



# **SPECIFICATIONS**

**for**

**CITY OF BELLE MEADE STORMWATER INFRASTRUCTURE  
IMPROVEMENTS – WALNUT DRIVE  
CITY OF BELLE MEADE, TENNESSEE**

**JANUARY 2024**

**CEC PROJECT 322-084**

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##### Permeable Articulated Concrete Block

Other technical specifications for this project are included in the engineering drawings. All work for this project shall be done in conformance with the current Tennessee Department of Transportation Standard Specifications for Road and Bridge Construction, unless otherwise noted.

#### ATTACHMENTS

- 1) Site Location Map
- 2) City of Belle Meade Stormwater Infrastructure Improvements – Walnut Drive Plan Set



**SECTION 00030**

**NOTICE TO BIDDERS**

**Request for Bids**

Sealed bids will be received at Belle Meade City Hall, Public Works Office, 4705 Harding Road, Nashville, TN 37205 until **2:00 p.m. CDT, on February 1, 2024**, at which time they will be opened for the following:

**City of Belle Meade Stormwater Infrastructure Improvements – Walnut Drive  
By the Public Works Office, City of Belle Meade**

Copies of the Engineering Plans and Specifications may be inspected at the Belle Meade City Hall, 4705 Harding Road, Nashville, TN 37205 starting **Monday, January 8, 2024**. Digital copies of the Plans and Specifications may be requested directly through Civil & Environmental Consultants (CEC) by emailing [cguybaker@cecinc.com](mailto:cguybaker@cecinc.com). A full-size, hard copy may also be requested through CEC for a fee of \$50.00.

The City of Belle Meade reserves the right to reject any and all bids and to waive formalities.

## SECTION 00100

### INSTRUCTIONS FOR BIDDERS

Bids will be received on or before **2:00 p.m. CDT on February 1, 2024**, at the **Belle Meade City Hall, 4705 Harding Road, Nashville, TN 37205**, telephone 615-297-6041, for the **City of Belle Meade Stormwater Infrastructure Improvements – Walnut Drive Project**.

The project consists of all the work required for the removal of existing asphalt pavement and base materials and installation of a permeable pavement system as described and shown in the engineering drawings entitled, “City of Belle Meade Stormwater Infrastructure Improvements – Walnut Drive,” including grading, drainage, paving, and all other specifications as shown on the plans, specifications, or as specified by the Owner, including all labor, materials, equipment, and supervision. Questions from potential bidders must be sent in writing and received by the City of Belle Meade by close of business on January 19, 2024.

It is expected that the work for this project will commence no later than March 4, 2024. **The project must be fully completed within 250 workdays. The Contractor will be allowed one (1) additional day for each day of inclement weather.** Allowable working days are defined as Monday through Friday 7:00 a.m. to 4:00 p.m. Contractor may propose work outside these limits for specific traffic flow reasons in a work plan submitted with their bid for consideration.

The Contractor shall be eligible for a \$500 per workday incentive payment for completing the project early. Completion of work is defined in 00700 Standard General Conditions of the Construction Contract. Incentive payment is capped at \$62,500.

**To be considered for this contract, the contractor is required to do the following:**

- Participate in a mandatory pre-bid conference on January 18, 2024 at 8:30 AM at Belle Meade City Hall.
- Agree to participating in a post-bid interview process with the City. The City plans to choose the top 2-3 most responsive bidders for this interview to aid in the selection process.
- Provide a construction schedule.
- Agree to participating in bi-weekly or monthly progress meetings among the City, Engineer, and Contractor to track schedule and budget.
- Agree to permit reasonable access to resident’s homes for duration of construction including emergency access.
- Contractors (or each partner in a joint venture) shall meet the following requirements as it relates to their Experience Modification Rate (EMR) as calculated by the National Council on Compensation Insurance for the most recent three (3) years. The contractor shall have an average EMR of no more than 1.25 over the immediate past three (3) years. Contractors shall provide a letter from their insurer indicating the EMR.

The Owner reserves the right to reject any one or all bids received. No bidder may withdraw a submitted Bid for a period of **sixty (60) days** after the date set for the opening of bids. Liquidated

Damages in the amount set out in the Specifications and Contract Documents will be assessed for failure to complete work within the Contract Completion Time as specified herein. Separate sealed bids will be received, in accordance with the Bidding Requirements, by the Belle Meade City Hall, 4705 Harding Road, Nashville, TN 37205, until **2:00 p.m., CDT, on February 1, 2024**. Bids will subsequently be publicly opened and read aloud.

Copies of the Engineering Plans and Specifications may be inspected at the Belle Meade City Hall, 4705 Harding Road, Nashville, TN 37205 starting **Monday, January 8, 2024**. Digital copies of the Plans and Specifications may be requested directly through Civil & Environmental Consultants (CEC) by emailing [cguybaker@cecinc.com](mailto:cguybaker@cecinc.com). A full-size, hard copy may also be requested through CEC for a fee of \$50.00.

The Contractor (and/or subcontractor) shall be licensed for the classification of work required for the Project in accordance with Public Chapter No. 822 (House Bill No. 2180) "Contractors Licensing Act of 1976," passed March 18, 1976 by the General Assembly of the State of Tennessee, and any subsequent amendments thereto, or any Rules and Regulations promulgated by the State Board of Licensing Contractors and approved by proper legal authority. The entire wording of the Act shall be considered to be included by reference to these Contract Documents.

**Drug-free Workplace Affidavits – T.C.A. § 50-9-113** - Effective January 1, 2001, any contractor with five or more employees who provides construction services for the State or any local government is required to submit an affidavit stating that the contractor has a drug free workplace program in compliance with the Tennessee Drug Free Workplace Act, T.C.A. §§ 50-9-101 through 50-9-113. The drug free workplace affidavit is to be submitted with the bid for a construction project. This statute directs that no local government shall award any construction contract to a contractor who does not submit such an affidavit with its bid.

The Contractor shall furnish a Certificate of Insurance indicating sufficient coverage, a minimum of \$2,000,000.00 per occurrence, to protect the Owner and to hold the Owner harmless from any damage or injuries due to the Contractor's negligence. The Contractor is to furnish a Certificate of Insurance indicating coverage under a Workman's Compensation Policy that meets the State Minimum Requirements. The policies shall be issued by insurance companies with a Best Rating of not less than B+.

On the outside of each envelope containing a Bid, the Bidder shall show the following information for the bidder; *otherwise the Bid will not be opened*:

- Name of project
- Applicable State License Number and its expiration date
- That part of the license classification applying to the Bid

Each Bidder is responsible for inspecting the site and for reading and being thoroughly familiar with the Contract Documents. By signing the Bid, the Bidder certifies that he has investigated the site conditions of the Project, fully satisfied himself of the surface and subsurface conditions, and has based his Bid accordingly. The failure or omission of any Bidder to do any of the foregoing shall in no way relieve any Bidder from any obligation in respect to his Bid.

The Owner may make such investigations as he deems necessary to determine the ability of the Bidder to perform the Work, and the Bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request. The Owner reserves the right to reject any Bid if the evidence submitted by, or investigation of, such Bidder fails to satisfy the Owner that such Bidder is properly qualified to carry out the obligations of the Agreement and to complete the Work contemplated therein.

Further, the Bidder agrees to abide by the requirements under Executive Order No. 11246, as amended, including specifically the provisions of the equal opportunity clause set forth in the Supplemental General Conditions.

CITY OF BELLE MEADE

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Jennifer Moody, City Manger

**SECTION 00301**

**BID FORM**

**City of Belle Meade Stormwater Infrastructure Improvements – Walnut Drive**

FOR: City of Belle Meade  
February 1, 2024, 2:00 p.m.

We, the undersigned Bidder, in compliance with your Advertisement for Bids for the *City of Belle Meade Stormwater Infrastructure Improvements – Walnut Drive*, having examined the Drawings and Specifications with related documents and the sites of the proposed work, and being familiar with all of the conditions surrounding the Project, hereby propose to furnish all labor, materials, and supplies to perform the Project in accordance with the Contract Documents within the time set forth therein.

We agree to accept therefore as complete payment, the estimated Lump Sum.

**BID**

NOTE	ESTIMATED QUANTITIES				
	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
	MOBILIZATION	LS	1		
	CONSTRUCTION STAKES, LINES, AND GRADES	LS	1		
1	TRAFFIC CONTROL	LS	1		
	SAW CUTTING ASPHALT PAVEMENT	L.F.	19		
	CONCRETE CURB REMOVAL	L.F.	260		
	STORMWATER PIPE REMOVAL	L.F.	116		
	STORMWATER STRUCTURE REMOVAL	EACH	4		
	PIPE CLEANING (<18IN DIA)	L.F.	50		
2	UNCLASSIFIED EXCAVATION	C.Y.	35420		
	CONCRETE POST CURB	L.F.	2230		
	CONCRETE FLUSH CURB	L.F.	1570		
3	CONCRETE PAVEMENT	S.Y.	58		
4	CONCRETE 90 DEGREE CURB RADIUS INFILL	S.Y.	39		
5	WATER LINE REMOVAL	L.F.	50		
	RIP RAP REMOVAL	S.Y.	86		
	12" HDPE PIPE	L.F.	236		
	18" PERFORATED HDPE PIPE	L.F.	162		
	6" PERFORATED HDPE	L.F.	43		
	STORMWATER CURB INLET	EACH	1		
	STORMWATER MANHOLE	EACH	1		
	STORMWATER PIPE CLEANOUT	EACH	1		
	STORMWATER SQUARE AREA DRAIN (BOTTOMLESS)	EACH	1		
	STORMWATER RECTANGULAR AREA DRAIN	EACH	3		
	STORMWATER OUTLET STRUCTURE	EACH	1		
	24" ADS INLINE DRAIN	EACH	3		
6	MIRAFI RS580i	S.Y.	5154		
	2" - 3" AGGREGATE	TON	3210		

ESTIMATED QUANTITIES					
NOTE	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
	3/4" - 1" AGGREGATE	TON	1620		
6	GEOGRID	S.Y.	5154		
	ARCHED PERMEABLE PAVERS	S.Y.	5154		
7	MIRAFI 600X	S.Y.	2930		
	FLAGSTONE ROCK SIZE 2' - 3'	EACH	6		
	CLASS A-3 RIPRAP	TON	14		
8	FLEXAMAT	S.Y.	88		
	SEEDING (WITHOUT MULCH)	UNIT	5		
	NAG SC150 EROSION BLANKET	S.Y.	280		
	SEDIMENT TUBE	L.F.	3902		
	SOD	S.Y.	5617		
	WATER	M.G.	56		
9	RELOCATION OF SERVICE LINE LATERALS	EACH	1		
10	DETENTION AREA EARTHWORK	EACH	1		
11	CHANNEL EARTHWORK	EACH	1		
12	DRIVEWAY REPAIR	EACH	29		
<b>ADD ALTERNATE 1</b>					
13	TRAFFIC CONTROL	LS	1		
2	UNCLASSIFIED EXCAVATION	C.Y.	1310		
	SAW CUTTING ASPHALT PAVEMENT	L.F.	70		
	PAVEMENT STRIPING	L.M.	0.21		
14	SOLID PERMEABLE PAVERS	S.Y.	1253		
6	MIRAFI RS580i	S.Y.	1253		
	2" - 3" AGGREGATE	TON	1200		
	3/4" - 1" AGGREGATE	TON	380		
6	GEOGRID	S.Y.	1253		
	MIRAFI 600X	S.Y.	140		
	STORMWATER RECTANGULAR AREA DRAIN (BOTTOMLESS)	EACH	2		
	CONCRETE FLUSH CURB	L.F.	655		
	STOP BAR	EACH	4		
	SEDIMENT TUBE	L.F.	285		
	SOD	S.Y.	1174		
	WATER	M.G.	12		
<b>ADD ALTERNATE 2</b>					
15	INFILTRACKER SYSTEM	EACH	1		

<b>TOTAL BASE BID AMOUNT</b>	\$ _____
<b>TOTAL ADD ALTERNATE 1 AMOUNT</b>	\$ _____
<b>TOTAL ADD ALTERNATE 2 AMOUNT</b>	\$ _____

**BID NOTES**

<b>1. CONTRACTOR IS TO KEEP ONE LANE OF TRAFFIC OPEN AND ACCESS TO DRIVEWAYS AT ALL TIMES.</b>
<b>2. THIS INCLUDES THE FULL REMOVAL AND PROPER DISPOSAL OF ASPHALT PAVEMENT AND ASSOCIATED SUBGRADE MATERIAL AS WELL AS EXCAVATION TO THE PROPOSED SUBGRADE ELEVATION FOR PROPOSED PERMEABLE PAVEMENT SYSTEM INSTALLATION.</b>
<b>3. THIS LINE ITEM IS FOR THE INSTALLATION OF THE CONCRETE DRIVEWAY APRONS INCLUDING SUBGRADE AND WIRE MESH AT 312 WALNUT DRIVE AND 301 WALNUT DRIVE.</b>
<b>4. THIS LINE ITEM IS FOR THE CONCRETE OVERLAY ASSOCIATED WITH THE 90 DEGREE CURB RADII FOR THE PAVEDRAIN INSTALLATION. QUANTITIES FOR THE SUBGRADE ARE PROVIDED UNDER THE 2" - 3" AND 3/4" - 1" AGGREGATE SECTION.</b>

5. THIS LINE ITEM IS FOR THE POTENTIAL REMOVAL OF THE ABANDONED WATER LINE IN THE BACK YARD OF 312 WALNUT DRIVE. REMOVAL MAY NOT BE NEEDED DEPENDENT ON ACTUAL LOCATION IN RELATION TO PROPOSED STORMWATER IMPROVEMENTS.
6. THIS QUANTITY DOES NOT INCLUDE ANY NECESSARY OVERLAP NEEDED BASED ON MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR IS TO PROVIDE COST FOR FINISHED PRODUCT INSTALLATION INCLUDING ANY OVERLAP THAT IS NEEDED BASED ON MANUFACTURER'S RECOMMENDATIONS.
7. THIS INCLUDES THE INSTALLATION OF SUBSURFACE STEPPED INSTALLATION FLOW BARRIERS
8. THIS SHALL INCLUDE SUITABLE FILL NEEDED TO BRING THE CHANNEL TO FINAL GRADE PRIOR TO FLEXAMAT INSTALLATION.
9. RELOCATION OF SERVICE LINE LATERALS IS NOT EXPECTED BASED ON APPROXIMATE DEPTHS TO UTILITY LINES; HOWEVER, PROVIDE PER RELOCATION PRICE IF RELOCATION OF WATER OR GAS SERVICE LINE LATERALS ARE ENCOUNTERED.
10. THIS SHALL INCLUDE THE EARTHWORK NECESSARY TO ESTABLISH THE FINAL GRADES SHOWN ON THE PLANS FOR THE DETENTION AREA LOCATED AT THE BACK YARD OF 312 WALNUT DRIVE.
11. THIS SHALL INCLUDE THE EARTHWORK NECESSARY TO ESTABLISH THE FINAL GRADES SHOWN ON THE PLANS FOR THE CHANNEL LOCATED AT THE BACK AND SIDE YARD OF 300 WALNUT DRIVE.
12. THIS ITEM SHALL INCLUDE A MAXIMUM OF 5' OF DRIVEWAY REPLACEMENT IN KIND TO INSTALL THE PERMEABLE PAVER SYSTEM, THE REMOVAL AND PROPER DISPOSAL OF ANY BURIED DRIVEWAY CULVERTS, AND THE REPLACEMENT OR REINSTALLATION OF ANY NON-BURIED DRIVEWAY CULVERTS.
13. CONTRACTOR IS TO KEEP ONE LANE OF TRAFFIC OPEN AT ALL TIMES. TRAFFIC CONTROL FOR THE CONSTRUCTION ASSOCIATED WITH THE INTERSECTION OF ABBOTT MARTIN, WALNUT DRIVE, AND LYNWOOD BLVD WILL BE PROVIDED BY THE CITY OF BELLE MEADE POLICE. NO LANE CLOSURE PERMITTING THROUGH METRO NASHVILLE BY THE CONTRACTOR WILL BE REQUIRED.
14. THE LIMITS OF THE ADD ALTERNATE IS THE BOUNDARY SHOWN ON THE PLANS BETWEEN THE SOLID AND ARCHED PAVEDRAIN BLOCK INSTALLATION AREAS.
15. PROVIDE AN EACH COST FOR THE PURCHASE AND INSTALLATION OF A PAVEDRAIN INFILTRACKER SYSTEM.

The undersigned Bidder does hereby declare and stipulate that this proposal is made in good faith, without collusion or connection with any other person or persons bidding for the same work, and that it is made in pursuance of and subject to all the terms and conditions of the construction contract, the detailed Specifications, and the Drawings pertaining to the work to be done, all of which have been examined by the undersigned.

The Bidder hereby agrees to commence work under this contract on or before a date to be specified in a written "Notice to Proceed" and to complete the Project fully within 250 workdays. The Contractor will be allowed one (1) additional day for each day of inclement weather. Allowable working days are defined as Monday through Friday, 7:00 a.m. to 4:00 p.m. The Bidder further agrees to pay, as liquidated damages, the sum of \$1,000.00 for each consecutive calendar working day that expires after the time specified for completion until the Project is fully complete. The Contractor shall be eligible for a \$500 per workday incentive payment for completing the project early. Completion of work is defined in 00700 Standard General Conditions of the Construction Contract. Incentive payment is capped at \$62,500.

We, the undersigned Bidder, declare that this proposal is made without connection with any other person or persons making proposals for the same work and that it is, in all respects, fair and in good faith without collusion or fraud.

Respectfully submitted,

License # \_\_\_\_\_

\_\_\_\_\_  
Name of Contractor

Expiration Date of Same \_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_



**SECTION 00500**

**AGREEMENT**

THIS AGREEMENT made this \_\_\_\_\_ day of \_\_\_\_\_ in the year TWO THOUSAND and TWENTY-THREE (2023) by and between

\_\_\_\_\_ hereinafter called the Contractor, and City of Belle Meade, 4705 Harding Road, Nashville, TN 37205, hereinafter called the Owner.

WITNESSETH, that the Contractor and the Owner for the considerations hereinafter named agree as follows:

**ARTICLE 1. Scope of the Work** – The Contractor shall furnish all of the materials and perform all of the work shown on the Drawings and described in the Specifications entitled:

**City of Belle Meade Stormwater Infrastructure Improvements – Walnut Drive**

Prepared by Civil & Environmental Consultants, Inc., 117 Seaboard Lane, Suite E-100, Franklin, Tennessee 37067, acting as and in these Contract Documents entitled the Engineer and shall do everything required by this Agreement, the General Conditions of the Contractor, the Specifications and the Drawings.

**ARTICLE 2. Time of Completion** – The work to be performed under this Contract shall be commenced \_\_\_\_\_

\_\_\_\_\_ and shall be completed \_\_\_\_\_

Liquidated damages will be assessed at a rate of One Thousand (\$1,000.00) dollars per working day for each day the Contractor exceeds the completion date. The Contractor will be allowed one (1) additional day for each day of inclement weather.

**ARTICLE 3. The Contract Sum** – The Owner shall pay the Contractor for the performance of the Contract, subject to Additions and Deductions provided therein, in current funds as follows:

Where the quantities contemplated are so changed that application of the agreed Lump Sum Amount to the quantity of work performed is shown to create a hardship to the Owner or to the Contractor, there shall be an equitable adjustment of the Contract to prevent such hardship.

**ARTICLE 4. Progress Payments** – The Contractor shall prepare a pay application for City of Belle Meade Stormwater Infrastructure Improvements – Walnut Drive Project. The Owner shall make payments on account of the Contract as provided therein, as follows:

On or about the first day of each month ninety-five (95%) percent of the value, based on the Contract prices, of labor and materials incorporated in the work and of materials suitably stored at the site thereof up to the last day of that month, as estimated by the Engineer, less the aggregate of previous payments.

Liquidated damages will be assessed at a rate of One Thousand (\$1,000.00) dollars per working day for each day the Contractor exceeds the completion date. The Contractor will be allowed one (1) additional day for each day of inclement weather.

**ARTICLE 5. Acceptance and Final Payment** – Upon receipt of written notice that the work is ready for final inspection and acceptance, the Engineer shall promptly make such inspection, and when he finds the work acceptable under the Contract and the Contract fully performed, he shall promptly issue a final certificate, over his own signature, stating that the work provided for in this Contract has been completed and is accepted by him under the terms and conditions thereof, and the entire balance found to be due the Contractor, including the retained percentage, shall be paid to the Contractor at the office of the Owner within thirty (30) days after the date of said final certificate.

Before issuance of final certificate, the Contractor shall submit evidence satisfactory to the Engineer that all payrolls, material bills, and other indebtedness connected with the work have been paid.

The making and acceptance of the final payment shall constitute a waiver of all claims by the Owner, other than those arising from unsettled liens, from faulty work appearing after final payment or from requirements of the Specifications, and of all claims by the Contractor, except those previously made and still unsettled.

If, after the work has been substantially completed, full completion thereof is materially delayed through no fault of the Contractor, and the Engineer so certifies, the Owner shall, upon certificate of the Engineer, and without terminating the Contract, make payment of the balance due for that portion of the work fully completed and accepted. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

**ARTICLE 6. The Contract Documents** – The General Conditions of the Contract, the Specifications and the Drawings, together with this Agreement, form the Contract, and they are as fully a part of the Contract as if hereto attached or herein repeated. The following is an enumeration of the Specifications and Drawings.

**City of Belle Meade Stormwater Infrastructure Improvements – Walnut Drive**

IN WITNESS WHEREOF, the parties hereto have executed this Agreement, the day and year first above written.

**OWNER**

**CONTRACTOR**

City of Belle Meade

By: \_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_

SECTION 00510

NOTICE OF AWARD

To: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

PROJECT DESCRIPTION: City of Belle Meade Stormwater Infrastructure Improvements – Walnut Drive

1. The Owner has considered the BID submitted by you for the above described WORK in response to its Advertisement for BIDS dated \_\_\_\_\_, 20 \_\_, and Information for Bidders.
2. You are hereby notified that your BID has been accepted for items in the amount of \$ \_\_\_\_\_.
4. You are required by the Information for Bidders to execute the Agreement and furnish the required Contractor's Performance Bond and Payment Bond within three (3) calendar days from the date of this Notice to you.
5. If you fail to execute said Agreement and to furnish said bonds within three (3) days from the date of the Notice, said OWNER will be entitled to consider all your rights arising out of the OWNER's acceptance of your BID as abandoned and as a forfeiture of your BID Bond. The OWNER will be entitled to such other rights as may be granted by law.
6. You are required to return an acknowledged copy of this NOTICE OF AWARD to the OWNER.

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_.

City of Belle Meade  
Owner

By: \_\_\_\_\_

Title: \_\_\_\_\_

**ACCEPTANCE OF NOTICE**

Receipt of the above NOTICE OF AWARD is hereby acknowledged:

by \_\_\_\_\_

this date \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_.

By: \_\_\_\_\_

Signature: \_\_\_\_\_

Title: \_\_\_\_\_

**SECTION 00550**

**NOTICE TO PROCEED**

To: \_\_\_\_\_

Date: \_\_\_\_\_

Project: ***City of Belle Meade Stormwater Infrastructure Improvements – Walnut Drive***

1. You are hereby notified to commence work in accordance with the Agreement dated \_\_\_\_\_, 20 \_\_, on or before \_\_\_\_\_, 20 \_\_, and you are to complete the WORK within 250 working days thereafter. Allowable working days are defined as Monday through Friday 7:00 a.m. to 4:00 p.m.

The date of completion of WORK is therefore \_\_\_\_\_, 20 \_\_.

City of Belle Meade  
Owner

By: \_\_\_\_\_

Title: City Manager

**ACCEPTANCE OF NOTICE**

Receipt of the above NOTICE TO PROCEED is hereby acknowledged by

\_\_\_\_\_, this the \_\_\_\_\_ day

of \_\_\_\_\_, 20 \_\_

By: \_\_\_\_\_

Signature: \_\_\_\_\_

Title: \_\_\_\_\_

SECTION 00610

PERFORMANCE BOND

BOND NO. \_\_\_\_\_

1. KNOW ALL MEN BY THESE PRESENTS: that

\_\_\_\_\_  
(Name of Contractor)

\_\_\_\_\_  
(Address of Contractor)

a \_\_\_\_\_, herein after call Principal,  
(Corporation, Partnership, or Individual)

and \_\_\_\_\_  
(Name of Surety)

\_\_\_\_\_  
(Address of Surety)

hereinafter called Surety, are held and firmly bound unto \_\_\_\_\_

\_\_\_\_\_  
City of Belle Meade  
(Name of Owner)

\_\_\_\_\_  
4705 Harding Road, Nashville, TN 37205  
(Address of Owner)

hereinafter called Owner, in the penal sum of (\$ \_\_\_\_\_)  
in lawful money of the United States, for the payment of which sum well and truly to be  
made, we bind ourselves, successors, and assigns; jointly and severally, firmly by these  
presents.

2. THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a  
certain contract with the Owner, dated the \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_,  
a copy of which is hereto attached and made a part hereof for the construction of: **City of  
Belle Meade Stormwater Infrastructure Improvements – Walnut Drive.**

3. NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the  
undertakings, covenants, terms, conditions, and agreements of said contract during the original  
term thereof, and any extensions thereof which may be granted by the Owner, with or without  
notice to the Surety and during the one year guaranty period, and if he shall satisfy all claims



and demands incurred under such contract, and shall fully indemnify and save harmless the Owner from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the Owner all outlay and expense which the Owner may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

4. PROVIDED, FURTHER, that the said Surety, for value received hereby stipulates and agrees that no change, extension of time, alternation or addition to the terms of the Contract or the work to be performed thereunder or the specifications accompanying the same shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alternation or addition to the terms of the contract or to the work or to the specifications.
5. PROVIDED, FURTHER, that no final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.
6. IN WITNESS WHEREOF, this instrument is executed in four (4) counterparts, each one of which shall be an original, this the \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_.

ATTEST:

\_\_\_\_\_  
Principal

\_\_\_\_\_  
(Principal) Secretary

By \_\_\_\_\_(s)

(SEAL)

\_\_\_\_\_  
(Witness as to Principal)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Address)

ATTEST:

\_\_\_\_\_  
(Surety) Secretary

(SEAL)

\_\_\_\_\_  
Witness as to Surety

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Address)

7. NOTE:     Date of Bond must not be prior to date of Contract.  
              If Contractor is Partnership, all partners shall execute bond.

SECTION 00620

LABOR AND MATERIAL PAYMENT BOND

BOND NO. \_\_\_\_\_

1. KNOW ALL MEN BY THESE PRESENTS: that

\_\_\_\_\_  
(Name of Contractor)

\_\_\_\_\_  
(Address of Contractor)

a \_\_\_\_\_, herein after call Principal,  
(Corporation, Partnership, or Individual)

and \_\_\_\_\_  
(Name of Surety)

\_\_\_\_\_  
(Address of Surety)

hereinafter called Surety, are held and firmly bound unto \_\_\_\_\_

\_\_\_\_\_  
City of Belle Meade  
(Name of Owner)

\_\_\_\_\_  
4705 Harding Road, Nashville, TN 37205  
(Address of Owner)

hereinafter called Owner, in the penal sum of \_\_\_\_\_  
\_\_\_\_\_ Dollars, (\$ \_\_\_\_\_)

in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns; jointly and severally, firmly by these presents.

2. THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the Owner, dated the \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_, a copy of which is hereto attached and made a part hereof for the construction of: ***City of Belle Meade Stormwater Infrastructure Improvements – Walnut Drive.***

3. NOW, THEREFORE, if the Principal shall promptly make payment to all persons, firms, subcontractors, and corporations furnishing materials for or performing labor in the prosecution of the work provided for in such contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the

construction of such work, and all insurance premiums on said work, and for all labor, performed in such work whether by subcontractor or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

4. PROVIDED, FURTHER, that the said Surety, for value received hereby stipulates and agrees that no change, extension of time, alternation or addition to the terms of the Contract or the work to be performed thereunder or the specifications accompanying the same shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alternation or addition to the terms of the contract or to the work or to the specifications.
5. PROVIDED, FURTHER, that no final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.
6. IN WITNESS WHEREOF, this instrument is executed in four (4) counterparts, each one of which shall be an original, this the \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_.

ATTEST:

\_\_\_\_\_  
Principal

\_\_\_\_\_  
(Principal) Secretary

By \_\_\_\_\_ (s)

\_\_\_\_\_  
(Address)

(SEAL)

\_\_\_\_\_  
Witness as to Principal

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
Surety

By \_\_\_\_\_  
Attorney-in-Fact

ATTEST:

\_\_\_\_\_  
(Surety) Secretary

(SEAL)

\_\_\_\_\_  
as to Surety

\_\_\_\_\_ Witness

\_\_\_\_\_  
(Address)

\_\_\_\_\_

\_\_\_\_\_

- 7. NOTE:           Date of Bond must not be prior to date of Contract.  
                      If Contractor is Partnership, all partners shall execute bond.
  
- 8. IMPORTANT:    Surety companies executing bonds must appear on the Treasury  
                      Department's most current list (Circular 570 as amended) and be authorized  
                      to transact business in the State where the project is located.

**SECTION 00941**  
**CHANGE ORDER**

Order No. \_\_\_\_\_

Date: \_\_\_\_\_

Agreement Date: \_\_\_\_\_

NAME OF PROJECT: **City of Belle Meade Stormwater Infrastructure Improvements – Walnut Drive**

OWNER: \_\_\_\_\_ City of Belle Meade \_\_\_\_\_

CONTRACTOR: \_\_\_\_\_

The following changes are hereby made to the CONTRACT DOCUMENTS:

Justification:

Change to CONTRACT PRICE: \$ \_\_\_\_\_

Original CONTRACT PRICE: \$ \_\_\_\_\_

Current CONTRACT PRICE adjusted by previous CHANGE ORDER \$ \_\_\_\_\_

The CONTRACT PRICE due to this CHANGE ORDER will be  
(increased) (decreased) by \$ \_\_\_\_\_

The new CONTRACT PRICE including this CHANGE ORDER will be \$ \_\_\_\_\_

Change to CONTRACT TIME: \_\_\_\_\_

The CONTRACT TIME will be (increased) (decreased) by \_\_\_\_\_ calendar days.

The date for completion of all work will be \_\_\_\_\_ (date).

Approvals Required:

To be effective, this Order must be approved by the City of Goodlettsville if it changes the scope or objective of the project, or if it will increase the budgeted amount of funds needed to complete the project, or as may otherwise be required by the GENERAL CONDITIONS.

Requested

By: \_\_\_\_\_ By: \_\_\_\_\_ Date: \_\_\_\_\_

Recommended

By: Civil & Environmental Consultants, Inc. By: \_\_\_\_\_ Date: \_\_\_\_\_

Approved

By: City of Belle Meade By: \_\_\_\_\_ Date: \_\_\_\_\_

**CONTRACTOR CERTIFICATION**

Date: \_\_\_\_\_

To: \_\_\_\_\_

Contractor

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Project Description: City of Belle Meade Stormwater Infrastructure Improvements – Walnut Drive**

The City of Belle Meade has executed and hands you herewith an executed counterpart of its contract with you for the performance of the above work. In your performance on this contract, we call to your attention the provisions of Tennessee Code Annotated Section 12-4-101 (a) and (b), which provide in part that “it is unlawful for any . . . person whose duty it is to . . . overlook or in any manner to superintend any work or any contract in which” the City “shall or may be interested” to be directly or indirectly interested in such contract. Accordingly, it will be a violation of the law of the State and the policies of the City of Belle Meade for any employee of the City to participate in any manner in the performance of this contract or to share in the proceeds of the same. In your performance of this contract, we shall expect full compliance with the requirements of this statute and request your confirmation of this fact upon the line provided below.

THE CITY OF BELLE MEADE

By: \_\_\_\_\_

Date: \_\_\_\_\_

\_\_\_\_\_ (Contractor) certifies that is understands the requirements of the above-referenced statute and agrees that it will comply fully with the same in the performance of the above contract.

\_\_\_\_\_ (Contractor)

By: \_\_\_\_\_

Date: \_\_\_\_\_



**DRUG-FREE WORKPLACE AFFIDAVIT**

STATE OF Tennessee

COUNTY OF \_\_\_\_\_

The undersigned, principal officer of \_\_\_\_\_,  
(the "Company"), being duly authorized to execute this affidavit on its behalf makes oath as follows:

1. The Company is an employer of no less than five (5) employees receiving pay and is submitting a bid to the City of Belle Meade for a contract to provide construction services.
2. The Company has a drug-free workplace program in full compliance with Title 50, Chapter 9, of the Tennessee Code Annotated, in effect at the time of the submission of such bid.
3. This affidavit is submitted in compliance with T.C.A. 50-9-113.

Further affiant saith not.

**Principal Officer:** \_\_\_\_\_

**Title:** \_\_\_\_\_

STATE OF \_\_\_\_\_

COUNTY OF \_\_\_\_\_

Before me personally appeared \_\_\_\_\_, with whom I am personally acquainted (or proved to me on the basis of satisfactory evidence), and who acknowledged that the statements contained in the forgoing affidavit are true of his own knowledge.

Witness my hand and seal at office this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

Notary Public: \_\_\_\_\_

My Commission Expires: \_\_\_\_\_

**CITY OF BELLE MEADE  
IRAN DIVESTMENT ACT COMPLIANCE**

The Iran Divestment Act of 2016, effective as of July 1, 2016, is codified at Tenn. Code Ann. § 12- 12-101 et seq. The Iran Divestment Act, with certain exceptions, prohibits municipalities, including the CITY, from entering into contracts with persons or entities engaged in investment activities in the energy sector of Iran. Pursuant to the terms set forth in Tenn. Code Ann. § 12-12-105, a person engages in investment activities in the energy sector of Iran if:

(1) The person provides goods or services of twenty million dollars (\$20,000,000) or more in the energy sector of Iran, including a person that provides oil or liquefied natural gas tankers, or products used to construct or maintain pipelines used to transport oil or liquefied natural gas, for the energy sector of Iran; or

(2) The person is a financial institution that extends twenty million dollars (\$20,000,000) or more in credit to another person, for forty-five (45) days or more, if that person will use the credit to provide goods or services in the energy sector in Iran and is identified on a list, created pursuant to § 12-12-106, as a person engaging in investment activities in Iran as described in this section.

This Act requires the State of Tennessee’s chief procurement officer to publish on the State’s web site a list of persons it determines engage in investment activities in Iran (the “Prohibited Entities List”).<sup>1</sup>

Any BIDDER that is on the Prohibited Entities List will be ineligible to contract with the CITY.

Pursuant to the Act, any BIDDER that attempts to contract with the CITY must certify, at the time the bid is submitted, that the BIDDER is not identified on the Prohibited Entities List. A bid shall not be considered for award, nor shall any award be made where the BIDDER fails to submit a signed and verified Bidder’s Certification.

---

<sup>1</sup> The State published its list which can be found on the Department of General Services’ web page here: <https://www.tn.gov/generalservices/procurement/central-procurement-office--cpo-/library-/public-information-library.html>

**BIDDER'S CERTIFICATION OF COMPLIANCE WITH IRAN DIVESTMENT ACT**

Tenn. Code Ann. § 12-12-101 et seq.

Comes \_\_\_\_\_, for and on behalf of  
(Printed name of Principal Officer of Company)  
\_\_\_\_\_, (the "Company") and, after  
being duly authorized by the Company so to do, makes oath that:

By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief that each bidder is not on the list created pursuant to the Iran Divestment Act, Tenn. Code Ann. § 12-12-106.

**Signature:** \_\_\_\_\_

**Title:** \_\_\_\_\_

STATE OF \_\_\_\_\_

COUNTY OF \_\_\_\_\_

Before me personally appeared \_\_\_\_\_, with whom I am personally acquainted (or proved to me on the basis of satisfactory evidence), and who acknowledged that the statements contained in the forgoing affidavit are true of his own knowledge.

Witness my hand and seal at office this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

Notary Public: \_\_\_\_\_

My Commission Expires: \_\_\_\_\_

**CERTIFICATE OF OWNER'S ATTORNEY**

I, the undersigned, \_\_\_\_\_, the duly authorized and acting legal representative of the City of Belle Meade, Tennessee do hereby certify as follows:

I have examined the foregoing Contract and Surety bonds and the manner of execution thereof, and I am of the opinion that each of the aforesaid agreements has been duly executed by the proper parties thereto acting through their duly authorized representatives; that said representatives have full power and authority to execute said agreements on behalf of the respective parties named, thereon; and that the foregoing agreements constitute valid and legally binding obligations upon the parties executing the same in accordance with the terms, conditions, and provisions thereof.

\_\_\_\_\_  
Attorney

Date: \_\_\_\_\_



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## STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by



Issued and Published Jointly by



Endorsed by



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# STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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## ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

### 1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
  2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.
  3. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
  4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
  5. *Bidder*—An individual or entity that submits a Bid to Owner.
  6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.
  7. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.
  8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.
  9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
  10. *Claim*—(a) A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein: seeking an adjustment of Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract; or (b) a demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal; or seeking resolution of a contractual issue that Engineer



has declined to address. A demand for money or services by a third party is not a Claim.

11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. (“CERCLA”); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5101 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. (“RCRA”); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, state, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
12. *Contract*—The entire and integrated written contract between the Owner and Contractor concerning the Work.
13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.
14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents. .
15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.
17. *Cost of the Work*—See Paragraph 13.01 for definition.
18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
20. *Engineer*—The individual or entity named as such in the Agreement.
21. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
22. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated in the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, does not establish a Hazardous Environmental Condition.
23. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

24. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
25. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date or by a time prior to Substantial Completion of all the Work.
26. *Notice of Award*—The written notice by Owner to a Bidder of Owner’s acceptance of the Bid.
27. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.
28. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.
29. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor’s plan to accomplish the Work within the Contract Times.
30. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.
31. *Project Manual*—The written documents prepared for, or made available for, procuring and constructing the Work, including but not limited to the Bidding Documents or other construction procurement documents, geotechnical and existing conditions information, the Agreement, bond forms, General Conditions, Supplementary Conditions, and Specifications. The contents of the Project Manual may be bound in one or more volumes.
32. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative or “RPR” includes any assistants or field staff of Resident Project Representative.
33. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
34. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer’s review of the submittals and the performance of related construction activities.
35. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor’s Applications for Payment.
36. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.

37. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands furnished by Owner which are designated for the use of Contractor.
38. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
39. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.
40. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.
41. *Successful Bidder*—The Bidder whose Bid the Owner accepts, and to which the Owner makes an award of contract, subject to stated conditions.
42. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
43. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.
44. *Technical Data*—Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (a) subsurface conditions at the Site, or physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) or (b) Hazardous Environmental Conditions at the Site. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then the data contained in boring logs, recorded measurements of subsurface water levels, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical or environmental report prepared for the Project and made available to Contractor are hereby defined as Technical Data with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06.
45. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including but not limited to those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, fiber optic transmissions, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
46. *Unit Price Work*—Work to be paid for on the basis of unit prices.
47. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.

48. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

## 1.02 Terminology

- A. The words and terms discussed in the following paragraphs are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives:*
1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.
- C. *Day:*
1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.
- D. *Defective:*
1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
    - a. does not conform to the Contract Documents; or
    - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
    - c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or 15.04).
- E. *Furnish, Install, Perform, Provide:*
1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
  2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
  4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.
- F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

## **ARTICLE 2 – PRELIMINARY MATTERS**

### **2.01 *Delivery of Bonds and Evidence of Insurance***

- A. *Bonds*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.
- B. *Evidence of Contractor’s Insurance*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract), the certificates and other evidence of insurance required to be provided by Contractor in accordance with Article 6.
- C. *Evidence of Owner’s Insurance*: After receipt of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or otherwise), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

### **2.02 *Copies of Documents***

- A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully executed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.
- B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

### **2.03 *Before Starting Construction***

- A. *Preliminary Schedules*: Within 10 days after the Effective Date of the Contract (or as otherwise specifically required by the Contract Documents), Contractor shall submit to Engineer for timely review:
  1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;
  2. a preliminary Schedule of Submittals; and

3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

#### 2.04 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

#### 2.05 *Initial Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.03.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.
  1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.
  2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
  3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.

#### 2.06 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may transmit, and shall accept, Project-related correspondence, text, data, documents, drawings, information, and graphics, including but not limited to Shop Drawings and other submittals, in electronic media or digital format, either directly, or through access to a secure Project website.
- B. If the Contract does not establish protocols for electronic or digital transmittals, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. When transmitting items in electronic media or digital format, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the recipient's use of software application packages, operating systems, or

computer hardware differing from those used in the drafting or transmittal of the items, or from those established in applicable transmittal protocols.

### **ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE**

#### **3.01 *Intent***

- A. The Contract Documents are complementary; what is required by one is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic or digital versions of the Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version shall govern.
- D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.

#### **3.02 *Reference Standards***

- A. Standards Specifications, Codes, Laws and Regulations
  - 1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
  - 2. No provision of any such standard specification, manual, reference standard, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

#### **3.03 *Reporting and Resolving Discrepancies***

- A. *Reporting Discrepancies:*
  - 1. *Contractor's Verification of Figures and Field Measurements:* Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict,

error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.

2. *Contractor's Review of Contract Documents:* If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.
3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. *Resolving Discrepancies:*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:
  - a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); or
  - b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Requirements of the Contract Documents*

- A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work thereunder.
- B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.
- C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Owner and Contractor that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.



### 3.05 *Reuse of Documents*

- A. Contractor and its Subcontractors and Suppliers shall not:
  - 1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or
  - 2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.
- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

## **ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK**

### 4.01 *Commencement of Contract Times; Notice to Proceed*

- A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Contract or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Contract. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Contract, whichever date is earlier.

### 4.02 *Starting the Work*

- A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to such date.

### 4.03 *Reference Points*

- A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

### 4.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.
  - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 11.
- B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

#### 4.05 *Delays in Contractor's Progress*

- A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Times and Contract Price. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:
1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
  2. abnormal weather conditions;
  3. acts or failures to act of utility owners (other than those performing other work at or adjacent to the Site by arrangement with the Owner, as contemplated in Article 8); and
  4. acts of war or terrorism.
- D. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5.
- E. Paragraph 8.03 governs delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.
- F. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor.

- G. Contractor must submit any Change Proposal seeking an adjustment in Contract Price or Contract Times under this paragraph within 30 days of the commencement of the delaying, disrupting, or interfering event.

## **ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS**

### **5.01 *Availability of Lands***

- A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.
- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

### **5.02 *Use of Site and Other Areas***

- A. *Limitation on Use of Site and Other Areas:*
  - 1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.
  - 2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.12, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or at law; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part

by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.

- B. *Removal of Debris During Performance of the Work:* During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.
- C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.
- D. *Loading of Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them.

### 5.03 *Subsurface and Physical Conditions*

- A. *Reports and Drawings:* The Supplementary Conditions identify:
  - 1. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site;
  - 2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities); and
  - 3. Technical Data contained in such reports and drawings.
- B. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:
  - 1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
  - 2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
  - 3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

#### 5.04 *Differing Subsurface or Physical Conditions*

- A. *Notice by Contractor:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site either:
1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate; or
  2. is of such a nature as to require a change in the Drawings or Specifications; or
  3. differs materially from that shown or indicated in the Contract Documents; or
  4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

- B. *Engineer's Review:* After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine the necessity of Owner's obtaining additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A above; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- C. *Owner's Statement to Contractor Regarding Site Condition:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.
- D. *Possible Price and Times Adjustments:*
1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, or both, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
    - a. such condition must fall within any one or more of the categories described in Paragraph 5.04.A;
    - b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,

- c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
  - a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise; or
  - b. the existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or
  - c. Contractor failed to give the written notice as required by Paragraph 5.04.A.
3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.

#### 5.05 *Underground Facilities*

- A. *Contractor's Responsibilities:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or adjacent to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:
  1. Owner and Engineer do not warrant or guarantee the accuracy or completeness of any such information or data provided by others; and
  2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
    - a. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
    - b. locating all Underground Facilities shown or indicated in the Contract Documents as being at the Site;
    - c. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
    - d. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.
- B. *Notice by Contractor:* If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, then Contractor shall, promptly after

becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer.

- C. *Engineer's Review:* Engineer will promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the Underground Facility in question; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and advise Owner in writing of Engineer's findings, conclusions, and recommendations. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
- D. *Owner's Statement to Contractor Regarding Underground Facility:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question, addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.
- E. *Possible Price and Times Adjustments:*
  - 1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, or both, to the extent that any existing Underground Facility at the Site that was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
    - a. Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated the existence or actual location of the Underground Facility in question;
    - b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;
    - c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times; and
    - d. Contractor gave the notice required in Paragraph 5.05.B.
  - 2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
  - 3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.

5.06 *Hazardous Environmental Conditions at Site*

- A. *Reports and Drawings*: The Supplementary Conditions identify:
1. those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
  2. Technical Data contained in such reports and drawings.
- B. *Reliance by Contractor on Technical Data Authorized*: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:
1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or
  2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
  3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.
- C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.
- D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.
- E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.



- F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.
- G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off.
- H. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.
- I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.I shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

## ARTICLE 6 – BONDS AND INSURANCE

### 6.01 *Performance, Payment, and Other Bonds*

- A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of all of Contractor's obligations under the Contract. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the Supplementary Conditions, or other specific provisions of the Contract. Contractor shall also furnish such other bonds as are required by the Supplementary Conditions or other specific provisions of the Contract.
- B. All bonds shall be in the form prescribed by the Contract except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (as amended and supplemented) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.
- C. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds in the required amounts.
- D. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or its right to do business is terminated in any state or jurisdiction where any part of the Project is located, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the bond and surety requirements above.
- E. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner's termination rights under Article 16.
- F. Upon request, Owner shall provide a copy of the payment bond to any Subcontractor, Supplier, or other person or entity claiming to have furnished labor or materials used in the performance of the Work.

### 6.02 *Insurance—General Provisions*

- A. Owner and Contractor shall obtain and maintain insurance as required in this Article and in the Supplementary Conditions.
- B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.
- C. Contractor shall deliver to Owner, with copies to each named insured and additional insured (as identified in this Article, in the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Contractor has obtained and is

maintaining the policies, coverages, and endorsements required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

- D. Owner shall deliver to Contractor, with copies to each named insured and additional insured (as identified in this Article, the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Owner has obtained and is maintaining the policies, coverages, and endorsements required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- E. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, shall not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.
- F. If either party does not purchase or maintain all of the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.
- G. If Contractor has failed to obtain and maintain required insurance, Owner may exclude the Contractor from the Site, impose an appropriate set-off against payment, and exercise Owner's termination rights under Article 16.
- H. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price shall be adjusted accordingly.
- I. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests.
- J. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner and other individuals and entities in the Contract.

### 6.03 *Contractor's Insurance*

- A. *Workers' Compensation:* Contractor shall purchase and maintain workers' compensation and employer's liability insurance for:
  - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts.
  - 2. United States Longshoreman and Harbor Workers' Compensation Act and Jones Act coverage (if applicable).
  - 3. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees (by stop-gap endorsement in monopolist worker's compensation states).

4. Foreign voluntary worker compensation (if applicable).
- B. *Commercial General Liability—Claims Covered:* Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against:
1. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees.
  2. claims for damages insured by reasonably available personal injury liability coverage.
  3. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.
- C. *Commercial General Liability—Form and Content:* Contractor's commercial liability policy shall be written on a 1996 (or later) ISO commercial general liability form (occurrence form) and include the following coverages and endorsements:
1. Products and completed operations coverage:
    - a. Such insurance shall be maintained for three years after final payment.
    - b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.
  2. Blanket contractual liability coverage, to the extent permitted by law, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.
  3. Broad form property damage coverage.
  4. Severability of interest.
  5. Underground, explosion, and collapse coverage.
  6. Personal injury coverage.
  7. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together); or CG 20 10 07 04 and CG 20 37 07 04 (together); or their equivalent.
  8. For design professional additional insureds, ISO Endorsement CG 20 32 07 04, "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.
- D. *Automobile liability:* Contractor shall purchase and maintain automobile liability insurance against claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy shall be written on an occurrence basis.
- E. *Umbrella or excess liability:* Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer's liability, commercial general liability, and automobile liability insurance described in the paragraphs above. Subject to industry-standard exclusions, the coverage afforded shall follow form as to each and every one of the underlying policies.
- F. *Contractor's pollution liability insurance:* Contractor shall purchase and maintain a policy covering third-party injury and property damage claims, including clean-up costs, as a result

of pollution conditions arising from Contractor's operations and completed operations. This insurance shall be maintained for no less than three years after final completion.

- G. *Additional insureds*: The Contractor's commercial general liability, automobile liability, umbrella or excess, and pollution liability policies shall include and list as additional insureds Owner and Engineer, and any individuals or entities identified in the Supplementary Conditions; include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds; and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis. Contractor shall obtain all necessary endorsements to support these requirements.
- H. *Contractor's professional liability insurance*: If Contractor will provide or furnish professional services under this Contract, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance shall provide protection against claims arising out of performance of professional design or related services, and caused by a negligent error, omission, or act for which the insured party is legally liable. It shall be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. If such professional design services are performed by a Subcontractor, and not by Contractor itself, then the requirements of this paragraph may be satisfied through the purchasing and maintenance of such insurance by such Subcontractor.
- I. *General provisions*: The policies of insurance required by this Paragraph 6.03 shall:
1. include at least the specific coverages provided in this Article.
  2. be written for not less than the limits of liability provided in this Article and in the Supplementary Conditions, or required by Laws or Regulations, whichever is greater.
  3. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least 10 days prior written notice has been given to Contractor. Within three days of receipt of any such written notice, Contractor shall provide a copy of the notice to Owner, Engineer, and each other insured under the policy.
  4. remain in effect at least until final payment (and longer if expressly required in this Article) and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract Documents.
  5. be appropriate for the Work being performed and provide protection from claims that may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable.
- J. The coverage requirements for specific policies of insurance must be met by such policies, and not by reference to excess or umbrella insurance provided in other policies.

#### 6.04 *Owner's Liability Insurance*

- A. In addition to the insurance required to be provided by Contractor under Paragraph 6.03, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.
- B. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.

#### 6.05 *Property Insurance*

- A. *Builder's Risk*: Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the full insurable replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:
  - 1. include the Owner and Contractor as named insureds, and all Subcontractors, and any individuals or entities required by the Supplementary Conditions to be insured under such builder's risk policy, as insureds or named insureds. For purposes of the remainder of this Paragraph 6.05, Paragraphs 6.06 and 6.07, and any corresponding Supplementary Conditions, the parties required to be insured shall collectively be referred to as "insureds."
  - 2. be written on a builder's risk "all risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire; lightning; windstorm; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; flood; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; water damage (other than that caused by flood); and such other perils or causes of loss as may be specifically required by the Supplementary Conditions. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; or flood, are not commercially available under builder's risk policies, by endorsement or otherwise, such insurance may be provided through other insurance policies acceptable to Owner and Contractor.
  - 3. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.
  - 4. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects).

5. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).
  6. extend to cover damage or loss to insured property while in transit.
  7. allow for partial occupation or use of the Work by Owner, such that those portions of the Work that are not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
  8. allow for the waiver of the insurer's subrogation rights, as set forth below.
  9. provide primary coverage for all losses and damages caused by the perils or causes of loss covered.
  10. not include a co-insurance clause.
  11. include an exception for ensuing losses from physical damage or loss with respect to any defective workmanship, design, or materials exclusions.
  12. include performance/hot testing and start-up.
  13. be maintained in effect, subject to the provisions herein regarding Substantial Completion and partial occupancy or use of the Work by Owner, until the Work is complete.
- B. *Notice of Cancellation or Change:* All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 6.05 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured.
- C. *Deductibles:* The purchaser of any required builder's risk or property insurance shall pay for costs not covered because of the application of a policy deductible.
- D. *Partial Occupancy or Use by Owner:* If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide notice of such occupancy or use to the builder's risk insurer. The builder's risk insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy; rather, those portions of the Work that are occupied or used by Owner may come off the builder's risk policy, while those portions of the Work not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
- E. *Additional Insurance:* If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.05, it may do so at Contractor's expense.
- F. *Insurance of Other Property:* If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, such as tools, construction equipment, or other personal property owned by Contractor, a Subcontractor, or an employee of Contractor or a Subcontractor, then the entity or individual owning such property item will be responsible for deciding whether to insure it, and if so in what amount.

## 6.06 *Waiver of Rights*

- A. All policies purchased in accordance with Paragraph 6.05, expressly including the builder's risk policy, shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any insureds thereunder, or against Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all Subcontractors, all individuals or entities identified in the Supplementary Conditions as insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.
- B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for:
  - 1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and
  - 2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 6.06.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them.
- D. Contractor shall be responsible for assuring that the agreement under which a Subcontractor performs a portion of the Work contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by builder's risk insurance and any other property insurance applicable to the Work.

## 6.07 *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of insurance required by Paragraph 6.05 will be adjusted and settled with the named insured that purchased the



policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.

- B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.05 shall distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.
- C. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the money so received applied on account thereof, and the Work and the cost thereof covered by Change Order, if needed.

## **ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES**

### *7.01 Supervision and Superintendence*

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

### *7.02 Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.
- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

### *7.03 Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.
- B. All materials and equipment incorporated into the Work shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and

guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

- C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

#### 7.04 "Or Equals"

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment, or items from other proposed suppliers under the circumstances described below.
  - 1. If Engineer in its sole discretion determines that an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer shall deem it an "or equal" item. For the purposes of this paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if:
    - a. in the exercise of reasonable judgment Engineer determines that:
      - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
      - 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
      - 3) it has a proven record of performance and availability of responsive service; and
      - 4) it is not objectionable to Owner.
    - b. Contractor certifies that, if approved and incorporated into the Work:
      - 1) there will be no increase in cost to the Owner or increase in Contract Times; and
      - 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.
- B. *Contractor's Expense:* Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.
- C. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal", which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.

- D. *Effect of Engineer's Determination:* Neither approval nor denial of an "or-equal" request shall result in any change in Contract Price. The Engineer's denial of an "or-equal" request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents.
- E. *Treatment as a Substitution Request:* If Engineer determines that an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer considered the proposed item as a substitute pursuant to Paragraph 7.05.

#### 7.05 *Substitutes*

- A. Unless the specification or description of an item of material or equipment required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment under the circumstances described below. To the extent possible such requests shall be made before commencement of related construction at the Site.
  - 1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of material or equipment from anyone other than Contractor.
  - 2. The requirements for review by Engineer will be as set forth in Paragraph 7.05.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.
  - 3. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:
    - a. shall certify that the proposed substitute item will:
      - 1) perform adequately the functions and achieve the results called for by the general design,
      - 2) be similar in substance to that specified, and
      - 3) be suited to the same use as that specified.
    - b. will state:
      - 1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times,
      - 2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and
      - 3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.
    - c. will identify:
      - 1) all variations of the proposed substitute item from that specified, and

- 2) available engineering, sales, maintenance, repair, and replacement services.
  - d. shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.
- B. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.
  - C. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
  - D. *Reimbursement of Engineer's Cost:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.
  - E. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute at Contractor's expense.
  - F. *Effect of Engineer's Determination:* If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.05.D, by timely submittal of a Change Proposal.

#### 7.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner.
- B. Contractor shall retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of designated parts of the Work if required by the Contract to do so.
- C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against which Contractor has reasonable objection.
- D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable, during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within five days.

- E. Owner may require the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors, Suppliers, or other individuals or entities for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor, Supplier, or other individual or entity so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity.
- F. If Owner requires the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, or both, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.
- G. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.
- H. On a monthly basis Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.
- I. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions.
- J. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors, Suppliers, and all other individuals or entities performing or furnishing any of the Work.
- K. Contractor shall restrict all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed herein.
- L. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- M. All Work performed for Contractor by a Subcontractor or Supplier shall be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer.
- N. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor on account of Work performed for Contractor by the particular Subcontractor or Supplier.

- O. Nothing in the Contract Documents:
1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier, or other individual or entity; nor
  2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

7.07 *Patent Fees and Royalties*

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.
- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

7.08 *Permits*

- A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work

#### 7.09 *Taxes*

- A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

#### 7.10 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work or other action. It shall not be Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.
- C. Owner or Contractor may give notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

#### 7.11 *Record Documents*

- A. Contractor shall maintain in a safe place at the Site one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved Shop Drawings. Contractor shall keep such record documents in good order and annotate them to show changes made during construction. These record documents, together with all approved Samples, will be available to Engineer for reference. Upon completion of the Work, Contractor shall deliver these record documents to Engineer.

#### 7.12 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:
  - 1. all persons on the Site or who may be affected by the Work;

2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
  3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify Owner; the owners of adjacent property, Underground Facilities, and other utilities; and other contractors and utility owners performing work at or adjacent to the Site, when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.
  - C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.
  - D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.
  - E. All damage, injury, or loss to any property referred to in Paragraph 7.12.A.2 or 7.12.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
  - F. Contractor's duties and responsibilities for safety and protection shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 15.06.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).
  - G. Contractor's duties and responsibilities for safety and protection shall resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

#### 7.13 *Safety Representative*

- A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

#### 7.14 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or



exchanged between or among employers at the Site in accordance with Laws or Regulations.

#### 7.15 *Emergencies*

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

#### 7.16 *Shop Drawings, Samples, and Other Submittals*

##### A. *Shop Drawing and Sample Submittal Requirements:*

1. Before submitting a Shop Drawing or Sample, Contractor shall have:
  - a. reviewed and coordinated the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
  - b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
  - c. determined and verified the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
  - d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.
2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that submittal, and that Contractor approves the submittal.
3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be set forth in a written communication separate from the Shop Drawings or Sample submittal; and, in addition, in the case of Shop Drawings by a specific notation made on each Shop Drawing submitted to Engineer for review and approval of each such variation.

- B. *Submittal Procedures for Shop Drawings and Samples:* Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals. Each submittal will be identified as Engineer may require.

##### 1. *Shop Drawings:*

- a. Contractor shall submit the number of copies required in the Specifications.
- b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to

provide and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.D.

2. *Samples:*
    - a. Contractor shall submit the number of Samples required in the Specifications.
    - b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 7.16.D.
  3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.
- C. *Other Submittals:* Contractor shall submit other submittals to Engineer in accordance with the accepted Schedule of Submittals, and pursuant to the applicable terms of the Specifications.
- D. *Engineer's Review:*
1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
  2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions or programs incident thereto.
  3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
  4. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Contract Documents in a Field Order.
  5. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 7.16.A and B.
  6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, shall not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
  7. Neither Engineer's receipt, review, acceptance or approval of a Shop Drawing, Sample, or other submittal shall result in such item becoming a Contract Document.

8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.D.4.

E. *Resubmittal Procedures:*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.
2. Contractor shall furnish required submittals with sufficient information and accuracy to obtain required approval of an item with no more than three submittals. Engineer will record Engineer's time for reviewing a fourth or subsequent submittal of a Shop Drawings, sample, or other item requiring approval, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges.
3. If Contractor requests a change of a previously approved submittal item, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

7.17 *Contractor's General Warranty and Guarantee*

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on Contractor's warranty and guarantee.
- B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
  1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
  2. normal wear and tear under normal usage.
- C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:
  1. observations by Engineer;
  2. recommendation by Engineer or payment by Owner of any progress or final payment;
  3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
  4. use or occupancy of the Work or any part thereof by Owner;
  5. any review and approval of a Shop Drawing or Sample submittal;
  6. the issuance of a notice of acceptability by Engineer;
  7. any inspection, test, or approval by others; or
  8. any correction of defective Work by Owner.

- D. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract shall govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

#### 7.18 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable.
- B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.
- C. The indemnification obligations of Contractor under Paragraph 7.18.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:
  - 1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
  - 2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

#### 7.19 *Delegation of Professional Design Services*

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable Laws and Regulations.
- B. If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, 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 Engineer.

- C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.
- D. Pursuant to this paragraph, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 7.16.D.1.
- E. Contractor shall not be responsible for the adequacy of the performance or design criteria specified by Owner or Engineer.

## **ARTICLE 8 – OTHER WORK AT THE SITE**

### **8.01 *Other Work***

- A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.
- B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any utility work at or adjacent to the Site, Owner shall provide such information to Contractor.
- C. Contractor shall afford each other contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.
- D. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 8, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

## 8.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:
  - 1. the identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;
  - 2. an itemization of the specific matters to be covered by such authority and responsibility; and
  - 3. the extent of such authority and responsibilities.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

## 8.03 *Legal Relationships*

- A. If, in the course of performing other work at or adjacent to the Site for Owner, the Owner's employees, any other contractor working for Owner, or any utility owner for whom the Owner is responsible causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment shall take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract. When applicable, any such equitable adjustment in Contract Price shall be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due to Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this paragraph.
- C. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due to Contractor.

- D. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

## **ARTICLE 9 – OWNER'S RESPONSIBILITIES**

### **9.01 *Communications to Contractor***

- A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

### **9.02 *Replacement of Engineer***

- A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer's status under the Contract Documents shall be that of the former Engineer.

### **9.03 *Furnish Data***

- A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

### **9.04 *Pay When Due***

- A. Owner shall make payments to Contractor when they are due as provided in the Agreement.

### **9.05 *Lands and Easements; Reports, Tests, and Drawings***

- A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.
- B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.
- C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

### **9.06 *Insurance***

- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.

### **9.07 *Change Orders***

- A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.

9.08 *Inspections, Tests, and Approvals*

- A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.

9.09 *Limitations on Owner's Responsibilities*

- A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

9.10 *Undisclosed Hazardous Environmental Condition*

- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.

9.11 *Evidence of Financial Arrangements*

- A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents (including obligations under proposed changes in the Work).

9.12 *Safety Programs*

- A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.
- B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

**ARTICLE 10 – ENGINEER'S STATUS DURING CONSTRUCTION**

10.01 *Owner's Representative*

- A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract.

10.02 *Visits to Site*

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.
- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 10.08. Particularly, but without limitation, during



or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 *Project Representative*

- A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 10.08. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent, or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

10.04 *Rejecting Defective Work*

- A. Engineer has the authority to reject Work in accordance with Article 14.

10.05 *Shop Drawings, Change Orders and Payments*

- A. Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, are set forth in Paragraph 7.16.
- B. Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, are set forth in Paragraph 7.19.
- C. Engineer's authority as to Change Orders is set forth in Article 11.
- D. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.06 *Determinations for Unit Price Work*

- A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

10.07 *Decisions on Requirements of Contract Documents and Acceptability of Work*

- A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.08 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 15.06.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.
- E. The limitations upon authority and responsibility set forth in this Paragraph 10.08 shall also apply to the Resident Project Representative, if any.

#### 10.09 *Compliance with Safety Program*

- A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs (if any) of which Engineer has been informed.

### **ARTICLE 11 – AMENDING THE CONTRACT DOCUMENTS; CHANGES IN THE WORK**

#### 11.01 *Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
  - 1. *Change Orders:*
    - a. If an amendment or supplement to the Contract Documents includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order. A Change Order also may be used to establish amendments and supplements of the Contract Documents that do not affect the Contract Price or Contract Times.
    - b. Owner and Contractor may amend those terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, without the recommendation of the Engineer. Such an amendment shall be set forth in a Change Order.
  - 2. *Work Change Directives:* A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.04 regarding change of Contract Price. Contractor must submit any Change Proposal seeking an

adjustment of the Contract Price or the Contract Times, or both, no later than 30 days after the completion of the Work set out in the Work Change Directive. Owner must submit any Claim seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 60 days after issuance of the Work Change Directive.

3. *Field Orders*: Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

#### 11.02 *Owner-Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Such changes shall be supported by Engineer's recommendation, to the extent the change involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters. Such changes may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work shall be performed under the applicable conditions of the Contract Documents. Nothing in this paragraph shall obligate Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

#### 11.03 *Unauthorized Changes in the Work*

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.

#### 11.04 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment of Contract Price shall comply with the provisions of Article 12.
- B. An adjustment in the Contract Price will be determined as follows:
  1. where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03); or
  2. where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.04.C.2); or
  3. where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on

the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.04.C).

- C. *Contractor's Fee*: When applicable, the Contractor's fee for overhead and profit shall be determined as follows:
1. a mutually acceptable fixed fee; or
  2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
    - a. for costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee shall be 15 percent;
    - b. for costs incurred under Paragraph 13.01.B.3, the Contractor's fee shall be five percent;
    - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.04.C.2.a and 11.04.C.2.b is that the Contractor's fee shall be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.A.1 and 13.01.A.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of five percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted work the maximum total fee to be paid by Owner shall be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the work;
    - d. no fee shall be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;
    - e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and
    - f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 11.04.C.2.a through 11.04.C.2.e, inclusive.

#### 11.05 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment in the Contract Times shall comply with the provisions of Article 12.
- B. An adjustment of the Contract Times shall be subject to the limitations set forth in Paragraph 4.05, concerning delays in Contractor's progress.

#### 11.06 *Change Proposals*

- A. Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; appeal an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; contest a set-off against payment due; or seek other relief under

the Contract. The Change Proposal shall specify any proposed change in Contract Times or Contract Price, or both, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents.

1. *Procedures:* Contractor shall submit each Change Proposal to Engineer promptly (but in no event later than 30 days) after the start of the event giving rise thereto, or after such initial decision. The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal. The supporting data shall be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event. Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal.
  2. *Engineer's Action:* Engineer will review each Change Proposal and, within 30 days after receipt of the Contractor's supporting data, either deny the Change Proposal in whole, approve it in whole, or deny it in part and approve it in part. Such actions shall be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.
  3. *Binding Decision:* Engineer's decision will be final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.
- B. *Resolution of Certain Change Proposals:* If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice shall be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.

#### 11.07 Execution of Change Orders

- A. Owner and Contractor shall execute appropriate Change Orders covering:
1. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;
  2. changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;
  3. changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.02, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters; and
  4. changes in the Contract Price or Contract Times, or other changes, which embody the substance of any final and binding results under Paragraph 11.06, or Article 12.

- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of this Paragraph 11.07, it shall be deemed to be of full force and effect, as if fully executed.

#### 11.08 *Notification to Surety*

- A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

### **ARTICLE 12 – CLAIMS**

#### 12.01 *Claims*

- A. *Claims Process:* The following disputes between Owner and Contractor shall be submitted to the Claims process set forth in this Article:
  - 1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;
  - 2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents; and
  - 3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters.
- B. *Submittal of Claim:* The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim shall rest with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, or both, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.
- C. *Review and Resolution:* The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim shall be stated in writing and submitted to the other party, with a copy to Engineer.
- D. *Mediation:*
  - 1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate shall stay the Claim submittal and response process.
  - 2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process shall resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim

submittal and decision process shall resume as of the date of the conclusion of the mediation, as determined by the mediator.

3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.
- E. *Partial Approval*: If the party receiving a Claim approves the Claim in part and denies it in part, such action shall be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.
- F. *Denial of Claim*: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim shall be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.
- G. *Final and Binding Results*: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim shall be incorporated in a Change Order to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

## **ARTICLE 13 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK**

### 13.01 *Cost of the Work*

- A. *Purposes for Determination of Cost of the Work*: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:
  1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or
  2. To determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.
- B. *Costs Included*: Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 13.01.C, and shall include only the following items:
  1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, and vacation and holiday pay applicable

thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.
3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.
4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.
5. Supplemental costs including the following:
  - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
  - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
  - c. Rentals of all construction equipment and machinery, and the parts thereof, whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
  - d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
  - e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
  - f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 6.05), provided such losses and damages have resulted from causes



other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.

- g. The cost of utilities, fuel, and sanitary facilities at the Site.
- h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.
- i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.

C. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:

- 1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.
- 2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
- 3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
- 4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
- 5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.

D. *Contractor's Fee:* When the Work as a whole is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 11.04.C.

E. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

## 13.02 Allowances

- A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

- B. *Cash Allowances*: Contractor agrees that:
  - 1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
  - 2. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.
- C. *Contingency Allowance*: Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

### 13.03 *Unit Price Work*

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of the following paragraph.
- E. Within 30 days of Engineer's written decision under the preceding paragraph, Contractor may submit a Change Proposal, or Owner may file a Claim, seeking an adjustment in the Contract Price if:
  - 1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement;
  - 2. there is no corresponding adjustment with respect to any other item of Work; and
  - 3. Contractor believes that it is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price, and the parties are unable to agree as to the amount of any such increase or decrease.

## ARTICLE 14 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

### 14.01 *Access to Work*

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction will have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply therewith as applicable.

### 14.02 *Tests, Inspections, and Approvals*

- A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.
- B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work shall be governed by the provisions of Paragraph 14.05.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.
- D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:
  - 1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;
  - 2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
  - 3. by manufacturers of equipment furnished under the Contract Documents;
  - 4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
  - 5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests shall be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

- E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.
- F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering shall be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to

cover the same and Engineer had not acted with reasonable promptness in response to such notice.

#### 14.03 *Defective Work*

- A. *Contractor's Obligation:* It is Contractor's obligation to assure that the Work is not defective.
- B. *Engineer's Authority:* Engineer has the authority to determine whether Work is defective, and to reject defective Work.
- C. *Notice of Defects:* Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.
- D. *Correction, or Removal and Replacement:* Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.
- E. *Preservation of Warranties:* When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.
- F. *Costs and Damages:* In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs, losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

#### 14.04 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work shall be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

#### 14.05 *Uncovering Work*

- A. Engineer has the authority to require additional inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.

- B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.
- C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.
  - 1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.
  - 2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

#### 14.06 *Owner May Stop the Work*

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

#### 14.07 *Owner May Correct Defective Work*

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, then Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.
- C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will

include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

## **ARTICLE 15 – PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD**

### **15.01 Progress Payments**

- A. *Basis for Progress Payments:* The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.
- B. *Applications for Payments:*
1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens, and evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.
  2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
  3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.
- C. *Review of Applications:*
1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
  2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

- a. the Work has progressed to the point indicated;
  - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and
  - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
- a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or
  - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
- a. to supervise, direct, or control the Work, or
  - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
  - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
  - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid on account of the Contract Price, or
  - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.
6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:
- a. the Work is defective, requiring correction or replacement;
  - b. the Contract Price has been reduced by Change Orders;
  - c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
  - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or

- e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. *Payment Becomes Due:*

- 1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.

E. *Reductions in Payment by Owner:*

- 1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
  - a. claims have been made against Owner on account of Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages on account of Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;
  - b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
  - c. Contractor has failed to provide and maintain required bonds or insurance;
  - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
  - e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
  - f. the Work is defective, requiring correction or replacement;
  - g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
  - h. the Contract Price has been reduced by Change Orders;
  - i. an event that would constitute a default by Contractor and therefore justify a termination for cause has occurred;
  - j. liquidated damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;
  - k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
  - l. there are other items entitling Owner to a set off against the amount recommended.
- 2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount



remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed shall be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.

3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 15.01.C.1 and subject to interest as provided in the Agreement.

#### 15.02 *Contractor's Warranty of Title*

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than seven days after the time of payment by Owner.

#### 15.03 *Substantial Completion*

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.
- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which shall fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.
- D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.

- E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.
- F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

#### 15.04 *Partial Use or Occupancy*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:
  - 1. At any time Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through E for that part of the Work.
  - 2. At any time Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
  - 3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
  - 4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.05 regarding builder's risk or other property insurance.

#### 15.05 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

#### 15.06 *Final Payment*

- A. *Application for Payment:*
  - 1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of

inspection, annotated record documents (as provided in Paragraph 7.11), and other documents, Contractor may make application for final payment.

2. The final Application for Payment shall be accompanied (except as previously delivered) by:
  - a. all documentation called for in the Contract Documents;
  - b. consent of the surety, if any, to final payment;
  - c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.
  - d. a list of all disputes that Contractor believes are unsettled; and
  - e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.

**B. *Engineer's Review of Application and Acceptance:***

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the Application for Payment to Owner for payment. Such recommendation shall account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to the provisions of Paragraph 15.07. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

**C. *Completion of Work:*** The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment.

**D. *Payment Becomes Due:*** Thirty days after the presentation to Owner of the final Application for Payment and accompanying documentation, the amount recommended by Engineer (less any further sum Owner is entitled to set off against Engineer's recommendation,

including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions above with respect to progress payments) will become due and shall be paid by Owner to Contractor.

#### 15.07 *Waiver of Claims*

- A. The making of final payment will not constitute a waiver by Owner of claims or rights against Contractor. Owner expressly reserves claims and rights arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 15.05, from Contractor's failure to comply with the Contract Documents or the terms of any special guarantees specified therein, from outstanding Claims by Owner, or from Contractor's continuing obligations under the Contract Documents.
- B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted or appealed under the provisions of Article 17.

#### 15.08 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents, or by any specific provision of the Contract Documents), any Work is found to be defective, or if the repair of any damages to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas used by Contractor as permitted by Laws and Regulations, is found to be defective, then Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
  - 1. correct the defective repairs to the Site or such other adjacent areas;
  - 2. correct such defective Work;
  - 3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
  - 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting therefrom.
- B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others).
- C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

- E. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

## **ARTICLE 16 – SUSPENSION OF WORK AND TERMINATION**

### **16.01 *Owner May Suspend Work***

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension. Any Change Proposal seeking such adjustments shall be submitted no later than 30 days after the date fixed for resumption of Work.

### **16.02 *Owner May Terminate for Cause***

- A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:
  - 1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule);
  - 2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
  - 3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or
  - 4. Contractor's repeated disregard of the authority of Owner or Engineer.
- B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) ten days written notice that Owner is considering a declaration that Contractor is in default and termination of the contract, Owner may proceed to:
  - 1. declare Contractor to be in default, and give Contractor (and any surety) notice that the Contract is terminated; and
  - 2. enforce the rights available to Owner under any applicable performance bond.
- C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.
- D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within seven days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses,

and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

- F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.
- G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond shall govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

#### 16.03 *Owner May Terminate For Convenience*

- A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
  - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
  - 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and
  - 3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor shall not be paid on account of loss of anticipated overhead, profits, or revenue, or other economic loss arising out of or resulting from such termination.

#### 16.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.
- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for

expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

## **ARTICLE 17 – FINAL RESOLUTION OF DISPUTES**

### **17.01 *Methods and Procedures***

- A. *Disputes Subject to Final Resolution:* The following disputed matters are subject to final resolution under the provisions of this Article:
  - 1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full; and
  - 2. Disputes between Owner and Contractor concerning the Work or obligations under the Contract Documents, and arising after final payment has been made.
- B. *Final Resolution of Disputes:* For any dispute subject to resolution under this Article, Owner or Contractor may:
  - 1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions; or
  - 2. agree with the other party to submit the dispute to another dispute resolution process; or
  - 3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

## **ARTICLE 18 – MISCELLANEOUS**

### **18.01 *Giving Notice***

- A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:
  - 1. delivered in person, by a commercial courier service or otherwise, to the individual or to a member of the firm or to an officer of the corporation for which it is intended; or
  - 2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the sender of the notice.

### **18.02 *Computation of Times***

- A. When any period of time is referred to in the Contract by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

### **18.03 *Cumulative Remedies***

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

18.04 *Limitation of Damages*

- A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 *No Waiver*

- A. A party's non-enforcement of any provision shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Contract.

18.06 *Survival of Obligations*

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract, as well as all continuing obligations indicated in the Contract, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

18.07 *Controlling Law*

- A. This Contract is to be governed by the law of the state in which the Project is located.

18.08 *Headings*

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.



## SECTION 00800

### SUPPLEMENTARY CONDITIONS

The following supplements modify the *EJCDC C-700 Standard General Conditions of the Construction Contract, 2013 Edition*. Where a portion of the General Conditions is modified or deleted by these Supplementary Conditions, the unaltered portions of the General Conditions shall remain in effect.

#### ARTICLE 2 – PRELIMINARY MATTERS

**SC-2.01 Delete Paragraphs 2.01 B. and C. in their entirety and insert the following in their place:**

- B. Evidence of Contractor's Insurance: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner copies of the policies of insurance (including all endorsements, and identification of applicable self-insured retentions and deductibles) required to be provided by Contractor in Article 6. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.**

#### ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

**SC 5.03 Delete Paragraphs 5.03.A and 5.03.B in their entirety and insert the following:**

- A. No reports of explorations or tests of subsurface conditions at or adjacent to the Site, or drawings of physical conditions relating to existing surface or subsurface structures at the Site, are known to Owner.**

**SC 5.06 Delete Paragraphs 5.06.A and 5.06.B in their entirety and insert the following:**

- B. A. No reports or drawings related to Hazardous Environmental Conditions at the Site are known to Owner.**

C. B. Not Used.

**ARTICLE 6 – BONDS AND INSURANCE**

**SC 6.03 Add the following new paragraph immediately after Paragraph 6.03.J:**

**K. The limits of liability for the insurance required by Paragraph 6.03 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:**

**1. Workers' Compensation, and related coverages under Paragraphs 6.03.A.1 and A.2 of the General Conditions:**

<b>State:</b>	<u>Statutory</u>
<b>Federal, if applicable (e.g., Longshoreman's):</b>	<u>Statutory</u>
<b>Jones Act coverage, if applicable:</b>	
<b>Bodily injury by accident, each accident</b>	<b>\$ <u>100,000</u></b>
<b>Bodily injury by disease, aggregate</b>	<b>\$ <u>100,000</u></b>

**Employer's Liability:**

<b>Bodily injury, each accident</b>	<b>\$ <u>100,000</u></b>
<b>Bodily injury by disease, each employee</b>	<b>\$ <u>100,000</u></b>
<b>Bodily injury/disease aggregate</b>	<b>\$ <u>100,000</u></b>

**For work performed in monopolistic states, stop-gap liability coverage shall be endorsed to either the worker's compensation or commercial general liability policy with a minimum limit of:**

	<b>\$ <u>100,000</u></b>
--	--------------------------

**Foreign voluntary worker compensation** Statutory

**2. Contractor's Commercial General Liability under Paragraphs 6.03.B and 6.03.C of the General Conditions:**

<b>General Aggregate</b>	<b>\$ <u>2,000,000</u></b>
<b>Products - Completed Operations Aggregate</b>	<b>\$ <u>2,000,000</u></b>

**Personal and Advertising Injury** \$ 2,000,000

**Each Occurrence (Bodily Injury and Property Damage)** \$ 2,000,000

**3. Automobile Liability under Paragraph 6.03.D. of the General Conditions:**

**Bodily Injury:**

**Each person** \$ 500,000

**Each accident** \$ 1,000,000

**Property Damage:**

**Each accident** \$ 250,000

*[or]*

**Combined Single Limit of** \$ 500,000

**4. Excess or Umbrella Liability:**

**Per Occurrence** \$ Not applicable

**General Aggregate** \$ Not applicable

*[See Paragraph 6.03.E of the General Conditions.]*

*[If Owner revises the standard terms by deleting the requirement that Contractor provide Excess or Umbrella liability insurance, then Owner should consider requiring (in SC-6.03.K.2) that “The aggregate limits under SC-6.03.K.2 (Commercial General Liability) be maintained fully available for this Contract by obtaining and maintaining a Designated Construction Project General Aggregate Limit endorsement, or equivalent.”]*

**5. Contractor’s Pollution Liability:**

**If box is checked, Contractor is not required to provide Contractor’s Pollution Liability insurance under this Contract**

**6. Additional Insureds: In addition to Owner and Engineer, include as additional insureds the following: [Here list by name (not category, role, or classification) other persons or entities to be included on the**

*commercial general liability, automobile liability, umbrella or excess, and pollution liability policies as additional insureds.]*

**No additional insureds are added.**

**7. Contractor's Professional Liability:**

<b>Each Claim</b>	<b>\$ <u>Not applicable</u></b>
<b>Annual Aggregate</b>	<b>\$ <u>Not applicable</u></b>

*[See Paragraph 6.03.H of the General Conditions.]*

*[Contractor's pollution liability and contractor's professional liability policies are sometimes sold as a hybrid or combined policy. If after receiving the advice of its risk managers the Owner concludes that it is an acceptable alternative for Contractor to provide such a combination policy, this should be stated here, together with the required policy limits for a combination policy.]*

***Contractor is not providing or furnishing professional services.***

**SC-6.05. Add the following to the list of requirements in Paragraph 6.05.A, as a numbered item:**

**14. be subject to a deductible amount of no more than [\$500] for direct physical loss in any one occurrence.**

**ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES**

**SC-7.12 Insert the following after the second sentence of Paragraph 7.12.C:**

**The following Owner safety programs are applicable to the Work:**

“Safety and Health Regulations for Construction” and subsequent amendments, promulgated by the Department of Labor under the Occupational and Health Act of 1970 (PL-91-596) and under Section 107 of the Contract Work Hours and Safety Standards Act (PL-91054). These regulations are identified as Chapter XVII of Title 29, Code of Federal Regulations (CFS), Part 1926 (formerly Chapter XIII of Title 29, CFR, Part 1518).”

**END OF SUPPLEMENTARY CONDITIONS**

# PERMEABLE ARTICULATING CONCRETE BLOCK (P-ACB) SPECIFICATION FOR PARKING LOTS, DRIVEWAYS, ALLEYS, AND ROADWAYS

## PART 1: GENERAL

### A. Definitions

Contract Documents – the Contract Documents establish the rights and obligations of the parties and include the Agreement, Addenda (which pertain to the Contract Documents), CONTRACTOR’s Bid (including documentation accompanying the Bid and any post Bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Agreement, the Notice to Proceed, the Bonds, the General conditions, the Supplementary Conditions, the Specifications and the Drawings as the same are more specifically identified in the Agreement, together with all Written Amendments, Change Orders, Work Change Directives, Field Orders, and ENGINEER’s written interpretations and clarifications issued on or after the Effective Date of the Agreement. Approved Shop Drawings and the reports of subsurface and physical conditions are not Contract Documents. Only printed hard copies of the items listed in this paragraph are Contract Documents. Files in electronic media format, of text, data, graphics, and the like that may be furnished by OWNER to CONTRACTOR are not Contract Documents.

Contractor – The individual or entity with whom OWNER has entered into the Agreement.

Drawings – That part of the Contract Documents prepared or approved by the ENGINEER which graphically shows the scope, extent, and character of the Work to be performed by the CONTRACTOR. Shop Drawings and other CONTRACTOR submittals are not Drawings as so defined.

Engineer – The individual or entity named as such in the Agreement.

Owner – The individual, entity, public body, or authority with whom the CONTRACTOR has entered into the Agreement and for whom the Work is to be performed.

Project – The total construction of which the Work to be performed under the Contract Documents may be the whole, or part as may be indicated elsewhere in the Contract Documents.

Resident Project Representative – The authorized representative of the ENGINEER who may be assigned to the Site or any part thereof.

Samples – Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portions of the Work will be judged.

Shop Drawings – All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled for the CONTRACTOR and submitted by the CONTRACTOR to illustrate some portion of the Work.

Site – Lands or areas indicated in the Contract Documents as being furnished by the OWNER upon which the Work is to be performed, including the rights-of-way and easements for access thereto, and such other lands furnished by OWNER which are designated for the use of the CONTRACTOR.

Specifications – That part of the Contract Documents consisting of written technical descriptions of materials, equipment, systems, standards, and workmanship applied to the Work and certain administrative details applicable there to.

Subcontractor – An individual or entity having a direct contract with CONTRACTOR or with any other Subcontractor for the performance of a part of the Work at the Site.

Supplier – A manufacturer, fabricator, supplier, distributor, material man, or vendor having a direct contract with CONTRACTOR or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by the CONTRACTOR or Subcontractor.

Work – The entire completed construction of the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction and furnishing, installing, and incorporating all materials and equipment into such construction, as required by the Contract Documents.

## **B. Scope of Work**

The CONTRACTOR shall furnish all labor, materials, equipment, and incidentals required and perform all operations in connection with the installation of the Permeable Articulating Concrete Block (P-ACB) in accordance with the lines, grades, design, and dimensions shown on the Contract Drawings and as specified herein.

## **C. Submittal**

The CONTRACTOR shall submit to the engineer all manufacturer's performance research results and calculations in support of the permeable articulating concrete blocks P-ACB system and geotextile proposed for use.

The CONTRACTOR shall furnish to the engineer all manufacturer's specifications, literature, and installation drawings of the P-ACB.

## **D. Preconstruction Conference**

Within two weeks prior to the installation of the P-ACB, a conference attended by CONTRACTOR, ENGINEER, Supplier, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

## PART 2: PRODUCTS

### A. General

Permeable Articulating Concrete Blocks (P-ACB) shall be premanufactured of individual concrete blocks with specific stormwater runoff and storage capacities. Blocks shall be hand-placed or mechanically installed with the use of a clamping or suction lifting device.

Individual blocks in the P-ACB shall be staggered, beveled, and interlocked for enhanced stability. The blocks shall be constructed of closed cell blocks with an arched storage chamber for additional stormwater runoff in locations shown on the contract drawings and without an arched storage chamber in locations as shown on the contract drawings. Each row of blocks shall be laterally offset by one-half block width from the adjacent row so that any given block is interlocked to four other blocks (two in the row above and two in the row below). Six adjacent blocks shall also surround each block.

Each block shall incorporate interlocking surfaces that prevent lateral displacement of the blocks. The interlocking surfaces shall not protrude beyond the perimeter of the blocks to such an extent that they reduce the flexibility or articulating capability of the system. Backfilling of the joints between the P-ACB with rock chips or sand is not required and shall not be done or included in the Work.

**Infiltration Performance.** The P-ACB will only be accepted when accompanied by documented third party infiltration performance characteristics based on ASTM C1701/C1701M-09, or C1781. The infiltration rate shall be no less than 1,000 inches per hour on an outdoor working surface, with typical base material utilized for the test.

**Structural Performance.** The design of the P-ACB shall be capable of supporting AASHTO H-25 and HS-25 truck loading. The blocks shall be analyzed as unreinforced concrete arches supporting a uniform truck tire load with impact per AASHTO standards. The subgrade soil, geosynthetic and base preparation for the P-ACB shall be properly designed by a Registered Professional Engineer and inspected by the ENGINEER or the Resident Project Representative during and following the installation of the Work.

### B. Cellular Concrete Blocks

#### **Materials**

Cementitious Materials - Materials shall conform to the following applicable ASTM specifications:

Portland Cements - Specification C 150, for Portland Cement.

Blended Cements - Specification C 595, for Blended Hydraulic Cements.

Hydrated Lime Types - Specification C 207, for Hydrated Lime Types.

Pozzolans - Specifications C 618, for Fly Ash and Raw or Calcinated Natural

Pozzolans for use in Portland Cement Concrete.

Aggregates shall conform to the following ASTM specifications.

Normal Weight - Specification C 33, for Concrete Aggregates.

### Visual Inspection

All units shall be sound and free of defects that would interfere with the proper placing of the unit or impair the strength or permanence of the construction. Surface cracks incidental to the usual methods of manufacture, or surface chipping resulting from customary methods of handling in shipment and delivery, shall not be deemed grounds for rejection. Cracks exceeding 0.25 inches in width and/or 1.0 inch in depth shall be deemed grounds for rejection.

### Physical Requirements

At the time of delivery to the work site, the units shall conform to the physical requirements prescribed in Table 1, Physical Characteristics.

**TABLE 1: PHYSICAL CHARACTERISTICS**

Item	Description	Values
Dimensions	Length x Width x Height	12" x 12" x 5.65" (+/- 1/8")
Compressive Strength	ASTM D-6684 / C-140	Avg. of Three: 4,000 psi min. Individual units: 3,500 psi min.
Block Weight		Arched Block: 45-50 lbs/sf Solid Block: 55-60 lbs/sf
Loading Capabilities	Truck Load Traffic Rating	AASHTO H-20, HS-20, HS-25
Joint Filler Between Blocks	Material Used	NONE Required
Percent Open Space		Surface: 7% Storage: 20%
Water Absorption (%) Density (lbs/cf)	ASTM D-6684 Table 1 / ASTM C-140	9.1% Avg. of Three, 11.7% Individual 130 Avg of Three, 125 Individual
Storage Capacity	Above Aggregate Within Arch	0.0833 cf/block
Post-Installation, Verified Surface Infiltration Rate	ASTM C1701/C1701M-09 ASTM C1781	Ave of three tests: 1,000 inches/hour/sf (MIN. 3 tests)

### Sampling and Testing

The OWNER, ENGINEER or their authorized representative shall be accorded proper access to the manufacturer to inspect and obtain samples of the Permeable Articulating Concrete Blocks at the place of manufacture from lots ready for delivery.

### Expense of Tests

Additional testing and associated costs, other than that provided by the manufacturer, shall be borne by the CONTRACTOR.



## **Manufacturer**

The Permeable Articulating Concrete Blocks shall be PaveDrain® or pre-approved equal, as represented or distributed by:

### **LOCAL**

Jen-Hill Construction Materials  
PH. (615) 812-0530  
[trey@jenhill.com](mailto:trey@jenhill.com)  
[www.jenhill.com](http://www.jenhill.com)

### **NATIONAL**

PaveDrain, LLC  
PH. (888) 575-5339  
[info@pavedrain.com](mailto:info@pavedrain.com)  
[www.pavedrain.com](http://www.pavedrain.com)

*"Or-Equal" Items:* If in ENGINEER's sole discretion an item of material or equipment proposed by CONTRACTOR is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by ENGINEER as an "or-equal" item, in which case review and approval of the proposed item may, in ENGINEER's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. The cost incurred by the ENGINEER of analysis of the proposed "or-equal" product will be the CONTRACTOR'S responsibility. A proposed item of material or equipment will be considered functionally equal to an item so named if:

- a. in the exercise of reasonable judgment ENGINEER determines that: (i) it is at least equal in quality, durability, appearance, strength, and design characteristics; (ii) it will reliably perform at least equally well the function imposed by the design concept of the completed Project as a functioning whole, and;
- b. CONTRACTOR certifies that: (i) there is no increase in cost to the OWNER; and (ii) it will conform substantially, even with deviations, to the detailed requirements of the item named in the Contract Documents.

## **PART 3: FOUNDATION PREPARATION AND BLOCK INSTALLATION**

### **A. Foundation and Preparation**

**General.** Areas on which permeable articulating concrete blocks are to be placed shall be constructed to the lines and grades shown on the Drawings and to the tolerances specified in the Contract Documents. Any proposed changes shall be reviewed and approved by the ENGINEER.

**References.** Tennessee Department of Transportation Standard Specifications for Road and Bridge Construction, current edition.

**Subgrade.** Unless required on the Drawings, compaction of underlying subgrade soil shall be avoided or minimized in order to encourage infiltration of stormwater. A Geotechnical Engineer should be consulted to determine the CBR values of the subgrade prior to the installation of the subbase materials and geotextile stabilizing fabrics and grids. CBR value of 1 is basis for pavement section design. Geotechnical engineer will perform testing after CONTRACTOR has demolished the first lane of Walnut Drive for verification of the CBR value. CONTRACTOR to allow access to Geotechnical engineer and necessary equipment for the sampling.

**Geotextile Separator or Geogrid Stabilization.** Monofilament or multifilament geotextile, that include Mirafi RS580i or its equivalent, or other geotextile material as shown on the Drawings shall be installed on the bottom and sides of the excavation to prevent in – situ soil contamination of the clean aggregate subbase. A geogrid will be required for subbase stabilization, but is not recommended on the sides of the aggregate subbase to separate the in-situ soils from the clean subbase aggregate.

**Aggregate Subbase.** If more than 6” of base aggregate is required, as shown on the Drawings, only the top 4-6” shall be AASHTO #57 aggregate. The aggregate shall be clean, angular on all sides with no less than 90% fractured faces and should be washed with less than 2% passing the No. 200 sieve. Do not use rounded river gravel or fractured river gravel for any application. As shown on the Drawings, this is the leveling course directly beneath the P-ACB blocks. Additional aggregate depth shall consist of either AASHTO #2 or #3 clean, angular on all sides aggregate, or as shown on Drawings.

**Crushed Aggregate Base Course.** Follow State Specifications

**Compaction.** Standard compaction.

95 percent maximum density determined by Modified Proctor.

Allow ENGINEER to inspect prepared base course and to witness proof roll test by a fully loaded dump truck. Reconstruct where deflection is greater than ½ inch.

Allowable deviation from design grade: ½ inch.

The base course shall be firm and non-yielding, compacted until it does not creep or weave in front of the roller or compacting vehicle.

The aggregate bedding layer shall be compacted to a smooth plane surface to ensure intimate and positive contact is achieved between the legs of the permeable articulating concrete blocks and the compacted aggregate subbase layer and the Geogrid Separator.

AASHTO #2 or #3 subbase aggregate shall be compacted in 6-8” lifts with a roller-compactor. The AASHTO #57 aggregate leveling subbase shall be rolled and then compacted with a minimum 10,000 psi plate compactor in both the perpendicular and parallel directions in the area of coverage. The CONTRACTOR shall thoroughly compact a 2” layer of the AASHTO #57 Aggregate *INTO* AASHTO #2 or #3 aggregate.

**Geogrid Separator.** Install Miragrid BXG110, Tensar BX-1100, (or equal) geogrid separator directly on top of the compacted leveling course. The geogrid separator may be installed prior to the compaction of the leveling course. This will create a “snowshoe” effect and minimize damage from foot traffic prior to placement of the P-ACB.

**Inspection.** Immediately prior to placing the P-ACB the prepared area shall be inspected by the ENGINEER or Resident Project Representative, the OWNER’s representative, and or by the manufacturer's representative. No blocks shall be placed thereon until that area has been approved by the ENGINEER.

## **B. Placement of Permeable Articulating Concrete Blocks**

**General.** Permeable articulating concrete blocks shall be constructed within the specified lines and grades shown on the Drawings.

**Placement.** The P-ACB shall be placed on the geogrid separator so as to produce a smooth plane surface. No individual block within the plane of placed articulating concrete mats shall protrude more than one-quarter of an inch unless otherwise specified by the ENGINEER.

**Consultation.** The Supplier will provide design and construction advice during the design and installation phases of the project. The Supplier will not supervise, direct, control, or have authority over or be responsible for CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work.

**Concrete Sealant.** A concrete sealant shall be applied once the P-ACB has been installed. A sealant is an economical way to assist the P-ACB System to resist the damage caused by salting of adjacent hardscape surfaces. It will also assist in maintaining the color of P-ACB System.

**Finishing.** The joints between the P-ACB shall NOT be backfilled with smaller aggregates or sand in order to function properly. The joints shall be left open. This includes following maintenance of the P-ACB. If the joints are filled with smaller aggregates or sand, the CONTRACTOR shall be responsible for the removal of the material and perform infiltration tests to assure that the P-ACB meets the minimum infiltration tests described in this specification.

**Post Installation Certification.** Upon completion of the P-ACB installation, the surface infiltration rate of the pavement shall be verified by ASTM C1701M-09 or ASTM C1781 to confirm the required infiltration rate of the pavement (per Table 1). If the system fails to perform as required in section Table 1 of this spec, it shall be removed and replaced at the supplier's cost.

## **C. Stormwater Monitoring System**

**Description.** This section describes providing, installing, provisioning, and startup of a maintenance free wireless stormwater management system used to monitor and measure stormwater in permeable pavement as shown in the plans. Data recorded by the device is transmitted wirelessly to a web-based dashboard at regular intervals. Acceptable products must conform to the following requirements.

**General.** The system shall have a pre-approval by a state Department of Natural Resources (DNR or DEP) for use in stormwater best management practices (BMPs). The pre-approval shall cover the use of the system for enhancing pollutant reductions and for determining quantity (volume) of water treated. The system shall be capable of computing stormwater runoff volumes and pollutant reductions whether water is treated by retention (residence time), filtration, or infiltration. The system shall be capable of incorporating real-time control technology for calibration and optimization of stormwater BMPs. The system shall be capable of monitoring BMPs individually and

for a period of time at least equal to the intended service life of the infrastructure being monitored. The system shall not interfere with applicable DNR or DEP technical standards. For infiltration-type BMPs specifically, the system shall not interfere with typical 24-hour (surface) and 72-hour (subsurface) draw down times from the end of a rainfall event.

The stormwater monitoring system shall use a cellular wireless technology for data transmission and must be 5G compatible. The cellular backhaul shall be a low bandwidth, low power type and utilize a standard micro- or nano-SIM (size 3FF and 4FF respectively). The ICCID of the SIM card and the IMEI of the cellular radio shall be recorded, documented, and provided to the owner.

The system shall be powered using durable solar panels using mono-crystalline solar cells and NiMH battery packs. The solar panels shall have a protective urethane encapsulation on the surface – glass should not be used anywhere on panel. The battery pack should use a NiMH battery chemistry and be sized for use with the solar panel. Charge controllers may be used but are not required. The battery packs should have built-in temperature protection which breaks the circuit to prevent battery pack overheating.

The transducer used to measure liquid level shall be composed entirely of stainless steel, grade 304 or 316. The transducer should utilize a mechanical float to make measurements of liquid level and shall be rated for freezing conditions. The transducer shall be plug-and-play with the system's micro controller unit (MCU), and have a watertight, locking-type, quick-disconnect connection to the MCU's enclosure. The transducer shall produce measurements to the nearest 1/4-inch with a range as indicated in the plans. The entire transducer must possess an IP 68 rating or better and shall be able to withstand being submerged in stormwater for long periods of time without damage. The transducer shall be able to produce accurate measurements when the liquid is populated with suspended solids, deicing salts, other dissolved chemicals, and other foreign debris common to stormwater (leaves, grit, etc.). The transducer shall not be degraded by common chemical compounds found in stormwater.

The MCU used shall comply with Part 15 of the Federal Communications Commission (FCC) Rules as a Class B device. It shall possess an FCC certification number and shall be displayed on the device enclosure as well as inside the enclosure. The entire system, as well as the MCU, transducer, and power system shall all be low voltage. All voltages within the system shall never exceed 24VDC.

The enclosures used for the system shall be UL listed and possess a minimum IP68 rating. It is expected that the enclosure will be subjected to normal environmental conditions found within the contiguous U.S. and shall be rated for those conditions. The enclosure shall be UV stabilized and rated for outdoor use. All penetrations into the enclosure for routing of wiring and cables shall be thoroughly sealed to maintain the water tightness and IP rating. The enclosure shall have brackets, mounting tabs, or other features to allow the device to be mounted in the location shown in the plans.

A web-based dashboard shall be available to view the data being generated by the system. The dashboard shall be accessible via a desktop computer and possess the ability for users to access and view historical data. Users shall be able to download historical data between selectable date ranges as a standard comma separated value (CSV) file

format and should be able to be readily opened with common spreadsheet software (e.g., OpenOffice Calc; Microsoft Excel). Several users from the owner's group shall be given access to the dashboard and each account shall be password protected. The manufacturer will be required to provide up to 20 hours of technical support at no cost to the owner for the warranty period. The manufacturer will be compensated for technical support beyond the 20-hour limit and any technical support requested beyond the warranty period.

**Manufacture:** The monitoring system shall be INFIL-Tracker or pre-approved equal, as manufactured by P4 Infrastructure, Inc. [www.p4.io](http://www.p4.io)

#### **D. Maintenance of Permeable Articulating Concrete Blocks**

**General.** The maintainability of the permeable articulating concrete blocks shall be based on a maintenance study of at least 24 months conducted by an independent or third-party representation.

- The study shall include multiple pre- and post-testing documentations in multiple locations of infiltration rates according to ASTM C1701 or a modified version of ASTM C1701 where the infiltration rate is recorded without a head pressure.
- Subsurface aggregate performance of pre- and post-testing shall also be documented over a 24-month period.
- The study shall show that following proper maintenance the original performance of the P-ACB can effectively be restored to at least 90% of its original performance.

**Inspection & Maintenance.** The manufacturer's representative of the P-ACB shall provide a minimum 36-month maintenance program, including a visual inspection report with photos and a recommended cleaning schedule with a Vacuum truck such as the Elgin® Whirlwind® or Megawind® or with the PaveDrain® Vac Head and associated combination sanitation vac truck. The visual inspection and recommended cleaning schedule shall be included with the price of the system.

Maintenance utilizing a combination sanitation vacuum truck with the PaveDrain vac head will be quoted and supplied by others based on the maintenance program.

Maintenance shall be required when either of the following are reached:

- a. The surface infiltration rates of more than 75% of the surface area fall below 10% of the rate required in Table 1.
- b. Surface ponding remains for 24 hours in an area larger than 10 square feet.

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**SITE LOCATION MAP**

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WALNUT DRIVE  
LAT: 36.1104°  
LONG: -86.8446°

LYNWOOD BLVD

WALNUT DRIVE

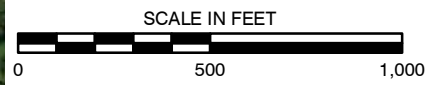
ABBOTT MARTIN RD

**LEGEND**

-  Project Location
-  Limits of Disturbance

**REFERENCE**

ESRI WORLD IMAGERY / ARCGIS MAP SERVICE:  
HTTP://GOTO.ARCGISONLINE.COM/MAPS/WORLD\_IMAGERY,  
ACCESSED 10/6/2023, IMAGERY DATE: 2004.



**Civil & Environmental Consultants, Inc.**  
117 Seaboard Lane Suite E-100 - Franklin, TN 37067  
615-333-7797 • 800-365-2324  
www.cecinc.com

CITY OF BELLE MEADE  
STORMWATER IMPROVEMENTS  
WALNUT DRIVE  
CITY OF BELLE MEADE, DAVIDSON COUNTY, TN

**SITE LOCATION MAP**

DRAWN BY:	CLG	CHECKED BY:	CLG	APPROVED BY:	SEC	FIGURE NO:	<b>1</b>
DATE:	10/06/2023	SCALE:	1" = 500'	PROJECT NO:	190-706		

P:\320-000\322-084-GIS\Maps\322-084\_SiteLocationMap.mxd 10/6/2023 13:35 PM (cauybaker)

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**CITY OF BELLE MEADE STORMWATER INFRASTRUCTURE  
IMPROVEMENTS – WALNUT DRIVE PLAN SET**

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**PURPOSE & SCOPE**

- 1. THE PURPOSE OF THIS PROJECT IS FOR STORMWATER INFRASTRUCTURE IMPROVEMENTS, NO CHANGES TO BUILDING OR DWELLINGS ARE PROPOSED.
- 2. THIS PROJECT INVOLVES THE REPLACEMENT OF AN ASPHALT ROADWAY WITH PERMEABLE PAVEMENT TO ALLEVIATE FLOODING AND PROVIDE A CONTROLLED PATHWAY FOR STORMWATER RUNOFF.

**CONSTRUCTION**

- 1. EXISTING CONDITIONS AS DEPICTED ON THESE PLANS ARE GENERAL AND ILLUSTRATIVE IN NATURE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO EXAMINE THE SITE AND BE FAMILIAR WITH EXISTING CONDITIONS PRIOR TO BIDDING ON THIS PROJECT. IF CONDITIONS ENCOUNTERED DURING EXAMINATION ARE SIGNIFICANTLY DIFFERENT THAN THOSE SHOWN, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY.
- 2. THE CONTRACTOR SHALL STAGE CONSTRUCTION AND SEQUENCE OF EVENTS SUCH THAT ONE LANE OF TRAVEL IS PROVIDED AT ALL TIMES. IN GENERAL THE CONTRACTOR SHALL WORK FROM DOWNSTREAM TO UPSTREAM. CONSTRUCTION OF THE INTERSECTION OF WALNUT, ABBOTT MARTIN, AND LYNWOOD BLVD SHALL BE COORDINATED WITH THE CITY OF BELLE MEADE POLICE DEPARTMENT. ACCESS MUST BE PROVIDED TO DRIVEWAYS AT ALL TIMES.
- 3. THE CONTRACTOR AND SUBCONTRACTORS SHALL BE RESPONSIBLE FOR COMPLYING WITH APPLICABLE FEDERAL, STATE, LOCAL, AND PRIVATE UTILITY COMPANY REQUIREMENTS, CODES, AND SPECIFICATIONS, TOGETHER WITH EXERCISING PRECAUTIONS AT ALL TIMES FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SUBCONTRACTORS TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK.
- 4. ALL WORK PERFORMED BY THE CONTRACTOR SHALL CONFORM TO THE LATEST REGULATIONS OF THE AMERICANS WITH DISABILITIES ACT.
- 5. TOPOGRAPHICAL INFORMATION TAKEN FROM SURVEY COMPLETED BY CIVIL AND ENVIRONMENTAL CONSULTANTS, INC. ON JULY 28, 2022.
- 6. BEFORE INSTALLATION OF STORM SEWER, THE CONTRACTOR SHALL VERIFY ALL CROSSINGS, BY EXCAVATION WHERE NECESSARY, AND INFORM THE OWNER AND THE ENGINEER OF ANY CONFLICTS.
- 7. NOTHING IN THE GENERAL NOTES SHALL RELIEVE THE CONTRACTOR FROM HIS RESPONSIBILITIES TOWARD THE SAFETY AND CONVENIENCE OF THE GENERAL PUBLIC AND THE RESIDENTS ALONG THE PROPOSED CONSTRUCTION AREA.
- 8. ANY AND ALL REFERENCES IN THESE PLANS AND SPECIFICATIONS (CONSTRUCTION DOCUMENTS) TO BRANDED PRODUCTS, PROCEDURES OR PATENTED PROCESSES ARE ASSUMED TO CARRY AN IMPLIED STATEMENT OF "OR APPROVED EQUAL" UNLESS SPECIFICALLY NOTED OTHERWISE WITH "NO SUBSTITUTIONS ALLOWED".
- 9. ALL CONSTRUCTION MATERIALS AND WORKMANSHIP, INCLUDING BUT NOT LIMITED TO PAVING, STRIPING, AND CONCRETE SHALL CONFORM TO THE CURRENT STANDARD SPECIFICATION, DETAILS AND REQUIREMENTS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION (TDOT).
- 10. THE CONTRACTOR SHALL REFER TO ALL PLANS WITHIN THIS PLANS SET. IT IS NOT THE ENGINEER'S INTENT THAT ANY SINGLE PLAN SHEET IN THIS SET OF DOCUMENTS FULLY DEPICT ALL WORK ASSOCIATED WITH THIS PROJECT.
- 11. ALL PROPOSED GRADES SHOWN ARE FINAL GRADES, TOP OF GROUND LEVEL, OR TOP OF PAVEMENT, OR GRATE ELEVATION AT THE DRAWDOWN POINT, UNLESS INDICATED OTHERWISE.
- 12. CONTRACTOR IS TO REPLACE ANYTHING TO REMAIN THAT IS DAMAGED WITHIN THE WORK LIMITS, INCLUDING BUT NOT LIMITED TO MAILBOXES.

**LAYOUT**

- 1. THE CONTRACTOR SHALL CHECK EXISTING GRADES, DIMENSIONS, AND INVERTS IN THE FIELD AND REPORT ANY DISCREPANCIES TO THE OWNER'S REPRESENTATIVE PRIOR TO BEGINNING WORK.
- 2. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL EXISTING UTILITIES, CARE SHALL BE TAKEN TO PROTECT UTILITIES THAT ARE TO REMAIN. RELOCATE EXISTING UTILITIES, BASED UPON UTILITY COMPANY SPECIFICATIONS, AND AS NECESSARY FOR CONSTRUCTION. INSTALL ALL UTILITIES, INCLUDING CONDUITS, PRIOR TO INSTALLATION OF PAVED SURFACES.
- 3. PROVIDE A SMOOTH TRANSITION BETWEEN EXISTING PAVEMENT AND NEW PAVEMENT. FIELD ADJUSTMENT OF FINAL GRADES WITH THE WRITTEN APPROVAL OF THE ENGINEER MAY BE NECESSARY.
- 4. ALL DAMAGE TO EXISTING PAVEMENT TO REMAIN WHICH RESULTS FROM THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED WITH LIKE MATERIALS AT THE CONTRACTOR'S EXPENSE. CONTRACTOR TO PROVIDE PRE-CONSTRUCTION PHOTO DOCUMENTATION OF THE ENTIRE SITE TO ENGINEER BEFORE BEGINNING WORK.
- 5. CONTRACTOR SHALL MAINTAIN ONE SET OF AS-BUILT/RECORD DRAWINGS ON THE JOB SITE DURING CONSTRUCTION FOR DISTRIBUTION TO THE OWNER AND/OR OWNER'S REPRESENTATIVE UPON COMPLETION.
- 6. ALL DIMENSIONS ARE TO EDGE OF PAVEMENT OR FACE OF CURB UNLESS OTHERWISE NOTED IN THE PLANS.

**CONSTRUCTION WORK ZONE & TRAFFIC CONTROL**

- 1. THE CONTRACTOR SHALL DEVELOP TRAFFIC CONTROL PLANS FOR ALL CONSTRUCTION ACTIVITIES AND PROVIDE TO THE ENGINEER A MINIMUM OF SEVEN (7) WORKING DAYS PRIOR TO STARTING WORK FOR REVIEW AND APPROVAL. ALL TRAFFIC CONTROL PLANS AND TRAFFIC CONTROL DEVICES SHALL MEET OR EXCEED STANDARDS CONTAINED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND TDOT STANDARDS.
- 2. CONTRACTOR SHALL PROVIDE AND MAINTAIN TRAFFIC CONTROL MEASURES IN ACCORDANCE WITH STATE DEPARTMENT OF TRANSPORTATION REGULATIONS AND AS REQUIRED BY LOCAL AGENCIES WHEN WORKING IN AND/OR ALONG STREETS, ROADS, HIGHWAYS, ETC. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN APPROVAL AND COORDINATE WITH LOCAL AND/OR STATE AGENCIES REGARDING THE NEED, EXTENT AND LIMITATIONS ASSOCIATED WITH INSTALLING AND MAINTAINING TRAFFIC CONTROL MEASURES.
- 3. ADVANCED WARNING SIGNS SHALL NOT BE DISPLAYED MORE THAN FORTY-EIGHT (48) HOURS BEFORE PHYSICAL CONSTRUCTION BEGINS. SIGNS MAY BE ERRECTED UP TO ONE WEEK BEFORE NEEDED, IF THE SIGN FACE IS FULLY COVERED.
- 4. IF THE CONTRACTOR MOVES OFF THE PROJECT, THEY SHALL COVER OR REMOVE ALL UNNEEDED SIGNS AS DIRECTED BY THE ENGINEER.
- 5. A LONG TERM BUT SPORADIC USE WARNING SIGN, SUCH AS A FLAGGER SIGN, MAY REMAIN IN PLACE WHEN NOT REQUIRED PROVIDED THE SIGN FACE IS FULLY COVERED.
- 6. TRAFFIC CONTROL DEVICES SHALL NOT BE DISPLAYED OR ERRECTED UNLESS RELATED CONDITIONS ARE PRESENT NECESSITATING WARNING.
- 7. USE OF BARRICADES, PORTABLE BARRIER RAILS, VERTICAL PANELS, AND DRUMS SHALL BE LIMITED TO THE IMMEDIATE AREAS OF CONSTRUCTION WHERE A HAZARD IS PRESENT.
- 8. CONTRACTOR TO MAINTAIN ACCESS TO DRIVEWAYS WITHIN VICINITY OF PROJECT.

**PERMITS, PLANS & RECORDS**

- 1. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR AND OBTAIN ANY NECESSARY ENVIRONMENTAL PERMITS OR APPROVALS, INCLUDING BUT NOT LIMITED TO ARCHAEOLOGY, ECOLOGY, HISTORICAL, HAZARDOUS MATERIALS, AIR AND NOISE, TDEC ARAP/401, USACE SECTION 404, AND TDEC NPDES PERMITS, FROM FEDERAL, STATE AND/OR LOCAL AGENCIES REGARDING ANY MATERIAL AND STAGING AREAS AND THE OPERATION OF ANY PROJECT-DEDICATED ASPHALT AND/OR CONCRETE PLANTS TO BE USED. ANY SUCH PERMITS SHALL BE SUPPLIED TO THE OWNER PRIOR TO THE USE OF THE PERMITTED AREA(S).
- 2. ANY DISAGREEMENT BETWEEN THE CONSTRUCTION PLANS, THE PROJECT AS CONSTRUCTED, AND THE PERMIT(S) ISSUED FOR THE PROJECT, SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER. THE OWNER SHALL BE CONTACTED IN THESE INSTANCES AND DECIDE WHICH HAS PRECEDENCE AND WHETHER PERMIT OR PLAN REVISIONS ARE NEEDED. IN GENERAL, PERMIT CONDITIONS WILL PREVAIL.
- 3. IF A CHANGE IN PROJECT SCOPE OCCURS DURING CONSTRUCTION, INCLUDING VALUE ENGINEERING, THE ENGINEER SHALL BE CONTACTED TO DETERMINE WHETHER PERMIT REVISIONS ARE NEEDED. THE ENGINEER SHALL BE CONTACTED TO DETERMINE IF ANY PLAN REVISIONS ARE NEEDED.
- 4. THE CONTRACTOR SHALL REVIEW ALL EXISTING PERMITS TO ENSURE THAT WORK AT PERMITTED SITES DOES NOT EXCEED THE EXPIRATION DATE. IF WORK IS GOING TO BE CONTINUED AFTER EXPIRATION DATES, THE CONTRACTOR SHALL CONTACT THE OWNER TO COMMENCE PERMIT RENEWAL PROCESS.
- 5. THE EPSC PLAN IS TO SERVE AS AN INITIAL GUIDE FOR SITE PERSONNEL AS THE CONSTRUCTION PROCESS DEVELOPS. IT MUST BE AMENDED, MODIFIED, AND UPDATED WHENEVER A CHANGE IN THE DESIGN OR CONSTRUCTION OF THE PROJECT OCCURS. THE STAGES DEPICTED IN THE EPSC PLANS MAY NOT COINCIDE WITH THE ACTUAL PHASES OF CONSTRUCTION ESTABLISHED BY THE CONTRACTOR DURING CONSTRUCTION, THUS MODIFICATIONS WILL BE REQUIRED TO ENSURE THE EPSC PLAN IS MAINTAINED TO DEPICT CURRENT SITE CONDITIONS. IT SHOULD BE MAINTAINED SUCH THAT IT WILL ALWAYS REFLECT THE MEASURES THAT ARE INSTALLED DURING THE VARIOUS PHASES OF CONSTRUCTION. IT IS IMPRACTICAL TO DETERMINE ALL THE INTERMEDIATE PHASES OF CONSTRUCTION THAT WILL OCCUR, THUS THESE DOCUMENTS WILL HAVE TO BE UPDATED THROUGHOUT THE LIFE OF THE CONSTRUCTION PROJECT.

**DEMOLITION**

- 1. CLEARING LIMITS SHALL BE PHYSICALLY MARKED IN THE FIELD. CONTRACTOR TO MINIMIZE DISTURBANCE TO THE MINIMUM NECESSARY TO CONSTRUCT THE PROJECT. CONTRACTOR IS TO ONLY DISTURB OR REMOVE ITEMS WITHIN THE RIGHT OF WAY THAT ARE NECESSARY TO CONSTRUCT THE PROJECT. CONTRACTOR IS TO PROVIDE A CLEARING LIMITS PLAN TO THE CITY FOR REVIEW PRIOR TO DISTURBANCE.
- 2. ALL DEMOLITION WASTE AND CONSTRUCTION DEBRIS SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS OTHERWISE DESIGNATED AND SHALL BE REMOVED BY THE CONTRACTOR AND DISPOSED OF OFFSITE ACCORDANCE WITH ALL LOCAL AND STATE CODES AND PERMIT REQUIREMENTS.
- 3. TAKE CARE TO PROTECT UTILITIES THAT ARE TO REMAIN. DAMAGE TO UTILITIES SHALL BE REPAIRED BY THE CONTRACTOR TO UTILITY COMPANY STANDARDS AT NO ADDITIONAL COST TO THE OWNER.
- 4. ALL UTILITY DISCONNECTION, REMOVAL, RELOCATION, CUTTING, CAPPING AND/OR ABANDONMENT SHALL BE COORDINATED WITH THE APPROPRIATE UTILITY COMPANY/AGENCY. UTILITY CONTACTS ARE LISTED ON THE COVER SHEET (SHEET C000).
- 5. CONTRACTOR SHALL PROTECT ALL CORNER PINS, MONUMENTS, PROPERTY CORNERS AND BENCHMARKS DURING DEMOLITION ACTIVITIES. IF DISTURBED, CONTRACTOR SHALL HAVE DISTURBED ITEMS RESET BY A LICENSED SURVEYOR AT NO ADDITIONAL COST TO THE OWNER, PROVIDING CERTIFICATION TO THE ENGINEER OF RECORD FOR EACH ITEM REPLACED.
- 6. CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES, STRUCTURES, AND FEATURES TO REMAIN. ANY ITEMS TO REMAIN THAT HAVE BEEN DISTURBED OR DAMAGED AS A RESULT OF CONSTRUCTION SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO OWNER.
- 7. PROVIDE NEAT, STRAIGHT, FULL DEPTH, SAW CUTS OF EXISTING PAVEMENT WHERE INDICATED ALONG LIMITS OF PAVEMENT DEMOLITION.
- 8. ALL UTILITY AND STRUCTURE REMOVAL, RELOCATION, CUTTING, CAPPING AND/OR ABANDONMENT SHALL BE COORDINATED AND PROPERLY DOCUMENTED BY A CERTIFIED PROFESSIONAL, WHEN APPLICABLE, WITH THE APPROPRIATE UTILITY COMPANY, MUNICIPALITY AND/OR AGENCY.
- 9. NO TREES SHALL BE REMOVED, NOR VEGETATION DISTURBED BEYOND THE LIMITS OF CONSTRUCTION WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE OWNER'S REPRESENTATIVE.
- 10. ALL PAVEMENT, BASE COURSES, SIDEWALKS, CURBS, BUILDINGS, FOUNDATIONS, ETC., WITHIN THE AREA TO BE DEMOLISHED SHALL BE REMOVED TO FULL DEPTH, UNLESS OTHERWISE NOTED ON THIS PLAN SET. EXISTING BASE COURSE MATERIALS MAY BE WORKED INTO THE NEW PAVEMENT OR BUILDING SUBGRADE PROVIDED THAT THE GRADATION, CONSISTENCY, COMPACTION, SUBGRADE CONDITION, ETC., ARE IN ACCORDANCE WITH THE SPECIFICATIONS.
- 11. THE CONTRACTOR SHALL USE SUITABLE METHODS TO CONTROL DUST AND DIRT CAUSED BY THE DEMOLITION ACTIVITY.
- 12. THE CONTRACTOR SHALL ACCOMMODATE SUBGRADE GEOTECHNICAL TESTING TO BE PERFORMED BY THE ENGINEER DURING THE DEMOLITION OF THE EXISTING PAVEMENT AND SUBGRADE.

**GOOD HOUSEKEEPING MEASURES & WASTE DISPOSAL**

- 1. THE CONTRACTOR SHALL REFER TO THE EPSC PLANS, NOTES AND DETAILS FOR ADDITIONAL NOTES AND REQUIREMENTS RELATED TO GOOD HOUSEKEEPING MEASURES AND WASTE DISPOSAL.
- 2. OPEN BURNING IS PROHIBITED UNLESS IT IS SPECIFICALLY ALLOWED BY LAW. IF ALLOWED, NATURAL VEGETATION, TREES, AND UNTREATED LUMBER SHALL BE THE ONLY MATERIALS THAT CAN BE OPEN BURNED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL APPLICABLE STATE AND LOCAL PERMITS PRIOR TO ANY BURNING.
- 3. DISPOSAL OF ONSITE VEGETATION AND TREES BY CHIPPING THEM INTO MULCH IS PREFERABLE TO OPEN BURNING. THIS MULCH MAY BE USED AS AN ONSITE SOIL STABILIZATION MEASURE WHERE APPROPRIATE.
- 4. WASTE MATERIAL (EARTH, ROCK, ASPHALT, CONCRETE, ETC.) NOT REQUIRED FOR THE CONSTRUCTION OF THE PROJECT WILL BE DISPOSED OF BY THE CONTRACTOR. IMPACTS TO WATERS OF THE STATE/U.S. SHALL BE AVOIDED IF POSSIBLE. IF UNAVOIDABLE, THE CONTRACTOR WILL OBTAIN ANY AND ALL NECESSARY PERMITS INCLUDING, BUT NOT LIMITED TO NPDES, AQUATIC RESOURCES ALTERATION PERMIT(S), AND CORPS OF ENGINEERS SECTION 404 PERMITS, TO DISPOSE OF WASTE MATERIALS.
- 5. MATERIALS AND LAND STAGING AREAS SHALL NOT AFFECT ANY WATERS OF THE STATE/U.S. UNLESS THESE AREAS ARE SPECIFICALLY COVERED BY ENVIRONMENTAL PERMITS, OBTAINED SOLELY BY THE CONTRACTOR. THE CONTRACTOR SHALL REVIEW ALL EXISTING PERMITS TO ENSURE THAT WORK AT PERMITTED SITES DOES NOT EXCEED EXPIRATION DATES. IF WORK IS GOING TO BE CONTINUED AFTER EXPIRATION DATES, THE CONTRACTOR SHALL CONTACT THE ENGINEER TO COMMENCE PERMIT RENEWAL PROCESS.

**EROSION AND SEDIMENT CONTROL NOTES**

- 1. THE CONTRACTOR SHALL REFER TO THE EPSC PLANS AND DETAILS FOR ADDITIONAL NOTES AND REQUIREMENTS RELATED TO EROSION AND SEDIMENT CONTROL.
- 2. EROSION AND SEDIMENT CONTROL MEASURES TO BE SELECTED, INSTALLED, AND MAINTAINED IN ACCORDANCE WITH THE TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.
- 3. SITE EROSION CONTROLS SHALL BE CHECKED AND, REPAIRED AS NECESSARY, BEFORE THE NEXT RAIN EVENT; BUT IN NO CASE MORE THAN SEVEN DAYS AFTER THE NEED IS IDENTIFIED.
- 4. ANY OFF SITE SEDIMENT ACCUMULATIONS SHALL BE REMOVED DAILY. OFFSITE ACCUMULATIONS DEPOSITED ON PRIVATE PROPERTY SHALL BE REMOVED BY METHODS AGREED UPON BY THE CONTRACTOR AND THE ADJACENT LAND OWNER(S).
- 5. STABILIZE AREAS WITHIN 14 DAYS AND STEEP SLOPES EQUAL TO OR GREATER THAN 3:1 WITHIN 7 DAYS.
- 6. CONTRACTOR SHALL PROVIDE AN AREA FOR CONCRETE WASH DOWN AND EQUIPMENT FUELING. CONTRACTOR TO COORDINATE EXACT LOCATION WITH OWNER DURING PRECONSTRUCTION MEETING. CONTROL OF OTHER SITE WASTES SUCH AS DISCARDED BUILDING MATERIALS, CHEMICALS, LITTER, AND SANITARY WASTES THAT MAY CAUSE ADVERSE IMPACTS TO WATER QUALITY IS ALSO REQUIRED BY THE CONTRACTOR.
- 7. ALL EPSC MEASURE LOCATIONS ARE APPROXIMATE.
- 8. INSTALL EROSION CONTROL BLANKETING CAPABLE OF WITHSTANDING SHEAR STRESS OF 5 PSF ON ALL SIDE SLOPES 3:1 (H:V) AND STEEPER.

**UTILITIES**

- 1. ALL PROPOSED UTILITY LINES AND EXTENSIONS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH APPLICABLE UTILITY COMPANY SPECIFICATIONS. CONTRACTOR SHALL COORDINATE UTILITY DISCONNECTIONS WITH THE APPROPRIATE AGENCY.
- 2. THE CONTRACTOR IS PARTICULARLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF THE EXISTING UTILITIES SHOWN HEREON IS BASED ON TOPOGRAPHIC SURVEYS AND RECORD DRAWINGS. THE CONTRACTOR SHALL NOT RELY UPON THIS INFORMATION AS BEING EXACT OR COMPLETE. SHOULD UNCHARTED UTILITIES BE ENCOUNTERED DURING EXCAVATION OPERATIONS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY FOR INSTRUCTIONS. THE CONTRACTOR SHALL CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION AND REQUEST FIELD VERIFICATION OF UTILITY LOCATIONS.
- 3. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED UTILITY WORK PERMITS PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- 4. ADJUST ALL EXISTING UTILITY SURFACE FEATURES INCLUDING BUT NOT LIMITED TO CASTINGS, VALVE BOXES, PEDESTALS, CLEANOUTS, ETC. TO MATCH PROPOSED FINISHED GRADES, UNLESS OTHERWISE INDICATED.
- 5. THE LOCATIONS OF UTILITIES SHOWN WITHIN THESE PLANS ARE APPROXIMATE ONLY. EXACT LOCATIONS SHALL BE DETERMINED IN THE FIELD BY CONTACTING THE UTILITY COMPANIES INVOLVED. NOTIFICATION BY CALLING THE TENNESSEE ONE CALL SYSTEM, INC., AT 1-800-351-1111 AS REQUIRED BY TCA 65-31-106 WILL BE REQUIRED.
- 6. THE CONTRACTOR WILL PROVIDE ALL NECESSARY PROTECTIVE MEASURES TO SAFEGUARD EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION OF THIS PROJECT. IN THE EVENT THAT SPECIAL EQUIPMENT IS REQUIRED TO WORK OVER AND AROUND THE UTILITIES, THE CONTRACTOR WILL BE REQUIRED TO FURNISH SUCH EQUIPMENT.
- 7. THE CONTRACTOR WILL BE SOLELY RESPONSIBLE FOR CONTACTING OWNERS OF ALL AFFECTED UTILITIES IN ORDER TO DETERMINE THE EXTENT TO WHICH UTILITY RELOCATIONS AND/OR ADJUSTMENTS WILL HAVE UPON THE SCHEDULE OF WORK FOR THE PROJECT. WHILE SOME WORK MAY BE REQUIRED "AROUND" UTILITY FACILITIES THAT WILL REMAIN IN PLACE, OTHER UTILITY FACILITIES MAY NEED TO BE ADJUSTED CONCURRENTLY WITH THE CONTRACTOR'S OPERATIONS. ADVANCE CLEAR CUTTING MAY BE REQUIRED BY THE ENGINEER AT ANY LOCATION WHERE CLEARING IS CALLED FOR IN THE PLANS AND CLEAR CUTTING IS NECESSARY FOR A UTILITY RELOCATION.

**GRADING**

- 1. CONTRACTOR SHALL ADHERE TO THE EPSC PLAN PREPARED FOR THIS PROJECT. SEE NOTE 5, PERMITS, PLANS & RECORDS SECTION.
- 2. EARTHWORK SHALL INCLUDE CLEARING AND GRUBBING, STRIPPING AND STOCKPILING TOPSOIL, MASS GRADING, EXCAVATION, FILLING, UNDER CUT AND REPLACEMENT, IF REQUIRED, AND COMPACTION.
- 3. CONTRACTOR TO BACKFILL UNDERCUT AREAS WITH SUITABLE MATERIAL AND COMPACT AS RECOMMENDED BY THE SPECIFICATIONS.
- 4. ALL AREAS NOT PAVED SHALL BE STABILIZED WITH SEED AND MULCH, UNLESS NOTED OTHERWISE.
- 5. ALL EXCESS SOIL MATERIALS SHALL BE REMOVED BY THE CONTRACTOR AND DISPOSED OF OFFSITE IN ACCORDANCE WITH ALL LOCAL AND STATE CODES AND PERMIT REQUIREMENTS.
- 6. ANY AREA THAT IS DISTURBED OUTSIDE LIMITS OF CONSTRUCTION DURING THE LIFE OF THIS PROJECT SHALL BE REPAIRED BY THE CONTRACTOR AT THEIR EXPENSE.
- 7. THE CONTRACTOR SHALL NOT DISPOSE OF ANY MATERIAL EITHER ON OR OFF STATE-OWNED R.O.W. IN A REGULATORY FLOODWAY OR FLOODPLAIN AS DEFINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY WITHOUT APPROVAL BY SAME. ALL MATERIAL SHALL BE DISPOSED OF IN UPLAND (NON-WETLAND) AREAS AND ABOVE ORDINARY HIGH WATER OF ANY ADJACENT WATERCOURSE. THIS DOES NOT ELIMINATE THE NEED TO OBTAIN ANY OTHER LICENSES OR PERMITS THAT MAY BE REQUIRED BY ANY OTHER FEDERAL, STATE OR LOCAL AGENCY.

**DRAINAGE**

- 1. DISTANCES SHOWN ON PIPING ARE HORIZONTAL DISTANCES FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE, UNLESS OTHERWISE NOTED.
- 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE INSTALLATION, INSPECTION, TESTING AND FINAL ACCEPTANCE OF ALL NEW STORMWATER FACILITIES CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH ALL APPLICABLE REGULATING AGENCIES CONCERNING INSTALLATION, INSPECTION AND APPROVAL OF THE STORMWATER CONSTRUCTION.
- 3. ALL STORMWATER FACILITIES, INCLUDING COLLECTION AND CONVEYANCE STRUCTURES SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE LOCAL AND STATE CODES AND REGULATIONS INCLUDING, BUT NOT LIMITED TO, TDOT STANDARD DRAWINGS AND CONSTRUCTION SPECIFICATIONS FOR ROADWAY CONSTRUCTION.

**PAVEMENT**

- 1. THE CONTRACTOR SHALL BE REQUIRED TO PAVE IN THE DIRECTION OF TRAFFIC.
- 2. WHERE DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL BE REQUIRED TO SHAPE PRIVATE DRIVES, AS WELL AS CLEANING OF EXISTING DRAINS BEFORE PLACING MATERIALS.
- 3. THE CONTRACTOR SHALL REPLACE ANY DRIVEWAY REPAIR IN KIND WHERE DRIVEWAYS MAY NEED TO BE CUT TO ACCOMMODATE THE INSTALLATION OF THE PERMEABLE PAVEMENT SYSTEM. THE CONTRACTOR SHALL PROVIDE A SMOOTH TRANSITION BETWEEN EXISTING DRIVEWAYS AND PROPOSED PERMEABLE PAVEMENT.

**PAVEMENT MARKING**

- 1. PERMANENT PAVEMENT LINE MARKINGS FOR THE ROADWAYS SHALL BE 4" SPRAY THERMOPLASTIC (60 mil) INSTALLED TO PERMANENT TDOT PAVEMENT MARKING STANDARDS.

**ESTIMATED QUANTITIES**

- 1. SEE SECTION 00301 BID FORM IN BID DOCUMENTS DATED DECEMBER 2023.

**ABBREVIATIONS WITHIN CONSTRUCTION PLANS**

TYP	TYPICAL
REF	REFERENCE
PUDE	PUBLIC UTILITY AND DRAINAGE EASEMENT
TDOT	TENNESSEE DEPARTMENT OF TRANSPORTATION
DIA	DIAMETER
NTS	NOT TO SCALE
UG	UNDERGROUND
SAN	SANITARY SEWER
WTR	WATER
PVC	POLYVINYL CHLORIDE
EPSC	EROSION PREVENTION AND SEDIMENT CONTROL
NPDES	NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
SPCC	SPILL PREVENTION, CONTROL AND COUNTERMEASURES
EP	EDGE OF PAVEMENT
FC	FACE OF CURB
FOG	FACE OF GUTTER
OC	ON CENTER
LP	LOW POINT
HP	HIGH POINT
EX	EXISTING
CONT	CONTINUOUS
MBSL	MINIMUM BUILDING SETBACK LINE
DSYL	DOUBLE SOLID YELLOW LINE
SSWL	SINGLE SOLID WHITE LINE

**REVISION RECORD**

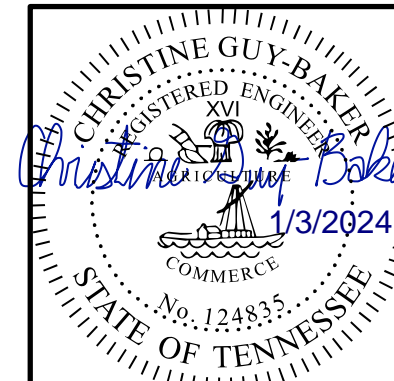
NO	DATE	DESCRIPTION

**Civil & Environmental Consultants, Inc.**  
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www.cecinco.com

**CITY OF BELLE MEADE  
STORMWATER IMPROVEMENTS  
WALNUT DRIVE  
BELLE MEADE, TN**

**GENERAL NOTES**

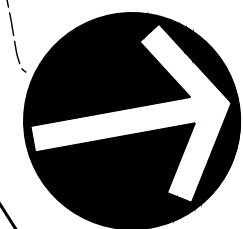
DATE:	JANUARY 2024	DRAWN BY:	WJW
DWG SCALE:	AS SHOWN	CHECKED BY:	CLG
PROJECT NO.:	322-084	APPROVED BY:	PLM



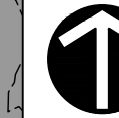
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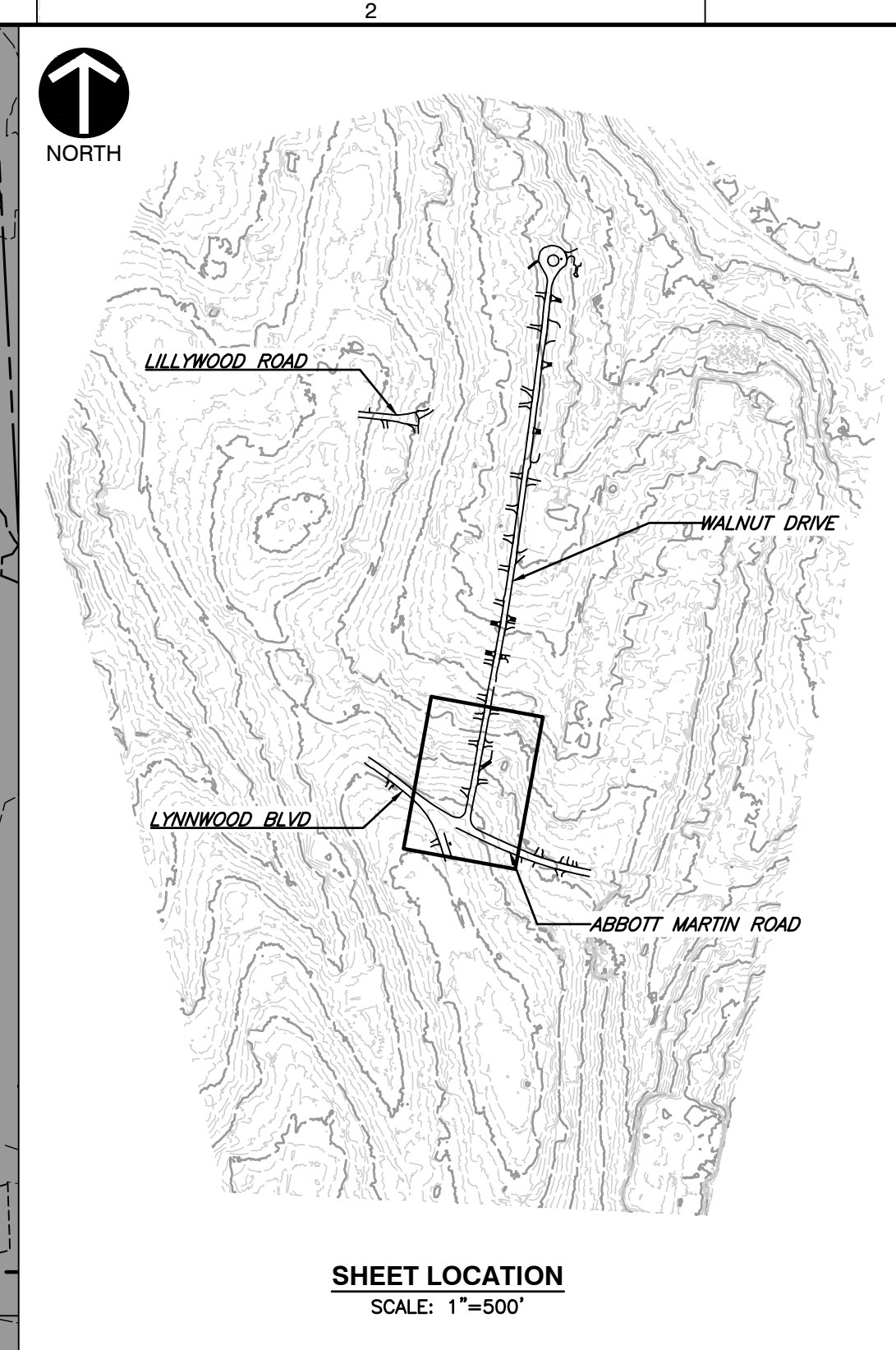
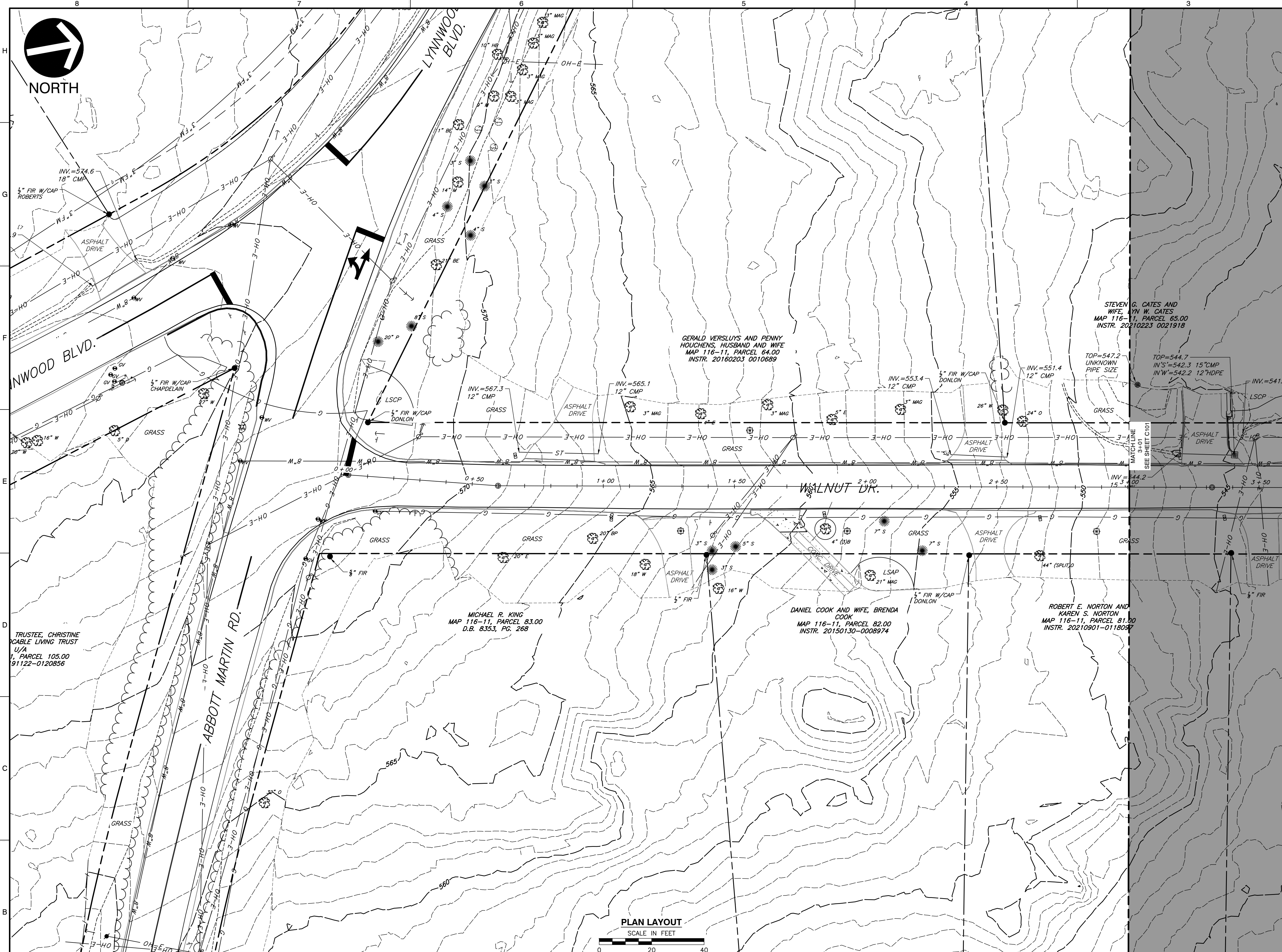




NORTH

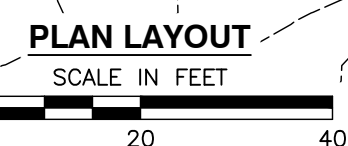


NORTH



LEGEND

- EXISTING PROPERTY LINE
- - - EXISTING EASEMENT
- - - EXISTING RIGHT-OF-WAY
- - - 560 EXISTING INDEX (MAJOR) CONTOUR
- - - EXISTING INTERMEDIATE (MINOR) CONTOUR
- - - EXISTING DRAINAGE DITCH
- x - x - EXISTING FENCE LINE
- EXISTING ROADWAY CENTERLINE
- EXISTING CURB
- EXISTING EDGE OF PAVEMENT
- EXISTING STRUCTURE
- ST — EXISTING STORM PIPE
- W — EXISTING WATER LINE
- SAN — EXISTING SANITARY SEWER LINE
- G — EXISTING GAS LINE
- OH-E — EXISTING OVERHEAD WIRE
- EXISTING IRON PIN
- EXISTING CONCRETE MONUMENT
- ⊙ EXISTING MAILBOX
- ⊙ EXISTING STORMWATER INLET
- ⊙ EXISTING SANITARY SEWER FEATURE
- ⊙ EXISTING WATER LINE FEATURE
- ⊙ EXISTING GAS VALVE
- ⊙ EXISTING VEGETATION
- ⊙ EXISTING ELECTRIC FEATURE



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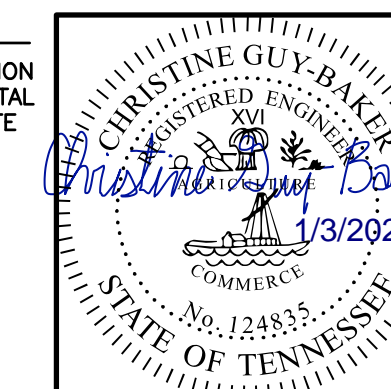
Know what's below.  
Call before you dig.

NOTE TO CONTRACTOR

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REFERENCE

1. EXISTING TOPOGRAPHIC INFORMATION TAKEN FROM A COMBINATION OF TOPOGRAPHIC SURVEY COLLECTED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. AND LIDAR DATA OBTAINED FROM THE STATE OF TENNESSEE.
2. HORIZONTAL DATUM IS TN STATE PLANE NSRS 2011 IN FEET.
3. VERTICAL DATUM IS NAVD88 (GEOID12B).



EXISTING CONDITIONS  
WALNUT DRIVE [1 OF 5]

DRAWING NO.:

C100

DATE:	JANUARY 2024	DRAWN BY:	WJW
DWG SCALE:	AS SHOWN	CHECKED BY:	CLG
PROJECT NO.:	322-084	APPROVED BY:	PLM

CITY OF BELLE MEADE  
STORMWATER IMPROVEMENTS  
WALNUT DRIVE  
BELLE MEADE, TN

**C&E**  
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NO.	DATE	DESCRIPTION

REVISION RECORD













HAYES BOWMAN HITCHENS AND  
MICHAEL MAXWELL HITCHENS,  
HUSBAND AND WIFE  
MAP 116-11, PARCEL 70.00  
INSTR. 20160628-0065783

NATHAN CRAIG PARRISH AND  
WIFE, NANCY E. PARRISH  
MAP 116-11, PARCEL 71.00  
INSTR. 20080721-0074807

CLARK WILLIAM LANDRY AND  
DAYNA SUGAR LANDRY,  
HUSBAND AND WIFE  
MAP 116-7, PARCEL 81.00  
INSTR. 20220131-0010988

DAVID R. BUTTREY, JR., AND WIFE,  
ANNE TRABUE BUTTREY  
MAP 116-7, PARCEL 82.00  
D.B. 6534, PG. 41

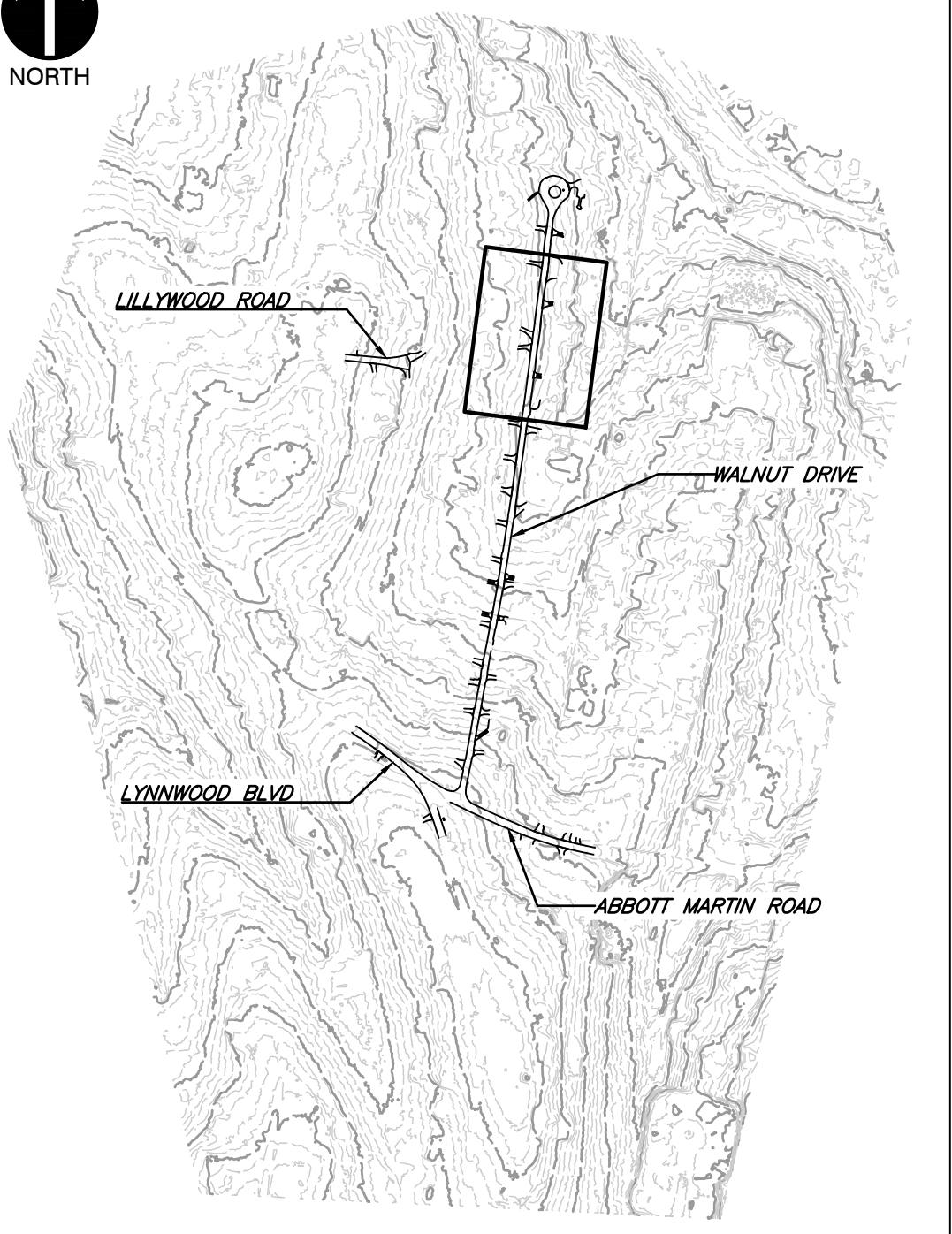
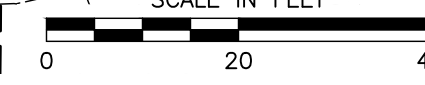
JAMES S. PRICE AND WIFE,  
ELLIN-KELLY D. PRICE  
MAP 116-11, PARCEL  
73.00  
D.B. 5167, PG. 288

MARSHALL G. SANDERS AND  
LUKE MICHAEL DUGGAN  
MAP 116-11, PARCEL 72.00  
INSTR. SA-20210802-0103800

MARTIN L. BLAKELY AND  
LAURA JOHNETTA BLAKELY,  
HUSBAND AND WIFE  
MAP 116-7, PARCEL 88.00  
INSTR. 20180702-0063740

PAMELA P. WILLY  
MAP 116-7, PARCEL 86.00  
D.B. 9931, PG. 273

**PLAN LAYOUT**  
SCALE IN FEET



**SHEET LOCATION**  
SCALE: 1"=500'

**LEGEND**

	EXISTING PROPERTY LINE
	EXISTING EASEMENT
	EXISTING RIGHT-OF-WAY
	EXISTING INDEX (MAJOR) CONTOUR
	EXISTING INTERMEDIATE (MINOR) CONTOUR
	EXISTING DRAINAGE DITCH
	EXISTING FENCE LINE
	EXISTING ROADWAY CENTERLINE
	EXISTING CURB
	EXISTING EDGE OF PAVEMENT
	EXISTING STRUCTURE
	EXISTING STORM PIPE
	EXISTING WATER LINE
	EXISTING SANITARY SEWER LINE
	EXISTING GAS LINE
	EXISTING OVERHEAD WIRE
	EXISTING IRON PIN
	EXISTING CONCRETE MONUMENT
	EXISTING MAILBOX
	EXISTING STORMWATER INLET
	EXISTING SANITARY SEWER FEATURE
	EXISTING WATER LINE FEATURE
	EXISTING GAS VALVE
	EXISTING VEGETATION
	EXISTING ELECTRIC FEATURE

- REFERENCE**
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**CITY OF BELLE MEADE  
STORMWATER IMPROVEMENTS  
WALNUT DRIVE  
BELLE MEADE, TN**

**EXISTING CONDITIONS  
WALNUT DRIVE [4 OF 5]**

DATE:	JANUARY 2024	DRAWN BY:	WJM
DWG. SCALE:	AS SHOWN	CHECKED BY:	CLG
PROJECT NO.:	322-084	APPROVED BY:	PLM
DRAWING NO.:	<b>C103</b>		

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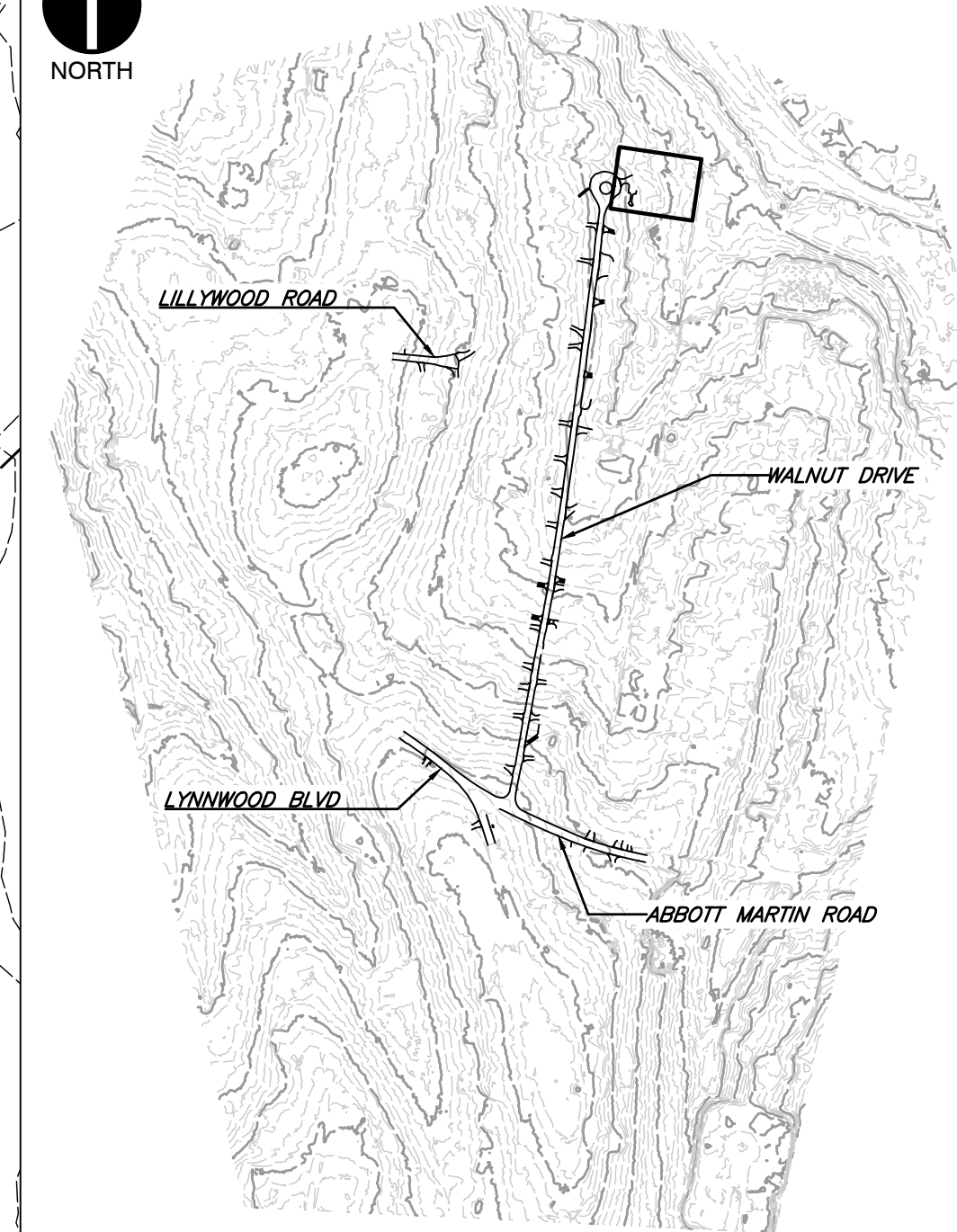
MARIE CARNEY REED  
MAP 116-B-D, PARCEL 91  
D.B. 9266, PG. 814

ANN R. BERNARD, TRUSTEE  
MAP 116-B-D, PARCEL 92.00  
INSTR. 20190809-0078455

ROBERT J. DEAL, TRUSTEE OF THE  
ROBERT JOSEPH DEAL  
REVOCABLE LIVING TRUST  
MAP 116-B-D, PARCEL 93.00  
INSTR. 20140904-0081212



NORTH

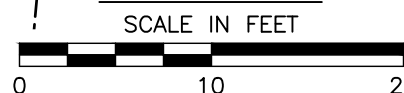


SHEET LOCATION  
SCALE: 1"=500'

LEGEND

- EXISTING PROPERTY LINE
- - - EXISTING EASEMENT
- - - EXISTING RIGHT-OF-WAY
- 560 EXISTING INDEX (MAJOR) CONTOUR
- - - EXISTING INTERMEDIATE (MINOR) CONTOUR
- - - EXISTING DRAINAGE DITCH
- x x x EXISTING FENCE LINE
- - - EXISTING ROADWAY CENTERLINE
- EXISTING CURB
- EXISTING EDGE OF PAVEMENT
- EXISTING STRUCTURE
- ST EXISTING STORM PIPE
- W EXISTING WATER LINE
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- G EXISTING GAS LINE
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- EXISTING MAILBOX
- ⊙ EXISTING STORMWATER INLET
- ⊙ EXISTING SANITARY SEWER FEATURE
- ⊙ EXISTING WATER LINE FEATURE
- ⊙ EXISTING GAS VALVE
- ⊙ EXISTING VEGETATION
- ⊙ EXISTING ELECTRIC FEATURE

PLAN LAYOUT



JAMES R. GRAY, JR. AND  
WIFE, TAMMY GRAY  
MAP 116-7, PARCEL 85.00  
INSTR. 20000204-0011799

TOP=512.5  
IN SW=510.8 12" CMP  
IN SE=510.8 12" CMP  
OUT NE=510.6 12" CMP

TOP=512.5  
OUT NW=511.0  
12" CMP

INV=494.1  
8" PVC

INV=497.6  
4" PVC

INV=505.5  
12" CMP

5" FIR  
LEANING

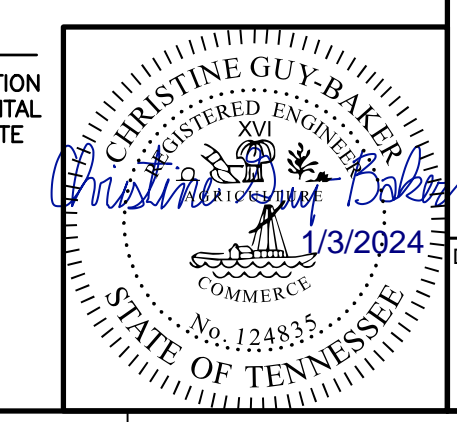
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- HORIZONTAL DATUM IS TN STATE PLANE NSRS 2011 IN FEET.
- VERTICAL DATUM IS NAVD88 (GEOID12B).



EXISTING CONDITIONS  
LOT 300

CITY OF BELLE MEADE  
STORMWATER IMPROVEMENTS  
WALNUT DRIVE  
BELLE MEADE, TN

**C&E**  
Civil & Environmental Consultants, Inc.  
117 Seaboard Lane - Suite E-100 - Franklin, TN 37067  
615-333-7797 · 800-763-2326  
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NO	DATE	DESCRIPTION

DATE:	JANUARY 2024	DRAWN BY:	WJM
DWG SCALE:	AS SHOWN	CHECKED BY:	CLG
PROJECT NO.:	322-084	APPROVED BY:	PLM

DRAWING NO.:  
**C107**

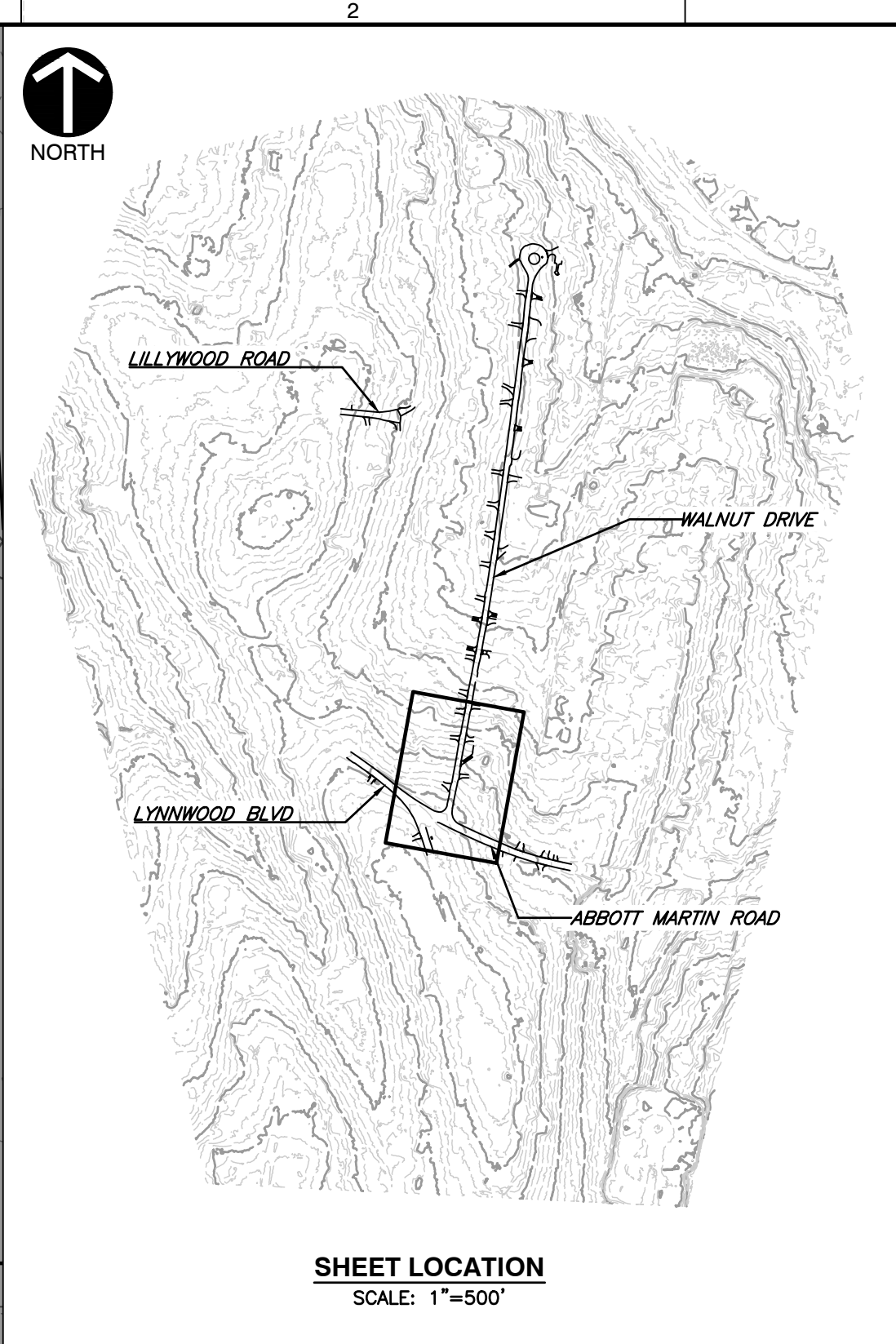
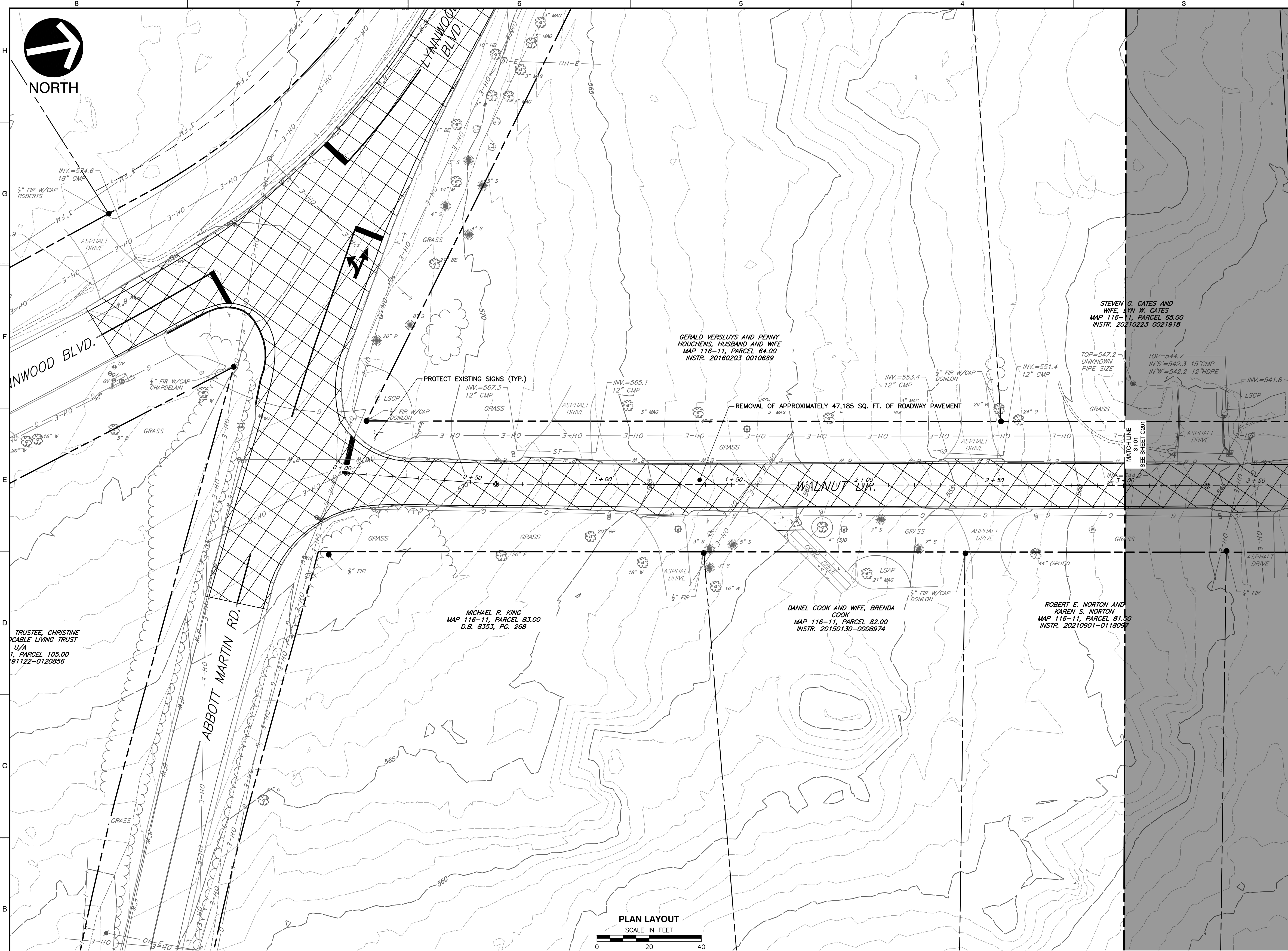




NORTH



NORTH



LEGEND

- EXISTING PROPERTY LINE
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- - - EXISTING RIGHT-OF-WAY
- - - 560 EXISTING INDEX (MAJOR) CONTOUR
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- - - EXISTING CURB
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- - - EXISTING GAS LINE
- - - EXISTING OVERHEAD WIRE
- EXISTING IRON PIN
- EXISTING CONCRETE MONUMENT
- ⊙ EXISTING MAILBOX
- ⊙ EXISTING STORMWATER INLET
- ⊙ EXISTING SANITARY SEWER FEATURE
- ⊙ EXISTING WATER LINE FEATURE
- ⊙ EXISTING GAS VALVE
- ⊙ EXISTING VEGETATION
- ⊙ EXISTING ELECTRIC FEATURE
- ▨ PAVEMENT TO BE REMOVED FULL DEPTH
- ▨ RIPRAP TO BE REMOVED
- ▨ LINEAR OBJECT TO BE REMOVED
- OBJECT TO BE REMOVED

REVISION RECORD

NO	DATE	DESCRIPTION

**Civil & Environmental Consultants, Inc.**  
 117 Seaboard Lane - Suite E-100 - Franklin, TN 37067  
 615-333-7797 · 800-763-2326  
 www.ceinc.com

**CITY OF BELLE MEADE  
 STORMWATER IMPROVEMENTS  
 WALNUT DRIVE  
 BELLE MEADE, TN**

**DEMOLITION PLAN  
 WALNUT DRIVE [1 OF 5]**

DATE: JANUARY 2024 | DRAWN BY: WJM | DWG SCALE: CLG  
 AS SHOWN | CHECKED BY: 322-084 | PROJECT NO. PLM  
 APPROVED BY:

DRAWING NO.: C200



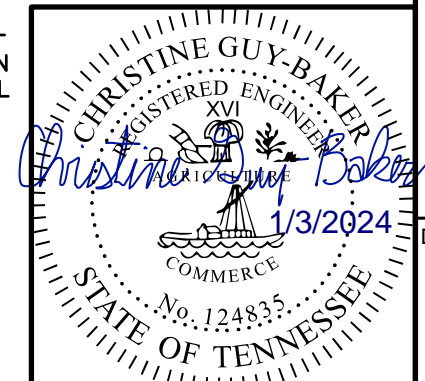
Know what's below. Call before you dig.

NOTE TO CONTRACTOR

THE CONTRACTOR SHALL REFER TO ALL PLANS WITHIN THIS PLAN SET. IT IS NOT THE DESIGNER'S INTENT THAT ANY SINGLE PLAN SHEET IN THIS SET OF DOCUMENTS FULLY DEPICT ALL WORK ASSOCIATED WITH THIS PROJECT.

REFERENCE

- EXISTING TOPOGRAPHIC INFORMATION TAKEN FROM A COMBINATION OF TOPOGRAPHIC SURVEY COLLECTED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. AND LIDAR DATA OBTAINED FROM THE STATE OF TENNESSEE.
- HORIZONTAL DATUM IS TN STATE PLANE NSRS 2011 IN FEET.
- VERTICAL DATUM IS NAVD88 (GEOID12B).



P:\1300-0001\8322-0841-CAD\DWG\11071\_L22084-11071\_L22084-11071\_L22084-11071 - LP\_1/3/2024\_4:43 PM





















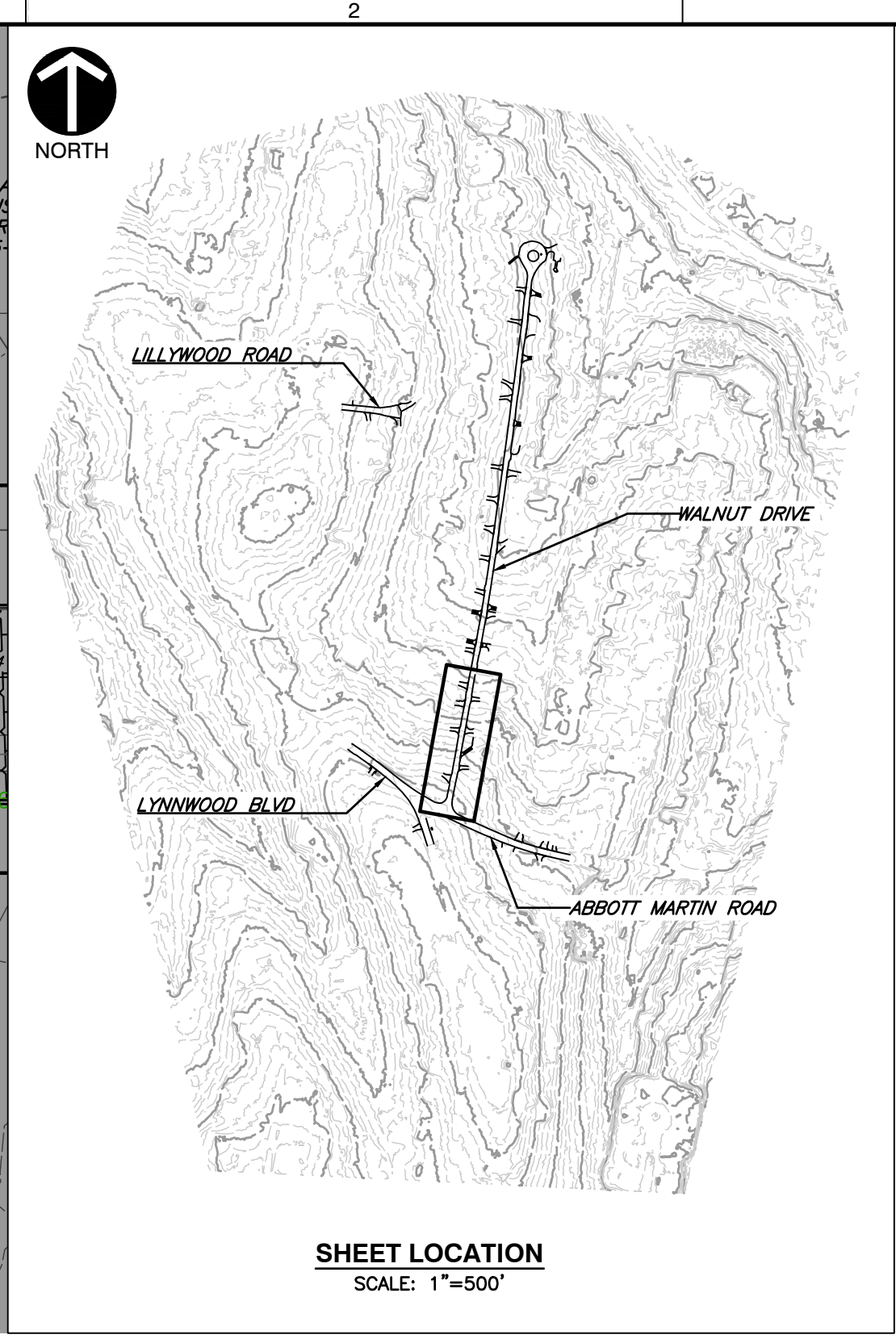
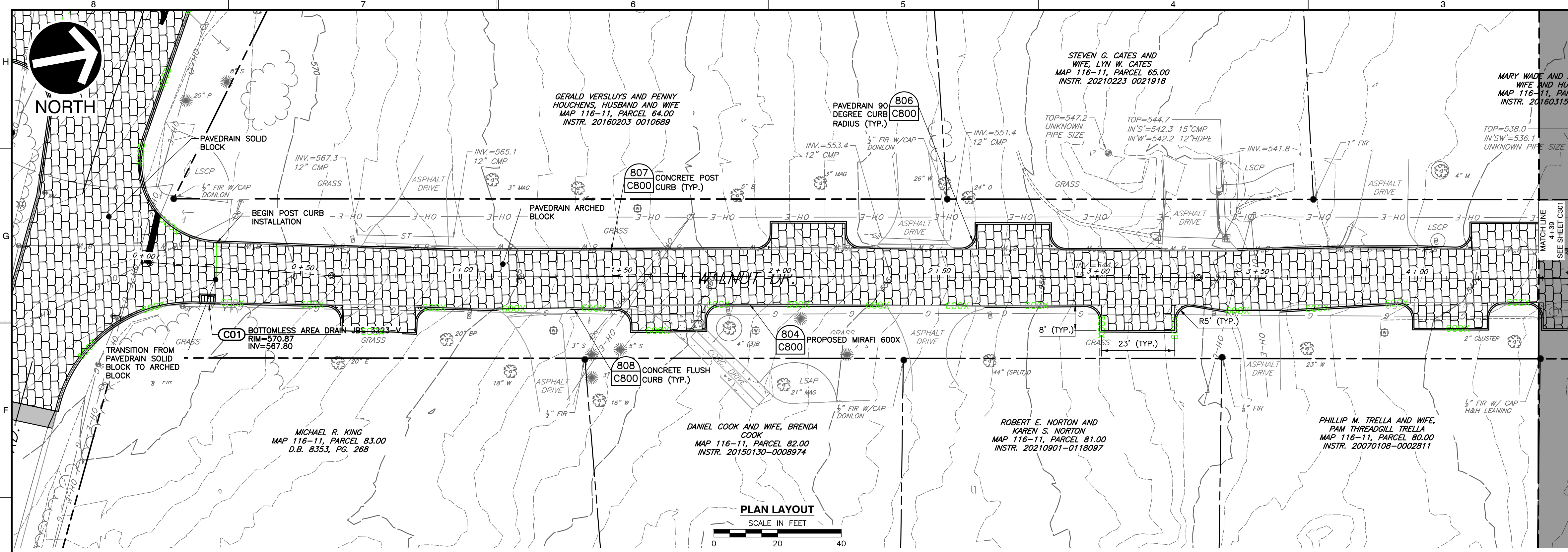












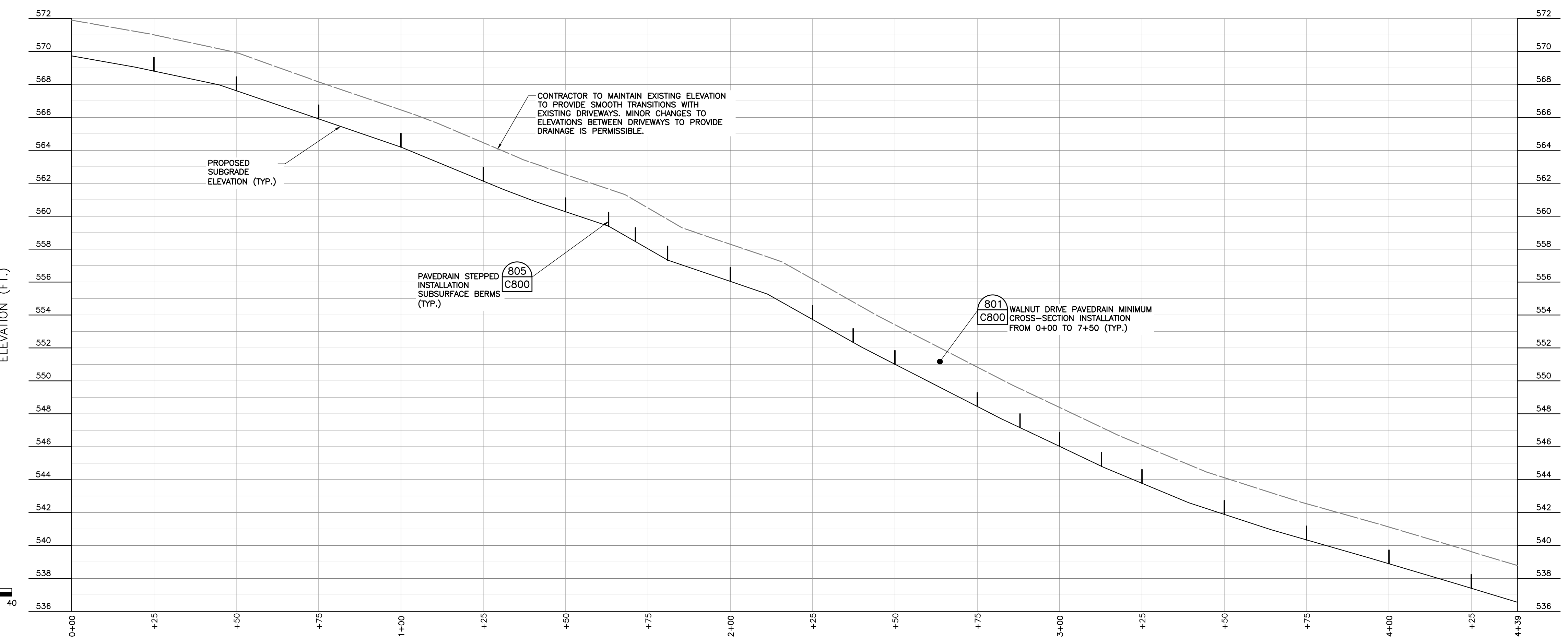
NO.	DATE	REVISION RECORD DESCRIPTION

**Civil & Environmental Consultants, Inc.**  
 117 Seaboard Lane - Suite E-100 - Franklin, TN 37067  
 615-333-7797 · 800-763-2326  
 www.ceinc.com

**CITY OF BELLE MEADE  
 STORMWATER IMPROVEMENTS  
 WALNUT DRIVE  
 BELLE MEADE, TN**

**PROPOSED PLAN & PROFILE  
 STA. 0+00 - STA. 4+66  
 WALNUT DRIVE**

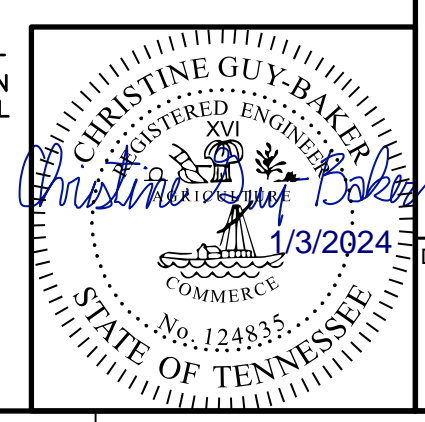
DATE: JANUARY 2024 DRAWN BY: WJM  
 DWG SCALE: AS SHOWN CHECKED BY: CLG  
 PROJECT NO: 322-084  
 APPROVED BY: PLM



**WALNUT DRIVE CL PROFILE**  
 SCALE H:1"=20'; V:1"=4'

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  - VERTICAL DATUM IS NAVD88 (GEOID12B).

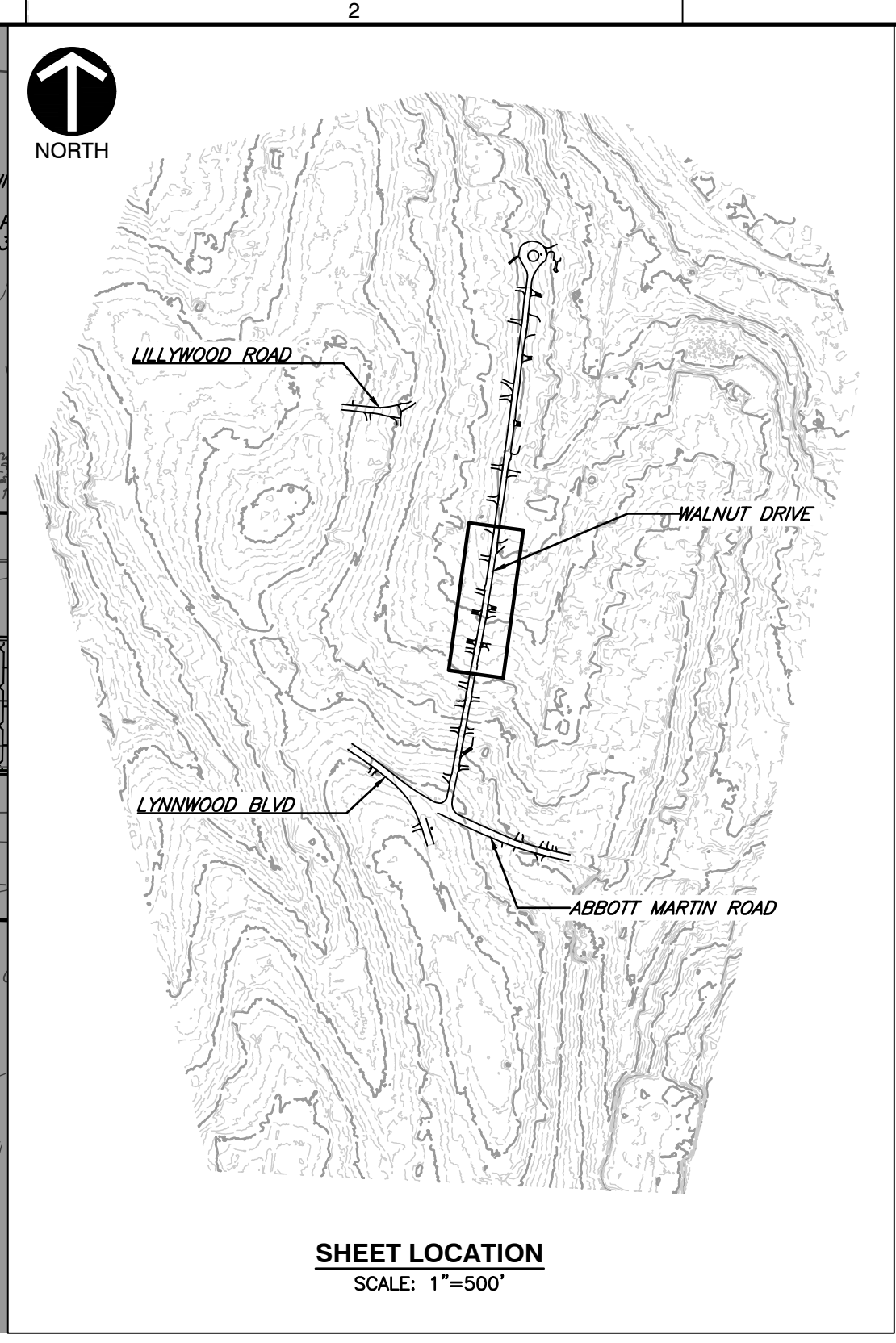
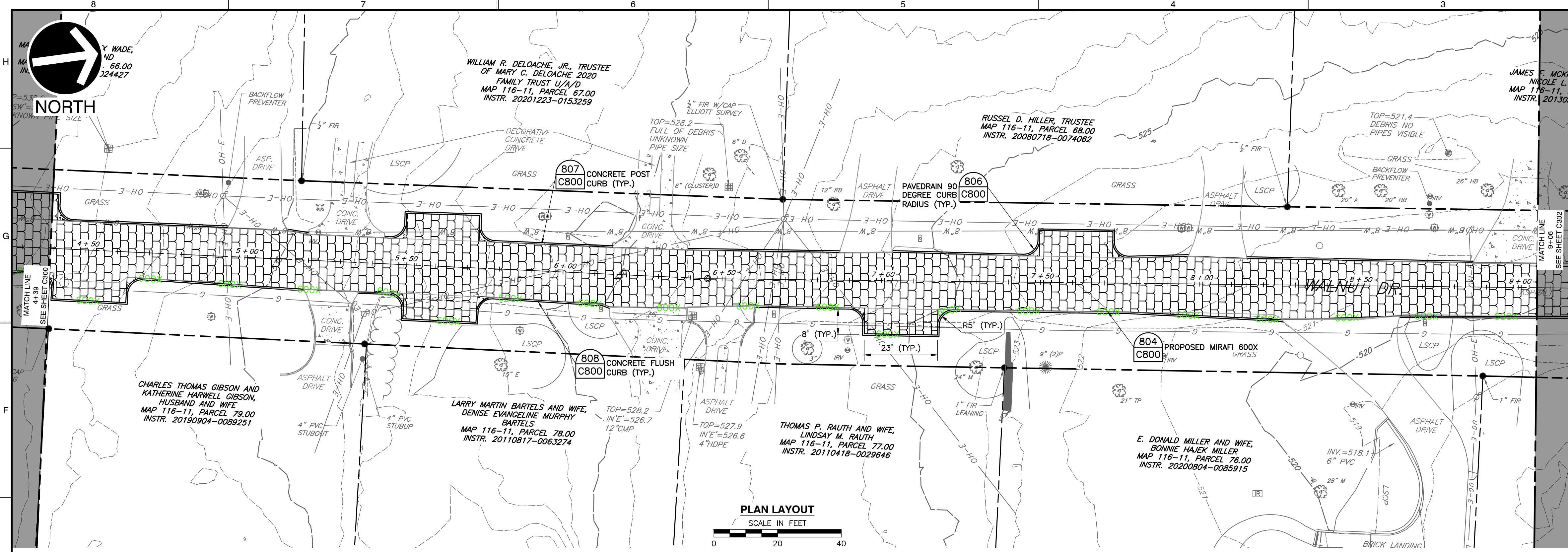


DRAWING NO.: **C300**

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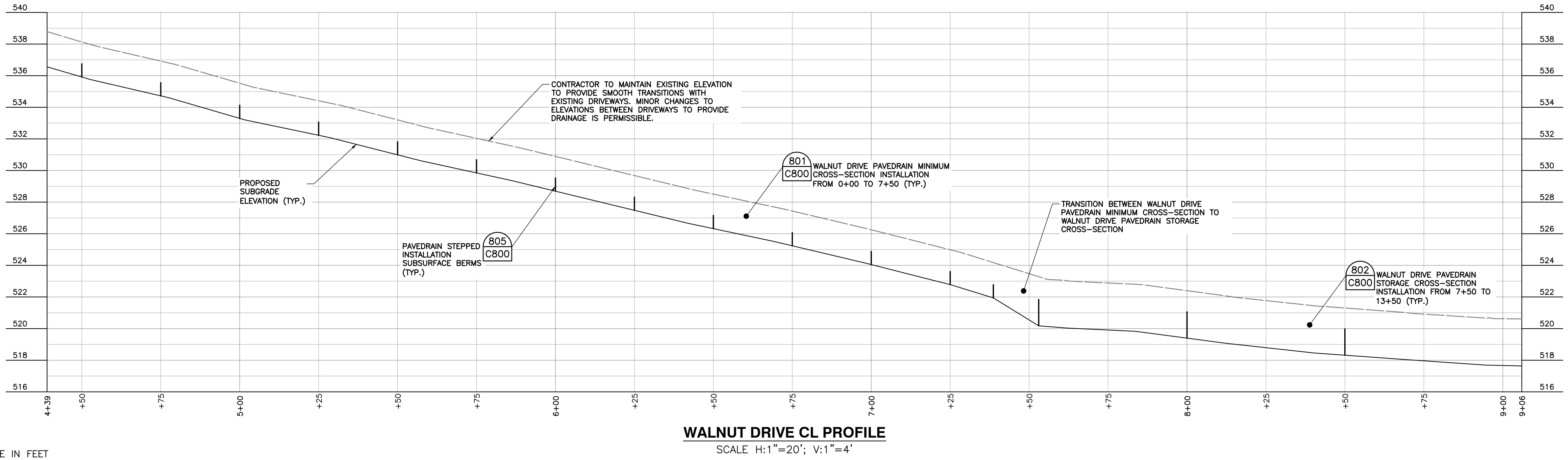
NO.	DATE	REVISION RECORD DESCRIPTION

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 117 Seaboard Lane - Suite E-100 - Franklin, TN 37067  
 615-333-7797 · 800-763-2326  
 www.ceinc.com

**CITY OF BELLE MEADE  
 STORMWATER IMPROVEMENTS  
 WALNUT DRIVE  
 BELLE MEADE, TN**

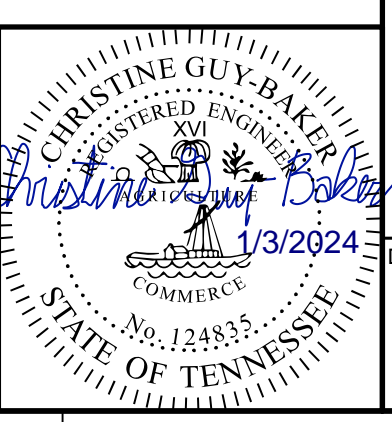
**PROPOSED PLAN & PROFILE  
 STA. 4+66 - STA. 9+33  
 WALNUT DRIVE**

DATE: JANUARY 2024 | DRAWN BY: WJM  
 DWG SCALE: AS SHOWN | CHECKED BY: CLG  
 PROJECT NO: 322-084  
 APPROVED BY: PLM



**WALNUT DRIVE CL PROFILE**  
 SCALE H:1"=20'; V:1"=4'

- REFERENCE**
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  - VERTICAL DATUM IS NAVD88 (GEOID12B).



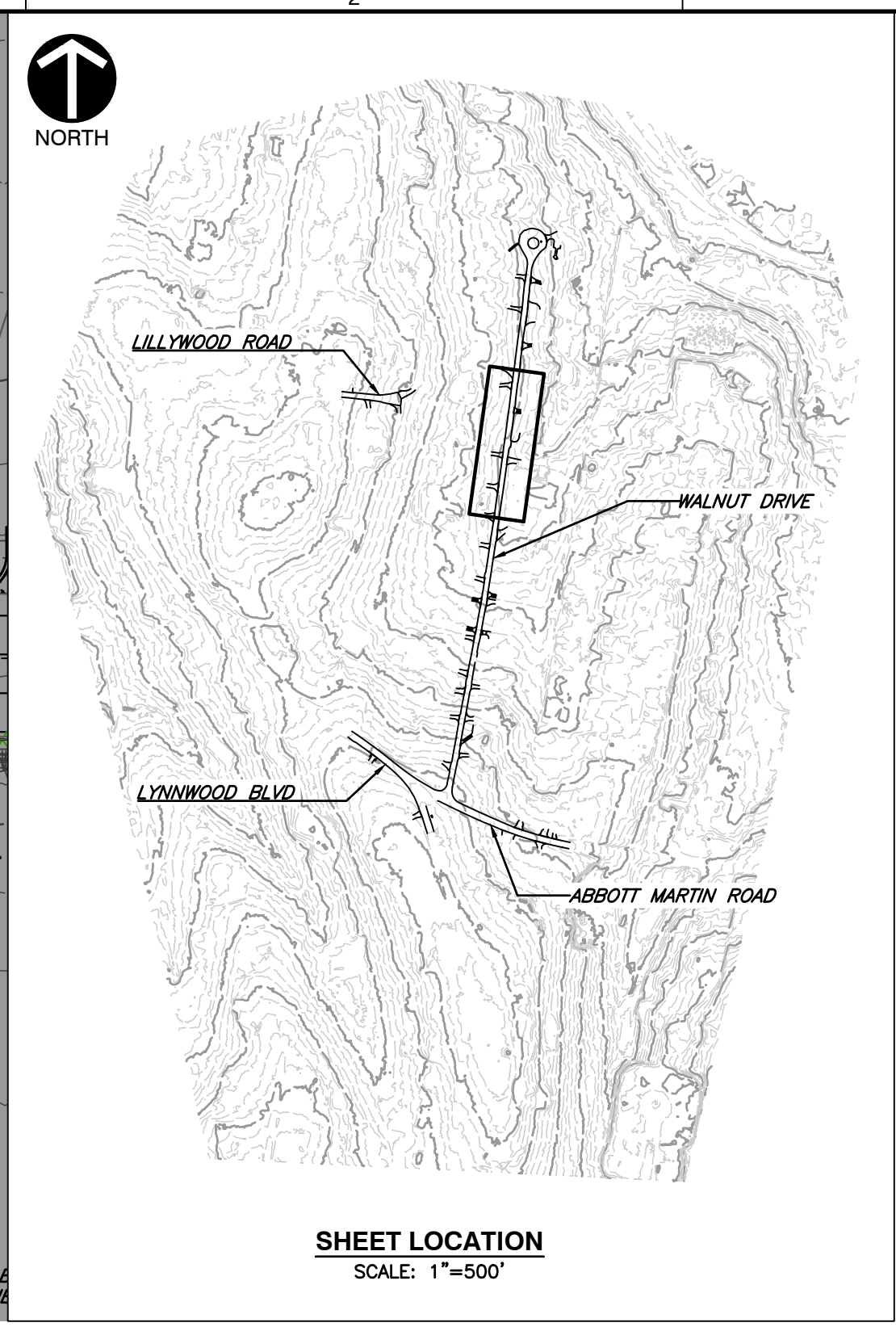
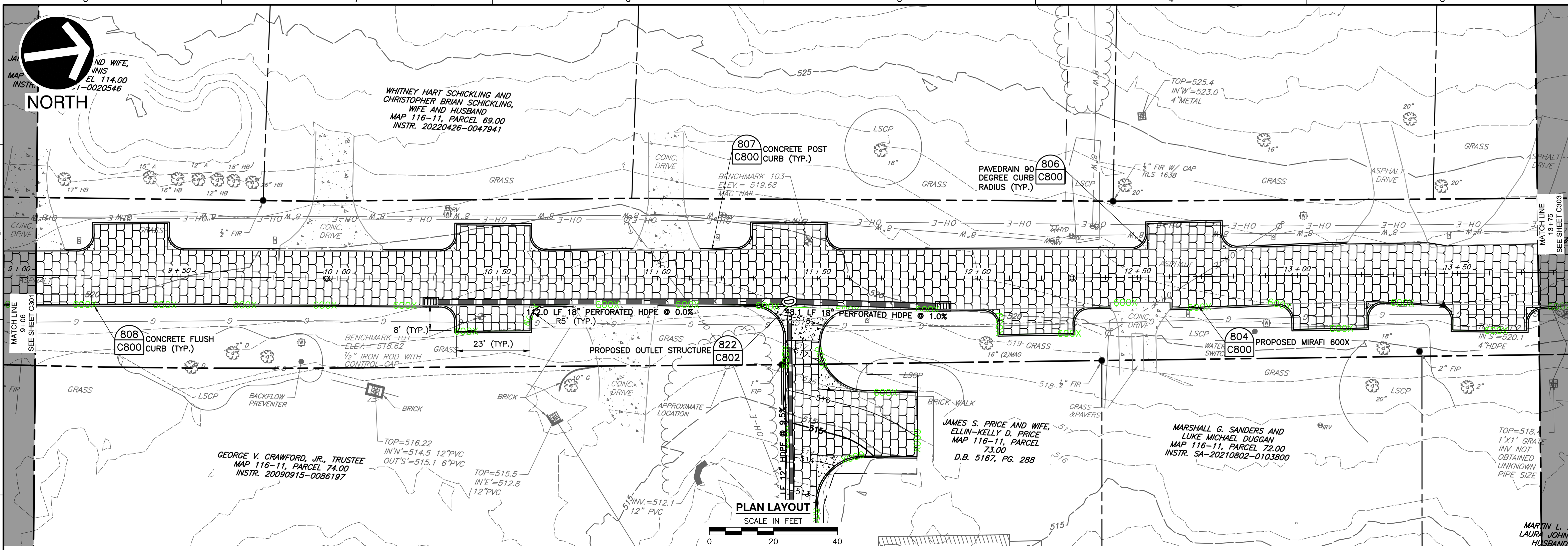
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NO.	DATE	REVISION RECORD DESCRIPTION

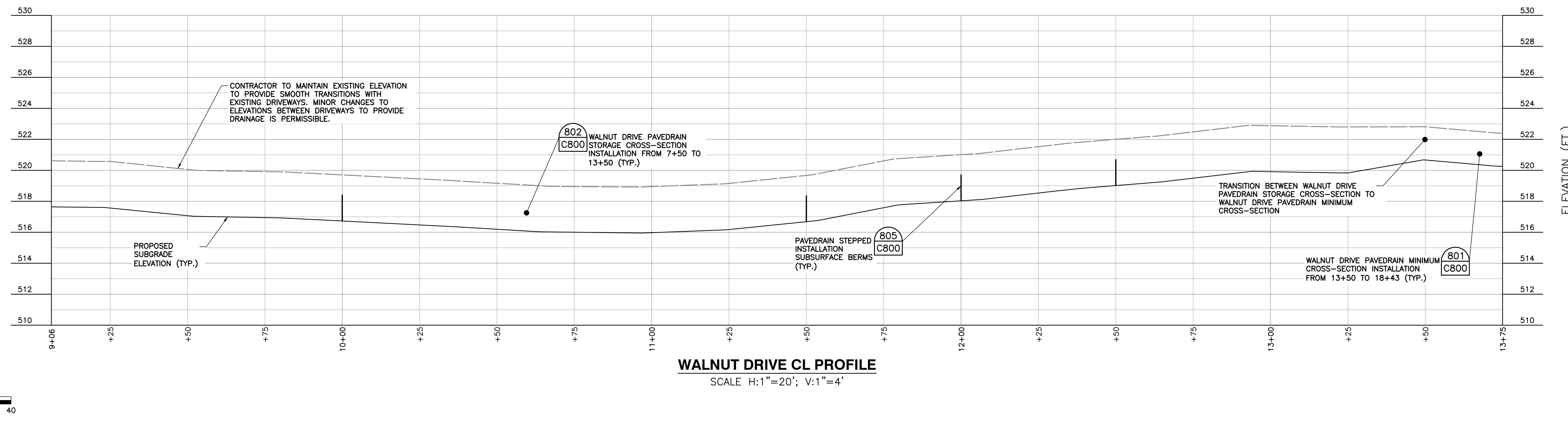
**Civil & Environmental Consultants, Inc.**  
 117 Seaboard Lane - Suite E-100 - Franklin, TN 37067  
 615-333-7797 · 800-763-2326  
 www.ceinc.com

**CITY OF BELLE MEADE  
 STORMWATER IMPROVEMENTS  
 WALNUT DRIVE  
 BELLE MEADE, TN**

**PROPOSED PLAN & PROFILE  
 STA. 9+33 - STA. 14+02  
 WALNUT DRIVE**

DATE: JANUARY 2024 | DRAWN BY: WJM | CLG  
 DWG SCALE: AS SHOWN | CHECKED BY: 322-084  
 PROJECT NO. 322-084  
 APPROVED BY: PLM

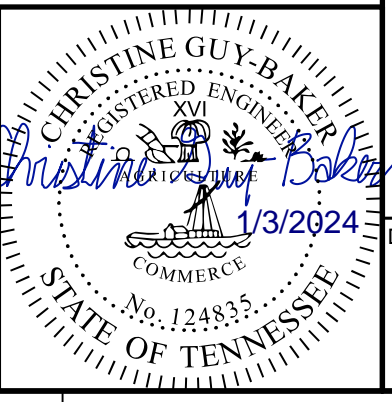
DRAWING NO.: **C302**



**WALNUT DRIVE CL PROFILE**  
 SCALE H:1"=20'; V:1"=4'

**NOTE TO CONTRACTOR**  
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  - VERTICAL DATUM IS NAVD88 (GEOID12B).



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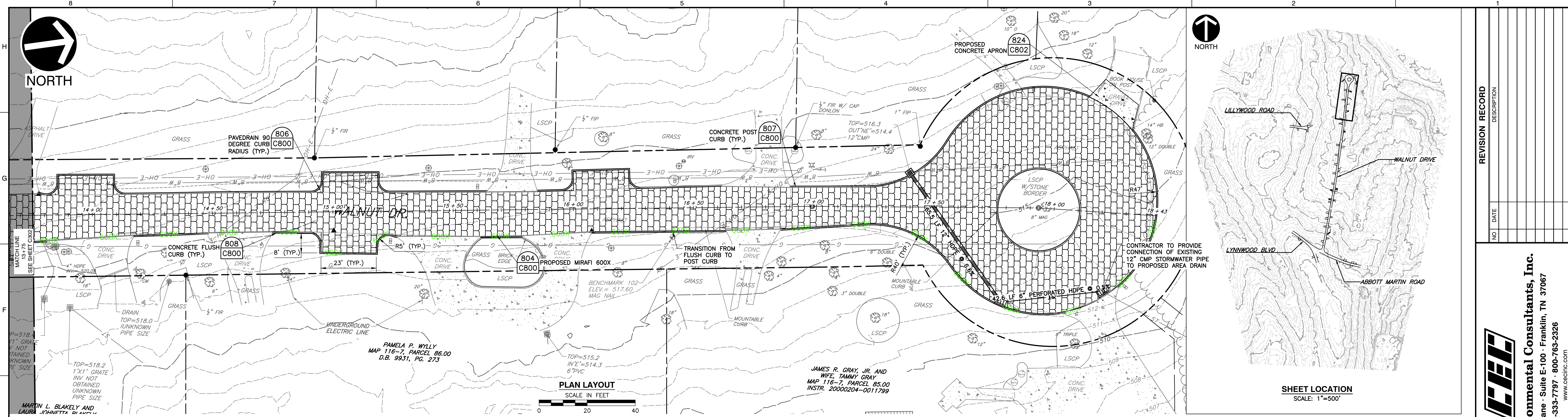




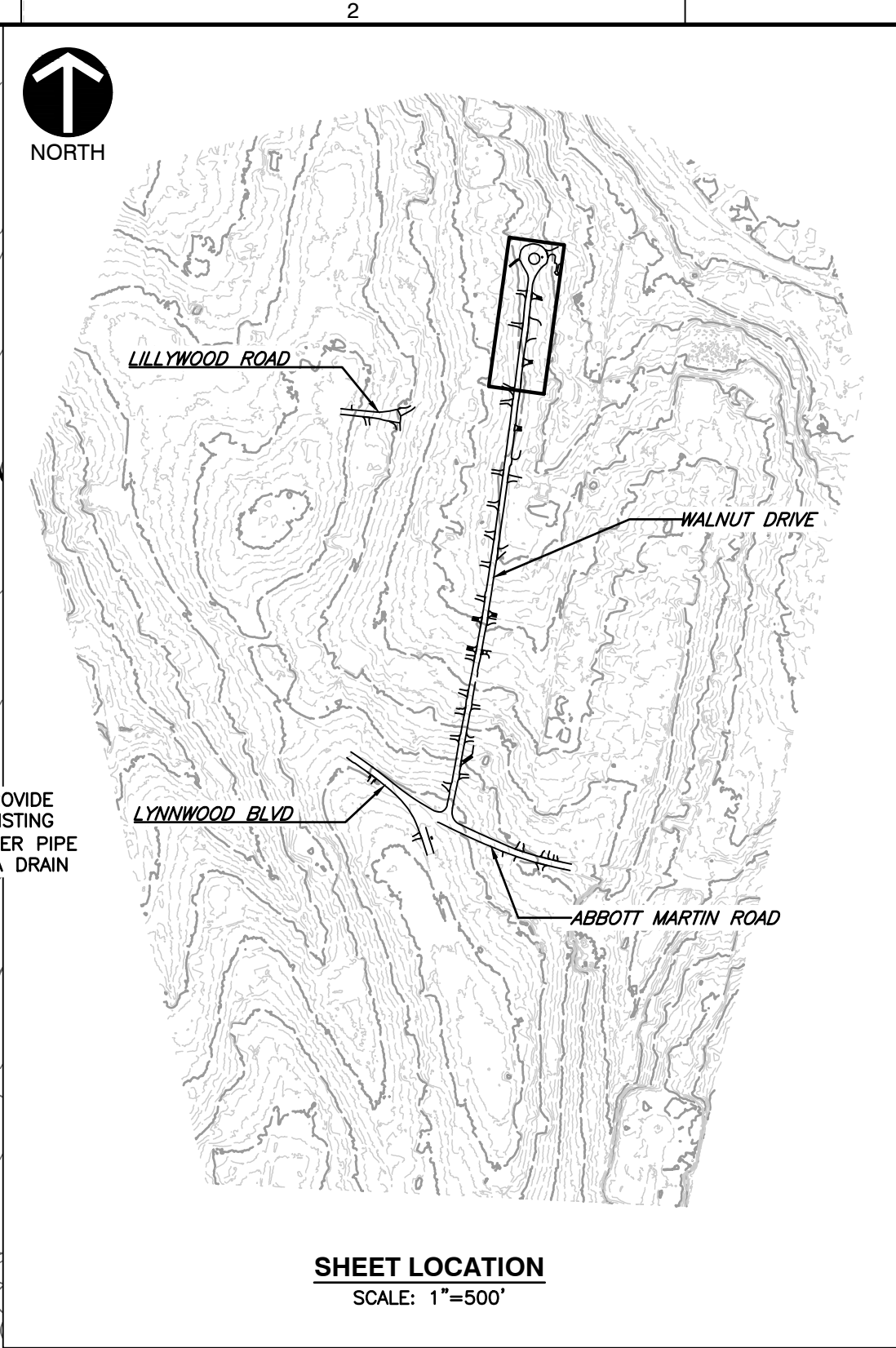
NORTH



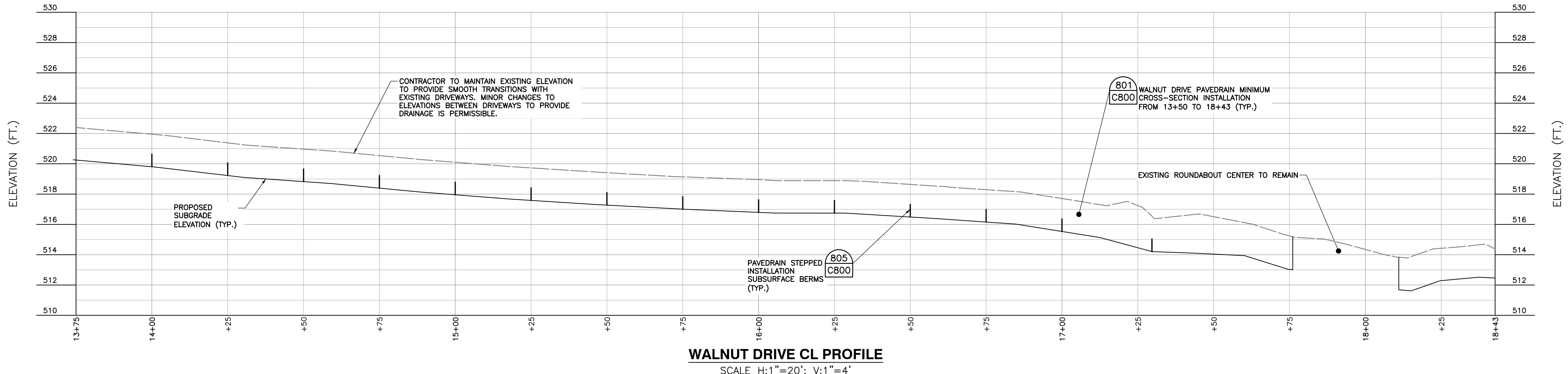
NORTH



PLAN LAYOUT  
SCALE IN FEET



SHEET LOCATION  
SCALE: 1"=500'



WALNUT DRIVE CL PROFILE  
SCALE H:1"=20'; V:1"=4'

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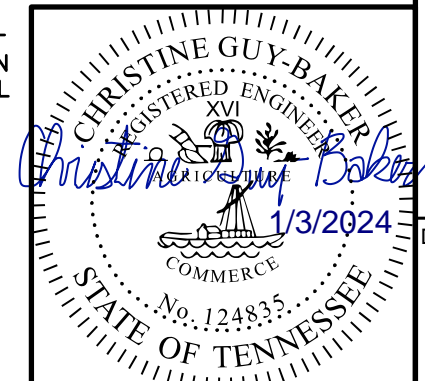
SCALE IN FEET  
0 4 8



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  - VERTICAL DATUM IS NAVD88 (GEOID12B).



NO.	DATE	DESCRIPTION

**C&E**  
Civil & Environmental Consultants, Inc.  
117 Seaboard Lane - Suite E-100 - Franklin, TN 37067  
615-333-7797 · 800-763-2326  
www.ceinc.com

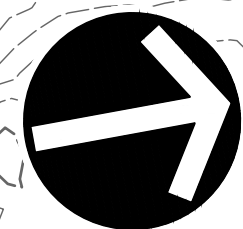
**CITY OF BELLE MEADE  
STORMWATER IMPROVEMENTS  
WALNUT DRIVE  
BELLE MEADE, TN**

**PROPOSED PLAN & PROFILE  
STA. 14+02 - STA. 18+67  
WALNUT DRIVE**

DATE: JANUARY 2024 | DRAWN BY: WJM | CLG  
DWG SCALE: AS SHOWN | CHECKED BY: AS SHOWN | PROJECT NO: 322-084  
APPROVED BY: PLM

DRAWING NO.: **C303**





NORTH

JOHN D. FERGUSON AND CAROLE S. FERGUSON, TRUSTEES OF THE FERGUSON REVOCABLE LIVING TRUST  
MAP 116-11, PARCEL 97.00  
INSTR. 20171120-0119030

EDWARD W. CONK AND CATHERINE E. CONK, HUSBAND AND WIFE  
MAP 116-11, PARCEL 96.00  
INSTR. 20180614-0057213

10" SANITARY SEWER ESMT.  
DB 5787, PG. 15

C02 BOTTOMLESS AREA DRAIN JBS 3223-V  
RIM=571.17  
INV=568.10

PROPOSED 4" DSYL

PROPOSED 4" DSYL

PROPOSED 4" SSWL

PROPOSED 4" SSWL

PROPOSED 4" DSYL

PROPOSED 4" SSWL

LYNNWOOD BLVD.

CONCRETE FLUSH CURB (TYP.)

808 CB00

ABBOTT MARTIN INTERSECTION PAVEDRAIN CROSS-SECTION INSTALLATION (TYP.)

801 CB00

PROPOSED 4" DSYL

PROPOSED 4" SSWL

PAUL E. ALLEN, TRUSTEE, CHRISTINE R. ALLEN REVOCABLE LIVING TRUST  
U/A  
MAP 116-11, PARCEL 105.00  
INSTR. 20191122-0120856

MICHAEL R. KING  
MAP 116-11, PARCEL 83.00  
D.B. 8353, PG. 268

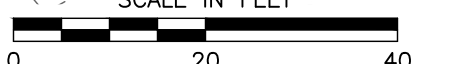
DANIEL COOK AND WIFE, BRENDA COOK  
MAP 116-11, PARCEL 82.00  
INSTR. 20150130-0008974

C01 BOTTOMLESS AREA DRAIN JBS 3223-V  
RIM=570.87  
INV=567.80

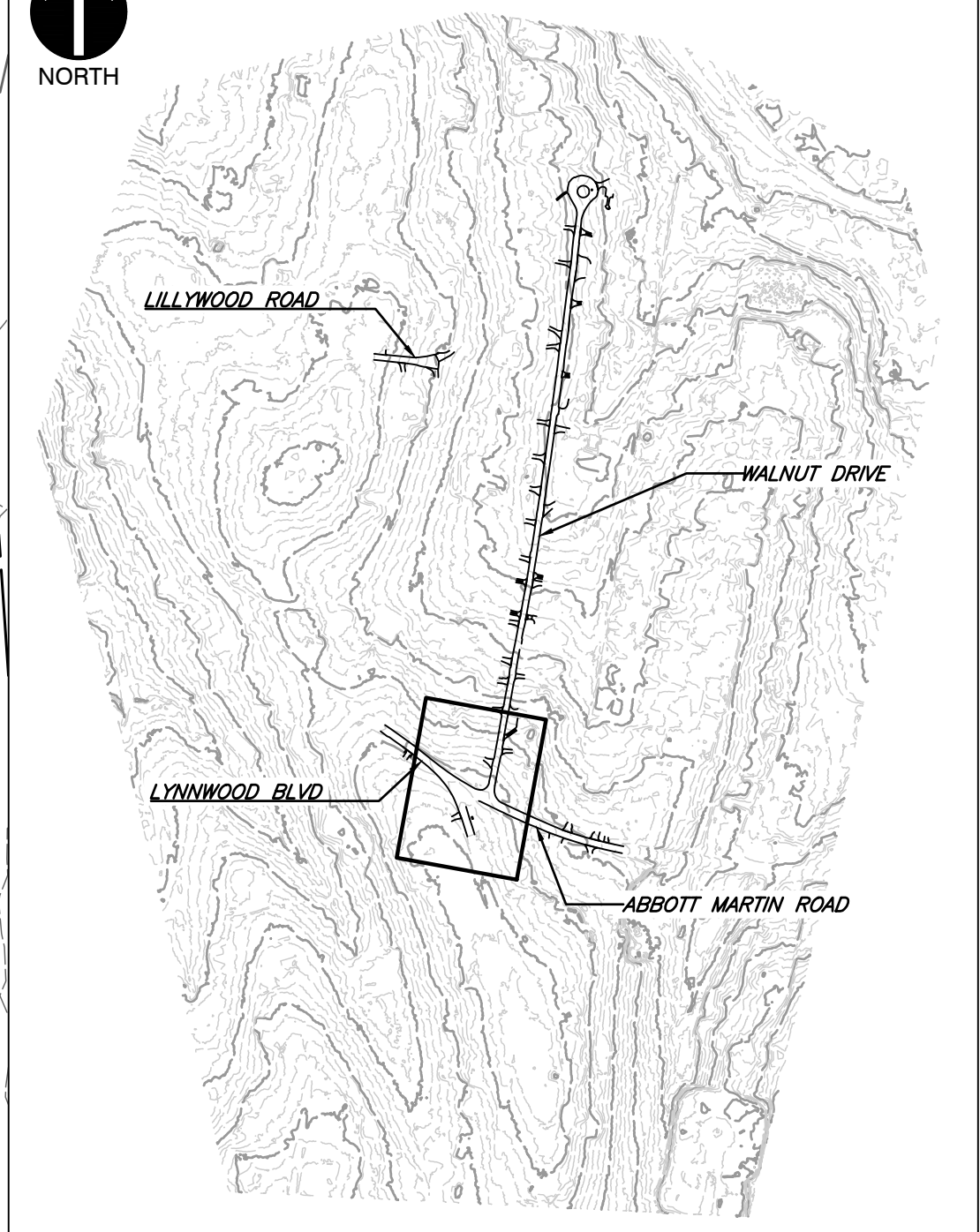
823 PROPOSED ASPHALT (TYP.)  
8202

801 WALNUT DRIVE PAVEDRAIN MINIMUM CROSS-SECTION INSTALLATION (TYP.)  
8000

PLAN LAYOUT  
SCALE IN FEET



NORTH



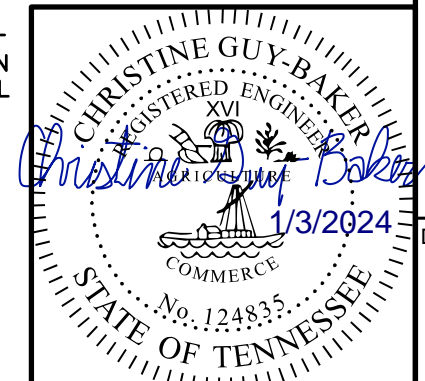
SHEET LOCATION  
SCALE: 1"=500'

LEGEND

- EXISTING PROPERTY LINE
- - - EXISTING EASEMENT
- - - EXISTING RIGHT-OF-WAY
- 560 EXISTING INDEX (MAJOR) CONTOUR
- - - EXISTING INTERMEDIATE (MINOR) CONTOUR
- - - EXISTING DRAINAGE DITCH
- - - EXISTING FENCE LINE
- - - EXISTING ROADWAY CENTERLINE
- - - EXISTING CURB
- - - EXISTING EDGE OF PAVEMENT
- - - EXISTING STRUCTURE
- ST EXISTING STORM PIPE
- W EXISTING WATER LINE
- SAN EXISTING SANITARY SEWER LINE
- G EXISTING GAS LINE
- OH-E EXISTING OVERHEAD WIRE
- EXISTING IRON PIN
- EXISTING CONCRETE MONUMENT
- ⊙ EXISTING MAILBOX
- ⊙ EXISTING STORMWATER INLET
- ⊙ EXISTING SANITARY SEWER FEATURE
- ⊙ EXISTING WATER LINE FEATURE
- ⊙ EXISTING GAS VALVE
- ⊙ EXISTING VEGETATION
- ⊙ EXISTING ELECTRIC FEATURE
- - - PROPOSED ROADWAY CENTERLINE
- - - PROPOSED CURB
- - - PROPOSED EDGE OF PAVED DRIVE
- - - PROPOSED PERMEABLE PAVERS
- - - PROPOSED ASPHALT
- - - PROPOSED CONCRETE
- - - PROPOSED FLEXAMAT
- - - PROPOSED EASEMENT
- ST PROPOSED STORMWATER PIPE
- - - PROPOSED ROADWAY STRIPING
- 600X PROPOSED MIRAFI 600X

REFERENCE

1. EXISTING TOPOGRAPHIC INFORMATION TAKEN FROM A COMBINATION OF TOPOGRAPHIC SURVEY COLLECTED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. AND LIDAR DATA OBTAINED FROM THE STATE OF TENNESSEE.
2. HORIZONTAL DATUM IS TN STATE PLANE NSRS 2011 IN FEET.
3. VERTICAL DATUM IS NAVD88 (GEOID12B).



NO	DATE	DESCRIPTION

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117 Seaboard Lane - Suite E-100 - Franklin, TN 37067  
615-333-7797 · 800-763-2326  
www.cecinc.com

**CITY OF BELLE MEADE  
STORMWATER IMPROVEMENTS  
WALNUT DRIVE  
BELLE MEADE, TN**

**PROPOSED PLAN  
LYNNWOOD BLVD  
INTERSECTION**

DATE: JANUARY 2024 | DRAWN BY: WJW | CLG  
DWS SCALE: AS SHOWN | CHECKED BY: 322-084  
PROJECT NO.: 322-084  
APPROVED BY: PLM

DRAWING NO.: **C304**



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Call before you dig.

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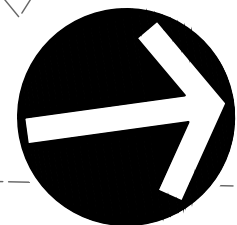








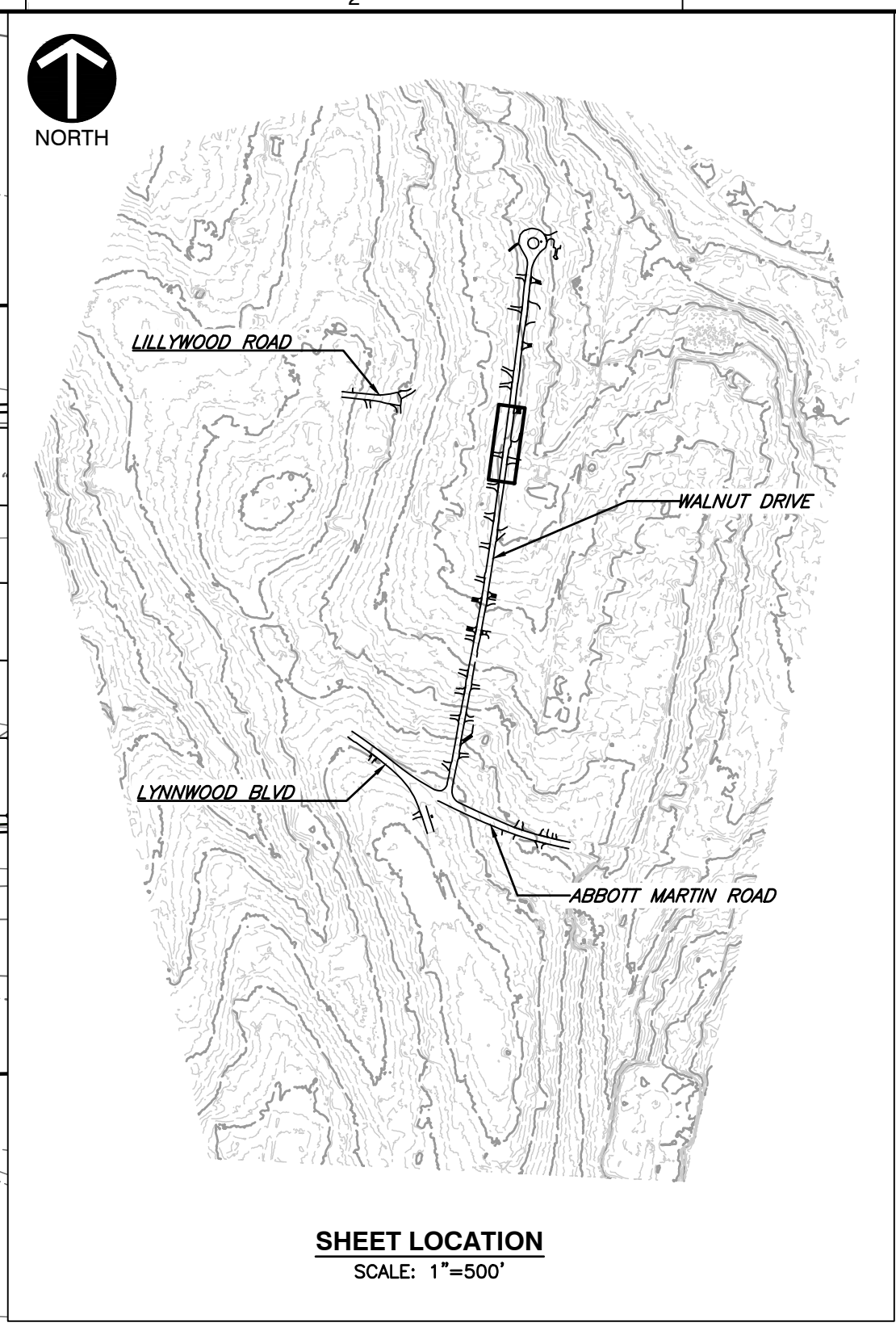
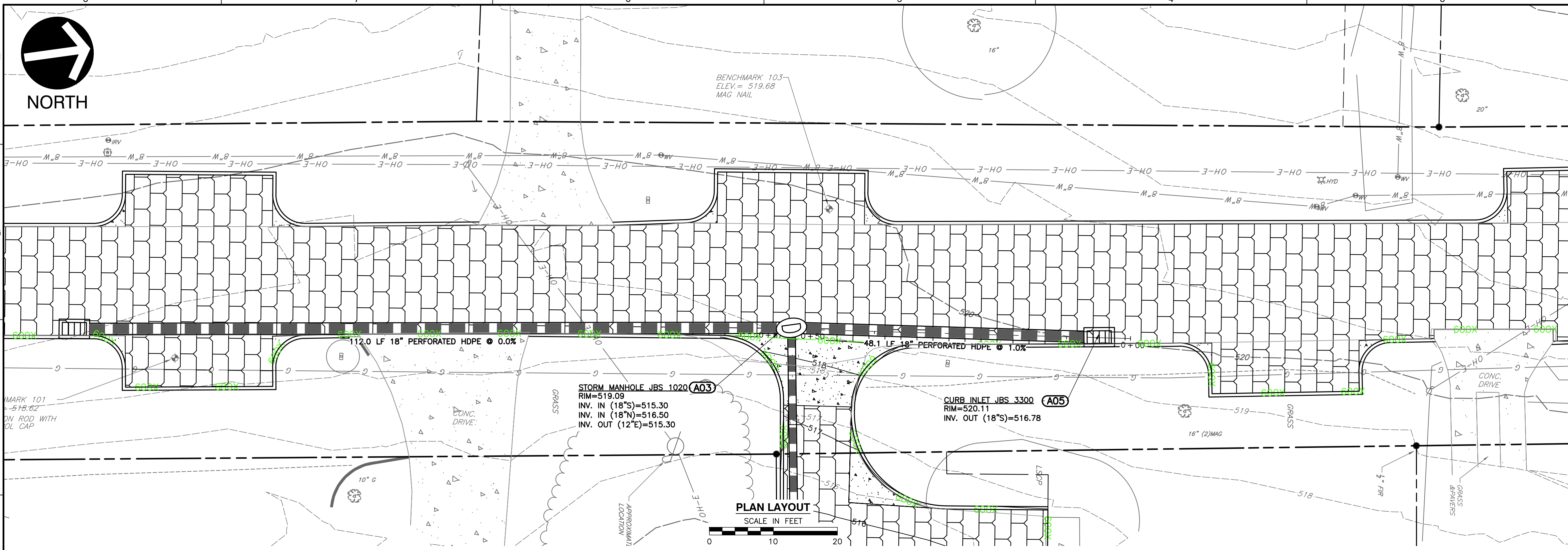




NORTH



NORTH



SHEET LOCATION  
SCALE: 1"=500'

MARK 101  
ELEV.=518.62  
ON ROD WITH  
OL. CAP

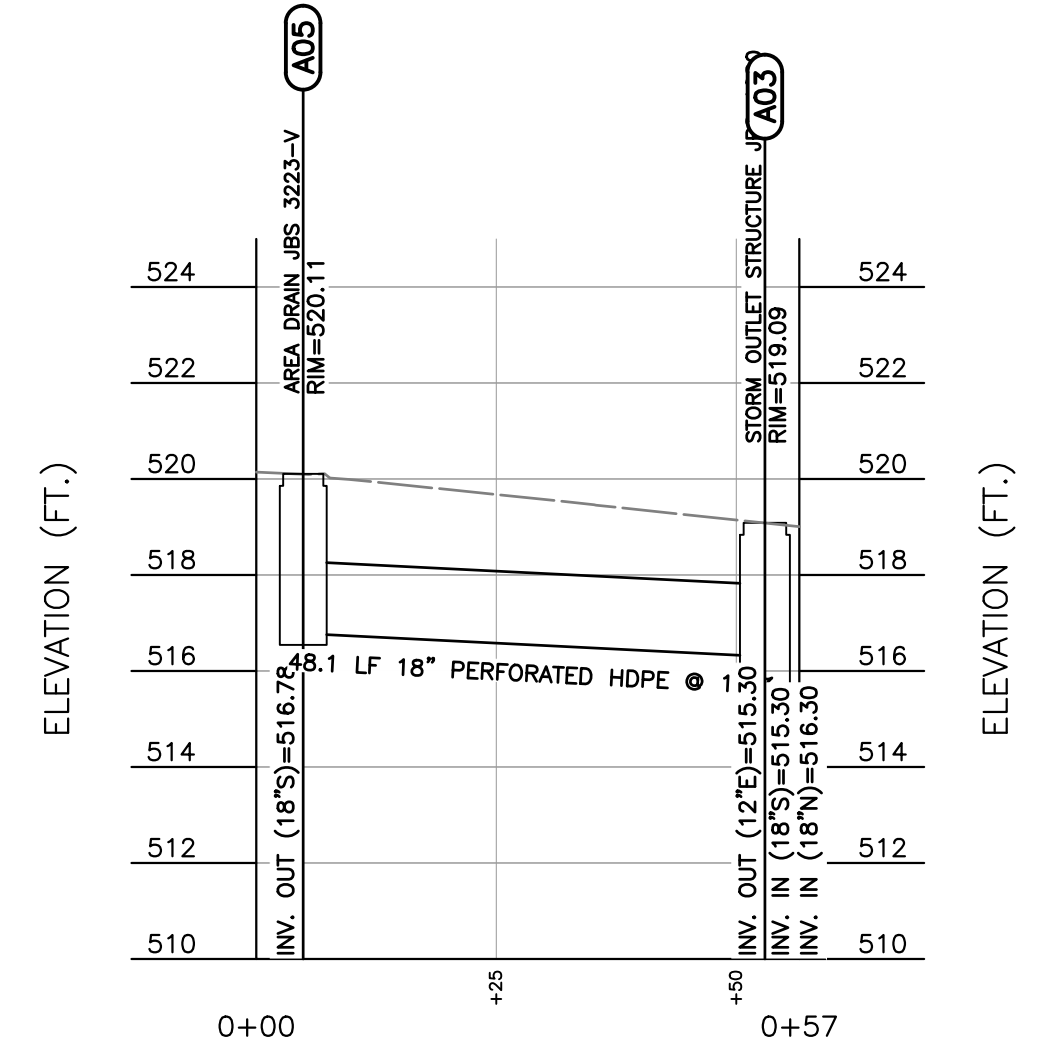
STORM MANHOLE JBS 1020 (A03)  
RIM=519.09  
INV. IN (18"S)=515.30  
INV. IN (18"N)=516.50  
INV. OUT (12"E)=515.30

CURB INLET JBS 3300 (A05)  
RIM=520.11  
INV. OUT (18"S)=516.78

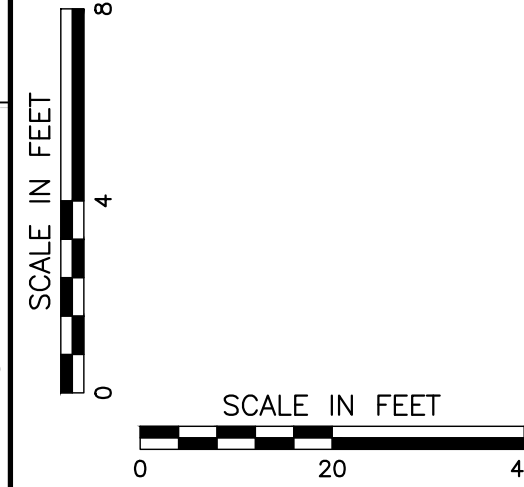
PLAN LAYOUT  
SCALE IN FEET

LEGEND

- EXISTING PROPERTY LINE
- - - EXISTING EASEMENT
- - - EXISTING RIGHT-OF-WAY
- 560- EXISTING INDEX (MAJOR) CONTOUR
- - - EXISTING INTERMEDIATE (MINOR) CONTOUR
- - - EXISTING DRAINAGE DITCH
- x-x-x- EXISTING FENCE LINE
- EXISTING ROADWAY CENTERLINE
- EXISTING CURB
- EXISTING EDGE OF PAVEMENT
- EXISTING STRUCTURE
- ST --- EXISTING STORM PIPE
- W --- EXISTING WATER LINE
- SAN --- EXISTING SANITARY SEWER LINE
- G --- EXISTING GAS LINE
- OH-E --- EXISTING OVERHEAD WIRE
- EXISTING IRON PIN
- EXISTING CONCRETE MONUMENT
- ⊙ EXISTING MAILBOX
- ⊙ EXISTING STORMWATER INLET
- ⊙ EXISTING SANITARY SEWER FEATURE
- ⊙ EXISTING WATER LINE FEATURE
- ⊙ EXISTING GAS VALVE
- ⊙ EXISTING VEGETATION
- ⊙ EXISTING ELECTRIC FEATURE
- PROPOSED ROADWAY CENTERLINE
- PROPOSED CURB
- PROPOSED EDGE OF PAVED DRIVE
- PROPOSED PERMEABLE PAVERS
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED FLEXAMAT
- PROPOSED EASEMENT
- ST --- PROPOSED STORMWATER PIPE
- PROPOSED ROADWAY STRIPING
- 600X --- PROPOSED MIRAFI 600X



A05 - A03 PROFILE  
SCALE H:1"=20'; V:1"=4'

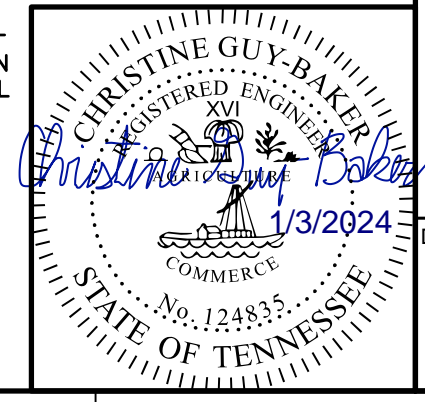


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3. VERTICAL DATUM IS NAVD88 (GEOID12B).



PROPOSED STORMWATER  
PLAN & PROFILE  
A05-A03 LINE

DRAWING NO.:

C308

CITY OF BELLE MEADE  
STORMWATER IMPROVEMENTS  
WALNUT DRIVE  
BELLE MEADE, TN

**Civil & Environmental Consultants, Inc.**  
117 Seaboard Lane - Suite E-100 - Franklin, TN 37067  
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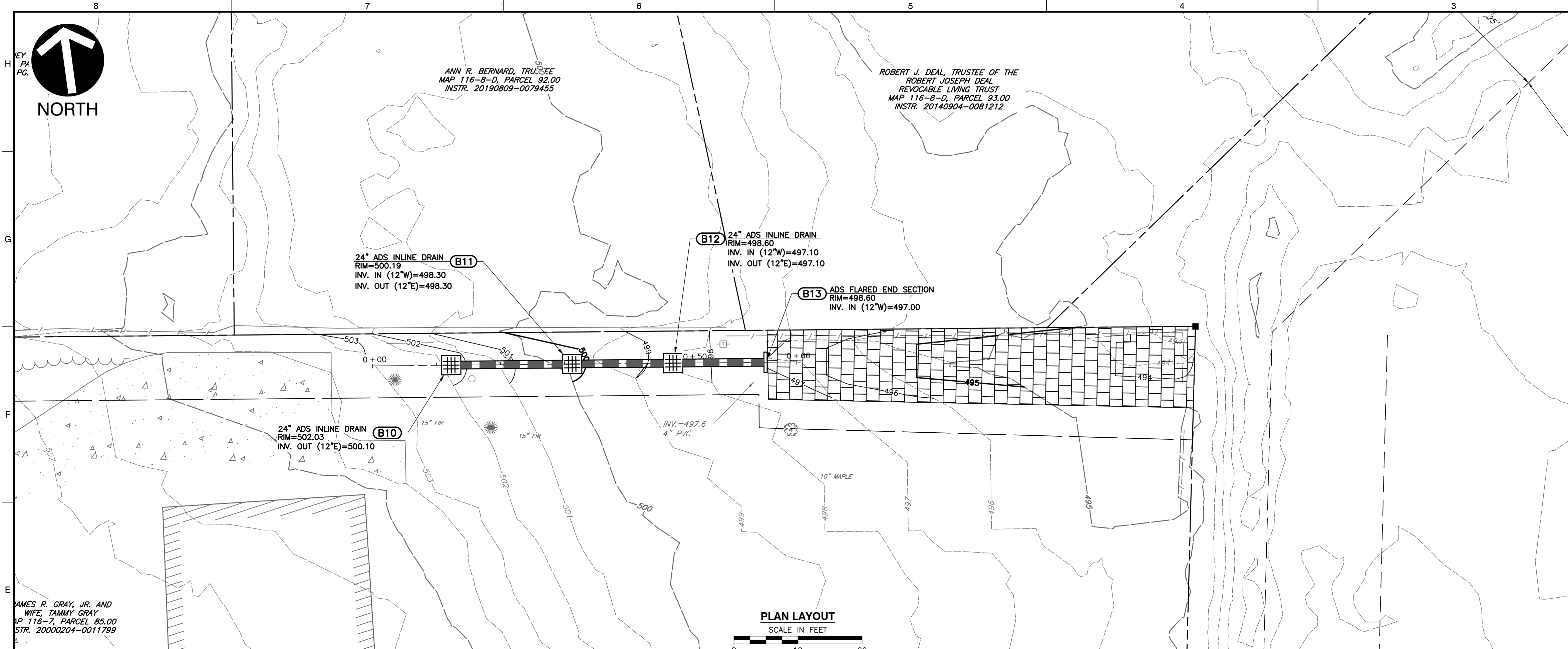
NO.	DATE	DESCRIPTION

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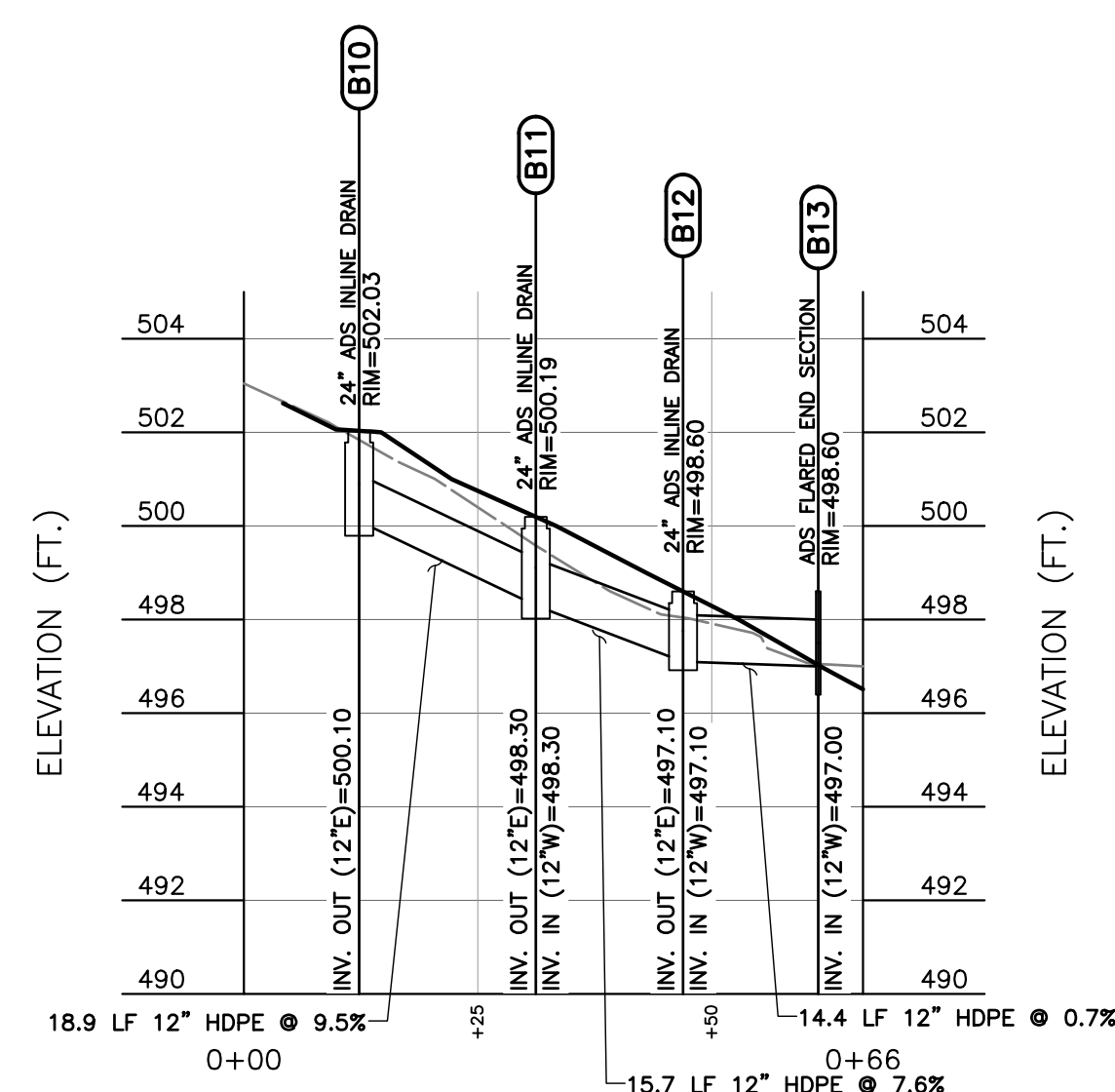




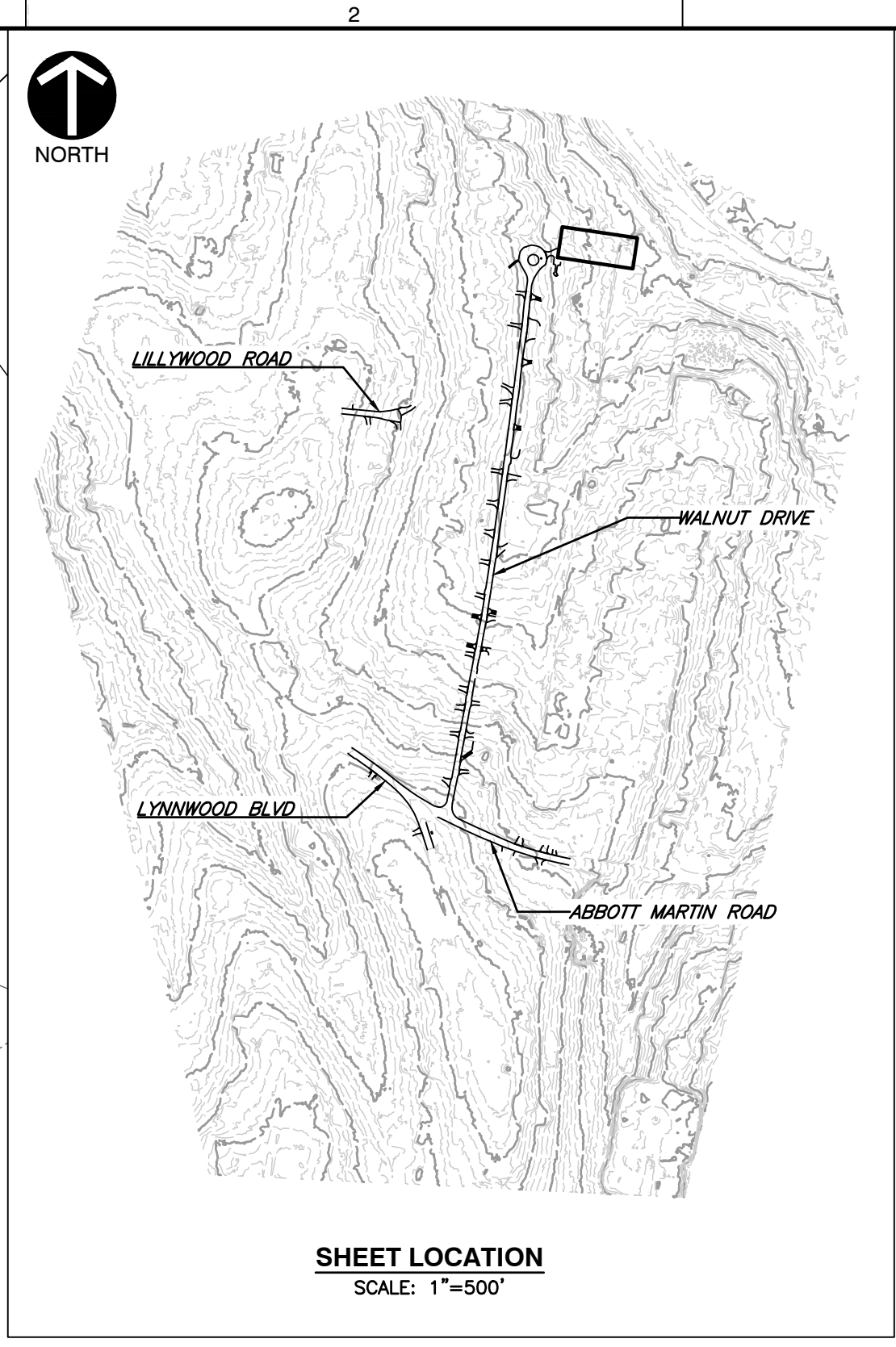




**PLAN LAYOUT**  
SCALE IN FEET



**B13 - B10 PROFILE**  
SCALE H:1"=20'; V:1"=4'



**SHEET LOCATION**  
SCALE: 1"=500'

**LEGEND**

	EXISTING PROPERTY LINE
	EXISTING EASEMENT
	EXISTING RIGHT-OF-WAY
	EXISTING INDEX (MAJOR) CONTOUR
	EXISTING INTERMEDIATE (MINOR) CONTOUR
	EXISTING DRAINAGE DITCH
	EXISTING FENCE LINE
	EXISTING ROADWAY CENTERLINE
	EXISTING CURB
	EXISTING EDGE OF PAVEMENT
	EXISTING STRUCTURE
	EXISTING STORM PIPE
	EXISTING WATER LINE
	EXISTING SANITARY SEWER LINE
	EXISTING GAS LINE
	EXISTING OVERHEAD WIRE
	EXISTING IRON PIN
	EXISTING CONCRETE MONUMENT
	EXISTING MAILBOX
	EXISTING STORMWATER INLET
	EXISTING SANITARY SEWER FEATURE
	EXISTING WATER LINE FEATURE
	EXISTING GAS VALVE
	EXISTING VEGETATION
	EXISTING ELECTRIC FEATURE
	PROPOSED ROADWAY CENTERLINE
	PROPOSED CURB
	PROPOSED EDGE OF PAVED DRIVE
	PROPOSED PERMEABLE PAVERS
	PROPOSED ASPHALT
	PROPOSED CONCRETE
	PROPOSED FLEXAMAT
	PROPOSED EASEMENT
	PROPOSED STORMWATER PIPE
	PROPOSED ROADWAY STRIPING
	PROPOSED MIRAFI 600X
	PROPOSED LIMITS OF DISTURBANCE

- REFERENCE**
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  - VERTICAL DATUM IS NAVD88 (GEOID12B).



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**Civil & Environmental Consultants, Inc.**  
117 Seaboard Lane - Suite E-100 - Franklin, TN 37067  
615-333-7797 · 800-763-2326  
www.ceinc.com

**CITY OF BELLE MEADE  
STORMWATER IMPROVEMENTS  
WALNUT DRIVE  
BELLE MEADE, TN**

**PROPOSED STORMWATER  
PLAN & PROFILE  
B13-B10 LINE**

DATE: JANUARY 2024 | DRAWN BY: WJM | DWG SCALE: AS SHOWN | CHECKED BY: CLG | PROJECT NO: 322-084 | APPROVED BY: PLM

DRAWING NO.: **C310**

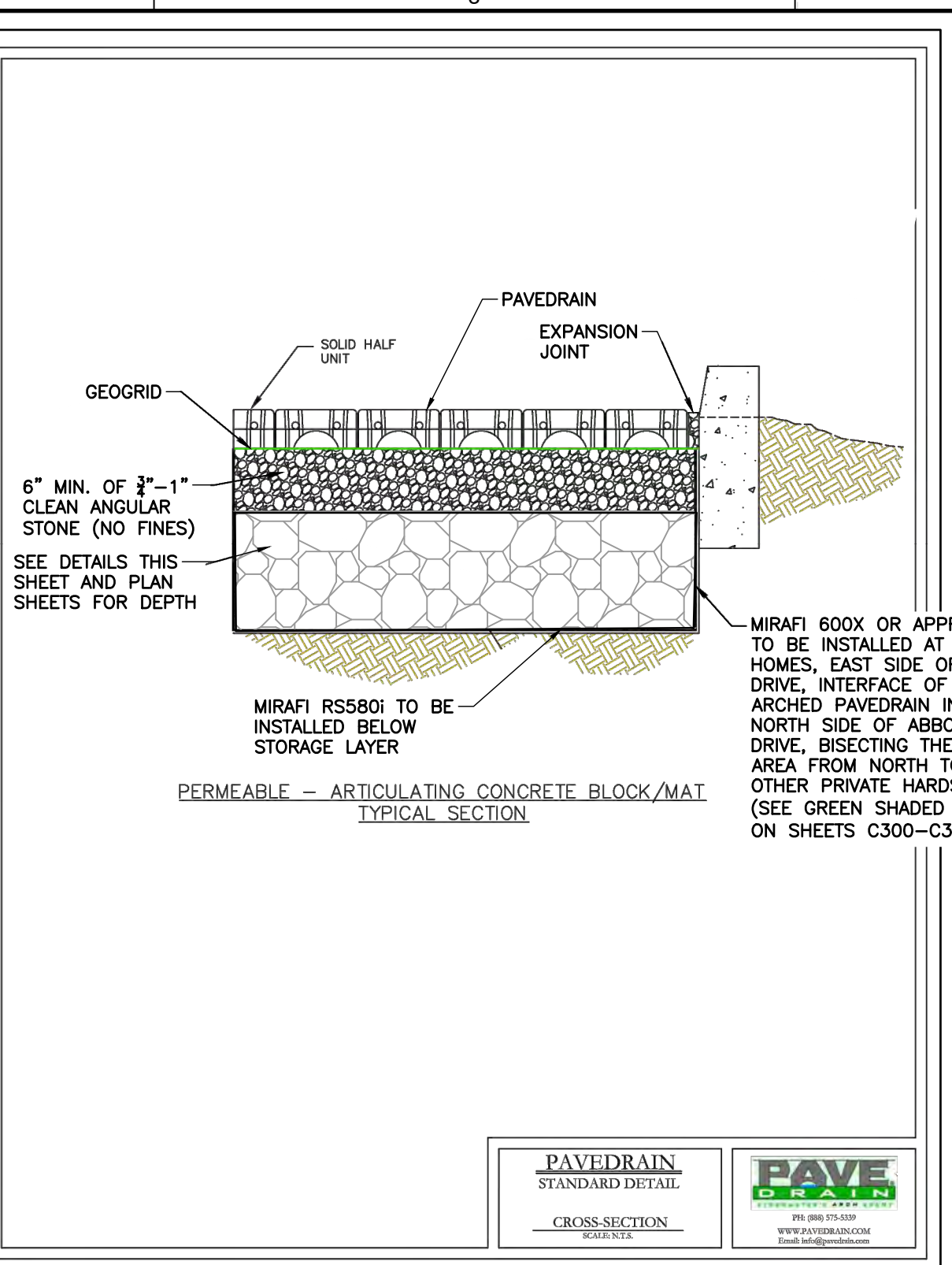
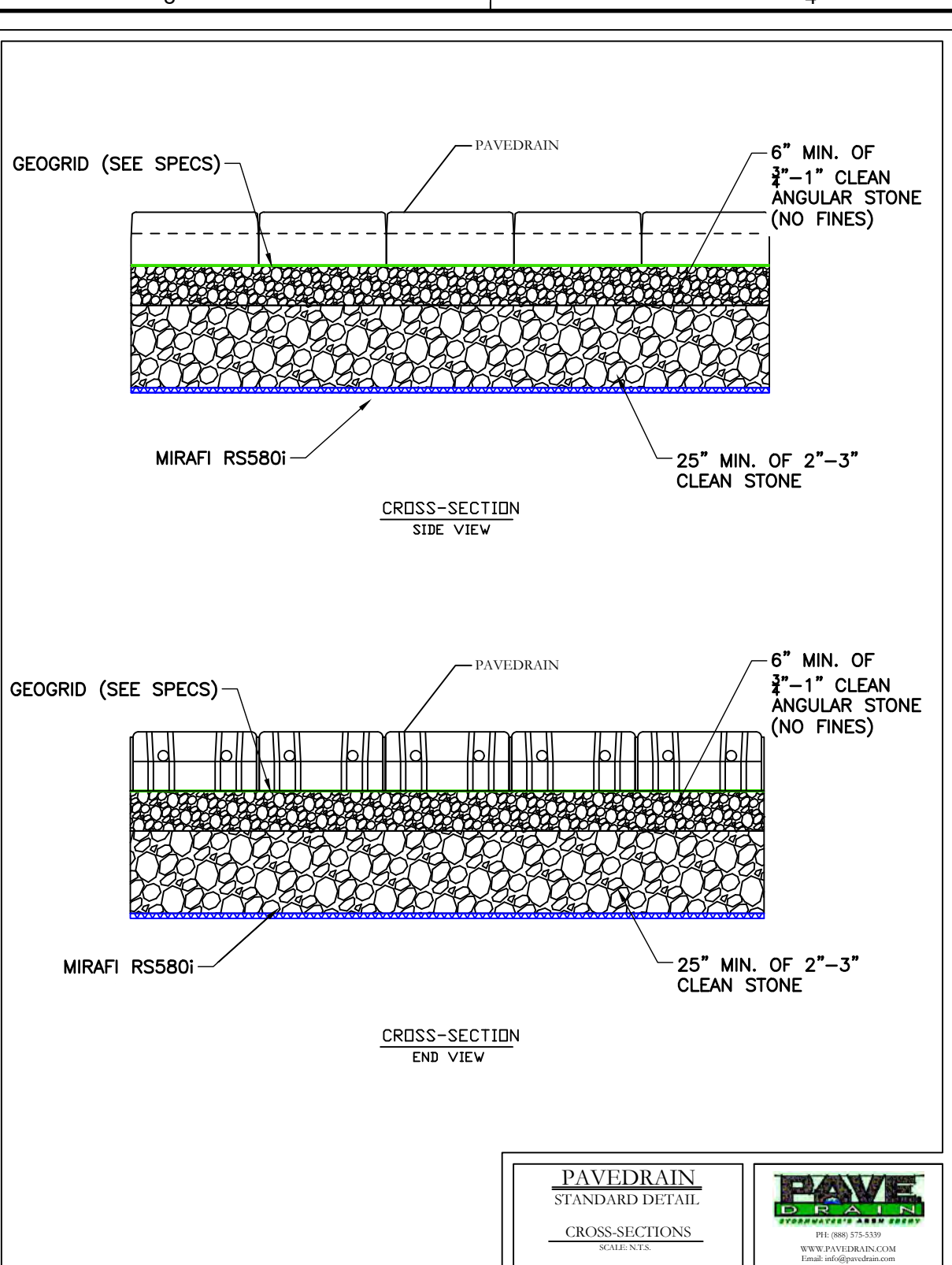
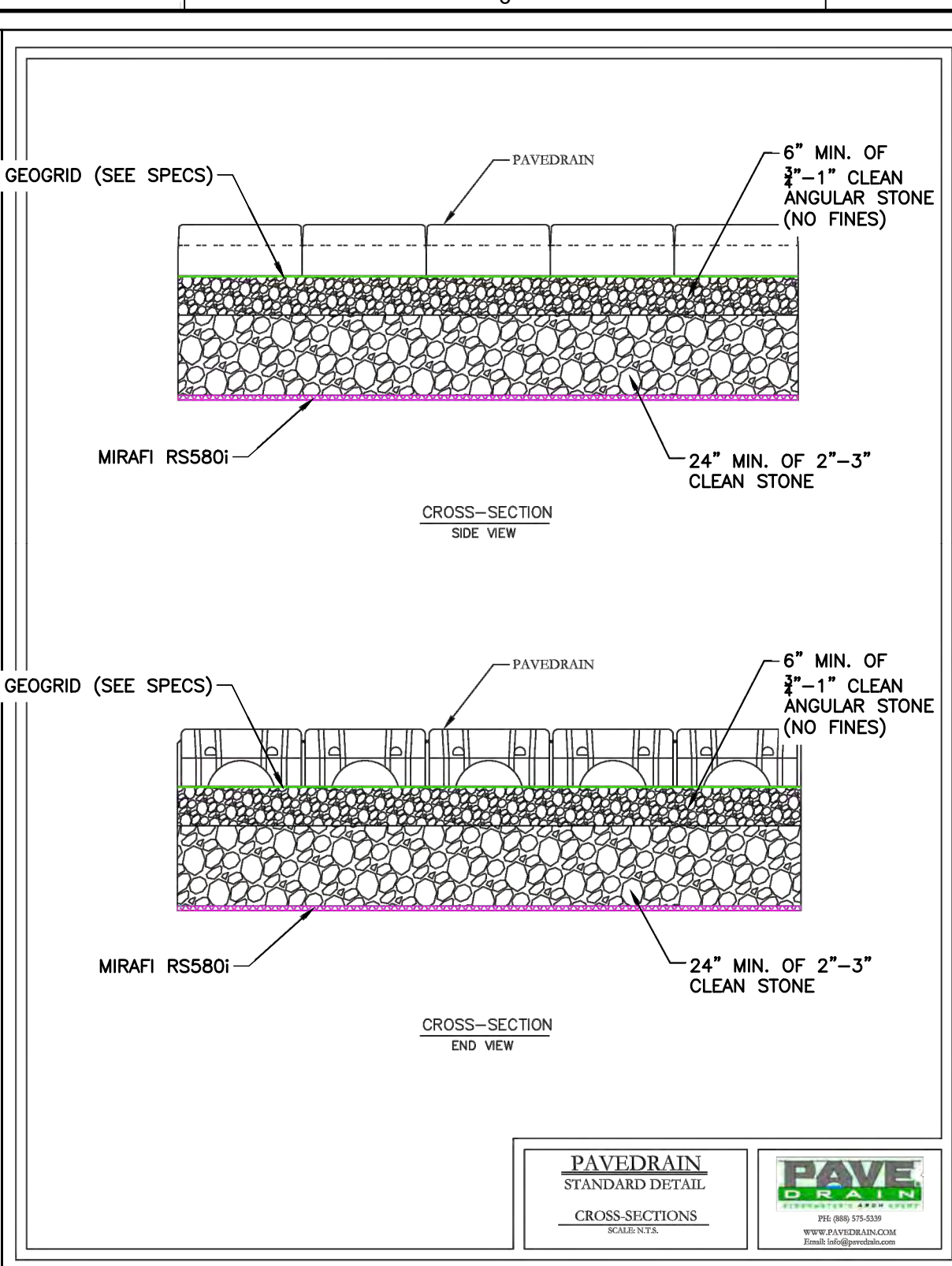
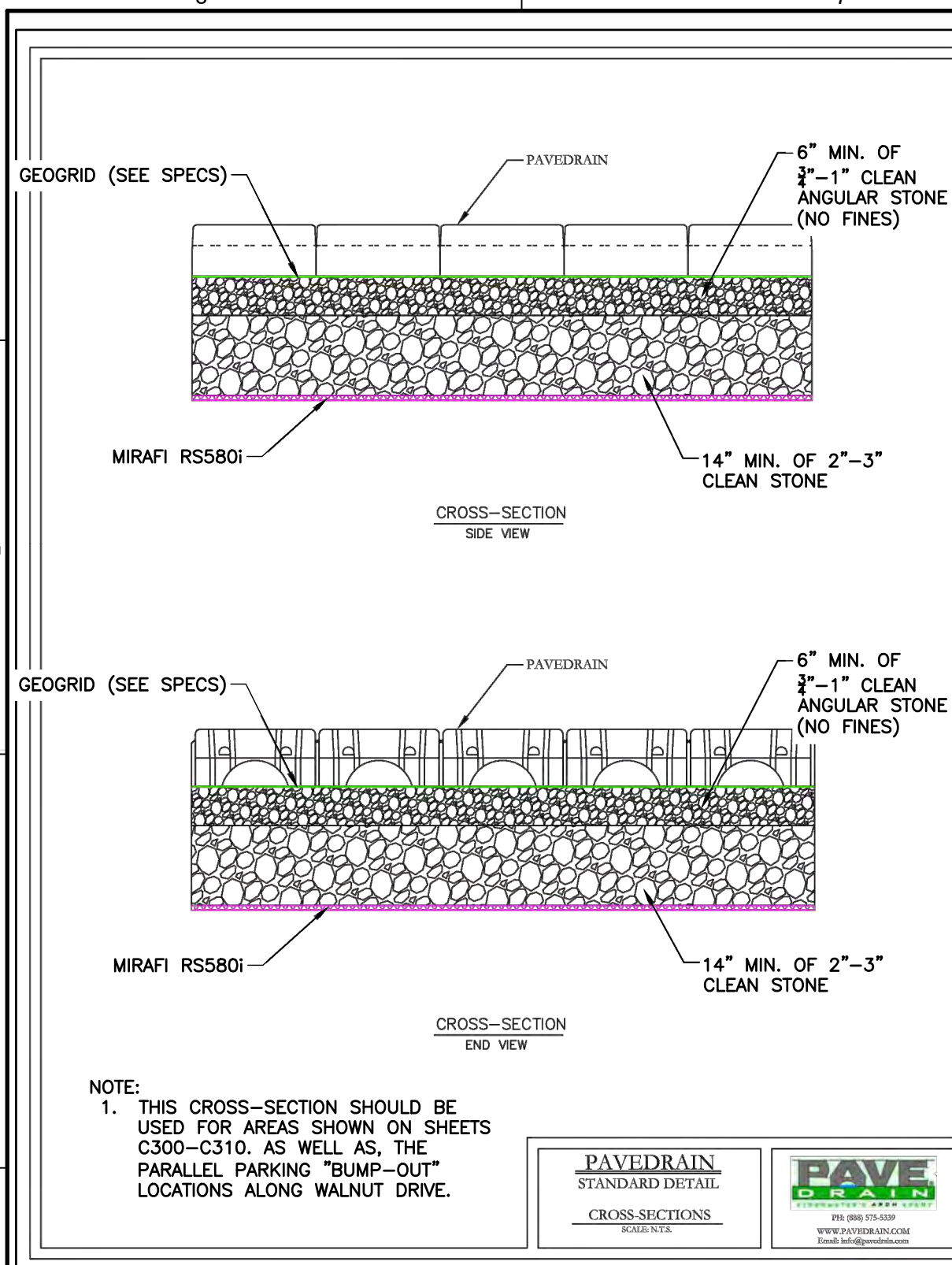
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Know what's below.  
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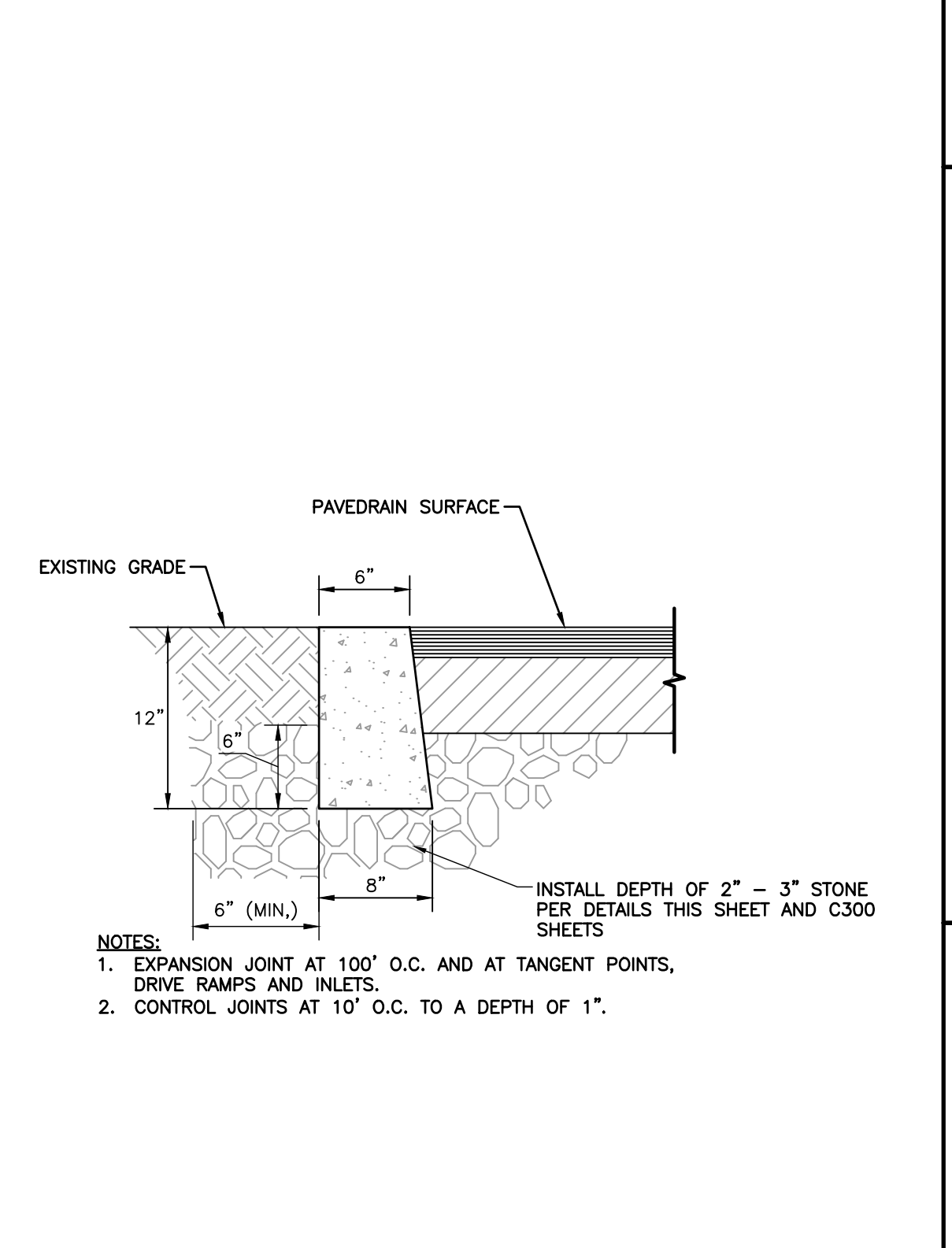
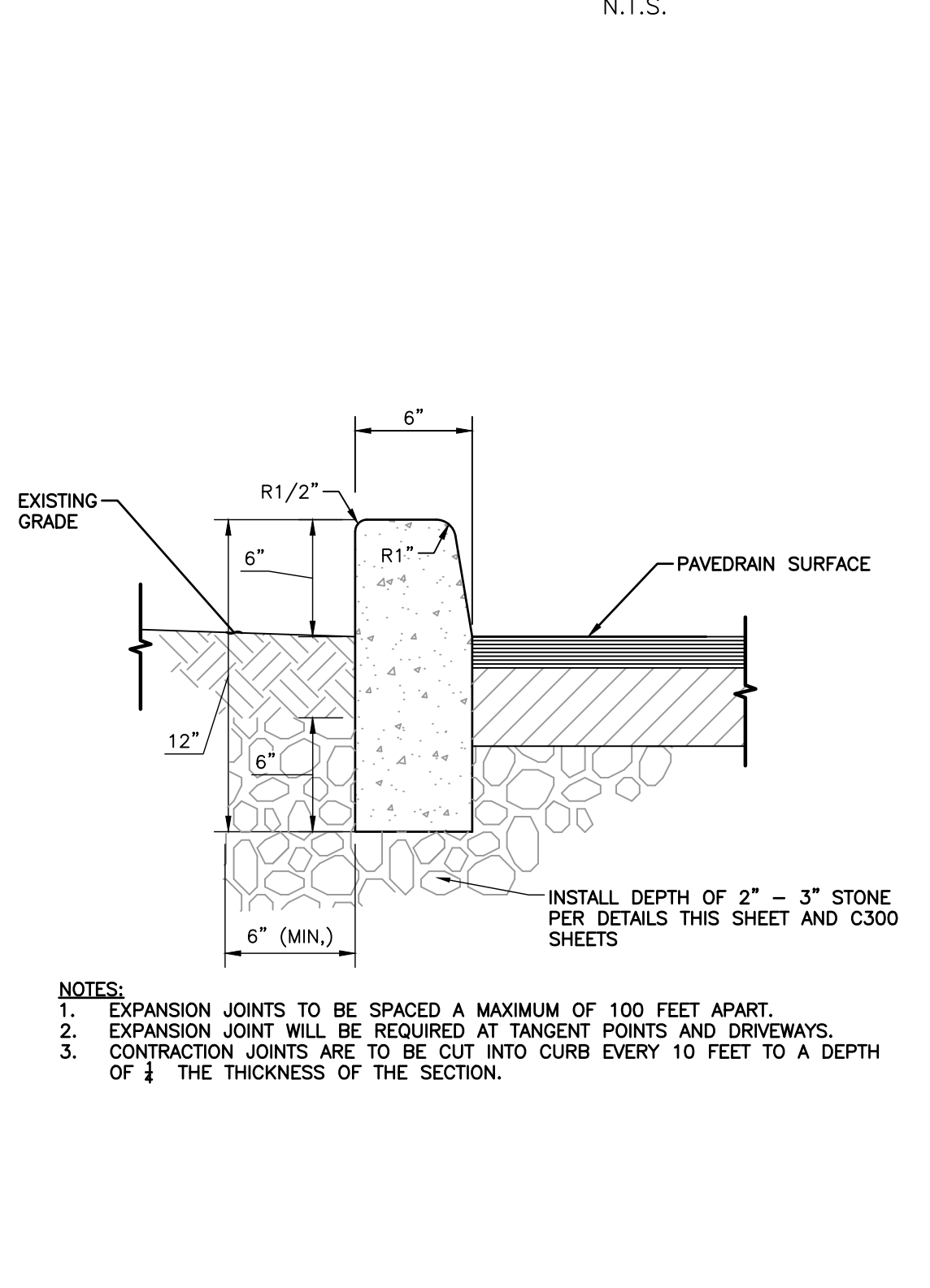
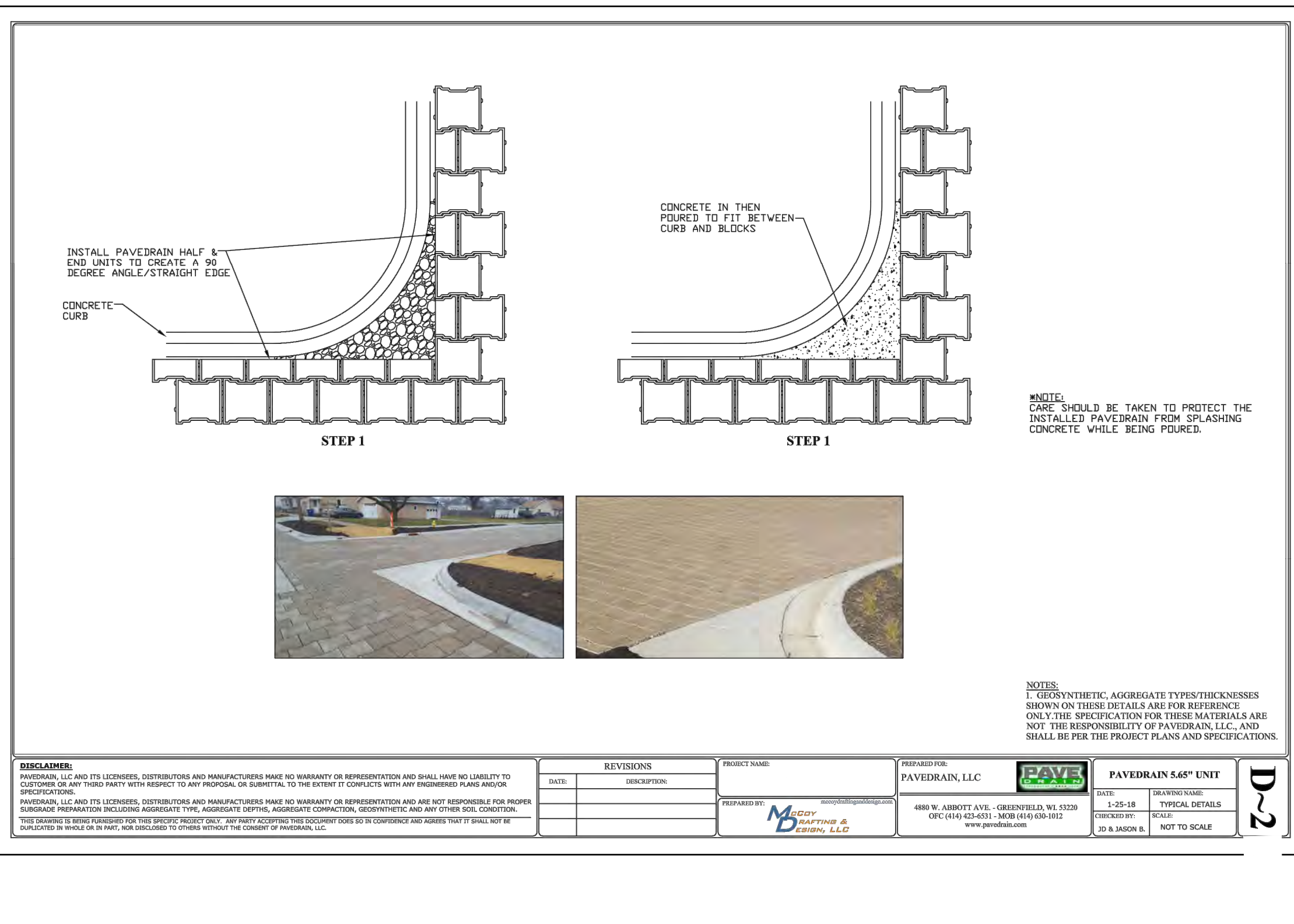
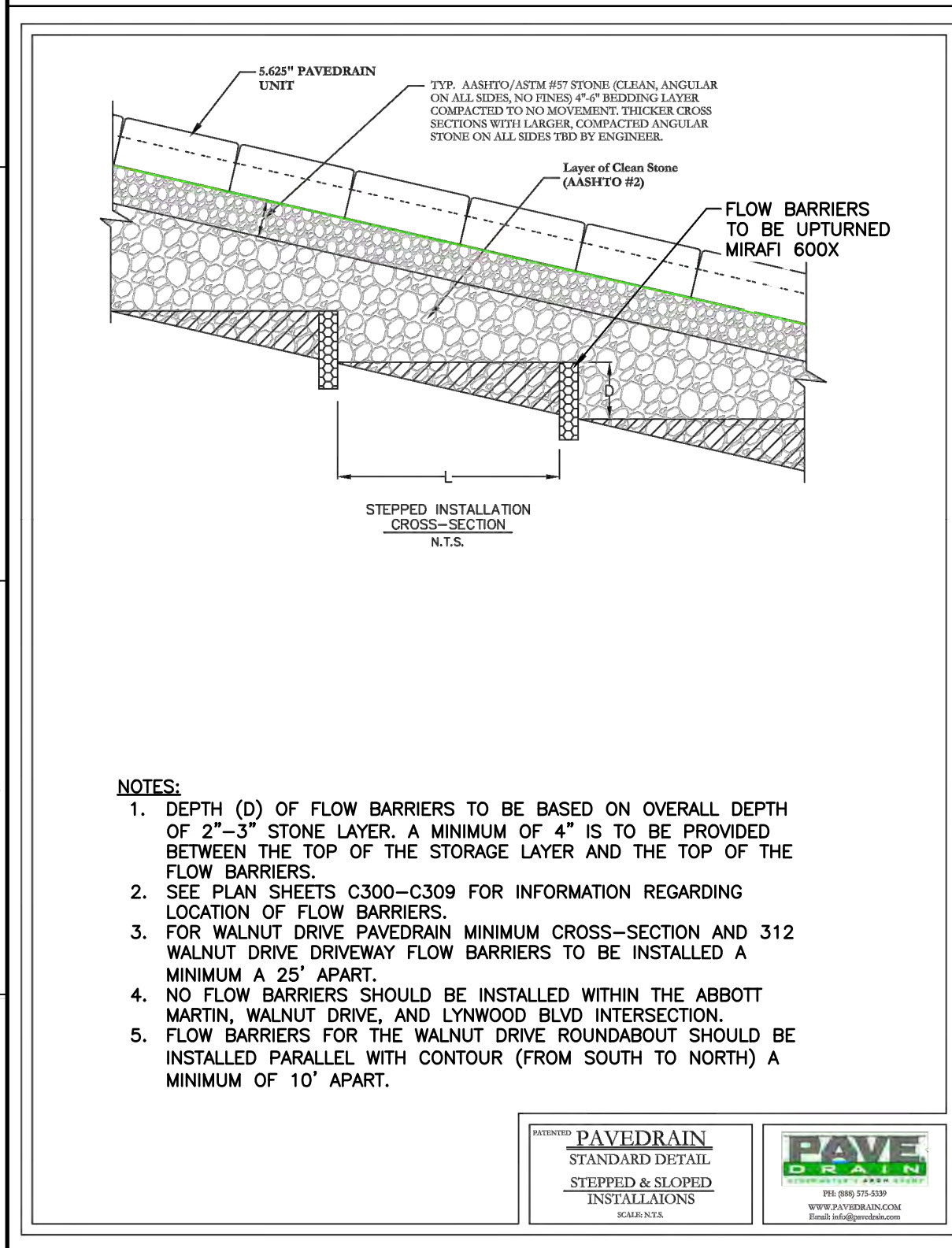


**DETAIL 801**  
**WALNUT DRIVE PAVEDRAIN MINIMUM CROSS-SECTION**  
N.T.S.

**DETAIL 802**  
**WALNUT DRIVE PAVEDRAIN STORAGE CROSS-SECTION**  
N.T.S.

**DETAIL 803**  
**ABBOTT MARTIN INTERSECTION PAVEDRAIN CROSS-SECTION**  
N.T.S.

**DETAIL 804**  
**PAVEDRAIN CROSS-SECTION WITH FLOW RETARDANT BARRIER**  
N.T.S.



**DETAIL 805**  
**PAVEDRAIN STEPPED INSTALLATIONS**  
N.T.S.

**DETAIL 806**  
**PAVEDRAIN 90 DEGREE CURB RADIUS**  
N.T.S.

**DETAIL 807**  
**EXTRUDED CURB**  
N.T.S.

**DETAIL 808**  
**FLUSH RIBBON CURB**  
N.T.S.

**811**  
Know what's below.  
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**REVISIONS**

NO.	DATE	DESCRIPTION

**PROJECT NAME:** WALNUT DRIVE PAVEDRAIN, L.L.C.  
**PREPARED FOR:** PAVEDRAIN, L.L.C.  
**DATE:** 1-25-18  
**SCALE:** TYPICAL DETAILS  
**PROJECT NO.:** 30 & 3000 B  
**NOT TO SCALE**

**PAVEDRAIN 5/8\"/>**

**NOTES:**  
1. EXPANSION JOINTS TO BE SPACED A MAXIMUM OF 100 FEET APART.  
2. EXPANSION JOINT WILL BE REQUIRED AT TANGENT POINTS AND DRIVEWAYS.  
3. CONTRACTION JOINTS ARE TO BE CUT INTO CURB EVERY 10 FEET TO A DEPTH OF 1/4 THE THICKNESS OF THE SECTION.

**NOTES:**  
1. EXPANSION JOINT AT 100' O.C. AND AT TANGENT POINTS, DRIVE RAMPS AND INLETS.  
2. CONTROL JOINTS AT 10' O.C. TO A DEPTH OF 1\"/>

**REVISION RECORD**

NO.	DATE	DESCRIPTION

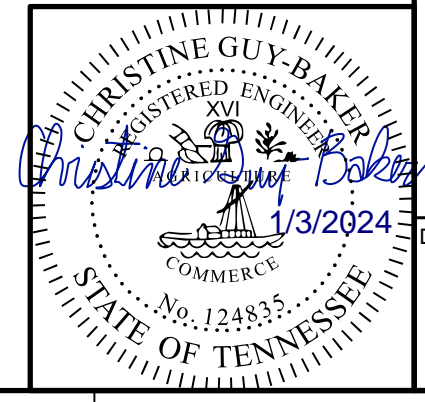
**C&E**  
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**CITY OF BELLE MEADE**  
**STORMWATER IMPROVEMENTS**  
**WALNUT DRIVE**  
**BELLE MEADE, TN**

**DETAILS [1 OF 4]**

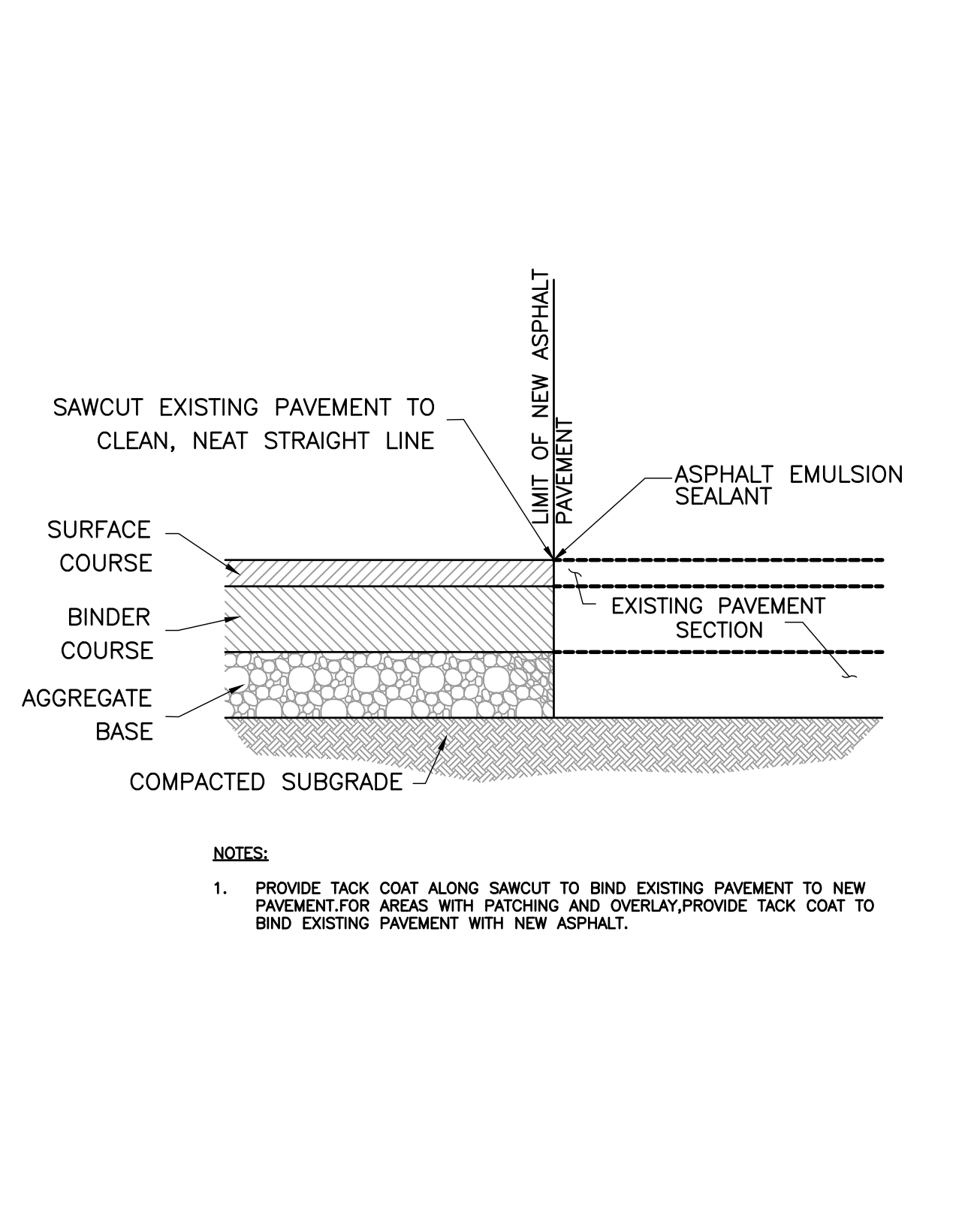
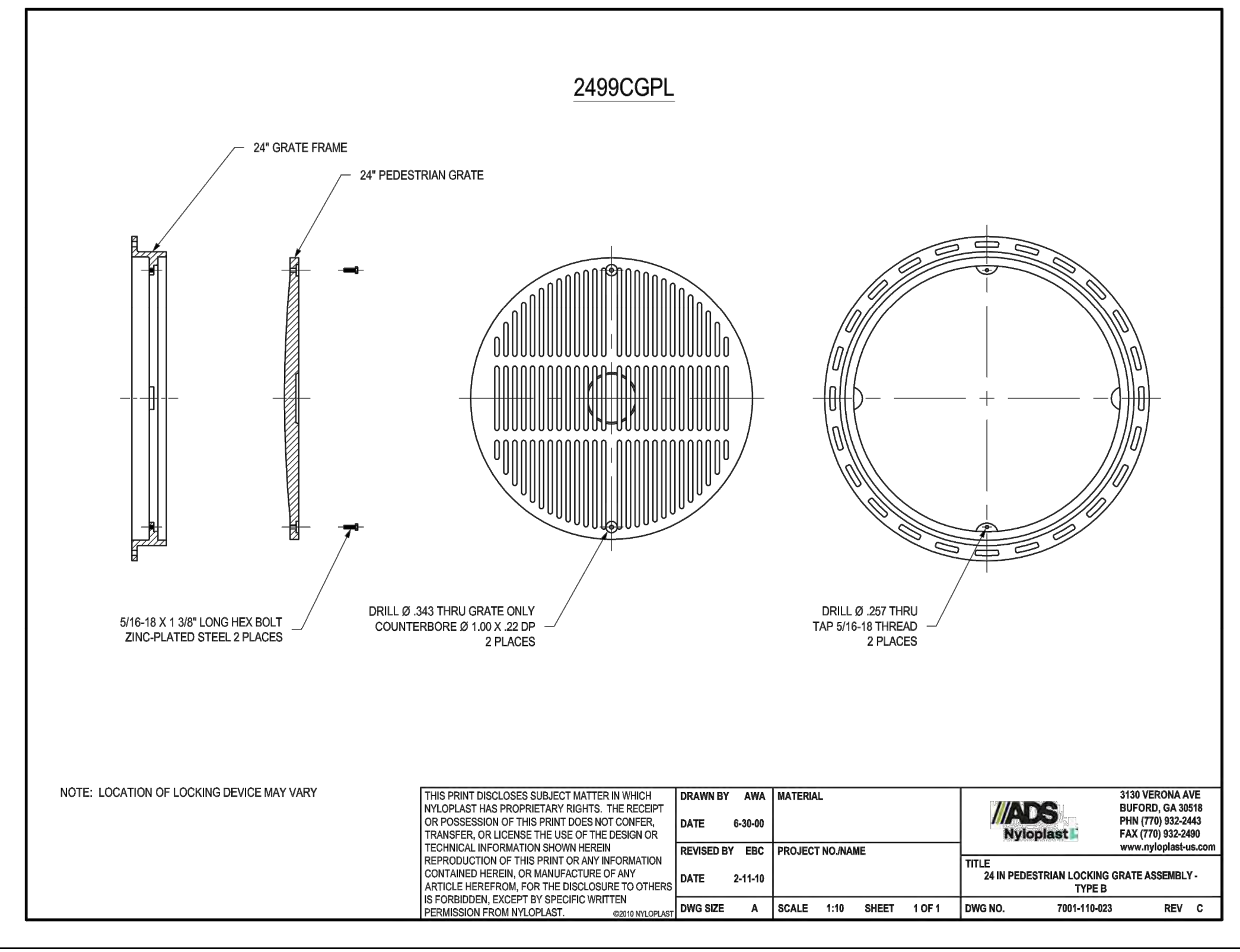
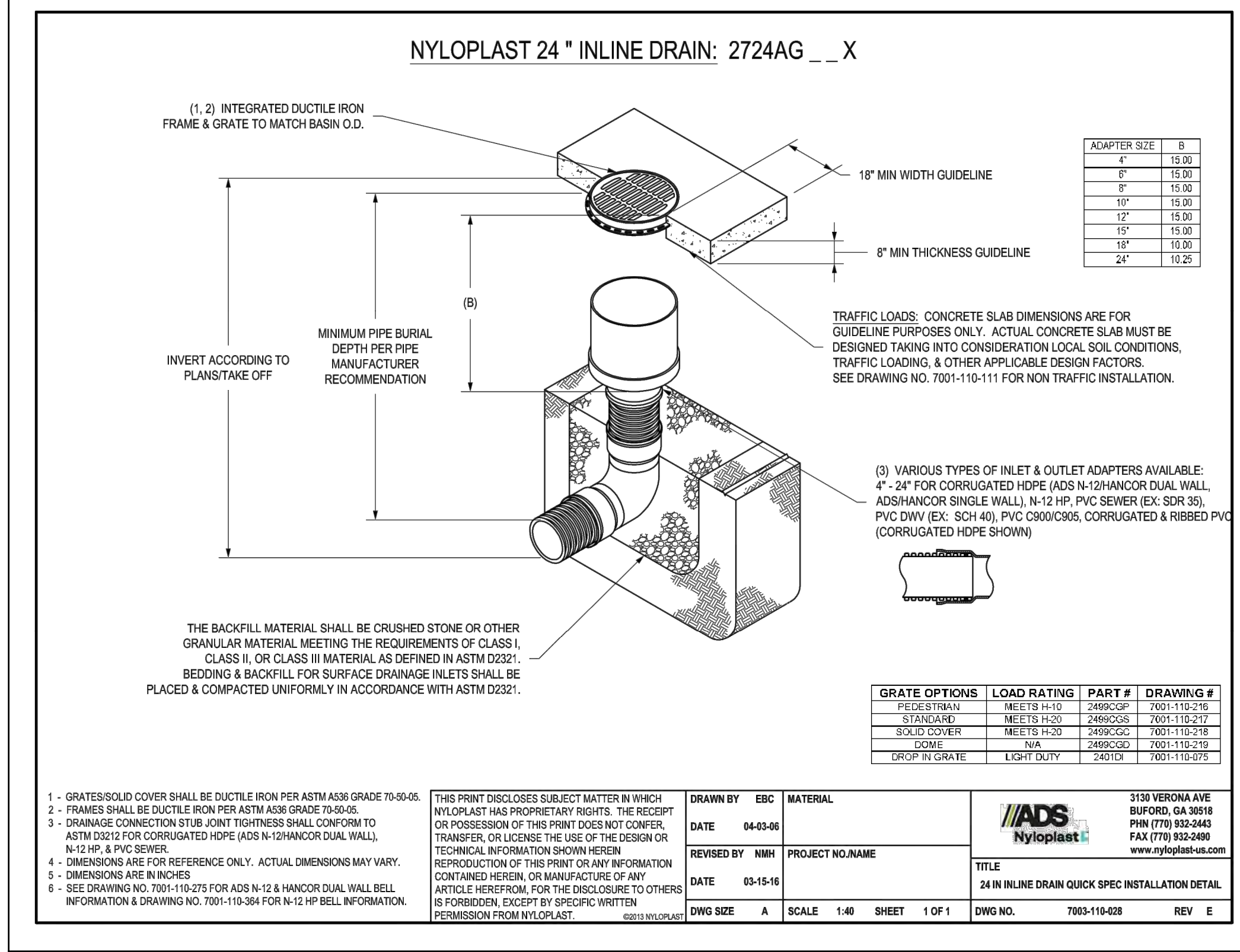
**DATE:** JANUARY 2024 [DRAWN BY: WJW]  
**DWG SCALE:** AS SHOWN [CHECKED BY: CLG]  
**PROJECT NO.:** 322-084  
**APPROVED BY:** PLM

**DRAWING NO.:** **C800**



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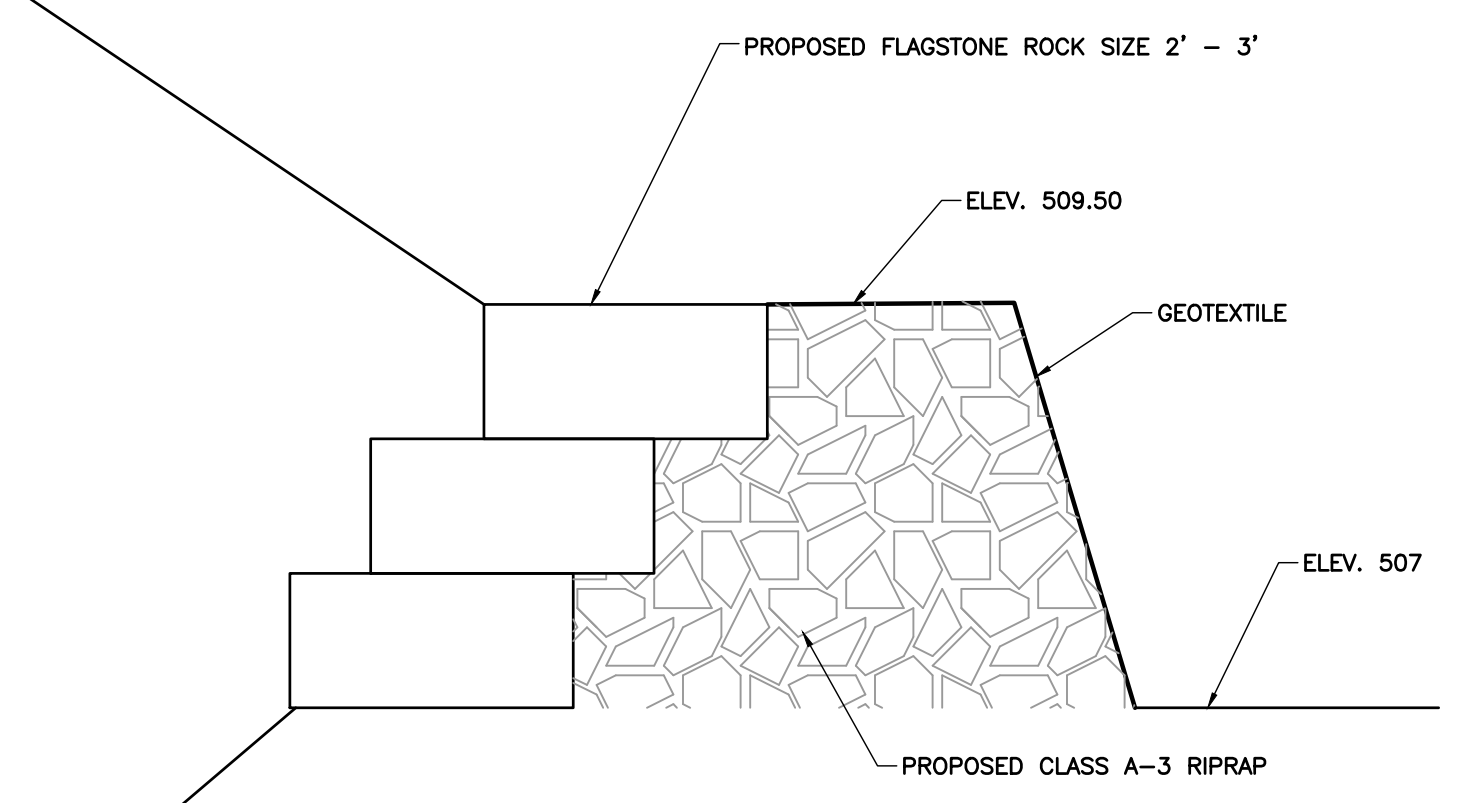




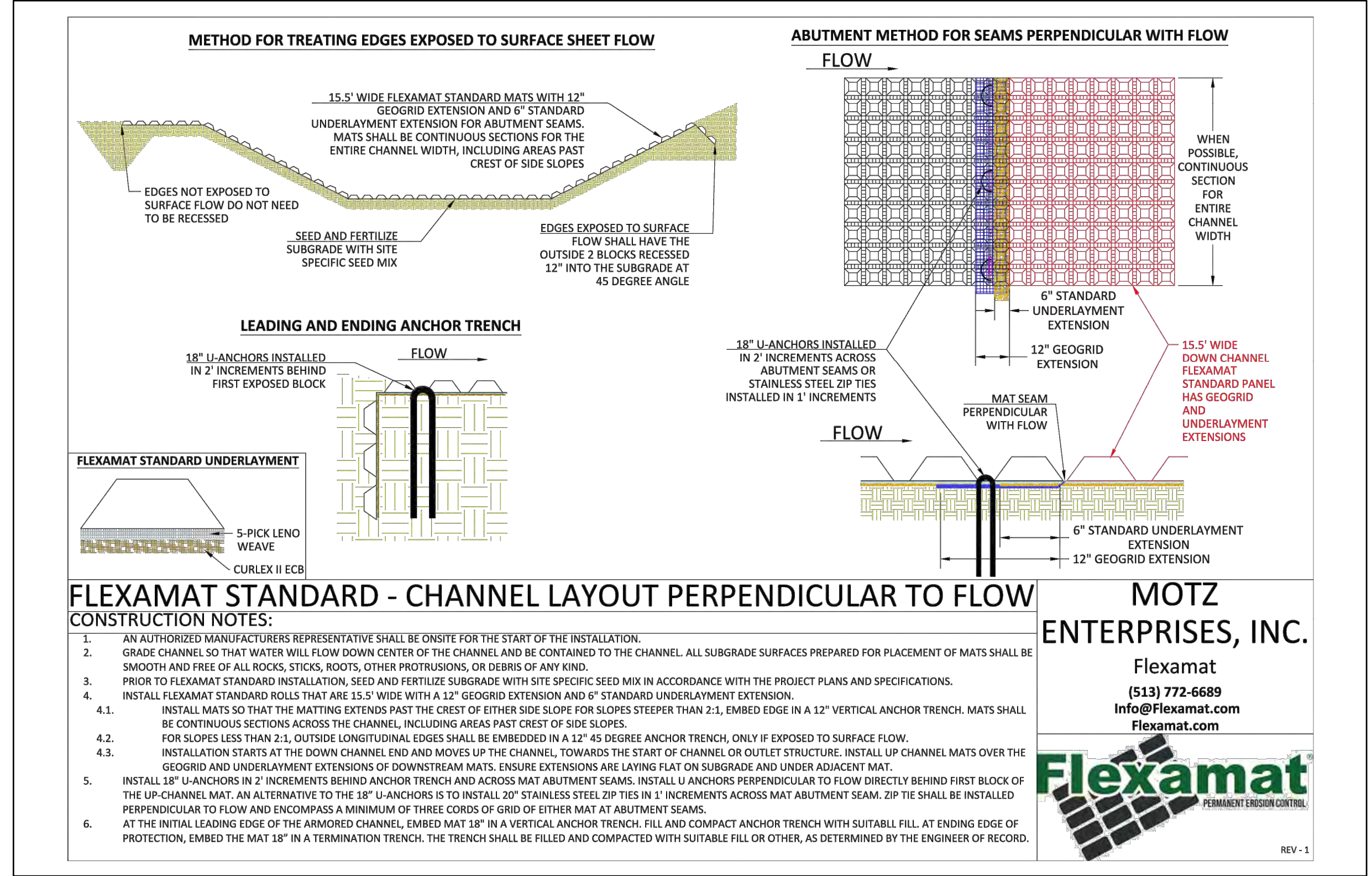
**DETAIL 810**  
**NYLOPLAST 24" INLINE DRAIN**  
N.T.S.

**DETAIL 811**  
**NYLOPLAST 24" LOCKING GRATE**  
N.T.S.

**DETAIL 812**  
**PAVEMENT SAWCUT**  
N.T.S.



**DETAIL 813**  
**PERMEABLE BERM**  
N.T.S.



**FLEXAMAT STANDARD - CHANNEL LAYOUT PERPENDICULAR TO FLOW**  
CONSTRUCTION NOTES:

1. AN AUTHORIZED MANUFACTURER'S REPRESENTATIVE SHALL BE ON SITE FOR THE START OF THE INSTALLATION.
2. GRADE CHANNEL SO THAT WATER WILL FLOW DOWN CENTER OF THE CHANNEL AND BE CONTAINED TO THE CHANNEL. ALL SUBGRADE SURFACES PREPARED FOR PLACEMENT OF MATS SHALL BE SMOOTH AND FREE OF ALL ROCKS, STICKS, ROOTS, OTHER PROTRUSIONS, OR DEBRIS OF ANY KIND.
3. PRIOR TO FLEXAMAT STANDARD INSTALLATION, SEED AND FERTILIZE SUBGRADE WITH SITE SPECIFIC SEED MIX IN ACCORDANCE WITH THE PROJECT PLANS AND SPECIFICATIONS.
4. INSTALL FLEXAMAT STANDARD ROLLS THAT ARE 15.5' WIDE WITH A 12" GEOTEXTILE EXTENSION AND 6" STANDARD UNDERLAYMENT EXTENSION.
  - 4.1. INSTALL MATS SO THAT THE MATTING EXTENDS PAST THE CREST OF EITHER SIDE SLOPE FOR SLOPES STEEPER THAN 2:1, EMBED EDGE IN A 12" VERTICAL ANCHOR TRENCH. MATS SHALL BE CONTINUOUS SECTIONS ACROSS THE CHANNEL, INCLUDING AREAS PAST CREST OF SIDE SLOPES.
  - 4.2. FOR SLOPES LESS THAN 2:1, OUTSIDE LONGITUDINAL EDGES SHALL BE EMBEDDED IN A 12" 45 DEGREE ANCHOR TRENCH, ONLY IF EXPOSED TO SURFACE FLOW.
  - 4.3. INSTALLATION STARTS AT THE DOWN CHANNEL END AND MOVES UP THE CHANNEL TOWARDS THE START OF CHANNEL OR OUTLET STRUCTURE. INSTALL UP CHANNEL MATS OVER THE GEOTEXTILE AND UNDERLAYMENT EXTENSIONS OF DOWNSTREAM MATS. ENSURE EXTENSIONS ARE LAYING FLAT ON SUBGRADE AND UNDER ADJACENT MAT.
5. INSTALL 18" U-ANCHORS IN 2' INCREMENTS BEHIND ANCHOR TRENCH AND ACROSS MAT ABUTMENT SEAMS. INSTALL U-ANCHORS PERPENDICULAR TO FLOW DIRECTLY BEHIND FIRST BLOCK OF THE UP-CHANNEL MAT. AN ALTERNATIVE TO THE 18" U-ANCHORS IS TO INSTALL 20" STAINLESS STEEL ZIP TIES IN 1' INCREMENTS ACROSS MAT ABUTMENT SEAM. ZIP TIE SHALL BE INSTALLED PERPENDICULAR TO FLOW AND ENCOMPASS A MINIMUM OF THREE CORDS OF GRID OF EITHER MAT AT ABUTMENT SEAMS.
6. AT THE INITIAL LEADING EDGE OF THE ARMORED CHANNEL, EMBED MAT 18" IN A VERTICAL ANCHOR TRENCH. FILL AND COMPACT ANCHOR TRENCH WITH SUITABLE FILL. AT ENDING EDGE OF PROTECTION, EMBED THE MAT 18" IN A TERMINATION TRENCH. THE TRENCH SHALL BE FILLED AND COMPACTED WITH SUITABLE FILL OR OTHER, AS DETERMINED BY THE ENGINEER OF RECORD.

**MOTZ ENTERPRISES, INC.**  
Flexamat  
(513) 772-6689  
Info@Flexamat.com  
Flexamat.com

**DETAIL 814**  
**FLEXAMAT CHANNEL INSTALLATION**  
N.T.S.

**Know what's below.**  
**Call before you dig.**

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NO.	DATE	DESCRIPTION

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**CITY OF BELLE MEADE**  
**STORMWATER IMPROVEMENTS**  
**WALNUT DRIVE**  
**BELLE MEADE, TN**

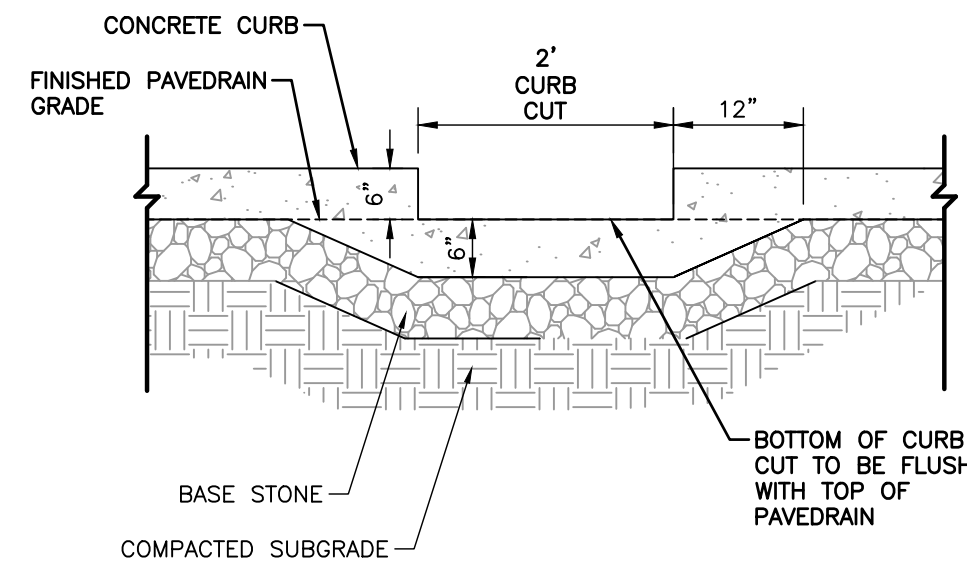
**DETAILS [2 OF 4]**

DRAWING NO.: **C801**

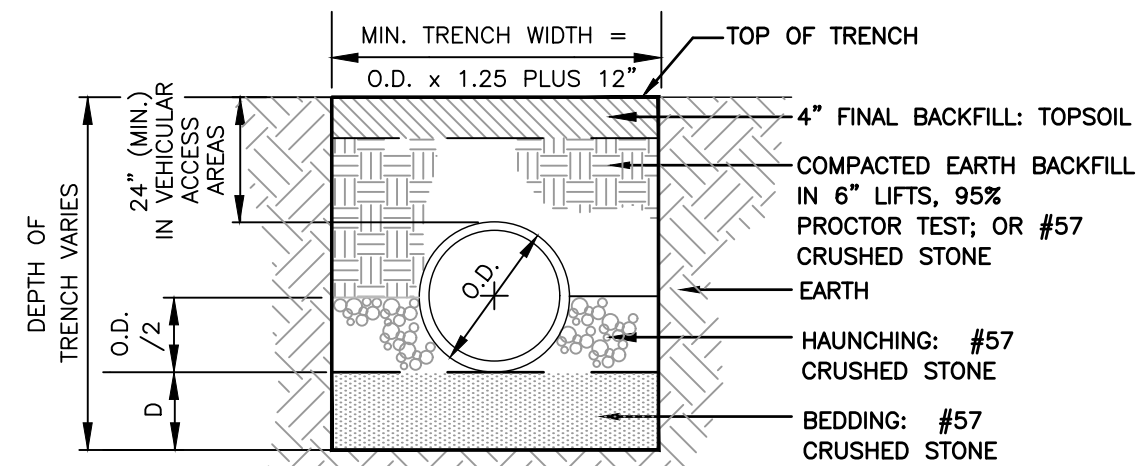
DATE: JANUARY 2024 | DRAWN BY: WJW | CHECKED BY: AS SHOWN | PROJECT NO.: 322-084 | APPROVED BY: PLM

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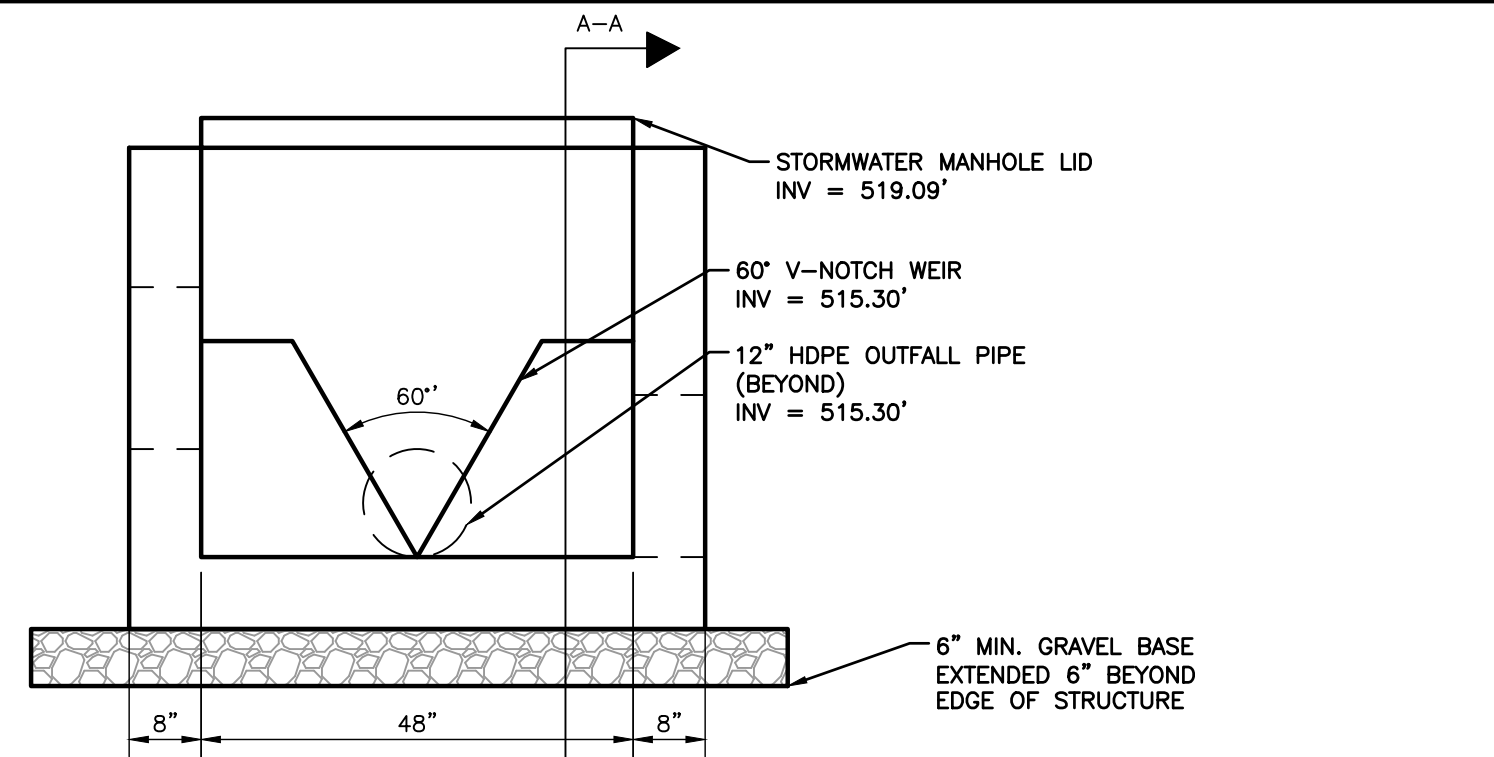
**DETAIL 820  
CURB CUT**  
N.T.S.



CONDITION	D (MIN.)
MIN. ROCK CUTS	4"
	6"

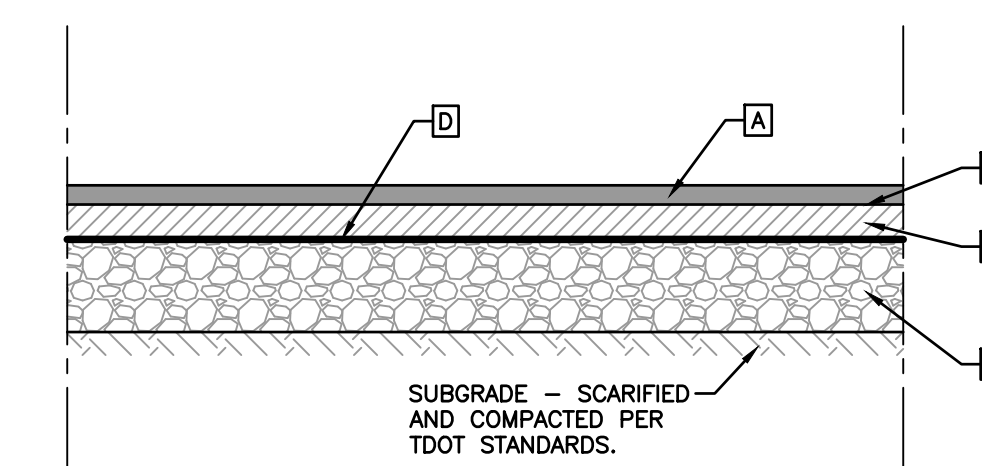
- NOTES:**
- WHEN PIPE IS TO BE PLACED IN A FILL SECTION, THE COMPACTED FILL SHALL BE PLACED A MIN. OF 12" ABOVE THE PIPE ELEVATION BEFORE THE TRENCH IS EXCAVATED.
  - SUBGRADES SHOULD BE EXCAVATED, IF NECESSARY, SO A UNIFORM FOUNDATION FREE OF PROTRUDING ROCKS MAY BE PROVIDED.

**DETAIL 821  
PIPE BEDDING**  
N.T.S.



- NOTE:**
- CONTRACTOR TO PROVIDE SHOP DRAWING OF PROPOSED OUTLET STRUCTURE TO ENGINEER FOR APPROVAL.

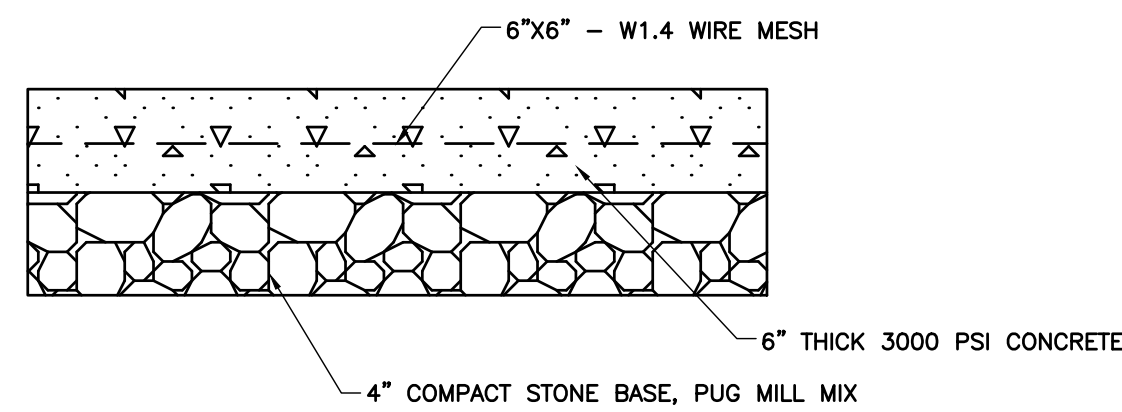
**DETAIL 822  
STORMWATER OUTLET STRUCTURE**  
N.T.S.



- A 1.5" THICK, ASPHALT CONCRETE SURFACE (411D)
- B TACK COAT (SS-1) BITUMINOUS MATERIAL FOR TACK COAT @ 0.05-0.01 GAL/S.Y.
- C 2" BITUMINOUS BINDER (B-M2)
- D PRIME COAT (RS-2) BITUMINOUS MATERIAL FOR PRIME COAT @ 0.30-0.35 GAL/S.Y. AGGREGATE FOR COVER MATERIAL @ 8-12 LBS/S.Y.
- E 8" STONE (GRADING D PUG MILL MIX)

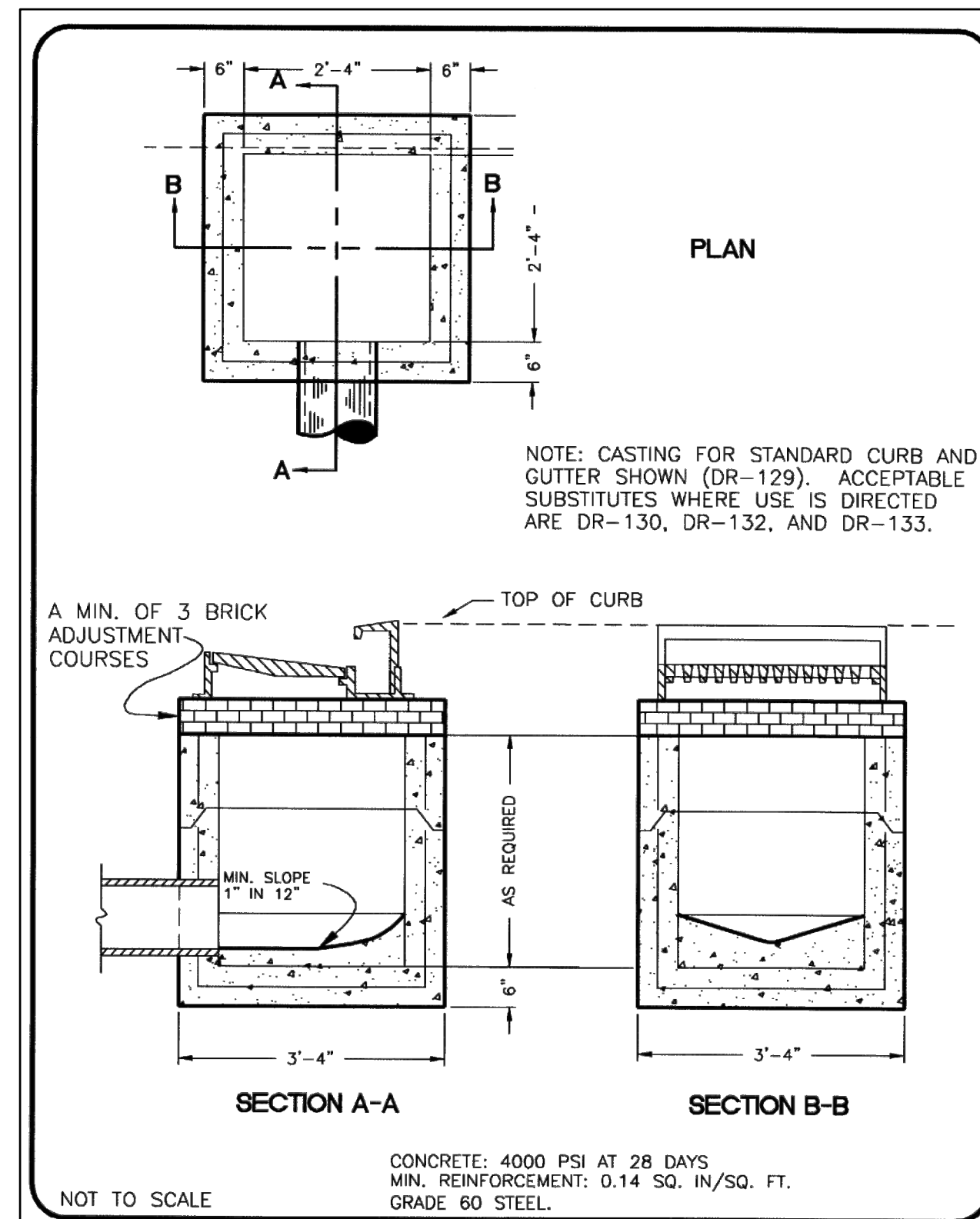
- NOTES:**
- PERFORMANCE GRADE MIX DESIGNATION IS BASED ON ADT AND EXPECTED USE:  
- FOR LESS THAN 10,000 ADT: PG64-22, STANDARD DUTY ASPHALT.
  - MATERIALS AND CONSTRUCTION PROCEDURES SHALL BE IN ACCORDANCE WITH THE TENNESSEE DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS, LATEST EDITION. SECTION 903.05 FOR AGGREGATE BASE COURSE MATERIAL; SECTION 903.06 FOR HOT MIX ASPHALT BASE COURSE; AND SECTION 903.11 FOR SURFACE COURSE.
  - CONTRACTOR SHALL SUBMIT A MIX DESIGN FOR ENGINEERING REVIEW AND RECEIVE APPROVAL PRIOR TO PAVING OPERATIONS.
  - ALL PAVEMENT JOINTS SHALL BE SQUARE WITHOUT FEATHERING.
  - SEAL ALL JOINTS WITH AN APPROVED SEALANT.
  - THE SUBGRADE MATERIALS SHALL BE PROOF ROLLED AND/OR SCARIFIED AND COMPACTED PRIOR TO PLACEMENT OF BASE MATERIAL. EXISTING SUBGRADE MATERIALS THAT ARE UNSUITABLE SHALL BE REMOVED AND REPLACED WITH COMPACTED SELECT MATERIAL.
  - CONSTRUCTION SHALL CONFORM TO THE NASHVILLE AND DAVIDSON COUNTY METROPOLITAN DEPARTMENT OF PUBLIC WORKS TECHNICAL SPECIFICATIONS, LATEST REVISION.

**DETAIL 823  
ASPHALT PAVEMENT SECTION**  
N.T.S.



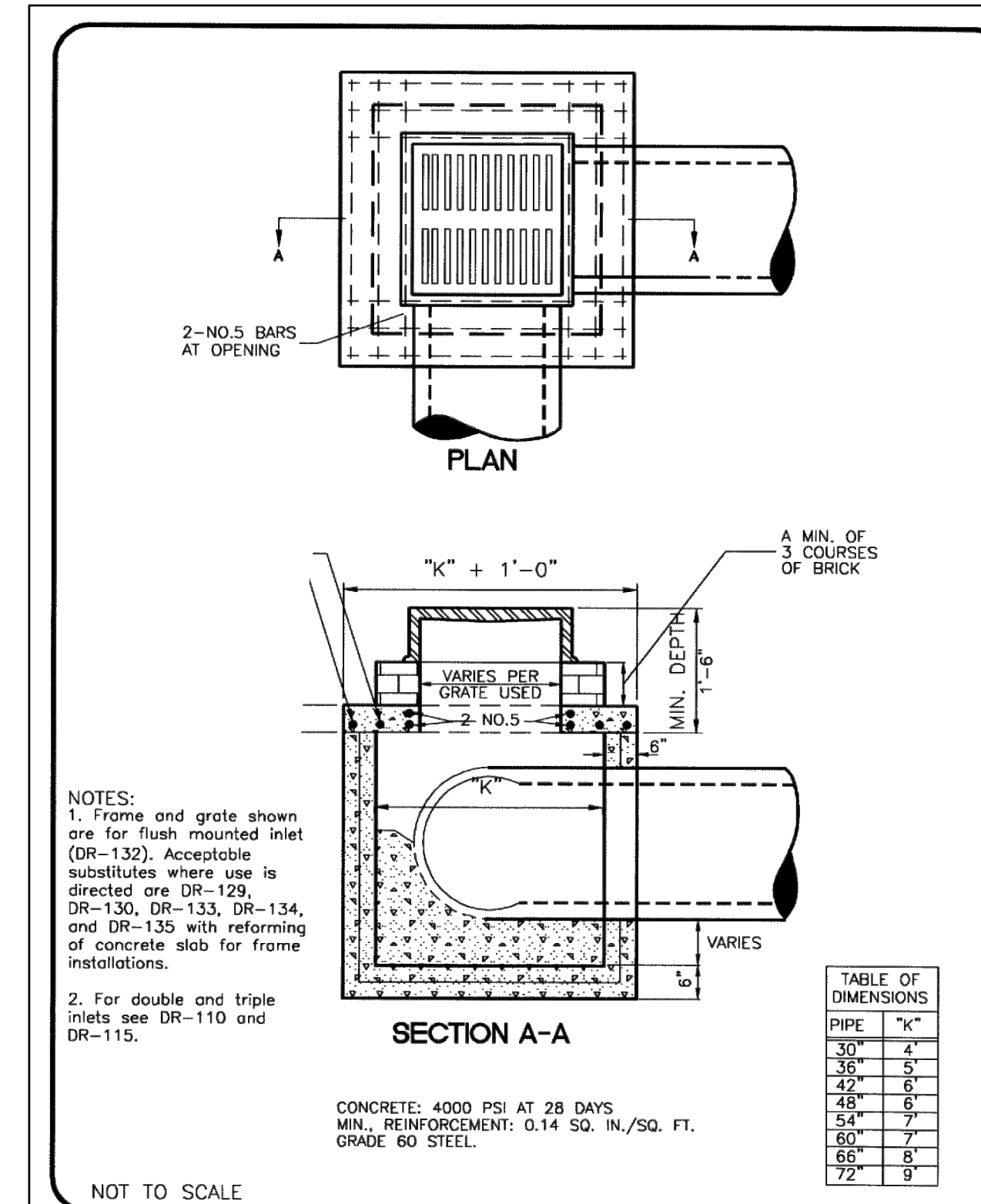
- NOTES:**
- THE SUBGRADE MATERIALS SHALL BE PROOF ROLLED AND/OR SCARIFIED AND COMPACTED PRIOR TO PLACEMENT OF BASE MATERIAL. EXISTING SUBGRADE MATERIALS THAT ARE UNSUITABLE SHALL BE REMOVED AND REPLACED WITH COMPACTED SELECT MATERIAL.

**DETAIL 824  
CONCRETE PAVEMENT SECTION**  
N.T.S.



METROPOLITAN GOVERNMENT OF NASHVILLE AND DAVIDSON COUNTY DEPARTMENT OF PUBLIC WORKS	SINGLE INLET (PRECAST)	DWG. NO. DR-105
ASST. DIR. ENG. DATE: 3/1/00 DIRECTOR: [Signature] DATE: 3/14/00	REVISD: 02/08/00	

**DETAIL 825  
STORMWATER CURB INLET**  
N.T.S.



METROPOLITAN GOVERNMENT OF NASHVILLE AND DAVIDSON COUNTY DEPARTMENT OF PUBLIC WORKS	COMBINATION INLET (PRECAST)	DWG. NO. DR-120
ASST. DIR. ENG. DATE: 3/1/00 DIRECTOR: [Signature] DATE: 3/14/00	REVISD: 02/08/00	

- NOTE:**
- FOR BOTTOMLESS AREA DRAIN, CONTRACTOR SHALL PROVIDE A MINIMUM OF 2' OF GRAVEL BASE BELOW THE AREA DRAIN EXTENDING 6" BEYOND THE EDGE OF THE STRUCTURE.

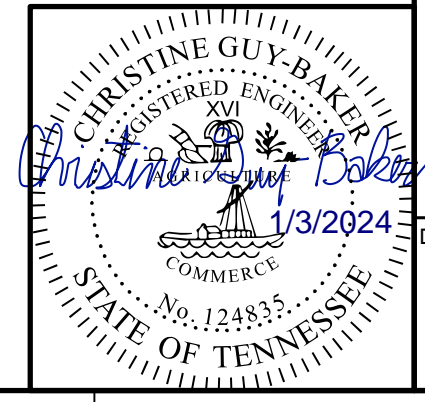
**DETAIL 825  
STORMWATER AREA DRAIN**  
N.T.S.

NO.	DATE	DESCRIPTION

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**CITY OF BELLE MEADE  
STORMWATER IMPROVEMENTS  
WALNUT DRIVE  
BELLE MEADE, TN**

DATE: JANUARY 2024	DRAWN BY: WJW	CLG
DWG SCALE: AS SHOWN	CHECKED BY: [Signature]	322-084
PROJECT NO. 322-084	APPROVED BY: [Signature]	PLM



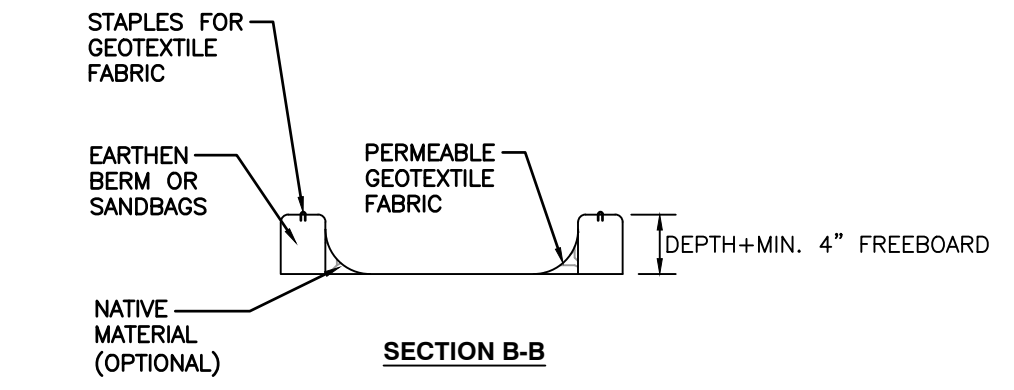
DRAWING NO. **C802**

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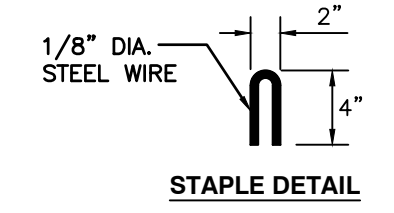


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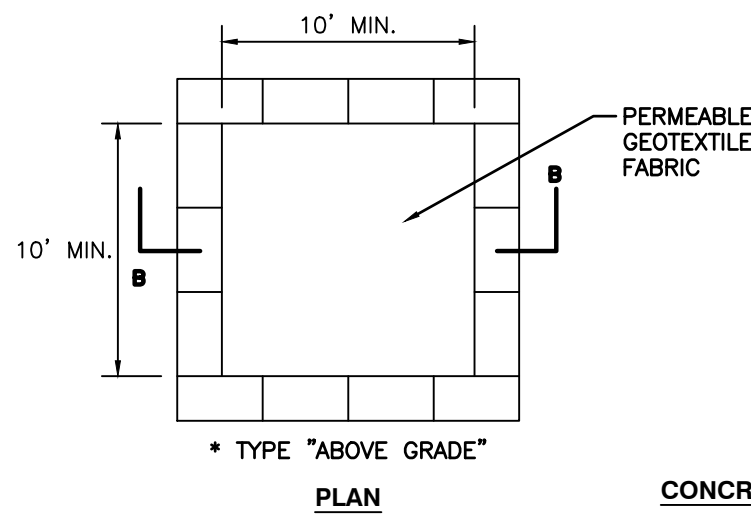




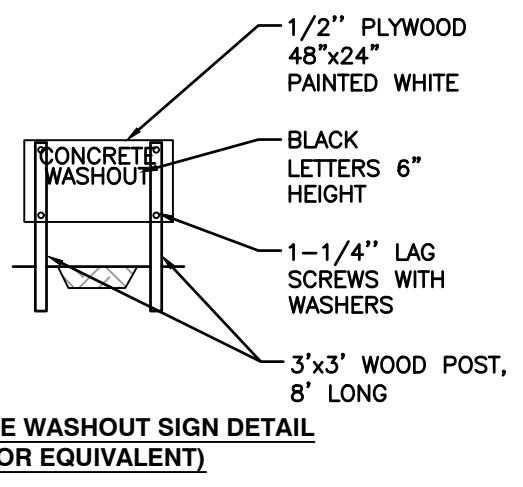
**SECTION B-B**



**STAPLE DETAIL**



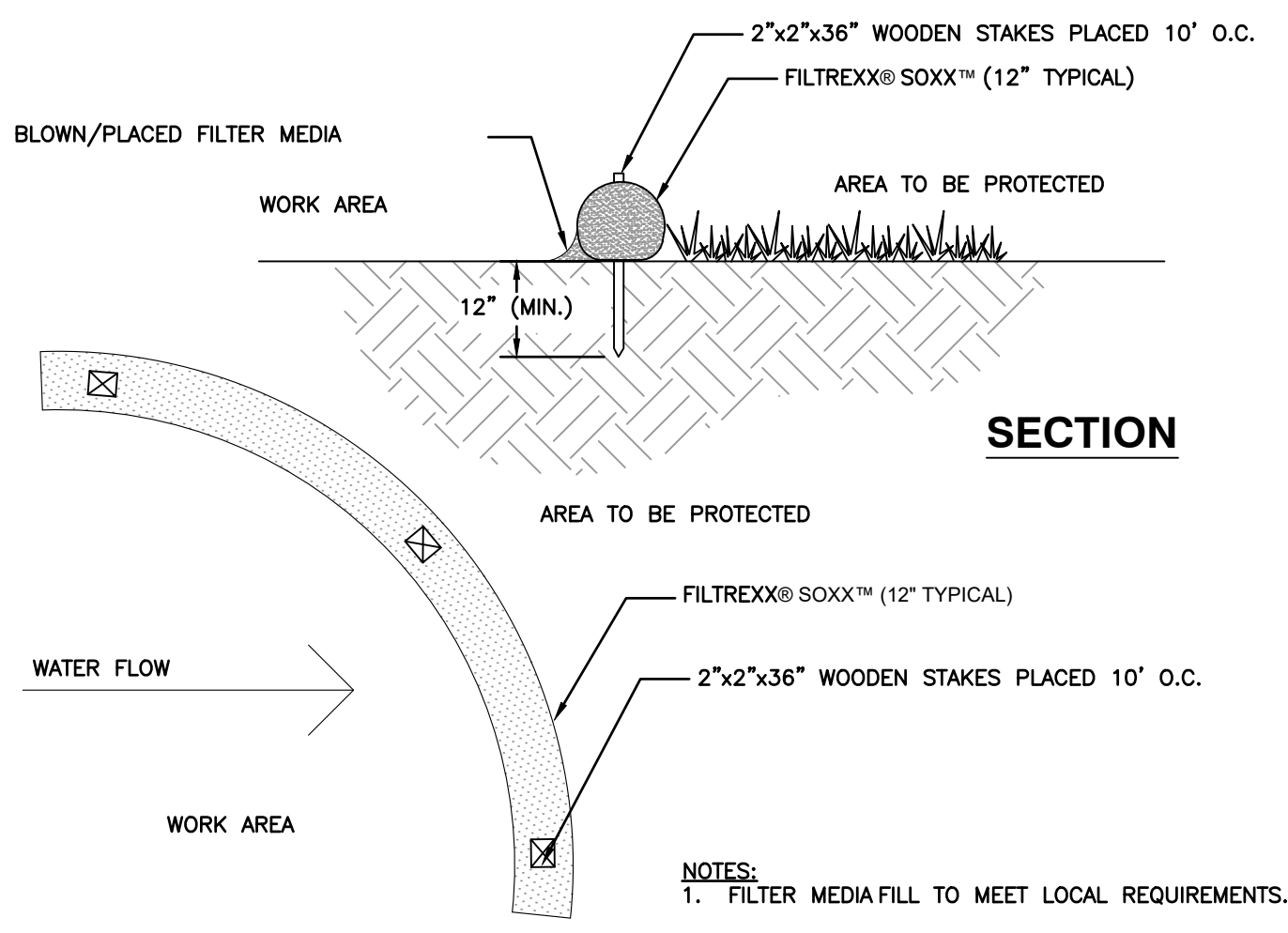
**PLAN**



**CONCRETE WASHOUT SIGN DETAIL (OR EQUIVALENT)**

- NOTES:**
1. ACTUAL LAYOUT DETERMINED IN FIELD.
  2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 5 FT. OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

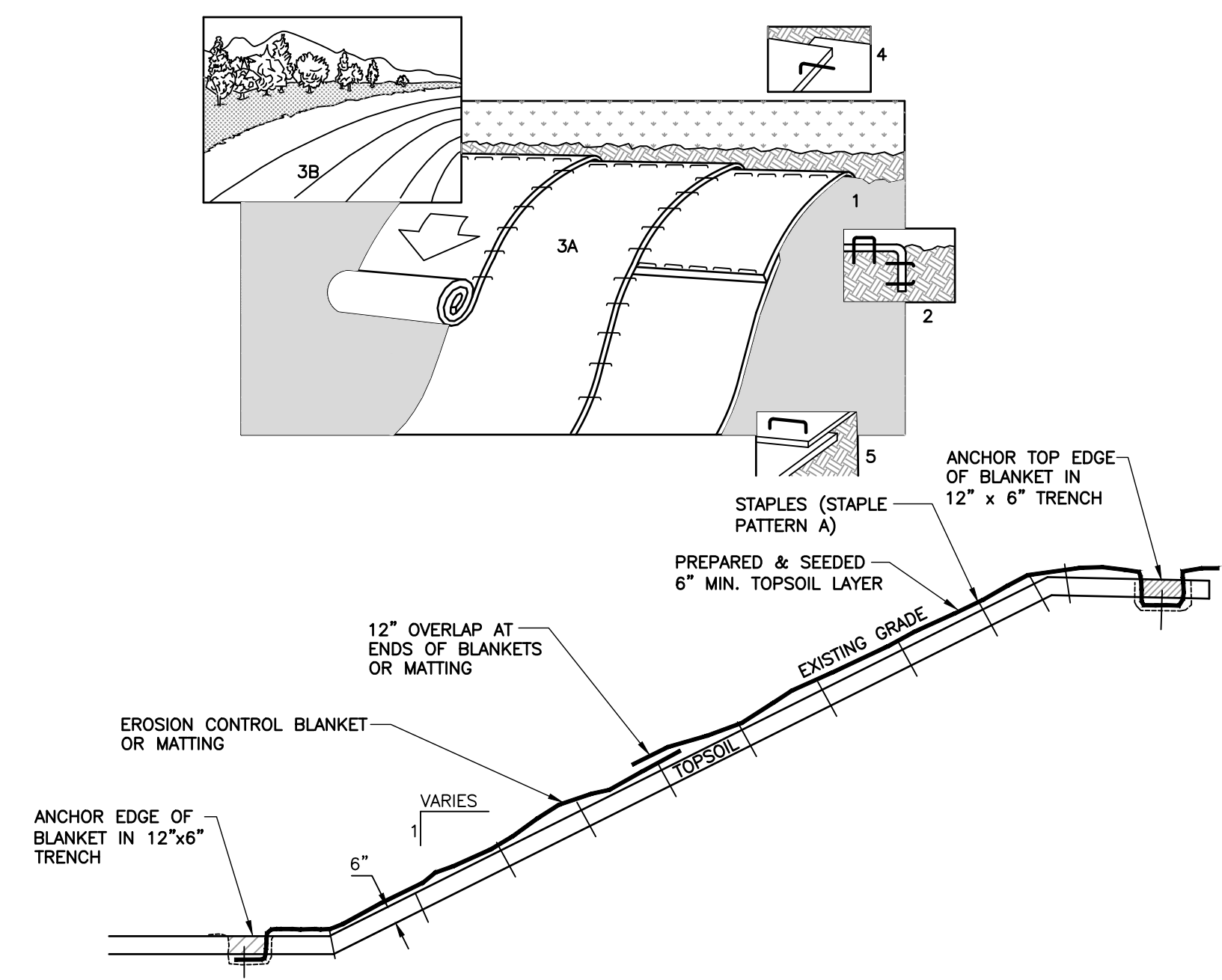
**DETAIL 830  
CONCRETE WASHOUT FACILITY**  
N.T.S.



**SECTION**

**DETAIL 831  
SEDIMENT TUBE**  
N.T.S.

- NOTES:**
1. FILTER MEDIA FILL TO MEET LOCAL REQUIREMENTS.



**NOTES:**

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF LIME, FERTILIZER, AND SEED.
2. GRADE THE SURFACE BEFORE INSTALLATION SO THE GROUND IS SMOOTH AND SOIL LOOSE. ALL GULLIES, RILLS, AND OTHER DISTURBED AREAS MUST BE FINE GRADED PRIOR TO INSTALLATION.
3. SPREAD SEED BEFORE BLANKET INSTALLATION.
4. REMOVE ALL LARGE ROCKS, DIRT CLODS, STUMPS, ROOTS, GRASS CLUMPS, TRASH, AND OTHER OBSTRUCTIONS FROM THE SOIL SURFACE TO ALLOW DIRECT CONTACT BETWEEN THE SOIL AND BLANKET.
5. PLACE BLANKET 2-3 FEET OVER THE TOP OF THE SLOPE AND INTO AN EXCAVATED END TRENCH 12" DEEP X 6" WIDE. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE.
7. OVERLAP ADJACENT ROLLS A MINIMUM OF 3 INCHES.
8. PIN THE BLANKET TO THE GROUND USING STAPLES OR PINS IN A 3' CENTER-TO-CENTER PATTERN, OR AS RECOMMENDED BY THE MANUFACTURER.
9. WHEN BLANKETS MUST BE SPICED DOWN THE SLOPE, PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH APPROXIMATELY 12" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART.
10. FOR ALL SLOPES 3:1 OR STEEPER, TEMPORARY EROSION CONTROL BLANKET (TENSAR NORTH AMERICAN GREEN S150 OR APPROVED EQUAL) INSTALLED PER MANUFACTURERS' RECOMMENDATIONS SHALL BE USED IN PLACE OF STRAW MULCH.
11. FOR PERMANENT STABILIZATION OF DRAINAGE DITCHES, INSTALL TURF REINFORCEMENT MATTING (TENSAR NORTH AMERICAN GREEN SC250 OR APPROVED EQUAL) INSTALLED PER MANUFACTURERS' RECOMMENDATIONS.
12. REFER TO MANUFACTURER'S INSTRUCTIONS FOR SPECIFIC INSTALLATION PROCEDURES.

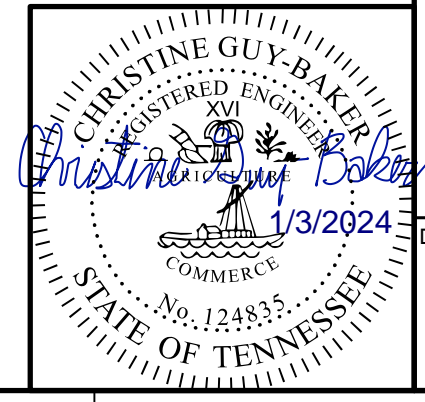
**DETAIL 832  
EROSION CONTROL BLANKET AND MATTING INSTALLATION**  
N.T.S.

NO.	DATE	DESCRIPTION

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**CITY OF BELLE MEADE  
STORMWATER IMPROVEMENTS  
WALNUT DRIVE  
BELLE MEADE, TN**

<b>DATE:</b> JANUARY 2024	<b>DRAWN BY:</b> WJW
<b>DWG SCALE:</b> AS SHOWN	<b>CHECKED BY:</b> CLG
<b>PROJECT NO.:</b> 322-084	<b>APPROVED BY:</b> PLM



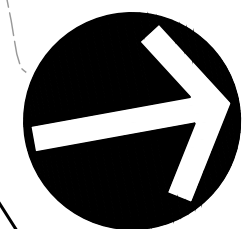
**DRAWING NO.:**  
**C803**



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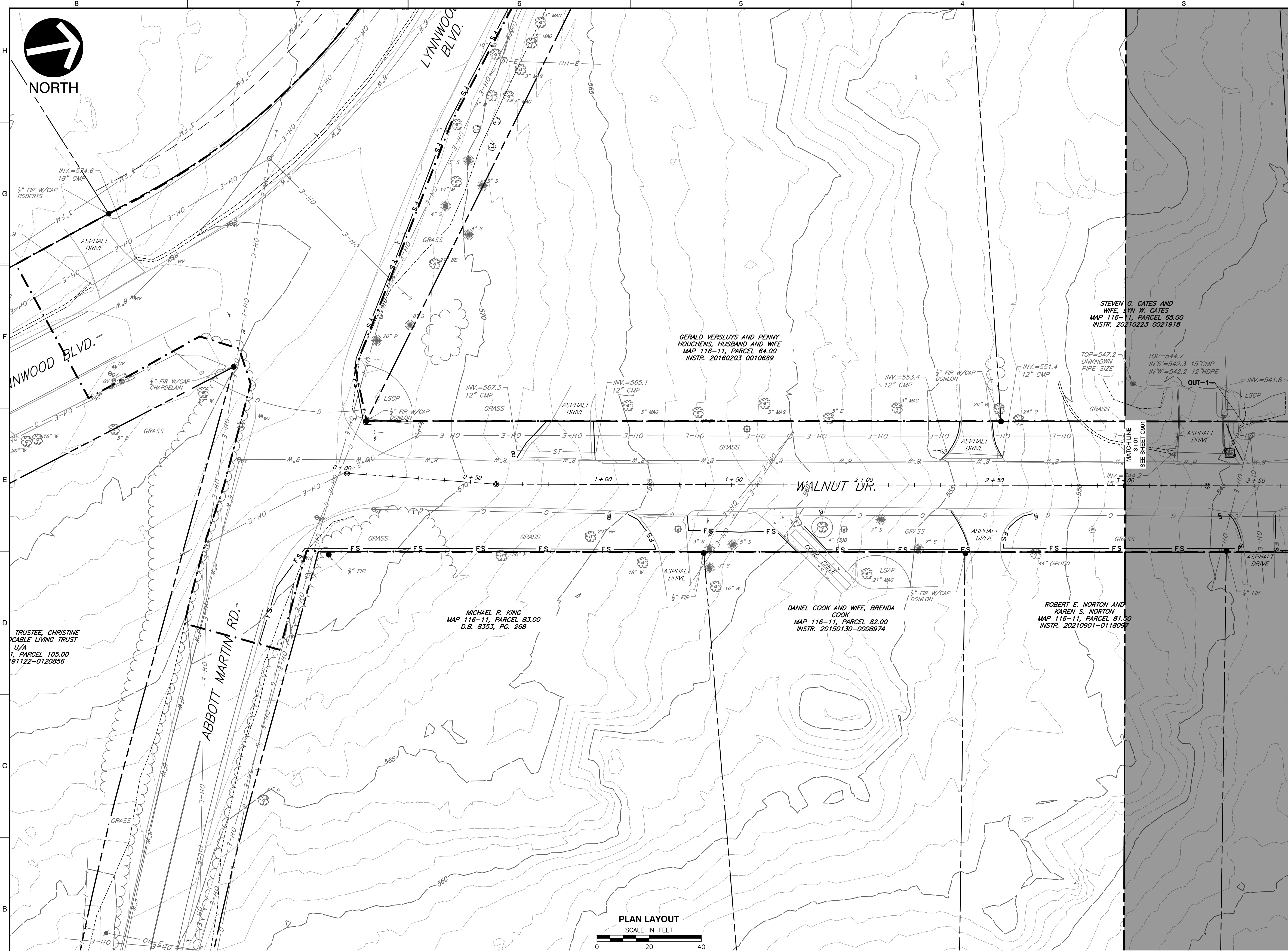




NORTH



NORTH



PLAN LAYOUT  
SCALE IN FEET

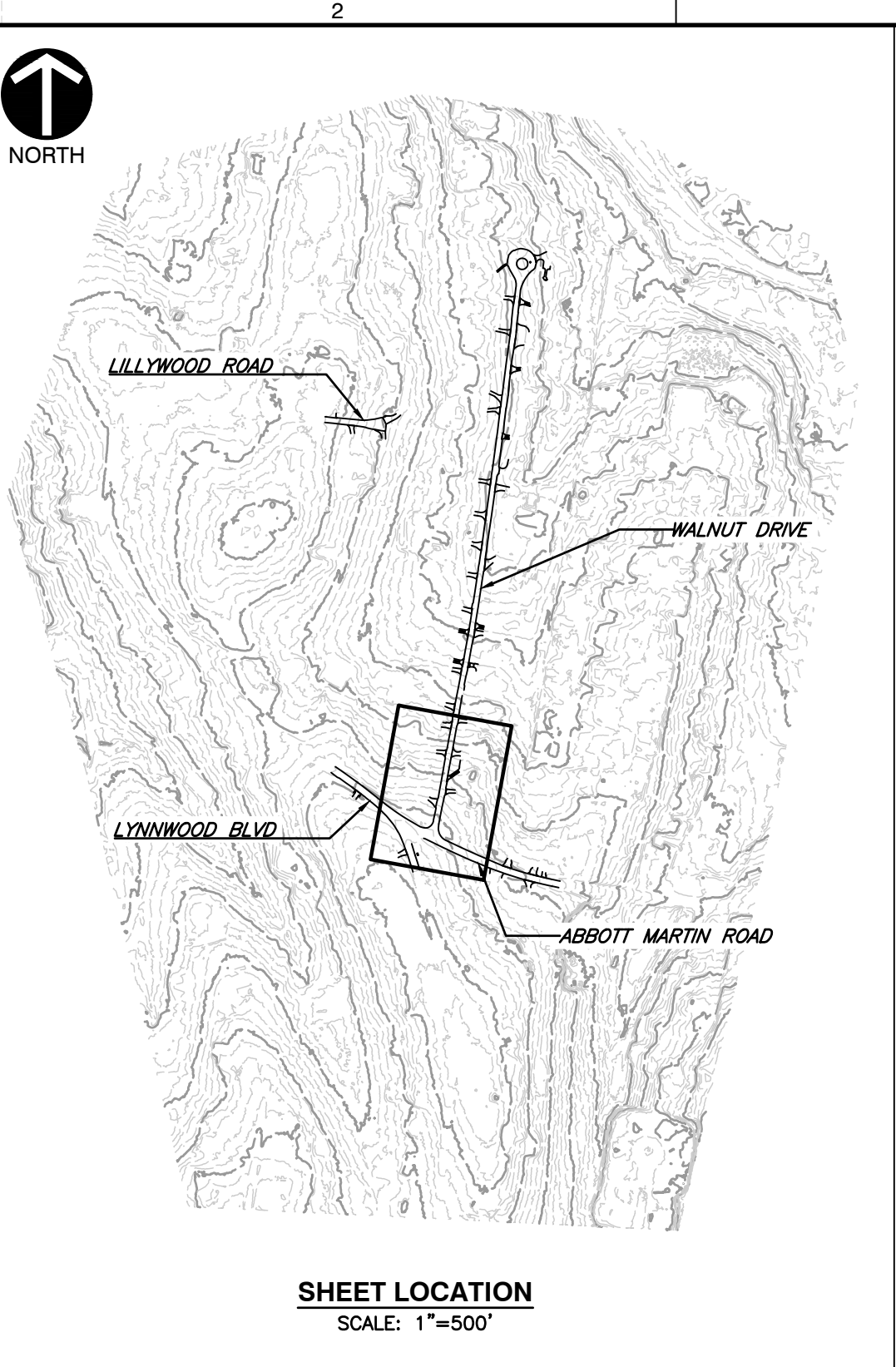


GENERAL EPSC NOTES:

THE CONTRACTOR SHALL STAGE CONSTRUCTION AND SEQUENCE OF EVENTS SUCH THAT ONE LANE OF TRAVEL IS PROVIDED AT ALL TIMES. IN GENERAL THE CONTRACTOR, SHALL WORK FROM DOWNSTREAM TO UPSTREAM. CONSTRUCTION OF THE INTERSECTION OF WALNUT, ABBOTT MARTIN, AND LYNNWOOD BLVD SHALL BE COORDINATED WITH THE CITY OF BELLE MEADE POLICE DEPARTMENT. ACCESS MUST BE PROVIDED TO PRIVATE DRIVEWAYS AT ALL TIMES. EPSC MEASURES ARE SHOWN ALONG ENTIRE LENGTH OF PROJECT, BUT MAY BE INSTALLED FOR THE PORTION OF ROADWAY IN ACTIVE CONSTRUCTION AND REMOVED AS SECTIONS ARE COMPLETED. IF NOT DAMAGED, PERIMETER EPSC MEASURES MAY BE RE-USED. FLOWS FROM THE ROADWAY LEAVING THE PROJECT PERIMETER WILL FLOW TO EPSC MEASURES AND DISCHARGE FROM THE SITE AS SHEET FLOW.

GENERAL EPSC SEQUENCING NOTES:

1. SEE SHEETS C904, C907, C912 & C915 FOR ADDITIONAL DITCH SEQUENCING NOTES.
2. INSTALL CONSTRUCTION EXITS. THE CONTRACTOR IS TO FIELD LOCATE CONSTRUCTION EXITS SUCH THAT THERE IS NO EVIDENCE OF TRACKING OR DEBRIS ON THE ROADWAY.
3. INSTALL PERIMETER EPSC MEASURES (FILTREX SOCKS OR EQUIVALENT) ALONG THE EDGE OF THE LOD AND PRIVATE DRIVEWAYS. PLACE SOCKS SUCH THAT LANDSCAPING FEATURES ARE PROTECTED TO THE MAXIMUM EXTENT PRACTICABLE. THE CONTRACTOR IS RESPONSIBLE FOR REPLACEMENT OF LANDSCAPING IN-KIND.
4. INSTALL CATCH BASIN AND INLET PROTECTION MEASURES WITHIN THE ACTIVE WORK AREA. CONTRACTOR IS RESPONSIBLE FOR FIELD LOCATING THE CONCRETE WASH-OUT.
5. REMOVE EXISTING CURB, PAVEMENT AND SUBGRADE. STOCKPILE AND/OR DISPOSE OF EXCAVATED SUBGRADE AND ROADWAY WASTE. STOCKPILE LOCATIONS ARE TO BE SELECTED BY THE CONTRACTOR. STOCKPILES SHOULD BE PROTECTED WITH PERIMETER EPSC MEASURES.
6. PERFORM PROPOSED GRADING, INSTALL PROPOSED PERMEABLE PAVER SYSTEM AND ASSOCIATED SUBGRADE.
7. INSTALL PROPOSED CURBS AND PERFORM FINAL PAVING ACTIVITIES.
8. REMOVE PERIMETER AND INLET PROTECTION EPSC MEASURES. STABILIZE ANY AREAS DISTURBED BY CONSTRUCTION OR REMOVAL OF EPSC MEASURES WITH SOD.



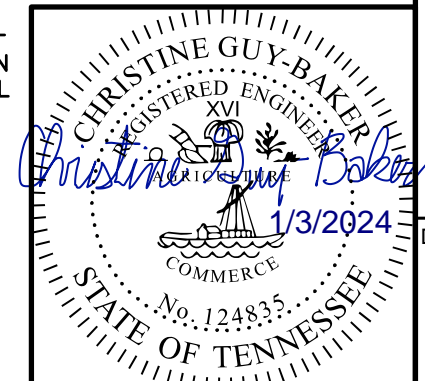
SHEET LOCATION  
SCALE: 1"=500'

LEGEND

- EXISTING PROPERTY LINE
- - - EXISTING EASEMENT
- - - EXISTING RIGHT-OF-WAY
- - - 560 EXISTING INDEX (MAJOR) CONTOUR
- - - EXISTING INTERMEDIATE (MINOR) CONTOUR
- - - EXISTING DRAINAGE DITCH
- - - EXISTING FENCE LINE
- - - EXISTING ROADWAY CENTERLINE
- - - EXISTING CURB
- - - EXISTING EDGE OF PAVEMENT
- - - EXISTING STRUCTURE
- - - ST EXISTING STORM PIPE
- - - W EXISTING WATER LINE
- - - SAN EXISTING SANITARY SEWER LINE
- - - G EXISTING GAS LINE
- - - OH-E EXISTING OVERHEAD WIRE
- EXISTING IRON PIN
- EXISTING CONCRETE MONUMENT
- EXISTING MAILBOX
- EXISTING STORMWATER INLET
- EXISTING SANITARY SEWER FEATURE
- EXISTING WATER LINE FEATURE
- EXISTING GAS VALVE
- EXISTING VEGETATION
- EXISTING ELECTRIC FEATURE
- - - PROPOSED LIMITS OF DISTURBANCE
- - - FS PROPOSED FILTREX SOCK (12")

REFERENCE

1. EXISTING TOPOGRAPHIC INFORMATION TAKEN FROM A COMBINATION OF TOPOGRAPHIC SURVEY COLLECTED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. AND LIDAR DATA OBTAINED FROM THE STATE OF TENNESSEE.
2. HORIZONTAL DATUM IS TN STATE PLANE NSRS 2011 IN FEET.
3. VERTICAL DATUM IS NAVD88 (GEOID12B).



NO	DATE	DESCRIPTION

**C&E**  
**Civil & Environmental Consultants, Inc.**  
 117 Seaboard Lane - Suite E-100 - Franklin, TN 37067  
 615-333-7797 · 800-763-2326  
 www.cecinc.com

**CITY OF BELLE MEADE  
 STORMWATER IMPROVEMENTS  
 WALNUT DRIVE  
 BELLE MEADE, TN**

**INITIAL EPSC PLAN  
 WALNUT DRIVE [1 OF 5]**

DRAWING NO.: **C900**

DATE: JANUARY 2024 | DRAWN BY: WJM | CLG  
 DWG SCALE: AS SHOWN | CHECKED BY: J.L.W. | 322-084  
 APPROVED BY: J.L.W.

P:\1300-1302-084-CAD\DWG\1300-INTAL\1300-INTAL.dwg(300) LS(12/17/2023) - csp(amer) - LP: 1/21/2024 4:45 PM



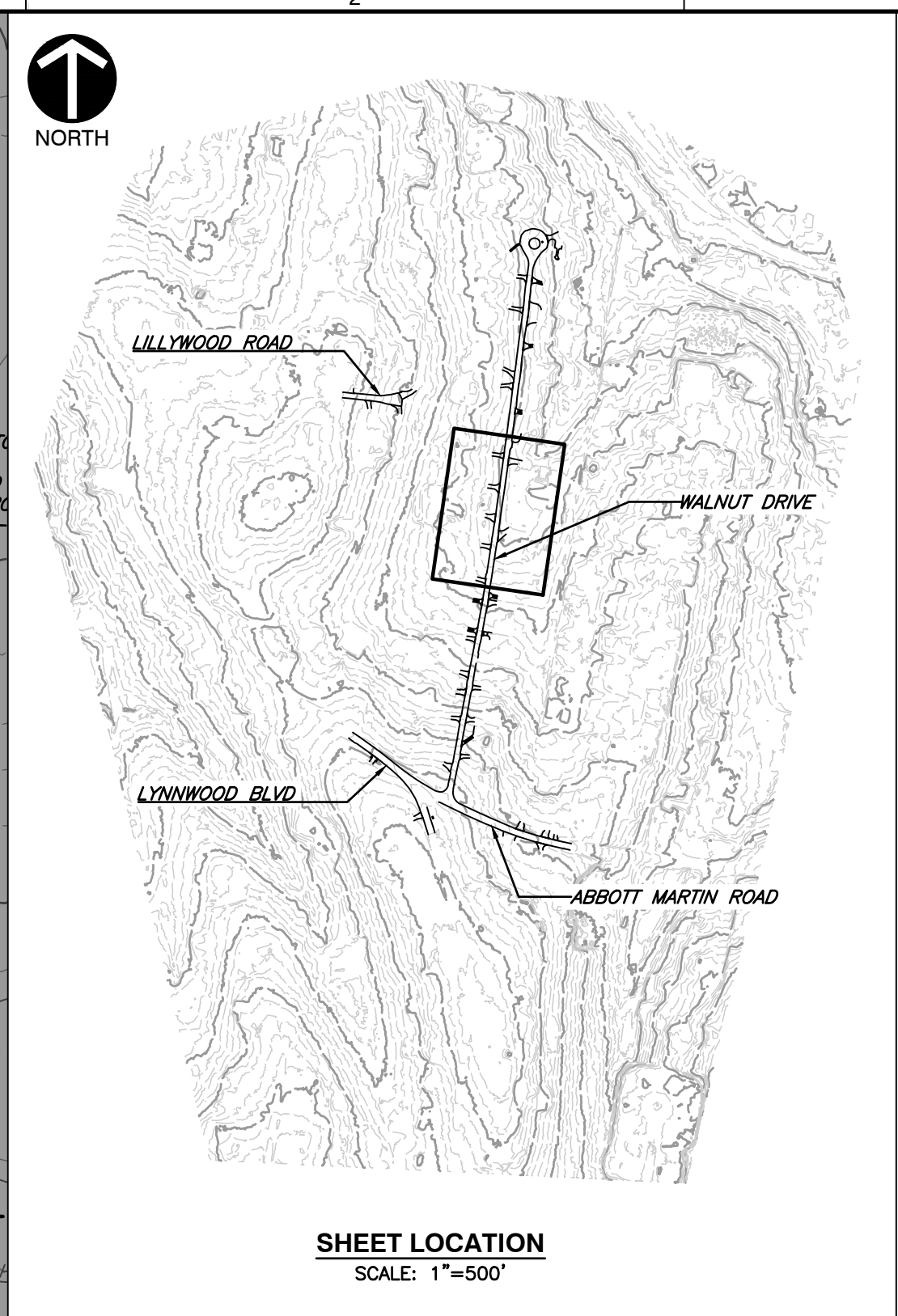
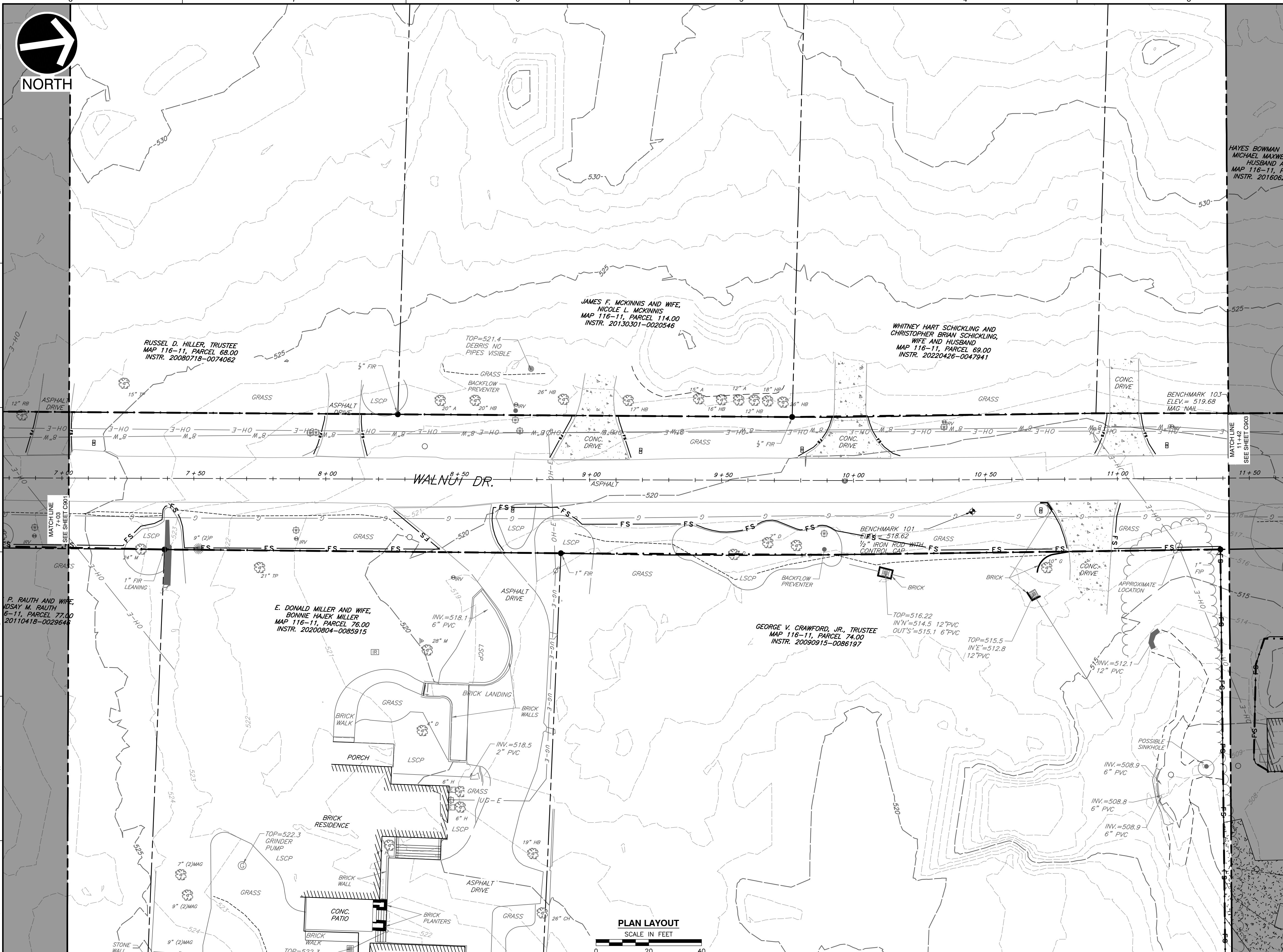
Know what's below.  
Call before you dig.

**NOTE TO CONTRACTOR**  
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**LEGEND**

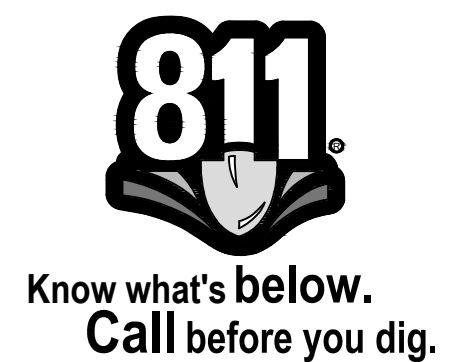
	EXISTING PROPERTY LINE
	EXISTING EASEMENT
	EXISTING RIGHT-OF-WAY
	EXISTING INDEX (MAJOR) CONTOUR
	EXISTING INTERMEDIATE (MINOR) CONTOUR
	EXISTING DRAINAGE DITCH
	EXISTING FENCE LINE
	EXISTING ROADWAY CENTERLINE
	EXISTING CURB
	EXISTING EDGE OF PAVEMENT
	EXISTING STRUCTURE
	EXISTING STORM PIPE
	EXISTING WATER LINE
	EXISTING SANITARY SEWER LINE
	EXISTING GAS LINE
	EXISTING OVERHEAD WIRE
	EXISTING IRON PIN
	EXISTING CONCRETE MONUMENT
	EXISTING MAILBOX
	EXISTING STORMWATER INLET
	EXISTING SANITARY SEWER FEATURE
	EXISTING WATER LINE FEATURE
	EXISTING GAS VALVE
	EXISTING VEGETATION
	EXISTING ELECTRIC FEATURE
	PROPOSED LIMITS OF DISTURBANCE
	PROPOSED FILTER SOCK (12")

**PLAN LAYOUT**  
SCALE IN FEET

- GENERAL EPSC NOTES:**
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**REVISION RECORD**

NO.	DATE	DESCRIPTION

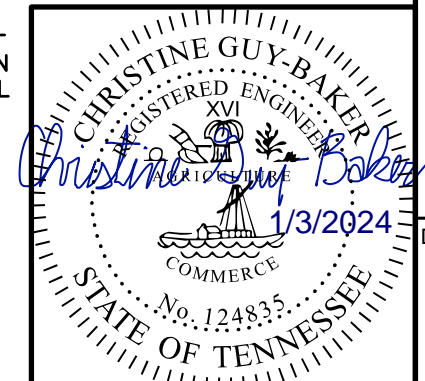
**Civil & Environmental Consultants, Inc.**  
117 Seaboard Lane - Suite E-100 - Franklin, TN 37067  
615-333-7797 • 800-763-2326  
www.ceinc.com

**CITY OF BELLE MEADE  
STORMWATER IMPROVEMENTS  
WALNUT DRIVE  
BELLE MEADE, TN**

**INITIAL EPSC PLAN  
WALNUT DRIVE [3 OF 5]**

DATE: JANUARY 2024 | DRAWN BY: WJM | DWG SCALE: AS SHOWN | CHECKED BY: JLV  
PROJECT NO: 322-084 | APPROVED BY: JLV

- REFERENCE**
- EXISTING TOPOGRAPHIC INFORMATION TAKEN FROM A COMBINATION OF TOPOGRAPHIC SURVEY COLLECTED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. AND LIDAR DATA OBTAINED FROM THE STATE OF TENNESSEE.
  - HORIZONTAL DATUM IS TN STATE PLANE NSRS 2011 IN FEET.
  - VERTICAL DATUM IS NAVD88 (GEOID12B).



DRAWING NO.: **C902**

P:\1300-1302-084-CADD\DWG\1302-084-INITIAL.dwg(322) LS(12/17/2023 - cspawhite) - LP: 1/3/2024 4:46 PM





HAYES BOWMAN HITCHENS AND  
MICHAEL MAXWELL HITCHENS,  
HUSBAND AND WIFE  
MAP 116-11, PARCEL 70.00  
INSTR. 20160628-0065783

NATHAN CRAIG PARRISH AND  
WIFE, NANCY E. PARRISH  
MAP 116-11, PARCEL 71.00  
INSTR. 20080721-0074807

CLARK WILLIAM LANDRY AND  
DAYNA SUGAR LANDRY,  
HUSBAND AND WIFE  
MAP 116-7, PARCEL 81.00  
INSTR. 20220131-0010988

DAVID R. BUTTREY, JR., AND WIFE,  
ANNE TRABUE BUTTREY  
MAP 116-7, PARCEL 82.00  
D.B. 6554, PG. 41

JAMES S. PRICE AND WIFE,  
ELLIN-KELLY D. PRICE  
MAP 116-11, PARCEL  
73.00  
D.B. 5167, PG. 288

MARSHALL G. SANDERS AND  
LUKE MICHAEL DUGGAN  
MAP 116-11, PARCEL 72.00  
INSTR. SA-20210802-0103800

MARTIN L. BLAKELY AND  
LAURA JOHNETTA BLAKELY,  
HUSBAND AND WIFE  
MAP 116-7, PARCEL 88.00  
INSTR. 20180702-0063740

PAMELA P. WILLY  
MAP 116-7, PARCEL 86.00  
D.B. 9931, PG. 273

**PLAN LAYOUT**  
SCALE IN FEET

**GENERAL EPSC NOTES:**

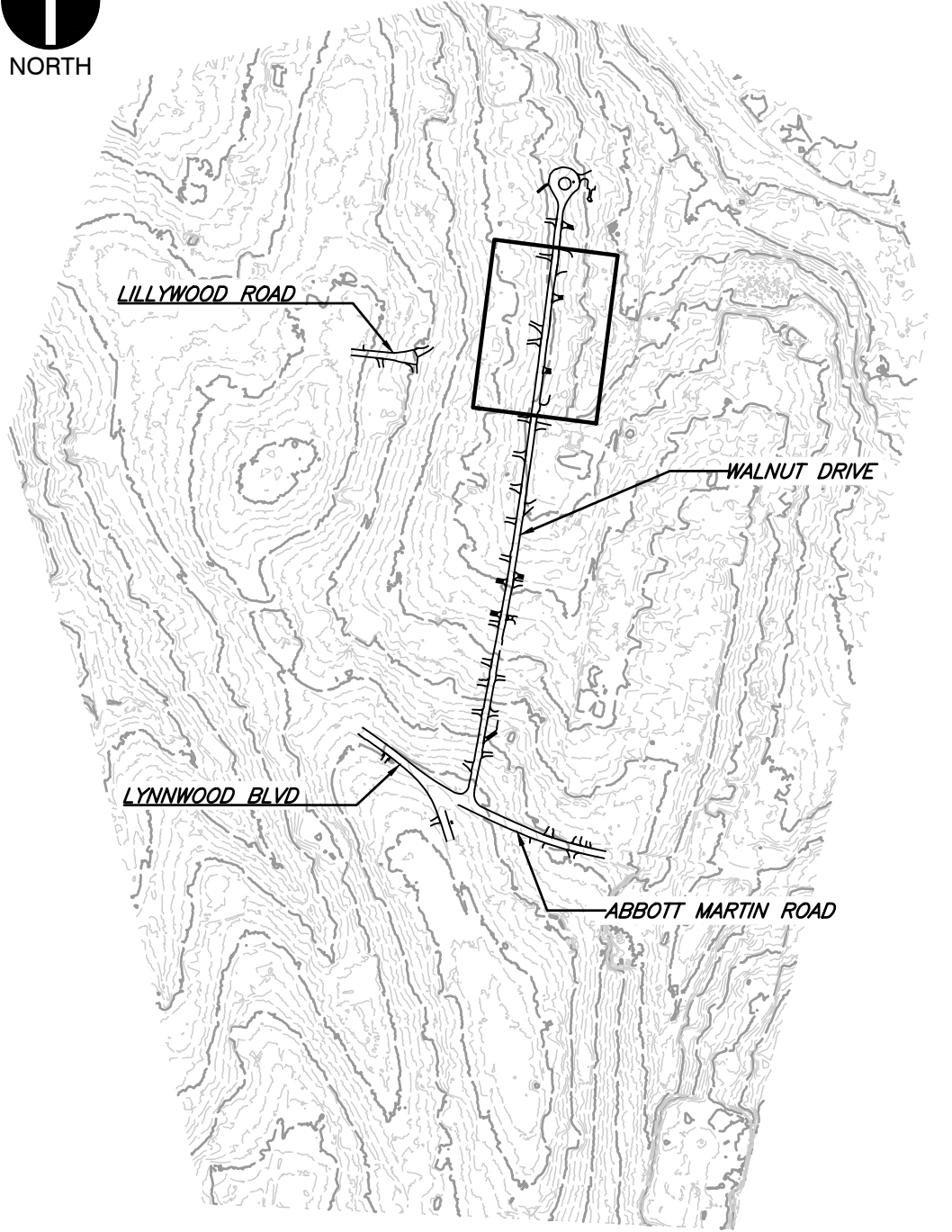
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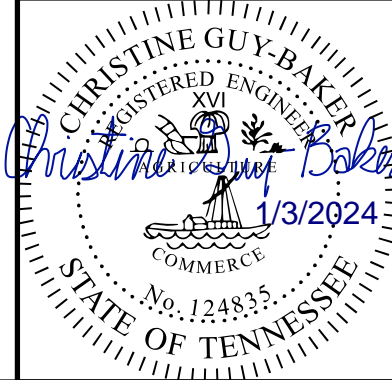
**SHEET LOCATION**  
SCALE: 1"=500'

**LEGEND**

- EXISTING PROPERTY LINE
- - - EXISTING EASEMENT
- - - EXISTING RIGHT-OF-WAY
- 560 EXISTING INDEX (MAJOR) CONTOUR
- - - EXISTING INTERMEDIATE (MINOR) CONTOUR
- - - EXISTING DRAINAGE DITCH
- x-x-x EXISTING FENCE LINE
- EXISTING ROADWAY CENTERLINE
- EXISTING CURB
- EXISTING EDGE OF PAVEMENT
- ST EXISTING STRUCTURE
- W EXISTING WATER LINE
- SAN EXISTING SANITARY SEWER LINE
- G EXISTING GAS LINE
- OH-E EXISTING OVERHEAD WIRE
- EXISTING IRON PIN
- EXISTING CONCRETE MONUMENT
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- ⊙ EXISTING SANITARY SEWER FEATURE
- ⊙ EXISTING WATER LINE FEATURE
- ⊙ EXISTING GAS VALVE
- ⊙ EXISTING VEGETATION
- ⊙ EXISTING ELECTRIC FEATURE
- - - PROPOSED LIMITS OF DISTURBANCE
- FS PROPOSED FILTREX SOCK (12")

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- HORIZONTAL DATUM IS TN STATE PLANE NSRS 2011 IN FEET.
- VERTICAL DATUM IS NAVD88 (GEOID12B).



**REVISION RECORD**

NO	DATE	DESCRIPTION

**Civil & Environmental Consultants, Inc.**  
117 Seaboard Lane - Suite E-100 - Franklin, TN 37067  
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www.cecinc.com

**CITY OF BELLE MEADE  
STORMWATER IMPROVEMENTS  
WALNUT DRIVE  
BELLE MEADE, TN**

**INITIAL EPSC PLAN  
WALNUT DRIVE [4 OF 5]**

DATE: JANUARY 2024 | DRAWN BY: WJM | CLG  
DWS SCALE: AS SHOWN | CHECKED BY: JLV | 322-084  
APPROVED BY: JLV

DRAWING NO.: **C903**



Know what's below.  
Call before you dig.

P:\1300-1303-0041-CADD\DWG\1303-000-INITIAL\epsc\903 LS(12/17/2023) - epsc.dwg - LP: 1/3/2024 4:46 PM

















MARIE CARNEY REED  
MAP 116-8-D, PARCEL 91  
D.B. 9266, PG. 814

ANN R. BERNARD, TRUSTEE  
MAP 116-8-D, PARCEL 92.00  
INSTR. 20190809-0079455

ROBERT J. DEAL, TRUSTEE OF THE  
ROBERT JOSEPH DEAL  
REVOCABLE LIVING TRUST  
MAP 116-8-D, PARCEL 93.00  
INSTR. 20140904-0081212

OUT-5

OUT-6

JAMES R. GRAY, JR. AND  
WIFE, TAMMY GRAY  
MAP 116-7, PARCEL 85.00  
INSTR. 20000204-0011799

PLAN LAYOUT

SCALE IN FEET



GENERAL EPSC NOTES:

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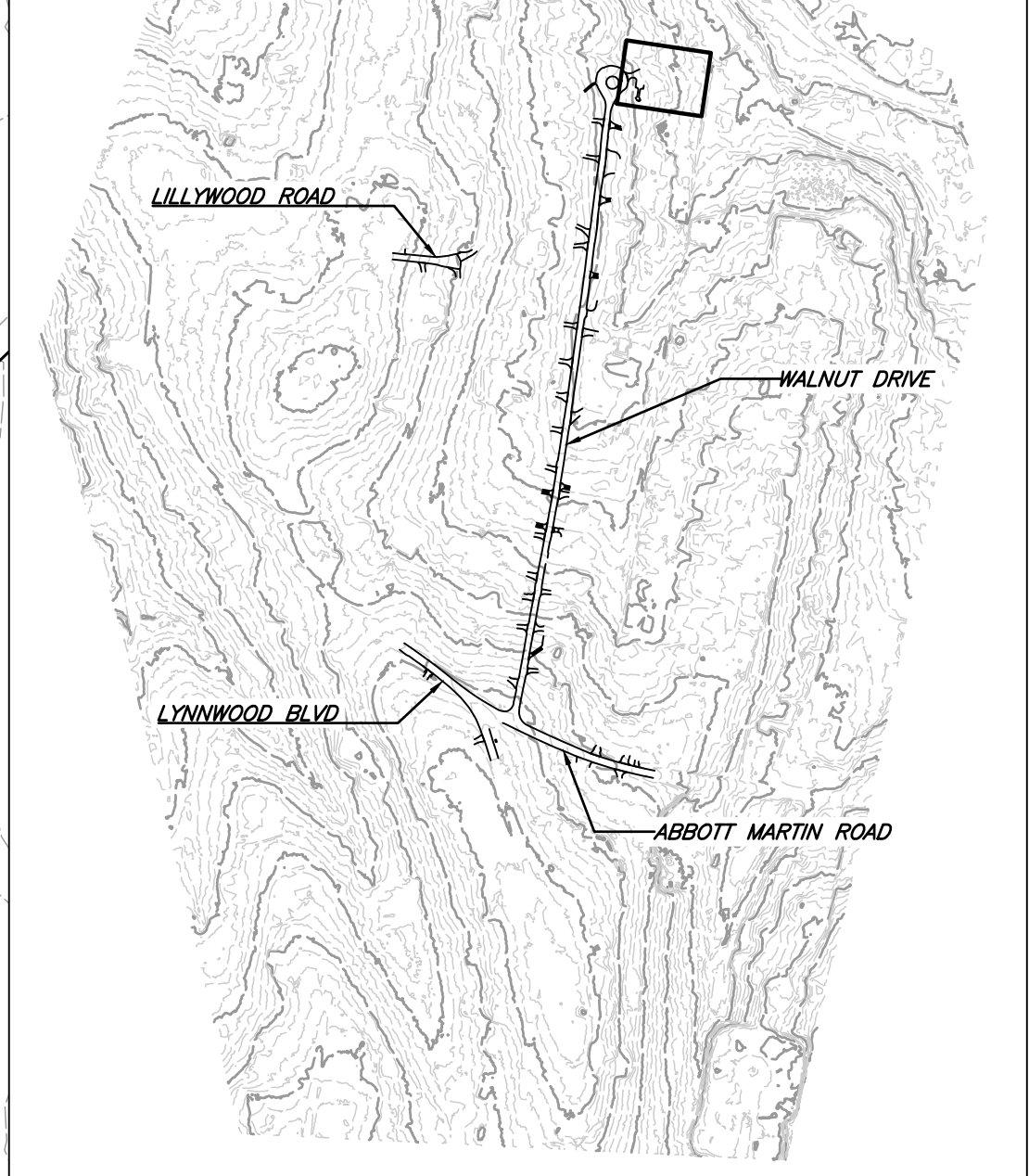
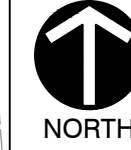
DITCH SEQUENCING NOTES:

ADS INLINE DRAIN, ASSOCIATED STRUCTURES, RIPRAP DITCH AND FLEXAMAT APRON MUST BE INSTALLED PRIOR TO ANY PROJECT RELATED DISTURBANCE WITHIN THE UPGRADIENT AREAS.

- INSTALL PERIMETER EPSC MEASURES ALONG LOD (LEFT DESCENDING BANK OF RIPRAP CHANNEL). PERIMETER EPSC MEASURES SHOWN ALONG PROPERTY LINE ARE INTENDED TO KEEP OFF-SITE RUN-ON SEPARATE FROM CONSTRUCTION RELATED FLOWS. IF NEEDED, THE FILTER SOCKS SHOWN MAY BE SUBSTITUTED FOR AN EARTHEN BERM.
- IN THE DRY, INSTALL FLEXAMAT APRON AND PERFORM PROPOSED GRADING WITHIN RIPRAP CHANNEL. ONCE GRADING IS COMPLETE, LINE THE CHANNEL WITH A GEOTEXTILE UNDERLAY AND RIPRAP IMMEDIATELY.
- MOVE PERIMETER EPSC MEASURES INSTALLED WITHIN STEP 1 TO THE DESCENDING RIGHT BANK OF RIPRAP CHANNEL SUCH THAT THE WORK AREA REQUIRED FOR INSTALLATION OF ADS SYSTEM IS SEPARATED FROM THE PORTION OF THE NEWLY STABILIZED RIPRAP CHANNEL. ALLOW OFF-SITE RUN-ON TO CLEANLY ENTER THE RIPRAP CHANNEL AND FLOW THROUGH THE FLEXAMAT APRON.
- INSTALL ADS INLINE DRAIN, ASSOCIATED STRUCTURES AND FLEXAMAT APRON.
- PERFORM FINAL INSTALLATION OF AREA USING PERMANENT SEED AND MULCH.
- BEGIN SUBGRADE REMOVAL AND INSTALLATION OF PROPOSED STORM SEWER NETWORK INSTALLATION WITHIN ROADWAY.

NOTE TO CONTRACTOR

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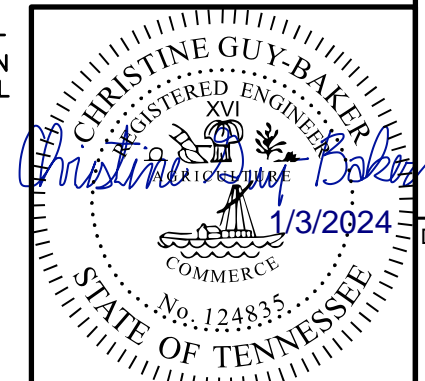
SHEET LOCATION  
SCALE: 1"=500'

LEGEND

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- - - EXISTING EASEMENT
- - - EXISTING RIGHT-OF-WAY
- 560 - EXISTING INDEX (MAJOR) CONTOUR
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- - - EXISTING ROADWAY CENTERLINE
- EXISTING CURB
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- ST — EXISTING STORM PIPE
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- - - PROPOSED LIMITS OF DISTURBANCE
- - - FS — PROPOSED FILTREX SOCK (12")

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**CITY OF BELLE MEADE  
STORMWATER IMPROVEMENTS  
WALNUT DRIVE  
BELLE MEADE, TN**

**INITIAL EPSC PLAN  
LOT 300**

DATE: JANUARY 2024 | DRAWN BY: WJM | CLG  
DWS SCALE: AS SHOWN | CHECKED BY: J.L.W. | 322-084  
APPROVED BY: J.L.W.

DRAWING NO.: **C907**

P:\1300-0001\1300-084-CAD\DWG\1300-084-INITIAL.dwg(3/6/24) LS(12/17/2023) - cp(3/6/24) - LP: 1/3/2024 4:46 PM



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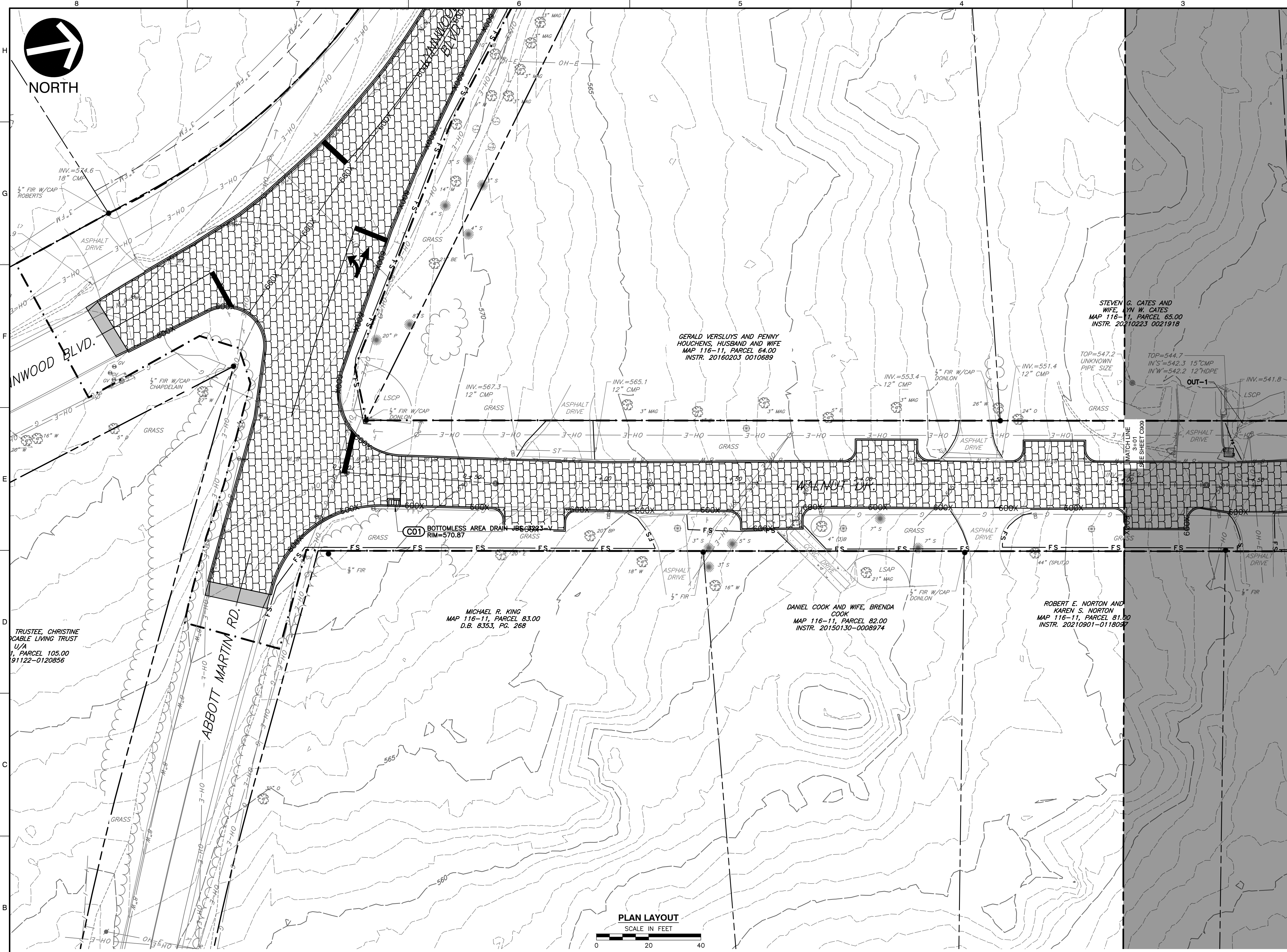




NORTH



NORTH



PLAN LAYOUT  
SCALE IN FEET

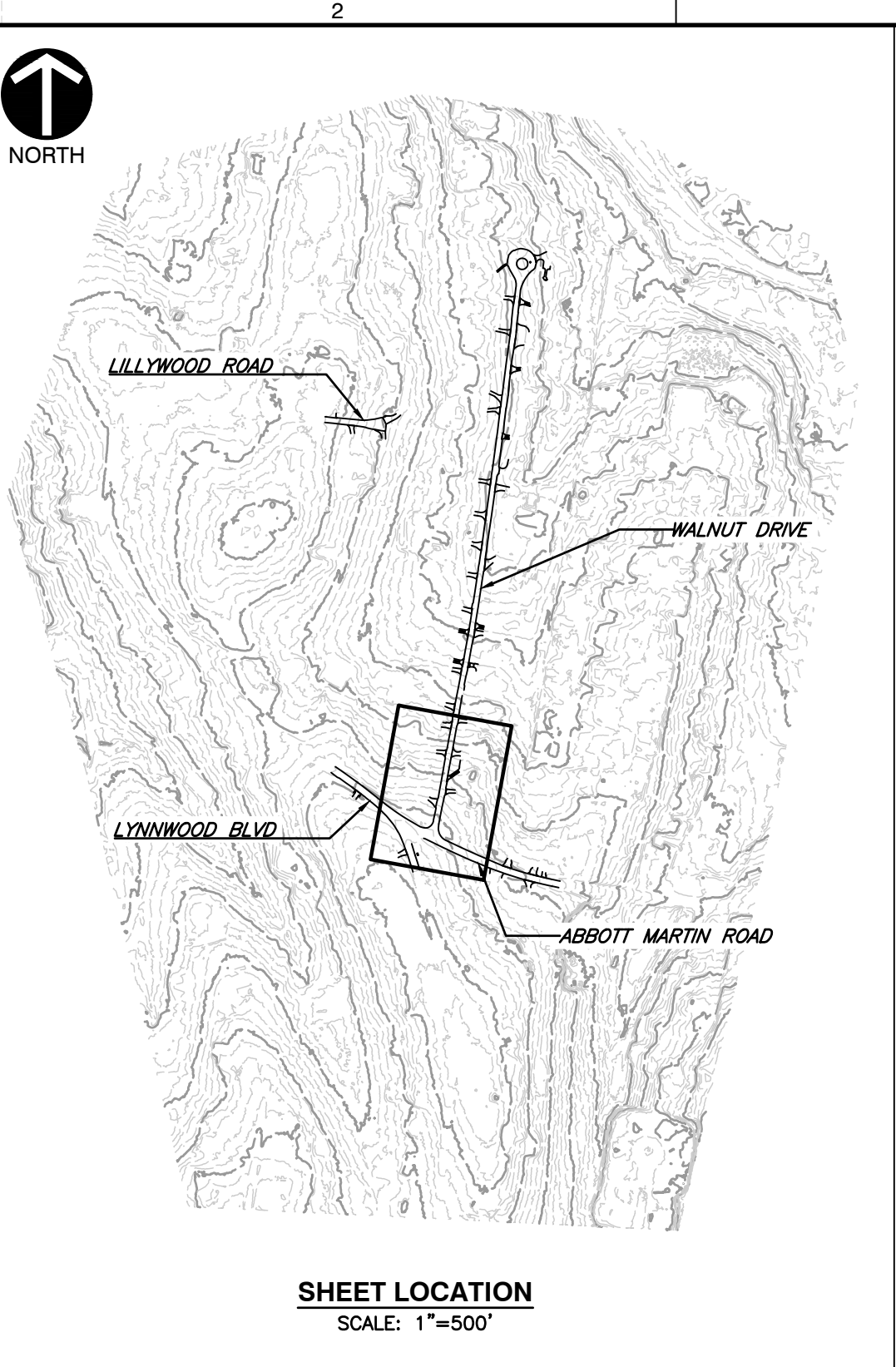


GENERAL EPSC NOTES:

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GENERAL EPSC SEQUENCING NOTES:

1. SEE SHEETS C904, C907, C912 & C915 FOR ADDITIONAL DITCH SEQUENCING NOTES.
2. INSTALL CONSTRUCTION EXITS. THE CONTRACTOR IS TO FIELD LOCATE CONSTRUCTION EXITS SUCH THAT THERE IS NO EVIDENCE OF TRACKING OR DEBRIS ON THE ROADWAY.
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4. INSTALL CATCH BASIN AND INLET PROTECTION MEASURES WITHIN THE ACTIVE WORK AREA. CONTRACTOR IS RESPONSIBLE FOR FIELD LOCATING THE CONCRETE WASH-OUT.
5. REMOVE EXISTING CURB, PAVEMENT AND SUBGRADE. STOCKPILE AND/OR DISPOSE OF EXCAVATED SUBGRADE AND ROADWAY WASTE. STOCKPILE LOCATIONS ARE TO BE SELECTED BY THE CONTRACTOR. STOCKPILES SHOULD BE PROTECTED WITH PERIMETER EPSC MEASURES.
6. PERFORM PROPOSED GRADING, INSTALL PROPOSED PERMEABLE PAVER SYSTEM AND ASSOCIATED SUBGRADE.
7. INSTALL PROPOSED CURBS AND PERFORM FINAL PAVING ACTIVITIES.
8. REMOVE PERIMETER AND INLET PROTECTION EPSC MEASURES. STABILIZE ANY AREAS DISTURBED BY CONSTRUCTION OR REMOVAL OF EPSC MEASURES WITH SOD.



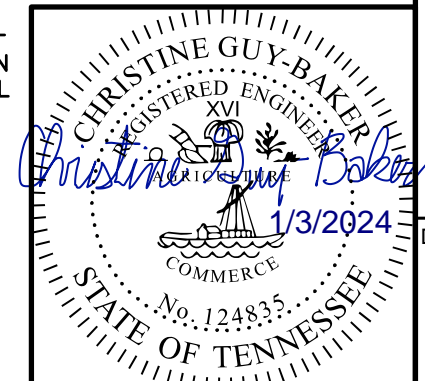
SHEET LOCATION  
SCALE: 1"=500'

LEGEND

- EXISTING PROPERTY LINE
- - - EXISTING EASEMENT
- - - EXISTING RIGHT-OF-WAY
- 560 EXISTING INDEX (MAJOR) CONTOUR
- - - EXISTING INTERMEDIATE (MINOR) CONTOUR
- - - EXISTING DRAINAGE DITCH
- x-x-x EXISTING FENCE LINE
- EXISTING ROADWAY CENTERLINE
- EXISTING CURB
- EXISTING EDGE OF PAVEMENT
- EXISTING STRUCTURE
- ST EXISTING STORM PIPE
- W EXISTING WATER LINE
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- G EXISTING GAS LINE
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- EXISTING IRON PIN
- EXISTING CONCRETE MONUMENT
- ⊙ EXISTING MAILBOX
- ⊙ EXISTING STORMWATER INLET
- ⊙ EXISTING SANITARY SEWER FEATURE
- ⊙ EXISTING WATER LINE FEATURE
- ⊙ EXISTING GAS VALVE
- ⊙ EXISTING VEGETATION
- ⊙ EXISTING ELECTRIC FEATURE
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- PROPOSED CURB
- PROPOSED EDGE OF PAVED DRIVE
- PROPOSED PERMEABLE PAVERS
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED FLEXAMAT
- PROPOSED EASEMENT
- ST PROPOSED STORMWATER PIPE
- PROPOSED ROADWAY STRIPING
- 600X PROPOSED MIRAFI 600X
- - - PROPOSED LIMITS OF DISTURBANCE

REFERENCE

1. EXISTING TOPOGRAPHIC INFORMATION TAKEN FROM A COMBINATION OF TOPOGRAPHIC SURVEY COLLECTED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. AND LIDAR DATA OBTAINED FROM THE STATE OF TENNESSEE.
2. HORIZONTAL DATUM IS TN STATE PLANE NSRS 2011 IN FEET.
3. VERTICAL DATUM IS NAVD88 (GEOID12B).



NO	DATE	DESCRIPTION

**C&E**  
**Civil & Environmental Consultants, Inc.**  
 117 Seaboard Lane - Suite E-100 - Franklin, TN 37067  
 615-333-7797 · 800-763-2326  
 www.cecinc.com

**CITY OF BELLE MEADE  
 STORMWATER IMPROVEMENTS  
 WALNUT DRIVE  
 BELLE MEADE, TN**

**FINAL EPSC PLAN  
 WALNUT DRIVE [1 OF 5]**

DATE: JANUARY 2024 | DRAWN BY: WJM | CLG  
 DWG SCALE: AS SHOWN | CHECKED BY: 322-084  
 PROJECT NO: J.L.W.  
 APPROVED BY:

DRAWING NO.: **C908**



Know what's below.  
Call before you dig.

**NOTE TO CONTRACTOR**  
 THE CONTRACTOR SHALL REFER TO ALL PLANS WITHIN THIS PLAN SET. IT IS NOT THE DESIGNER'S INTENT THAT ANY SINGLE PLAN SHEET IN THIS SET OF DOCUMENTS FULLY DEPICT ALL WORK ASSOCIATED WITH THIS PROJECT.

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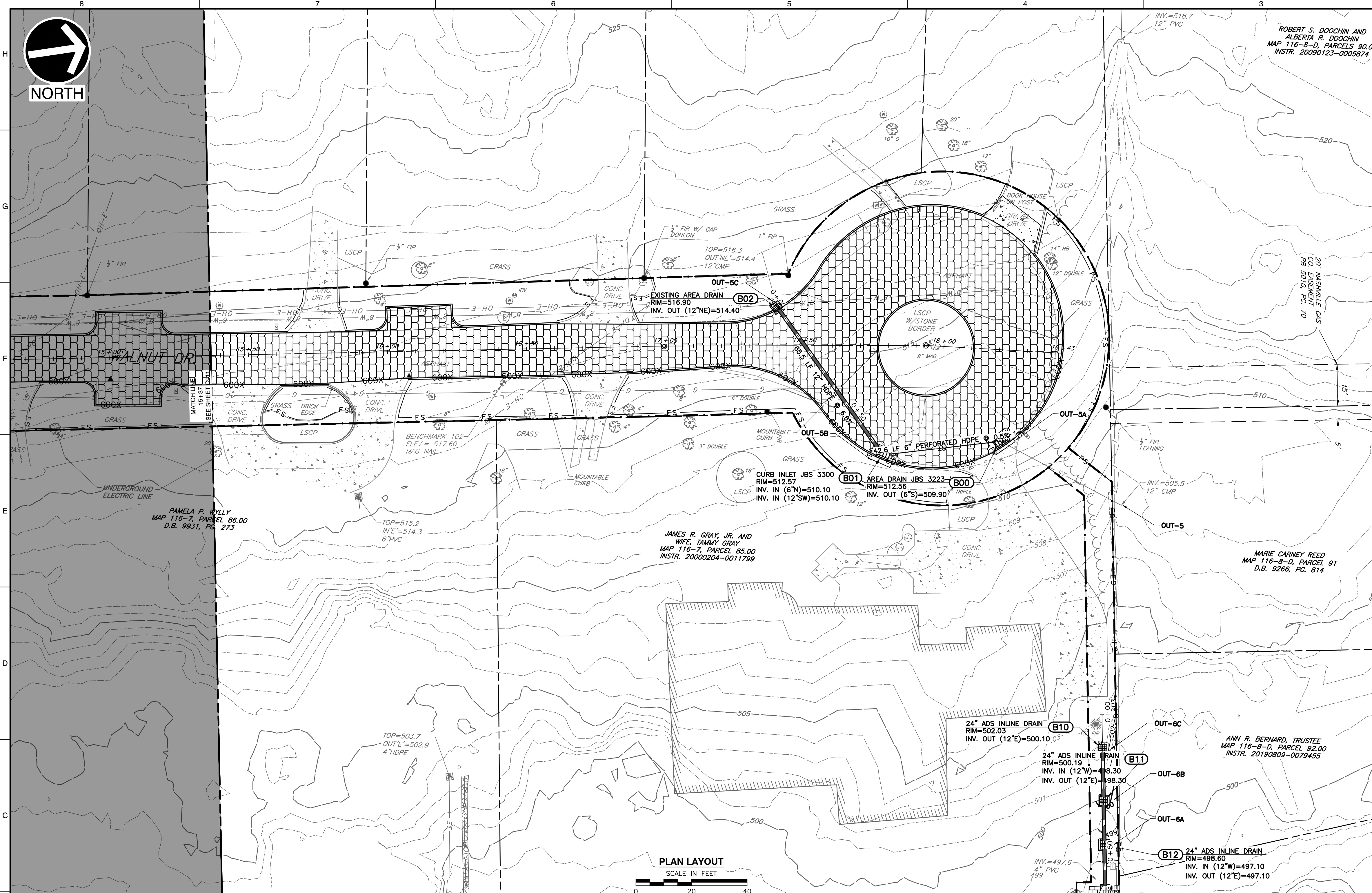
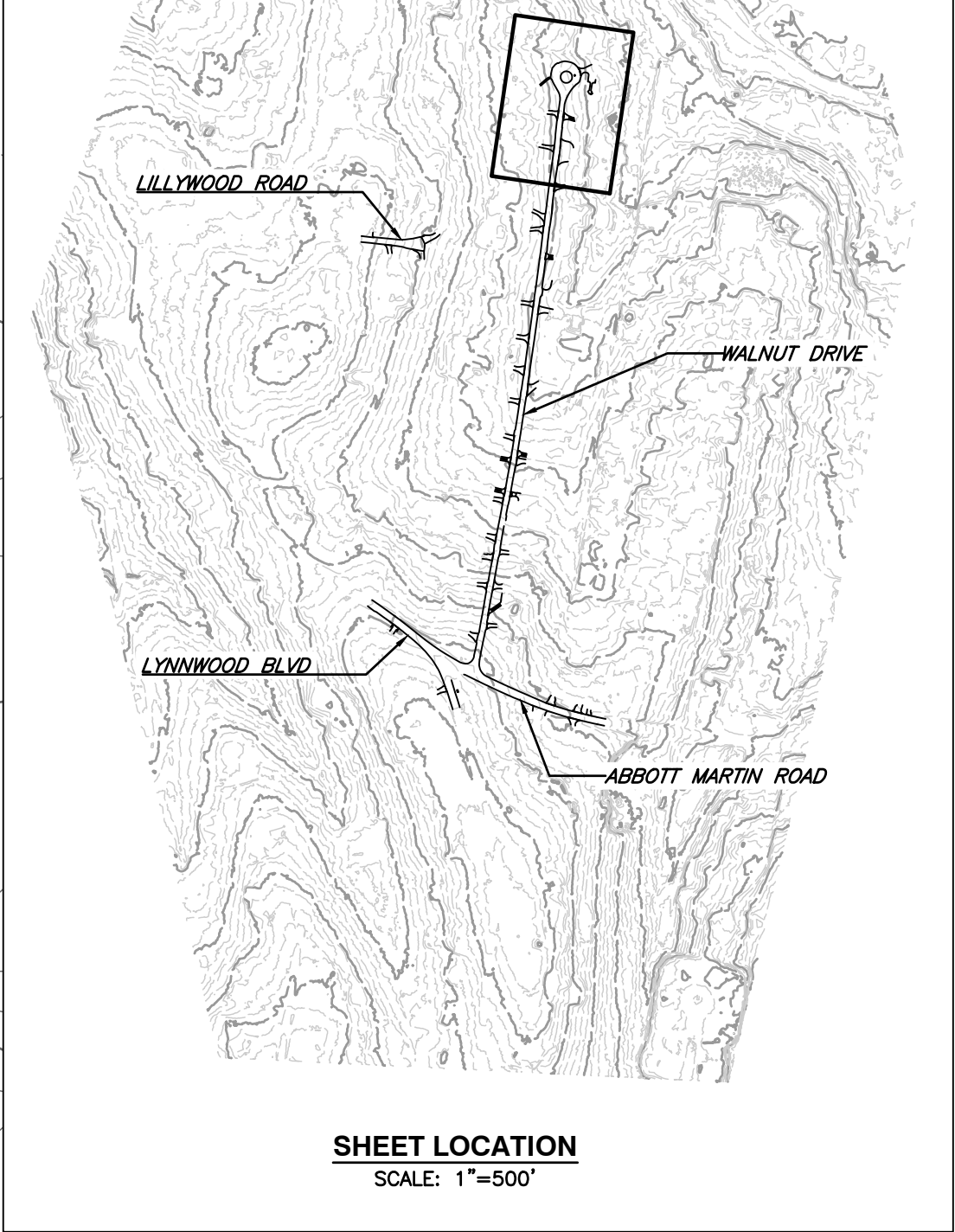












PLAN LAYOUT  
SCALE IN FEET  
0 20 40

GENERAL EPSC NOTES:

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GENERAL EPSC SEQUENCING NOTES:

- SEE SHEETS C904, C907, C912 & C915 FOR ADDITIONAL DITCH SEQUENCING NOTES.
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- INSTALL CATCH BASIN AND INLET PROTECTION MEASURES WITHIN THE ACTIVE WORK AREA. CONTRACTOR IS RESPONSIBLE FOR FIELD LOCATING THE CONCRETE WASH-OUT.
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- PERFORM PROPOSED GRADING. INSTALL PROPOSED PERMEABLE PAVEMENT SYSTEM AND ASSOCIATED SUBGRADE.
- INSTALL PROPOSED CURB AND PERFORM FINAL PAVING ACTIVITIES.
- REMOVE PERIMETER AND INLET PROTECTION EPSC MEASURES. STABILIZE ANY AREAS DISTURBED BY CONSTRUCTION OR REMOVAL OF EPSC MEASURES WITH SOD.

DITCH SEQUENCING NOTES:

ADS INLINE DRAIN, ASSOCIATED STRUCTURES, RIPRAP DITCH AND FLEXAMAT APRON MUST BE INSTALLED PRIOR TO ANY PROJECT RELATED DISTURBANCE WITHIN THE UPGRADIENT AREAS.

- INSTALL PERIMETER EPSC MEASURES ALONG LOD (LEFT DESCENDING BANK OF RIPRAP CHANNEL). PERIMETER EPSC MEASURES SHOWN ALONG PROPERTY LINE ARE INTENDED TO KEEP OFF-SITE RUN-ON SEPARATE FROM CONSTRUCTION RELATED FLOWS. IF NEEDED, THE FILTER SOCKS SHOWN MAY BE SUBSTITUTED FOR AN EARTHEN BERM.
- IN THE DRY, INSTALL FLEXAMAT APRON AND PERFORM PROPOSED GRADING WITHIN RIPRAP CHANNEL. ONCE GRADING IS COMPLETE, LINE THE CHANNEL WITH A GEOTEXTILE UNDERLAY AND RIPRAP IMMEDIATELY.
- MOVE PERIMETER EPSC MEASURES INSTALLED WITHIN STEP 1 TO THE DESCENDING RIGHT BANK OF RIPRAP CHANNEL SUCH THAT THE WORK AREA REQUIRED FOR INSTALLATION OF ADS SYSTEM IS SEPARATED FROM THE PORTION OF THE NEWLY STABILIZED RIPRAP CHANNEL. ALLOW OFF-SITE RUN-ON TO CLEANLY ENTER THE RIPRAP CHANNEL AND FLOW THROUGH THE FLEXAMAT APRON.
- INSTALL ADS INLINE DRAIN, ASSOCIATED STRUCTURES AND FLEXAMAT APRON.
- PERFORM FINAL INSTALLATION OF AREA USING PERMANENT SEED AND MULCH.
- BEGIN SUBGRADE REMOVAL AND INSTALLATION OF PROPOSED STORM SEWER NETWORK INSTALLATION WITHIN ROADWAY.

LEGEND

- EXISTING PROPERTY LINE
- - - EXISTING EASEMENT
- - - EXISTING RIGHT-OF-WAY
- 560 EXISTING INDEX (MAJOR) CONTOUR
- - - EXISTING INTERMEDIATE (MINOR) CONTOUR
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- x x x EXISTING FENCE LINE
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- EXISTING CURB
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- PROPOSED EASEMENT
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- PROPOSED ROADWAY STRIPING
- 600X PROPOSED MIRAFI 600X
- - - PROPOSED LIMITS OF DISTURBANCE
- FS PROPOSED FILTRIX SOCK (12")

REFERENCE

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NO	DATE	DESCRIPTION

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 www.ceinc.com

**CITY OF BELLE MEADE  
 STORMWATER IMPROVEMENTS  
 WALNUT DRIVE  
 BELLE MEADE, TN**

**FINAL EPSC PLAN  
 WALNUT DRIVE [5 OF 5]**

DATE: JANUARY 2024 DRAWN BY: WJW  
 DWG SCALE: AS SHOWN CHECKED BY: CLG  
 PROJECT NO: 322-084  
 APPROVED BY: J.L.W.

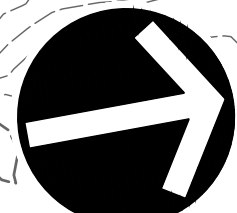
DRAWING NO.: **C912**



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NORTH

JOHN D. FERGUSON AND CAROLE S. FERGUSON, TRUSTEES OF THE FERGUSON REVOCABLE LIVING TRUST  
MAP 116-11, PARCEL 97.00  
INSTR. 20171120-0119030

EDWARD W. CONK AND CATHERINE E. CONK, HUSBAND AND WIFE  
MAP 116-11, PARCEL 96.00  
INSTR. 20180614-0057213

10' SANITARY SEWER ESMT.  
DB 5787, PG. 15

CO2 BOTTOMLESS AREA DRAIN JBS 3223-V  
RIM=571.17

GERALD VERSLUYS AND PENNY HOUCHEMS, HUSBAND AND WIFE  
MAP 116-11, PARCEL 64.00  
INSTR. 20160203 0010689

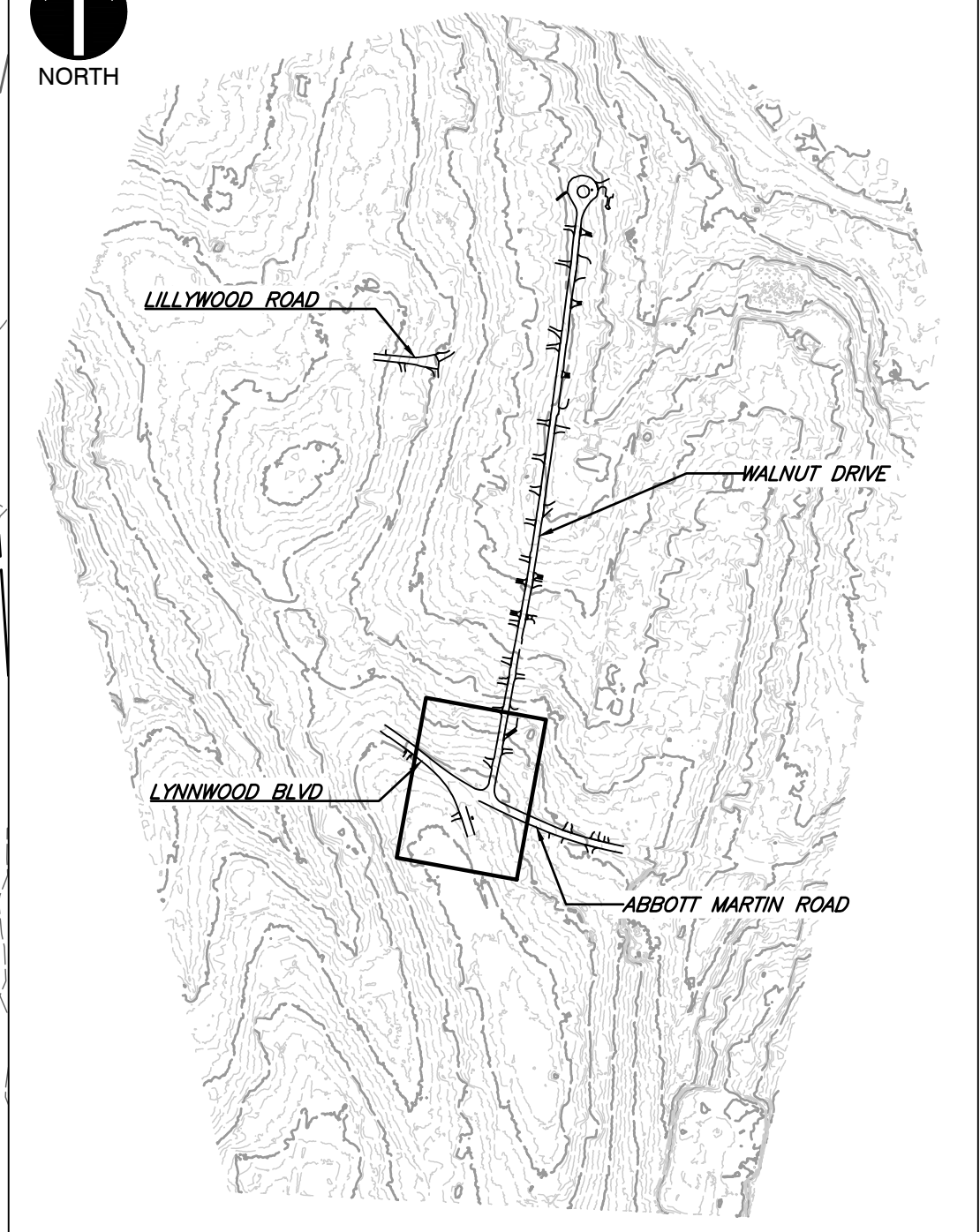
MICHAEL R. KING  
MAP 116-11, PARCEL 83.00  
D.B. 8353, PG. 268

DANIEL COOK AND WIFE, BRENDA COOK  
MAP 116-11, PARCEL 82.00  
INSTR. 20150130-0008974

PAUL E. ALLEN, TRUSTEE, CHRISTINE R. ALLEN REVOCABLE LIVING TRUST  
U/A  
MAP 116-11, PARCEL 105.00  
INSTR. 20191122-0120856



NORTH



SHEET LOCATION  
SCALE: 1"=500'

LEGEND

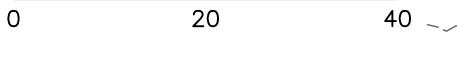
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- - - PROPOSED LIMITS OF DISTURBANCE
- FS PROPOSED FILTREX SOCK (12")

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3. VERTICAL DATUM IS NAVD88 (GEOID12B).

PLAN LAYOUT

SCALE IN FEET



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Know what's below.  
Call before you dig.

REVISION RECORD

NO	DATE	DESCRIPTION

**Civil & Environmental Consultants, Inc.**  
117 Seaboard Lane - Suite E-100 - Franklin, TN 37067  
615-333-7797 · 800-763-2326  
www.cecinc.com

**CITY OF BELLE MEADE  
STORMWATER IMPROVEMENTS  
WALNUT DRIVE  
BELLE MEADE, TN**

**FINAL EPSC PLAN  
LYNNWOOD BLVD  
INTERSECTION**

DATE: JANUARY 2024 | DRAWN BY: WJW | DWG SCALE: CLG  
AS SHOWN | CHECKED BY: JLV | PROJECT NO: 322-084  
APPROVED BY: JLV

DRAWING NO.: **C913**



P:\1300-0001\322-084\001-CAD\DWG\116-11\322-084-INT01-000-FINAL.dwg (1/31/24 12:27:23) - LP: 1/2/2024 4:48 PM





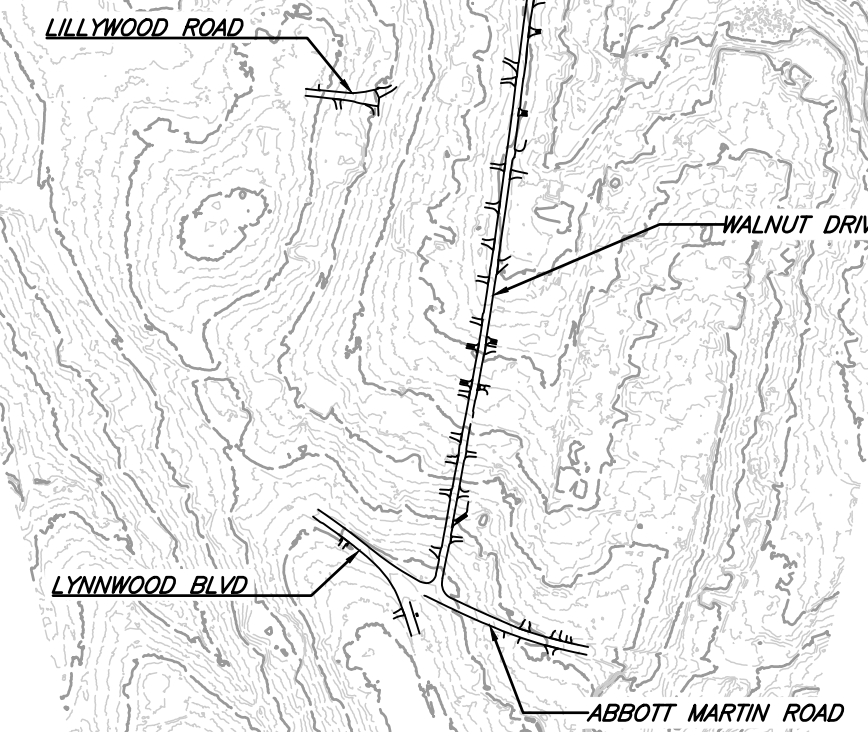




MARIE CARNEY REED  
MAP 116-8-D, PARCEL 91  
D.B. 9266, PG. 814

ANN R. BERNARD, TRUSTEE  
MAP 116-8-D, PARCEL 92.00  
INSTR. 20190809-0079455

ROBERT J. DEAL, TRUSTEE OF THE  
ROBERT JOSEPH DEAL  
REVOCABLE LIVING TRUST  
MAP 116-8-D, PARCEL 93.00  
INSTR. 20140904-0081212



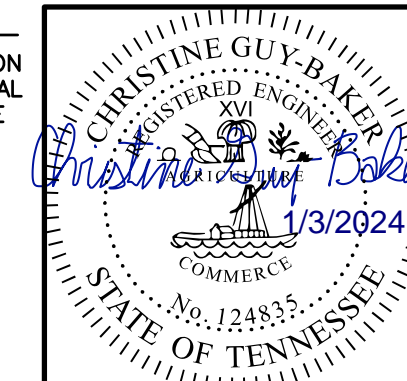
SHEET LOCATION  
SCALE: 1"=500'

LEGEND

- EXISTING PROPERTY LINE
- - - EXISTING EASEMENT
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DRAWING NO.:

C915

FINAL EPSC PLAN  
LOT 300

CITY OF BELLE MEADE  
STORMWATER IMPROVEMENTS  
WALNUT DRIVE  
BELLE MEADE, TN

Civil & Environmental Consultants, Inc.  
117 Seaboard Lane - Suite E-100 - Franklin, TN 37067  
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www.ceinc.com

NO	DATE	DESCRIPTION

PL 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