



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES
William R. Snodgrass - Tennessee Tower
312 Rosa L. Parks Avenue, 11th Floor
Nashville, Tennessee 37243-1102

July 9, 2021

John Roberson
AAA Cooper Transportation
1751 Kinsey Road
Dothan, AL 36303

Subject: §401 Water Quality Certification
ARAP Application NRS 21.032
AAA Coopers Transportation Facility Expansion

Location: 4920 Hickory Hill Road
Memphis, Shelby County, TN
Latitude: 35.0142, Longitude: -89.8620

Mr. Roberson:

We have reviewed and approved your Aquatic Resource Alteration Permit application for waterbody impacts associated with the AAA Cooper Transportation facility expansion. Authorized impacts are three stream crossings and two stormwater outfalls along an unnamed tributary to John's Creek (Stream 1), one stormwater outfall along an additional unnamed tributary to John's Creek (Stream 2), and 300 linear feet of bank stabilization and one stormwater outfall along a third unnamed tributary to John's Creek. The purchase of 173.6 functional-foot compensatory stream mitigation credits are required to be purchased from Rossville Farms Mitigation Bank to offset the authorized loss of stream resource value.

The planned activity was reviewed, and the Division has reasonable assurance that the activity as proposed in accordance with all permit conditions herein will not violate applicable water quality standards and has issued the attached permit (enclosed). This permit may also serve as a §401 water quality certification (pursuant to 40 C.F.R. §121.2).

The state of Tennessee may modify, suspend, or revoke this authorization should the state determine that the activity results in more than an insignificant violation of applicable water quality standards or violation of the TWQCA. Failure to comply with permit terms may result in penalty in accordance with T.C.A. §69-3-115.

It is the responsibility of the permittee to read and understand all permit conditions before the project begins. If you need any additional information or clarification, please contact me at 615-454-7993 or by e-mail at Robert.J.Wayne@tn.gov.

Sincerely,



Robert Wayne,

Natural Resources Unit

Enclosure: §401 Water Quality Certification

Cc: Heather Smith, TDEC Memphis EFO Heather.N.Smith@tn.gov
Kyle Ham, Ledford Engineering, Planning, and Architecture kyle@ledforddep.com
Zuzana Chovanec, USACE Memphis Zuzana.Chovanec@usace.army.mil
Maylynne Wilbert, Shelby County MS4 maylynne.wilbert@memphistn.gov



AQUATIC RESOURCE ALTERATION PERMIT NRS 21.032

Pursuant to §401 of *The Federal Clean Water Act* (33 U.S.C. 1341), any applicant for a Federal license or permit to conduct any activity which may result in any discharge into the waters of the U.S., shall provide the federal licensing or permitting agency a certification from the State in which the discharge originates or will originate. Accordingly, the Division of Water Resources requires reasonable assurance that the activity will not violate provisions of *The Tennessee Water Quality Control Act of 1977* (T.C.A. §69-3-101 et seq.) or provisions of §§301, 302, 303, 306 or 307 of *The Clean Water Act*.

Subject to conformance with accepted plans, specifications and other information submitted in support of the application, pursuant to 33 U.S.C. 1341 the State of Tennessee hereby certifies the activity described below. This shall serve as authorization under T.C.A. §69-3-101 et seq.

PERMITTEE AAA Cooper Transportation
 C/o John Roberson
 1751 Kinsey Road
 Dothan, AL 36303

AUTHORIZED WORK: Authorized impacts are three stream crossings and two stormwater outfalls along an unnamed tributary to John’s Creek (Stream 1), one stormwater outfall along an additional unnamed tributary to John’s Creek (Stream 2), and 300 linear feet of bank stabilization and one stormwater outfall along a third unnamed tributary to John’s Creek. The purchase of 173.6 functional-foot compensatory stream mitigation credits are required to be purchased from Rossville Farms Mitigation Bank to offset the authorized loss of stream resource value.

LOCATION:

4920 Hickory Hill Road
Memphis, Shelby County, TN
Latitude: 35.0142, Longitude: -89.8620

EFFECTIVE DATE: July 9, 2021

EXPIRATION DATE: July 8, 2026

A handwritten signature in cursive script that reads "M. Lee Barber".

for Jennifer Dodd
Director, Division of Water Resources

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PART I

Authorized Work:

STR-1 Unnamed Tributary to John's Creek

Latitude: 35.0155 Longitude: -89.8600

- a. Installation of a 58-foot culvert (Tier 5 Impact)
- b. Installation of 12-foot wingwalls at the culvert inlet and outlet (Tier 4 Impact)
- c. Mitigation required for 58 feet of Tier 5 Impact = 40.6 functional-foot credits
- d. Mitigation required for 24 (12 +12) feet of Tier 4 Impact = 13 functional-foot credits

Latitude: 35.0148 Longitude: -89.8598

- a. Installation of a 59-foot culvert (Tier 5 Impact)
- b. Installation of 12-foot wingwalls at the culvert inlet and outlet (Tier 4 Impact)
- c. Mitigation required for 59 feet of Tier 5 Impact = 41.3 functional-foot credits
- d. Mitigation required for 24 (12 +12) feet of Tier 4 Impact = 13 functional-foot credits

Latitude: 35.0142 Longitude: -89.8597

- a. Removal of existing 64-foot culvert
- b. Installation of a 64-foot culvert (Tier 5 Impact)
- c. Installation of 12-foot wingwalls at the culvert inlet and outlet (Tier 4 Impact)
- d. Mitigation required for 64 feet of Tier 5 Impact = 44.8 functional-foot credits
- e. Mitigation required for 24 (12 +12) feet of Tier 4 Impact = 13 functional-foot credits

Latitude: 35.0154 Longitude: -89.8600

- a. Installation of 24-inch stormwater outfall and headwall structure with 22 linear feet of impact along one streambank (Tier 2 Impact)
- b. Mitigation required for 22 feet of Tier 2 Impact = 3.5 functional-foot credits

Latitude: 35.0133 Longitude: -89.8588

- a. Installation of 15-inch stormwater outfall and headwall structure with 8 linear feet of impact along one streambank (Tier 2 Impact)
- b. Mitigation required for 8 feet of Tier 2 Impact = 1.3 functional-foot credits

STR-2 Unnamed Tributary to John's Creek

Latitude: 35.0154 Longitude: -89.8600

- a. Installation of 18-inch stormwater outfall and headwall structure with nine linear feet of impact along one streambank (Tier 2 Impact)
- b. Mitigation required for nine feet of Tier 2 Impact = 1.4 functional-foot credits

STR-3 Unnamed Tributary to John's Creek

Latitude: 35.0130 Longitude: -89.8619

- a. Use of grading to create three to one slope along 300 linear feet of the right streambank
- b. Installation of biodegradable coir erosion control blanket and stakes
- c. Use of hydroseeding and planting with native species for bank stabilization

Latitude: 35.0131 Longitude: -89.8623

- a. Installation of 24-inch stormwater outfall and headwall structure with 11 linear feet of impact along one streambank (Tier 2 Impact)
- b. Mitigation required for 11 feet of Tier 2 Impact = 1.8 functional-foot credits

Special Conditions:

- a. Unless stated otherwise, all work shall be accomplished in conformance with the accepted plans, specifications, data, and other information submitted in support of application NRS 21.032.
- b. The portion of any waters, including wetlands, located outside the project area shall be clearly labeled as protected and that no disturbance is permitted.
- c. All temporary haul roads must be removed upon project completion. The locations impacted by temporary haul road shall be returned to pre-construction elevations.
- d. All riprap areas shall be placed as to mimic the existing/proposed contours of the stream channel. Riprap shall be countersunk and placed at the grade with the existing stream substrate. Riprap shall not be placed in a manner that would permanently disrupt the movement of fish and aquatic life.
- e. All outfall structures must be installed in accordance with Tennessee Department of Environment and Conservation *General Aquatic Resource Alteration Permit for Construction of Intake and Outfall Structures*.
- f. New intake or outfall structures shall be located and oriented such as to avoid permanent alteration or damage to the integrity of the stream channel including the opposite stream bank. The alignment of the outfall structure (except for diffusers) should be as parallel to the stream flow as is practicable, with the discharge pointed downstream. Diffusers may be placed perpendicular to stream flow for more complex mixing.
- g. Checkdams or other in-stream treatments are not authorized.
- h. Temporary stream crossings shall not be constructed in a manner that would permanently disrupt the movement of fish and aquatic life.
- i. Permanent vegetative stabilization using native species of all disturbed areas must be initiated within 14 days of project completion (see also *Landscaping with Natives* at tneppc.org). Non-native, non-invasive annuals may be used as cover crops until native species can be established.
- j. The use of monofilament-type erosion control netting or blanket is prohibited. To minimize wildlife entanglement and plastic debris pollution, temporary erosion, and sediment control products that either do not contain netting, or that contain netting manufactured from 100 percent biodegradable non-plastic materials such as jute, sisal, or coir fiber shall be specified. Netting used in these products should have a loose-weave wildlife-safe design with movable joints between the horizontal and vertical twines, allowing the twines to move independently. Degradable, photodegradable, UVdegradable, oxo-degradable, or oxo-biodegradable plastic netting (including polypropylene, nylon, polyethylene, and polyester) are not acceptable alternatives.
- k. Construction shall be conducted in the dry to the maximum extent practicable, by diverting flow utilizing cofferdams, berms, and/or temporary channels or pipes. Temporary diversion channels shall be protected by non-erodible material and lines to the expected high-water level.
- l. If any stream channel or adjoining stream channel fails to meet the assessment criteria to be classified as a stream, corrective action or additional mitigation will be required. Permittee is responsible for any permanent reduction or loss of instream flow resulting from authorized activities.
- m. This does not authorize the removal of riparian trees or shrubs. Authorization may need to be obtained through the local jurisdiction before riparian zones are modified in any way.
- n. The permittee shall notify this office of project completion within thirty (30) days of completion.
- o. Best Management Practices (BMP's) shall be stringently implemented throughout the construction period to prevent sediments, oils, or other project-related pollutants from being discharged into waters

of the state. All spills must be reported to the appropriate emergency management agency, and measures shall be taken immediately to prevent the pollution of waters of the state, including groundwater, should a spill occur.

- p. Streambeds shall not be used as transportation routes for construction equipment. Temporary stream crossings shall be limited to one point in the construction area and EPSC measures shall be utilized where stream banks are disturbed.
- q. Equipment staging and maintenance areas shall be developed a sufficient distance from any water to ensure that oil, gas, other petroleum products, and other hazardous materials do not enter the waters.
- r. Instream work by heavy equipment shall be kept to a minimum. Equipment shall be free of noticeable leaks of fluids and oils; e.g., hydraulic, transmission, crankcase, and engine coolant, fluids, and oils.
- s. Following the receipt of the final monitoring report, the agency may contact the applicant (or agent) to schedule a site visit to confirm the completion of the site, and that all requirements have been met. The project will not be considered complete without confirmation (either through submitted reports and/or an on-site inspection by regulatory staff) that the site and riparian zone is functioning as proposed.

General Conditions:

- a. **It is the responsibility of the applicant to convey all terms and conditions of this permit to all contractors. A copy of this permit, approved plans, and any other documentation pertinent to the activities authorized by this permit shall be maintained on site at all times during periods of construction activity.**
- b. Work shall not commence until the applicant has received the federal §404 permit from the U. S. Army Corps of Engineers, a §26a permit from the Tennessee Valley Authority or authorization under a Tennessee NPDES Storm Water Construction Permit where necessary. The applicant is responsible for obtaining these permits.
- c. All work shall be carried out in such a manner as will prevent violations of water quality criteria as stated in Rule 0400-40-03-.03 of the Rules of the Tennessee Department of Environment and Conservation. This includes, but is not limited to, the prevention of any discharge that causes a condition in which visible solids, bottom deposits, or turbidity impairs the usefulness of waters of the state for any of the uses designated by Rule 0400-40-04. These uses include fish and aquatic life (including trout streams and naturally reproducing trout streams), livestock watering and wildlife, recreation, irrigation, industrial water supply, domestic water supply, and navigation.
- d. Impacts to waters of the state other than those specifically addressed in the plans and this permit are prohibited. All streams, springs and wetlands shall be fully protected prior, during and after construction until the area is stabilized. Any questions, problems or concerns that arise regarding any stream, spring, or wetland either before or during construction, shall be addressed to the Division of Water Resource's Memphis Environmental Field Office (901-371-3000), or the permit coordinator in the division's Natural Resources Unit (615-532-0709).
- e. Adverse impact to formally listed state or federal threatened or endangered species or their critical habitat is prohibited.
- f. This permit does not authorize adverse impacts to cultural, historical, or archeological features or sites.

PART II

Mitigation Requirements and Monitoring Procedures Required Mitigation Activities

1. Compensatory mitigation activities shall be carried out utilizing best professional efforts to comply with approved plans and the conditions of this permit. Mitigation activities shall be deemed complete when the Division determines that the permitted impact on aquatic resources has been adequately addressed through successful achievement of the compensatory mitigation activities, and a no further action letter has been provided to the permittee.
2. The goal of this permit and its mitigation success criteria is to ensure there is no net loss of resource value due to the impacts of the permitted activity. In accordance with adaptive management, the Division incorporates safety factors into compensatory mitigation requirements. Therefore, once successful mitigation has been achieved the Division reserves the right to revise performance standards and mitigation criteria to account for any changes documented in the compensatory mitigation project. While final mitigation activities may not result in a net loss of resource value, they may be revised to reflect approved changes from the original mitigation proposal and the success criteria in the permit. Upon acceptance of closure of the project, the Division shall record any such revisions of the mitigation plan or success criteria through formal modification of the permit conditions with public notice.
3. To mitigate for stream resource value losses resulting from the authorized project not otherwise addressed, the applicant shall purchase minimum of 173.6 functional feet stream mitigation credits from the Rossville Farms Mitigation Bank. **Please be advised that the stream impacts associated with this mitigation are not authorized to proceed until the specified mitigation credits have been purchased.** Payment must be made within 60 days of invoice. **Proof of credit purchase shall be submitted to this office within 30 days of payment.** With the purchase of the stream mitigation credits, legal responsibility for completion of this stream mitigation is legally transferred to Rossville Farms Mitigation Bank.

PART III

Duty to Reapply

If any portion of the permitted activities, including the authorized impacts to water resources, compensatory mitigation requirements, or post-project monitoring is not completed before the expiration date of this permit **the applicant must apply for permit re-issuance.** The permittee shall submit such information and forms as are required to the director of the Division of Water Resources at least ninety (90) days prior to its expiration date. Such applications must be properly signed and certified.

Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State, or local laws or regulations.

Other Information

If the permittee becomes aware that he/she failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, then he/she shall promptly submit such facts or information.

Changes Affecting the Permit Transfer/Change of Ownership

- a. This permit may be transferred to another party, provided there are no activity or project modifications, no pending enforcement actions, or any other changes which might affect the permit conditions contained in the permit, by the permittee if:
- b. The permittee notifies the Director of the proposed transfer at least 30 days in advance of the proposed transfer date;
- c. The notice includes a written agreement between the existing and new permittees containing a specified date for transfer of permit responsibility, coverage, and contractual liability between them; and
- d. The Director does not notify the current permittee and the new permittee, within 30 days, of her intent to modify, revoke, reissue, or terminate the permit, or require that a new application be filed rather than agreeing to the transfer of the permit.
- e. The permittee must provide the following information to the division in their formal notice of intent to transfer ownership:
 1. the permit number of the subject permit;
 2. the effective date of the proposed transfer;
 3. the name and address of the transferor;
 4. the name and address of the transferee;
 5. the names of the responsible parties for both the transferor and transferee;
 6. a statement that the transferee assumes responsibility for the subject permit;
 7. a statement that the transferor relinquishes responsibility for the subject permit;
 8. the signatures of the responsible parties for both the transferor and transferee, and;
 9. a statement regarding any proposed modifications to the permitted activities or project, its operations, or any other changes which might affect the permit conditions contained in the permit.

Change of Mailing Address

The permittee shall promptly provide to the Director written notice of any change of mailing address. In the absence of such notice the original address of the permittee will be assumed to be correct.

Noncompliance Effect of Noncompliance

All discharges shall be consistent with the terms and conditions of this permit. Any permit noncompliance constitutes a violation of applicable State and Federal laws and is grounds for enforcement action, permit termination, permit modification, or denial of permit reissuance.

Reporting of Noncompliance 24-Hour Reporting

- a. In the case of any noncompliance which could cause a threat to public drinking supplies, or any other discharge which could constitute a threat to human health or the environment, the required notice of non-compliance shall be provided to the Division of Water Resources in the appropriate Environmental Field Office within 24-hours from the time the permittee becomes aware of the circumstances. (The Environmental

Field Office should be contacted for names and phone numbers of environmental response personnel).

- b. A written submission must be provided within five (5) days of the time the permittee becomes aware of the circumstances unless this requirement is waived by the Director on a case-by-case basis. The permittee shall provide the Director with the following information:
 1. A description of the discharge and cause of noncompliance;
 2. The period of noncompliance, including exact dates and times or, if not corrected, the anticipated time the noncompliance is expected to continue; and
 3. The steps being taken to reduce, eliminate, and prevent recurrence of the non-complying discharge.

Scheduled Reporting

For instances of noncompliance which are not reported under subparagraph a. above, the permittee shall report the noncompliance by contacting the permit coordinator, and provide all information concerning the steps taken or planned to reduce, eliminate, and prevent recurrence of the violation and the anticipated time the violation is expected to continue.

Adverse Impact

The permittee shall take all reasonable steps to minimize any adverse impact to the waters of Tennessee resulting from noncompliance with this permit, including but not limited to, accelerated or additional monitoring as necessary to determine the nature and impact of the noncompliance. It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

Liabilities

Civil and Criminal Liability

Nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance. Notwithstanding this permit, the permittee shall remain liable for any damages sustained by the State of Tennessee, including but not limited to fish kills and losses of aquatic life and/or wildlife, as a result of the discharge of pollutants to any surface or subsurface waters. Additionally, notwithstanding this Permit, it shall be the responsibility of the permittee to conduct its discharge activities in a manner such that public or private nuisances or health hazards will not be created.

Liability under State Law

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or the Federal Water Pollution Control Act, as amended.

This permit does not preclude requirements of other federal, state, or local laws. This permit also serves as a State of Tennessee Aquatic Resource Alteration Permit (ARAP) pursuant to the Tennessee Water Quality Control Act of 1977 (T.C.A. §69-3-101 et seq.).

AAA Cooper; NRS 21.032
§401 Water Quality Certification

The State of Tennessee may modify, suspend, or revoke this permit or seek modification or revocation should the state determine that the activity results in more than an insignificant violation of applicable water quality standards or violation of the act. Failure to comply with permit terms may result in penalty in accordance with T.C.A. §69-3-115.

An appeal of this action may be made as provided in T.C.A. §69-3-105(i) and Rule 0400-40-05-.12 by submitting a petition for appeal. This petition must be filed within THIRTY (30) DAYS after public notice of the issuance of the permit. The petition must specify what provisions are being appealed and the basis for the appeal. It should be addressed to the technical secretary of the Tennessee Board of Water Quality, Oil and Gas at the following address: Jennifer Dodd, Director, Division of Water Resources, William R. Snodgrass - Tennessee Tower, 312 Rosa L. Parks Avenue, Nashville, Tennessee 37243-1102 or you may submit such petition electronically to TDEC.Appeals@tn.gov. Any hearing would be in accordance with T.C.A. §§69-3-110 and 4-5-301 et seq.

FINAL PERMIT RATIONALE
Aquatic Resource Alteration Permit NRS21.032

AAA Cooper Transportation

July 12, 2021

I. SUMMARY

Name of applicant:

AAA Cooper Transportation

1751 Kinsey Road

Dothan, AL 36303

Contact: John Roberson

Phone: 334-671-3155

Activity Location: 4920 Hickory Hill Road

Memphis, Shelby County, TN

Nature of Business: Industrial Development

Authorized Activity: AAA Cooper Transportation is authorized to install three stream crossings and two stormwater outfalls along an unnamed tributary to John's Creek (Stream 1), one stormwater outfall along an additional unnamed tributary to John's Creek (Stream 2), and 300 linear feet of bank stabilization and one stormwater outfall along a third unnamed tributary to John's Creek. AAA Cooper is required to purchase of 173.6 functional-foot compensatory stream credits from Rossville Farms Mitigation Bank to offset the authorized loss of stream resource value.

Waterbody Name: Unnamed tributaries to John's Creek

II. PERMIT STATUS

ARAP NRS21.032 issued: **July 9, 2021**

ARAP NRS21.032 expires: **July 8, 2026**

Application for ARAP received: **1/29/2021 and updated 3/20/2021, 3/29/2021, 4/20/2021, 5/18/2021, and 5/21/2021**

Application Complete: **5/21/2021**

Status of Affected Waters

Stream Name/ID: John's Creek / TN08010211176_0100

Classified Uses	Use Support	Causes	Sources
Fish and Aquatic Life	not assessed		
Irrigation	not assessed		
Recreation	not assessed		
Livestock watering & wildlife	not assessed		

Assessment Date: n/a

The affected waters have not been assessed. The affected waters are not known Exceptional Tennessee Waters.

Alternatives Analysis and Selection of Least Impactful Practicable Alternative

The stated purpose of the authorized project is to provide needed expansion at the existing AAA Cooper Transportation facility and to address existing and ongoing erosion along an unnamed tributary to John's Creek.

The following alternatives analysis was submitted with the application. No practicable alternatives that would result in less adverse impact to water resources were identified.

Bank Stabilization

Alternative 1:

If the site is currently left unimproved, the erosion issues will persist and cause further damage to the existing security fence onsite. The existing erosion issues will also significantly impact the integrity on John's Creek bank.

Alternative 2:

The second alternative considered is regrading at the existing outfall locations and installing additional rip-rap and appropriate vegetation. The core issue of the erosion issues is the fact that the stormwater from the site is being allowed to sheet flow into the creek. There are 3 rip rap lined channels that collect the stormwater at the top of the stream bank. Although regrading at the outfall locations will correct the current issues temporarily, overtime the issue will persist.

Alternative 3:

The third alternative consists of installing a three foot concrete channel along with numerous inlets along the back of the existing curb line of the parking area. The stormwater will be collected and discharge into the stream at approximately 2 feet above the current flowline of John's Creek. The proposed headwall at the discharge point will surround the pipe with four (4) inch thick concrete and the pipe and headwall will be sloped to the bank slope. The bank will also be re-graded at a 3-to-1 slope to correct the existing washout areas and provide a continuous stream bank. The underbrush along the stream bank will be removed and the Erosion Control Products Erosion Control System will be put in place. This system includes installation of the Double Coir Erosion Control Blanket (Coconut Fiber) surrounded on top and bottom with the Biodegradable Jute Fiber Non-Woven Netting. The erosion control blanket will be fixed with Biodegradable Landscape Stakes. After the Erosion Control Products Erosion control System is installed around the existing mature trees, the bank will be seeded with a permanent native species.

There will be approximately 300 linear feet of bank that will be stabilized with the Erosion Control Blanket.

Site Expansion

Alternative 1:

This alternative, which is the design alternative, consists of three stream crossings in order to facilitate a proposed parking expansion for the trucking facility. The purpose of the stream crossing associated with the northern drive will facilitate access for future construction. Given the location of the site, there is no other feasible or economically reasonable route to this location.

There are two stream crossings associated with the proposed additional parking for tractor parking. The two crossings will allow a one way in, one way out design to utilize the available land to the full extent. These proposed parking will require stormwater detention, which will ultimately require a new outfall into the existing stream.

Alternative 2:

A second alternative explored consists of installing only one stream crossing for the proposed parking expansion. While this alternative reduces the overall resource impact, this design would require significantly larger drive aisles that would allow two-way traffic for the tractor trailers. This alternative would not allow maximum utilization of the available land.

Based on the available information, the Division has determined that the authorized activities are the least impactful practical alternative that will accomplish the project purpose.

Social or Economic Justification Information

The applicant has stated that greater than de minimis degradation is necessary to accommodate important social or economic development in the area in which the waters are located. The applicant has provided written justification as follows.

The proposed site expansion will provide approximately 165 new tractor spaces. AAA Cooper is currently at max capacity for tractor parking at the currently facility just west of the unnamed tributary. The two stream crossings associated with this expansion will allow adequate circulation of tractor trailer traffic. The expansion will allow for continued operation and the creation of additional employment at the existing facility.

The need for the slope stabilization and outfalls along Stream 3 is to resolve the existing erosion issues and to prevent future erosion. The existing erosion is beginning to damage the security fence that is in place and there are several areas of severe washout just beyond the security fence. If left as is it is anticipated the erosion will continue and result in damage to the existing parking lot.

Based on the available information, the Division has determined that the applicant has demonstrated that degradation is necessary to accommodate important economic or social development in the area and will not violate the water quality criteria for uses existing in the receiving waters.

Existing Conditions/Authorized Loss of Resource Values and Compensatory Mitigation

All waterbodies within the authorized project are not assessed and are not known Exceptional Tennessee Waters. The authorized impacts to Stream 1 and Stream 2 are considered greater than de minimis and will require compensatory mitigation. A default TN SQT score of 0.8 was assumed for all streams within the project location. The applicant is proposing to offset the permanent loss in stream resource value through

the purchase of 176.3 functional feet stream credits from the Rossville Farms Mitigation Bank. The authorized impacts are located within an adjacent HUC-8 watershed and the secondary service area of Rossville Farms Mitigation Bank.

Antidegradation

In accordance with the Tennessee Antidegradation Statement (Rule 0400-40-03-.06), the Division has determined that the authorized activities will result in greater than de minimis degradation to water quality. Any appreciable permanent loss of resource value associated with the authorized impact is required to be offset by sufficient mitigation to result in no overall net loss of resource value. Pursuant to Antidegradation Statement, in waters with available parameters for habitat, an activity that would cause degradation of habitat above the level of de minimis will only be authorized if applicant has demonstrated to the Department that there are no practicable alternatives to prevent or lessen degradation associated with the authorized activity and the degradation is necessary to accommodate important economic or social development in the area and will not violate the water quality criteria for uses existing in the receiving waters.

APPENDIX I

Location:

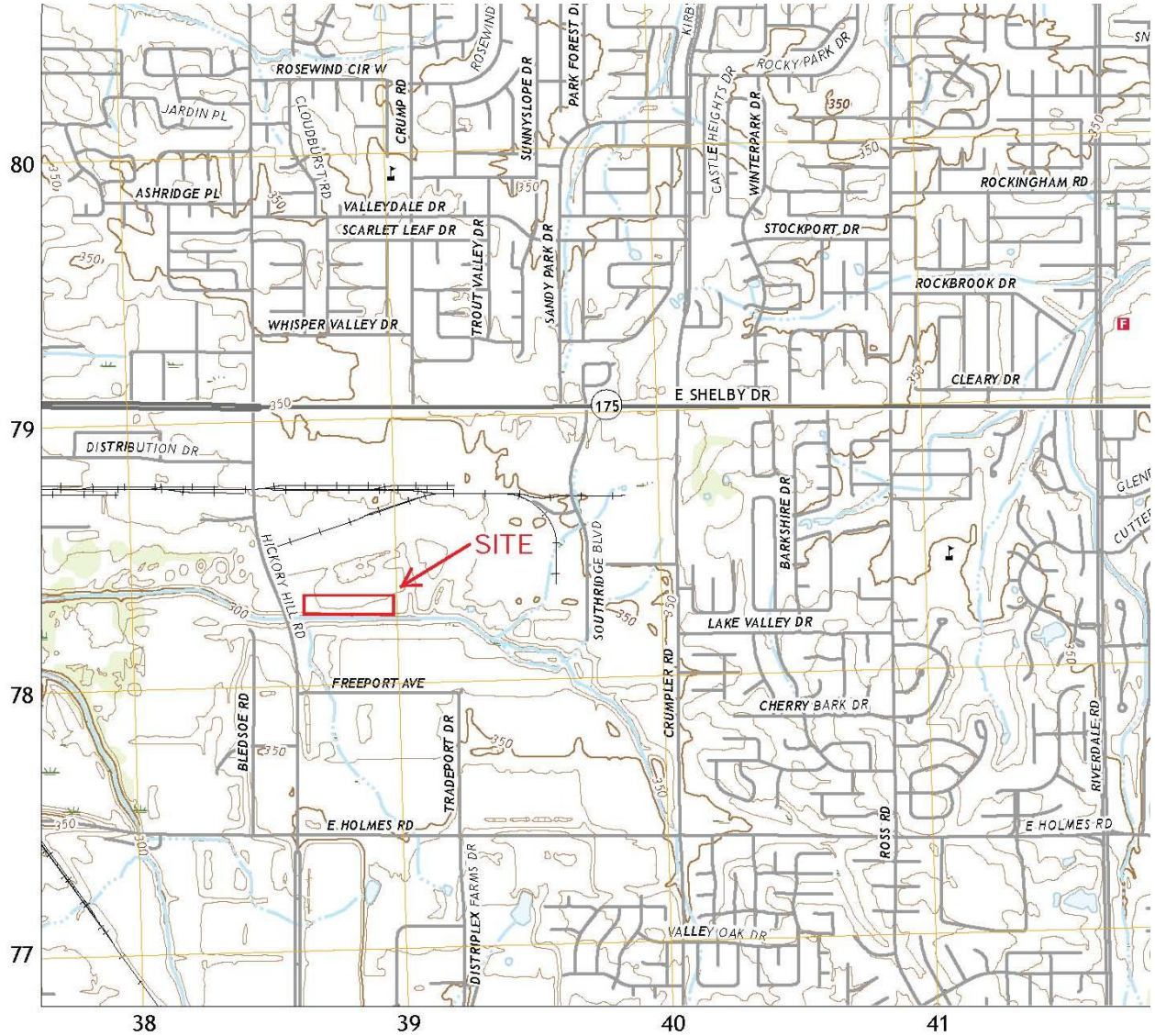


Figure 3 – USGS Map



Figure 1 – Site Expansion Location Map

TDEC – ARAP Application
AAA Cooper Transportation
Memphis, Shelby County, TN



Figure 2 – Bank Stabilization Location Map

TDEC – ARAP Application
AAA Cooper Transportation
Memphis, Shelby County, TN
25

Design Details:

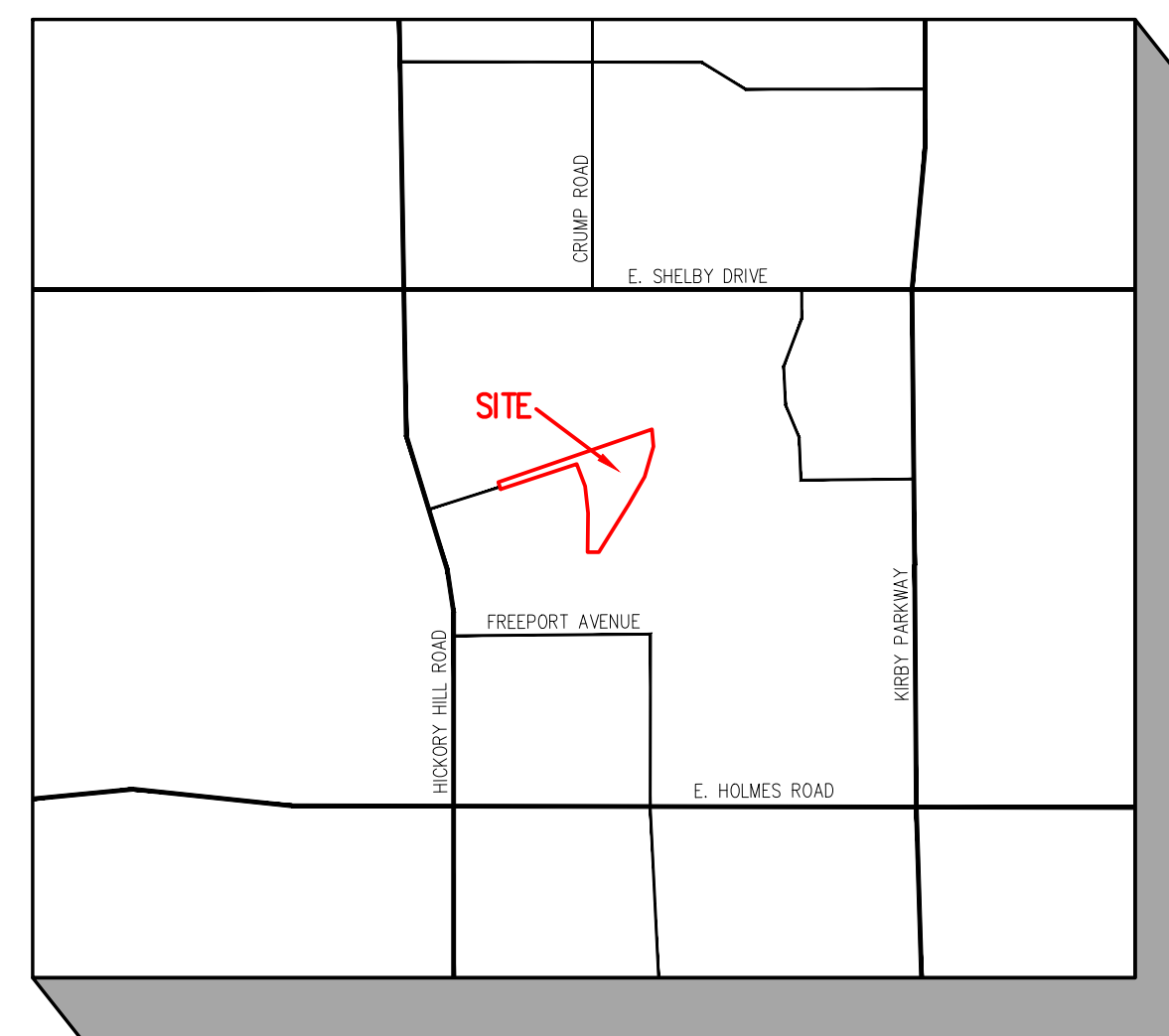
AAA COOPER SITE EXPANSION

MEMPHIS, TENNESSEE

FOR

AAA COOPER TRANSPORTATION, LLC.

P.O. BOX 6827
DOTHAN, ALABAMA 36302



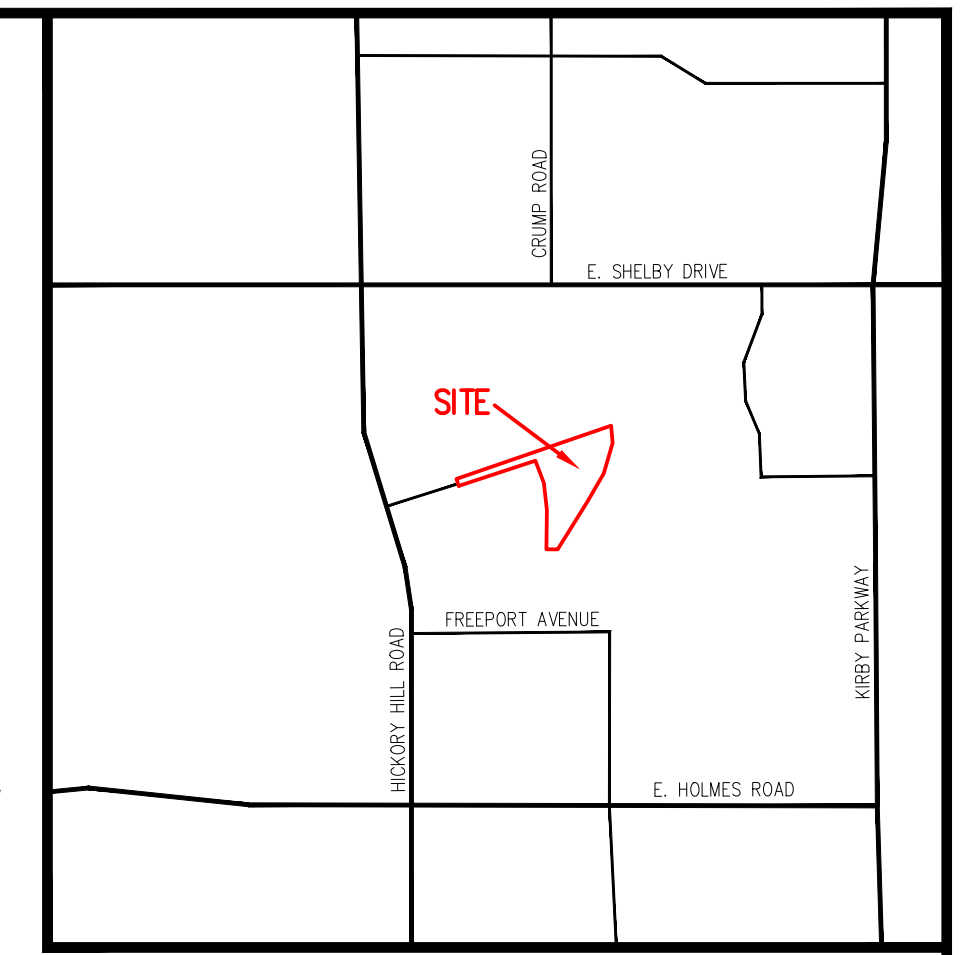
VICINITY MAP
N.T.S.

 **Ledford**
Engineering • Planning • Architecture
5567 Commander Drive, Suite 105, Arlington, TN 38002
phone: 901.867.5220 fax: 901.867.5331

April 19, 2021

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VICINITY MAP
N.T.S.

INDUSTRIAL DEVELOPMENT BOARD OF THE CITY OF
MEMPHIS AND COUNTY OF SHELBY COUNTY
PARCEL ID: 093600 00318C
ZONED: EMP

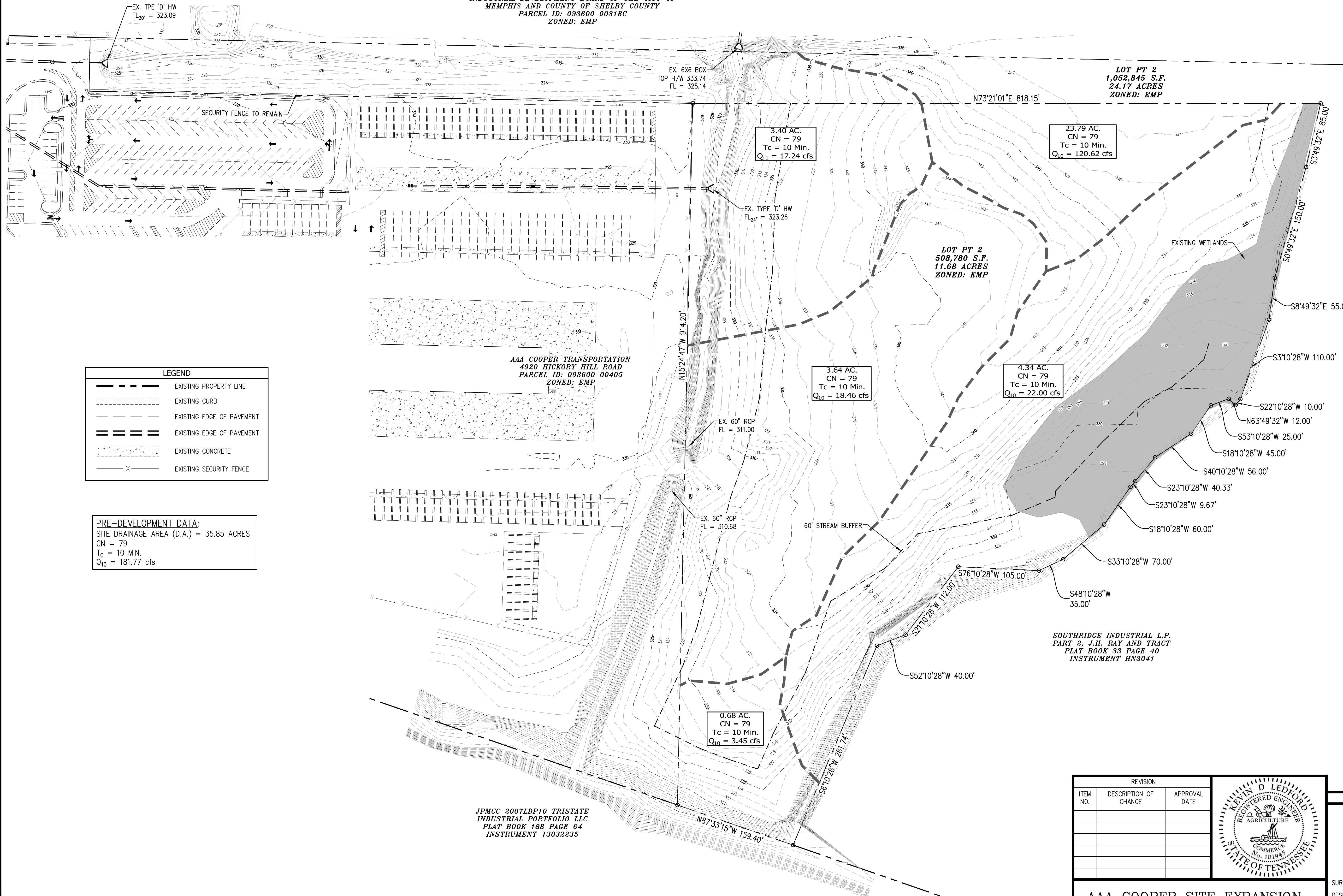
LOT PT 2
1,052,845 S.F.
24.17 ACRES
ZONED: EMP

LOT PT 2
508,780 S.F.
11.68 ACRES
ZONED: EMP

AAA COOPER TRANSPORTATION
4920 HICKORY HILL ROAD
PARCEL ID: 093600 00405
ZONED: EMP

SOUTHRIDGE INDUSTRIAL L.P.
PART 2, J.H. RAY AND TRACT
PLAT BOOK 33 PAGE 40
INSTRUMENT HN3041

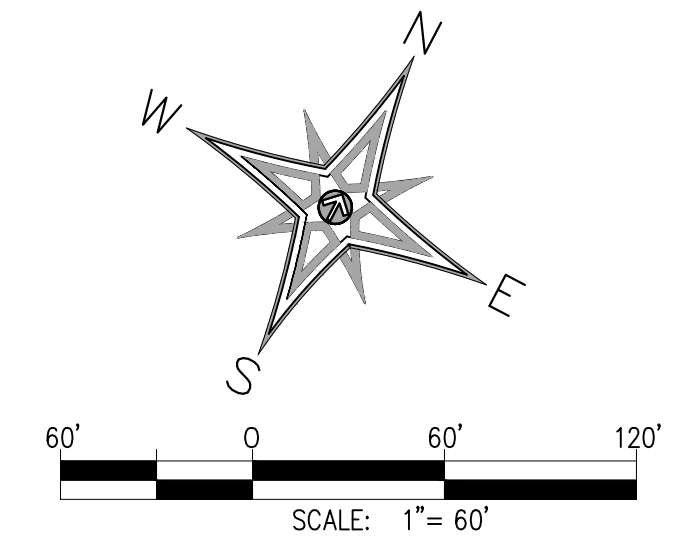
JPMCC 2007LDP10 TRISTATE
INDUSTRIAL PORTFOLIO LLC
PLAT BOOK 188 PAGE 64
INSTRUMENT 13032235



LEGEND

	EXISTING PROPERTY LINE
	EXISTING CURB
	EXISTING EDGE OF PAVEMENT
	EXISTING EDGE OF PAVEMENT
	EXISTING CONCRETE
	EXISTING SECURITY FENCE

PRE-DEVELOPMENT DATA:
SITE DRAINAGE AREA (D.A.) = 35.85 ACRES
CN = 79
T_c = 10 MIN.
Q₁₀ = 181.77 cfs



BENCHMARK:
BASIS OF ELEVATIONS NAVD 88 CITY BM#296 - LOCATED AT THE ER ON THE HICKORY HILL SIDE AT THE INTERSECTION OF HICKORY HILL ROAD & RAINES ROAD. ELEV. 341.46

FLOOD NOTE:
JOHN'S CREEK IS A ZONE AE FLOODWAY WITH BFE AT CONFLUENCE WITH LOCATED FEEDER CREEK. SEE FLOOD MAP FEMA 47157C0465F EFFECTIVE 9/28/2007.

DRAINAGE BASIN: JOHN'S CREEK

DWG NO.

C-1

SHEET 1 OF 1
DIVISION OF ENGINEERING

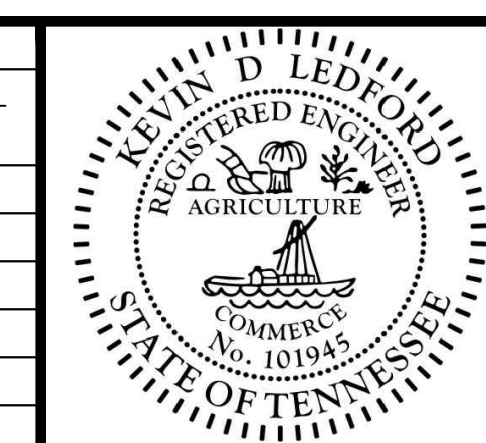
EXISTING CONDITIONS PLAN

LOCATION: EAST OF 4920 HICKORY HILL ROAD
MEMPHIS, TN

SURVEY: _____ DATE: _____ BOOK: _____
DESIGN BY: KH DATE: 4/19/21 SCALE: 1"=60'
REVIEWED: _____

DEPUTY CITY ENGINEER DATE CITY ENGINEER DATE

REVISION		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE



AAA COOPER SITE EXPANSION

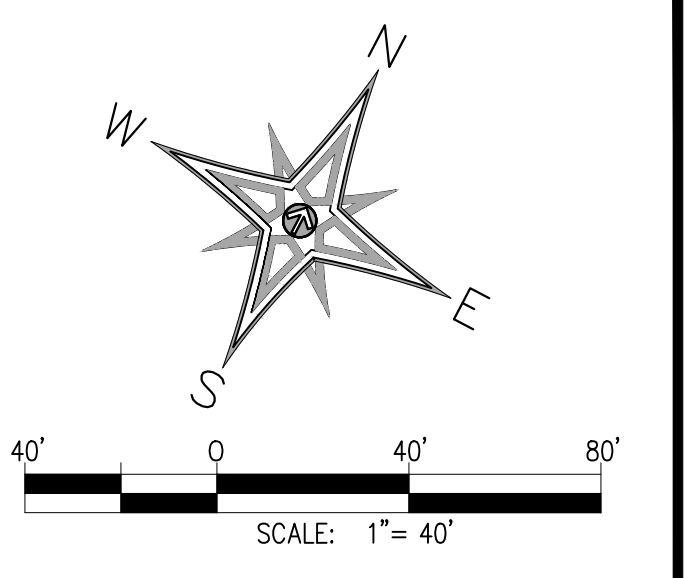
DEVELOPER: AAA COOPER TRANSPORTATION
ENGINEER: LEDFORD ENGINEERING AND PLANNING, LLC

LEP: 1290-06

Z:\1290\06\CONSTRUCTION DRAWINGS\C-1 EXISTING CONDITIONS.dwg

MATCHLINE - SEE THIS SHEET FOR CONTINUATION

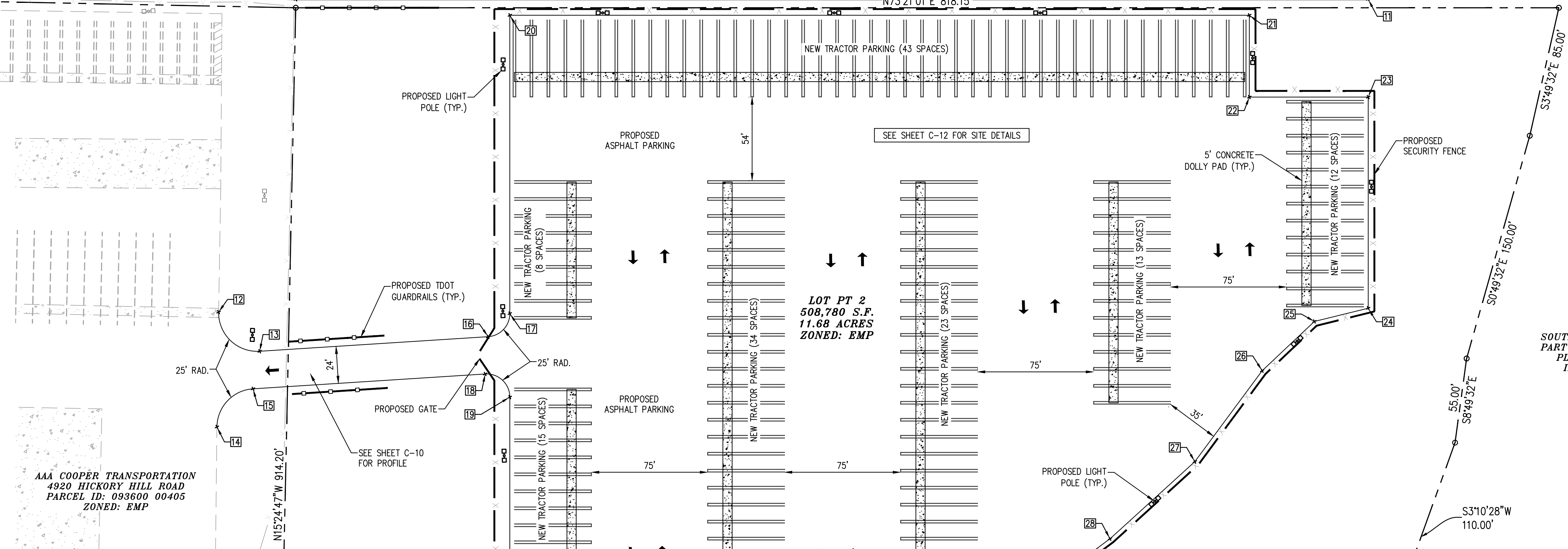
INDUSTRIAL DEVELOPMENT BOARD OF THE CITY OF
MEMPHIS AND COUNTY OF SHELBY COUNTY
PARCEL ID: 093600 00318C
ZONED: EMP



LOT PT 2
1,052,845 S.F.
24.17 ACRES
ZONED: EMP

LEGEND

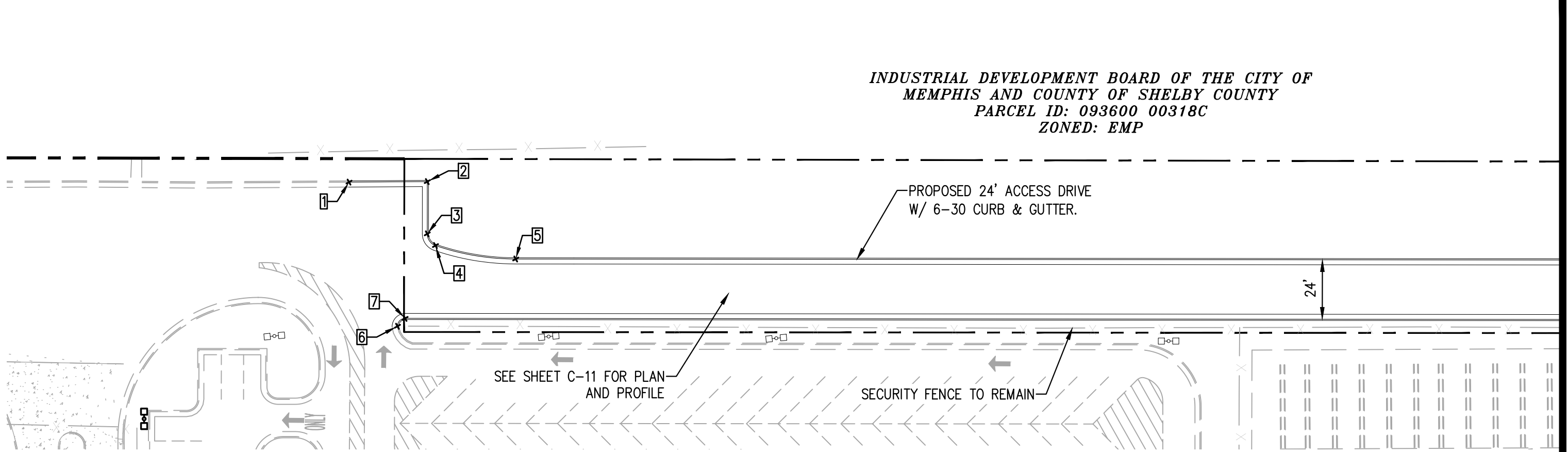
- EXISTING PROPERTY LINE
- EXISTING CURB
- PROPOSED CURB & GUTTER
- EXISTING EDGE OF PAVEMENT
- PROPOSED EDGE OF PAVEMENT
- EXISTING CONCRETE
- PROPOSED CONCRETE
- EXISTING SECURITY FENCE
- PROPOSED SECURITY FENCE
- PROPOSED STRIPING
- PROPOSED LIGHT POLE



AAA COOPER TRANSPORTATION
4920 HICKORY HILL ROAD
PARCEL ID: 093600 00405
ZONED: EMP

SOUTHRIDGE INDUSTRIAL L.P.
PART 2, J.H. RAY AND TRACT
PLAT BOOK 33 PAGE 40
INSTRUMENT HN3041

MATCHLINE - SEE SHEET C-3 FOR CONTINUATION



INDUSTRIAL DEVELOPMENT BOARD OF THE CITY OF
MEMPHIS AND COUNTY OF SHELBY COUNTY
PARCEL ID: 093600 00318C
ZONED: EMP

MATCHLINE - SEE THIS SHEET FOR CONTINUATION

POINT COORDINATE TABLE

POINT	NORTHING	EASTING
1	270948.70	812026.23
2	270957.38	812056.65
3	270937.03	812062.29
4	270933.38	812066.75
5	270936.84	812099.46
6	270897.87	812060.68
7	270901.77	812062.79
8	271134.70	812813.67
9	271111.63	812820.31
10	271333.64	813478.92
11	271310.65	813485.79
12	270903.18	812830.45
13	270886.49	812863.19
14	270831.62	812850.71
15	270861.96	812866.06
16	270937.94	813002.26

POINT COORDINATE TABLE

POINT	NORTHING	EASTING
17	270956.30	813011.42
18	270914.23	813007.35
19	270904.46	813026.93
20	271141.42	812956.06
21	271278.67	813414.98
22	271227.89	813430.17
23	271249.95	813503.94
24	271118.93	813543.13
25	271100.74	813512.19
26	271060.44	813488.91
27	270991.53	813464.00
28	270927.91	813425.67
29	270867.43	813380.31
30	270796.40	813352.07
31	270692.88	813333.09
32	270661.77	813230.47

POINT COORDINATE TABLE

POINT	NORTHING	EASTING
33	270649.30	813223.80
34	270608.15	813236.28
35	270555.36	813062.23
36	270638.42	813037.04
37	270655.27	813006.48
38	270626.80	812903.02
39	270606.00	812888.22
40	270665.47	812884.59
41	270647.38	812910.00
42	270689.89	813064.41
43	270721.15	813081.73

SITE DATA

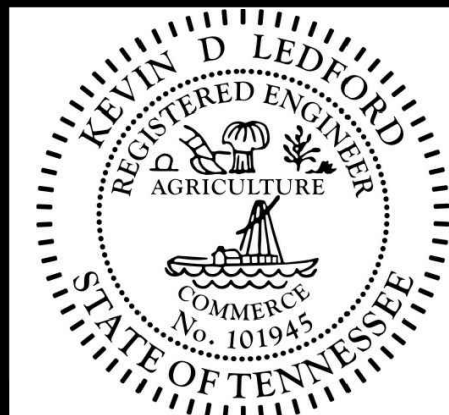
LOT 1:		
ZONED:	=	EMPLOYMENT (EMP)
LOT ACREAGE:	=	24.17 ACRES
PARCEL ID:	=	093600 00524
PB., PG.:	=	33-40
PROPOSED USE	=	TRACTOR STORAGE
LOT 2:		
ZONED:	=	EMPLOYMENT (EMP)
LOT ACREAGE:	=	11.68 ACRES
PARCEL ID:	=	093600 00525
PB., PG.:	=	33-40
PROPOSED USE	=	TRACTOR STORAGE

OWNER:
AAA COOPER TRANSPORTATION
P.O. BOX 6827
DOTHAN, AL 36302

ENGINEER:
LEDFORD ENGINEERING, PLANNING, AND ARCHITECTURE LLC
5567 COMMANDER DRIVE, SUITE 105
ARLINGTON, TENNESSEE 38002
901-867-5220

REVISION

ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE



AAA COOPER SITE EXPANSION

DEVELOPER: AAA COOPER TRANSPORTATION
ENGINEER: LEDFORD ENGINEERING AND PLANNING, LLC

DWG NO. C-2

SHEET 1 OF 2
DIVISION OF ENGINEERING

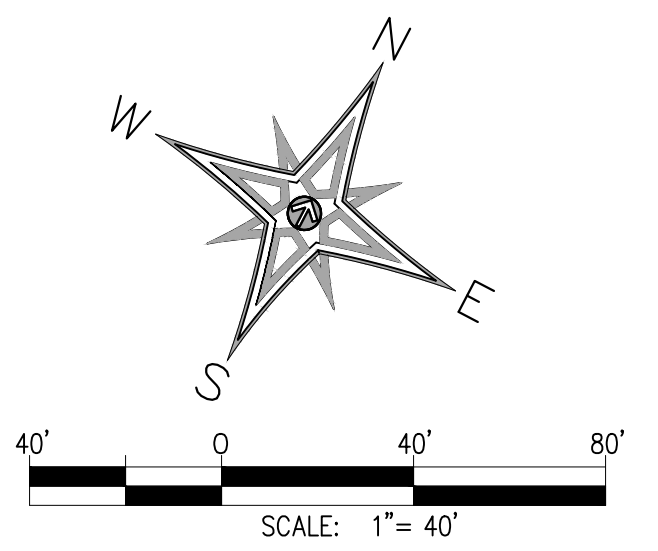
SITE PLAN - SHEET 1

LOCATION: EAST OF 4920 HICKORY HILL ROAD
MEMPHIS, TN

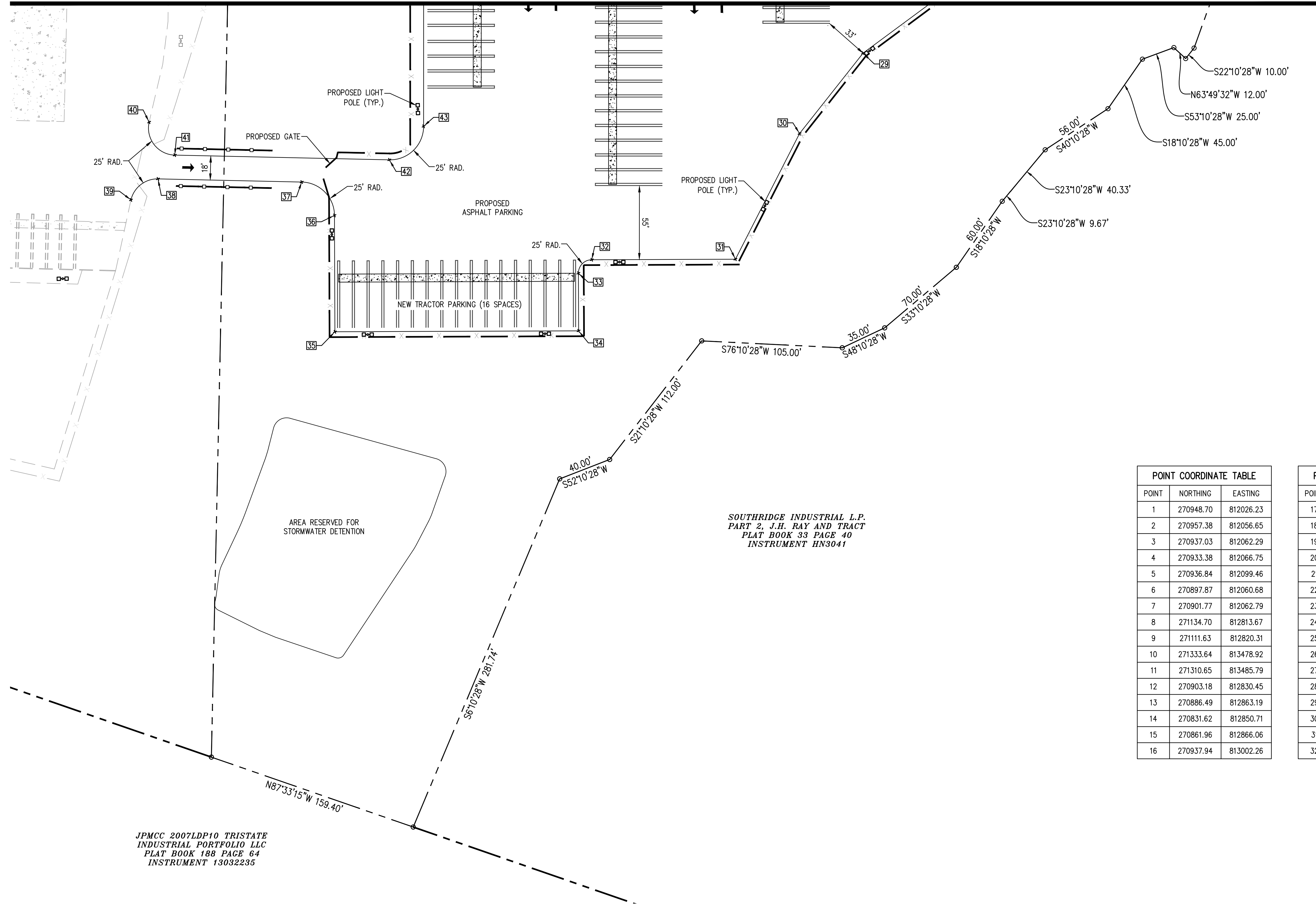
SURVEY: _____ DATE: _____ BOOK: _____
DESIGN BY: KH DATE: 4/19/21 SCALE: 1"=40'
REVIEWED: _____

DEPUTY CITY ENGINEER DATE CITY ENGINEER DATE

Z:\290\06 CONSTRUCTION DRAWINGS\C-2 SITE PLAN.dwg



MATCHLINE - SEE SHEET C-2 FOR CONTINUATION



LEGEND	
	EXISTING PROPERTY LINE
	EXISTING CURB
	PROPOSED CURB & GUTTER
	EXISTING EDGE OF PAVEMENT
	PROPOSED EDGE OF PAVEMENT
	EXISTING CONCRETE
	PROPOSED CONCRETE
	EXISTING SECURITY FENCE
	PROPOSED SECURITY FENCE
	PROPOSED STRIPING
	PROPOSED LIGHT POLE

SOUTHRIDGE INDUSTRIAL L.P.
PART 2, J.H. RAY AND TRACT
PLAT BOOK 33 PAGE 40
INSTRUMENT HN3041

POINT COORDINATE TABLE		
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1	270948.70	812026.23
2	270957.38	812056.65
3	270937.03	812062.29
4	270933.38	812066.75
5	270936.84	812099.46
6	270897.87	812060.68
7	270901.77	812062.79
8	271134.70	812813.67
9	271111.63	812820.31
10	271333.64	813478.92
11	271310.65	813485.79
12	270903.18	812830.45
13	270886.49	812863.19
14	270831.62	812850.71
15	270861.96	812866.06
16	270937.94	813002.26

POINT COORDINATE TABLE		
POINT	NORTHING	EASTING
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25	271100.74	813512.19
26	271060.44	813488.91
27	270991.53	813464.00
28	270927.91	813425.67
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31	270692.88	813333.09
32	270661.77	813230.47

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41	270647.38	812910.00
42	270689.89	813064.41
43	270721.15	813081.73

JPMCC 2007LDP10 TRISTATE
INDUSTRIAL PORTFOLIO LLC
PLAT BOOK 188 PAGE 64
INSTRUMENT 13032235

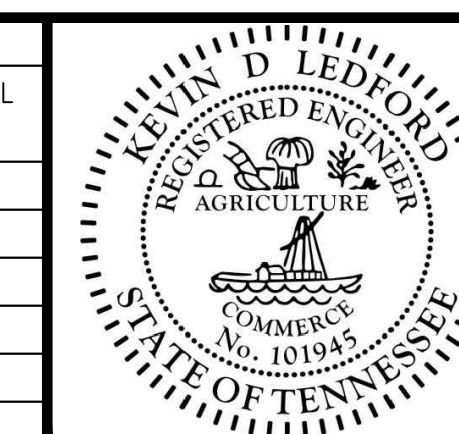
DWG NO.
C-3

SITE DATA	
LOT 1:	
ZONED:	= EMPLOYMENT (EMP)
LOT ACREAGE:	= 24.17 ACRES
PARCEL ID:	= 093600 00524
PB., PG.:	= 33-40
PROPOSED USE:	= TRACTOR STORAGE
LOT 2:	
ZONED:	= EMPLOYMENT (EMP)
LOT ACREAGE:	= 11.68 ACRES
PARCEL ID:	= 093600 00525
PB., PG.:	= 33-40
PROPOSED USE:	= TRACTOR STORAGE

OWNER:
AAA COOPER TRANSPORTATION
P.O. BOX 6827
DOTHAN, AL 36302

ENGINEER:
LEDFOUR ENGINEERING, PLANNING, AND ARCHITECTURE LLC
5567 COMMANDER DRIVE, SUITE 105
ARLINGTON, TENNESSEE 38002
901-867-5220

REVISION		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE



AAA COOPER SITE EXPANSION

DEVELOPER: AAA COOPER TRANSPORTATION
ENGINEER: LEDFOUR ENGINEERING AND PLANNING, LLC

SHEET 2 OF 2
DIVISION OF ENGINEERING

SITE PLAN - SHEET 2

LOCATION: EAST OF 4920 HICKORY HILL ROAD
MEMPHIS, TN

SURVEY: _____ DATE: _____ BOOK: _____
DESIGN BY: KH DATE: 4/19/21 SCALE: 1"=40'
REVIEWED: _____

DEPUTY CITY ENGINEER DATE CITY ENGINEER DATE

LEGEND

- PROPOSED DRAINAGE
- EXISTING DRAINAGE
- PROPOSED CONTOURS
- PROPOSED RIDGE LINES
- STREAM BUFFER
- PROPOSED DRAINAGE AREA
- PROPOSED DRAINAGE STRUCTURE
- PROPOSED DRAINAGE PIPE
- EXISTING PROPERTY LINE
- PROPOSED CURB & GUTTER
- EXISTING EDGE OF PAVEMENT
- EXISTING CONCRETE
- PROPOSED CONCRETE
- EXISTING SECURITY FENCE
- PROPOSED STRIPING

- GENERAL NOTES:**
- PROPERTY LINES SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION. GRADING CLEARING AND THE ERECTION OR REMOVAL OF FENCES ALONG PROPERTY LINES SHALL BE FULLY COORDINATED WITH ADJACENT PROPERTY OWNERS.
 - NEWLY CUT OR FILLED EMBANKMENTS SHALL BE SODDED SOLID OR SEEDED AND MULCHED TO ADEQUATELY PREVENT SOIL EROSION.
 - THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR THE DAMAGE OR LOSS OF ANY REFERENCE POINTS MONUMENTS, HUBS, AND STAKED LOT CORNERS DURING THE CONSTRUCTION OF HIS WORK AND SHALL BEAR THE COST OF REPLACING SAME.
 - THE LOCATION OF ALL EXISTING UTILITIES SHALL BE PROPERLY VERIFIED PRIOR TO CONSTRUCTION. ALL WORK SHALL BE PERFORMED IN A MANNER TO INSURE THAT EXISTING UTILITIES ARE NOT INTERFERED WITH OR DISRUPTED.
 - ALL TREES, STUMPS, OBSTRUCTIONS, ETC. REMOVE FROM THE RIGHT-OF-WAY AND BORROW AREAS ARE TO BE DISPOSED OF BY CONTRACTOR AS APPROVED BY THE OWNER, SO AS TO CAUSE NO POLLUTION TO THE ENVIRONMENT.
 - ALL FILL SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY WITHIN 3% OPTIMUM MOISTURE CONTENT IN 6" LIFTS UNLESS OTHERWISE SPECIFIED BY THE SOILS REPORT.
 - ALL AREAS TO BE FILLED SHALL BE PROPERLY CLEARED AND STRIPPED PRIOR TO BEGINNING THE FILLING OPERATION.
 - SAW CUT AND DEMO EXISTING CONCRETE APRON AS REQUIRED.
 - ALL DESIGN, CONSTRUCTION AND MATERIAL SHALL BE IN COMPLIANCE WITH THE CITY OF MEMPHIS AND SHELBY COUNTY CONSTRUCTION SPECIFICATIONS AND STANDARDS.
 - THE CONTRACTOR SHALL NOTIFY THE SHELBY COUNTY CONSTRUCTION INSPECTION DEPARTMENT A MINIMUM OF 24 HOURS PRIOR TO COMMENCING CONSTRUCTION 901-222-8300.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING UTILITY COMPANIES WHICH MAINTAIN A UTILITY LINE WITHIN THE BOUNDARIES OF THE PROJECT PRIOR TO THE INITIATION OF ANY CONSTRUCTION ON THE PROJECT OR IN THE STREETS BORDERING THE PROJECT. THE CONTRACTOR SHALL ALSO ASSUME THE RESPONSIBILITY FOR ANY DAMAGE TO UTILITY LINES, WHETHER SHOWN ON THE CONSTRUCTION PLANS OR NOT, DURING THE WORK ON THE PROJECT. FOR UNDERGROUND UTILITY LOCATIONS CALL 1- 800- 351- 1111
 - ALL AREAS WHICH SHALL REQUIRE FILL SHALL BE PREPARED BY REMOVING ORGANIC MATTER, FOREIGN MATERIAL, AND TOPSOIL. COMPACT THE TOP 6" OF THE CLEARED SUBGRADE TO A MINIMUM OF 95% OF OPTIMUM DENSITY AS PER ASTM D-698. FILL MATERIAL WHICH IS NATURALLY OCCURRING EARTH MATERIAL WITH A PLASTICITY INDEX OF NOT MORE THAN 20 SHALL BE PLACED IN 6 INCH LIFTS. EACH LIFT SHALL BE COMPACTED TO 95% OPTIMUM DENSITY.
 - AREAS TO FOUND PAVEMENTS SHALL HAVE A DENSITY OF 100% OPTIMUM FOR THE TOP LIFT.

STORM DRAINAGE STRUCTURE DATA

NAME	TYPE	DRAINAGE AREA	Q10 (CFS)	TOP	AS BUILT	INVERT	AS BUILT
DS-1	TYPE 'D' HW	-	-	-	-	323.66	-
DS-2	TWN 11 INLET	1.67	11.73	332.10	-	326.09	-
DS-3	TWN 11 INLET	1.58	11.10	333.20	-	328.57	-
DS-4	TWN 11 INLET	0.84	5.90	336.50	-	332.00	-
DS-5	NO. 11 INLET	0.68	4.78	336.30	-	330.93	-
DS-6	TYPE 'D' HW	-	-	-	-	313.00	-
DS-7	DMH	-	-	324.50	-	313.27	-
DS-7A	TYPE 'D' HW	-	-	-	-	310.45	-
DS-7B	TYPE 'D' HW	12.11	79.97	-	-	311.00	-
DS-8	TYPE 'D' HW	5.36	14.37	-	-	322.00	-
DS-9	TYPE 'D' HW	-	-	-	-	314.99	-
DS-10	TYPE 'D' HW	11.40	76.08	-	-	315.50	-
DS-11	TYPE 'D' HW	-	-	-	-	319.71	-
DS-12	TYPE 'D' HW	7.50	49.74	-	-	320.05	-
DS-13	EX. DMH	-	-	329.54	-	319.74	-
DS-14	EX. DMH	-	-	329.75	-	322.72	-
DS-15	TYPE 'D' HW	3.51	22.21	329.75	-	323.20	-
DS-16	TYPE 'D' HW	-	-	-	-	325.50	-
DS-17	6-72 INLET	0.12	0.82	-	-	325.55	-
DS-18	6-72 INLET	0.11	0.75	-	-	325.79	-
DS-19	TYPE 'D' HW	-	-	329.54	-	323.00	-
DS-20	6-72 INLET	0.72	4.90	329.75	-	324.66	-
DS-21	6-72 INLET	0.36	2.45	329.75	-	325.02	-

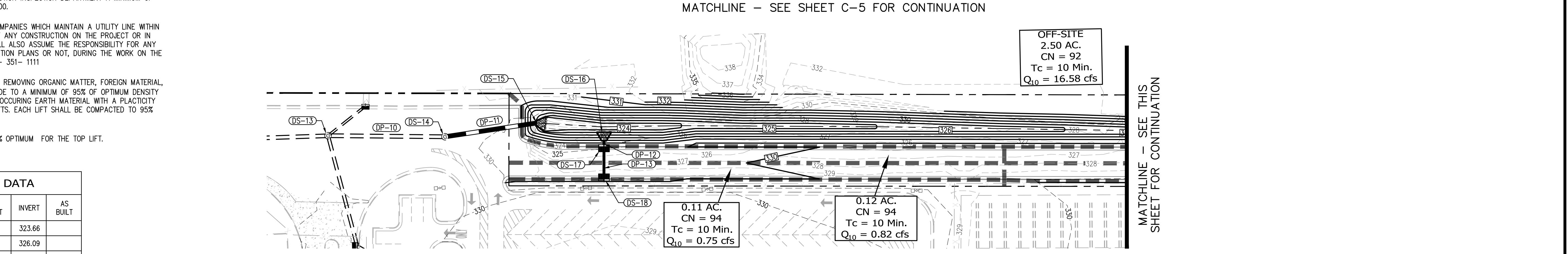
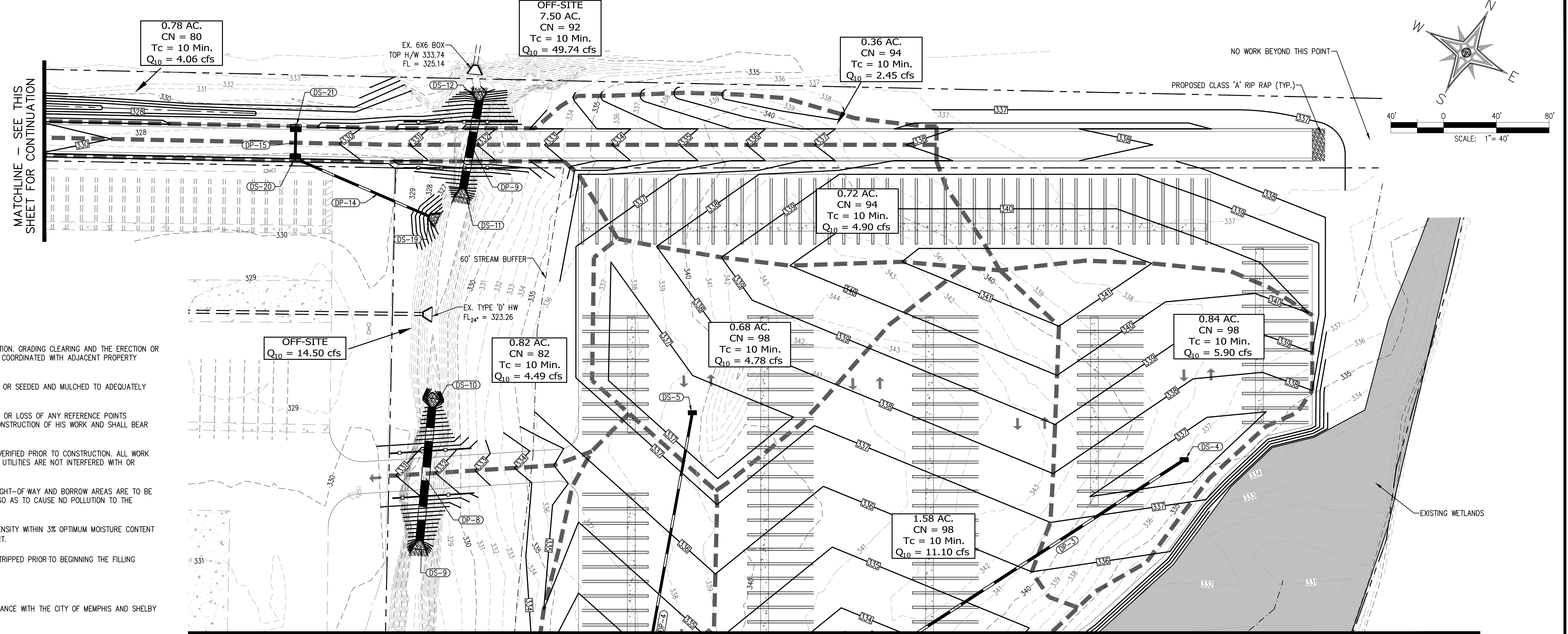
STORM DRAINAGE PIPE DATA

PIPE NAME	FROM	INVERT (UP)	AS BUILT	TO	INVERT (DOWN)	AS BUILT	SLOPE (%)	AS BUILT	SIZE	LENGTH	MATERIAL	DA (ACR)	Q10 (CFS)	QCAP (CFS)	VEL (FPS)
DP-1	DS-2	326.09	-	DS-1	323.66	-	1.00%	-	30"	243'	RCP	4.77	33.51	53.31	10.86
DP-2	DS-3	328.57	-	DS-2	326.59	-	1.00%	-	24"	198'	RCP	2.42	17.00	29.40	9.36
DP-3	DS-4	332.00	-	DS-3	329.07	-	1.00%	-	18"	293'	RCP	0.84	5.90	13.65	7.72
DP-4	DS-5	330.93	-	DS-2	327.34	-	1.25%	-	15"	287'	RCP	0.68	4.78	9.38	7.65
DP-5	DS-7	313.27	-	DS-6	313.00	-	1.50%	-	18"	18'	RCP	5.36	14.37	16.72	9.46
DP-6	DS-8	322.00	-	DS-7	320.73	-	1.50%	-	18"	85'	RCP	5.36	14.37	16.72	9.46
DP-7	DS-7B	311.00	-	DS-7A	310.45	-	0.50%	-	60"	109'	RCP	12.11	79.97	239.38	12.19
DP-8	DS-10	315.50	-	DS-9	314.99	-	0.50%	-	60"	102'	RCP	11.40	76.08	239.38	12.19
DP-9	DS-12	320.05	-	DS-11	319.71	-	0.50%	-	60"	68'	RCP	7.50	49.74	239.38	12.19
DP-10	DS-14	322.72	-	DS-13	319.74	-	3.36%	-	30"	89'	RCP	3.51	22.21	97.73	19.91
DP-11	DS-15	323.20	-	DS-14	322.72	-	0.70%	-	30"	69'	RCP	3.51	22.21	44.60	9.08
DP-12	DS-17	325.55	-	DS-16	325.50	-	1.00%	-	15"	5'	RCP	0.23	1.54	8.39	6.84
DP-13	DS-18	325.79	-	DS-17	325.55	-	1.00%	-	15"	24'	RCP	0.11	0.75	8.39	6.84
DP-14	DS-20	324.66	-	DS-19	323.00	-	1.50%	-	15"	111'	RCP	1.08	7.35	10.28	8.38
DP-15	DS-21	325.02	-	DS-20	324.66	-	1.50%	-	15"	24'	RCP	0.36	2.45	10.28	8.38

PRE-DEVELOPMENT DATA:
 SITE DRAINAGE AREA (D.A.) = 35.85 ACRES
 CN = 79
 Tc = 10 MIN.
 Q10 = 181.77 cfs

POST-DEVELOPMENT DATA:
 SITE DRAINAGE AREA (D.A.) = 35.85 ACRES
 CN = 82
 Tc = 10 MIN.
 Q10 = 175.76 cfs

DETENTION NOTE:
 THE AREAS DENOTED BY "RESERVED FOR STORMWATER DETENTION" SHALL BE USED AS A BUILDING SITE OR FILLED WITHOUT FIRST OBTAINING WRITTEN PERMISSION FROM THE CITY ENGINEER. THE STORMWATER DETENTION SYSTEMS LOCATED IN THESE AREAS, EXCEPT FOR THOSE PARTS LOCATED IN A PUBLIC DRAINAGE EASEMENT, SHALL BE OWNED AND MAINTAINED BY THE PROPERTY OWNER AND/OR PROPERTY OWNER'S ASSOCIATION. SUCH MAINTENANCE SHALL BE PERFORMED SO AS TO ENSURE THAT THE SYSTEM OPERATES IN ACCORDANCE WITH THE APPROVED PLAN ON FILE IN THE CITY ENGINEER'S OFFICE. SUCH MAINTENANCE SHALL INCLUDE, BUT NOT LIMITED TO REMOVAL OF SEDIMENTATION, FALLEN OBJECTS, DEBRIS AND TRASH, MOWING, OUTLET CLEANING, AND REPAIR OF DRAINAGE STRUCTURES.



BENCHMARK:
 BASIS OF ELEVATIONS NAVD 88 CITY BM#296 - LOCATED AT THE ER ON THE HICKORY HILL SIDE AT THE INTERSECTION OF HICKORY HILL ROAD & RAINES ROAD. ELEV. 341.46

FLOOD NOTE:
 JOHN'S CREEK IS A ZONE AE FLOODWAY WITH BFE AT CONCLUSION WITH LOCATED FEEDER CREEK. SEE FLOOD MAP FEMA 47157C0465F EFFECTIVE 9/28/2007.

DRAINAGE BASIN: JOHN'S CREEK

DWG NO. C-4

REVISION

ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE

KEVIN D LEDFORD
 REGISTERED ENGINEER
 AGRICULTURE
 No. 101945
 STATE OF TENNESSEE

AAA COOPER SITE EXPANSION

DEVELOPER: AAA COOPER TRANSPORTATION
 ENGINEER: LEDFORD ENGINEERING AND PLANNING, LLC

SHEET 1 OF 2

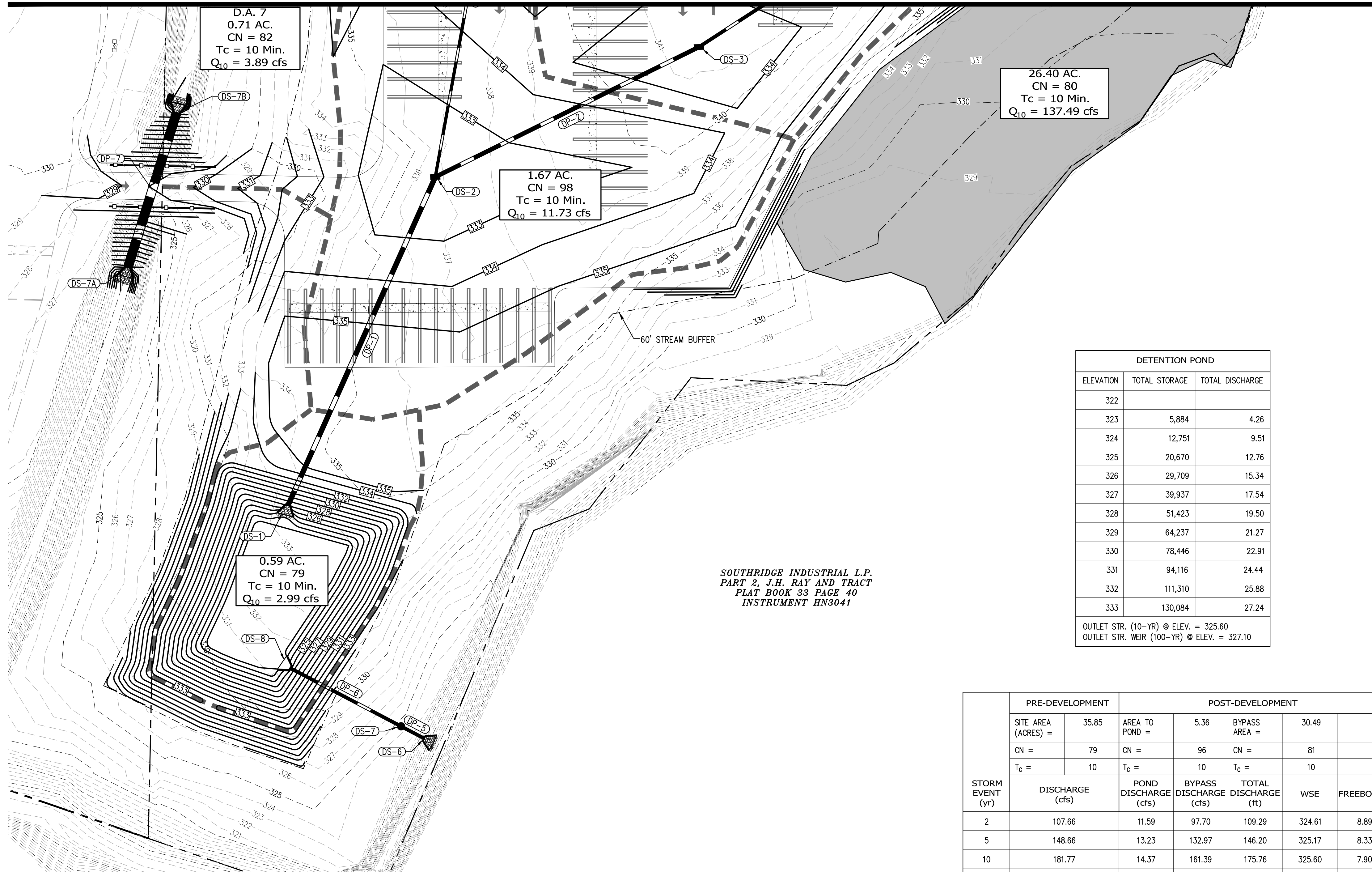
DIVISION OF ENGINEERING

GRADING & DRAINAGE PLAN - SHEET 1

LOCATION: EAST OF 4920 HICKORY HILL ROAD
 MEMPHIS, TN

SURVEY: _____ DATE: _____ BOOK: _____
 DESIGN BY: KH DATE: 4/19/21 SCALE: 1"=40'
 REVIEWED: _____

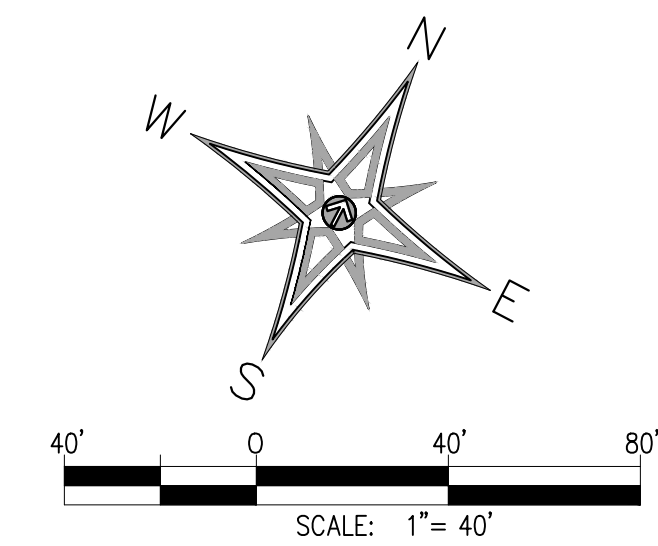
DEPUTY CITY ENGINEER DATE CITY ENGINEER DATE



SOUTHRIDGE INDUSTRIAL L.P.
PART 2, J.H. RAY AND TRACT
PLAT BOOK 33 PAGE 40
INSTRUMENT HN3041

LEGEND

- PROPOSED DRAINAGE
- EXISTING DRAINAGE
- 100 EXISTING CONTOURS
- 100 PROPOSED CONTOURS
- PROPOSED RIDGE LINES
- STREAM BUFFER
- 1.00 Ac. PROPOSED DRAINAGE AREA
- DS-00 PROPOSED DRAINAGE STRUCTURE
- DP-00 PROPOSED DRAINAGE PIPE
- EXISTING PROPERTY LINE
- PROPOSED CURB & GUTTER
- EXISTING EDGE OF PAVEMENT
- EXISTING CONCRETE
- PROPOSED CONCRETE
- EXISTING SECURITY FENCE
- PROPOSED STRIPING



DETENTION POND

ELEVATION	TOTAL STORAGE	TOTAL DISCHARGE
322		
323	5,884	4.26
324	12,751	9.51
325	20,670	12.76
326	29,709	15.34
327	39,937	17.54
328	51,423	19.50
329	64,237	21.27
330	78,446	22.91
331	94,116	24.44
332	111,310	25.88
333	130,084	27.24

OUTLET STR. (10-YR) @ ELEV. = 325.60
OUTLET STR. WEIR (100-YR) @ ELEV. = 327.10

GENERAL NOTES:

- PROPERTY LINES SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION. GRADING CLEARING AND THE ERECTION OR REMOVAL OF FENCES ALONG PROPERTY LINES SHALL BE FULLY COORDINATED WITH ADJACENT PROPERTY OWNERS.
- NEWLY CUT OR FILLED EMBANKMENTS SHALL BE SODDED SOLID OR SEEDED AND MULCHED TO ADEQUATELY PREVENT SOIL EROSION.
- THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR THE DAMAGE OR LOSS OF ANY REFERENCE POINTS MONUMENTS, HUBS, AND STAKED LOT CORNERS DURING THE CONSTRUCTION OF HIS WORK AND SHALL BEAR THE COST OF REPLACING SAME.
- THE LOCATION OF ALL EXISTING UTILITIES SHALL BE PROPERLY VERIFIED PRIOR TO CONSTRUCTION. ALL WORK SHALL BE PERFORMED IN A MANNER TO INSURE THAT EXISTING UTILITIES ARE NOT INTERFERED WITH OR DISRUPTED.
- ALL TREES, STUMPS, OBSTRUCTIONS, ETC. REMOVE FROM THE RIGHT-OF-WAY AND BORROW AREAS ARE TO BE DISPOSED OF BY CONTRACTOR AS APPROVED BY THE OWNER, SO AS TO CAUSE NO POLLUTION TO THE ENVIRONMENT.
- ALL FILL SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY WITHIN 3% OPTIMUM MOISTURE CONTENT IN 6" LIFTS UNLESS OTHERWISE SPECIFIED BY THE SOILS REPORT.
- ALL AREAS TO BE FILLED SHALL BE PROPERLY CLEARED AND STRIPPED PRIOR TO BEGINNING THE FILLING OPERATION.
- SAW CUT AND DEMO EXISTING CONCRETE APRON AS REQUIRED.
- ALL DESIGN, CONSTRUCTION AND MATERIAL SHALL BE IN COMPLIANCE WITH THE CITY OF MEMPHIS AND SHELBY COUNTY CONSTRUCTION SPECIFICATIONS AND STANDARDS.
- THE CONTRACTOR SHALL NOTIFY THE SHELBY COUNTY CONSTRUCTION INSPECTION DEPARTMENT A MINIMUM OF 24 HOURS PRIOR TO COMMENCING CONSTRUCTION 901-222-8300.
- CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING UTILITY COMPANIES WHICH MAINTAIN A UTILITY LINE WITHIN THE BOUNDARIES OF THE PROJECT PRIOR TO THE INITIATION OF ANY CONSTRUCTION ON THE PROJECT OR IN THE STREETS BORDERING THE PROJECT. THE CONTRACTOR SHALL ALSO ASSUME THE RESPONSIBILITY FOR ANY DAMAGE TO UTILITY LINES, WHETHER SHOWN ON THE CONSTRUCTION PLANS OR NOT, DURING THE WORK ON THE PROJECT. FOR UNDERGROUND UTILITY LOCATIONS CALL 1- 800- 351- 1111
- ALL AREAS WHICH SHALL REQUIRE FILL SHALL BE PREPARED BY REMOVING ORGANIC MATTER, FOREIGN MATERIAL, AND TOPSOIL. COMPACT THE TOP 6" OF THE CLEARED SUBGRADE TO A MINIMUM OF 95% OF OPTIMUM DENSITY AS PER ASTM D- 698. FILL MATERIAL WHICH IS NATURALLY OCCURRING EARTH MATERIAL WITH A PLACTICITY INDEX OF NOT MORE THAN 20 SHALL BE PLACED IN 6 INCH LIFTS. EACH LIFT SHALL BE COMPACTED TO 95% OPTIMUM DENSITY.
- AREAS TO FOUND PAVEMENTS SHALL HAVE A DENSITY OF 100% OPTIMUM FOR THE TOP LIFT.

STORM EVENT (yr)	PRE-DEVELOPMENT		POST-DEVELOPMENT			
	SITE AREA (ACRES) =	35.85	AREA TO POND =	5.36	BYPASS AREA =	30.49
	CN =	79	CN =	96	CN =	81
	Tc =	10	Tc =	10	Tc =	10
	DISCHARGE (cfs)		POND DISCHARGE (cfs)	BYPASS DISCHARGE (cfs)	TOTAL DISCHARGE (ft)	WSE
2	107.66		11.59	97.70	109.29	324.61
5	148.66		13.23	132.97	146.20	325.17
10	181.77		14.37	161.39	175.76	325.60
100	303.96		17.74	265.32	283.06	327.10

STORM DRAINAGE STRUCTURE DATA

NAME	TYPE	DRAINAGE AREA	Q10 (CFS)	TOP	AS BUILT	INVERT	AS BUILT
DS-1	TYPE 'D' HW	-	-	-	-	323.66	-
DS-2	TWIN 11 INLET	1.67	11.73	332.10	-	326.09	-
DS-3	TWIN 11 INLET	1.58	11.10	333.20	-	328.57	-
DS-4	TWIN 11 INLET	0.84	5.90	336.50	-	332.00	-
DS-5	NO. 11 INLET	0.68	4.78	336.30	-	330.93	-
DS-6	TYPE 'D' HW	-	-	-	-	313.00	-
DS-7	DMH	-	-	324.50	-	313.27	-
DS-7A	TYPE 'D' HW	-	-	-	-	310.45	-
DS-7B	TYPE 'D' HW	12.11	79.97	-	-	311.00	-
DS-8	TYPE 'D' HW	5.36	14.37	-	-	322.00	-
DS-9	TYPE 'D' HW	-	-	-	-	314.99	-
DS-10	TYPE 'D' HW	11.40	76.08	-	-	315.50	-
DS-11	TYPE 'D' HW	-	-	-	-	319.71	-
DS-12	TYPE 'D' HW	7.50	49.74	-	-	320.05	-
DS-13	EX. DMH	-	-	329.54	-	319.74	-
DS-14	EX. DMH	-	-	329.75	-	322.72	-
DS-15	TYPE 'D' HW	3.51	22.21	329.75	-	323.20	-
DS-16	TYPE 'D' HW	-	-	-	-	325.50	-
DS-17	6-72 INLET	0.12	0.82	-	-	325.55	-
DS-18	6-72 INLET	0.11	0.75	-	-	325.79	-
DS-19	TYPE 'D' HW	-	-	329.54	-	323.00	-
DS-20	6-72 INLET	0.72	4.90	329.75	-	324.66	-
DS-21	6-72 INLET	0.36	2.45	329.75	-	325.02	-

STORM DRAINAGE PIPE DATA

PIPE NAME	FROM	INVERT (UP)	AS BUILT	TO	INVERT (DOWN)	AS BUILT	SLOPE (%)	AS BUILT	SIZE	LENGTH	MATERIAL	DA (ACR)	Q10 (CFS)	QCAP (CFS)	VEL (FPS)
DP-1	DS-2	326.09	-	DS-1	323.66	-	1.00%	-	30"	243'	RCP	4.77	33.51	53.31	10.86
DP-2	DS-3	328.57	-	DS-2	326.59	-	1.00%	-	24"	198'	RCP	2.42	17.00	29.40	9.36
DP-3	DS-4	332.00	-	DS-3	329.07	-	1.00%	-	18"	293'	RCP	0.84	5.90	13.65	7.72
DP-4	DS-5	330.93	-	DS-2	327.34	-	1.25%	-	15"	287'	RCP	0.68	4.78	9.38	7.65
DP-5	DS-7	313.27	-	DS-6	313.00	-	1.50%	-	18"	18'	RCP	5.36	14.37	16.72	9.46
DP-6	DS-8	322.00	-	DS-7	320.73	-	1.50%	-	18"	85'	RCP	5.36	14.37	16.72	9.46
DP-7	DS-7B	311.00	-	DS-7A	310.45	-	0.50%	-	60"	109'	RCP	12.11	79.97	239.38	12.19
DP-8	DS-10	315.50	-	DS-9	314.99	-	0.50%	-	60"	102'	RCP	11.40	76.08	239.38	12.19
DP-9	DS-12	320.05	-	DS-11	319.71	-	0.50%	-	60"	68'	RCP	7.50	49.74	239.38	12.19
DP-10	DS-14	322.72	-	DS-13	319.74	-	3.36%	-	30"	89'	RCP	3.51	22.21	97.73	19.91
DP-11	DS-15	323.20	-	DS-14	322.72	-	0.70%	-	30"	69'	RCP	3.51	22.21	44.60	9.08
DP-12	DS-17	325.55	-	DS-16	325.50	-	1.00%	-	15"	5'	RCP	0.23	1.54	8.39	6.84
DP-13	DS-18	325.79	-	DS-17	325.55	-	1.00%	-	15"	24'	RCP	0.11	0.75	8.39	6.84
DP-14	DS-20	324.66	-	DS-19	323.00	-	1.50%	-	15"	111'	RCP	1.08	7.35	10.28	8.38
DP-15	DS-21	325.02	-	DS-20	324.66	-	1.50%	-	15"	24'	RCP	0.36	2.45	10.28	8.38

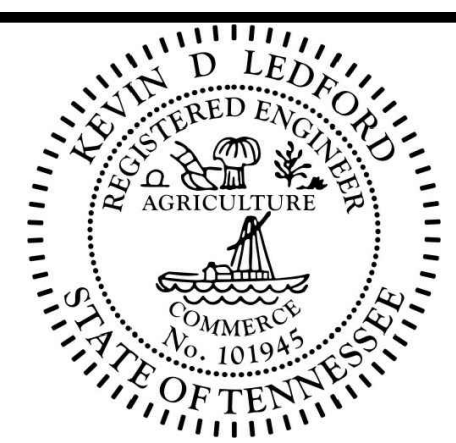
PRE-DEVELOPMENT DATA:
SITE DRAINAGE AREA (D.A.) = 35.85 ACRES
CN = 79
Tc = 10 MIN.
Q10 = 181.77 cfs

POST-DEVELOPMENT DATA:
SITE DRAINAGE AREA (D.A.) = 35.85 ACRES
CN = 82
Tc = 10 MIN.
Q10 = 175.76 cfs

DETENTION NOTE:
THE AREAS DENOTED BY "RESERVED FOR STORMWATER DETENTION" SHALL BE USED AS A BUILDING SITE OR FILLED WITHOUT FIRST OBTAINING WRITTEN PERMISSION FROM THE CITY ENGINEER. THE STORMWATER DETENTION SYSTEMS LOCATED IN THESE AREAS, EXCEPT FOR THOSE PARTS LOCATED IN A PUBLIC DRAINAGE EASEMENT, SHALL BE OWNED AND MAINTAINED BY THE PROPERTY OWNER AND/OR PROPERTY OWNER'S ASSOCIATION. SUCH MAINTENANCE SHALL BE PERFORMED SO AS TO ENSURE THAT THE SYSTEM OPERATES IN ACCORDANCE WITH THE APPROVED PLAN ON FILE IN THE CITY ENGINEER'S OFFICE. SUCH MAINTENANCE SHALL INCLUDE, BUT NOT LIMITED TO REMOVAL OF SEDIMENTATION, FALLEN OBJECTS, DEBRIS AND TRASH, MOWING, OUTLET CLEANING, AND REPAIR OF DRAINAGE STRUCTURES.

REVISION

ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE



AAA COOPER SITE EXPANSION
DEVELOPER: AAA COOPER TRANSPORTATION
ENGINEER: LEDFORD ENGINEERING AND PLANNING, LLC

BENCHMARK:
BASIS OF ELEVATIONS NAVD 88 CITY BM#296 - LOCATED AT THE ER ON THE HICKORY HILL SIDE AT THE INTERSECTION OF HICKORY HILL ROAD & RAINES ROAD. ELEV. 341.46

FLOOD NOTE:
JOHN'S CREEK IS A ZONE AE FLOODWAY WITH BFE AT CONCLUENCE WITH LOCATED FEEDER CREEK. SEE FLOOD MAP FEMA 471570C0465F EFFECTIVE 9/28/2007.

DRAINAGE BASIN: JOHN'S CREEK

DWG NO. **C-5**

SHEET 2 OF 2

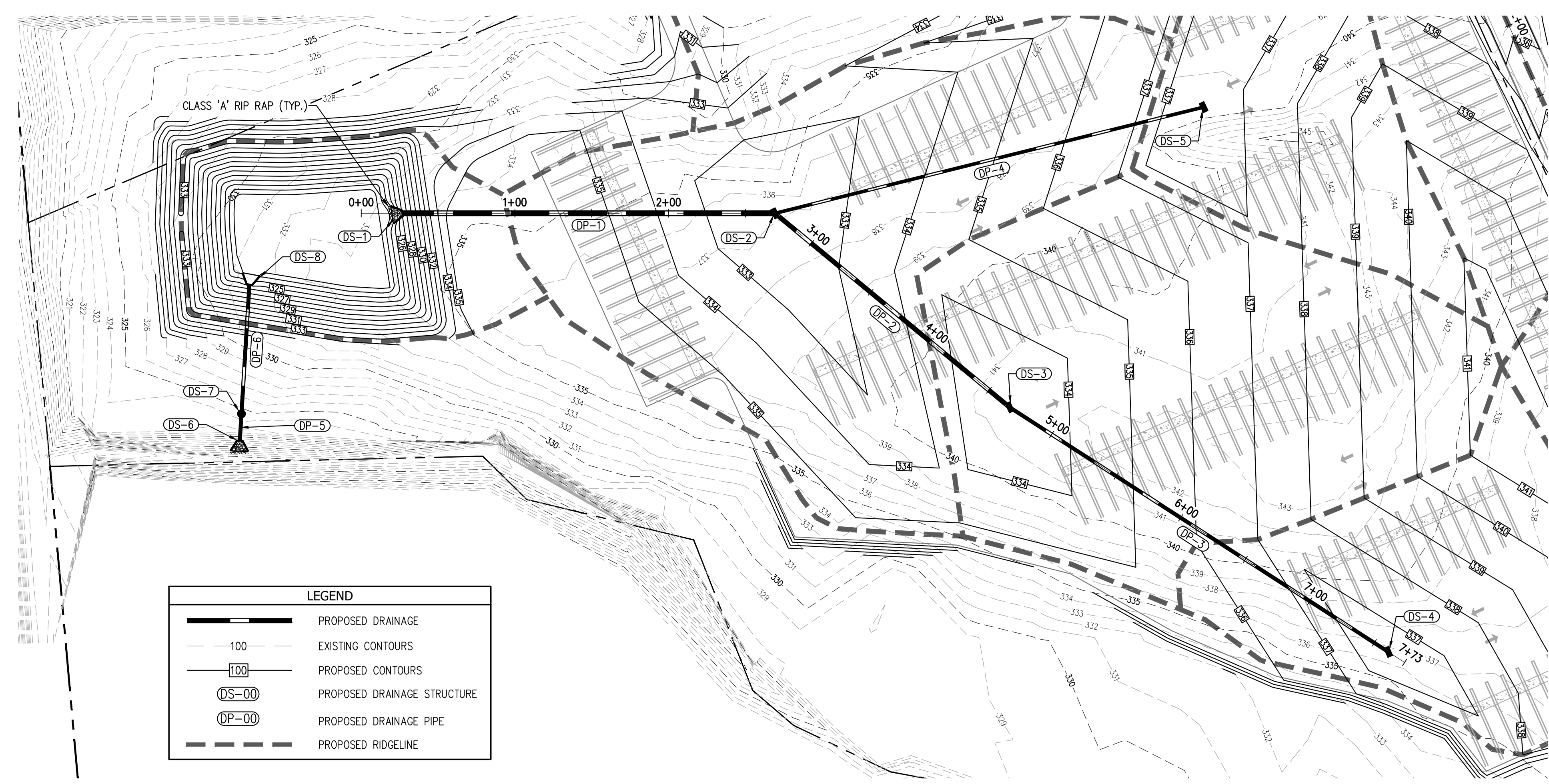
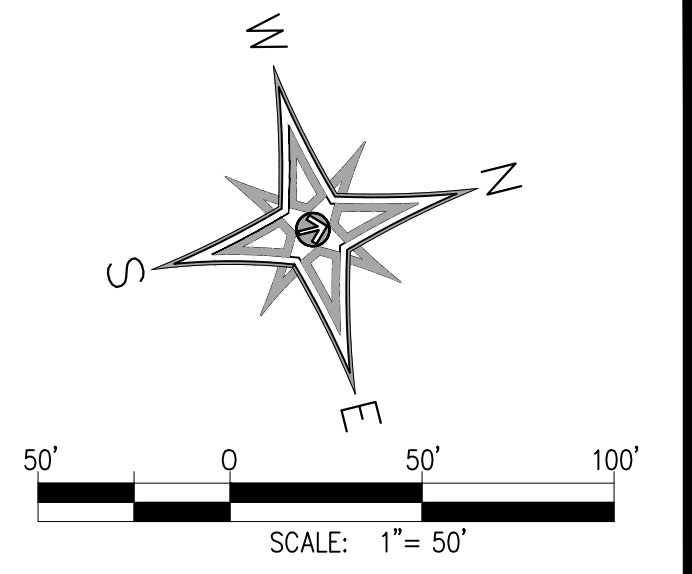
DIVISION OF ENGINEERING

GRADING & DRAINAGE PLAN - SHEET 2

LOCATION: EAST OF 4920 HICKORY HILL ROAD
MEMPHIS, TN

SURVEY: _____ DATE: _____ BOOK: _____
DESIGN BY: KH DATE: 4/19/21 SCALE: 1"=40'
REVIEWED: _____

DEPUTY CITY ENGINEER DATE CITY ENGINEER DATE



LEGEND

- PROPOSED DRAINAGE
- EXISTING CONTOURS
- PROPOSED CONTOURS
- PROPOSED DRAINAGE STRUCTURE
- PROPOSED DRAINAGE PIPE
- PROPOSED RIDGELINE

STORM DRAINAGE STRUCTURE DATA

NAME	TYPE	DRAINAGE AREA	Q10 (CFS)	TOP	AS BUILT	INVERT	AS BUILT
DS-1	TYPE 'D' HW	-	-	-	-	323.66	
DS-2	TWIN 11 INLET	1.67	11.73	332.10		326.09	
DS-3	TWIN 11 INLET	1.58	11.10	333.20		328.57	
DS-4	TWIN 11 INLET	0.84	5.90	336.50		332.00	

STORM DRAINAGE PIPE DATA

PIPE NAME	FROM	INVERT (UP)	AS BUILT	TO	INVERT (DOWN)	AS BUILT	SLOPE (%)	AS BUILT	SIZE	LENGTH	MATERIAL	DA (ACR)	Q10 (CFS)	QCAP (CFS)	VEL (FPS)
DP-1	DS-2	326.09		DS-1	323.66		1.00%		30"	243'	RCP	4.77	33.51	53.31	10.86
DP-2	DS-3	328.57		DS-2	326.59		1.00%		24"	198'	RCP	2.42	17.00	29.40	9.36
DP-3	DS-4	332.00		DS-3	329.07		1.00%		18"	293'	RCP	0.84	5.90	13.65	7.72

-1+00 0+00 1+00 2+00 3+00 4+00 5+00 6+00 7+00 8+00 9+00 10+00 11+00 12+00 13+00 14+00 14+50



SCALE: 1" = 5' V
1" = 50' H

DS-1
STA. 0+78.81
PROPOSED TYPE 'D' HW
TOP=327.00
FL_{10" IN} (N) = 323.66
FL_{30" OUT} (S) = 323.66

DS-2
STA. 2+69.29
PROPOSED TWIN NO. 11 INLET
TOP=332.10
FL_{10" IN} (N) = 327.34
FL_{10" IN} (NE) = 326.59
FL_{30" OUT} (S) = 326.09

DS-3
STA. 4+67.48
PROPOSED TWIN NO. 11 INLET
TOP=333.20
FL_{10" IN} (NE) = 329.07
FL_{24" OUT} (SW) = 328.57

DS-4
STA. 7+60.82
PROPOSED TWIN NO. 11 INLET
TOP=336.50
FL_{18" OUT} (SW) = 332.00

243 L.F. 30" RCP @ 1.00% Qc=58.40, Qd=33.51

198 L.F. 24" RCP @ 1.00% Qc=31.53, Qd=17.00

293 L.F. 18" RCP @ 1.00% Qc=13.65, Qd=5.90

BENCHMARK:
BASIS OF ELEVATIONS NAVD 88 CITY BM#296 - LOCATED AT THE ER ON THE HICKORY HILL SIDE AT THE INTERSECTION OF HICKORY HILL ROAD & RAINES ROAD. ELEV. 341.46

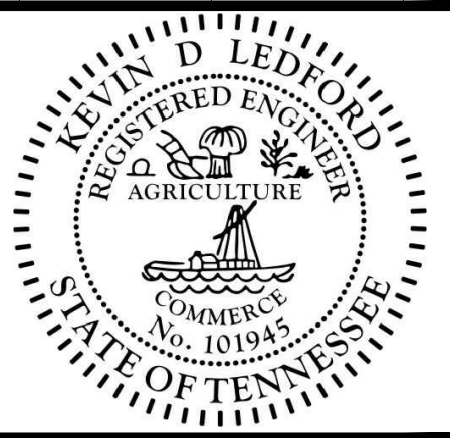
FLOOD NOTE:
JOHN'S CREEK IS A ZONE AE FLOODWAY WITH BFE AT CONJUNCTION WITH LOCATED FEEDER CREEK. SEE FLOOD MAP FEMA 47157C0465F EFFECTIVE 9/28/2007.

DRAINAGE BASIN: JOHN'S CREEK

DWG NO. C-6

REVISION

ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE



SHEET 1 OF 1

DIVISION OF ENGINEERING

OFF-STREET DRAINAGE PLAN & PROFILE

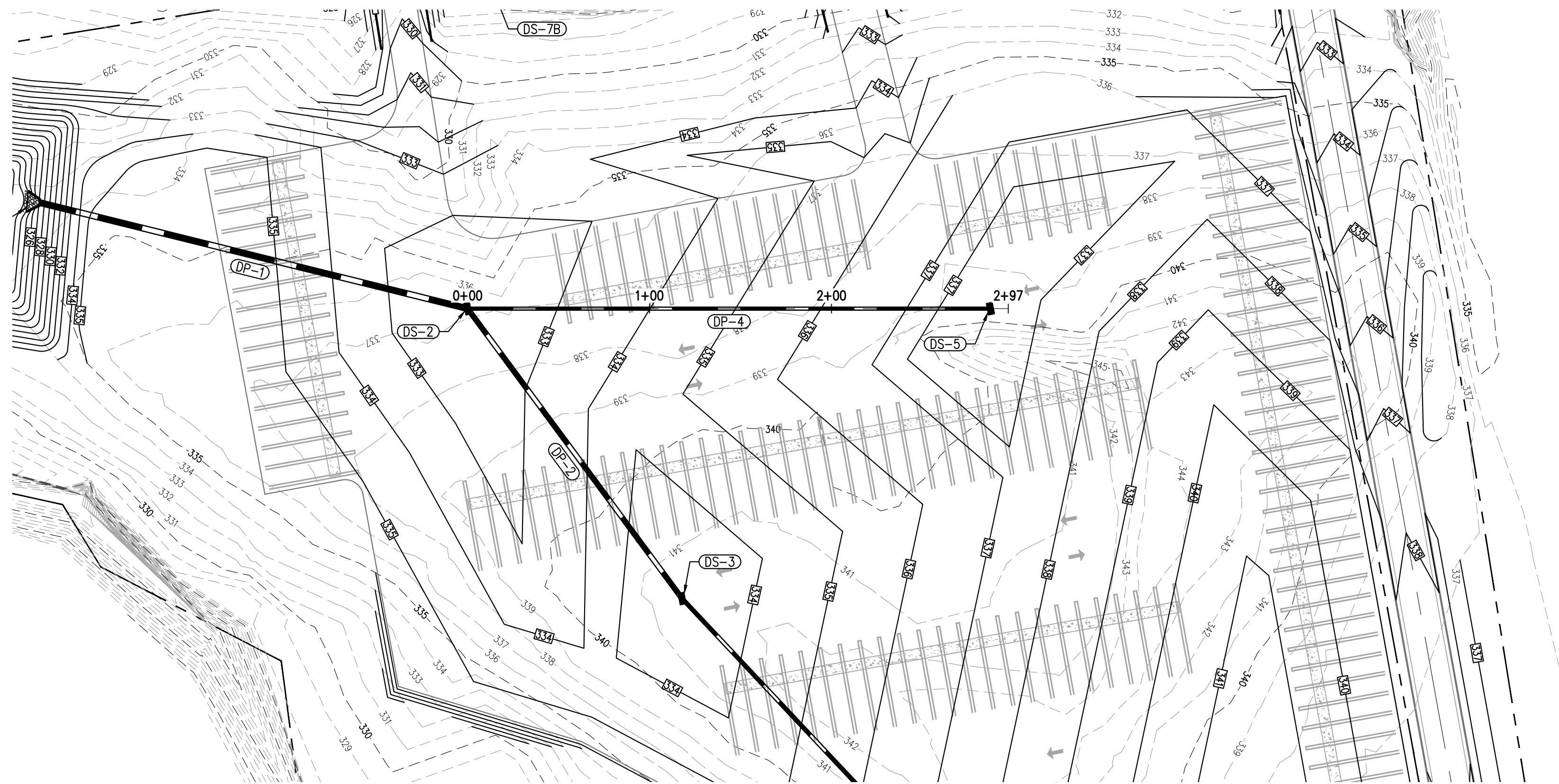
LOCATION: EAST OF 4920 HICKORY HILL ROAD
MEMPHIS, TN

SURVEY: _____ DATE: _____ BOOK: _____
DESIGN BY: KH DATE: 4/19/21 SCALE: 1"=50'
REVIEWED: _____

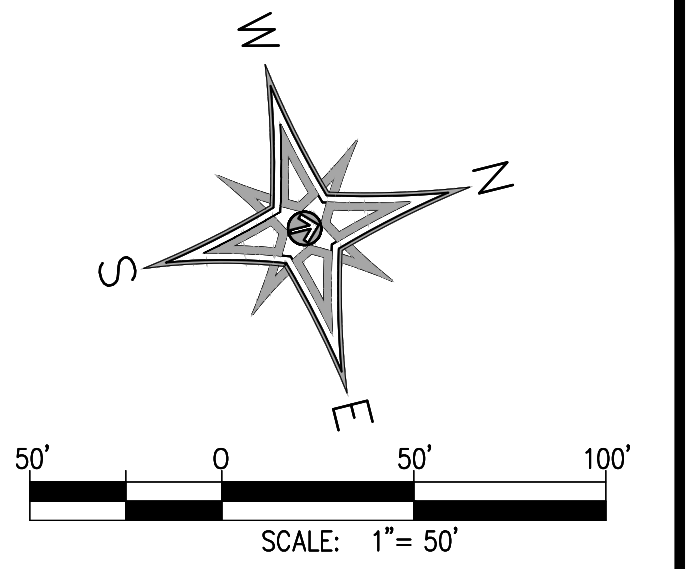
DEPUTY CITY ENGINEER DATE CITY ENGINEER DATE

AAA COOPER SITE EXPANSION

DEVELOPER: AAA COOPER TRANSPORTATION
ENGINEER: LEDFORD ENGINEERING AND PLANNING, LLC

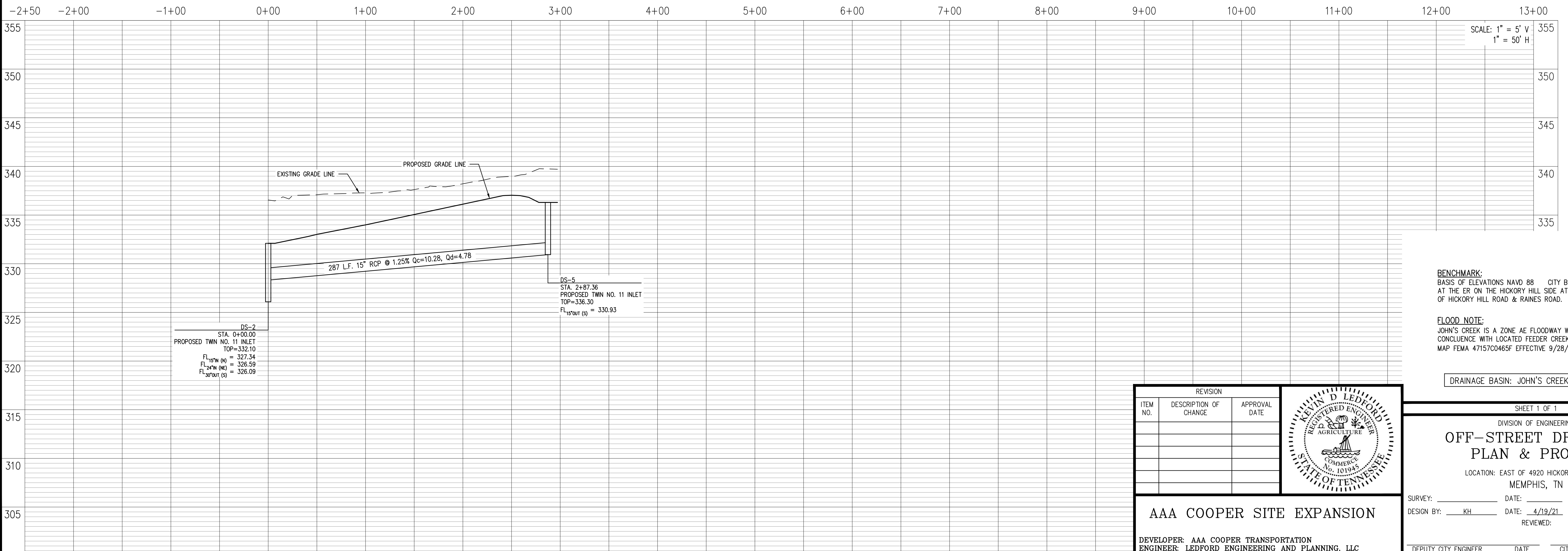


LEGEND	
	PROPOSED DRAINAGE
	EXISTING CONTOURS
	PROPOSED CONTOURS
	PROPOSED DRAINAGE STRUCTURE
	PROPOSED DRAINAGE PIPE
	PROPOSED RIDGELINE



STORM DRAINAGE STRUCTURE DATA						
NAME	TYPE	DRAINAGE AREA	Q10 (CFS)	TOP	AS BUILT INVERT	AS BUILT
DS-2	TWIN 11 INLET	1.67	11.73	332.10		326.09
DS-5	NO. 11 INLET	0.68	4.78	336.30		330.93

STORM DRAINAGE PIPE DATA															
PIPE NAME	FROM	INVERT (UP)	AS BUILT	TO	INVERT (DOWN)	AS BUILT	SLOPE (%)	AS BUILT	SIZE	LENGTH	MATERIAL	DA (ACR)	Q10 (CFS)	QCAP (CFS)	VEL (FPS)
DP-4	DS-5	330.93		DS-2	327.34		1.25%		15"	287'	RCP	0.68	4.78	9.38	7.65



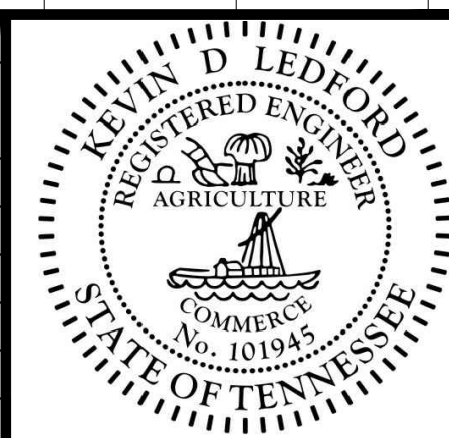
BENCHMARK:
BASIS OF ELEVATIONS NAVD 88 CITY BM#296 - LOCATED AT THE ER ON THE HICKORY HILL SIDE AT THE INTERSECTION OF HICKORY HILL ROAD & RAINES ROAD. ELEV. 341.46

FLOOD NOTE:
JOHN'S CREEK IS A ZONE AE FLOODWAY WITH BFE AT CONFLUENCE WITH LOCATED FEEDER CREEK. SEE FLOOD MAP FEMA 47157C0465F EFFECTIVE 9/28/2007.

DRAINAGE BASIN: JOHN'S CREEK

DWG NO. C-7

REVISION		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE



AAA COOPER SITE EXPANSION

DEVELOPER: AAA COOPER TRANSPORTATION
ENGINEER: LEDFORD ENGINEERING AND PLANNING, LLC

SHEET 1 OF 1

DIVISION OF ENGINEERING

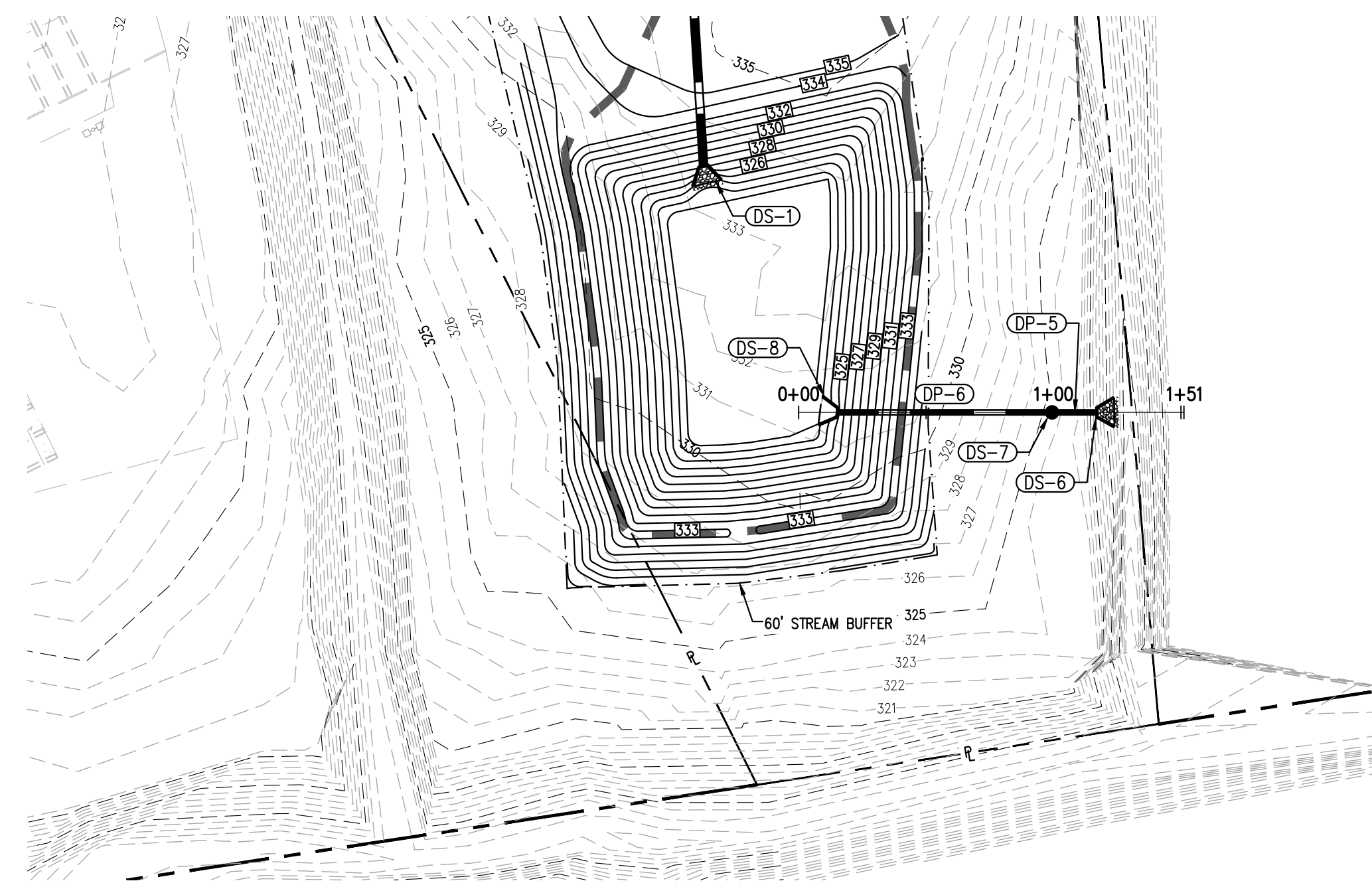
OFF-STREET DRAINAGE PLAN & PROFILE

LOCATION: EAST OF 4920 HICKORY HILL ROAD
MEMPHIS, TN

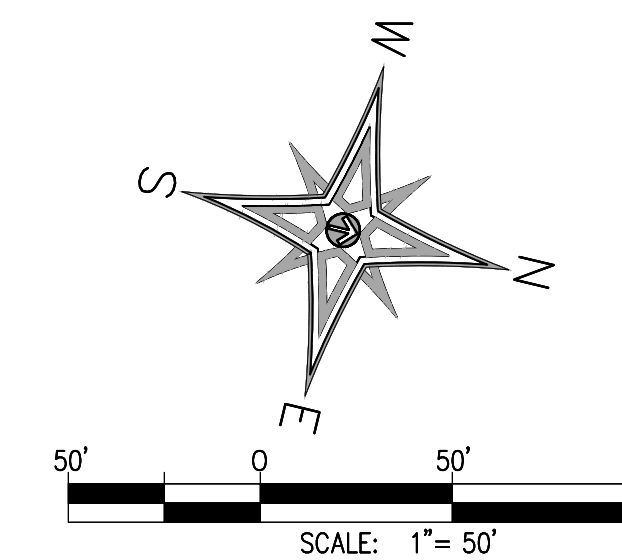
SURVEY: _____ DATE: _____ BOOK: _____
DESIGN BY: KH DATE: 4/19/21 SCALE: 1"=50'
REVIEWED: _____

DEPUTY CITY ENGINEER DATE CITY ENGINEER DATE

Z:\1290\1-06 CONSTRUCTION DRAWINGS\C-7 OFF-STREET DRAINAGE PLAN & PROFILE.dwg



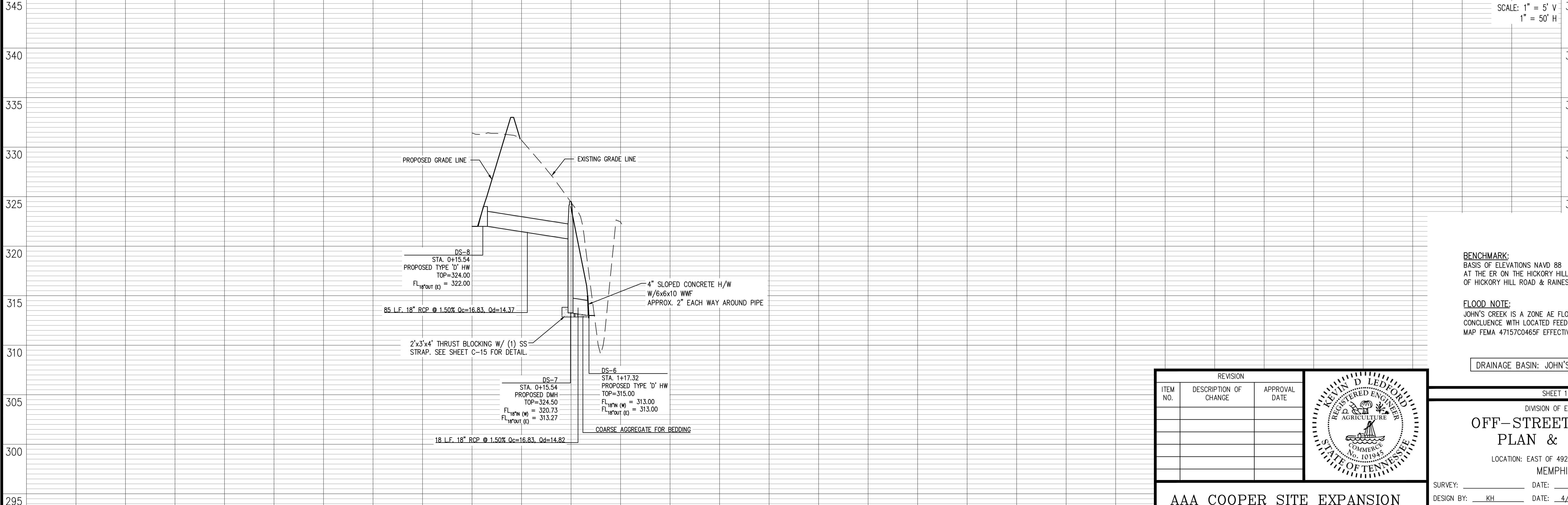
LEGEND	
	PROPOSED DRAINAGE
	EXISTING CONTOURS
	PROPOSED CONTOURS
	PROPOSED DRAINAGE STRUCTURE
	PROPOSED DRAINAGE PIPE
	PROPOSED RIDGELINE



STORM DRAINAGE STRUCTURE DATA							
NAME	TYPE	DRAINAGE AREA	Q10 (CFS)	TOP	AS BUILT	INVERT	AS BUILT
DS-6	TYPE 'D' HW	-	-	-	-	313.00	-
DS-7	DMH	-	-	324.50	-	313.27	-
DS-8	TYPE 'D' HW	5.36	14.82	-	-	322.00	-

STORM DRAINAGE PIPE DATA															
PIPE NAME	FROM	INVERT (UP)	AS BUILT	TO	INVERT (DOWN)	AS BUILT	SLOPE (%)	AS BUILT	SIZE	LENGTH	MATERIAL	DA (ACR)	Q10 (CFS)	QCAP (CFS)	VEL (FPS)
DP-5	DS-7	313.27	-	DS-6	313.00	-	1.50%	-	18"	18'	RCP	5.36	14.37	16.72	9.46
DP-6	DS-8	322.00	-	DS-7	320.73	-	1.50%	-	18"	85'	RCP	5.36	14.37	16.72	9.46

-4+50 -4+00 -3+00 -2+00 -1+00 0+00 1+00 2+00 3+00 4+00 5+00 6+00 7+00 8+00 9+00 10+00 11+00

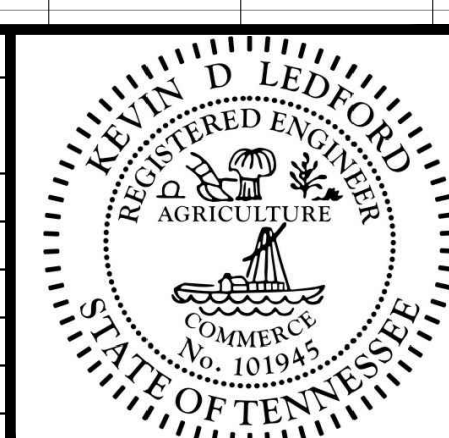


BENCHMARK:
BASIS OF ELEVATIONS NAVD 88 CITY BM#296 - LOCATED AT THE ER ON THE HICKORY HILL SIDE AT THE INTERSECTION OF HICKORY HILL ROAD & RAINES ROAD. ELEV. 341.46

FLOOD NOTE:
JOHN'S CREEK IS A ZONE A-E FLOODWAY WITH BFE AT CONJUNCTION WITH LOCATED FEEDER CREEK. SEE FLOOD MAP FEMA 47157C0465F EFFECTIVE 9/28/2007.

DRAINAGE BASIN: JOHN'S CREEK C-8

REVISION		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE



AAA COOPER SITE EXPANSION

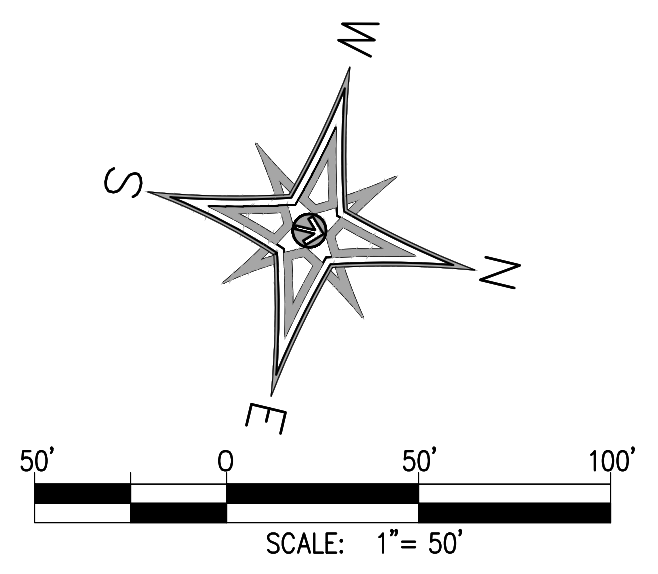
DEVELOPER: AAA COOPER TRANSPORTATION
ENGINEER: LEDFORD ENGINEERING AND PLANNING, LLC

SHEET 1 OF 1
DIVISION OF ENGINEERING
OFF-STREET DRAINAGE PLAN & PROFILE
LOCATION: EAST OF 4920 HICKORY HILL ROAD
MEMPHIS, TN

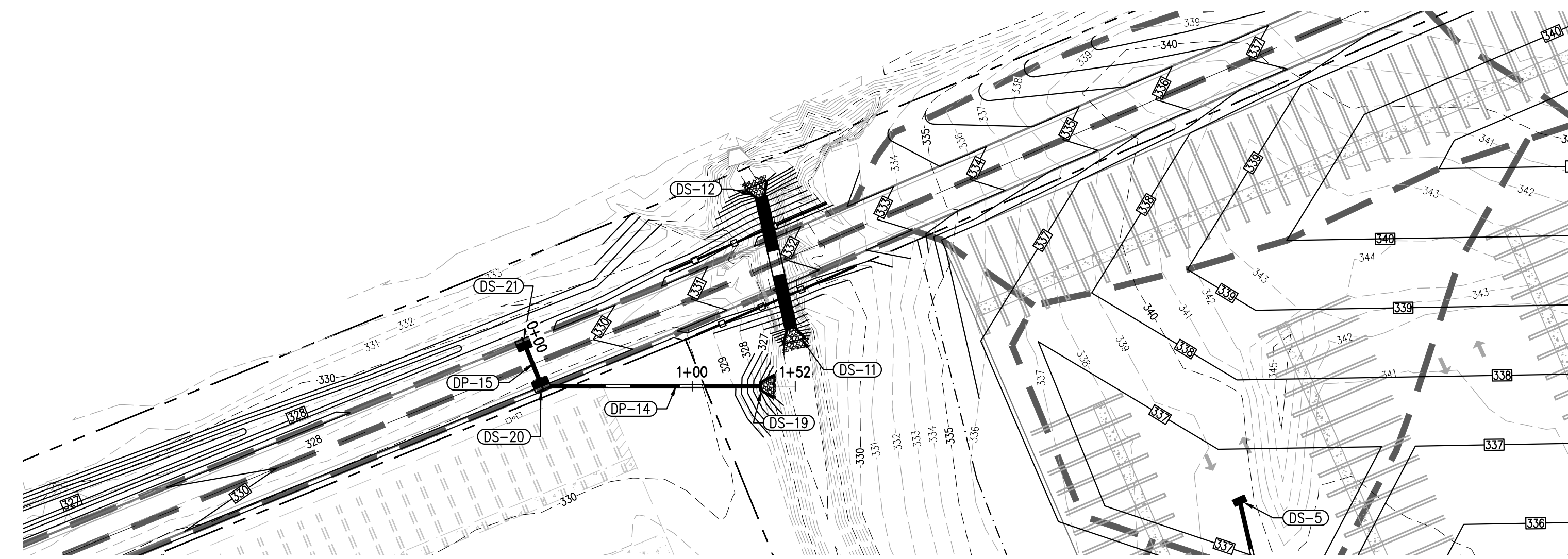
SURVEY: _____ DATE: _____ BOOK: _____
DESIGN BY: KH DATE: 4/19/21 SCALE: 1"=50'
REVIEWED: _____

DEPUTY CITY ENGINEER DATE CITY ENGINEER DATE

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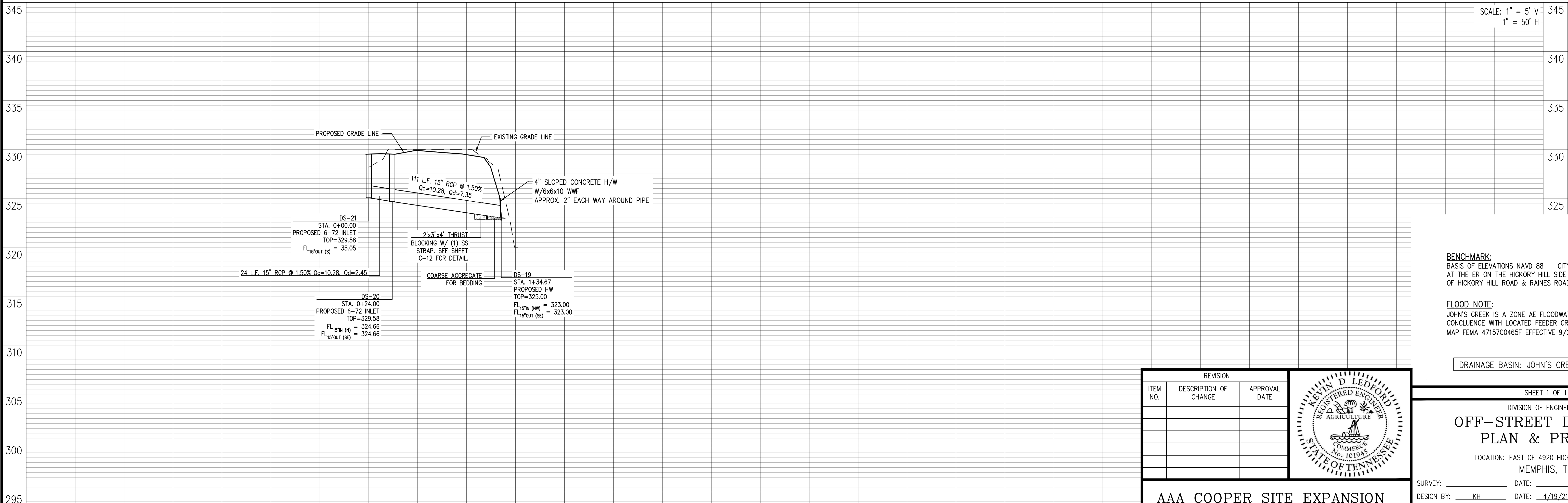
LEGEND	
	PROPOSED DRAINAGE
	EXISTING CONTOURS
	PROPOSED CONTOURS
	PROPOSED DRAINAGE STRUCTURE
	PROPOSED DRAINAGE PIPE
	PROPOSED RIDGELINE



STORM DRAINAGE STRUCTURE DATA							
NAME	TYPE	DRAINAGE AREA	Q10 (CFS)	TOP	AS BUILT	INVERT	AS BUILT
DS-19	TYPE 'D' HW	-	-	329.54		323.00	
DS-20	6-72 INLET	0.72	4.90	329.58		324.66	
DS-21	6-72 INLET	0.36	2.45	329.58		325.02	

STORM DRAINAGE PIPE DATA															
PIPE NAME	FROM	INVERT (UP)	AS BUILT	TO	INVERT (DOWN)	AS BUILT	SLOPE (%)	AS BUILT	SIZE	LENGTH	MATERIAL	DA (ACR)	Q10 (CFS)	QCAP (CFS)	VEL (FPS)
DP-14	DS-20	324.66		DS-19	323.00		1.50%		15"	111'	RCP	1.08	7.35	10.28	8.38
DP-15	DS-21	325.02		DS-20	324.66		1.50%		15"	24'	RCP	0.36	2.45	10.28	8.38

-3+50 -3+00 -2+00 -1+00 0+00 1+00 2+00 3+00 4+00 5+00 6+00 7+00 8+00 9+00 10+00 11+00 12+00



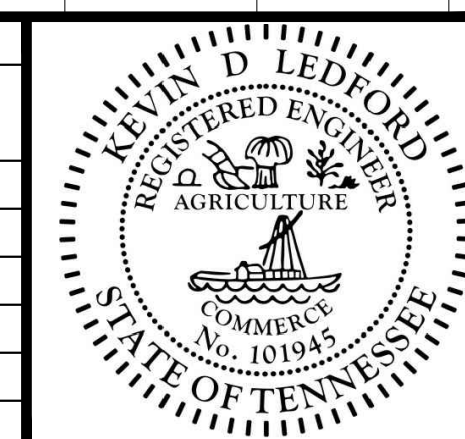
BENCHMARK:
BASIS OF ELEVATIONS NAVD 88 CITY BM#296 - LOCATED AT THE ER ON THE HICKORY HILL SIDE AT THE INTERSECTION OF HICKORY HILL ROAD & RAINES ROAD. ELEV. 341.46

FLOOD NOTE:
JOHN'S CREEK IS A ZONE A-E FLOODWAY WITH BFE AT CONCLUENCE WITH LOCATED FEEDER CREEK. SEE FLOOD MAP FEMA 47157C0465F EFFECTIVE 9/28/2007.

DRAINAGE BASIN: JOHN'S CREEK

DWG NO. C-9

REVISION		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE



AAA COOPER SITE EXPANSION

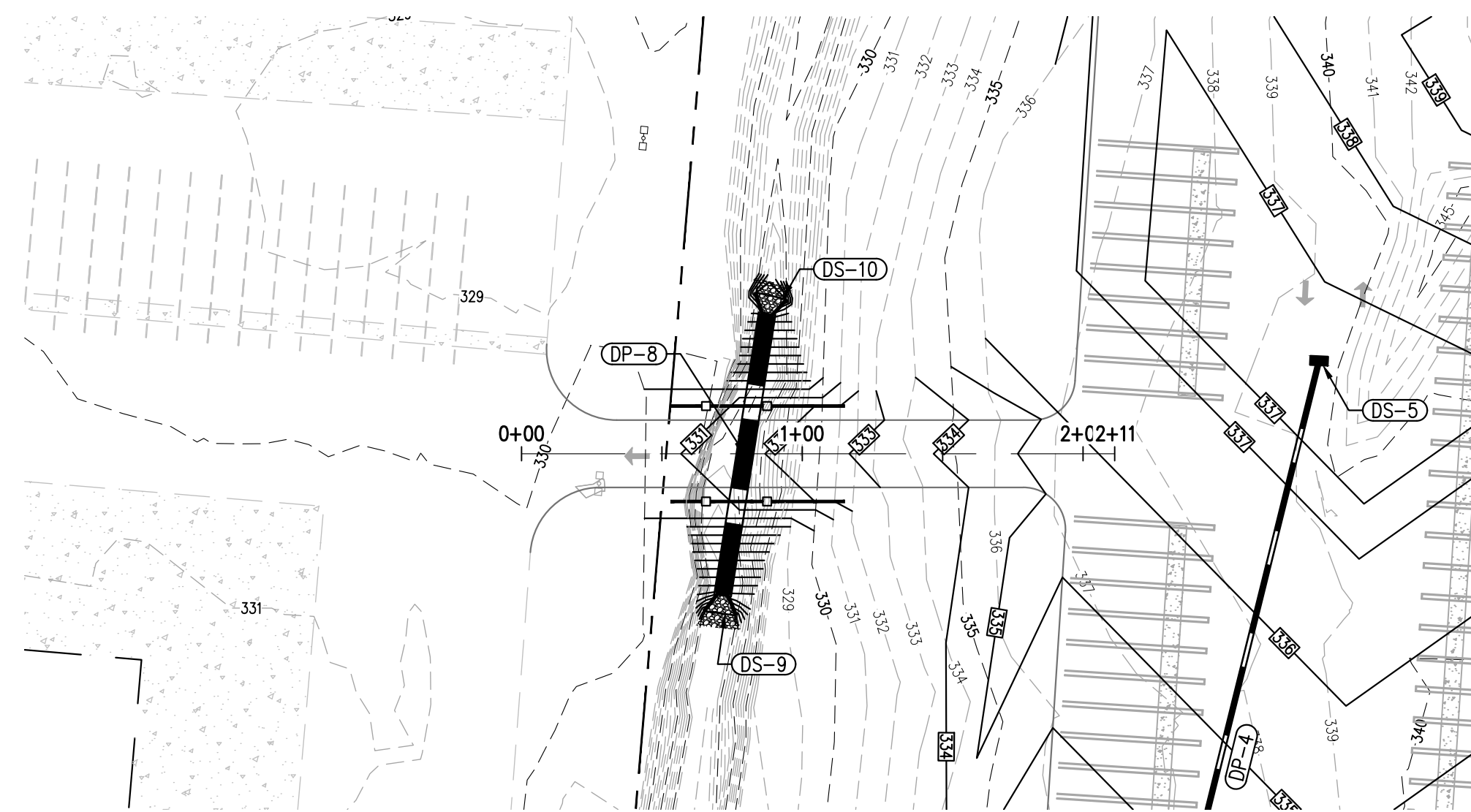
DEVELOPER: AAA COOPER TRANSPORTATION
ENGINEER: LEDFORD ENGINEERING AND PLANNING, LLC

SHEET 1 OF 1
DIVISION OF ENGINEERING
OFF-STREET DRAINAGE PLAN & PROFILE
LOCATION: EAST OF 4920 HICKORY HILL ROAD
MEMPHIS, TN

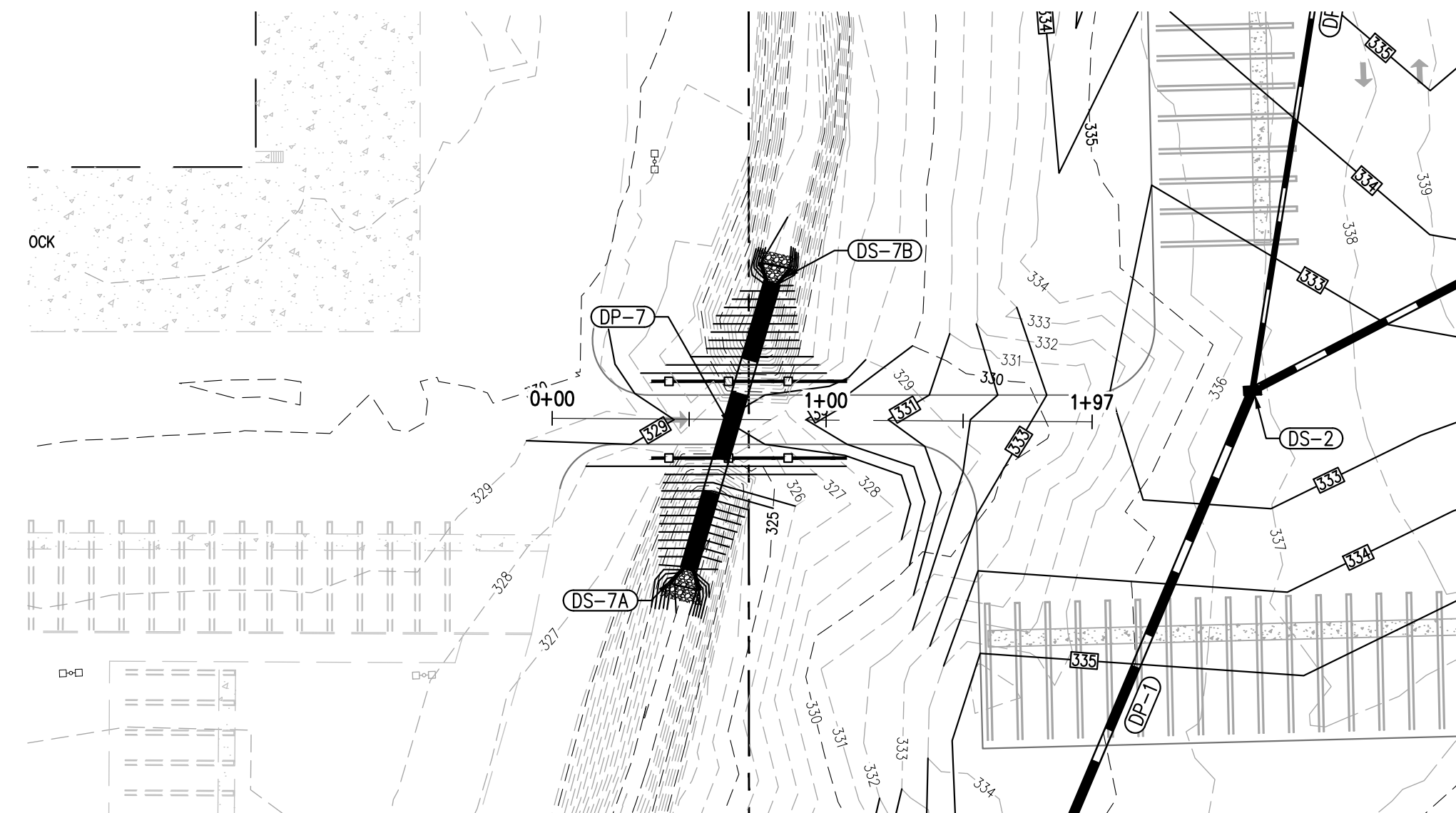
SURVEY: _____ DATE: _____ BOOK: _____
DESIGN BY: KH DATE: 4/19/21 SCALE: 1"=50'
REVIEWED: _____

DEPUTY CITY ENGINEER DATE CITY ENGINEER DATE

Z:\2020\06\CONSTRUCTION DRAWINGS\C-9 OFF-STREET DRAINAGE PLAN & PROFILE.dwg

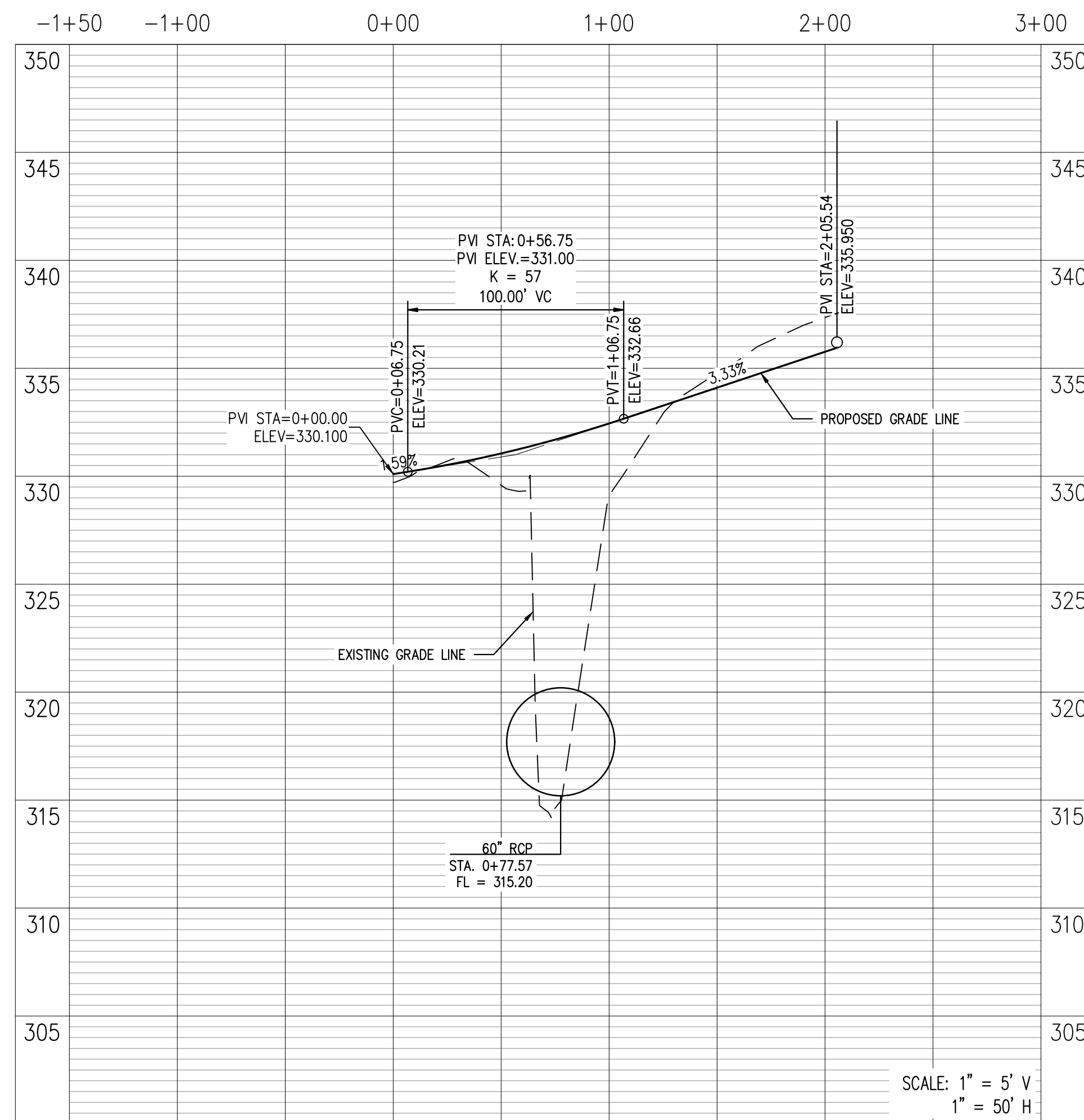
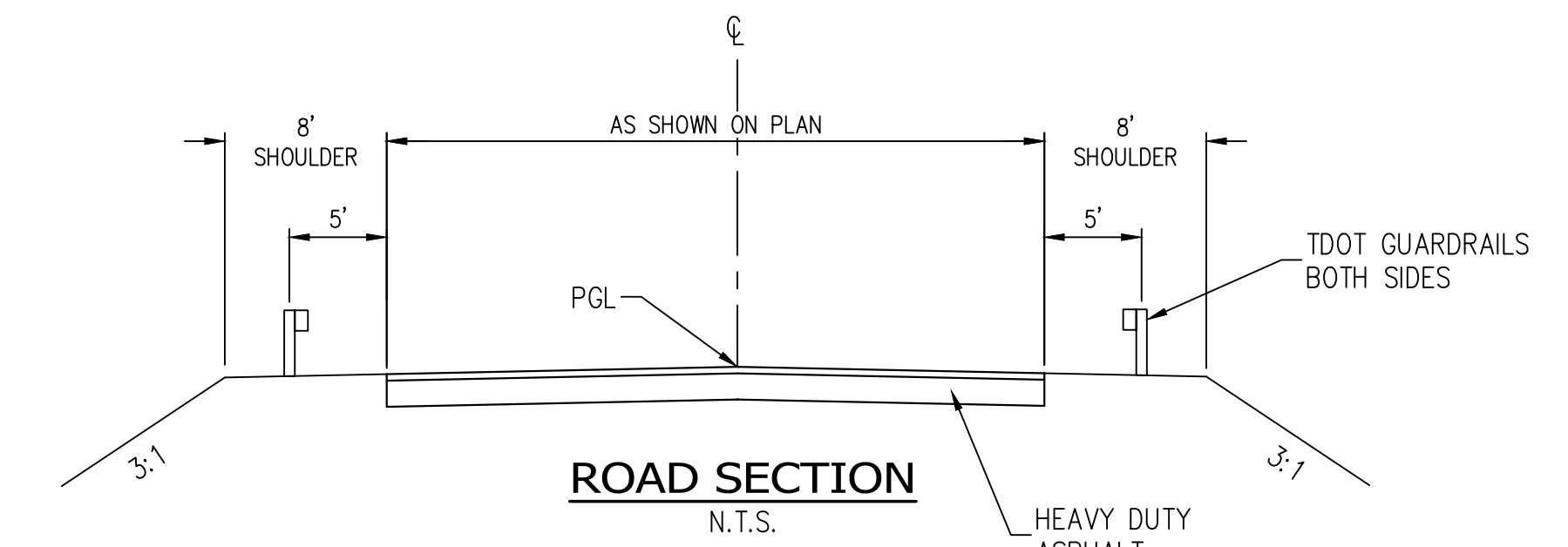
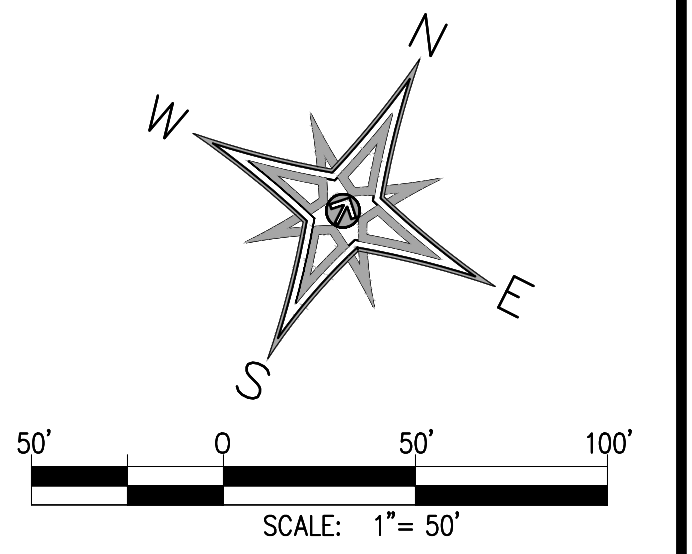


STREAM CROSSING 'A' PLAN

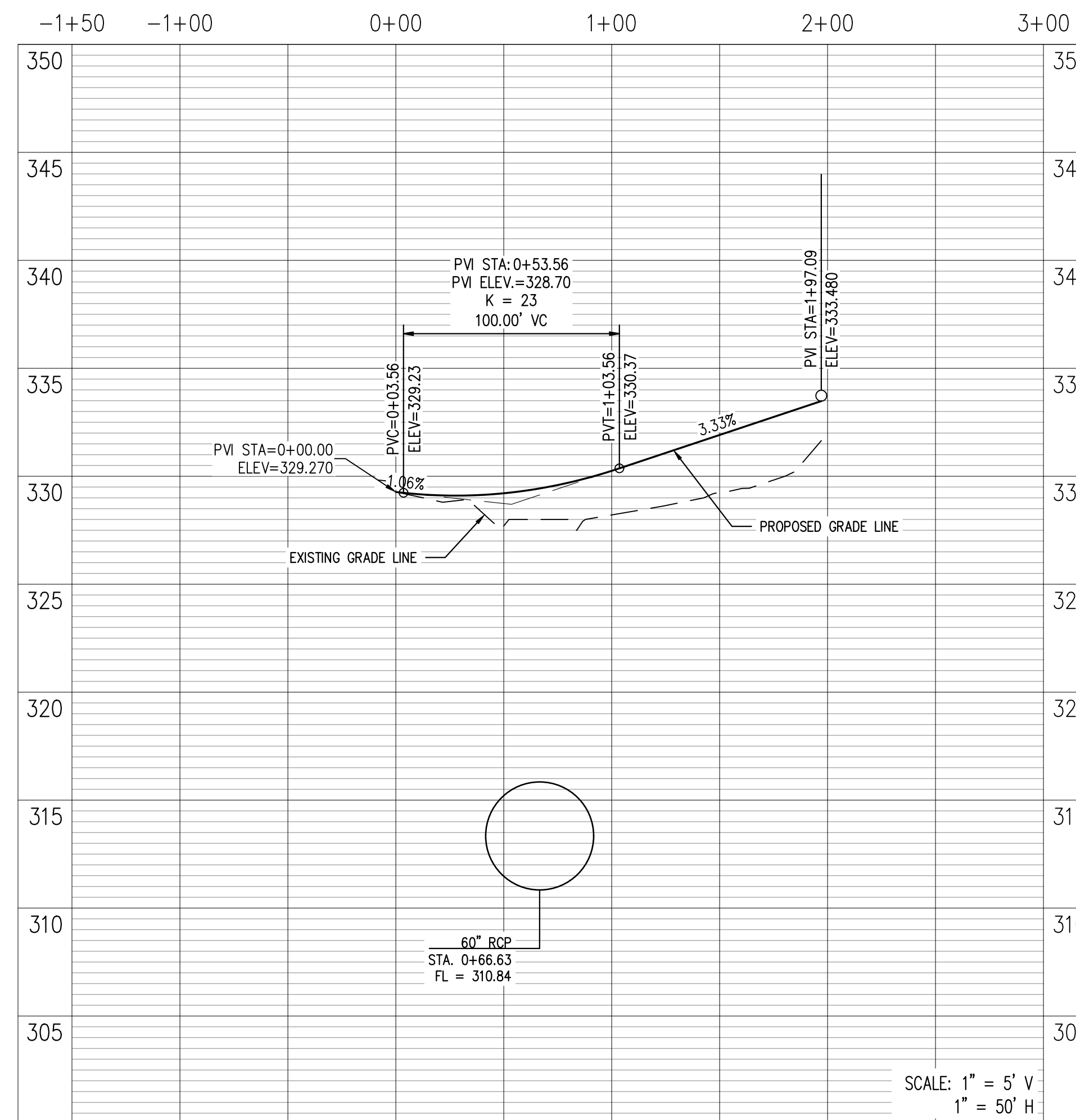


STREAM CROSSING 'B' PLAN

LEGEND	
	PROPOSED DRAINAGE
	EXISTING CONTOURS
	PROPOSED CONTOURS
	PROPOSED DRAINAGE STRUCTURE
	PROPOSED DRAINAGE PIPE
	EXISTING DRAINAGE



STREAM CROSSING 'A' SECTION



STREAM CROSSING 'B' SECTION

STORM DRAINAGE STRUCTURE DATA						
NAME	TYPE	DRAINAGE AREA	Q10 (CFS)	TOP	AS BUILT	INVERT
DS-7A	TYPE 'D' HW	-	-	-	-	310.45
DS-7B	TYPE 'D' HW	12.11	79.97	-	-	311.00
DS-9	TYPE 'D' HW	-	-	-	-	314.99
DS-10	TYPE 'D' HW	11.40	76.08	-	-	315.50

STORM DRAINAGE PIPE DATA												
PIPE NAME	FROM	INVERT (UP)	AS BUILT	TO	INVERT (DOWN)	AS BUILT	SLOPE (%)	AS BUILT	SIZE	LENGTH	MATERIAL	DA (ACR)
DP-7	DS-7B	311.00	-	DS-7A	310.45	-	0.50%	-	60"	109'	RCP	12.11
DP-8	DS-10	315.50	-	DS-9	314.99	-	0.50%	-	60"	102'	RCP	11.40

BENCHMARK:
BASIS OF ELEVATIONS NAVD 88 CITY BM#296 - LOCATED AT THE ER ON THE HICKORY HILL SIDE AT THE INTERSECTION OF HICKORY HILL ROAD & RAINES ROAD. ELEV. 341.46

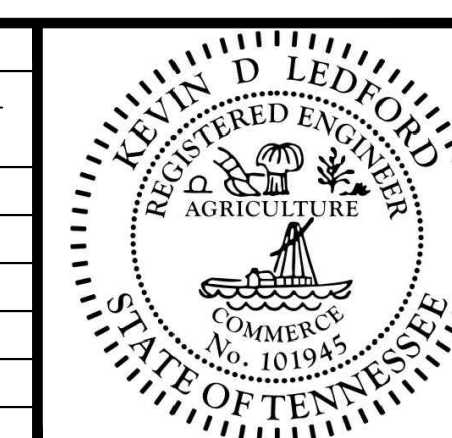
FLOOD NOTE:
JOHN'S CREEK IS A ZONE A-F FLOODWAY WITH BFE AT CONFLUENCE WITH LOCATED FEEDER CREEK. SEE FLOOD MAP FEMA 47157C0465F EFFECTIVE 9/28/2007.

DRAINAGE BASIN: JOHN'S CREEK

DWG NO.

C-10

REVISION		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE



AAA COOPER SITE EXPANSION

DEVELOPER: AAA COOPER TRANSPORTATION
ENGINEER: LEDFORD ENGINEERING AND PLANNING, LLC

LEP: 1290-06

SHEET 1 OF 1

DIVISION OF ENGINEERING
STREAM CROSSING PROFILES

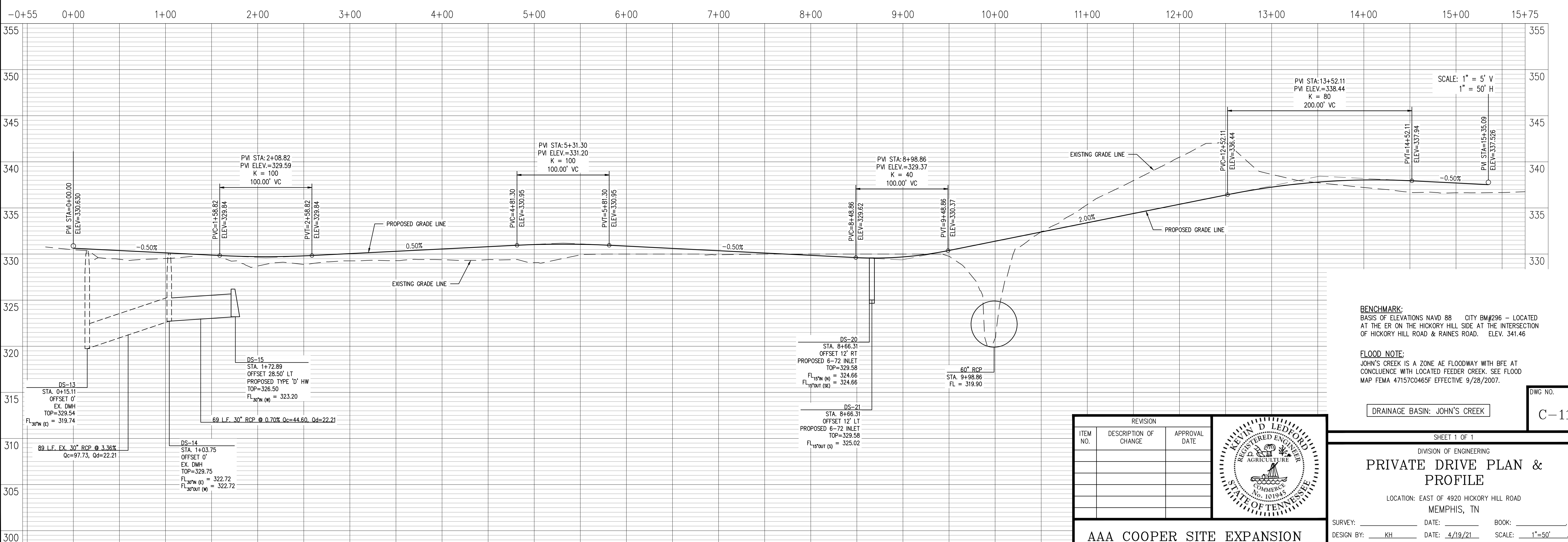
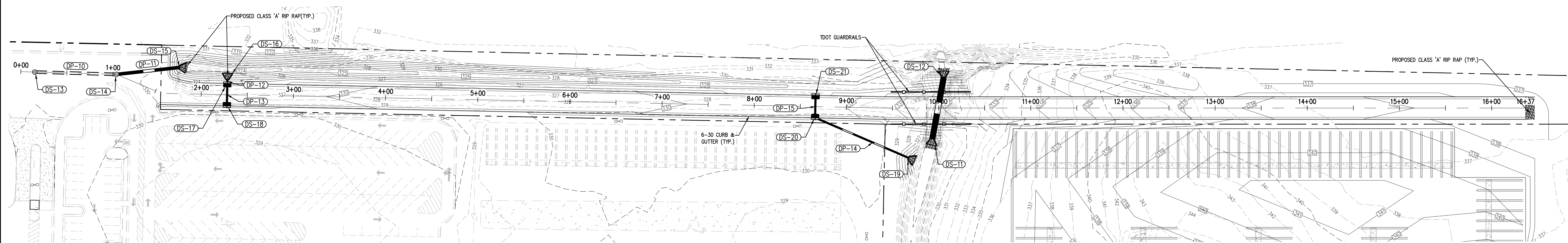
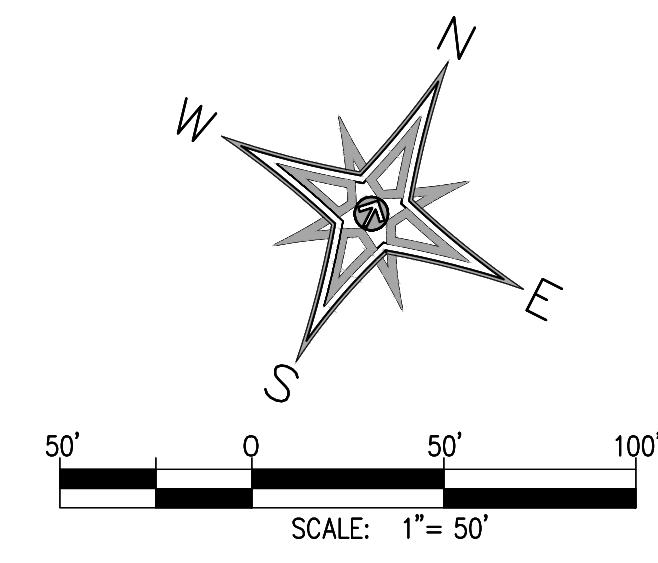
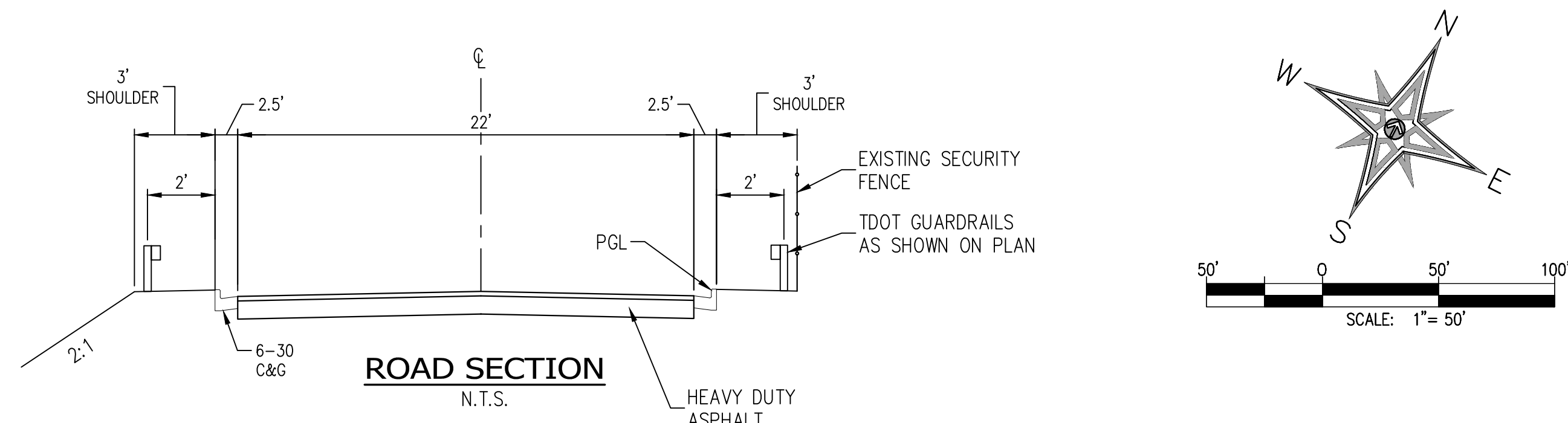
LOCATION: EAST OF 4920 HICKORY HILL ROAD
MEMPHIS, TN

SURVEY: _____ DATE: _____ BOOK: _____
DESIGN BY: KH DATE: 4/19/21 SCALE: 1"=50'
REVIEWED: _____

DEPUTY CITY ENGINEER DATE CITY ENGINEER DATE

STORM DRAINAGE STRUCTURE DATA							
NAME	TYPE	DRAINAGE AREA	Q10 (CFS)	TOP	AS BUILT	INVERT	AS BUILT
DS-11	TYPE 'D' HW	-	-	-	-	319.71	-
DS-12	TYPE 'D' HW	7.50	49.74	-	-	320.05	-
DS-13	EX. DMH	-	-	329.54	-	319.74	-
DS-14	EX. DMH	-	-	329.75	-	322.72	-
DS-15	TYPE 'D' HW	3.51	22.21	329.75	-	323.20	-
DS-16	TYPE 'D' HW	-	-	-	-	325.50	-
DS-17	6-72 INLET	0.12	0.82	-	-	325.55	-
DS-18	6-72 INLET	0.11	0.75	-	-	325.79	-
DS-19	TYPE 'D' HW	-	-	329.54	-	323.00	-
DS-20	6-72 INLET	0.72	4.90	329.58	-	324.66	-
DS-21	6-72 INLET	0.36	2.45	329.58	-	325.02	-

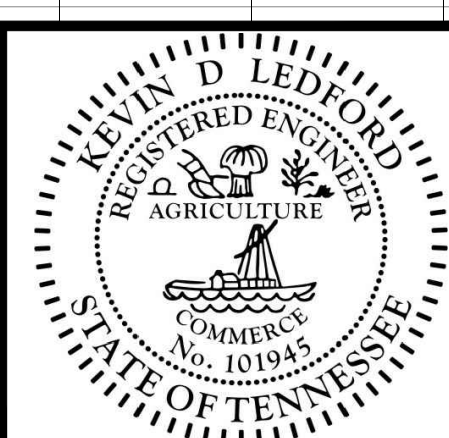
STORM DRAINAGE PIPE DATA															
PIPE NAME	FROM	INVERT (UP)	AS BUILT	TO	INVERT (DOWN)	AS BUILT	SLOPE (%)	AS BUILT	SIZE	LENGTH	MATERIAL	DA (ACR)	Q10 (CFS)	QCAP (CFS)	VEL (FPS)
DP-9	DS-12	320.05	-	DS-11	319.71	-	0.50%	-	60"	68'	RCP	7.50	49.74	239.38	12.19
DP-10	DS-14	322.72	-	DS-13	319.74	-	3.36%	-	30"	89'	RCP	3.51	22.21	97.73	19.91
DP-11	DS-15	323.20	-	DS-14	322.72	-	0.70%	-	30"	69'	RCP	3.51	22.21	44.60	9.08
DP-12	DS-17	325.55	-	DS-16	325.50	-	1.00%	-	15"	5'	RCP	0.23	1.54	8.39	6.84
DP-13	DS-18	325.79	-	DS-17	325.55	-	1.00%	-	15"	24'	RCP	0.11	0.75	8.39	6.84
DP-14	DS-20	324.66	-	DS-19	323.00	-	1.50%	-	15"	111'	RCP	1.08	7.35	10.28	8.38
DP-15	DS-21	325.02	-	DS-20	324.66	-	1.50%	-	15"	24'	RCP	0.36	2.45	10.28	8.38



BENCHMARK:
BASIS OF ELEVATIONS NAVD 88 CITY BM#296 - LOCATED AT THE ER ON THE HICKORY HILL SIDE AT THE INTERSECTION OF HICKORY HILL ROAD & RAINES ROAD. ELEV. 341.46

FLOOD NOTE:
JOHN'S CREEK IS A ZONE AE FLOODWAY WITH BFE AT CONCLUSION WITH LOCATED FEEDER CREEK. SEE FLOOD MAP FEMA 47157C0465F EFFECTIVE 9/28/2007.

REVISION		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE



DRAINAGE BASIN: JOHN'S CREEK

SHEET 1 OF 1

DIVISION OF ENGINEERING

PRIVATE DRIVE PLAN & PROFILE

LOCATION: EAST OF 4920 HICKORY HILL ROAD
MEMPHIS, TN

SURVEY: _____ DATE: _____ BOOK: _____
DESIGN BY: KH DATE: 4/19/21 SCALE: 1"=50'
REVIEWED: _____

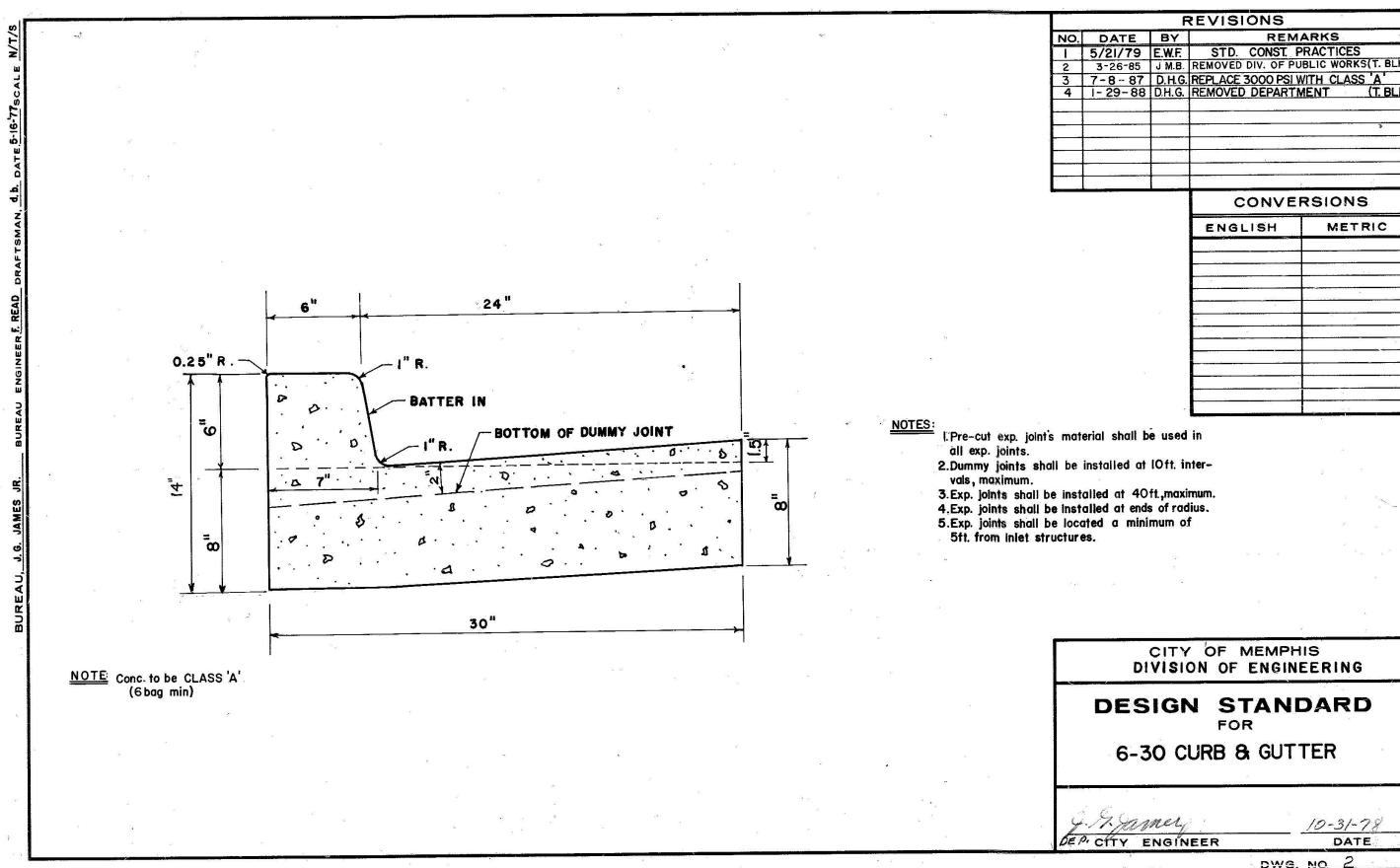
DEPUTY CITY ENGINEER DATE CITY ENGINEER DATE

AAA COOPER SITE EXPANSION

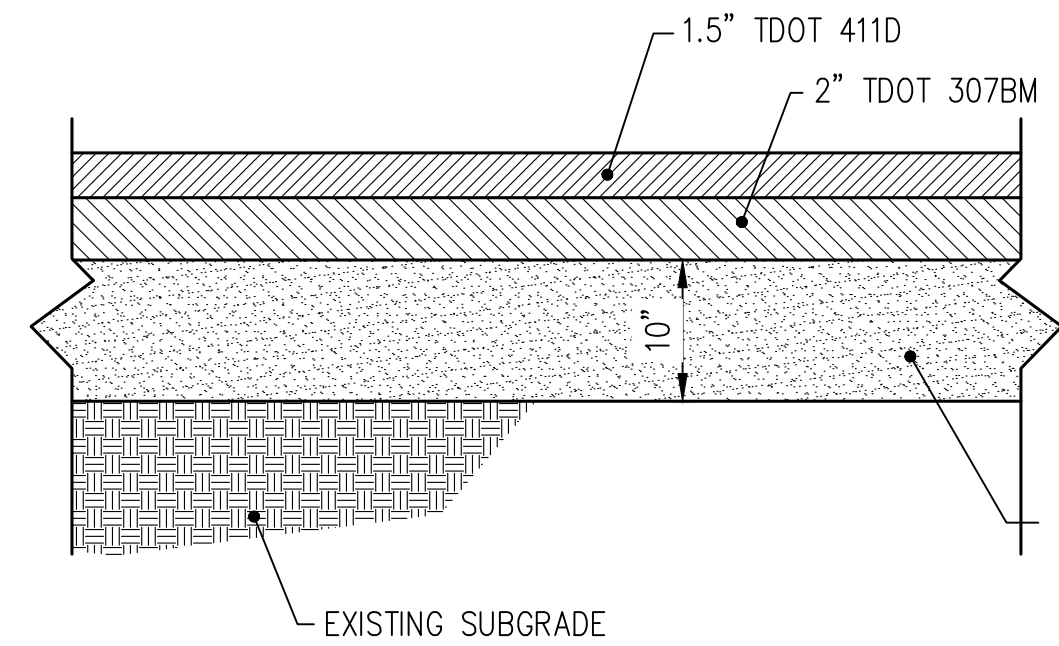
DEVELOPER: AAA COOPER TRANSPORTATION
ENGINEER: LEDFORD ENGINEERING AND PLANNING, LLC

LEP: 1290-06

Z:\1290\06 CONSTRUCTION DRAWINGS\C-12 STREET PLAN & PROFILE.dwg

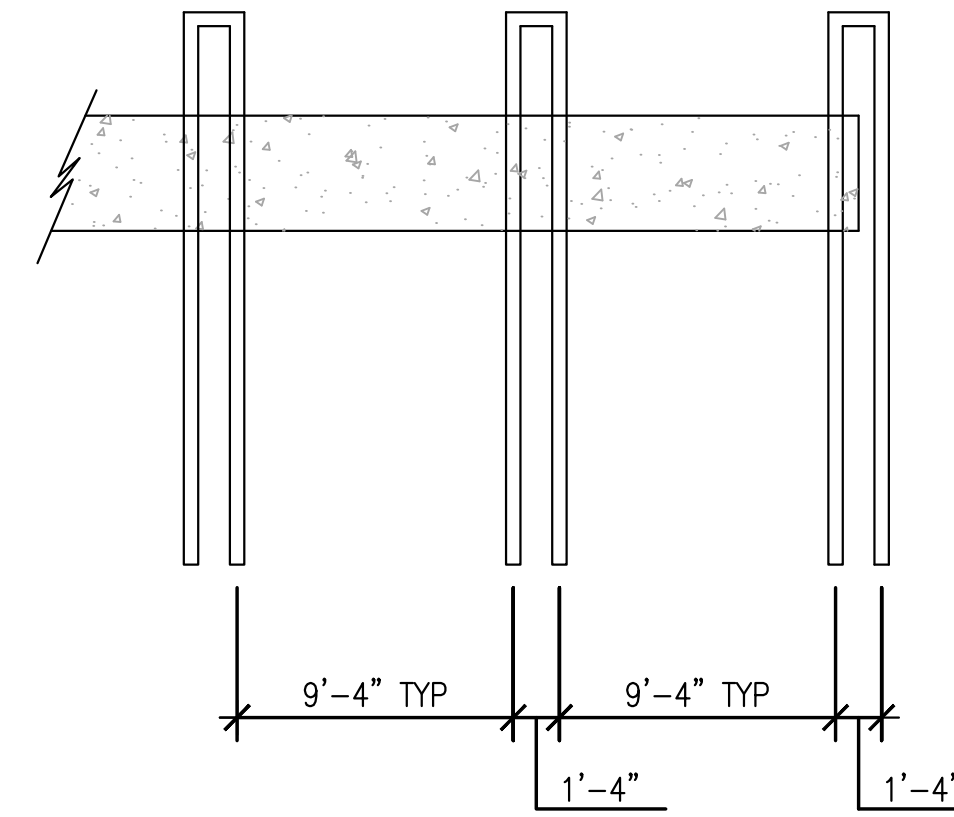


6-30 CURB & GUTTER DETAIL
N.T.S.

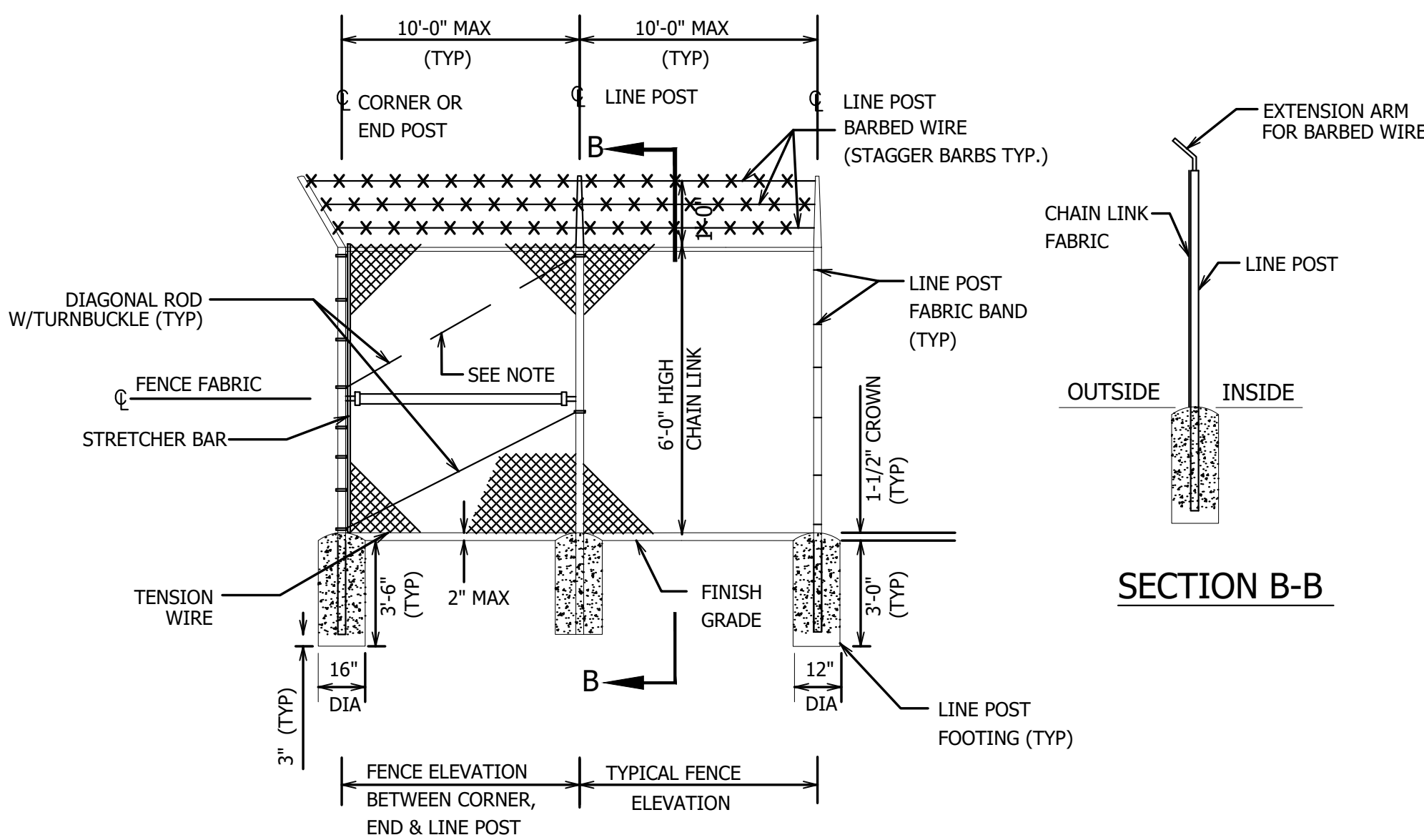


ASPHALT PAVEMENT SECTION
N.T.S.

SOIL CEMENT BLENDED WITH EXISTING CR610 TO EXCEED 350 PSI COMPRESSIVE STRENGTH. ENGINEER TO OBSERVE PROOF ROLLING.

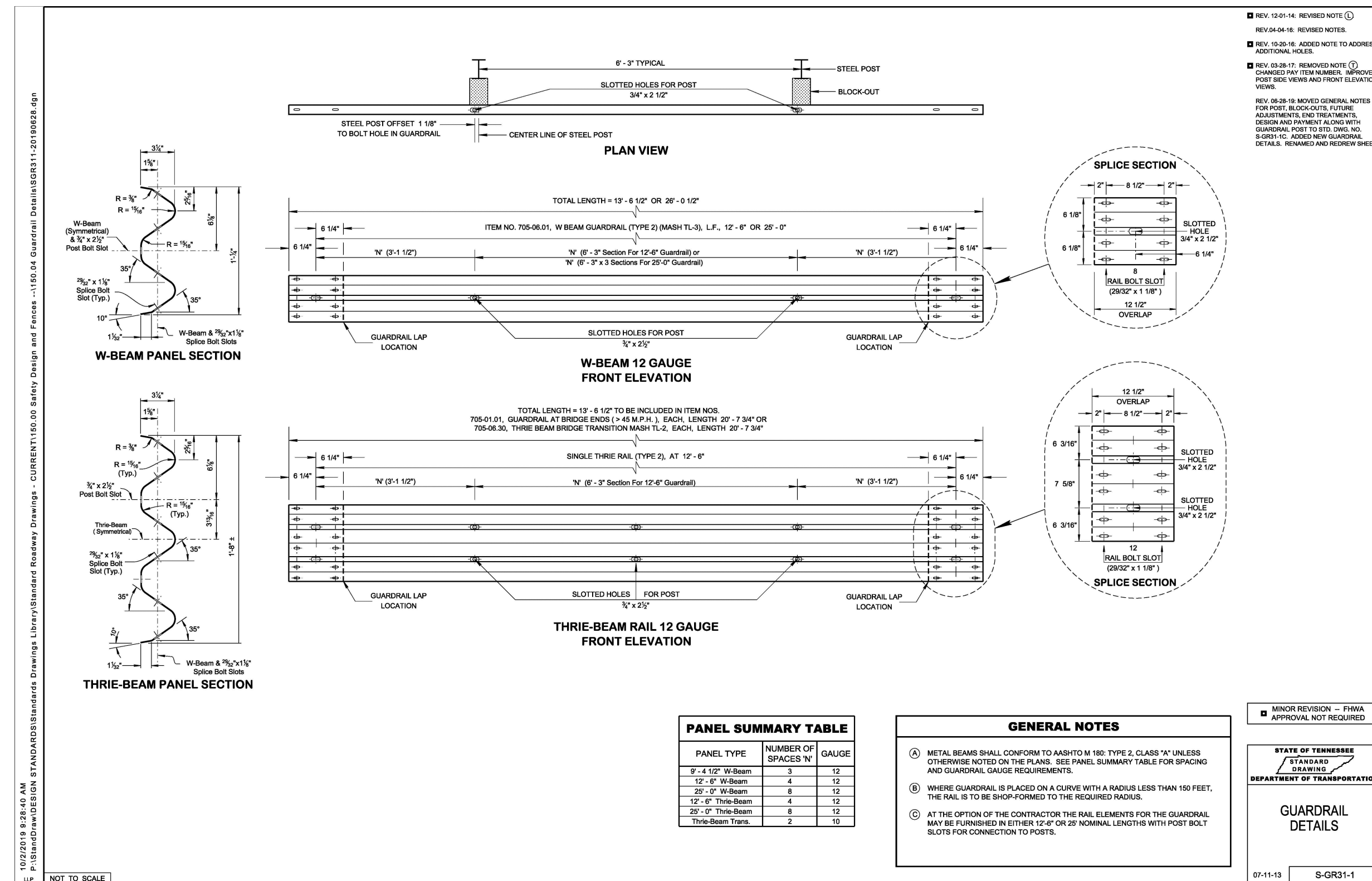


TRUCK STRIPING DETAIL
N.T.S.



NOTE:
POST BRACES SHALL BE PROVIDED AT EACH GATE, CORNER, AND END POST, WHERE FENCE RUNS OF 300 FT. OR MORE TERMINATE AT THE POST. SECOND DIAGONAL ROD SHALL BE INSTALLED AS SHOWN.

FENCE DETAIL
N.T.S.

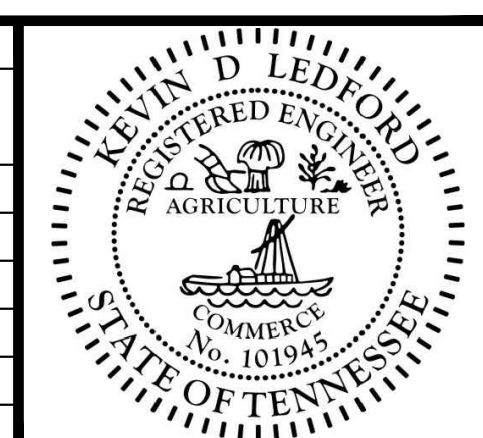


TDOT GUARDRAIL DETAIL
N.T.S.

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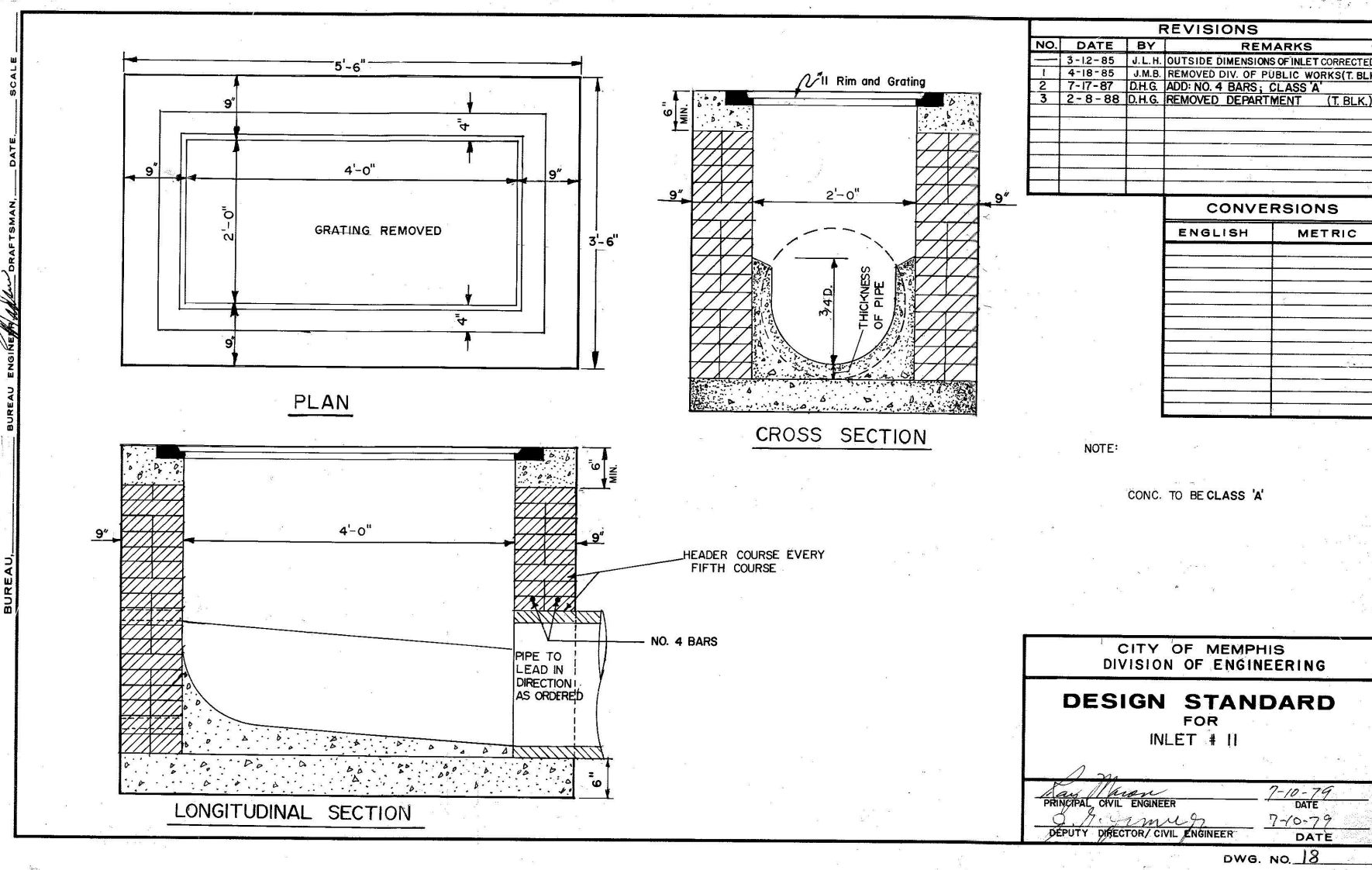
DWG NO.
C-12

REVISION		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE

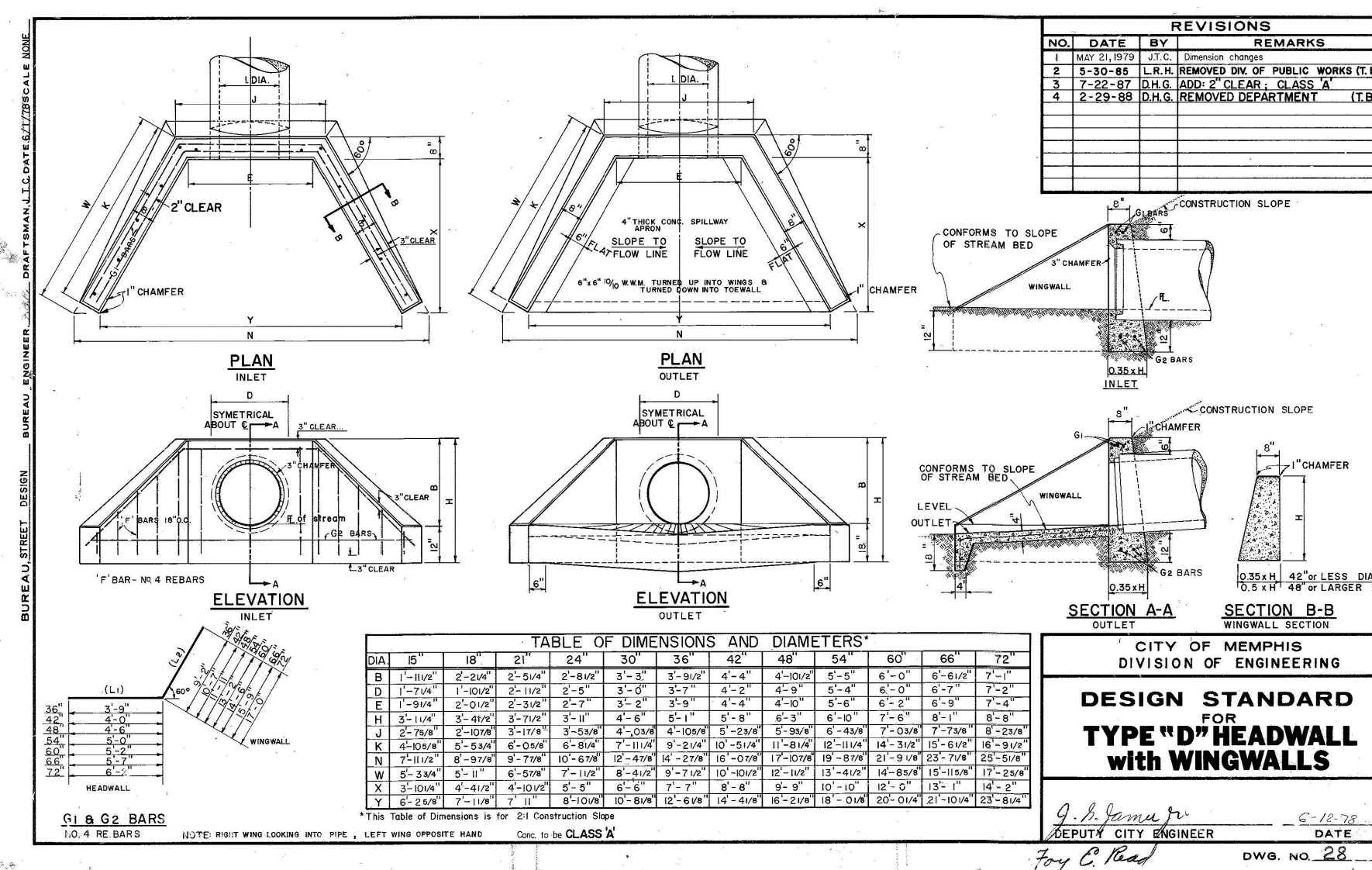


SHEET 1 OF 1
DIVISION OF ENGINEERING
SITE DETAILS
LOCATION: EAST OF 4920 HICKORY HILL ROAD
MEMPHIS, TN
SURVEY: _____ DATE: _____ BOOK: _____
DESIGN BY: KH DATE: 4/19/21 SCALE: N/A
REVIEWED: _____
DEPUTY CITY ENGINEER DATE CITY ENGINEER DATE

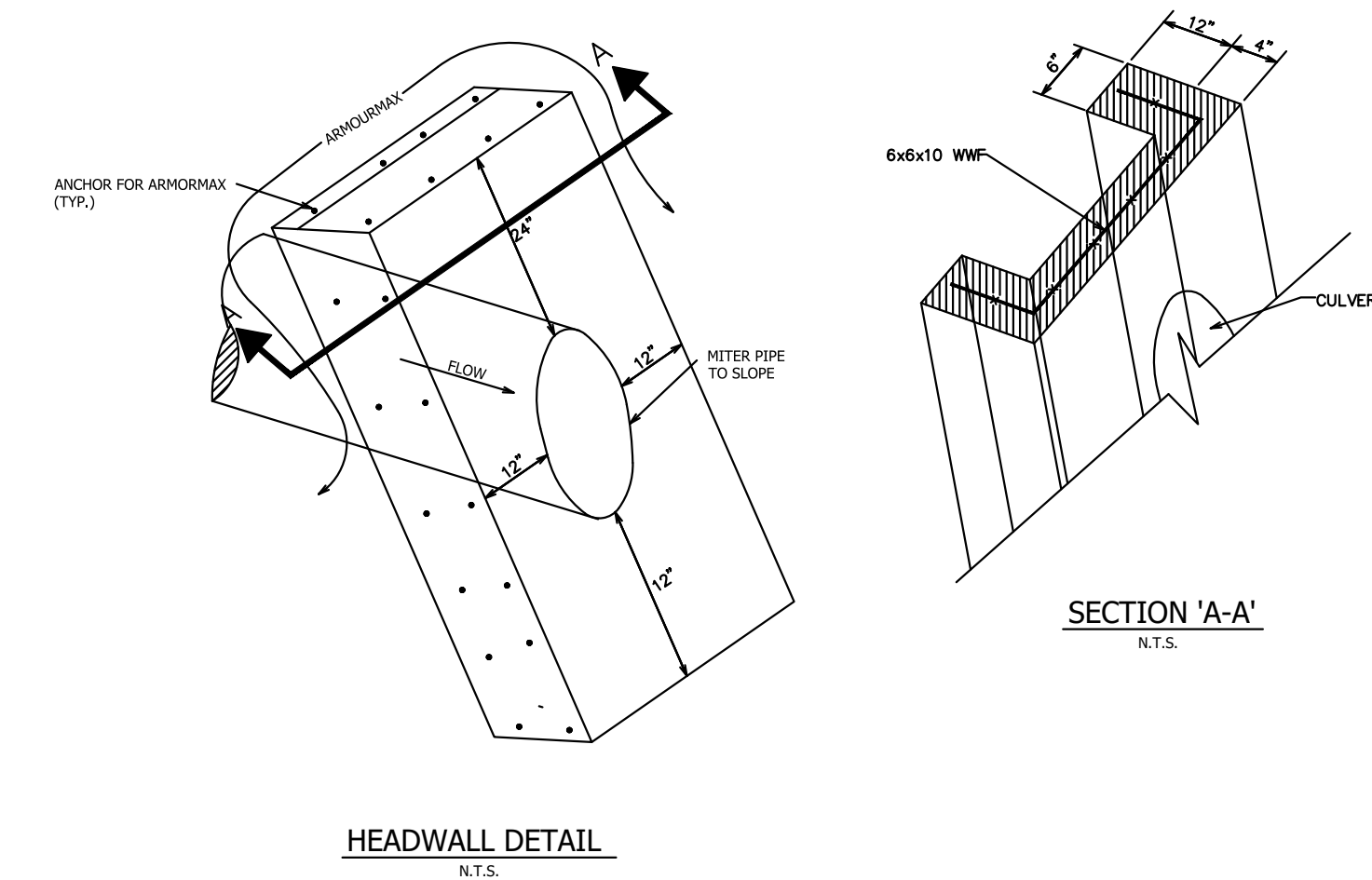
AAA COOPER SITE EXPANSION
DEVELOPER: AAA COOPER TRANSPORTATION
ENGINEER: LEDFORD ENGINEERING AND PLANNING, LLC
LEP:1290-06



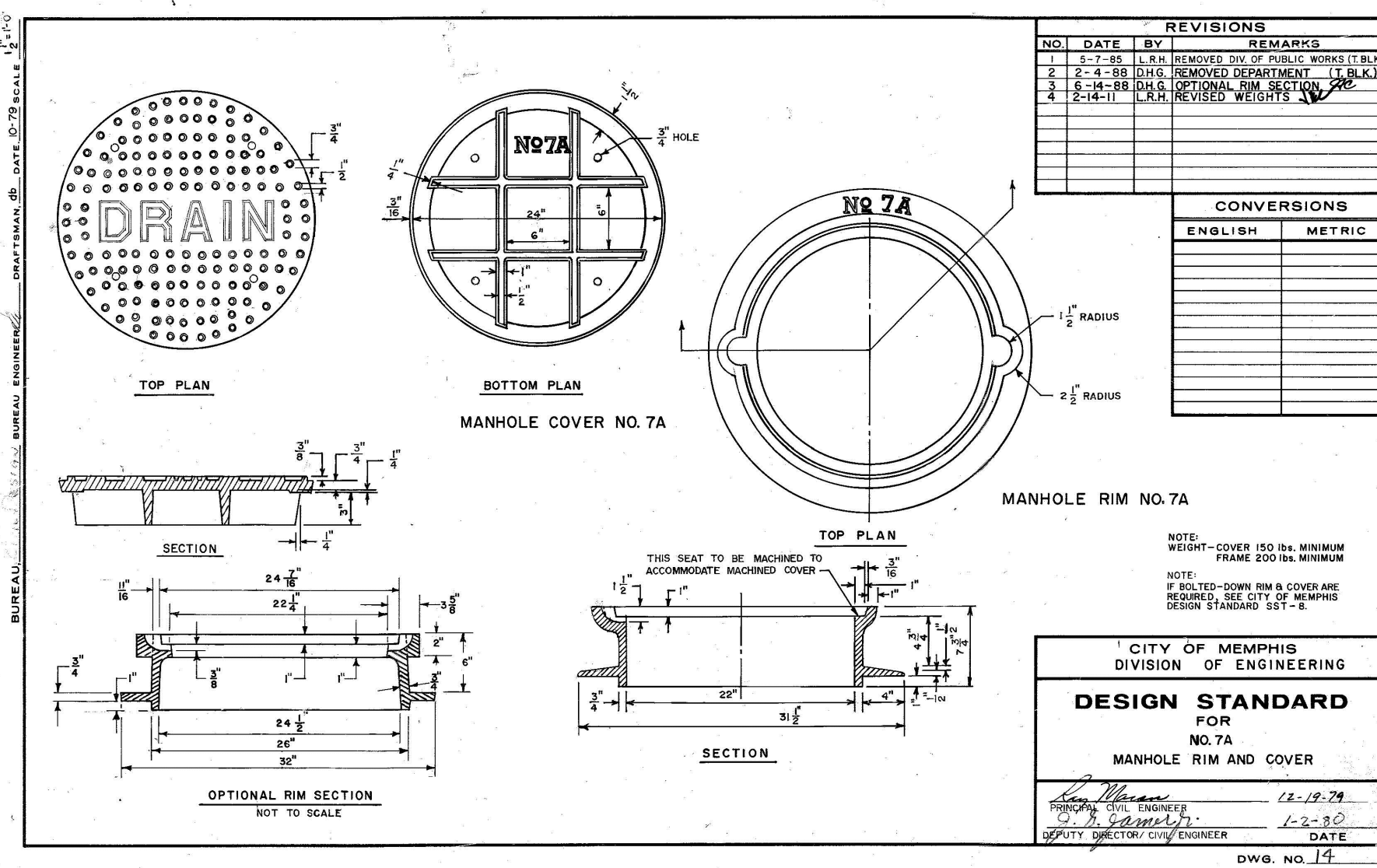
NO. 11 INLET DETAIL
N.T.S.



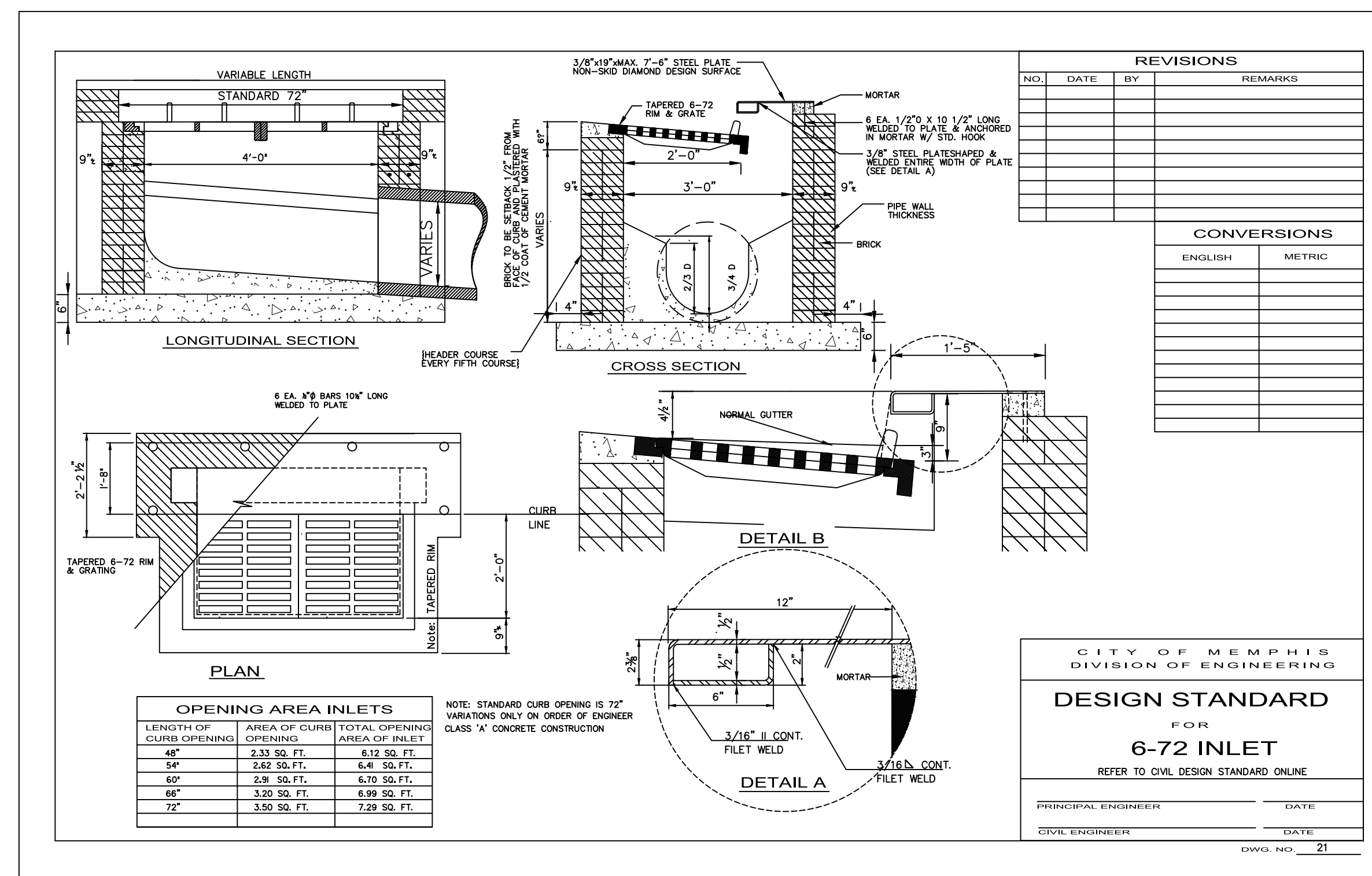
TYPE "D" HEADWALL DETAIL
N.T.S.



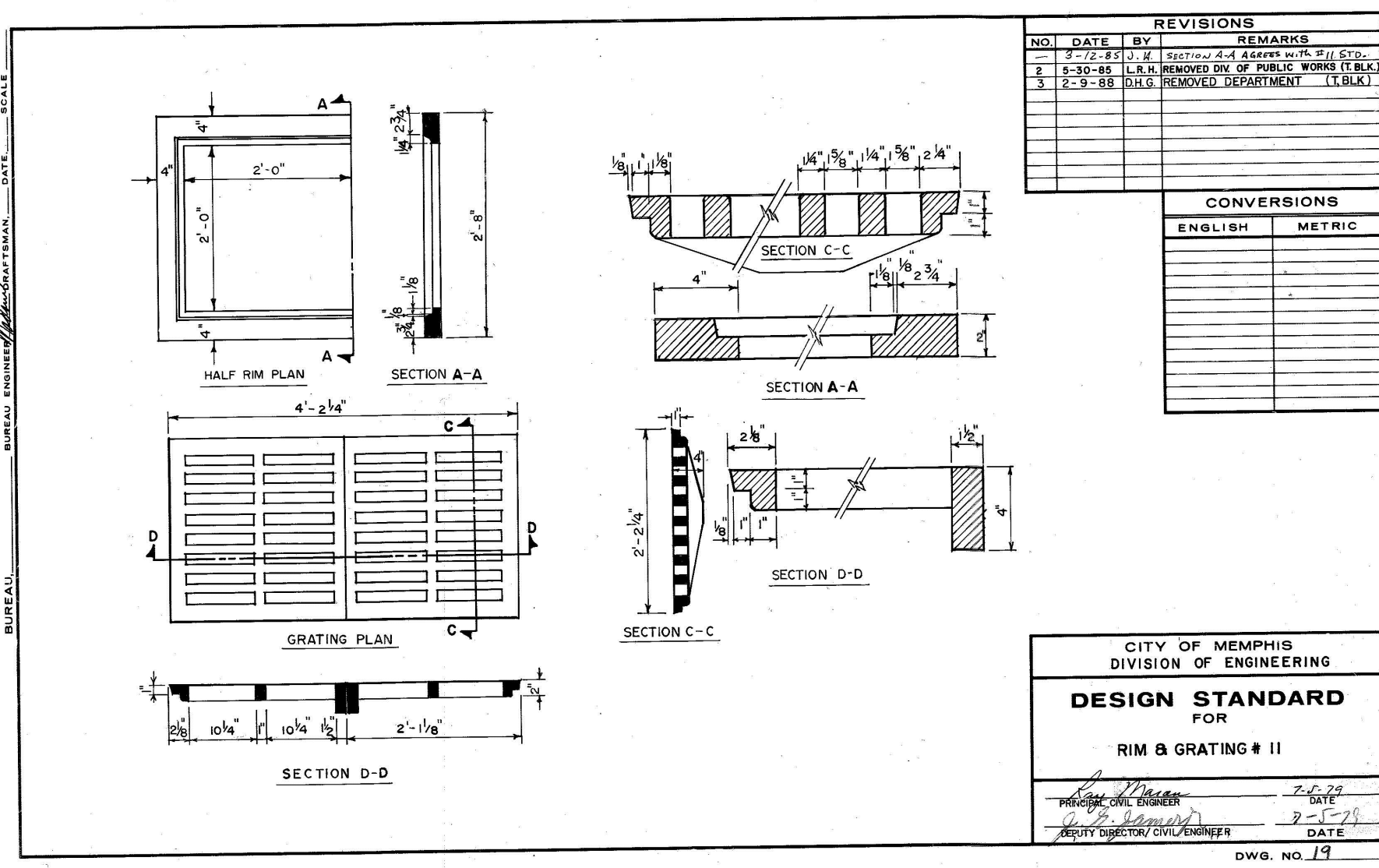
SPECIAL HEADWALL DETAIL
N.T.S.



NO. 7A MANHOLE RIM & COVER DETAIL
N.T.S.



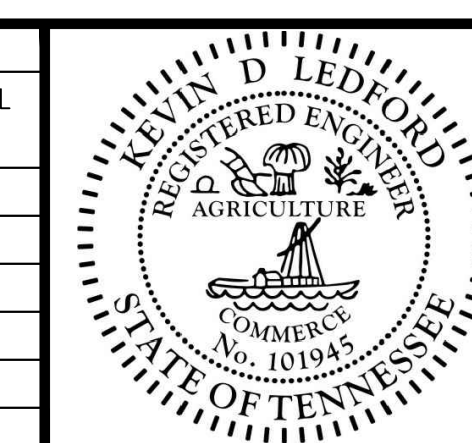
6-72 INLET DETAIL
N.T.S.



NO. 11 RIM & GRATING DETAIL
N.T.S.

DWG. NO.
C-13

REVISION		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE



SHEET 1 OF 1
DIVISION OF ENGINEERING
DRAINAGE DETAILS
LOCATION: EAST OF 4920 HICKORY HILL ROAD
MEMPHIS, TN

AAA COOPER SITE EXPANSION

DEVELOPER: AAA COOPER TRANSPORTATION
ENGINEER: LEDFORD ENGINEERING AND PLANNING, LLC

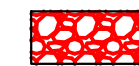

SURVEY: _____ DATE: _____ BOOK: _____
DESIGN BY: KH DATE: 4/19/21 SCALE: N/A
REVIEWED: _____

DEPUTY CITY ENGINEER DATE CITY ENGINEER DATE

CONSTRUCTION ENTRANCE - SEE DETAIL SHEET EC-4.

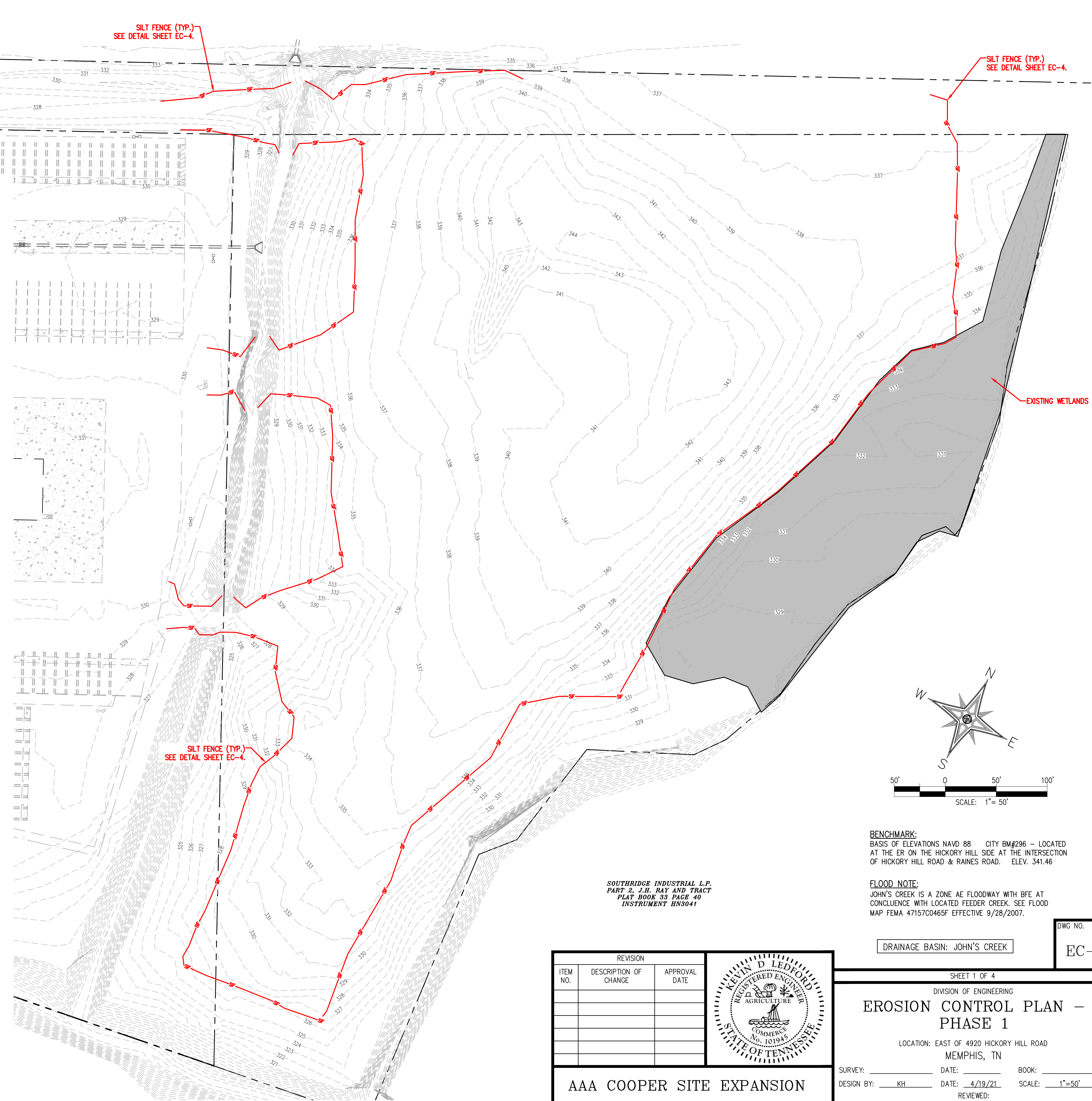
SILT FENCE (TYP.) - SEE DETAIL SHEET EC-4.

SILT FENCE (TYP.) - SEE DETAIL SHEET EC-4.

LEGEND	
	PROPOSED CONSTRUCTION EXIT
	PROPOSED SILT FENCE

GENERAL NOTES:

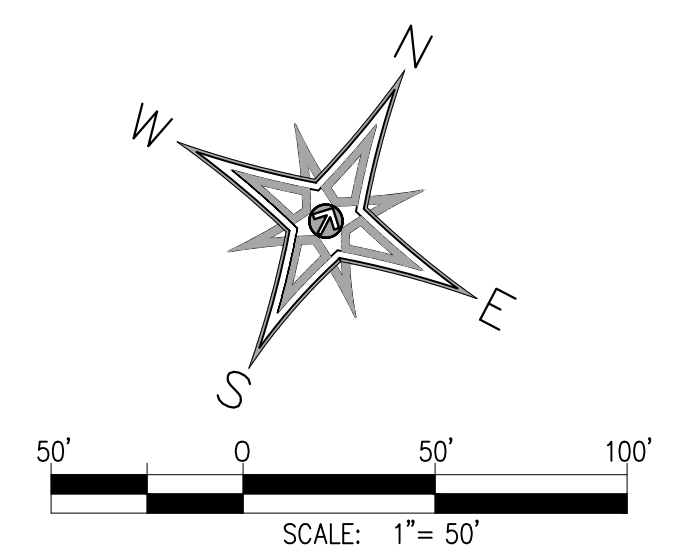
- PROPERTY LINES SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION. GRADING CLEARING AND THE ERECTION OR REMOVAL OF FENCES ALONG PROPERTY LINES SHALL BE FULLY COORDINATED WITH ADJACENT PROPERTY OWNERS.
- NEWLY CUT OR FILLED EMBANKMENTS SHALL BE SODDED SOLID OR SEEDDED AND MULCHED TO ADEQUATELY PREVENT SOIL EROSION.
- THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR THE DAMAGE OR LOSS OF ANY REFERENCE POINTS MONUMENTS, HUBS, AND STAKED LOT CORNERS DURING THE CONSTRUCTION OF HIS WORK AND SHALL BEAR THE COST OF REPLACING SAME.
- THE LOCATION OF ALL EXISTING UTILITIES SHALL BE PROPERLY VERIFIED PRIOR TO CONSTRUCTION. ALL WORK SHALL BE PERFORMED IN A MANNER TO INSURE THAT EXISTING UTILITIES ARE NOT INTERFERED WITH OR DISRUPTED.
- ALL TREES, STUMPS, OBSTRUCTIONS, ETC. REMOVE FROM THE RIGHT-OF-WAY AND BORROW AREAS ARE TO BE DISPOSED OF BY CONTRACTOR AS APPROVED BY THE OWNER, SO AS TO CAUSE NO POLLUTION TO THE ENVIRONMENT.
- ALL FILL SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY WITHIN 3% OPTIMUM MOISTURE CONTENT IN 6" LIFTS UNLESS OTHERWISE SPECIFIED BY THE SOILS REPORT.
- ALL AREAS TO BE FILLED SHALL BE PROPERLY CLEARED AND STRIPPED PRIOR TO BEGINNING THE FILLING OPERATION.
- SAW CUT AND DEMO EXISTING CONCRETE APRON AS REQUIRED.
- ALL DESIGN, CONSTRUCTION AND MATERIAL SHALL BE IN COMPLIANCE WITH THE CITY OF MEMPHIS AND SHELBY COUNTY CONSTRUCTION SPECIFICATIONS AND STANDARDS.
- THE CONTRACTOR SHALL NOTIFY THE SHELBY COUNTY CONSTRUCTION INSPECTION DEPARTMENT A MINIMUM OF 24 HOURS PRIOR TO COMMENCING CONSTRUCTION 901-222-8300.
- CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING UTILITY COMPANIES WHICH MAINTAIN A UTILITY LINE WITHIN THE BOUNDARIES OF THE PROJECT PRIOR TO THE INITIATION OF ANY CONSTRUCTION ON THE PROJECT OR IN THE STREETS BORDERING THE PROJECT. THE CONTRACTOR SHALL ALSO ASSUME THE RESPONSIBILITY FOR ANY DAMAGE TO UTILITY LINES, WHETHER SHOWN ON THE CONSTRUCTION PLANS OR NOT, DURING THE WORK ON THE PROJECT. FOR UNDERGROUND UTILITY LOCATIONS CALL 1-800-351-1111
- ALL AREAS WHICH SHALL REQUIRE FILL SHALL BE PREPARED BY REMOVING ORGANIC MATTER, FOREIGN MATERIAL, AND TOPSOIL. COMPACT THE TOP 6" OF THE CLEARED SUBGRADE TO A MINIMUM OF 95% OF OPTIMUM DENSITY AS PER ASTM D-698. FILL MATERIAL WHICH IS NATURALLY OCCURRING EARTH MATERIAL WITH A PLACTICITY INDEX OF NOT MORE THAN 20 SHALL BE PLACED IN 6 INCH LIFTS. EACH LIFT SHALL BE COMPACTED TO 95% OPTIMUM DENSITY.
- AREAS TO FOUND PAVEMENTS SHALL HAVE A DENSITY OF 100% OPTIMUM FOR THE TOP LIFT.



EXISTING WETLANDS

SILT FENCE (TYP.) - SEE DETAIL SHEET EC-4.

SOUTHRIDGE INDUSTRIAL L.P.
PART 2, J.H. RAY AND TRACT
PLAT BOOK 33 PAGE 40
INSTRUMENT HN3041

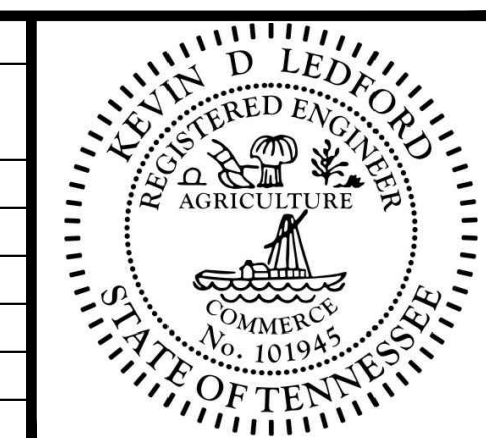


BENCHMARK:
BASIS OF ELEVATIONS NAVD 88 CITY BM#296 - LOCATED AT THE ER ON THE HICKORY HILL SIDE AT THE INTERSECTION OF HICKORY HILL ROAD & RAINES ROAD. ELEV. 341.46

FLOOD NOTE:
JOHN'S CREEK IS A ZONE AE FLOODWAY WITH BFE AT CONCLUENCE WITH LOCATED FEEDER CREEK. SEE FLOOD MAP FEMA 47157C0465F EFFECTIVE 9/28/2007.

DRAINAGE BASIN: JOHN'S CREEK
EC-1

REVISION		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE

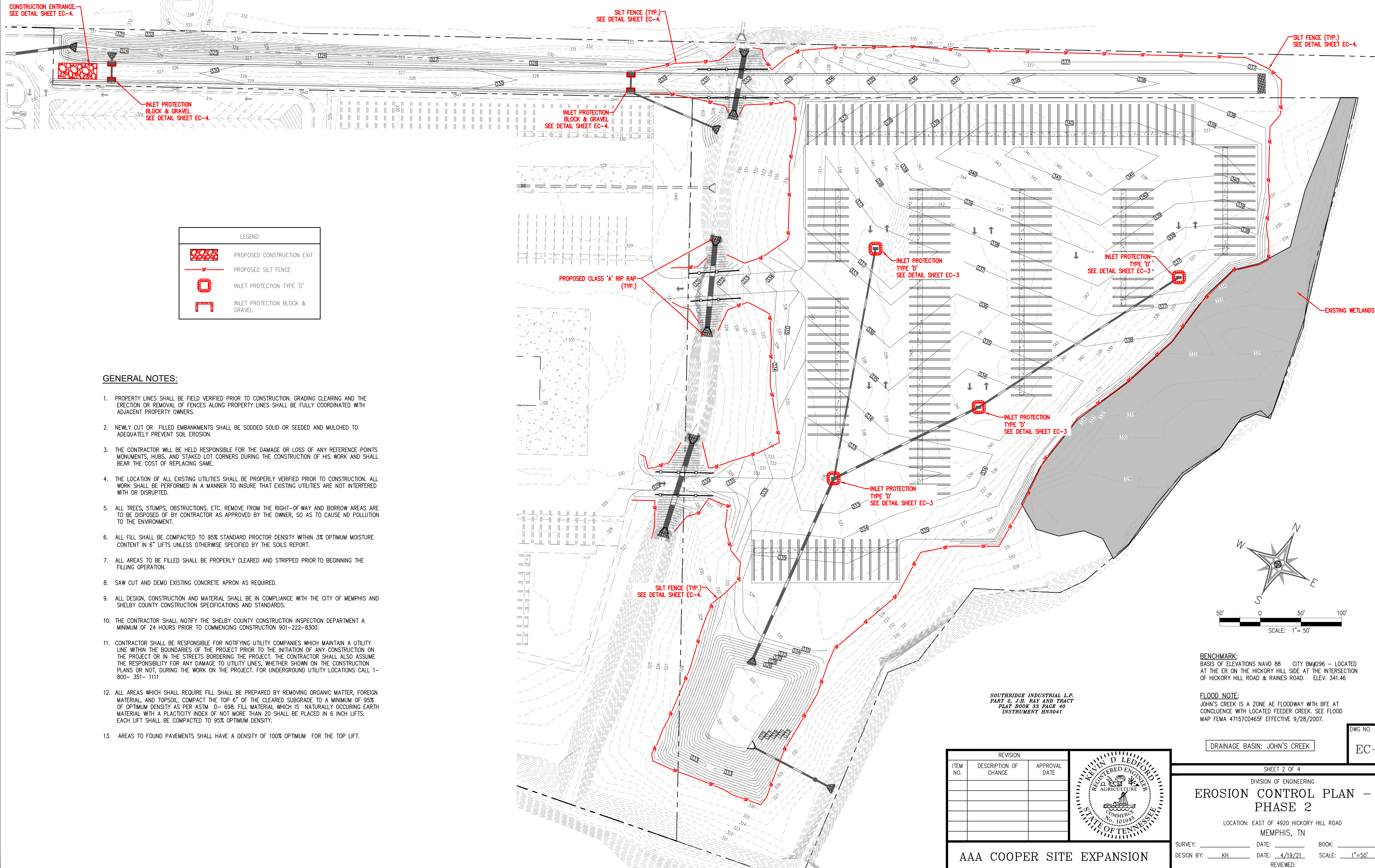


AAA COOPER SITE EXPANSION

DEVELOPER: AAA COOPER TRANSPORTATION
ENGINEER: LEDFORD ENGINEERING AND PLANNING, LLC

SHEET 1 OF 4
DIVISION OF ENGINEERING
EROSION CONTROL PLAN - PHASE 1
LOCATION: EAST OF 4920 HICKORY HILL ROAD
MEMPHIS, TN
SURVEY: _____ DATE: _____ BOOK: _____
DESIGN BY: KH DATE: 4/19/21 SCALE: 1"=50'
REVIEWED: _____
DEPUTY CITY ENGINEER DATE CITY ENGINEER DATE

Z:\1290-06\CONSTRUCTION DRAWINGS\EC-1 EROSION CONTROL PHASE 1.dwg



LEGEND

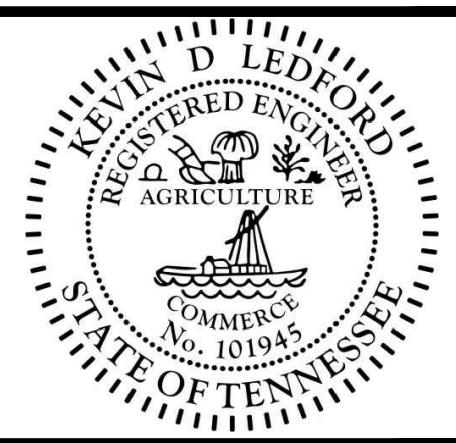
	PROPOSED CONSTRUCTION EXIT
	PROPOSED SILT FENCE
	INLET PROTECTION TYPE 'D'
	INLET PROTECTION BLOCK & GRAVEL

GENERAL NOTES:

- PROPERTY LINES SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION. GRADING CLEARING AND THE ERECTION OR REMOVAL OF FENCES ALONG PROPERTY LINES SHALL BE FULLY COORDINATED WITH ADJACENT PROPERTY OWNERS.
- NEWLY CUT OR FILLED EMBANKMENTS SHALL BE SODDED SOLID OR SEEDED AND MULCHED TO ADEQUATELY PREVENT SOIL EROSION.
- THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR THE DAMAGE OR LOSS OF ANY REFERENCE POINTS MONUMENTS, HUBS, AND STAKED LOT CORNERS DURING THE CONSTRUCTION OF HIS WORK AND SHALL BEAR THE COST OF REPLACING SAME.
- THE LOCATION OF ALL EXISTING UTILITIES SHALL BE PROPERLY VERIFIED PRIOR TO CONSTRUCTION. ALL WORK SHALL BE PERFORMED IN A MANNER TO INSURE THAT EXISTING UTILITIES ARE NOT INTERFERED WITH OR DISRUPTED.
- ALL TREES, STUMPS, OBSTRUCTIONS, ETC. REMOVE FROM THE RIGHT-OF-WAY AND BORROW AREAS ARE TO BE DISPOSED OF BY CONTRACTOR AS APPROVED BY THE OWNER, SO AS TO CAUSE NO POLLUTION TO THE ENVIRONMENT.
- ALL FILL SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY WITHIN 3% OPTIMUM MOISTURE CONTENT IN 6" LIFTS UNLESS OTHERWISE SPECIFIED BY THE SOILS REPORT.
- ALL AREAS TO BE FILLED SHALL BE PROPERLY CLEARED AND STRIPPED PRIOR TO BEGINNING THE FILLING OPERATION.
- SAW CUT AND DEMO EXISTING CONCRETE APRON AS REQUIRED.
- ALL SHELVING, CONSTRUCTION AND MATERIAL SHALL BE IN COMPLIANCE WITH THE CITY OF MEMPHIS AND SHELBY COUNTY CONSTRUCTION SPECIFICATIONS AND STANDARDS.
- THE CONTRACTOR SHALL NOTIFY THE SHELBY COUNTY CONSTRUCTION INSPECTION DEPARTMENT A MINIMUM OF 24 HOURS PRIOR TO COMMENCING CONSTRUCTION 901-222-8300.
- CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING UTILITY COMPANIES WHICH MAINTAIN A UTILITY LINE WITHIN THE BOUNDARIES OF THE PROJECT PRIOR TO THE INITIATION OF ANY CONSTRUCTION ON THE PROJECT OR IN THE STREETS BORDERING THE PROJECT. THE CONTRACTOR SHALL ALSO ASSUME THE RESPONSIBILITY FOR ANY DAMAGE TO UTILITY LINES, WHETHER SHOWN ON THE CONSTRUCTION PLANS OR NOT, DURING THE WORK ON THE PROJECT. FOR UNDERGROUND UTILITY LOCATIONS CALL 1-800-351-1111
- ALL AREAS WHICH SHALL REQUIRE FILL SHALL BE PREPARED BY REMOVING ORGANIC MATTER, FOREIGN MATERIAL, AND TOPSOIL. COMPACT THE TOP 6" OF THE CLEARED SUBGRADE TO A MINIMUM OF 95% OF OPTIMUM DENSITY AS PER ASTM D-698. FILL MATERIAL WHICH IS NATURALLY OCCURRING EARTH MATERIAL WITH A PLACTICITY INDEX OF NOT MORE THAN 20 SHALL BE PLACED IN 6 INCH LIFTS. EACH LIFT SHALL BE COMPACTED TO 95% OPTIMUM DENSITY.
- AREAS TO FOUND PAVEMENTS SHALL HAVE A DENSITY OF 100% OPTIMUM FOR THE TOP LIFT.

SOUTHRIDGE INDUSTRIAL L.P.
PART 2, J.H. RAY AND TRACT
PLAT BOOK 88 PAGE 40
INSTRUMENT HN3041

REVISION		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE



AAA COOPER SITE EXPANSION

DEVELOPER: AAA COOPER TRANSPORTATION
ENGINEER: LEDFORD ENGINEERING AND PLANNING, LLC

DRAINAGE BASIN: JOHN'S CREEK

DWG NO.
EC-2

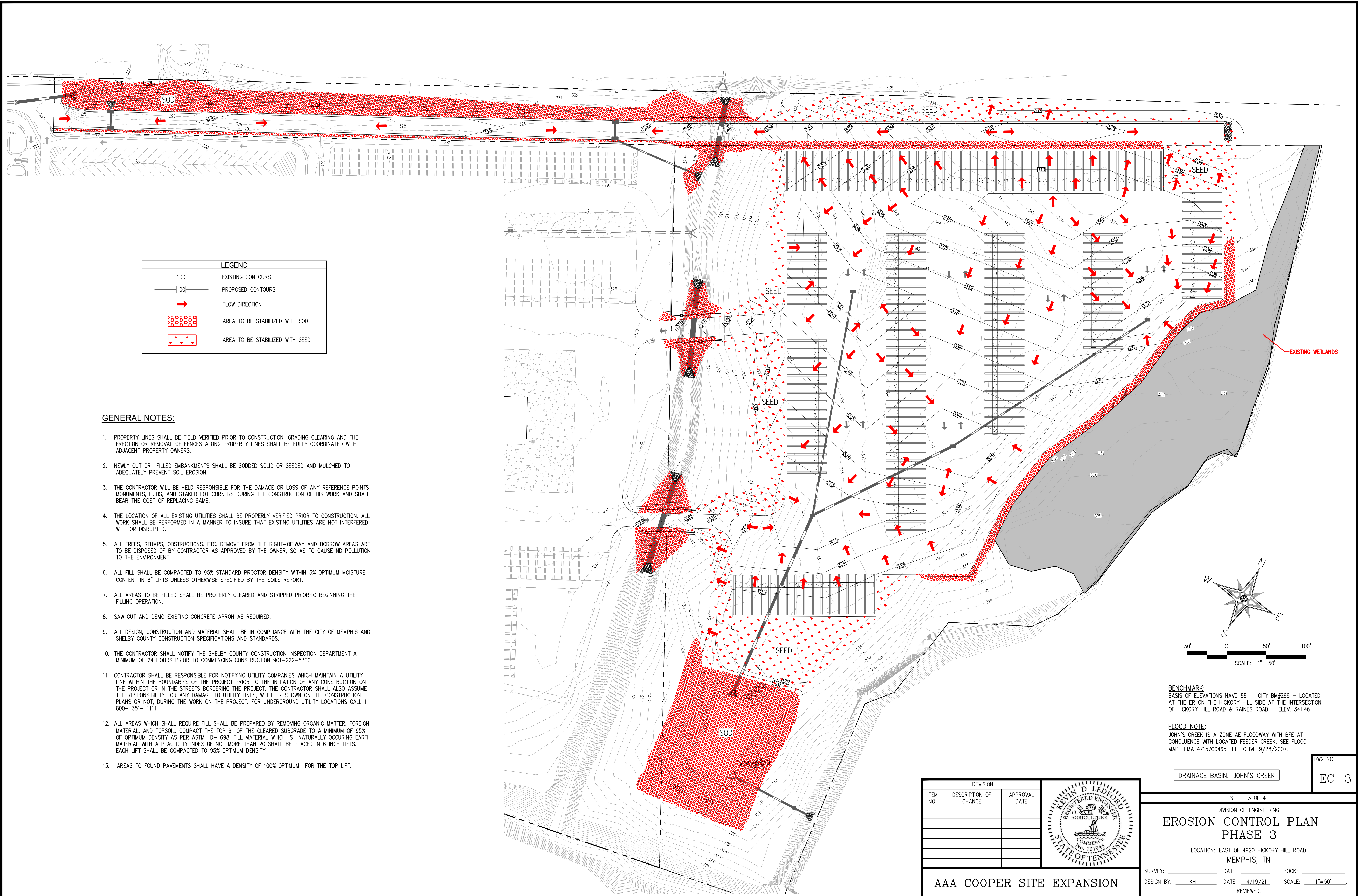
SHEET 2 OF 4
DIVISION OF ENGINEERING
EROSION CONTROL PLAN - PHASE 2

LOCATION: EAST OF 4920 HICKORY HILL ROAD
MEMPHIS, TN

SURVEY: _____ DATE: _____ BOOK: _____
DESIGN BY: KH DATE: 4/19/21 SCALE: 1"=50'
REVIEWED: _____

DEPUTY CITY ENGINEER DATE CITY ENGINEER DATE

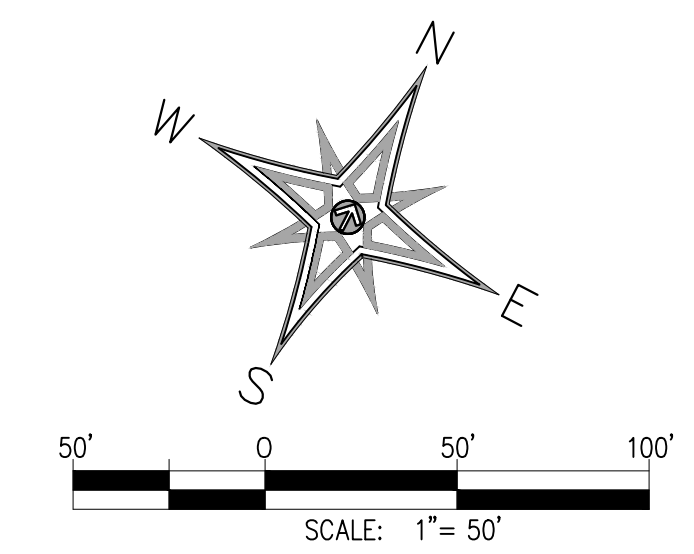
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LEGEND	
---100---	EXISTING CONTOURS
—100—	PROPOSED CONTOURS
→	FLOW DIRECTION
[Red Dotted Pattern]	AREA TO BE STABILIZED WITH SOD
[Red Dashed Pattern]	AREA TO BE STABILIZED WITH SEED

GENERAL NOTES:

- PROPERTY LINES SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION. GRADING CLEARING AND THE ERECTION OR REMOVAL OF FENCES ALONG PROPERTY LINES SHALL BE FULLY COORDINATED WITH ADJACENT PROPERTY OWNERS.
- NEWLY CUT OR FILLED EMBANKMENTS SHALL BE SODDED SOLID OR SEEDED AND MULCHED TO ADEQUATELY PREVENT SOIL EROSION.
- THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR THE DAMAGE OR LOSS OF ANY REFERENCE POINTS MONUMENTS, HUBS, AND STAKED LOT CORNERS DURING THE CONSTRUCTION OF HIS WORK AND SHALL BEAR THE COST OF REPLACING SAME.
- THE LOCATION OF ALL EXISTING UTILITIES SHALL BE PROPERLY VERIFIED PRIOR TO CONSTRUCTION. ALL WORK SHALL BE PERFORMED IN A MANNER TO INSURE THAT EXISTING UTILITIES ARE NOT INTERFERED WITH OR DISRUPTED.
- ALL TREES, STUMPS, OBSTRUCTIONS, ETC. REMOVE FROM THE RIGHT-OF-WAY AND BORROW AREAS ARE TO BE DISPOSED OF BY CONTRACTOR AS APPROVED BY THE OWNER, SO AS TO CAUSE NO POLLUTION TO THE ENVIRONMENT.
- ALL FILL SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY WITHIN 3% OPTIMUM MOISTURE CONTENT IN 6" LIFTS UNLESS OTHERWISE SPECIFIED BY THE SOILS REPORT.
- ALL AREAS TO BE FILLED SHALL BE PROPERLY CLEARED AND STRIPPED PRIOR TO BEGINNING THE FILLING OPERATION.
- SAW CUT AND DEMO EXISTING CONCRETE APRON AS REQUIRED.
- ALL DESIGN, CONSTRUCTION AND MATERIAL SHALL BE IN COMPLIANCE WITH THE CITY OF MEMPHIS AND SHELBY COUNTY CONSTRUCTION SPECIFICATIONS AND STANDARDS.
- THE CONTRACTOR SHALL NOTIFY THE SHELBY COUNTY CONSTRUCTION INSPECTION DEPARTMENT A MINIMUM OF 24 HOURS PRIOR TO COMMENCING CONSTRUCTION 901-222-8300.
- CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING UTILITY COMPANIES WHICH MAINTAIN A UTILITY LINE WITHIN THE BOUNDARIES OF THE PROJECT PRIOR TO THE INITIATION OF ANY CONSTRUCTION ON THE PROJECT OR IN THE STREETS BORDERING THE PROJECT. THE CONTRACTOR SHALL ALSO ASSUME THE RESPONSIBILITY FOR ANY DAMAGE TO UTILITY LINES, WHETHER SHOWN ON THE CONSTRUCTION PLANS OR NOT, DURING THE WORK ON THE PROJECT. FOR UNDERGROUND UTILITY LOCATIONS CALL 1-800-351-1111
- ALL AREAS WHICH SHALL REQUIRE FILL SHALL BE PREPARED BY REMOVING ORGANIC MATTER, FOREIGN MATERIAL, AND TOPSOIL. COMPACT THE TOP 6" OF THE CLEARED SUBGRADE TO A MINIMUM OF 95% OF OPTIMUM DENSITY AS PER ASTM D-698. FILL MATERIAL WHICH IS NATURALLY OCCURRING EARTH MATERIAL WITH A PLACTICITY INDEX OF NOT MORE THAN 20 SHALL BE PLACED IN 6 INCH LIFTS. EACH LIFT SHALL BE COMPACTED TO 95% OPTIMUM DENSITY.
- AREAS TO FOUND PAVEMENTS SHALL HAVE A DENSITY OF 100% OPTIMUM FOR THE TOP LIFT.



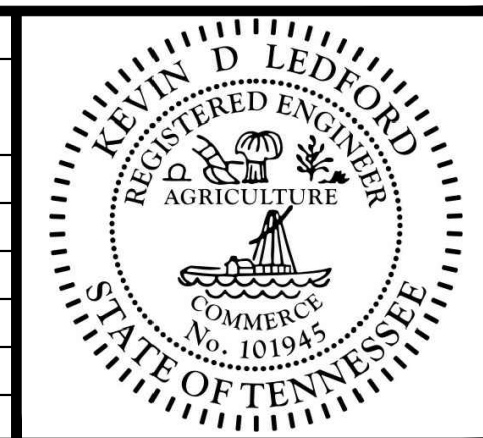
BENCHMARK:
BASIS OF ELEVATIONS NAVD 88 CITY BM#296 - LOCATED AT THE ER ON THE HICKORY HILL SIDE AT THE INTERSECTION OF HICKORY HILL ROAD & RAINES ROAD. ELEV. 341.46

FLOOD NOTE:
JOHN'S CREEK IS A ZONE AE FLOODWAY WITH BFE AT CONJUGLENCE WITH LOCATED FEEDER CREEK. SEE FLOOD MAP FEMA 47157CD465F EFFECTIVE 9/28/2007.

DRAINAGE BASIN: JOHN'S CREEK

DWG NO.
EC-3

REVISION		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE



AAA COOPER SITE EXPANSION

DEVELOPER: AAA COOPER TRANSPORTATION
ENGINEER: LEDFORD ENGINEERING AND PLANNING, LLC

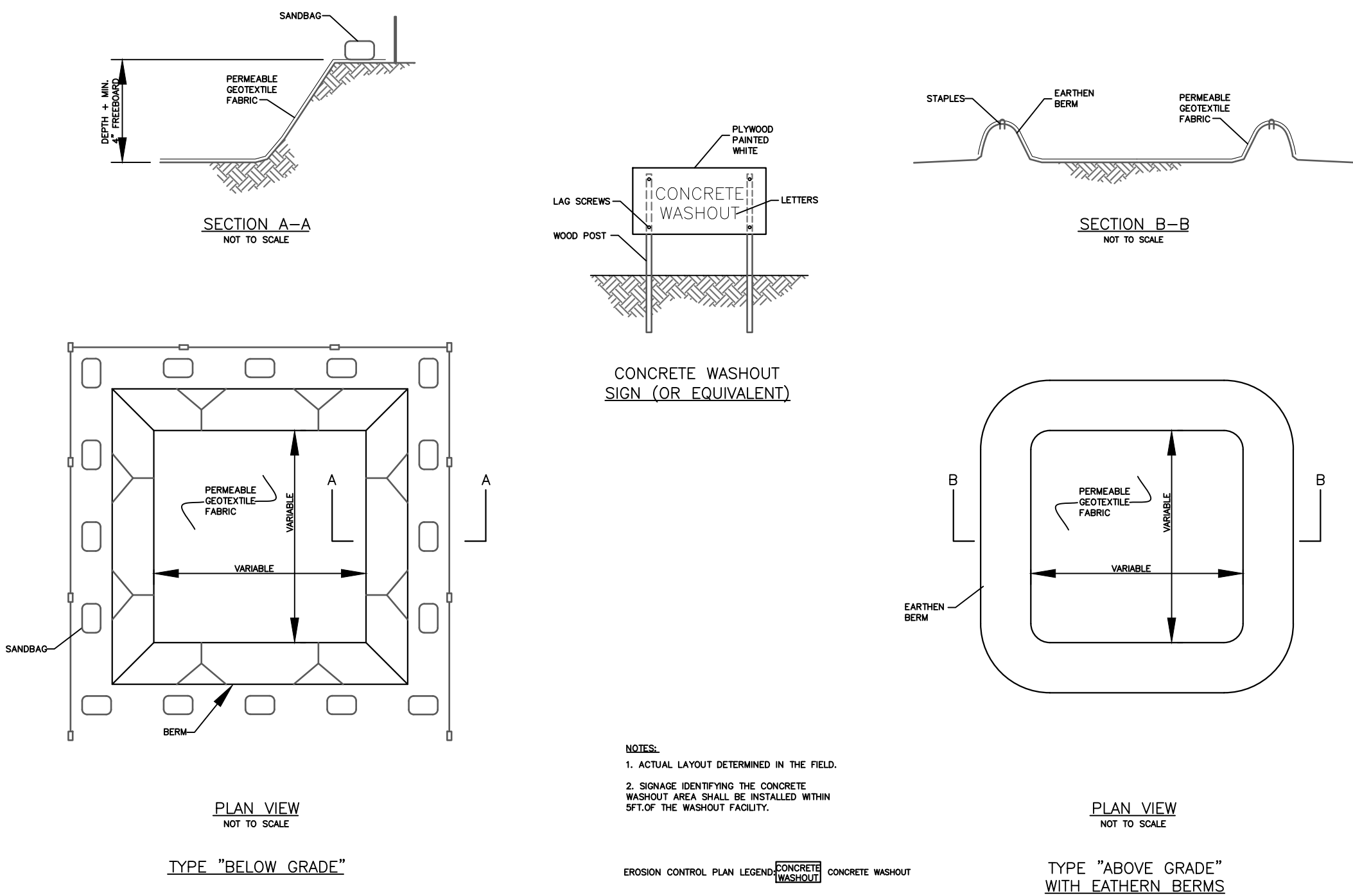
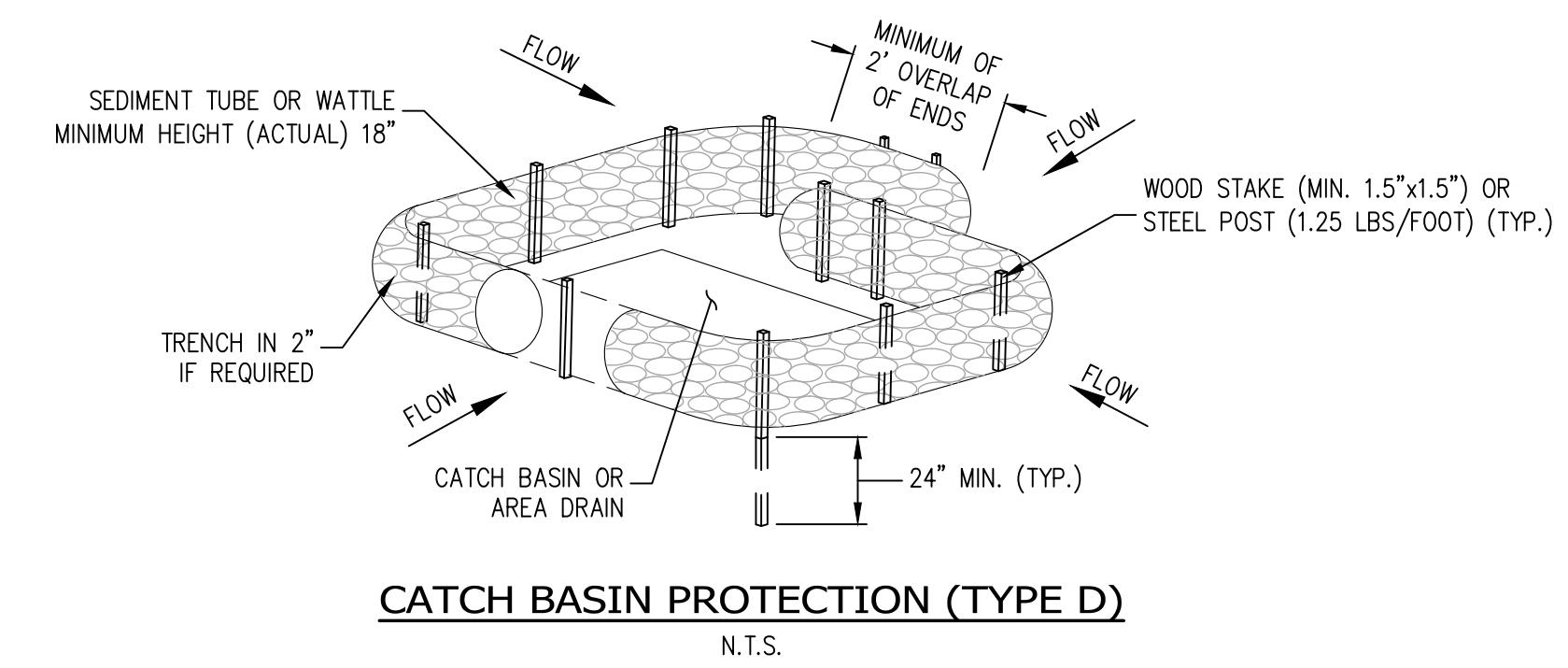
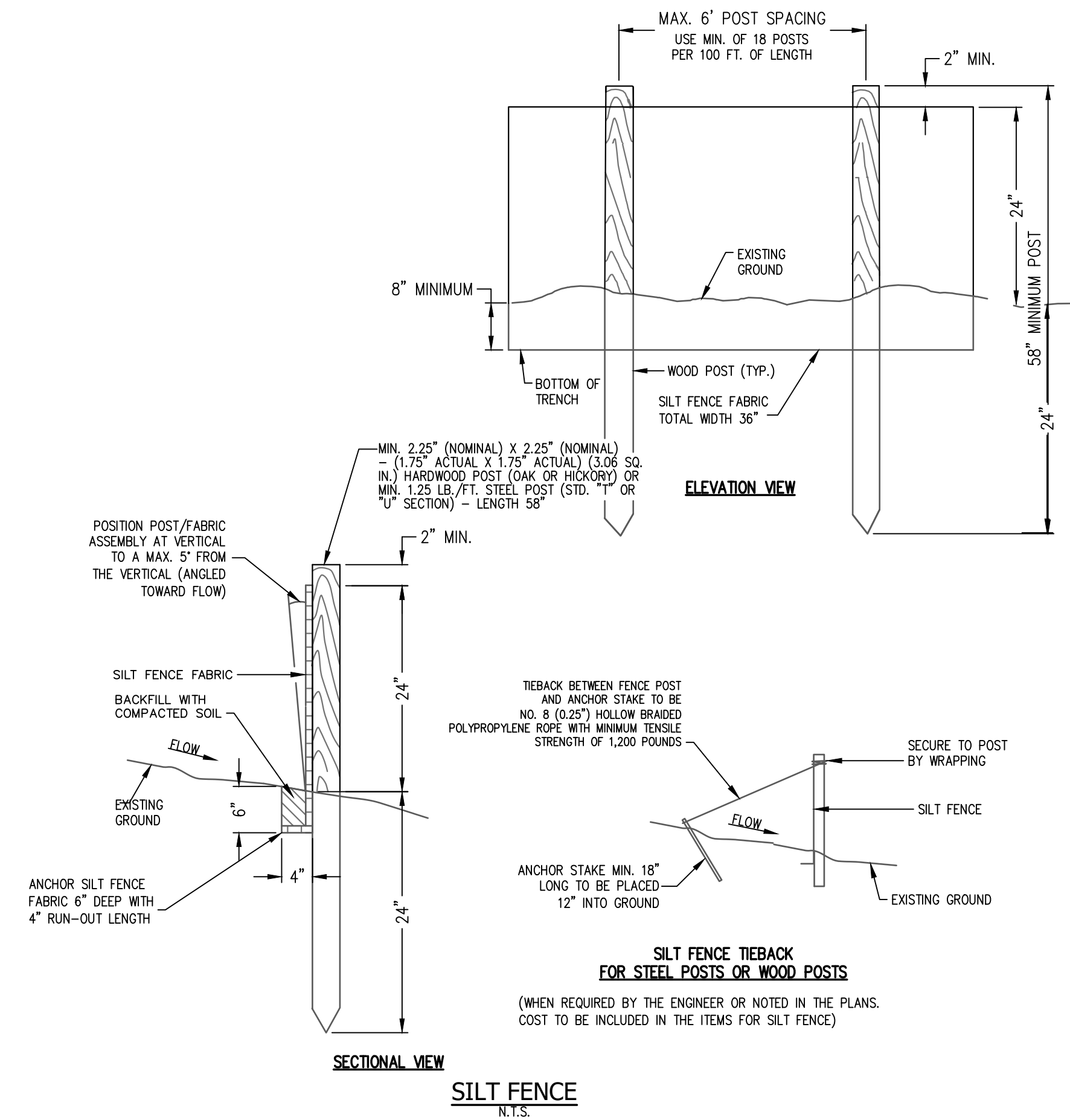
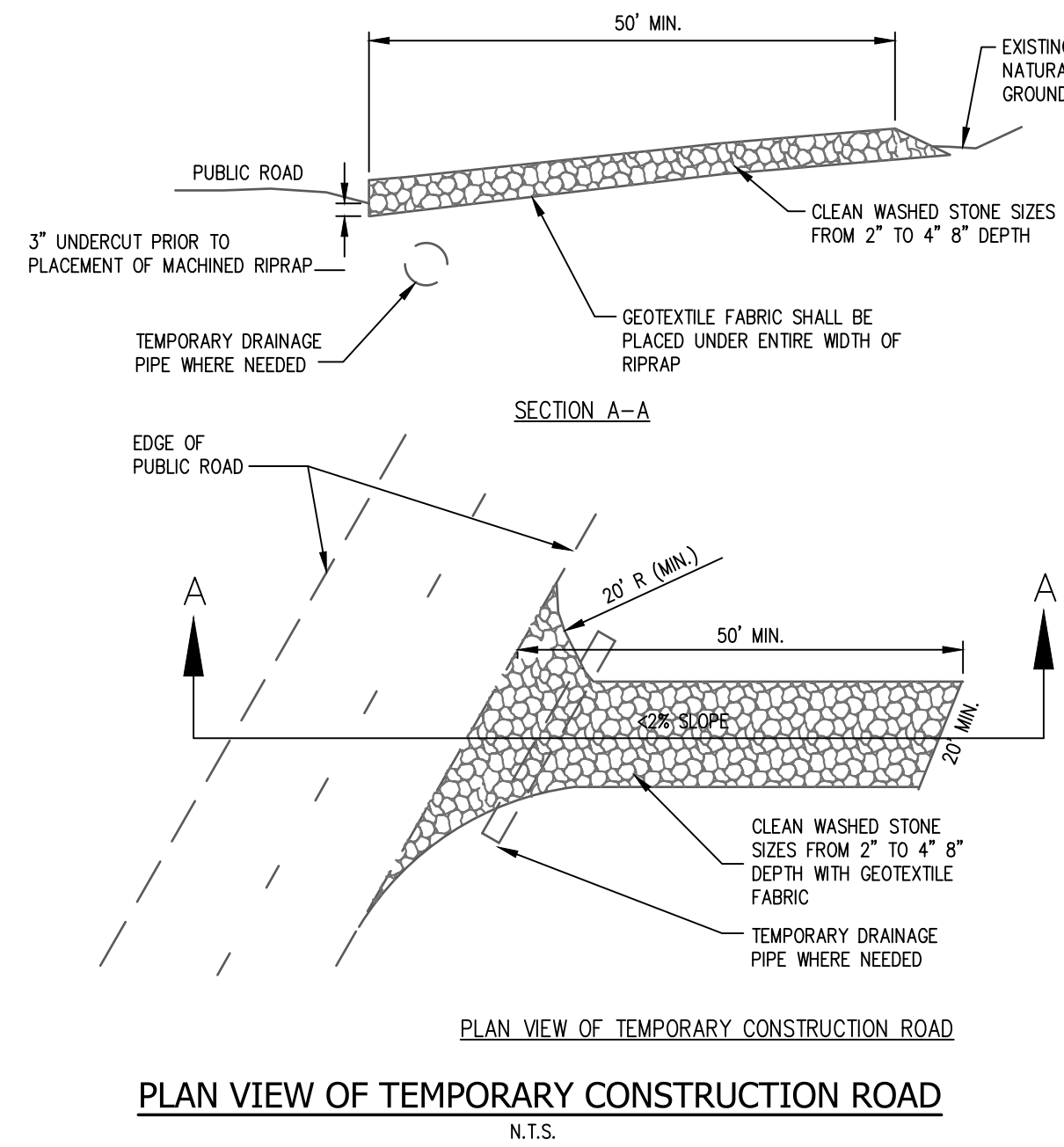
SHEET 3 OF 4
DIVISION OF ENGINEERING
EROSION CONTROL PLAN - PHASE 3

LOCATION: EAST OF 4920 HICKORY HILL ROAD
MEMPHIS, TN

SURVEY: _____ DATE: _____ BOOK: _____
DESIGN BY: KH DATE: 4/19/21 SCALE: 1"=50'
REVIEWED: _____

DEPUTY CITY ENGINEER DATE CITY ENGINEER DATE

Z:\1290\06\CONSTRUCTION DRAWINGS\EC-3 EROSION CONTROL PHASE 3.dwg



NOTES:
 1. ACTUAL LAYOUT DETERMINED IN THE FIELD.
 2. SIGNS IDENTIFYING THE CONCRETE WASHOUT AREA SHALL BE INSTALLED WITHIN 5 FT OF THE WASHOUT FACILITY.

WASHOUT NOTES

- NO WASHING OUT OF CONCRETE TRUCKS OR WASHING OF TRUCKS FROM EXPOSED AGGREGATE CONCRETE INTO STORM DRAINS, OPEN STREETS, STREETS, OR STORMS IS ALLOWED.
- EXCESS CONCRETE IS NOT ALLOWED TO BE DUMPED ON-SITE, EXCEPT IN DESIGNATED TEMPORARY CONCRETE WASHOUT PIT AREAS.
- ON-SITE TEMPORARY CONCRETE WASHOUT AREAS WILL BE LOCATED AT LEAST 50 FEET FROM STORM DRAINS, OPEN STREETS, OR WATER BODIES AS DETERMINED IN THE FIELD.
- TEMPORARY CONCRETE WASHOUT FACILITIES WILL BE CONSTRUCTED AND MAINTAINED IN SUFFICIENT QUANTITY AND SIZE TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS.
- WASHOUT FACILITIES WILL BE CLEANED OUT OR REPLACED ONCE THE WASHOUT IS 75% FULL.
- PLASTIC LINING MATERIAL WILL BE MINIMUM OF 10 MIL POLYETHYLENE SHEETING AND WILL BE FREE OF HOLES, TEARS, OR OTHER DEFECTS.
- WHEN WASHOUT FACILITIES ARE NO LONGER REQUIRED FOR WORK, THE HARDENED CONCRETE WILL BE REMOVED AND DISPOSED OF OFF-SITE. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES WILL BE REMOVED FROM THE SITE AND DISPOSED OF.

CONCRETE WASHOUT
N.T.S.

BENCHMARK:
 BASIS OF ELEVATIONS NAVD 88 CITY BM#296 - LOCATED AT THE ER ON THE HICKORY HILL SIDE AT THE INTERSECTION OF HICKORY HILL ROAD & RAINES ROAD. ELEV. 341.46

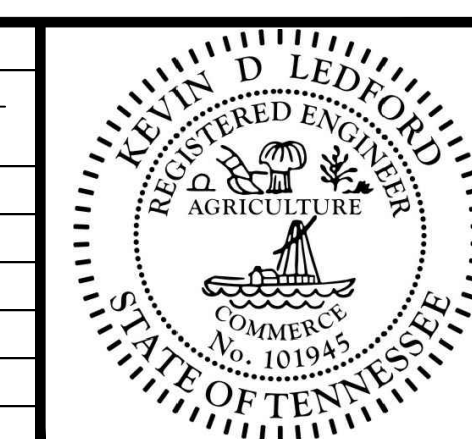
FLOOD NOTE:
 JOHN'S CREEK IS A ZONE AE FLOODWAY WITH BFE AT CONJUNCTION WITH LOCATED FEEDER CREEK. SEE FLOOD MAP FEMA 4715700465F EFFECTIVE 9/28/2007.

DRAINAGE BASIN: JOHN'S CREEK

DWG NO.

EC-4

REVISION		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE



AAA COOPER SITE EXPANSION

DEVELOPER: AAA COOPER TRANSPORTATION
 ENGINEER: LEDFORD ENGINEERING AND PLANNING, LLC

LEP: 1290-06

SHEET 4 OF 4

DIVISION OF ENGINEERING

EROSION CONTROL DETAILS

LOCATION: EAST OF 4920 HICKORY HILL ROAD
 MEMPHIS, TN

SURVEY: _____ DATE: _____ BOOK: _____
 DESIGN BY: KH DATE: 4/19/21 SCALE: N/A
 REVIEWED: _____

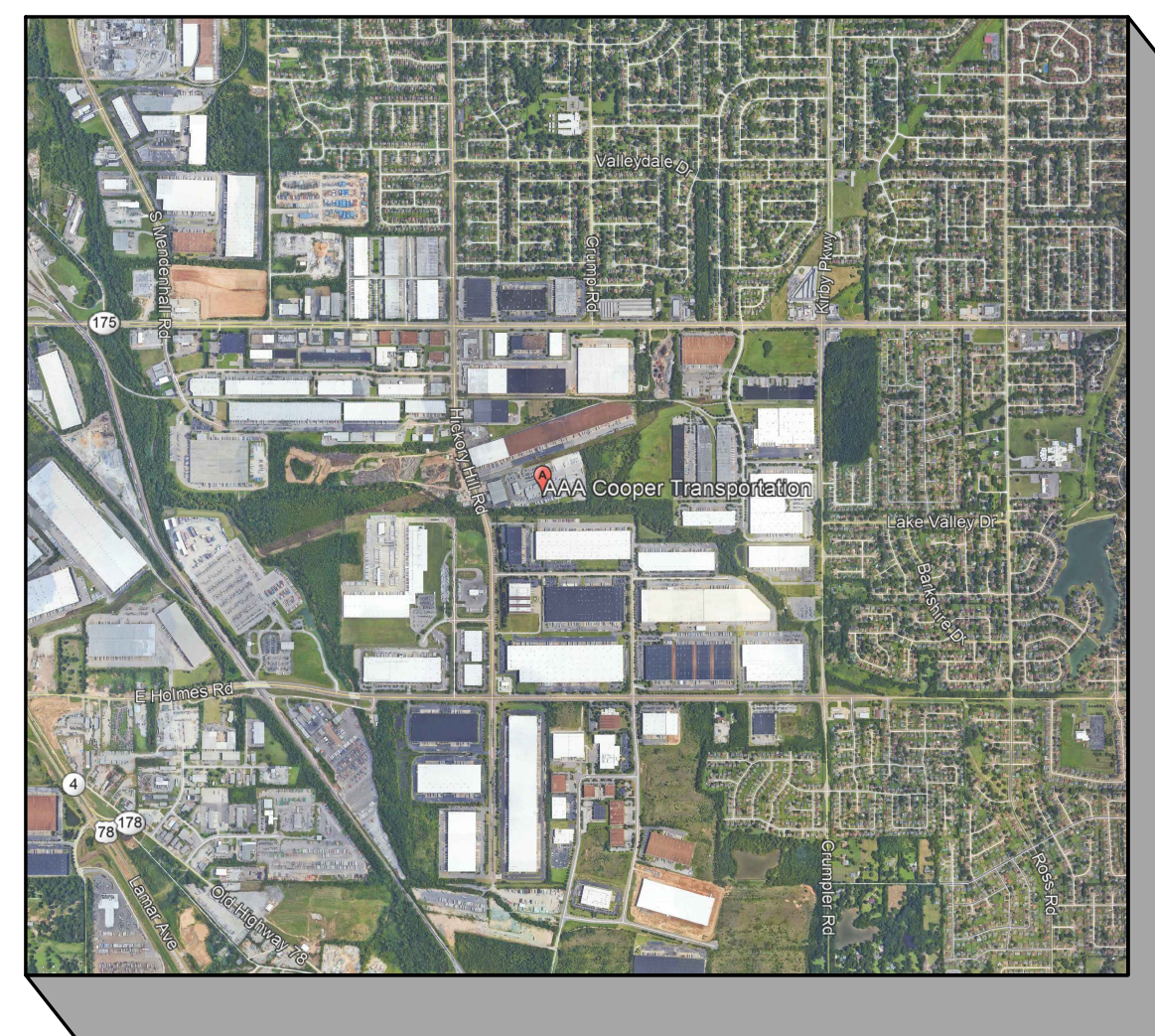
DEPUTY CITY ENGINEER DATE CITY ENGINEER DATE

AAA COOPER BANK STABILIZATION

MEMPHIS , TENNESSEE FOR

AAA COOPER TRANSPORTATION

4920 HICKORY HILL ROAD MEMPHIS, TN 38141



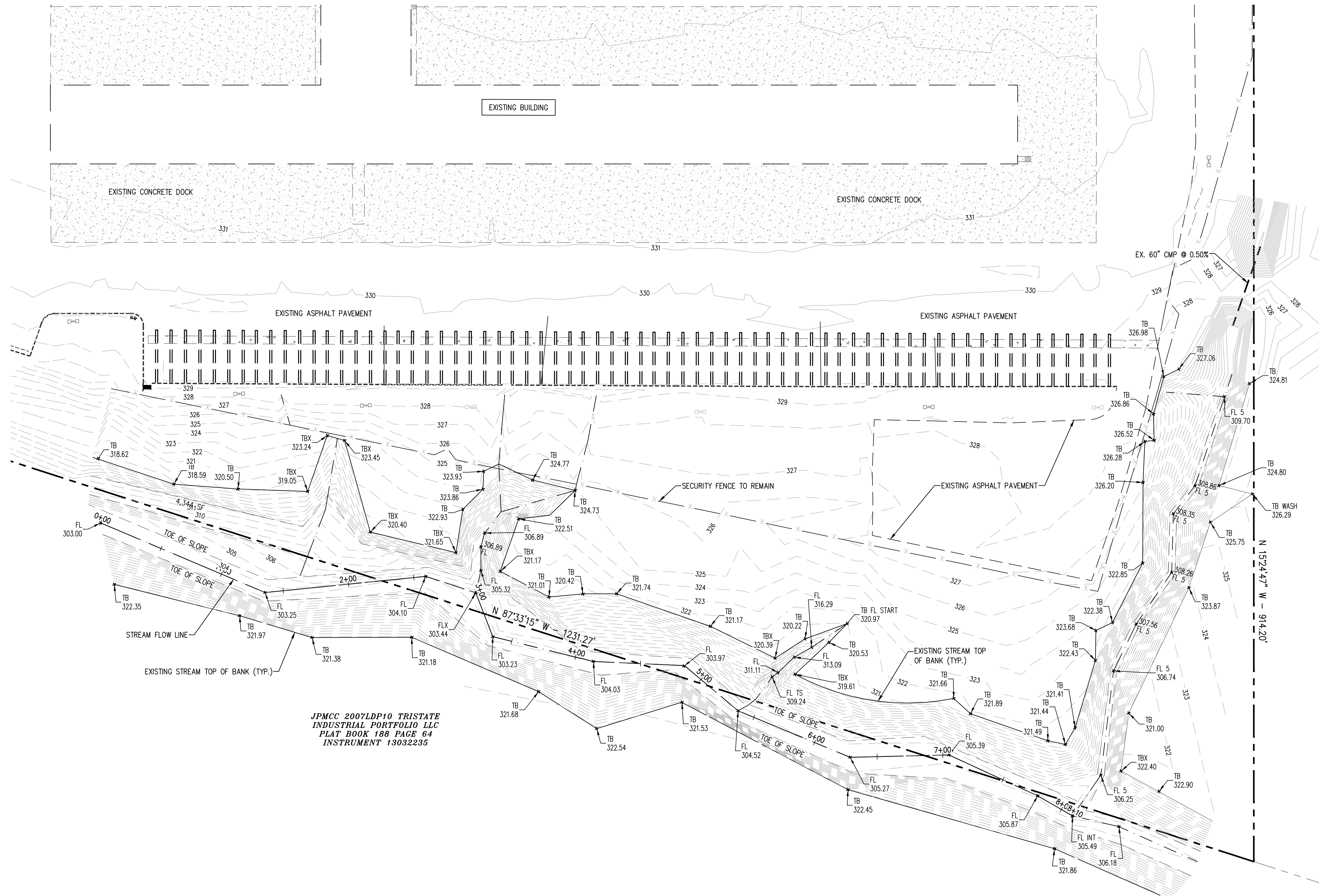
VICINITY MAP
N.T.S.

 **Ledford**
Engineering • Planning • Architecture
5567 Commander Drive, Suite 105, Arlington, TN 38002
phone: 901.867.5220 fax: 901.867.5331

INDEX TO DRAWINGS

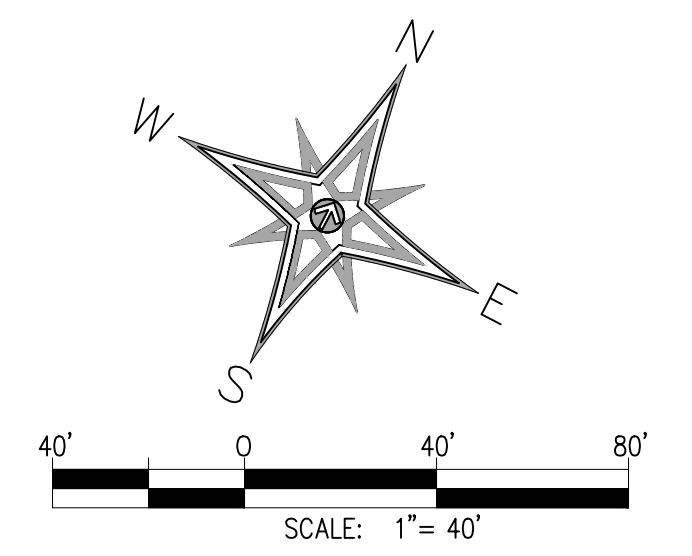
CV	COVER SHEET
C-1	EXISTING CONDITIONS
C-2	GRADING AND DRAINAGE PLAN
C-3	DRAINAGE PLAN & PROFILE
C-4	STREAM PROFILES
C-5	STREAM PROFILES
C-6	STREAM PROFILES
C-7	SITE DETAILS

April 19, 2021



LEGEND

---	PROPERTY LINE
---100---	EXISTING CONTOURS
-----	EXISTING CURB
- - - - -	EXISTING EDGE OF PAVEMENT
▨	EXISTING CONCRETE
---	STREAM TOP OF BANK
X	EXISTING SECURITY FENCE



JPMCC 2007LDP10 TRISTATE INDUSTRIAL PORTFOLIO LLC
PLAT BOOK 188 PAGE 64
INSTRUMENT 13032235

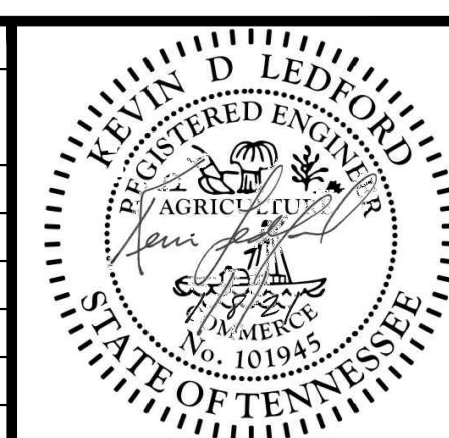
BENCHMARK:
BASIS OF ELEVATIONS NAVD 88 CITY BM#296 - LOCATED AT THE ER ON THE HICKORY HILL SIDE AT THE INTERSECTION OF HICKORY HILL ROAD & RAINES ROAD. ELEV. 341.46

FLOOD NOTE:
JOHN'S CREEK IS A ZONE AE FLOODWAY WITH BFE AT CONFLUENCE WITH LOCATED FEEDER CREEK. SEE FLOOD MAP FEMA 4715700465F EFFECTIVE 9/28/2007.

DRAINAGE BASIN: JOHN'S CREEK

DWG NO.
C 1

REVISION		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE

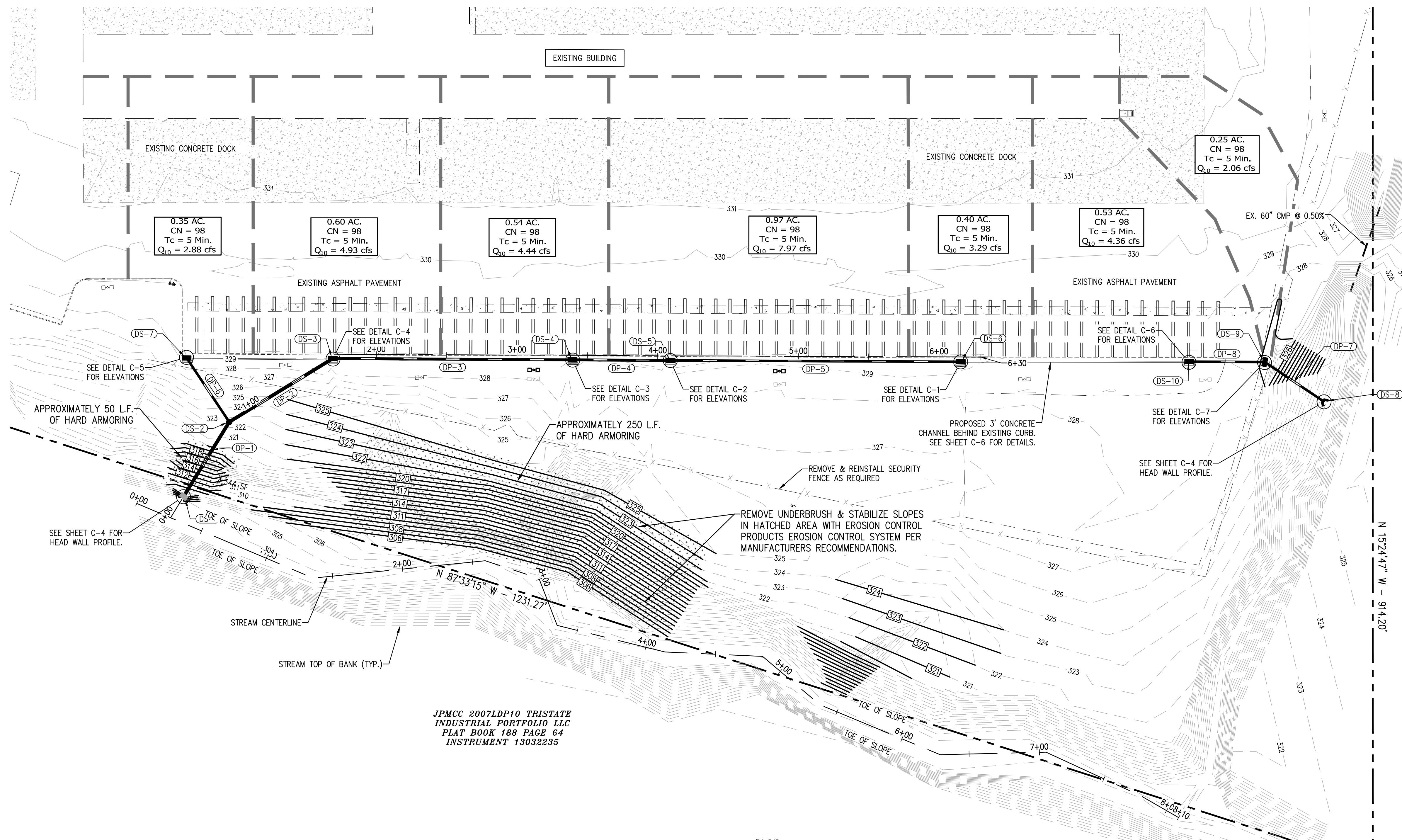


AAA COOPER BANK STABILIZATION

DEVELOPER: AAA COOPER TRANSPORTATION
ENGINEER: LEDFORD ENGINEERING AND PLANNING, LLC

SHEET 1 OF 1
DIVISION OF ENGINEERING
EXISTING CONDITIONS PLAN
LOCATION: 4920 HICKORY HILL ROAD
MEMPHIS, TN
SURVEY: _____ DATE: _____ BOOK: _____
DESIGN BY: KH DATE: 4/19/21 SCALE: 1"=40'
REVIEWED: _____
DEPUTY CITY ENGINEER DATE CITY ENGINEER DATE

Z:\1290-04\CONSTRUCTION DRAWINGS\C-1 EXISTING CONDITIONS.dwg



LEGEND

- PROPERTY LINE
- - - - - EXISTING CONTOURS
- 100 — PROPOSED CONTOURS
- — — — — EXISTING CURB
- — — — — EXISTING EDGE OF PAVEMENT
- — — — — EXISTING CONCRETE
- — — — — STREAM TOP OF BANK
- — — — — STREAM BUFFER
- X — EXISTING SECURITY FENCE
- — — — — PROPOSED DRAINAGE

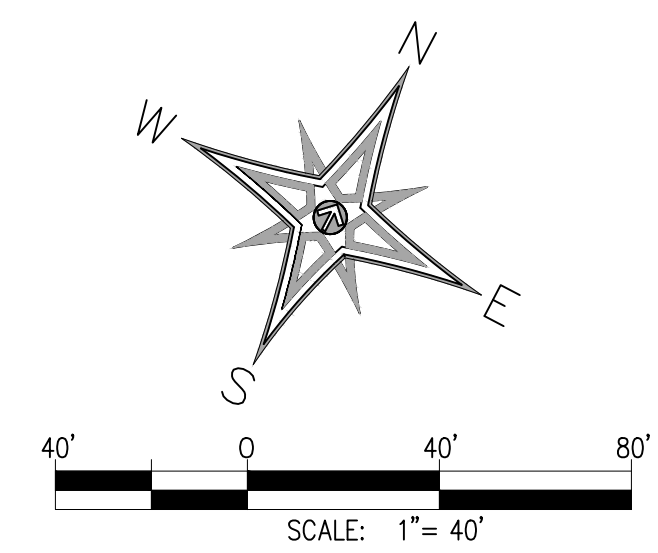
STORM DRAINAGE STRUCTURE DATA

NAME	TYPE	DRAINAGE AREA	Q10 (CFS)	TOP	AS BUILT	INVERT	AS BUILT
DS-1	TYPE 'D' HW	-	-	-	-	305.00	-
DS-2	DMH	-	-	322.50	-	305.58	-
DS-3	3070 INLET	0.60	4.93	328.77	-	319.13	-
DS-4	3070 INLET	0.54	4.44	329.31	-	323.04	-
DS-5	3070 INLET	0.97	7.97	328.68	-	324.09	-
DS-6	3070 INLET	0.40	3.29	329.61	-	326.40	-
DS-7	3070 INLET	0.35	2.88	329.26	-	320.66	-
DS-8	TYPE 'D' HW	-	-	-	-	311.00	-
DS-9	3070 INLET	0.25	2.06	326.90	-	311.50	-
DS-10	3070 INLET	0.53	4.36	329.40	-	325.04	-

STORM DRAINAGE PIPE DATA

PIPE NAME	FROM	INVERT (UP)	AS BUILT	TO	INVERT (DOWN)	AS BUILT	SLOPE (%)	AS BUILT	SIZE	LENGTH	MATERIAL	DA (ACR)	Q10 (CFS)	QCAP (CFS)	VEL (FPS)
DP-1	DS-2	306.25	-	DS-1	305.00	-	2.00%	-	24" 58'	CMP	0.81	23.51	29.40	9.36	
DP-2	DS-3	319.13	-	DS-2	318.27	-	2.00%	-	24" 86'	CMP	2.51	20.63	29.40	9.36	
DP-3	DS-4	323.04	-	DS-3	319.63	-	2.00%	-	18" 170'	CMP	1.91	15.70	19.31	10.92	
DP-4	DS-5	324.09	-	DS-4	323.04	-	1.50%	-	18" 70'	CMP	1.37	11.26	16.72	9.46	
DP-5	DS-6	326.40	-	DS-5	324.34	-	1.00%	-	15" 206'	CMP	0.40	3.29	8.39	6.84	
DP-6	DS-7	320.66	-	DS-2	319.02	-	3.00%	-	15" 50'	CMP	0.35	2.88	14.54	11.85	
DP-7	DS-9	311.50	-	DS-8	311.00	-	1.00%	-	15" 50'	CMP	0.78	6.42	8.39	6.84	
DP-8	DS-10	325.04	-	DS-9	324.50	-	1.00%	-	15" 54'	CMP	0.53	4.36	8.39	6.84	

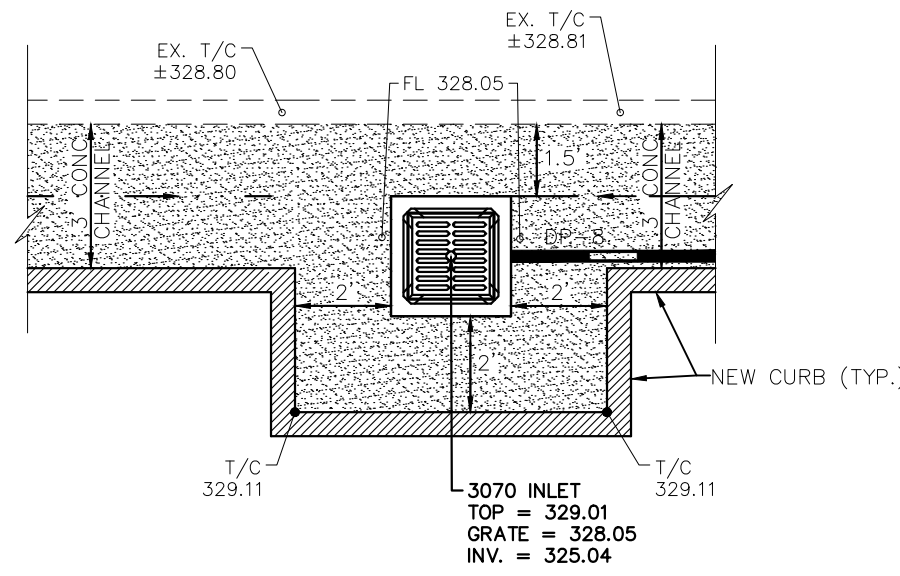
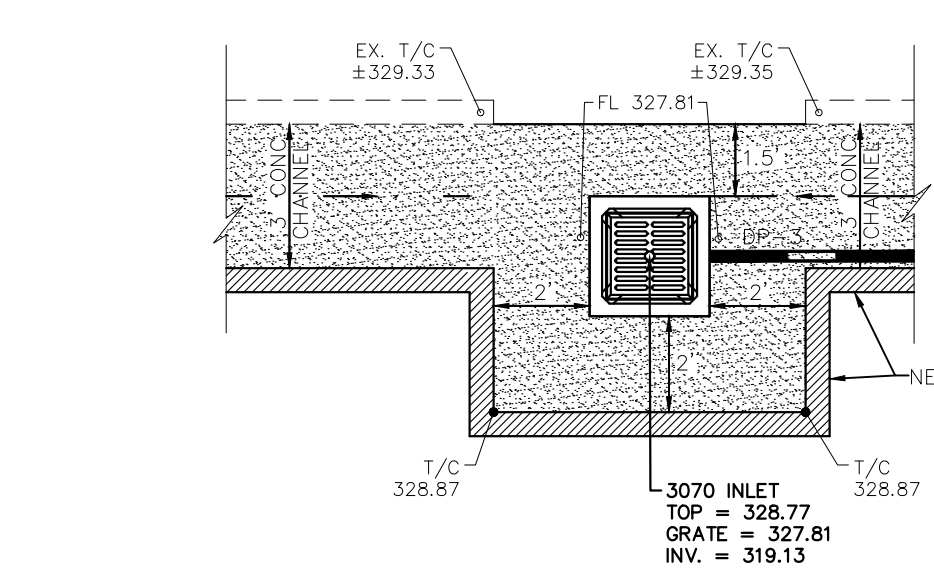
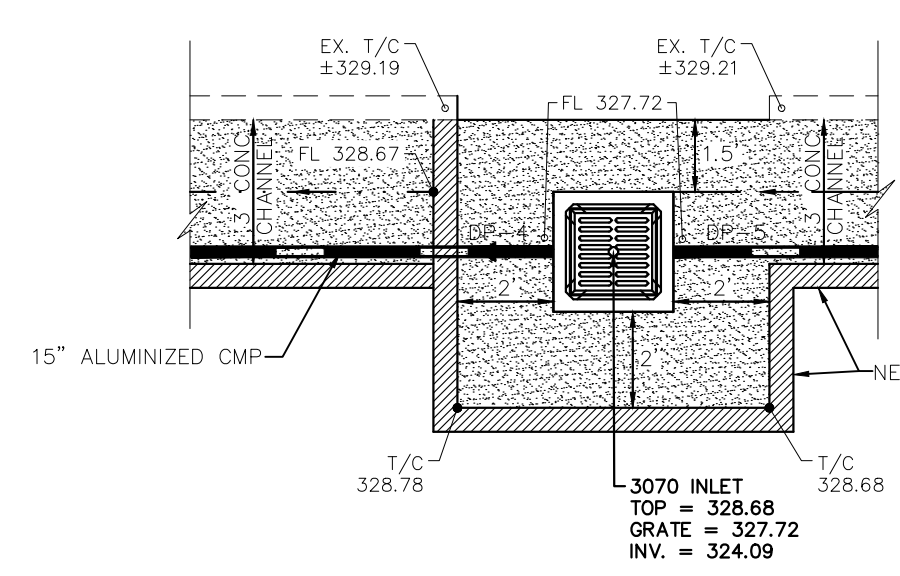
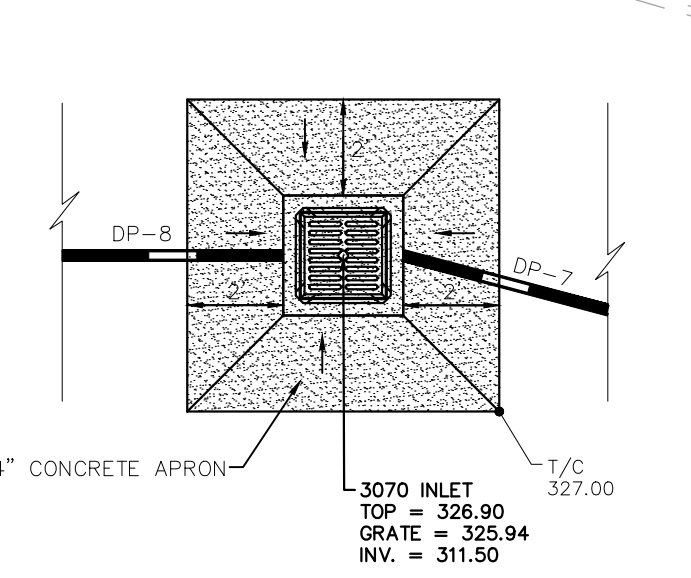
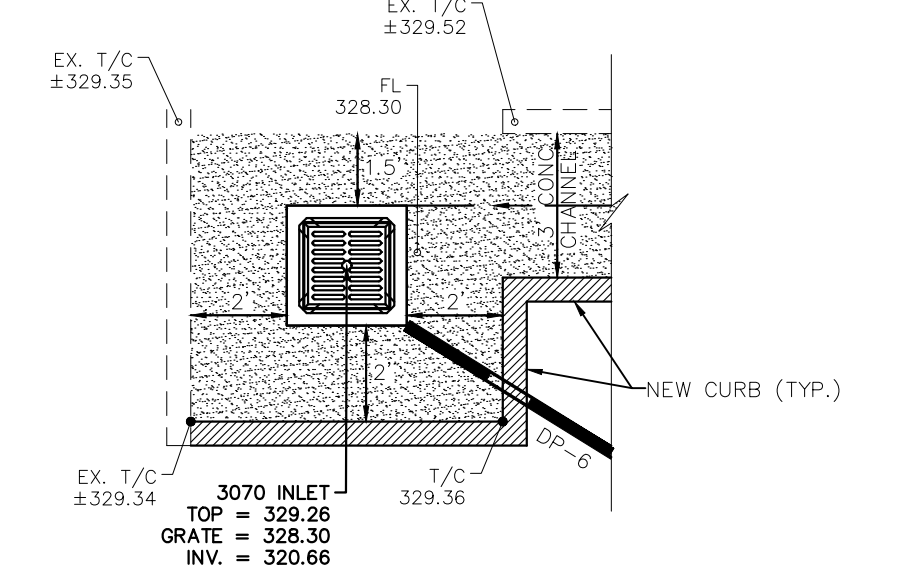
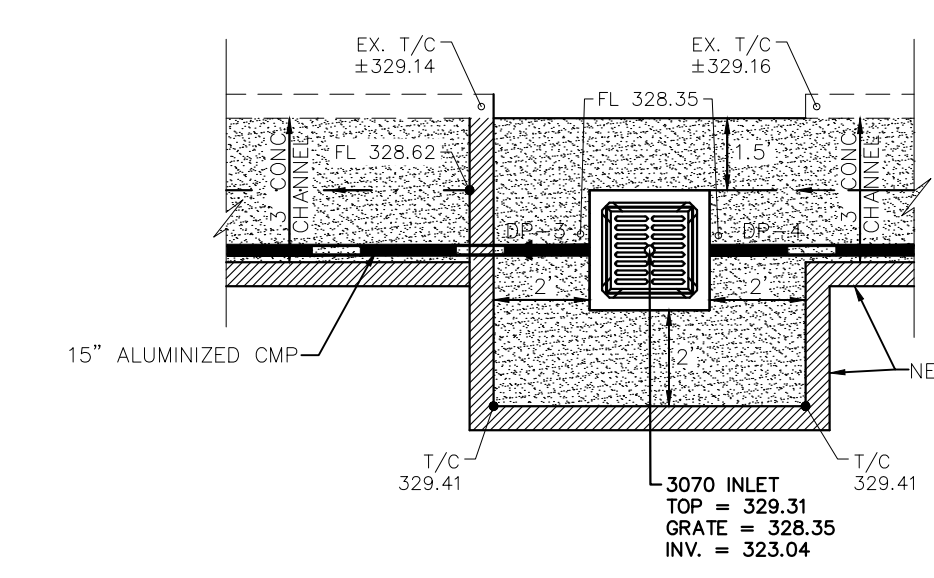
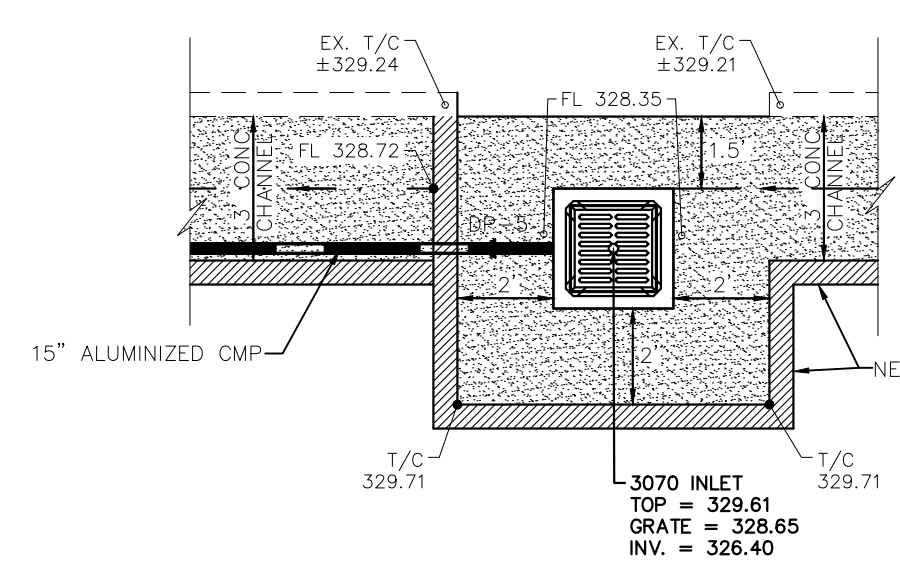
- CONSTRUCTION NOTES:**
- REMOVE UNDERBRUSH IN IT'S ENTIRTY DOWN TO EXISTING SLOPE.
 - INSTALL EROSION CONTROL PRODUCTS DOUBLE COIR EROSION CONTROL BLANKET SURROUNDED ON TOP AND BOTTOM WITH BIODEGRADABLE JUTE FIBER NETTING. SECURE THE EROSION BLANKET WITH EROSION CONTROL PRODUCTS BIODEGRADABLE LANDSCAPE STAKES.
 - SEED WITH HYDROSEEDING MEASURES AS FOLLOWS: SEED 60% OF APPLICATION RATE ON PREPARED SLOPES PRIOR TO INSTALLATION OF EROSION CONTROL PRODUCTS EROSION CONTROL SYSTEM AND THE REMAINING 40% AFTER INSTALLATION. USE PERMANENT NATIVE SPECIES.



BENCHMARK:
BASIS OF ELEVATIONS NAVD 88 CITY BM#296 - LOCATED AT THE ER ON THE HICKORY HILL SIDE AT THE INTERSECTION OF HICKORY HILL ROAD & RAINES ROAD. ELEV. 341.46

FLOOD NOTE:
JOHN'S CREEK IS A ZONE AE FLOODWAY WITH BFE AT CONCLUENCE WITH LOCATED FEEDER CREEK. SEE FLOOD MAP FEMA 47157C0465F EFFECTIVE 9/28/2007.

JPMCC 2007LDP10 TRISTATE INDUSTRIAL PORTFOLIO LLC PLAT BOOK 188 PAGE 64 INSTRUMENT 13032235

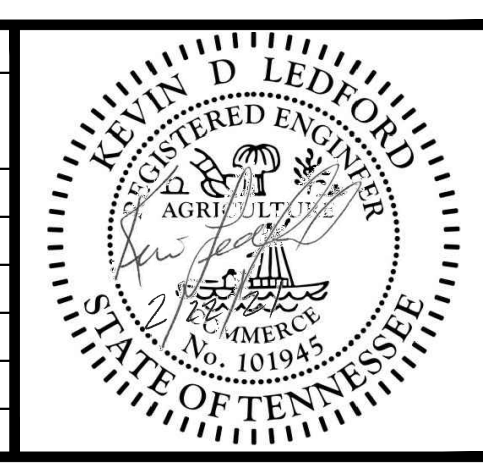


DRAINAGE BASIN: JOHN'S CREEK

DWG NO. C-2

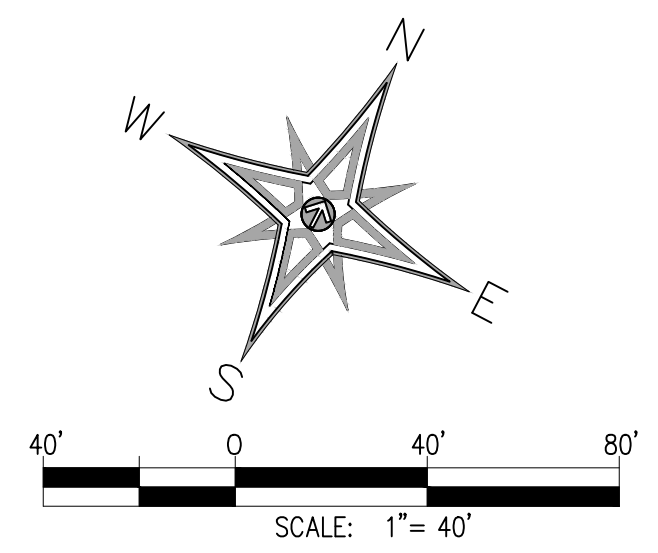
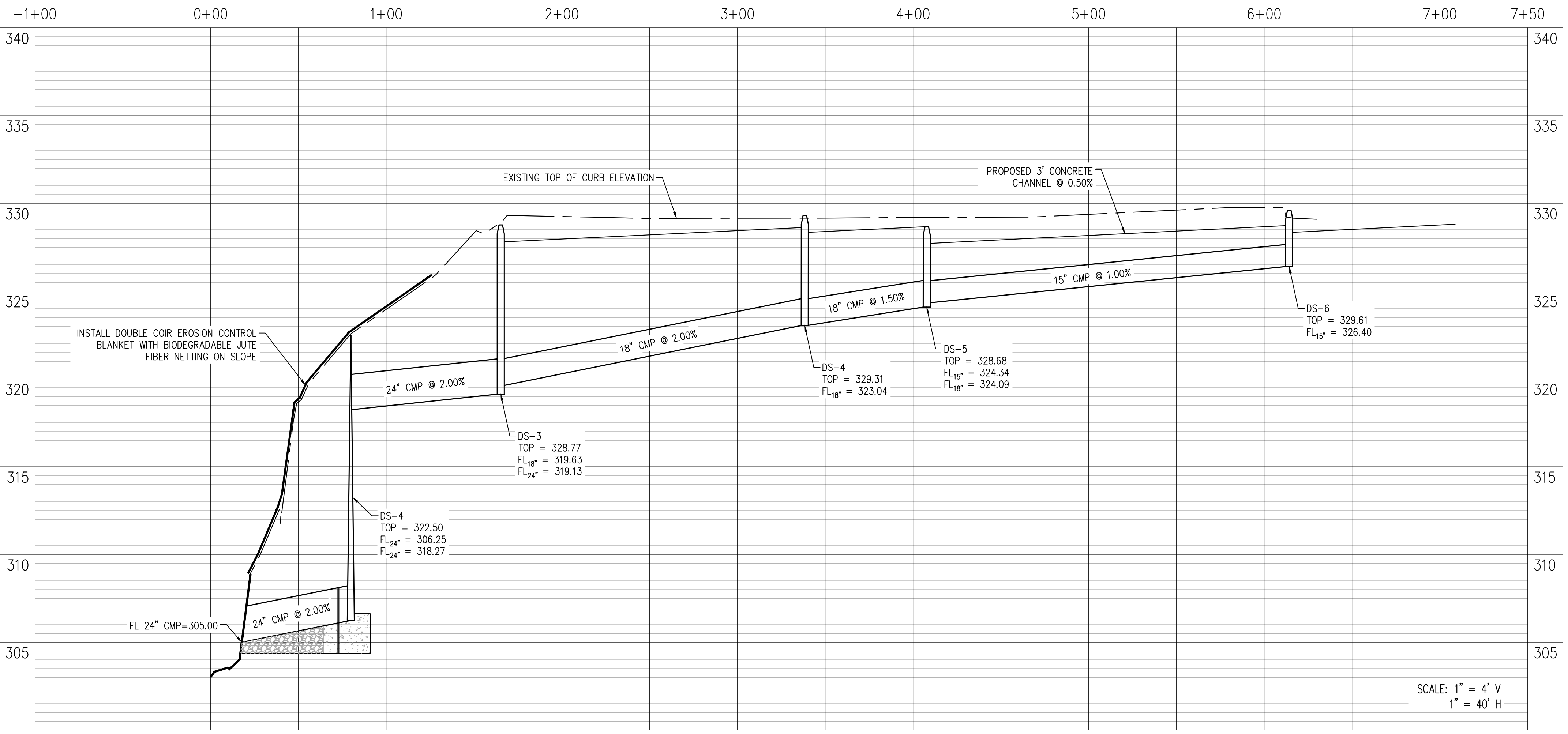
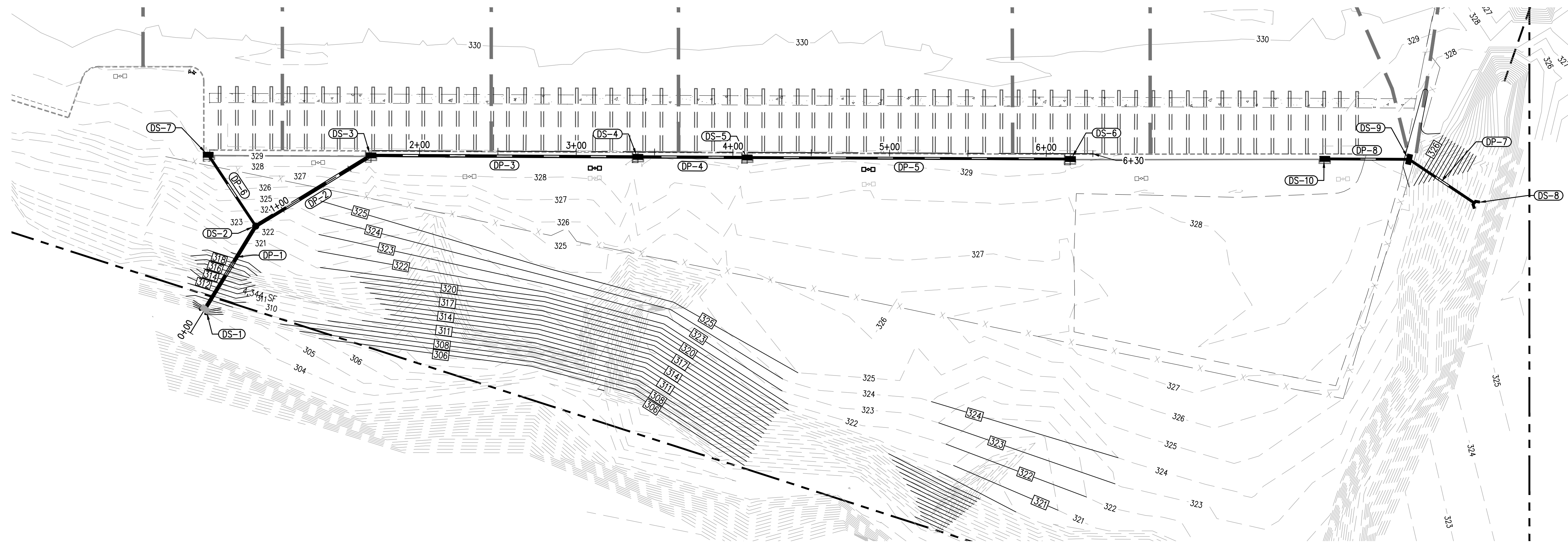
REVISION

ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE



SHEET 1 OF 1
DIVISION OF ENGINEERING
GRADING & DRAINAGE PLAN
LOCATION: 4920 HICKORY HILL ROAD
MEMPHIS, TN
SURVEY: _____ DATE: _____ BOOK: _____
DESIGN BY: KH DATE: 4/19/21 SCALE: 1"=40'
REVIEWED: _____
DEPUTY CITY ENGINEER DATE CITY ENGINEER DATE

AAA COOPER BANK STABILIZATION
DEVELOPER: AAA COOPER TRANSPORTATION
ENGINEER: LEDFORD ENGINEERING AND PLANNING, LLC



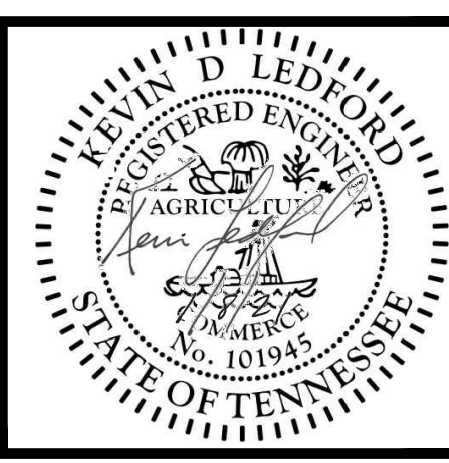
BENCHMARK:
BASIS OF ELEVATIONS NAVD 88 CITY BM#296 - LOCATED AT THE ER ON THE HICKORY HILL SIDE AT THE INTERSECTION OF HICKORY HILL ROAD & RAINES ROAD. ELEV. 341.46

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DRAINAGE BASIN: JOHN'S CREEK

DWG NO. C-3

REVISION		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE



SHEET 1 OF 1
DIVISION OF ENGINEERING

DRAINAGE PLAN & PROFILE

LOCATION: 4920 HICKORY HILL ROAD
MEMPHIS, TN

SURVEY: _____ DATE: _____ BOOK: _____
DESIGN BY: KH DATE: 4/19/21 SCALE: 1"=40'
REVIEWED: _____

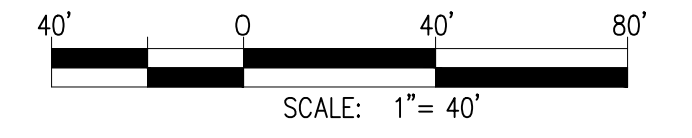
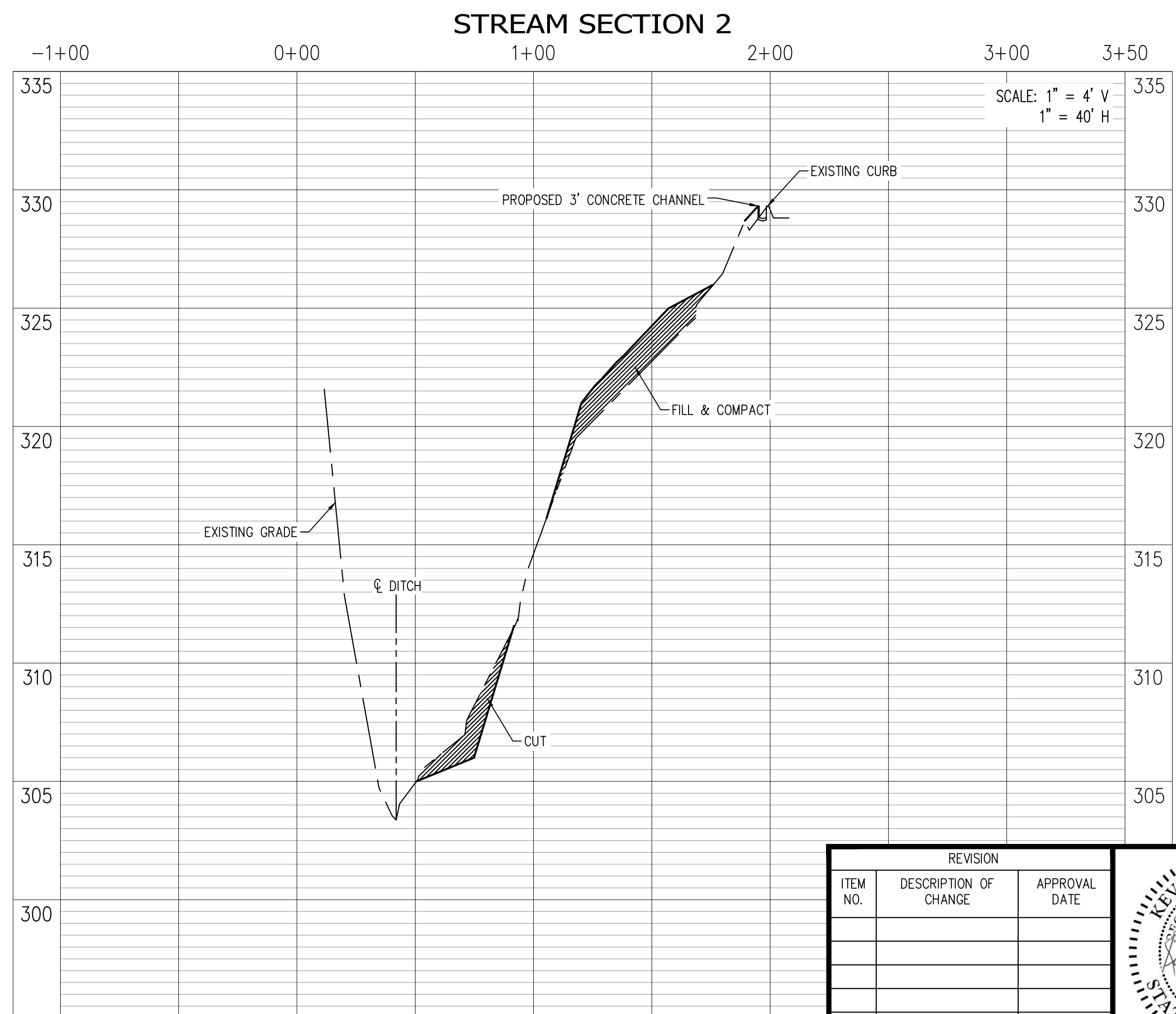
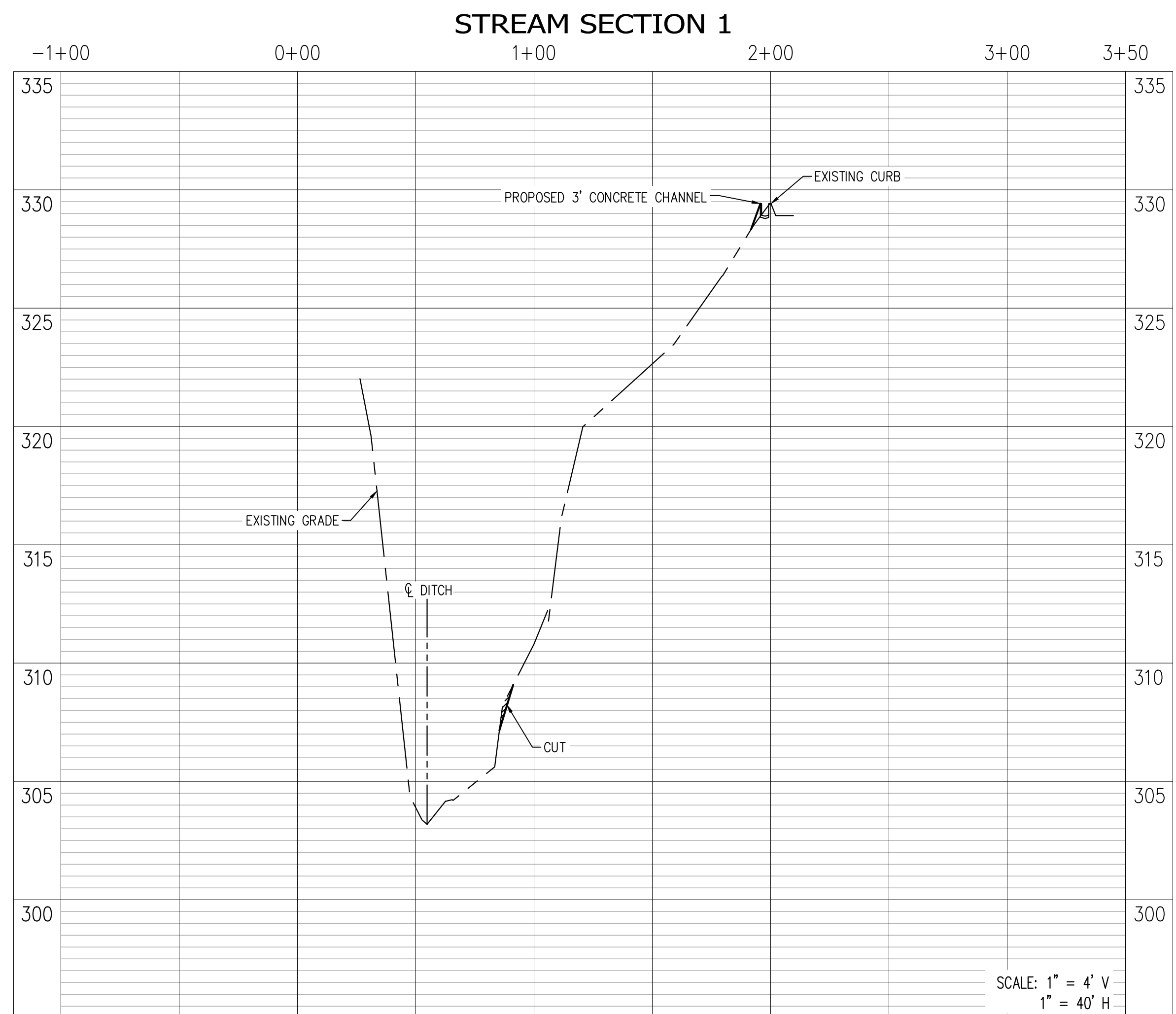
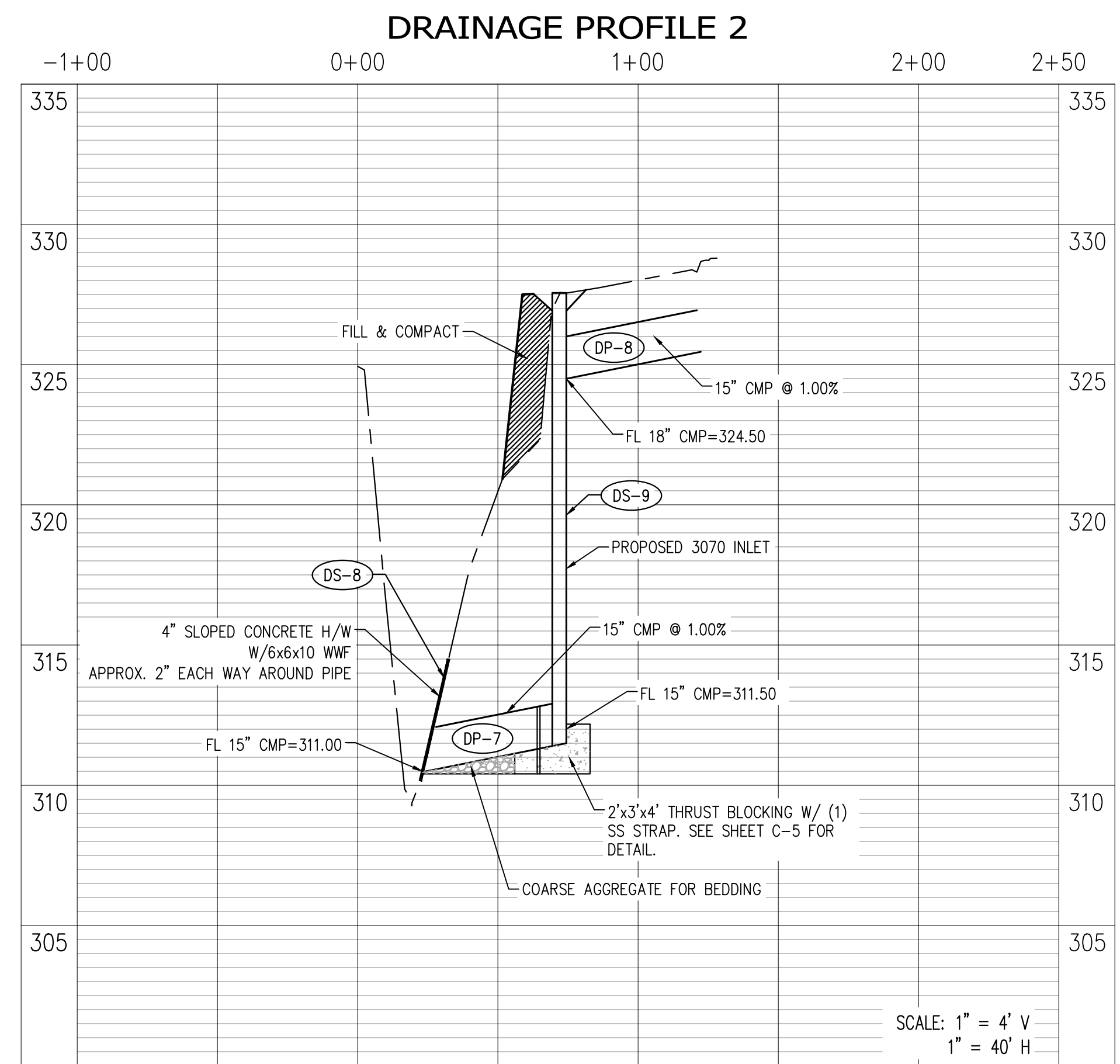
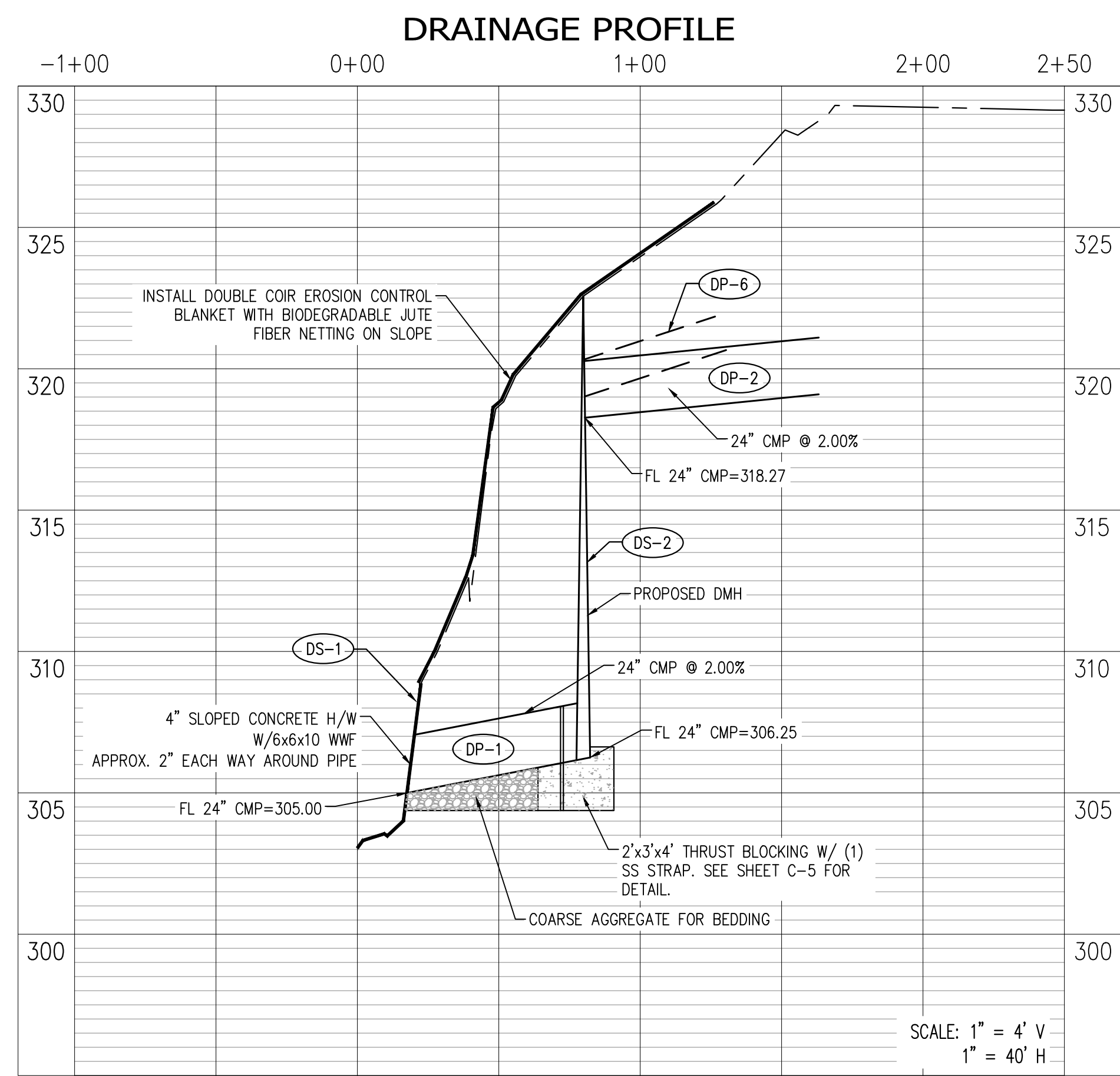
DEPUTY CITY ENGINEER DATE CITY ENGINEER DATE

AAA COOPER BANK STABILIZATION

DEVELOPER: AAA COOPER TRANSPORTATION
ENGINEER: LEDFORD ENGINEERING AND PLANNING, LLC

LEP: 1290-04

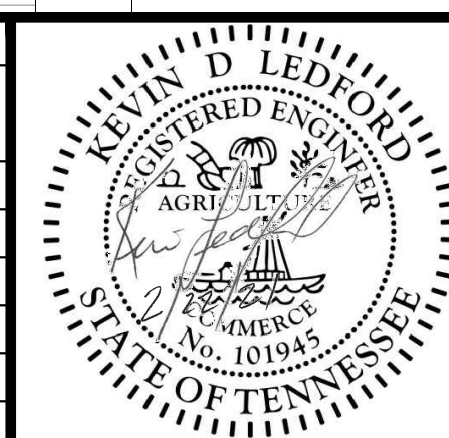
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BENCHMARK:
BASIS OF ELEVATIONS NAVD 88 CITY BM#296 - LOCATED AT THE ER ON THE HICKORY HILL SIDE AT THE INTERSECTION OF HICKORY HILL ROAD & RAINES ROAD. ELEV. 341.46

FLOOD NOTE:
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REVISION		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE



DRAINAGE BASIN: JOHN'S CREEK

DWG NO. C 4

SHEET 1 OF 3
DIVISION OF ENGINEERING

STREAM PROFILES

LOCATION: 4920 HICKORY HILL ROAD
MEMPHIS, TN

AAA COOPER BANK STABILIZATION

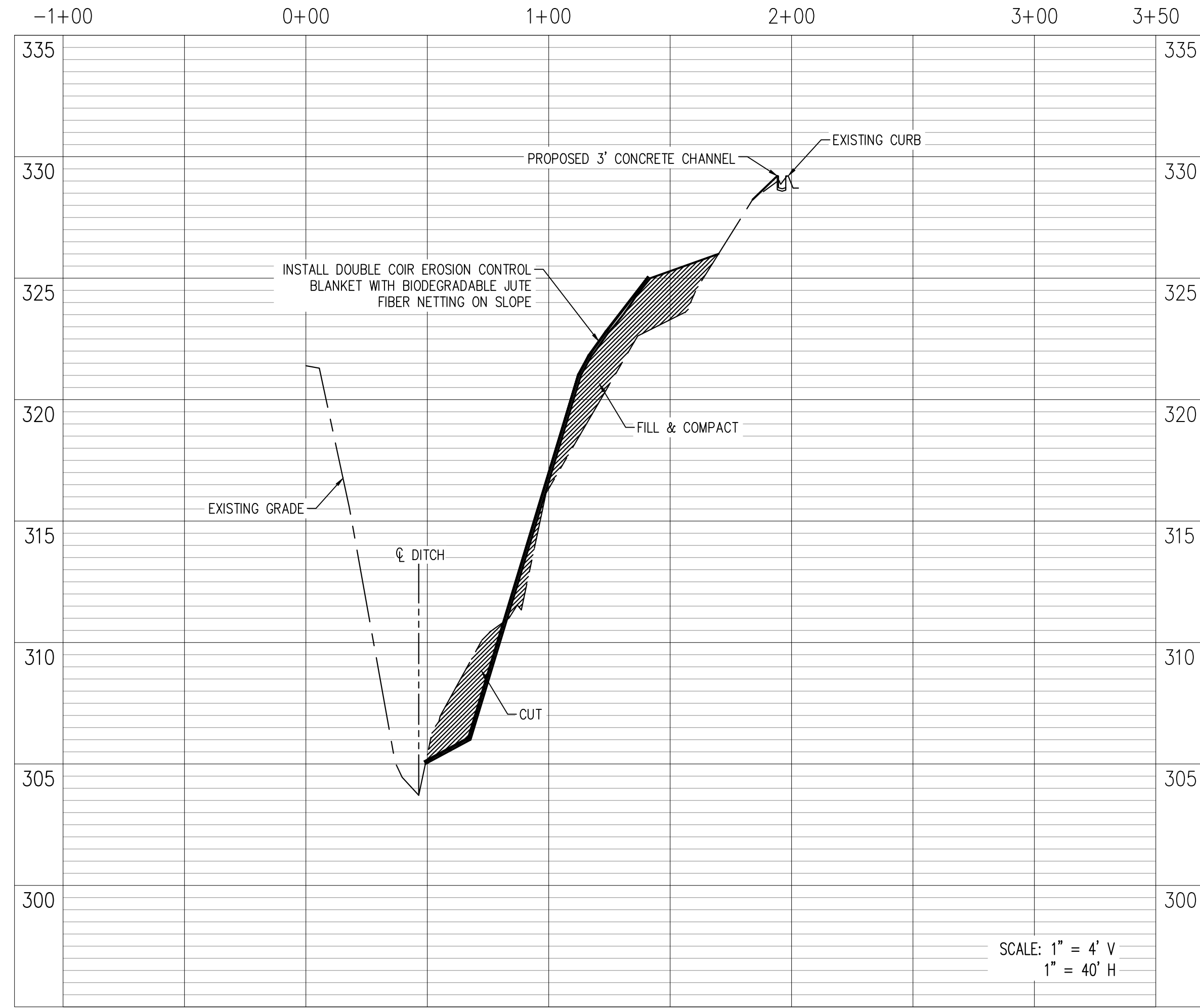
DEVELOPER: AAA COOPER TRANSPORTATION
ENGINEER: LEDFORD ENGINEERING AND PLANNING, LLC

SURVEY: _____ DATE: _____ BOOK: _____
DESIGN BY: KH DATE: 4/19/21 SCALE: 1"=40'
REVIEWED: _____

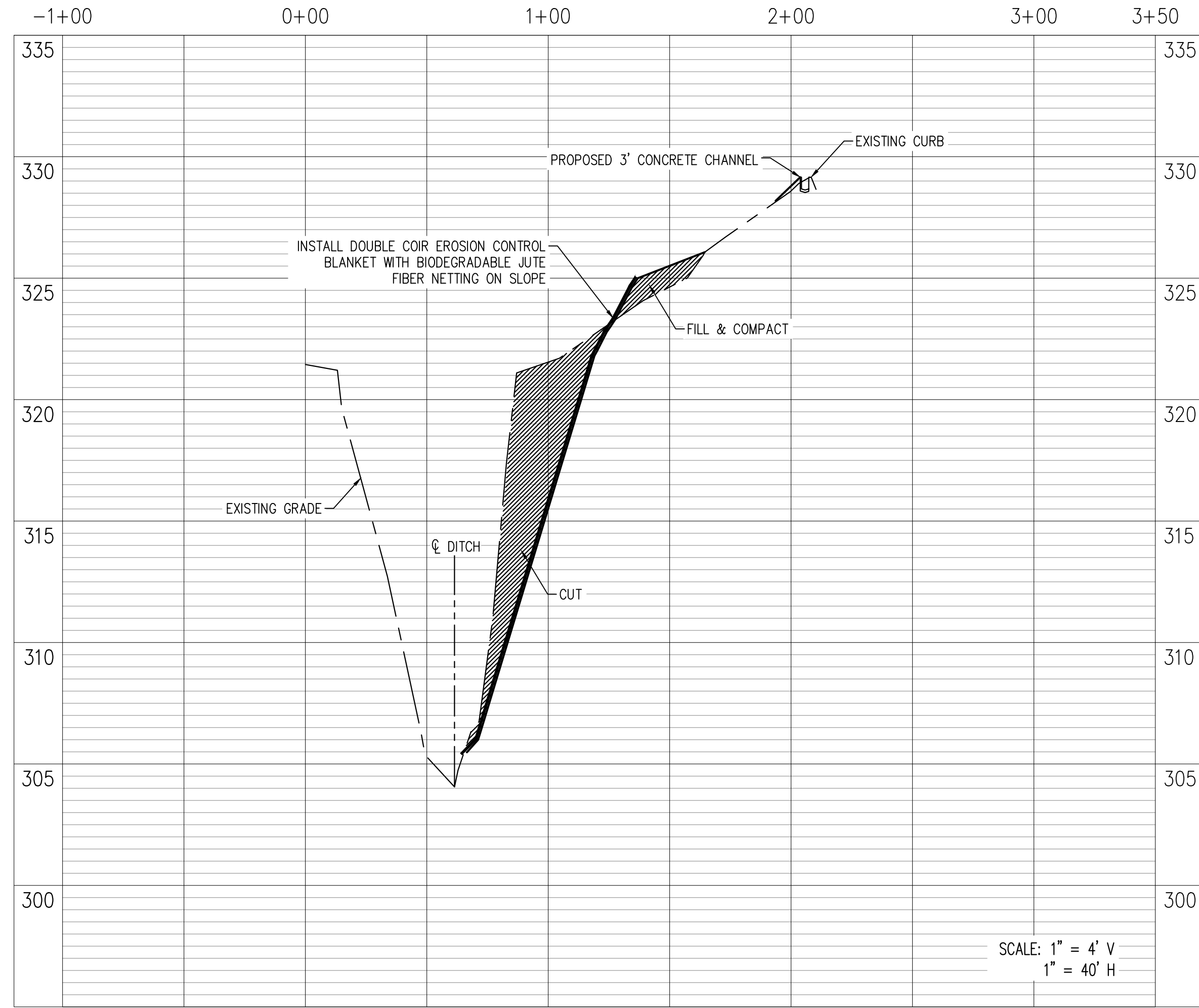
DEPUTY CITY ENGINEER DATE CITY ENGINEER DATE

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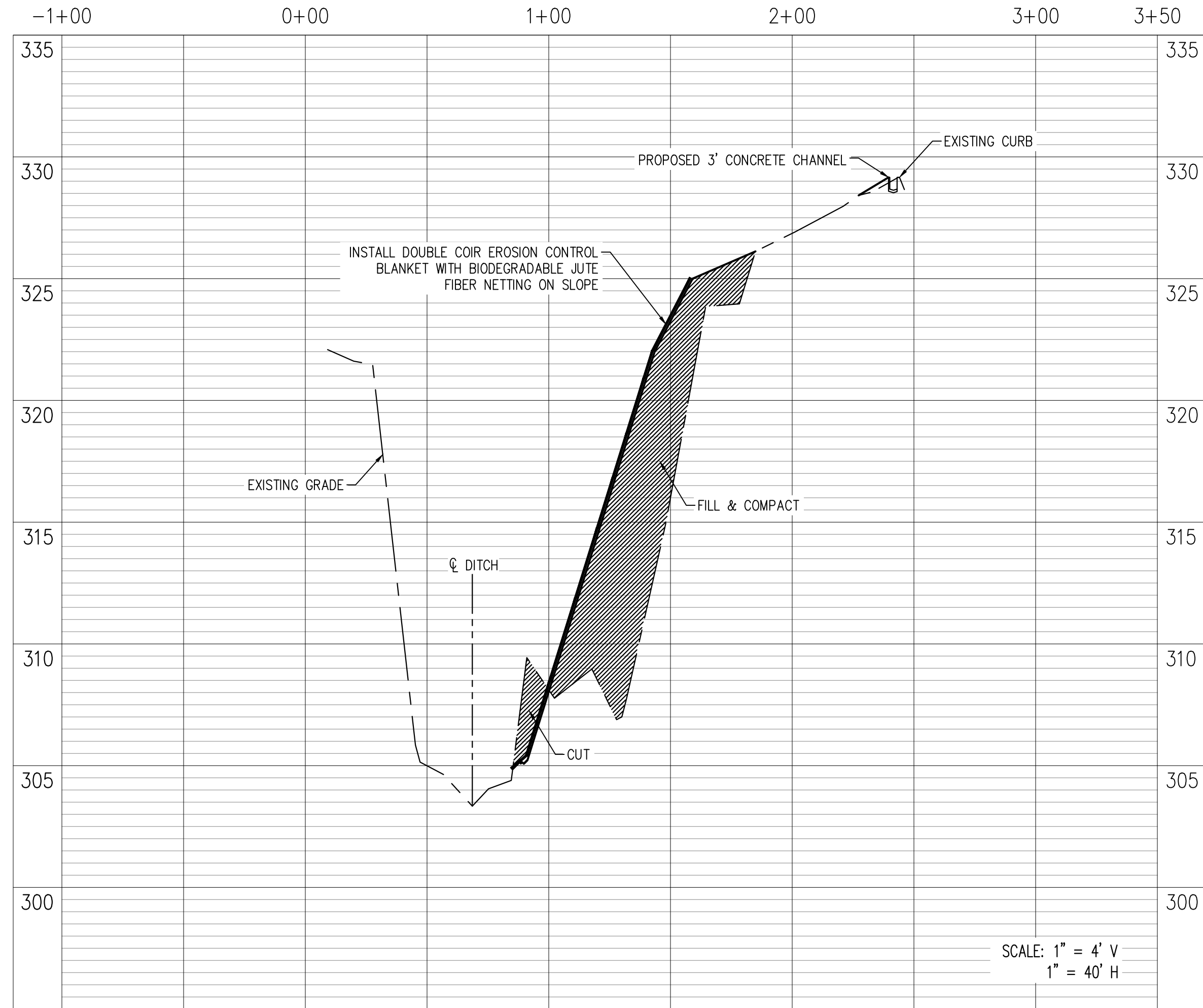
STREAM SECTION 3



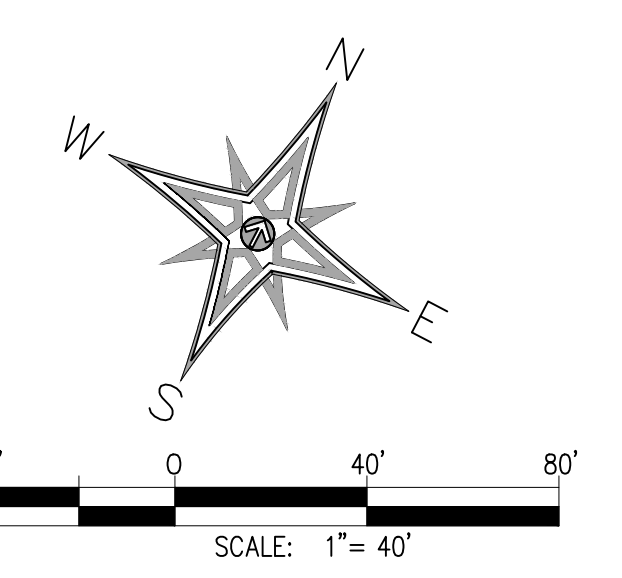
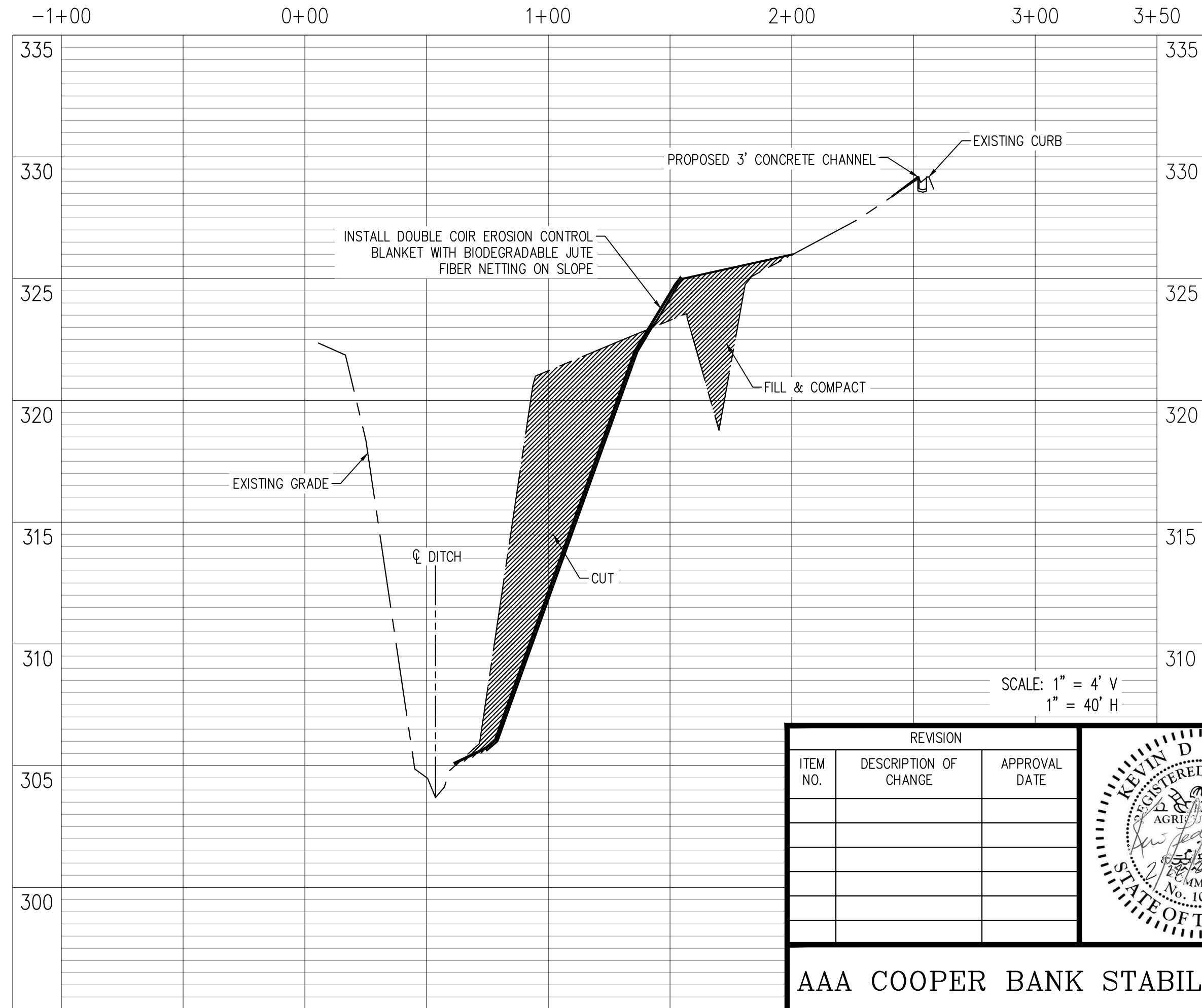
STREAM SECTION 4



STREAM SECTION 5



STREAM SECTION 6



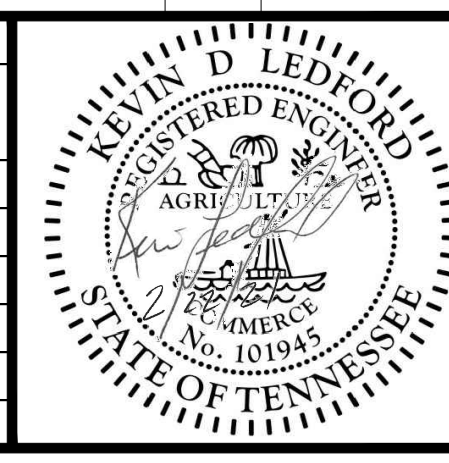
BENCHMARK:
BASIS OF ELEVATIONS NAVD 88 CITY BM#296 - LOCATED AT THE ER ON THE HICKORY HILL SIDE AT THE INTERSECTION OF HICKORY HILL ROAD & RAINES ROAD. ELEV. 341.46

FLOOD NOTE:
JOHN'S CREEK IS A ZONE AE FLOODWAY WITH BFE AT CONCLUSION WITH LOCATED FEEDER CREEK. SEE FLOOD MAP FEMA 47157C0465F EFFECTIVE 9/28/2007.

DRAINAGE BASIN: JOHN'S CREEK

DWG NO. C-5

REVISION		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE



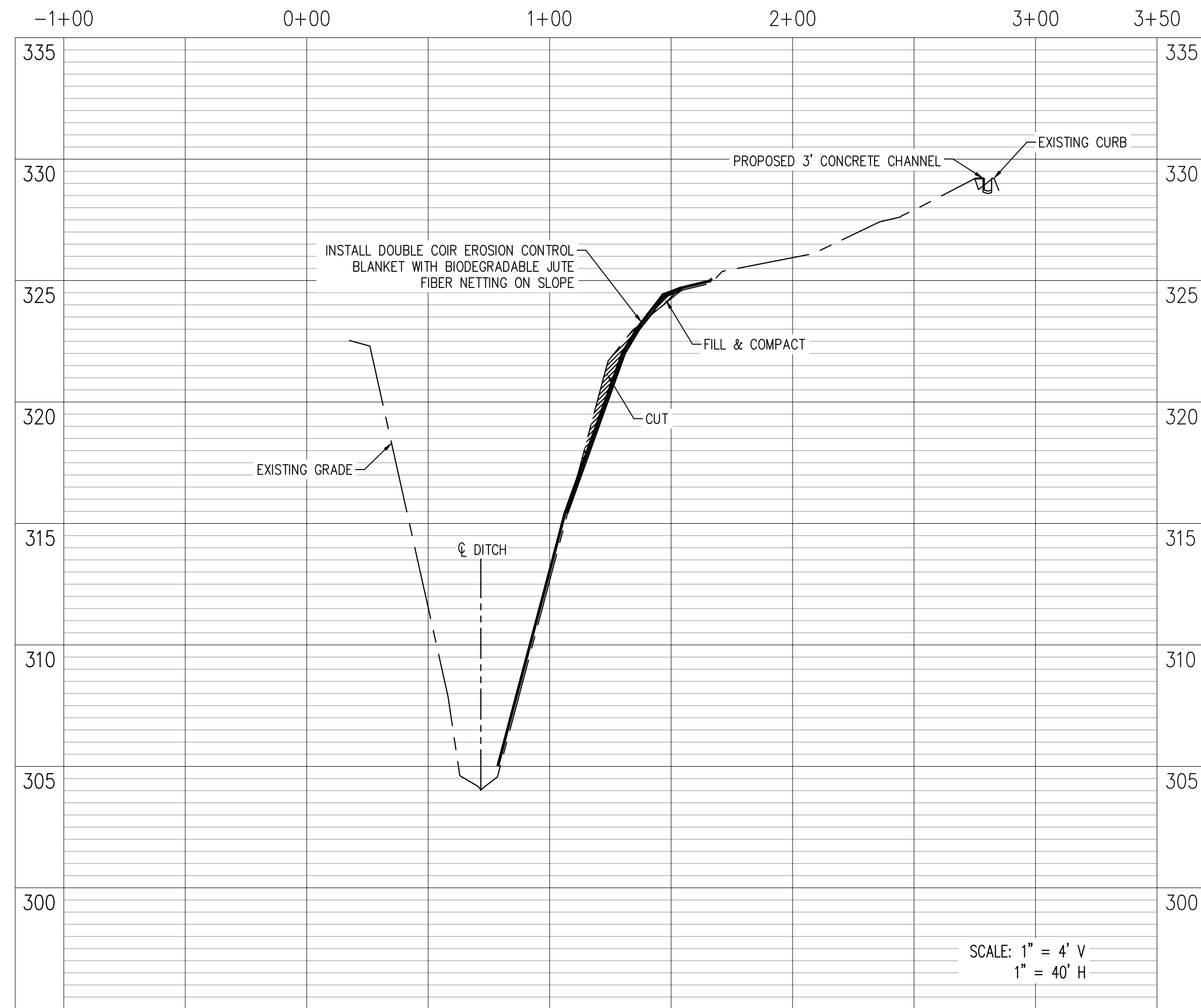
AAA COOPER BANK STABILIZATION

DEVELOPER: AAA COOPER TRANSPORTATION
ENGINEER: LEDFORD ENGINEERING AND PLANNING, LLC

SHEET 2 OF 3
DIVISION OF ENGINEERING
STREAM PROFILES
LOCATION: 4920 HICKORY HILL ROAD
MEMPHIS, TN
SURVEY: _____ DATE: _____ BOOK: _____
DESIGN BY: KH DATE: 4/19/21 SCALE: 1"=40'
REVIEWED: _____
DEPUTY CITY ENGINEER DATE CITY ENGINEER DATE

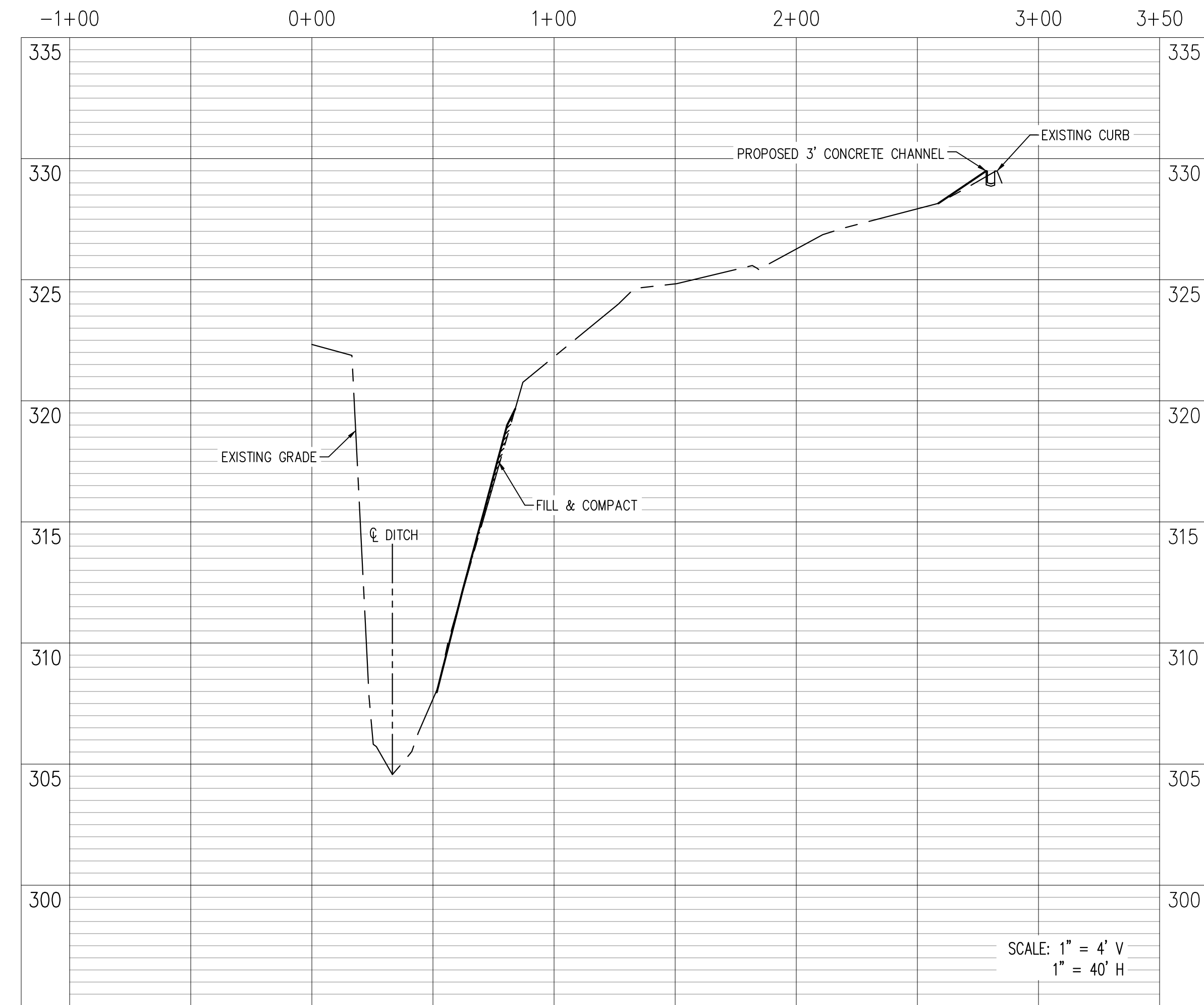
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STREAM SECTION 7



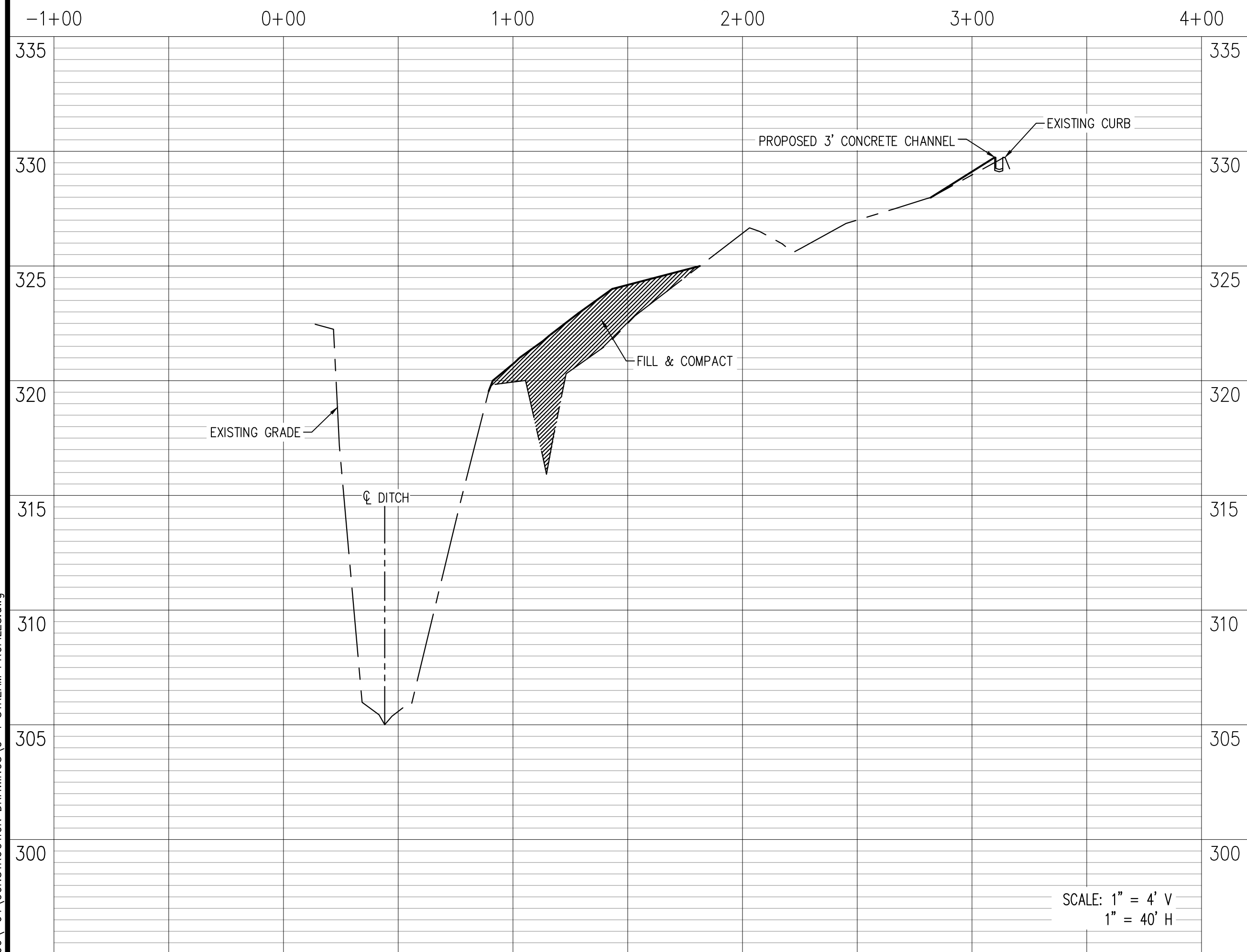
SCALE: 1" = 4' V
1" = 40' H

STREAM SECTION 8



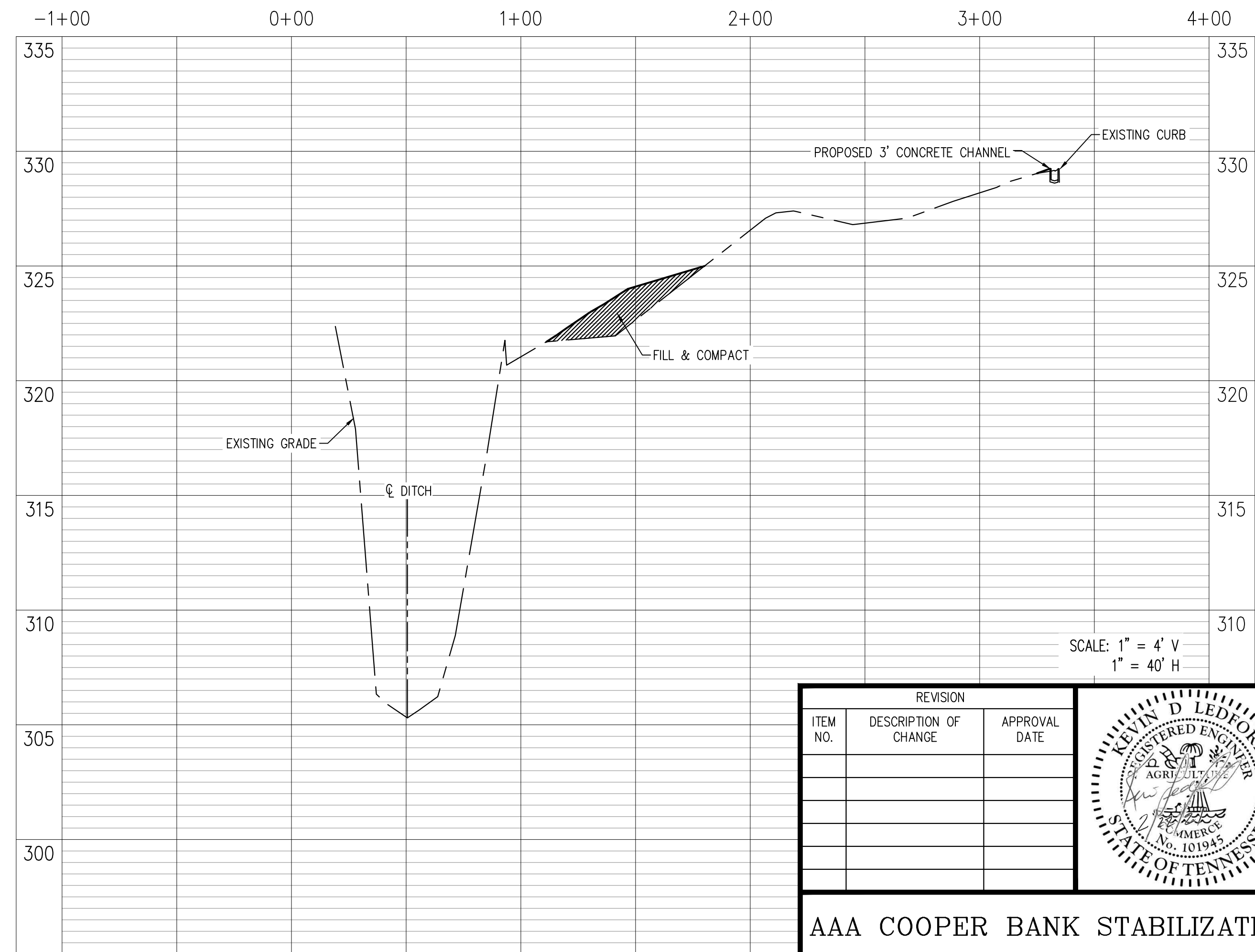
SCALE: 1" = 4' V
1" = 40' H

STREAM SECTION 9

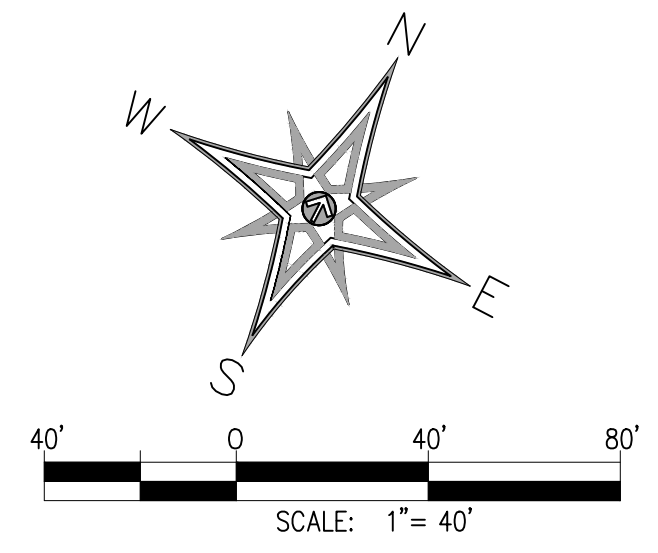


SCALE: 1" = 4' V
1" = 40' H

STREAM SECTION 10



SCALE: 1" = 4' V
1" = 40' H



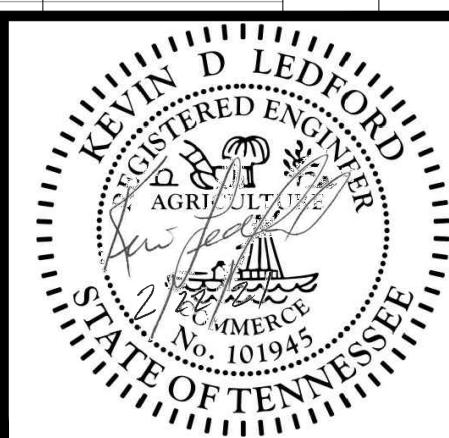
BENCHMARK:
BASIS OF ELEVATIONS NAVD 88 CITY BM#296 - LOCATED AT THE ER ON THE HICKORY HILL SIDE AT THE INTERSECTION OF HICKORY HILL ROAD & RAINES ROAD. ELEV. 341.46

FLOOD NOTE:
JOHN'S CREEK IS A ZONE AE FLOODWAY WITH BFE AT CONJUGLENCE WITH LOCATED FEEDER CREEK. SEE FLOOD MAP FEMA 47157C0465F EFFECTIVE 9/28/2007.

DRAINAGE BASIN: JOHN'S CREEK

DWG NO. C-6

REVISION		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE

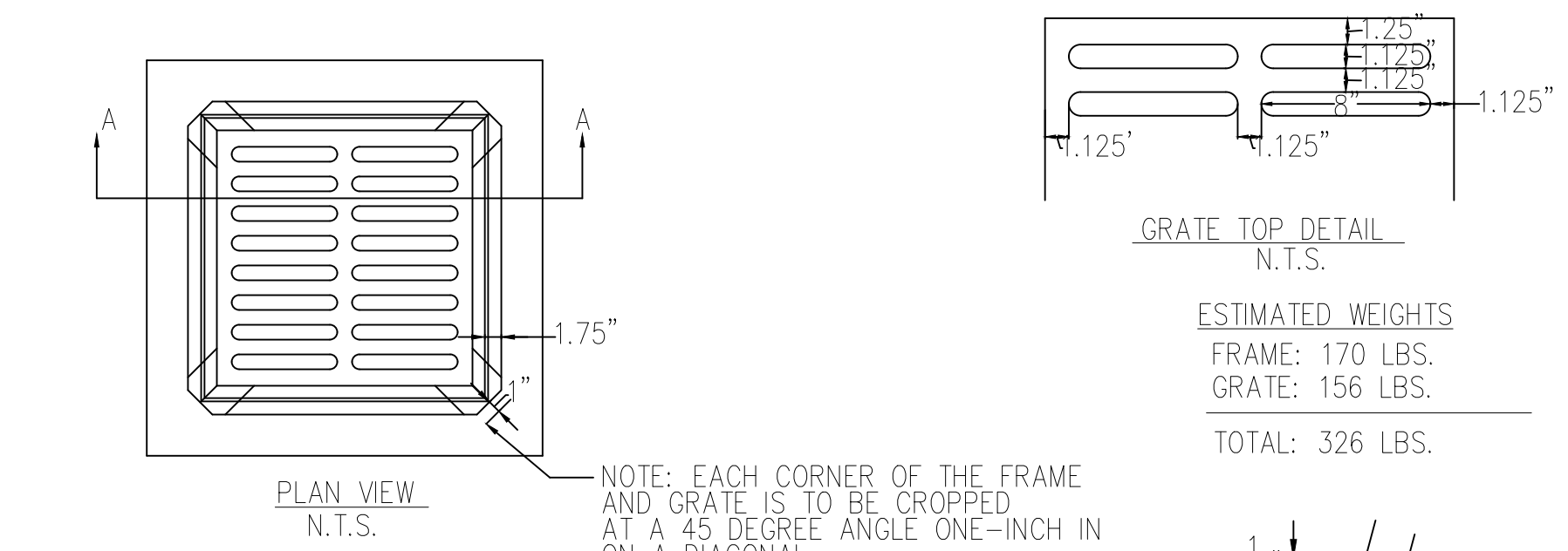


AAA COOPER BANK STABILIZATION

DEVELOPER: AAA COOPER TRANSPORTATION
ENGINEER: LEDFORD ENGINEERING AND PLANNING, LLC

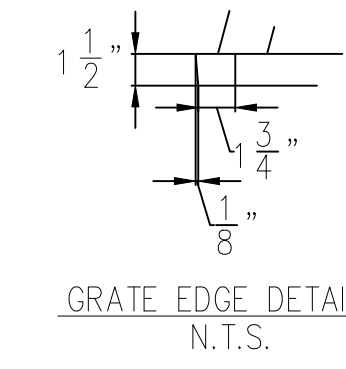
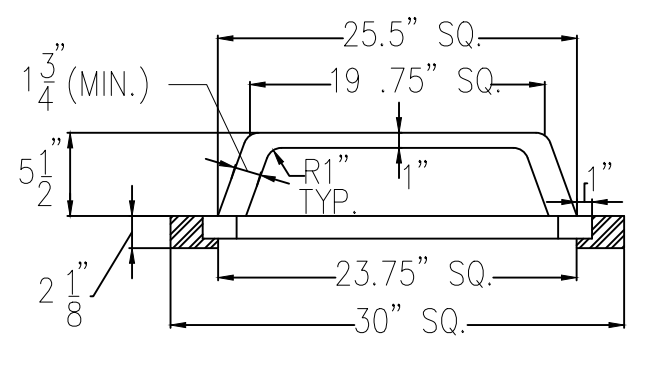
SHEET 3 OF 3
DIVISION OF ENGINEERING
STREAM PROFILES
LOCATION: 4920 HICKORY HILL ROAD
MEMPHIS, TN
SURVEY: _____ DATE: _____ BOOK: _____
DESIGN BY: KH DATE: 4/19/21 SCALE: 1"=40'
REVIEWED: _____
DEPUTY CITY ENGINEER DATE CITY ENGINEER DATE

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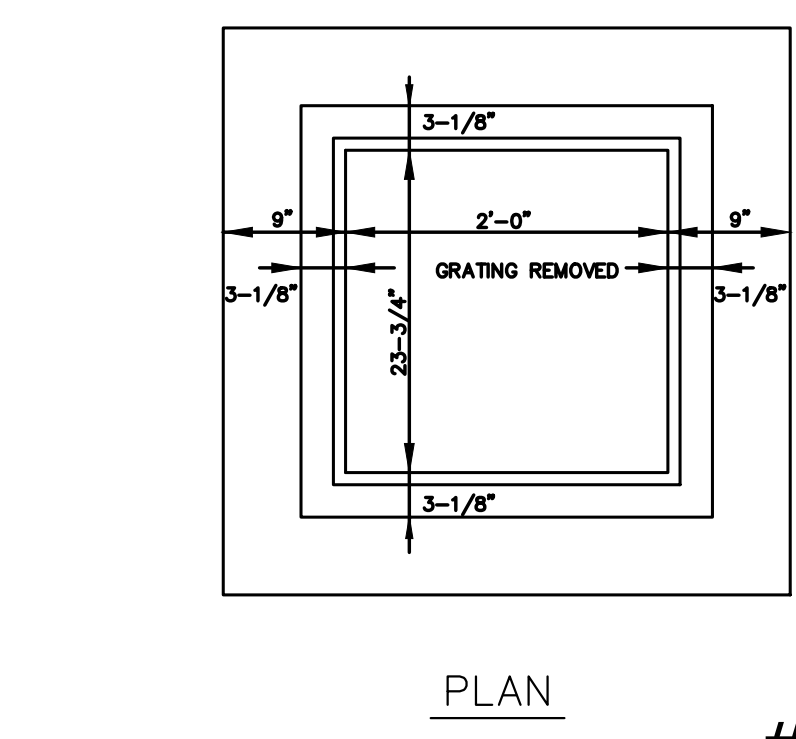
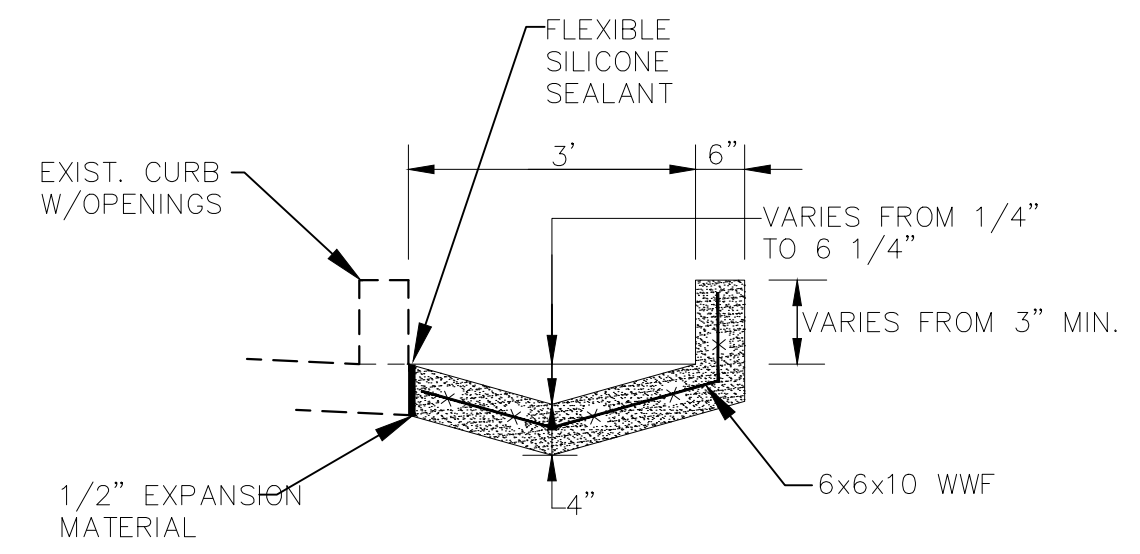
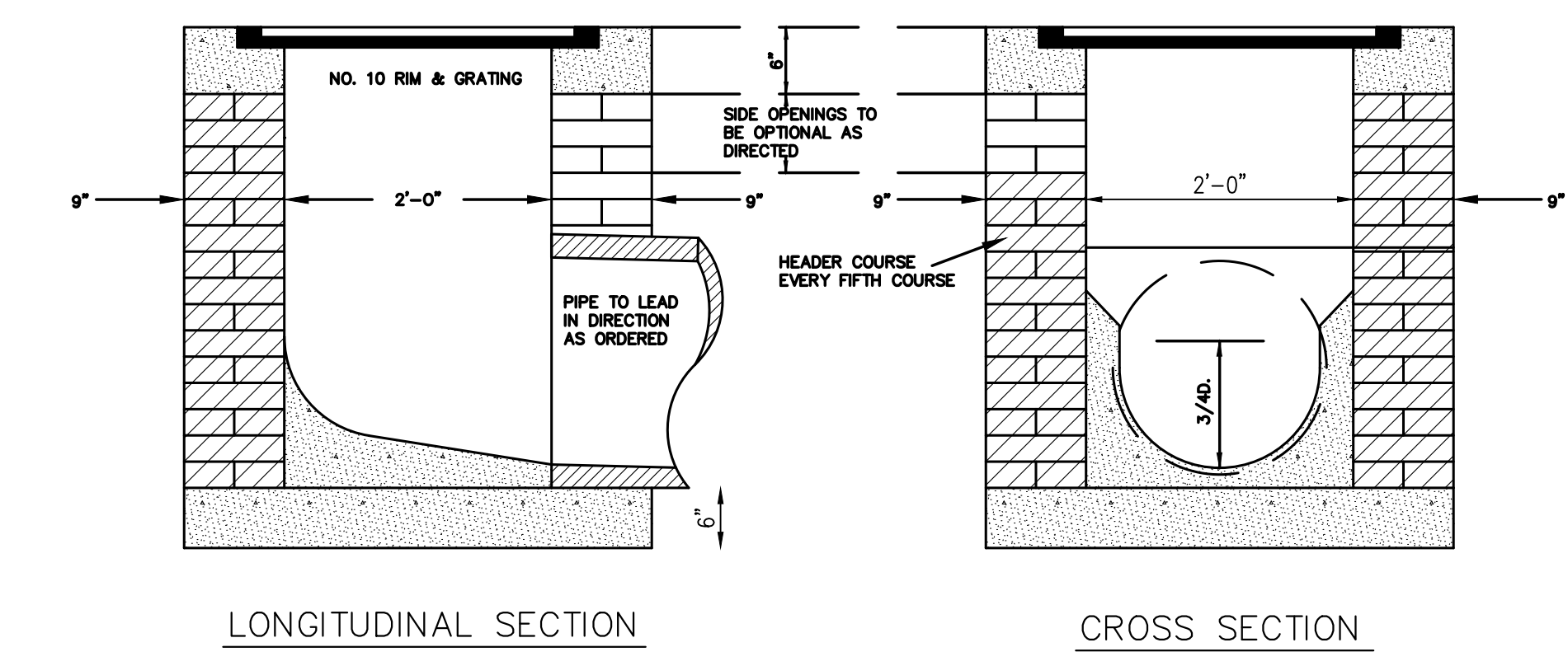
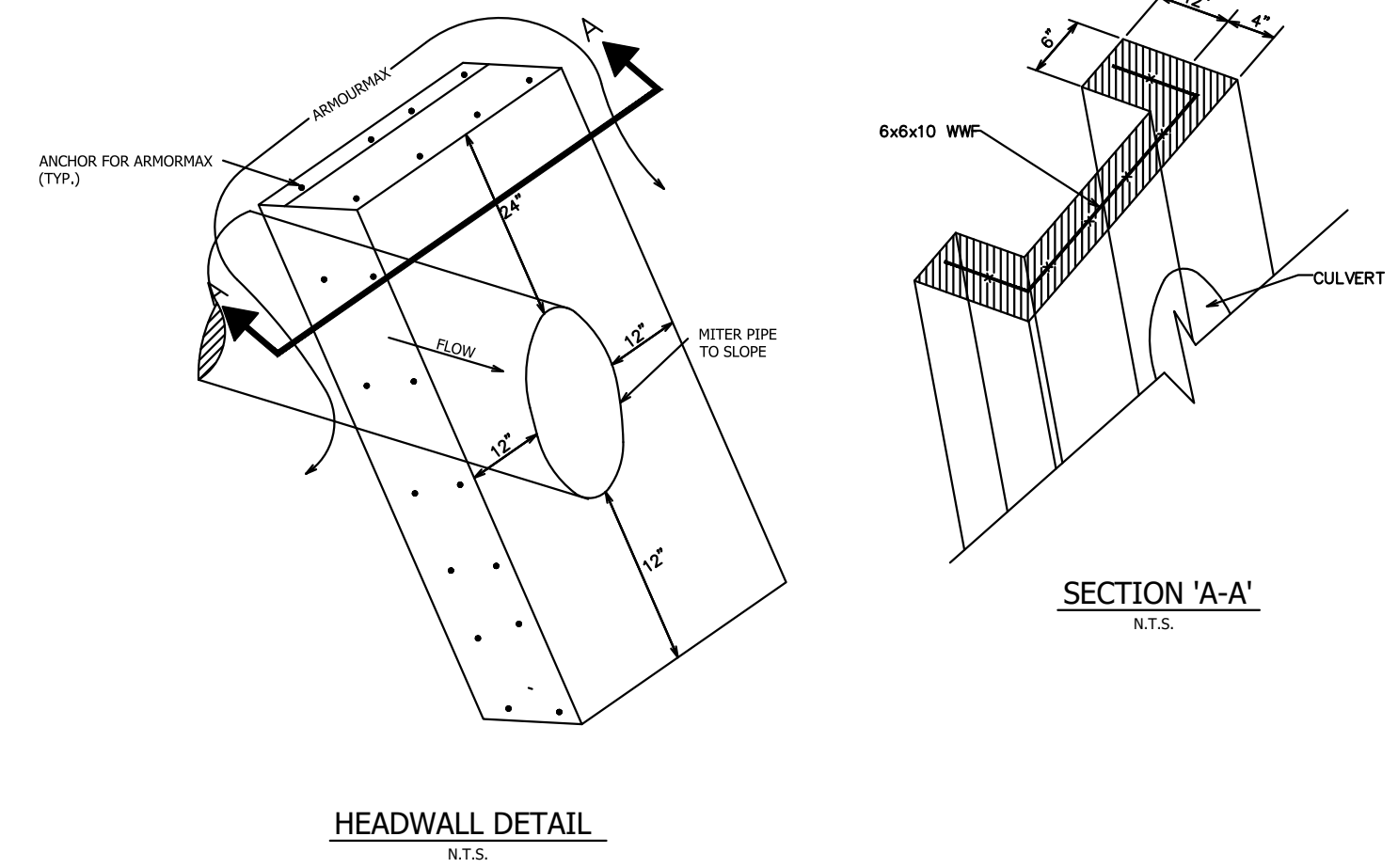
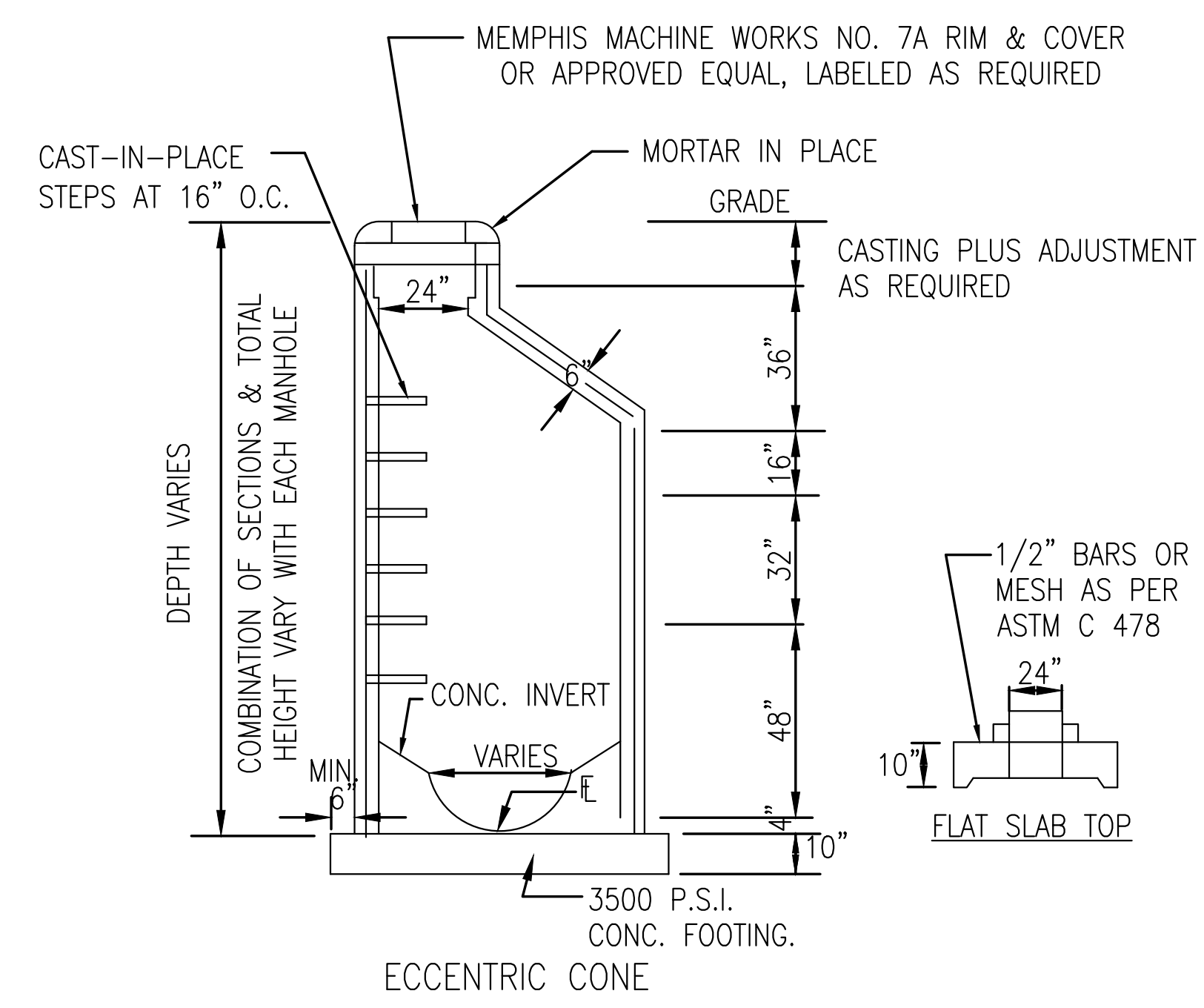


ESTIMATED WEIGHTS
FRAME: 170 LBS.
GRATE: 156 LBS.
TOTAL: 326 LBS.

NOTE: EACH CORNER OF THE FRAME AND GRATE IS TO BE CROPPED AT A 45 DEGREE ANGLE ONE-INCH IN ON A DIAGONAL.



- NOTES:**
- FOR INLET STRUCTURE CONSTRUCTION SEE THE CITY OF MEMPHIS DESIGN STANDARD FOR A NO. 10 INLET
 - INLET CAPACITY: (WITH 50% TRASH BLOCKAGE)
- | H (FT.) | Q (C.F.S.) |
|---------|------------|
| 1.0 | 6.6 |
| 0.8 | 5.6 |
| 0.6 | 4.4 |
- MAXIMUM TRIBUTARY DRAINAGE AREA ALLOWED IN INLET = 2 ACRES
MAXIMUM ALLOWABLE HEIGHT OF WATER (H) = 1 FT.
 - NO TWIN 3070 INLETS ALLOWED.



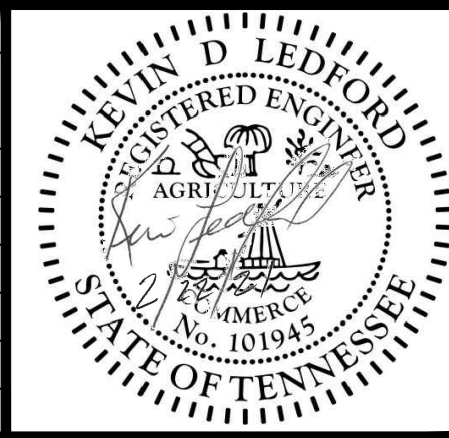
#3070 INLET
N.T.S.

NOTE: CONC. TO BE 3000 PSI (8 BAG MIN.)

BENCHMARK:
BASIS OF ELEVATIONS NAVD 88 CITY BM#296 - LOCATED AT THE ER ON THE HICKORY HILL SIDE AT THE INTERSECTION OF HICKORY HILL ROAD & RAINES ROAD. ELEV. 341.46

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REVISION		
ITEM NO.	DESCRIPTION OF CHANGE	APPROVAL DATE



DRAINAGE BASIN: JOHN'S CREEK

SHEET 1 OF 1
DIVISION OF ENGINEERING
SITE DETAILS
LOCATION: 4920 HICKORY HILL ROAD
MEMPHIS, TN
SURVEY: _____ DATE: _____ BOOK: _____
DESIGN BY: KH DATE: 4/19/21 SCALE: N/A
REVIEWED: _____
DEPUTY CITY ENGINEER DATE CITY ENGINEER DATE

AAA COOPER BANK STABILIZATION
DEVELOPER: AAA COOPER TRANSPORTATION
ENGINEER: LEDFORD ENGINEERING AND PLANNING, LLC