon approval by the Murfreesboro City Council.
- II. If the products or services furnished under this Agreement are likely to, or do become, the subject of such a claim of infringement, then without diminishing Contractor's obligation to satisfy the final award, Contractor may at its option and expense:
 - a. Procure for the City the right to continue using the products or services.
 - b. Replace or modify the alleged infringing products or services with other equally suitable products or services that are satisfactory to the City, so that they become non-infringing.
 - c. Remove the products or discontinue the services and cancel any future charges pertaining thereto; provided however, Contractor will not exercise this option until Contractor and the City have determined that each of the other options are impractical.
- III. Contractor has no liability to the City if any such infringement or claim thereof is based upon or arises out of the use of the products or services in combination with apparatus or devices not supplied or else approved by Contractor, the use of the products or services in a manner for which the products or services were neither designated nor contemplated, or the claimed infringement in which the City has any direct or indirect interest by license or otherwise, separate from that granted herein.

7. Notices. Notice of assignment of any rights to money due to Contractor under this Agreement must be mailed first class mail or hand delivered to the following:

If to the City of Murfreesboro:	If to Contractor:
City Manager	Electro-Mech. Scoreboard Co.
City of Murfreesboro	Attn: Jim Ledford
111 West Vine Street	72 Industrial Boulevard
Murfreesboro, TN 37130	Wrightsville, GA 31096
	jledford@electro-mech.com

8. Maintenance of Records. Contractor must maintain documentation for all charges against the City. The books, records, and documents of Contractor, insofar as they relate to work performed or money received under the Agreement, must be maintained for a period of three full years

from the date of final payment and will be subject to audit, at any reasonable time and upon reasonable notice by the City or its duly appointed representatives. Accounting records must be maintained in accordance with the Generally Accepted Accounting Principles.

9. **Modification.** This Agreement may be modified only by written amendment executed by all parties and their signatories hereto.
10. **Relationship of the Parties.** Nothing herein may in any way be construed or intended to create a partnership or joint venture between the parties or to create the relationship of principal and agent between or among any of the parties. None of the parties hereto may hold itself out in a manner contrary to the terms of this paragraph. No party becomes liable for any representation, act, or omission of any other party contrary to this section.
11. **Waiver.** No waiver of any provision of this Agreement affects the right of any party thereafter to enforce such provision or to exercise any right or remedy available to it in the event of any other default.
12. **Employment.** Contractor may not subscribe to any personnel policy which permits or allows for the promotion, demotion, employment, dismissal or laying off of any individual due to race, creed, color, national origin, age, sex, veteran status, or any other status or class protected under federal or state law or which is in violation of applicable laws concerning the employment of individuals with disabilities.
13. **Non-Discrimination.** It is the policy of the City not to discriminate on the basis of age, race, sex, color, national origin, veteran status, disability, or other status or class protected under federal or state law in its hiring and employment practices, or in admission to, access to, or operation of its programs, services, and activities. With regard to all aspects of this Agreement, Contractor certifies and warrants it will comply with this policy. No person may be excluded from participation in, be denied benefits of, be discriminated against in the admission or access to, or be discriminated against in treatment or employment in the City's contracted programs or activities, on the grounds of handicap and/or disability, age, race, color, religion, sex, national origin, or any other classification protected by federal or Tennessee State Constitutional or statutory law; nor may they be excluded from participation in, be denied benefits of, or be otherwise subjected to discrimination in the performance of contracts with the City or in the employment practices of the City's Contractors. Accordingly, all proposers entering into contracts with the City may upon request be required to show proof of such nondiscrimination and to post in conspicuous places that are available to all employees and applicants, notices of nondiscrimination.
14. **Gratuities and Kickbacks.** It is a breach of ethical standards for any person to offer, give or agree to give any employee or former employee, or for any employee or former employee to solicit, demand, accept or agree to accept from another person, a gratuity or an offer of employment in connection with any decision, approval, disapproval, recommendation, preparation of any part of a program requirement or a purchase request, influencing the content of any specification or procurement standard, rendering of advice, investigation, auditing or in any other advisory capacity in any proceeding or application, request for ruling, determination, claim or controversy or other particular matter, pertaining to any program requirement of a contract or subcontract or to any solicitation or proposal therewith. It is a breach of ethical standards for

any payment, gratuity or offer of employment to be made by or on behalf of a subcontractor under a contract to the prime contractor or higher tier subcontractor or a person associated therewith, as an inducement for the award of a subcontract or order. Breach of the provisions of this paragraph is, in addition to a breach of this Agreement, a breach of ethical standards which may result in civil or criminal sanction and/or debarment or suspension from being a contractor or subcontractor under the City contracts.

15. **Assignment.** The provisions of this Agreement inure to the benefit of and are binding upon the respective successors and assignees of the parties hereto. Except for the rights of money due to Contractor under this Agreement, neither this Agreement nor any of the rights and obligations of Contractor hereunder may be assigned or transferred in whole or in part without the prior written consent of the City. Any such assignment or transfer does not release Contractor from its obligations hereunder.
16. **Integration.** This Agreement sets forth the entire agreement between the parties with respect to the subject matter hereof and governs the respective duties and obligations of the parties.
17. **Force Majeure.** No party has any liability to the other hereunder by reason of any delay or failure to perform any obligation or covenant if the delay or failure to perform is occasioned by force majeure, meaning any act of God, storm, fire, casualty, unanticipated work stoppage, strike, lockout, labor dispute, civil disturbance, riot, war, national emergency, act of public enemy, or other cause of similar or dissimilar nature beyond its control.
18. **Governing Law and Venue.** The validity, construction and effect of this Agreement and any and all extensions or modifications thereof are governed by the laws of the state of Tennessee regardless of choice of law doctrine or provision in any attachment or other document that Contractor may provide. Any action between the parties arising from this agreement may only be filed in the courts of Rutherford County, Tennessee.
19. **Severability.** Should any provision of this Agreement be declared to be invalid by any court of competent jurisdiction, such provision will be severed and not affect the validity of the remaining provisions of this Agreement.
20. **Attorney Fees.** In the event any party takes legal action to enforce any provision of the Agreement, should the City prevail, Contractor will pay all expenses of such action including attorney fees, expenses, and costs at all stages of the litigation and dispute resolution.
21. **Effective Date.** This Agreement is not binding upon the parties until signed by each of the Contractor and authorized representatives of the City and is thereafter effective as of the date set forth above.

[signatures to appear on following page]

IN WITNESS WHEREOF, the parties enter into this agreement as of _____, 2023 (the "Effective Date").

CITY OF MURFREESBORO

By: _____
Shane McFarland, Mayor

ELECTRO-MECH SCOREBOARD CO.

By: Jim Ledford
Jim Ledford, National Sales Manager

APPROVED AS TO FORM:

DocuSigned by:

Adam F. Tucker
Adam F. Tucker, City Attorney

46AP035E51F9401

COUNCIL COMMUNICATION

Meeting Date: 02/02/2023

Item Title: Agreement for Greenways, Blueways, and Bikeways Master Plan Update

Department: Parks and Recreation

Presented by: Angela Jackson, Executive Director

Requested Council Action:

- Ordinance
 - Resolution
 - Motion
 - Direction
 - Information
-

Summary

Professional Services Agreement with Kimley-Horn for the update of the Greenways, Blueways, and Bikeways Master Plan.

Staff Recommendation

Approve agreement with Kimley-Horn.

Background Information

In 2011, the City initiated the development of the Greenways, Blueways, and Bikeways Master Plan to help identify and coordinate implementable improvements in recreation and nonmotorized transportation; the plan was completed and published in 2013. Due to the amount of growth in population and development in the City, staff recognized the need for an update, issued a Request for Qualifications, and Kimley-Horn and Associates was selected.

Key changes include incorporating the 2040 Major Transportation Plan and the 2035 Comprehensive Plan, using updated regulations and guidelines, and analysis of current and future opportunities. A detailed list of the scope of services is included in the proposal attachment.

Council Priorities Served

Expand infrastructure

An updated plan will assist staff in the planning and construction of future greenway, blueway, and bikeway routes.

Responsible Budgeting

Updating this plan will identify routes that can be constructed through public/private development partnerships.

Fiscal Impact

The expenditure, \$100,000, is funded by FY23 Parks and Recreation operating budget.

Attachments

1. Professional Services Agreement with Kimley-Horn
2. 2013 Greenways Blueways and Bikeways Master Plan



January 13, 2023

Angela Jackson
Executive Director of Community Services
City of Murfreesboro
PO Box 748
Murfreesboro, Tennessee 37133

Re: Professional Services Agreement

Dear Ms. Jackson:

Kimley-Horn and Associates, Inc. ("Kimley-Horn" or "Consultant") is pleased to submit this letter agreement (the "Agreement") to the City of Murfreesboro, Tennessee ("Client") for providing consulting services for the update to the City's Greenways, Blueways, and Bikeways Master Plan.

Project Understanding

The City desires to update the existing Greenways, Blueways, and Bikeways Master Plan that was originally published in 2013. This plan serves as a guide for the implementation of active transportation and recreational connectivity amidst the rapid development of the City.

Scope of Services

Kimley-Horn will provide the services specifically set forth below.

Task 1 – Project Management and Meetings

This task will consist of general project management, administrative, and accounting activities for the project. Coordination activities will consist of preparing and distributing project correspondence, scheduling of meetings, and discussion of project elements with the Client throughout the process.

Task 1.1 – Kickoff Meeting

Kimley-Horn will facilitate one (1) project kickoff meeting with staff to discuss the vision and goals for the project as well as any other key issues consisting of a project schedule, identifying key stakeholders, and other pertinent information to this project. General notes and topics of discussion will be documented in meeting minutes.

Task 1.2 – Monthly Progress Meetings

Kimley-Horn will facilitate up to two (2) virtual and two (2) in-person meetings with staff to discuss progress and action items.

Task 1.3 – Draft Plan Presentations

Kimley-Horn will make three (3) draft plan presentations in order to present the highlights of the Draft Master Plan. It is anticipated that a single presentation will be made to each of the following elected bodies: Parks and Recreation Commission, Planning Commission, and the City Council.

Task 1.4 – Final Plan Presentation

Kimley-Horn will make one (1) final presentation to the City in order to present the highlights of the Final Master Plan.

Task 2 – Public Engagement

Task 2.1 – Needs Mapping Survey

Kimley-Horn will create an online mapping survey for the public to identify desired routes and amenities. This survey will be provided in an online format via wikimapping. Kimley-Horn will provide an executive summary of the survey methodology, a description of major findings, and graphics to depict highlights of the results as a section in the Master Plan report.

Task 2.2 – Public Workshop

Kimley-Horn will facilitate one (1) public workshop during the planning process. We anticipate this to occur with draft recommendations for the public to provide feedback.

Task 3 – Existing Conditions

Task 3.1 – Demographic Analysis

Kimley-Horn will evaluate existing U.S. Census Bureau data to assess the demographic characteristics of the City's population. Categories will consist of population trends and projections and others as it relates to the need, demand, and potential for active transportation infrastructure as provided by the U.S. Census Bureau. Kimley-Horn will assess how the demographic characteristics affect the alternative transportation and recreation habits of the residents and provide recommendations for modifications to existing greenways, blueways, and bikeways network to better meet the needs of the City's residents.

Task 3.2 – Existing Plans

Kimley-Horn will collect, review, and incorporate relevant data from related planning documents. The existing planning documents we anticipate in this task are as follows:

- Existing Greenways, Blueways, and Bikeways Master Plan
- Rutherford County greenway, blueway, and/or bikeway plans
- Stones River Battlefield Trail Plan
- City Parks Master Plan
- 2040 Major Transportation Plan
- Future Land Use Map
- Transit Route and Shelter Study

Task 3.3 – Data Collection

Kimley-Horn will obtain GIS mapping from the Client pertinent to this project. Anticipated files may

consist of:

- City limits
- City, County, State, and Federally owned properties
- Urban Growth Boundary
- Property Appraiser parcels and data
- Roads
- Bodies of water
- Greenways, trailheads
- Existing blueways, trailheads
- Protected lands
- Bike lanes, Bike routes (any existing bike facilities)
- Points of destination (i.e. libraries, schools, civic buildings, etc)
- Parks
- Historic sites
- Major Thoroughfare Plan

Task 3.4 – Existing Facilities Maps

Kimley-Horn will utilize the GIS from the City acquired in Task 3.3 and produce an existing conditions map for each of the three facility types. One (1) map will be created to show existing greenways, one (1) for existing blueways, and one (1) for existing bikeways. These three (3) maps will create the foundation on which the plan update builds upon.

Kimley-Horn will utilize the GIS from the City acquired in Task 3.3 and produce a key destination and major activity center map showing important places such as schools, parks, destinations, and other regional activity centers.

Task 4 – Analysis

Task 4.1 – Future Development Trends

Kimley-Horn will review existing and future residential and commercial development hot zones within the City. A brief description of these land use patterns will be shown in a heat map for inclusion in the Master Plan report.

Task 4.2 – Needs Assessment

Kimley-Horn will assess the needs for the multimodal facilities in this plan and will focus on demographics, land use, and economic factors to identify the most important mobility links throughout the City.

The needs assessment will consist of formalizing a set of goals and objectives for the study that will aid in the identification and prioritization of projects. Kimley-Horn anticipates that City staff and public input will all be used to develop the goals and objectives.

Task 4.3 – Update Inventory

The Client will provide an update as to which projects have and which projects have not been implemented since the last Master Plan. Kimley-Horn will update the GIS mapping to reflect the existing and proposed categories from the previous Master Plan files.

Task 4.4 – Opportunity Analysis

Kimley-Horn will utilize GIS files from the City to identify opportunities to expand the existing greenway, blueway and bikeway network. Our analysis will include contiguous rights-of-way, natural features, utility easements, and other linear features available for non-motorized transportation facilities. Our understanding is that on-street bikeways are not a desired facility type in the city; our analysis will focus on opportunities to develop off-street protected facilities along existing and proposed roads.

Task 5 – Proposed Networks

Task 5.1 – Project Identification

Using staff coordination, public input, and technical analysis of demand, gaps, and opportunities for connectivity, Kimley-Horn will identify feasible and appropriate proposed greenway, blueway, and bikeway facilities. Recommendations will focus on logical termini and existing gaps to enable programming as standalone projects. Project information will include facility type, length and order of magnitude cost. We will work with staff to identify unit cost estimates based on preferred materials, design characteristics (facility width, separation, etc.) and any structural requirements.

Task 5.2 – Proposed Mapping

Kimley-Horn will provide a GIS-based mapping deliverable that depicts the proposed greenway, blueway, and bikeway network connections based on existing infrastructure and the analysis in the tasks above.

Task 5.3 – Prioritization

Kimley-Horn will work the Client to create performance measures based on the Task 4.2 goals and readily available data to evaluate existing and future facilities that may consist of health, environment, demand, connectivity, safety, equity, and cost to prioritize proposed projects. This task is intended to be used as a tool for the Client to use in order to implement a phased approach in implementing the recommendations. Kimley-Horn will estimate up to five performance measures for each project. The outcome of this task is a project ranking or tiers based on performance measures.

Task 5.4 – Implementation Plan

The priorities identified in Task 5.3 will be used to establish an implementation plan Kimley-Horn anticipates grouping projects into short, mid, and longer-term groups based on likely funding availability and overall benefit to city residents. For projects that are high-priority but may also be identified as long-term for funding opportunities, interim improvement options will also be identified for enhancing safety until funding becomes available.

Task 6 – Master Plan Report

Kimley-Horn will prepare a summary master plan report detailing the findings and recommendations of the project and compile the important documents and deliverables from the tasks above. The report will



consist of graphics, tabular formats where feasible, and summary text that documents the process of the plan development. The plan will consist of the following sections:

- Current Master Plan Documents
- Community Involvement
- Existing Facilities
- Proposed Projects
- Prioritization
- Implementation Plan

A draft plan document will be submitted to City staff for review and comment for a thirty (30) day review period. Once a consolidated set of comments are received from the City, Kimley-Horn will address these comments and revise the document. The final document will then be submitted to the City in digital PDF format.

Additional Services

Any services not specifically provided for in the above scope will be billed as additional services and performed at our then current hourly rates. Additional services we can provide include, but are not limited to, the following:

- Additional meetings beyond those outlined in the above scope
- Additional analysis beyond the scope that is outlined above
- Additional design beyond the scope that is outlined above
- Additional site visits beyond those outlined in the above scope
- Others as requested by the Client

Information Provided By Client

We shall be entitled to rely on the completeness and accuracy of all information provided by the Client or the Client's consultants or representatives. The Client shall provide all information requested by Kimley-Horn during the project, including but not limited to the requested GIS files.

Schedule

We will provide our services as expeditiously as practicable with the goal of providing a draft master plan by June 2023.

Fee and Expenses

Kimley-Horn will perform the services in Tasks 1-6 on a labor fee plus expense basis with the maximum labor fee shown below. All permitting, application, and similar project fees will be paid directly by the Client.



Task 1 Project Management and Meetings	\$16,400
Task 2 Public Engagement	\$ 7,700
Task 3 Existing Conditions	\$14,600
Task 4 Analysis	\$10,900
Task 5 Proposed Networks	\$20,800
Task 6 Master Plan Report	\$29,600
Maximum Labor Fee	\$100,000

Kimley-Horn will not exceed the total maximum labor fee shown without authorization from the Client. Individual task amounts are provided for budgeting purposes only. Kimley-Horn reserves the right to reallocate amounts among tasks as necessary.

Labor fee will be billed on an hourly basis according to our then-current rates. As to these tasks, direct reimbursable expenses such as express delivery services, fees, air travel, and other direct expenses will be billed at 1.15 times cost. A percentage of labor fee will be added to each invoice to cover certain other expenses as to these tasks such as telecommunications, in-house reproduction, postage, supplies, project related computer time, and local mileage. Administrative time related to the project may be billed hourly. All permitting, application, and similar project fees will be paid directly by the Client. Should the Client request Kimley-Horn to advance any such project fees on the Client's behalf, an invoice for such fees, with a fifteen percent (15%) markup, will be immediately issued to and paid by the Client.

Payment will be due within 25 days of your receipt of the invoice and should include the invoice number and Kimley-Horn project number.

Closure

In addition to the matters set forth herein, our Agreement shall include and be subject to, and only to, the attached Standard Provisions, which are incorporated by reference. As used in the Standard Provisions, "Consultant" shall refer to Kimley-Horn and Associates, Inc., and "Client" shall refer to the City of Murfreesboro, Tennessee.

Kimley-Horn, in an effort to expedite invoices and reduce paper waste, submits invoices via email in an Adobe PDF format. We can also provide a paper copy via regular mail if requested. Please include the invoice number and Kimley-Horn project number with all payments. Please provide the following information:

Please email all invoices to Lexi Stacey lstacey@murfreesborotn.gov

Please copy _____



If you want us to proceed with the services, please have an authorized person sign this Agreement below and return to us. We will commence services only after we have received a fully-executed agreement. Fees and times stated in this Agreement are valid for sixty (60) days after the date of this letter.

We appreciate the opportunity to provide these services to you. Please contact me if you have any questions.

Very truly yours,

KIMLEY-HORN AND ASSOCIATES, INC.

Alisha Eley, PLA, LEED AP, ASLA
Project Manager

Christopher D. Rhodes, P.E.
Vice President

City of Murfreesboro, Tennessee

SIGNED: _____

PRINTED NAME: _____

TITLE: _____

DATE: _____

APPROVED AS TO FORM:

DocuSigned by:

Adam F. Tucker, City Attorney

Attachment – Standard Provisions

KIMLEY-HORN AND ASSOCIATES, INC.
STANDARD PROVISIONS (with modifications to sections 4b, 5, 6, 10, and 19)

- 1) **Consultant's Scope of Services and Additional Services.** The Consultant will perform only the services specifically described in this Agreement. If requested by the Client and agreed to by the Consultant, the Consultant will perform Additional Services, which shall be governed by these provisions. Unless otherwise agreed to in writing, the Client shall pay the Consultant for any Additional Services an amount based upon the Consultant's then-current hourly rates plus an amount to cover certain direct expenses including telecommunications, in-house reproduction, postage, supplies, project related computer time, and local mileage. Other direct expenses will be billed at 1.15 times cost.
- 2) **Client's Responsibilities.** In addition to other responsibilities herein or imposed by law, the Client shall:
 - a. Designate in writing a person to act as its representative, such person having complete authority to transmit instructions, receive information, and make or interpret the Client's decisions.
 - b. Provide all information and criteria as to the Client's requirements, objectives, and expectations for the project and all standards of development, design, or construction.
 - c. Provide the Consultant all available studies, plans, or other documents pertaining to the project, such as surveys, engineering data, environmental information, etc., all of which the Consultant may rely upon.
 - d. Arrange for access to the site and other property as required for the Consultant to provide its services.
 - e. Review all documents or reports presented by the Consultant and communicate decisions pertaining thereto within a reasonable time so as not to delay the Consultant.
 - f. Furnish approvals and permits from governmental authorities having jurisdiction over the project and approvals and consents from other parties as may be necessary.
 - g. Obtain any independent accounting, legal, insurance, cost estimating, and feasibility services required by Client.
 - h. Give prompt written notice to the Consultant whenever the Client becomes aware of any development that affects the Consultant's services or any defect or non-compliance in any aspect of the project.
- 3) **Period of Services.** Unless otherwise stated herein, the Consultant will begin work after receipt of a properly executed copy of this Agreement. This Agreement assumes conditions permitting continuous and orderly progress through completion of the services. Times for performance shall be extended as necessary for delays or suspensions due to circumstances that the Consultant does not control. If such delay or suspension extends for more than six months, Consultant's compensation shall be renegotiated.
- 4) **Method of Payment.** Client shall pay Consultant as follows:
 - a. Invoices will be submitted periodically for services performed and expenses incurred. Payment of each invoice will be due within 25 days of receipt. The Client shall also pay any applicable sales tax. All retainers will be held by the Consultant and applied against the final invoice. Interest will be added to accounts not paid within 25 days at the maximum rate allowed by law. If the Client fails to make any payment due under this or any other agreement within 30 days after the Consultant's transmittal of its invoice, the Consultant may, after giving notice to the Client, suspend services and withhold deliverables until all amounts due are paid.
 - b. If the Client relies on payment or proceeds from a third party to pay Consultant and Client does not pay Consultant's invoice within 60 days of receipt, Consultant may communicate directly with such third party to secure payment. In the event such third party is a state or federal agency, Client and Consultant agree to take reasonable actions to communicate with such agency according to that agency's normal processes and procedures, and to further keep each other reasonably informed regarding the status of payment by such agency.
 - c. If the Client objects to an invoice, it must advise the Consultant in writing giving its reasons within 14 days of receipt of the invoice or the Client's objections will be waived, and the invoice shall conclusively be deemed due and owing. If the Client objects to only a portion of the invoice, payment for all other portions remains due.
 - d. If the Consultant initiates legal proceedings to collect payment, it may recover, in addition to all amounts due, its reasonable attorneys' fees, reasonable experts' fees, and other expenses related to the proceedings. Such expenses shall include the cost, at the Consultant's normal hourly billing rates, of the time devoted to such proceedings by its employees.
 - e. The Client agrees that the payment to the Consultant is not subject to any contingency or condition. The Consultant may negotiate payment of any check tendered by the Client, even if the words "in full satisfaction" or words intended to have similar effect appear on the check without such negotiation being an accord and satisfaction of any disputed debt and without prejudicing any right of the Consultant to collect additional amounts from the Client.
- 5) **Use of Documents.** All documents and data prepared by the Consultant are related exclusively to the services described in this Agreement and may be used only if the Client has satisfied all of its obligations under this Agreement. They are not intended or represented to be suitable for use or reuse by the Client or others on extensions of this project or on any other project. Any modifications by the Client to any of the Consultant's documents, or any reuse of the documents without written authorization by the Consultant will be at the Client's sole risk and without liability to the Consultant, and the Client shall (to the extent allowable by law) indemnify,

defend and hold the Consultant harmless from all claims, damages, losses and expenses, including but not limited to attorneys' fees, resulting therefrom. The Consultant's electronic files and source code remain the property of the Consultant and shall be provided to the Client only if expressly provided for in this Agreement. Any electronic files not containing an electronic seal are provided only for the convenience of the Client and use of them is at the Client's sole risk. In the case of any defects in the electronic files or any discrepancies between them and the hardcopy of the documents prepared by the Consultant, the hardcopy shall govern.

- 6) **Intellectual Property.** Consultant may use or develop its proprietary software, patents, copyrights, trademarks, trade secrets, and other intellectual property owned by Consultant or its affiliates ("Intellectual Property") in the performance of this Agreement. Unless explicitly agreed to in writing by both parties to the contrary, Consultant maintains all interest in and ownership of its Intellectual Property and conveys no interest, ownership, license to use, or any other rights in the Intellectual Property to Client. Any enhancements of Intellectual Property made during the performance of this Agreement are solely owned by Consultant and its affiliates. Consultant shall indemnify and hold harmless Client from and against any and all suits, actions, and/or claims against Consultant and/or Client relating to copyright, trademark, and/or intellectual property infringement by Consultant due to the use or development of the Intellectual Property contemplated herein.
- 7) **Opinions of Cost.** Because the Consultant does not control the cost of labor, materials, equipment or services furnished by others, methods of determining prices, or competitive bidding or market conditions, any opinions rendered as to costs, including but not limited to the costs of construction and materials, are made solely based on its judgment as a professional familiar with the industry. The Consultant cannot and does not guarantee that proposals, bids or actual costs will not vary from its opinions of cost. If the Client wishes greater assurance as to the amount of any cost, it shall employ an independent cost estimator. Consultant's services required to bring costs within any limitation established by the Client will be paid for as Additional Services.
- 8) **Termination.** The obligation to provide further services under this Agreement may be terminated by either party upon seven days' written notice in the event of substantial failure by the other party to perform in accordance with the terms hereof, or upon thirty days' written notice for the convenience of the terminating party. The Consultant shall be paid for all services rendered and expenses incurred to the effective date of termination, and other reasonable expenses incurred by the Consultant as a result of such termination.
- 9) **Standard of Care.** The standard of care applicable to Consultant's services will be the degree of care and skill ordinarily exercised by consultants performing the same or similar services in the same locality at the time the services are provided. No warranty, express or implied, is made or intended by the Consultant's performance of services, and it is agreed that the Consultant is not a fiduciary with respect to the Client.
- 10) **LIMITATION OF LIABILITY.** In recognition of the relative risks and benefits of the Project to the Client and the Consultant, the risks are allocated such that, to the fullest extent allowed by law, and notwithstanding any other provisions of this Agreement or the existence of applicable insurance coverage, that the total liability, in the aggregate, of the Consultant and the Consultant's officers, directors, employees, agents, and subconsultants to the Client or to anyone claiming by, through or under the Client, for any and all claims, losses, costs or damages whatsoever, other than any indemnity obligation herein, arising out of or in any way related to the services under this Agreement from any causes, including but not limited to, the negligence, professional errors or omissions, strict liability or breach of contract or any warranty, express or implied, of the Consultant or the Consultant's officers, directors, employees, agents, and subconsultants, shall not exceed twice the total compensation received by the Consultant under this Agreement or \$100,000, whichever is greater. Higher limits of liability may be negotiated for additional fee. This Section is intended solely to limit the remedies available to the Client or those claiming by or through the Client, and nothing in this Section shall require the Client to indemnify the Consultant.
- 11) **Mutual Waiver of Consequential Damages.** In no event shall either party be liable to the other for any consequential, incidental, punitive, or indirect damages including but not limited to loss of income or loss of profits.
- 12) **Construction Costs.** Under no circumstances shall the Consultant be liable for extra costs or other consequences due to unknown conditions or related to the failure of contractors to perform work in accordance with the plans and specifications. Consultant shall have no liability whatsoever for any costs arising out of the Client's decision to obtain bids or proceed with construction before the Consultant has issued final, fully approved plans and specifications. The Client acknowledges that all preliminary plans are subject to substantial revision until plans are fully approved and all permits obtained.
- 13) **Certifications.** All requests for the Consultant to execute certificates, lender consents, or other third-party reliance letters must be submitted to the Consultant at least 14 days prior to the requested date of execution. The Consultant shall not be required to execute certificates, consents, or third-party reliance letters that are inaccurate,

that relate to facts of which the Consultant does not have actual knowledge, or that would cause the Consultant to violate applicable rules of professional responsibility.

- 14) **Dispute Resolution.** All claims arising out of this Agreement or its breach shall be submitted first to mediation in accordance with the American Arbitration Association as a condition precedent to litigation. Any mediation or civil action by Client must be commenced within one year of the accrual of the cause of action asserted but in no event later than allowed by applicable statutes.
- 15) **Hazardous Substances and Conditions.** Consultant shall not be a custodian, transporter, handler, arranger, contractor, or remediator with respect to hazardous substances and conditions. Consultant's services will be limited to analysis, recommendations, and reporting, including, when agreed to, plans and specifications for isolation, removal, or remediation. The Consultant will notify the Client of unanticipated hazardous substances or conditions of which the Consultant actually becomes aware. The Consultant may stop affected portions of its services until the hazardous substance or condition is eliminated.
- 16) **Construction Phase Services.**
 - a. If the Consultant prepares construction documents and the Consultant is not retained to make periodic site visits, the Client assumes all responsibility for interpretation of the documents and for construction observation, and the Client waives any claims against the Consultant in any way connected thereto.
 - b. The Consultant shall have no responsibility for any contractor's means, methods, techniques, equipment choice and usage, sequence, schedule, safety programs, or safety practices, nor shall Consultant have any authority or responsibility to stop or direct the work of any contractor. The Consultant's visits will be for the purpose of endeavoring to provide the Client a greater degree of confidence that the completed work of its contractors will generally conform to the construction documents prepared by the Consultant. Consultant neither guarantees the performance of contractors, nor assumes responsibility for any contractor's failure to perform its work in accordance with the contract documents.
 - c. The Consultant is not responsible for any duties assigned to it in the construction contract that are not expressly provided for in this Agreement. The Client agrees that each contract with any contractor shall state that the contractor shall be solely responsible for job site safety and its means and methods; that the contractor shall indemnify the Client and the Consultant for all claims and liability arising out of job site accidents; and that the Client and the Consultant shall be made additional insureds under the contractor's general liability insurance policy.
- 17) **No Third-Party Beneficiaries; Assignment and Subcontracting.** This Agreement gives no rights or benefits to anyone other than the Client and the Consultant, and all duties and responsibilities undertaken pursuant to this Agreement will be for the sole benefit of the Client and the Consultant. The Client shall not assign or transfer any rights under or interest in this Agreement, or any claim arising out of the performance of services by Consultant, without the written consent of the Consultant. The Consultant reserves the right to augment its staff with subconsultants as it deems appropriate due to project logistics, schedules, or market conditions. If the Consultant exercises this right, the Consultant will maintain the agreed-upon billing rates for services identified in the contract, regardless of whether the services are provided by in-house employees, contract employees, or independent subconsultants.
- 18) **Confidentiality.** The Client consents to the use and dissemination by the Consultant of photographs of the project and to the use by the Consultant of facts, data and information obtained by the Consultant in the performance of its services. If, however, any facts, data or information are specifically identified in writing by the Client as confidential, the Consultant shall use reasonable care to maintain the confidentiality of that material.
- 19) **Miscellaneous Provisions.** This Agreement is to be governed by the law of the State of Tennessee. Venue for any action arising out of this Agreement shall be in the courts of Rutherford County, Tennessee or, in the event of federal question jurisdiction only, the Middle District of Tennessee. This Agreement contains the entire and fully integrated agreement between the parties and supersedes all prior and contemporaneous negotiations, representations, agreements, or understandings, whether written or oral. Except as provided in Section 1, this Agreement can be supplemented or amended only by a written document executed by both parties. Any conflicting or additional terms on any purchase order issued by the Client shall be void and are hereby expressly rejected by the Consultant. If Client requires Consultant to register with or use an online vendor portal for payment or any other purpose, any terms included in the registration or use of the online vendor portal that are inconsistent or in addition to these terms shall be void and shall have no effect on Consultant or this Agreement. Any provision in this Agreement that is unenforceable shall be ineffective to the extent of such unenforceability without invalidating the remaining provisions. The non-enforcement of any provision by either party shall not constitute a waiver of that provision nor shall it affect the enforceability of that provision or of the remainder of this Agreement.

City of Murfreesboro, Tennessee Greenways, Blueways, and Bikeways Master Plan



April 2013

**CITY OF MURFREESBORO
GREENWAYS, BLUEWAYS, & BIKEWAYS MASTER PLAN**

ACKNOWLEDGEMENTS



T E N N E S S E E

The Murfreesboro Greenways, Blueways, and Bikeways Master Plan was developed by the Murfreesboro Parks and Recreation Department in concert with these City of Murfreesboro departments: Transportation, Planning and Engineering, Urban Environmental, and Legal. The Murfreesboro Parks and Recreation staff gratefully acknowledges the efforts and leadership from the following individuals in the development of this plan:

Study Advisory Committee

Community Members

Randle Branch
Cynthia Allen
Mark DeMent
James Herring
Eddie Miller
Dr. Kim Sadler
Kent Syler
Kirt Wade

City Staff

Lanny Goodwin, Parks and Recreation Director
Angela Jackson, Parks and Recreation Assistant Director
Joseph Aydelott, Planning Director
Dana Richardson, Transportation Director
David Ives, Assistant City Attorney
Cynthia Holloway, City Horticulturalist
Melinda Tate, Parks and Recreation Program Coordinator for Greenways

Consultant Team



Transportation
Consultants, LLC

Jeff Hammond, PE, Primary Author
Bob Murphy, PE
Preston Elliott, AICP



John Lavender, RLA, Primary Author
Chris Camp, ASLA



Mark Lee, PE

**CITY OF MURFREESBORO
GREENWAYS, BLUEWAYS, & BIKEWAYS MASTER PLAN**

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CITY OF MURFREESBORO GREENWAYS, BLUEWAYS, & BIKEWAYS MASTER PLAN

EXECUTIVE SUMMARY

In 2011, the City of Murfreesboro initiated the development of the Greenways, Blueways, and Bikeways Master Plan to help identify and coordinate implementable improvements in recreation and non-motorized transportation over the next 25 years. This plan represents a joint effort of the associated City Departments which oversee the planning, design, and maintenance of these facilities working closely with a Study Advisory Committee consisting of various local stakeholder interests. It has also been developed around the input of Murfreesboro's residents, who contributed to the ideals of the plan on two separate occasions.

The full plan consists of a plan overview document supported by five (5) separate technical memorandums as summarized below:

Plan Overview: A condensed version of the full plan documentation which provides interested readers the key facets of the plan as well as its primary recommendations.

Technical Memorandum #1: Refined Plan Objectives. These objectives speak to the outcomes of the plan, but are really deeper reflections of what stakeholders in Murfreesboro envision for the greenways, blueways, and bikeways network as it is further developed over the planning horizon.

Technical Memorandum #2: Existing Conditions. Summarizes planning documents and policies that are pertinent to the plan and that are currently in place. It also summarizes an evaluation of the existing infrastructure located within the City and the urban growth boundary.

Technical Memorandum #3: Capital Improvement Needs. Presents the physical, capital improvement needs that have been identified through the development of the plan. Project maps, general project descriptions, phasing recommendations, and potential costs and funding resources are presented here.

Technical Memorandum #4: User Design Guide. Defines the desirable standards for construction of the City's greenways, blueways, and bikeways network. These design guidelines are intended to function as a reference for local government, engineers, planners, and others who make decisions that affect bicycle and pedestrian travel in Murfreesboro. These guidelines are intended to be used in conjunction with and as a supplement to existing local, state, and national construction standards.

Technical Memorandum #5: Plan Implementation. The focus here is on policies and programs which have been used in other communities and which may be applicable in Murfreesboro to increase greenway, blueway, and bikeway use. Such policies and programs promote bicycling and walking, educate users and potential users, and set standards to provide well designed facilities for non-motorized travel and recreation.

The participant-formed objectives of this plan find common ground in two emphasis areas of contemporary American cities: health/recreation and transportation. The advantages gained by communities that have comprehensive, safe, and well maintained facilities for recreation and transportation are immense. In the development of this plan and in its implementation in the

years ahead, the question should continually be asked, “how will our actions progress one or more of these objectives to the advantage of Murfreesboro?”

The combination of a growing Murfreesboro creating development opportunities for greenway, blueway, and bikeway infrastructure, more residents requiring additional recreation outlets and transportation options, and the City’s desire to provide a leading quality of life for existing and future residents of middle Tennessee has prompted the need for this master plan.

A total of 67 miles of off-road trails and 24 new trailheads have been recommended for development over the next 25 years. The routes focus on improving connectivity between large community parks, neighborhoods and commercial areas and on providing trails to currently underserved segments of the

population. Over 100 miles of bicycle facilities and designations are also proposed as part of the plan. These are aimed at making critical connections to key destinations and allowing more users to experience the greenway network without driving to it. Lastly, 14 blueways access locations are recommended on all three forks of the Stones River in and around Murfreesboro in addition to the seven public access locations that currently exist.

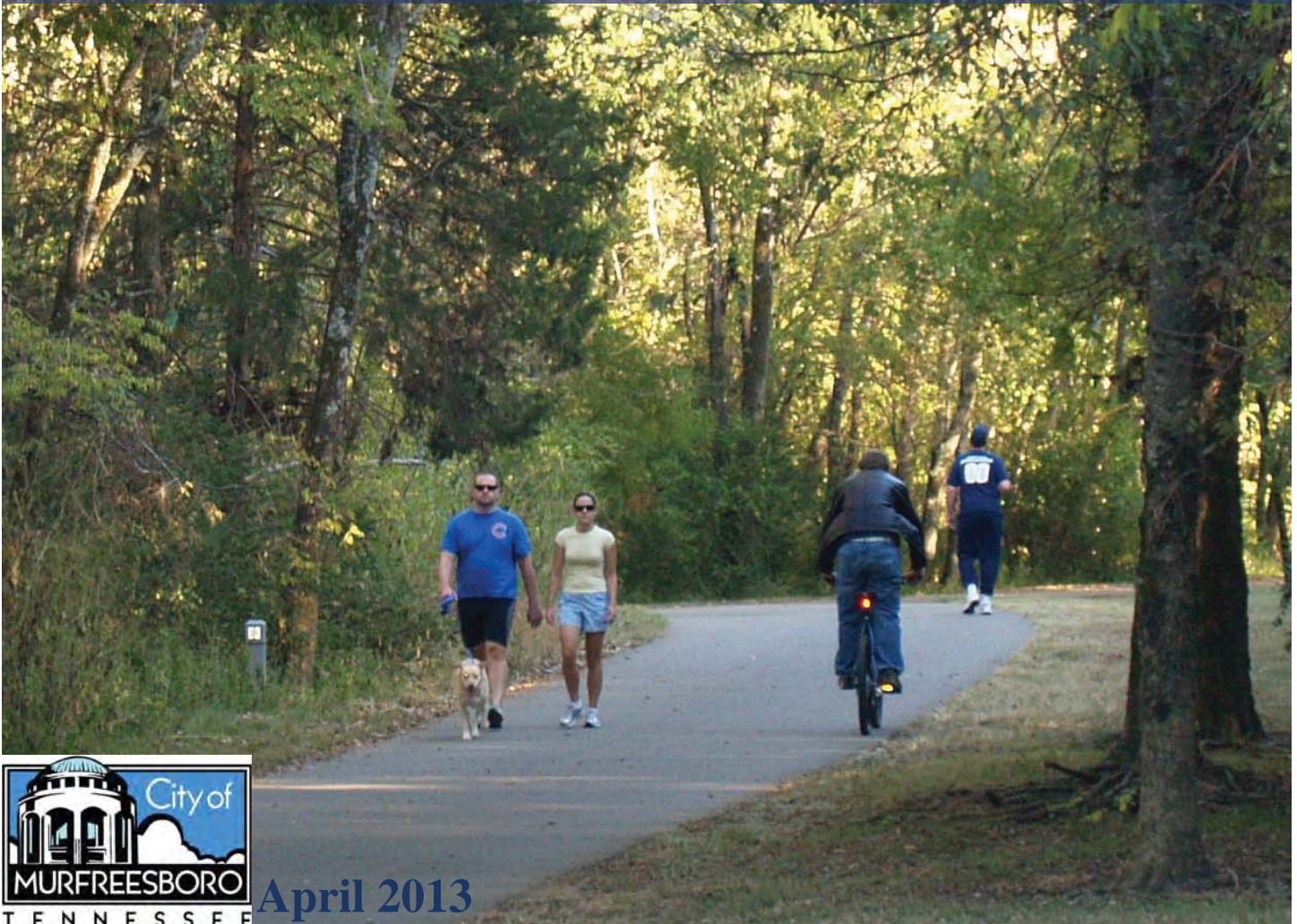
Type of Recommended Facility	Length (miles)
Greenways and Greenway Connectors	67.3
Multi-Use Paths	36.3
Bicycle Lanes	20.2
Bicycle Routes	50.0
TOTAL	173.8

Murfreesboro has taken the first step in addressing the pedestrian needs of its citizens by developing this plan. Progressive cities across the nation have long realized the close ties to economic development of their city and the quality of life offered. Our neighboring city Nashville recognizes the benefits of greenways and says in their published materials, “it seems difficult to conceive of a more efficient way to accomplish so many desirable objectives. And accomplishing these goals is essential to Nashville’s economic development. Unless growth is balanced with protection of the natural resources that contribute to our quality of life, it risks being counterproductive.” The balance between work and play is essential to the future growth of Murfreesboro.

This is an important plan and an achievable goal. Murfreesboro’s growth is both an opportunity to develop high quality infrastructure such as is proposed as well as a call to responsibility for City leaders to continue to provide the quality of life that Murfreesboro has become known for. Stretched budgets, ever-competitive federal funding, and other priorities and obligations of the city will present challenges to the fulfillment of the plan. However, remaining flexible in implementation, looking for opportunities for plan advancement as part of other projects, and engaging in non-infrastructure activities (policies and programs) will allow the City to continue to make tremendous strides over the next 25 years.

City of Murfreesboro, Tennessee Greenways, Blueways, and Bikeways Master Plan

Master Plan Overview



April 2013

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Need for a Plan

The City of Murfreesboro has a population of nearly 110,000 residents making it the sixth largest city in the State of Tennessee. Its population growth has far exceeded national averages and therefore has required the city to be very proactive about development and how it occurs. Murfreesboro has developed policies related to sidewalks, water quality, subdivision development, street construction and zoning ordinances with overlay districts protecting areas of historic significance and with

specific design intents. These policies are all geared toward providing the best possible community and quality of life for residents of Murfreesboro.

Murfreesboro also has some of the best public recreation facilities in Tennessee. These facilities have resulted in the attraction of many large-scale competitive sporting events while at the same time providing first class facilities to residents.

The combination of a growing community creating development opportunities for greenway, blueway, and bikeway infrastructure, more residents requiring additional recreation outlets and transportation options, and the City's desire to provide a leading quality of life for existing and future residents of middle Tennessee has prompted the need for this master plan.

The Objectives

These locally-developed objectives of the plan speak to the outcomes of this document, but are really deeper reflections of what stakeholders in Murfreesboro envision for the actual greenway, blueway, and bikeway system as it is further developed over the planning horizon. As such, these objectives should be used to routinely gauge not only the development of the master plan, but to act as benchmarks as various facets of the plan are considered and undertaken in the future.

The objectives are:

- 1.** Promote the increased usage of existing greenways and blueways and the construction of new greenways and blueways access points by identifying personal and community needs and benefits relating to quality of life, health, economics, and sustainability.
- 2.** Present strategies leading toward a transformational attitude of Murfreesboro’s residents and workers in which active transportation (transportation by walking or by bicycle) is regarded as a viable travel option for all.
- 3.** Assist City staff involved in facility planning and construction through the determination of future greenway and blueway routes which can be pursued through capital budgeting as well as private development processes. This may include facilities constructed as part of the renovation of current infrastructure (street renovations) as well as through new roadway development.
- 4.** Identify leverages of existing, emerging, and potential resources (funding, programs, policies, etc.) toward a cooperative approach in elevating Murfreesboro’s greenway, blueway, and bikeway system.



These participant-formed objectives find common ground in two emphasis areas of contemporary American cities: health/recreation and transportation. The advantages gained by communities that have comprehensive, safe, and well maintained facilities for recreation and transportation

are immense. In the development of this plan and in its implementation in the years ahead, the question should continually be asked, “how will our actions progress one or more of these objectives to the advantage of Murfreesboro?”

Plan Development

Murfreesboro’s Greenways, Blueways, and Bikeways Master Plan is a joint effort of the associated City Departments which oversee the planning, design, and maintenance of these facilities. The study was developed by means of a Study Advisory Committee (SAC) meeting approximately bi-monthly through the course of a year. SAC members represented the following interests:

System Users

- City of Murfreesboro
 - Parks and Recreation Department
 - Parks and Recreation Commission
 - Transportation Department
 - Planning Department
 - Planning Commission
 - Greenway Projects Committee
 - Urban Environment Department
 - Legal Department

MTSU

- Environmental Education
- Biology



At the outset of the plan development, multiple interviews were held with key stakeholders. The following stakeholder groups were included in the interviews:

- Murfreesboro City Schools
- MTSU
- Friends of the Greenway
- Stones River Watershed Association
- Tennessee Trails Association
- City Administration
- City Transportation
- City Parks
- City Planning
- County Planning
- Town of Smyrna Planning
- Town of Smyrna Parks and Recreation

The development of the plan also included two public meetings designed for input into the planning process at the outset and preliminary recommendations phases of the plan’s development. A formal public review period and public hearing also preceded the City’s adoption of this plan.

Existing Conditions

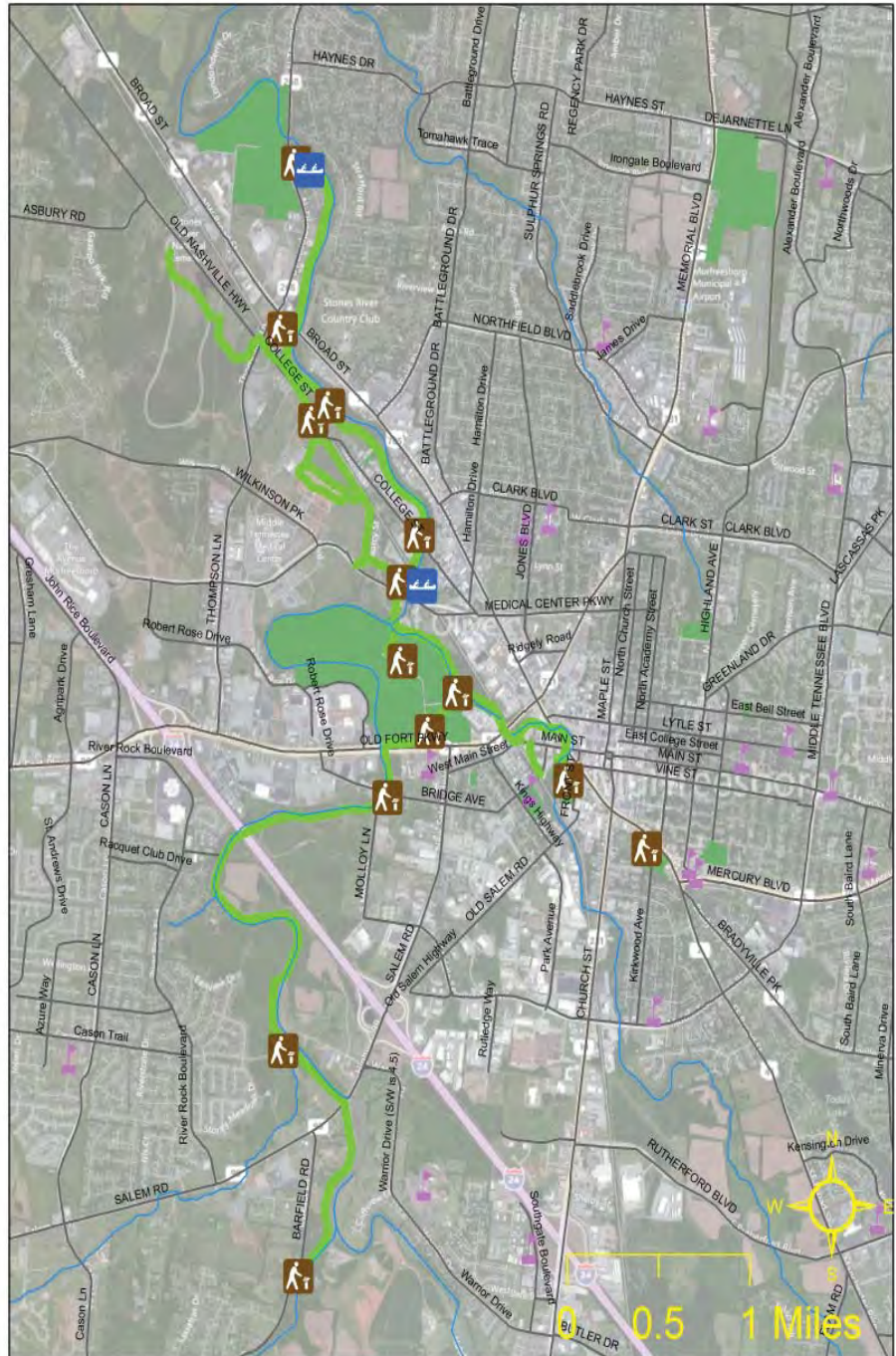
The City of Murfreesboro has 12-miles of paved asphalt trails located along the Stones River and Lytle Creek. There are 11 official trailheads that provide access to residents from various vantage points along the route and many historic points of interest and parks are connected by the trail.

Recreation opportunities for paddle sports within the City of Murfreesboro exist along the East, West, and Middle forks of the Stones River. The Middle Fork of the Stones River is approximately 19.8 miles long and joins the West Fork near Highway 99. The West Fork flows for 39.1 miles converging with the East Fork on the North side of Murfreesboro where the river then flows into J. Percy Priest Lake. Dams exist along each segment of the Stones River altering flow and requiring short portages for continuous paddling along the river.

In order to assess the current conditions of Murfreesboro’s on-street bikeways network, a comprehensive inventory and analysis was completed. The inventory included all major roadways as identified by the City’s functional classification designation, including major arterials, minor arterials, commercial collectors, community collectors, residential collectors, and residential sub collectors. In total, 311 miles of roadways within Murfreesboro’s Urban Growth Boundary were inventoried to document roadway conditions as well as the presence of sidewalks and related attributes.

Currently, there are approximately 21.7 miles of bike lanes and 7.0 miles of signed bike routes within the study area. All of the bike lane miles and 66% of the bike route miles are within the city limits.

A bicycle level of service (BLOS) analysis was used to determine the current suitability of streets within the urban growth boundary area. The BLOS



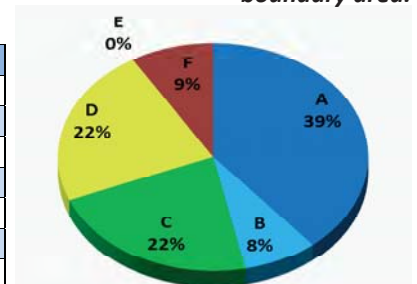
12 miles of existing greenways link several key recreation and historic sites.

ranges from most suitable (BLOS A) to least suitable (BLOS F) based on roadway conditions (number of lanes, roadway speed, traffic volume, pavement width, and shoulder width, etc.).

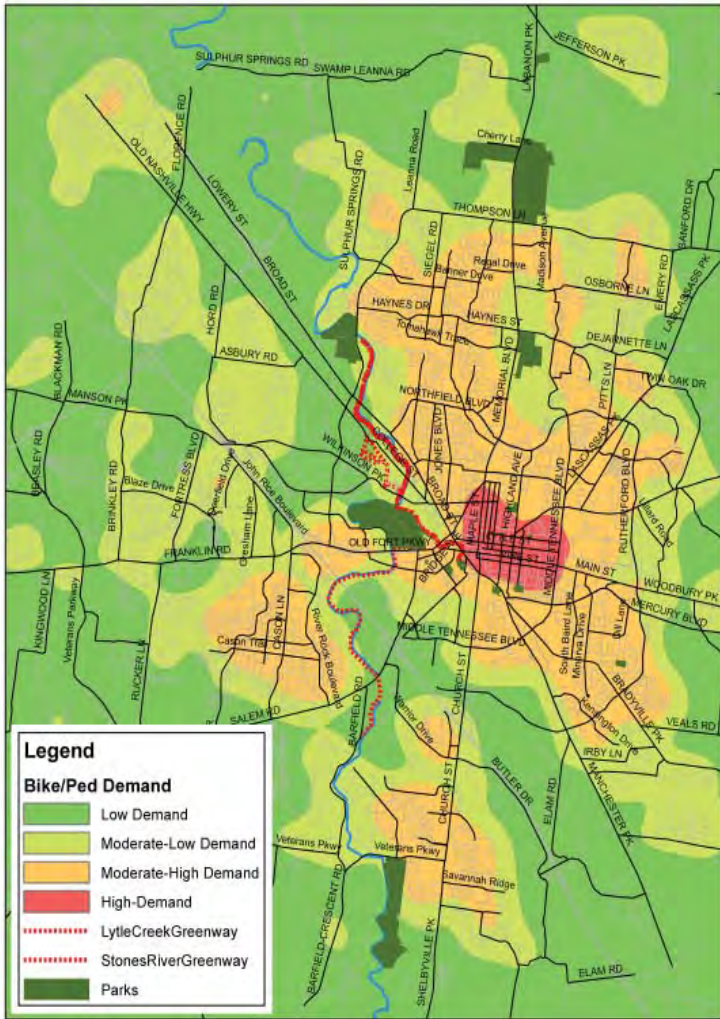
Among other findings, the BLOS analysis shows that there may be an opportunity to implement more formal bicycling infrastructure and designation with little actual construction.

BLOS breakdown for streets within the urban growth boundary area.

BLOS	Miles
A	121
B	24
C	69
D	70
E	0
F	27
TOTAL	311



Based on national trip-making averages, Murfreesboro's land use is such that over 60,000 daily walking and biking trips could be realized if adequate infrastructure were in place.



Determining What's Needed

Data collection and engineering analysis is one component of the needs assessment, but what really matters is what the users of the system think. The real strategy for Murfreesboro's greenways, blueways, and bikeways plan came from residents when asked to rank several important evaluation criteria for the future projects found in this plan.

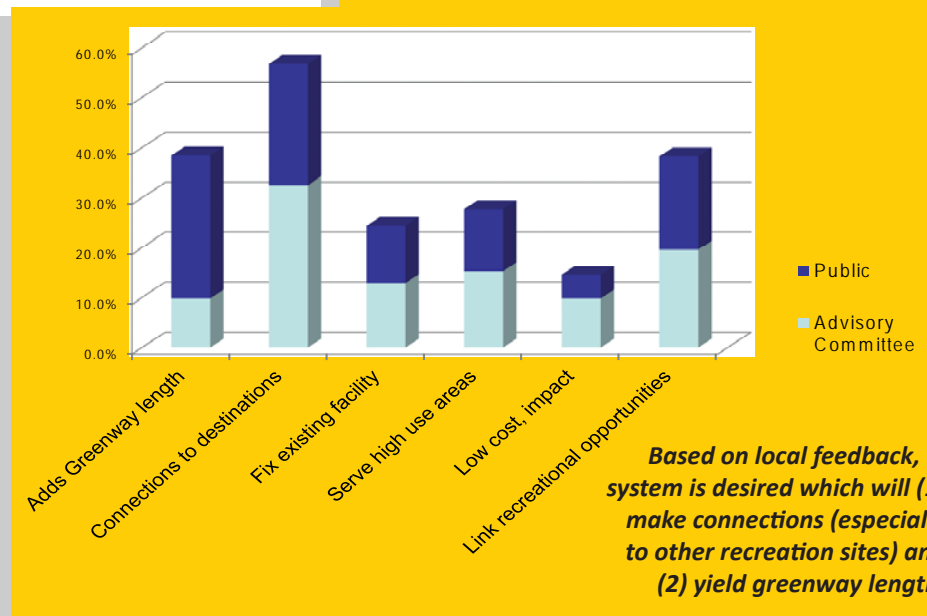
- Project adds to overall length of greenway system
- Project provides connections to destinations (neighborhoods, shopping, schools, parks, etc.)
- Project retrofits existing substandard facility (ex. widen an existing greenway)
- Project is especially likely to have high usage (in a high demand area – from model)
- Project is inexpensive, limited in scope, and/or has little environmental impact
- Project links other recreational opportunities (parks, blueways, etc.)



To give local planners, engineers, and Parks staff a decision tool that helps to visualize the real need for walking and biking facilities within the study area, a demand intensity map was produced. At the macro level, this is a regional bike and pedestrian model that incorporates the entirety of the transportation planning area of the Murfreesboro region. Aside from the scope of the model's planning area, however, this procedure is very much a microscopic one, producing a parcel-level analysis fit for walking and biking trips.

torized transportation activity in an area and to help predict where transportation investments will have the greatest impact.

This analysis is developed by using each parcel's demographic information and proximity to other land uses to predict how many walking and/or cycling trips the parcel will likely generate under ideal conditions. This information can be used to help understand the propensity for non-mo-



Based on local feedback, a system is desired which will (1) make connections (especially to other recreation sites) and (2) yield greenway length.



OUR PLAN

Infrastructure Recommendations

Over the last 20 years, the City of Murfreesboro has developed a high quality greenway system that extends for over 12 miles, making it a leader in the state for its quality of off-road facilities. The GBB Master Plan was initiated to provide the City with the tools to continue the momentum of the bike and pedestrian network and to provide a road map for the next 25 years.

Taking advantage of the river and stream network found throughout the City and Rutherford County, a blue-

way component was also added to the master plan to provide improved water recreation opportunities for the system. With a public input process that included an Advisory Committee of city staff and citizens and open public forums that allowed for the general public to give input, a master plan was developed with recommendations for the next 25 years. These recommendations take into account the priorities identified in the public input process and reflect those projects that provide the highest benefit for the residents of Murfreesboro.

The proposed improvements have been identified as a result of an analysis of the existing infrastructure conditions and an identification of the needs within Murfreesboro for non-motorized transportation and recreation as identified through technical analyses and local stakeholder and public input. Successful implementation of the greenways, blueways, and bikeways master plan will address the primary needs of this type of infrastructure through the planning horizon.

Facility Types

The intent of the recommended capital projects of the master plan is to identify corridor level facilities, not necessarily to identify specific routing (for off-road improvements) or design-level details. These specific details are expected to follow this plan as certain projects move into the implementation stages including project design. General project types recommended in this master plan are:



Greenway:

A typical 10' – 16' wide paved off-street path generally following an established water course and having few or no at-grade crossings of roadways. Murfreesboro's existing greenway facilities are examples.



Greenway Connector:

A paved off-street path that usually serves to connect specific properties to a greenway. Usually planned on public or institutional properties, an 8' – 12' width is expected. At-grade street crossings will be required, and must be designed appropriately as the project is implemented.



Multi-Use Path:

Constructed within the right-of-way of a roadway, this 8' – 12' paved path is ideally separated from the edge of the road by at least 5'. Where curb-and-gutter is used and right-of-way is constrained, the path may be constructed without a buffer to resemble a wide sidewalk. At-grade street crossings (signalized and unsignalized) are common.



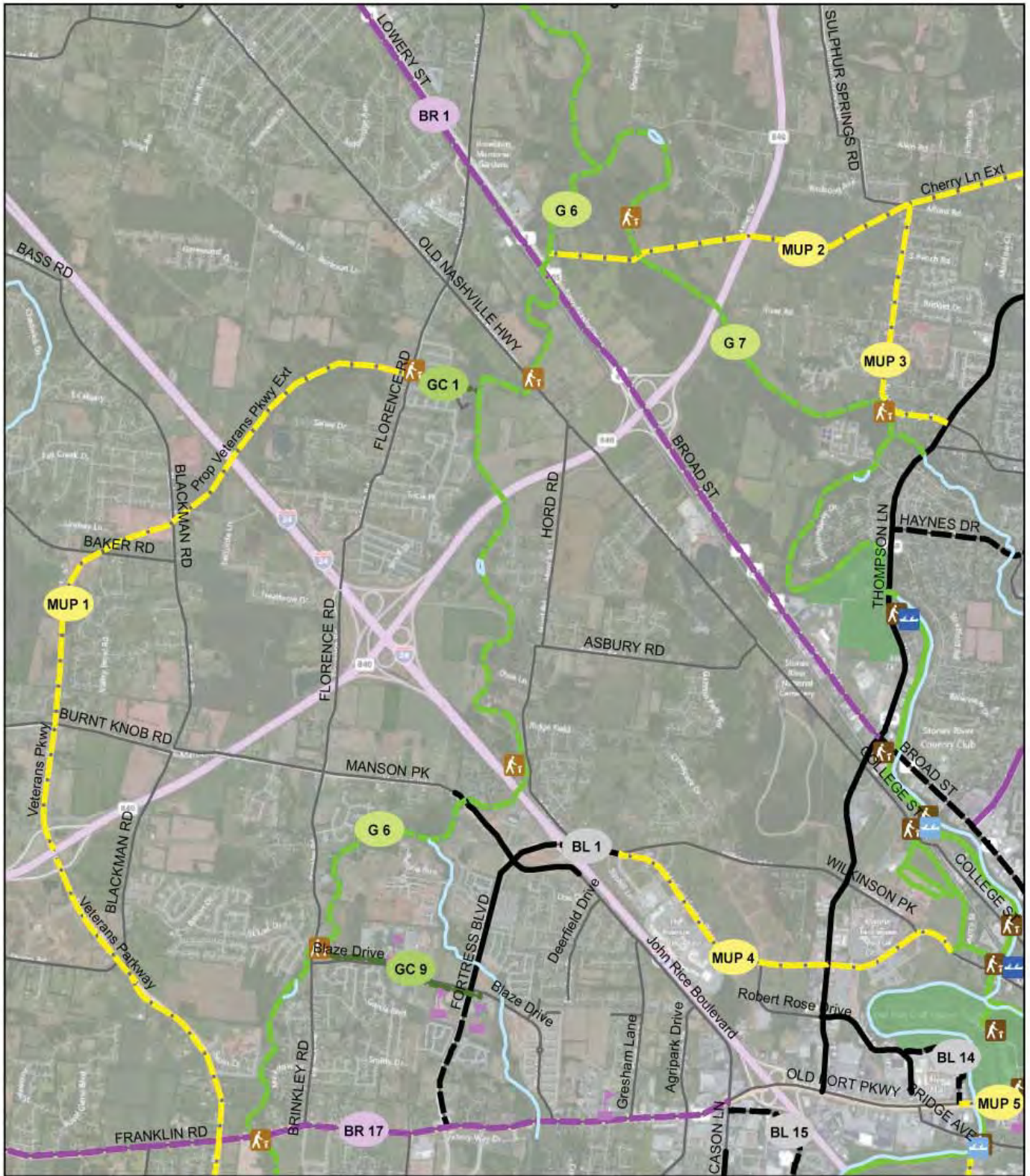
Bike Lane:

A signed, dedicated lane for cyclists on the roadway having a minimum width of 4'. Modifications to the traditional bike lane including buffered bike lanes and cycle tracks should be considered in the project's design phase.

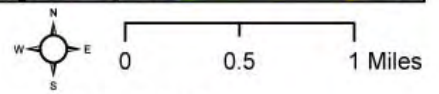


Bike Route:

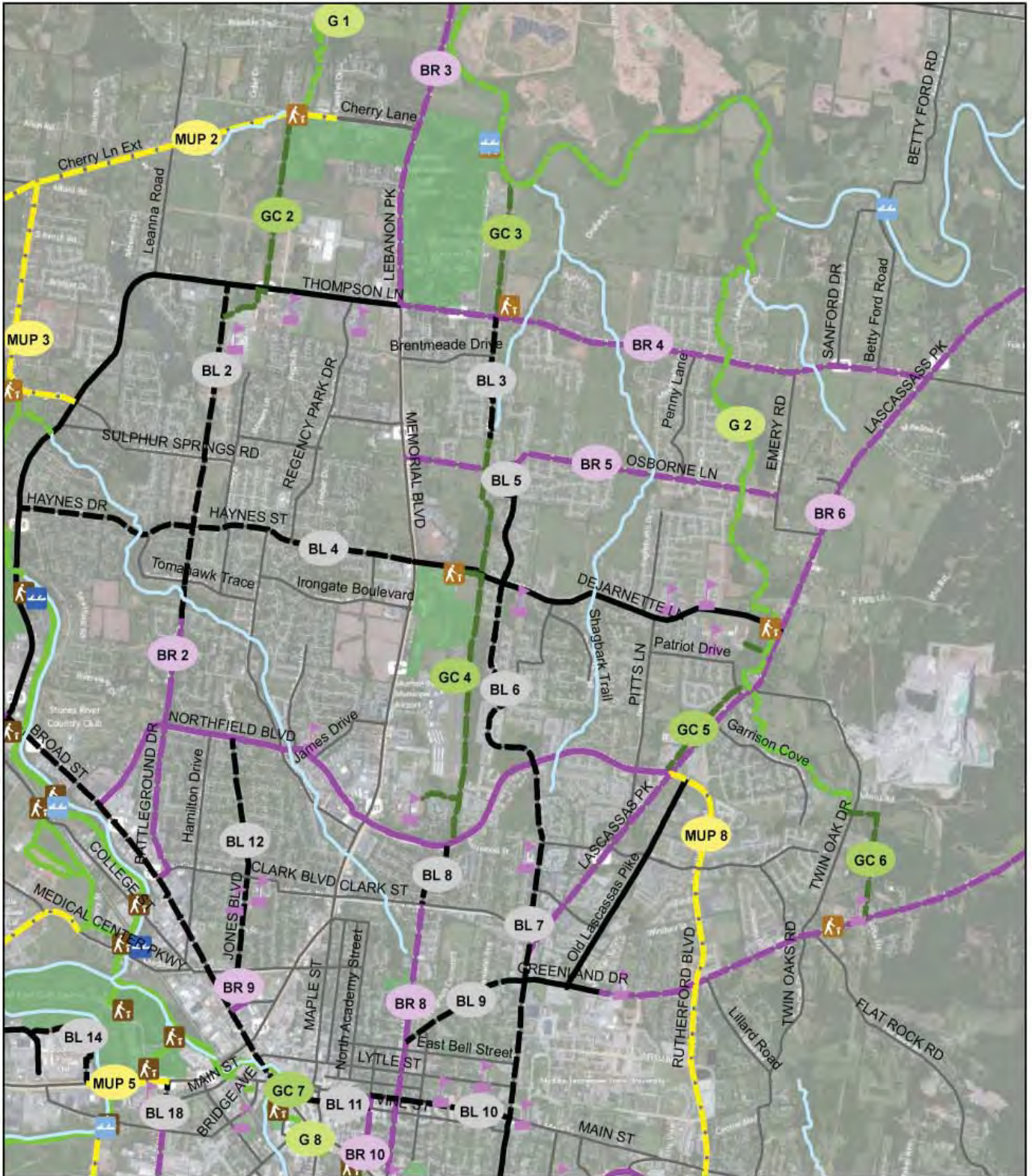
A signed route (sometimes including pavement markings) for bicycle use but with no dedicated infrastructure. Examples may be roads with wide shoulders, striped shared lanes ("sharrows"), or low-speed, low-volume streets.



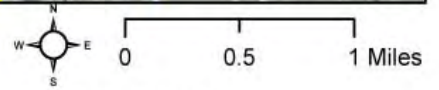
Existing Facilities		Proposed Facilities	
	Exist. Trailhead		Prop. Trailhead
	Prop. Trailhead		Exist. Blueway Access
	Exist. Blueway Access		Prop. Blueway Access
	Prop. Blueway Access		Schools
	Schools		Bike Lane
	Bike Lane		Bike Route
	Bike Route		Greenway Connector
	Greenway		Multi-Use Path
	Parks		Greenway



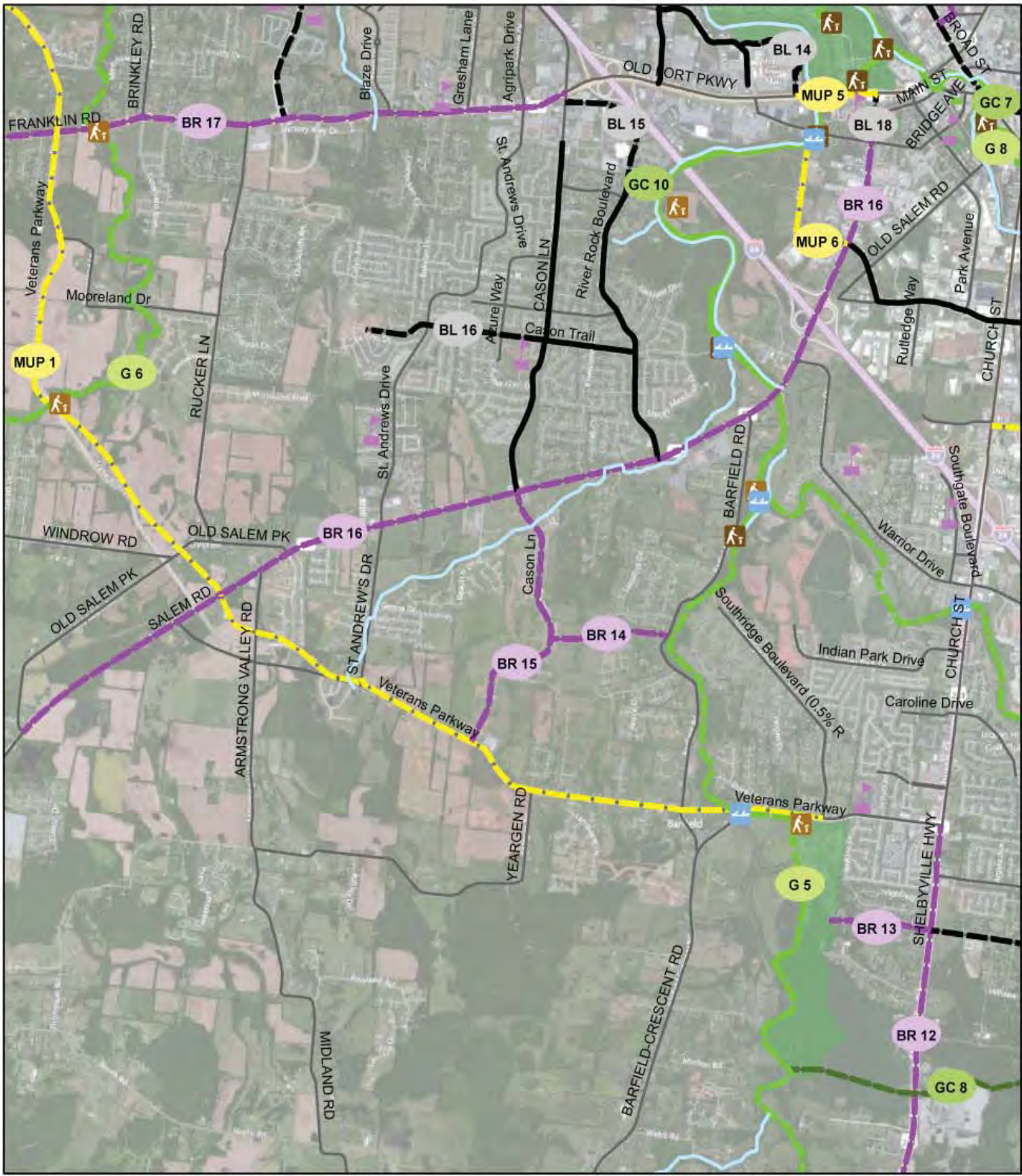
City of Murfreesboro
**Greenways, Blueways,
 and Bikeways Master Plan**
 Plan Recommendations -
 Northwest



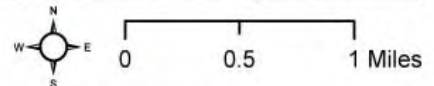
- | Existing Facilities | | Proposed Facilities | |
|---------------------|-----------------------|---------------------|--------------------|
| | Exist. Trailhead | | Bike Lane |
| | Prop. Trailhead | | Bike Route |
| | Exist. Blueway Access | | Greenway Connector |
| | Prop. Blueway Access | | Multi-Use Path |
| | Schools | | Greenway |
| | Parks | | |



City of Murfreesboro
**Greenways, Blueways,
 and Bikeways Master Plan**
 Plan Recommendations -
 Northeast



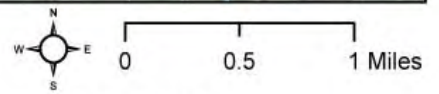
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|  Exist. Trailhead | Existing Facilities | Proposed Facilities |
|  Prop. Trailhead |  Bike Lane |  Bike Lane |
|  Exist. Blueway Access |  Bike Route |  Bike Route |
|  Prop. Blueway Access |  Greenway |  Greenway Connector |
|  Schools |  Parks |  Multi-Use Path |
| | |  Greenway |



City of Murfreesboro
Greenways, Blueways, and Bikeways Master Plan
 Plan Recommendations - Southwest



- | | | |
|---|--|--|
|  Exist. Trailhead | Existing Facilities | Proposed Facilities |
|  Prop. Trailhead |  Bike Lane |  Bike Lane |
|  Exist. Blueway Access |  Bike Route |  Bike Route |
|  Prop. Blueway Access |  Greenway |  Greenway Connector |
|  Schools |  Parks |  Multi-Use Path |
| | |  Greenway |



City of Murfreesboro
**Greenways, Blueways,
 and Bikeways Master Plan**
 Plan Recommendations -
 Southeast

Greenways

Project ID	From	To	Distance (mi)	Additional Information
G 1	Cherry Lane	Walter Hill Park	1.76	
G 2	Walter Hill Park	Twin Oak Dr	8.91	
G 3	Middle Tennessee Blvd	Urban Growth Boundary	7.96	
G 4	Greenway (existing - Barfield Rd)	Urban Growth Boundary	11.61	Via Middle Fork of Stones River.
G 5	Greenway (existing - Barfield Rd)	Urban Growth Boundary	8.98	"Via Stones River, along Barfield-Crescent Park."
G 6	Veterans Pkwy	Urban Growth Boundary	12.57	Via Overall Creek
G 7	Thompson Lane	Overall Creek Greenway (proposed - G 6)	5.19	
G 8	Greenway (existing - Cannonsburg)	Discovery Center	0.47	Requires crossing at S. Church

Greenway Connectors

Project ID	From	To	Distance (mi)	Additional Information
GC 1	Veterans Pkwy (prop)	Greenway (prop)	0.38	
GC 2	Siegel schools campus	Greenway (prop)	1.36	Connects Siegel schools, Miller Coliseum, and Siegel Park.
GC 3	Madison Ave	Greenway (prop)	0.75	Connects Madison Ave bike lanes to greenway via easement on MTSU and water treatment plant property.
GC 4	Northfield Blvd	Madison Ave	2.31	Part of major north-south connector route via airport property easement. May include short spur trails to SportsCom and MTCS.
GC 5	Rutherford Blvd	Greenway (prop)	0.67	Part of effort to link MTSU to future greenway via trails (via Rutherford Blvd MUP). May include spur trail to Oakland HS.
GC 6	Halls Hill Pk	Greenway (prop)	0.78	Connection to Daniel McKee school via apparent existing utility corridor.
GC 7	Vine St	Greenway (exist)	0.14	Urban GC enhancing downtown greenway access.
GC 8	Wilderness Station	Greenway (prop)	2.19	Potential for landmark bridge over Shelbyville Pk near quarry (included in cost).
GC 9	Blackman schools campus	Greenway (prop)	1.05	
GC 10	River Rock Blvd	Greenway (exist)	0.21	Bridge to greenway on old raquet club property

Multi-Use Paths

Project ID	Route	From	To	Distance (mi)	Additional Information
MUP 1	Veterans Parkway	Barfield-Crescent Park	Greenway Connector (prop)	12.2	
MUP 2	Cherry Lane	Siegel Park	Greenway (prop)	4	To be designed as part of Cherry Lane extension. ROW limitations may require use of alternative facility type.
MUP 3	Sulphur Springs Rd	Cherry Lane	Thompson Lane	1.53	To be designed as part of future Sulphur Springs Rd improvements.
MUP 4	Medical Center Pkwy	Conference Center Dr	Greenway (exist)	2.34	Retrofit on north side of Medical Center Pkwy.
MUP 5	Old Fort Pkwy	Salem Rd	Mall Circle Dr	0.49	On north side of Old Fort Pkwy only.
MUP 6	Molloy Lane	Middle Tennessee Blvd	Greenway (exist)	0.83	
MUP 7	Kirkwood Ave	Middle Tennessee Blvd	Discovery Center	0.75	Potential connection for Discovery Center to Bellwood Elementary to greenway (proposed).
MUP 8	Rutherford Blvd	Church St	Northfield Blvd	6.6	
MUP 9	Joe B Jackson Pkwy	East of I-24	John Bragg Hwy	7.57	

Bike Lanes

Project ID	Route	From	To	Distance (mi)	Additional Information
BL 1	Medical Center Pkwy	Manson Pk	Conference Center Dr	0.75	Retrofit bike lanes through I-24 interchange
BL 2	Seigel Rd/ Battleground Dr	Marymont Dr	Thompson Ln	1.92	Includes new bike/ped only connection at Battleground dead end.
BL 3	Madison Ave	Dead End	Thompson Ln	0.69	Stripe only
BL 4	Haynes Dr	Thompson Ln	Memorial Blvd	2.39	
BL 5	Peconic Pl/ Howell Dr	Alexander Blvd	Osborne Ln	0.27	Stripe only
BL 6	Alexander Blvd/ N Tennessee Blvd	Northfield Blvd	Dejarnette Ln	1.32	Stripe only
BL 7	Middle Tennessee Blvd/ N Tennessee Blvd	Main St	Northfield Blvd	2.02	
BL 8	Highland Ave	Clark Blvd	Northfield Blvd	0.39	Stripe only
BL 9	Greenland Dr	Highland Ave	Middle Tennessee Blvd	0.8	Stripe only
BL 10	Main St	Maney Ave	Middle Tennessee Blvd	0.82	
BL 11	Vine St	Greenway Connector (prop)	Maney Ave	0.48	Stripe only
BL 12	Jones Blvd	Medical Center Pkwy	Northfield Blvd	1.33	
BL 13	Broad St	Thompson Ln	Greenway (exist)	2.65	Construct as part of future Broad St improvements.
BL 14	Mall Circle Dr	Robert Rose Dr	Old Fort Pkwy	0.63	Restripe existing 3-lane section.
BL 15	River Rock Blvd	Cason Ln	Greenway Connector (prop)	0.8	Restripe existing 3-lane section.
BL 16	Cason Trl	Dead End	Cason Ln	1.07	Stripe only
BL 17	Joe B Jackson Pkwy	Shelbyville Hwy	Multi-Use Path (prop)	0.87	
BL 18	Salem Rd	Bridge Ave	Old Fort Pkwy	0.28	
BL 19	Mercury Blvd	Broad St	Middle Tennessee Blvd	0.69	
BL 20	Bradyville Pk	Broad St	Rutherford Blvd	1.33	Additional 0.8 mile bike lane from Middle Tennessee Blvd to Minerva Dr already exists

Bike Routes

Project ID	Route	From	To	Distance (mi)	Additional Information
BR 1	Broad St	Urban Growth Boundary	Thompson Lane	1.73	
BR 2	Clark Blvd/ Battleground Dr	Broad St	Marymont Dr	1.55	
BR 3	Lebanon Pk	Urban Growth Boundary	Thompson Lane	1.81	
BR 4	Thompson Ln	Lebanon Pk	Lascassas Pk	3.13	
BR 5	Osborne Ln	Memorial Blvd	Emery Rd	2.22	
BR 6	Lascassas Pk	Urban Growth Boundary	Middle Tennessee Blvd	6.28	
BR 7	Halls Hill Pk	Urban Growth Boundary	Champion Way	4.2	
BR 8	Highland Ave	Dead End	Clark Blvd	1.67	Includes new bike/ped only connection to Mercury Blvd.
BR 9	Jones Blvd/Ridgely Rd	Broad St	Medical Center Pkwy	0.32	
BR 10	Maney Ave	Broad St	Main St	0.4	
BR 11	Broad St/Manchester Pk	Middle Tennessee Blvd	Urban Growth Boundary	4.93	
BR 12	Shelbyville Pk	Veterans Pkwy	Urban Growth Boundary	2.71	
BR 13	Lynnford Dr	Barfield-Crescent Park	Joe B Jackson Pkwy	0.61	
BR 14	Unfinished Road	Barfield Rd	Cason Ln	0.7	
BR 15	Cason Ln	Veterans Pkwy	Salem Rd	1.74	
BR 16	Salem Rd	Urban Growth Boundary	Bridge Ave	6.45	
BR 17	Old Fort Pkwy	Urban Growth Boundary	Cason Ln	9.13	
BR 18	Bradyville Pk	Rutherford Blvd	Joe B Jackson Ext (prop)	3.0	

Greenway Recommendations

A total of 67 miles of off-road trails and 24 new trailheads have been recommended for development over the next 25 years. The routes focus on improving connectivity between large community parks, neighborhoods and commercial areas and on providing trails to currently underserved segments of the population. In conjunction with bike lanes and multi-use paths, the proposed greenways begin to provide a system that encompasses the entire perimeter of the City of Murfreesboro. Greenway Connector routes penetrate the central corridors of the city and link up community parks, downtown and MTSU to the perimeter.

Trailheads have been strategically placed

along primary vehicular corridors for ease of access and wayfinding to the trail. These trailheads are intended to provide parking, restrooms, picnic facilities and other amenities similar to existing trailheads found along the Stones River Greenway. They have been located approximately 3-miles apart in most locations to provide good access for all residents. It is anticipated that ancillary trailheads, on a much smaller scale, will be provided in other locations as development occurs. These trailheads will link to subdivisions and other commercial areas that develop along the trail corridor. They may or may not provide parking and in most cases will likely not have restroom facilities. These access points may be built as part of larger developments that occur along the trail or by the city as demand dictates.

Type of Recommended Facility	Length (miles)
Greenways and Greenway Connectors	67.3
Multi-Use Paths	36.3
Bicycle Lanes	20.2
Bicycle Routes	50.0
TOTAL	173.8

The planned on-street facilities were developed to provide connections between

Bikeway Recommendations

The City of Murfreesboro maintains an inventory of roadway classifications for all roads in the city, as determined by the Major Thoroughfare Plan. This roadway classification listing, as well as the existing greenway network, was used as the basis for making bikeway enhancement recommendations. On-road bikeway improvements are limited to the rights-of-way of certain functionally classified streets (major arterials, minor arterials, commercial collectors, community collectors, residential collectors, and residential sub-collectors). Local residential streets are generally adequate for non-motorized travel due to low speeds and low volumes and do not warrant special bikeway system designation.

key local destinations using the classified roadway network. Of course, one of these key destinations is the greenway system itself, so a primary strategy of the recommended bike facilities is to promote access to greenway facilities.

When is a bike lane not a bike lane?

The intent of the master plan is to identify the general, desirable type of facility for a particular corridor. As each planned project progresses, it may be found that the project type called for by this plan has obstacles that preclude constructing the facility as originally planned. In such a case, an alternative facility type, alignment change, or a new connection altogether should be considered.

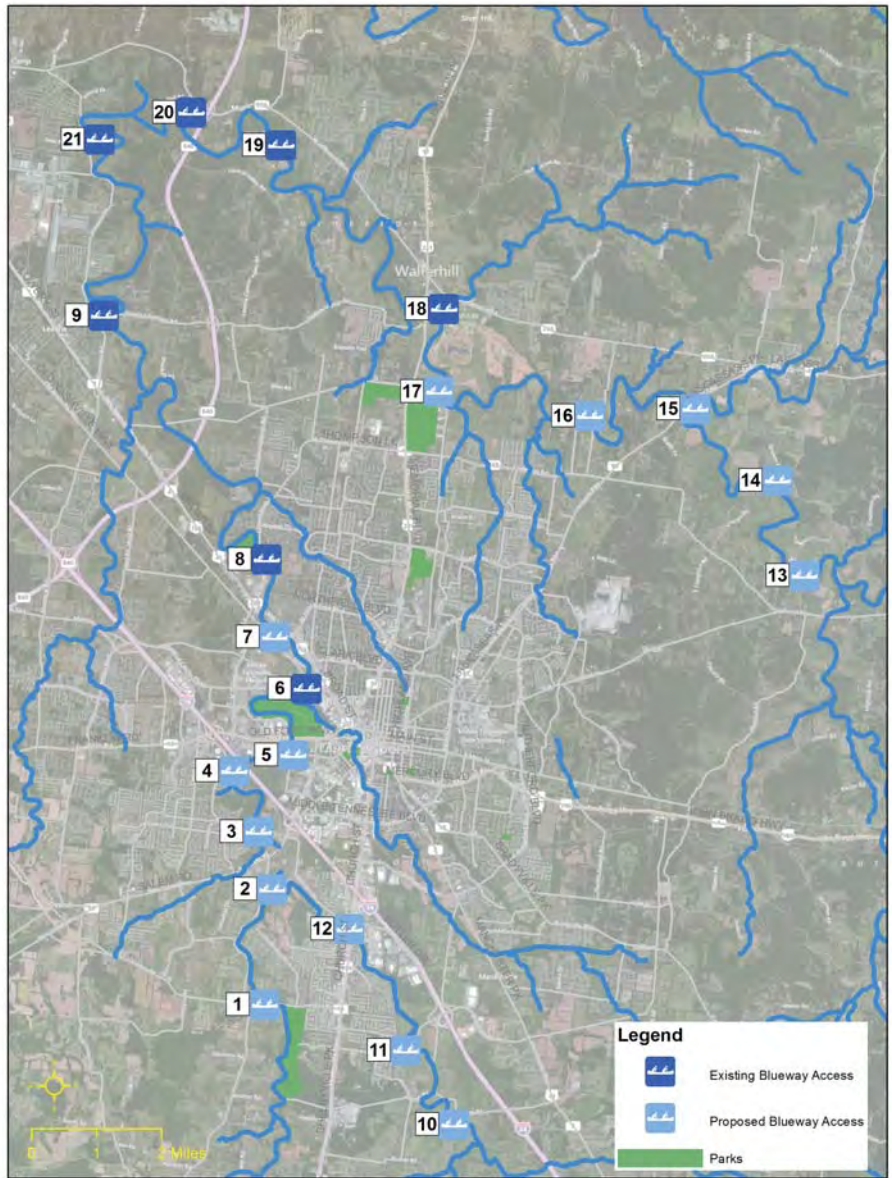
Although the planned projects have been identified to meet the expected needs of the community in a particular area, developing an alternative project may be the best way to fulfill the intent of the master plan.



Blueway Recommendations

The West, Middle and East forks of the Stones River provide excellent opportunities for recreational paddle sports. There are currently seven (7) locations for public access in and around the City of Murfreesboro. The Parks and Recreation Department currently maintains one (1) designated blueway with a put-in at the Manson Pike Trailhead along the Stones River Greenway and a take-out at the Thompson Lane Trailhead in addition to maintaining a joint put-in with the United States Army Corps of Engineers (USACE) at Walter Hill Park. Four (4) other locations are maintained and controlled by the USACE.

The Stones River Watershed Association (SRWA) has identified access points along all three forks of the Stones River in and around Murfreesboro. These sites are very limited in amenities and many cannot be considered public access because they lack formal use agreements. The planning team reviewed access points identified by the SRWA and has recommended 14 locations in addition to the seven (7) public access locations that currently exist. Some of these locations will only be seasonally accessible due to low flow during different times of year. It will be necessary for the City to monitor river levels throughout the year and close those locations that are not navigable during certain periods. The following represents the 21 locations recommended for the Murfreesboro Blueway system.



West Fork Access

Map ID	Stones River (West Fork)
1	Veterans Pkwy
2	West and Middle Confluence
3	Cason Trail
4	River Rock Boulevard
5	Bridge Ave. & Molloy
6	Manson Pike
7	General Bragg Trailhead
8	Thompson Lane
9	Nices Mill
21	West Fork Recreation Area

Middle Fork Access

Map ID	Stones River (Middle Fork)
10	Elam Mill
11	Joe B. Jackson Trailhead
12	City Schools Office

East Fork Access

Map ID	Stones River (East Fork)
13	Guy James Road
14	Brown's Mill
15	Lascassas Pike
16	Betty Ford Road
17	VA Hospital
18	Walter Hill Park
19	Mona Recreation Area
20	East Fork Recreation Area



OUR STRATEGY

Implementation

This master plan contains proposes nearly 200 miles of new and repurposed infrastructure - all aimed at getting Murfreesboro's residents outdoors and active on a regular basis.

It is an important plan and an achievable goal. Murfreesboro's growth is both an opportunity to develop high quality infrastructure such as is proposed as well as a call to responsibility for City leaders to continue to provide

the quality of life that Murfreesboro has become known for. The City of Murfreesboro should recognize these facilities as an enhancement to the quality of life while offering an alternative transportation option, which is a growing trend in progressive cities throughout the United States. To stay competitive, the City of Murfreesboro should consider these strategies and recommendations in its overall growth and development model.

Stretched budgets, ever-competitive federal funding, and other priorities and obligations of the city will present challenges to the fulfillment of the plan. However, remaining flexible in implementation, looking for opportunities for plan advancement as part of other projects, and engaging in non-infrastructure activities (policies and programs) will allow the City to continue to make tremendous strides over the next 25 years.

Tiered Priorities

Based on greenway plans already underway and community desires, some identified greenway needs have been designated into two project tiers, or phases. Tier I projects seek to extend the existing greenway system in south Murfreesboro and initiate a

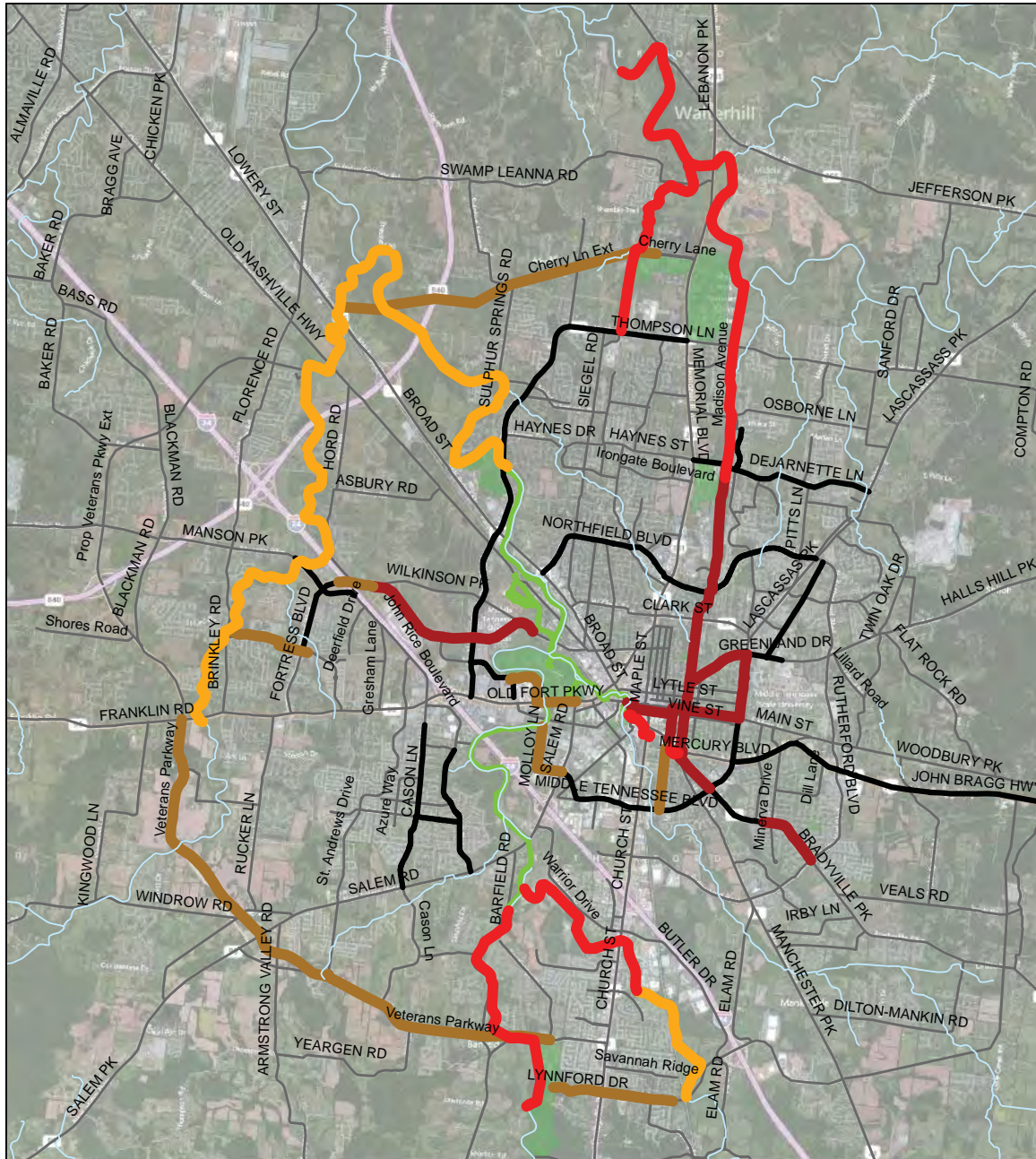
true greenway trail system in north Murfreesboro. Doing so not only increases the amount of usable trail, but also will encourage new users by linking more households and destinations along the new trail segments. Tier I roadway projects are based on critical needs such as creating better downtown access to the existing

greenway system, as well as seeking to increase the effectiveness of Tier I greenway improvements by linking these to each other and to important destinations.

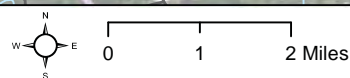
Tier II greenway construction includes the major portions of the Blackman area trails. Tier II improvements also

include significant stretches of multi-use path which will result in the connection of Siegel Park in the north to Barfield-Crescent Park in the south.

Unfortunately, few on-street projects in Murfreesboro can be considered “low-hanging fruit”, ready to be implemented relatively easily with little cost. Most of these type of projects have already been implemented by the city. Those projects which can be easily implemented (e.g. signing a designated bikeway along newly reconstructed portions of Maney Avenue) generally do not link together into a bike network of any appreciable length or with an important connection. Thus, ease of construction has not been a major factor in designating priority improvements.



- Tier I Greenway Projects
- Tier II Greenway Projects
- Tier I Road Projects
- Tier II Road Projects
- Existing Greenway
- Existing Bike Facility



City of Murfreesboro
**Greenways, Blueways,
 and Bikeways Master Plan**
 Project Phasing

Costs and Funding

Project costs associated with the capital needs identified in this master plan can be easily misunderstood. This is because, particularly for the on-street projects, facilities are often implemented as part of larger roadway improvement projects, so that the estimated costs of the non-motorized facility improvements are more difficult to quantify.

The project needs costs shown here have been developed assuming that each project is a stand-alone project and are meant to provide a planning level estimate so that the scale of these projects can be understood.

Total Estimate for Full Plan Implementation*		
Type of Recommended Facility	Length (miles)	Cost
Greenways and Greenway Connectors	67.3	\$67,310,000
Multi-Use Paths	36.3	\$27,240,000
Bicycle Lanes	20.2	\$9,710,000
Bicycle Routes	50.0	\$620,000
TOTAL	173.8	\$104,880,000

*Planning-level construction costs only. Does not include right-of-way acquisition, utility relocation, or preliminary engineering costs. Assumes full construction of stand-alone projects (conservative assumption).

However, it should be noted that implementation of many of these projects will be fractional with respect to other roadway work which might be undertaken as part of a roadway project occurring along the same corridor as an identified bike facility.

In fact, many of the on-road facilities in the plan are recommended in part because of a future larger roadway need has already been identified and incorporating a bicycle connection can be done relatively easily as part of the bigger project.

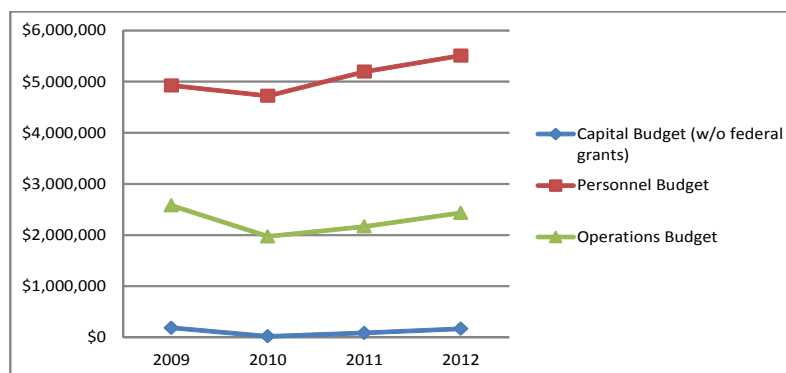
Breaking these costs out by the recommended project tiers gives funding estimates for a 10-year planning horizon, a secondary planning horizon, and further future needs. The 10-year planning horizon cost for greenways and greenway connectors is \$38.4M, or an average of \$3.8M per year. Given that the average city-funded capital expenditures budget for the Parks and Recreation Department over the past four years was approximately \$120,000 per year (when federal greenway allocations are subtracted), it is quickly evident that a different funding strategy will be required.

General Estimates* for Plan Projects by Planning Horizon						
Type of Recommended Facilities	Length (mi)	10-Year Horizon ¹ (\$1,000s)	Length (mi)	Secondary Horizon ² (\$1,000s)	Length (mi)	Future Horizon (\$1,000s)
Greenways and Greenway Connectors	38.4	\$37,310	24.6	\$24,350	4.3	\$5,650
Multi-Use Paths	2.3	\$1,760	12.2	\$9,130	21.8	\$16,350
Bicycle Lanes	5.2	\$2,270	2.3	\$1,610	12.7	\$5,830
Bicycle Routes	1.7	\$20	0.6	\$10	47.7	\$590
TOTALS	47.6	\$41,360	39.7	\$35,100	86.5	\$28,420

*Planning-level construction costs only. Does not include right-of-way acquisition, utility relocation, or preliminary engineering costs. Assumes full construction of stand-alone projects (conservative assumption).

¹Corresponds to Tier I projects

²Corresponds to Tier II projects



Four-Year Budget Trends, Murfreesboro Parks & Recreation Dept.
(Source: Annual Budget, FY 2011-12)



Transportation Funding Opportunities

Although it is likely that historic federal funding levels for facilities in Murfreesboro cannot be sustained, it should not be assumed that no state or federal funding will be available. In fact, new MAP-21 federal transportation legislation has special opportunities for funding active transportation projects. The Transportation Alternatives (TA) funds will be administered by the Nashville Area Metropolitan Planning Organization (MPO) (instead of by TDOT as in the past) and will be eligible for use by active transportation projects like those presented in this plan. The total amount of TA funds available

annually within the Nashville area is expected to be approximately \$1.5M.

As part of the 2035 Long-Range Transportation Plan, the Nashville MPO also established a nationally recognized strategy by which 15% of the region’s Urban Surface Transportation Program (U-STP) funds would be dedicated to projects which encourage the development of active transportation choices and walkable communities. The revenue forecasts of this funding source shows that regional STP funding should be considered as a significant possible funding source for this plan’s implementation.

U-STP Investment Strategy – Revenue Distribution by Planned Horizon Year (Source: Nashville Area MPO)

Category	Target	2011-2015*	2016-2025	2026-2035
Multi-Modal Roadway Capacity & Safety	70%	\$11,448,000	\$213,353,452	\$315,815,228
Active Transportation Enhancements	15%	\$2,500,000	\$45,718,597	\$67,674,692
Public Transportation/ Mass Transit	10%	\$1,650,000	\$30,479,065	\$45,116,461
System Management & Operations	5%	\$825,000	\$15,239,532	\$22,558,231
TOTAL URBAN STP	100%	\$16,423,000*	\$304,790,646	\$451,164,612

*FY 11-15 revenues available after prior commitments are funded.

The cost estimates presented here do not include right-of-way acquisition costs. There are many avenues to acquiring greenway rights-of-way with the first and most obvious being fee simple acquisition. Fee simple acquisition results in the direct ownership of real property; it is the most complete form of land ownership. Acquisition is not limited to purchase of land in fee simple, but also includes purchase of development rights and acceptance of donations of land and development rights.

Fee simple acquisition is a very expensive method for acquiring right-of-way but is probably the simplest form for property that is intended for public use. Alternative right-of-way acquisition methods include:

- Multi-Purpose Easements
- Easements through Private Development
- Riparian Buffers
- Roadway Buffers

The plan recommends some policy revisions that should be considered by the City as alternative ways to acquire the necessary rights-of-way for implementation, including:

- Consideration of a dedicated greenway easement for all property shown along planned corridors
- Consideration to provide density bonuses and other incentives for developers willing to construct trail segments located within their proposed developments
- Consideration to provide a stormwater variance process that incorporates the dedication of greenway easements into the variance approval
- Explore opportunities for multi-purpose easements with the water and sewer department

Non-Infrastructure Initiatives

More than just infrastructure, other efforts can be championed or supported by the City to have a positive impact on the promotion and use of the system. Some examples of effective policies and programs are:

Provide Facilities

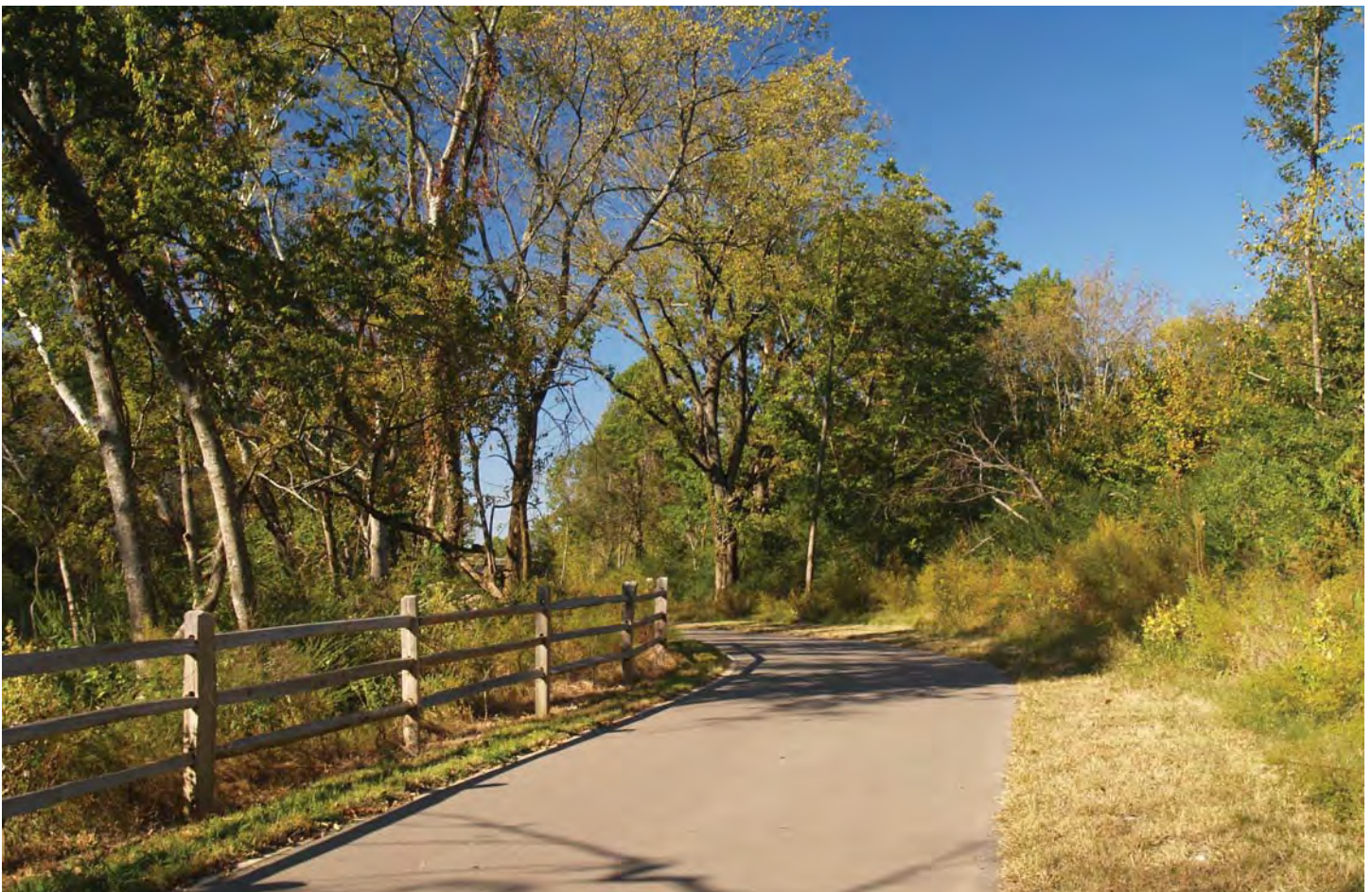
- Policies should be adopted by City agencies to provide ongoing maintenance of the network.
- Some jurisdictions in Tennessee allow “in-lieu-of” payments to the community’s infrastructure fund.
- Promote and encourage land use decisions that provide a context-appropriate mixture of uses that are supportive of increased walking and bicycling.
- Establish developer incentives for inclusion of amenities such as bike racks, lockers, showers, and other facilities in commercial and public building projects.

Build Support

- Initiate an annual bicycle and pedestrian count program consistent with the National Bicycle & Pedestrian Documentation Project (NBPD).
- Adhere to a locally developed Complete Streets policy.
- Providing continuous bicycle and pedestrian facilities across the city will require a new level of inter-agency as well as inter-jurisdictional cooperation. A recognized process by which the Parks Department has an opportunity to review and comment on new development proposals affecting the system could help facilitate this cooperation.

Increase Awareness

- Promote bicycle safety education locally, including efforts to increase understanding and awareness of the Tennessee 3-foot law for motorists passing bicyclists.
- Offer safety training opportunities for adults and children.
- An informational website should be established that contains information regarding biking and paddling in the region.
- Create promotional materials to promote walking and bicycling as a safe, healthy, cost effective, environmentally beneficial transportation choice.



**CITY OF MURFREESBORO
GREENWAYS, BLUEWAYS, & BIKEWAYS MASTER PLAN**

TECHNICAL MEMORANDUM #1: REFINED PLAN OBJECTIVES

In 2011, the City of Murfreesboro initiated the development of the Greenways, Blueways, and Bikeways (GBB) Master Plan to help identify and coordinate implementable improvements in recreation and non-motorized transportation over the next 25 years.

This technical memorandum summarizes the overall plan objectives that have been established as part of the plan development process. These objectives speak to the outcomes of the plan, but are really deeper reflections of what stakeholders in Murfreesboro envision for the actual GBB system as it is further developed over the planning horizon. As such, these objectives should be used to routinely gauge not only the development of the master plan, but act as benchmarks as various facets of the plan are considered and undertaken in the future.

The plan's objectives were developed through input from the Study Advisory Committee along with interviews of local stakeholders. The following is a list of the project objectives as developed for the project.

The GBB Master Plan should:

1. Promote the increased usage of existing greenways and blueways and the construction of new greenways and blueways by identifying personal and community needs and benefits relating to quality of life, health, economics, and sustainability.
2. Present strategies leading toward a transformational attitude of Murfreesboro's residents and workers in which active transportation (transportation by walking or by bicycle) is regarded as a viable travel option for all.
3. Assist City staff involved in facility planning and construction through the determination of future greenway and blueway routes which can be pursued through capital budgeting as well as private development processes. This may include facilities constructed as part of the renovation of current infrastructure (street renovations) as well as through new roadway development.
4. Identify leverages of existing, emerging, and potential resources (funding, programs, policies, etc.) toward a cooperative approach in elevating Murfreesboro's GBB system.

These participant-formed objectives find common ground in two emphasis areas of contemporary American cities: health/recreation and transportation. The advantages gained by communities that have comprehensive, safe, and well maintained facilities for recreation and transportation are immense. In the development of this plan and in its implementation in the years ahead, the question should continually be asked, "how will our actions progress one or more of these objectives to the advantage of Murfreesboro?"

Currently, the greenway system is almost exclusively a system of recreation. Based on public and stakeholder input through the planning process, leisure use is likely to remain the primary

focus of the system. As such, implementation of the plan towards its listed objectives can focus on individual user benefits such as the importance of leisure time, appreciation of nature, and the personal health benefits.

Though not the primary focus of the greenway system in Murfreesboro, active transportation and transportation alternatives continue to be important emphasis areas for many communities. Growing an effective and dynamic culture of active transportation in Murfreesboro will require helping travelers better understand the benefits and processes of travel by foot or bike. This can be accomplished by providing well designed bicycle and pedestrian facilities and through education and encouragement activities. To foster more of a transportation emphasis, implementation of the plan towards its listed objectives can focus on community benefits such as environmental impacts of travel, lower personal transportation costs, transportation equity, travel safety, traffic reduction, and development/re-development patterns.

**CITY OF MURFREESBORO
GREENWAYS, BLUEWAYS, & BIKEWAYS MASTER PLAN**

TECHNICAL MEMORANDUM #2: EXISTING CONDITIONS

In 2011, the City of Murfreesboro initiated the development of the Greenways, Blueways, and Bikeways (GBB) Master Plan to help identify and coordinate implementable improvements in recreation and non-motorized transportation over the next 25 years.

This technical memorandum summarizes planning documents and policies that are pertinent to the GBB plan and are currently in place. It also summarizes an evaluation of the existing facilities located within the City and the urban growth boundary. These policies play an important role in recreation and non-motorized transportation and will be critical to the future implementation of the GBB.

Murfreesboro Land Use, Zoning and Development Regulations

The 2010 census estimated the City of Murfreesboro had a population of nearly 110,000 residents making it the sixth largest city in the State of Tennessee. Its population growth has far exceeded national averages and therefore has required the city to be very proactive about development and how it occurs. Murfreesboro has developed policies related to sidewalks, water quality, subdivision development, street construction and zoning ordinances with overlay districts protecting areas of historic significance and with specific design intents. These policies are all geared toward providing the best possible community and quality of life for residents of Murfreesboro.

Sidewalk Policy

Adopted in July 2000, the Sidewalk Policy detailed the provision of sidewalks on both sides of the street for all new development. The policy provided details regarding when a developer is required to build the sidewalk as part of the overall site construction. This policy served as the guiding principal until the 2009 adoption of the subdivision regulations.

Subdivision Regulations

The Murfreesboro Subdivision Regulations detail how property can be divided and developed. Adopted on July 22, 2009, these regulations require the dedication of right-of-way to accommodate roadway development according to the major thoroughfare plan including the provision of curb and gutter, storm drainage, sidewalks and bike lanes wherever previously identified. The subdivision regulations also address the provision of drainage easements where drainage is not feasible in the public right of way. These easements, a minimum of 20 feet in width, provide for drainage to natural watercourses located within subdivisions. These easements are intended to be connected to public rights of way for ease in maintenance operations.

Street Design Specifications

Also adopted in July of 2009, the street design specifications detail standards related to new streets constructed within the City. Utilizing the guiding design principals outlined by such organizations as AASHTO, ITE, the Federal Highway Administration and others, these standards help ensure that roadways are constructed to appropriate standards and include design features suited to the street's functionality. Relative to the GBB, the street design specifications detail the construction of sidewalks in all new developments and identify where and how bicycle facilities should be accommodated. Sidewalks are required in all new developments on both sides of the street. The minimum width is four (4) feet for local streets and five(5) feet for all other streets. Bicycle facilities are required wherever previously identified within the Bicycle Master Plan. As written in the Street Design Specifications, they can be in the form of bike lanes and bicycle shared streets.

Special Overlay Districts

Special Overlay Districts have been developed within the City to address areas of historic significance or those areas with very specific design intent. The Gateway Design Overlay is one such area. The overlay district takes design requirements a step beyond the standard subdivision regulations providing for more detailed treatment of the landscape and pedestrian connections. As with the subdivision regulations, sidewalks are required on both sides of all

streets but, in this area must be set back a minimum of (6) feet behind the street curbs. The overlay district goes on to further describe pedestrian and bicycle movement within the district describing it as having an alternative transportation mode made up of a network of sidewalks, paths or trails. While the district is not specific about these provisions, it does reference the possible requirement by the planning staff or Planning Commission for the provision of these facilities within future developments within the overlay district.

Stormwater Management and Water Quality Protection Areas

Written as part of the Murfreesboro City Code, Ordinance 06-O-27 details the treatment of stormwater and water quality protection areas. The code details the required buffers that must be observed in the development of property along streams and wetlands. The buffers vary in width depending on the classifications of the stream. There are two zones identified within the code. Zone 1 represents the area directly adjacent to the stream and requires a 35' buffer from the top of bank on all streams mapped by the USGS service. An additional 15 feet is required with Zone 2 making the total stream buffer requirement 50'. Smaller streams not mapped by the USGS require only a 20' buffer for Zone 1 and 15' buffer for Zone 2. For wetlands, the required buffer is 35' from the outermost edge of the delineated wetland. The code further describes acceptable uses within the water quality protection area buffers and the provision of plant material or preservation of plant material within those undisturbed areas. Acceptable structures and activities with the WQPA include:

- In Zone 1 - Publicly accessible greenways and road, bridge and utility crossings
- In Zone 2 – Uses allowed in Zone 1 and utility right(s)-of-way.

Specific design requirements for greenways located within the WQPA are also provided in the code and include:

- The design and placement of the greenway is outside Zone 1 insofar as practicable;
- The design and placement of the greenway takes into account natural fluctuations in stream channel;
- The design and placement of the greenway takes into consideration the location of invasive, exotic plants or other undesirable vegetation or lack of vegetation;
- Grading and post-construction planting is done to maintain or establish stormwater sheet flow and infiltration of stormwater to the maximum extent practicable;
- Where watercourses cross the greenway, care is taken to provide ample culvert or channel structure to avoid scour;
- Disturbances of native vegetation and more valuable trees are minimized;
- Vegetation is reestablished where missing;
- Management of the greenway includes litter pick-up and monitoring and elimination of erosion or other polluting activities;
- Management of the greenway includes removal of invasive, exotic plants; and,
- Programs or materials to educate users about surface water quality are provided.

Existing Bikeway and Greenway Plans

The City of Murfreesboro Bicycle Plan

Completed in January 1994, the City of Murfreesboro Bicycle Plan provided recommendations for “integrating bicycling into standard transportation engineering procedures”. The plan provided design standards for implementation and identified bicycle routes for future development. This plan has provided the basis for most of the bicycle facilities that exist in Murfreesboro today.

Stones River Greenway – Master Plan

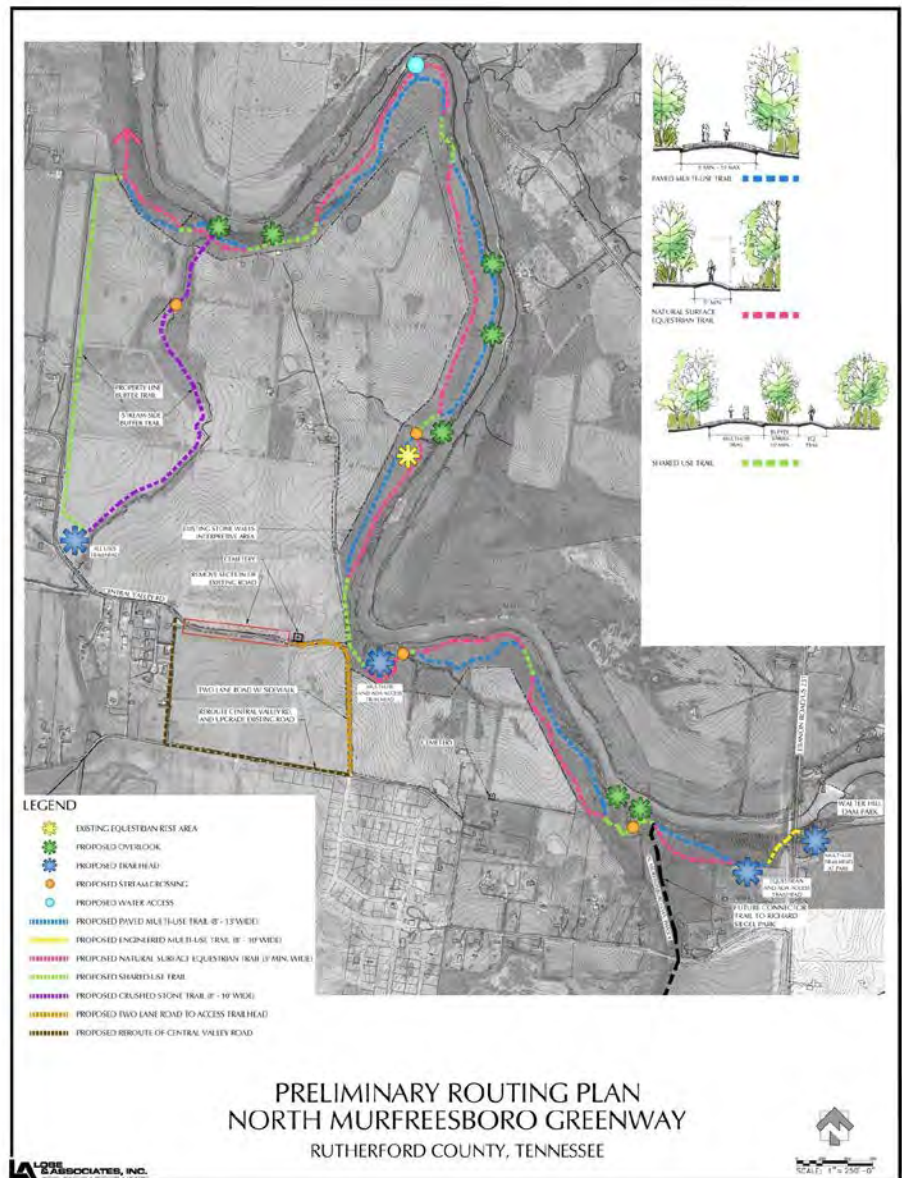
Completed in November of 1993, the Stones River Master plan provided the inventory and analysis for the eventual development of construction documents for the greenway trail. The master plan identified greenway routing and valuable points of interest along the corridor making note of all property acquisition that would be required. The plan also addressed maintenance and management of the trail along with safety and security. This master plan served as the guiding document for the built phases of the Stones River Greenway and Lytle Creek Greenway that exist today.

Stones River Greenway (Phase IV)

Phase IV Construction of the Stones River Greenway is currently underway. It will connect the Phase III terminus at Barfield Road south to Barfield Crescent Park, a distance of approximately 2.25 miles. The project is in the right-of-way acquisition phase and will be scheduled for construction once right-of-way has been secured. Funding for this project has been allocated.

North Murfreesboro Trail

A master plan was developed in 2007 for the North Murfreesboro Trail. This 3-mile segment of trail was designed along the East Fork Stones River and connects Walter Hill Dam to



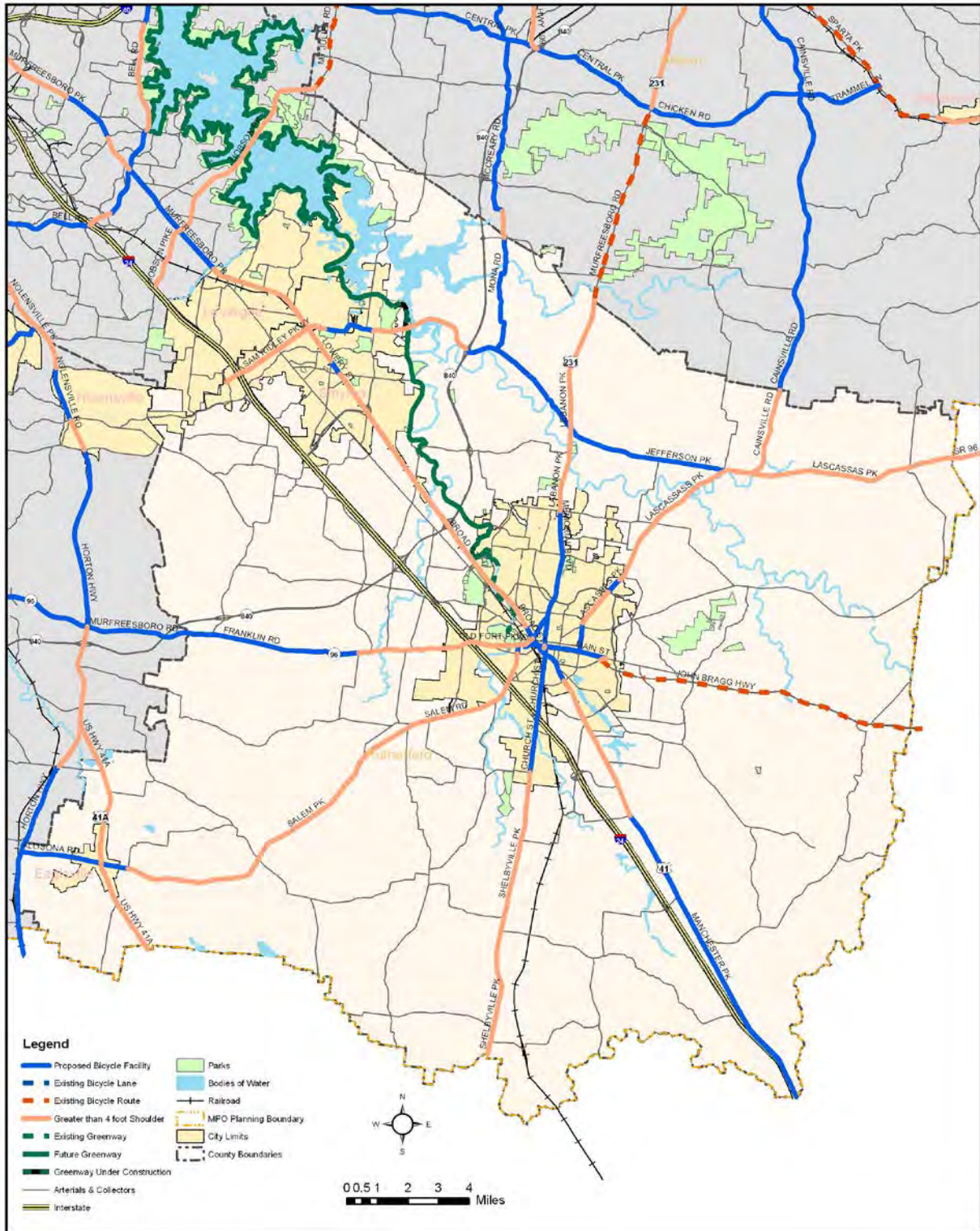
the 400-acre Coleman Farm property owned by the City of Murfreesboro. The project includes a multi-use system for pedestrians, cyclists and equestrians on both paved and soft-surface trails. A joint effort by the United States Army Corps of Engineers (USACE), City of Murfreesboro, and Tennessee Wildlife Resources Agency, the project is moving toward construction with funding from the USACE.

Regional Bicycle Plan

In 2009, the Nashville Area Metropolitan Planning Organization (MPO) established its current plan for regional bicycling infrastructure for its planning jurisdiction which includes all of Rutherford County. The MPO's Regional Bicycle and Pedestrian Study is supportive of local bicycle facility infrastructure, but places emphasis on facilities which provide regionally-scaled accommodations. Thus, the facilities which are recommended in it tend to be along major transportation corridors, generally state and federal routes. The Stones River Greenway is one of only two off-road facilities in middle Tennessee which is specifically designated as part of the Regional Bikeway Network. This is because of its existing length and its high potential for linear and regional connections in neighboring jurisdictions.

In Murfreesboro, the Regional Bikeway Network designates the following major corridors:

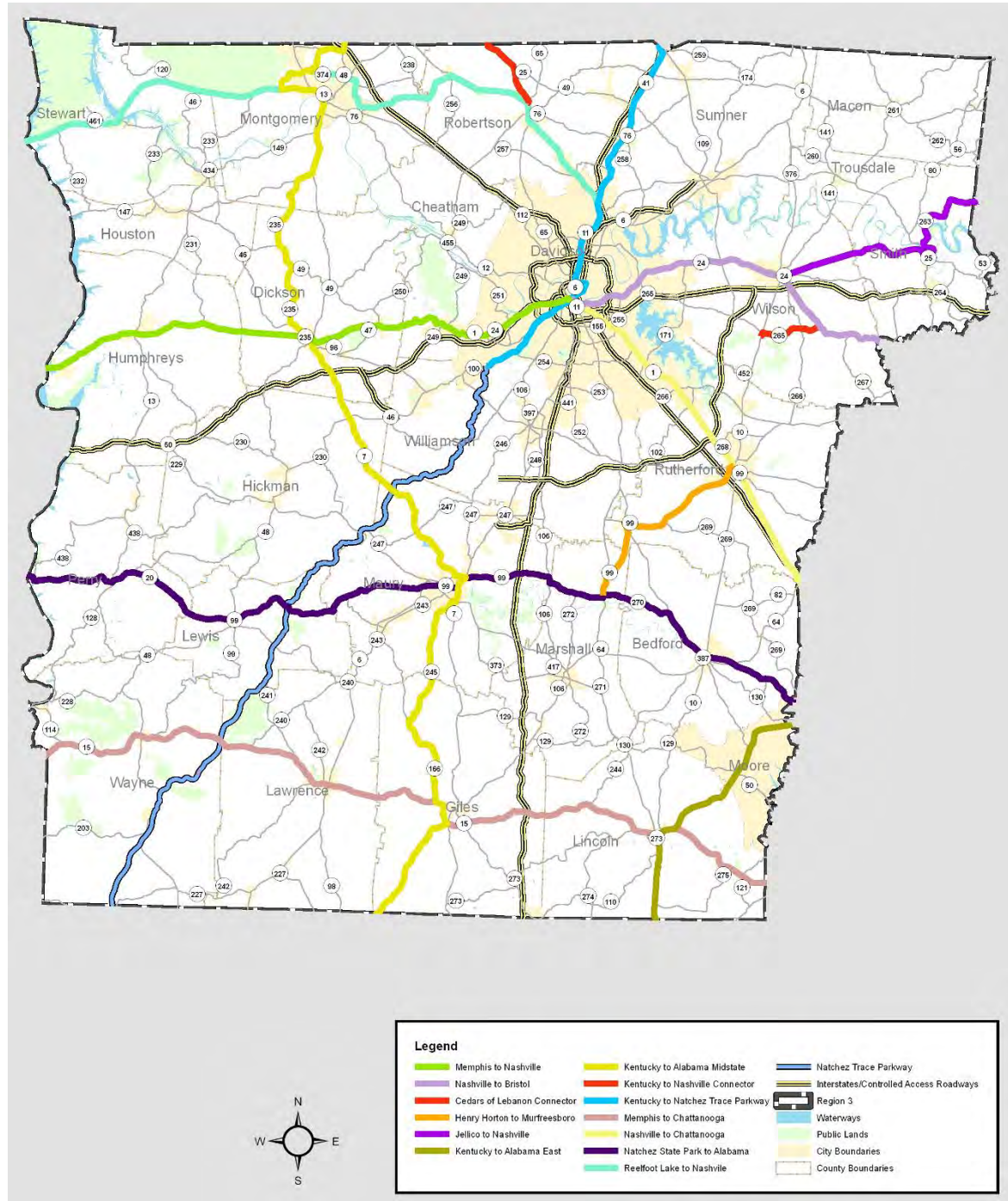
- Memorial Boulevard/Lebanon Pike
- Lascassas Pike
- Jefferson Pike
- Main Street/John Bragg Highway
- Broad Street/Manchester Pike
- Church Street/Shelbyville Pike
- Salem Pike
- Old Fort Parkway/Franklin Road



Rutherford County Regional Bike Network Recommendations (Source: Nashville Area MPO)

Statewide Bicycle Plan

On an even larger scale, the Tennessee Department of Transportation in 2011 updated its statewide bicycle plan which designates future corridors as priority routes for bicycle infrastructure. Two routes within Rutherford County appear in this plan, both having portions inside of Murfreesboro. These are Broad Street/Manchester Pike which is part of the Nashville to Chattanooga Tour and Salem Pike which is part of the Henry Horton to Murfreesboro Tour.



Proposed State Highway Bicycle Routes (Source: Tennessee Dept. of Transportation)

Infrastructure Existing Conditions

Murfreesboro Greenway System

The City of Murfreesboro has 12-miles of paved asphalt trails located along the Stones River and Lytle Creek. There are 11 trailheads that provide access to residents from various vantage points along the route and many historic points of interest and parks are connected by the trail. The trail extends from Thompson Lane approximately 1-mile north of Broad Street (U.S. 41/70) to Barfield Road just East of Highway 99. The greenway network is situated on approximately 215 acres of land, but the amount of land protected as a result of its presence is significantly larger. Points of interest along the trail include the Stones River Battlefield and Old Fort Park as well as schools, neighborhoods and commercial areas. The trailheads found along the Stones River Greenway include parking, restrooms, river access, playgrounds and picnic pavilions. The trailhead locations include:



- Thompson Lane
- Broad Street
- General Bragg
- West College
- Redoubt Brannan
- Manson Pike
- Fortress Rosecrans
- Overall Street
- Cannonsburgh
- Old Fort Park
- Cason

The Lytle Creek Greenway segment connects the Cannonsburgh Trailhead to the downtown Murfreesboro commercial district crossing under Broad Street near the intersection of West Main Street. The Stones River Greenway and Lytle Creek Greenway provide a safe pedestrian environment free from vehicular traffic. The Stones River and Lytle Creek segments of the greenway system were built in phases utilizing federal and local funding sources. The final phase of that project is under development now and will be under construction once all right-of-way has been acquired. The trail will extend from Thompson Lane north of Broad Street (U.S. 41/70) to Barfield Crescent Park on the south side of Murfreesboro.

One of the newest additions to the greenway system is the Gateway Trail. This loop system connects the newly developed Gateway Business and Medical Park to the Stones River Greenway. The Gateway Trail is the only portion of the Murfreesboro Greenway System that is lighted for night use.

Existing Blueways Network

Recreation opportunities for paddle sports within the City of Murfreesboro exist along the East, West, and Middle forks of the Stones River. The Middle Fork of the Stones River is approximately 19.8 miles long and joins the West Fork near Highway 99. The West Fork flows for 39.1 miles converging with the East Fork on the North side of Murfreesboro where the river then flows into J. Percy Priest Lake. Dams exist along each segment of the Stones River altering flow and requiring short portages for continuous paddling along the river.

The City of Murfreesboro currently maintains one designated Blueway with access at the Thompson Lane and Manson Pike trailheads along the Stones River Greenway. Additional public access points are found outside the city limits, but within the urban growth boundary. These include Walter Hill Park and Nice's Mill Dam. Walter Hill Park is found along the East Fork of the Stones River while Nice's Mill is located along the West Fork.

Other public access points found along the East and West Forks of the Stones River but outside the city urban growth boundary include West Fork Recreation Area, East Fork Recreation Area and Mona Recreation Area. The Mona Recreation Area is located approximately 5.72 river miles from the Walter Hill Park access and provides a good water recreation paddling opportunity on the East Fork of the river. The West Fork Recreation Area is located approximately 5.17 miles from Nice's Mill and provides an equal opportunity along the West Fork of the river. With the exception of the two city-operated blueway access sites along the greenway, each of these recreation areas is maintained by the United States Army Corps of Engineers (USACE).

The Stones River Watershed Organization was formed in 2003 and over the last 10 years, the organization has studied potential blueway access points along the East, West and Middle Forks of the Stones River. While some of these access points are located on public property, many are located on private property and are accessible to only those who have obtained verbal or written permission from the property owners. The sites lack developed amenities such as parking, boat launches and signage and many provide access to portions of the river that are not navigable during all seasons of the year. The planning team visited each of the potential access points that have been identified by the Stones River Watershed Organization. Our observations of those locations include:

Stones River – West Fork

West Fork Stones River – Barfield (No Public Access)

Due to the widening of Barfield Crescent Road in this location, an assessment and accessibility determination was not viable. Future public access in this general location is recommended.



Highway 99 Access, West Fork Stones River (No Public Access)

Located within TDOT Right-of-Way, this access is listed as a potential site by the Stones River Watershed Organization. It is located along a gravel road that runs parallel to the Highway 99 bridge over the Stones River. The intersection with Highway 99 is dangerous for ingress and egress. Access to the river does not exist. It is unclear if the entire road is within existing right-of-way. This location would not be recommended as a future public access point.

Confluence of West and Middle Fork (No Public Access)

The access to this point along the river would be difficult because of the distance from the river to the nearest road. It would require an easement or acquisition of a parcel of land. A new trailhead along Barfield Road could provide access to the West Fork and would offer a good alternative to the access at Highway 99 location.

River Rock Boulevard (No Public Access)

This potential access point provides a link for the greenway as well as the blueway system. The property was formerly used by an athletic club and is currently vacant and for sale. In the future, should the property undergo redevelopment, easement opportunities should be explored for the greenway and blueway access.

Bridge Avenue and Molloy Lane (Future Public Access)

Identified by the Stones River Watershed Association as an access point, there is no formal signage or parking in this location. River access is also limited to a very narrow path down to the water. The distance required to carry boats from the nearest potential parking area makes this location somewhat prohibitive as a public access point.

Manson Pike (Public Access)

Located at another greenway trailhead along the West Fork of the Stones River, this access point is well marked and provides signage and a concrete ramp down to the water's edge. The ramp provides a large staging area for put in and take out as well.

General Bragg Trailhead (Future Public Access)

This location is maintained by the Parks and Recreation Department and represents an approximate midpoint between the Thompson Lane Trailhead and the Manson Pike Trailhead on the West Fork of the Stones River. There are currently no infrastructure improvements for blueway access however there is adequate parking and room to create an access point if future demand dictates.

Broad Street/Thompson Lane (No Public Access)

Located near the intersection of Broad Street and Thompson Lane across from the Stones River Greenway Broad Street Trailhead access at 84 Lumber, this location provides a future potential access point. It is currently located within an existing utility right of way and is not considered a public access site. There is a paved walkway down to the trail but access to the river is limited with only a small gravel path cleared to the river's edge.

Thompson Lane (Public Access)

Located at the Thompson Lane Trailhead along the Stones River Greenway, this blueway access is maintained by the City of Murfreesboro Parks and Recreation Department. The site is well marked and is complete with signage and adequate space for staging. A concrete launch provides good access to the river. A safety checklist is also visible for potential users of the blueway.

Nices Mill (Public Access)

Nices Mill is located on Sulphur Springs Road along the West Fork of the Stones River. The recreation area which is maintained by the United States Army Corps of Engineers is well signed and provides a large paved parking lot. Access to the river is very easy with a gravel drive providing a connection to the riverbank.

West Fork Recreation Area (Public Access)

Located at the furthest northern point along the West Fork prior to the confluence of the East Fork, this public access area is maintained by the United States Army Corps of Engineers. It is located outside the urban growth boundary and therefore was not evaluated by the planning team.

Stones River – Middle Fork

Elam Mill Road (No Public Access)

The Elam Mill Road access point is located outside the city limits. There are no improvements with the exception of a gravel lot that provides more than adequate parking. This location is on private property and would require acquisition or an easement for use as a blueway access.

County Farm Road Bridge (No Public Access)

Located outside the city limits, the County Farm Road bridge access is located near a single lane bridge on East County Farm Road along the Middle Fork. There is a steep pull-off from the main road but it is severely eroded and not manageable by a car. There are no improvements at this location and the river is not navigable certain times of year due to low flow. This site is not recommended as a future public access site.

Murfreesboro City Schools Office (No Public Access)

This location is a future potential access site. There are currently no improvements and parking is already inadequate for the school offices. Improvements would be necessary to include additional parking and infrastructure for access to the river. The riverbank was overgrown and does not currently provide access to the river's edge.

Stones River – East Fork

Brown's Mill (No Public Access)

Brown's Mill is located along the East Fork of the Stones River outside city limits. The property is owned by the City of Murfreesboro Water and Sewer Department and is currently utilized by the Parks and Recreation Department for some water based programming. There are no improvements at this location. The Tennessee Wildlife Resources Agency is currently considering the removal of a low water dam that exists in this location. The Brown's Mill site would make a good future public access point along the East Fork.

Veterans Administration Hospital (No Public Access)

Located along Lebanon Road (U.S. 231) north of Murfreesboro, the Veterans Administration provides a potential future access point along the East Fork of the Stones River. This site could be developed in conjunction with a greenway trailhead.

Walter Hill Park (Public Access)

Located north of Murfreesboro in the community of Walter Hill, Walter Hill Park is maintained by the Murfreesboro Parks and Recreation Department with adjoining property that is maintained by the United States Army Corps of Engineers. The property provides public access to the East Fork of the Stones River via a boat launch. The Walter Hill Dam is located in this location as well. Future improvements would include the need for a defined portage to carry water craft around the dam. Cooperative efforts for renovations, improvements and future construction of a greenway trail are underway.

Other Public Access Sites (located outside the urban growth boundary)

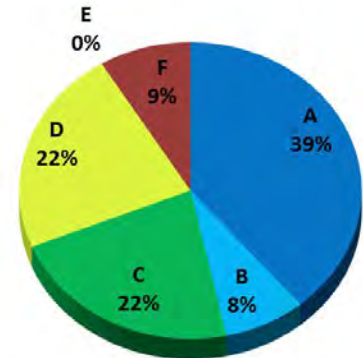
Mona Recreation Area (Public Access)

East Fork Recreation Area (Public Access)

Murfreesboro Bikeways Network

In order to assess the current conditions of Murfreesboro's bikeways network and infrastructure, a comprehensive inventory and analysis was completed. The inventory included all major roadways as identified by the City's functional classification designation, including major arterials, minor arterials, commercial collectors, community collectors, residential collectors, and residential sub collectors. The inventory process required building upon existing GIS data with measurements made in the field. In total, 311 miles of roadways within Murfreesboro's Urban Growth Boundary were inventoried to document roadway conditions (number of lanes, roadway speed, traffic volume, pavement width, and bicycle accommodations) as well as the presence of sidewalks and related attributes. Local streets are considered outside the scope of this route plan, but should be considered on a project-level basis for implementation of local bicycle and pedestrian accommodations.

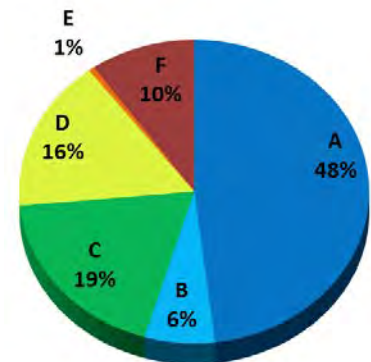
BLOS	Miles
A	121
B	24
C	69
D	70
E	0
F	27
TOTAL	311



Currently, there are approximately 21.7 miles of bike lanes and 7.0 miles of signed bike routes within the study area. All of the bike lane miles and 66% of the bike route miles are within the city limits. While these types of facilities are generally assumed to be adequate for cyclist use, there are other roads which may also be quite adequate for cyclist use based on existing roadway characteristics.

BLOS Statistics for Area Inside Urban Growth Boundary

BLOS	Miles
A	89
B	12
C	35
D	30
E	1
F	18
TOTAL	185



BLOS Statistics for Area Inside City Limits

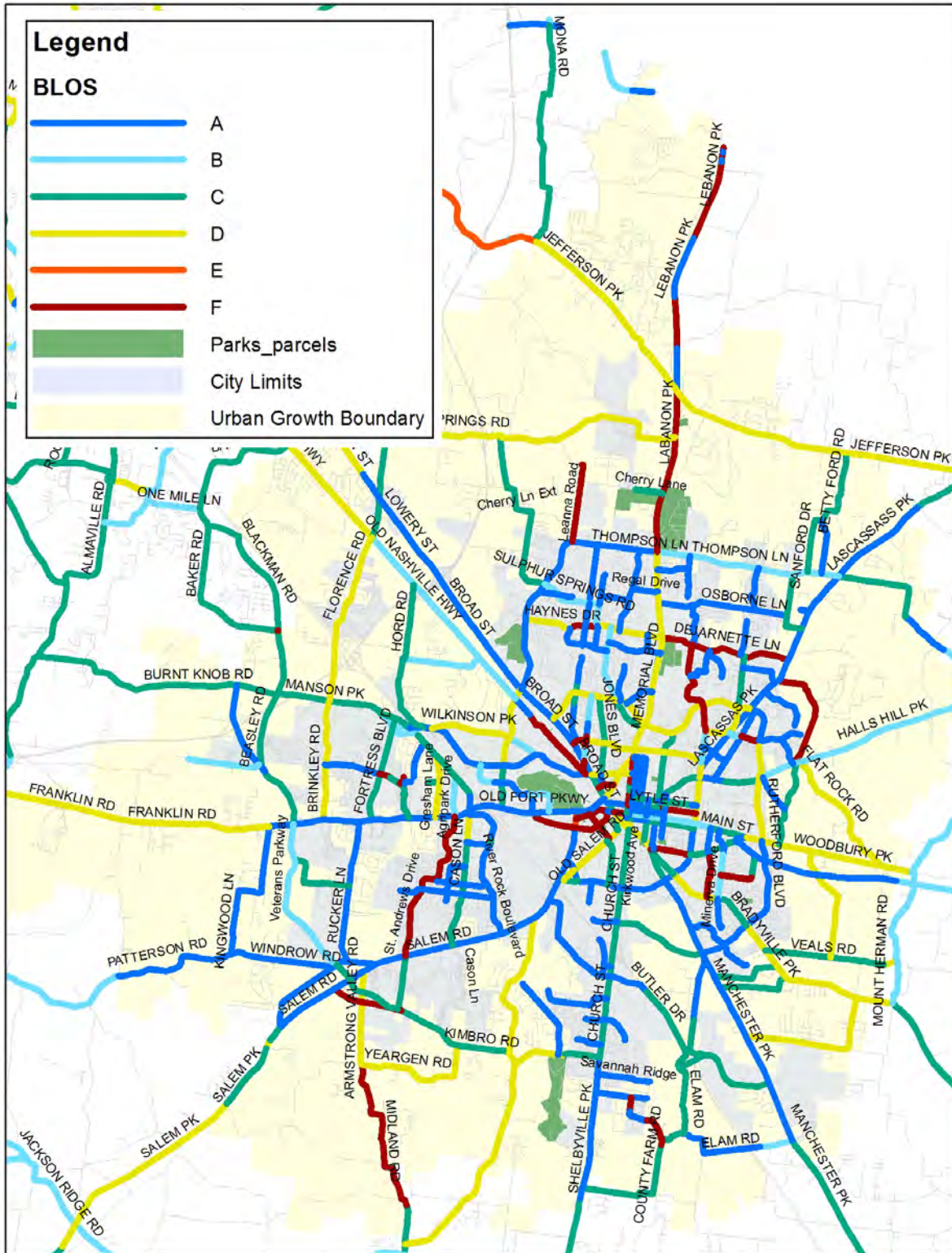
Using the procedures documented in Volume 3 of the Highway Capacity Manual (HCM), the Bicycle Level of Service (BLOS) was determined for the inventoried roads in the study area. BLOS is a way to objectively rate the quality of roadways for cyclists. The BLOS score is based on research which gauged the comfort level of cyclists of all age groups and riding capabilities when asked to ride on a variety of roadway conditions. The roadway condition factors used in the BLOS calculation include the Average Daily Traffic (ADT) volume, number of through lanes on the roadway segment, speeds, percentage of trucks, the width of the outside travel lane, shoulder, and bike lane, the condition of the pavement, and the occupancy rate of on-street parking. The result is a score ranging from A to F with A being the best conditions and F the worst conditions.

Several conclusions are drawn from the BLOS analysis in Murfreesboro:

- The overall results of the analysis would indicate that on-street bikeway conditions are predominately quite suitable within the study area. However, two aspects of this analysis may temper these findings for many cyclists.
 - The City of Murfreesboro designates a high proportion of city streets as being functionally classified. This means that a significantly high number of low volume

residential streets are included in the inventory and analysis and drives up the percentages of roads deemed adequate for cycling by the BLOS procedure.

- Secondly, the BLOS procedure does not consider access conditions such as driveways and intersections. Examples of the importance of this are Broad and Church Streets which were rated as most acceptable (LOS A) to marginally acceptable (LOS C), respectively. In reality, the conflicts along these street segments from numerous driveways and large intersections would make cycling on these streets unfeasible for many potential cyclists.
- Bicycle suitability for roads within the Urban Growth Boundary do not drastically differ from current city streets. This is encouraging, and speaks to the importance of maintaining shoulder requirements for rural roads. Adequate bike facilities should be incorporated as these roads are improved to have a more urban cross-section.
- The apparent adequacy of many of the roads in the study area indicates that there is a significant opportunity to implement more formal bicycling infrastructure and designation with little actual construction. For example, a street may have a high LOS due to a favorable combination of wide lanes and low speeds. Improving on this existing condition with just a restriping project could formally implement a bike lane which would be expected to lead to greater comfort and use by potential cyclists.
- Recent road building projects in Murfreesboro, though often not explicitly incorporating bicycle infrastructure, have left open an opportunity to retrofit these facilities. This gives the opportunity to have bike accommodations which extend over long distances and make connections which will grow in significance in the future as land uses urbanize in these areas.



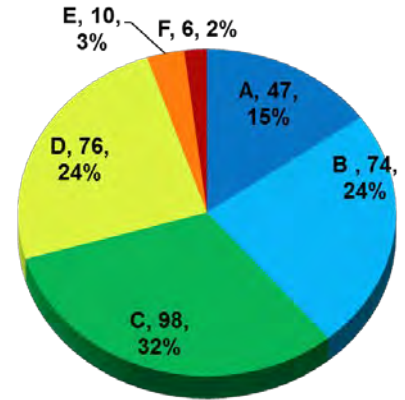
Existing Bicycle Level of Service (BLOS)

Murfreesboro Pedestrian Network

The inventory also included pedestrian facilities within the study area. Of the approximately 330 miles of classified streets within the urban growth boundary area, 96 miles (29%) currently have sidewalk. However, as described for bicycle facilities, many additional miles of road exist which, by engineering analysis, are considered to be suitable for pedestrian travel despite the lack of a sidewalk. In this analysis, 219 miles (66%) of street were found to have a pedestrian level of service (PLOS) of A, B, or C.

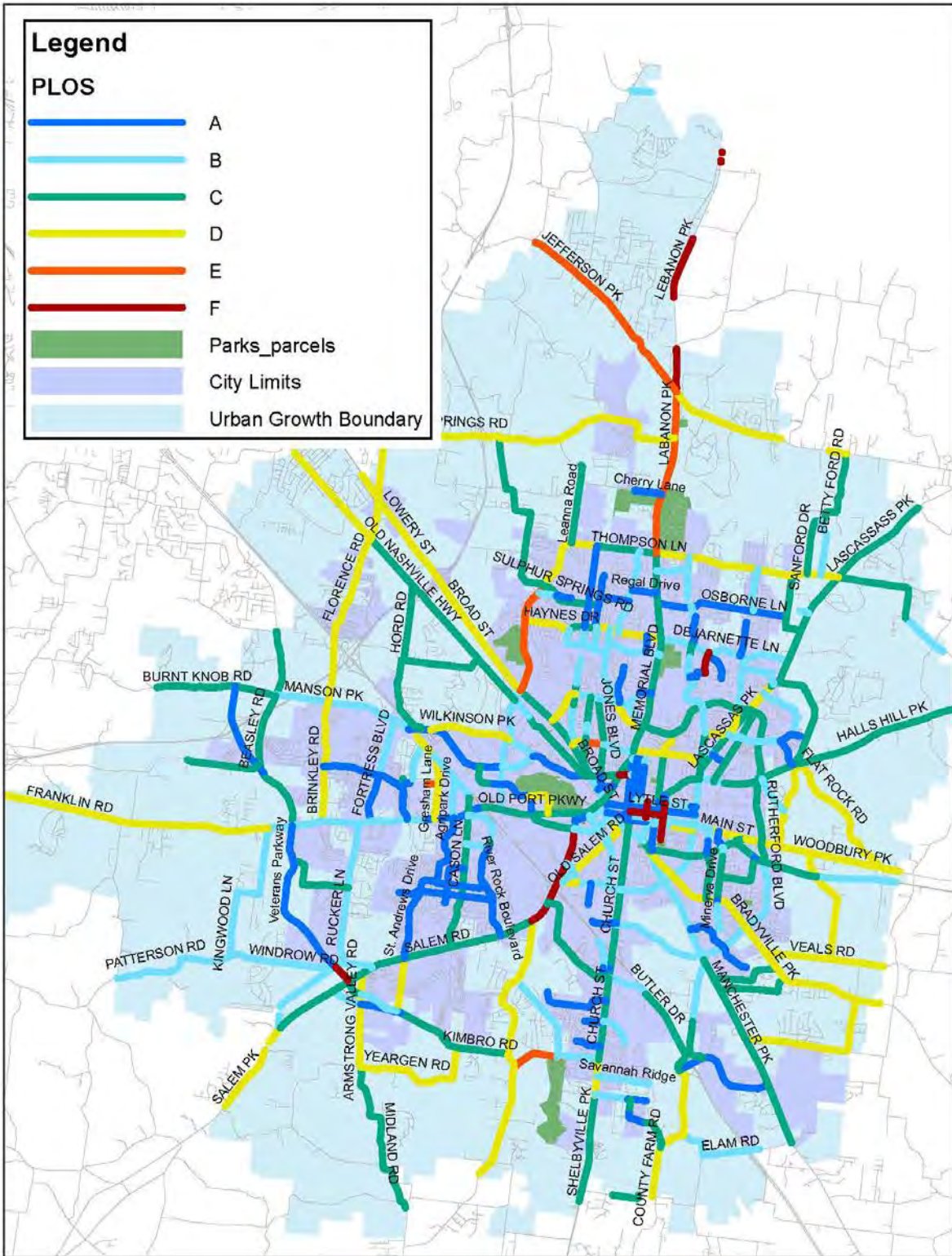
As in most cities, sidewalks in Murfreesboro are most prevalent in the core downtown area. While many relatively new or reconstructed streets have been improved with sidewalks (Middle Tennessee Boulevard, Northfield Boulevard, Church Street, etc.), other arterial and collectors streets have none (Thompson Lane, Broad Street, Old Fort Parkway, etc.).

PLOS	Miles
A	47
B	74
C	98
D	76
E	10
F	6
TOTAL	311



PLOS Statistics for Area Inside Urban Growth Boundary

The presence of adequate pedestrian facilities is always desirable, but having these accommodations becomes a critical need when deciding to make a trip by foot. As mentioned, the City's street standards require sidewalks be constructed as part of new development. Sidewalk retrofits, particularly in established residential areas will become equally if not more important in order to fully capitalize on future greenway investments. However, many primary destinations (shopping, schools, parks, etc.) in proximity to the greenway are already or can be reasonably connected by means of new greenway connectors or other facilities to promote opportunities for complete non-motorized trip making.



Existing Pedestrian Level of Service (PLOS)

Demand for Existing Facilities

To give local planners, engineers, and City staff a decision tool that helps to visualize the real need for walking and biking facilities within the study area, a demand intensity map was produced. At the macro level, this is a regional bike and pedestrian model that incorporates the entirety of the transportation planning area of the Murfreesboro region. Aside from the scope of the model's planning area, however, this procedure is very much a microscopic one, producing a parcel-level analysis fit for walking and biking trips.

This analysis is developed by using each parcel's demographic information and proximity to other land uses to predict how many walking and/or cycling trips the parcel will likely generate under ideal conditions. This information can be used to help understand the propensity for non-motorized transportation activity in an area and to help predict where transportation investments will have the greatest impact.

Some important aspects of the analysis are:

- The model predicts one-way, daily walking or biking trips from every parcel in the study area. However, the effects of trip chaining are not accounted for.
- Eight different types of walking trips are estimated and five different types of bike trips are estimated. These are: walk to school, walk to recreate, walk to shop, walk to work, walk to errand, walk to transit, walk from transit, walk from parking, bike to school, bike to recreate, bike to shop, bike to work, and bike to errand.
- The origin of the trip takes preeminence over the destination in the model. Households are the most common trip origins, but trips also originate from workplaces and transit stops. Although trips are attributed only to the originating parcel, there must be a suitable destination in proximity for the trip to occur. In other words, the model requires both an origin and a destination to generate a trip, but the trip is attributed to its origin.
- The trip model assumes ideal bike and pedestrian conditions. This includes uninterrupted connectivity of facilities at regular intervals that are in good condition. This assumption may be close to actual conditions in urban downtown settings, but is usually far from the reality in suburban and rural areas. This aspect contrasts the trip model with the LOS analysis, which considers the actual condition of the facility, but does not account for its usage.

How the Trip Model Works

To estimate the walking or cycling trips for a parcel, several things must be known about that parcel; namely, its household count, employment characteristics, and the shortest distance to the nearest school, recreational facility, retail area, and transit stop. Also, some information relative to its proximity to employment in the study area and whether any substantial public parking exists is important.

Once the distance relationships to other land uses are known, the effect of distance on making the walk or bike trip is quantified. This is done using a series of distance impedance curve equations developed by RPM from data in the National Household Travel Survey. The more proximate the land use, the more likely that the trip will be made by walking or cycling. Each parcel in the study area, then, has an impedance probability for every walking and biking trip type. The impedance probability is one factor in the total trip generation process.

Next, employment and population attributes are used in series of trip type equations. These equations follow the general formula shown below:

(No. households in the parcel)¹ x (type-specific factor series) x (impedance probability)

The first two terms in the equation quantify the number of non-motorized trips that are likely to occur based on national averages and assumptions regarding each parcel's trip making characteristics, without respect to how far the walking or cycling trip would be. The last term, the impedance probability as described above, accounts for the inverse relationship that distance has on these trips.

The result of the equation for each trip type is the expected number of walking and cycling trips by type. These trips can be reported individually by trip type. However, these trips are also summed to obtain the total number of one-way walking and cycling trips on a typical work/school day.

Specific Considerations by Trip Type

Travel to School: Only applied to residential parcels. Uses U.S. Census data to determine numbers of school-age children by parcel. Uses a proximity factor to scale down trips because not all children attend the school they live closest to.

Travel to Recreation: Only applied to residential parcels. Uses national data to factor the number of recreational trips made as a proportion of all trips made. Recreation trips are only made in the model if the household is in proximity to a park. In reality, many recreational trips have destinations other than a park, or have no destination at all, making these difficult to predict.

Travel to Shop: Only applied to residential parcels. Uses national data to factor the number of shopping (including personal service such as a haircut) trips made as a proportion of all trips made. Uses a proximity factor to scale down trips because not all shopping trips are made to the retail area closest to home.

Travel to Work: Only applied to residential parcels. Uses national data to factor the number of work trips made as a proportion of all trips made. Proximity to employment density used to estimate likelihood of trips. Uses a proximity factor to scale up trips to account for desirability to live close to work. Number of travel to work trips found to be very low because of employment density method.

Travel to Errand: Estimation of errand-type trips from work to other commercial uses. Only applied to workplace parcels where retail exists within ½ mile. Uses national data to factor the number of errand trips made as a proportion of all trips made. Proximity of employment to retail sales and services used to estimate likelihood of trips.

Walk to Transit: The first of two transit walking trips, this one estimates trips from home to the transit stop. Only applied to households within 1 mile of a transit stop. Uses national data to factor the number of all trips made using transit as a proportion of all trips made using other modes. Proximity of households to transit stops used to estimate likelihood of trips. The

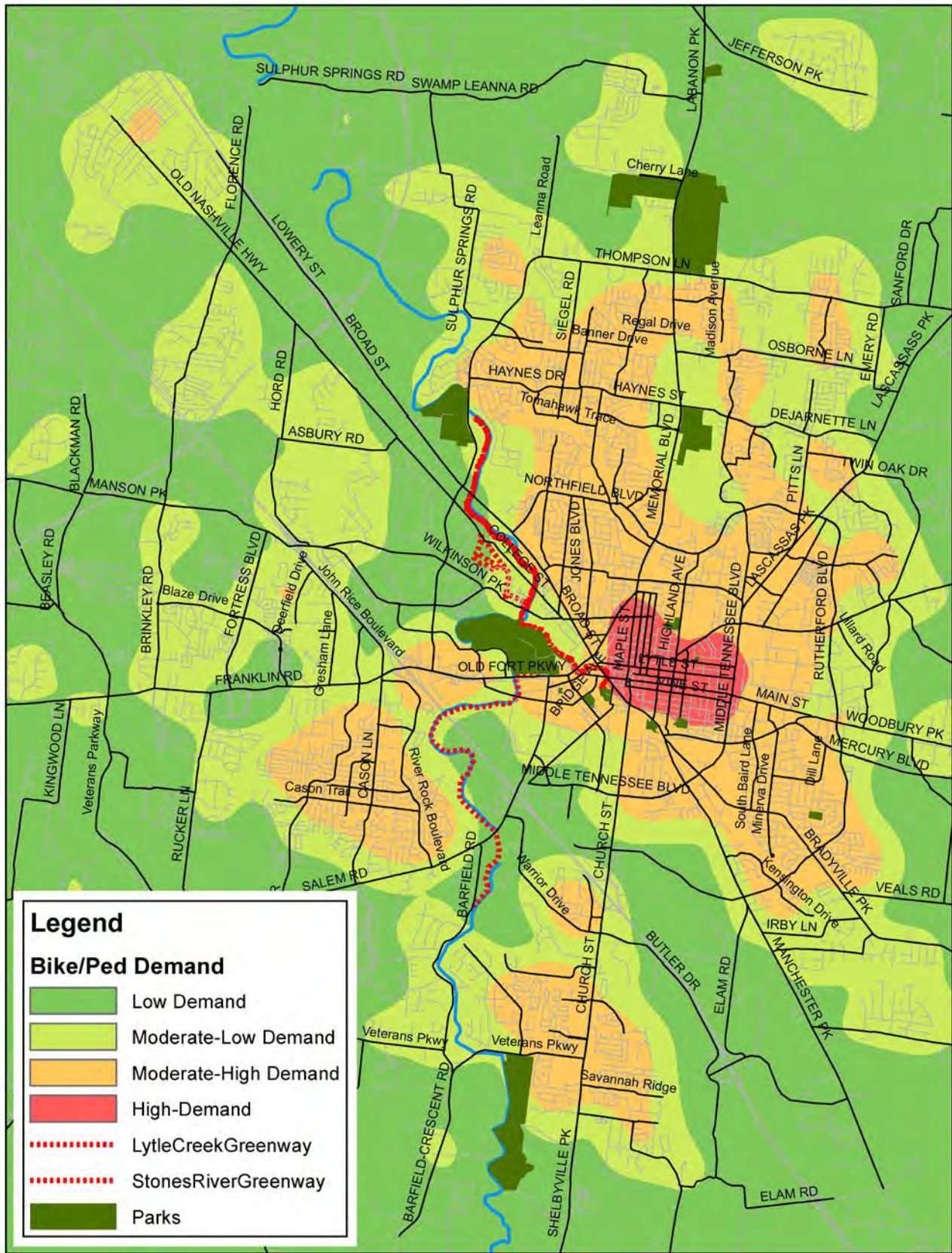
¹ This is the common equation form for trip types with households as the origin. Several trips types do not use the number of households as a determinant and would therefore have a different equation form.

impedance curve for this trip was developed using data from a transit on-board survey conducted in an urban area (Nashville, TN).

Walk from Transit: The second of two transit walking trips, this one estimates trips from the transit stop to a final destination (based on employment). This is the only destination-based trip type and is only applied to employment sites within 1/2 mile of a transit stop. Uses the number of boarding trips from the Walk to Transit trip type listed above. Proximity of employment to transit stops and the relative amount of employment at each site used to estimate likelihood of these trips.

Walk from Parking: Only applied to major public surface parking lots and/or parking garages. Assumes that walk trips will originate from all parked vehicles. Uses parking space turnover and garage occupancy factors to scale up and down trips, respectively.

Note that the last three trip types are only applicable for walking trips and were not determined for cycle trips. The Nashville MTA On-Board Survey, which was conducted in 2006, found that over 87 percent of all transit trips were made after walking to the bus stop as opposed to only 0.5 percent being made after cycling to the bus stop. Therefore, Bike to Transit was not derived in the model. Likewise, there is not expected to be a significant number of weekday bike trips made after driving to a parking lot, other than perhaps at a greenway trailhead, park, or similar area. Therefore, Bike to Parking was not derived in the model.



Non-Motorized Travel Demand (relative intensities)

**CITY OF MURFREESBORO
GREENWAYS, BLUEWAYS, & BIKEWAYS MASTER PLAN**

TECHNICAL MEMORANDUM #3: CAPITAL IMPROVEMENT NEEDS

In 2011, the City of Murfreesboro initiated the development of the Greenways, Blueways, and Bikeways (GBB) Master Plan to help identify and coordinate implementable improvements in recreation and non-motorized transportation over the next 25 years.

This technical memorandum presents the capital improvement needs that have been identified through the development of the plan. The proposed improvements have been identified as a result of an analysis of the existing infrastructure conditions and an identification of the needs within Murfreesboro for non-motorized transportation and recreation as identified through technical analyses and local stakeholder and public input. These needs are identified in Technical Memorandum #2. The proposed improvements are also recommended because they align directly with one or more of the locally-developed objectives for the GBB system as identified in Technical Memorandum #1.

Successful implementation of the GBB Master Plan will address the primary needs of this type of infrastructure through the planning horizon. The intent of this technical memorandum is to identify these needs. Murfreesboro's GBB needs can be summarized into two major categories: infrastructure and non-infrastructure. Infrastructure needs are physical elements of the built environment like greenways, river launches, and bike lanes and are described in this technical memo as capital improvements. Non-infrastructure recommendations are discussed in Technical Memorandum #5 and include policies and programs which facilitate use or implementation of a successful GBB system.

Various aspects of Murfreesboro's GBB capital improvement needs which are addressed in this technical memorandum include: a project prioritization methodology, identifying the needs themselves, providing recommendations for phased project implementation, and estimating the costs of the recommended improvements.

Project Prioritization Methodology

As capital budgets remain tight, the proposed improvements found within the GBB plan will have to be implemented over a number of years and will have to compete with other city priorities. As such, it is desirable to have an objective and predictable way in which to allocate ever-scarce funds to these projects. In the development of the GBB plan, local stakeholders and citizen participants rated the relative importance of six aspects of GBB implementation. From this information, a scoring matrix was developed.

This matrix and procedure can be used to assist the city as it considers funding citywide bicycle and pedestrian investments. It should be recognized, however, that strict adherence to such a process is not always advisable. For instance, opportunities may arise in which time is of the essence in acting for the benefit of promotion of the GBB system (e.g. purchase of available land). In such a case, subjecting these decisions to this prioritization methodology may not best serve the GBB system as intended.

An evaluation such as this should also be used within the context of the recommended tiered project phasing presented later in this technical memorandum. The recommended project tiers outline a more general strategic approach to phasing that builds system effectiveness as improvements are implemented. Rather, this matrix can be used within the tier system to help make decisions as to what type of improvements may be most cost effective given the local public and stakeholder stated objectives.

Prioritization Criteria	Evaluation Metric and Scoring				Score Multiplier	Total Score	Max Score (for reference)
Project adds to overall length of GBB system	Off Road (Greenway, Greenway Connector, Multi Use Path)		On Road (Bike Route, Sidewalk, Bike Lane)		20		200
	Greater than 2 miles	Less than 2 miles	Greater than 2 miles	Less than 2 miles			
	10	8	7	5			
Project provides connections to destinations (neighborhoods, shopping, schools, etc.)	2 x _____ (number of connected destinations - up to 5)				30		300
Project retrofits existing substandard facility (ex. widen an existing greenway) ¹	Existing facility is brought into ADA compliance		Existing facility is improved, but with no change in compliance status		10		100
	10		5				
Project is especially likely to have high usage (in a high demand area – from model)	Non-Motorized Demand (from demand map shown in Technical Memorandum #2)				15		150
	High	Moderate-High	Moderate-Low	Low			
	10	7	4	0			
Project is inexpensive, limited in scope, and/or has little environmental impact ²	Less than \$100,000 per mile		Between \$500,000 and \$100,000 per mile		5		50
	10		5				
Project links other recreational opportunities (parks, blueways, etc.) ³	Links two or more recreational facilities		Links one recreational facility		20		200
	10		5				
Total possible score (for reference)							1000

¹ No points awarded if an existing facility is not improved.

² No points awarded for projects costing more than \$500,000 per mile.

³ No points awarded if project does not connect to a recreational facility.

Recommended Capital Improvement Projects

The intent of the recommended capital projects of the GBB Master Plan is to identify corridor level facilities, not necessarily to identify specific routing (for off-road improvements) or design-level details. These specific details are expected to follow this plan as certain projects move into the implementation stages including project design.

General project types found in the proposed improvements plan are:

Greenway: a typical 10' – 16' wide paved off-street path generally following an established water course and having few or no at-grade crossings of roadways.

Greenway Connector: a paved off-street path that usually serves to connect specific properties to a greenway. Usually planned on public or institutional properties, an 8' – 12' width is expected. At-grade street crossings will be required, and must be designed appropriately as the project is implemented.

Multi-Use Path: constructed within the right-of-way of a roadway, this 8' – 12' paved path is ideally separated from the edge of the road by at least 5'. Where curb-and-gutter is used and right-of-way is constrained, the path may be constructed without a buffer to resemble a wide sidewalk. At-grade street crossings (signalized and unsignalized) are common.

Bike Lane: a signed, dedicated lane for cyclists on the roadway having a minimum width of 4'. Modifications to the traditional bike lane including buffered bike lanes and cycle tracks should be considered in the project's design phase.

Bike Route: a signed route (sometimes including pavement markings) for bicycle use but with no dedicated infrastructure. Examples may be roads with wide shoulders, striped shared lanes ("sharrows"), or low-speed, low-volume streets.

Greenway System Improvements

Over the last 20 years, the City of Murfreesboro has developed a high quality greenway system that extends for over 12 miles, making it a leader in the state for off-road facilities. The GBB Master Plan was initiated to provide the City with the tools to continue the momentum of the bike and pedestrian network and to provide a road map for the next 25 years. Taking advantage of the river and stream network found throughout the City and Rutherford County, a blueway component was also added to the master plan to provide improved water recreation opportunities for the system. With a public input process that included an Advisory Committee of city staff and citizens and open public forums that allowed for the general public to give input, a master plan was developed with recommendations for the next 25 years. These recommendations take into account the priorities identified in the public input process and those projects that provide the highest benefit for the residents of Murfreesboro.

Greenway Recommendations

The existing Stones River, Lytle Creek, and Gateway Trails provide off road recreation opportunities in a central location to the city. Input from the public and the advisory committee indicated a desire to see the overall system lengthened in mileage and to provide connections to destinations such as parks, commercial areas, neighborhoods, and schools. Providing links

from the greenways to downtown and Middle Tennessee State University were also high priorities for residents.

Review of existing planning initiatives revealed several projects that are ongoing. The Stones River Greenway (Phase IV) is under development and is currently in the right-of-way acquisition phase. The project is funded and will extend the Stones River Greenway from its current terminus at Barfield Road, south to Barfield Crescent Park. It is anticipated that this project will move to construction sometime in 2013. The North Murfreesboro Greenway Trail is another ongoing project that will provide an off-road trail network to a currently underserved area of the city. The trail is being coordinated by the United States Army Corps of Engineers and is in the design phase, awaiting release for construction. Funding for this project has been appropriated and it is anticipated it will move forward in 2013. These projects will add 2.25 and 3 miles respectively of paved trails to the system. Additional soft surface trails will also be included as part of the improvements and will accommodate equestrian users as well.

Other projects that have been studied for their feasibility include an extension of the Stones River Greenway from the confluence of the west and middle forks of the Stones River traveling southeast along the middle fork to the General Mills property along Butler Drive. The desire to provide a connection from the Children's Discovery Center at Murfree Spring on Broad Street to the Stones River Greenway at Cannonsburgh prompted a feasibility study for making that connection. The feasibility study looked at two alternatives; a crossing of Church Street via a tunnel or a bridge. The final concept design called for the addition of a tunnel under the roadway with an on-street multi-use path connecting to Cannonsburgh.

A total of 67 miles of off-road trails and 24 new trailheads have been recommended for development over the next 25 years. The routes focus on improving connectivity between large community parks, neighborhoods and commercial areas and on providing trails to currently underserved segments of the population. In conjunction with bike lanes and multi-use paths, the proposed greenways begin to provide a system that encompasses the entire perimeter of the City of Murfreesboro. Greenway Connector routes penetrate the central corridors of the city and link up community parks, downtown and MTSU to the perimeter. Wherever possible, grade separated crossings such as bridges or tunnels should be included at major thoroughfares. When road widening projects are initiated, tunnels in the location of planned greenway crossings should be considered to allow for the future connection of trails under the roadways.

Trailheads have been strategically placed along primary vehicular corridors for ease of access and wayfinding of the trail. These trailheads are intended to provide parking, restrooms, picnic facilities and other amenities similar to existing trailheads found along the Stones River Greenway. They have been located approximately 3-miles apart in most locations to provide good access for all residents. It is anticipated that ancillary trailheads, on a much smaller scale, will be provided in other locations as development occurs. These trailheads will link to subdivisions and other commercial areas that develop along the trail corridor. They may or may not provide parking and in most cases will likely not have restroom facilities. These access points may be built as part of larger developments that occur along the trail or by the city as demand dictates.

Two projects that bring very specific benefits to the system include the trailhead located at the confluence of the west and middle fork of the Stones River on Barfield Road and the trailhead located along River Rock Boulevard. Each trailhead would not only serve as a blueway access point but also provide a critical connection to other parts of the system via bridges at those locations. The bridge along River Rock Boulevard would offer direct access to the existing

Stones River Greenway and would serve as an alternate route for cyclists who wish to avoid the congested areas along Old Fort Parkway. The trailhead and bridge at the confluence of the west and middle forks would provide access to the southeast along the middle fork of the Stones River.

Blueway Recommendations

The West, Middle and East forks of the Stones River provide excellent opportunities for recreational paddle sports. As noted in the Existing Conditions Inventory, there are currently seven (7) locations for public access in and around the City of Murfreesboro. The Parks and Recreation Department currently maintains one (1) designated blueway with a put-in at the Manson Pike Trailhead along the Stones River Greenway and a take-out at the Thompson Lane Trailhead in addition to maintaining a joint put-in with the United States Army Corps of Engineers (USACE) at Walter Hill Park. Four (4) locations are maintained and controlled by the USACE. They provide parking, boat ramps and signage regarding rules and safety on the water.

The Stones River Watershed Association (SRWA) has identified access points along all three forks of the Stones River in and around Murfreesboro. These sites are very limited in amenities and many cannot be considered public access because they lack formal use agreements. The planning team reviewed access points identified by the SRWA and has recommended 14 locations in addition to the seven (7) public access locations that currently exist. Some of these locations will only be seasonally accessible due to low flow during different times of year. It will be necessary for the City to monitor river levels throughout the year and close those locations that are not navigable during certain periods. The following represents the 21 locations recommended for the Murfreesboro Blueway system.

Map ID	Stones River (West Fork)	Current Status	Ownership
1	Veterans Pkwy	No Public Access	Private
2	West and Middle Confluence	No Public Access	Private
3	Cason Trail	Future Public Access	City of Murfreesboro
4	River Rock Boulevard	No Public Access	Private
5	Bridge Ave. & Molloy	Future Public Access	City of Murfreesboro
6	Manson Pike	Public Access	Ownership
7	General Bragg Trailhead	Future Public Access	City of Murfreesboro
8	Thompson Lane	Public Access	City of Murfreesboro
9	Nices Mill	Public Access	USACE
21	West Fork Recreation Area	Public Access	USACE

Map ID	Stones River (Middle Fork)	Current Status	Ownership
10	Elam Mill	No Public Access	Private Owner
11	Joe B. Jackson Trailhead	No Public Access	Private Owner
12	City Schools Office	No Public Access	City Board of Education

Map ID	Stones River (East Fork)	Current Status	Ownership
13	Guy James Road	No Public Access	Private Owner
14	Brown's Mill	No Public Access	City of Murfreesboro
15	Lascassas Pike	No Public Access	Private
16	Betty Ford Road	No Public Access	Private
17	VA Hospital	No Public Access	Veterans Administration
18	Walter Hill Park	Public Access	USACE
19	Mona Recreation Area	Public Access	USACE
20	East Fork Recreation Area	Public Access	USACE

The 14 proposed access sites are controlled by various agencies. Those owned by the City of Murfreesboro will provide the greatest opportunity in the near future to develop river access. Those controlled by other public entities should present the greatest opportunity for negotiating easements. Those held in private ownership will require land acquisition or easements to permit development. Three (3) locations under private ownership are recommended for development as trailheads for the existing greenway and blueway system. Those locations include:

- West and Middle fork confluence (Barfield Road)
- River Rock Boulevard
- Joe B. Jackson Trailhead

With the eventual development of the greenway in these locations, river access can be provided similar to that of the Manson Pike and Thompson Lane trailheads on the existing Stones River Greenway. In addition to the easements and land acquisition required for trailheads, it will be necessary to acquire land for the development of canoe portages around the existing dams found on each of the 3 forks of the Stones River. The following provides a look at the point to point river mileage between each of the existing and proposed river access trailheads. The 21 locations provide over 50 miles of water recreation and paddling opportunities.

Stones River (West Fork)

From	To	Distance (mi)
Veterans Pkwy	Middle Fork Confluence	2.20
West and Middle Fork Confluence	Cason Trail	1.20
Cason Trail	River Rock Boulevard	1.20
River Rock Boulevard	Bridge Avenue & Molloy	1.00
Bridge Avenue & Molloy	Manson Pike Trailhead	2.22
Manson Pike Trailhead	General Bragg Trailhead	1.21
General Bragg Trailhead	Thompson Lane Trailhead	1.43
Thompson Lane Trailhead	Nices Mill	7.11
Nices Mill	West Fork Recreation Area	5.17
Total		22.74

Stones River (Middle Fork)

From	To	Distance (mi)
Elam Mill	Joe B. Jackson Trailhead	2.84
Joe B. Jackson Trailhead	City Schools Office	2.00
City Schools Office	West Fork Confluence	1.78
Total		6.62

Stones River (East Fork)

From	To	Distance (mi)
Guy James Road	Brown's Mill	2.38
Brown's Mill	Lascassas Pike	3.00
Lascassas Pike	Betty Ford Road	3.37
Betty Ford Road	VA Hospital	3.67
VA Hospital	Walter Hill Park	1.58
Walter Hill Park	Mona Recreation Area	5.72
Mona Recreation Area	East Fork Recreation Area	2.50
Total		22.22

It is anticipated that the City of Murfreesboro would develop 12 of the currently undeveloped locations due to their proximity within the city limits or just outside in the urban growth boundary. Those 12 sites include three (3) located at existing trailheads along the Stones River Greenway, three (3) located at proposed trailheads along the expanded greenway system, two (2) at locations identified on government agency controlled property, and four (4) at stand-alone facilities that would be for the specific use of the blueway system.

The existing trailheads that could be expanded to accommodate water access include General Bragg, Cason Trail and Bridge Avenue & Molloy. With the exception of Bridge Avenue & Molloy, each has existing infrastructure that could provide the necessary support amenities for the blueway trailheads. Additional improvements would be minimal to make those sites viable. The Bridge Avenue & Molloy location would require the addition of parking and a staging area as well as a boat access.

Proposed access points on the expanded greenway system include a point near the confluence of the west and middle forks of the Stones River, and new trailheads recommended at River Rock Boulevard and Joe B. Jackson. These sites should include all the amenities found at the Thompson Lane and Manson Pike Trailheads.

Two (2) locations are recommended on property that is owned by other government agencies. The location on the Veterans Administration hospital property is proposed to be a joint greenway and blueway trailhead. It is anticipated that this would be a large trailhead and include the amenities found at other joint trailheads in the system. The second location at the City Schools office site is proposed to be a blueway access site only. It is anticipated that additional parking and river access improvements would be necessary.

The four remaining sites are recommended as single purpose sites for the blueway system only. These locations include Barfield Crescent on the west fork and Brown's Mill Road, Lascassas

Pike and Betty Ford Road on the east fork. Improvements would include at a minimum, parking, staging areas, ramps and signage.

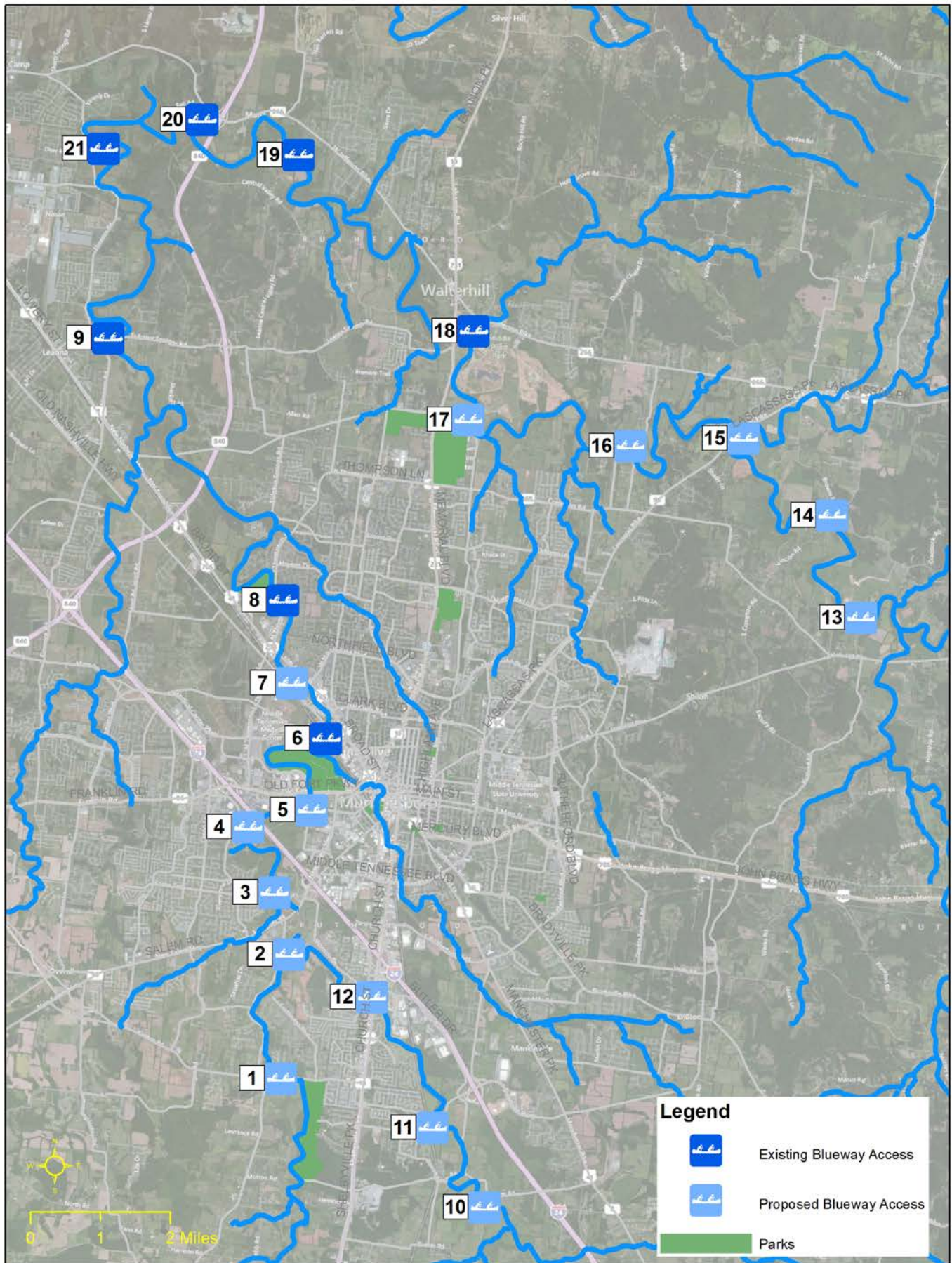
There are two remaining locations that are well outside the urban growth boundary. The location at Guy James Road and Elam Mill Road would likely be joint developments by the City and a partner agency. The location at Guy James Road is owned by Middle Tennessee State University and presents an excellent opportunity for a joint development with the city.

Blueway System Improvements

As the city looks to expand its blueway system, design elements that will be common among all sites include:

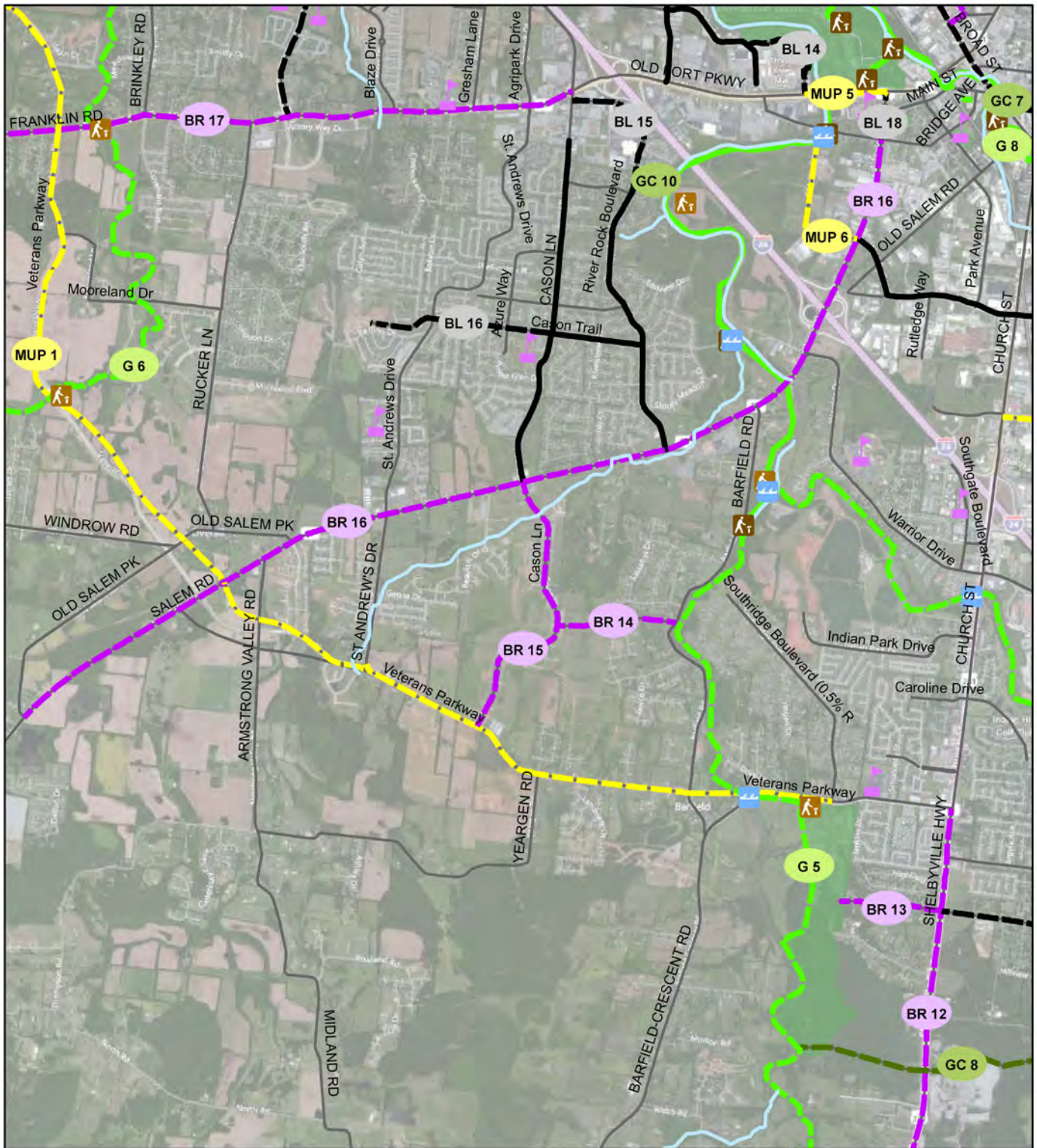
- Signage (wayfinding, safety and rules, maps, interpretive, mileage markers, etc.)
- Parking
- River access points (concrete launches, steps, slide rail for small boats, etc.)
- Amenities (trash cans, benches, pavilions, access gates, security lighting)
- Portages around dam structures and other obstacles in the river

Blueway development around the city should follow a design approach that takes into account the sensitive riverine environment where they will be constructed. Low impact development and the use of best management practices (BMP's) for handling all stormwater runoff from parking and roadway surfaces should be employed. Designs should also take into account flood-prone areas and be built to withstand heavy rain events when floodwaters may rise outside the riverbanks.

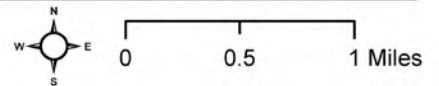


On-Street Improvements

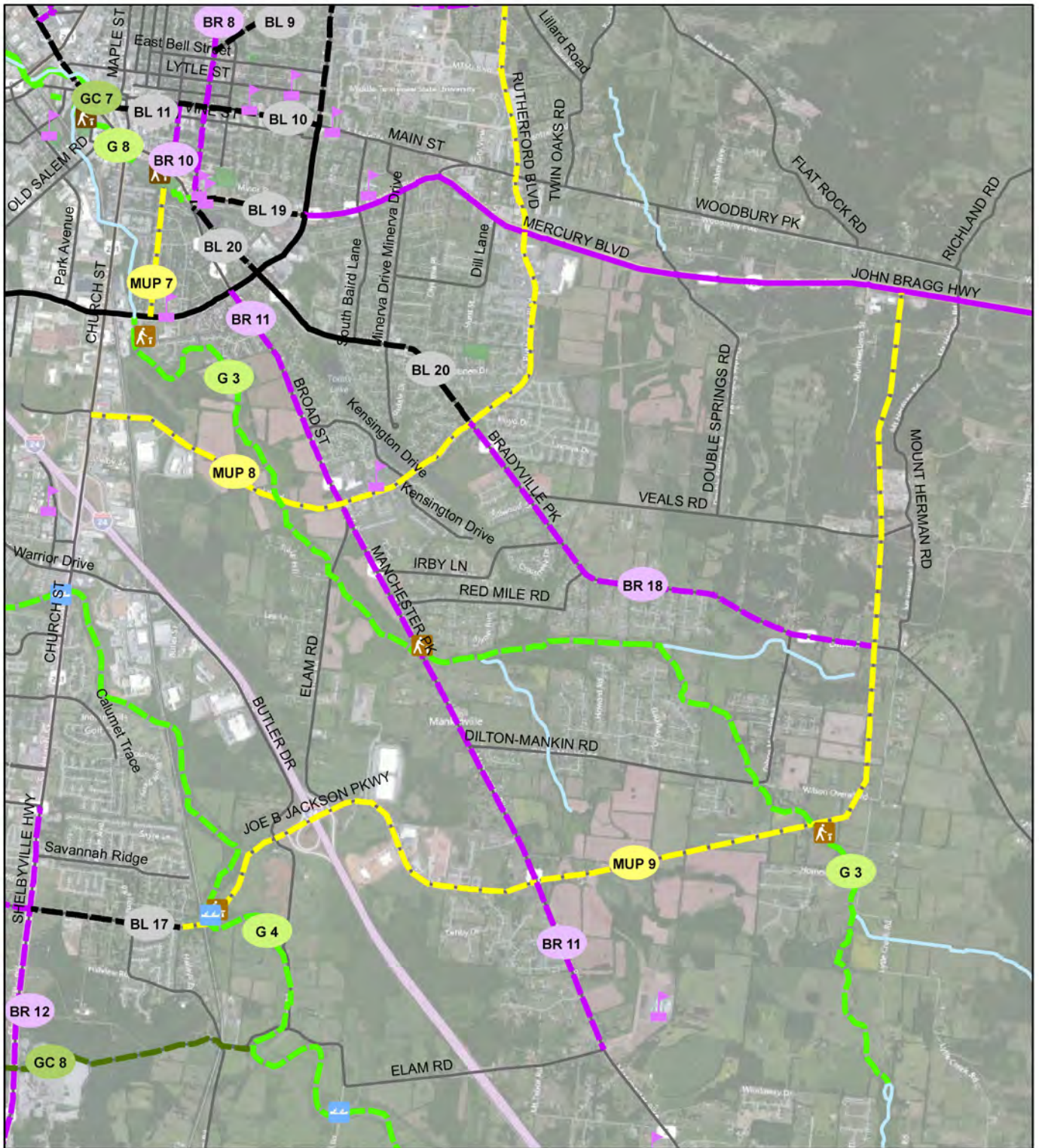
The City of Murfreesboro maintains an inventory of roadway classifications for all roads in the city, as determined by the Major Thoroughfare Plan. This roadway classification listing, as well as the existing greenway network, was used as the basis for making GBB enhancement recommendations. On-road GBB improvements are limited to the rights-of-way of certain functionally classified streets (major arterials, minor arterials, commercial collectors, community collectors, residential collectors, and residential sub-collectors). Local residential streets are generally adequate for non-motorized travel due to low speeds and low volumes and do not warrant special GBB system designation. Off-road GBB improvements have generally been constrained to the floodways of the Stones River and significant tributaries which have not been developed such that future greenway construction is precluded. Other off-road improvements such as greenway connectors do not follow water courses, but have generally been limited to publicly or institutionally owned parcels.



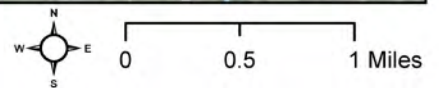
- | Existing Facilities | | Proposed Facilities | |
|-----------------------|------------|---------------------|------------|
| Exist. Trailhead | Bike Lane | Bike Lane | Bike Lane |
| Prop. Trailhead | Bike Route | Bike Route | Bike Route |
| Exist. Blueway Access | Greenway | Greenway Connector | Greenway |
| Prop. Blueway Access | Parks | Multi-Use Path | |
| Schools | | | |



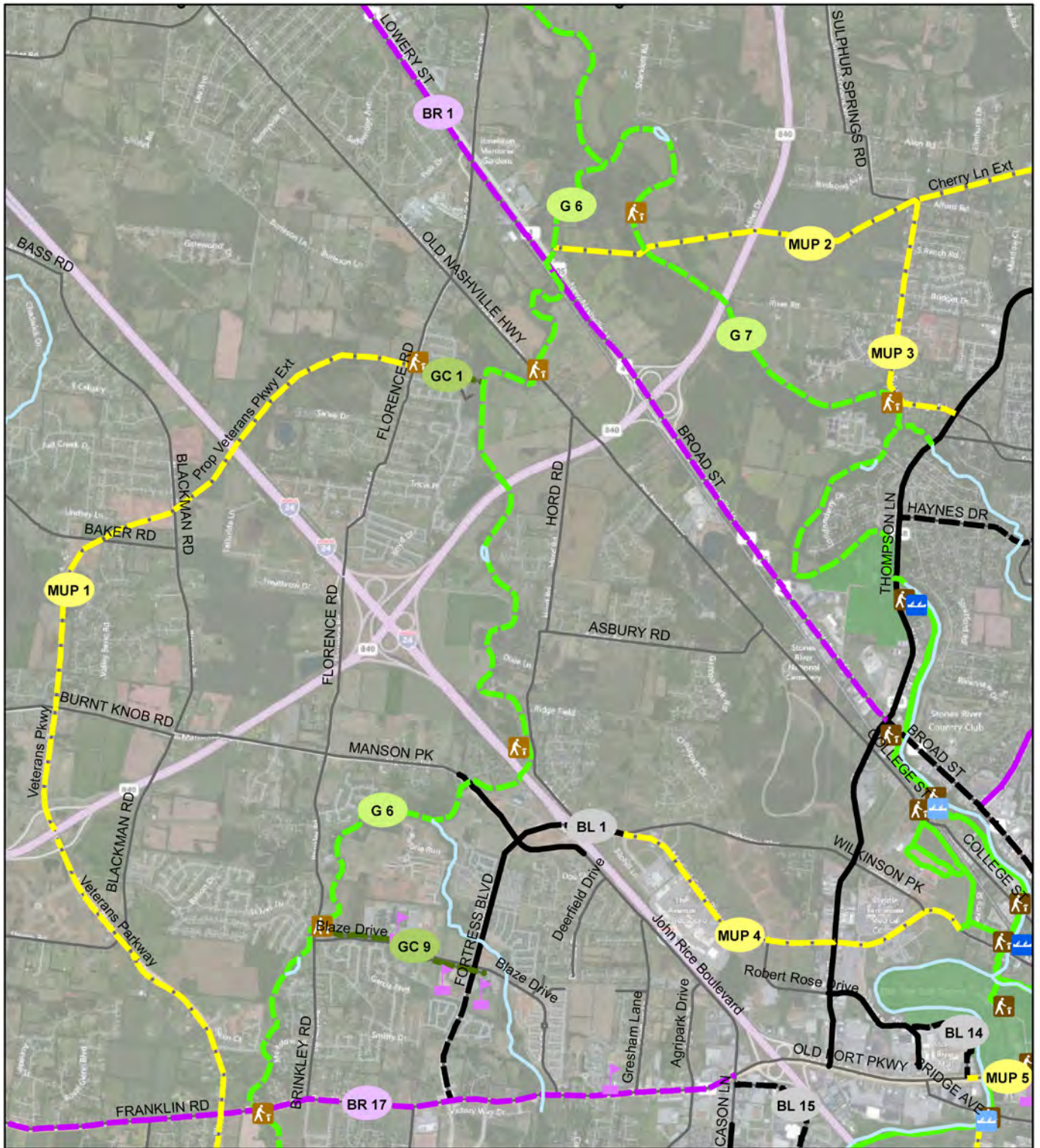
City of Murfreesboro
**Greenways, Blueways,
 and Bikeways Master Plan**
 Plan Recommendations -
 Southwest



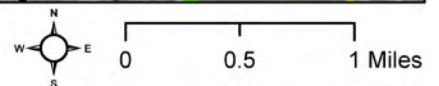
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|-----------------------|----------------------------|----------------------------|
| Exist. Trailhead | Existing Facilities | Proposed Facilities |
| Prop. Trailhead | Bike Lane | Bike Lane |
| Exist. Blueway Access | Bike Route | Bike Route |
| Prop. Blueway Access | Greenway | Greenway Connector |
| Schools | Parks | Multi-Use Path |
| | | Greenway |



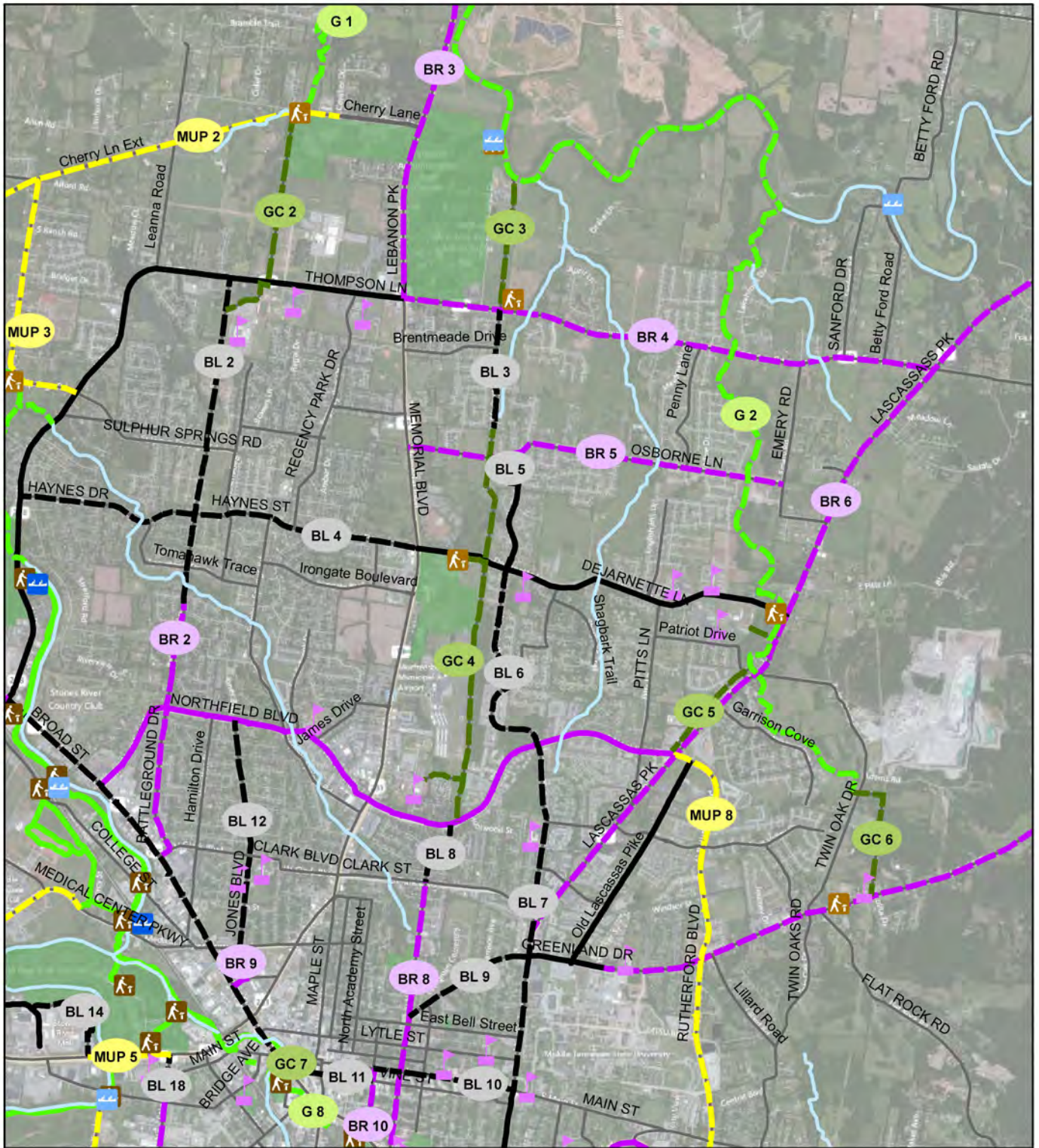
City of Murfreesboro
**Greenways, Blueways,
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 Plan Recommendations -
 Southeast



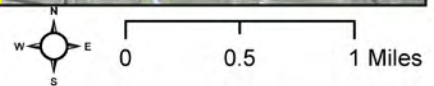
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|-----------------------|----------------------------|----------------------------|
| Exist. Trailhead | Existing Facilities | Proposed Facilities |
| Prop. Trailhead | Bike Lane | Bike Lane |
| Exist. Blueway Access | Bike Route | Bike Route |
| Prop. Blueway Access | Greenway | Greenway Connector |
| Schools | Parks | Multi-Use Path |
| | | Greenway |



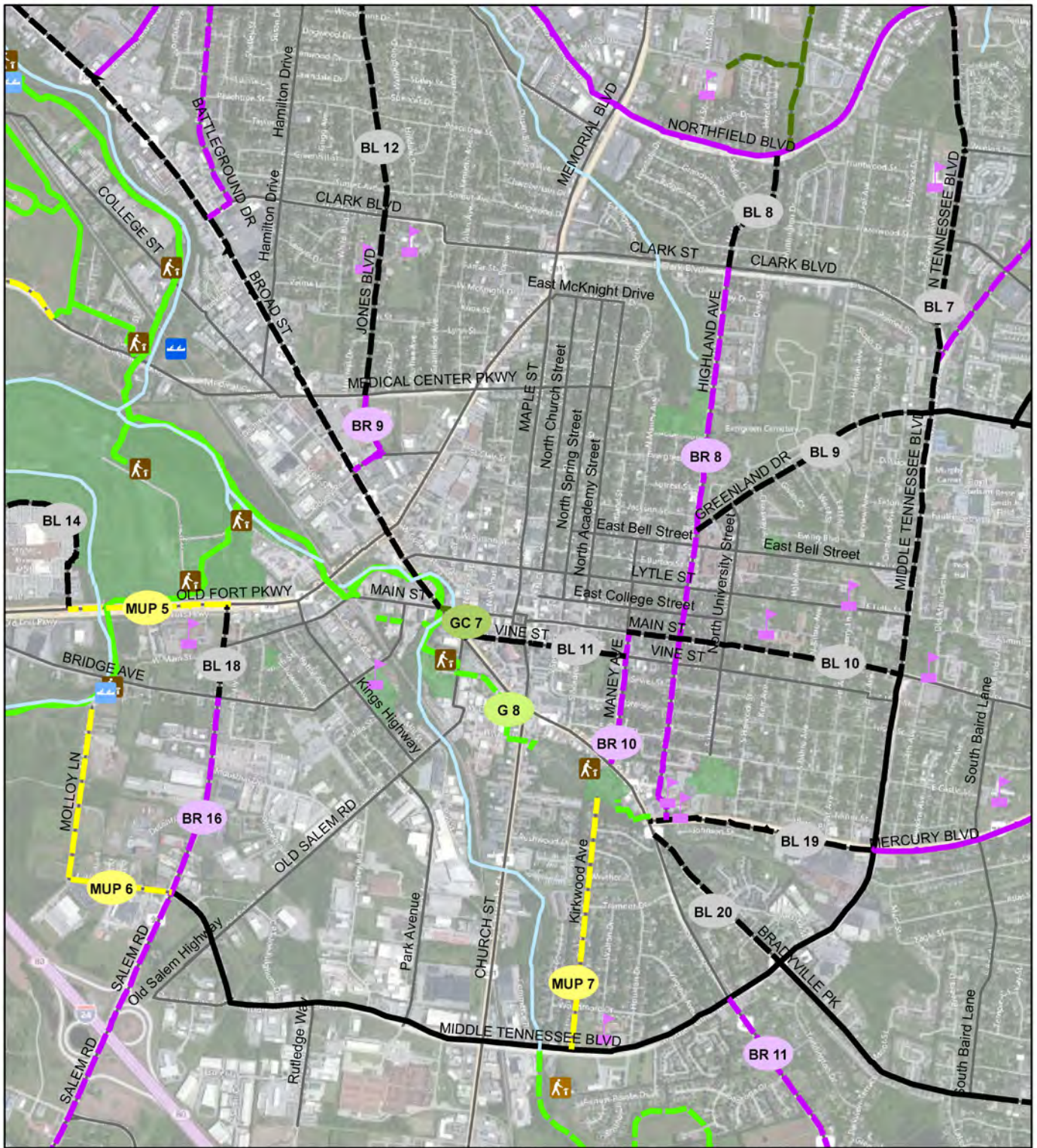
City of Murfreesboro
**Greenways, Blueways,
 and Bikeways Master Plan**
 Plan Recommendations -
 Northwest



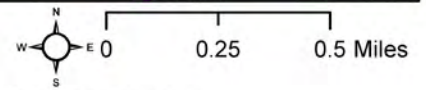
- | | | |
|-----------------------|----------------------------|----------------------------|
| Exist. Trailhead | Existing Facilities | Proposed Facilities |
| Prop. Trailhead | Bike Lane | Bike Lane |
| Exist. Blueway Access | Bike Route | Bike Route |
| Prop. Blueway Access | Greenway | Greenway Connector |
| Schools | Parks | Multi-Use Path |
| | | Greenway |



City of Murfreesboro
**Greenways, Blueways,
 and Bikeways Master Plan**
 Plan Recommendations -
 Northeast



- | Existing Facilities | | Proposed Facilities | |
|-----------------------|------------|---------------------|----------------|
| Exist. Trailhead | Bike Lane | Bike Lane | Bike Lane |
| Prop. Trailhead | Bike Route | Bike Route | Bike Route |
| Exist. Blueway Access | Greenway | Greenway Connector | Multi-Use Path |
| Prop. Blueway Access | Parks | Greenway | |
| Schools | | | |



City of Murfreesboro
**Greenways, Blueways,
 and Bikeways Master Plan**
 Plan Recommendations -
 Central

Greenway Projects

Project ID	From	To	Distance (mi)	Additional Information
G 1	Cherry Lane	Walter Hill Park	1.76	
G 2	Walter Hill Park	Twin Oak Dr	8.91	
G 3	Middle Tennessee Blvd	Urban Growth Boundary	7.96	
G 4	Greenway (existing - Barfield Rd)	Urban Growth Boundary	11.61	Via Middle Fork of Stones River.
G 5	Greenway (existing - Barfield Rd)	Urban Growth Boundary	8.98	Via Stones River, along Barfield-Crescent Park.
G 6	Veterans Pkwy	Urban Growth Boundary	12.57	Via Overall Creek
G 7	Thompson Lane	Overall Creek Greenway (proposed - G 6)	5.19	
G 8	Greenway (existing - Cannonsburg)	Discovery Center	0.47	Requires crossing at S. Church

Greenway Connector Projects

Project ID	From	To	Distance (mi)	Additional Information
GC 1	Veterans Pkwy (prop)	Greenway (prop)	0.38	
GC 2	Siegel schools campus	Greenway (prop)	1.36	Connects Siegel schools, Miller Coliseum, and Siegel Park.
GC 3	Madison Ave	Greenway (prop)	0.75	Connects Madison Ave bike lanes to greenway via easement on MTSU and water treatment plant property. Requires crossing of Thompson Lane.
GC 4	Northfield Blvd	Madison Ave	2.31	Part of major north-south connector route via airport property easement. May include short spur trails to SportsCom and MTCS.
GC 5	Rutherford Blvd	Greenway (prop)	0.67	Part of effort to link MTSU to future greenway via trails (via Rutherford Blvd MUP). May include spur trail to Oakland HS. Includes portion of Big Ditch.
GC 6	Halls Hill Pk	Greenway (prop)	0.78	Connection to Daniel McKee school via apparent existing utility corridor.
GC 7	Vine St	Greenway (exist)	0.14	Urban GC enhancing downtown greenway access.
GC 8	Wilderness Station	Greenway (prop)	2.19	Potential for landmark bridge over Shelbyville Pk near quarry (included in cost).
GC 9	Blackman schools campus	Greenway (prop)	1.05	
GC 10	River Rock Blvd	Greenway (exist)	0.21	Bridge to greenway on old raquet club property

Multi-Use Path Projects

Project ID	Route	From	To	Distance (mi)	Additional Information
MUP 1	Veterans Pkwy	Barfield-Crescent Park	Greenway Connector (prop)	12.2	
MUP 2	Cherry Lane	Siegel Park	Greenway (prop)	4	To be designed as part of Cherry Lane extension. ROW limitations make require use of alternative facility type.
MUP 3	Sulphur Springs Rd	Cherry Lane	Thompson Lane	1.53	To be designed as part of future Sulphur Springs Rd improvements.
MUP 4	Medical Center Pkwy	Conference Center Dr	Greenway (exist)	2.34	Retrofit on north side of Medical Center Pkwy.
MUP 5	Old Fort Pkwy	Salem Rd	Mall Circle Dr	0.49	On north side of Old Fort Pkwy only.
MUP 6	Molloy Lane	Middle Tennessee Blvd	Greenway (exist)	0.83	
MUP 7	Kirkwood Ave	Middle Tennessee Blvd	Discovery Center	0.75	Potential connection for Discovery Center to Bellwood Elementary to greenway (proposed).
MUP 8	Rutherford Blvd	Church St	Northfield Blvd	6.6	
MUP 9	Joe B Jackson Pkwy	East of I-24	John Bragg Hwy	7.57	

Bike Lane Projects

Project ID	Route	From	To	Distance (mi)	Additional Information
BL 1	Medical Center Pkwy	I-24	Conference Center Dr	0.75	Retrofit bike lanes through I-24 interchange
BL 2	Seigel Rd/ Battleground Dr	Marymont Dr	Thompson Ln	1.92	Includes new bike/ped only connection at Battleground dead end.
BL 3	Madison Ave	Dead End	Thompson Ln	0.69	Stripe only
BL 4	Haynes Dr	Thompson Ln	Memorial Blvd	2.39	
BL 5	Peconic Pl/ Howell Dr	Alexander Blvd	Osborne Ln	0.27	Stripe only
BL 6	Alexander Blvd/ N Tennessee Blvd	Northfield Blvd	Dejarnette Ln	1.32	Stripe only
BL 7	Middle Tennessee Blvd/ N Tennessee Blvd	Main St	Northfield Blvd	2.02	
BL 8	Highland Ave	Clark Blvd	Northfield Blvd	0.39	Stripe only
BL 9	Greenland Dr	Highland Ave	Middle Tennessee Blvd	0.8	Stripe only
BL 10	Main St	Maney Ave	Middle Tennessee Blvd	0.82	
BL 11	Vine St	Greenway Connector (prop)	Maney Ave	0.48	Stripe only
BL 12	Jones Blvd	Medical Center Pkwy	Northfield Blvd	1.33	

Bike Lane Projects (Con't.)

Project ID	Route	From	To	Distance (mi)	Additional Information
BL 13	Broad St	Thompson Ln	Greenway (exist)	2.65	Construct as part of future Broad St improvements.
BL 14	Mall Circle Dr	Robert Rose Dr	Old Fort Pkwy	0.63	Restripe existing 3-lane section.
BL 15	River Rock Blvd	Cason Ln	Greenway Connector (prop)	0.8	Restripe existing 3-lane section.
BL 16	Cason Trl	Dead End	Cason Ln	1.07	Stripe only
BL 17	Joe B Jackson Pkwy	Shelbyville Hwy	Multi-Use Path (prop)	0.87	
BL 18	Salem Rd	Bridge Ave	Old Fort Pkwy	0.28	
BL 19	Mercury Blvd	Broad St	Middle Tennessee Blvd	0.69	
BL 20	Bradyville Pike	Broad St	Rutherford Blvd	1.33	Additional 0.8 mile bike lane from Middle Tennessee Blvd to Minerva Dr already exists

Bike Route Projects

Project ID	Route	From	To	Distance (mi)	Additional Information
BR 1	Broad St	Urban Growth Boundary	Thompson Lane	1.73	
BR 2	Clark Blvd/ Battleground Dr	Broad St	Marymont Dr	1.55	
BR 3	Lebanon Pk	Urban Growth Boundary	Thompson Lane	1.81	
BR 4	Thompson Ln	Lebanon Pk	Lascassas Pk	3.13	
BR 5	Osborne Ln	Memorial Blvd	Emery Rd	2.22	
BR 6	Lascassas Pk	Urban Growth Boundary	Middle Tennessee Blvd	6.28	
BR 7	Halls Hill Pk	Urban Growth Boundary	Champion Way	4.2	
BR 8	Highland Ave	Dead End	Clark Blvd	1.67	Includes new bike/ped only connection to Mercury Blvd.
BR 9	Jones Blvd/ Ridgely Rd	Broad St	Medical Center Pkwy	0.32	
BR 10	Maney Ave	Broad St	Main St	0.4	
BR 11	Broad St/ Manchester Pk	Middle Tennessee Blvd	Urban Growth Boundary	4.93	
BR 12	Shelbyville Pk	Veterans Pkwy	Urban Growth Boundary	2.71	

Bike Route Projects (Con't.)

Project ID	Route	From	To	Distance (mi)	Additional Information
BR 13	Lynnford Dr	Barfield-Crescent Park	Joe B Jackson Pkwy	0.61	
BR 14	Unfinished Road	Barfield Rd	Cason Ln	0.7	
BR 15	Cason Ln	Veterans Pkwy	Salem Rd	1.74	
BR 16	Salem Rd	Urban Growth Boundary	Bridge Ave	6.45	
BR 17	Old Fort Pkwy	Urban Growth Boundary	Cason Ln	9.13	
BR 18	Bradyville Pike	Rutherford Blvd	Joe B Jackson Ext (prop)	3.0	

10-Year (Tier I) and Secondary (Tier II) Priority Needs

Based on greenway plans already underway and community desires, some identified greenway needs have been designated into two project tiers, or phases. Tier I projects seek to extend the existing greenway system in south Murfreesboro and initiate a true greenway trail system in north Murfreesboro. Doing so not only increases the amount of usable trail, but also will encourage new users by linking more households and destinations along the new trail segments. Tier I roadway projects are based on critical needs such as creating better downtown access to the existing greenway system, as well as seeking to increase the effectiveness of Tier I greenway improvements by linking these to each other and to important destinations.

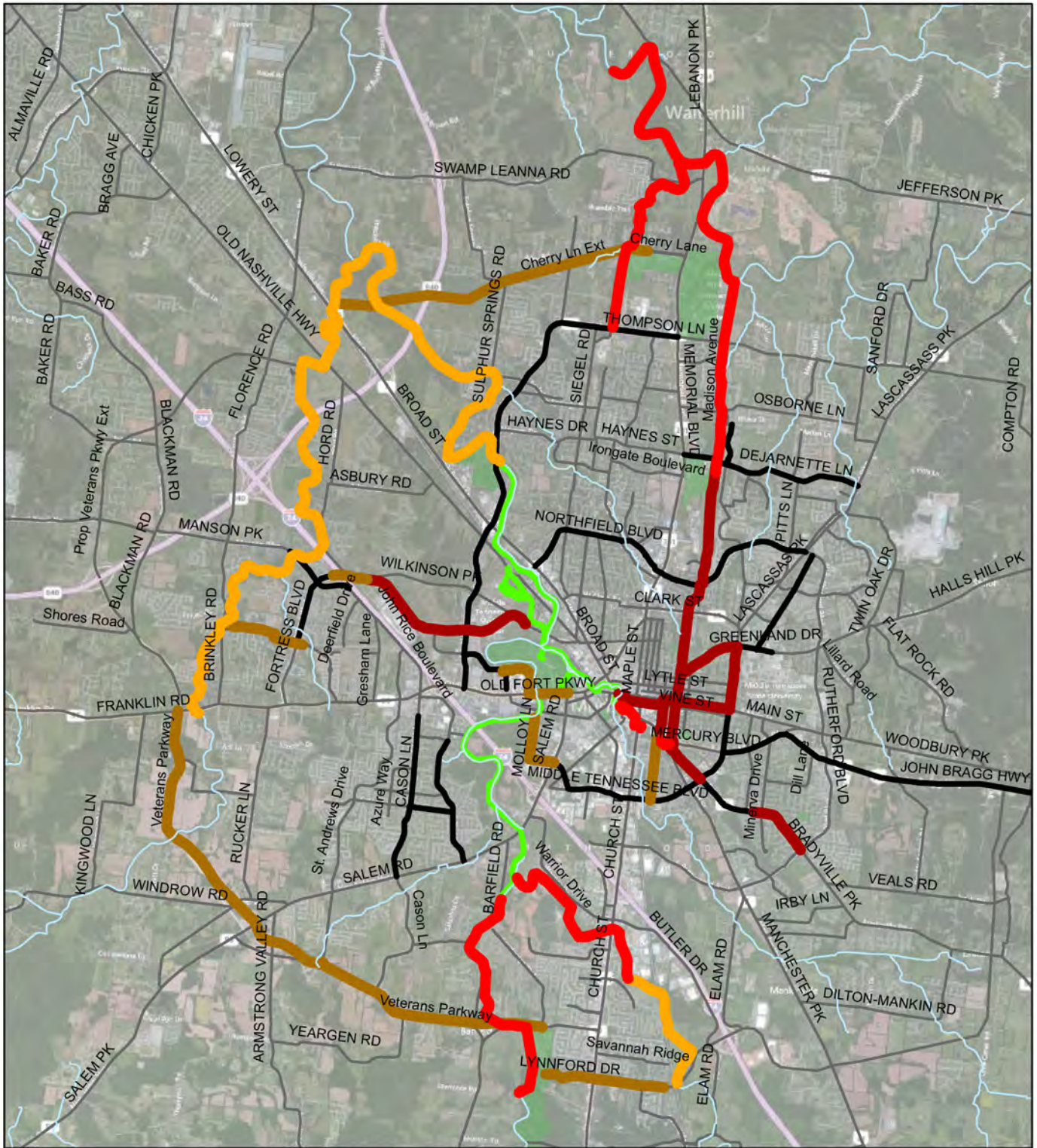
Tier II greenway construction includes the major portions of the Blackman area trails. Tier II improvements also include significant stretches of multi-use path which will result in the connection of Siegel Park in the north to Barfield-Crescent Park in the south.

Unfortunately, few on-street projects in Murfreesboro can be considered “low-hanging fruit”, ready to be implemented relatively easily with little cost. Those projects which can be easily implemented (e.g. signing a designated bikeway along newly reconstructed portions of Maney Avenue) generally do not link together into a bike network of any appreciable length or with an important connection. Thus, ease of construction has not been a major factor in designating priority improvements.

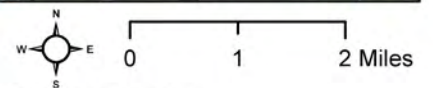
It is also important to understand the intent of the phasing designations. The recommended tier of these improvements should be used as an aid toward the strategic implementation of the ultimate GBB system with respect to user benefit. That is, the tiered approach recommends that finishing greenway plan already under development and linking downtown and downtown neighborhoods to the existing greenways are the most pressing needs from the users' standpoint.

However, there are other factors that will need to be considered that may not be inherent in the phasing strategy presented in this plan. For instance, a unique funding or land acquisition opportunity may (and often will) come about which requires timely attention. Such a circumstance will take attention and potentially funding away from an upper-tier project and give it to a lower-tier, but more opportunistic project. Within reasonable limits, taking focus off of the upper-tiered project to take advantage of these types of circumstances is encouraged for the good of the GBB system as a whole.

Several of the upper-tier projects will require substantial effort and cost to implement. As these are encountered, City leadership will have to determine the best course of action in the plan's implementation. Ultimately, the effectiveness of the GBB system as a whole will be strengthened as all projects are implemented. Furthermore, few of the recommended projects will become any easier or less expensive to implement as time passes. It is thus recommended that the upper-tier project be implemented as early as possible to make later improvements as beneficial as possible.



- █ Tier I Greenway Projects
- █ Tier II Greenway Projects
- █ Tier I Road Projects
- █ Tier II Road Projects
- █ Existing Greenway
- █ Existing Bike Facility



City of Murfreesboro
**Greenways, Blueways,
 and Bikeways Master Plan**
 Project Phasing

Project Costs

Project costs associated with the capital needs identified in the GBB Master Plan, like in any bicycle and pedestrian facilities plan, can be easily misunderstood. This is because, particularly for the on-street projects, facilities are often implemented as part of larger roadway improvement projects, so that the estimated costs of the non-motorized facility improvements are more difficult to quantify.

The project needs costs listed below have been developed assuming that each project is a stand-alone project and are meant to provide a planning level estimate so that the scale of these projects can be understood. However, it should be noted that implementation of many of these projects will be fractional with respect to other roadway work which might be undertaken as part of a roadway project occurring along the same corridor as an identified bike facility. In fact, many of the on-road facilities in the GBB plan are recommended in part because of a future larger roadway need has already been identified and incorporating a bicycle connection can be done relatively easily as part of the bigger project.

General Estimates* for All GBB Projects		
Type of Recommended Facilities	Length (miles)	Cost
Greenways and Greenway Connectors	67.3	\$67,310,000
Multi-Use Paths	36.3	\$27,240,000
Bicycle Lanes	20.2	\$9,710,000
Bicycle Routes	50.0	\$620,000
TOTALS	173.8	\$104,880,000

**Planning-level construction costs only. Does not include right-of-way acquisition, utility relocation, or preliminary engineering costs.*

By way of comparison, it was reported in the Regional Bicycle and Pedestrian Study that for the five years 2006-2011, just under \$33 million in bicycle and pedestrian projects was awarded in Rutherford County. This was 38% of the total funding in the Nashville region and was more than in any other county, including Davidson. The funding during this period was the result of special federal appropriations directly through congress and is not likely to be realized again in the near future.

Breaking these costs out by the recommended project tiers gives funding estimates for a 10-year planning horizon, a secondary planning horizon, and further future needs. The 10-year planning horizon cost for greenways and greenway connectors is \$38.4M, or an average of \$3.8M per year. Given that the average city-funded capital expenditures budget for the Parks and Recreation Department over the past four years was approximately \$120,000 per year (when federal greenway allocations are subtracted), it is quickly evident that a different funding strategy will be required.

General Estimates* for GBB Projects by Planning Horizon						
Type of Recommended Facilities	10-Year Horizon ¹		Secondary Horizon ²		Future Horizon	
	Length (mi)	Cost (\$1,000s)	Length (mi)	Cost (\$1,000s)	Length (mi)	Cost (\$1,000s)
Greenways and Greenway Connectors	38.4	\$37,310	24.6	\$24,350	4.3	\$5,650
Multi-Use Paths	2.3	\$1,760	12.2	\$9,130	21.8	\$16,350
Bicycle Lanes	5.2	\$2,270	2.3	\$1,610	12.7	\$5,830
Bicycle Routes	1.7	\$20	0.6	\$10	47.7	\$590
TOTALS	47.6	\$41,360	39.7	\$35,100	86.5	\$28,420

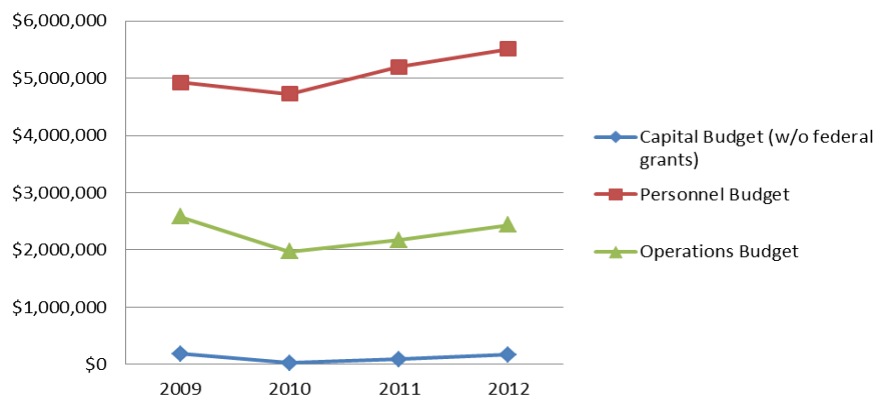
*Planning-level construction costs only. Does not include right-of-way acquisition, utility relocation, or preliminary engineering costs.

¹Corresponds to Tier I projects

²Corresponds to Tier II projects

Some considerations regarding funding strategies are as follow:

- An additional expenditure of \$3.8M would represent an approximate 3% share of the City's annual general fund expenditures. An amount this significant is not likely to be found within the existing budget. As such, it appears likely that additional revenue would be required to fund the Tier 1 projects over the 10-year near-term horizon.
 - Greenway construction should become the new leading priority of the Parks and Recreation Department. Looking at the departmental budget, it is clear that staffing and operating costs of existing park facilities are significant. As greenways become priority, the department will realize that greenway construction does not significantly increase staffing and operations costs the way traditional park facilities do. Plus, existing facilities will see more users once connected by these facilities.
- Some communities have instituted an "infrastructure adequacy" fund whereby developers of new housing and/or commercial property pay into the fund which is dedicate to greenway system expansion.



Four-Year Budgeting by Expenditure Type for Murfreesboro's Parks and Recreation Dept.

- A portion of the county hotel/motel tax is currently earmarked for greenway facilities. This portion dedicated to greenways should be evaluated and grown if appropriate.
- Although historic federal funding levels for facilities in Murfreesboro cannot be sustained, it should not be assumed that no state or federal funding will be available. In fact, new MAP-21 federal transportation legislation has special opportunities for funding active transportation projects. The Transportation Alternatives (TA) funds will be administered by the Nashville Area Metropolitan Planning Organization (MPO) (instead of by TDOT as in the past) and will be eligible for use by active transportation projects like those presented in this plan. The total amount of TA funds available annually within the Nashville area is expected to be approximately \$1.5M.

As part of the 2035 Long-Range Transportation Plan, the Nashville MPO also established a nationally recognized strategy by which 15% of the region's Urban Surface Transportation Program (U-STP) funds would be dedicated to projects which encourage the development of active transportation choices and walkable communities. The revenue forecasts of this funding source shows that regional STP funding should be considered as a significant possible funding source for this plan's implementation.

U-STP Investment Strategy – Revenue Distribution by Planned Horizon Year

Category	Target	2011-2015*	2016-2025	2026-2035
Multi-Modal Roadway Capacity & Safety	70%	\$11,448,000	\$213,353,452	\$315,815,228
Active Transportation Enhancements	15%	\$2,500,000	\$45,718,597	\$67,674,692
Public Transportation/ Mass Transit	10%	\$1,650,000	\$30,479,065	\$45,116,461
System Management & Operations	5%	\$825,000	\$15,239,532	\$22,558,231
TOTAL URBAN STP	100%	\$16,423,000*	\$304,790,646	\$451,164,611

*FY 11-15 revenues available after prior commitments are funded.

Source: Nashville Area MPO

- Another source of potential transportation funding is through public transit funds. These funds are generally made available by the Federal Transit Administration and will again be administered locally by the MPO. A greenway or bikeway project which provides bicycle or pedestrian infrastructure improvements to or in the vicinity of transit service may be eligible for these funds.
- Partnerships have begun and will continue to emerge for walking and bicycling programs and infrastructure. Often geared toward children, funding opportunities through both public health and education arenas may be capitalized on. These opportunities may be administered by public, private, or non-profit organizations.

**CITY OF MURFREESBORO
GREENWAYS, BLUEWAYS, & BIKEWAYS MASTER PLAN**

TECHNICAL MEMORANDUM #4: USER DESIGN GUIDE

In 2011, the City of Murfreesboro initiated the development of the Greenways, Blueways, and Bikeways (GBB) Master Plan to help identify and coordinate implementable improvements in recreation and non-motorized transportation over the next 25 years.

This technical memorandum sets forth the desirable standards for construction of the City's GBB network. These design guidelines are intended to function as a reference for local government, engineers, planners, and others who make decisions that affect bicycle and pedestrian travel in Murfreesboro. These guidelines are intended to be used in conjunction with and as a supplement to the construction requirements and specifications already established in the City's *Street Design Specifications* (July 2009). These guidelines are also meant to be used in conjunction with established guidelines of the American Association of State Highway and Transportation Officials (AASHTO), the current edition of the *Manual on Uniform Traffic Control Devices* (MUTCD), and the *Americans with Disabilities Act* (ADA). Other emerging guidelines such as the National Organization of City Transportation Officials (NACTO) *Urban Bikeway Design Guide* should be consulted and may be found to provide more innovative guidance that might be appropriate given specific conditions.

As is common with all design guideline documents, this document cannot provide specific guidance for every design issue that may be encountered. In situations that are not covered by this document, appropriate planning and engineering principles should be applied, but always with the intent of consideration of all modes of transportation in planning, design, and construction projects. In doing so, a continuous and consistent transportation system for bicyclists, pedestrians, and transit users will be created, resulting in a more complete implementation and greater usage of the GBB network. Including the design of facilities for alternative modes of transportation from planning to construction is more effective and less costly than having to retrofit facilities in order to provide bicycle, pedestrian, and transit accommodations.

In short, these guidelines are meant to help create a safe, efficient, and user-friendly environment that encourages ever-increasing levels of walking and biking in Murfreesboro.

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1.0 GREENWAY FACILITY DESIGN STANDARDS

Developing quality design standards is very important to the success of a greenway. The first step in defining standards is to identify who will use the greenway and what they will use it for. Different user groups have different needs and different destinations. The ultimate goal of design standards is to ensure the greenways are safe, usable and attractive to the community.

1.1 PURPOSE OF A GREENWAY

Greenways are used for recreation, transportation, therapy and education. The result of each of these uses is connection. Many connections can be developed, including people to places, people to nature and nature to nature. Providing these pedestrian and bicycle connections between neighborhoods, schools, parks and commercial areas can reduce traffic on roadways, provide environmental benefits and help slow the fast pace of life.

Connecting people to nature is becoming more difficult as our natural environment is encroached upon by development. Typically, people want to live in and enjoy the natural environment every day. This need to be surrounded by nature can be seen in the homes we purchase, the places we vacation and the ways we spend our leisure time. As our lives continue to move at a faster pace, time for enjoying our natural surroundings decreases. Incorporating natural surroundings into our daily routines through the use of greenways for daily errands and trips will provide opportunities to reconnect people and nature.

Connecting nature to nature is also a vital aspect of greenways. Small islands of forests remain in Murfreesboro. Linear corridors along streams and rivers connect many of these islands of habitat. As development in Murfreesboro continues to encroach on the natural environment, fewer areas are available for wildlife. Identifying, protecting and enhancing connections between natural areas will help protect the integrity of the natural environment currently found in the area.

1.2 USERS OF A GREENWAY

The connections created by greenways provide opportunities for several different uses. Identifying the potential users makes identifying these uses easier. There are two general categories of greenway users: pedestrians and bicyclists. Within these categories are several different subcategories that need to be considered: ages, levels of experience, physical abilities, special needs and destinations. The different facilities required to accommodate the needs of all users effectively are discussed in the following sections.

Pedestrians

The term "pedestrian" includes many different users of greenways, including walkers, runners and roller bladers. The intensity of use from pedestrians can range from a leisurely walk to enjoy the outdoors to a five-mile run to skating to work. The age and experience of users will influence how they use a greenway.

When greenways are used for transportation, walking remains the most common form of pedestrian transportation. Elements considered when choosing walking as a form of transportation include safety, convenience, travel time, physical condition, family circumstances and natural factors, including the climate and land forms. Providing safe surroundings, good connections and several rest areas can minimize deterrents to using walking as transportation; however, elements that cannot be controlled include the current weather conditions, natural land forms and travel distance and time.

Studies have shown that 80 percent of all walking trips are less than a mile in length. This indicates that if a destination is more than a 15-minute walk, people tend not to walk (calculated at 17 minutes per mile using 3.5 miles per hour as an average speed). These calculations do not include instances when the basic physical facilities are not provided for safely walking to a destination. These facilities include sidewalks, traffic signals and adequate lighting.

Providing facilities that are separate from vehicles is not always an option. This is why sidewalks remain the most common element to accommodate pedestrian transportation. Standard sidewalks are three to five feet wide and parallel to the road. Moving sidewalks away from the road, increasing the width and adding curves are techniques used to create a more enjoyable walking experience. These sidewalk enhancements can be done only if the rights-of-way are wide enough to accommodate these changes. Regardless of the type of sidewalk provided, it is necessary to provide a safe walking experience. Sidewalks that are free of large cracks, buckles and steps are the basic elements needed to provide accessibility by all pedestrians.



Grade separated greenway crossing under a roadway.

Street crossings are unavoidable if pedestrians are to move freely through a community. Traffic volumes, site distances and street widths will affect the type of crossing that is needed. Crossing a two-lane residential street may only require pavement markings. As traffic flow increases, so should safety devices to allow for pedestrian crossings. Many standard signals and traffic calming devices are available. The correct type and time of crossings will depend on the volume of traffic, number of lanes to be crossed and the number of pedestrians. These safety devices include traffic and pedestrian signals, raised crosswalks and

other traffic calming devices. If high volumes of traffic interfere with high volumes of pedestrians, it may be necessary to provide additional crossing safety measures. On roads where parallel parking is present, cars are not permitted to park within a certain distance of an intersection. Sidewalks can be extended into this parking lane to shorten the distance a pedestrian has to cross. These elements, called chokers, also make pedestrians visible to oncoming traffic. Curbed medians in the center of the road can



Raised crosswalk with chokers to reduce distance a pedestrian must cross the travel lane.

also act as a safety zone for pedestrians crossing several lanes of traffic. When room is not available for medians or chokers on busy roads, a pedestrian bridge or tunnel that completely separates vehicles from pedestrians may be necessary.

Urban areas typically offer many opportunities for both day and night activities. Areas that are well lit and minimize shadows are inviting to pedestrians at night. The opposite is true of a dark street. These areas discourage pedestrian use and turn people away because darkness

provides places for people to hide, creating a potentially unsafe space. Adequate lighting can minimize concerns of unsafe areas and situations.

Adequate sidewalks and lighting create attractive pedestrian places. Other items can be included in a pedestrian walk to make it more attractive to its users. These elements include scenic overlooks, interpretive signs for significant buildings or areas, trees and shrubs, alternative paving materials and pedestrian oriented events such as farmers' markets or street vendors. The right combination of these elements will not only provide the basic needs for pedestrian use but will also make walking more popular.

Bicyclists

Bicycling has become more popular over the past several years. According to the Bicycle Institute of America, the number cyclists increased by nearly 38 percent from 1983 to 1992. Many of these were recreation-based cyclists; however, bicycling continues to become a larger part of the transportation system. As with walking, distance continues to be a limiting factor in a person's decision to ride a bicycle as a form of transportation. A 1980 study by the U.S. Department of Transportation established that 90 percent of work trips and 84 percent of the utilitarian trips taken by bicyclists were two miles or less. A 1990 study in Denver, Colorado, found the mean bicycle trip to be 2.1 miles¹. Although the number of bicyclists has risen, the trip distance has remained relatively consistent at approximately two miles.

¹ Federal Highway Administration. "Facts and Figures: National Overview".

This Denver study also concluded that cities and communities that contain universities have a greater amount of transportation by bicycle than other communities. However, communities that are not home to universities but still maintained higher levels of bicycle transportation have “70% more bikeways per roadway mile and six times more bike lanes per arterial mile.”²

As with pedestrians, age and experience are factors for consideration when planning bicycle routes and facilities. There are typically three levels of bicyclists:

- Novice bicyclists are young or inexperienced riders who are uncertain about their abilities and become nervous when confronted with awkward or crowded riding situations. Areas best suited for novice cyclists are lightly traveled residential streets or off road, multi-use paths.
- Basic bicyclists are more experienced and comfortable with riding and know the rules of cycling safety. These riders are comfortable for shorter, leisurely rides on multi-use trails and signed, on-road facilities parallel to pedestrian walks.
- Proficient cyclists, or experienced riders, cycle for transportation, intense recreation, health and sport. These cyclists typically enjoy long distance and quickly paced rides and prefer a well-paved road with adequate width to allow cars to pass safely. Speed limits and mix of users typically deter proficient cyclists from using multi-use paths for longer rides.

Wildlife

Establishing greenways also provides and protects valuable wildlife habitat. Greenways protect valuable plant communities, food sources and linkages between vegetative cover and food that are critical to sustaining wildlife. However, greenways' impact on wildlife and plant communities can affect the makeup of these communities. Care should be taken when developing greenways through existing natural areas to reduce construction impact, protect wildlife corridors, avoid sensitive areas and be sensitive to operating practices that could affect breeding or other activities critical to the sustainability of wildlife.

1.3 TRAIL STANDARDS

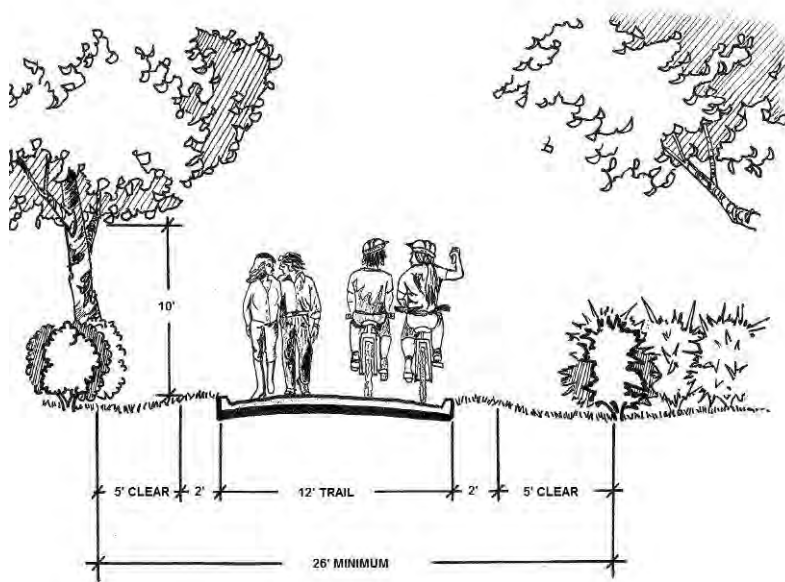
Developing a greenway can range from preserving a natural area for wildlife habitation to constructing a 12-foot path that connects heavily populated neighborhoods with downtown businesses to posting signs that indicate a bicycle route along a county road. Understanding the types of users for which a particular portion of the greenway is being developed will help to ensure proper use and inclusion of adequate facilities. The following sections outline the types of facilities to be included within the greenway for different user groups. When rights-of-way are available, lane and sidewalk widths should be increased to ensure a safe environment for users.

² Federal Highway Administration. “Facts and Figures: National Overview”.

Natural Corridors

Middle Tennessee has consistently been named one of the fastest growing regions in the country. The result has been rapid growth within the city of Murfreesboro and in the county just outside the city limits. This rapid growth has seen natural areas and undeveloped agricultural land swallowed up by commercial and residential development. Maintaining the existing integrity of the remaining natural areas requires conservation. Delineating and protecting these areas of natural beauty can be accomplished by defining them as greenways.

Establishing natural corridors can be as simple as acquiring land. This, however, is not as simple as it sounds. Purchasing natural land from private landowners can be an expensive and time-consuming, but rewarding process. Immeasurable benefits are gained from this acquisition. Plants and animals are provided a place to live and reproduce. The community also benefits because natural areas help clean air and water, provide flood storage and protection, reduce erosion and offer educational resources.



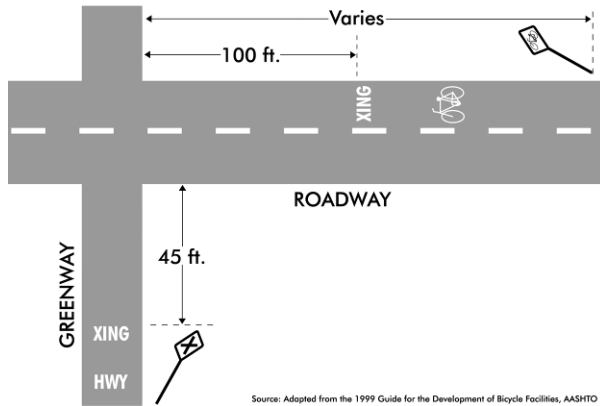
Multi-Use Trails

Multi-use trails follow linear corridors such as rivers, abandoned railroads, utility rights-of-way and other linear elements in the landscape. Multi-use trails can be within road rights-of-way; however, they are completely separated from vehicular traffic. The trail is typically 12 feet wide to accommodate several users traveling in both directions. This width can vary according to the anticipated number of users and the location of the trail.

To accommodate all types of activities, including bicycles, strollers and roller bladers, asphalt or other hard surfacing materials are used to pave a smooth surface. In areas of regular flooding or wetlands, boardwalks are constructed to protect the sensitive environment and maintain a year-round usable trail.

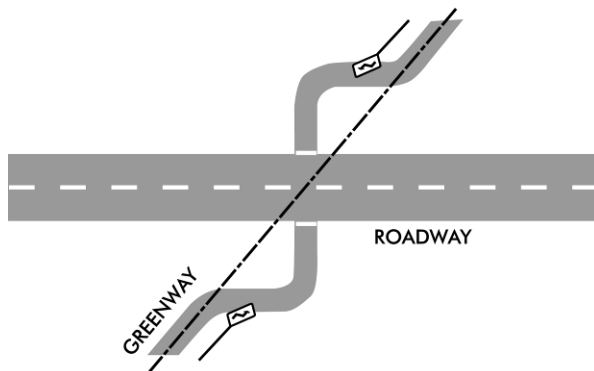
To avoid conflict among different users, different design features can be added to trails. A painted centerline can separate persons going in opposite directions. A two-foot cleared shoulder on both sides of the trail allows for maneuverability and emergency pull-offs. Signage is installed to inform users of trail alignments and special conditions. Many of these design features and standard requirements are included in the American

Association of State Highway Transportation Officials (AASHTO) regulations. These standards are developed to accommodate all levels of bicycle travel at a maximum speed of 20 miles per hour. To ensure proper maintenance, trails are also constructed to accommodate a 6.5-ton vehicle travelling at 15 miles per hour.



Midblock Crossing

Multi-use trails traverse many different elevations and natural elements. Accommodations are made when possible to minimize steep grades or to access interesting landscapes. Access through some of the terrain in Murfreesboro may be difficult; however, regulations require that a certain portion of trails be accessible by all users despite physical ability. The guidelines established by the Americans with Disabilities Act should be followed during the design and construction of multi-use trails to ensure safety and accessibility to all users. ADA guidelines establish a maximum trail slope of 5 percent. Any slope higher than 5 percent and up to 8 percent is considered a ramp, which requires hand rails and landings every 30 feet. Trails will not be considered accessible if they contain slopes greater than 8 percent.



90 Degree Crossing

Intersection Design Issues

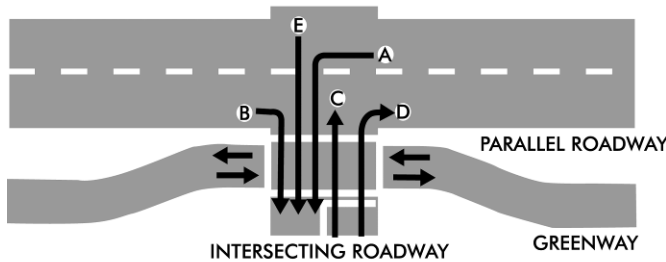
Where off-street, multi-use greenway routes intersect with surface streets; bicyclists and pedestrians must be provided with safe opportunities to enter or exit the trail, and bollards or other devices should be used to prevent motorized vehicles from entering. These intersections must also provide safe opportunities for bicyclists and pedestrians to cross or merge with traffic.

In the detailed design phases of greenway development, alternate locations for a trail are typically considered, and locations with the most appropriate intersection conditions should be prioritized. In ideal conditions, greenway crossings of roads should be removed from existing intersections in order to have better control over vehicular movements. When this is not possible, the greenway crossing should be at or adjacent to existing pedestrian crossings.

Greenway-Roadway Intersections

The most critical safety conditions on a greenway generally occur at the intersections of greenways and vehicular roadways. According to the American Association of State Highway and Transportation Officials, there are three basic categories of at-grade greenway/roadway intersections—midblock, adjacent path and complex.

Mid-block crossings should be distinctly removed from existing roadway intersections to clearly separate them from vehicular intersection activity such as merging movements, acceleration/deceleration and preparations to enter turn lanes. The figure illustrates an acceptable greenway/roadway intersection at midblock. Where greenways are aligned in such a way that they would not cross the roadway at a 90-degree angle, the configuration should be used as shown.



Source: Adapted from the 1999 Guide for the Development of Bicycle Facilities, AASHTO

Adjacent Greenway Crossing

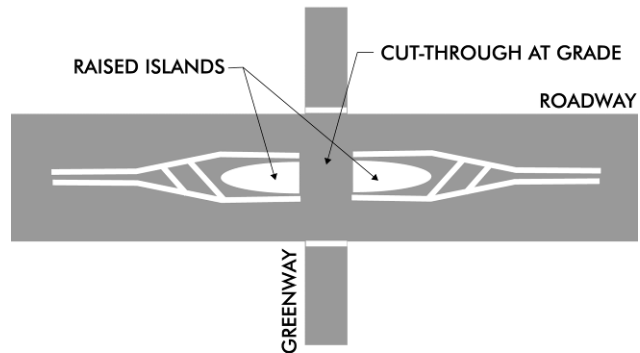
Adjacent Greenway Crossings

This category of crossing occurs when a greenway crosses a roadway at an existing intersection between two roadways, whether it is a T-intersection such as a driveway, or a four-legged intersection as shown in the illustration. This type of crossing should be developed as close as possible to the intersection so that both motorists and greenway users recognize each other as intersecting traffic. However, potential conflicts for greenway users will occur with left-turning (A) and right-turning (B) motor vehicles from the parallel roadway, and on the crossed roadway at C, D and E.

To minimize conflicts for type A turning movements, it is advisable to use protected left turn phasing on a high-volume parallel roadway and high-use greenways. To minimize conflicts for turning movement B, the turning radius should be as small as practical in order to reduce the speed of turning motor vehicles. For turning movements C and D it is advisable to prohibit right turns on red. The major roadway in the figure may be either the parallel or the crossed road. Right-of-way requirements, traffic control devices and separation distance between the road and the greenway will greatly affect this type of intersection - attention to these details must occur in the development of construction documents for specific greenway segments.

Complex Intersection Crossings

Complex intersection crossings account for all other greenway/roadway or greenway/driveway intersections. Improvements to complex crossings must be considered on an individual, site-specific basis. The obvious mitigation measures to avoid complex intersection crossings are moving the crossing to an alternate location, installation of a traffic signal, change in signalization timing, or provisions for a refuge island and a two-step crossing for greenway users as shown in the illustration. The refuge accommodates groups of users including pedestrians, bicyclists and individuals in wheelchairs. Additionally, adequate space should be provided so that users in the refuge areas do not feel threatened by passing motor vehicles while waiting to finish the crossing.



Source: Adapted from the 1999 Guide for the Development of Bicycle Facilities, AASHTO

Traffic Signals and Stop Signs

Regardless of the type of greenway/roadway intersection, a regulatory traffic control device should be installed at all greenway/roadway intersections - the individual type of control device will vary from case to case.

Under certain circumstances, traffic signals are most appropriate. The Manual on Uniform Traffic Control Devices (MUTCD) developed by the Federal Highway Administration identifies 11 situations that warrant the use of a traffic signal. The MUTCD does not address greenway crossings, but bicycle traffic on a greenway may be functionally classified as vehicular traffic and addressed accordingly. Greenway stop signs should be placed as close to the intended stopping point as possible. Four-way stops at greenway/roadway intersections are not recommended because of frequent confusion about or disregard for right of way rules. Yield signs may be acceptable on low-volume, low-speed neighborhood streets. In any event, the designer should ensure that greenway signs are located so that motorists are not confused by them, and that roadway signs are placed so that pedestrians and bicyclists are not confused by them.

Transition Zones

Where greenways terminate at existing roads, the path must be integrated into the existing roadway network. Again, as construction documents are developed, care must be taken to properly design the terminus in order to create a safe merging or diverging situation. The designer should treat each greenway/roadway intersection as a potential point of ingress or egress and the design should consider the movements of greenway users who enter the greenway from the road as well as those who will exit the trail and use the roadway from that point on.

Approach Treatments

Greenway intersections and approaches should be developed on relatively flat areas. The stopping sight distance at intersections must be evaluated and adequate warning signs should be provided to allow bicyclists to stop before reaching the intersection, especially on downgrades. Unpaved greenways should incorporate paved aprons that extend a minimum of 10 feet from paved road surfaces.

Ramp Widths

Ramps for curbs at intersections should be at least the same width as the greenway. Curb cuts and ramps should provide a smooth transition between the greenway and the roadway. A five-foot radius should be considered to facilitate right turns for bicycles.

Bridge Crossings

In some cases, such as stream crossings, bridges may be the only practical treatment—these structures should be designed to serve both pedestrians and non-motorized users. Ideally, the clear width of pedestrian bridges will match the approaching greenway including the recommended minimum two-foot wide cleared area on either side of the trail. Including the cleared area width allows for free space between the users and requisite safety railings and barriers.

When it is necessary to route a trail along an existing vehicular bridge, several alternatives can be considered. The first, if width is limited, is to align ". . . the bicycle path across the bridge on one side. This should be done where the bridge facility will connect to a bicycle path at both ends and sufficient width exists on [one] side of the bridge or can be obtained by widening or restriping lanes."³ A second alternative is to "provide wide curb lanes over the bridge. This may be advisable where the bicycle path transitions into wide outside lanes at one end of the bridge and sufficient width exists or can be obtained by widening or restriping." The third and least acceptable alternative is to use existing sidewalks. "This may be advisable where conflicts between bicyclists and pedestrians will not exceed tolerable limits, and the existing sidewalks are adequately wide. Under certain conditions, the bicyclist may be required to dismount and cross the structure as a pedestrian." Retrofitting an existing bridge will present a variety of challenges, and compromises may be required.

Railroad Crossings

Railroad grade crossings should be aligned at a right angle to the rails. The greater the crossing deviates from this angle, the greater the potential for a cyclist's front tire to be trapped in the flangeway, causing loss of control. If the crossing angle is less than 45 degrees, an additional paved shoulder of sufficient width should be provided to permit the cyclist to cross the track at a safer angle. Where this is not possible, and where train speeds are low, commercially available compressible flangeway fillers may be used.

Pedestrian Walks

Pedestrian walks are designated sidewalks that make important connections and are an integral part of the greenway system. Pedestrian walks are designed or renovated to

³ AASHTO, Guide for the Development of Bicycle Facilities, (Washington DC, 1999)

meet the needs of all pedestrians, including children, senior citizens and individuals with disabilities. Widening the walk, adding landscape and signage, using different paving materials, decorative lighting and site furnishing can create a consistency that helps define a sidewalk as an element within the greenway system.

Shared-Use Facilities

Many communities discourage using bicycles on sidewalks. Shared use facilities are designed to accommodate both bicyclists and pedestrians by combining a sidewalk, or pedestrian walk, that is separated from the vehicles and a bike lane along the edge of the roadway. The same standards outlined for pedestrian walks and bicycle lanes would be combined to develop shared-use facilities.

Retaining parallel parking along streets designated as shared-use facilities can have both positive and negative results. On the positive end of the spectrum, maintaining adequate parking in high-density business and residential settings is imperative. Parked cars can provide a physical barrier between pedestrians and moving vehicles and bicycles. Negatively, parked cars create a safety hazard for bicyclists. People are used to looking for moving vehicles prior to getting in and out of their cars; however, looking for moving bicyclists is not a common practice.

Physical barriers between automobiles and bicycles may also be appropriate to separate vehicles from cyclists along certain bike lanes. These types of barriers may be comprised of planters, mow strips, guard rails, low curbs or bollards. The type and width of barriers depends upon the number of curb cuts along the roadway, the amount of traffic flow and the availability of space within the rights-of-way.

Trail Hierarchy

Regardless of the type of trail being developed, there is a hierarchy, or priority, of trail use. A primary trail makes connections to several different elements within the community. The design elements included in a primary trail should accommodate a greater number of users and include a greater number of support facilities. Ideally, primary trails should close upon themselves or make a looped system. More specifically, a primary multi-use trail will be a 12-foot wide paved pathway with a two-foot wide shoulder on both sides. Small rest areas that include benches, trash cans and signs will be provided every half-mile and at intersections with other trails. Vegetation should be cleared a minimum of five feet on both sides, and limbs should not hang lower than 10 feet.

Secondary trails connect one element, such as a neighborhood or school, to another element or primary trail. Secondary trails typically will not need to accommodate as many users, but they are important to providing access to primary trails. Secondary trails generally are not a part of a closed, or looped, system. A secondary multi-use trail is similar to a primary trail except it is only 10 feet wide. The same clearances and paving materials are needed. Depending upon the length of the trail, benches may not be necessary, but they should be added at all intersections with primary trails.

Rustic trails are typically located in areas that will not draw a large number of users or in areas that are rural. These types of trails are typically eight feet wide and may be surfaced with a porous material such as wood mulch, compacted gravel or other types of fines. Vegetation should still be cleared five feet on both sides and 10 feet above the trail.

1.4 TRAIL SUPPORT FACILITIES

A large part of creating an attractive and safe greenway system is incorporating support facilities along the trail. These facilities should provide relaxation, education, orientation and recreation opportunities. Anticipating the needs and wants of all users is important to developing a successful greenway system, and incorporating the appropriate support facilities is necessary for this to be accomplished.

Trailheads

In simple terms, trailheads are trail access points. However, in terms of available facilities, they can be extremely diverse. Trailheads will establish the trail user's first impression of the greenway network; therefore, their detailed design will be critical as construction documents are developed for implementation. Where possible, trailheads will be located in or adjacent to existing or planned parks so that public amenities such as restrooms, telephones, parking, picnic pavilions, playgrounds and general recreation facilities are already available. Frugal use of economic resources does dictate this course. However, economy of means is not the only component of this reasoning. By clustering recreational opportunities, the community will have a greater range of choices to improve their health, quality of life and leisure time.

The size of a trailhead depends upon its location and anticipated amount of use. The basic facilities included at a trailhead are parking, trail map and access to the trail. More extensive trailhead facilities include restrooms, security lighting, signage, landscaping, site furnishings, and telephones.

Existing facilities, such as schools and parks, can also be utilized as trailheads. Existing parking can easily be supplemented with the addition of a trail map and entrance. Many other amenities typically included at trailheads are already available, including phones, lighting and restrooms. Utilizing these existing facilities as trailheads minimizes construction costs and creates important connections to the greenway system.

General Trailhead Criteria:

- 1) Circulation. Adequate, efficient and safe space must be provided for vehicles and pedestrians to maneuver.
- 2) Parking. Adequate number of spaces for the anticipated level of use of the particular facility including, where appropriate, spaces for RVs, buses, small trailers for boats and canoes, and bicycles.

- 3) Structures. Again, depending on the anticipated level of use, buildings may be required. Structures may include gazebos, picnic shelters or pavilions, restrooms, maintenance and storage facilities, information booths and kiosks.
- 4) Site furnishings, including benches and trash receptacles.
- 5) Signs.
- 6) Fences and lockable security gates.
- 7) Security lighting.
- 8) Landscaping.
- 9) Connector trails to the main trail.
- 10) River access where appropriate.

Signage

The primary purpose of trail signs is to aid and instruct users of the greenway system. Signs fall into four categories: regulatory, warning, guidance and educational.

Regulatory Signs

Regulatory signs provide operational requirements, and are used for traffic control. This category includes stop and yield signs, right-of-way signs, speed-limit signs and exclusion signs. They are normally installed where specific regulations apply.

Warning Signs

Warning signs identify existing or potentially hazardous conditions on or near the trail. Like those on roadways, warning signs on trails identify steep grades, intersections, stop or yield signs, changes in paving materials and speed limits for bicycles. These warnings are included to provide safe conditions for all users. Warning signs function as their name implies - they identify existing or potentially hazardous conditions on or near the trail, and they caution users to reduce speed or dismount a bicycle for safety reasons. They are typically used near intersections, bridges, crossings and tunnels. Following the rules and heeding the warnings identified by these signs is necessary because of the interaction of different trail user groups and unavoidable intersections with roadways.

Guidance Signs

Guidance signs instruct; they provide trailside information to orient users geographically. The typical "you are here" map is an excellent example of this category of sign. Guidance signs can be both directional and informational. Directional signs point out nearby support facilities and points of interest, such as historic sites and unique natural resources. In this respect, guidance signs are often referred to as interpretive signs.

Educational Signs

Elements in the landscape or along the trail can be identified and their significance explained with educational signs. These signs can inform trail users of historical events that took place on a hillside, the geologic forces that created the waterfall on the other side of the river, the type of wildlife inhabiting the woods in which they are walking or the importance of the trees in maintaining the water quality of the stream paralleling the trail. Hundreds of elements can be highlighted and illustrated through signage to provide

trail users with a fuller understanding of their community and the events that have taken place.

Trails are transportation corridors, and for that reason, recognizable transportation signs can be adapted for trail use. However, an independent sign "package" that coordinates all greenway-related signage should be developed in succeeding phases of the citywide trail system design. The sign package facilitates several goals; most importantly, it reinforces an overall aesthetic image that incorporates the greenway logo and colors. With consistent application of greenway sign standards, trail users will quickly learn to recognize and comprehend trail components. The trails will be more user-friendly, easier to navigate and safer.



Interpretive Sign Explaining Historic Events

Ancillary Trail Facilities

Waysides

Wayside exhibits are built adjacent to trails or at the terminus of a connecting trail. These areas contain interpretive signs that provide information on the natural environment or on cultural and historic points of interest in the vicinity. They also provide small areas where people can sit, relax and enjoy a quiet moment.



Educational Facilities

In addition to signage, hands-on educational opportunities can be developed with the greenway system. These experiences can be informal, such as access to the water's edge, or more structured, such as a nature center or guided tour along a significant portion of the trail. A combination of these different educational opportunities can exist at different locations and different seasons of the year.

1.5 LANDSCAPING AND GATEWAYS

Landscaping may be required not only at trailheads, but virtually all along the trail network. Construction of the greenway will require grubbing and clearing and some loss of existing vegetation. At first, this may seem regrettable; however, it also presents real opportunities for ecological restoration and beautification.

To the extent possible and practicable, native species should be preserved wherever possible as trails are installed. However, invasive exotic species such as privet and honeysuckle should be removed. Additionally, damaged trees should be examined by certified arborists. Trees in extreme states of decline should be removed, especially if they present safety hazards. Dominant native plants in the areas of disturbance can then be reintroduced and function to provide visual screens, walls, buffers and overhead canopies. The particular environment and intended purpose of landscaping will influence the overall plant palette, and native trees do not have to be used exclusively. Some situations will certainly benefit from more ornamental introductions. However, native vegetation should be considered wherever possible, especially in riparian areas where it can protect the environment and stabilize riverbanks. Indigenous plant material will be the most robust and will adapt best to local climate, soils and precipitation.

In most cases, a cleared area should be maintained for five feet on each side of trails. Therefore, new trees and shrubs should be planted at least ten feet from the trail. By maintaining this minimum ten-foot space, visibility will enhance user safety, and tree roots will be less likely to damage trail surfaces. For reasons of security, dense shrub plantings should be avoided adjacent to the trail. Occasional open spaces will also increase security by providing clear routes for people to exit the trail in the event of emergencies.

1.6 MAINTENANCE, SAFETY AND SECURITY MEASURES

Developing a greenway system requires both capital and operational funding to implement and maintain the system. A community can employ many techniques to maintain the trail system. One technique is to design the system with proper trash receptacles and clearly state rules of conduct for greenway users. The proper location and spacing of trash receptacles provides ample opportunity for people to dispose of refuse. Posted signs inform users of fines for littering. These regulations need to be enforced if they are to work. Another technique is to create public ownership of the trails. The community can be encouraged to assist with trail maintenance by establishing an "Adopt a Greenway" program. Similar to the "Adopt A Highway" program, a section of the trail would be kept clean by a group or organization.

Volunteer organizations and groups should not be expected to do regular routine maintenance. Regular maintenance tasks include the following:

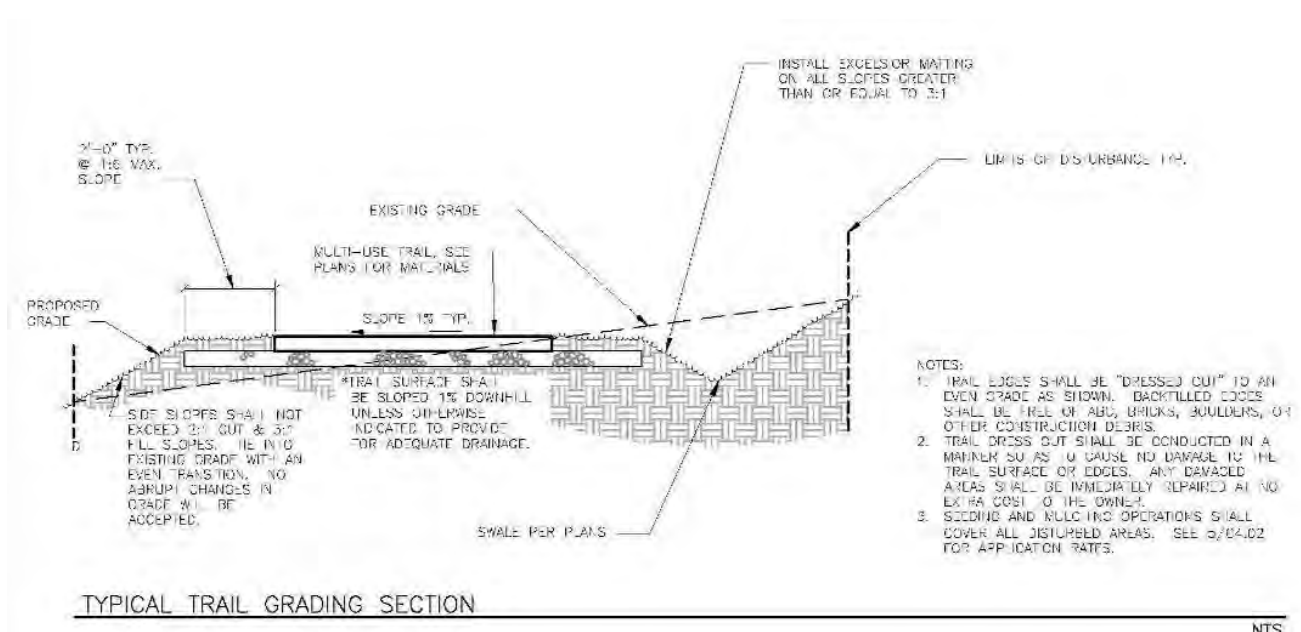
- Trash removal
- Signs and Traffic Markings for motorists and trail users must be inspected regularly and kept in good condition. Pavement markings must be kept clear and legible.
- Sight distances, especially those leading to crossings and curves should not be impaired by vegetation. Trees, shrubs, and tall grass should be trimmed to meet sight-distance requirements based on a 20-mile-per-hour design speed. Adequate clearance must also be maintained overhead and on both sides of trails.

- Trail surfaces should be patched on a regular basis-patches must be flush with the finish surface of the trail.
- Trail damage from seasonal washouts and silt or gravel washes must be repaired as soon as possible after they occur. Recurring drainage problems should be identified and remedied. Culverts, catch basins, and other drainage structures should be cleaned at least once a year.
- Regular sweeping and cleaning will be required to keep the trail free of debris, including broken glass, loose gravel, leaves, and trash.
- Structures such as pavilions and restrooms should be inspected annually to ensure they are in good condition. Special attention must be paid to wood foundations and posts to determine if rot or termites are present. At the same time, site furniture and other support facilities should be inspected.
- Mow trail shoulders and other selected areas on a scheduled basis depending upon season, species and rate of growth.
- Remove storm-tossed limbs and fallen trees as soon as possible. Inspections should also occur after significant storms to determine if any potential danger exists from tree damage.
- Habitat enhancement and control
- Graffiti removal

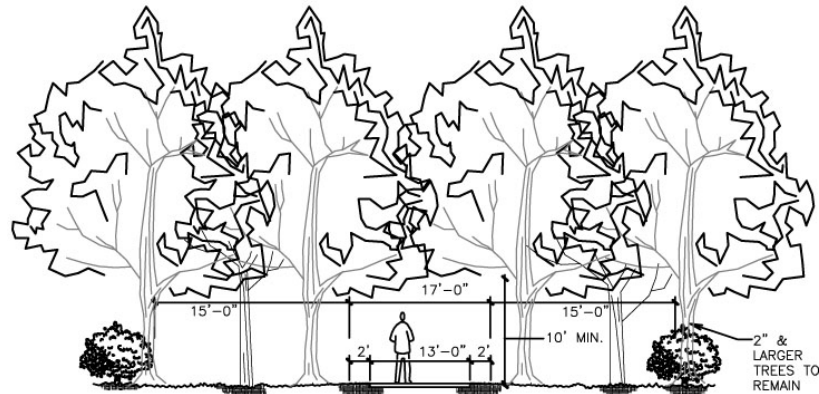
1.7 STANDARD TRAIL DETAILS

The following details represent standard design practices utilized on the Murfreesboro Greenway system. Furnishings such as benches, trash cans and bollards represent those found throughout the system. Signage is also representative of the design utilized on existing trails.

Trail Grading



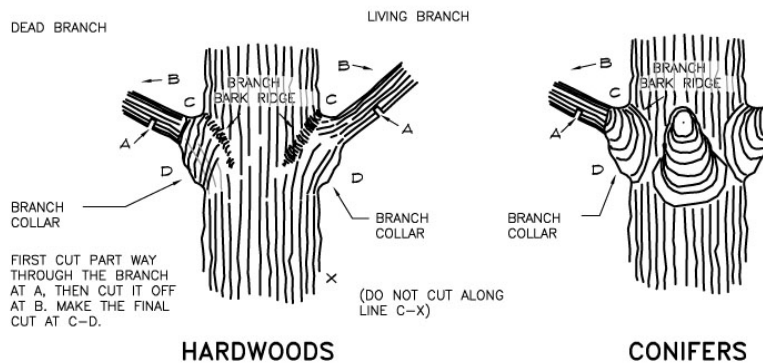
Clearing and Tree Protection



1. LANDSCAPE ARCHITECT SHALL FLAG TREES FOR REMOVAL. ADDITIONAL TREES MAY BE REMOVED BY CONTRACTOR AFTER ON-SITE CONSULTATION AND AGREEMENT OF LANDSCAPE ARCHITECT.
2. CONTRACTOR SHALL CLEAR FOREST UNDERSTORY (TREES LESS THAN 2" CAL.) AND BRUSH FOR A DISTANCE OF 15' ON BOTH SIDES OF THE TRAIL. < OF TREES SHALL BE LIMBED UP TO A VERTICAL DISTANCE OF 10' FROM THE FOREST FLOOR IN THE 15' WIDE ZONE. BRANCHES SHALL BE CUT FLUSH WITH STANDARD TREE PRUNING EQUIPMENT, AS CALLED FOR IN THE TREE PRUNING SPECIFICATION & DETAIL 2 C3.00.
3. CONTRACTOR SHALL USE WOOD CHIPPER TO DISPOSE OF LANDSCAPE CLEARING DEBRIS. WOOD CHIPS SHALL BE BLOWN INTO WOODS ADJACENT TO TRAIL. CONTRACTOR SHALL USE ALL PRACTICABLE MEANS TO REDUCE AMOUNT OF WASTE SENT FROM THIS JOB SITE TO LANDFILL.
4. IN AREAS WHERE TRAIL IS ROUTED ADJACENT TO WOODS EDGE, UNDERSTORY CLEARING SHALL EXTEND 15' INTO WOODS.
4. SEED AREA WITHIN CLEARING LIMITS AS CALLED FOR IN SPECIFICATIONS

1 VEGETATION CLEARING FOR WOODED AREAS

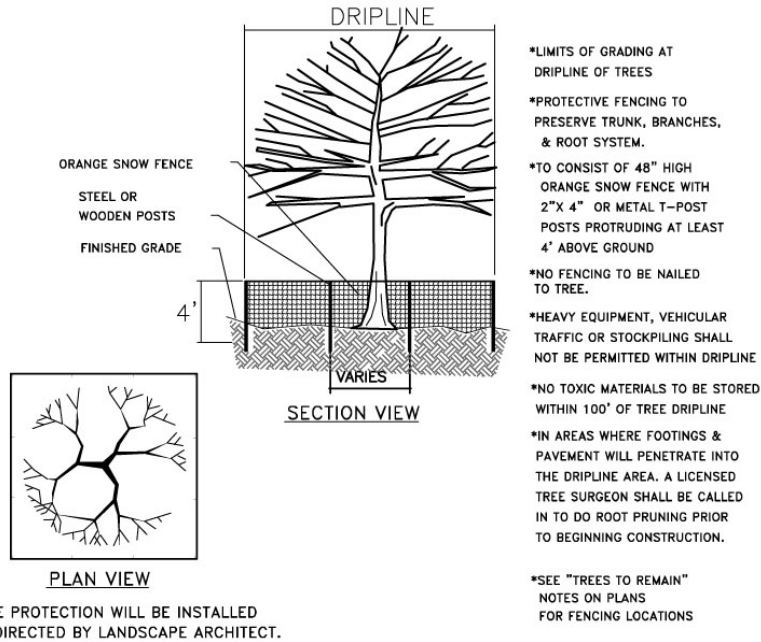
NTS



THANKS LARGELY TO THE WORK OF DR. ALEX L. SHIGO AND OTHERS SCIENTISTS AT THE USDA FOREST SERVICE'S NORTHEASTERN FOREST EXPERIMENT STATION IN DURHAM, NH, MUCH IS NOW UNDERSTOOD ABOUT A TREE'S NATURAL SYSTEM OF DEFENCE AGAINST INFECTIONS FROM WOUNDS. BASED ON THIS KNOWLEDGE, THESE METHODS OF MAKING PRUNING CUTS ARE RECOMMENDED TO HELP WORK WITH RATHER THAN AGAINST A TREE'S NATURAL TENDENCY TO WALL OFF INJURED TISSUES AND PREVENT THE SPREAD OF DECAY. IN THESE ILLUSTRATIONS, FINAL CUTS SHOULD BE MADE FROM POINTS C TO D. DO NOT CUT ALONG LINE C-X WHICH IS SIMPLY AN IMAGINARY VERTICAL LINE TO HELP YOU LOCATE C-D

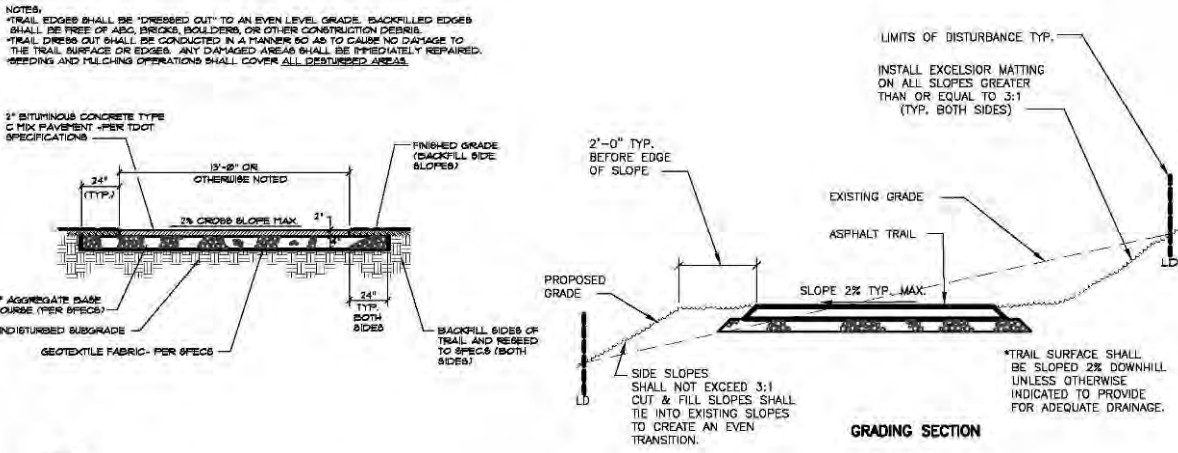
2 TREE PRUNING DETAIL

NTS

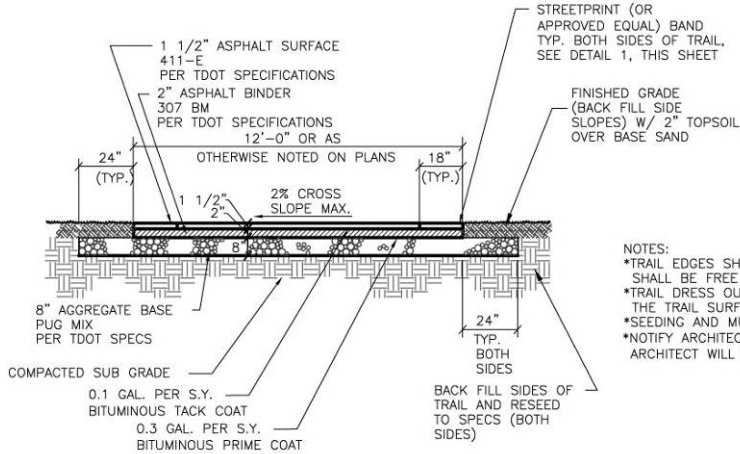


3 TREE PROTECTION DETAIL NTS

Trail Construction



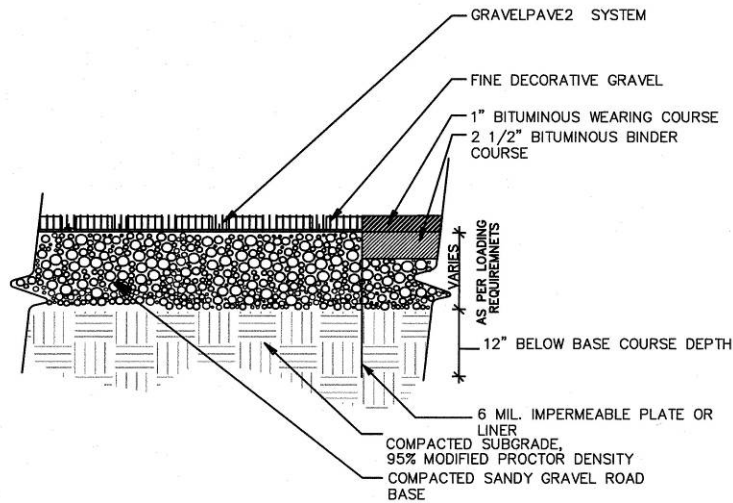
1 ASPHALT TRAIL SECTION NTS



- NOTES:
- *TRAIL EDGES SHALL BE "DRESSED OUT" TO AN EVEN LEVEL GRADE. BACK FILLED EDGES SHALL BE FREE OF BRICKS, BOULDERS, OR OTHER CONSTRUCTION DEBRIS.
 - *TRAIL DRESS OUT SHALL BE CONDUCTED IN A MANNER SO AS TO CAUSE NO DAMAGE TO THE TRAIL SURFACE OR EDGES. ANY DAMAGED AREAS SHALL BE IMMEDIATELY REPAIRED.
 - *SEEDING AND MULCHING OPERATIONS SHALL COVER ALL DISTURBED AREAS.
 - *NOTIFY ARCHITECT IF TRAIL ROUTE INTERFERES WITH SPECIMEN TREES OVER 24" D.B.H.- ARCHITECT WILL SUGGEST REROUTING TO AVOID REMOVAL OF SUCH TREES

2 HEAVY DUTY ASPHALT TRAIL SECTION

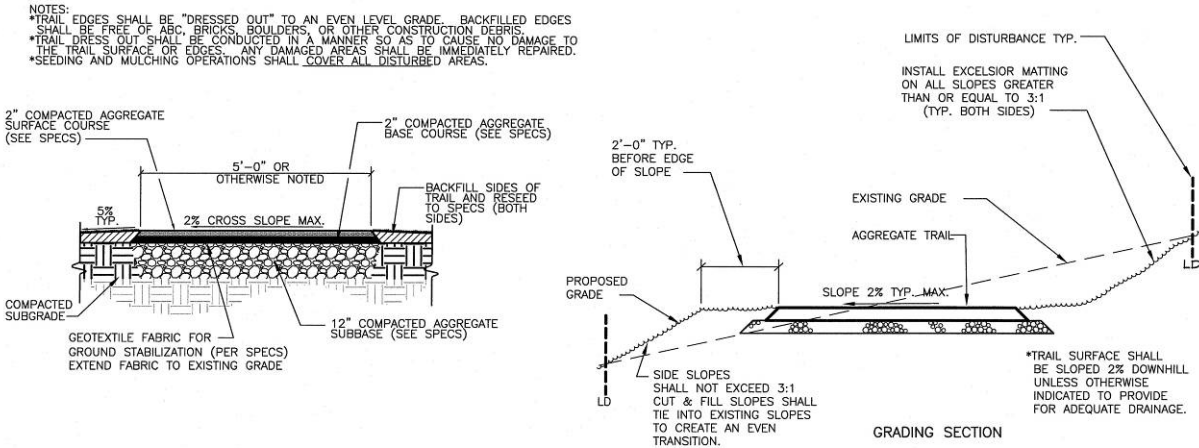
N.T.S.



NOTE: GRASS/PLANT TYPES SHALL BE SPECIFIED BY A LANDSCAPE ARCHITECT OR LANDSCAPE DESIGNER

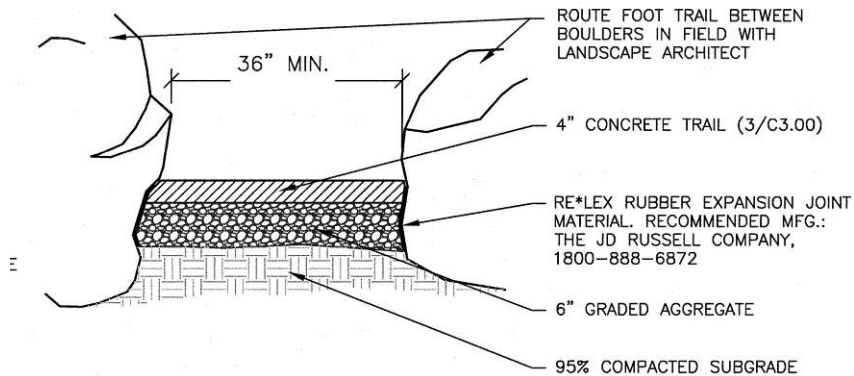
2 GRAVEL PAVE 2 @ ASPHALT

NTS



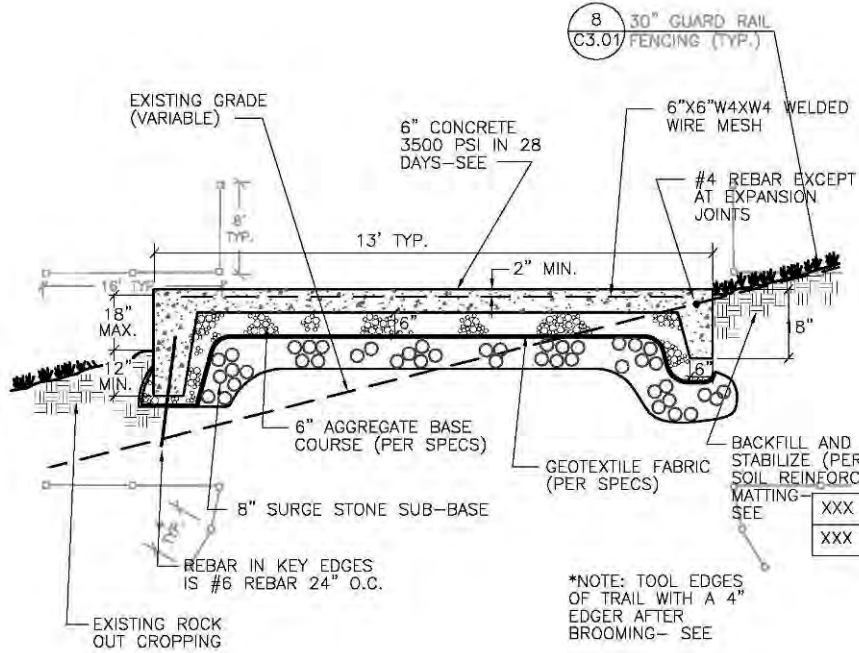
3 AGGREGATE TRAIL SECTION

NTS



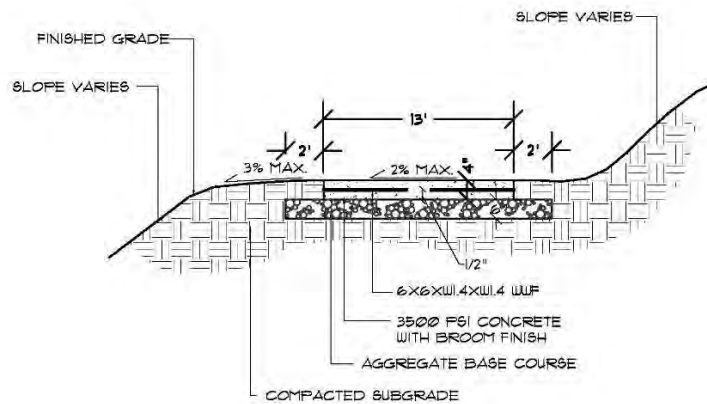
9 CONCRETE TRAIL THROUGH ROCK OUTCROPPING

N.T.S.

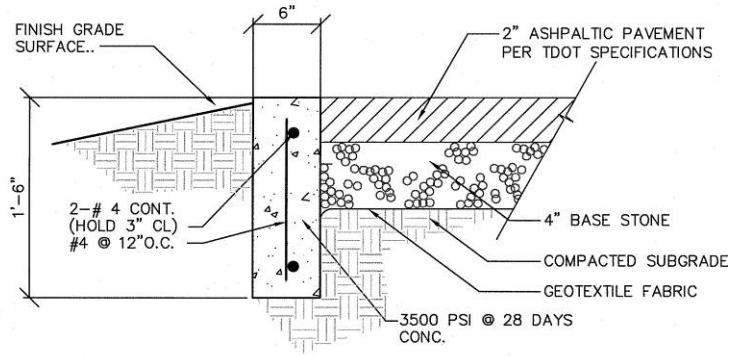


4 CONCRETE TRAIL SECTION W/ TURNDOWN EDGE
N.T.S.

*NOTE: TOOL EDGES OF
SIDEWALK WITH A 4" EDGER
AFTER BROOMING.



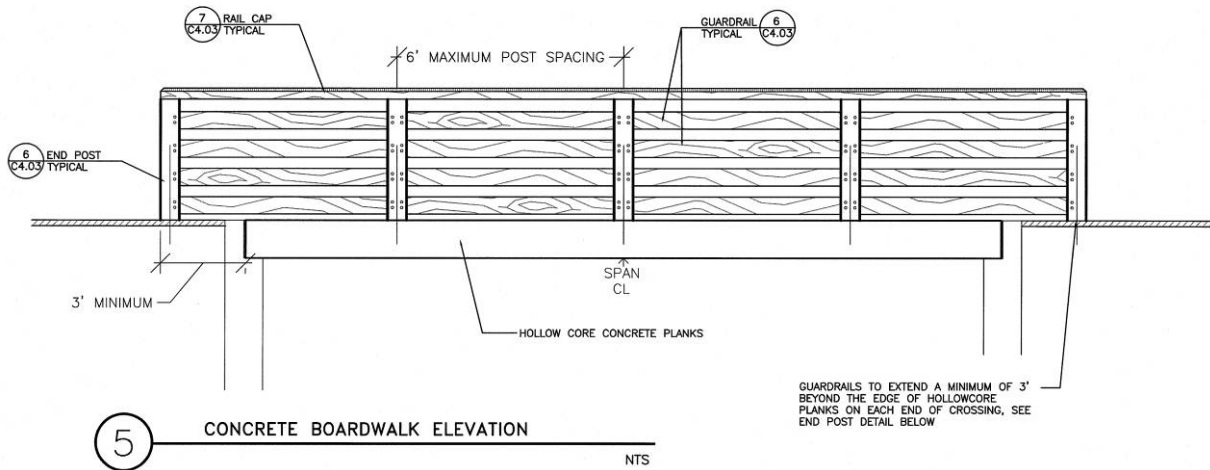
3 CONCRETE TRAIL SECTION

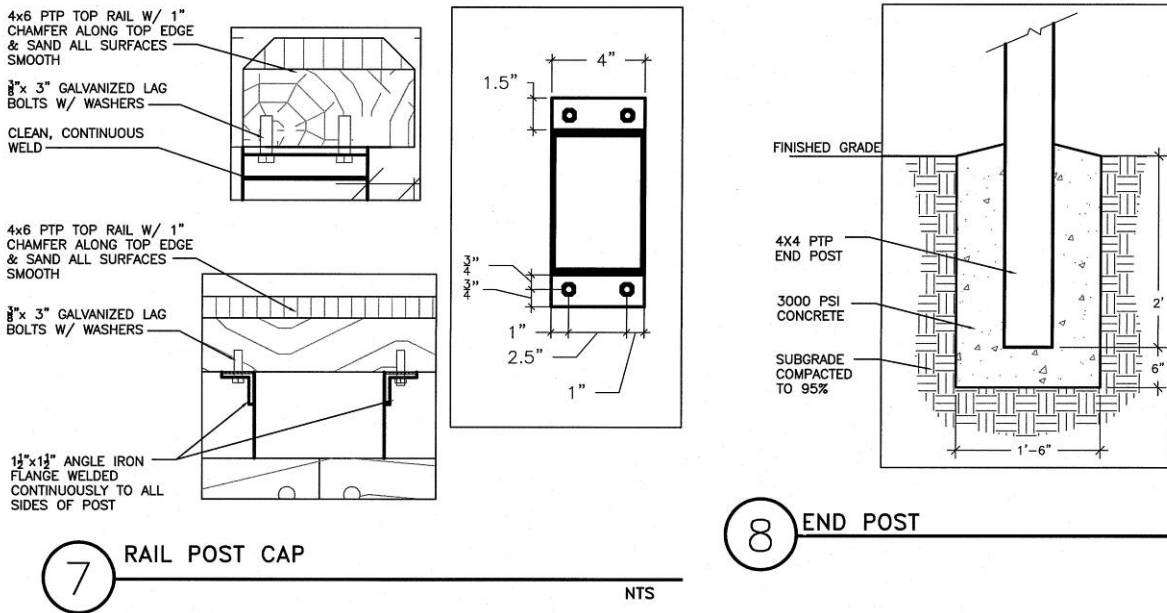
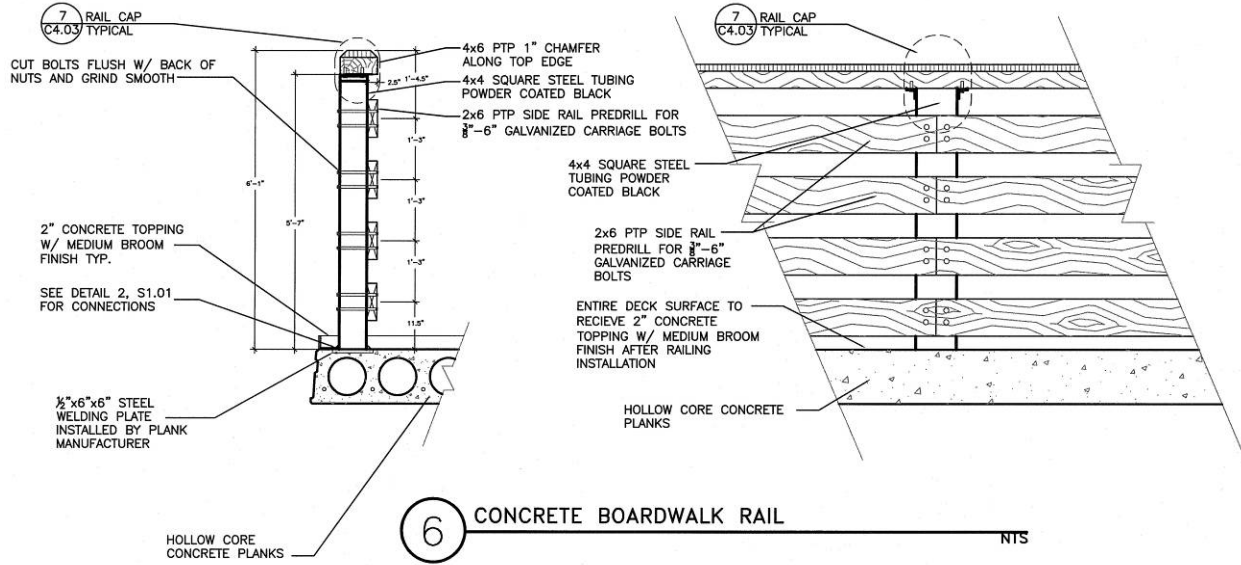


NOTE: CURB SHALL HAVE 1/4" x 1" DEEP CONTROL JOINTS @ 10'-0" O.C. AND 1/4" ASPHALTIC EXPANSION JOINTS 30' O.C.

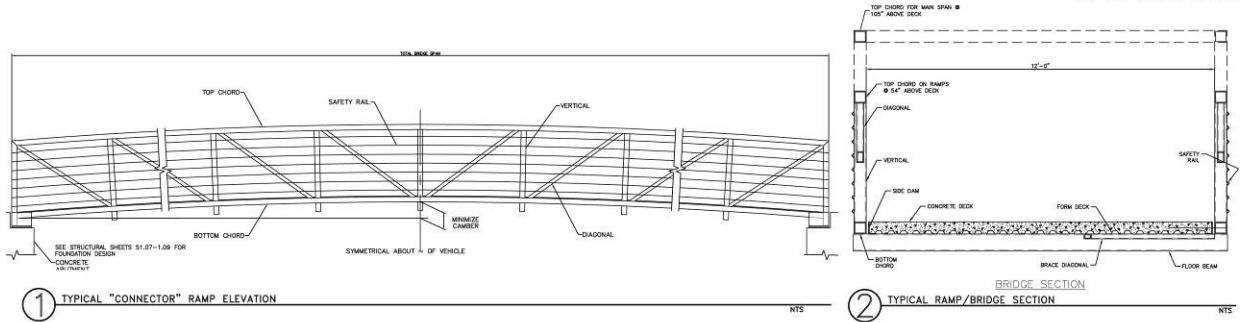
8 CONCRETE FLUSH CURB ALONG TRAIL N.T.S.

Boardwalks and Bridges



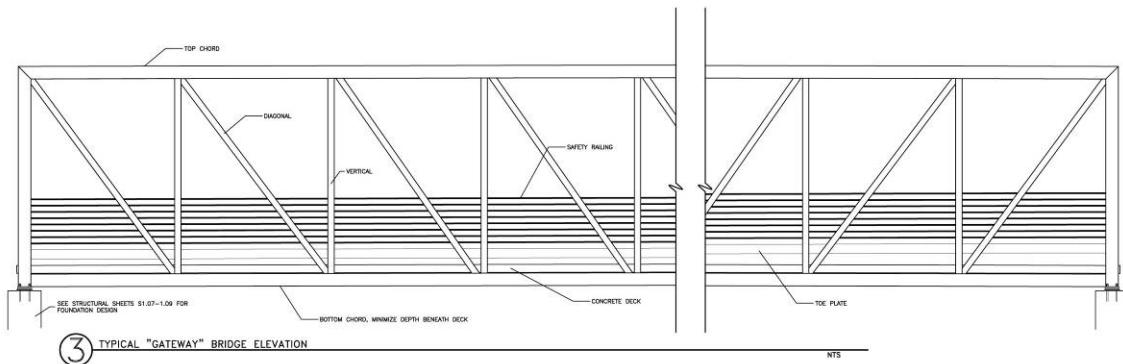


NOTE:
DRAWINGS ARE PROVIDED FOR BID PURPOSES ONLY. CONTRACTOR TO SUBMIT
SHOP DRAWINGS SEALED BY BRIDGE ENGINEER PRIOR TO BEGINNING
CONSTRUCTION.



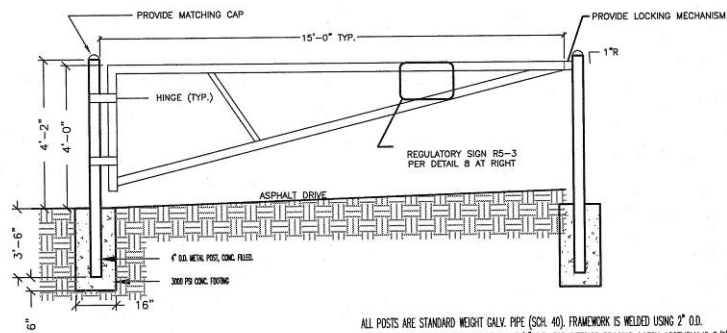
1 TYPICAL "CONNECTOR" RAMP ELEVATION NTS

2 TYPICAL RAMP/BRIDGE SECTION NTS



3 TYPICAL "GATEWAY" BRIDGE ELEVATION NTS

Fencing and Barricades



NOTE: GATE TO RECEIVE TIE BACK POST IDENTICAL TO GATE POST. PROVIDE MECHANISM FOR PADLOCK AT BOTH POSTS. SEE PLANS FOR LOCATION.

ALL POSTS ARE STANDARD WEIGHT GALV. PIPE (SCH. 40). FRAMEWORK IS WELDED USING 2" O.D. STANDARD PIPE FOR EXTERIOR FRAME & 1 5/8" O.D. FOR INTERIOR BRACING. LATCH ASSEMBLY IS 3/8" X 1" PRESSED STEEL.

PROVIDE MECHANISM FOR RECEIVING PADLOCK IN OPEN AND CLOSED POSITION. OWNER TO PROVIDE PADLOCK. COORDINATE WITH OWNER FOR MECHANISM TYPE.

ALL STEEL JOINTS TO RECEIVE CONT. WELD USE NO SPOT WELDS.

GRIND ALL WELDS SMOOTH W/ NO BARBS.

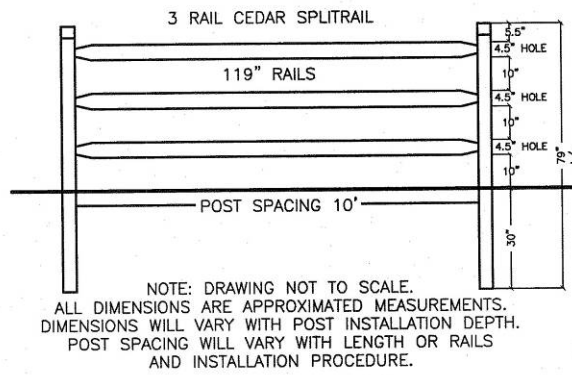
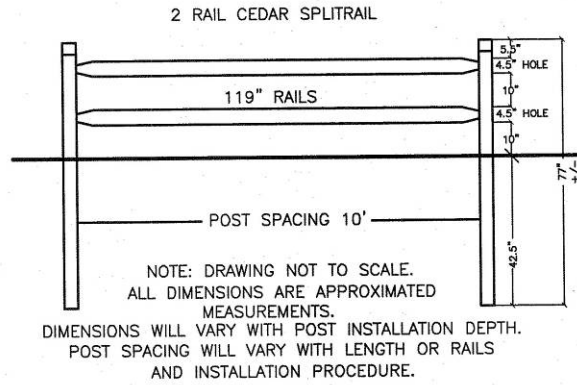
PAINT TO BE EXTERIOR SEMI-GLOSS ENAMEL. APPLY ALL PAINT PER MANUFACTURER'S SPECS. OVER PREVIOUSLY PRIMER RED PAINTED STEEL

PAINT ALL STEEL SURFACES BLACK

PROVIDE SHOP DRAWINGS FOR OWNER'S REPRESENTATIVE'S APPROVAL

6 MAINTENANCE DRIVE ACCESS GATE

NTS

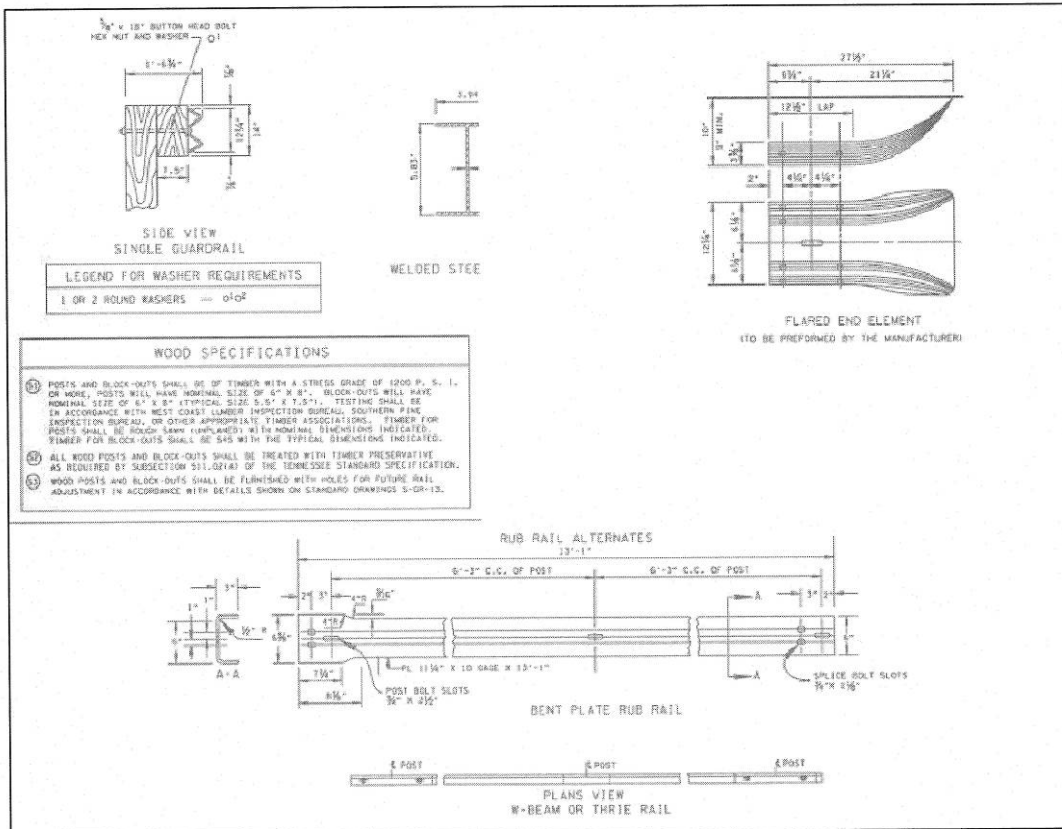


5

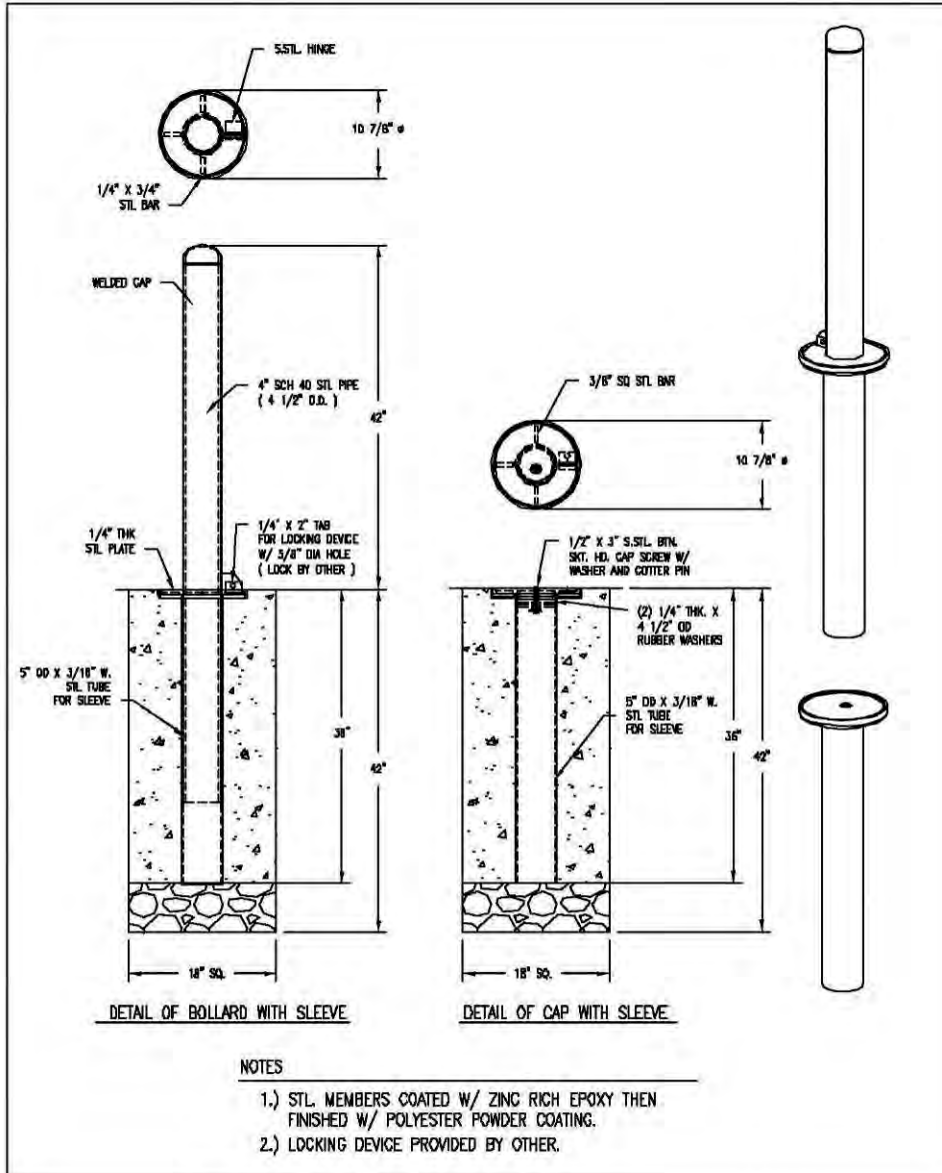
SPLIT RAIL FENCE


N.T.S

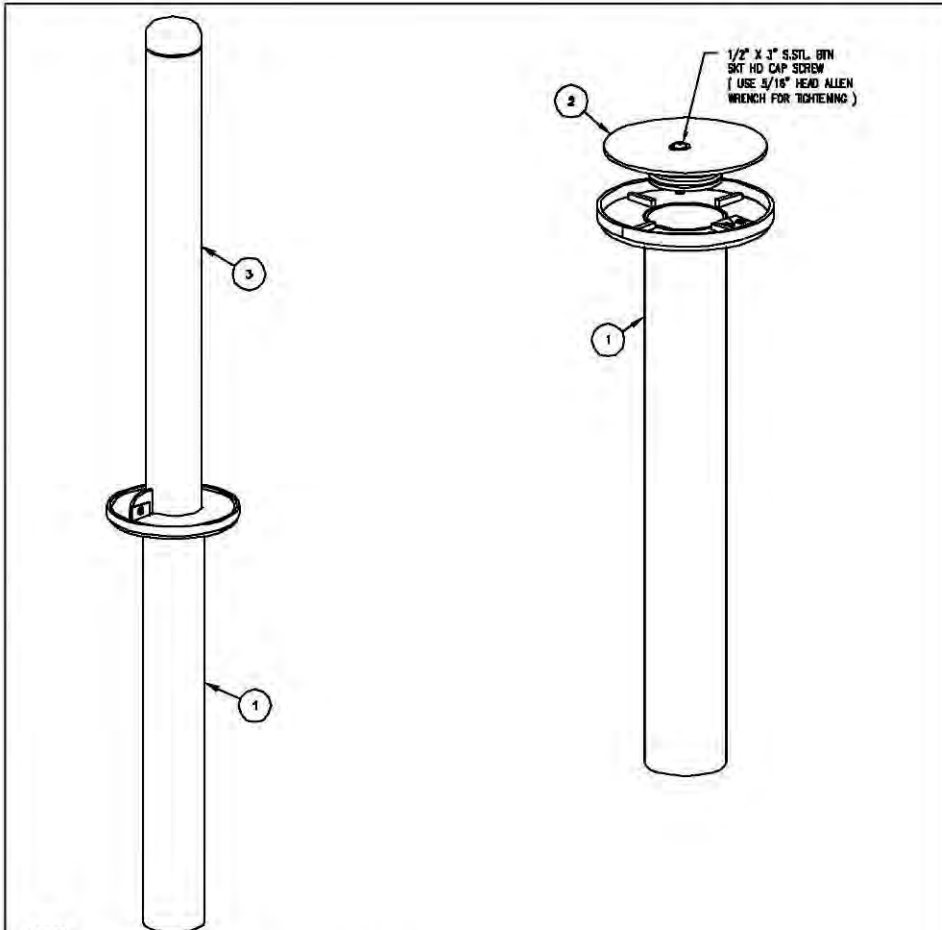
NOTE:
 DRAWINGS ARE TAKE FROM TDOT'S ENGLISH STANDARD DRAWINGS, SEE S-GR-11,12, AND 15 FOR COMPLETE LIST OF REQUIREMENTS AND NOTES.
 DRAWINGS MAY BE VIEWED ONLINE @ www.tdot.state.tn.us/Cheif_Engineer/engr_library/design/Std_Drwg_Eng.htm



6 GUARD RAIL
 NOT TO SCALE




 <p>DuMor, inc. P.O. Box 142 Mifflintown, PA 17059-0142</p>	SCALE :	NONE	TITLE :		BOLLARD
	DATE DRAWN :	10/27/06	REV.	DRAWING NUMBER	400-42/S-15L
	DRAWN BY :	AMH	B		
	DATE REV. :	01/10/07			
	REV. BY :	ESS			SHEET 1 OF 2



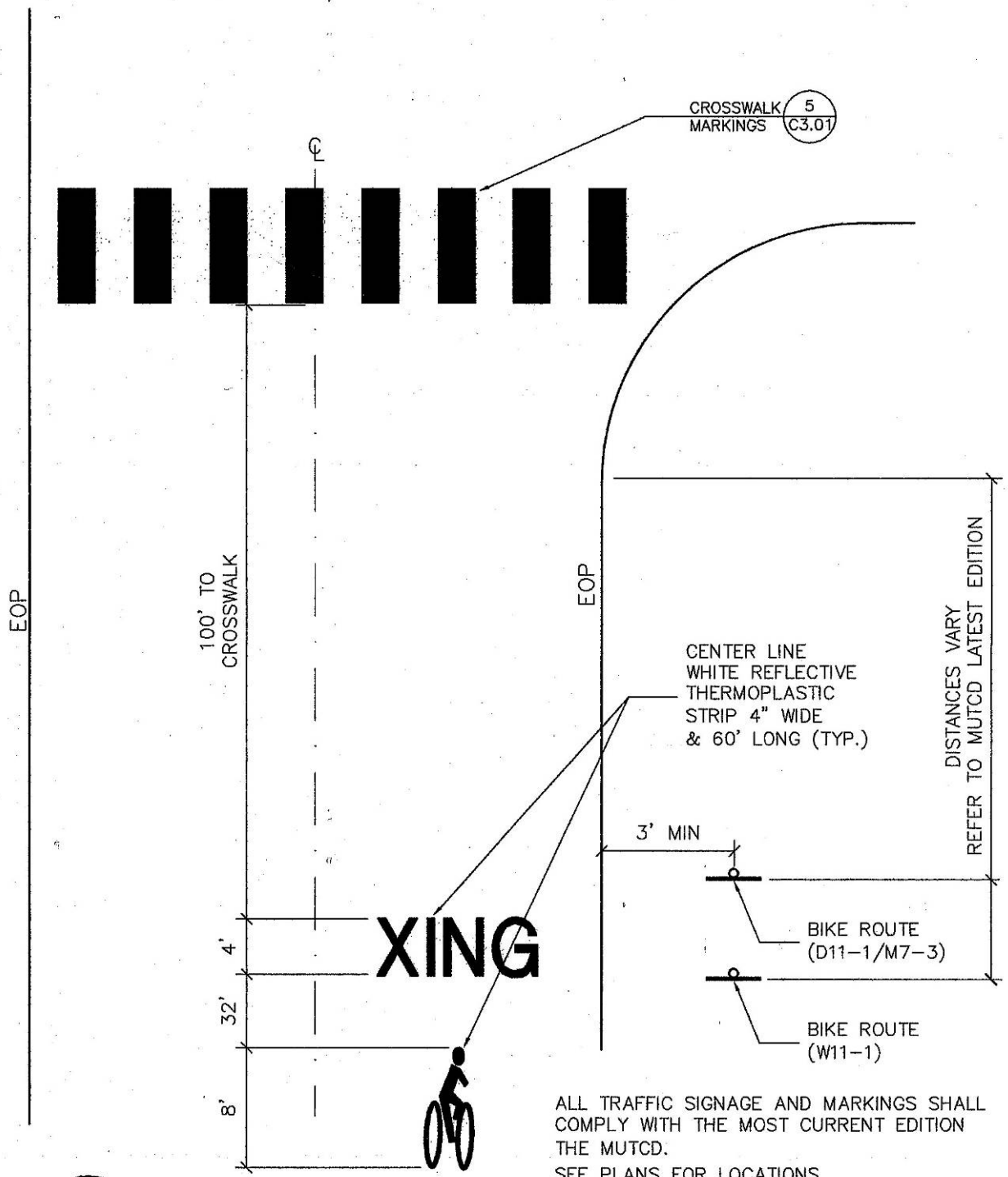
NOTES:

1. SET SLEEVE INTO FOOTER HOLDING PLUMB, SQUARE AND HEIGHT SHOWN.
2. SLIDE BOLLARD INTO SLEEVE AFTER CONCRETE HAS HARDENED. BE SURE TO HAVE HINGE TAB SLIDE INTO BOLLARD BASE PLATE SLOT FOR LOCKING.
3. FOR USE OF CAP. WHEN BOLLARD IS REMOVED, PLACE CAP INTO SLEEVE. TIGHTEN CAP BY USING 1/2" X 3" BUTTON HEAD BOLT. THIS WILL COMPRESS THE RUBBER WASHERS THICKNESS AND EXPAND THE DIAMETER TO FIT SNUG TO SLEEVE.

ITEM	QTY	PART NO	DESCRIPTION
1	1	D-400-02	STL BOLLARD SLEEVE W/ HINGE
2	1	D-400-03	BOLLARD SLEEVE CAP ASSEMBLY
3	1	D-400-42-01/1SL	42" STL BOLLARD, EMBED FOR SLEEVE

 DuMor, inc. P.O. Box 142 Mifflintown, PA 17059-0142	SCALE : NONE	TITLE : BOLLARD	
	DATE DRAWN : 10/27/06	REV. B	DRAWING NUMBER 400-42/5-15L
	DRAWN BY : AWH	SHEET 2 OF 2	
	DATE REV. : 01/10/07		
	REV. BY : ESS		

Signage

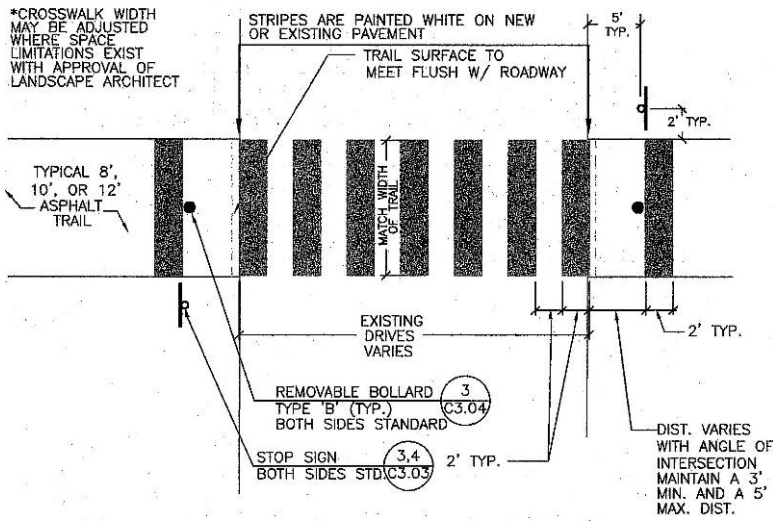


5 STOP BAR - DETAIL

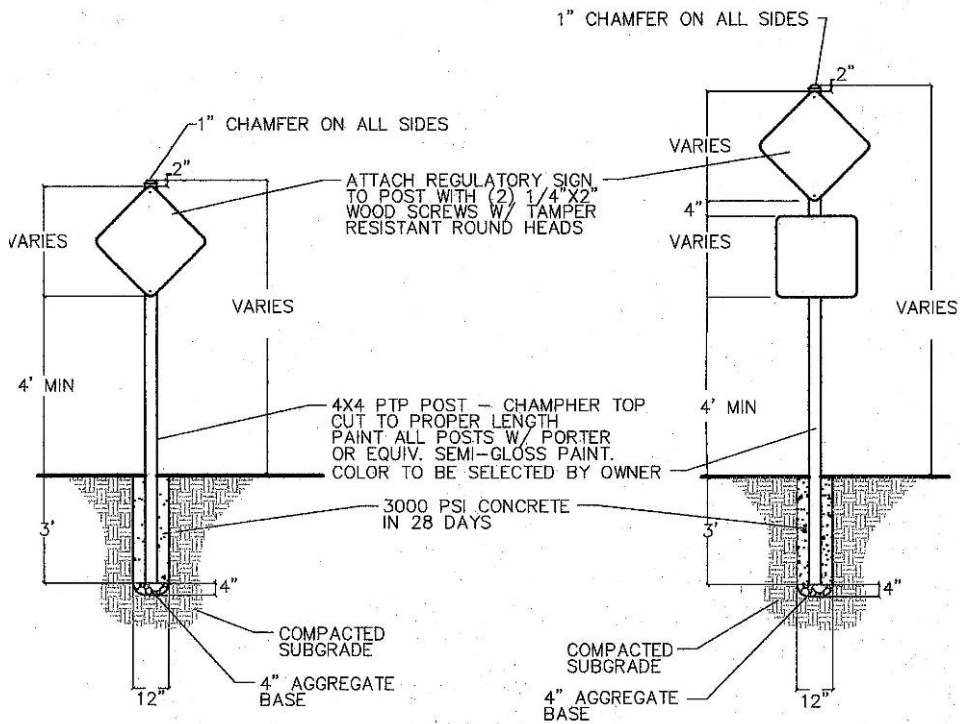
NTS

ALL TRAFFIC SIGNAGE AND MARKINGS SHALL COMPLY WITH THE MOST CURRENT EDITION THE MUTCD.
SEE PLANS FOR LOCATIONS

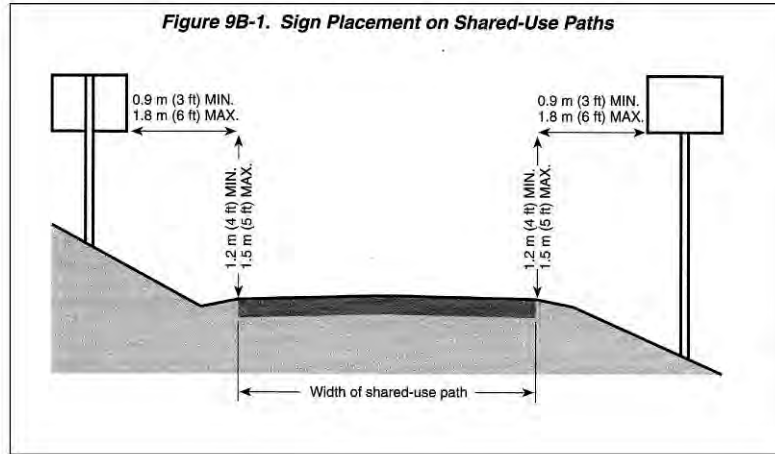
NOTE:
 CROSSWALK STRIPES SHALL BE APPLIED IN ACCORDANCE WITH
 TDOT SPECIFICATIONS SECTIONS 716.06 AND 716.07(C).
 PAINT FOR THE CROSSWALK SHALL BE WHITE REFLECTIVE
 THERMOPLASTIC PAINT



5 CROSSWALK MARKINGS AND SIGNAGE N.T.S.
 ALL SIGNS & MARKINGS TO MEET THE MUTCD (MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES)







1 TRAIL REGULATORY SIGN POST N.T.S.



FROM SECTION 9, MUTCD 2003 EDITION

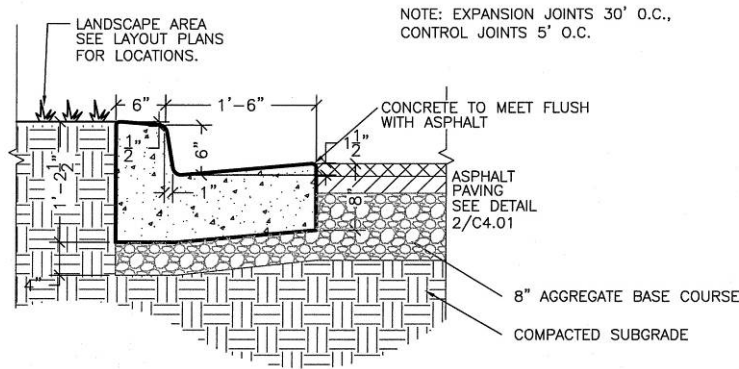
REGULATORY AND INFORMATIONAL SIGN SCHEDULE

NOTE:
 - ALL ALUMINIUM SIGNS ARE TO BE MANUFACTURED BY RAINBOW SIGNS OR APPROVED EQUIVELANT
 - ALL SIGNS TO MEET THE MUTCD/MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES- 2003 EDITION) NUMBERING AND SIZING SYSTEM AND SHALL BE BUILT CONFORMING TO THOSE STANDARDS.

<p>PEDESTRIANS ONLY</p> <p>NO BICYCLES</p> <p>*GREEN BACKGROUND *WHITE TEXT</p> <p>SP-1 18"x12"</p>		
 <p>ROADWAY 30"x30" BIKE TRAIL 18"x18"</p> <p>R1-1</p>	<p>NO MOTOR VEHICLES</p> <p>R5-3 24"x24"</p>	 <p>YIELD TO PEDS</p> <p>R9-6 12"x18"</p>
 <p>W1-1 18"x18"</p>	<p>STOP AHEAD</p> <p>W3-1 18"x18"</p>	 <p>SLIPPERY WHEN WET</p> <p>BIKE TRAIL 18' X 18' 12' X 9'</p> <p>W8-10</p>

1.8 TRAILHEAD DETAILS

Curb and Gutter

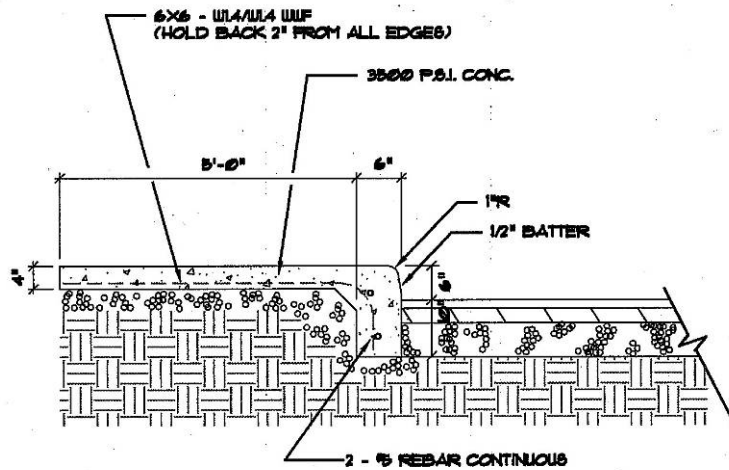


GENERAL NOTE:

- 1.) Expansion joints will also be required at tangent points, ramps, and inlets.
- 2.) Contraction joints are to be cut into curb and gutter every 10 feet to a depth of $D/4$, where D equals the thickness of the section. The spacing of 10 feet may be reduced at closures but no section of curb and gutter shall be less than 6 feet.
- 3.) There will be a minimum of 10 feet tie in at curb inlets oneach side of the inlet. An expansion joint will be used on each side of the tie in.
- 4.) Cost of joints to be included in the unit bid price for concrete curb with gutter.
- 5.) Concrete to be class "A" per Murfreesboro Standards.

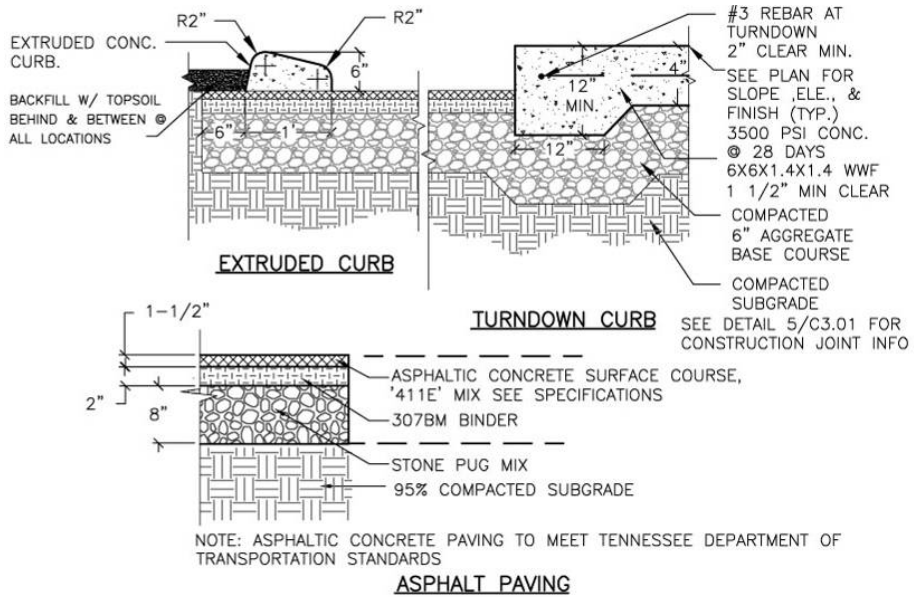
11 CURB AND GUTTER

N.T.S.

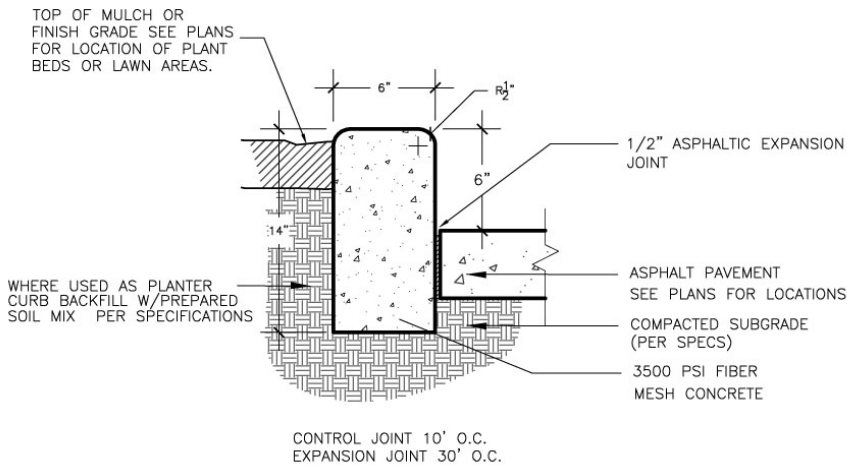


6 C3.00 SIDEWALK & CURB DETAIL

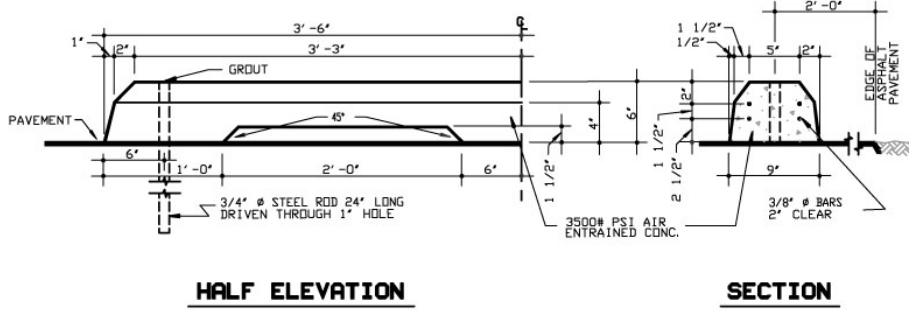
NTS



3 STD. ASPHALT PAVING W/ CURBS NTS



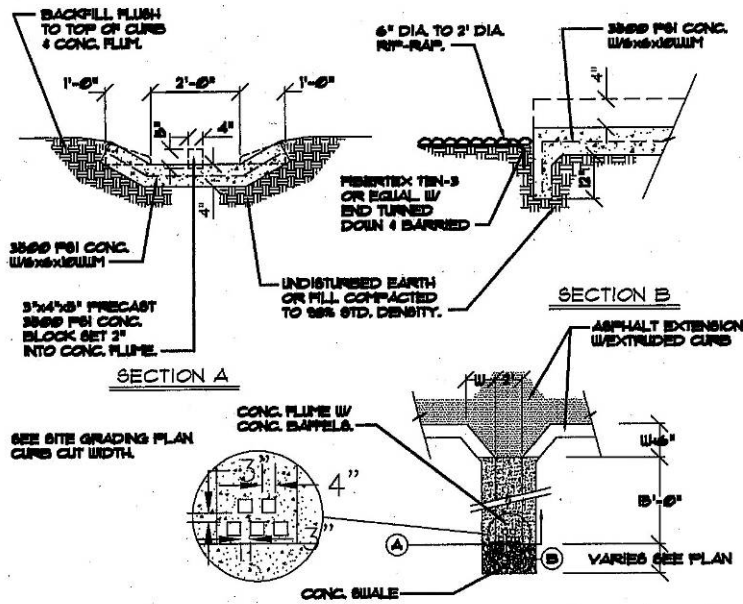
6 POST CURB NOT TO SCALE



7

PRECAST CONCRETE CURB STOP

N.T.S.



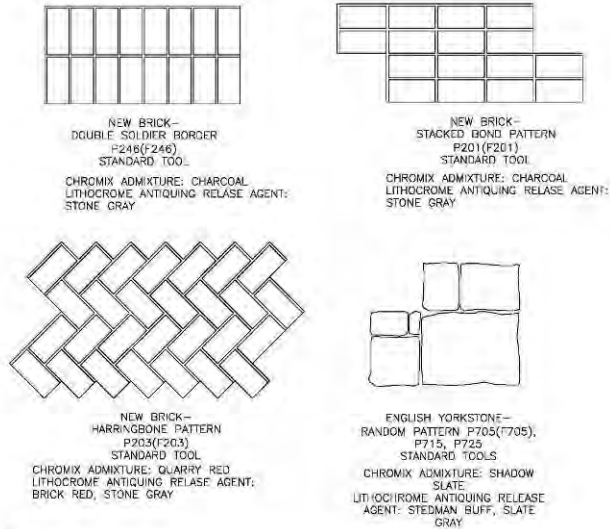
9
C3.00

CURB CUT

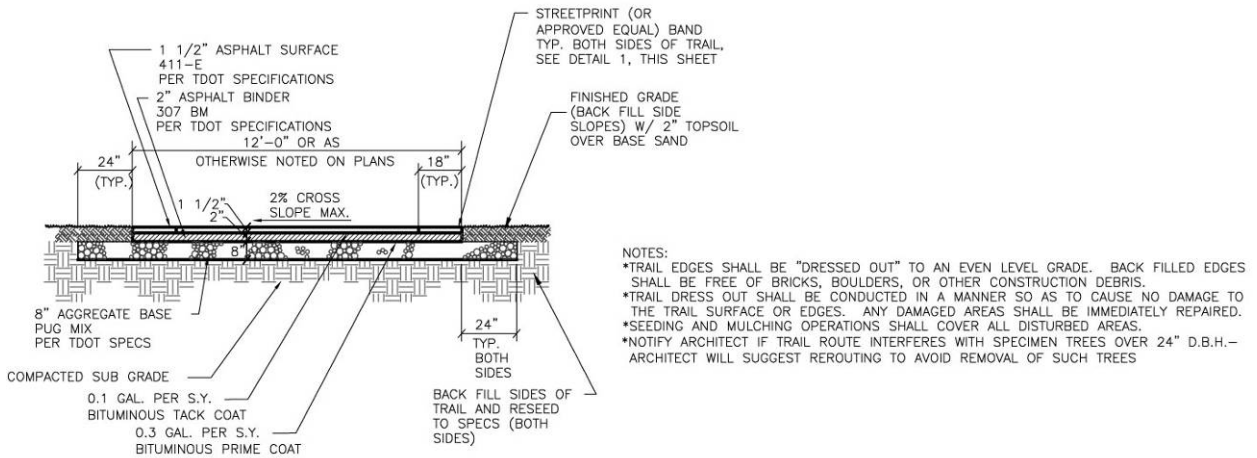
NTS

Paving

PATTERNS SHOWN ARE LITHOTEX PAVECRAFTERS BY L.M. SCOFIELD COMPANY, 1-800-800-9900, OR APPROVED EQUALS, SEE DETAIL 3, THIS SHEET FOR CONCRETE PAVING DETAIL



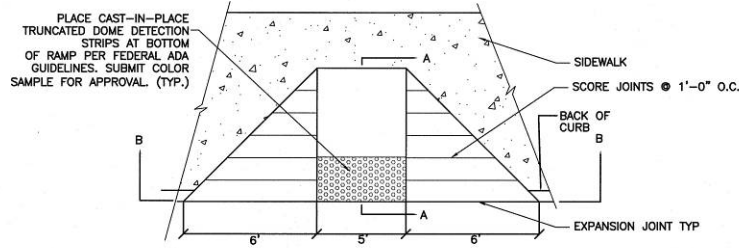
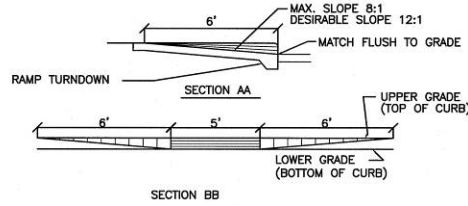
4 CONCRETE PATTERNS N.T.S.



NOTES:
 *TRAIL EDGES SHALL BE "DRESSED OUT" TO AN EVEN LEVEL GRADE. BACK FILLED EDGES SHALL BE FREE OF BRICKS, BOULDERS, OR OTHER CONSTRUCTION DEBRIS.
 *TRAIL DRESS OUT SHALL BE CONDUCTED IN A MANNER SO AS TO CAUSE NO DAMAGE TO THE TRAIL SURFACE OR EDGES. ANY DAMAGED AREAS SHALL BE IMMEDIATELY REPAIRED.
 *SEEDING AND MULCHING OPERATIONS SHALL COVER ALL DISTURBED AREAS.
 *NOTIFY ARCHITECT IF TRAIL ROUTE INTERFERES WITH SPECIMEN TREES OVER 24" D.B.H.- ARCHITECT WILL SUGGEST REROUTING TO AVOID REMOVAL OF SUCH TREES

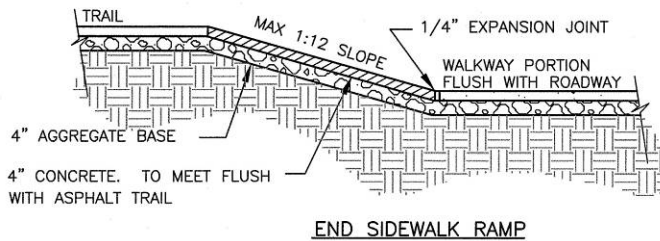
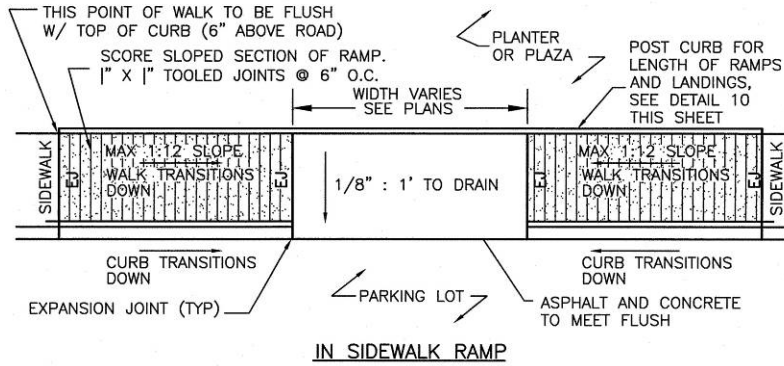
2 HEAVY DUTY ASPHALT TRAIL SECTION N.T.S.

Ramps



3 FLARED CONCRETE RAMP

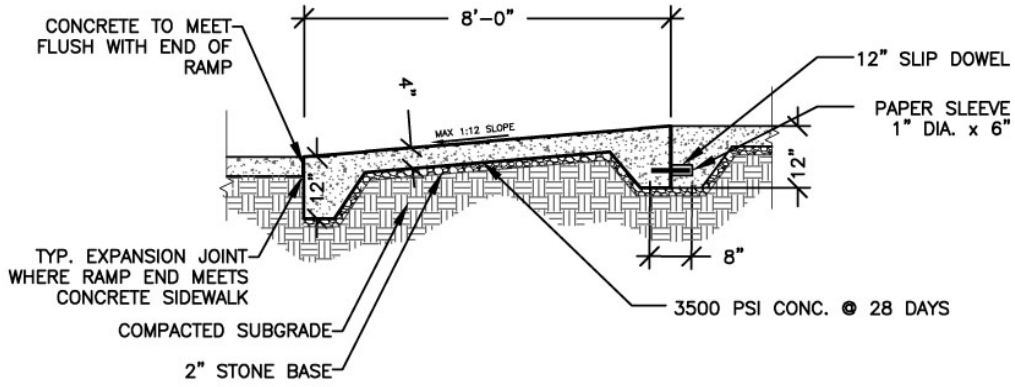
NOT TO SCALE



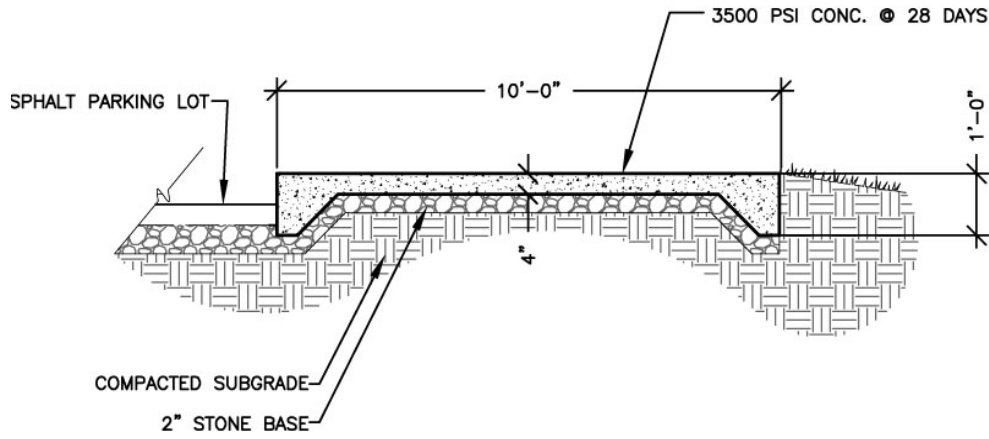
7 STD. HANDICAP SIDEWALK RAMPS

NOT TO SCALE

NTS



HORIZONTAL SECTION VIEW



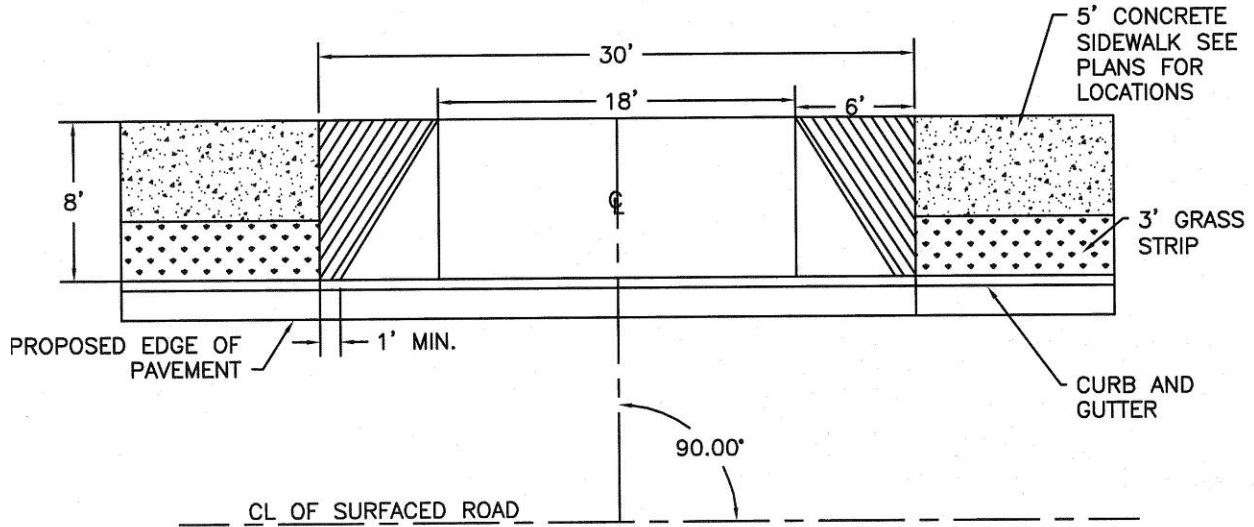
LONGITUDINAL SECTION VIEW

1

HANDICAP RAMP

N.T.S.

NOTE: ALL CONSTRUCTION AND MATERIAL SHALL COMPLY WITH THE CITY OF MURFREESBORO STANDARDS

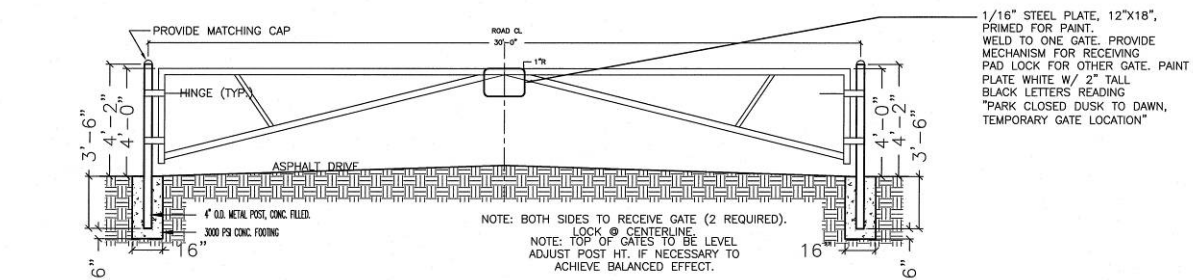


4

CONCRETE DRIVEWAY RAMP

NTS

Fencing and Barricades



NOTE: EACH GATE TO RECEIVE TIE BACK POST IDENTICAL TO GATE POST. PROVIDE MECHANISM FOR PADLOCK AT TIE BACK POSTS. SEE PLANS FOR LOCATION.

ALL POSTS ARE STANDARD WEIGHT GALV. PIPE (SCH. 40). FRAMEWORK IS WELDED USING 2" O.D. STANDARD PIPE FOR EXTERIOR FRAME & 1 5/8" O.D. FOR INTERIOR BRACING. LATCH ASSEMBLY IS 3/8" X 1" PRESSED STEEL.

PROVIDE MECHANISM FOR RECEIVING PADLOCK @ CENTERLINE OF ROAD. OWNER TO PROVIDE PADLOCK. COORDINATE WITH OWNER FOR MECHANISM TYPE.

ALL STEEL JOINTS TO RECEIVE CONT. WELD USE NO SPOT WELDS.

GRIND ALL WELDS SMOOTH W/ NO BARBS.

PAINT TO BE EXTERIOR SEMI-GLOSS ENAMEL. APPLY ALL PAINT PER MANUFACTURER'S SPECS. OVER PREVIOUSLY PRIMER RED PAINTED STEEL.

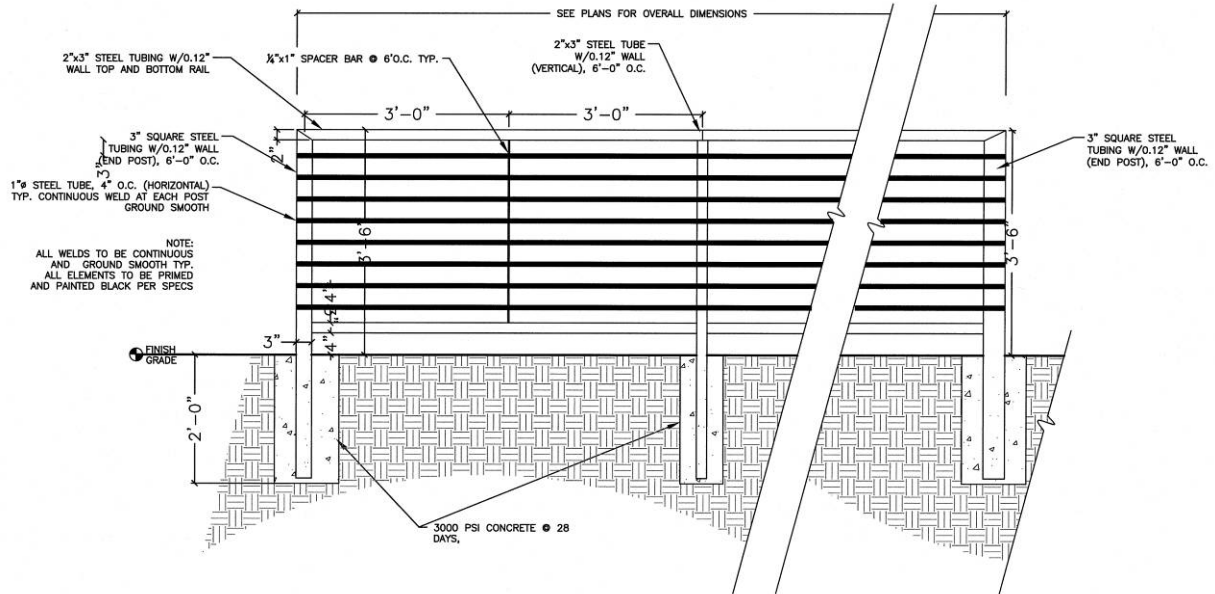
PAINT ALL STEEL SURFACES BLACK. PROVIDE SHOP DRAWINGS FOR OWNER'S REPRESENTATIVE'S APPROVAL.

1/16" STEEL PLATE, 12"x18", PRIMED FOR PAINT. WELD TO ONE GATE. PROVIDE MECHANISM FOR RECEIVING PAD LOCK FOR OTHER GATE. PAINT PLATE WHITE W/ 2" TALL BLACK LETTERS READING "PARK CLOSED DUSK TO DAWN, TEMPORARY GATE LOCATION"

2

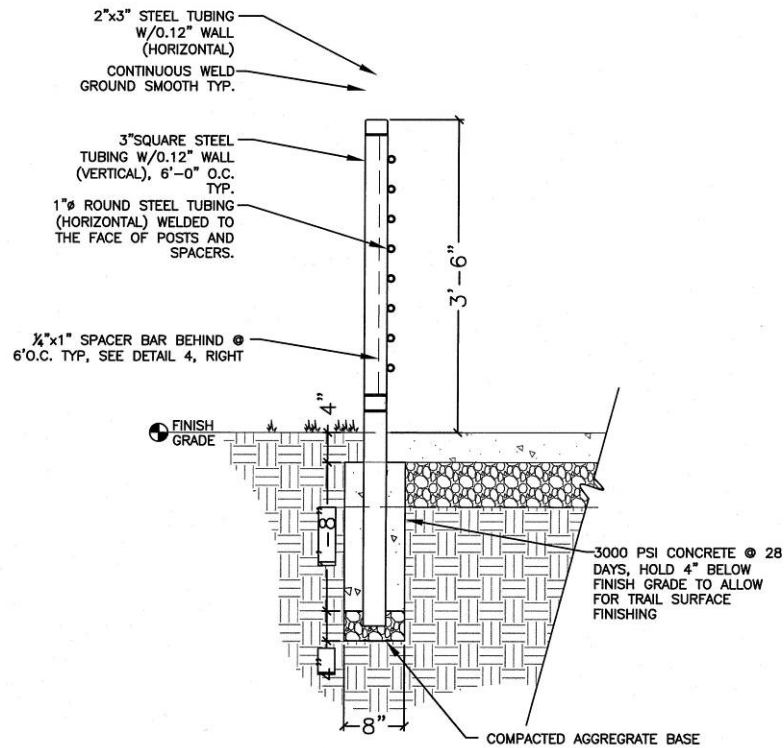
TRAILHEAD ACCESS GATE

NTS



1 HANDRAIL ELEVATION DETAIL

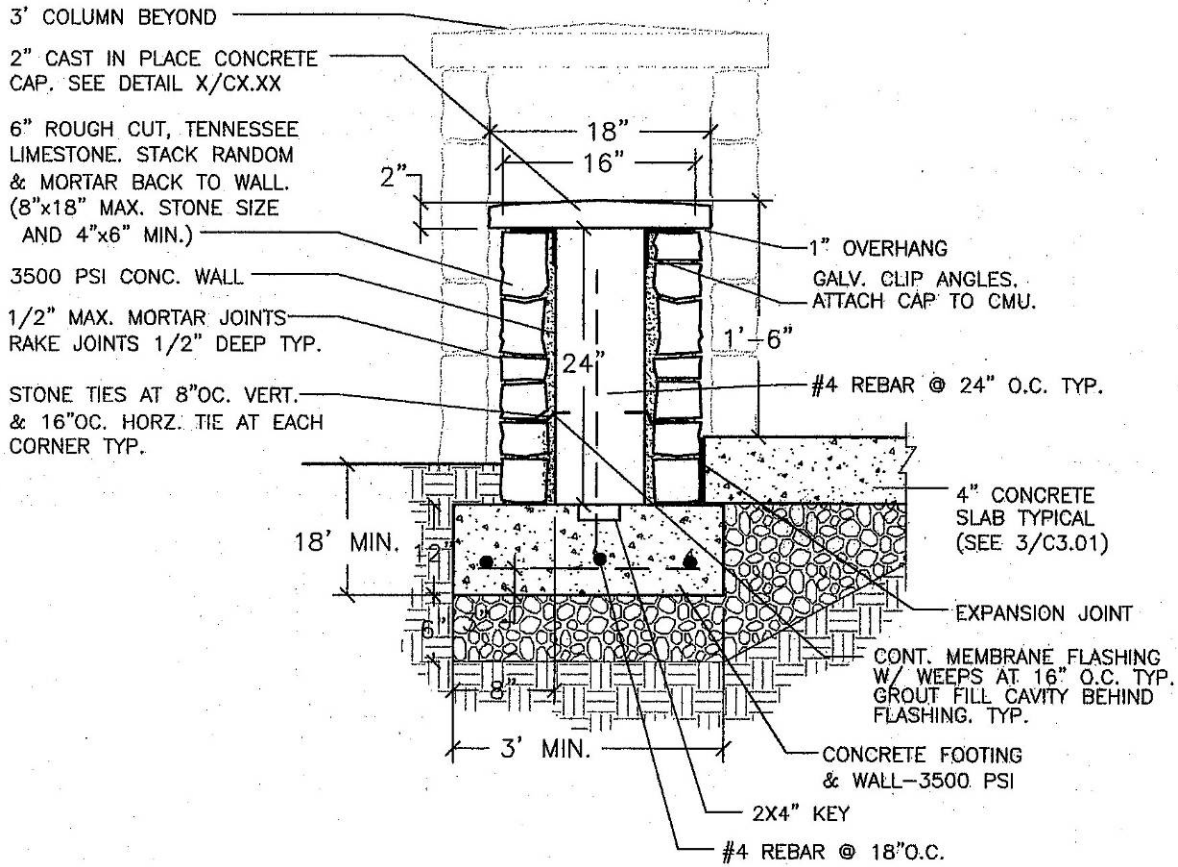
N.T.S.



3 HANDRAIL SECTION DETAIL

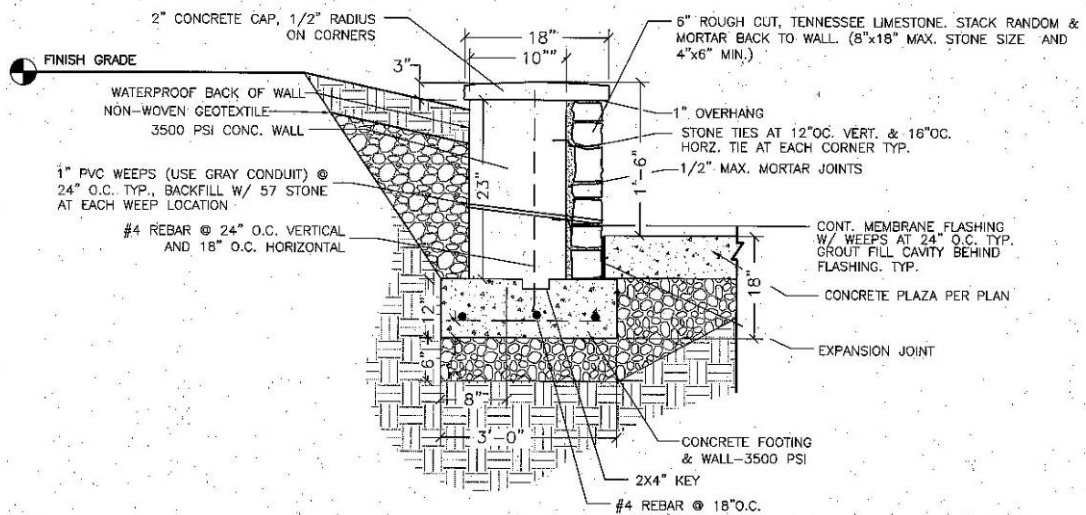
N.T.S.

Walls



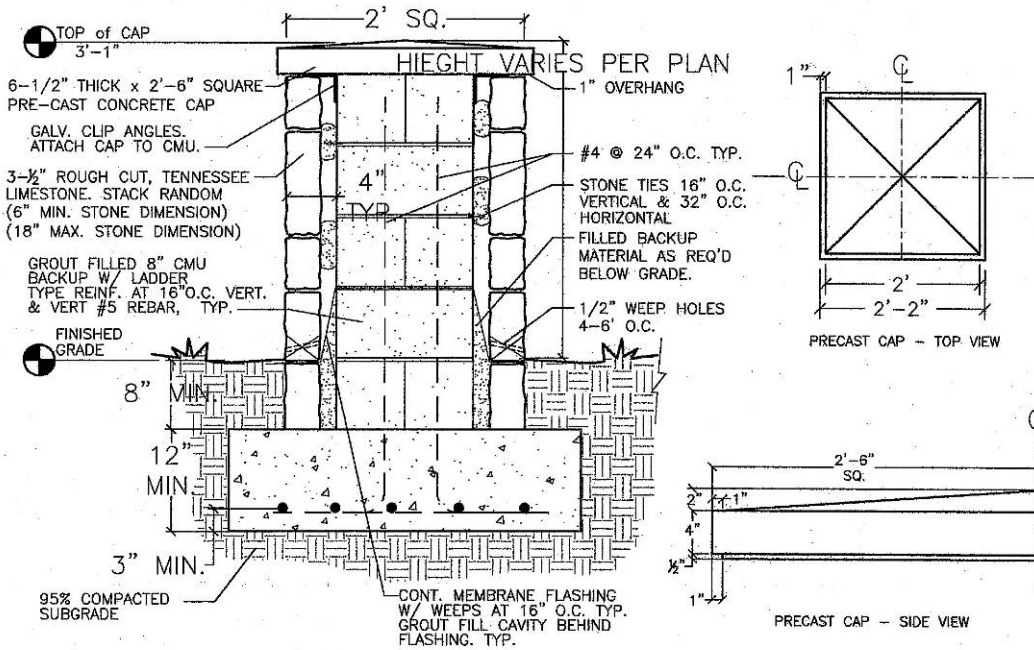
2 DIVIDER WALL

N.T.S.



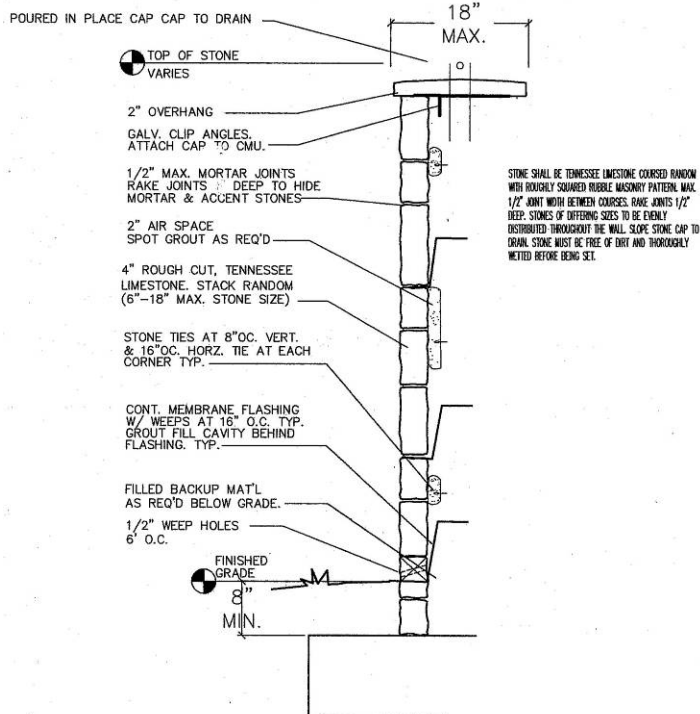
2 SEAT WALL

NTS



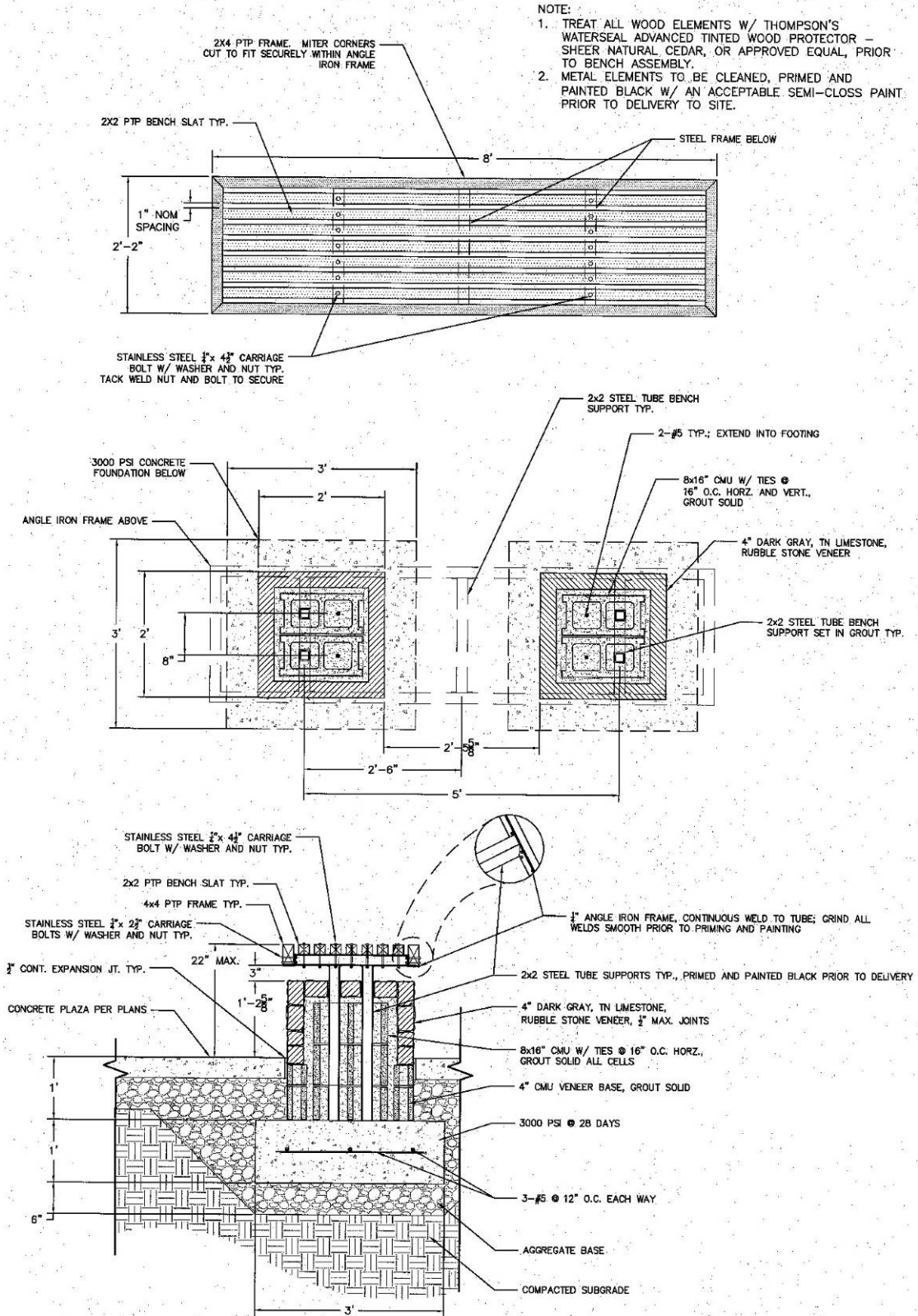
3 3' COLUMN W/ CAP

N.T.S.



4 STONE VENEER DETAIL

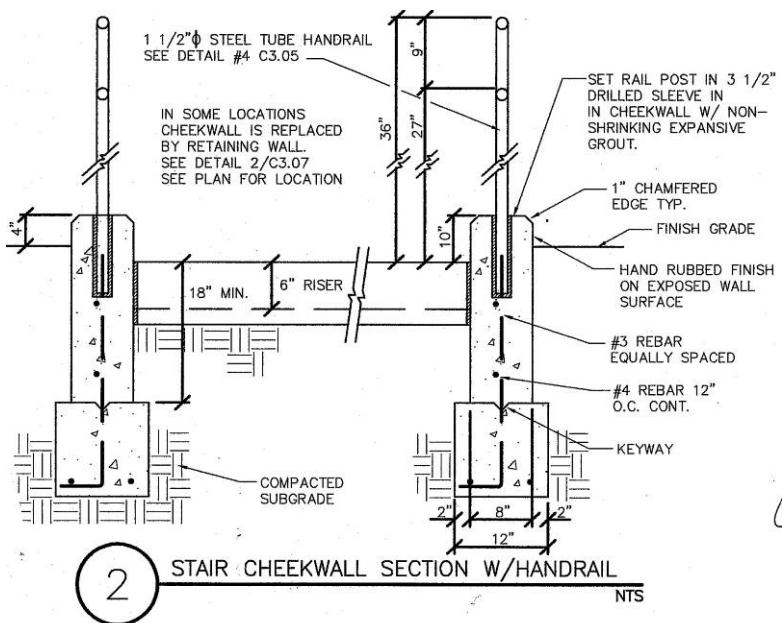
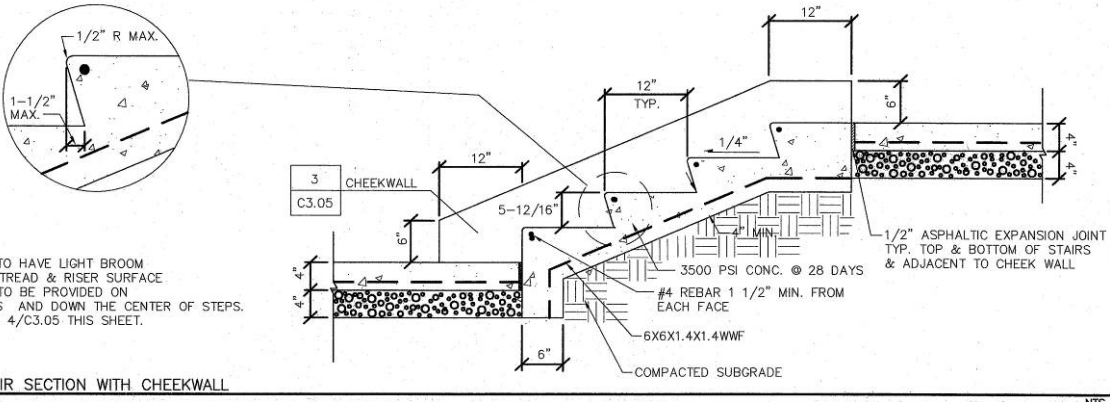
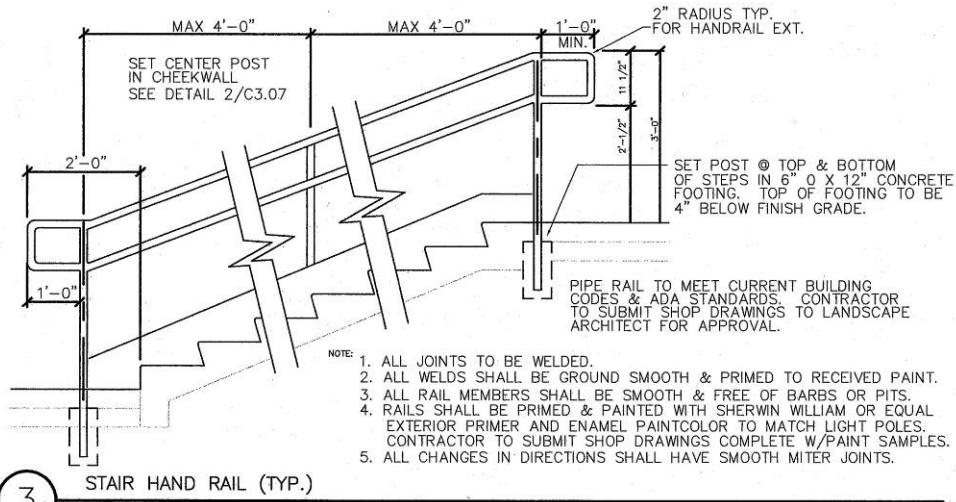
N.T.S.



3 CUSTOM 8' BENCH

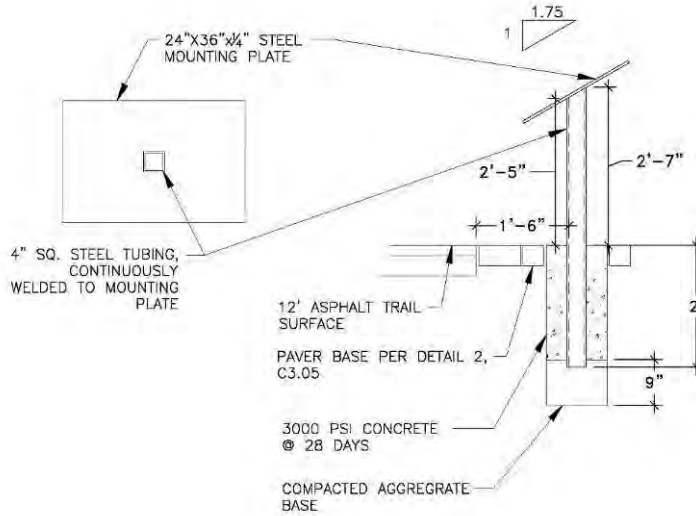
NTS

Stairs

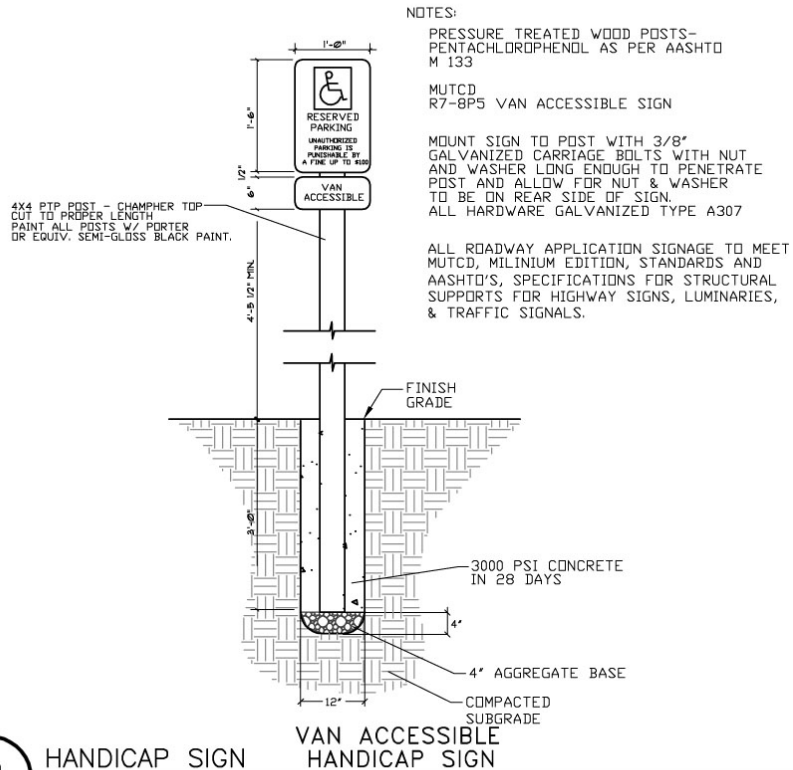


Signage

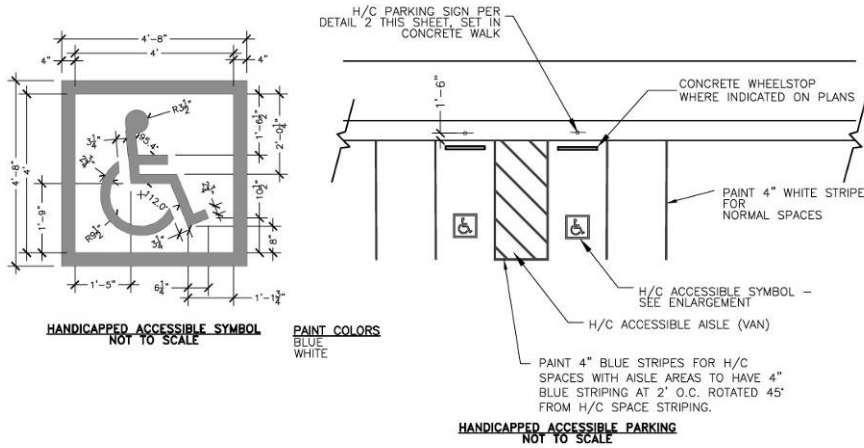
NOTE: $\frac{1}{8}$ " RESIN EMBEDDED GRAPHIC MAP TO BE MOUNTED ON STEEL MOUNTING PLATE PER MANUFACTURERS RECOMMENDATIONS, GRAPHICS TO BE COORDINATED WITH THE CITY OF MURFREESBORO PARKS DEPARTMENT. PAINT ALL EXPOSED METAL SURFACE BLACK.



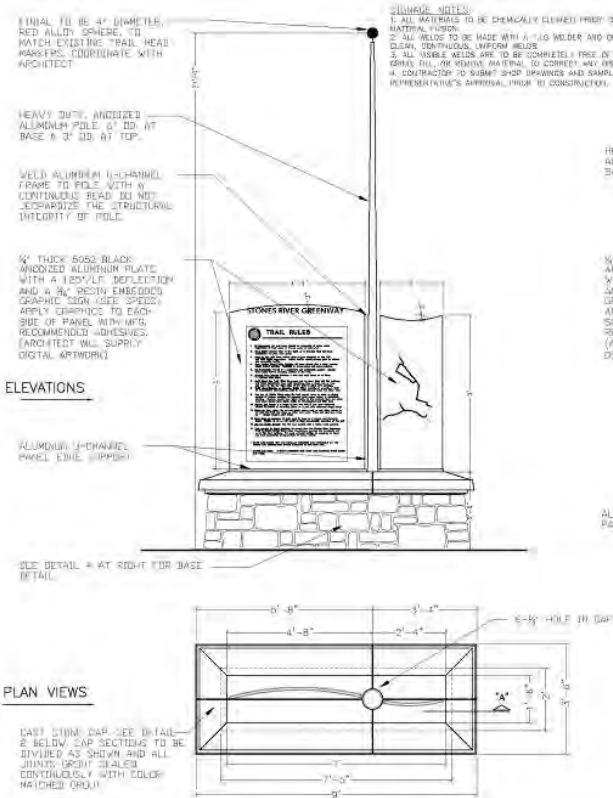
GREENWAY MAP STAND



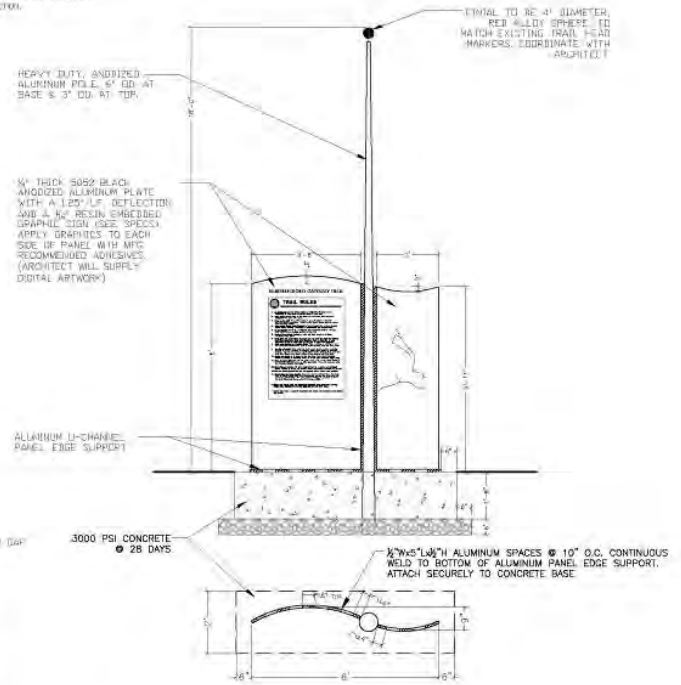
NTS



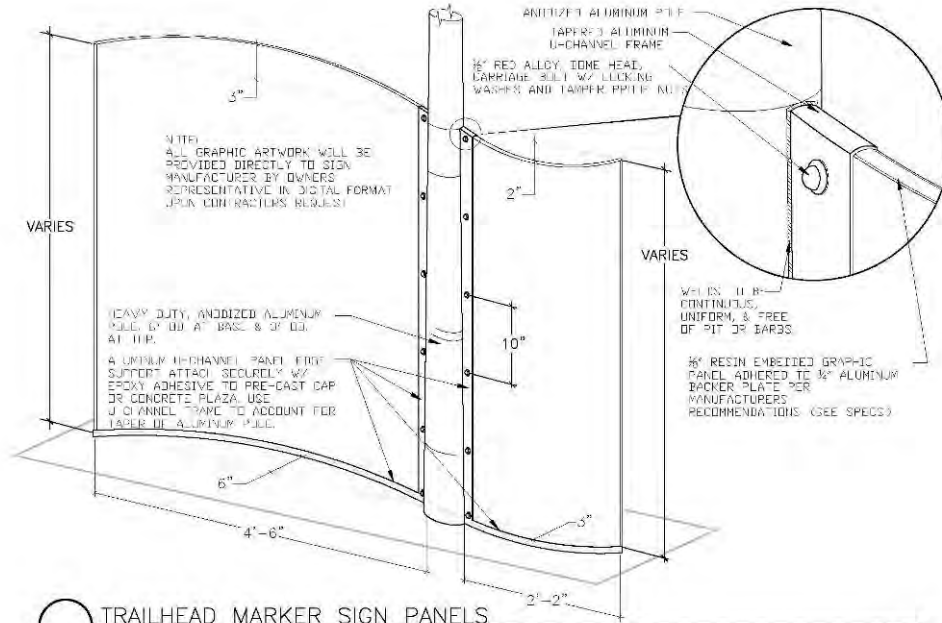
3 HANDICAPPED PARKING LAYOUT
NOT TO SCALE



1a TRAILHEAD MARKER W/ ELEVATED BASE

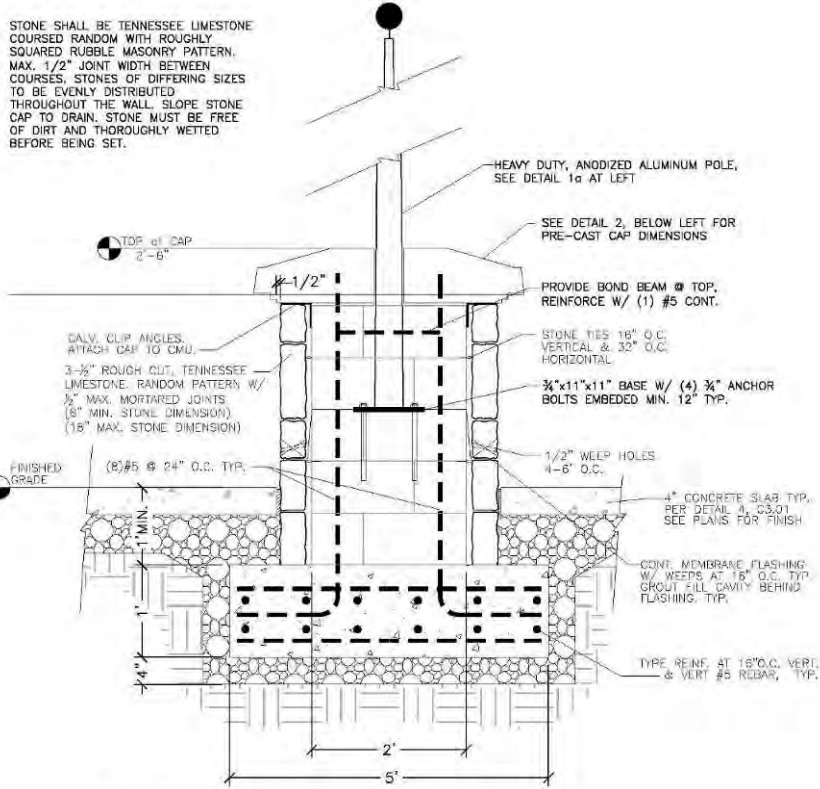


1b TRAILHEAD MARKER W/ FLUSH BASE



TRAILHEAD MARKER SIGN PANELS

NTS

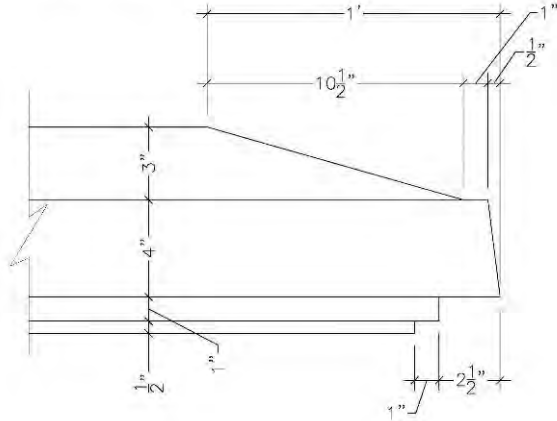


ELEVATED SIGN BASE SECTION

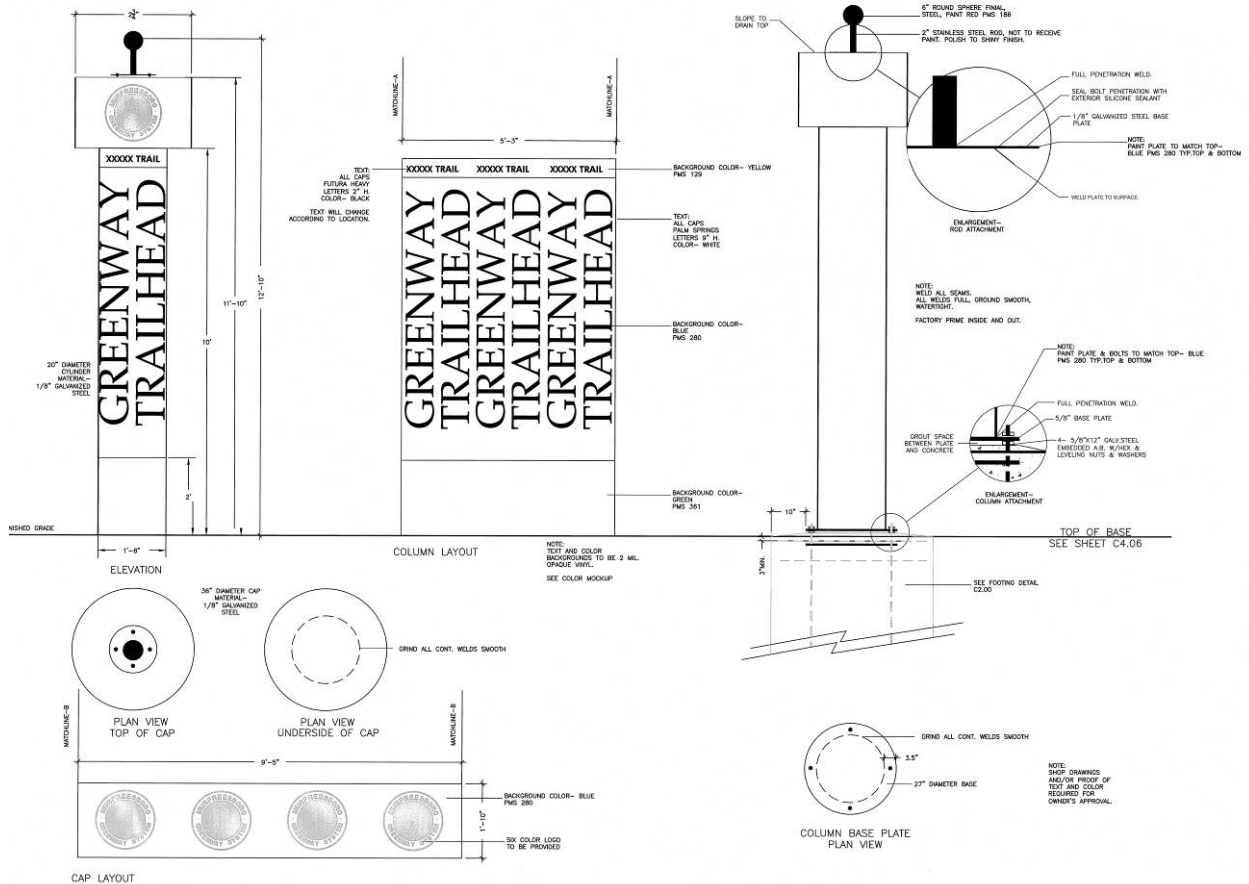
N.T.S.

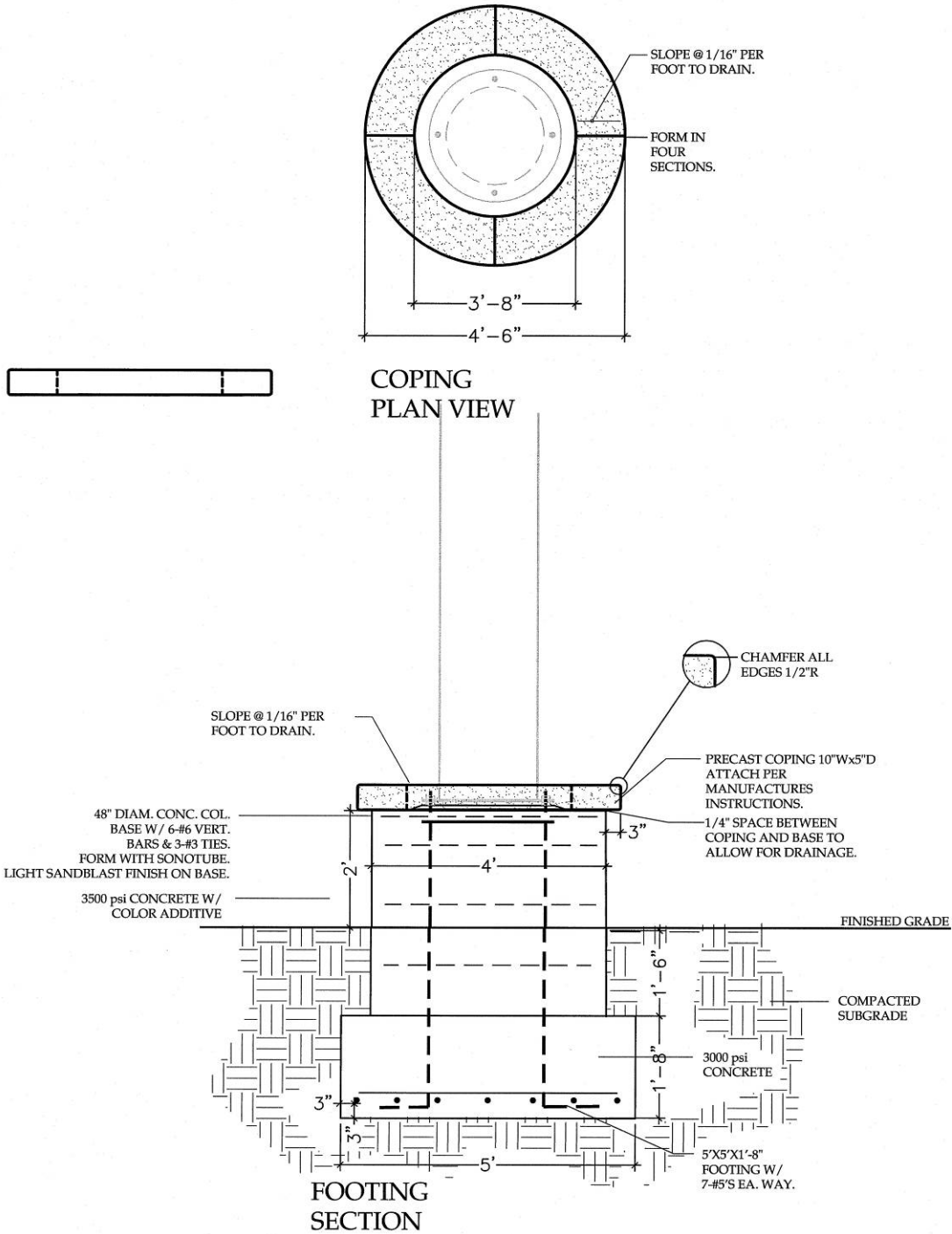
PRE-CAST STONE CAPS:

1. EACH SECTION OF PRE-CAST CAP IS TO BE SECURELY ANCHORED TO CONCRETE BASE AND NOT CLIP-TIED INTO VENEER.
2. ALL PRE-CAST STONE WORK TO MATCH AND BE UNIFORM IN COLOR.
3. ALL PRE-CAST STONEWORK TO BE TREATED WITH STAIN PROTECTION PRIOR TO INSTALLATION.
4. CONTRACTOR TO SUBMIT SAMPLES FOR OWNER'S APPROVAL.



STONE CAP DETAIL "A" NTS





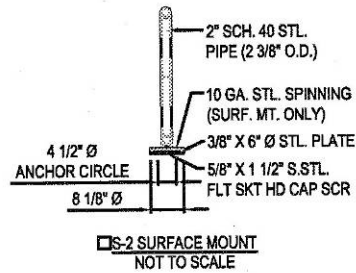
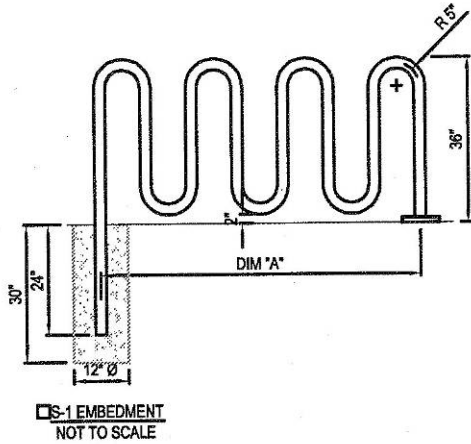
2 TRAIL MARKER FOUNDATION

NTS

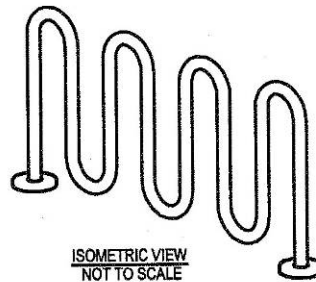
Site Furnishings



DU MOR, INC.
 15 INDUSTRIAL CIRCLE, P.O. BOX 142
 MIFFLINTOWN, PA 17059-0142
 1-800-598-4018
 PHONE:(717) 436-2106
 FAX:(717) 436-9839
 www.dumor.com



MODEL NO.	PEAKS	DIM 'A'
130-30	3	50" LG.




COATED W/ ZINC RICH EPOXY THEN FINISHED W/ POLYESTER POWDER COATING. (GREEN)
 HOT DIPPED GALVANIZED.

NOTES:

1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. DO NOT SCALE DRAWINGS.
3. 1/2" X 3 3/4" EXPANSION ANCHOR BOLTS PROVIDED FOR OPTION S-2.
4. CONTRACTOR'S NOTE: FOR PRODUCT AND PURCHASING INFORMATION VISIT www.CADdetails.com/info REFERENCE NUMBER 017-283.

4 130 SERIES DUMOR BIKE RACKS
 NOT TO SCALE

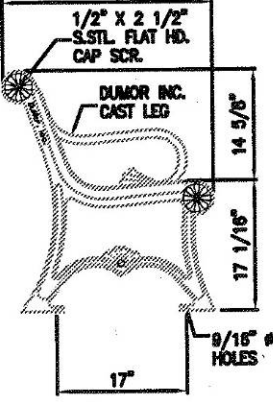
017-283



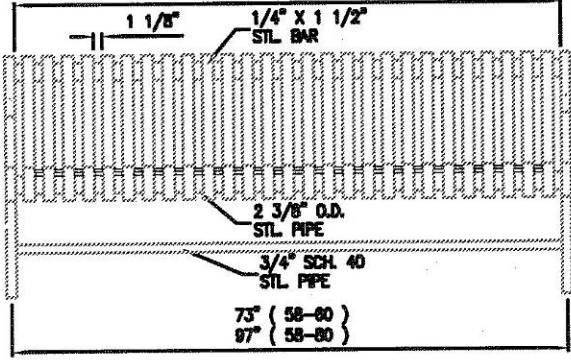
DuMor, inc.

DU MOR, INC.
 15 INDUSTRIAL CIRCLE, P.O. BOX 142
 MIFFLINTOWN, PA 17059-0142
 1-800-598-4018
 PHONE: (717) 436-2106
 FAX: (717) 436-9839
 www.dumor.com
 71 3/4" (58-80)
 85 3/4" (58-80)

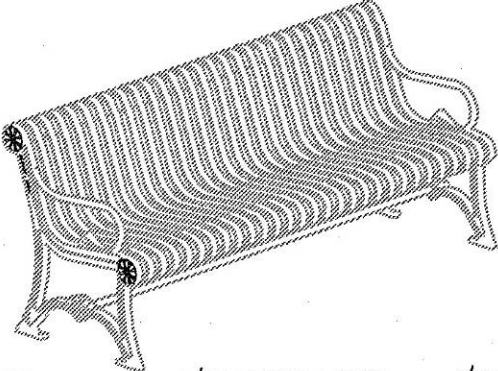
27 9/16"



17"



73" (58-80)
97" (58-80)



SELECT DESIRED CUSTOM LETTERING

_____ (37 SPACES)

SELECT DESIRED LENGTH


60" BENCH
 66" BENCH

SELECT DESIRED COLOR

<input type="checkbox"/> BLACK	<input type="checkbox"/> HUNTER GREEN
<input type="checkbox"/> BRONZE	<input type="checkbox"/> DEEP RED
<input type="checkbox"/> BLUE	<input type="checkbox"/> GREEN
<input type="checkbox"/> OTHER	

NOTES:

1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. DO NOT SCALE DRAWINGS.
3. ALL STL. MEMBERS COATED W/ ZINC RICH EPOXY THEN FINISHED W/ POLYESTER COATING (SEE COLOR OPTIONS).
4. 1/2" X 3 3/4" PLTD. EXPANSION ANCHOR BOLTS PROVIDED.
5. CUSTOM LETTERING AVAILABLE FOR RECESSED SIDE PANELS (37 SPACES TOTAL).
6. CONTRACTOR'S NOTE: FOR PRODUCT AND PURCHASING INFORMATION VISIT www.PROJECTmarketalls.com REFERENCE NUMBER 017-029




BENCH
58 SERIES, METAL

PROTECTED BY COPYRIGHT - 017-029 04/30/02

www.caddetails.com

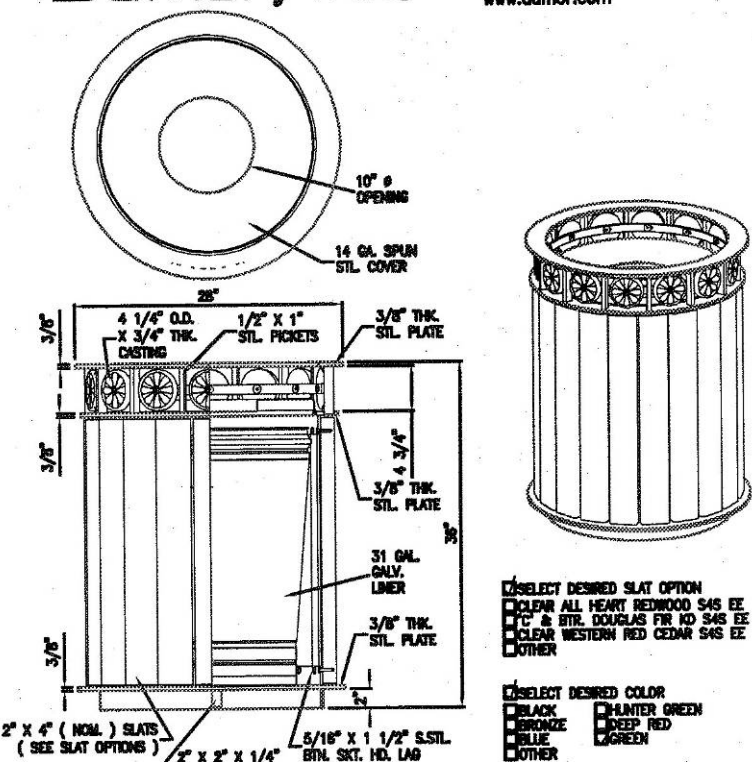
BENCH

NTS



DuMor, inc.

DU MOR, INC.
 15 INDUSTRIAL CIRCLE, P.O. BOX 142
 WIFFLINTOWN, PA 17059-0142
 1-800-399-4018
 PHONE (717) 436-2106
 FAX (717) 436-9839
 www.dumor.com



SELECT DESIRED SLAT OPTION

CLEAR ALL HEART REDWOOD S4S EE
 C & BTR. DOUGLAS FIR KD S4S EE
 CLEAR WESTERN RED CEDAR S4S EE
 OTHER

SELECT DESIRED COLOR

<input type="checkbox"/> BLACK	<input type="checkbox"/> HUNTER GREEN
<input type="checkbox"/> BRONZE	<input type="checkbox"/> DEEP RED
<input type="checkbox"/> BLUE	<input type="checkbox"/> GREEN
<input type="checkbox"/> OTHER	

NOTES:

1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. DO NOT SCALE DRAWINGS.
3. ALL STL. MEMBERS COATED W/ ZINC RICH EPOXY THEN FINISHED W/ POLYESTER COATING (SEE COLOR OPTIONS).
4. 1/2" X 3 3/4" PLTD. EXPANSION ANCHOR BOLTS PROVIDED.
5. ALL WOOD MEMBERS TREATED W/ CLEAR PRESERVATIVE.
6. CONTRACTOR'S NOTE: FOR PRODUCT AND PURCHASING INFORMATION VISIT www.PROJECTmortealta.com

REFERENCE NUMBER 017-080

RECEPTACLE
 124-31-F10, 31 GAL., WOOD SLATS

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www.caddetail.com

2

WASTE RECEPTACLE

NTS

BARCO PRODUCTS
OR
APPROVED ALTERNATE

MODEL # WDOG11003
INCL. 8' STEEL "U" CHANNEL POST
10GAL STEEL TRASH RECEPTACLE
50 HEAVY-DUTY TRASH BAGS,
12 X 18 ALUM. PET WASTE SIGN,
BAG DISPENSER,
400 LITTER BAGS



PET WASTE DISPOSAL STATION

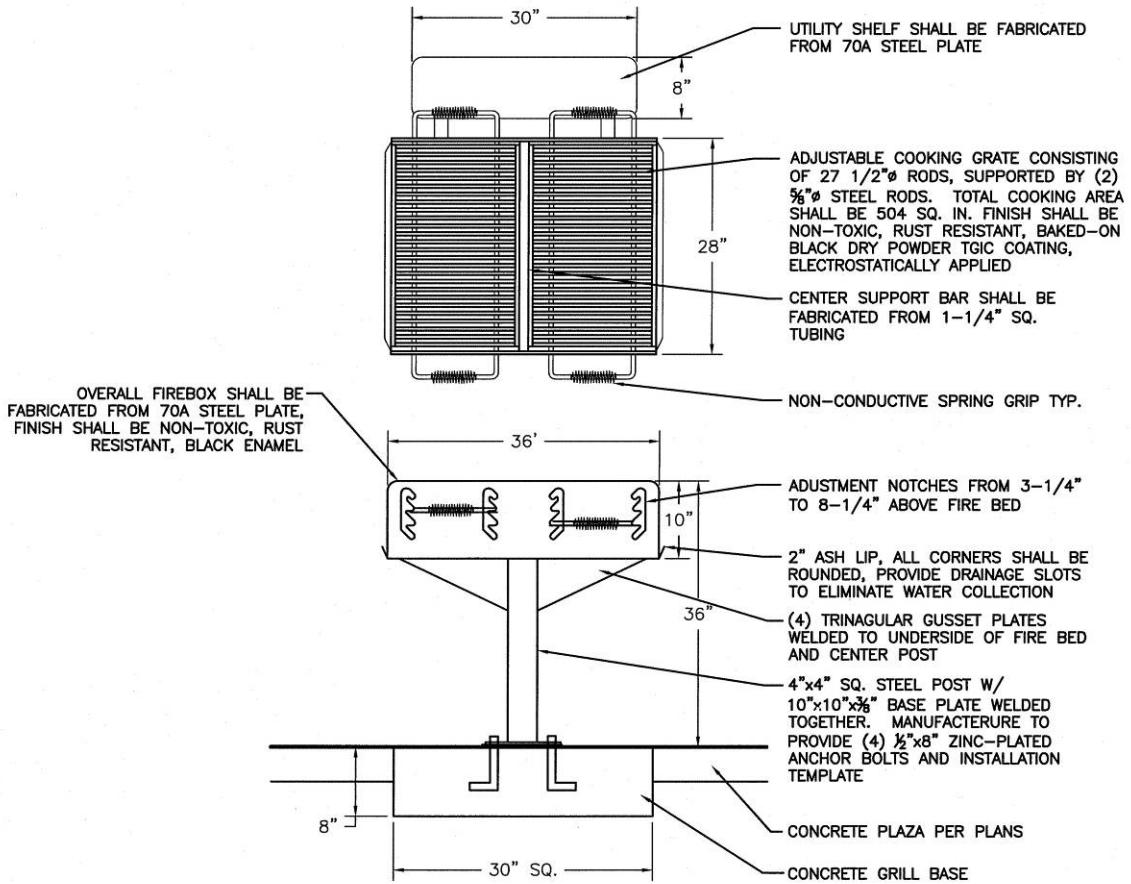
NTS

CONTACT:
 DAVID JONES @ MID-SOUTH
 RECREATION
 901-754-0905

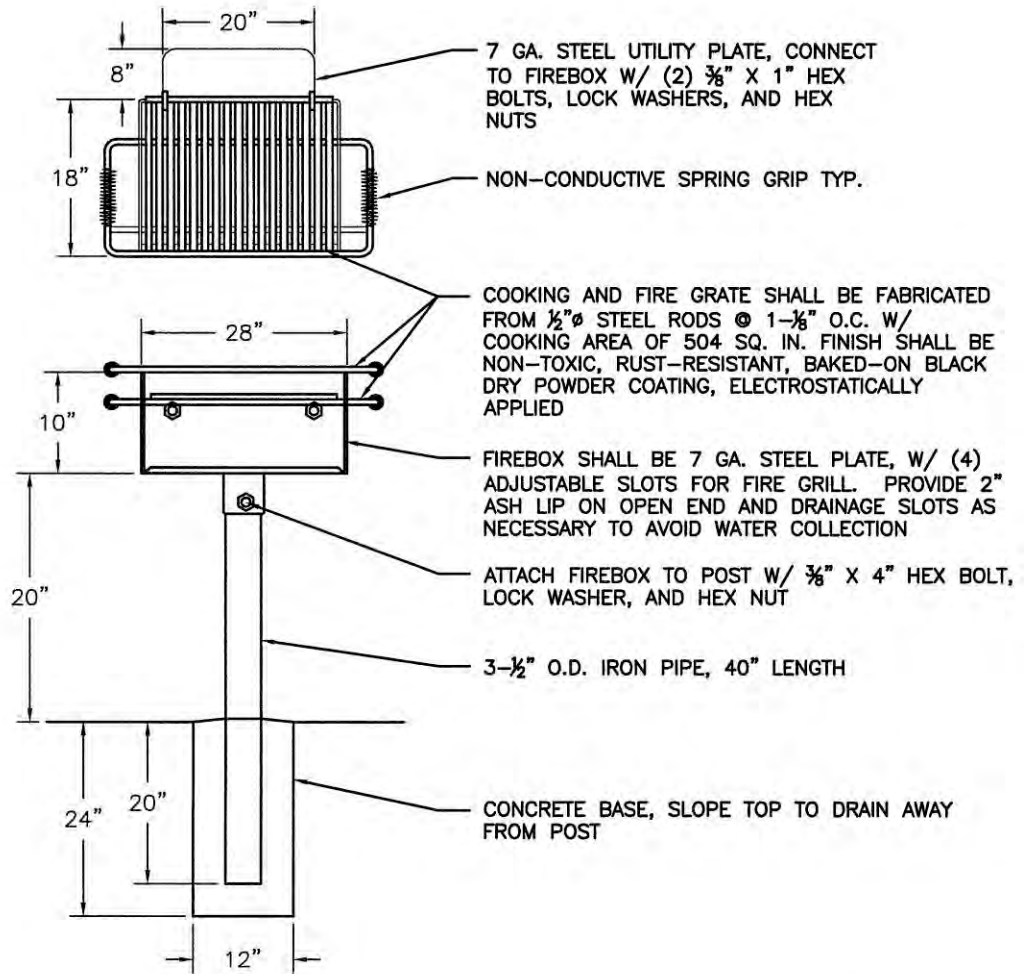


OR APPROVED EQUAL,
 SUBSTITUTIONS MUST BE SUBMITTED TO
 OWNER'S REPRESENTATIVE FOR APPROVAL AS
 SPECIFIED IN SPECS.

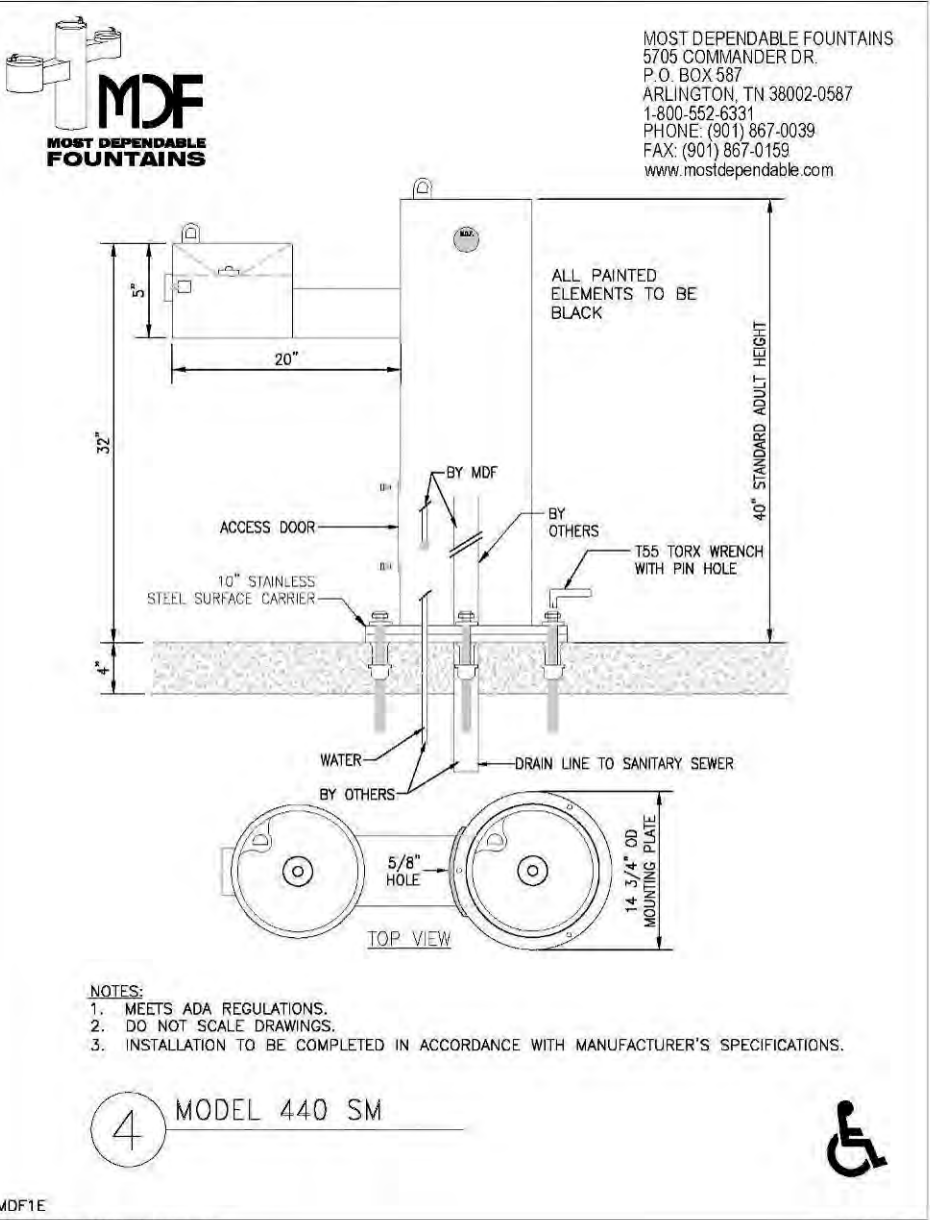
MODEL
 210-X

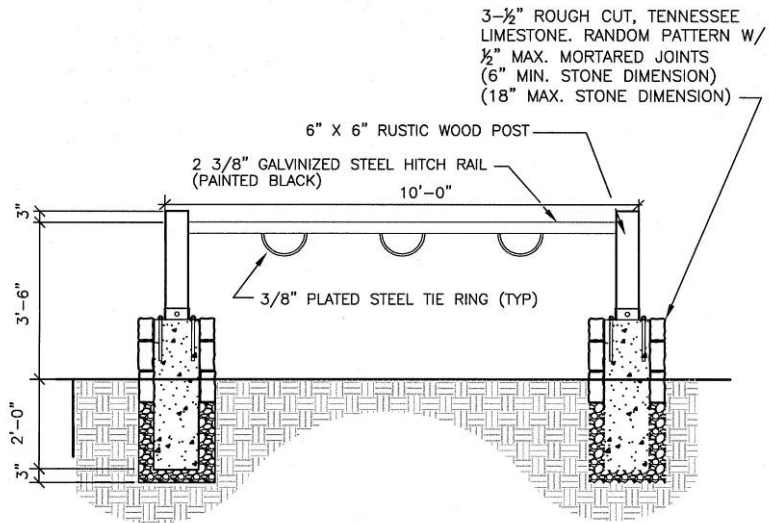


4 IRON MOUNTAIN FORGE GRILL 210-X
 NOT TO SCALE



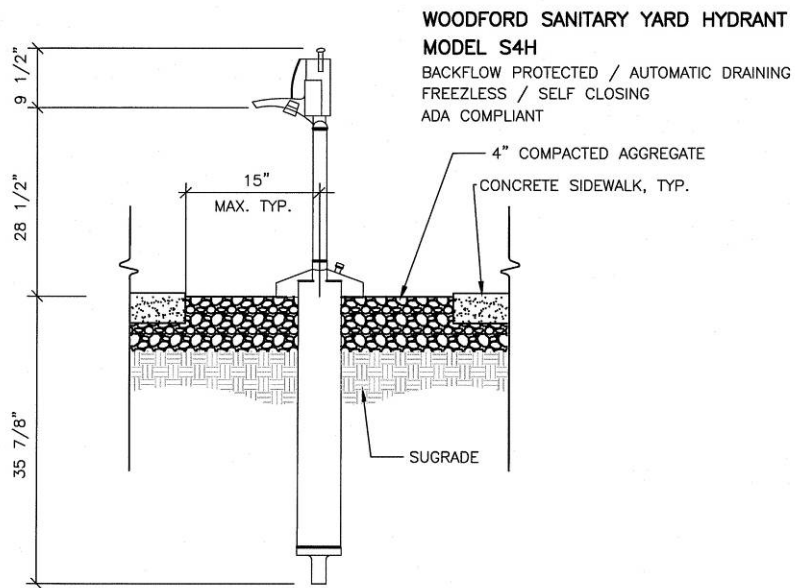
3 IRON MOUNTAIN FORGE GRILL 205-X
NOT TO SCALE





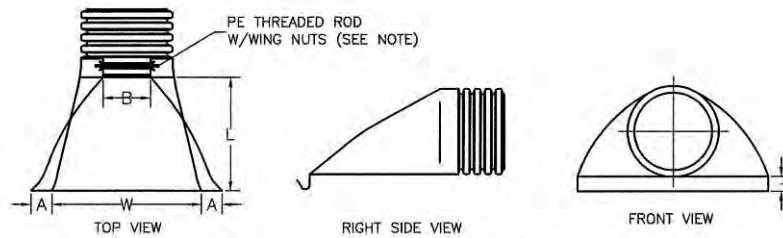
5 HITCHING POST

NTS



4 SANITARY YARD HYDRANT

NTS

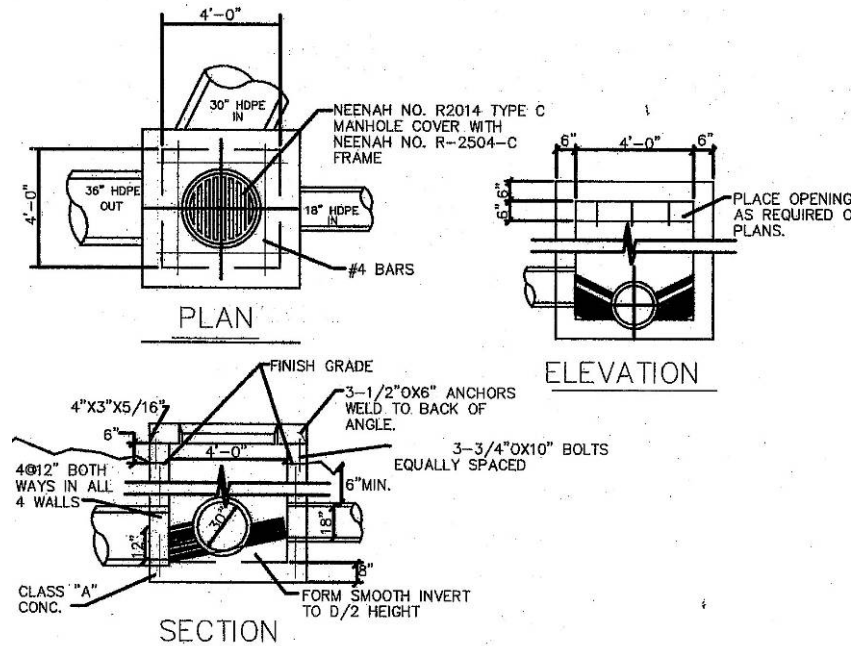


PART #	PIPE SIZE	A	B(MAX)	H	L	W
1210NP	12 in (300mm)	6.5 in (165mm)	10.00 in (254mm)	6.50 in (165mm)	25.00 in (635mm)	29.00 in (737mm)
1510NP	15 in (375mm)	6.5 in (165mm)	10.00 in (254mm)	6.50 in (165mm)	25.00 in (635mm)	29.00 in (737mm)
1810NP	18 in (450mm)	7.50 in (191mm)	15.00 in (381mm)	6.50 in (165mm)	32.00 in (813mm)	35.00 in (889mm)
2410NP	24 in (600mm)	7.50 in (191mm)	18.00 in (457mm)	6.50 in (165mm)	36.00 in (914mm)	45.00 in (1143mm)
3012NP	30 in (750mm)	10.50 in (267mm)	N/A	7.00 in (178mm)	53.00 in (1346mm)	68.00 in (1727mm)
3612NP	36 in (900mm)	10.50 in (267mm)	N/A	7.00 in (178mm)	53.00 in (1346mm)	68.00 in (1727mm)

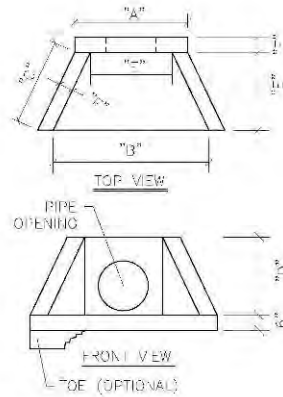
NOTE: ALL DIMENSIONS ARE NOMINAL

NOTE: PE THREADED ROD W/WING NUTS PROVIDED FOR END SECTIONS 12"-24". 30" & 36" END SECTIONS TO BE WELDED TO PIPE PER MANUFACTURER'S RECOMMENDATIONS.

10 FLARED END SECTION NTS



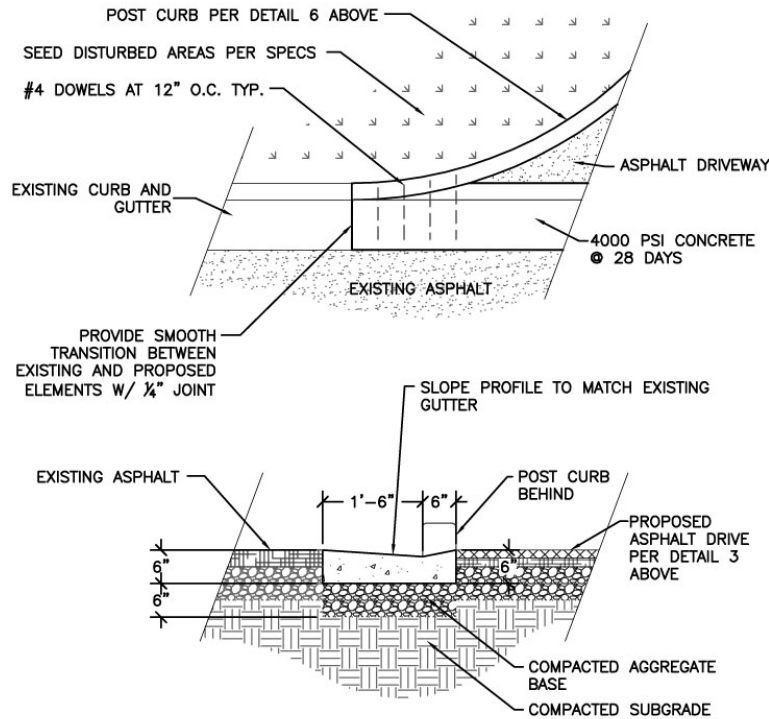
11 JUNCTION BOX NTS



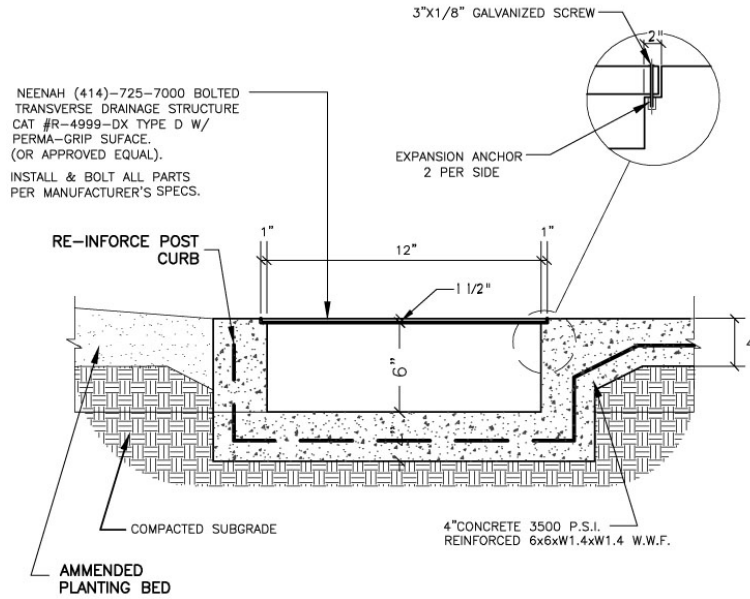
DIMENSION TABLE			
SIZE	3'	4'	5'
"A"	28"	32"	36"
"B"	36"	42"	60"
"C"	22"	30"	38"
"D"	18"	25"	33"
"E"	20"	24"	28"
"F"	4"	5"	5"
MAX. DEPTH	12"	18"	22"

CONCRETE: 4000 PSI AT 28 DAYS REINFORCED WITH NO. 4 BARS 18" O.C. EACH WAY WITH WINGS AND TOE SLAB DOWN TO HEADWALL WITH NO. 5 BARS. 3/4" CHAMFER ON ALL EXPOSED EDGES.

10 PRECAST CONC. HEADWALLS

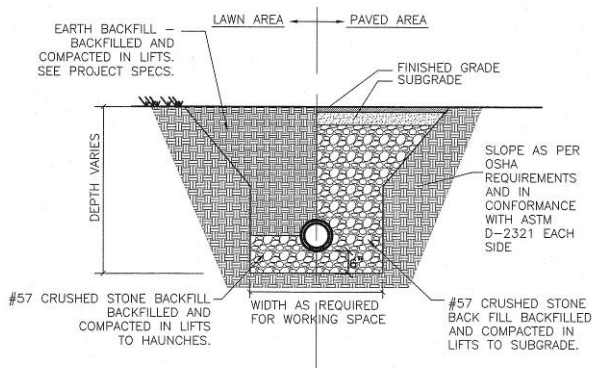


8 CHANNEL GUTTER
NOT TO SCALE



10 SIDEWALK DRAIN

NTS



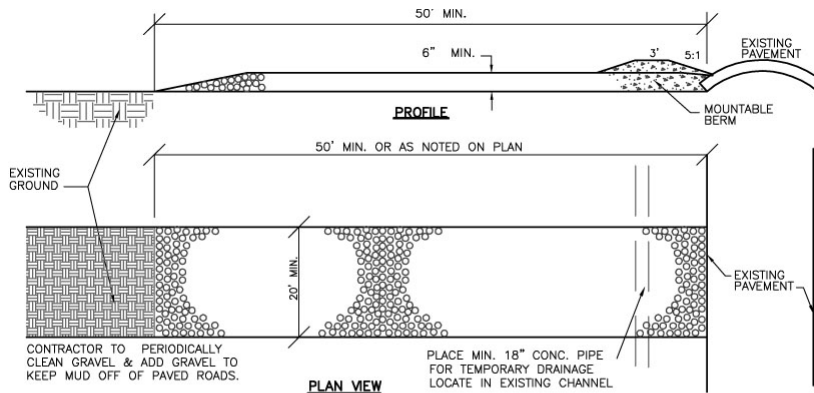
NOTES:

1. SEE CITY OF MURFREESBORO STANDARD SPECIFICATIONS FOR BACKFILL REQUIREMENTS FOR SANITARY SEWER AND UTILITY DISTRICT FOR BACKFILL REQUIREMENTS FOR WATER LINE. BACKFILL REQUIREMENTS. THE CONTRACTOR SHALL ADHERE TO MURFREESBORO SEWER STANDARD AND UTILITY STANDARDS WHERE MORE STRINGENT.
2. LIMIT TRENCH WIDTH TO O.D. + 16" UNLESS PERMITTED OTHERWISE BY ENGINEER.
3. PIPE BEDDING IS TO BE #57 CRUSHED STONE, OR OTHER GRANULAR MATERIAL AS APPROVED BY ENGINEER. MIN. DEPTH OF BEDDING MATERIAL UNDER PIPE IS TO BE 1/8 O.D. OF PIPE OR 6", WHICHEVER IS GREATER.
4. PIPE IS TO BE CONTINUOUSLY SUPPORTED ALONG LENGTH OF PIPE BARREL. BELL HOLES ARE REQUIRED SUCH THAT NO BEARING LOAD IS APPLIED TO THE BELLS.
5. BACKFILL REQUIREMENTS APPLY TO ALL TYPES OF PIPE (HDPE, PVC, CONCRETE, ETC.)

1 TYPICAL UTILITY TRENCH

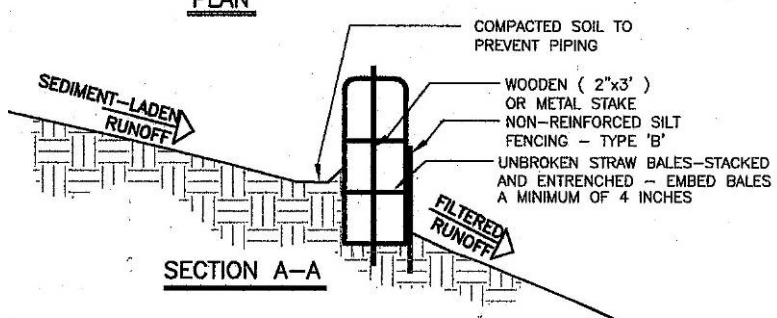
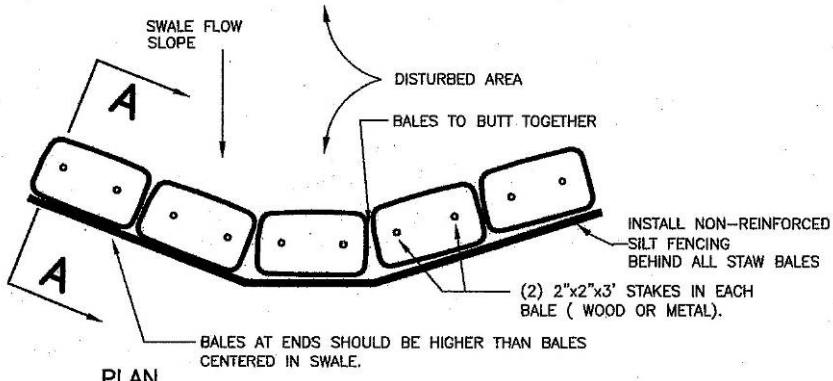
NOT TO SCALE

Erosion Control

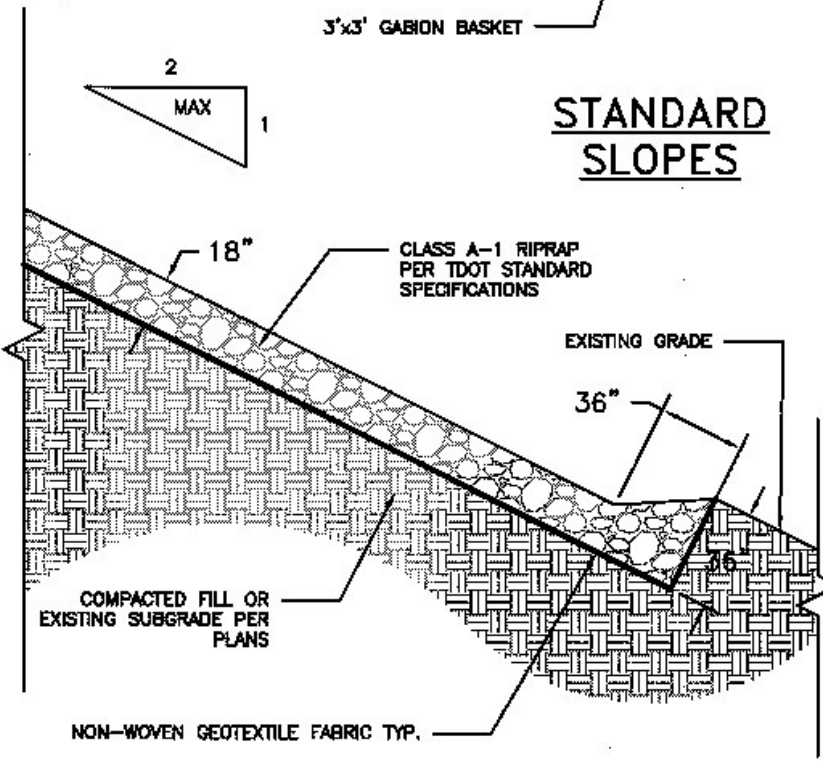
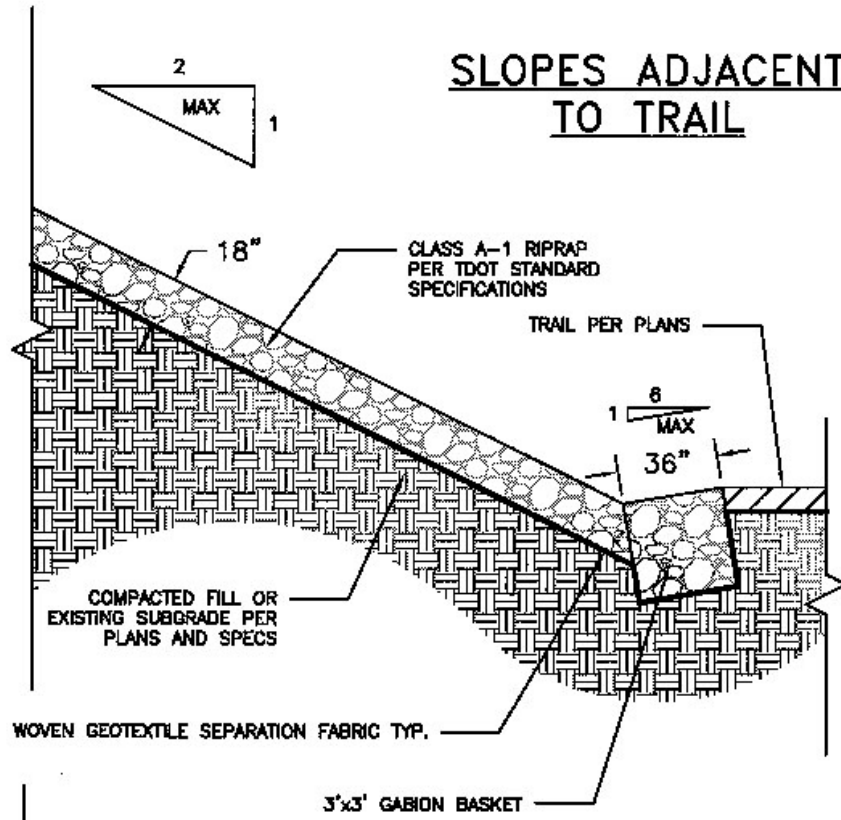


1. STONE SIZE- USE 1.5"-3.5" STONE, OR RECLAIMED OR RECYCLED CONC. EQUIVALENT.
2. LENGTH- AS REQUIRED, BUT NOT LESS THAN 50'. USE OF ENTRANCE NOT TO IMPACT EXISTING TREES, UTILITIES, OR PAVED SURFACES THROUGHOUT DURATION OF CONSTRUCTION.
3. THICKNESS- NOT LESS THAN SIX (6) INCHES.
4. WIDTH- TWENTY (20) FOOT MIN, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
5. GEOTEXTILE BARRIER TO BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER- ALL SURFACE WATER FLOWING OR DIVIDED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM W/5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF EDIMENT ONTO PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC RIGHT-OF-WAYS MUST BE REMOVED IMMEDIATELY.
8. WASHING- WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS- OF- WAY. WHEN WASHING IS REQUIRED IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DONE INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

11 STABILIZED CONSTRUCTION ENTRANCE N.T.S.



4 HAYBALE CHECK DAM N.T.S.



6 RIPRAP SLOPE STABILIZATION

CRITICAL AREA VEGETATIVE PLAN

GENERAL:

THIS VEGETATIVE PLAN WILL BE CARRIED OUT ON CUT AND FILL SLOPES, SHOULDERS AND CRITICAL AREAS CREATED BY CONSTRUCTION. SEEDING WILL BE DONE AS SOON AS CONSTRUCTION IN AN AREA IS COMPLETED. PLANTINGS WILL BE MADE TO CONTROL EROSION, TO REDUCE DAMAGES FROM SEDIMENT AND RUNOFF TO DOWNSTREAM AREAS AND TO IMPROVE THE SAFETY AND BEAUTY OF THE DEVELOPMENT AREA. NO AREA SHALL BE CLEAR OF VEGETATION FOR MORE THAN 14 CALENDAR DAYS. SUBMIT PROPOSED SEED VARIETIES FOR LANDSCAPE ARCHITECTS APPROVAL.

SOIL CONDITIONS:

DUE TO GRADING AND CONSTRUCTION, THE AREAS TO BE TREATED ARE MAINLY SUBSOIL SUBSTRATA. FERTILITY IS LOW AND THE PHYSICAL CHARACTERISTICS OF THE EXPOSED MATERIAL ARE UNFAVORABLE TO ALL BUT THE MOST HARDY PLANTS. CONTRACTOR TO PROVIDE SOIL TESTING DATA AT A MINIMUM OF 5 LOCATIONS THROUGHOUT THE SITE AND LAB RECOMMENDED LIME AND FERTILIZER APPLICATION RATES, IF DIFFERENT FROM BELOW.

CONVENTIONAL SEEDING EQUIPMENT:

GRADE, SHAPE AND SMOOTH WHERE NEEDED TO PROVIDE FOR SAFE EQUIPMENT OPERATION AT SEEDING TIME AND FOR MAINTENANCE PURPOSES. THE LIME AND FERTILIZER IN DRY FORM WILL BE SPREAD UNIFORMLY OVER THE AREA IMMEDIATELY BEFORE SEEDBED PREPARATION. A SEEDBED WILL BE PREPARED BY SCARIFYING TO A DEPTH OF 1 TO 4 INCHES AS DETERMINED ON SITE. THE SEEDBED MUST BE WELL PULVERIZED, SMOOTHED AND FIRMED. SEEDING WILL BE DONE WITH CULTIPACKER-SEEDER, DRILL, ROTARY SEEDER OR OTHER MECHANICAL OR HAND SEEDER. SEED WILL BE DISTRIBUTED UNIFORMLY OVER A FRESHLY PREPARED SEEDBED AND COVERED LIGHTLY. WITHIN 24 HOURS AFTER SEEDING, STRAW OR HAY MULCH WILL BE SPREAD UNIFORMLY OVER THE AREA, LEAVING ABOUT 25 PERCENT OF THE GROUND SURFACE EXPOSED. MULCH WILL BE SPREAD WITH BLOWER-TYPE MULCH EQUIPMENT OR BY HAND AND ANCHORED IMMEDIATELY AS IT IS SPREAD. A DISK HARROW WITH THE DISK SET OR A SPECIAL PACKER DISK MAY BE USED TO PRESS THE MULCH INTO THE SOIL. THE PER ACRE APPLICATION RATES ARE AS FOLLOWS:

A. PERMANENT SEEDING WITH MULCH:(CONVENTIONAL SEEDING EQUIPMENT)

AGRICULTURAL LIMESTONE	2000 LBS./ACRE	
FERTILIZER, 5-10-15	1500 LBS./ACRE	
MULCH:		
STRAW	4000 LBS./ACRE	
OR HAY	5000 LBS./ACRE	

<u>SEEDING SPECIES</u>	<u>APPLICATION RATE/ACRE</u>	<u>PLANTING DATES</u>
HARD FESCUE	130 LBS.	3/1-5/1
CHEWINGS FESCUE	40 LBS.	OR 8/15-12/1
 HAY MULCH FOR TEMP. COVER	 5000 LBS.	 5/1-8/15

B. TOP DRESSING: APPLY WHEN PLANTS ARE 2 TO 4 INCHES TALL

FERTILIZER(AMMONIUM NITRATE 33.5%)	300 LBS./ACRE	
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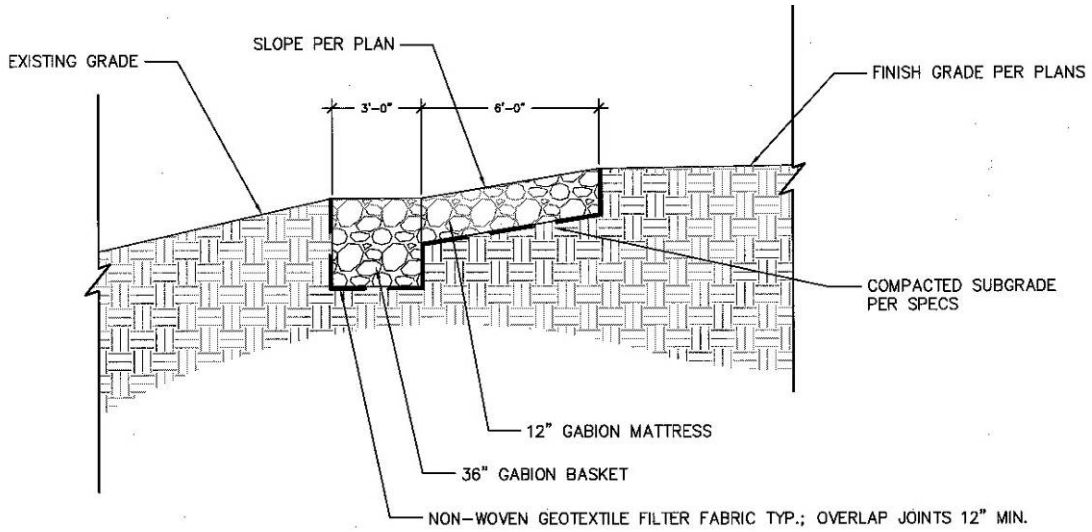
C. TEMPORARY SEEDING WITH MULCH:(CONVENTIONAL SEEDING EQUIPMENT)

AGRICULTURAL LIMESTONE	500 LBS./ACRE	
FERTILIZER, 5-10-15	300 LBS./ACRE	
MULCH:		
STRAW	4000 LBS./ACRE	
OR HAY	5000 LBS./ACRE	

<u>SEEDING SPECIES</u>	<u>APPLICATION RATE/ACRE</u>	<u>PLANTING DATES</u>
ITALIAN RYE	28 LBS.	1/1-5/1
ANNUAL LESPEDEZA	10 LBS.	
SUMMER OATS	32 LBS.	
 STAR MILLET	 40 LBS.	 5/1-7/15
 BALBOA RYE	 28 LBS.	 7/15-1/1
ITALIAN RYE	28 LBS.	

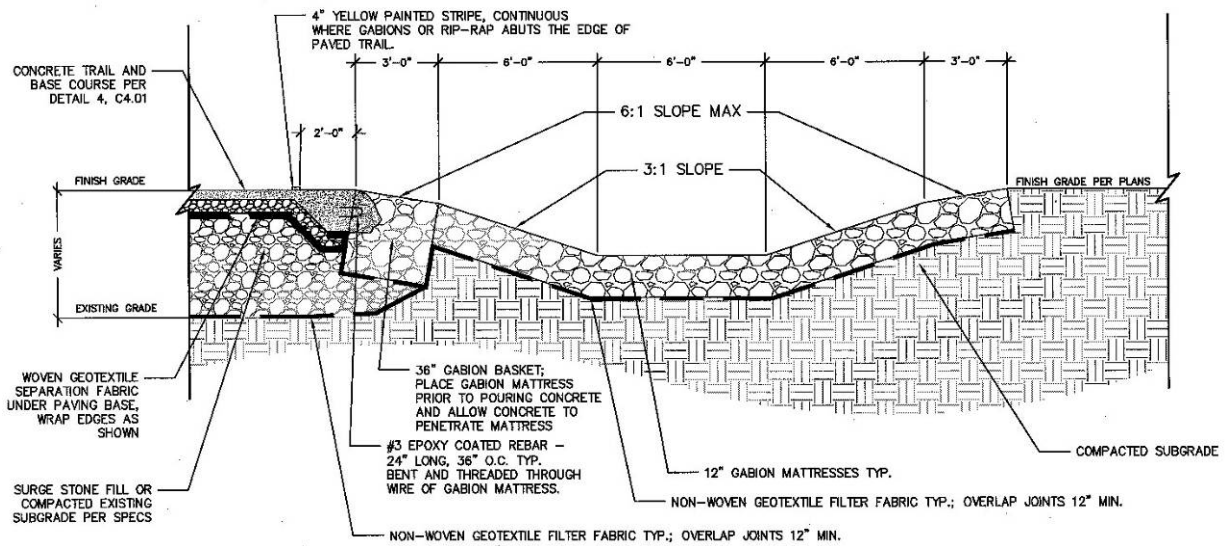


5 DISTURBED AREA STABILIZATION DETAILS



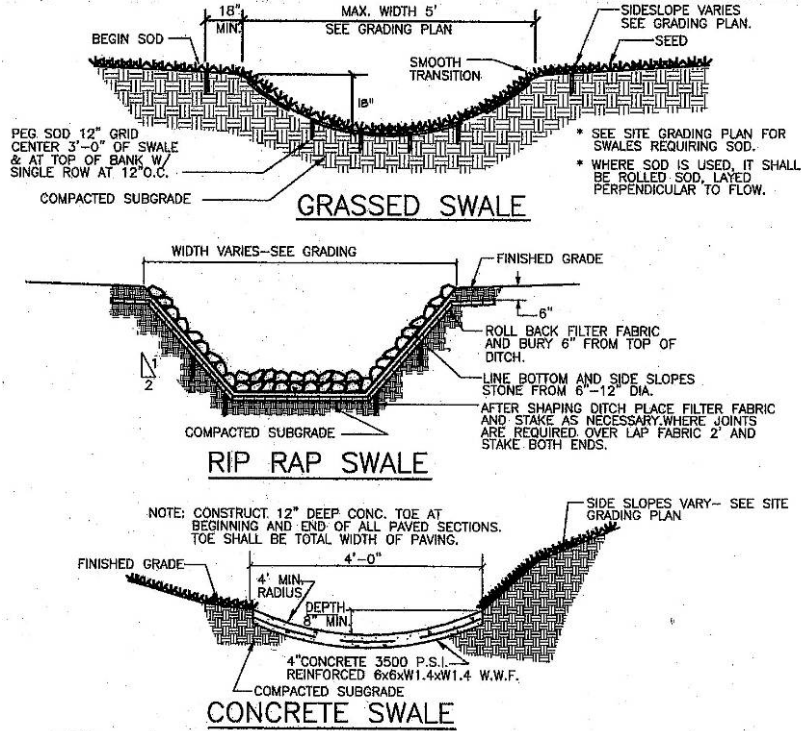
3 SHORELINE PROTECTION

NTS

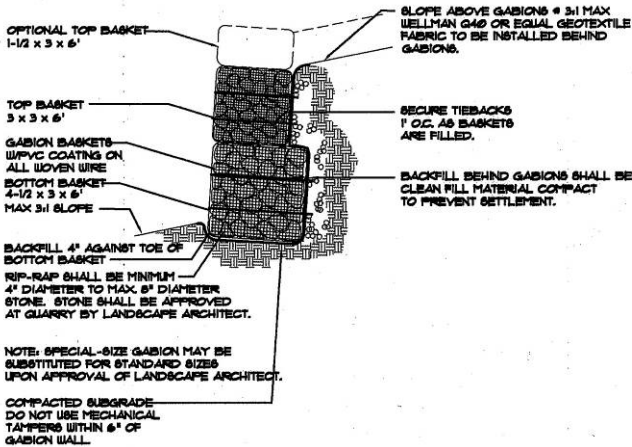


2 TRAPEZOIDAL SWALES

NTS



7 STANDARD SWALES



NOTES ON GABIONS:

CONTRACTOR TO CONSULT MACCAFERRI GABIONS, INC. ON INSTALLATION OF EACH GABION APPLICATION.

IN ALL PHASES OF GABION CONSTRUCTION CONTRACTOR SHALL FOLLOW INSTRUCTION MANUAL ISSUED BY MACCAFERRI GABIONS, INC. MACCAFERRI GABION AND RENO MATTRESS CONSTRUCTION- A FIELD INSPECTOR'S GUIDE.

GABIONS TO BE ANCHORED AND STRETCHED TO FOLLOW CURVATURE OF TRAIL.

ROCK BOXES WILL BE REQUIRED FOR GABION CONSTRUCTION. NO DUMPING OF GABION STONE WILL BE ALLOWED.

FILL CONDITIONS WILL BE USED TO DETERMINE TRANSITION POINT FROM ONE GABION BASKET TO STACK OF TWO GABION BASKETS.

A 3 x 3 x 6' GABION MAY BE USED FOR THE BOTTOM BASKET ONLY WHEN STACKING BASKETS IS NOT REQUIRED.

THE BOTTOM BASKET MUST BE A 4-1/2 x 3 x 6' BASKET WHEN STACKING BASKETS IS REQUIRED.

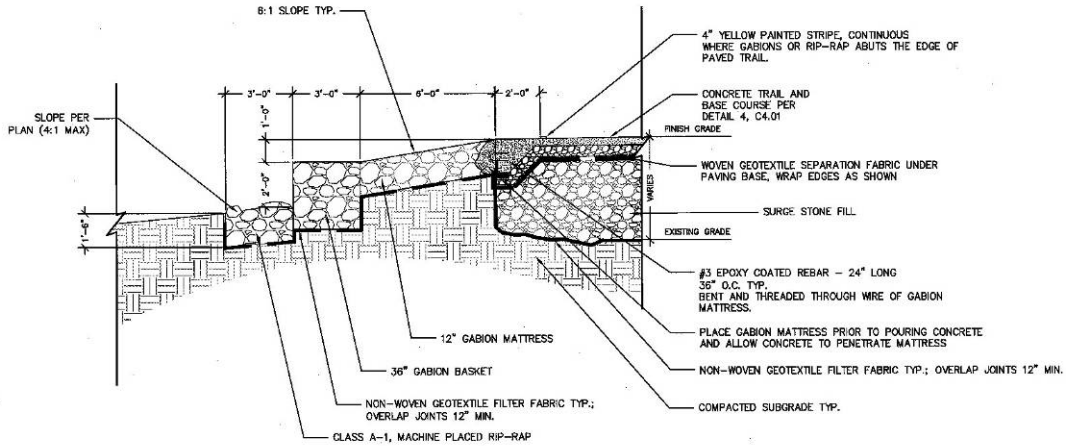
A 1-1/2 x 3 x 6' BASKET MAY BE USED TO INCREASE THE GABION WALL HEIGHT. 1-1/2 x 3 x 6' BASKETS SHALL BE USED AS THE TOP BASKET ONLY.

11 TYPICAL GABION CONSTRUCTION

NTS

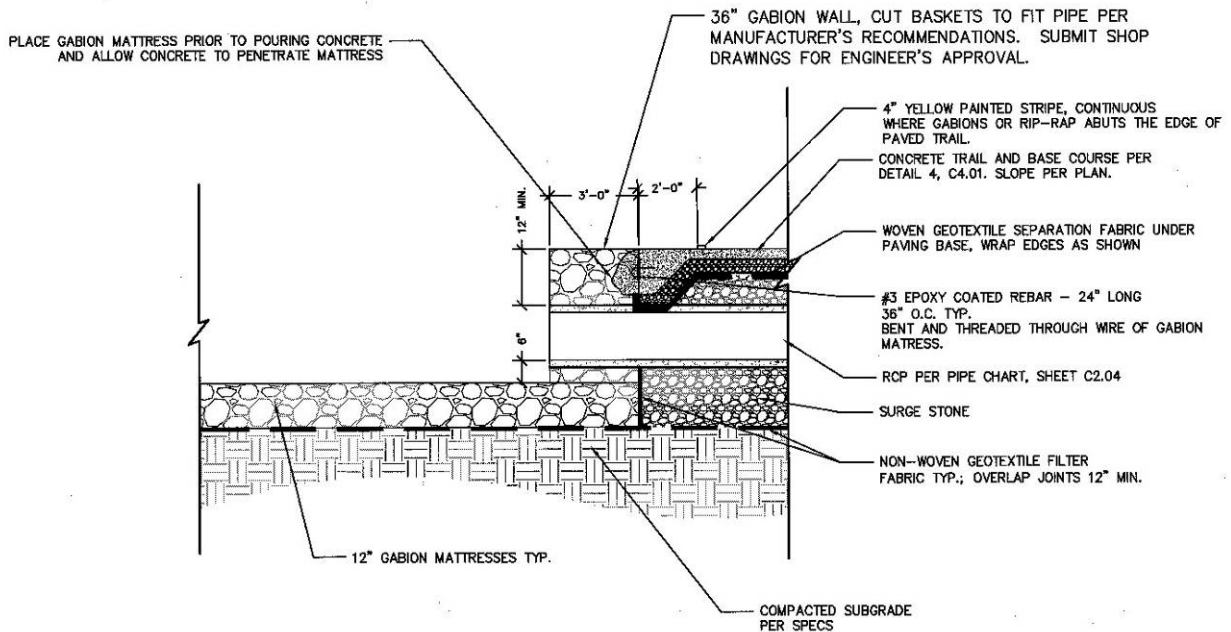
GABION NOTES:

1. FILL GABIONS WITH CLASS A-1 (MIN. ROCK SIZE OF 4"), MACHINE PLACED RIP-RAP. SUBMIT MANUFACTURER'S RECOMMENDED FILL FOR ENGINEER'S APPROVAL IF DIFFERENT FROM ABOVE.
2. ASSEMBLE AND WIRE ALL GABION STRUCTURES TOGETHER PER MANUFACTURER'S RECOMMENDATIONS.
3. SEE MANUFACTURER'S RECOMMENDATIONS FOR FITTING GABIONS TO A RADIUS.



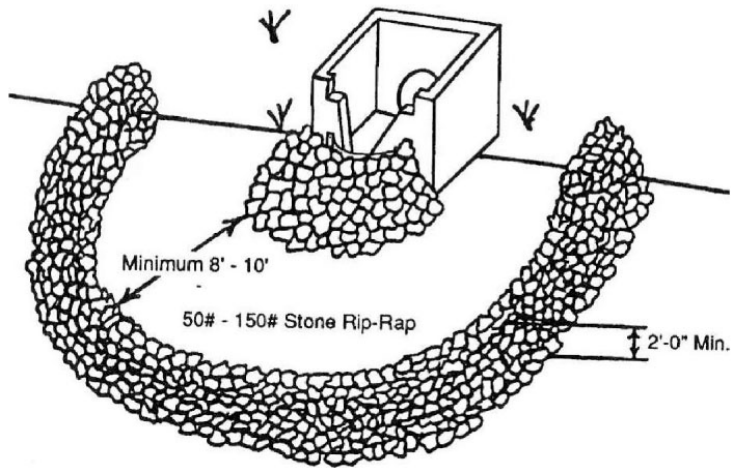
1 GABION RETAINING WALL SECTION

NTS



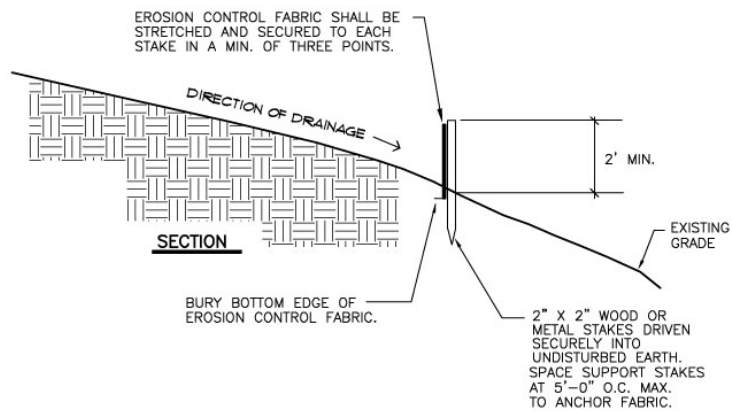
4 GABION HEADWALL

NTS



4 TEMPORARY FILTER RING NTS

- NOTES:
1. FENCE TO BE INSTALLED PRIOR TO EXCAVATION OR BACKFILLING. FENCE TO RUN ENTIRE LENGTH OF TRAIL ALONG THE DOWN HILL SIDE.
 2. CONTRACTOR IS TO MAINTAIN FENCE UNTIL VEGETATION IS ESTABLISHED; THEN REMOVE FENCE AND ANY ACCUMULATED SEDIMENT.
 3. CONTRACTOR MAY SUBSTITUTE APPROVED PRE-ASSEMBLED FENCE.
 4. TO BE INSTALLED AS LIMITS OF CONSTRUCTION PRIOR TO BEGINNING CONSTRUCTION



5 SILT FENCE / LIMITS OF CONSTRUCTION NTS

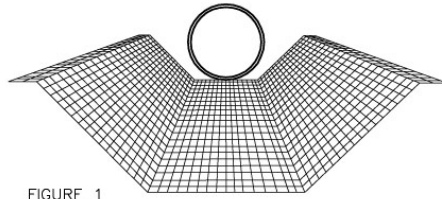


FIGURE 1

IN CHANNELS, ROLL OUT STRIPS OF NETTING PARRALLEL TO THE DIRECTION OF FLOW.

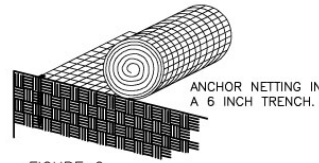


FIGURE 2

ANCHOR NETTING IN A 6 INCH TRENCH.

NOTE:

CONTRACTOR SHALL USE "EXCELSIOR" BLANKET OR SIMILAR WOOD FIBER MATTING OF BIODEGRADABLE TYPE.

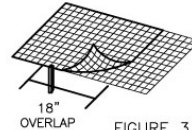


FIGURE 3

JOIN STRIPS BY ANCHORING AND OVERLAPPING.

INSTALLATION INSTRUCTIONS:

1. SEED (PER SPEC) BEFORE PLACEMENT OF MATTING. ROLL STRIPS OUT PARALLEL TO THE DIRECTION OF WATER FLOW (SEE FIGURE 1)
2. START LAYING THE NET FROM THE TOP OF THE CHANNEL OR SLOPE AND UNROLL IT DOWN THE GRADE. ALLOW MATTING TO LAY LOOSELY ON THE SOIL BUT WITHOUT WRINKLES— DO NOT STRETCH.
3. TO SECURE THE NET, BURY THE UPSLOPE END IN A TRENCH NO LESS THAN 6" DEEP, COVER WITH SOIL AND TAMP FIRMLY (SEE FIGURE 2). STAPLE THE MAT EVERY 12" ACROSS THE TOP END AND EVERY 3' AROUND THE EDGES AND BOTTOM. WHERE 2 STRIPS OF NET ARE LAID SIDE BY SIDE, THE ADJACENT EDGES SHOULD BE OVERLAPPED 3 INCHES AND STAPLED TOGETHER. EACH STRIP OF MATTING SHOULD ALSO BE STAPLED DOWN THE CENTER, EVERY 3'. DO NOT STRETCH THE MAT WHEN APPLYING STAPLES.
4. TO JOIN TWO STRIPS, CUT A TRENCH TO ANCHOR THE END OF THE NEW MAT. OVERLAP THE END OF THE PREVIOUS ROLL 18" (SEE FIGURE 2), AND STAPLE EVERY 12" JUST BELOW THE ANCHOR SLOT.
5. ON 3:1 OR SIMILAR BANK INSTALLATIONS, FOLLOW MANUFACTURERS INSTALLATION REQUIREMENTS.

6

EROSION CONTROL MATTING

NTS

NOTE: ALL PERMANENT MATTING TO BE CONTECH TRM 35 OR APPROVED EQUAL. CONTRACTOR TO INSTALL PER MANUFACTURES RECOMMENDATIONS.



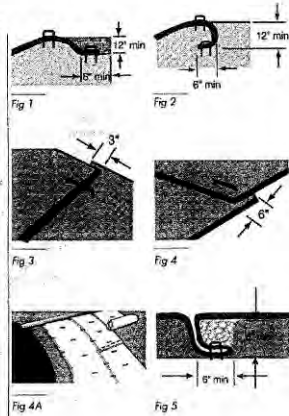
Erosion Control Blanket and TRM Installation Guide

General

Site Preparation (Channels and Slopes) - Grade the surface of installation areas so that the ground is smooth and compact. When seeding prior to installation, prepare for seeding by loosening the top 2" to 2" of soil. All gullies, rills, and any other disturbed areas must be fine graded prior to installation. Spread seed before or after mat installation as directed. (Important: Remove all large rocks, dirt clods, stumps, roots, grass clumps, trash, and other obstructions from the soil surface to allow for intimate contact between the soil surface and the mat.)

Slopes

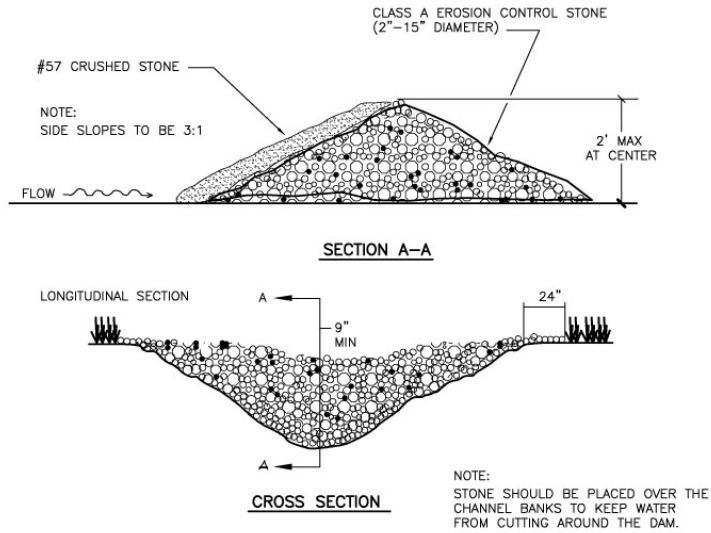
1. Anchor blankets 2" to 2" over the top of slope as in Fig. 1 or Fig. 2. Fit the mat or 1" intervals along the anchor trench bottom.
2. Working backward down the slope, allow the blanket to unroll slowly, ideally the blanket roll will roll against your skin as you work. Place blankets loosely but without slack. The blanket must lie so reverse covers with the soil to perform properly.
3. Staple blanket according to recommended staple pattern for specific product and slope. (See staple pattern guide.)
4. Overlap blanket edges (side-to-side) approximately 3" and staple according to Fig. 3. Note: install blankets so edge overlaps are slunged away from prevailing winds.
5. Overlap blanket ends 6" (15 cm), with upper blanket over lower blanket, and staple at 1' intervals (see Fig. 4 and Fig. 4A) across the width of the blanket.
6. Cut across blanket with scissors and outside of end of slope.
7. If installation plan specifies "check ditches", see Fig. 5.



3

PERMANENT EROSION CONTROL MATTING

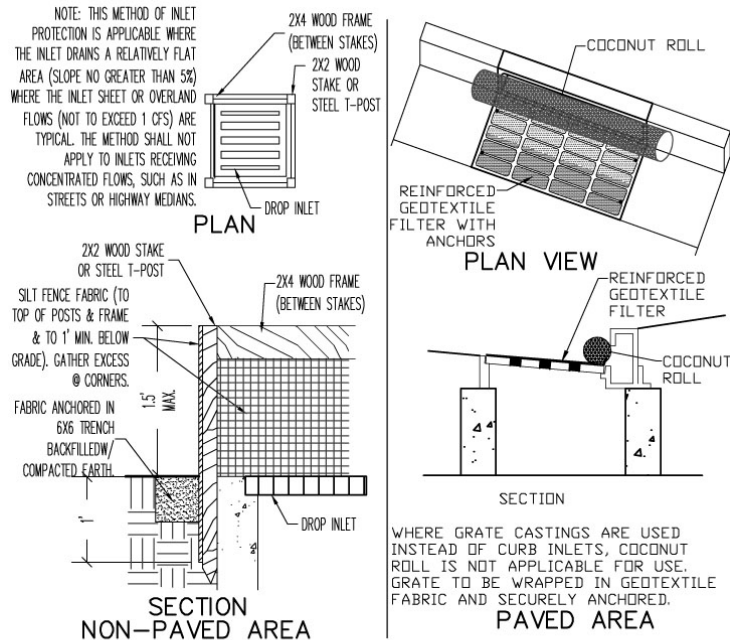
NTS



8

STONE CHECK DAM

NTS



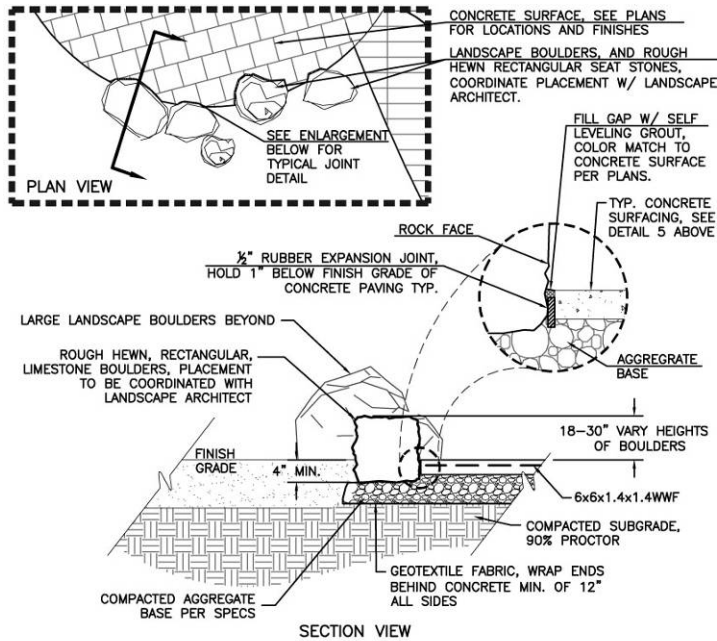
12

INLET PROTECTION

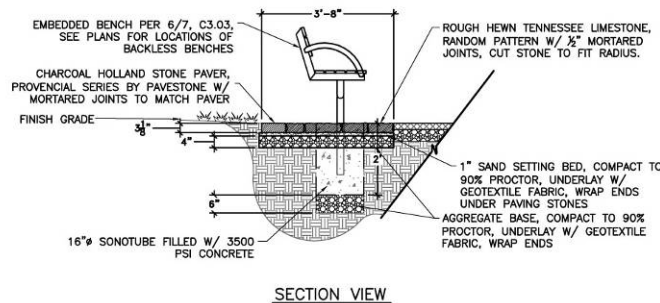
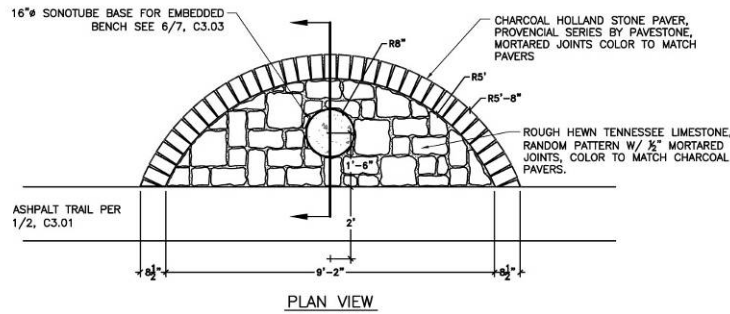
N.T.S.

1.10 GATEWAY TRAIL DETAILS

Paving

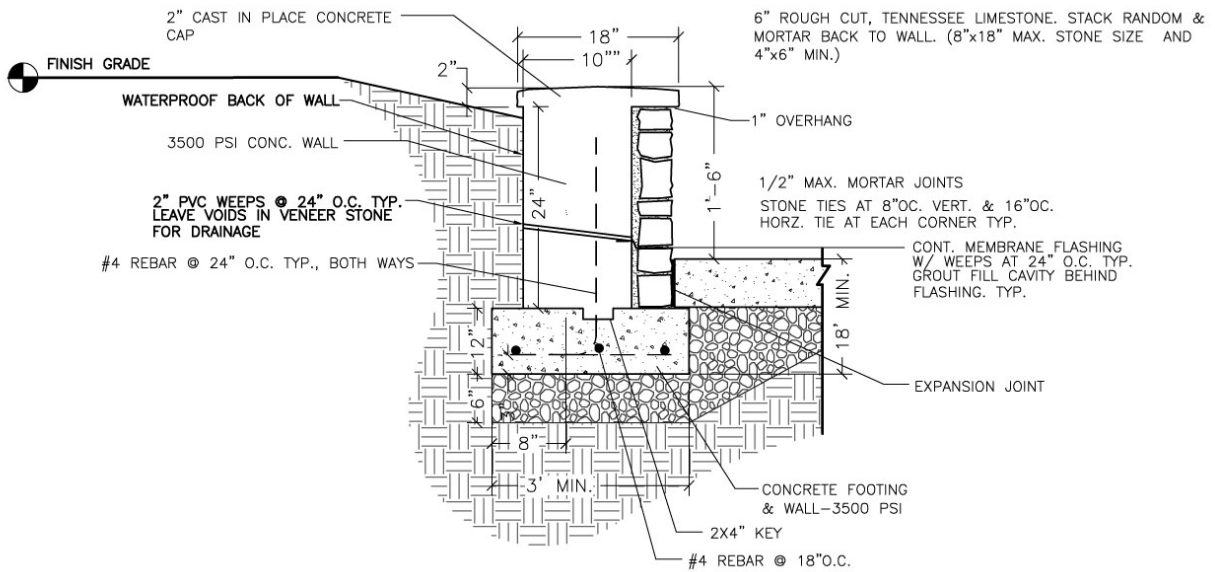


9 CONCRETE PLAZA/STONE INTERFACE
NOT TO SCALE



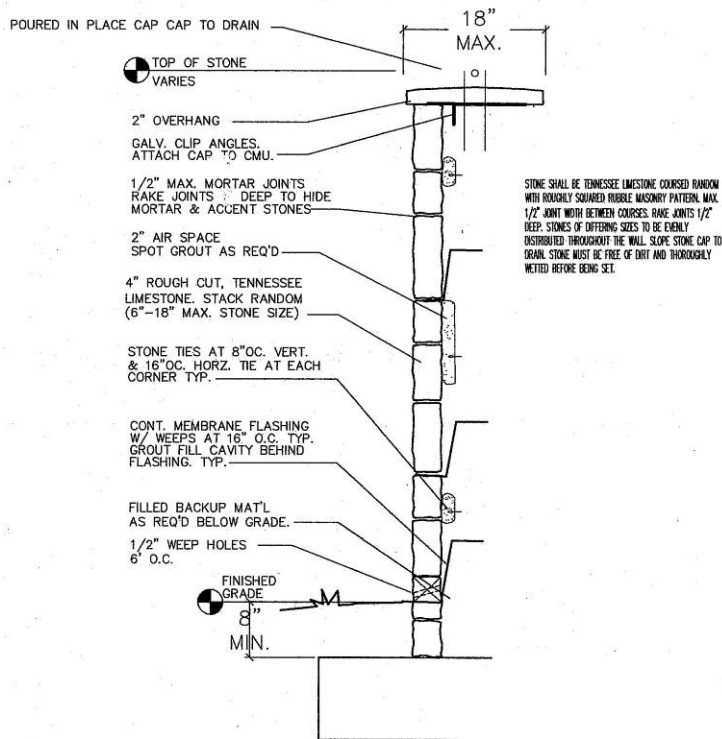
2 BENCH BASE
1/2" = 1'-0"

Walls



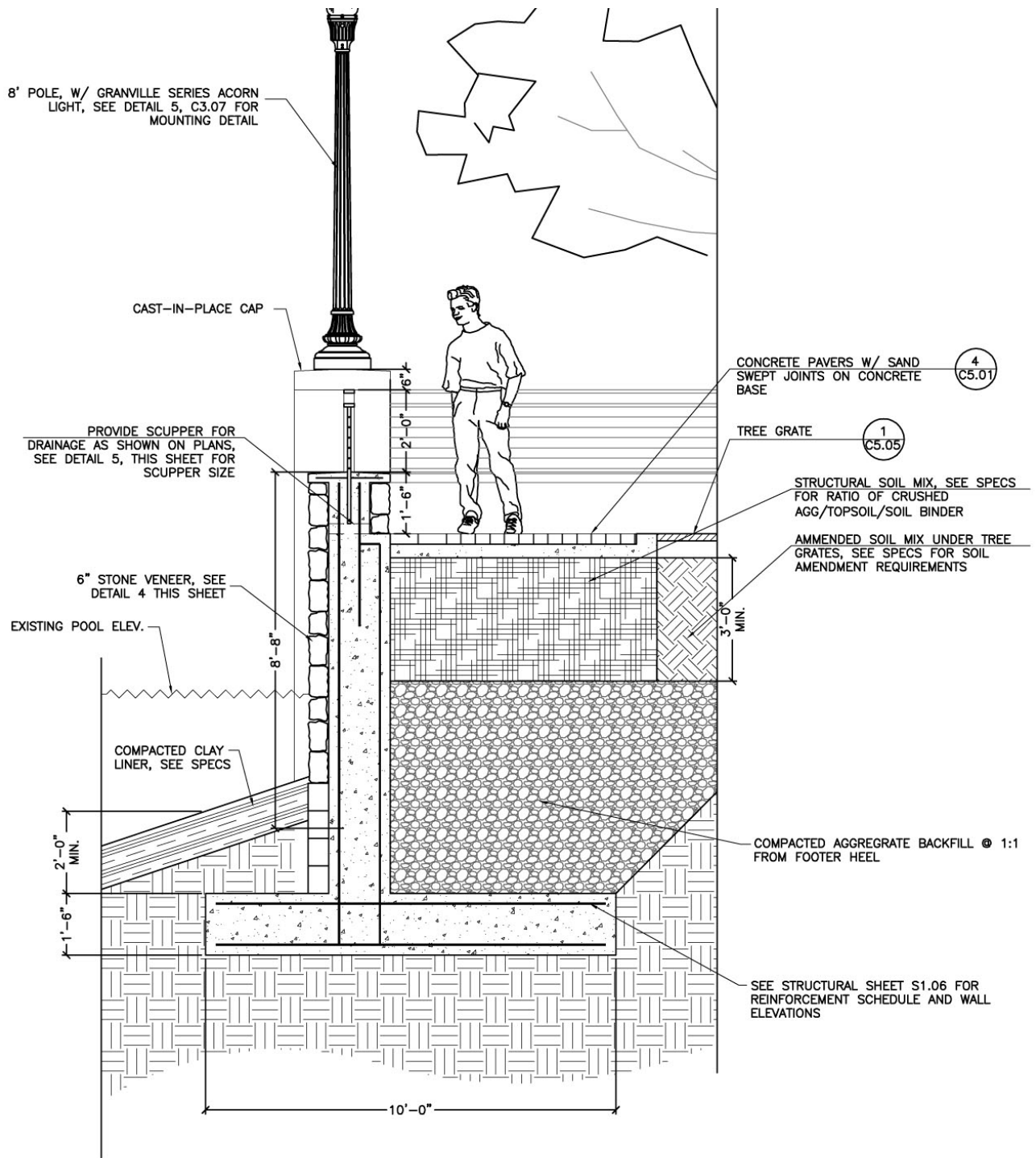
2 SEAT WALL

N.T.S.



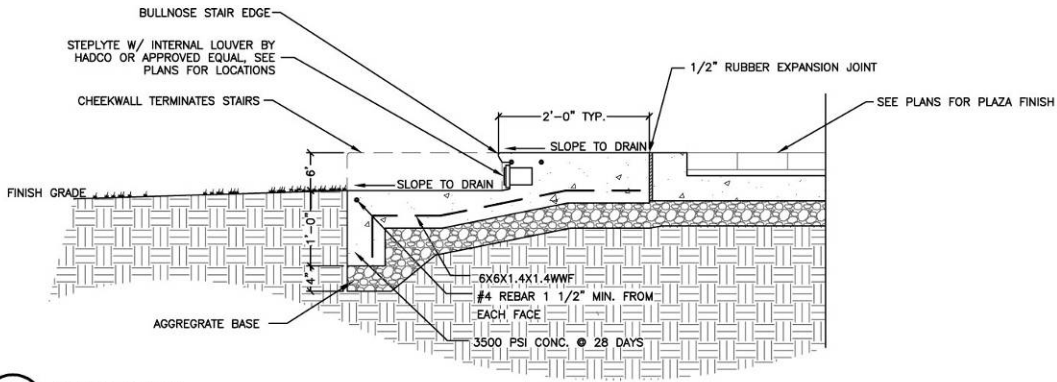
4 STONE VENEER DETAIL

NTS



3 RETAINING WALL SECTION
NTS

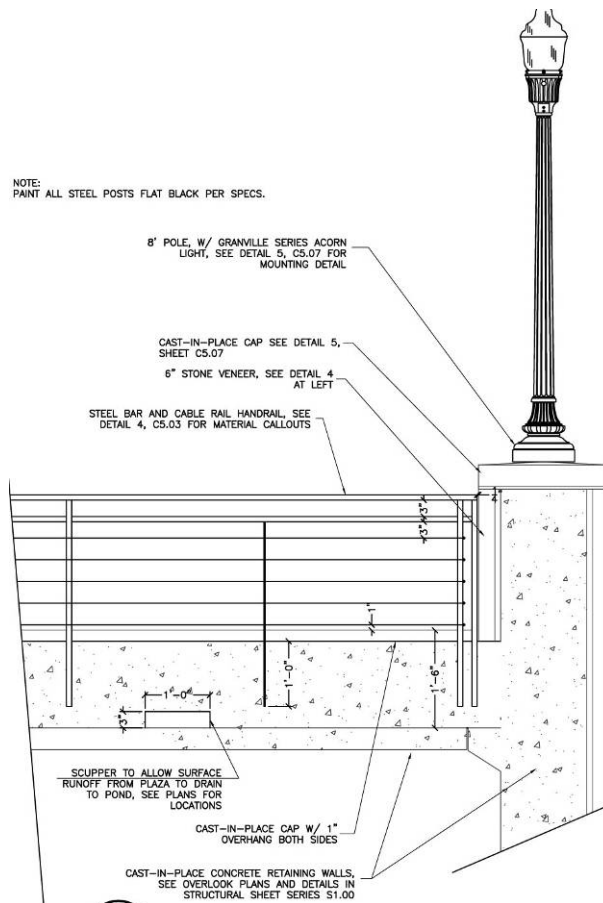
Stairs



1 STAIR DETAIL

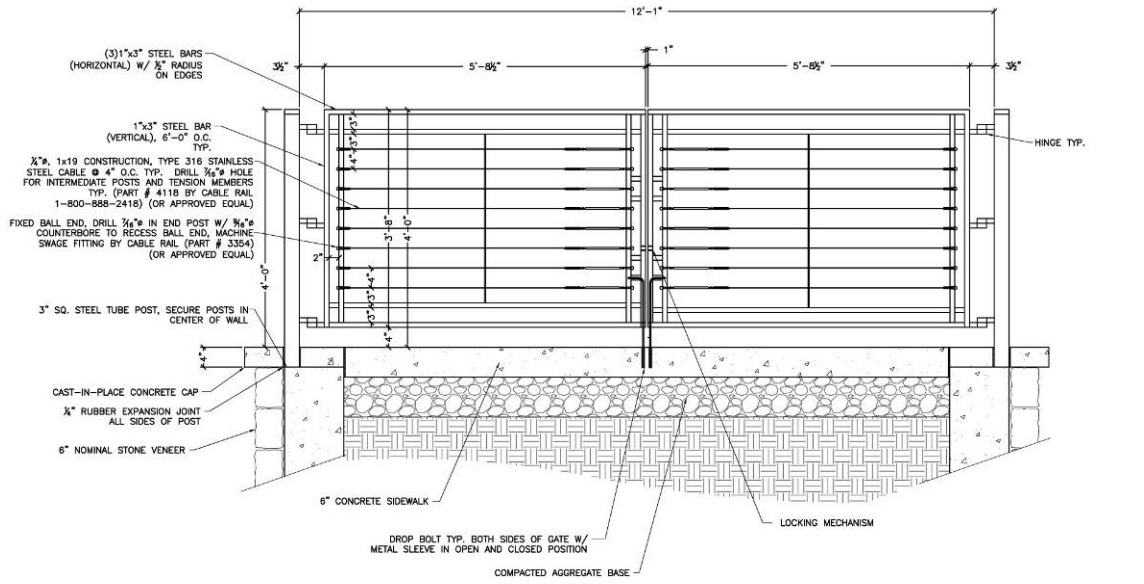
N.T.S.

Fencing



5 RAILING DETAIL

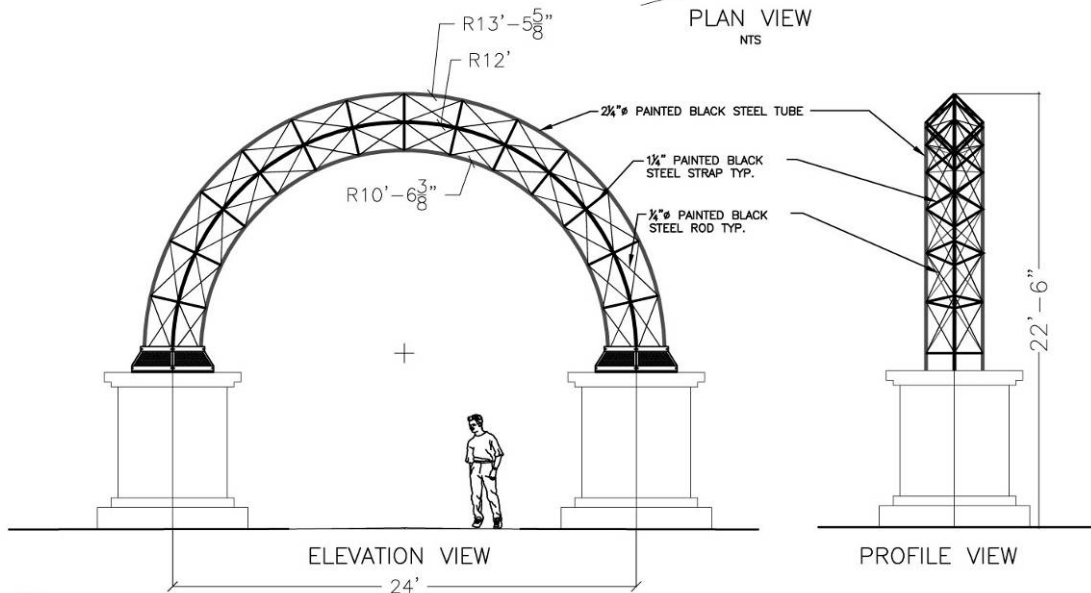
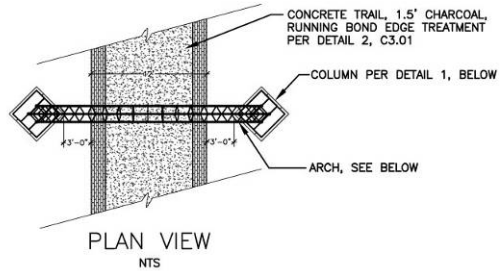
NTS



2 ISLAND GATES

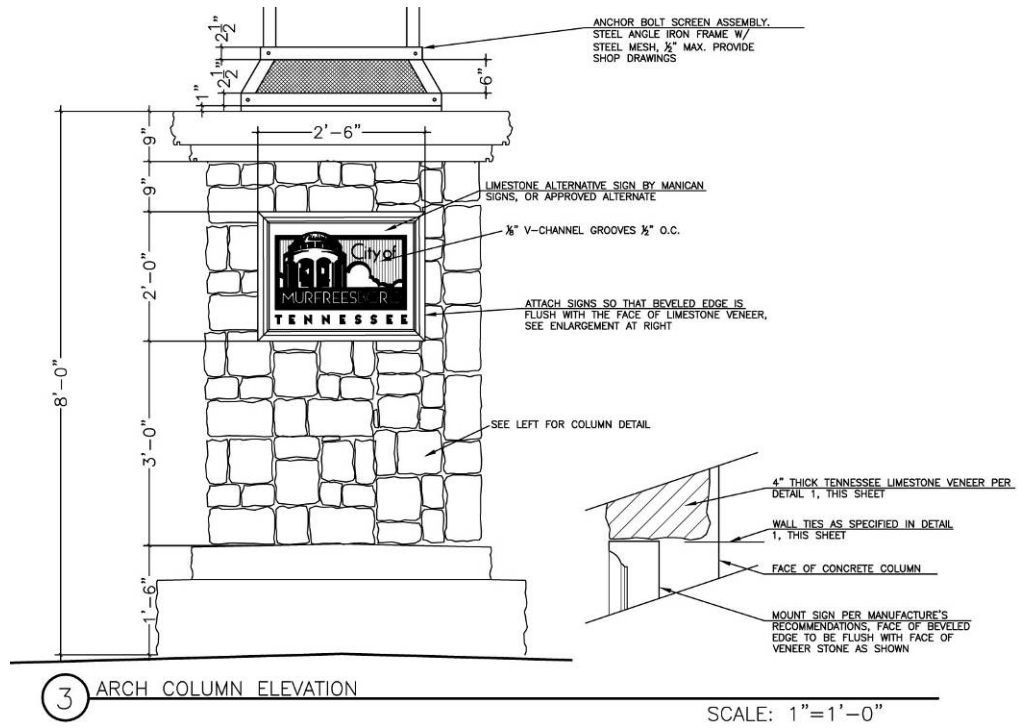
Gateway Arch

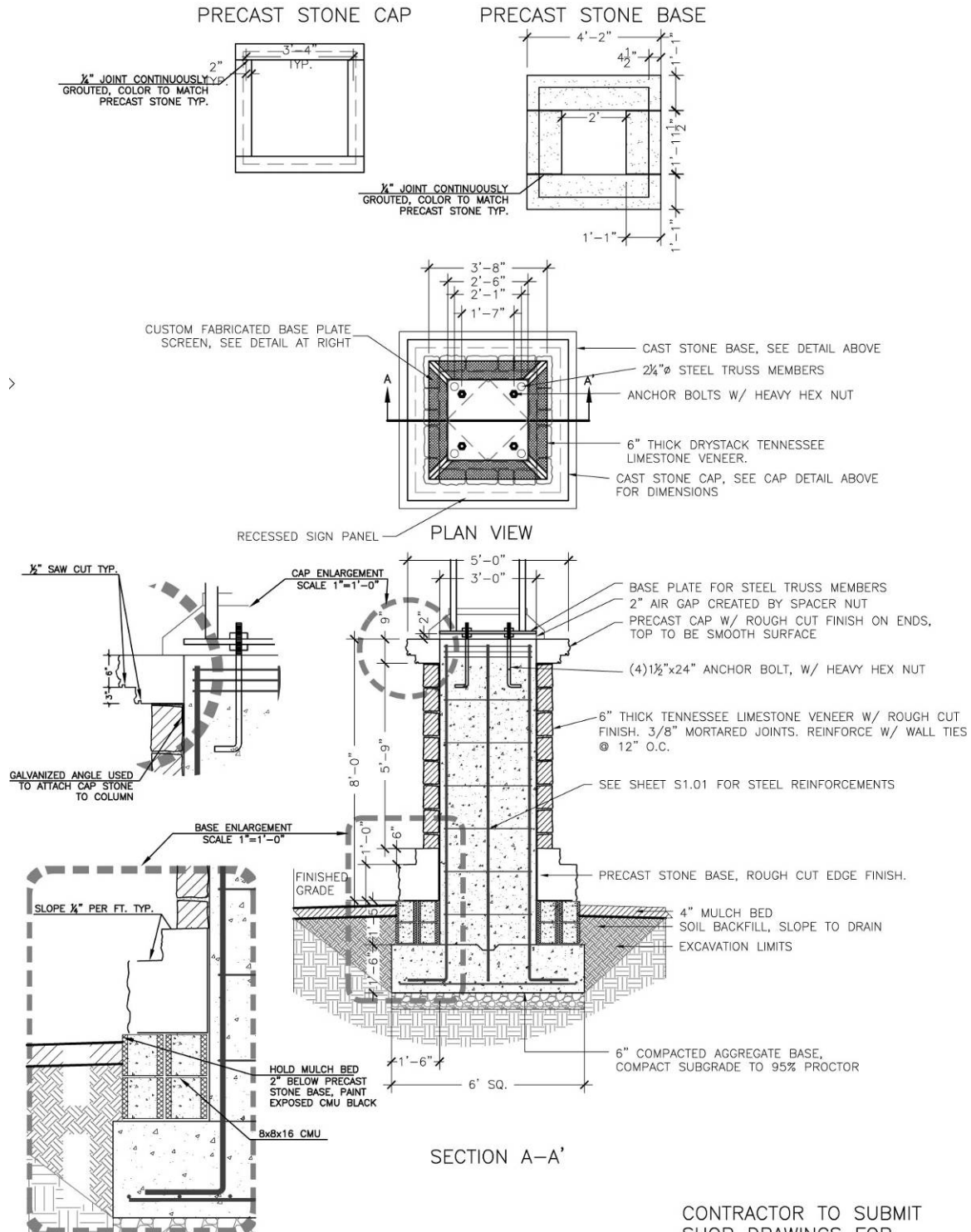
- ARCH NOTES:
1. ALL MEMBERS TO BE BLACK ANODIZED ALUMINUM TUBING, SEE BELOW FOR DIMENSIONS.
 2. ALL MATERIALS TO BE CHEMICALLY CLEANED PRIOR TO WELDING FOR OPTIMAL MATERIAL FUSION.
 3. ALL WELDS TO BE MADE WITH A T.I.G WELDER AND OPERATOR SHALL MAINTAIN CLEAN, CONTINUOUS, UNIFORM WELDS.
 4. ALL VISIBLE WELDS ARE TO BE COMPLETELY FREE OF GAPS, SPLATTERS, AND SPURS. GRIND, FILL, OR REMOVE MATERIAL TO CORRECT ANY DISCONTINUITIES.
 5. CONTRACTOR TO SUBMIT SHOP DRAWINGS AND SAMPLES FOR OWNER'S REPRESENTATIVE'S APPROVAL PRIOR TO CONSTRUCTION.



2 GATEWAY ARCH DETAIL

SCALE 1/2" = 1'-0"



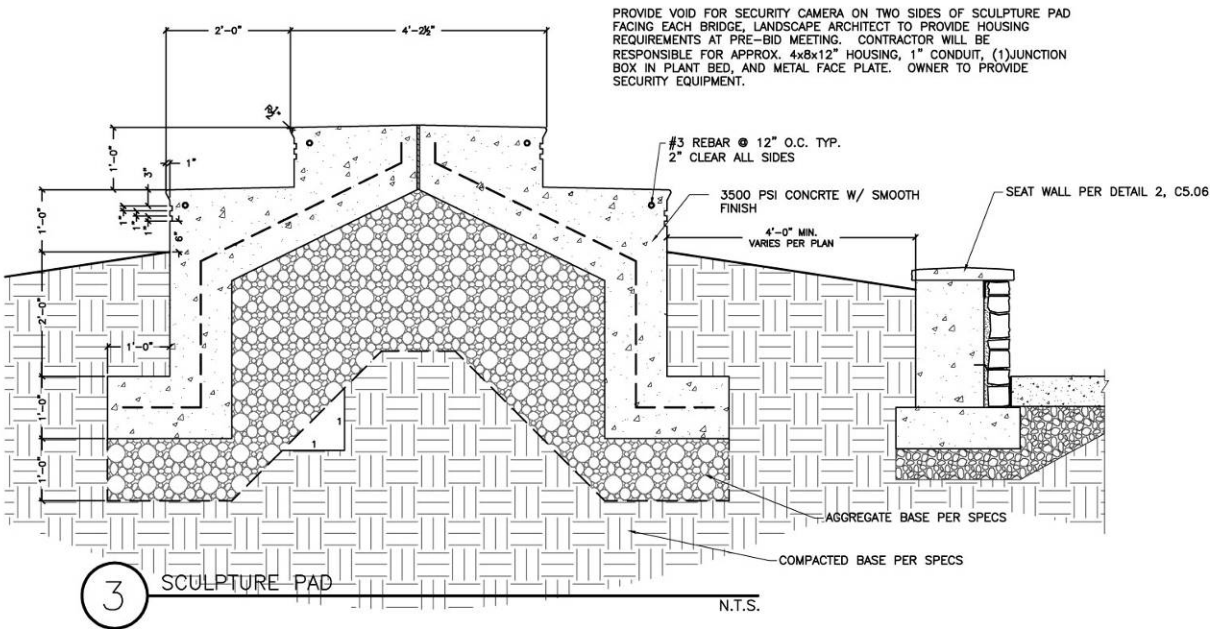


CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR ARCHITECTS APPROVAL.

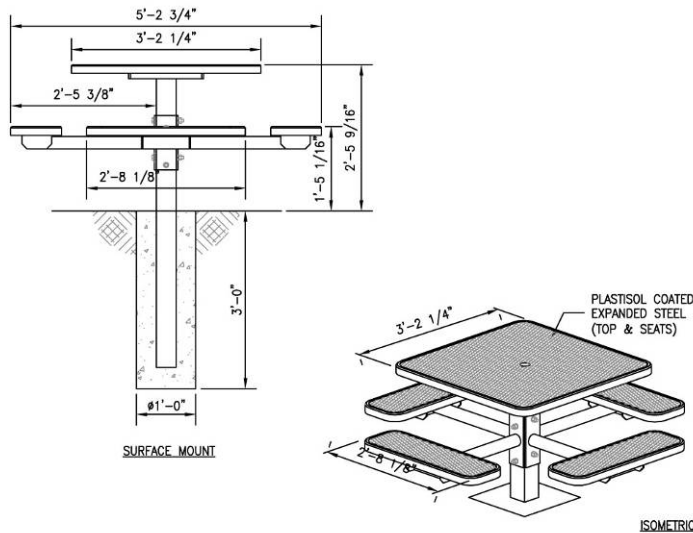
1 GATEWAY ARCH COLUMN

SCALE 1/2"=1'-0"

Sculpture Pad



Site Furnishings



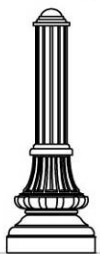
NOTES:

1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
2. DO NOT SCALE DRAWINGS.
3. CONTACT LITCHFIELD INDUSTRIES FOR DIMENSIONAL INFORMATION AND SPECIFICATIONS.
4. REFERENCE NUMBER 175-156.

3 SURVIVOR SERIES TABLES
MODEL 4600, 3 FT. SQUARE

WADSWORTH Series

Cast Aluminum Bollard



BOL/W42/14/BT-CA/BK

Specifications

DESCRIPTION: The bollard shall be cast aluminum construction with a 12" dia shaft and a classic tapered and fluted base. The bollard shall be provided with a cast aluminum ball or dome top.

MATERIALS: The bollard and top shall be heavy wall, cast aluminum produced from certified ASTM 356.1 ingot per ASTM B179-95a or ASTM B26-95. The castings shall be formed true to the pattern with complete detail. The fluted shaft shall be an aluminum extrusion, 6061 alloy, heat treated to T6 temper. All exposed hard-ware shall be tamper resistant stainless steel. Anchor bolts to be completely hot dip galvanized.

CONSTRUCTION: The bollard and top shall be one-piece construction with a fluted shaft and cast ball or dome top welded to the top. All exposed welds shall be ground smooth. All welding shall be per ANSI/AWS D12-90. All welders shall be certified per Section 5 of ANSI/AWS D12-90.

DIMENSIONS: The bollard shall be 3'-3" or 3'-0" in height with an 11" diameter base, a 5" diameter shaft, and a 5" diameter ball or 5.5" diameter dome top.

INSTALLATION: The bollard shall be provided with four 3/4" diameter, hot dip galvanized L-type anchor bolts to be installed on a 10.5" ball circle. A door shall be provided in the base for anchorage access.

For finish specifications and color options, see "Finish" section in catalog.

ORDERING GUIDE

catalog number:
BOL/W42/14/14/BT-CA/BK-2

Notes: (check appropriate boxes)
 BOL/W38-14DT (Bollard with Dome Top)
 BOL/W42/14BT (Bollard with Ball Top)

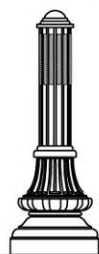
Material/Finish: (check appropriate boxes)
 CA/BK Cast Aluminum/Black
 CA/DG Cast Aluminum/Dark Green
 CA/DB Cast Aluminum/Dark Bronze
 CA/PP Cast Aluminum/Prime Painted
 CA/CC Cast Aluminum/Custom Color

(for complete finish and color options, see "Finish" section in catalog)

Optional Equipment: (check appropriate boxes)
 EB Eyebolt mounted on bollard for use with chain by others.
 S Weatherproof Durable Receptacle mounted inside base.
 DBB Direct Burial Base for mounting without a concrete footing.
 CLD Custom Logic cast into access door.

WADSWORTH Series

Cast Aluminum Lighted Bollard



BOL/W42/14/BLT-CA/BK

Specifications

DESCRIPTION: The bollard shall be cast aluminum construction with a 12" dia shaft and a classic tapered and fluted base. The bollard shall be provided with an optical assembly mounted inside the shaft providing a I.E.S. Type V distribution with a cast aluminum ball or dome top.

MATERIALS: The bollard and top shall be heavy wall, cast aluminum produced from certified ASTM 356.1 ingot per ASTM B179-95a or ASTM B26-95. The castings shall be formed true to the pattern with complete detail. The fluted shaft shall be an aluminum extrusion, 6061 alloy, heat treated to T6 temper. The lens shall be white acrylic. All exposed hardware shall be tamper resistant stainless steel. Anchor bolts to be completely hot dip galvanized.

CONSTRUCTION: The bollard shall be one-piece construction. The optical assembly shall be secured inside the shaft. All exposed inside shall be ground smooth. All welding shall be per ANSI/AWS D12-90. All welders shall be certified per Section 5 of ANSI/AWS D12-90.

DIMENSIONS: The bollard shall be 3'-3" or 3'-0" in height with an 11" diameter base, a 5" diameter shaft, and a 5" diameter ball or 5.5" diameter dome top.

INSTALLATION: The bollard shall be provided with four 3/4" diameter, hot dip galvanized L-type anchor bolts to be installed on an 10.5" ball circle. A door shall be provided in the base for anchorage and wiring access. The bollard top shall be removable for optical assembly access.

LIGHT SOURCE: The lighted bollard shall be furnished with an H.I.D. ballast and socket assembly. Sockets shall be gasket porcelain, mogul or medium base, with a copper alloy metal plated screw shell and center contact. The bollard shall have a core and coil, high power factor, regulating type.

For finish specifications and color options, see "Finish" section in catalog.

ORDERING GUIDE

catalog number:
BOL/W42/14/14/BLT-CA/BK-12

Notes: (check appropriate boxes)
 BOL/W38-14DTL (Bollard with Dome Top)
 BOL/W42/14BTL (Bollard with Ball Top)

Material/Finish: (check appropriate boxes)
 CA/BK Cast Aluminum/Black
 CA/DG Cast Aluminum/Dark Green
 CA/DB Cast Aluminum/Dark Bronze
 CA/PP Cast Aluminum/Prime Painted
 CA/CC Cast Aluminum/Custom Color

(for complete finish and color options, see "Finish" section in catalog)

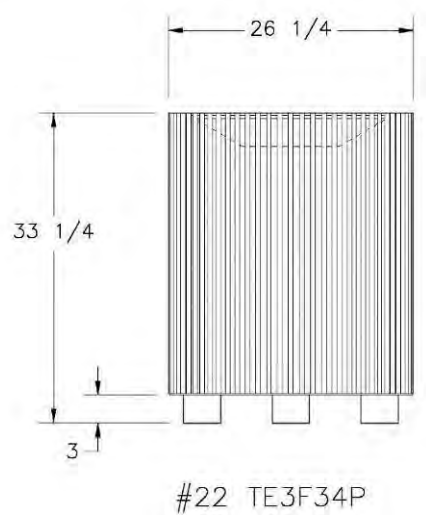
Light Source: (check appropriate boxes)
 H12-120W 120 watt Mercury Vapor
 H48 48 watt Mercury Vapor
 H75 75 watt Mercury Vapor
 H100 100 watt Mercury Vapor
 H150 150 watt Mercury Vapor
 H100 100 watt Metal Halide
 H150 150 watt Metal Halide
 H50 50 watt High Pressure Sodium
 H70 70 watt High Pressure Sodium
 H100 100 watt High Pressure Sodium

Optional Equipment: (check appropriate boxes)
 EB Eyebolt mounted on bollard for use with chain by others.
 S Weatherproof Durable Receptacle mounted inside base.
 DBB Direct Burial Base for mounting without a concrete footing.
 CLD Custom Logic cast into access door.

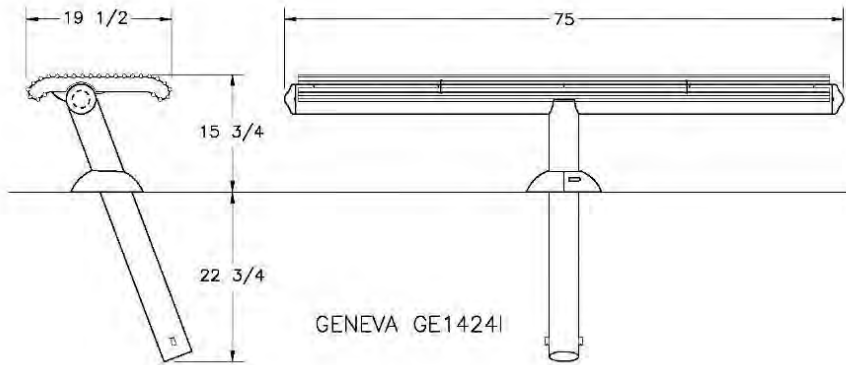
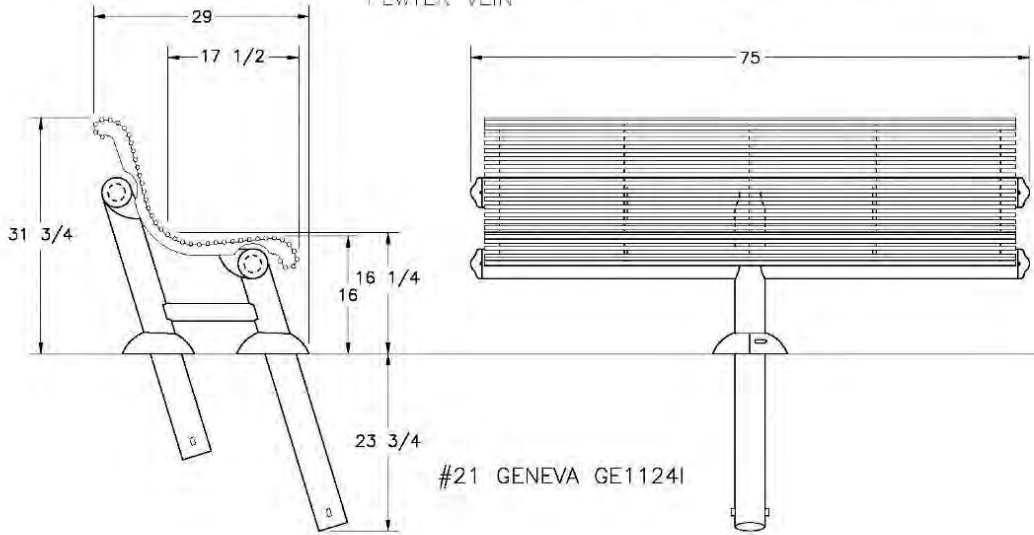
3 BOLLARD

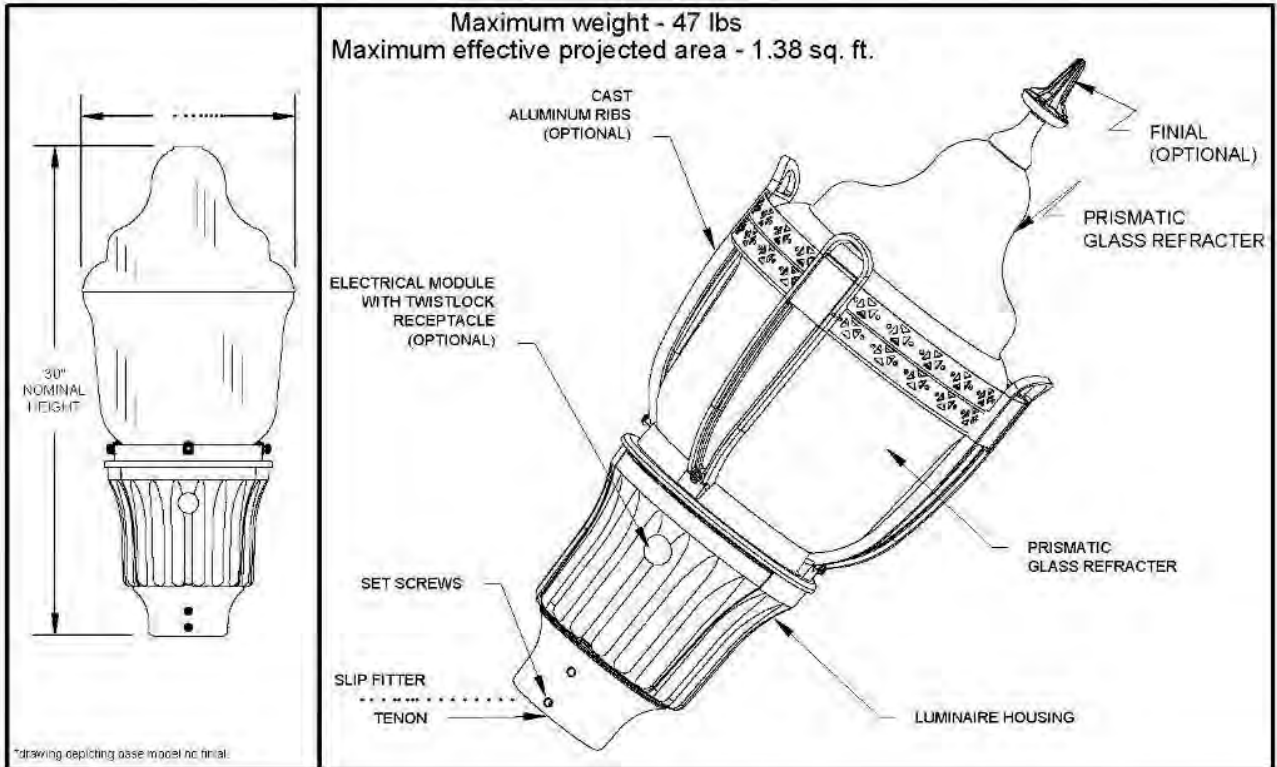
4 ILLUMINATED BOLLARD

RECEPTACLE: TE3F34S BY URBANSCAPE SITE FURNITURE
 32 GAL; FLAT TOP LID; ROD; SURFACE MOUNTING PER MANUFACTURER'S SPECIFICATIONS; COLOR - PEWTER VEIN



GENEVA BENCH BY URBANSCAPE SITE FURNITURE
6' BENCH W/ OR W/O BACK; IN-GROUND MOUNTING
PER MANUFACTURER'S SPECIFICATIONS; COLOR -
PEWTER VEIN





ORDERING INFORMATION:

GVU	175MH	MT	B	3	N	S	B
BALLAST TYPE (MOGUL BASE) 175MH = 175W MH	VOLTAGE MT = MULTITAP (factory 240V) (120, 208, 240, 277 VOLT)	HOUSING COLOR B = BLACK	OPTICS 3 = IES TYPE III DISTRIBUTION	FINIAL S = STANDARD	TRIM N = NO TRIM	COLOR B = BLACK	

OPTIONS
H = NEMA TWISTLOCK PHOTOCONTROL RECEPTACLE ONLY

FINIALS

STANDARD

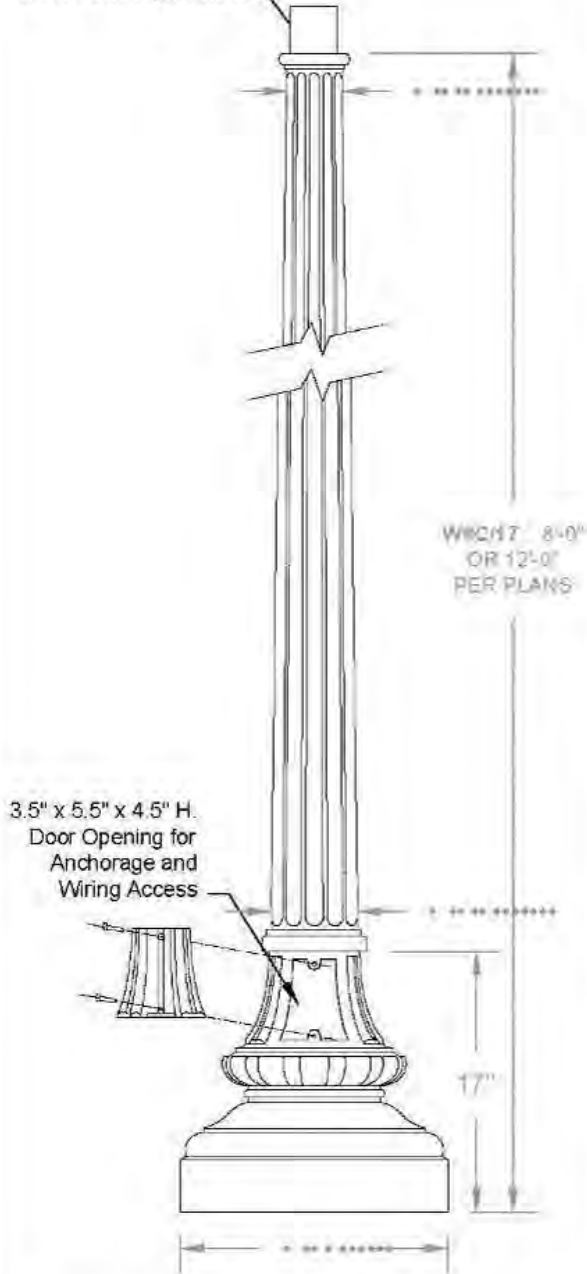
CLEAR FINIAL
NO TRIM OPTION
LUMINAIRE OPTION

HOLOPHANE[®]
LEADER IN LIGHTING SOLUTIONS
An *acuity* Brands Company

Utility Granville[®] Series Postlight

WADSWORTH Series Cast Aluminum Posts

3" O.D. x 3" High Tenon



3.5" x 5.5" x 4.5" H.
Door Opening for
Anchorage and
Wiring Access

W8C/17 8'-0"
OR 12'-0"
PER PLANS

HOLOPHANE An Acuity Brands Company
LEADER IN LIGHTING SOLUTIONS 214 OAKWOOD AVENUE, NEWARK, OHIO 43055

ORDERING GUIDE

sample catalog number

W8C/17 - CA/BK -
Post - material / finish - options
WADSWORTH - Cast Aluminum -
12' height - Black -
cast shaft -
17" dia. base

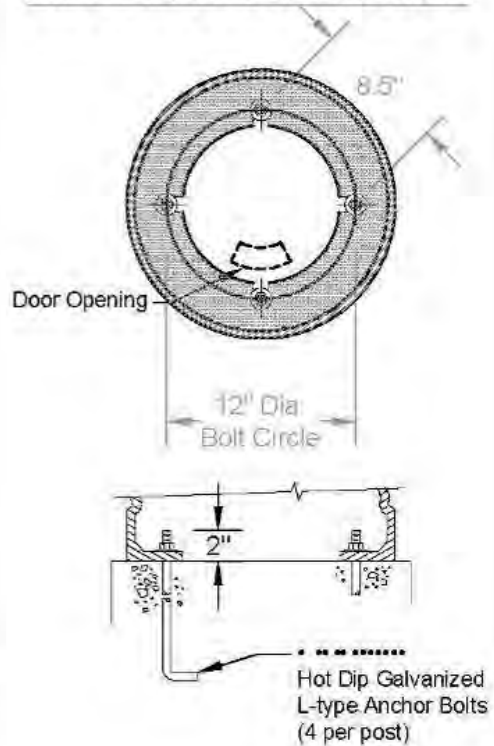
Post (check appropriate boxes)
Catalog # Height
 W8C/17 8'-0"

Material/Finish
Catalog Suffix Description
 -CA/BK Cast Aluminum/Black (std.)

(for complete finish and color options, see "Finish" section in catalog)

Optional Equipment
Catalog Suffix Description
 - Receptacles (see Accessories section)
 - Banner Arms (see Accessories section)
 - Flag Pole Holders (see Accessories section)
 - Custom Logos (see Accessories section)
 - Signage (see Signage section)
(for optional equipment not found in catalog, consult factory)

ANCHORAGE GUIDE



Hot Dip Galvanized
L-type Anchor Bolts
(4 per post)

2.0 BLUEWAY FACILITY GUIDELINES

The blueway facility guidelines of this master plan provide basic information on creating a successful blueways system. Similar to greenways, it is important to develop quality design standards that are consistent throughout the system when creating blueways. Blueway systems should have access points in key locations and provide safety information for users.

2.1 PURPOSE OF A BLUEWAY

Blueways are water-based trail systems for paddlers. These systems have designed access points and they are important recreation corridors that both promote conservation and can have economic benefits as well.



In the past, rivers were the main transportation routes for the movement of people and goods; now rivers present an opportunity for recreation and education. They provide a unique recreation experience for paddlers, while protecting priceless biological features.

2.2 USERS OF A BLUEWAY

In general, the proposed Stones River blueways are considered mainly flatwater, meaning they typically have little current and obstructions are easily avoided by trained paddlers. Blueway users may be experienced paddlers and inexperienced paddlers who utilize a variety of non-motorized watercraft, which may include canoes, kayaks and stand-up paddling (SUP) boards.

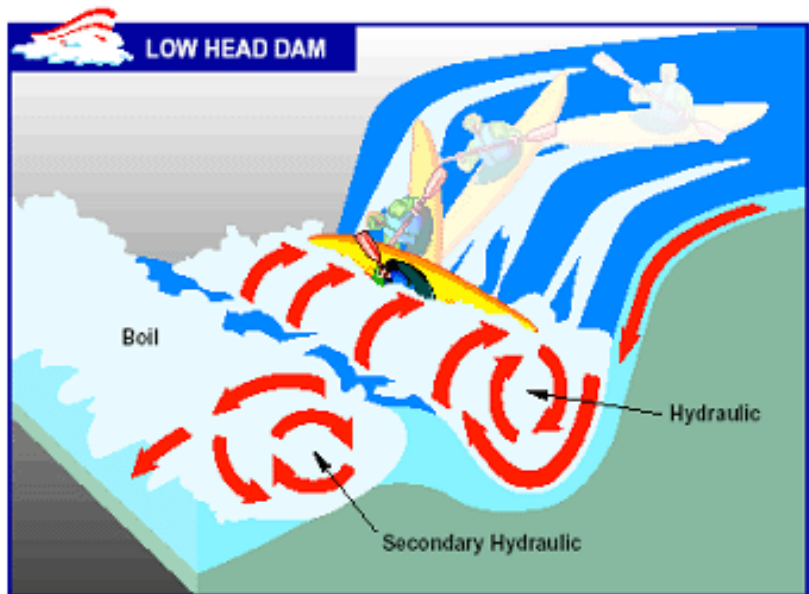
Given the numerous species of fish found in the Stones River and its tributaries, fishing is often a popular activity on blueways. The West Fork of the Stones River near Nices Mill is already known locally for having rainbow trout. By providing access points, signage and other blueway infrastructure, this recreational sport can continue to expand and encourage tourism.

2.3 SAFETY CONCERNS AND MEASURES

While there are many benefits to blueways, they can pose safety concerns for users. These risks are not always apparent, as conditions can change rapidly due to weather conditions, water level or changes in route due to fallen trees or other water hazards.

Low-water levels at certain times of the year also create unfavorable conditions for paddlers. Information on available water data, current water levels and other safety information is a critical component to providing a successful blueway system.

In addition, small low head dams currently exist along some of the streams and pose a serious risk. When water flows over the top of these low head dams, they produce churning currents on the downstream side that may not appear dangerous, but recirculating water can pin someone against the upstream side, making it difficult to escape. If possible, these low head dams should be removed along blueway routes.



Source: American Boat Operators' Course <www.boatcourse.com>

An ongoing study by the University of Tennessee states that there have been 204 deaths at low-head dams in 30 states over the past 50 years. Half of those deaths have occurred since 2000. As more people use rivers for recreation purposes, these unsuspecting “drowning machines” (as they are sometimes called) present a significant health risk to paddlers. Removing low-head dams will not only improve river safety, but also improve aquatic habitats by allowing fish passage.

All paddlers, whether experienced or beginner, need to be prepared for emergencies. Posting rules for paddlers and providing a safe access point are two important elements, but citizens should be advised that rivers pose many dangers.

According to the Centers for Disease Control and Prevention, drowning ranks fifth among the leading causes of unintentional injury death in the United States. Tennessee State Law requires that each person on board a watercraft have an approved Personal Flotation Device (PFD); children 12 years old or younger are required to wear a PFD at all times while on the water. For state regulations regarding Personal Flotation Devices, refer to the *Tennessee Boating Safety Guide*.

The Tennessee Wildlife Resources Agency (TWRA) provides the *Safety Checklist for Canoeing and Paddle Sports* manual. They also have a Boating Safety Education website with important safety information. General guidelines for users include:

- Be prepared and always wear a PFD on and in the river. Paddlers should be prepared for any situation.
- Know your skill level and never paddle alone. Although the blueway may be considered as class I rivers, paddlers of any skill level should check both weather conditions and water level prior to departure. Always tell someone where you are going and when you expect to return.
- Bring plenty of drinking water, regardless of the season. Bring necessary allergy medications and emergency supplies such as a first aid kit, prescription medications, a change of clothes, flashlight, whistle, compass, rain gear, cell phone, sunscreen, insect repellent, snacks, etc., and a waterproof “dry” bag to hold these items. Secure items.
- Check weather conditions and water level before your trip. Do not attempt a trip if the forecast indicates severe weather such as a thunderstorm. Do not attempt a trip during flood conditions.
- Wear clothes and shoes suitable for conditions. Avoid flip-flops or other shoes that can slip off the foot easily.

If sponsoring a float trip, leaders should provide participants with a legal waiver to sign and require participants under the age of 18 be accompanied by an adult who has legal responsibility.

2.4 CORRIDOR PROTECTION

Establishing a Blueways system and becoming a Scenic River can help protect and improve water quality of the Stones River. Currently, parts of the river are listed as 303(d) impaired river according to the Tennessee Department of Environmental and Conservation (TDEC). This is due, in part, to point source land development in the watershed as well as unrestricted cattle access along the river. Opening river access can promote water quality improvements. Improvements might include utilizing low impact development techniques in future construction, adding rain gardens and other stormwater best management practices to existing developments as well as restricting cattle access to the river, when possible.

Engaging nonprofits in assisting with cleanups, education and outreach is an important partnership that benefits the river and its paddlers. The Stones River Watershed Association (SRWA) provides a great way to involve individuals interested in protecting the river as a valuable resource. Other potential sources for assistance include the

statewide organization Tennessee Scenic Rivers Association (TSRA), Boy Scouts of America, Girl Scouts of the U.S.A., Americorps and possibly corporate sponsorships.

Scenic River Program

The Stones River may be eligible to participate in the Tennessee Scenic Rivers Program. Currently, there are thirteen rivers designated as State Scenic Rivers. The program seeks to preserve sections of rivers within the state and they are managed according to the Rules for the Management of Tennessee Natural Resource Areas. (Source: www.tn.gov/environment/na/scenicrivers/#rivers). For example, the Duck River in Maury County is a member of the Scenic Rivers Program. The 37-mile section designated as a state scenic river enhances the ability to protect its “scenic, ecological, cultural and historical values.” It also provides guidelines for the protection for species of rare and endangered plants and animals through protection of water quality and adjacent lands.

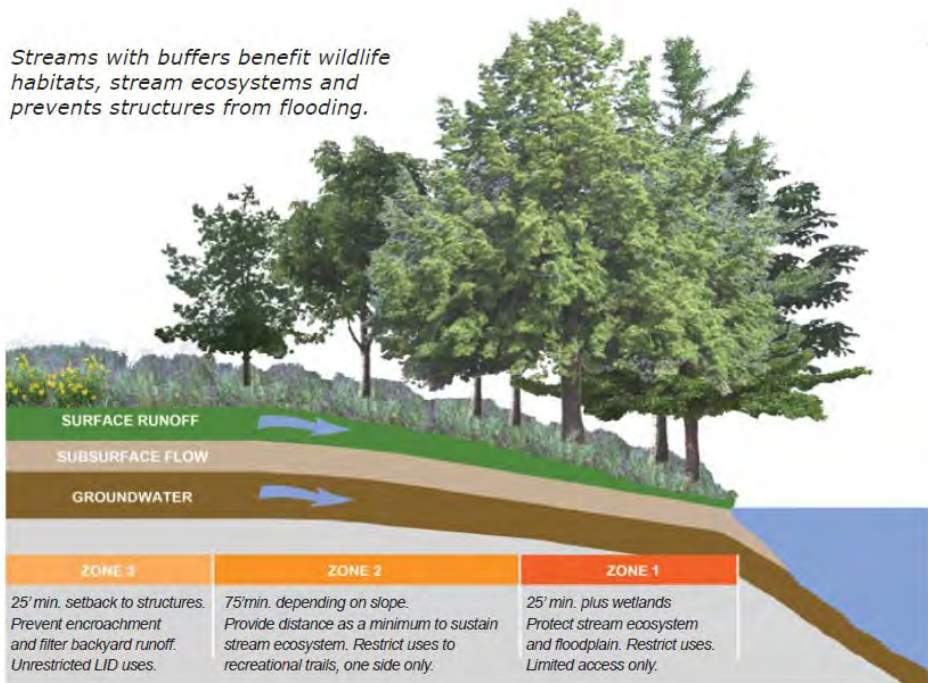
Park and Float Program

The Tennessee Department of Transportation (TDOT) began the Park and Float program in 2010. The program is a partnership between TDOT and the Tennessee Wildlife Resources Agency (TWRA) that helps provide access to Tennessee streams and rivers at bridge crossings on state highways. By recognizing the economic benefits of providing access, the state capitalizes on this existing asset. (Learn more at www.tdot.state.tn.us/environment/ecology/accomplishments.htm).

Aquatic Buffers

Aquatic buffers along the corridor can protect waterways and sensitive aquatic environments.

Buffers protect water quality by filtering pollutants from runoff and provide flood control zones, stream bank stabilization, stream temperature control and room for lateral movement of the stream channel. Linking buffers to create a network of green infrastructure provide benefits for



wildlife corridors. Buffers can protect rivers and streams from future development with conservation easements; thus, conservation easements are a strong marketing tool that helps guarantee the protection of scenic views and our precious natural resources.

Bank Stabilization

Erosion along banks causes land loss, habitat destruction and other adverse effects to water quality and aquatic biodiversity. Designing bank stabilization requires a careful analysis of what is causing the erosion. Applied incorrectly, bank stabilization techniques may cause more erosion downstream.

When determining where to apply bank stabilization, first begin with addressing the most severe sites and working from upstream to downstream. Tributaries should also be evaluated. Verify land use on site and determine if there is a link between the erosion and the land use. For example, cattle access may be a source of soil erosion. Limiting access would be the first step in stabilizing the bank. In general, the first step is to assess the amount of erosion (e.g. minor, moderate, severe) then determine the method for bank stabilization and calculate costs. One of the more difficult steps in bank stabilization is the ability to implement improvements (i.e. garnering public participation and cooperation from the landowner).

It is important to utilize experts who understand river morphology and who can determine the best method to stabilize the bank as well as what time of year is best to implement the proposed measures. Often, low-tech methods can be used that, long-term, can withstand major storm events better than more expensive methods—such as gabion retaining walls. However, without proper expertise, these methods could also fail. For example, planting trees as a bank stabilization method should not be implemented during the rainy seasons when a large storm event could wash away installations before they have an opportunity to take root.

2.5 BLUEWAY ACCESS POINTS

Blueway access points provide facilities for recreational use of waterways. These facilities allow for ease of put-in and take-out for canoes, kayaks and other small recreational watercraft. As shown in the overall blueways master plan, a total of over 50 miles of blueway is proposed along the three forks of the Stones River. Proposed access points along the river vary from a short distance of two miles, and span distances up to six miles (with a median of 2.2 miles between access points). For flat water canoeing, a paddler can average about two miles an hour. Access points shown on the overall blueways master plan with short distances may be eliminated to provide greater distances, but they are included for overall planning purposes. Each site will need to be evaluated for access, distance from the next access point and site-specific attributes.

Below is a list of potential access points and distances:

Map ID	Stones River (West Fork)	Current Status
1	Veterans Pkwy	No Public Access
2	West and Middle Confluence	No Public Access
3	Cason Trail	Future Public Access
4	River Rock Blvd.	No Public Access
5	Bridge Ave. & Molloy	Future Public Access
6	Manson Pike	Public Access
7	General Bragg Trailhead	Future Public Access
8	Thompson Lane	Public Access
9	Nice Mill	Public Access
21	West Fork Recreation Area	Public Access

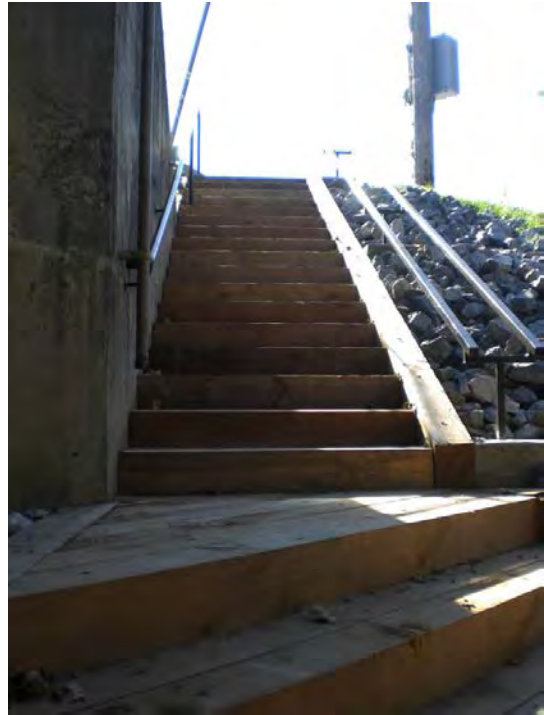
Map ID	Stones River (Middle Fork)	Current Status
10	Elam Mill	No Public Access
11	Joe B. Jackson Trailhead	No Public Access
12	City Schools Office	No Public Access

Map ID	Stones River (East Fork)	Current Status
13	Guy James Road	No Public Access
14	Brown's Mill	No Public Access
15	Lascassas Pike	No Public Access
16	Betty Ford Road	No Public Access
17	VA Hospital	No Public Access
18	Walter Hill	Public Access
19	Mona Recreation Area	Public Access
20	East Fork Recreation Area	Public Access

2.6 BLUEWAY ACCESS AND PARKING AREAS

At a minimum, blueway access and parking areas should include a paved access path to natural staging and launching areas. In some situations, a minimal amount of shotcrete or concrete may be required to improve footing and access within natural rock outcrops. In other situations, a system of large steps or terraces can be constructed of recycled plastic (textured, not slippery when wet) and wood timbers to facilitate put-in and take-out at varying water levels. Ideally, access points should be provided every two to four miles.

These access points should, wherever possible, take advantage of existing park facilities or proposed trailheads for parking, picnicking, restrooms and other amenities. In some situations, access points may be independent of park facilities and will require dedicated parking and signage. In a few cases, roadway pull-offs with adequate room for two or three vehicles may be appropriate. In other cases, more developed parking amenities will be required.



Boat access slide rail next to stairs

Road construction to access points should be carefully planned to minimize impact on the river and surrounding buffer. Access and parking areas should be limited to the minimum necessary and should employ low impact techniques such as porous pavement where possible to reduce stormwater runoff.



In general, parking areas should be located close to launch areas and should have a loading/unloading zone for heavy equipment. When designing parking areas, utilize low impact designs and provide best management practices when constructing to minimize disturbances to the site and soil erosion. In situations where parking cannot be located near access points, pathways to the water should be constructed at a minimum of 5' wide to allow adequate space to carry watercraft to the water's edge.

Riverbanks with a slope greater than 15% will create difficulty transitioning from land to water and will require handrails, steps and/or a boat launch. Bank stabilization should also be provided to protect streams from soil erosion.

The American Disabilities Act (ADA) of 1990 requires that people with disabilities be provided equal access to public programs and services. At a minimum, provide at least one accessible put-in and take-out along the route as the blueway system develops.

Construction of ramps and steps will need to be designed to withstand heavy storm events and may require permits from the U.S. Army Corps of Engineers, Tennessee Department of Environment and Conservation (TDEC) and other regulating authorities.

2.7 MAINTENANCE

Similar to the maintenance of greenways, a blueway system requires both capital and operational funding to implement and maintain the system. Designing the system with proper trash receptacles and clearly stated rules of conduct for blueway users can help reduce litter. As with greenways, these regulations need to be enforced if they are to work. "Adopt a Stream" programs, where an organization volunteers to keep a section of the blueway clean can also help with maintenance.

Regular maintenance tasks include the following:

- Removal of trash
- Signs and traffic markings for paddlers must be inspected regularly and kept in good condition
- Following heavy storm events, blueways should be inspected for water hazards and those hazards should be removed.
- Structures such as ramps, access points, pavilions and restrooms should be inspected annually to ensure they are in good condition. Special attention must be paid to wood foundations and posts to determine if rot or termites are present. At the same time, site furniture and other support facilities should be inspected.
- Mow put-in and take out areas and other selected areas on a scheduled basis depending upon season, species and rate of growth.
- Habitat enhancement and control
- Removal of graffiti
- Repaint/repair flow gauge
- Bank stabilization repair measures

2.8 BLUEWAY FACILITIES AND SIGNAGE

In providing a comprehensive blueway system, the system will require designation of the route, access to put-in/take-outs and several types of signage. The system should also provide sections that are ADA accessible. General guidelines to create ADA compliant facilities for blueways are found below. The elements listed do not create an exhaustive list, but rather provide general guidance.

Route Surface and Slope

The access route to the boat launch site should have a smooth slope surface and be as level as possible. To meet ADA guidelines, the slope should be less than 8.33% and have a cross slope of under 2%. The ADA accessible route should also be clearly marked.

Landing/Loading Area

A leveled boat slip space that is at least 60"x60" should be provided adjacent to the loading area. In a back country canoe launch, this might be constructed using large relatively flat boulders approximately a foot under water. This leveled area should be designed to allow transfer from a wheelchair to a rock then into a floating canoe.

Transfer assistance

Whether on a bank of a lake or on a rocky slope, it is difficult to transfer to a moving boat. When possible at the landing/loading area, provide a grab bar and other grab points to assist in the procedure of getting into a boat seat. If possible, provide a surface that will limit the amount of movement of the boat when entering the craft.

Below are several examples of handicap accessible landing/loading areas to consider.



Source: EZ Launch for Kayaks & Canoes <www.ez-dock.com>



Source: Logical Lasting Launches, by Roger Lewis, Lower Colorado River Authority



Source: Kay-aKcess <www.kay-akcess.com>

Signage

A blueway signage system may consist of wayfinding signs, rules and regulations, hazard signage and travel distance markers along blueway routes. Signage may also include interpretive panels at access areas that educate the visitors about wildlife and habitats found in the streams.

Wayfinding for blueways may be simple signage that guides visitors to the put-in or take-out locations, as shown in this photo. Often, paddlers are experiencing routes for the first time and wayfinding will assist them in locating these areas. This example shown of the brown sign with paddlers in a canoe is a commonly recognized sign standard already in use in Murfreesboro.

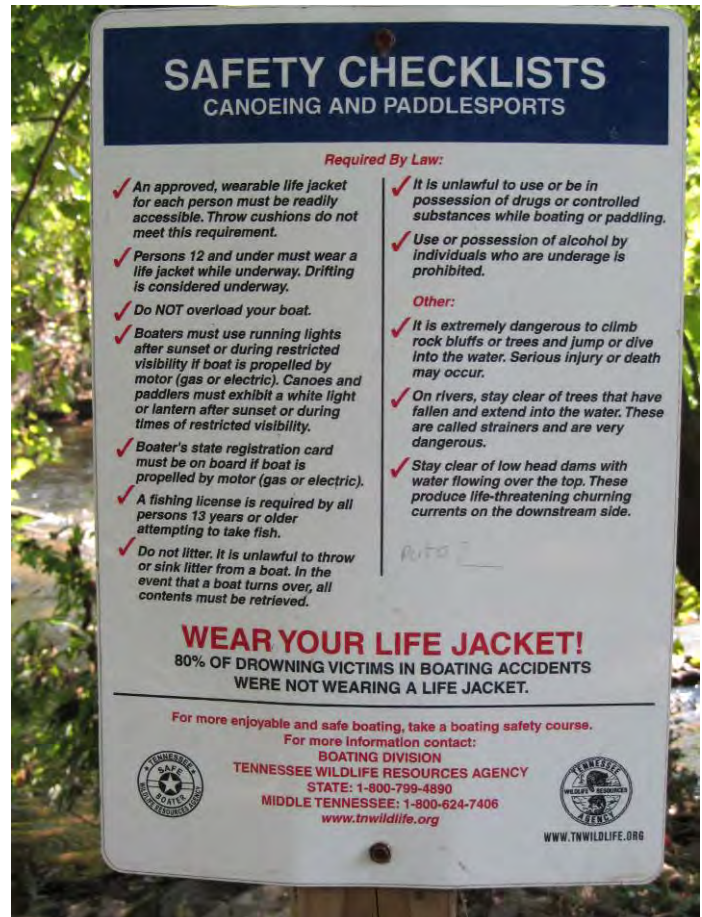


Signage for blueways should be provided to encourage safe use of the river corridor as well as user rules. Signage should identify distances to take-outs downstream as well as any areas where additional caution may be necessary due to adverse conditions such as waterfalls.

Below is a safety checklist for canoeing and paddle sports, as posted on a sign at the Thompson Lane access point.

Required By Law:

- An approved, wearable life jacket for each person must be readily accessible. Throw cushions do not meet this requirement.
- Persons 12 and under must wear a life jacket while underway. Drifting is considered underway.
- Do NOT overload your boat.
- Boaters must use running lights after sunset or during restricted visibility if boat is propelled by motor (gas or electric). Canoes and paddlers must exhibit a white light or lantern after sunset or during times of restricted visibility.
- Boater's state registration card must be on board if boat is propelled by motor (gas or electric).
- A fishing license is required by all persons 13 years or older attempting to take fish.



- It is unlawful to use or be in possession of drugs or controlled substances while boating or paddling.
- Use or possession of alcohol by individuals who are underage is prohibited.

Other:

- It is extremely dangerous to climb rock bluffs or trees and jump or dive into the water. Serious injury or death may occur.
- On rivers, stay clear of trees that have fallen and extend into the water. These are called strainers and are very dangerous.

- Stay clear of low head dams with water flowing over the top. These produce life-threatening churning currents on the downstream side.

Additional items may be added to this checklist. We may also recommend changing the title from Safety Checklists to Rules and Regulations with information regarding restrictions on swimming at these access locations.

Access points should have a clearly visible flow gauge that indicates the degree of safety for canoeing. Given the low water flow of the Stones River during several months of the year, it is important to provide water level information to paddlers. Shown in the picture on the right is a simple flow gauge. Larger signs and information may be needed. Some examples include gauges painted on bridges or rock outcroppings near the access point. Links to the *USGS National Water Information System* with information on current water levels should be provided on blueway websites.



Source: Chris Council, *Aspen Daily News*
<www.aspenjournalism.org/2012/05/01/new-stream-gauge-on-castle-creek-installed>



Source: Iowa Whitewater Coalition
<www.iowawhitewater.org/lhd/images/BooneLowHeadDam.JPG>

Other signs that are important in providing a safe blueway system include signage regarding low head dams. An example of signage provided at low head dams is shown to the left.

3.0 BIKEWAY FACILITY GUIDELINES

Bikeways is the term used in the Murfreesboro GBB Plan to describe bicycle facilities that are always within the right-of-way (ROW) of a roadway, and often within the traveled (curb-to-curb, shoulder-to-shoulder) portion of the roadway. These on-street facilities are critical components of the plan because they serve as connectors that extend the accessible range and therefore the effectiveness of the greenway system. Several types of bikeways exist, each with different design and operating characteristics.

3.1 BICYCLE LANES

A bicycle lane is a portion of the roadway cross-section that has been designated for the preferential or exclusive use of bicyclists by striping, pavement markings, and signage. Bike lanes should be one-way facilities located on both sides of the roadway, in order to carry bicycle traffic in the same direction as adjacent motor vehicle traffic. On one-way streets, bike lanes should be on the right side of the road. Bike lanes are highly regarded by many cyclists because of the safety benefits they provide to cyclists.

Bike lanes are typically considered to be the most desirable facility for higher-volume, urban roadways, including collector roadways. On such roadways, bike lanes benefit both bicyclists and motorists by segregating users, thereby increasing overall capacity. In addition, bike lanes provide a defined area for bicycle travel, decrease sudden lane changing by roadway users, and help to make cyclists feel more confident.

Width

It is recommended that bike lanes be four to six feet in width. However, exact bike lane width should be determined by the type of roadway. Bike lanes on roadways without curb and gutter should have a minimum width of four feet. For roadways with curb and gutter, the bike lane should be at least four feet wide, and should be measured from the gutter pan seam. Bike lanes located next to on-street parking, guardrails or the face of a curb are recommended to have a minimum of five feet in width. Bike lane width is recommended to be increased to six feet when the following roadway conditions are present:

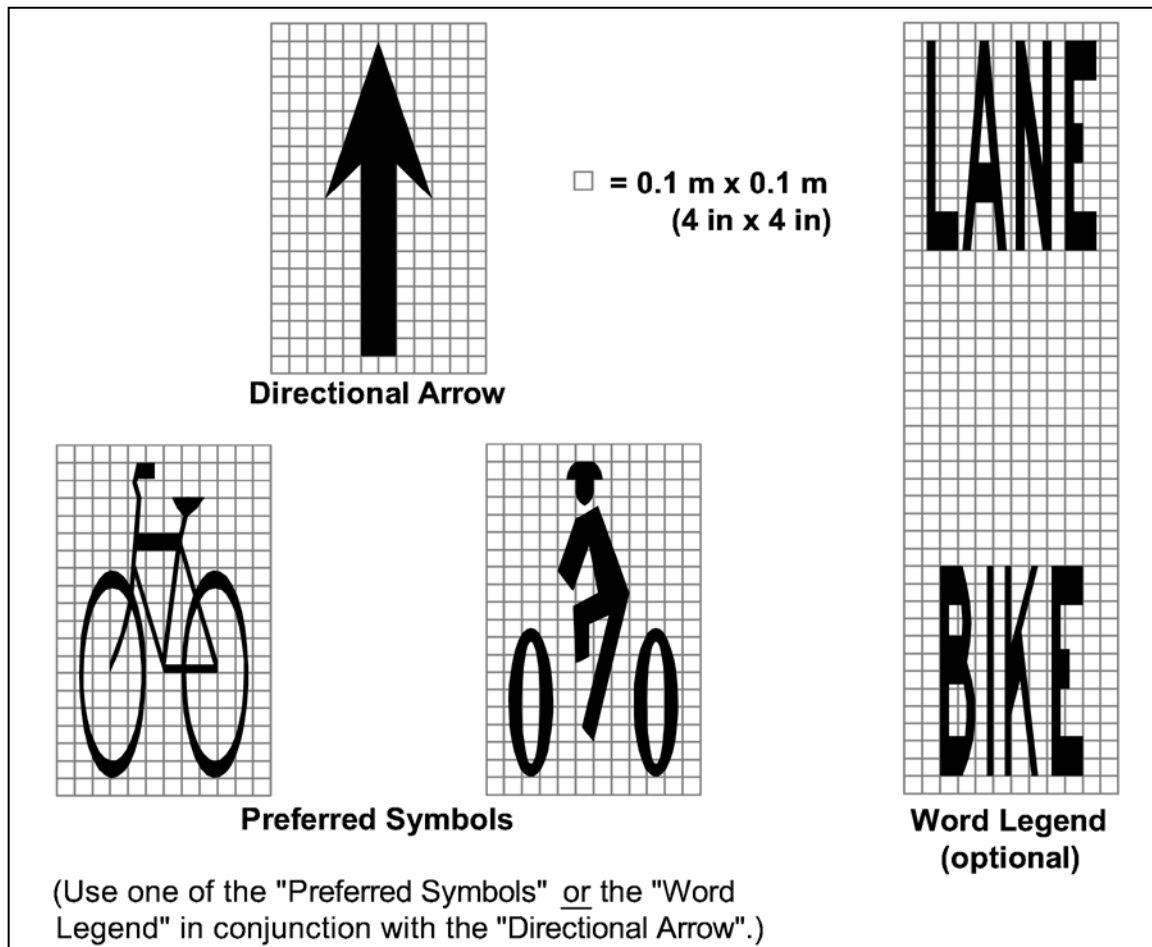
- Streets with high traffic volumes
- Heavy (commercial) vehicle volumes are high
- Steep grades
- Bike lane is adjacent to parking and parking turnover is moderate to heavy

Bike lanes in excess of six feet are generally not recommended, since they can be used for parking or conventional travel lanes.

Pavement Markings

Bicycle lanes should be delineated from conventional travel lanes by a six-inch, single, solid white line. An additional solid white line can be placed between the bike lane and parking lane to encourage motorists to park closer to the curb and to discourage motorists from using the parking lane as a travel lane. This line should be four inches wide.

Standard pavement marking should be placed within bike lanes to indicate the designated space for cyclists. Bicycle lane markings, including symbols and a directional arrow, should be placed after every major intersection, at least 65 feet from the intersection. Symbols and arrows should be located at least every 1,000 feet between intersections.



Typical bike lane symbols, as shown above, are used in bike lanes to indicate designated bicycle use and direction of travel.

Standard pavement markings for bicycle lanes should be white, retro-reflectorized, and created using durable, skid-resistant material. If possible, it is recommended that pavement markings be located out of the path of motor vehicle crossings to maintain the life of the markings. At bus stops, bike lanes should be striped with dashed lines to

indicate where buses are expected to merge into the bike lane in order to reach the curb.

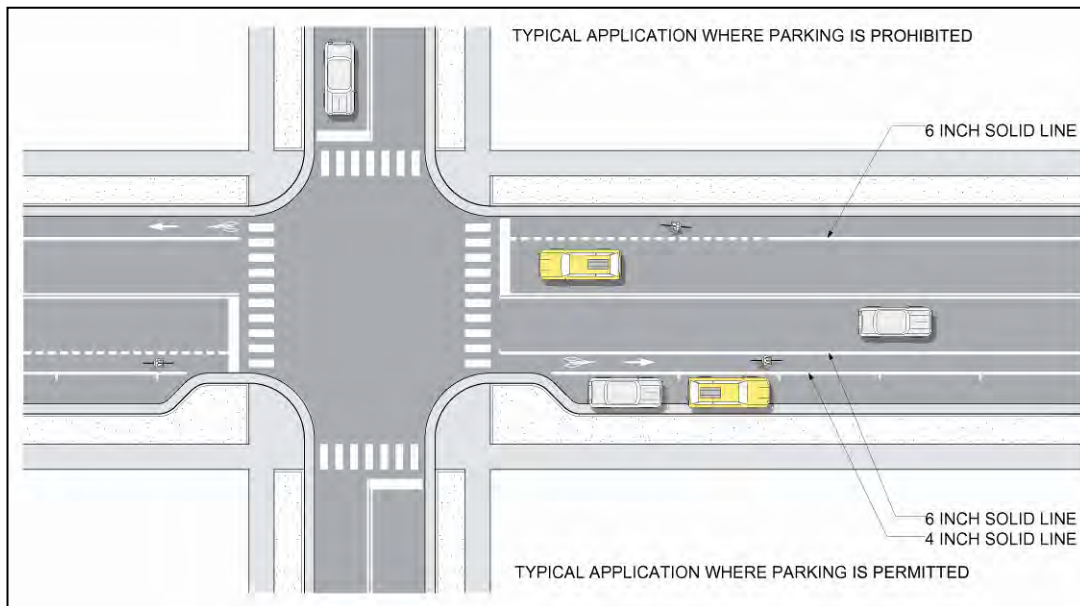
It should be noted that the diamond symbol, which was recommended in the past, is no longer used for bike lanes. This symbol is now associated with High Occupancy Vehicles (HOV) lanes and other motor vehicle facilities. It is recommended that the diamond symbol in existing locations be eliminated as part of regular maintenance.

Bike Lanes Adjacent to Parking Lanes

Bike lanes are often installed adjacent to on-street parking. As mentioned previously, bike lanes on streets with parking should be at least five feet wide to provide additional space to avoid opening car doors, and car mirrors, and to maneuver around vehicles moving into and out of the parking lane. A width of six feet is desirable when parking turnover is significant. AASHTO states that the minimum combined width for the bike lane and the parking lane should be 12 feet. Where on-street parking is present, the bike lane should be placed between the parking lane and the conventional travel lane. Diagonal parking can cause visibility problems for cyclists and is generally not recommended on streets with bike lanes.



Bike Lanes next to Adjacent On-Street Parking



This figure shows bike lanes on a street with and without on-street parking. Note that the curb extensions do not extend into the bike lanes on the side with on-street parking.

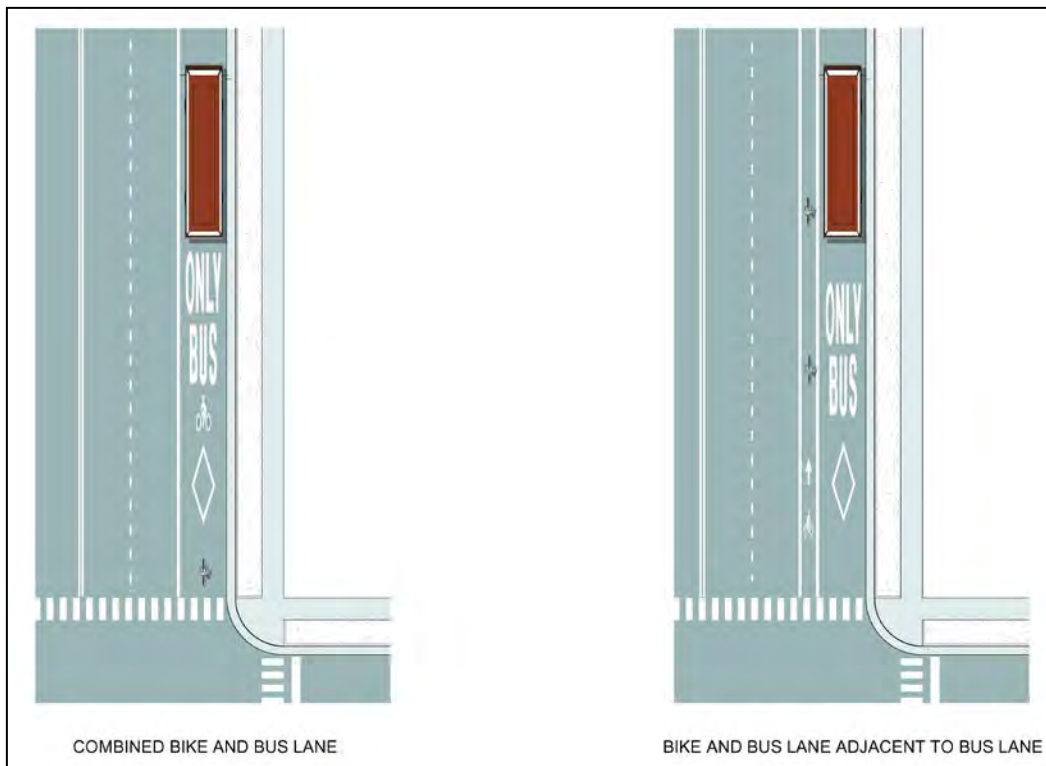
Bus/Bike Lanes



Shared Bus/Bike Lane

Where pavement width allows, a five to six-foot wide bike lane should be provided between the bus lane and conventional travel lanes. A shared lane for buses and bicycles is an option in locations where a bus lane is present, but there is not adequate room for separate bus and bicycle lanes. Shared bus/bike lanes can reduce conflicts with bicyclists, buses, and cars and can increase cyclist safety when used appropriately.

Shared bus/bike lanes are generally used on streets with relatively high automobile traffic, but light, or express, bus traffic. Shared bus/bike lanes with very high bus volumes can create significant conflicts with bikes. It should be noted that right turning vehicles are usually allowed in bus/bike lanes at intersections, and cars remaining in this lane between intersections can cause problems for cyclists. In locations where shared bus/bike lanes are used, the recommended lane width is at least 14 feet.



Bike lanes can share a lane with bus traffic, as shown to the left. If pavement width allows the preferred design is to provide a separate bike lane, as shown on the right.

Innovative Bike Lane Facilities

Left-Side Bike Lane on One-Way Streets

Although bike lanes are typically only recommended for the right side of the roadway, occasionally, bike lanes are installed on the left side of one-way streets for safety benefits. Installation of left side bike lanes can help minimize conflicts due to high bus volumes, a high percentage of right turning traffic, or a high volume of left turning bicycle traffic.

Bicycle traffic turning left from a left side bike lane may create conflicts with motorists who are not expecting bicycle travel on the left side of the street. Also, cyclists may encounter problems moving from the left side bike lane back to the right side of the roadway, if necessary.

Typically, lane width and striping requirements remain the same for left side bike lanes as for bike lanes installed on the right side of the street. Left side bicycle lanes have been used in Minneapolis, Minnesota; Berkeley, California; Eugene, Oregon; and Madison, Wisconsin.

Contra-Flow Bike Lanes

Contra-flow bike lanes allow bicycle traffic to travel in the opposite direction of motor vehicle traffic and are applied on one-way streets where directness and connectivity of bicycle facilities is a high priority. While contra-flow lanes are not generally recommended, they may be appropriate under the following circumstances:

- Fewer conflicts are present on the shorter route, improving safety
- Cyclists can safely re-enter traffic at each end of the lane
- Very few roads, driveways or alleys intersect the roadway on the contra-flow bike lane side
- Out-of-direction travel for cyclists is reduced considerably

Certain design features should be included for contra-flow bike lanes, such as:

- Contra-flow lanes should be placed to the left of motorists
- Proper signage alerting roadway users to two-way bicycle traffic should be provided on streets or driveways intersecting a road with a contra-flow bike lane
- Existing signals should be able to accommodate contra-flow bike traffic
- The contra-flow lane should be the priority on one-way streets where there is not enough width to accommodate both a contra-flow lane and a typical bike lane on the right side of the street

Contra-flow bike lanes should be striped with a double, solid, yellow line to indicate two-way travel. Cities that have used contra-flow bike lanes include Eugene, Oregon; Cambridge, Massachusetts; Minneapolis, Minnesota; Madison, Wisconsin; and San Francisco, California.

Colorized Bike Lanes

Colorized bike lanes can be used in high-conflict locations as a way to alert motorists to the presence of bicyclists and bike lanes, especially in areas where high volumes of motor vehicle traffic cross bike lanes. The use of colorized bike lanes has been shown to increase bicycle safety by improving visibility of bike lanes, encouraging motorists to yield, and warning motorists and cyclists of a potentially dangerous area.



Colorized Bike Lanes

Colorized bike lanes should be used for short segments at conflict points within the bike lane. Potential locations that may benefit from colored bike lanes



Sign to Alert Motorists to look for Bicycles

include sections of bike lanes where ramps or roadways merge in such a way that typical bicycle lane markings may not be adequately visible.

Locations where colorized bike lanes have been used include Portland, Oregon; Cambridge, Massachusetts; Philadelphia, Pennsylvania; Montreal, Canada; and several cities throughout Europe. Although several colors have been used in Europe, green is the most commonly used color in the United States.

“Dooring” in Bike Lanes

Emerging practices for bike lane accommodations with on-street parking focus on efforts to reduce the conflict between parked cars and bicyclists. The “door zone” is the area in the bike lane that is crossed when the driver of a parked car opens

the door. This poses a problem for bike lanes located next to on-street parking. Two emerging strategies for increasing awareness of the “door zone” are:

- Install “Look for Bike” signs to alert drivers to look for bicyclists when opening the driver’s side door.
- Increase the width of the bike lane so that bicyclists can travel outside the “door zone” without entering into the motorists travel lane.



Example of Car Door Opening in Bike Lane

Bicycle Lanes at Intersections

Designing for bicycle travel at intersections is arguably the most crucial, and most challenging, aspect of bicycle facility design. Because a high proportion of incidents between bicycles and automobiles occur at intersections, it is important that bicycle facilities at intersections are designed in a manner that is direct, logical, predictable, and that minimizes unusual circumstances. Both cyclists and motorists must be provided with a well-defined path to follow and a clear indication of who has right of way. As usual, bicycles should be treated as vehicles at intersections and the path designated for bicycles should remain as close to conventional travel lanes as possible. Bike lanes may be striped all the way to the crosswalk. However, they should not extend through pedestrian crossings or through the intersection.

As cyclists approach an intersection, they will need to position themselves in the correct location for the movement they intend to make. For turning movements, this may require cyclists to merge into outside travel lanes in areas without bike lanes. Where bike lanes are present, they are often only intended for through movements. Turning cyclists will still need to position themselves appropriately in other lanes, as needed.

Free-flowing intersections, like those with slip lanes, allow motorists to make turns without being controlled by a traffic signal and enable higher-speed turns. This design decreases safety for cyclists, who must cross paths with motorists at some point. Therefore, slip lanes should be avoided where bicycle facilities are present.

Intersections without Right-Turn Lanes

Bicycle lanes that are provided at signalized or stop-controlled intersections without exclusive right turn lanes should be replaced with a dashed line for a minimum of 50 feet prior to the intersection. The dashed line will alert motorists and cyclists that they may be merging with one another at the intersection. Solid bike lane striping should start again immediately on the far side of the intersection.

Minor intersections that are not stop-controlled should be striped with a solid line all the way to the crosswalk. However, at intersections where a high volume of vehicles are turning right or where there is a near-side bus stop, the bike lane striping should be dashed for at least 50 feet or for the length of the bus stop.

Intersections with Right-Turn Lanes

At intersections where both bicycle lanes and exclusive right turn lanes exist, conflicts are created when right-turning motorists and cyclists traveling through the intersection must cross each other's path of travel. Bike lanes at these intersections should be placed to the left of the exclusive right-turn lane.

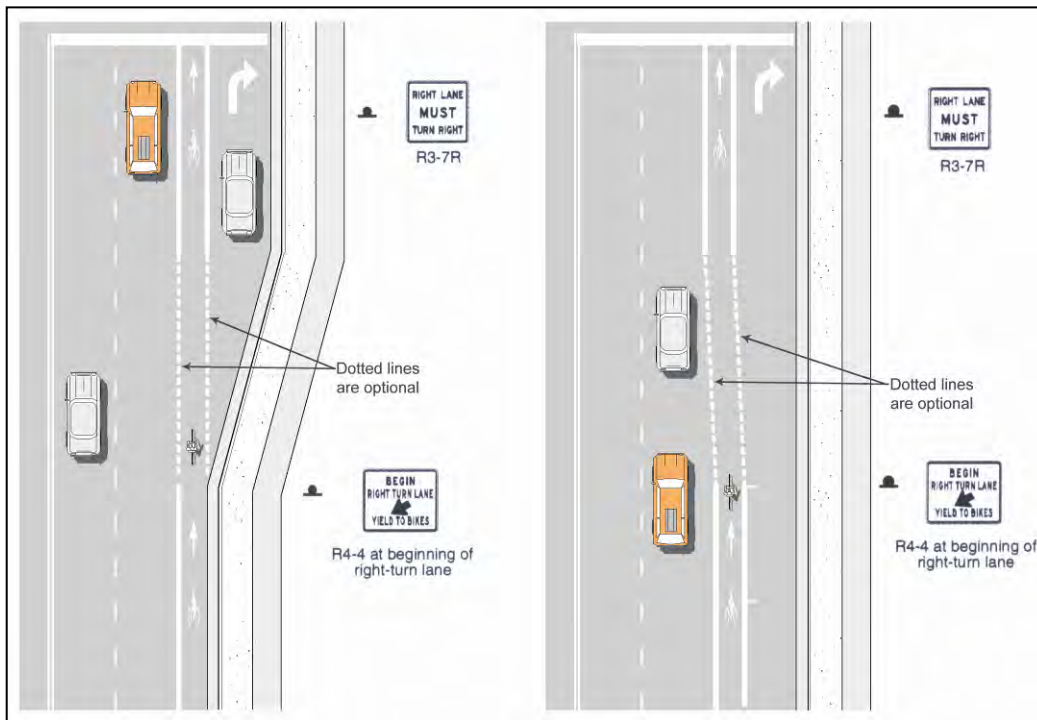
Merging and lane changes between motorists and cyclists should occur before reaching the intersection. To encourage motorists to move into the right turn lane, the bike lane should be striped with dashed lines at least 50 feet in advance of the intersection. The

solid bike lane striping should resume when the full-width of the right-turn lane is achieved and should extend to the crosswalk or stop line.

In locations without adequate space for both a separate bike lane and a right turn lane, the right-turn lane may be marked as a shared-use lane, with bicyclists directed to the left side of the lane. This approach has been used in Memphis, Tennessee as well as Eugene, Oregon. However it is not included in the AASHTO or MUTCD manuals. Another



Bike Lane at Intersection with Right Turn Lane



The illustration on the left shows an exclusive right turn lane without on-street parking, while the illustration on the right shows the right turn lane where on-street parking is present.

option, when space is limited, is to end the bike lane and widen the through lane to at least 14 feet for shared use.

In cases where a parking lane or a through travel lane is dropped at an intersection to create a turn lane, the bike lane should be located between the through lane and the right-turn lane, if possible. In locations where a through lane has been dropped to become a right-turn-only lane, the MUTCD states that bicycle markings should stop at least 100 feet before the beginning of the right-turn lane, and through bicycle markings should resume to the left of the right turn lane. At intersections with a high volume of

right-turning bicycles, it may be appropriate to provide a right turn only bike lane in addition to a through bike lane.

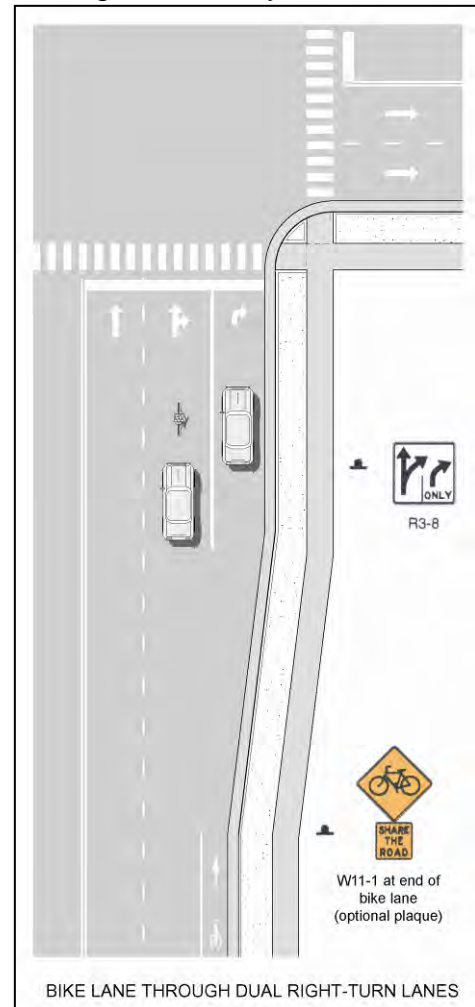
Intersections with Dual Right-Turn Lanes

Approaches with dual right-turn lanes consist of either two exclusive right turn lanes or an exclusive right-turn lane and a shared through/right-turn lane. These configurations complicate the placement of a bike lane. Cyclists traveling straight through the intersection face the difficulty of merging across two right turn lanes to a through lane, or proceeding through the intersection in a lane where drivers may be turning right.

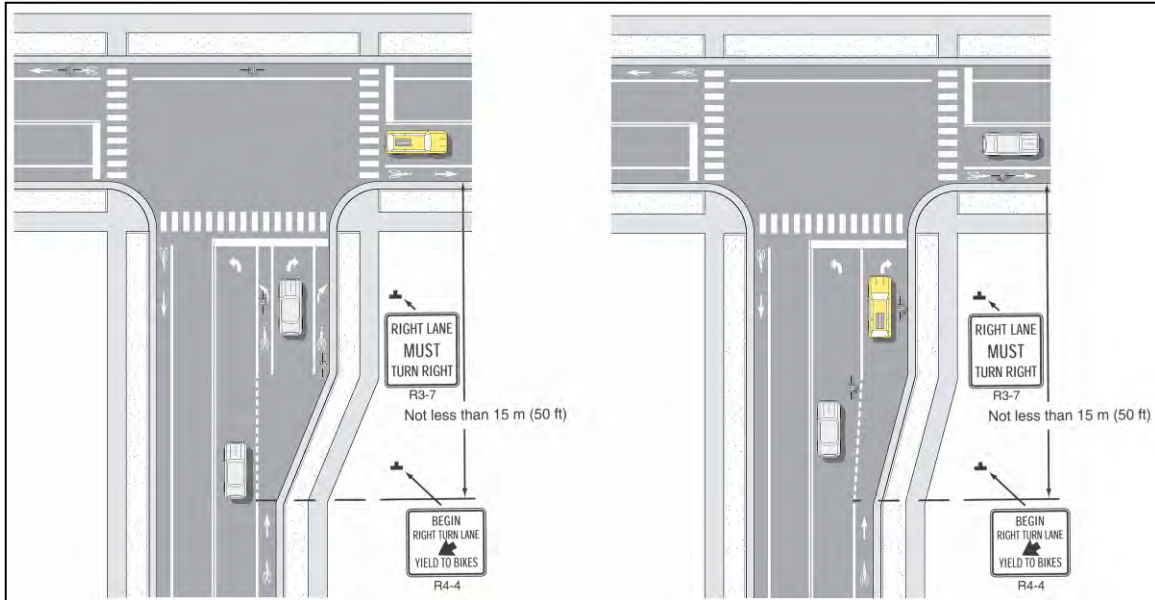
The MUTCD states that, in this situation, the bicycle lane should be discontinued. Possible alternatives at these locations include providing a dashed line from the edge of pavement to guide the cyclist to the shared through/right turn lane, or providing a sidewalk cut to allow the cyclist to approach the intersection as a pedestrian. Proper signage should be provided to warn cyclists of the conditions ahead. Dual right turn lanes should be warranted by an engineering study and avoided, whenever possible, on streets where significant bicycle traffic is anticipated.

T-Intersections

At T-intersections, especially where traffic volumes are high and there is available space, bike lanes should be provided for both left and right-turning movements. If space is limited, the bike lane should be dropped in advance of the intersection so that cyclists may position themselves in the proper conventional lane. If the bike lane is dropped, the left turn lane is recommended to be at least 14 feet wide. The bike lane on the through street of the T-intersection should be striped through the intersection, except at crosswalks.



Proper signage should be installed at dual right turn lanes to warn motorists and cyclists of the lane configuration ahead.



Separate left and right turn bike lanes should be provided at T-intersections, as shown in the illustration to the left. Where pavement width prevents this, a wide left shared left turn lane should be provided, as shown to the right.

Complex Intersections

Intersections that have offset or skewed approaches, or multiple streets entering from different angles, can create confusion for all roadway users. Skewed intersections can reduce bicycle visibility at angles and can increase the distance across the intersection. This often results in a long, confusing path for cyclists. Ideally, approaches to skewed intersections should be realigned to meet at right angles. Where re-alignment is not possible, ample sight distance must be achieved at the intersection. Bike lanes may be dashed through the intersection to guide cyclists and to keep motorists from encroaching into the path of travel of cyclists.

Multiple streets entering an intersection create difficulties for cyclists due to an increased number of conflict points, a larger intersection with a longer distance to cross, reduced visibility of bicycles, and more unpredictable movements by motorists. It may be possible to redesign this type of intersection so that only two roads cross at one point, and the additional approaches intersect the road at another location. Also, redesigning this type of intersection as a roundabout may be appropriate. Where redesigning the intersections is not possible, dashed bike lanes may be continued through the intersection.

Bike Lanes at Roundabouts

Roundabouts can be problematic for cyclists, although low-speed roundabouts tend to accommodate both motor vehicle and bicycle travel fairly well. Higher-speed roundabouts, and roundabouts with multiple lanes or flared entry points, create more points of conflict for cyclists.

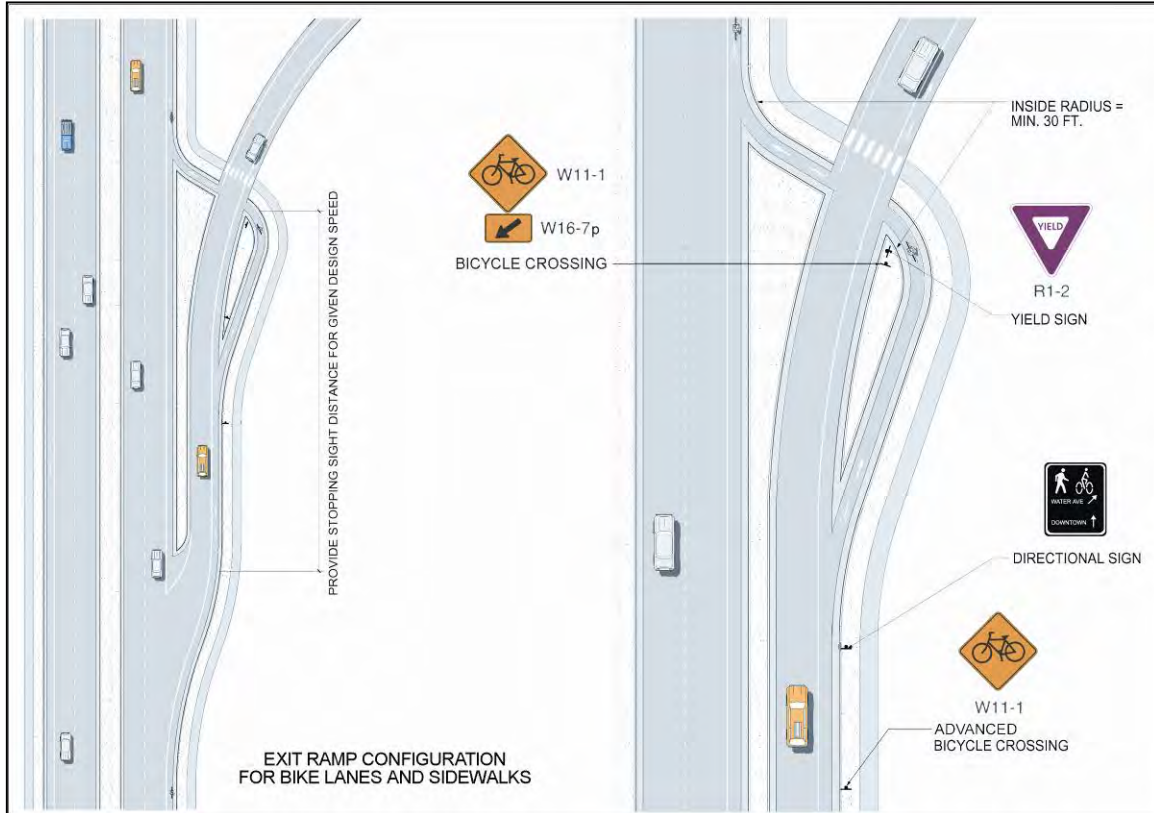
In general, bicycle travel is accommodated at roundabouts by providing separate bicycle paths outside of the roadway or by bicycles sharing conventional travel lanes with motorists. Bicycle lanes through roundabouts are not recommended. At locations where bicycle lanes lead to roundabouts, the bike lane should end between 35 and 65 feet ahead of the roundabout.

Bike Lanes at Interchanges

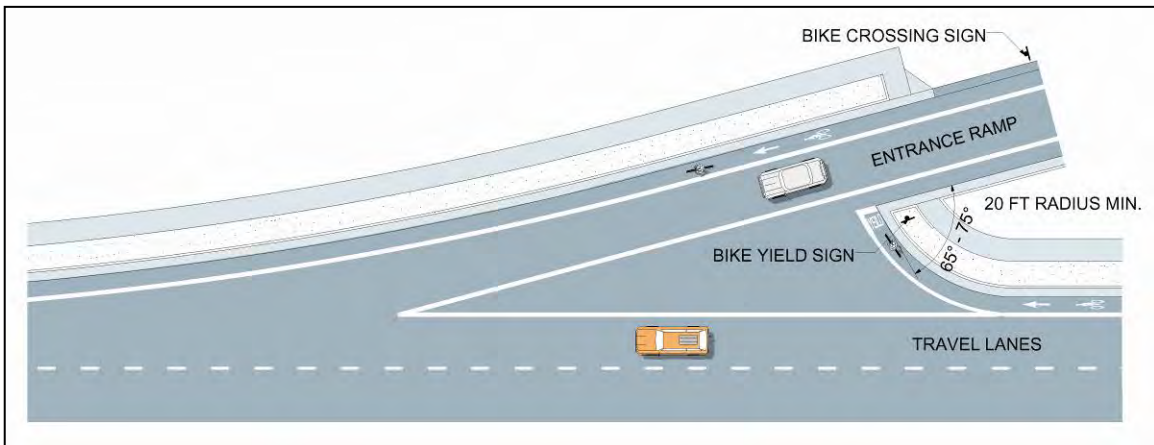
Because of their high-speed, free-flowing motor vehicle traffic, freeway or interstate interchanges can be one of the most difficult areas for cyclists to navigate. Conflicts can occur when cyclists traveling at lower speeds must weave or merge with motorists traveling at much higher speeds. Problems that occur at entrance and exit ramps include:

- Visibility problems caused by the acute angle at which vehicles are approaching
- Accelerating motorists merging into traffic, which increases the speed differential with bicyclists
- Motorists exiting to the right sometimes do not use turn signals, making it difficult for cyclists to predict their movements
- Motorists concentrating on merging may be distracted and not as attentive as normal to the presence of cyclists
- Because they may be exiting bicycle-restricted roadways, motorists may not be anticipating bicycle traffic

While design recommendations for bike lanes at intersections provide suitable solutions for signalized interchange ramps, many interchange designs allow for uncontrolled vehicular movements which require special attention for non-motorized users. The bicycle lane designs shown below help to increase safety and comfort at interchanges which have uncontrolled movements by minimizing the distance that cyclists must cross, by improving sight distance, and by moving the conflict point to a location where motorists are not concentrating on merging with traffic. As shown in the figures, the bike lanes are pulled away from the through lane of the roadway and curve around to intersect the road at near-right angles. Portland, Oregon has also experimented with using colorized bike lanes at entrance and exit ramps to increase visibility.



The bike lane at the entrance ramp shown in the figure intersects the ramp at nearly a right angle before the motorist must merge into traffic.
 Source: *Oregon Bicycle and Pedestrian Plan*



Bike lanes at exit ramps should be pulled away from the roadway to allow nearly right angle crossings at the ramp, as shown above.
 Source: *Oregon Bicycle and Pedestrian Plan*

Interchange-type intersections, such as single point urban interchanges (SPUI) occasionally occur on urban roadways where bicycle travel is permitted. Single point urban interchanges (SPUI) are constructed in areas where there is restricted right-of-way since this type of interchange requires less land. SPUI's are designed to move high volumes of traffic through the interchange at relatively high speeds. With this type

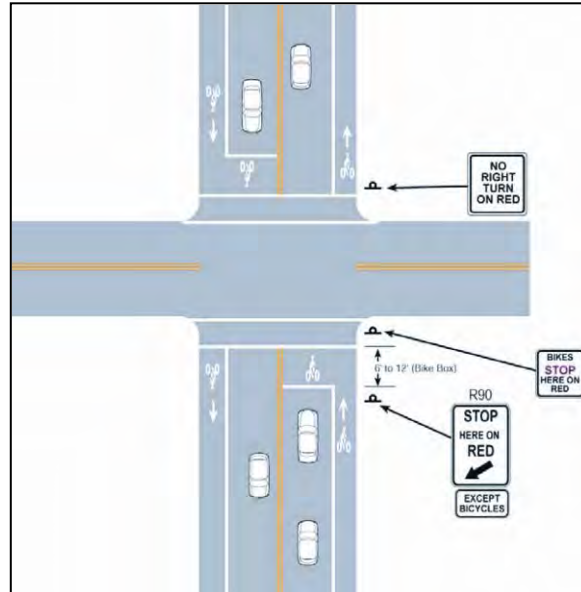
of motor vehicle design it is important for the interchange to include a design that allows for safe bicycle movement. At these intersections, bicycle lanes should be designed to enable cyclists to safely cross the intersection, as well as enter and exit the roadway. The design should include small controlled crossings, a geometry that creates tight, close to right angle crossings, and one that is clearly marked for bicyclists.

Advanced Stop Line/Bicycle Box

At intersections with high volumes and frequent turning conflicts, advanced stop lines, or bike boxes, enable cyclists to move ahead of motorists to position themselves for a turn. As shown in the figure, bike lanes lead into the bike box, which is located between the motor vehicle stop line and the crosswalk. Bicycle markings should be placed in the box and signage should be provided to indicate where cyclists and motorists should stop.

Bike boxes can improve bicycle visibility and decrease turning conflicts with motorists without significant delay to motor vehicle traffic. The downside to bike boxes is that motorists will be restricted from right turns on red, and bike boxes will not help cyclist turning movements during the green signal phase. Also, if the signal turns green before a cyclist has a chance to position themselves, the cyclist may be trapped in an unsafe location. Until they are more common, motorists may be unfamiliar with, and may be confused by, bike boxes. Therefore, bike boxes should be used with caution.

Bike boxes have been used in many cities. Some of these cities include Portland and Eugene, Oregon; Cambridge, Massachusetts; and various cities in the United Kingdom and the Netherlands.



Bike boxes, as shown above, allow cyclists to move ahead of motorists to position themselves for a turn.

3.2 SHOULDER BIKEWAYS

In many cases, the use of paved shoulders in rural areas or on roadways without curb and gutter is a good way to incorporate bicycle facilities. Shoulder bikeways are beneficial to all roadway users in that they provide added space for motorist emergencies and emergency vehicles, improve highway capacity and sight distance, and help to maintain the edge of the roadway. Although shoulder bikeways are typically not striped exclusively for bicycles because of their range of functions, they are still able to provide a cost-effective solution for accommodating bicycle travel on rural roadways.

To most safely accommodate bicycle travel on shoulder bikeways, it is generally recommended that a clear shoulder width of at least four feet be provided. A five or six-foot wide clear shoulder is suggested on roadways with high traffic volumes, average speeds over 50 mph, steep grades, a high volume of large vehicles, or the presence of shoulder rumble strips or obstructions on the side of the road.

3.3 SHARED ROADWAYS

Roadways where cyclists and motorists share the same travel lanes are considered shared roadways. Shared roadways do not provide exclusive space for bicyclist and may require motorists to weave into adjacent lanes to pass a cyclist safely. Types of shared roadways include:

- Wide Outside Lanes,
- Bicycle Boulevards,
- Signed Shared Roadways, and
- Local Roadways.

Wide Outside Lanes (WOL)

Wide outside lanes (WOL) are a preferred alternative for arterial and collector streets that do not have adequate room for bike lanes and do not have paved shoulders. WOLs should be designed to provide adequate room for a standard automobile to pass a cyclist within the travel lane. While some cyclists may feel less comfortable on WOLs than on bike lanes, WOLs are a significant improvement over standard 11 to 12-foot wide travel lanes in accommodating bicycle traffic.

The shared lane pavement marking, also



Example of the Shared Lane Pavement Marking also called a “sharrow”, 2009 Edition of the MUTCD

referred to as “sharrow”, is called out in the 2009 MUTCD to identify WOLs. This marking indicates a presence of cyclists to motorists and also provides a guide to cyclists as to where they should position themselves. It can be especially effective in WOLs that are adjacent to parking lanes.

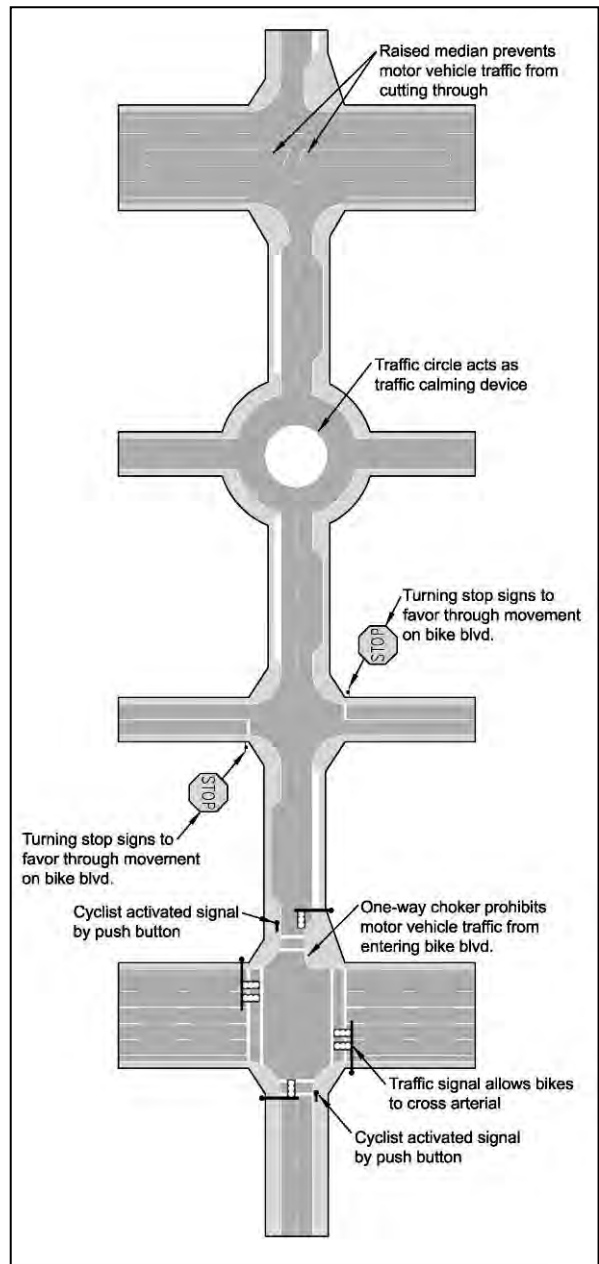
Many times, WOLs can be accomplished on multi-lane roadways by reducing the existing width of other travel lanes and reallocating it to the outside lane. It is recommended that WOLs be a minimum of 14 feet wide, measured from the gutter pan seam. Where on-street parking is provided, an adjacent WOL that is 15 to 16 feet wide is recommended. The parking lane should be striped to encourage motorists to park close to the curb. If WOLs are 15 feet or wider for continuous periods, striped bike lanes should be considered.

Bicycle Boulevard

Typically placed on low volume or residential streets parallel to high volume arterials, bicycle boulevards serve as through streets for cyclists. Motor vehicle traffic is allowed on bicycle boulevards. However, traffic calming devices are used to discourage cut-through traffic and slow motor vehicle traffic. Treatments used on bicycle boulevards, such as medians, traffic circles and chokers, are intended to reduce conflicts between motorists and cyclists, while prioritizing bicycle travel. For example, in order to favor bicycle travel, stop signs are placed on the side street, except at locations where stop control on the bicycle boulevard would benefit cyclists at busy intersections.

Streets on a grid system often are the best candidates for bicycle boulevards, since they are typically direct routes and provide better connectivity than winding streets. While bicycle boulevards offer advantages to cyclists and pedestrians by decreasing motor vehicle speeds and volumes, careful planning is needed to avoid increasing traffic volumes on nearby streets, impeding emergency vehicles, and other negative

Bicycle boulevards, as shown here, are roadways that emphasize bicycle travel.
 Source: *Oregon Bicycle and Pedestrian Plan*



impacts. It is also important to collaborate with residents on streets that a bicycle boulevard may impact.

Signed Shared Roadways (SSR)

Signed shared roadways are roadways that are identified by signage, and where appropriate pavement markings, as preferred bike routes. SSRs are recommended for roadways with limited pavement width and where adding width to support preferred bicycle facilities, such as bike lanes or wide outside lanes, is not possible. Roadways that carry a relatively high volume of bicycle traffic, a low volume of motor vehicle traffic, or that provide critical connectivity between bicycle routes or common destinations may be good candidates to be SSRs. When establishing a roadway as an SSR, the outside lane should be re-striped to provide as much additional pavement width for bicycle travel as possible. In some cases, the roadway should be marked with a “sharrow”. The pavement marking is used to alert motorists of the presence of bicyclists and to indicate to the bicyclist where to ride.



“Sharrow” pavement marking designating a shared lane

It is important to note that SSRs require more than just signage and pavement markings. Care should be taken to ensure that other elements of the roadway are as bicycle-friendly as possible. Regular maintenance to the roadway should be conducted, and common hazards to cyclists should be eliminated. For example, roadway maintenance should include scheduled street sweeping to clear debris. It should also improve other roadway conditions for cyclists, such as storm grates, potholes, railroad crossings, and other facilities. Common hazards facing cyclists are discussed in detail in the *Other Design Considerations* section of the *Bicycle Facilities Design Guidelines*.

In general, “Share the Road” signs are recommended, unless the SSR is a short section between bike lanes or WOLs. It is recommended that the speed limit on SSRs not exceed 35 mph.

Local Roadways

Due to their low traffic volumes and reduced vehicle speeds, special treatments are often not required for motorists and cyclists to share local roadways. At times, local roadways tend to endure more traffic and at higher speeds than is planned. When this is the case, bike lanes are recommended to increase comfort and safety for roadway users if adequate width is available.

3.4 TRAFFIC SIGNALS

Like motorists and pedestrians, cyclists must abide by traffic signals. Therefore, the signal timings should be designed to accommodate cyclists and detection must be designed to detect bicycles.

Traffic Signal Timing

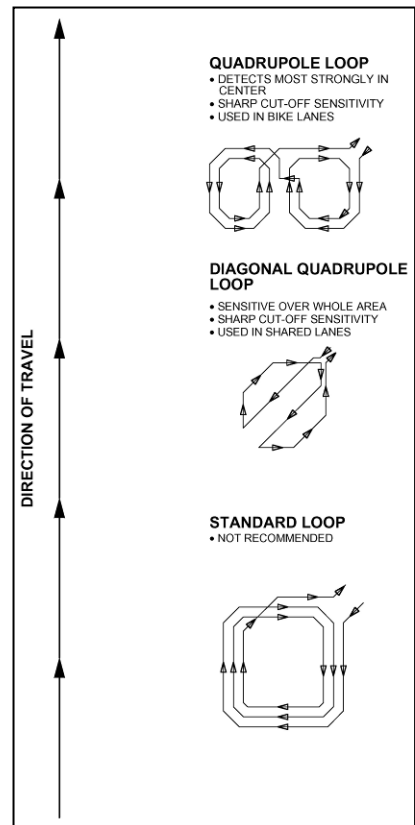
Traffic signal timings that are based solely on motor vehicle traffic may not provide adequate time for cyclists to clear an intersection. Signal clearance intervals should be programmed to allow cyclists enough time to react, accelerate, and proceed through an intersection on the clearance interval. At intersections where bicycle travel is anticipated, the average bicyclist speed of six to eight mph, and perception/reaction/braking time of one second should be considered when programming signal timings. At large intersections, such as multi-lane or skewed intersections, cyclists may also require additional time to cross.

Traffic Signal Detection

At actuated intersections where bicycle travel is expected, detector loops should be designed to detect bicycles in addition to motor vehicles. For this reason, detectors should be located within cyclists' expected path of travel in bike lanes, shoulder bikeways, and conventional travel lanes. Left turn lanes and outside through lanes, or shared through/right turn lanes, may need special consideration since the cyclist may be located on the right side of the lane, outside the typical detection area. At these locations, bicycle detection symbols should be provided to indicate to the cyclist the proper position at which to activate the signal detector.



Pavement Marking indicating Bicycle Detector Loop Location



Detector loops designed to detect bicycles should be used at signalized intersections where bicycles are expected.

The various types of detector loops are shown in the figure. Quadrupole and diagonal quadrupole loops are generally best for bicycle detection, since they are more sensitive throughout the loop. Standard loops are more difficult to adjust for bicycle detection and are not

recommended.

Video detection can also be used for bicycle detection. This type of detector is typically seen at intersections where a designated bike lane is striped and where video detection is used for automobiles. The technology uses detection zones to determine the presence of a bicycle.

Pushbutton-type detectors are generally discouraged for bicycle facilities. However, when a loop or video detector is not an option, a pushbutton may be appropriate if cyclists are able to access the pushbutton without having to dismount or lean and they can remain in the proper position for the direction they wish to travel at the intersection, including left and through movements.

Bicycle Signals

Bicycle signals can be used to help guide cyclists through high-volume, high-conflict intersections by providing a separate signal for cyclists. Bicycle signals protect cyclists at signalized intersections by separating conflicting movements and giving priority to cyclists making certain movements. Also, the overall flow of the intersection may be improved, but may result in additional delays for motorists.

Guidelines for bicycle signals are not provided in MUTCD and are not widely used. However, they have been implemented in cities such as Davis, California; New York, New York; Tucson, Arizona; and in various cities throughout Europe and Australia.

3.5 SIGNAGE

Bicycle facilities will often require signs directed at motorists, cyclists, or both. Additional signage directed at motorists may be required in some instances, such as complex intersections or locations with high bicycle traffic and insufficient bicycle facilities. Signs directed at cyclists are typically smaller versions of standard roadway signs since cyclists travel at lower speeds, and are often traveling closer to the signs. In addition to bike-specific signs, standard roadway signs usually also apply to cyclists.

Signs used for bicycle facilities, like standard roadway signs, should be easy to understand by all roadway users. The use of symbols is preferred over text on signs in general.

The 2009 MUTCD provides guidance on signage, placement and pavement markings for bicycle facilities. The latest edition of the MUTCD should be consulted when installing signs and pavement markings (<http://mutcd.fhwa.dot.gov/>).

Signage Guidelines

Shared-Use Trails (Greenways)

At intersections between shared-use trails and roadways, a “Bicycle Warning” sign (W11-1) should be placed on the roadway in advance of the intersection. Signs directed at cyclists on the shared-use path approach to an intersection, should only be visible to path users, not to motorists.

Bicycle Lanes

“Bicycle Lane” signs (R3-17) should only be used on designated bike lanes, which are marked by the “Bicycle Lane Symbol” marking. Supplemental bike lane plaques “Ahead” (R3-17a) and “Ends” (R3-17b) should be used in conjunction with the “Bike Lane” sign (R3-17) before the beginning of a marked bike lane, or before the bike lane ends. The “Bicycle Warning” sign (W11-1) and the “Share the Road” plaque (W16-1) should both be used just after the “Bike Lane Ends” signage. Where bike route signs (D11-1, M1-8, M1-9, and supplemental plaques) are used, they should include directional information, or information identifying the bikeway. On roadways with bike lanes, this type of informational signage is only needed at major intersections or where the route changes streets.

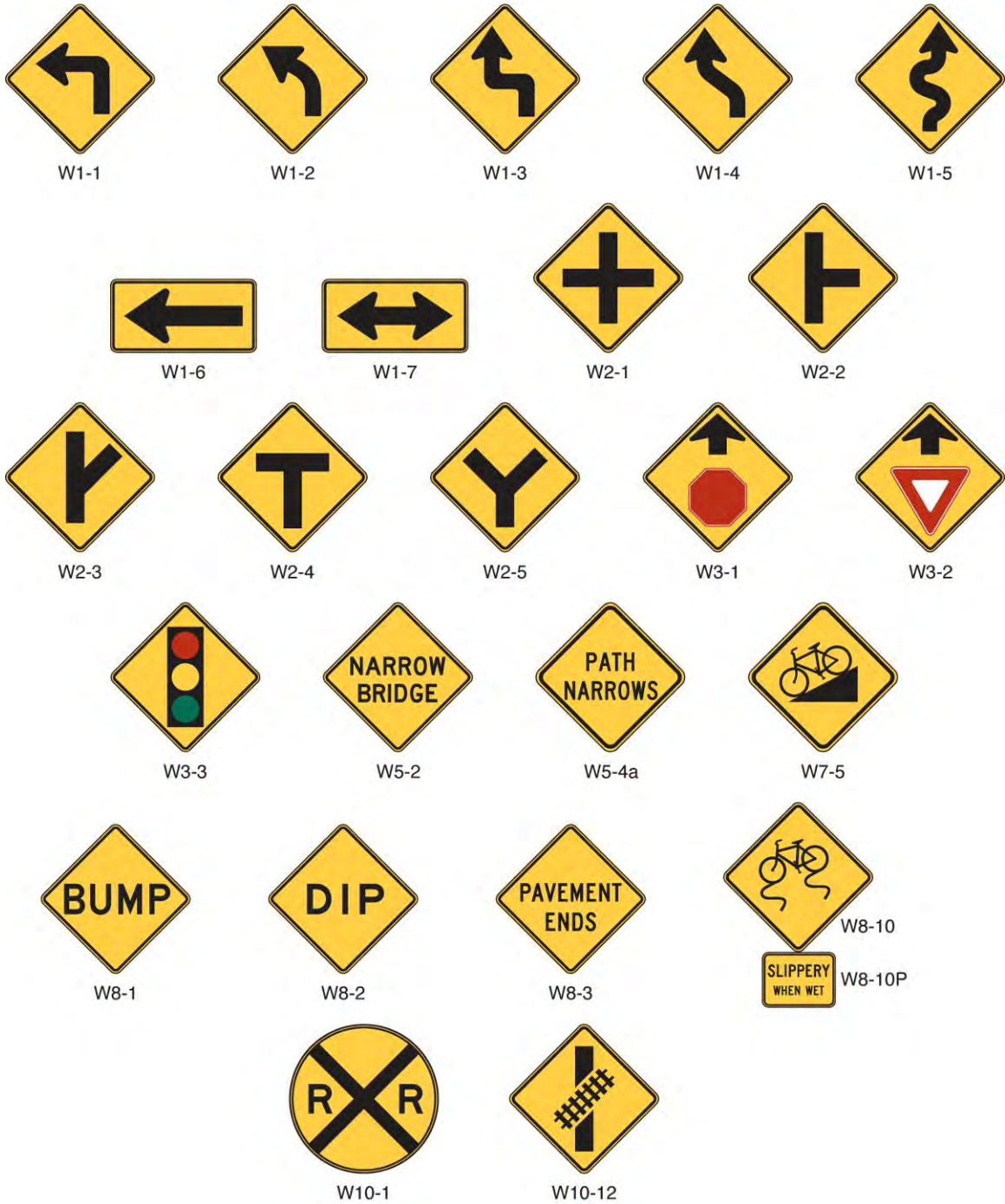
In locations where sections of bike lanes are discontinuous, bike route signs should be provided to guide cyclists from one bike lane to the next. Also, bike route signs are recommended to direct cyclists to destinations. For example, “Bike Route: XX Street Bikeway” or “Bike Route: Zoo.”

“No Parking Bike Lane” signs (R7-9, R7-9a) may be necessary in areas where parking within bike lanes is a recurring problem. However, in most cases, adequate pavement markings in bike lanes reduce the need for these signs.

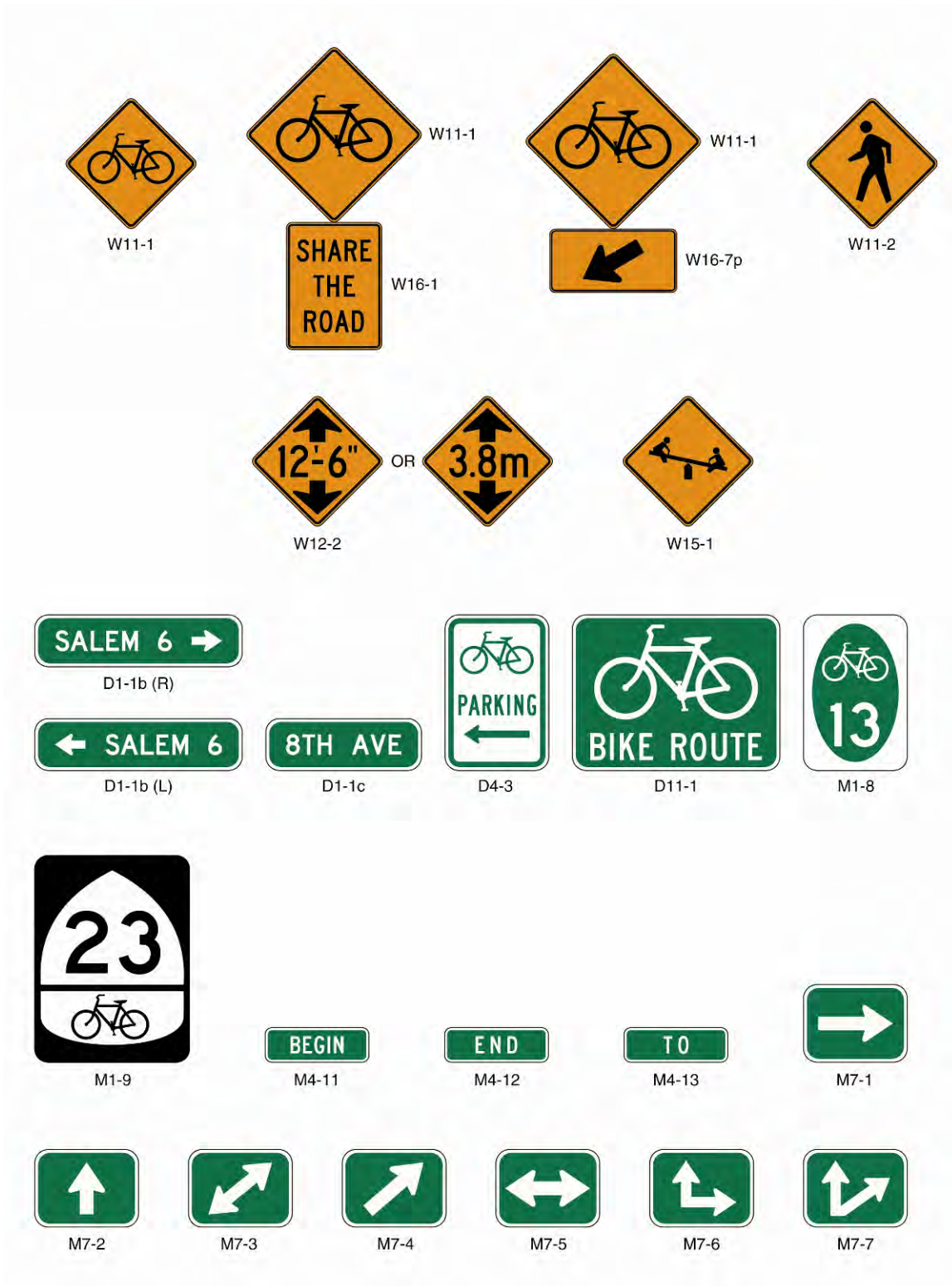
On roadways where motorists must transition across bike lanes into right turn lanes, “Begin Right Turn Lane Yield to Bikes” signs (R4-4) should be installed at the beginning of the taper, or, if none, at the point where merging begins.



Regulatory bicycle facilities signage from the 2009 edition of the *Manual on Uniform Traffic Control Devices*.



Warning bicycle facilities signage from the 2009 edition of the *Manual on Uniform Traffic Control Devices*.



Directional bicycle facilities signage from the 2009 edition of the *Manual on Uniform Traffic Control Devices*.

Shared Roadways

It is recommended that bicycle route signs (D11-1, M1-8, M1-9 and supplemental plaques) be placed at all major intersections where routes change direction and on streets with a minimum spacing of 1,000 feet. As previously mentioned bike route signs should include information, such as destinations, directions or identifying bikeways.

3.6 OTHER DESIGN CONSIDERATIONS

Pavement Surface Quality

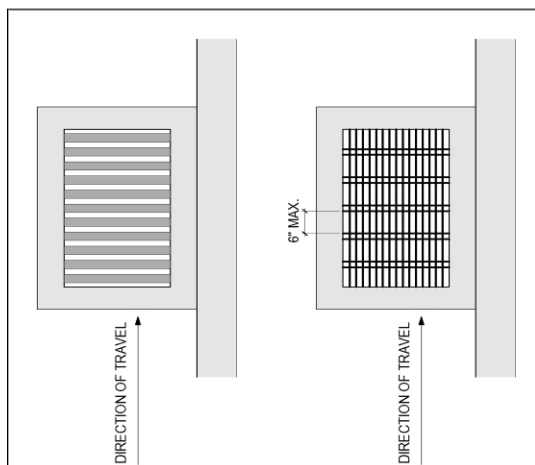
The quality of the pavement surface is an important consideration for cyclists. Potholes, joints, raised pavement or other surface irregularities can trap a bicycle wheel, or even cause cyclists to swerve or lose control, especially when they occur in the path of travel. These types of pavement problems should be repaired quickly and carefully, while making certain that the repairs do not actually leave conditions worse, such as leaving a ridge or loose gravel.

Storm Grates

Storm grates can pose a serious threat to cyclists depending on their design and location. For this reason, storm grates and utility covers should be kept out of the path of bicycle travel as much as possible. When it is not possible to relocate storm grates out of the path of travel, efforts should be made to maximize the safety of the existing storm grates in place.

Storm grates that are not flush with the frame of the grate and grates with long slots parallel to the path of travel can trap bicycle wheels, which can result in serious injury to the cyclist. These types of grates should be replaced with storm grates that are bicycle-compatible as well as hydraulically efficient. If replacing storm grates cannot be

achieved immediately, a temporary solution is to weld steel cross straps or bars to an existing grate, perpendicular to the path of travel, spaced a maximum of six inches apart.



Bicycle-friendly storm grates, such as those illustrated above, are recommended.

Another hazard to cyclists is created by storm grates that have not been raised as the street has been resurfaced and, as a result, are significantly lower than the surrounding pavement. When resurfacing a street, it is recommended that the grate be no more than one-quarter of an inch offset from the new pavement. If this is not possible, the pavement should be tapered into the grate to avoid leaving a severe edge.

In general, bicycle-safe storm grates are recommended for all streets, not just those identified for bicycle travel. Likewise, when

resurfacing streets, storm grates should be nearly level with the pavement on as many streets as possible, not just those designated for bicycle use.

Rumble Strips

Rumble strips are sometimes used on higher-speed roadways to alert motorists that they have veered onto the shoulder or to warn of an approaching intersection. However, for cyclists, they can be unsafe and uncomfortable. For cyclists, the safest option is to prohibit the use of rumble strips on roadways where bicycle travel is expected.

If it is determined that rumble strips will offer safety benefits on a roadway, there are techniques that will minimize their impact on cyclists. There should be at least five feet of space between the rumble strip and the edge of pavement. On roadways with wide outside lanes, rumble strips should be located on the right side of the lane line. Rumble strips should not be used on roads with bike lanes, unless they are placed outside the bike lane, to the right. Another design for rumble strips that is good for bicyclists is to install them with a skip pattern which allows bicyclists to move to the left when necessary.

Construction Zones

Bicycle travel should be maintained through construction zones to the greatest extent possible. Any provisions that are made for motorized traffic should also include provisions for maintaining bicycle travel.

Where bicycle facilities are interrupted for a significant distance, temporary bicycle facilities, such as bike lanes or wide outside lanes, should be provided. In locations where no temporary facilities can be provided, a reasonable detour should be identified and signed. Where bicycle facilities will be interrupted for a shorter distance, cyclists may be routed to conventional travel lanes. Cyclists should not be re-routed onto sidewalks unless no other options exist.

Metal plates that are used on roadways in construction sites may be difficult to see under certain conditions, and can have surfaces that can be slippery for cyclists. If metal plates are used, they should have an edge less than one inch high. If the edge is greater than one inch, an asphalt lip should be provided.

Construction signs should not obstruct the path of travel for cyclists or pedestrians. Also, construction information, especially regarding route changes, is recommended to be provided by local media or websites to the public. It is also recommended that groups affected by the construction such as neighborhood associations, or bike clubs be notified prior to the start of construction.

Bridges

Roadway bridges are as important to cyclists as they are to motorists in providing connectivity across highways or waterways. However, typical bridge elements such as

open grate decking, expansion joints and narrow lanes can present problems for cyclists.

Bridges should be improved to safely accommodate bicycle travel as part of routine bridge maintenance or as major work is scheduled for the bridge. For example, bridges should be retrofitted with bicycle-compatible decking and expansion joints to improve conditions for cyclists.

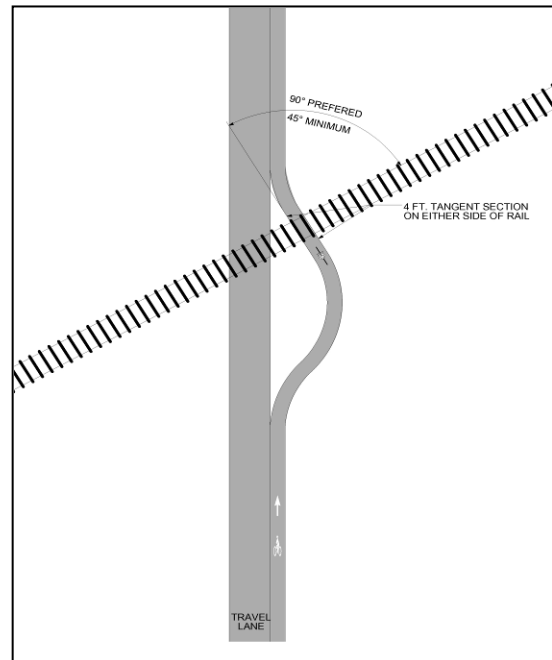
On new bridge construction, six-foot wide bike lanes are desirable to provide cyclists with additional room to maneuver on bridges with high volumes or steep grades. The width of the bridge should be at least as wide as the approaching roadways, including bike lanes, shoulders, curb and gutter, and sidewalks.

Bridges should be as bicycle-friendly as possible, even in locations where designated bicycle facilities are not provided. All new bridges should be designed to accommodate bicycle travel.

Railroad Crossings

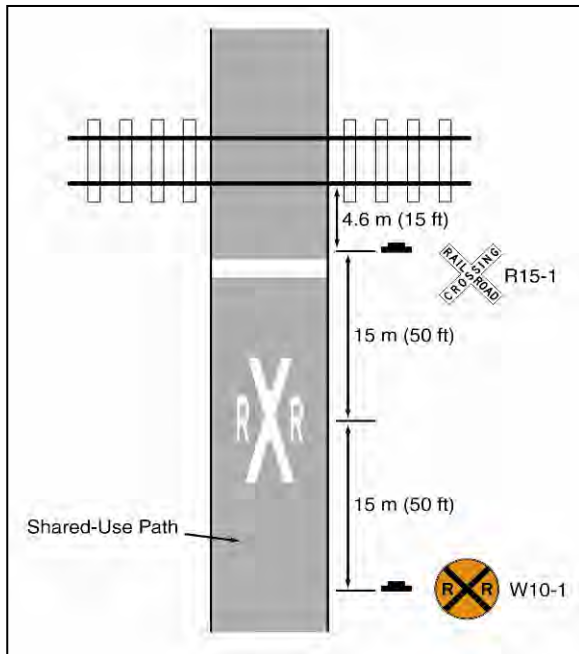
At-grade railroad crossings are most difficult for cyclists where they are forced to cross at an angle, especially if the surface at the crossing is rough. The channel between the flange and pavement can catch a bicycle tire and throw the cyclist.

Bikeways are recommended to cross railroad tracks as close to a right angle as possible. Angled crossings can result in a trapped bicycle wheel and can cause a loss of control for the cyclist. If the projected path of the bikeway will meet the railroad at less than a 45-degree angle, it is generally recommended that the bikeway should be realigned to provide a more perpendicular approach.

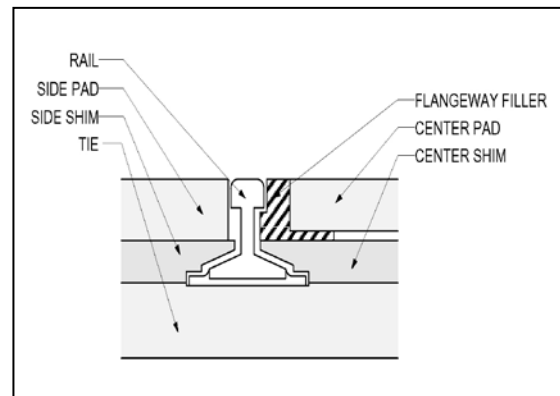


Realigned bike facilities can allow cyclists to cross the railroad at near perpendicular angles.

Advanced warning signs and pavement markings should be installed in advance of a railroad crossing, as stated in the MUTCD. Pavement markings should also be used to indicate the safest crossing angle to cyclists.



Advanced warning signs and pavement markings should be provided prior to a railroad crossing. (MUTCD)



Flangeway fillers can improve a rough railroad crossing surface by minimizing the gap between the rail and the pavement.

The pavement of the bikeway should be level with the rails in order to provide a smooth crossing. Crossings should be constructed of concrete panels with steel reinforcements. Rubberized crossing mats may also be used. However, they are not recommended on roadways with high volumes of heavy vehicles. Neither asphalt nor timber is recommended for crossings since asphalt has a tendency to develop ridges next to the rails, and timber can be slippery and is not as durable.

A rough railroad crossing can also be caused by the gap that can exist between the rail and the adjacent pavement, known as the flangeway. It is recommended that the width of the flangeway be as narrow as possible. Flangeway fillers, which are usually made of rubber, can be used to reduce the flangeway width. Flangeway fillers should not be used on high-speed railroad tracks.

3.7 DESIGN PRACTICES TO BE AVOIDED

Sidewalk Bikeways

Sidewalks for bicycle travel are generally not recommended for several reasons. These include:

- Sidewalks are not designed for higher-speed use by bicycles, which can lead to conflicts with slower-moving pedestrians or with fixed objects, such as poles, benches, and other street furniture.
- At intersections, motorists will expect pedestrians from a sidewalk, but may not be looking for a fast-moving cyclist to emerge from the sidewalk.

- Cyclists face conflicts at intersections where they are unable to follow vehicular traffic rules, but may also not follow pedestrian rules, resulting in confusion for all roadway users.
- Sight distance on sidewalks can be limited by buildings, trees, walls, or other obstructions.

In areas where bicycle travel on sidewalks is expected and allowed, such as locations where children ride on the sidewalk, sidewalks should not be signed as bicycle facilities. In general, cyclists should function as vehicles, and bicycle facilities should be appropriately designed to encourage this practice.

Two-Way Bike Lanes on One Side of the Street

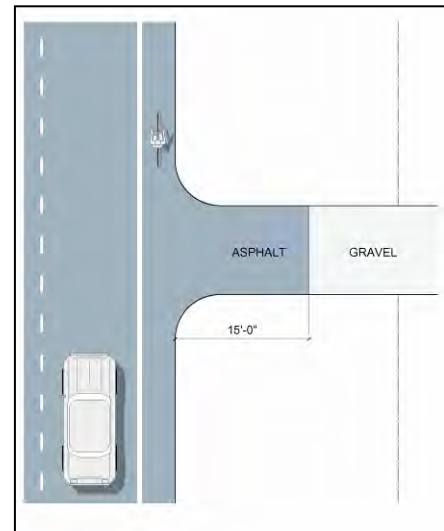
Potential hazards are created for cyclists when two-way bike lanes are installed on one side of the roadway. Cyclists next to the travel lane are traveling between motorists and cyclists who are moving in opposite directions. Cyclists using these lanes may cause confusion by being in unexpected locations at intersections, and they may be forced to make awkward and unsafe movements when moving to and from traditional bicycle lanes.

Gravel Driveways and Alleys

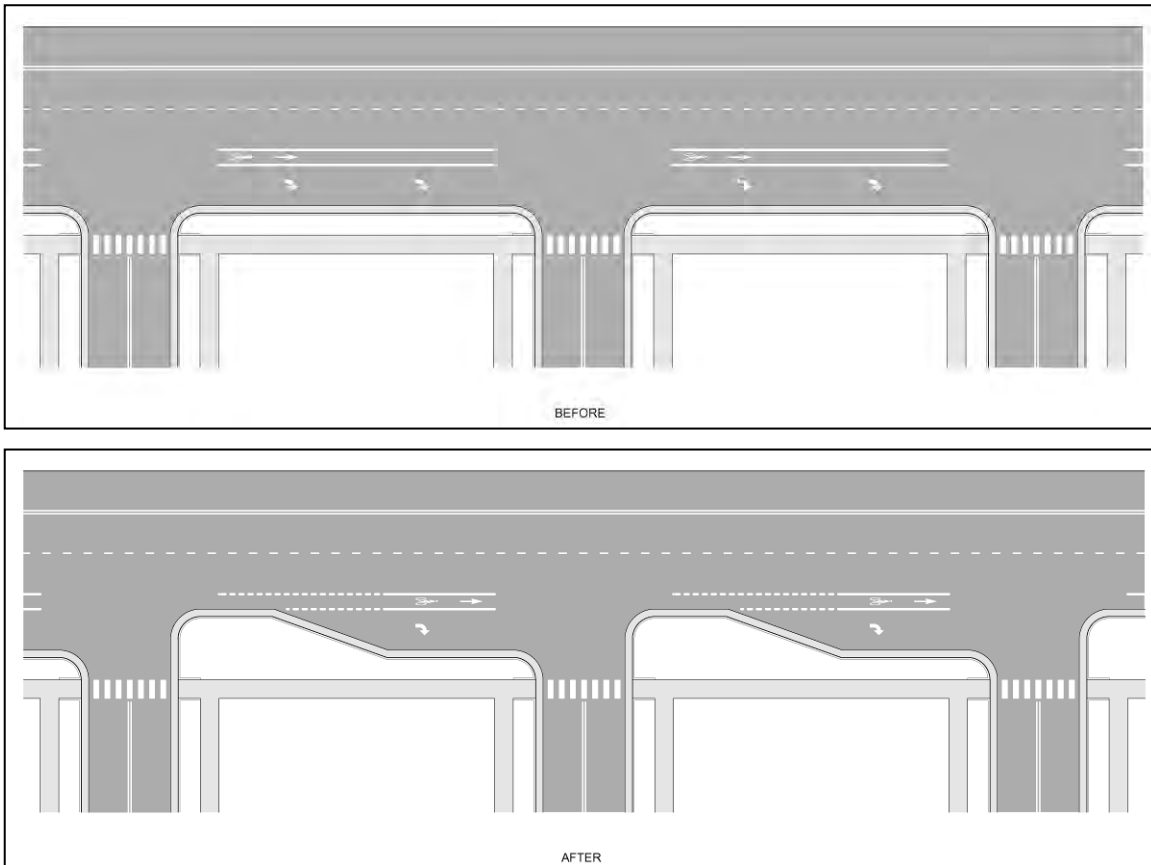
Gravel can be very unstable for cyclists and can result in loss of control. To prevent gravel from drifting onto bicycle facilities, gravel approaches should be paved back at least 15 feet.

Continuous Right-Turn Lanes

Cyclists riding on streets with continuous right turn lanes are forced to ride either to the right of the right-turn lane, where they may be in the path of the right-turning traffic, or to the left of the right-turn lane, where they are in the path of traffic moving into and out of the turn lane.



A paved apron at gravel approaches helps prevent gravel from spilling onto bicycle facilities.



The illustration at top shows a roadway with a continuous right turn lane, which allow constant merging conflicts. The bottom illustration provides separate right turn lanes, which can increase safety for cyclists.

Instead of a continuous right-turn lane, providing multiple right-turn lanes that serve specific intersections may be preferable. Eliminating the continuous right-turn lane will prevent vehicles on the approaching roadway from turning right into the continuous turn lane, resulting in fewer vehicles merging out of the continuous turn lane. Also, multiple turn lanes will create a defined space for motor vehicles to move into the right-turn lane prior to an intersection. Bike lanes should be installed to the left of the right-turn lanes.

Rumble Strips on Urban and Suburban Roadways

Shoulder rumble strips have been implemented by many highway agencies and State Departments of Transportation (DOTs) across the United States as an effective countermeasure to single-vehicle run-off-the-road accidents. In 2001, the FHWA issued a technical advisory on roadway shoulder rumble strips to address the conflict between the use of shoulder rumble strips on non-controlled access roadways and cyclists. FHWA technical advisory recommends rumble strips normally not be used in urban or suburban areas on non-controlled access roadways or along roadways where prevailing speeds are less than 50 mph. Additionally, FHWA recommends rumble strips not be used when their installation would leave a clear shoulder pathway less than 4-feet wide (or less than 5-feet wide if there is an obstruction such as a curb or guardrail) to the right of the rumble strip for bicycle use. The use of shoulder rumble strips on non-

access controlled facilities should be limited to locations that an engineering study or crash analysis suggests that the number of these crashes would likely be reduced by the presence of rumble strips which is consistent with FHWA's policy guidance.

3.8 MAINTENANCE

Cyclists travel on two high-pressure wheels and are even more vulnerable to poor roadway conditions than motor vehicles. Therefore, bicycle facilities should be maintained to the same high standard as roadways for motor vehicle traffic.

Bicycle facilities require routine maintenance just as roadways do. Because of their design, bicycles can be even more susceptible to accidents or damage caused by poor roadway conditions than motor vehicles. Debris on the roadway can deflect bicycle wheels, causing cyclists to lose control, and potholes can bend the rim of a bicycle wheel.

Surface Repairs

Cyclists should be provided with smooth riding surfaces. Therefore, surface imperfections should be maintained. Irregularities, such as potholes, ridges, cracks, and other surface defects, should be identified as part of regular maintenance and repaired promptly, especially when they are located within the bicycle path of travel. Also, an effort should be made to respond quickly to complaints of a specific hazard made by facility users.

Repaving

Repaving projects often present an opportunity to add or improve bicycle facilities on a roadway. Repaving may result in additional room for shoulders or bike lanes, adjustment of conventional travel lanes or the repair of surface irregularities.

Pavement overlays should extend across the entire pavement width (e.g. travel lanes, turn lanes, shoulder area, etc.) to prevent surface problems, like a ridge or edge, within the bicycle travel path.

As part of the repaving project, certain roadway features, such as manhole covers and storm grates, should be raised to offset the pavement surface by no more than one-quarter inch.

As previously mentioned, gravel driveways should be paved at least 15 feet back from the roadway to prevent gravel from spilling into the bicycle travel path. This portion of gravel driveways can be paved during roadway repaving projects.

Debris Removal

Routine inspection and maintenance programs should be organized to guarantee that litter and debris are removed from bicycle facilities on a regular basis. Streets that are equipped with bicycle facilities may require even more attention than roadways without bike facilities. Areas of the roadway between through and turning traffic often collect debris and are often in the path of bicycle travel. In order to keep them functioning properly and to keep water out of the bicycle path of travel, drainage areas should be kept clear of debris.

Maintenance schedules may need to be modified depending on the season. For example, frequent sweeping to remove leaves in the fall may be necessary. Individuals should be discouraged from blowing grass or leaves into the public right-of-way because, in addition to littering the path of bicycle travel, this practice creates increased workload and burden for the government agencies charged with keeping the right-of-way clean.

Utility Cuts

The cut lines of utility cuts on a roadway should be parallel with the flow of traffic and should be located outside the path of bicycle traffic to the greatest extent possible. Cut lines that must be placed within the travel path of cyclists should be filled and made flush with the surface of the pavement.

Vegetation

Vegetation along bicycle facilities should be trimmed periodically to avoid sight distance limitations and to provide a minimum of two feet of roadside clearance, especially at curves or intersections. In addition, care should be taken to ensure that signage is not hidden by vegetation. Preventative maintenance should be performed to keep tree roots from breaking up pavement.

Spot Improvements Program

In many cases, the users of a bicycle facility are the first to be aware of a maintenance problem on a bikeway. Spot improvement programs, where cyclists communicate problems directly to responsible government agencies, provide early detection of problems. This allows needed repairs to be performed quickly. However, spot improvement programs should not be expected to replace routine maintenance and inspection of bicycle facilities.

Providing forms on the government website can be a good way for cyclists to contact the appropriate government agency. The maintenance request can be forwarded to the

proper department, which will then be able to follow-up with the citizen who made the request. Paper forms should also be made available to those without internet access, and should be provided at bike shops or other easily accessible locations to cyclists. The government agencies need to have adequate staff and funding available to address maintenance problems as they arise.

3.9 BIKE FACILITY RETROFITS

Space within the roadway right-of-way should accommodate motor vehicle, bicycle, and pedestrian travel. However, many existing streets were originally constructed without bike lanes. For this reason, creating space for bicycle facilities on roadways can be one of the more challenging aspects of developing a bicycle network.

Bike facilities can be added to existing roadways by paving the shoulder as a bike lane, re-striping the roadway, or widening the roadway. Typically, re-striping or adding bike lanes to the shoulder are the preferred methods of incorporating bike facilities to existing streets since physical constraints often make widening roads not feasible.

Paving the Shoulders

As discussed in the shoulder bikeways section, the shoulder area on roadways without curb and gutter can often be used for bike facilities. However, unpaved or gravel shoulders, or shoulders paved with a rough bituminous surface, should be repaved to provide a stable riding surface for cyclists.

Shoulders should be paved to match the adjacent roadway structure and can function as either bike lanes or wide outside lanes. Minor shoulder grading may be able to provide additional width for paving, improving the comfort and safety of shoulder bike facilities.

Re-stripe the Roadway

Reduce Travel Lane Width

Space can be created for bicycle facilities by narrowing existing travel lanes, turn lanes, or parking lanes. Occasionally, wide lanes can be narrowed and still maintain 11 or 12-foot wide lanes. On lower-speed streets, travel lanes can be reduced to ten feet without compromising safety or operation and can still remain within AASHTO guidelines.

Reduce the Number of Travel Lanes

In some cases, removal of a conventional travel lane may be warranted and can provide roadway space for bike lanes. An engineering study should be conducted to determine levels of service for motor vehicles based on a reduction of travel lanes. Depending on

the roadway, the demand for enhanced bicycle facilities may outweigh a reasonable reduction in motor vehicle capacity.

The practice of reducing the number of conventional travel lanes has actually been effective in improving traffic flow in many locations and is now commonly referred to as a “road diet.” A common example of a road diet is a two-way roadway with a four-lane cross-section that is re-striped as a three-lane cross-section to include a single travel lane in each direction, a center turn lane, and, of course, space for bike lanes. This configuration has been used successfully in cities throughout the United States and Canada and can effectively improve traffic operations by reducing speeding, conflicts and crashes, especially on streets with high turning volumes.

Reduce On-Street Parking

Additional width for bike facilities may be obtained by reducing the amount of pavement width allotted to on-street parking. The width of parking lanes can be reduced to seven feet. However, when seven-foot parking lanes are used, adjacent bike lanes are recommended to have a minimum width of six feet.

Removing a parking lane from one side of the street may be appropriate where there is moderate parking demand. Another alternative would be to allow parking in bike lanes during off-peak periods or during special events, such as at night or during a nearby worship service.

The benefits of on-street parking and its effect on pedestrians and nearby businesses should be considered before reducing or eliminating parking lanes. For example, many businesses rely on on-street parking for their customers, and parking lanes increase pedestrian comfort by providing a buffer between the sidewalk and travel lanes.

Re-stripe for Wide Outside Lanes

Whenever possible, “extra” roadway width should be applied to outside lanes, even in locations where extra width will not result in the standard 14-foot required for WOLs. Cyclists benefit from any additional space in the outside lane, and motorists are provided with more room to pass cyclists without weaving into adjacent lanes. When additional width is provided for wide outside lanes, roadway features, such as storm grates, manhole covers, sign posts, or other obstructions, should be bicycle-compatible or should be relocated, if possible.

3.10 BICYCLE PARKING

Parking is as important to cyclists as it is to motorists and should be well-located, secure, and plentiful. Insufficient bicycle parking can actually discourage a potential cyclist from riding.

Benefits of bicycle parking are not limited to cyclists. Approximately ten bicycles can be parked in the amount of space provided for a single motor vehicle. Therefore, if

installed properly, the use of bicycle parking may lessen overcrowding in parking lots and help satisfy parking demand.

To ensure adequate parking for cyclists, many cities are implementing specific ordinances related to bicycle parking, usually based on the land use and size of the development. These guidelines may be used as a foundation for the development of this type of ordinance.

**CITY OF MURFREESBORO
GREENWAYS, BLUEWAYS, & BIKEWAYS MASTER PLAN**

TECHNICAL MEMORANDUM #5: PLAN IMPLEMENTATION

In 2011, the City of Murfreesboro initiated the development of the Greenways, Blueways, and Bikeways (GBB) Master Plan to help identify and coordinate implementable improvements in recreation and non-motorized transportation over the next 25 years.

This technical memorandum presents a summary and evaluation of Murfreesboro's existing implementation strategies as well as the identification of innovative activities which other communities are using to increase greenway, blueway, and bikeway use. The focus here is on policies and programs which have been used in other communities and which may be applicable in Murfreesboro. Such policies and programs promote bicycling and walking, educate users and potential users, and set standards to provide well designed facilities for non-motorized travel.

Implementation of the GBB Plan should always refer back to the community-held objectives for this plan and for non-motorized transportation and recreation as a whole. Two objectives lead toward the increased usage of these facilities; one by educating users as to the personal and community benefits of usage (Objective #1), and one toward establishing an attitude of at least considering use of these facilities on a regular basis (Objective #2). A third objective is also directly related to the Plan's implementation, by seeking to take advantage of existing programs within the City to increase the effectiveness of the GBB system (Objective #4).

This document should be viewed in the context of a normal planning level document. The intent of the Greenways, Blueways, and Bikeways Master Plan is to provide an overall programmatic vision for the City of Murfreesboro through coordinated planning between recreational and transportation facilities and users and to provide a general basis for facility implementation. Actual implementation of any individual planning recommendation may require additional study and analysis in identifying and quantifying opportunities and constraints including but not limited to project components such as land acquisition, utility relocation, construction cost and etc. Analysis and consideration of identified impacts may ultimately indicate the feasibility of implementation of the actual project recommendation or consideration of more viable alternatives in attempting to achieve and adhere to the overall intent and goals of the plan.

Evaluation of Murfreesboro's Existing Strategies

An evaluation of the existing regulatory processes that promote bike and pedestrian facilities in the City of Murfreesboro was completed so that recommendations could be made that will help promote future development of the greenway system. The City currently has many planning tools that help shape the development of the community. Policies are in place requiring the provision of sidewalks and the best management and treatment of stormwater runoff. Zoning with special overlay districts as well as subdivision regulations help shape how the community grows and what the visual character will be.

A specific look at regulations geared at promoting and improving the pedestrian environment reveals many tools that are currently in place. Sidewalks are required for all new development in the city. Their size, location and time of construction are all regulated by the city's subdivision regulations. Street design specifications call for the provision of bicycle facilities wherever they have been identified in the overall bicycle master plan. Stormwater regulations provide buffers to protect water quality along the water courses within the city, making specific mention for the use of those buffers for greenway development. The special overlay districts provide language for the provision of pedestrian and bike facilities within their boundaries. These facilities are often regulated and promoted by planning staff and the Planning Commission as development occurs within those zones. Review of the various planning and regulatory tools for development in the city reveals that additional processes could be added that are common to other communities that are similar in size and character to Murfreesboro.

Land Acquisition and Greenway Easements

There are many avenues to acquiring greenway rights-of-way with the first and most obvious being fee simple acquisition. Fee simple acquisition results in the direct ownership of real property; it is the most complete form of land ownership. Acquisition is not limited to purchase of land in fee simple, but also includes purchase of development rights and acceptance of donations of land and development rights. These methods may be desirable for larger parcels of land where protection of a natural resource with significant natural qualities is desired. Fee simple acquisition is a very expensive method for acquiring right-of-way but is probably the simplest form for property that is intended for public use. Alternative right-of-way acquisition methods are discussed below.

Multi-Purpose Easements

The City of Murfreesboro should incorporate the right of public access into new sewer easements or coordinate the acquisition of sewer and access easements, where feasible, creating greenway corridors that link new subdivisions and homes with other greenspaces and public facilities such as schools, libraries and commercial centers. The Parks and Recreation Department should work with the Murfreesboro Water and Sewer Department to acquire public access easements on new sewer lines and explore opportunities along existing sewer lines in areas of desired linkages.

Easements through Private Development

There are generally three options for acquiring easements for public access greenways associated with new development along designated corridors. They include:

- Acquire the greenway portion of the property in fee simple

- Where allowable in the City's regulatory processes, acquire an easement for the greenway portion which stipulates public access as a condition
- Provide incentives for developers to include public access greenways in their developments

The development community has become much more aware of the value and benefit to public access greenways and specifically to the desire by citizens to be connected to them. Developers are much more willing to consider granting easements for trails and in some cases are willing to build them as part of their overall project. Requiring easements along planned greenway corridors is consistent with other practices within the City. The current street design specifications require developers of new roads to accommodate for bike lanes and sidewalks wherever previously planned. Greenway easements could be treated in a similar manner. Incentives could be offered that give a developer density bonuses or other compensation for granting easements. If the greenway is not constructed as a part of the overall development, the greenway easement would be maintained by the owner until such time that the city exercises its right to build the trail. At that time, the city would take over maintenance of the trail. Greenway easements should be included in the final property plat and noted as such. It is recommended that the city post signs along the corridor that note the area as a future greenway easement. This will alert property owners of the future intent of the city to build a trail and eliminate any future surprises.

In order to evaluate property found along the greenway corridor, existing routes should be mapped and maintained by the city's GIS department. During the initial planning review stages for new projects, discussions should be made relative to easement dedication. Developer incentives such as density bonuses, variances for parking or other opportunities should be discussed at this time.

Due to the popularity of greenways and the desirability of homeowner's and business owner's to be located along greenway corridors, it is highly feasible that developers will be willing to dedicate right of way for future trail construction. In some cases, developers may be willing to build sections of trail through their development as an amenity feature to help with the sale of lots. In these instances, it is recommended that the trail project be evaluated and a determination be made as to when the city will assume all responsibility for the trail. If the trail does not connect to an existing part of the overall system, the city may want to delay acceptance of the trail until such time that a link can be made to the overall public system. If that is the case, the trail should be maintained as an amenity of the private development. In the case of a trail located within a subdivision, the trail would simply be maintained as an amenity feature for residents in the same manner as a swimming pool, tennis courts or other recreation element.

Riparian Buffers

The City currently accommodates and allows for the development of greenways within water quality protection areas (WQPA). A buffer of 35' to 50' is required along all streams and wetlands. These areas are no-disturb zones with the exception of specific uses such as stream crossings for roads or utilities and greenways. As with the site plan review process, greenway easements could be acquired through the stormwater approval process. Variance requests for special considerations could be approved if mitigated by the granting of a greenway easement. As in other cases, the property owner would maintain the easement until such time that the city exercises the right to develop the trail.

Roadway Buffers

Multi-use paths have been recommended along many of Murfreesboro's existing and future roadway projects. Additional right of way may be required where multi-use paths have been recommended to allow for the desired separation of the trail from the roadway.

Revised Policy Recommendations Include:

- Consideration of a dedicated greenway easement for all property shown along planned corridors
- Consideration to provide density bonuses and other incentives for developers willing to incorporate trail segments as part of their proposed developments
- Consideration to provide a stormwater variance process that incorporates the dedication of greenway easements into the variance approval
- Explore opportunities for multi-purpose easements with the water and sewer department

Non-Infrastructure Strategies for Increasing Use of the GBB System

In addition to policies which facilitate the provision of system infrastructure, other efforts which can be championed or supported by the City can have positive impact on the promotion and use of the system. The numerous potential non-infrastructure policies and programs have different objectives, different levels of effort required to becoming implemented, and, consequently, different levels of effectiveness. To help structure some of the potential policy and program considerations, they have been grouped into three classifications.

Those which:

- 1) **Provide Facilities** – Typically used by City staff to assist in providing a comprehensive, safe, and convenient GBB system,
- 2) **Build Support** – Work towards more use through a collaborative and cooperative environment among local stakeholders and organizations, and
- 3) **Increase Awareness** - Highlight an understanding and awareness of the opportunities, benefits, and need for the GBB system.

Provide Facilities

- Policies should be adopted by City agencies to provide ongoing maintenance of the GBB network. Examples of such maintenance activities include regular street sweeping of roadway bicycle facilities, debris removal, and sign and striping replacement.
- As part of Nashville's Regional Bicycle and Pedestrian Study, a Sidewalk Accommodation Policy was proposed that calls for sidewalk accommodations on all federally classified Arterial roadways within an Urban Growth Boundary of the MPO on which pedestrians are not prohibited. This has largely been accomplished within Murfreesboro's City Limits, but extending arterial sidewalks into the UGB will require additional coordination with County officials. This policy adoption should occur as part of Murfreesboro's comprehensive plan, zoning code, and/or subdivision regulations.
- Some jurisdictions in Tennessee allow "in-lieu-of" payments to the community's sidewalk fund. By collecting equal payments in lieu of actual on-site sidewalk construction, more strategic choices can be made regarding where and when sidewalks are built.
- Develop a maintenance and spot improvement program to be run by the Street or Parks Department. The responsibility could be split where on-road facilities are maintained by the Street Department and greenways are maintained by the Parks Department. Examples of such maintenance activities include regular sweeping, litter and debris removal, vegetation control, and signing and striping.
- Provide spot maintenance forms upon request at bicycle shops and on a website set-up for bicycle and pedestrian information.

- Establish a local sidewalk maintenance program to address sidewalk maintenance and repair needs.
- As a required part of the development review process, evaluate the potential for new developments to provide pedestrian and bicycle connections to nearby destinations and/or facilities. This review should also encourage pedestrian and bicycle facilities which provide logical connections between schools, shopping centers, parks, civic buildings, transit stops, park-and-ride lots, residential developments, and other activity centers.
- Expand the City's current plans, ordinances, regulations, etc. to not only require sidewalk and bikeway facilities but also advocate for development policies that support walking and bicycling through community design, mixed-use development, street connectivity, and transit oriented development.
- Promote and encourage land use decisions that provide a context-appropriate mixture of uses that are supportive of increased walking and bicycling. Specifically, development incentives can be offered which:
 - Encourage a diversity of mixed-income residential neighborhoods, employment, shopping and recreation choices at the activity center, town center, and corridor level;
 - Provide access to a range of travel modes including transit, roadways, walking and biking; and
 - Develop an outreach process that promotes the involvement of all stakeholders.
- Establish developer incentives for inclusion of amenities such as bike racks, lockers, showers, and other facilities in commercial and public building projects.
- Develop bicycle parking requirements for new developments. Alternatively, use car parking reduction incentives to encourage the provision of bike parking.
- Champion the implementation of bike-friendly practices outside of redevelopment scenarios. Providing bike parking in prominent locations at public buildings is a good start.
- Formal bike share programs are another way to promote bike-friendliness, but are expensive and are just beginning in the major urban areas of Tennessee. The effectiveness of these is not yet known. If a bike share program is desired in Murfreesboro, start at likely high-use locations where participants can ride comfortably. Old Fort Park and Wilderness Station might be good places for potential riders to get re-introduced to bicycling by using a Parks-managed bike share program. As more planned on-street facilities are implemented, a formal bike share program with multiple urban stations will become more effective.
- Establish school siting policies that favor sites with good walking and biking access. In addition, the site design of schools should give opportunity for pedestrian and bicycle access.

Build Support

- City staff should engage in national, state, regional, and local advocacy organizations related to greenways, blueways, and bikeways. These are effective ways to learn about new advancements in facility provision, design, and use.
- Providing continuous bicycle and pedestrian facilities across the city will require a new level of inter-agency as well as inter-jurisdictional cooperation. The active role of the Parks Department in greenway implementation will require it to coordinate closely with other agencies like the Planning Department which is charged with coordinating the development of the city, including its greenways. A recognized process by which the Parks Department has an opportunity to review and comment on new development proposals affecting the GBB system could help facilitate this cooperation.
- Consider working with local and regional transit providers (MTA, RTA, and ROVER) to develop strategies and opportunities to increase walking and biking to and from public transportation services. Potential strategies include linking transit stops to sidewalks and bikeways, providing comfortable, well designed transit stops, and providing bike storage at transit stops. One example might be providing covered bike parking at the RTA Relax-and-Ride stop on the MTSU campus. Generally, federal transit funds can be used for bicycle and pedestrian facilities that serve transit activities.
- Provide an annual report on the state of GBB improvements and activities in the city. Information can be used in presentations to elected leaders, community organizations (i.e. YMCA, health depts., churches, bicycle clubs, etc.), and other stakeholders detailing the benefits, projects, and practices for the year related to walking and biking in the city.
- Initiate an annual bicycle and pedestrian count program consistent with the National Bicycle & Pedestrian Documentation Project (NBPD). Data from this program is useful in demonstrating growing usage over time and can be included in the annual report (above). Even more usage data can be obtained by installing continuous counting devices at points along the greenway. Having continuous count data can be used to tailor other activities such as litter maintenance, which may need to be completed more often during certain periods.
- User surveys can be conducted periodically to provide customer feedback on the state of the GBB system. Surveys can also be used as a tool to measure the effectiveness of various policies and programs.
- Develop a “targeted neighborhood” program. The City of Portland has a program that targets an area of town each year to increase bicycling, walking, transit, carpool, and car sharing trips. The projects include programs that are targeted toward the demographics in that neighborhood. Each household in the target area receives an order form for informational materials. The households can order materials about bicycling which include a bike kit, maps, safe routes, ride calendar, and helmet brochure. In some areas there are incentives offered to residents who returned their order forms. The residents receive a newsletter every other month that provides

information on traffic safety and programs in that area, a calendar of events, and other resources.

- Adhere to a locally developed Complete Streets policy to ensure that new roadways and roadway improvements are designed with all users and all skill levels in mind, i.e. it is designed to accommodate bicyclist, pedestrians, transit users, and motorists.

Increase Awareness

- Explore the possibility of providing information regarding the GBB networks, bicyclist/pedestrian safety, etc. to be distributed through the Rutherford County Clerk as part of vehicle registration renewals.
- Promote bicycle safety education locally, including efforts to increase understanding and awareness of the Tennessee 3-foot law for motorists passing bicyclists.
- Establish a formalized cyclist/pedestrian safety enforcement program through the Murfreesboro Police Department. Grants from the National Highway Traffic Safety Administration (NHTSA) can be obtained by local police departments for enforcing pedestrian right-of-way laws and bicycle traffic violations. The grants can be used to conduct targeted enforcement campaigns, pedestrian enforcement at intersections and bicycle enforcement at other intersections. Those behaviors to be targeted should be determined at the outset of a law enforcement campaign. It is recommended that the following behaviors be targeted:

Motorist behaviors

- Failing to pass at a safe distance (not less than three feet),
- Right turners cutting off bicyclists,
- Failing to yield to bicyclists (comply with signals/signs) at intersections,
- Failing to yield to pedestrians at crosswalks, and
- Right turn on red violations.

Bicyclist behaviors

- Riding at night without lights,
- Violating traffic signals/stop signs,
- Sudden changes in direction without scanning or signaling, and
- Failing to yield to motorists at midblock locations.

The effort to enforce the traffic laws as they relate to bicycle and pedestrian safety should be addressed in a publicized, citywide, coordinated bicycle enforcement campaign. Sporadic enforcement is not likely to result in significant improvements to motorist, cyclist, or pedestrian behavior.

- Offer safety training opportunities for adults and children. These can range from “lunch and learn” type presentations to evening/weekend commuter workshops to providing League of American Bicyclists *Traffic Skills 101* courses offered by the Parks Department.
- An informational website should be established that contains information regarding biking and paddling in the region. This website can be used to post facility maps and other information regarding the GBB facilities. The website can also provide opportunities for maintenance requests or other user feedback.
- The website should provide information on a variety of educational resources including information such as elementary instructor training courses on bicycle and pedestrian safety for children through programs like Safe Routes to School.

- It is recommended that a bicycle and pedestrian traffic safety curriculum for elementary and middle school students be developed. The program should establish guidelines to maintain, update, and distribute the materials, as well as train the educators on implementing the materials. This type of curriculum is currently being developed in Knox County for grades K-8 and may be available soon as an example.
- Create, fund, and implement pedestrian and bicycle media campaigns and promotional materials to promote walking and bicycling as a safe, healthy, cost effective, environmentally beneficial transportation choice. Identify partners to provide bicycle and pedestrian education, enforcement, and encouragement programs. One such source may be the Federal Highway Administration's (FHWA) Pedestrian Safety Campaign. FHWA materials include radio, television, and public service announcements; brochures; posters; press releases; and newspaper articles.
- Host special events that feature elements of the GBB System. The following provides information regarding the successful planning of road racing events as well as a map for target areas that can be utilized in the planning of future events.

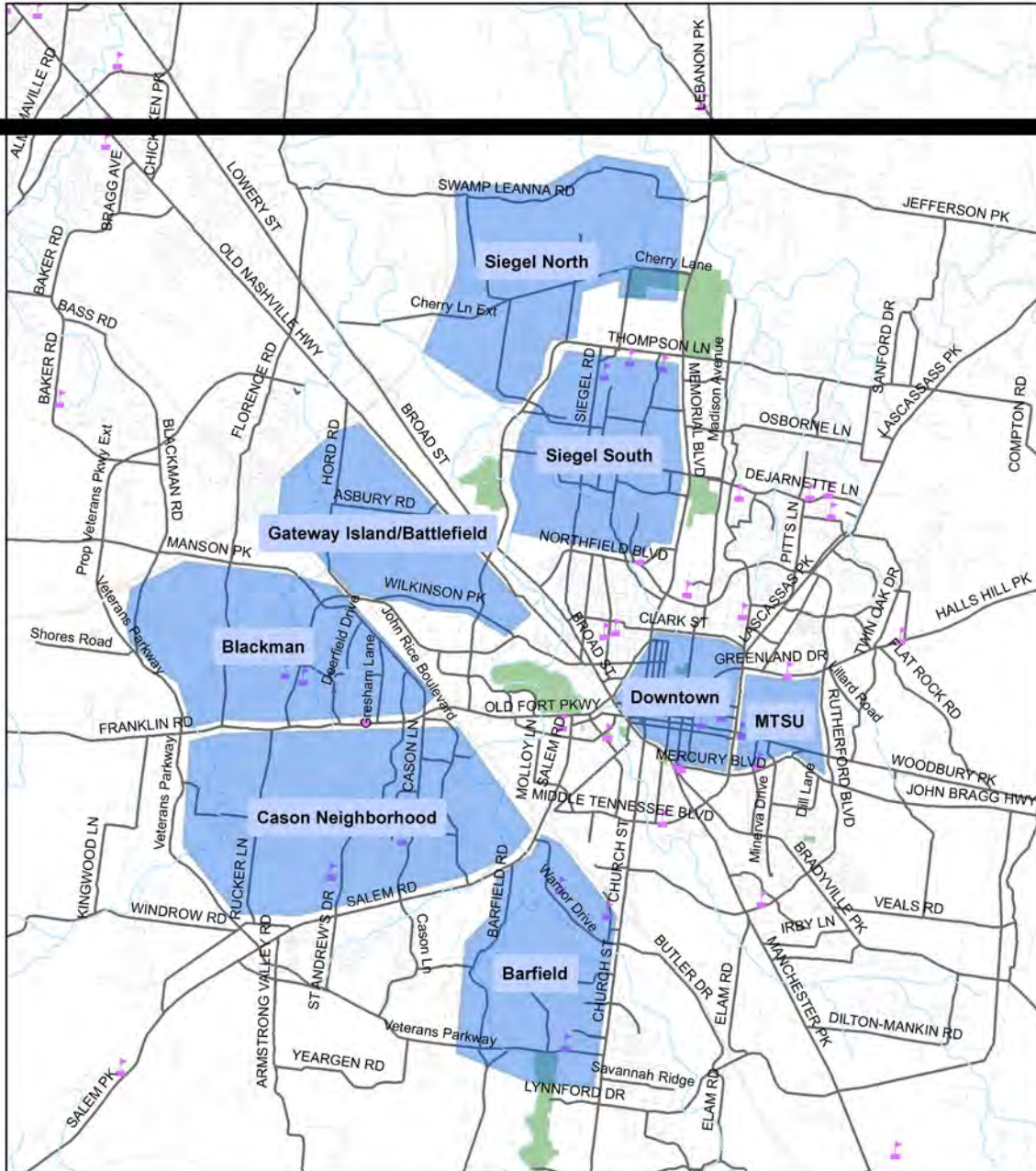
A common way for communities to encourage active recreation is through facilitation and support of local road racing (5 and 10K events, etc). These events are usually organized by local non-profit entities and held as a fundraiser and/or awareness campaign for the hosting organization. While a few experienced race directors are for hire in middle Tennessee, these races are often overseen by a race director with little or no experience in establishing a course for the event. Designing and approving a course using public street infrastructure to hold a road racing event should consider both the advantages and potential complications of a particular route.

The recommended approach for establishing future road racing courses and events in Murfreesboro is to produce a guidance packet which sets forth the City's desired characteristics for an approved road course as well as the expectations for the event host with respect to parking, traffic control, etc. This can be given to race directors as they plan the course and event. Guidelines that should be considered when designing a race course on Murfreesboro's streets include:

- Streets should not be used (or crossed) by the race route if the street has an ADT of 10,000 vehicles per day or more. This would rule out high-volume streets like Broad Street, Middle Tennessee Boulevard, Memorial Boulevard, Thompson Lane, etc.
- Greenways should not be used as part of the route (excepting the Gateway Trail).
- For one-way race routing, a minimum clear street width (accounting for on-street parking, etc.) of 15' is desirable. Where runners are traveling in opposing directions (i.e. on an out-and-back portion of a course), a minimum clear street width of 22' is desired.
- Ample off-street space for before and after race activities (parking, registration, post-race celebration, etc.) must be available. City parks may be encouraged as beginning and/or ending points for these events.
- Race routes should not include at-grade railroad track crossings or streets near hospitals, fire stations, or other locations dependent on clear access.
- Unpaved areas may be used, but including significant lengths of unpaved surface may jeopardize course certification by USATF, RRCA, etc.

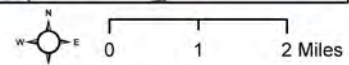
- Longer races (marathons, half marathons, etc.) will likely require use of higher-volume streets to obtain the distance and should be planned in close coordination with Murfreesboro's Transportation Department.

A map showing potential races areas has been developed to illustrate some locations where most if not all of these guidelines can be incorporated into future races.



Proposed Race Areas Schools Parks

Proposed race areas have many of the race course characteristics recommended in the street guidelines. These include enough distance to obtain certifiable course distance, avoidance of major streets, and at least one suitable start/finish/parking site. Other courses outside of these areas may be equally suitable.

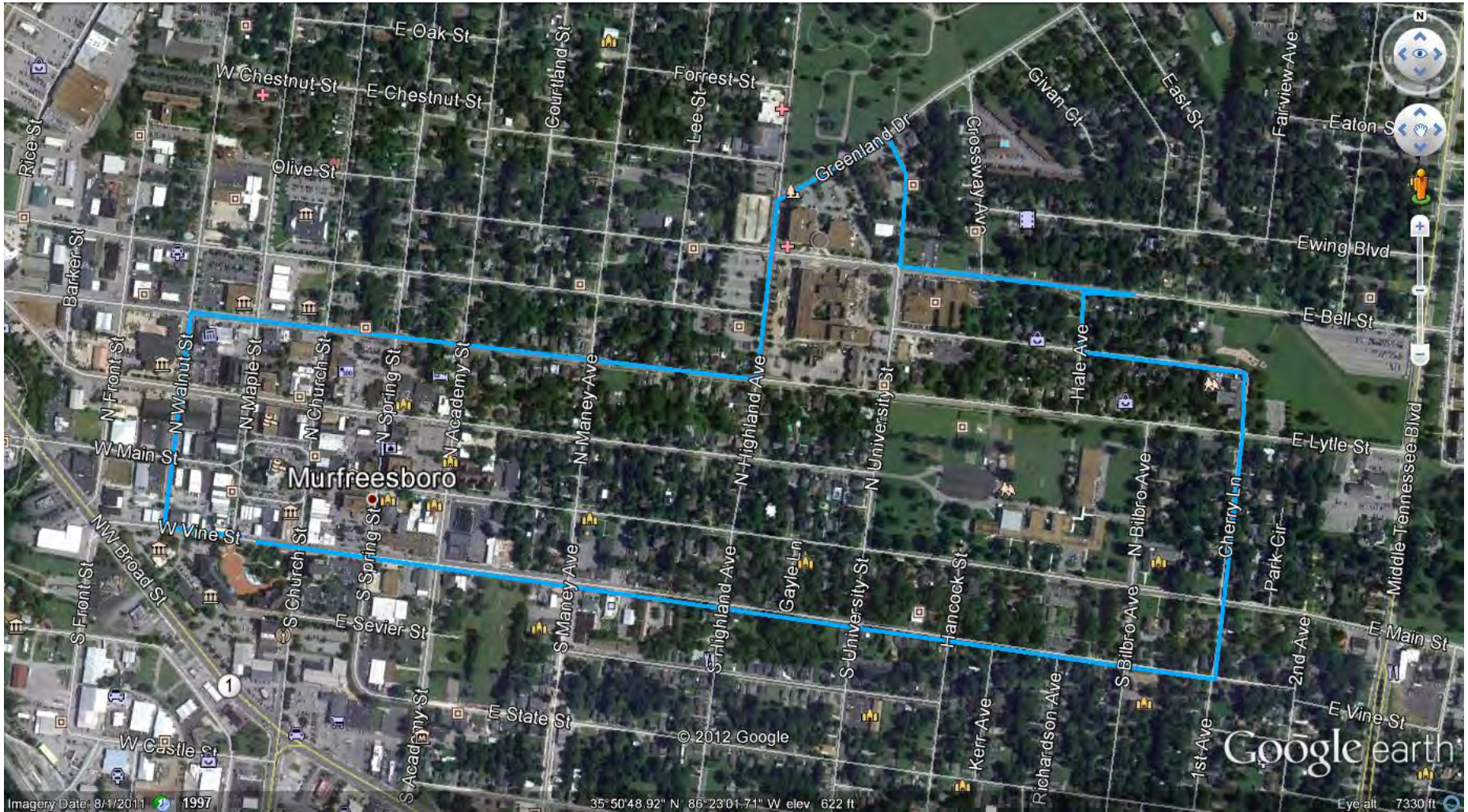


City of Murfreesboro
**Greenways, Blueways,
 and Bikeways Master Plan**
 Potential Road Race Areas

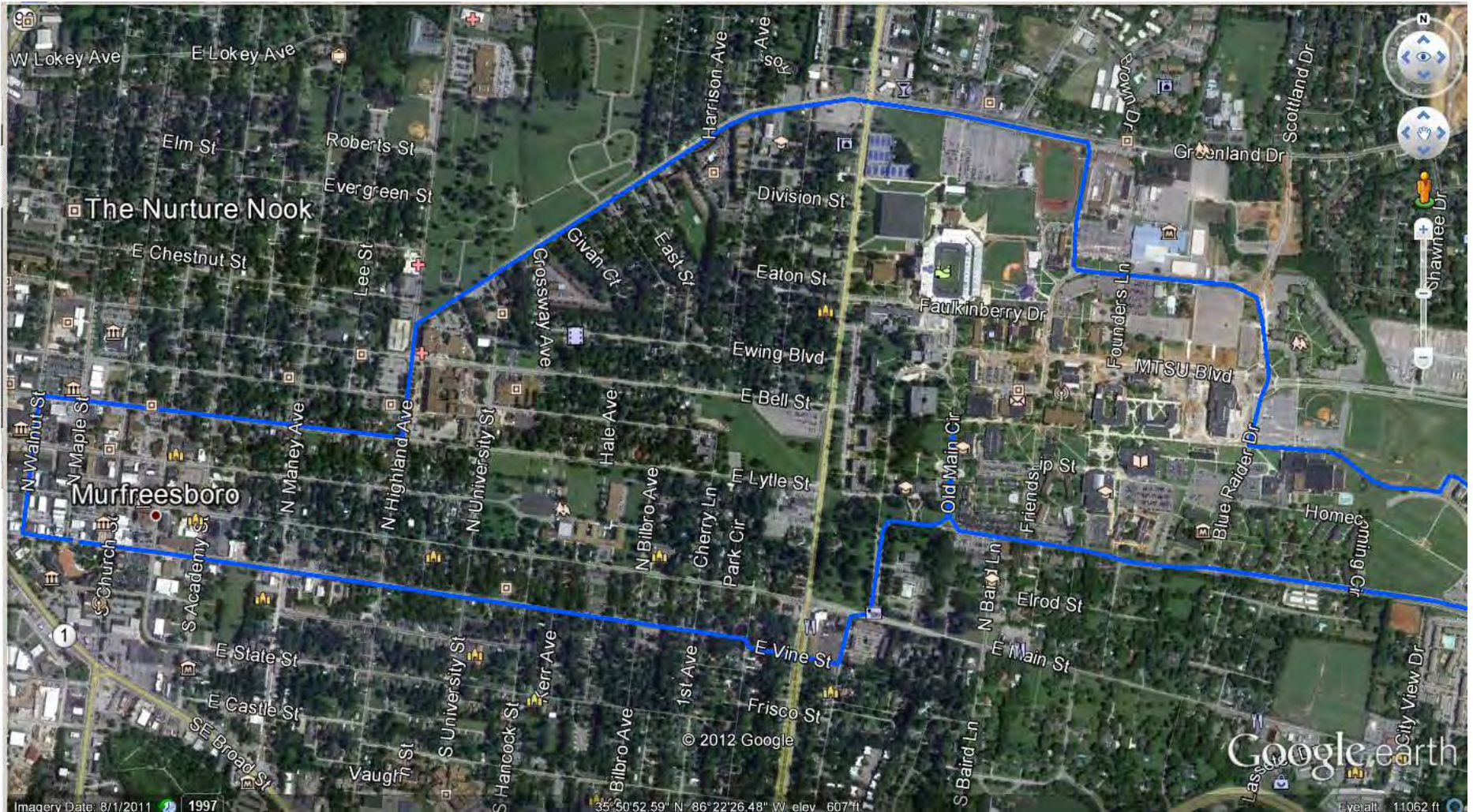
It may further be desirable to establish several “standing” courses which are pre-determined by the city to be adequate for these events. If established, these pre-determined courses would require the use of public property for parking, registration areas, etc. with start/finish locations nearby. Two such locations would be the City Hall Garage/Library Plaza and Patterson Park Community Center. An incentive for a race director to use one of these pre-determined courses is that the event host would save the time and expense of having the course certified by road racing certification agencies.



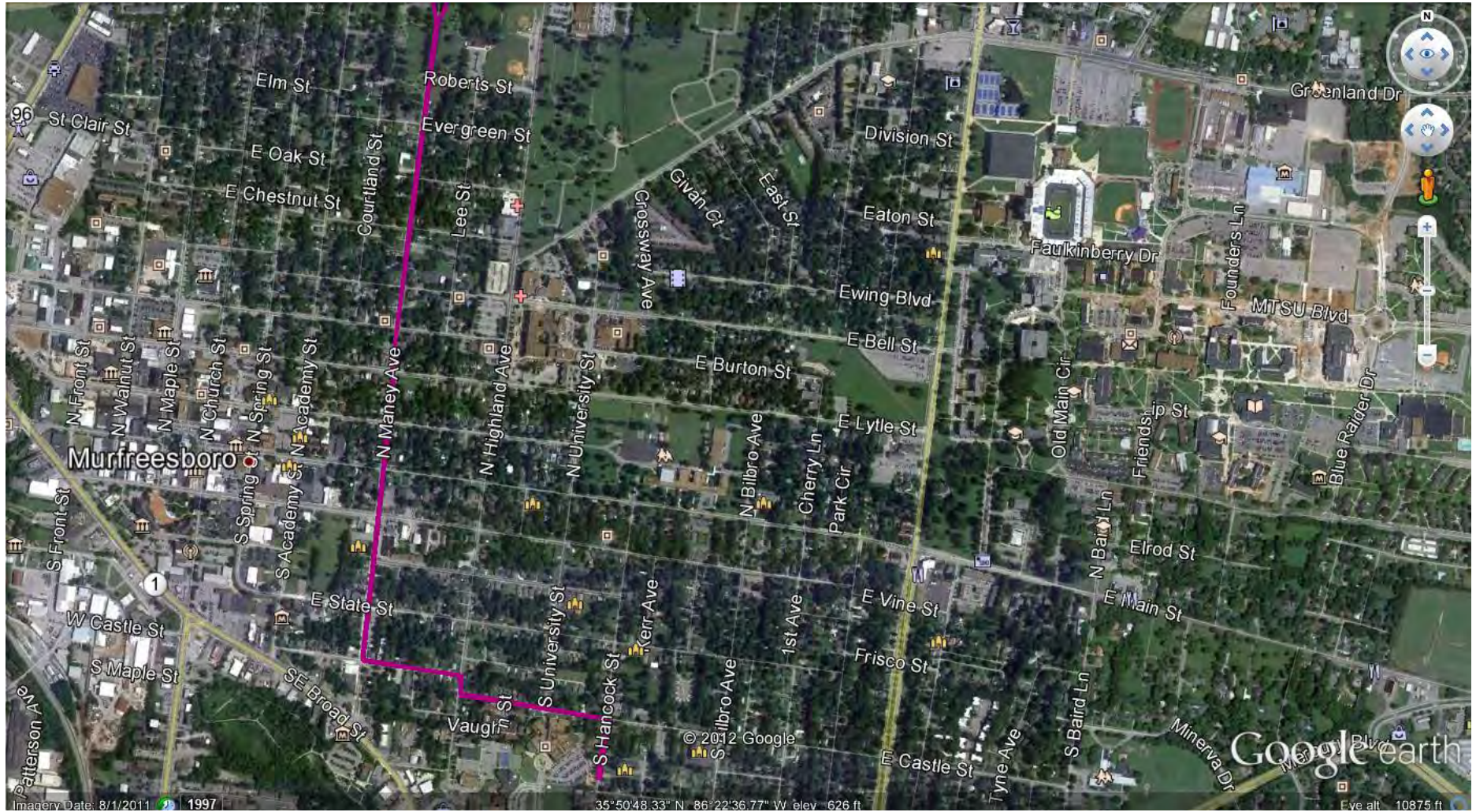
Option A: Downtown 5K



Option B: Downtown 5K (pairs with Option C 10K)



Option C: Downtown 10K (pairs with Option B 5K)



Option D: Patterson Park 5K (Patterson Park to Oaklands)

**CITY OF MURFREESBORO
GREENWAYS, BLUEWAYS, & BIKEWAYS MASTER PLAN**

APPENDIX

**Ordinance
Timeline of Plan Input**

ORDINANCE 13-O-02 to adopt the Greenways, Blueways, and Bikeways Master Plan for the City Of Murfreesboro; Planning Staff, applicant [2012-SI-7].

WHEREAS, the City of Murfreesboro adopted a Comprehensive Land Use Plan on January 12, 1989 and thereafter has adopted other land use plans to complement, implement and modify said Comprehensive Land Use Plan; and,

WHEREAS, a Greenways, Blueways, and Bikeways Master Plan for the City Of Murfreesboro is necessary and prudent to accomplish the goals of the Comprehensive Land Use Plan; and,

WHEREAS, on October 22, 2012 the Planning Commission, City Council, Recreation Commission, and Special Projects Committee met in joint session to hear a presentation from Planning Staff and from consultants regarding preparation of a master plan for Greenways, Blueways, and Bikeways; and,

WHEREAS, the attached Greenways, Blueways, and Bikeways Master Plan was the subject of a public hearing before the Planning Commission at its regular meeting on January 9, 2013, the time and place of which had been published in a newspaper of general circulation in the municipality at least thirty (30) days prior to the meeting; and,

WHEREAS, the Planning Commission adopted the Greenways, Blueways and Bikeways Master Plan, including map, by an affirmative vote of not less than a majority of all members of the Planning Commission; and,

WHEREAS, the Planning Commission has requested consideration and adoption of the Greenways, Blueways and Bikeways Master Plan by the City Council in accordance with T.C.A. §13-4-202; and,

WHEREAS, a Public Hearing on the Greenways, Blueways, and Bikeways Master Plan was held before the City Council of the City of Murfreesboro, Tennessee, on March 7, 2013, pursuant to a Resolution passed and adopted by the City Council on January 31, 2013, and notice thereof published in The Murfreesboro Post, a newspaper of general circulation in said City, on February 3, 2013; and

WHEREAS, the Greenways, Blueways, and Bikeways Master Plan attached hereto is appropriate.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF MURFREESBORO, TENNESSEE, AS FOLLOWS:

SECTION 1. That the Greenways, Blueways, and Bikeways Master Plan for the City Of Murfreesboro attached hereto is hereby adopted.


SECTION 2. That this Ordinance shall take effect fifteen (15) days after its passage upon third and final reading, the public welfare and the welfare of the City requiring it.

Passed:

1st reading March 7, 2013

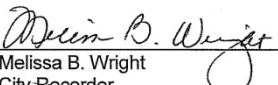
2nd reading March 21, 2013

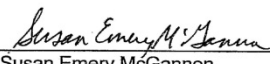
3rd reading April 18, 2013

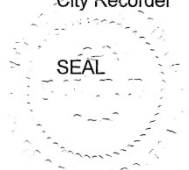

Tommy Bragg, Mayor

ATTEST:

APPROVED AS TO FORM:


Melissa B. Wright
City Recorder


Susan Emery McGannon
City Attorney



Certification of Adoption.

I hereby certify that the GREENWAY, BLUEWAYS,
AND BIKEWAYS MASTER PLAN including the maps
was adopted in accordance with the requirements of TCA
13-4-202 by the Murfreesboro Planning Commission on
January 9, 2013.

Joseph D. Aydelott
Planning Commission Secretary

2-6-13
Date

This plan was developed in accordance with input and direction provided by the elected leadership, departmental staff, and citizens of the City of Murfreesboro. Additional insight and guidance was provided other agencies and organizations as well. The dates of substantive meetings related to the development of this plan are as follow:

Kick-off meeting: November 16, 2011

Study Advisory Committee Meeting #1: December 16, 2011

Stakeholder interviews: February 2-3, 2012

Study Advisory Committee Meeting #2: March 13, 2012

Public Meeting #1: March 13, 2012

Study Advisory Committee Meeting #3: June 7, 2012

Study Advisory Committee Meeting #4: August 23, 2012

Technical Workshop: August 23, 2012

Public Meeting #2: September 10, 2012

Joint Councils (Parks, Planning, City) Presentation: October 22, 2012

Staff Review Meeting: November 9, 2012

Planning Commission 1st Reading: November 21, 2012

Planning Commission Public Hearing and Adoption: January 9, 2013

City Council Public Hearing and 1st Reading: March 7, 2013

City Council 2nd Reading: March 21, 2013

City Council 3rd Reading: April 18, 2013

No items.

