

GMC



CHESSER DRIVE CONNECTORS APPLE STUDY

Prepared by Goodwyn Mills Cawood
JANUARY 2021



EXECUTIVE SUMMARY

Project Study Objective

This study was initiated by the City of Chelsea through the Advanced Planning, Programming, and Logical Engineering Program (APPLE) developed by the Regional Planning Commission of Greater Birmingham (RPCGB). The City requested professional assistance in evaluating the feasibility of constructing two service road segments on the North side of U.S. Highway 280:

- [Eastern Connector](#) (East of CR-47): Between Chesser Plantation Lane and Old Highway 280
- [Western Connector](#) (West of CR-47): From Atchinson Drive to U.S. Highway 280

The purpose of the study is to determine the feasibility of constructing these service roads to provide safer access to businesses and residential neighborhoods in the central business district of Chelsea along U.S Highway 280.

Project Study Area

The study is focused on improving traffic flow through a 1-mile stretch of highway 280 by providing service road access to areas North of Highway 280 in the area of Chesser Drive. The land usage in the area of the study is primarily commercial along the frontage of US 280 with residential developments located off US 280. Many businesses are located on Chesser Drive with neighborhoods and residential developments along Chesser Plantation Lane and Old Highway 280.

The [Eastern Connector](#) would extend from Chesser Plantation Lane to Old Highway 280, a distance of approximately 0.33 miles. The proposed alignment would be primarily located on Right-of-Way



owned by the Alabama Department of Transportation (ALDOT). The site for the proposed alignment includes a mix of gentle and steep slopes. The site is grassed/wooded with some existing pavement and drainage structures and large utility infrastructure.

The [Western Connector](#) would extend from Atchinson Drive and potentially connect to U.S. Highway 280, a distance of 0.25 miles. The corridor for the proposed road alignment slopes gently and is bordered to the south by steep slopes which lead to a deep ravine adjacent to US 280. The surrounding properties are commercial developments with some lots still under development that could potentially have access from the connector. Construction of the western connector would provide access to new developments in the area, reduce traffic on Highway 280, and provide safer route alternatives at intersections with safety concerns.

Proposed Improvements

The [Eastern Connector](#) would extend east from Chesser Plantation Lane to connect with Old Highway 280. Due to limited side road connectivity in this area, local traffic must use U.S. Highway 280 in order to navigate between the multiple commercial developments in this area.

By providing a service road to connect Chesser Plantation Lane to Old Highway 280, traffic would be able to travel from the western end of the central business district to the eastern end of the central business district without having to travel on U.S. Highway 280. Traffic volumes would therefore be reduced on U.S. Highway 280 and this would provide a smoother route option for local traffic in the area accessing the businesses on Chesser Drive.

The [Western Connector](#) would begin at Atchinson Drive and extend west where it could potentially connect to U.S. Highway 280. Constructing a service road along this corridor would provide



necessary access to future developments west of Chesser Drive without the developments connecting directly to U.S. Highway 280.

If connected to U.S. Highway 280, it could also remove some traffic away from the intersection of Chesser Drive and U.S. Highway 280, which has been identified as a priority intersection to enhance safety with regards to vehicular accidents.



Table of Contents

Executive Summary.....	2
Project Study Objective	2
Project Study Area	2
Proposed Improvements	3
1. Introduction	7
1.1 Study Objective.....	8
1.2 Study Methods.....	9
2. Project Location	10
2.1 Description of the proposed Connectors.....	11
2.1.1. Eastern Connector	11
2.1.2. Western Connector	12
2.2 Site Reviews	13
2.2.1. Eastern Connector	13
2.2.2. Western connector.....	17
3. Environmental Impacts	20
3.1. Hazardous Materials Sites	20
3.2. Known Historical Structures and Archeological Sites	20
3.3. Known Threatened and Endangered Species Critical Habitat	21
3.4. Jurisdictional Waters of the U.S. (Streams and Wetlands).....	21
3.5. Floodplain Boundaries.....	23
4. Geotechnical Observations	24
4.1. Field Tests	24
4.2. Observations.....	24
5. Recommended Improvements	25
5.1. Eastern Connector	25
5.2. Western Connector	28
5.3. Opinions of Probable Cost	29
5.3.1. Eastern Connector	29



5.3.2. Western Connector	30
6. Potential Sources of Funding	30
6.1. Federal-Aid Highway Program (Administered by the Alabama Department of Transportation).....	30
6.2. State Funds (Administered by the Alabama Department of Transportation)	31
6.3. Local Funding	31
7. Summary	32
7.1 Next Steps.....	32

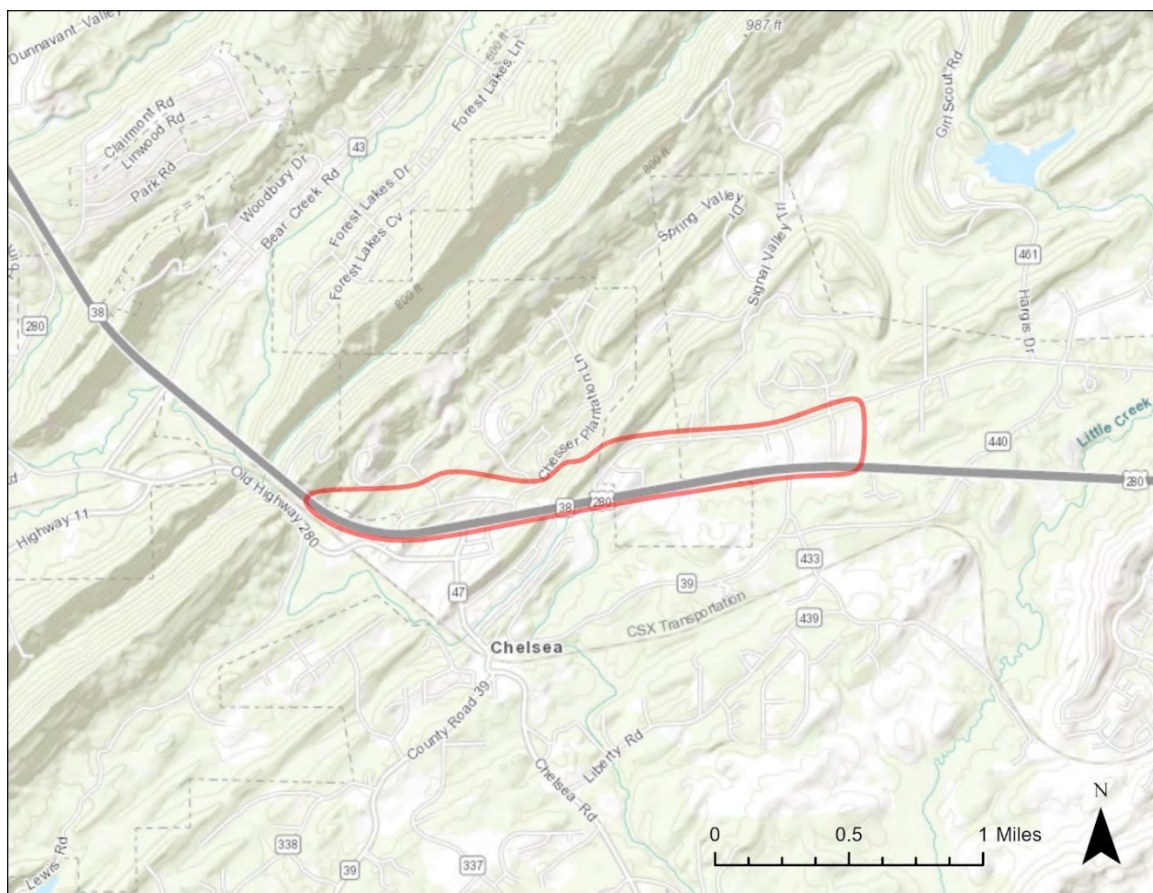
- APPENDIX A – Environmental Reports
- APPENDIX B – Geotechnical Investigations
- APPENDIX C – Opinions of Probable Cost
- APPENDIX D – Preliminary Layout Sheets
- APPENDIX E – Preliminary Cross Sections

Introduction

This study was initiated by the City of Chelsea through the Advanced Planning, Programming, and Logical Engineering Program (APPLE) developed by the Regional Planning Commission of Greater Birmingham (RPCGB). The City requested professional assistance in evaluating the feasibility of constructing two service road segments on the North side of U.S. Highway 280:

- **Eastern Connector** (East of CR-47): Between Chesser Plantation Lane and Old Highway 280
- **Western Connector** (West of CR-47): From Atchinson Drive to U.S. Highway 280

A location map of the study area can be seen below.





1.1 Study Objective

This study was undertaken to determine the feasibility of constructing service roads to provide safer access to businesses and residential neighborhoods in the central business district of Chelsea along U.S. Highway 280.

Construction of these connecting roads would also serve to improve traffic flow on U.S. Highway 280, improve safety conditions at key intersections along U.S. Highway 280 in the central business district, as well as provide access to undeveloped parcels on the North side of Highway 280.

The purpose of this study is to identify the potential roadway corridors for both connector roads and determine the environmental, utility, right of way and cost impacts the construction of these connector roads would create.

In Chelsea, the addition of these connector roads would create safe vehicular connectivity between 3 different retail / commercial clusters in Chelsea. The 3 clusters include:

- The Chesser Drive cluster including establishments stretching from Tractor Supply to Applebee's.
- The Old Highway 280 western cluster including establishments stretching from Coosa Pines Credit Union to the former Whataburger site.
- The Old Highway 280 eastern cluster including establishments stretching from Avadian Credit Union to the APCO Employees Credit Union.

These 3 clusters of development cover approximately 9,000 feet of frontage along US Highway 280 and could all be connected from one end to the other if the Eastern Connector could be constructed.



1.2 Study Methods

This study was performed in a two-phase process. The first phase of the feasibility study involved evaluating the existing conditions of the study area to identify potential conflicts, constraints, and opportunities for development. Data was collected for the existing conditions through a site review.

The site review included performing a topographic survey of the project area and conducting on-site investigations to identify conflicts. Information from various environmental databases was compiled to identify potential environmental concerns in the areas around Chesser Drive.



The second phase of the feasibility study involved evaluating design alternatives for the project area. This included developing preliminary horizontal and vertical alignments, establishing cross sections / construction limits and evaluating the impacts of the proposed roadway footprints.

As part of this evaluation, preliminary opinions of probable costs and conceptual drawings were prepared and reviewed with the city.

2. PROJECT LOCATION

The area of primary focus for this study was a 1-mile long corridor along the north side of Highway 280 in the City of Chelsea, Alabama. The western limits were just west of the Chesser Drive intersection and the eastern limits were the Chesser Lane intersection. The land usage in the area of the study is primarily commercial and residential. Many businesses are located on Chesser Drive with neighborhoods and residential developments along Chesser Plantation Lane and Old Highway 280.



2.1 Description of the proposed Connectors

2.1.1. Eastern Connector

The **Eastern Connector** would extend east from Chesser Plantation Lane to connect with Old Highway 280. Due to limited side road connectivity in this area, local traffic must use U.S. Highway 280 in order to navigate between the multiple commercial developments in this area. This connector would pass in front of 2 active businesses and a large vacant property

By providing a service road to connect Chesser Plantation Lane to Old Highway 280, traffic would be able to travel from the western end of the central business district to the eastern end of the central business district without having to travel on U.S. Highway 280. Traffic volumes would therefore be reduced on U.S. Highway 280 and this would provide a smoother route option for local traffic in the area accessing the businesses on Chesser Drive.





2.1.2. Western Connector

The **Western Connector** would begin at Atchinson Drive and extend west where it could potentially connect to U.S. Highway 280. Constructing a service road along this corridor would provide necessary access to future developments west of Chesser Drive without the developments connecting directly to U.S. Highway 280.

If the **Western Connector** is connected to U.S. Highway 280, it could also remove some traffic away from the intersection of Chesser Drive and U.S. Highway 280, which has been identified as a priority intersection to enhance safety with regards to vehicular accidents.



2.2 Site Reviews

2.2.1. Eastern Connector

As part of the project study, data was collected along the corridors of both proposed connectors. This process included performing topographic survey of both corridors, identifying right of way and property lines, identifying in-place utilities and performing an environmental and geotechnical map review of the area. In addition to gathering this data, multiple site visits were made in order to get a close-up perspective of the project area and how these connectors could potentially “fit-in” with the surrounding environment.

Figure 2 shows the proposed site for the beginning of the Eastern Connector. The view in Figure 2 is from Chesser Drive looking eastbound along Highway 280 West. The area has a mixture of gentle and moderate slopes.



Figure 2: Proposed Site for East Connector
(View from Chesser Drive looking East)

Figure 3 shows the Eastern Connector corridor east of the turnout for Walgreen's. The area is grassed/wooded with steep and moderate slopes and includes a stream crossing which crosses underneath Hwy 280 through a large 10' x 7' box culvert. This portion of the corridor is separated from Hwy 280 by a steel beam guardrail system. The stream crossing is pictured in Figures 3 & 4.



Figure 3: Eastern Connector Corridor



Figure 4: Eastern Connector Stream Crossing

Just east of the stream is a 600' long stretch where a large rock cut exists on the north side of the corridor (opposite Hwy 280). This rock cut has elevation changes that range from 40' – 50'. This is the most constrictive portion of the corridor due to the vertical terrain elements and could possibly require a retaining wall depending on property availability and the presence of rock.



Figure 5: Eastern Connector Rock Cut (North Side of Hwy 280)

Several utilities are present through the corridor for the Eastern Connector. Based on our research of the area, the following overhead and underground utilities exist in the area:

- Alabama Power Company – Overhead Transmission
- Alabama Power Company – Overhead Distribution
- Shelby County Water – 30” Ductile Iron Water Line
- Shelby County Water – 6” PVC Water Line

Contact was made with the utility owners and mapping of their facilities was received. Due to the close proximity of the proposal road alignment to the 30” water line, it will most likely be necessary to relocate a portion of this line. It may also be necessary to encase a portion of the 6” PVC line



just west of Old Highway 280. The cost of this work will need to be a budgeted expense to the project.

In regards to the Alabama Power facilities, the preliminary alignment for the Eastern Connector does avoid impact with the transmission line poles. It may be necessary however to adjust the location of one or two distribution poles and / or anchors. This work would most likely be handled by Alabama Power and not included as a budgeted expense to the project.

Figure 6 shows the site at the end of the proposed alignment. This area is grassed/wooded and overgrown. There are some utilities in the area which can be preserved and protected during construction and should present minimal conflicts to the design and construction of the project.



Figure 6: End of Eastern Corridor (Looking west)

2.2.2. Western connector

The [Western Connector](#) would extend from Atchinson Drive to U.S. Highway 280, north of Highway 280. The connector would provide access to undeveloped commercial property in the area. If connected to Highway 280, it could also assist in removing traffic movements from the Chesser Drive intersection with Highway 280.



Figure 8: Western Connector Site
(View from Atchinson Drive Looking West)

Figure 8 shows the site for the proposed alignment west of Atchinson Drive and North of Highway 280. The site slopes gently and is mostly grassed. This site has minimal conflicts and would seem to be ideal for road construction.

The site is bordered by a shallow drainage ditch to the north next to Tractor Supply (Figure 9) and by a very deep ravine (Figure 10) to the south adjacent to Highway 280. The connector road should be able to fit in between the two drainage features without issue.



Figure 9: Tractor Supply Drainage Swale
(Looking East toward Atchinson Drive)



Figure 10: Drainage Ravine
(Looking South towards Hwy 280)

The site to the west of Tractor Supply Co. is currently under development and has already been cleared making it an ideal site for construction. A connector road in this area would help provide access to future developments in the area, increase connectivity, and reduce traffic at key intersections on Highway 280. Figures 11 and 12 depict the site for the end of the proposed West Alignment.



Figure 11: Western Connector Site
(View Looking West)



Figure 12: Western Connector Site
(View Looking South toward Highway 280)



3. ENVIRONMENTAL IMPACTS

An environmental resource review was performed to determine potential environmental issues that could arise as part of the proposed project. Data was gathered from online databases, as well as, a preliminary site review. This section summarizes the information gathered during the preliminary environmental review.

3.1. Hazardous Materials Sites

A preliminary review of sites within and adjacent to the proposed corridor was conducted as part of the environmental study. There were no hazardous material sites identified within the proposed corridor. There is one fueling station located adjacent to the proposed East Alignment at the west end of the alignment. If the city decides to move forward with the project, a Phase I Environmental Site Assessment would be performed which would identify any hazardous sites within the project vicinity.

3.2. Known Historical Structures and Archeological Sites

A preliminary review of online databases was conducted to determine if there were any historical sites in the vicinity of the project. A review of the National Register of Historic Places (NRHP) and the Alabama Register of Landmarks and Heritage produced no listings within or adjacent to the proposed project area. No historic structures were identified in a review of historic maps. Because of its proximity to Highway 280, and current developments in the area, it is unlikely that any historical structures are present within or in the proximity of the proposed alignments.



3.3. Known Threatened and Endangered Species Critical Habitat

The U.S. Fish and Wildlife Service Information for Planning and Conservation (IPaC) website was used to determine if any threatened and endangered species critical habitat would be impacted as a part of the proposed project. A review of IPaC resources did not identify any designated critical habitat within the project area, however, it did identify ten listed species that should be considered as part of an effect analysis for the project.

Due to the required stream characteristics, and the characteristics of the existing stream, it is unlikely that the listed species would be impacted as part of the project. Summer roosting habitat for the listed bat species could potentially be impacted by any tree clearing activities. The bats require trees greater than 3 inches in diameter that have exfoliating bark. Based on a preliminary site review it is unlikely that there are few trees that meet these criteria, therefore the listed species are not likely to be impacted.

To avoid potential impacts, tree clearing should be performed after October 15th but before March 31st. If clearing during this timeframe is not possible, a survey should be conducted to determine if eligible trees are present within the site of the proposed project. Based on the scope of the project and the developments in the area, it is unlikely that migratory birds would be impacted as part of the project.

3.4. Jurisdictional Waters of the U.S. (Streams and Wetlands)

The U.S. Fish and Wildlife Service (USFWS) National Wildlife Inventory (NWI) mapper identified two riverine habitats within the project area. No wetlands were identified within the project site. Based on the identification of the two jurisdictional streams, it is likely this project would fall under the Nationwide Permit 14 for linear transportation projects. This general permit is required for

impacts less than 0.50 acres to stream or wetland crossings. Figure 13 shows the delineation of the jurisdictional streams within the project area.



Figure 13: Stream Delineation (Eastern Connector)

Based on these delineations, the impact at each stream crossing would be less than 0.10 acres and no wetlands would be impacted. This project would not require any additional mitigation, and would not require the U.S. Army Corps of Engineers to be contacted prior to construction.

3.5. Floodplain Boundaries

Figure 14 shows the floodplain boundaries in the proposed project area. Based on this map, all project areas are in Zone X, which is outside the 0.2% annual chance floodplain.

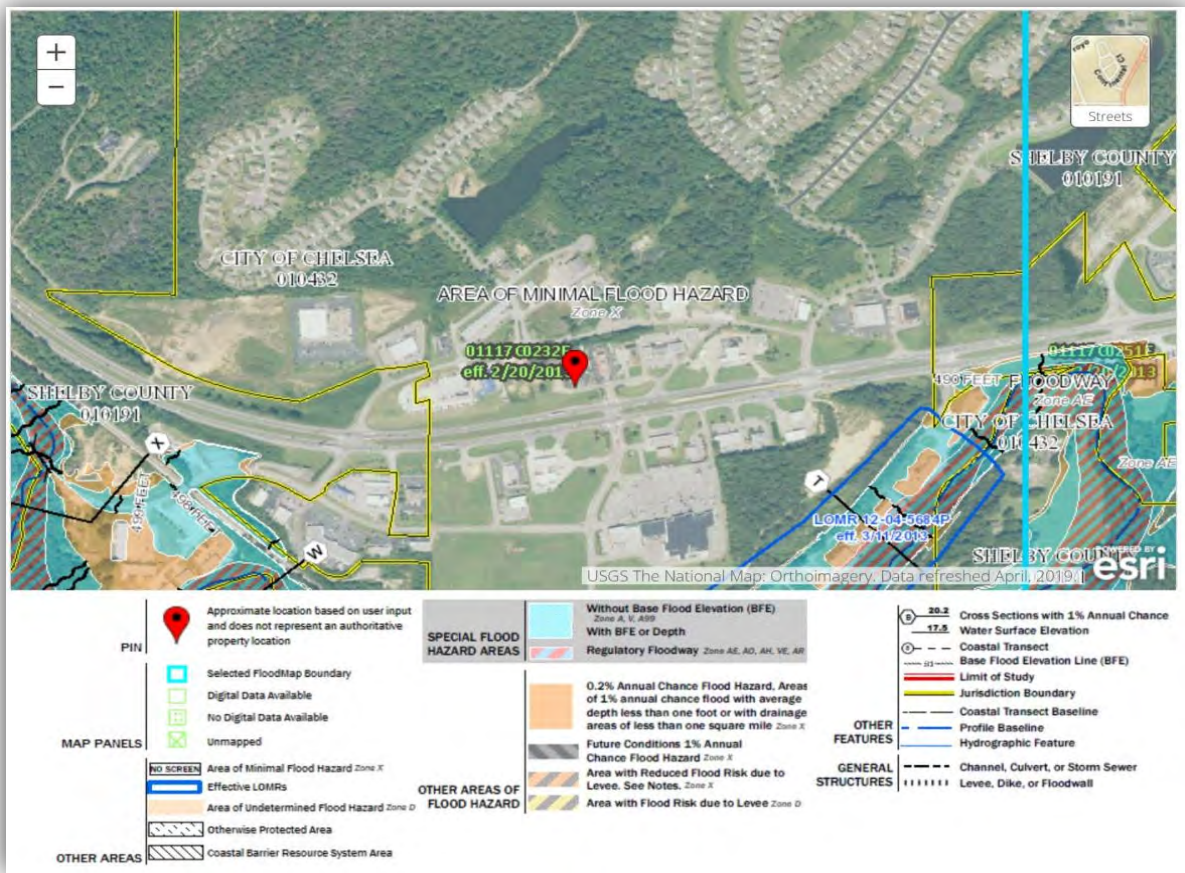


Figure 14: Floodplain Boundaries



4. GEOTECHNICAL OBSERVATIONS

This study focuses on two proposed connector roads that have the potential to provide much needed connectivity between commercial developments in Chelsea, eliminating the need to access Highway 280 to travel between the developments and therefore reducing local traffic on Highway 280. This section focuses on a breakdown of recommended improvements for the two connector roads, as well as, a cost breakdown of the recommended improvements.

4.1. Field Tests

In order to perform a preliminary analysis of the soils in the area of the Eastern Connector, GMC performed a Dual-Mass Dynamic Cone Penetrometer (DCP) test. Four DCP test were performed along the proposed Eastern Connector alignment. The ground surface consisted of grasses with approximately 6 inches of topsoil. The soils consisted of sandy clay and clayey sand. The CBR values in the upper 6 inches of the ground surface varied from about 3 to 5. The depths between 6 inches and the termination depths of 3 to 4 feet had CBR values of 5 to over 20.

4.2. Observations

Most of the test locations had 6 inches of upper soft soils, which would be likely typical along the Eastern Connector alignment. Soft soils would likely also be encountered in the swales and culvert alignment. We anticipate the soft soils would not exceed 3 feet in these areas. Test locations on the side of the cut slope reached refusal after about 6 inches on partially weathered shale. If the slope would be required to be excavated, it is likely that the partially weathered shale along the surface would be able to be removed with a large track hoe. Deeper excavations into the slope may require blasting. The presence of unsuitable soils did not appear to be a major concern based on preliminary observations.



5. RECOMMENDED IMPROVEMENTS

This study focuses on two proposed connector roads that have the potential to provide much needed connectivity between commercial developments in Chelsea, eliminating the need to access Highway 280 to travel between the developments and therefore reducing local traffic on Highway 280.

This section focuses on a breakdown of recommended improvements for the two connector roads, as well as, a cost breakdown of the recommended improvements.

5.1. Eastern Connector

One alignment analyzed in the study would extend east from Chesser Plantation Lane to connect with Old Highway 280. Due to the lack of sufficient local road connectivity in the area, local traffic has to use Highway 280 as the main access to businesses and restaurants in the area of Chesser Drive.

By providing a service road to connect Chesser Plantation Lane to Old Highway 280, traffic would no longer be required to use Highway 280 to travel between the business clusters. This would reduce traffic on Highway 280 and would provide a smoother route option for local traffic in the area accessing the businesses on Chesser Drive.

Below is an image of the proposed alignment of the Eastern Connector.



Figure 15: Proposed Eastern Connector

The following improvements are recommended as part of the Eastern Connector:

1. The proposed alignment would extend east from Chesser Plantation Lane and connect with Old Highway 280. The proposed road is a two (2) lane connector road with twelve (12) foot lanes and combination curb and gutter. The proposed alignment is approximately 1,630 linear feet of roadway.
2. The proposed road surface would be constructed of asphalt pavement with a typical 2% cross slope.
3. Multiple drainage structures would be required including cross drains and storm sewer infrastructure.
4. A 10'X7' concrete box culvert would be required to be extended approximately 45 linear feet under the proposed alignment.
5. There are two potential options to address the turnout from Walgreen's and Advance Auto Parts:



- a. Option 1: Close access to Highway 280 from the turnout. Connect the driveway to the proposed connector road.
 - b. Option 2: Allow turnout to remain. Create stop conditions on the connector road at the intersection of the turnout.
6. A concrete jersey barrier would be required in between the proposed service road and Highway 280 to provide a safety barrier and reduce glare from the headlights of oncoming traffic at night. The barrier would be approximately 1000 linear feet long.
 7. A retaining wall may be required along a portion of the project north of the proposed service road. The retaining wall would also enable the project to move forward with minimal impact with overhead utilities.

The proposed Eastern Connector is located entirely within the Alabama Department of Transportation's (ALDOT) right-of-way. The project would be designed according to ALDOT standards and specifications.

5.2. Western Connector

The second alignment analyzed would begin at Atchinson Drive and extend westward where it could connect to Highway 280. This alignment would provide necessary access to future developments west of Chesser Drive and prevent these developments from accessing directly to Highway 280.



Figure 16: Proposed Western Connector Alignment

The following improvements are recommended as a part of the Western Connector:

1. The proposed alignment would begin at Atchinson drive and extend west to potentially connect with Highway 280. The proposed road is a two (2) lane connector road with twelve (12) foot lanes and combination curb and gutter. The proposed alignment is approximately 1,250 linear feet of roadway.



2. The proposed road surface would be constructed of asphalt pavement with a typical 2% cross slope.
3. Multiple drainage structures would be required including cross drains and storm sewer infrastructure.

The proposed Western Connector alignment would require Right-of-Way acquisition; however, the proposed alignment would provide access to upcoming developments in the area and would have minimal conflicts to the implementation of the proposed design.

5.3. Opinions of Probable Cost

Opinions of probable construction cost were developed based on the proposed improvements for each connector road. These opinions are based on the experience and knowledge of the engineer as it relates to the construction of projects with similar scopes of work. These numbers are not guaranteed and some variations in costs from those provided should be expected. A contingency of fifteen (15) percent is included in each cost estimate.

The cost estimates do not include costs associated with right-of-way acquisition as it is not anticipated that right of way will have to be acquired for the [Eastern Connector](#) and it will be donated for the [Western Connector](#). Utility relocation is not anticipated for the [Western Connector](#). However, water line encasements will most likely be required on the [Eastern Connector](#).

5.3.1. Eastern Connector

The estimated construction cost range for the [Eastern Connector](#) is \$2.5M to \$3.0M. This includes cost associated with the relocation and encasement of water line infrastructure in the area owned



by Shelby County Water and the adjustment of distribution poles owned by Alabama Power. No right of way acquisition cost is anticipated.

5.3.2. Western Connector

The estimated construction cost range for the [Western Connector](#) is \$500k to \$1.0M. Utility relocation cost for this segment would be minor as it would only include a short encasement for a water line. Also, it is anticipated that the right of way required for the project would be donated by the property owners. Therefore, cost for right of way acquisition is not included in the cost of the project.

6. POTENTIAL SOURCES OF FUNDING

6.1. Federal-Aid Highway Program (Administered by the Alabama department of Transportation)

The Federal-Aid Highway Program supports State highway systems by providing financial assistance for the construction, maintenance and operations of the public highway system, including the Interstate Highway System, primary highways and secondary local roads. The Federal Highway Administration (FHWA) is charged with implementing the Federal-aid Highway Program in cooperation with the States and local government.

One-way federal funds can be obtained by cities in a metropolitan area is through coordination with the local Metropolitan Planning Organization (MPO) as long as the city or county is an actual member of the MPO. The city of Chelsea lies within the footprint of the Regional Planning Council of Greater Birmingham (RPCGB) and is a member of the Birmingham MPO.



Federal funds can also be obtained through other governing agencies such the Alabama Department of Economic and Community Affairs (ADECA). These funds are often competitive and are based on promoting economic growth.

All projects constructed with federal funds must comply with all federal guidelines for environmental compliance (NEPA), design criteria and right of way acquisition.

6.2. State Funds (Administered by the Alabama Department of Transportation)

State funds from the State of Alabama are funds obtained directly from the state that originated within the state and do not have any federal government obligations. These funds are still administered by the state of Alabama and must follow ALDOT guidelines for environmental compliance, design criteria and right of way acquisition.

6.3. Local Funding

Local funds are funds that originate at the city or county level and are not administered by FHWA or ALDOT. One option for funding is for the City to use its own resources to fund the design and construction of the proposed improvements. Funding the project with local funds would allow for a faster timeframe and plan review process. Local funds could be used to supplement or match funding from state or federal resources.



7. SUMMARY

Based on the preliminary findings of this report, the following is a summary of the potential conflicts and issues that these two alignments would encounter if pursued as a roadway development project:

Corridor	Probable Range of Cost	Potential Utility Relocations	Potential Right of Way Acquisition	Potential Wetland / Stream Mitigation	Anticipate Poor Soil Conditions
Eastern Connector	\$2.5M - \$3.5M	Yes	No	Yes	No
Western Connector	\$500k - \$1M	No	Yes	No	No

7.1 Next Steps

The next step would be to coordinate with multiple funding agencies, such as the Alabama Department of Transportation (ALDOT), the Regional Planning Commission of Greater Birmingham (RPCGB) or the Alabama Department of Economic and Community Affairs (ADECA) in order to identify any funding opportunities that would be available for a project of this nature.

This project would require an environmental document to comply with the NEPA process and a geotechnical exploration process would need to be performed as well. As part of the design process, public hearings would be held to discuss concerns for the proposed alignments. For the Eastern Connector, utility coordination / relocations would be required. Right of way acquisition would most likely need to be acquired for the Western Connector.



If federal funds are utilized for this project, it should be anticipated that project development, including design and construction, could take 2 – 4 years, depending on final permitting requirements



APPENDIX A – ENVIRONMENTAL REPORTS



Goodwyn Mills Cawood

2701 1st Avenue South
Suite 100
Birmingham, AL 35233

T (205) 879-4462
F (205) 879-4493

www.gmcnetwork.com

May 28, 2020

Mayor Tony Pickelsimer
City of Chelsea
11611 Chelsea Road
Chelsea, AL 35043

RE: Chelsea Apple Study
Preliminary Environmental Resource Review
Chelsea, Alabama

Mayor Pickelsimer,

Goodwyn, Mills, & Cawood, Inc. (GMC) Environmental Department is pleased to have the opportunity to conduct a preliminary environmental resource review for the proposed project in Chelsea, Alabama. GMC utilized online resources and a preliminary site visit to review the potential for the following common environmental issues that could arise for the proposed project 1) hazardous material sites, 2) historical/archaeological sites, 3) threatened and endangered species, 4) jurisdictional streams or wetlands, and 5) floodplains. The following is a summary of the preliminary findings.

1) Hazardous Materials Sites

GMC conducted a preliminary review of potential hazardous materials sites within and immediately adjacent to the proposed corridor. This review did not identify any hazardous material sites within the proposed corridor. There is one fueling station located in the vicinity of the proposed corridor (west end of the proposed eastern service road). It is likely a Phase I Environmental Site Assessment (ESA) will be conducted during the land transaction for the proposed project. Although unlikely, the Phase I ESA would identify any potential historical or current hazardous materials site.

2) Known Historical Structures and Archaeological Sites

A review of available literature was conducted to determine if there were any known historical structures and/or historical sites in the vicinity of the proposed corridor. A search of the National Register of Historic Places (NRHP) and the Alabama Register of Landmarks and Heritage produced no listings within or adjacent to the proposed corridor. A review of historic maps did not identify any historic structures. Considering the proximity to the existing right of way of Highway 280 and the development activities in the immediate area, it is unlikely that significant historical or archaeological resources are present. Although unlikely, it should be noted that this does not preclude the possibility of these resources existing in this area.

3) Known Threatened and Endangered Species Critical Habitat

The U.S. Fish & Wildlife Service Information for Planning and Conservation (IPaC) website was utilized to determine if there is known threatened and endangered species critical habitat within the proposed corridor. The IPaC Trust Resources Report did not identify designated critical habitat within the project area; however, it did identify ten (10) listed species that should be considered as part of an effect analysis for the project. Based on the development in the area, the required stream characteristics to support the clam species, and the type of stream habitat potentially present; it is unlikely that listed clam species will be impacted by the proposed project. Summer roosting habitat for the listed bat species could potentially be impacted by the proposed project. These bat species require trees that are greater than 3-inches in diameter and contain exfoliating bark. It appears that there are very few trees that meet these criteria for the listed bat species, and therefore unlikely that the listed species will be impacted. However, to avoid this potential impact altogether, all tree clearing activities should occur after October 15th and before March 31st (fall/winter months). If clearing during this timeframe is not feasible, then a survey to determine if the eligible trees are present should be conducted. If eligible trees are present in the corridor, then additional surveys may be necessary. The IPaC report also addresses potential impacts to migratory birds. Based on the scope of the project and condition of the area being developed, it is our opinion that migratory birds will not be impacted.

4) **Jurisdictional Waters of the U.S. (Streams and Wetlands)**

The U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) mapper identified two (2) riverine (stream) habitats within the project area. Based on site observations, it appears that there is the potential for impacts to jurisdictional wetlands as well as streams. If jurisdictional streams or wetlands are impacted, it is likely that a Nationwide Permit 14 (NWP14) for linear transportation projects will be required from the U.S. Army Corps of Engineers (USACE). Depending on the quantity and quality of the resources being impacted, the USACE may require mitigation of the proposed impacts through the permitting process.

5) **Floodplain Boundaries**

According to FEMA Map number 01117C0232E, all areas of the proposed project are located in Zone X, areas determined to be outside the 0.2% annual chance floodplain.

Please find attached the USFWS IPaC report along with the National Wetland Inventory map and FEMA floodplain map. If you have any questions, feel free to contact me at (205) 471-1629 or by email at sblackwell@gmcnetwork.com.

Sincerely,

GOODWYN, MILLS, AND CAWOOD, INC.

A handwritten signature in blue ink that reads "Stuart Blackwell". The signature is written in a cursive style.

Stuart A. Blackwell,
Environmental Department Manager

IPaC Information for Planning and Consultation **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Shelby County, Alabama



Local office

Alabama Ecological Services Field Office

☎ (251) 441-5181

📠 (251) 441-6222

1208 B Main Street

Daphne, AL 36526-4419

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species

¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

-
1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.
 2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Gray Bat <i>Myotis grisescens</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6329	Endangered
Indiana Bat <i>Myotis sodalis</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Threatened

Clams

NAME	STATUS
Coosa Moccasinshell <i>Medionidus parvulus</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2575	Endangered
Finelined Pocketbook <i>Lampsilis altilis</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/1393	Threatened
Ovate Clubshell <i>Pleurobema perovatum</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/5430	Endangered
Southern Clubshell <i>Pleurobema decisum</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/6113	Endangered
Southern Pigtoe <i>Pleurobema georgianum</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/1520	Endangered

Triangular Kidneyshell *Ptychobranhus greenii* Endangered
There is **final** critical habitat for this species. Your location is outside the critical habitat.
<https://ecos.fws.gov/ecp/species/4396>

Upland Combshell *Epioblasma metastriata* Endangered
There is **final** critical habitat for this species. Your location is outside the critical habitat.
<https://ecos.fws.gov/ecp/species/317>

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act

¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location,

desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

Golden-winged Warbler *Vermivora chrysoptera*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/8745>

Breeds May 1 to Jul 20

Red-headed Woodpecker *Melanerpes erythrocephalus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 10 to Sep 10

Wood Thrush *Hylocichla mustelina*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 10 to Aug 31

Yellow-bellied Sapsucker *sphyrapicus varius*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/8792>

Breeds May 10 to Jul 15

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ “Proper Interpretation and Use of Your Migratory Bird Report” before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

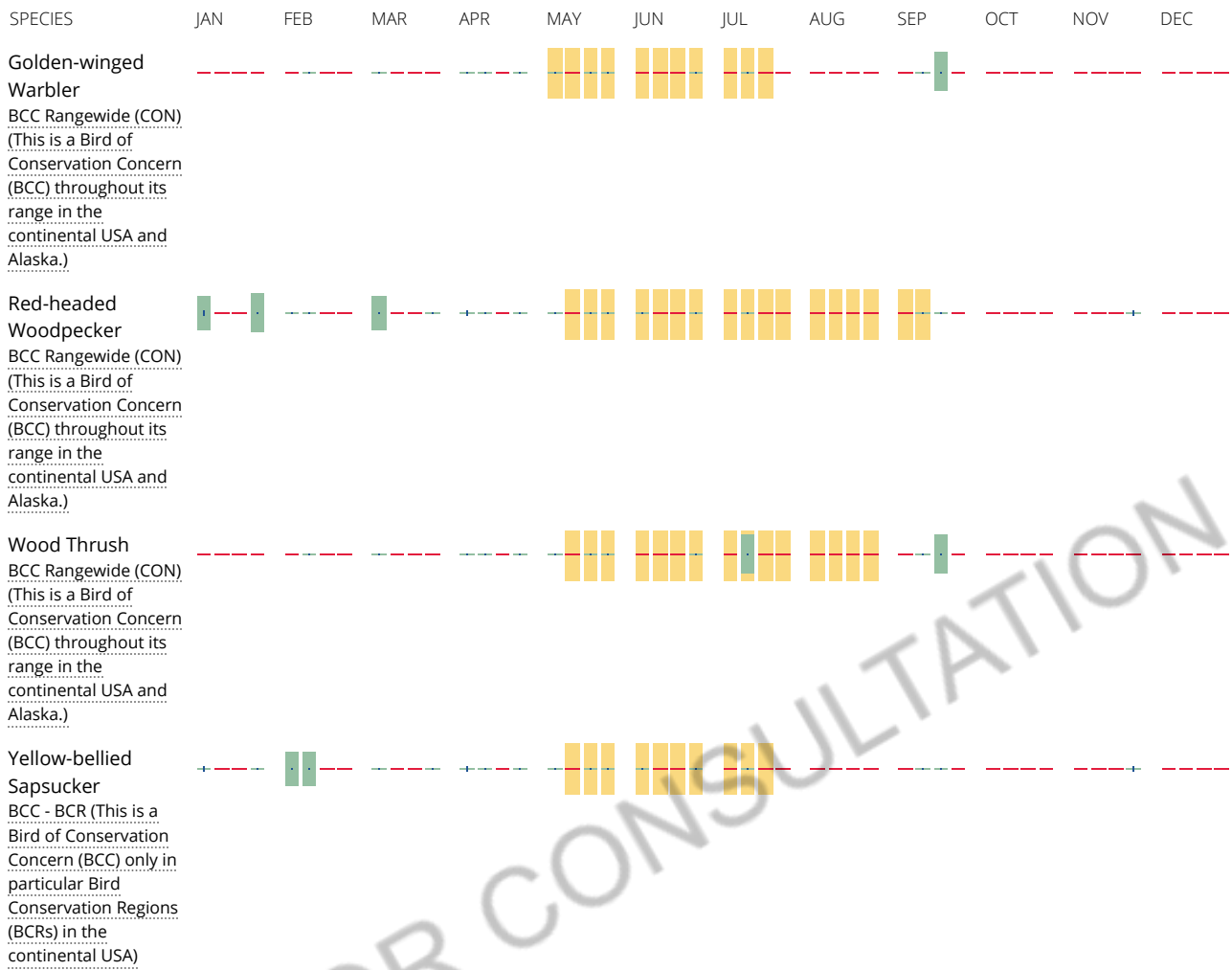
No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

■ probability of presence ■ breeding season | survey effort — no data



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

[PEM1/FO1Fh](#)

RIVERINE

[R4SBC](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

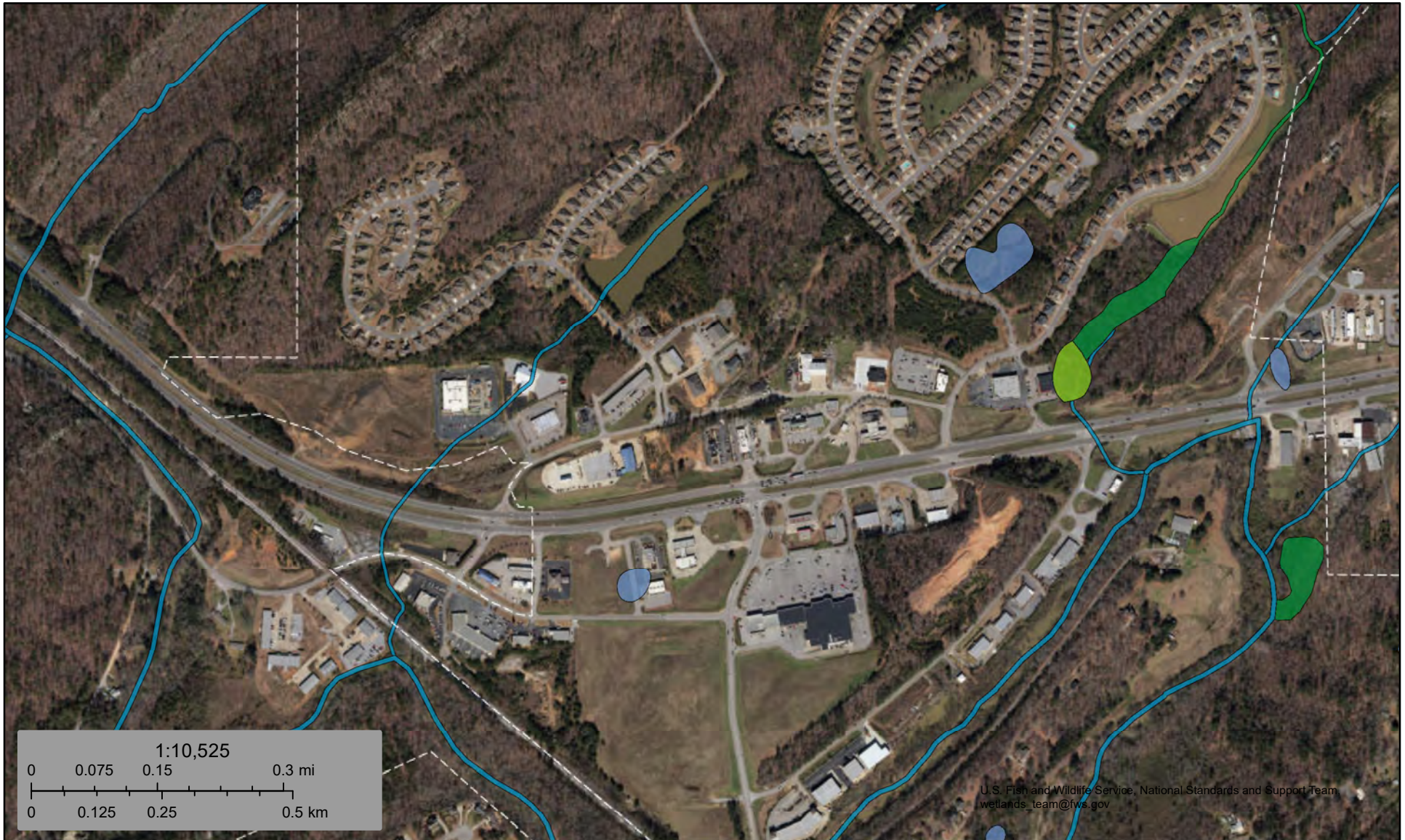
Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.



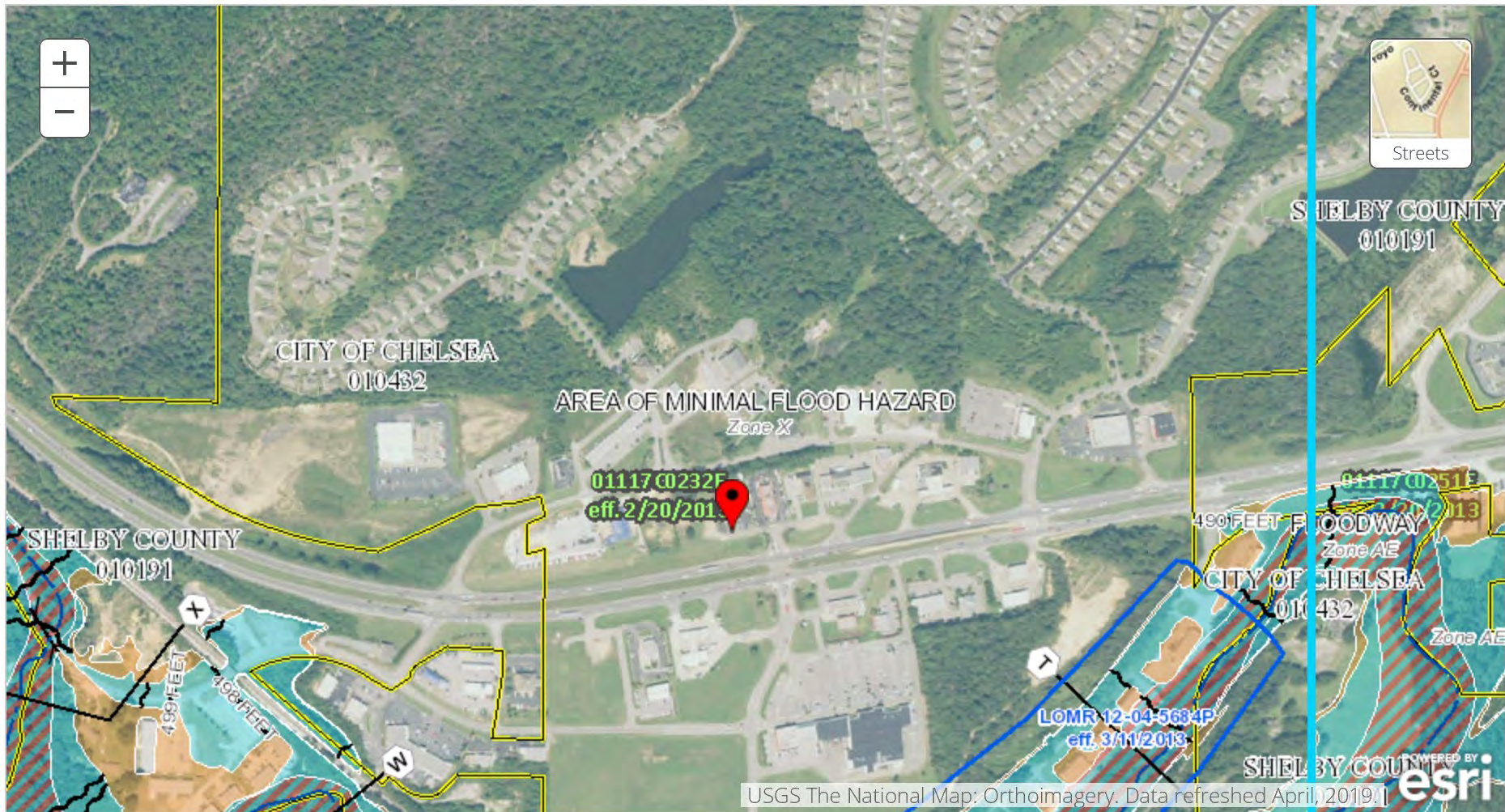
U.S. Fish and Wildlife Service, National Standards and Support Team
wetlands_team@fws.gov

May 28, 2020

Wetlands

- | | | | | | |
|---|--------------------------------|---|-----------------------------------|---|----------|
|  | Estuarine and Marine Deepwater |  | Freshwater Emergent Wetland |  | Lake |
|  | Estuarine and Marine Wetland |  | Freshwater Forested/Shrub Wetland |  | Other |
| | |  | Freshwater Pond |  | Riverine |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.



USGS The National Map: Orthoimagery. Data refreshed April, 2019. | **esri**

<p>PIN</p> <ul style="list-style-type: none"> Approximate location based on user input and does not represent an authoritative property location 	<p>SPECIAL FLOOD HAZARD AREAS</p> <ul style="list-style-type: none"> Without Base Flood Elevation (BFE) Zone A, V, A99 With BFE or Depth Regulatory Floodway Zone AE, AO, AH, VE, AR 	<p>OTHER AREAS OF FLOOD HAZARD</p> <ul style="list-style-type: none"> 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X Future Conditions 1% Annual Chance Flood Hazard Zone X Area with Reduced Flood Risk due to Levee. See Notes. Zone X Area with Flood Risk due to Levee Zone D 	<p>OTHER FEATURES</p> <ul style="list-style-type: none"> Cross Sections with 1% Annual Chance Water Surface Elevation Coastal Transect Base Flood Elevation Line (BFE) Limit of Study Jurisdiction Boundary Coastal Transect Baseline Profile Baseline Hydrographic Feature
<p>MAP PANELS</p> <ul style="list-style-type: none"> Selected FloodMap Boundary Digital Data Available No Digital Data Available Unmapped 	<p>OTHER AREAS</p> <ul style="list-style-type: none"> Area of Minimal Flood Hazard Zone X Effective LOMRs Area of Undetermined Flood Hazard Zone D Otherwise Protected Area Coastal Barrier Resource System Area 	<p>GENERAL STRUCTURES</p> <ul style="list-style-type: none"> Channel, Culvert, or Storm Sewer Levee, Dike, or Floodwall 	



Goodwyn Mills Cawood

2701 1st Avenue South
Suite 100
Birmingham, AL 35233

T (205) 879-4462
F (205) 879-4493

www.gmcnetwork.com

July 29, 2020

Mayor Tony Pickelsimer
City of Chelsea
11611 Chelsea Road
Chelsea, AL 35043

RE: Chelsea Apple Study
Preliminary Environmental Resource Review
Chelsea, Alabama

Mayor Pickelsimer,

Goodwyn, Mills, and Cawood, Inc. (GMC) Environmental Department conducted a preliminary environmental due diligence assessment on the proposed road project located in Chelsea, Alabama. The scope of work included a review of jurisdictional Waters of the U.S. (including wetlands) and information regarding potential wetland permitting requirements for the proposed project. The following information is a summary of the findings for these assessments.

JURISDICTIONAL WATERS OF THE U.S.

A Professional Wetland Scientist (PWS) from GMC conducted a site visit to identify potential jurisdictional "waters of the U.S." (waters), including streams and wetlands, regulated by the U.S. Army Corps of Engineers (USACE). The waters were delineated in accordance with the *2012 Regional Supplement to the U.S. Army Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region*. Based on the field assessment, two potential perennial streams were identified on the eastern portion of the proposed project area. No wetlands were identified throughout the project site. The attached Figure 1 shows the identified jurisdictional streams.

SECTION 404 (WETLAND) PERMITTING REQUIREMENTS

Based on the identified jurisdictional areas located within the project area, it is likely this project would fall under the Nationwide Permit 14 for Linear Transportation projects. This general permit is for activities required for impacts less than 0.50 acres to stream and/or wetland crossings. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable. The U.S. Army Corps of Engineers (USACE) requires that an applicant must submit a pre-construction notification to the district engineer prior to commencing the activity if: (1) the loss of waters of the United States exceeds 1/10-acre; or (2) there is a discharge in a special aquatic site, including wetlands. Based on the delineation described above, the impacts at each crossing is less than 0.10 acres and there are no wetland impacts; therefore notification to the USACE is not required for this project and no mitigation is required.


Thank you and feel free to contact me if you have any questions or concerns.


Sincerely,

GOODWYN, MILLS, AND CAWOOD, INC.

Stuart A. Blackwell,
Environmental Department Manager



© 2020 Microsoft Corporation © 2020 DigitalGlobe © CNES (2020) Distribution Airbus DS 

PLAN SUBMITTAL	CITY OF CHELSEA	HORIZ		SCALE (FEET)	SHEET TITLE	ROUTE
					PRELIMINARY ALIGNMENT	



APPENDIX B – GEOTECHNICAL INVESTIGATIONS



Goodwyn Mills Cawood May 27, 2020

2701 1st Avenue South
Suite 100
Birmingham, AL 35233

T (205) 879-4462
F (205) 879-4493

www.gmcnetwork.com

Mayor Tony Pickelsimer
City of Chelsea
11611 Chelsea Road
Chelsea, AL 35043

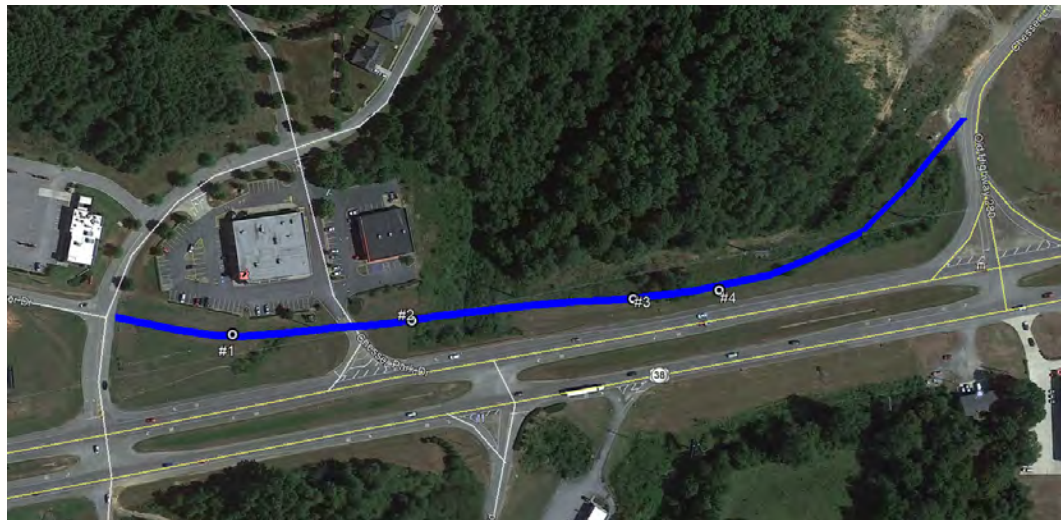
**RE: REPORT OF LIMITED GEOTECHNICAL EXPLORATION
CHELSEA APPLE STUDY
CHELSEA, SHELBY COUNTY, ALABAMA
GMC PROJECT NO. CBHM200019**

Dear Mayor Pickelsimer,

Goodwyn, Mills and Cawood, Inc. (Geotechnical & Construction Services Division) is pleased to provide this report of limited geotechnical exploration performed for the above referenced project. This report includes the results of field testing and general site conditions.

General Subsurface Conditions

The purpose of this exploration was to perform a limited evaluation of the subsurface soil conditions along a proposed new alignment of Chesser Drive. The Google Earth image below shows the potential alignment along with the soil test locations.



Google Earth Imagery Date 8/15/2019



The scope of the exploration and evaluation included a site reconnaissance, field testing, and an engineering evaluation of the foundation materials. The testing performed by GMC consisted of using a hand operated Dual-Mass Dynamic Cone Penetrometer test. Dual-Mass Dynamic Cone Penetrometer tests (DCP) test is intended to provide data that can be correlated to an in-situ California Bearing Ratio (CBR) test. The California Bearing Ratio is a value provides data that is a semi-empirical index of the strength and deflection characteristics of a soil that has been correlated with pavement performance to establish design curves. The CBR is used with empirical curves to design pavement structures. The DCP test involves a rod with a 0.79-inch O.D. cone is seated at the test location and driven with a 17.6-pound (or 10.1-pound) weight falling 22.6 inches. The length of penetration is recorded with a given number of blows. The values are then evaluated and correlated with an in situ CBR.

Four DCP test were performed along the proposed alignment. The ground surface consisted of grasses with approximately 6 inches of topsoil. The soils consisted of sandy clay and clayey sand. The CBR values in the upper 6 inches of the ground surface varied from about 3 to 5. The between 6 inches and the termination depths of 3 to 4 feet had CBR values of 5 to over 20.





Existing Culvert Under U.S. Highway 280

The subsurface descriptions are generalized in nature to highlight the major subsurface stratification features and material characteristics. Variations may occur and should be expected between test locations.

Geology

Published geologic information indicates that the site is underlain by the Pottsville formation. The Pottsville formation consists of alternating beds of sandstone, shale, and siltstone with coal seams within the shale. The bedrock weathers to form clayey sand and sandy clay soils with varying amounts of silt. The bedrock surface is relatively level in the formation.

Observations

Test locations #1 and #2 were in areas that would require fill material to reach an anticipated subgrade elevation. These areas had 6 inches of upper soft soils at the test locations, which would be likely typical along the alignment. Soft soils would likely be encountered in the swales and culvert alignment. We anticipate the soft soils would not exceed 3 feet in these areas. Test location #3 was on the side of the cut slope and reached refusal after about 6 inches on likely partially weathered shale. Test location #4 was located at the toe of the slope and may be in a potential fill area. If the slope would be required to be excavated, it is likely that the partially weathered shale along the surface should be able to be removed with large trackhoe. Deeper excavations into the slope may require blasting.



Limitations of Report

The recommendations submitted are based on the available soil information obtained by GMC and design details furnished by GMC for the proposed project. If there are any revisions to the plans for this project or if deviations from the subsurface conditions noted in this report are encountered during construction, we should be notified immediately to determine if changes in the foundation, or other, recommendations are required. If GMC is not retained to perform these functions, GMC cannot be responsible for the impact of those conditions on the performance of the project.


The findings, recommendations or professional advice contained herein have been made in accordance with generally accepted professional geotechnical engineering practices in the local area.

After the plans and specifications are more complete, the geotechnical engineer should be provided the opportunity to review the final design plans and specifications to check that our engineering recommendations have been properly incorporated into the design documents. At that time, it may be necessary to submit supplementary recommendations.

We appreciate the opportunity to perform this study on this phase of the project for you and look forward to continued participation during the construction phase of this project. If you have any questions pertaining to this report, or if we may be of further service, please do not hesitate to call us.

Sincerely,


GOODWYN, MILLS AND CAWOOD, INC.


Michael J. McNeill, PE
Senior Geotechnical Engineer
Licensed Alabama 26331



Attachments DCP Location Plan
Dual-Mass Dynamic Cone Penetrometer Results



 Approximate Boring Location

Reference: Google Earth Imagery Date 8/15/2019

Chelsea APPLE Study
Chelsea, Shelby County, Alabama

Figure 1

SUPPLEMENTAL DRAWING

GMC # CBHM200019

05/27/2020

DRAWN BY: ---

DCP Location Plan

27011st Avenue S
Birmingham, AL 35233
T 205.879.4462
GMCNETWORK.COM

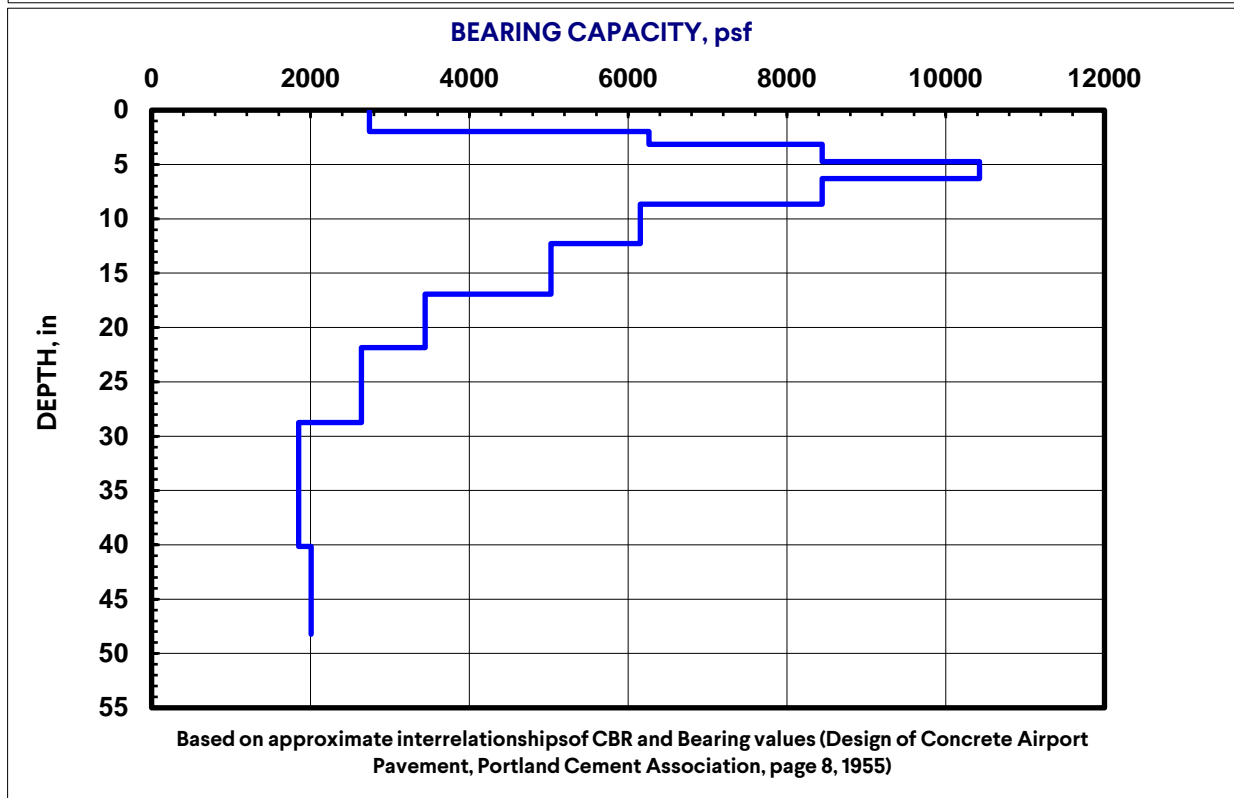
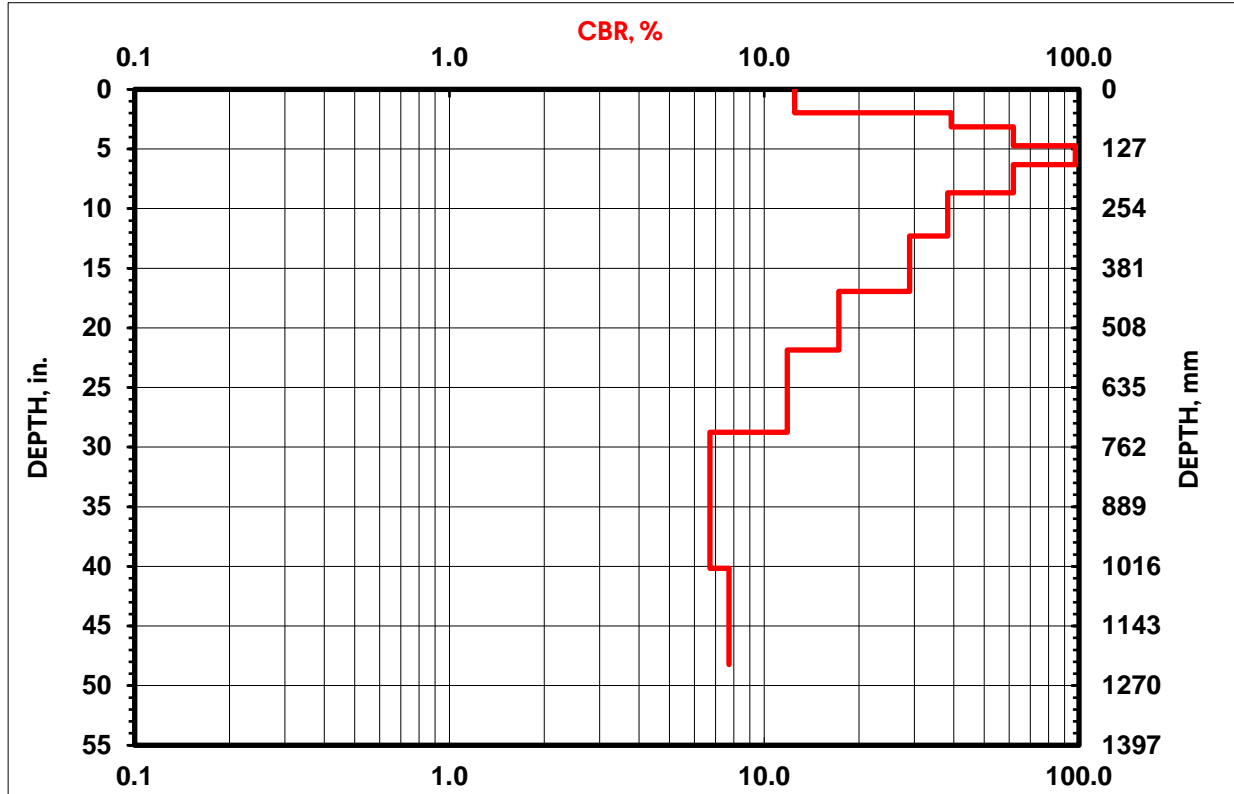
GMC



Dual-Mass Dynamic Cone Penetrometer

Project Number: CBHM200019
Location: Chelsea APPLE Study
Test Location No.: #1

Date: May 18, 2020
Soil Type: Clayey Sand
Hammer: 17.6 lb Hammer

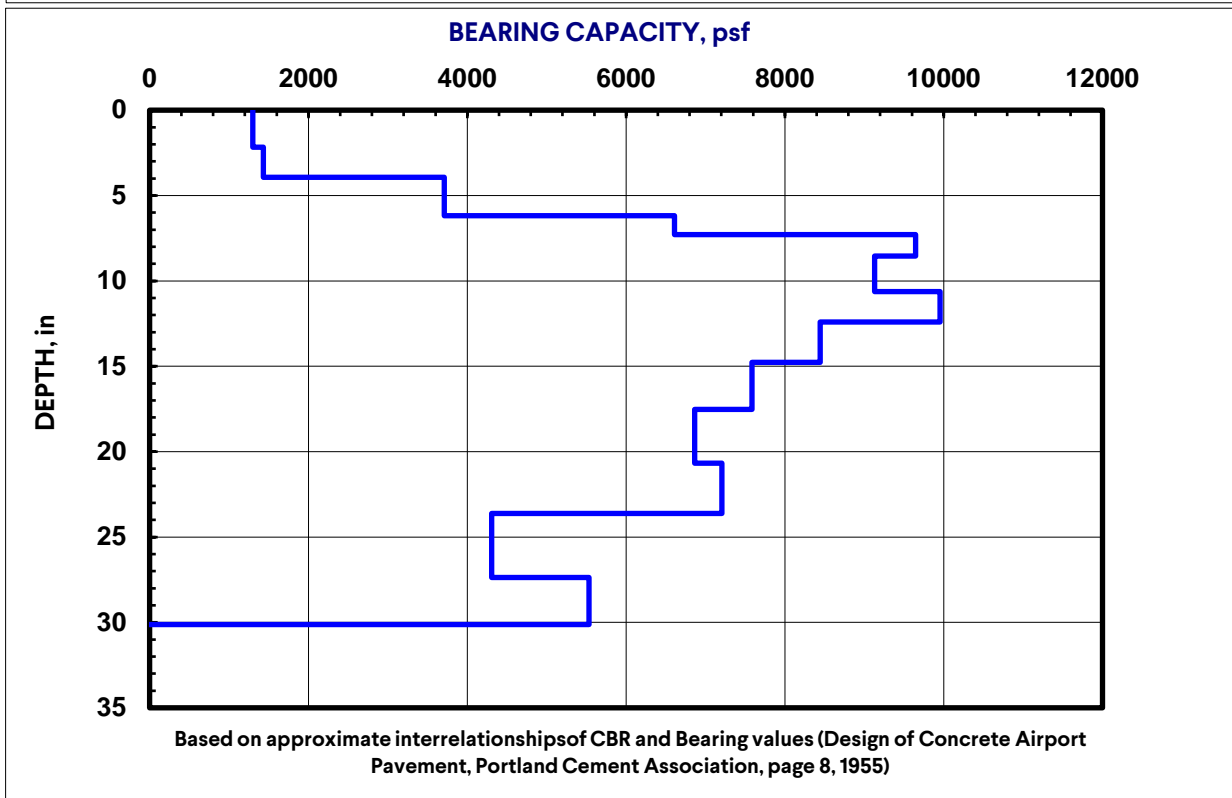
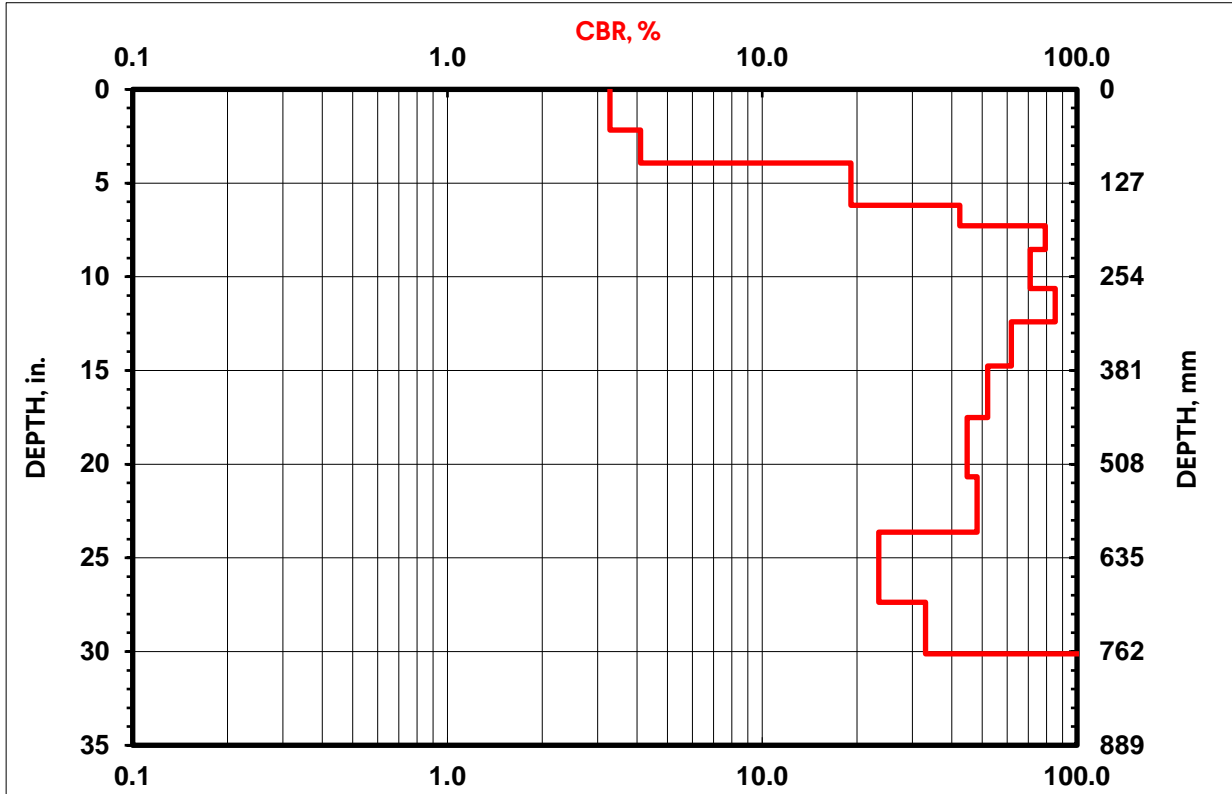




Dual-Mass Dynamic Cone Penetrometer

Project Number: CBHM200019
Location: Chelsea APPLE Study
Test Location No.: #2

Date: May 18, 2020
Soil Type: Clayey Sand
Hammer: 17.6 lb Hammer

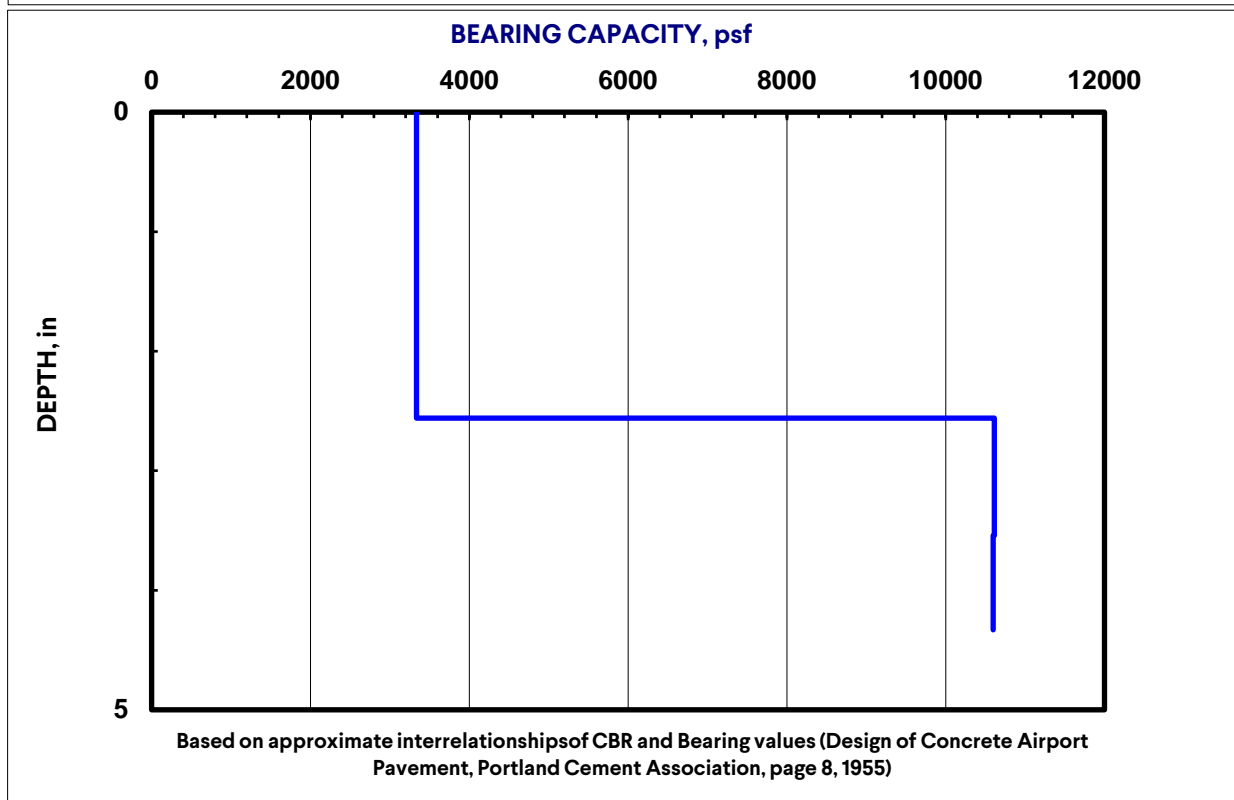
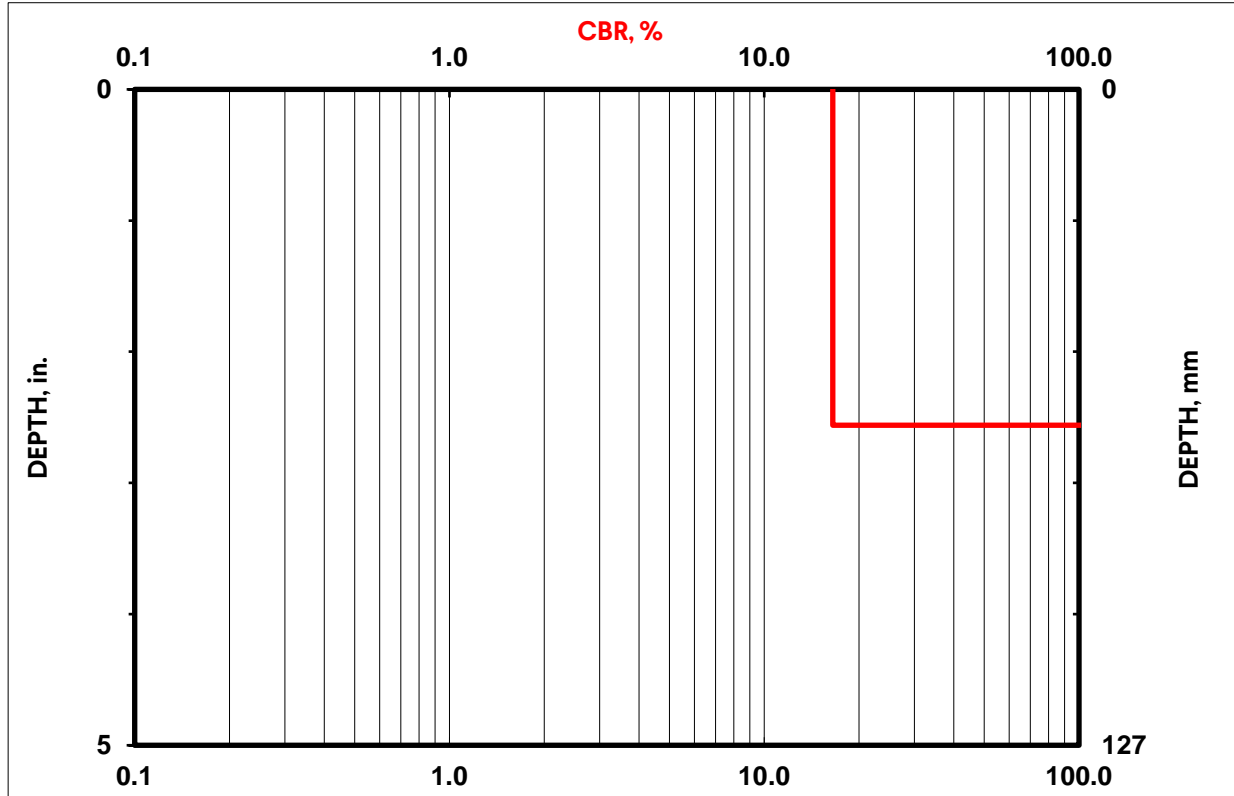




Dual-Mass Dynamic Cone Penetrometer

Project Number: CBHM200019
Location: Chelsea APPLE Study
Test Location No.: #3

Date: May 18, 2020
Soil Type: Clayey Sand
Hammer: 17.6 lb Hammer

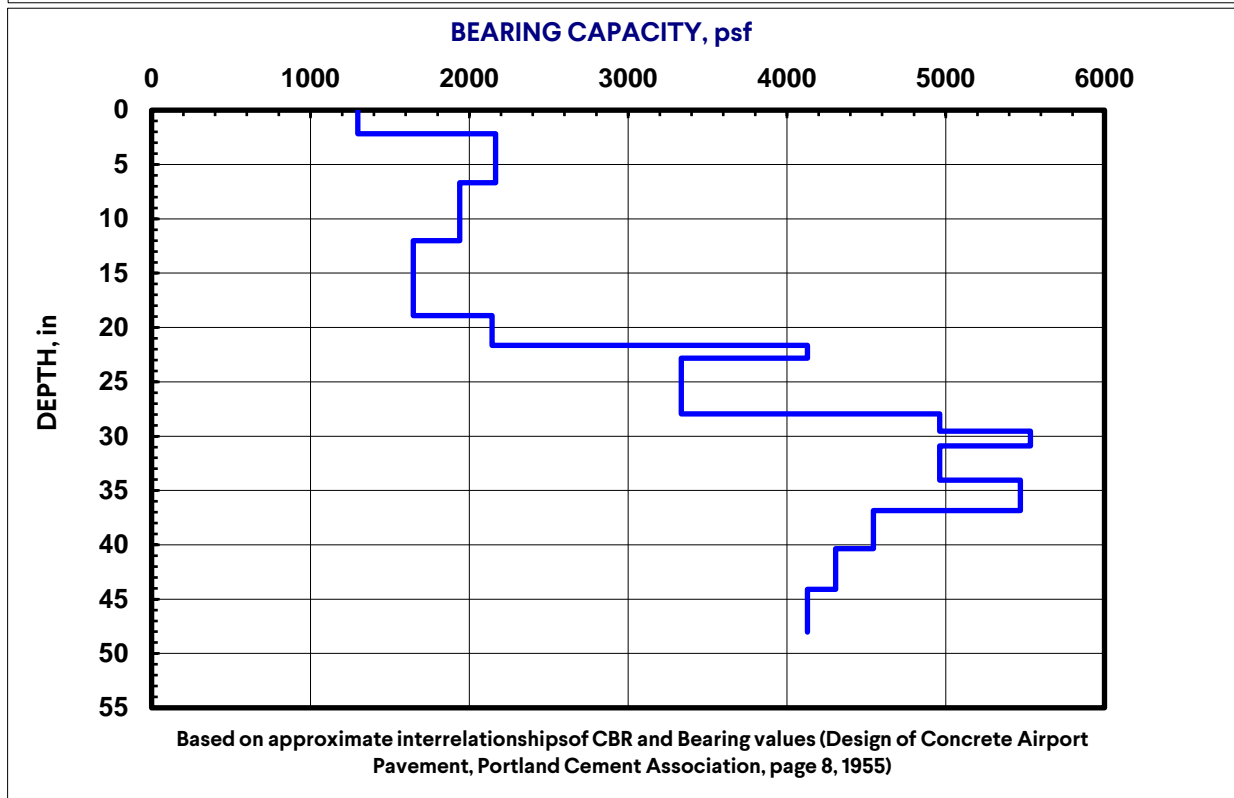
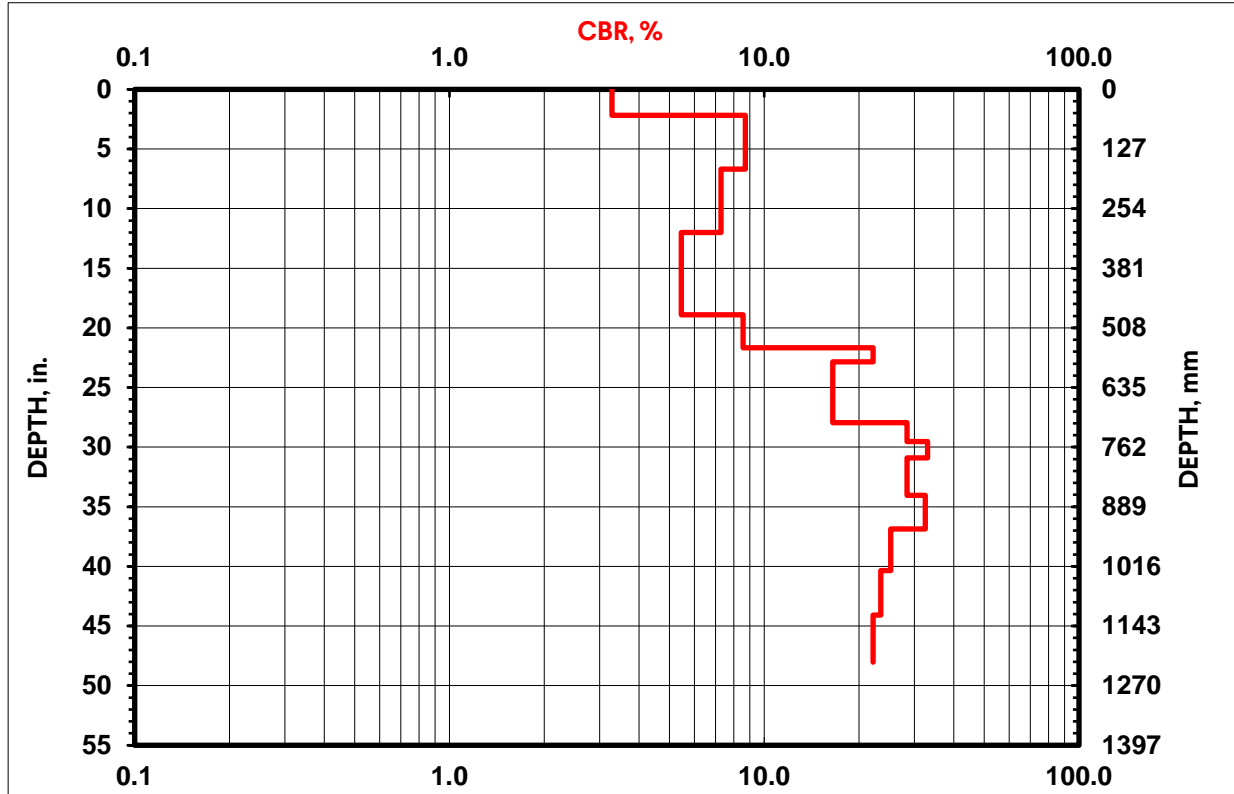




Dual-Mass Dynamic Cone Penetrometer

Project Number: CBHM200019
Location: Chelsea APPLE Study
Test Location No.: #4

Date: May 18, 2020
Soil Type: Clayey Sand
Hammer: 17.6 lb Hammer





APPENDIX C – OPINION OF PROBABLE COST



OPINION OF PROBABLE COST:

CHESSER DRIVE CONNECTOR STUDY

Date: January 1, 2021

EASTERN CONNECTOR

CHELSEA, ALABAMA

ITEM	QTY	UNIT	DESCRIPTION	UNIT PRICE	TOTAL COST
1.00 General Requirements					
1.01	1	LS	Mobilization	\$50,000.00	\$50,000
1.02	1	LS	Clearing & Grubbing	\$15,000.00	\$15,000
1.03	1	LS	Grassing, seeding and cleanup	\$20,000.00	\$20,000
				Total	\$85,000
2.00 Road & Drainage Improvements					
East Alignment					
2.01	500	CY	Excavation and Removal	\$40.00	\$20,000
2.02	14,000	CY	Unclassified Excavation	\$20.00	\$280,000
2.03	1,660	CY	Crushed Aggregate Base	\$75.00	\$124,500
2.04	1,060	TON	6.5" Asphalt	\$110.00	\$116,600
2.05	3,260	LF	Curb & Gutter	\$50.00	\$163,000
2.06	4,955	SF	Concrete Retaining Wall	\$125.00	\$619,375
2.07	950	LF	Concrete Jersey Barrier	\$200.00	\$190,000
2.08	725	LF	18" RCP Storm Drain	\$45.00	\$32,625
2.09	70	LF	Connect & Extend 24" RCP Storm Drain	\$70.00	\$4,900
2.10	45	LF	Connect & Extend 10' X 7' Box Culvert	\$200.00	\$9,000
2.11	4	EA	Grate Inlet	\$4,000.00	\$16,000
2.12	1,250	LF	Thermoplastic Striping	\$2.25	\$2,813
2.13	4	EA	Signage	\$250.00	\$1,000
2.14	2	EA	Single Wing Curb Inlet	\$5,500.00	\$11,000
2.15	1	EA	Double Wing Curb Inlet	\$6,000.00	\$6,000
				Total	\$1,596,813
3.00 Utility Relocation & Encasement					
3.01	600	LF	Existing Line Removal	\$28.00	\$16,800
3.02	600	LF	Install 30" DIP - Class 150 Water Line	\$235.00	\$141,000
3.03	2	EA	Connect to Existing 30" DIP Water Line	\$20,000.00	\$40,000
3.04	4	EA	Install 30" DIP MJ x MJ Bend	\$2,500.00	\$10,000
3.05	120	LF	Encase Existing 6" Water Line w 12" Encasement	\$80.00	\$9,600
3.06	1	LS	Power Pole Relocations (Alabama Power)	\$100,000.00	\$100,000
				Total	\$217,400
Construction SubTotal:					\$1,899,213
Contingency (15%)					\$284,882
Construction Total					\$2,184,094
Engineering (9%):					\$196,568
Construction Engineering & Inspection (15%)					\$327,614
TOTAL PROJECT ESTIMATE					\$2,708,277

Notes:

1. This opinion of probable cost is based on the experience and knowledge of the engineer as it relates to construction of projects with similar scopes of work. These numbers are not guaranteed and the owner should assume that some variation in costs from those provided will be experienced.



OPINION OF PROBABLE COST:

CHESSER DRIVE CONNECTOR STUDY

Date: January 1, 2021

WESTERN CONNECTOR

CHELSEA, ALABAMA

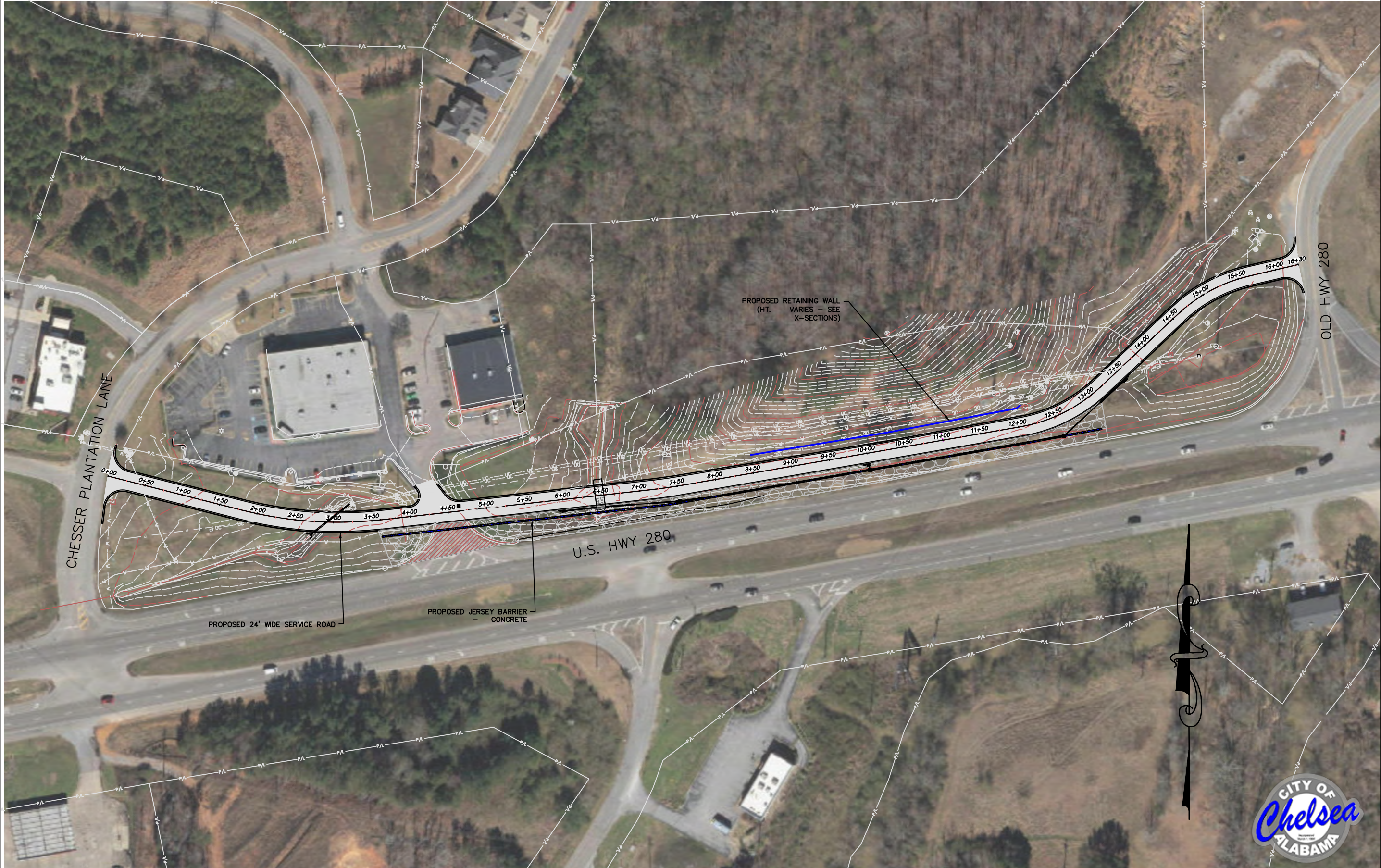
ITEM	QTY	UNIT	DESCRIPTION	UNIT PRICE	TOTAL COST
1.00	General Requirements				
1.01	1	LS	Mobilization	\$15,000.00	\$15,000
1.02	1	LS	Clearing & Grubbing	\$10,000.00	\$10,000
1.03	1	LS	Grassing, seeding and cleanup	\$20,000.00	\$20,000
			Total		\$45,000
2.00	Road & Drainage Improvements				
2.16	926	CY	8" Crushed Aggregate Base	\$75.00	\$69,450
2.17	815	TON	6.5" Asphalt	\$110.00	\$89,650
2.18	800	CY	Unclassified Excavation	\$20.00	\$16,000
2.19	76	LF	Saw Cut and Remove Curb & Gutter	\$5.00	\$380
2.20	510	LF	18" RCP Storm Drain	\$65.00	\$33,150
2.21	3	EA	Single Wing Curb Inlet	\$5,500.00	\$16,500
2.22	1	EA	Concrete Slope Paved Headwall	\$2,500.00	\$2,500
2.23	1,630	LF	Thermoplastic Striping	\$2.25	\$3,668
2.24	4	EA	Signage	\$250.00	\$1,000
2.25	2,500	LF	Curb & Gutter	\$45.00	\$112,500
2.26	1	LS	Erosion Control	\$20,000.00	\$20,000
2.27	1	LS	Traffic Control	\$10,000.00	\$10,000
			Total		\$374,798
Construction SubTotal:					\$419,798
Contingency (15%)					\$62,970
Construction Total					\$482,767
Engineering (9%):					\$43,449
Construction Engineering & Inspection (15%)					\$72,415
TOTAL PROJECT ESTIMATE					\$598,631

Notes:

1. This opinion of probable cost is based on the experience and knowledge of the engineer as it relates to construction of projects with similar scopes of work. These numbers are not guaranteed and the owner should assume that some variation in costs from those provided will be experienced.

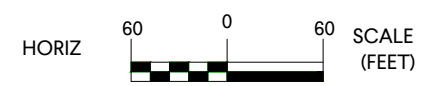


APPENDIX D – PRELIMINARY LAYOUT SHEETS



PLAN SUBMITTAL

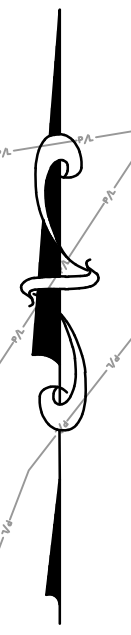
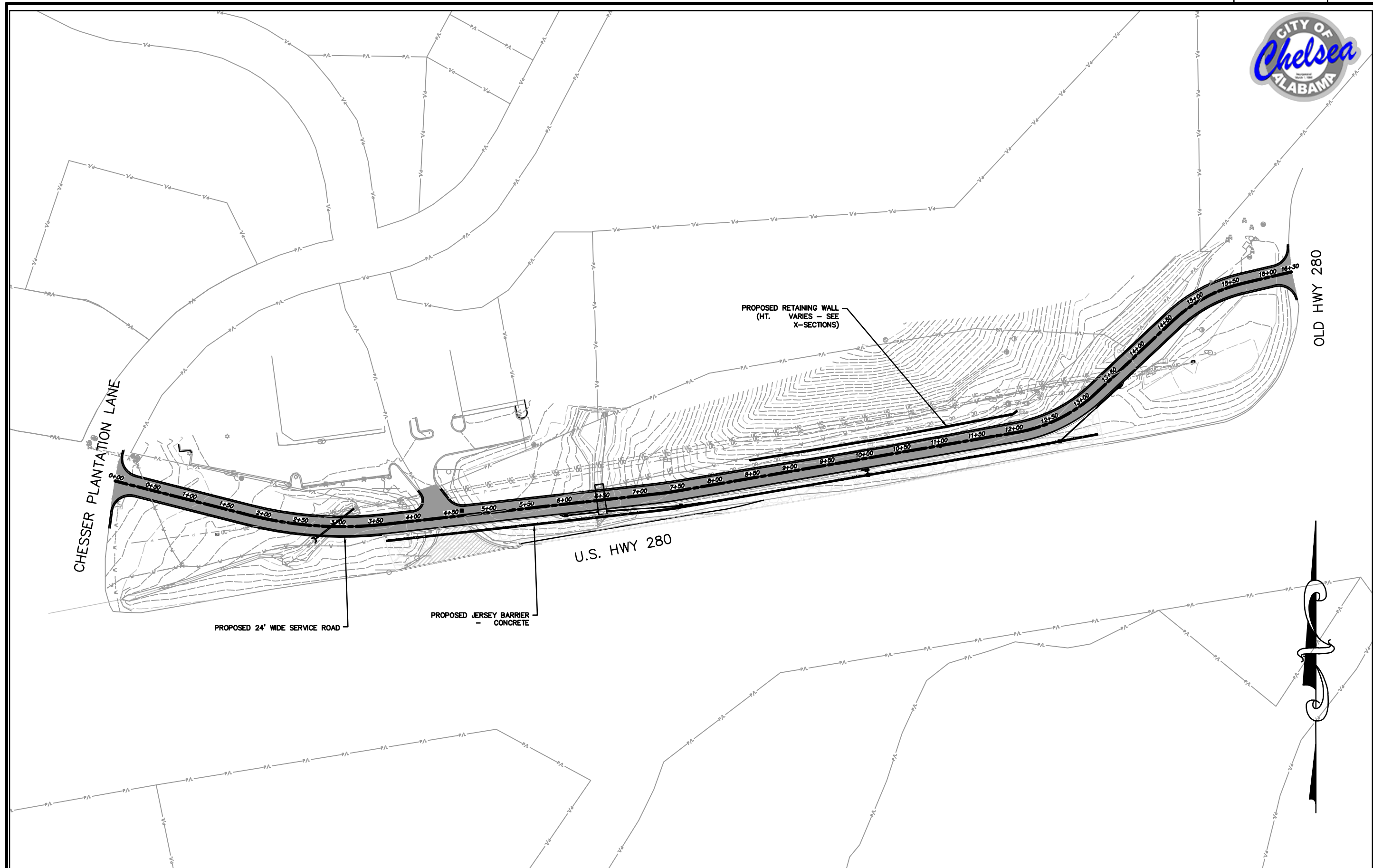
Chesser Drive APPLE Study

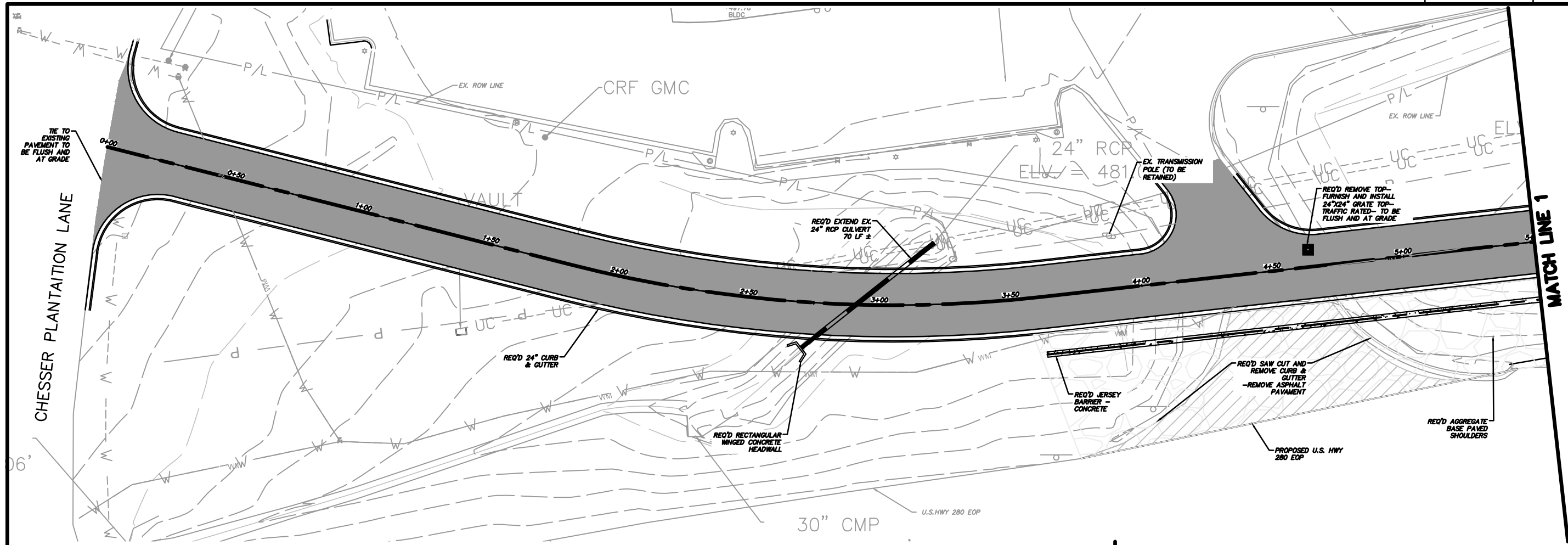


SHEET TITLE

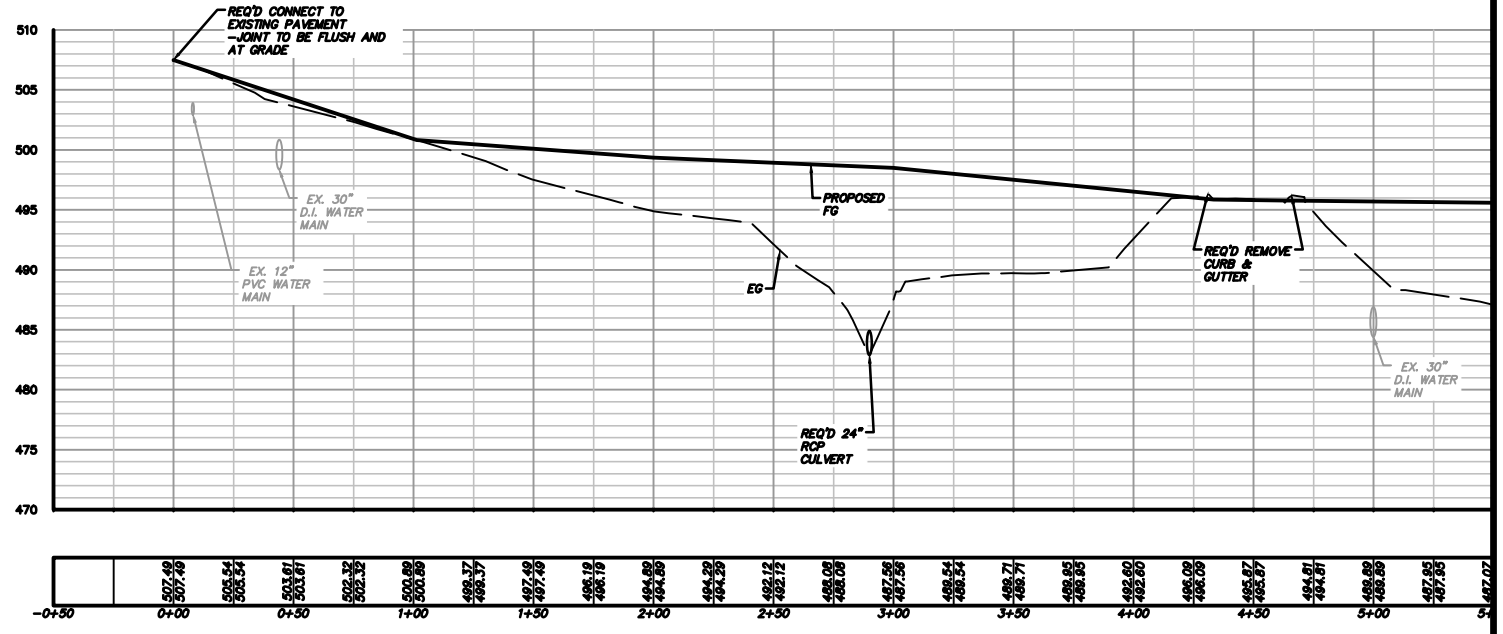
Eastern Connector

ROUTE



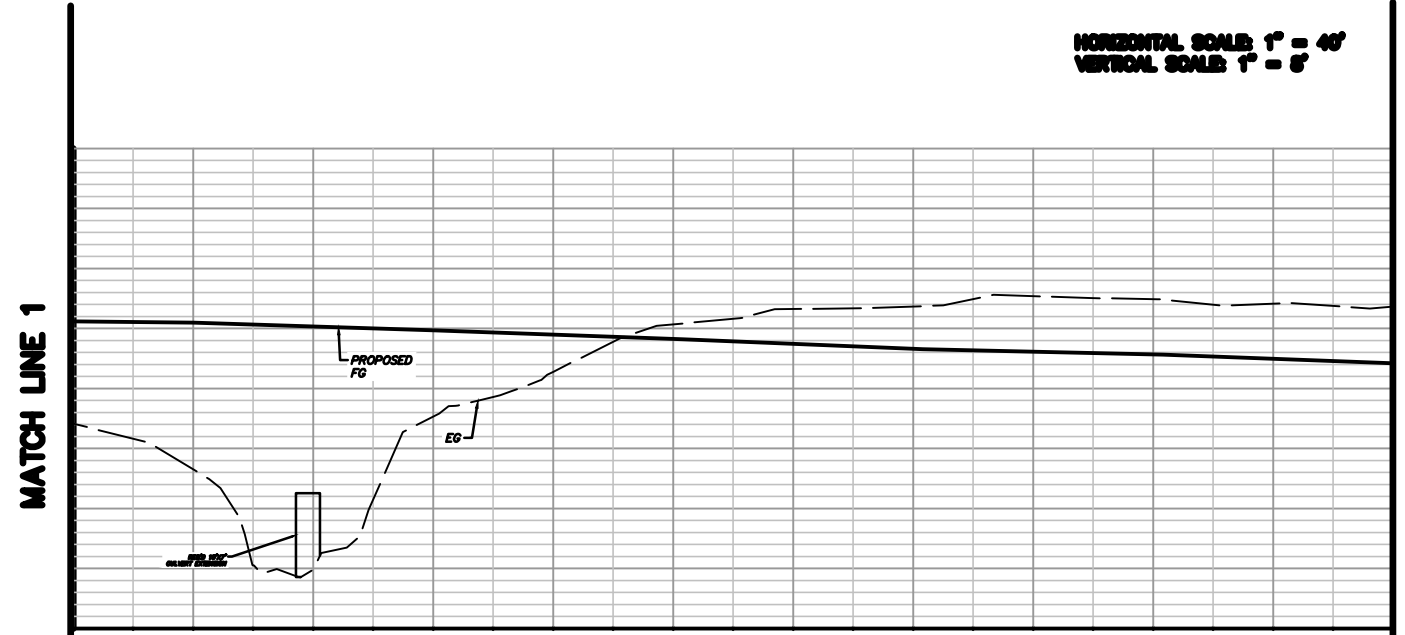
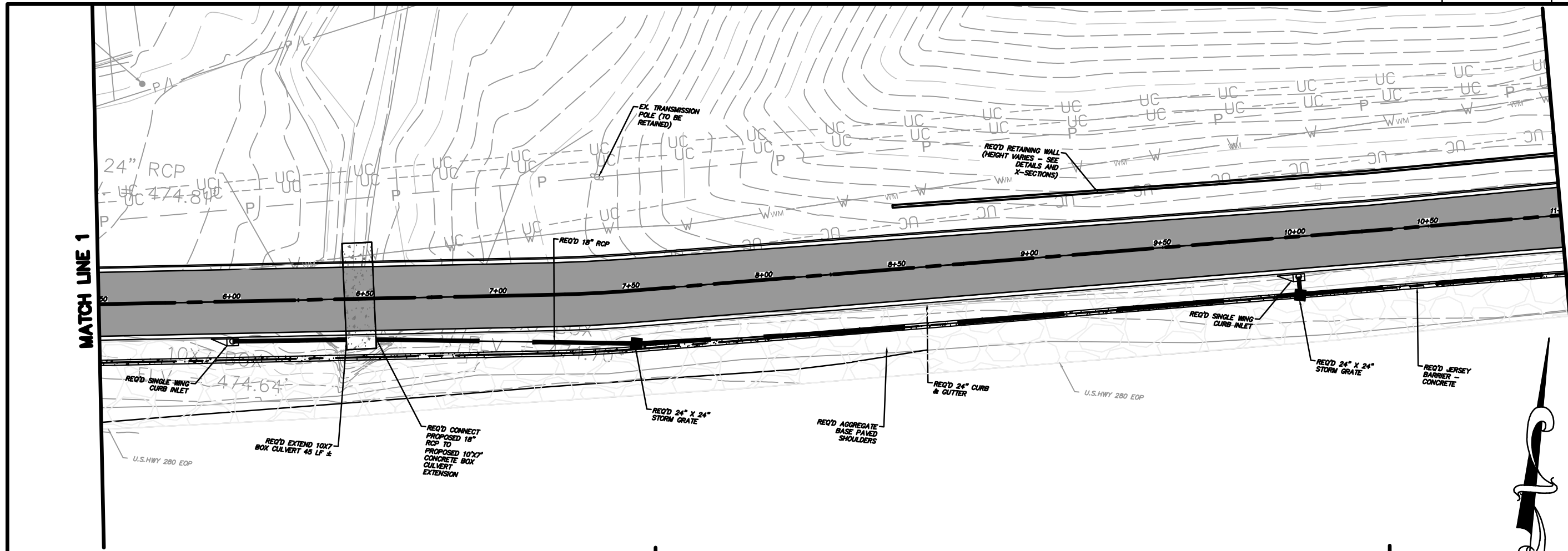


HORIZONTAL SCALE: 1" = 40'
 VERTICAL SCALE: 1" = 6'



MATCH LINE 1





HORIZONTAL SCALE: 1" = 40'
 VERTICAL SCALE: 1" = 5'

497.07	496.81	496.51	496.26	496.06	495.92	495.84	495.80	495.80	495.83	495.92	496.07	496.26	496.51	496.81	497.07
6+00	6+50	7+00	7+50	8+00	8+50	9+00	9+50	10+00	10+50	11+00					

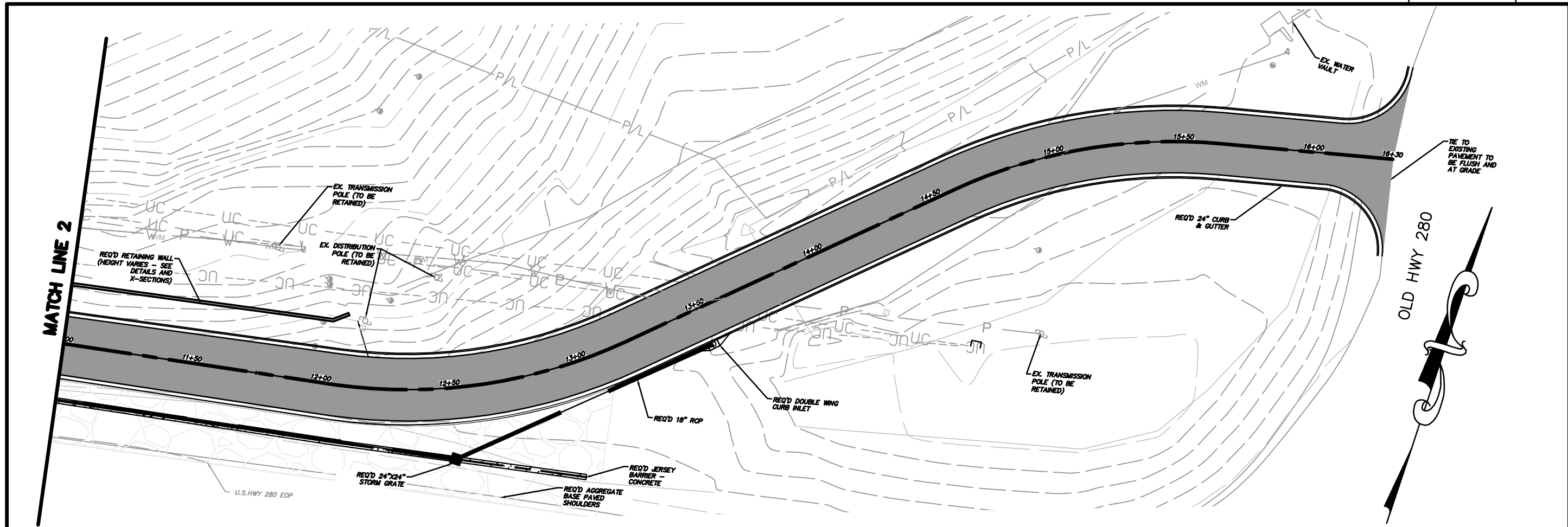


PLAN SUBMITTAL

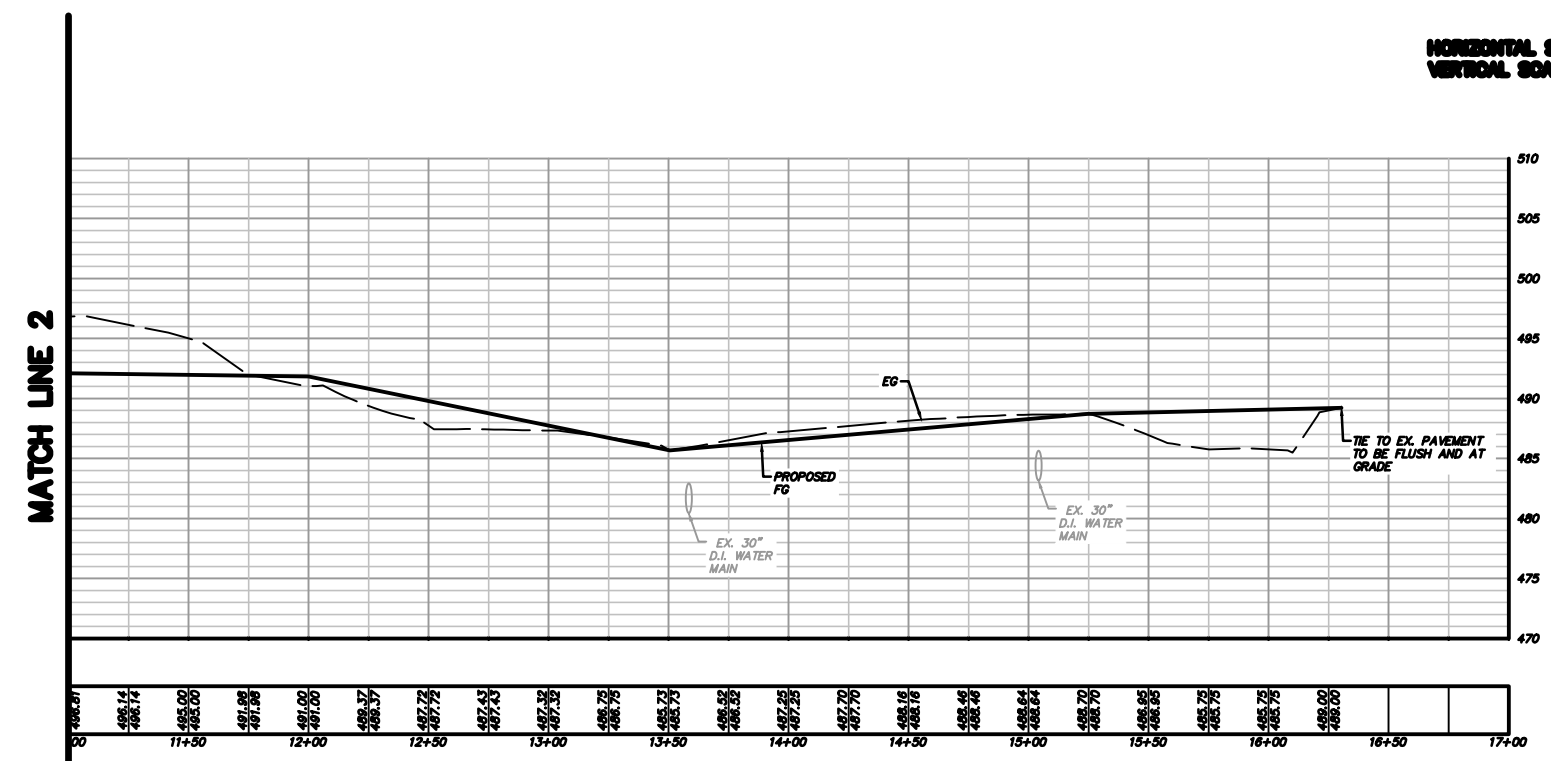
Chesser Drive APPLE Study



SHEET TITLE: Eastern Connector
 ROUTE: [Blank]



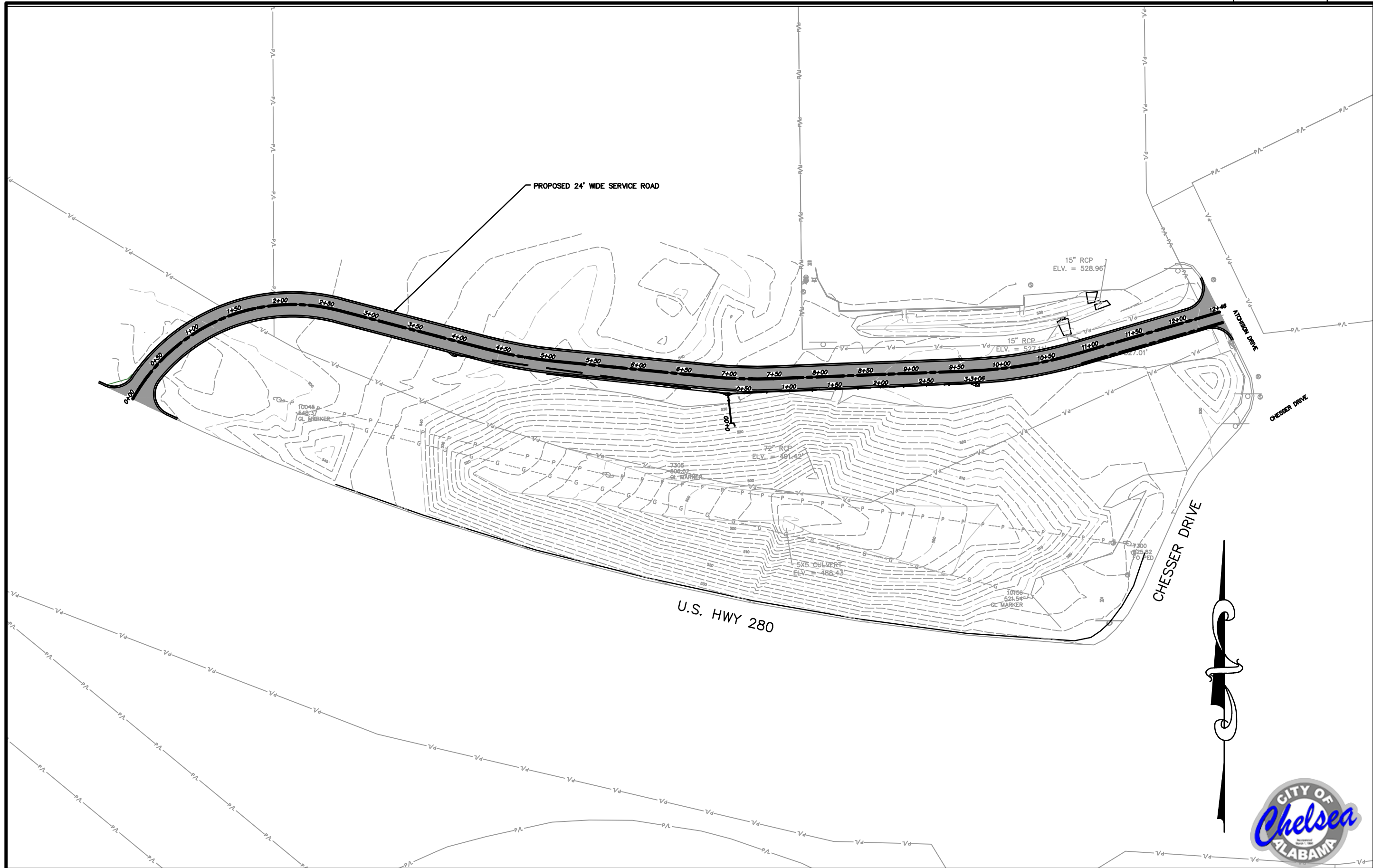
HORIZONTAL SCALE: 1" = 40'
 VERTICAL SCALE: 1" = 6'

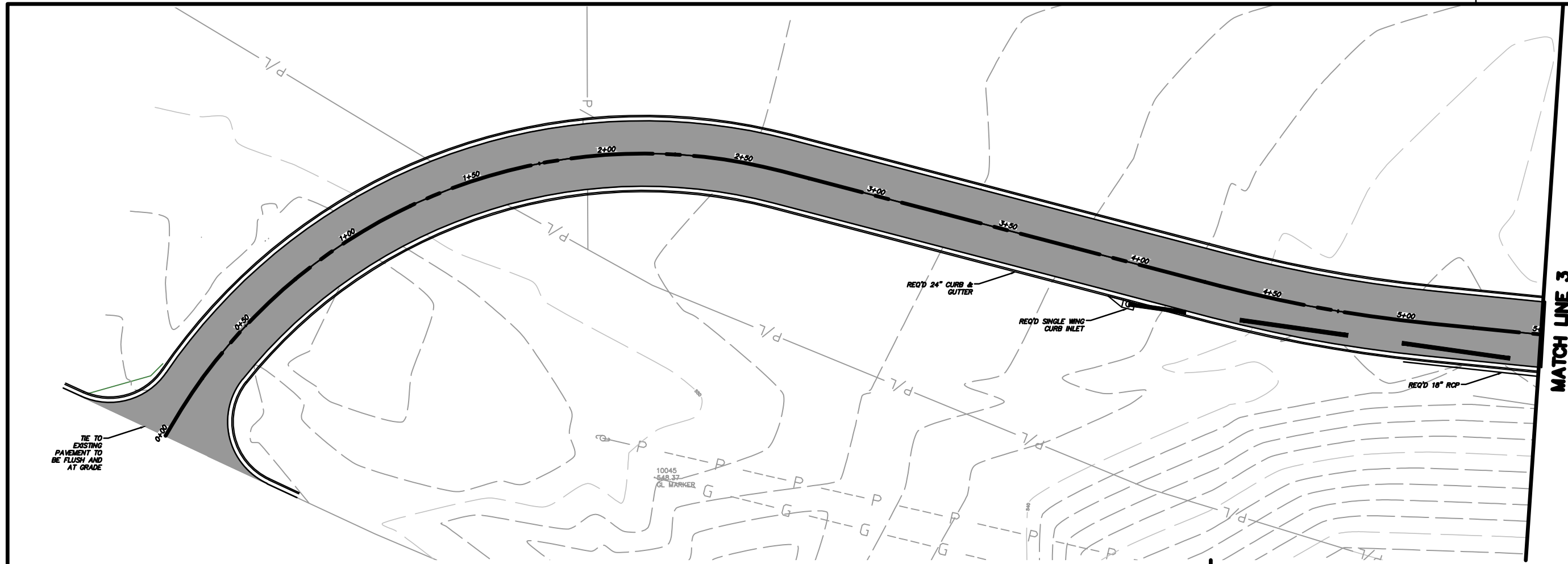


486.14	486.14	486.00	486.00	485.80	485.80	485.72	485.72	485.63	485.63	485.52	485.52	485.46	485.46	485.44	485.44	485.35	485.35	485.25	485.25	485.16	485.16	485.06	485.06	485.00	485.00
11+00	11+50	12+00	12+50	13+00	13+50	14+00	14+50	15+00	15+50	16+00	16+50	17+00													









MATCH LINE 3

TIE TO EXISTING PAVEMENT TO BE FLUSH AND AT GRADE

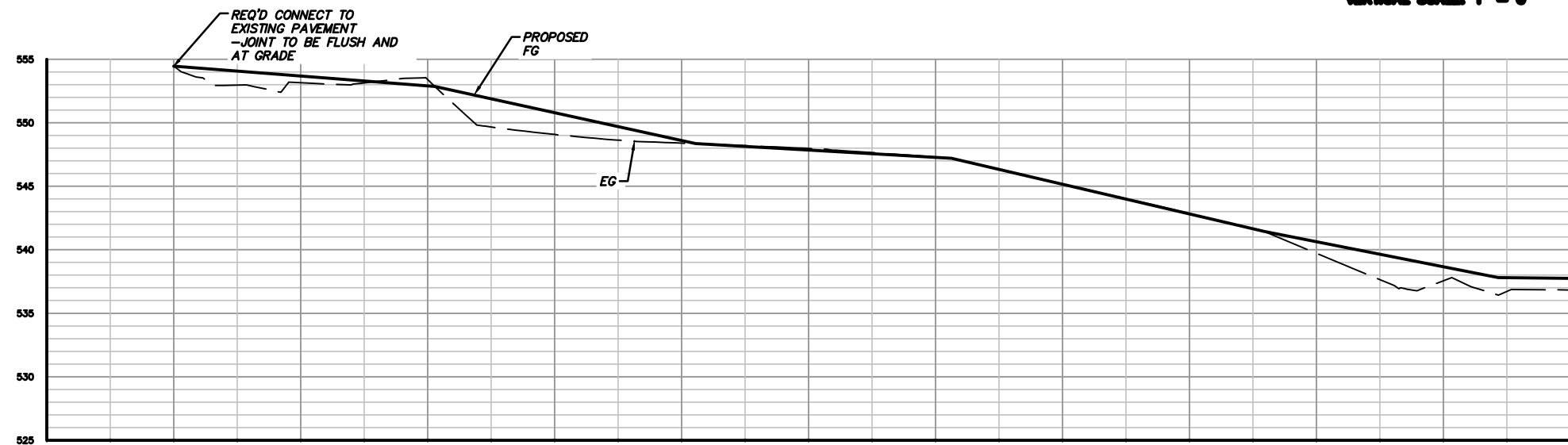
REQ'D 24" CURB & GUTTER

REQ'D SINGLE WING CURB INLET

REQ'D 18" RCP

10045
548.37
GL MARKER

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 6'



REQ'D CONNECT TO EXISTING PAVEMENT - JOINT TO BE FLUSH AND AT GRADE

PROPOSED FG

EG

MATCH LINE 3



554.46	554.46	552.97	553.19	553.19	553.39	548.67	548.08	548.64	548.40	548.20	547.99	547.65	547.31	546.33	545.18	544.02	542.65	541.65	538.72	537.65	537.56	536.73	536.63
0+00	0+10	0+20	0+30	0+40	0+50	1+00	1+50	2+00	2+50	3+00	3+50	4+00	4+50	5+00	5+50	6+00	6+50	7+00	7+50	8+00	8+50	9+00	9+50



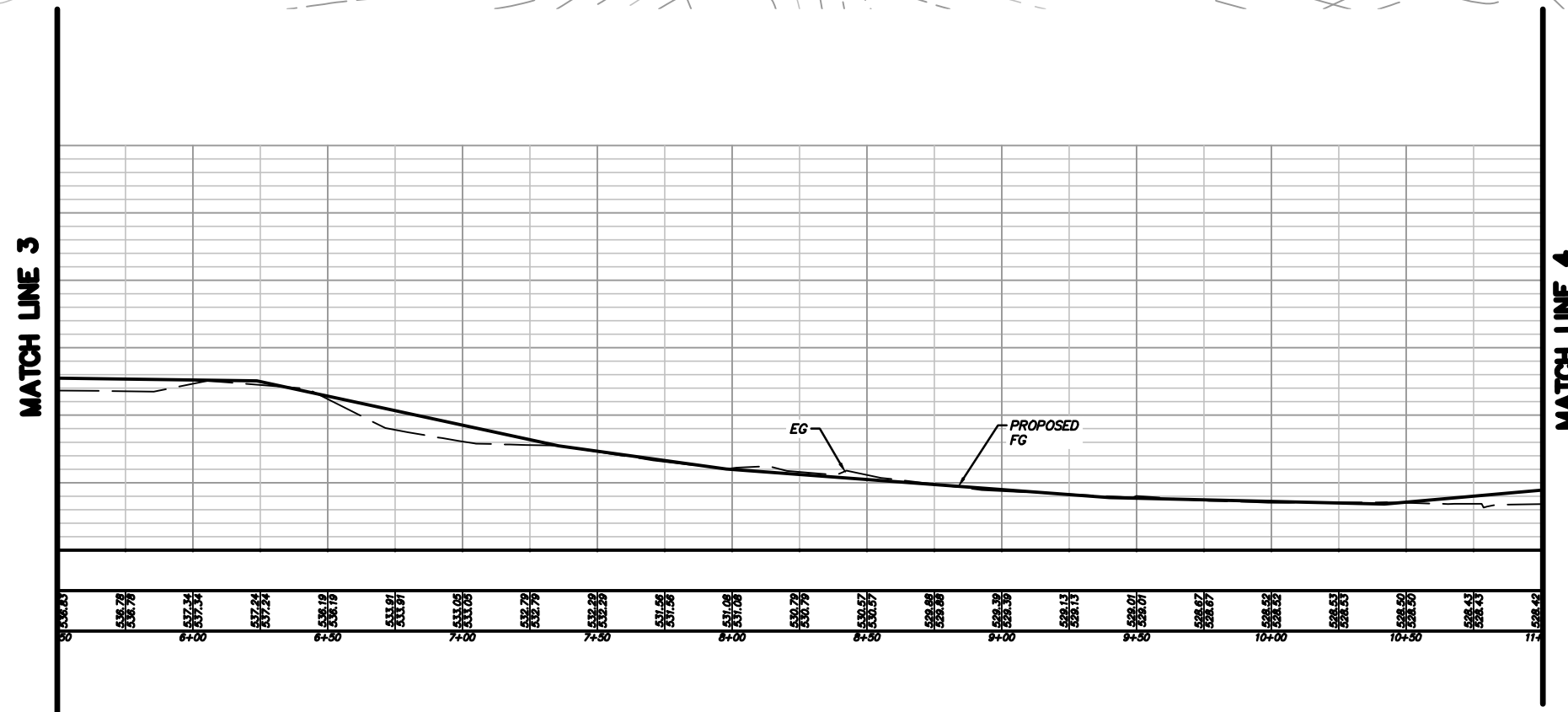
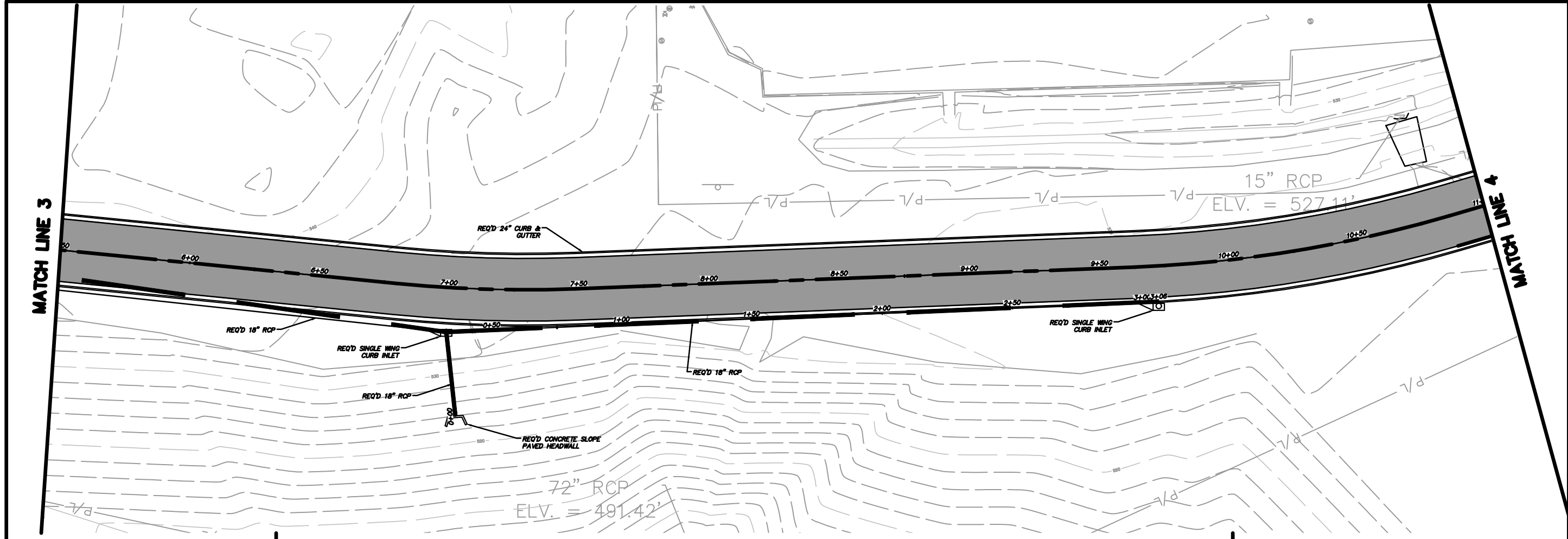
PLAN SUBMITTAL

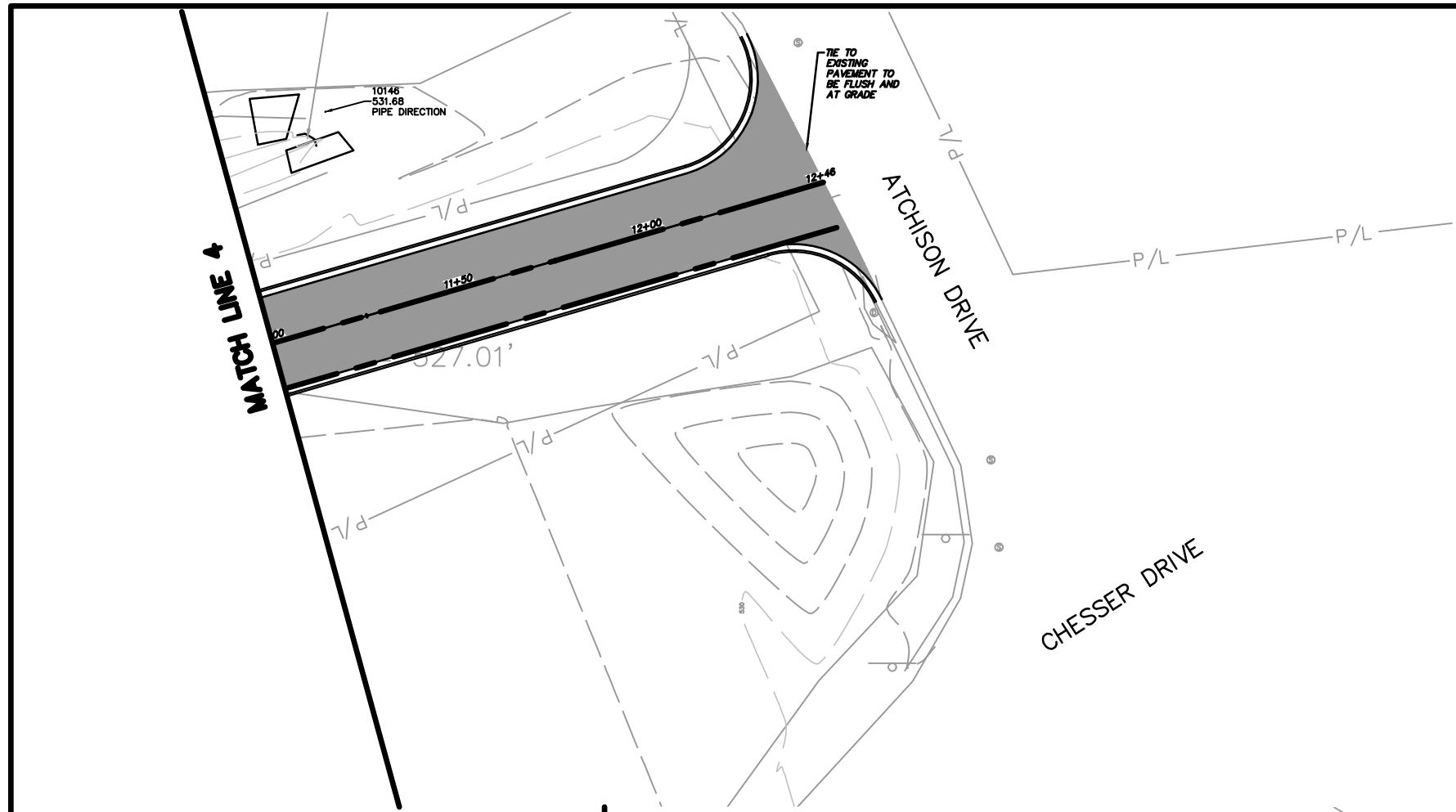
Chesser Drive APPLE Study



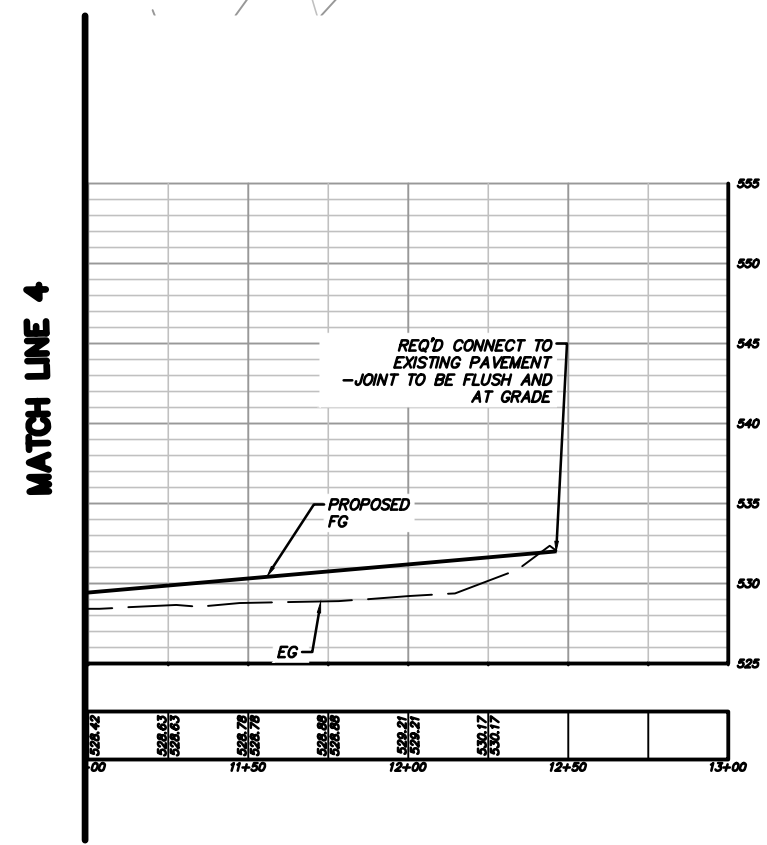
SHEET TITLE
Western Connector

ROUTE



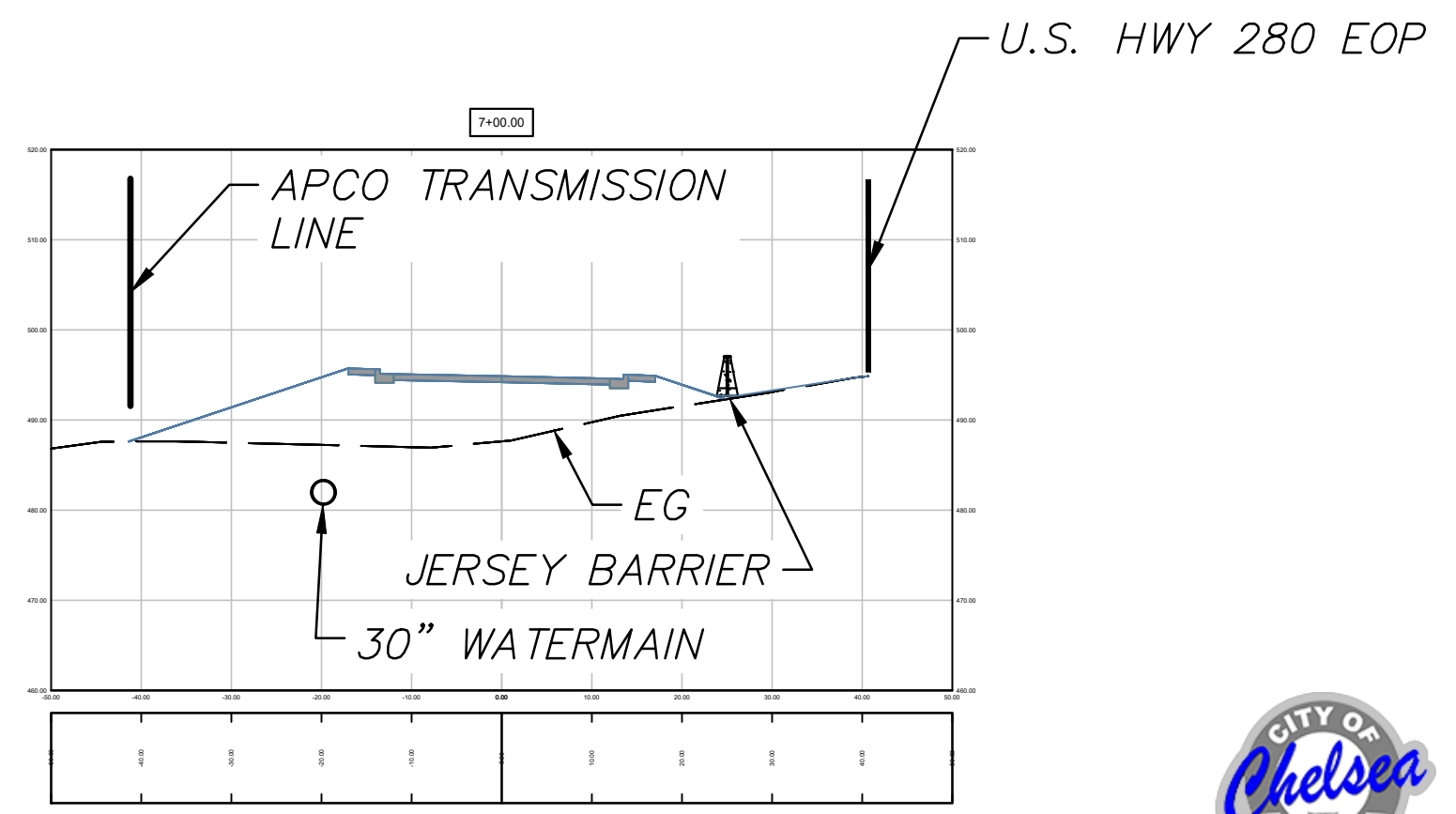
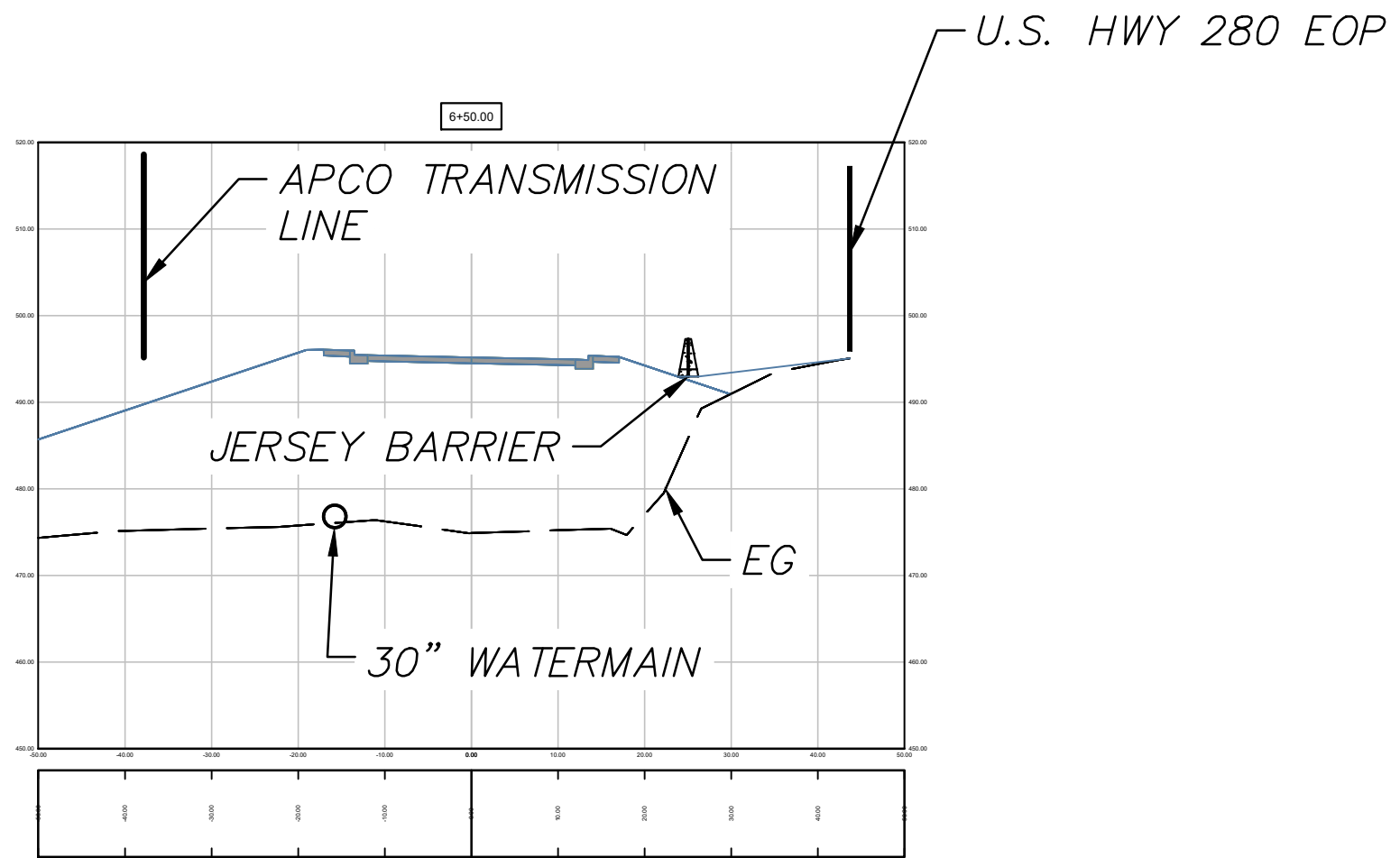


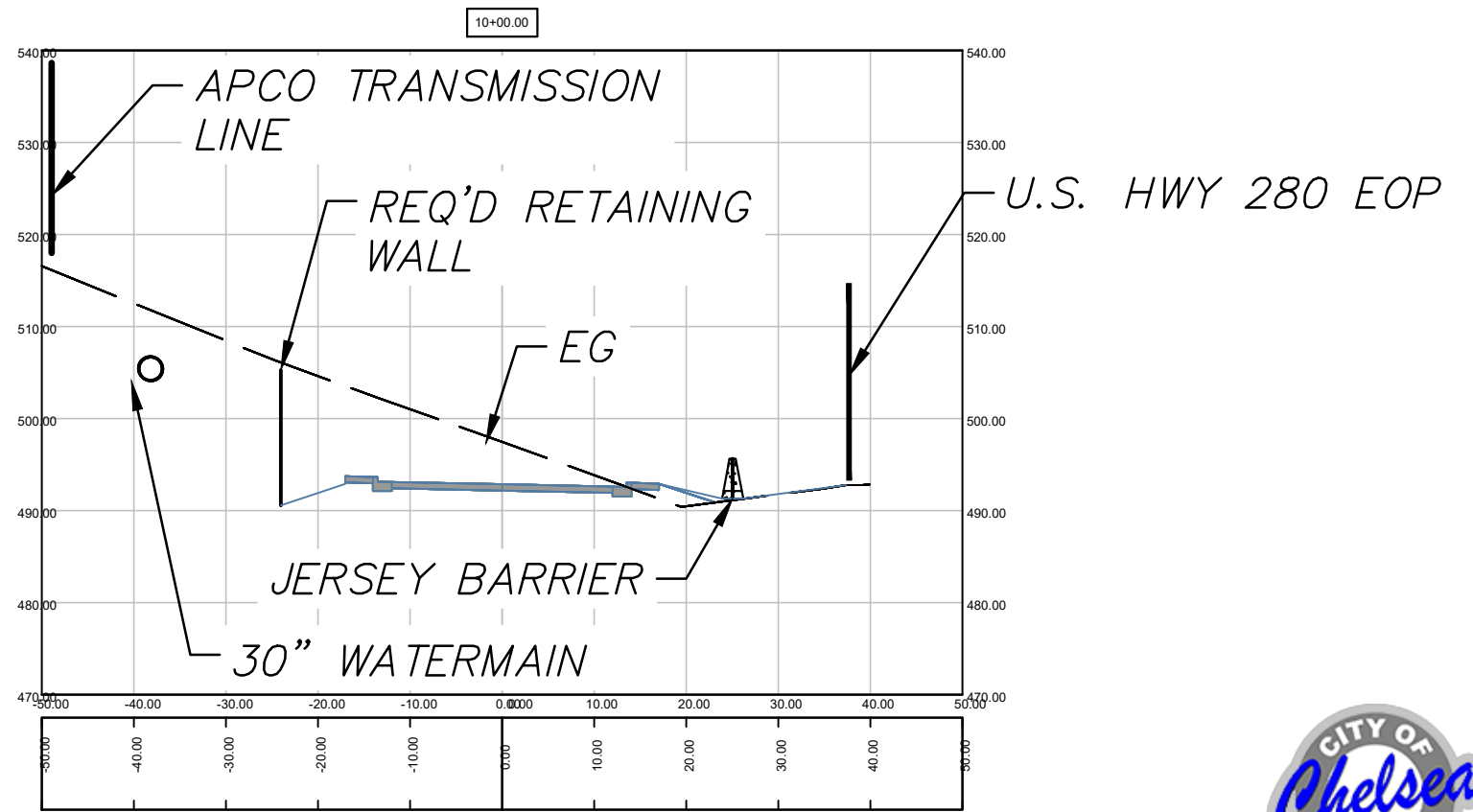
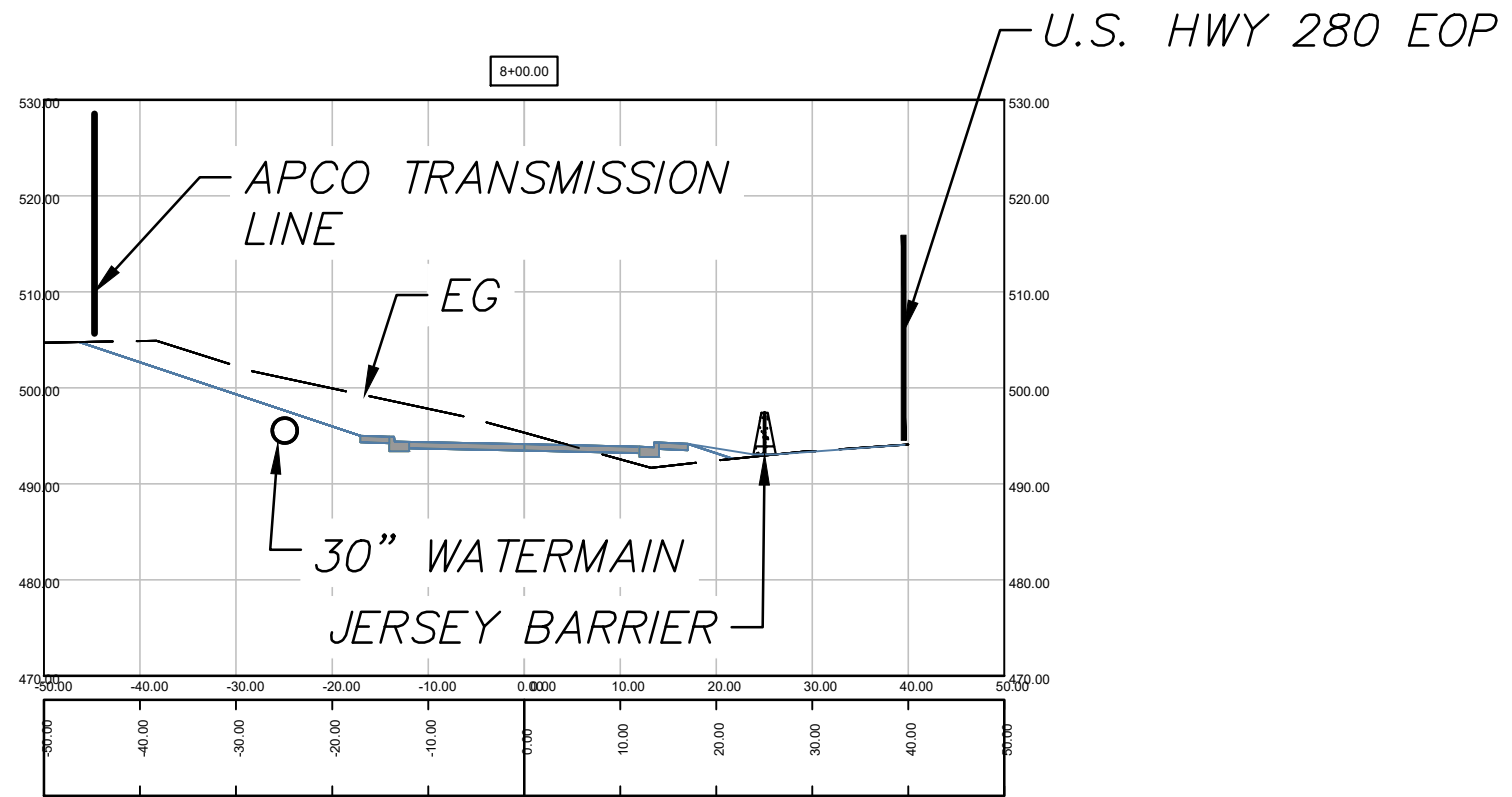
HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 6'

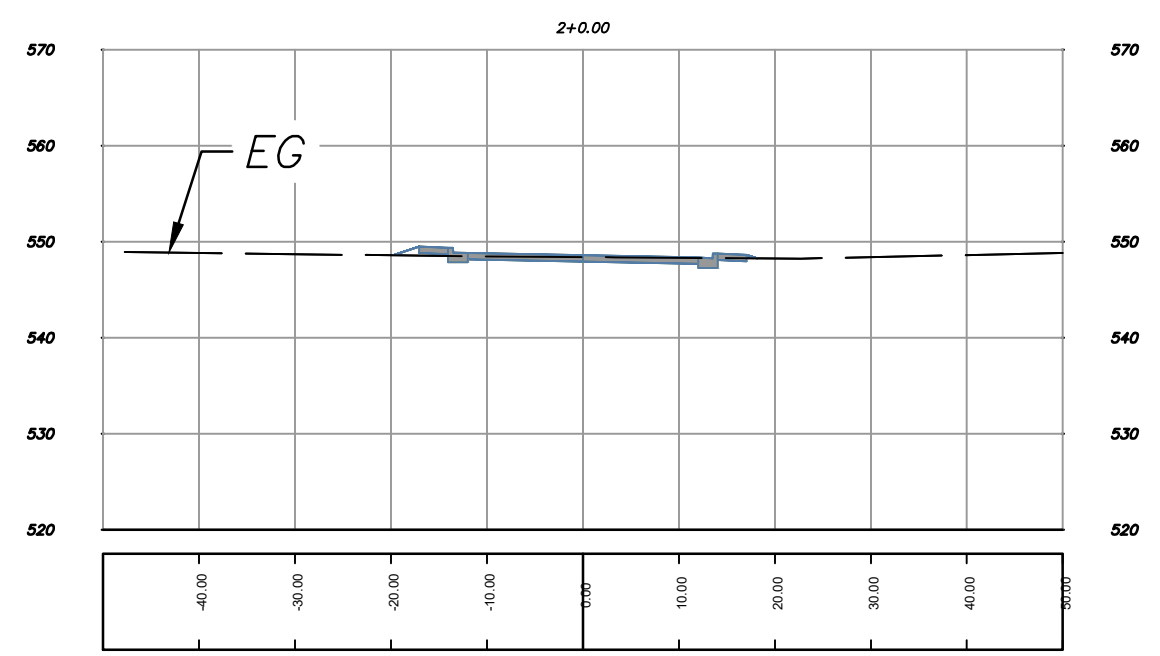
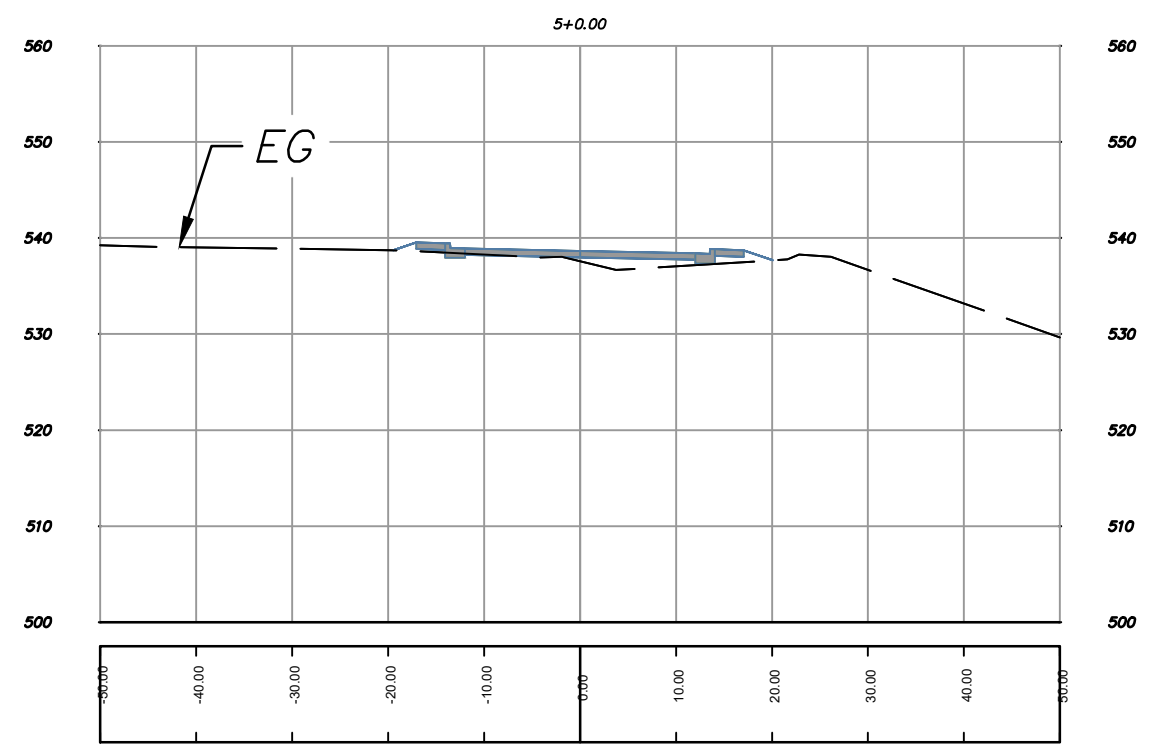




APPENDIX E – PRELIMINARY CROSS SECTIONS







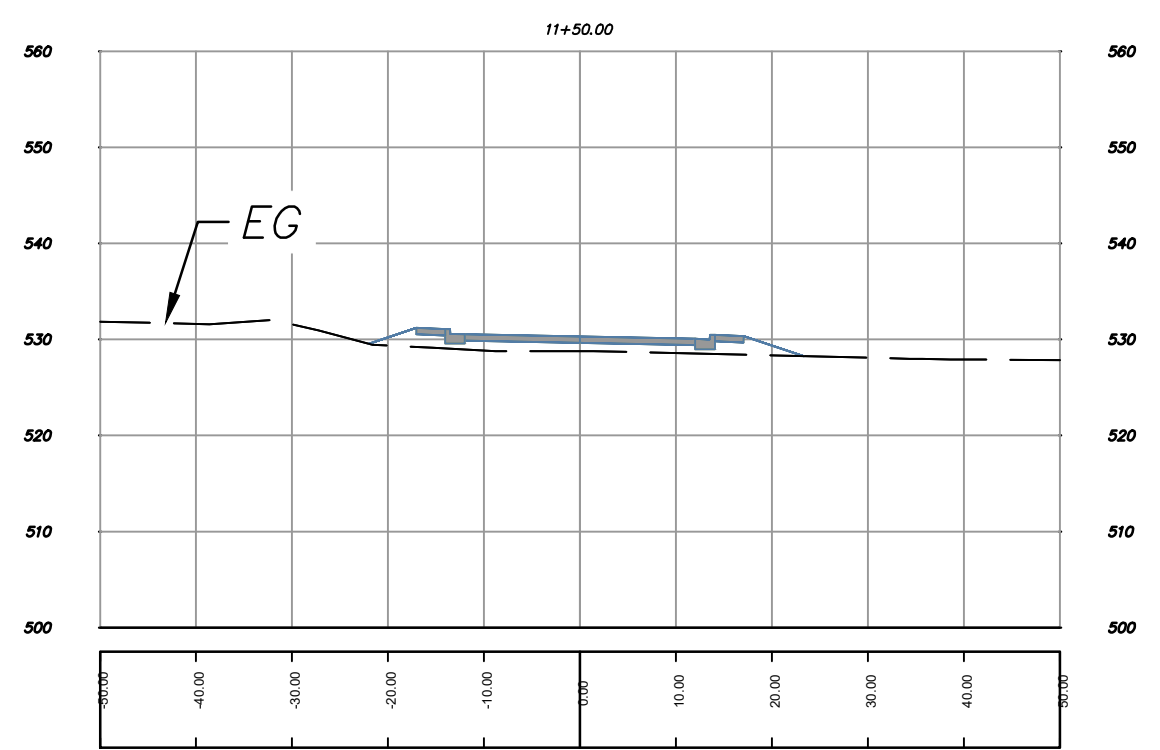
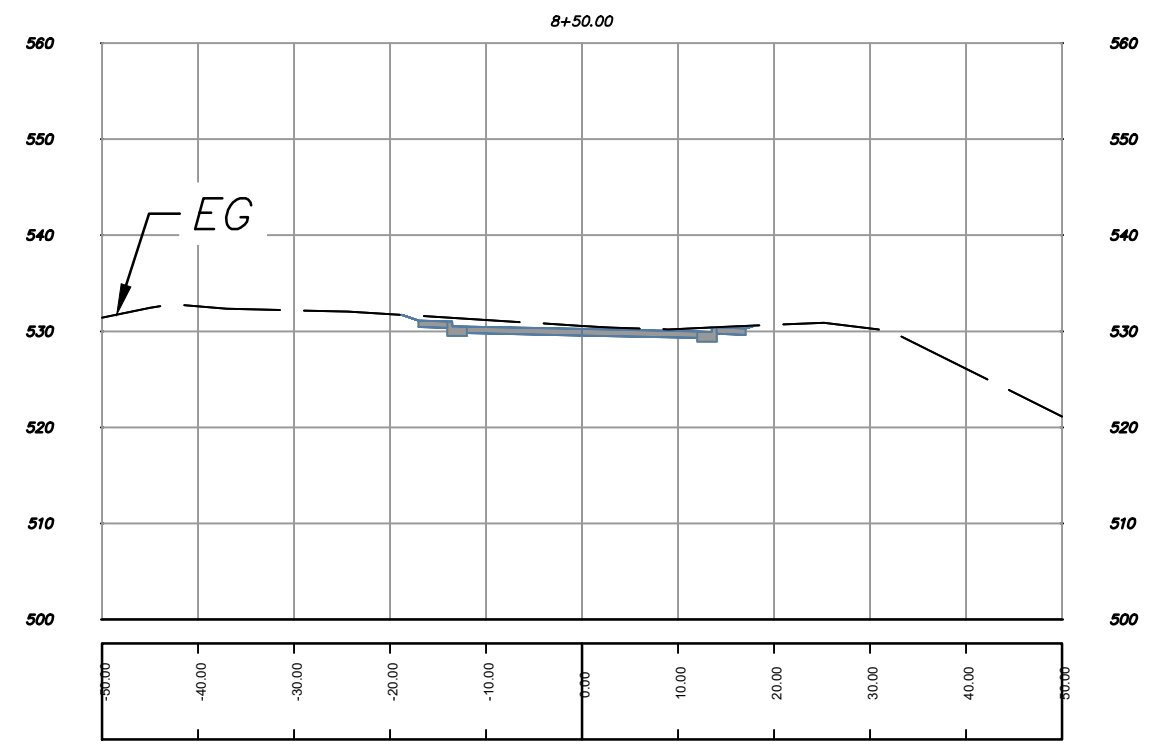
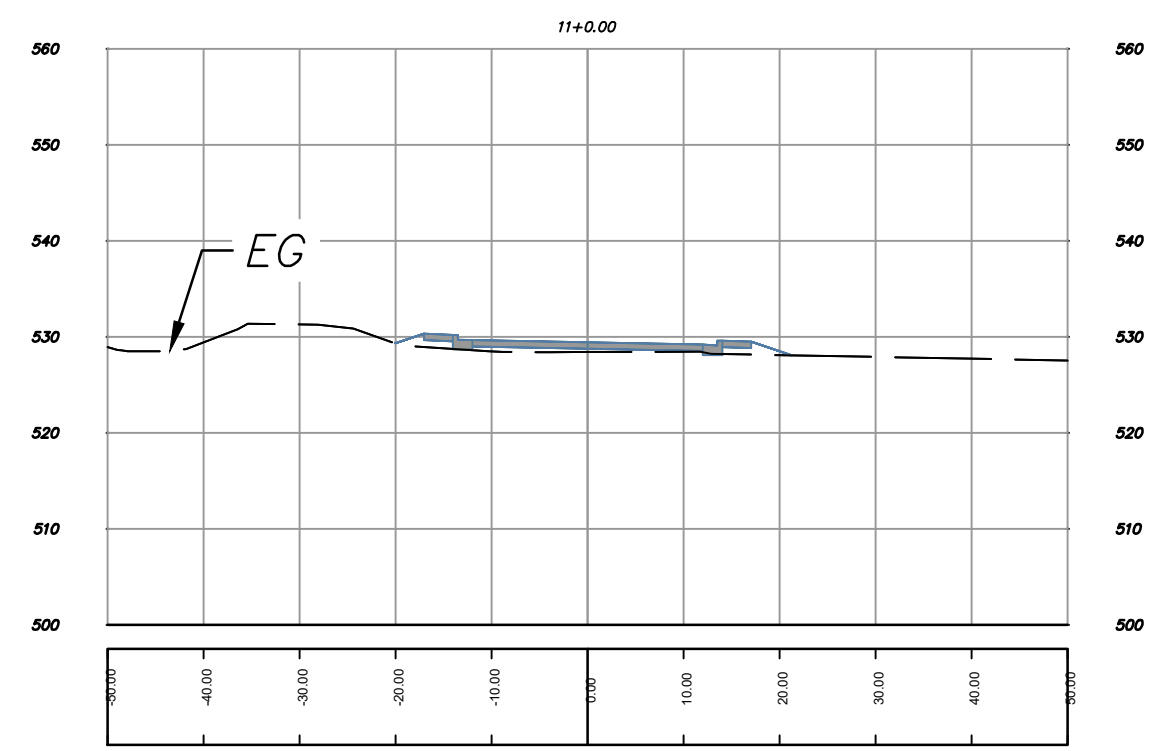
PLAN SUBMITTAL

Chesser Drive APPLE Study



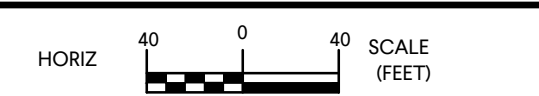
SHEET TITLE
WEST CONNECTOR
X-SECTIONS

ROUTE



PLAN SUBMITTAL

Chesser Drive APPLE Study



SHEET TITLE
WEST CONNECTOR
X-SECTIONS

ROUTE

GMC



Contact
Keith Strickland, P.E.

Goodwyn Mills Cawood
2701 1st Avenue South | Suite 100
Birmingham, AL 35233
T (205) 879.4462 Ext. 616
E keith.strickland@gmcnetwork.com

www.gmcnetwork.com

Building Communities