ST. TAMMANY PARISH

MICHAEL B. COOPER
PARISH PRESIDENT

February 26, 2021

Please find the following addendum to the below mentioned BID.

Addendum No.: 1

Bid#: 21-4-2

Project Name: Soult Street Road Improvements

Bid Due Date: Wednesday, March 3, 2021

GENERAL INFORMATION:

1.**Delete** Sheet 2B entirety and **replace** with Sheet 2B included with this Addendum.
2.**Add** Sheet 2D included with this Addendum.
3.**Delete** Sheet 20 entirety and **replace** with Sheet 20 included with this Addendum.
4.**Delete** Sheet 21 entirety and **replace** with Sheet 21 included with this Addendum.
5.**Delete** Sheet 64 entirety and **replace** with Sheet 64 included with this Addendum.

QUESTIONS & ANSWERS:

Question 1: PLAN SHEET 2B TYPICAL DISCRIPTION 11 refers to a 12" THICK AVERAGE ASPHALT CONCRETE PATCHING (LEVEL 2); however, there is a note "SEE NOTE 4" referencing that section in the typical drawing. The note states CONTRACTOR HAS THE OPTION TO USE FULL DEPTH ASPHALT PATCHES…. Etc. My question is isn't 12" asphalt patching REQUIRED? Is there a CLASS II BASE COURSE REPAIR OPTION that can be used in place of the ASPHALT PATCHING indicated in description 11?

Answer 1. No, class II base course repairs are not allowed for patching locations. Asphalt concrete is required for roadway patching.

For widened roadway sections and full reconstruction areas, class II base course is required; however, the Contractor has the option to use full depth asphalt concrete in lieu of the class II base course with written approval from St. Tammany Parish Department of Public Works. The asphalt concrete to class II base course substitution shall be achieved with a 1:2 ratio (i.e. for every 2 inches of class II base, a minimum of 1 inch of asphalt shall be substituted).

Sheet Number 2B has been revised and is included with this Addendum.

Question 2. PLAN SHEET 2B - CONCERNING ASPHALT PATCHING – (LEVEL 2) is in description 11. Was "LEVEL 2" a typo? Or is the intent to require the contractor to patch with LEVEL 2?

Answer 2. "LEVEL 2" requirement is shown in error on Sheet Number 2B. The contractor shall use Level 1F for asphalt wearing course and Level 1 for the 12" asphalt pavement patching. Sheet Number 2B has been revised and is included with this Addendum.

Question 3. For this project, does the Contractor retain all of the Reclaimed Asphalt Pavement or is the Parish going to keep a portion of this material (and if so where is it to be delivered)?

Answer 3. The Contractor can keep 50% of the Reclaimed Asphalt Pavement (RAP). The remaining 50% shall be delivered to either the Hwy 59 Maintenance Barn or the Keller Barn. Location to be determined at time of milling by project manager.

Question 4. Can you please provide roadway borings?

Answer 4. Geotechnical Report is included with this Addendum.

Question 5. SHEET 2C – TYPICALS reference station 1+00 to 1+32.32, 1+32.38 to 6+00.44, & 6+00.44 to 6+14.09. What roads are those stations located?

Answer 5. These stations correspond to the Soult St. proposed centerline/adopted baseline 1 shown on plan sheet numbers 20 and 21. Sheet numbers 20 and 21 have been updated to show the baseline in plain view and are included with this Addendum.

Question 6. Please provide sheet 2D for the Typical for Station 186+75 to 190+60.

Answer 6. Sheet Number 2D is added with this Addendum.

Question 7. Can we get a copy of the borings?

Answer 7. Geotechnical Report is included with this Addendum.

Question 8. Will the Engineer allow LEVEL 1 Wearing Course to be used for leveling?

Answer 8. The Contractor is required to use Level 1F wearing course for leveling.

Question 9. Do the Turn outs / Intersecting roads get paid under item 502-01-00200? If so can LEVEL A be used for paving these areas?

Answer 9. Driveways are paid under item 502-01-00200. Intersecting roads are paid for under 502-01-00100. The wearing course for both 502-01-00200 and 502-01-00100 pay items require Level 1F asphalt concrete.

Question 10. SEE NOTE below. Plan does not state what asphalt mix design will be allowed in the substitute. Please let us know what mix design we are to plan to use.

2. CONTRACTOR HAS THE OPTION TO USE FULL DEPTH ASPHALT PATCHES IN LIEU OF THE CLASS II BASE COURSE REPAIR WITH WRITTEN APPROVAL FROM ST. TAMMANY PARISH DPW. THE ASPHALT CONCRETE TO CLASS II BASE COURSE SUBSTITUTION SHALL BE ACHIEVED WITH A 1: 2 RATIO (i.e. FOR EVERY 2 INCHES OF CLASS II BASE COURSE, A MINIMUM OF 1 INCH OF ASPHALT SHALL BE SUBSTITUTED).

Answer 10. The required asphalt mix for base course is Level 1.

ATTACHMENTS:

1. Sheet 2B.
2. Sheet 2D.
3. Sheet 20.
4. Sheet 21.
5. Sheet 64.
6. Geotechnical Report.

End of Addendum # 1

NOTES:

1. AREA OF EXISTING DRAINAGE DITCH WHICH FALLS WITHIN REQ'D ROADWAY OR SHOULDER LIMITS SHALL BE MUCK EXCAVATED TO A DEPTH OF 1'-0" AND BACKFILLED WITH NON PLASTIC EMBANKMENT AS NECESSARY. THE LIMITS OF MUCK EXCAVATION SHALL EXTEND TO A POINT ON THE DITCH SIDE SLOPE APPROXIMATELY 1'-0" ABOVE THE EXISTING DITCH INVERT. THIS WORK WILL BE UNDER THE FOLLOWING ITEMS:

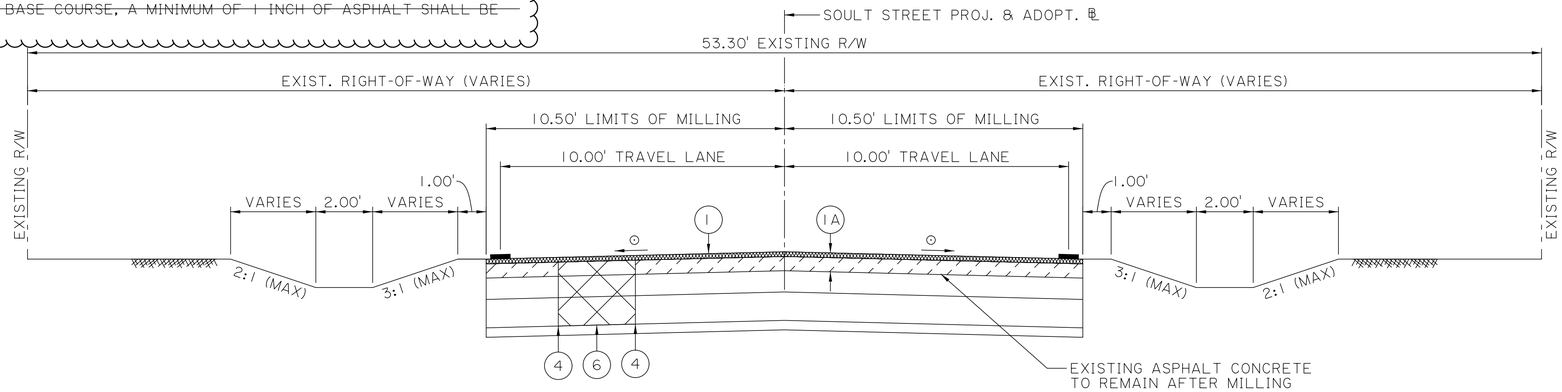
   ITEM NO. 203-02-00100 DRAINAGE EXCAVATION
   ITEM NO. 203-04-00200 NONPLASTIC EMBANKMENT (SAND)

2. SCRATCH MILL EXISTING ASPHALT CONCRETE. PATCH LOCATIONS TO BE DETERMINED IN THE FIELD AS DIRECTED BY PROJECT ENGINEER. SEE CPR-07 FOR PAVEMENT PATCHING DETAILS.

3. SEE PLAN AND PROFILE SHEETS FOR LIMITS OF DITCH GRADING.

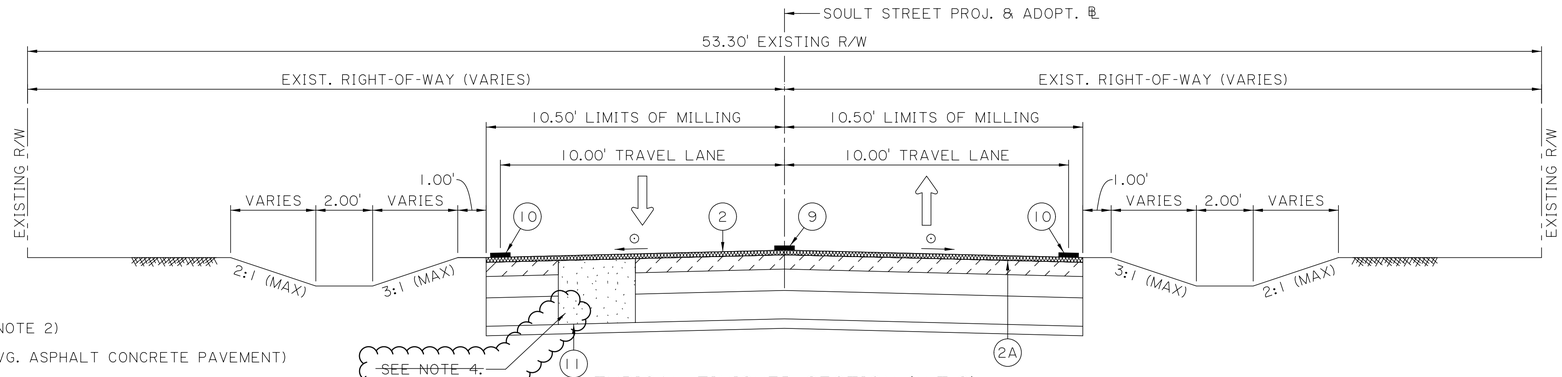
4. ~~CONTRACTOR HAS THE OPTION TO USE FULL DEPTH ASPHALT PATCHES IN LIEU OF THE CLASS II BASE COURSE REPAIR WITH WRITTEN APPROVAL FROM ST. TAMMANY PARISH DPW. THE ASPHALT CONCRETE TO CLASS II BASE COURSE SUBSTITUTION SHALL BE ACHIEVED WITH A 1: 2 RATIO (i.e. FOR EVERY 2 INCHES OF CLASS II BASE COURSE, A MINIMUM OF 1 INCH OF ASPHALT SHALL BE SUBSTITUTED).~~ ⚠

⊙ MATCH EXISTING CROSS SLOPE



TYPICAL GRADING SECTION (N.T.S)

APPLIES: STA. 110+90.00 TO STA. 178+00.00
STA. 183+15.69 TO STA. 186+75.00
STA. 196+66.00 TO STA. 203+11.00



TYPICAL FINISHED SECTION (N.T.S)

APPLIES: STA. 110+90.00 TO STA. 178+00.00
STA. 183+15.69 TO STA. 186+75.00
STA. 196+66.00 TO STA. 203+11.00

(1) MILLING ASPHALT PAVEMENT (SEE NOTE 2)
(1A) EXISTING PAVEMENT SECTION (3" AVG. ASPHALT CONCRETE PAVEMENT)
(2) 2" THICK ASPHALT CONCRETE WEARING COURSE (LEVEL 1F)
(2A) ASPHALT CONCRETE LEVELING COURSE (AS NEEDED) △
⊡ (2B) 3" THICK ASPHALT CONCRETE BINDER COURSE (LEVEL 1)
⊡ (3) 12" THICK CLASS II BASE COURSE (CRUSHED STONE OR RECYCLED PORTLAND CONCRETE)
⊡ (3A) 8" THICK CLASS II BASE COURSE (CRUSHED STONE OR RECYCLED PORTLAND CONCRETE)
(4) REQUIRED FULL DEPTH SAWCUT OF ASPHALT CONCRETE PAVEMENT
⊡ (5) 2' CONCRETE COMBINATION CURB & GUTTER (BARRIER TYPE) (SEE DOTD STD. PLAN CP-01 FOR DETAILS)
(6) REMOVE EXISTING PAVEMENT AND BASE COURSE FOR PAVEMENT PATCHING
(7) 12" THICK ASPHALT CONCRETE PATCHING
⊡ (8) EMBANKMENT
(9) PAVEMENT STRIPING & REFLECTORIZED MARKER
(10) PAVEMENT STRIPING
(11) 12" THICK AVERAGE ASPHALT CONCRETE PATCHING ~~(LEVEL 2)~~ ⚠
⊡ NOT USED THIS SHEET.

△ ASPHALT LEVELING LOCATIONS TO BE DETERMINED FOLLOWING MILLING OPERATIONS.

STATE OF LOUISIANA
RANDAL J. BONURA
License No. 31861
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING
Randal J. Bonura
2/23/2021

Typical Section.dgn

SHEET NUMBER 2B
PARISH ST. TAMMANY
CONTROL-SECTION 000-52
PROJECT ENI800011
DESIGNED CEH
CHECKED RJB
DETAILED BBS
CHECKED CRH
SERIES NUMBER 2 OF 6
NO. DATE REVISION OR CHANGE ORDER DESCRIPTION BY
2/23/2021 CALLOUT AND LEGEND REVISIONS

TYPICAL SECTIONS
SOULT ST. ROAD IMPROVEMENTS

HNTB

NOTES:

1. AREA OF EXISTING DRAINAGE DITCH WHICH FALLS WITHIN REQ'D ROADWAY OR SHOULDER LIMITS SHALL BE MUCK EXCAVATED TO A DEPTH OF 1'-0" AND BACKFILLED WITH NON PLASTIC EMBANKMENT AS NECESSARY. THE LIMITS OF MUCK EXCAVATION SHALL EXTEND TO A POINT ON THE DITCH SIDE SLOPE APPROXIMATELY 1'-0" ABOVE THE EXISTING DITCH INVERT. THIS WORK WILL BE UNDER THE FOLLOWING ITEMS:

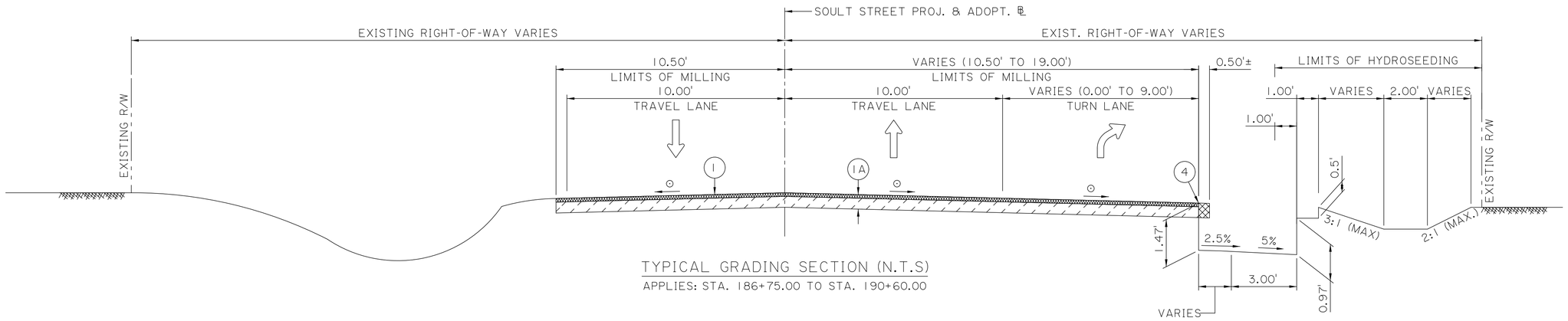
   ITEM NO. 203-02-00100 DRAINAGE EXCAVATION
   ITEM NO. 203-04-00200 NONPLASTIC EMBANKMENT (SAND)

2. SCRATCH MILL EXISTING ASPHALT CONCRETE. PATCH LOCATIONS TO BE DETERMINED IN THE FIELD AS DIRECTED BY PROJECT ENGINEER. SEE CPR-07 FOR PAVEMENT PATCHING DETAILS.

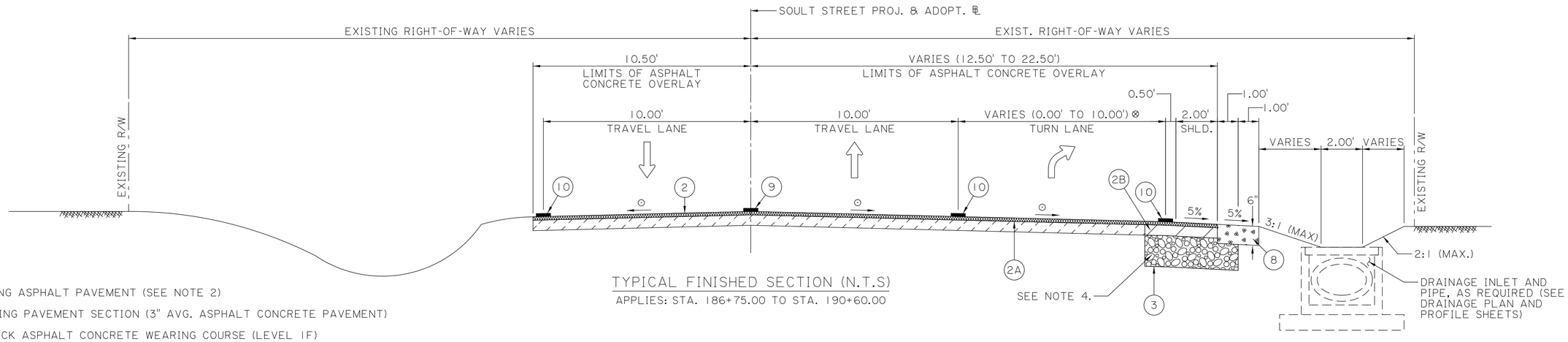
3. 12" THICK ASPHALT CONCRETE SHALL BE PAID UNDER ITEM 510-01-00200 PAVEMENT PATCHING (12" MINIMUM THICKNESS).

4. CONTRACTOR HAS THE OPTION TO USE FULL DEPTH ASPHALT PATCHES IN LIEU OF THE CLASS II BASE COURSE REPAIR WITH WRITTEN APPROVAL FROM ST. TAMMANY PARISH DPW. THE ASPHALT CONCRETE TO CLASS II BASE COURSE SUBSTITUTION SHALL BE ACHIEVED WITH A 1: 2 RATIO (i.e. FOR EVERY 2 INCHES OF CLASS II BASE COURSE, A MINIMUM OF 1 INCH OF ASPHALT SHALL BE SUBSTITUTED).

⊙ MATCH EXISTING CROSS SLOPE
⊗ 10.00' TRAVEL LANE APPLIES STA. 187+55.00 TO 190+05.00



TYPICAL GRADING SECTION (N.T.S)
APPLIES: STA. 186+75.00 TO STA. 190+60.00



TYPICAL FINISHED SECTION (N.T.S)
APPLIES: STA. 186+75.00 TO STA. 190+60.00

(1) MILLING ASPHALT PAVEMENT (SEE NOTE 2)
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⊡ (7) 12" THICK ASPHALT CONCRETE PATCHING
(8) EMBANKMENT
(9) PAVEMENT STRIPING & REFLECTORIZED MARKER
(10) PAVEMENT STRIPING
⊡ NOT USED THIS SHEET.

△ ASPHALT LEVELING LOCATIONS TO BE DETERMINED FOLLOWING MILLING OPERATIONS.

STATE OF LOUISIANA
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CIVIL ENGINEERING
Randal J. Bonura
2/24/2021

SHEET NUMBER	2D
PARISH	ST. TAMMANY
CONTROL-SECTION	000-52
PROJECT	EN1800011
DESIGNED / CHECKED	CEH / RJB
DETAILED / CHECKED	BBS / CRH
SERIES NUMBER	4 OF 6

NO.	DATE	REVISION OR CHANGE ORDER DESCRIPTION	BY

TYPICAL SECTIONS

SOULT ST. ROAD IMPROVEMENTS

HNTB

100% FINAL PLANS

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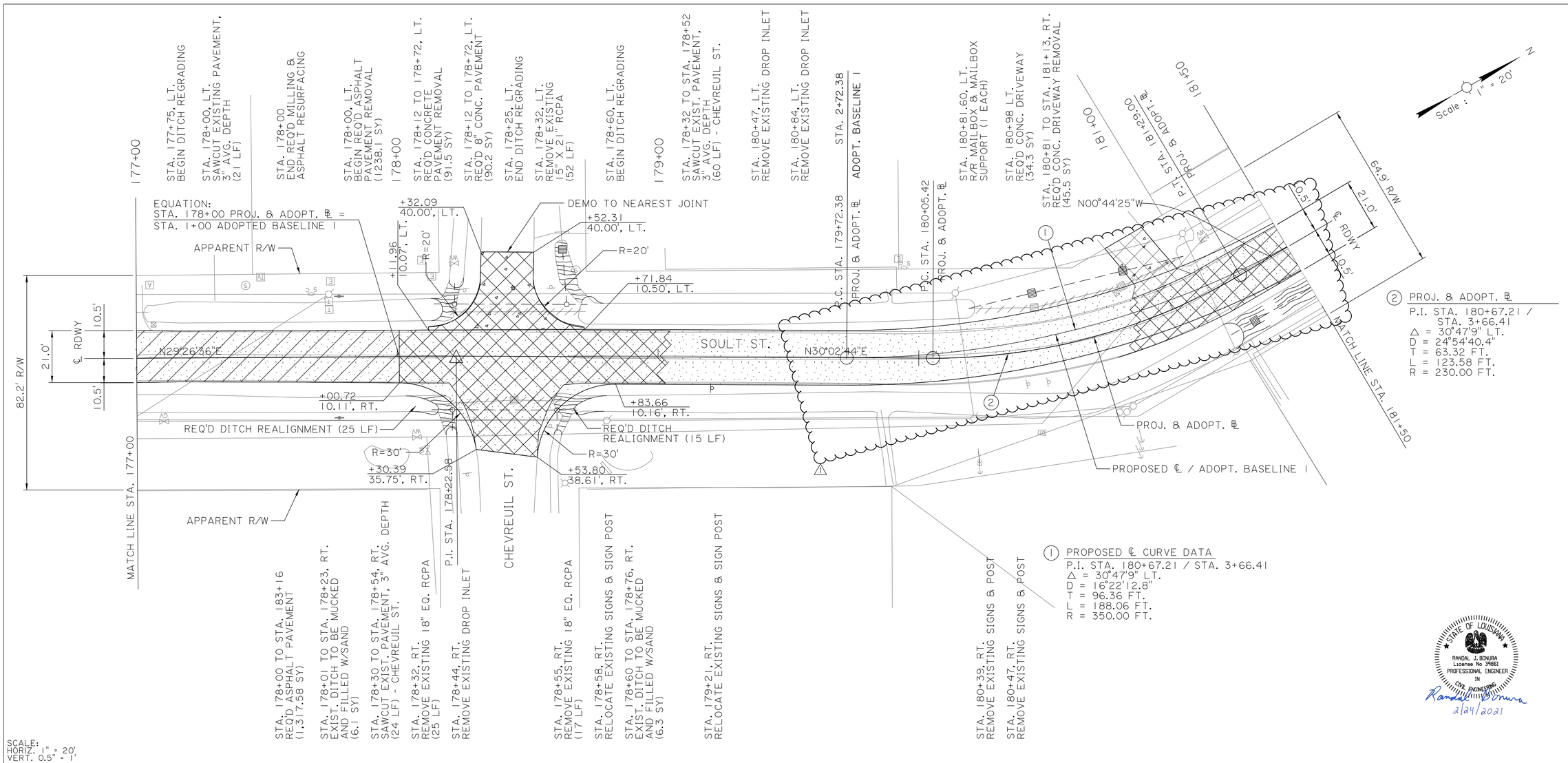
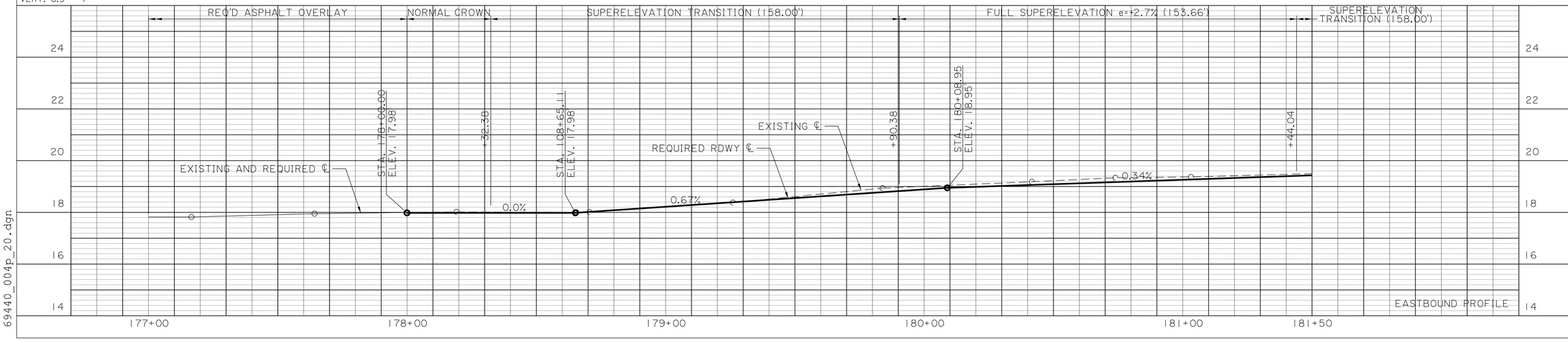


SCALE:
HORIZ. 1" = 20'
VERT. 0.5" = 1'



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STATE OF LOUISIANA
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PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING
Randal J. Bonura
2/24/2021

NO.	DATE	REVISION OR CHANGE ORDER DESCRIPTION	BY
1	2/24/2021	ADDED CENTERLINE 1 LINEWORK	

DESIGNED CRH
CHECKED RJB
DETAILED BBS
CHECKED CRH
SERIES NUMBER 17 OF 23

PARISH ST. TAMMANY
CONTROL-SECTION 000-52
PROJECT EN1800011

SHEET NUMBER 20

PLAN AND PROFILE SHEET
STA. 177+00 TO STA. 181+50
SOULT ST. ROAD IMPROVEMENTS

HNTB

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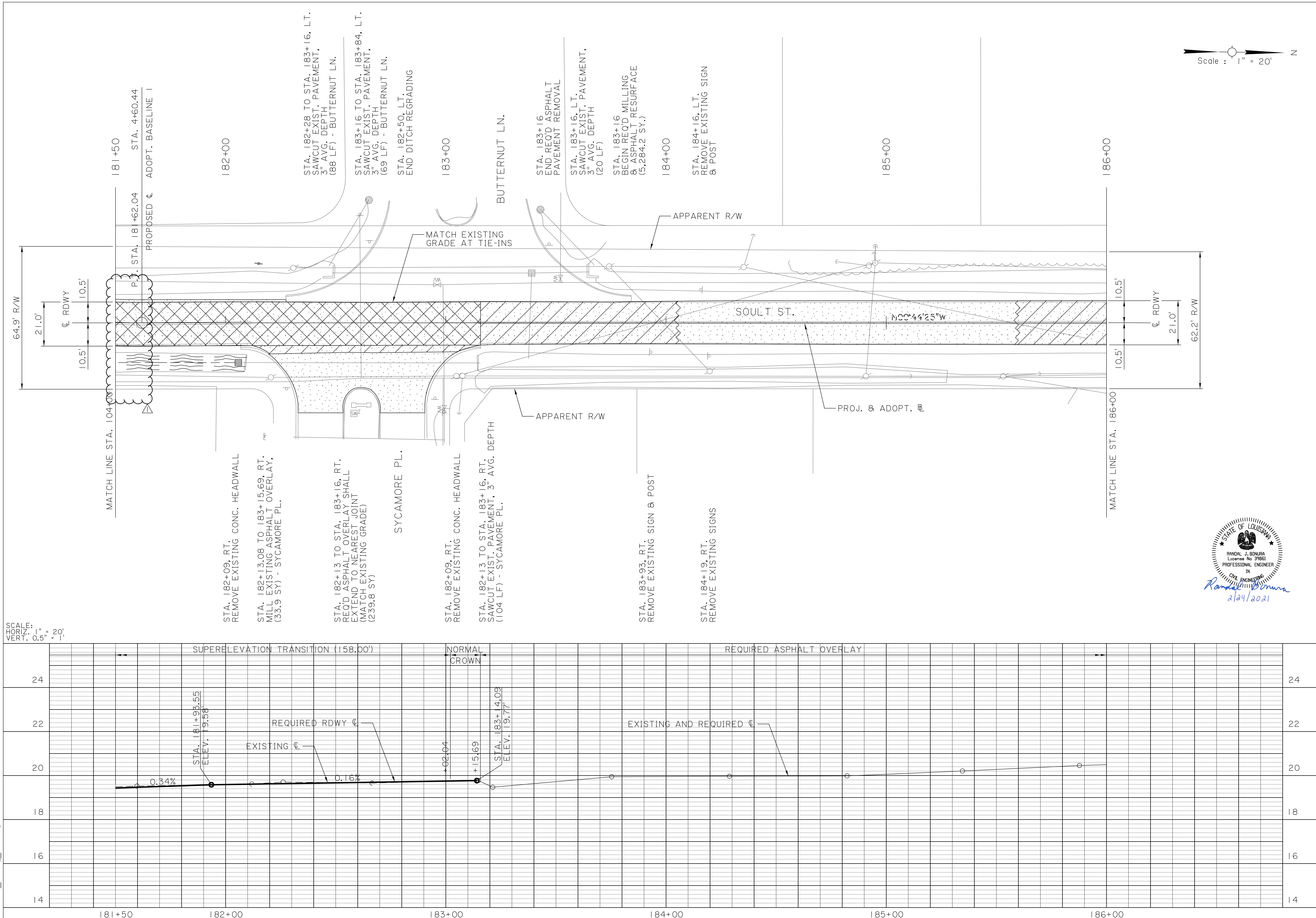
100% FINAL PLANS



SHEET NUMBER	21
PARISH	ST. TAMMANY
CONTROL SECTION	000-52
PROJECT	EN18000011
DESIGNED / CHECKED	CRH / RJB
DETAILED / CHECKED	BBS / CRH
SERIES NUMBER	18 OF 23

NO.	DATE	REVISION OR CHANGE ORDER DESCRIPTION	BY
1	2/24/2021	ADDED CENTERLINE 1 LINEWORK	

PLAN AND PROFILE SHEET
STA. 181+50 TO STA. 186+00
SOULT ST. ROAD IMPROVEMENTS

ST. TAMMANY PARISH GOVERNMENT

HNTB

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SUGGESTED SEQUENCE OF CONSTRUCTION

1. THE SUGGESTED SEQUENCE OF CONSTRUCTION SHOULD GENERALLY CONSIST OF THE FOLLOWING:

   a. SOULT STREET: WHILE MAINTAINING A MINIMUM OF ONE LANE, ONE WAY TRAFFIC ADJACENT TO HIS WORK, THE CONTRACTOR SHALL COMPLETE FULL DEPTH PAVEMENT REPLACEMENT, MILL AND OVERLAY, ASPHALT PAVEMENT PATCHING AND REPAIRS AS SHOWN IN THE PLANS OR AS DIRECTED BY THE PROJECT ENGINEER. THE CONTRACTOR SHALL USE A MOVING OPERATION WITH FLAGGERS WHILE PERFORMING THE WORK. AT THE END OF EACH WORK DAY, THE CONTRACTOR SHALL CLOSE ALL OPEN TRENCHES AND EXCAVATIONS. ADDITIONALLY, DURING NON-WORKING HOURS, THE CONTRACTOR SHALL PROVIDE TWO-WAY TRAFFIC ON SOULT STREET WITH MINIMUM LANE WIDTHS OF 10'. THE CONTRACTOR SHALL BACKFILL WITH SAND AND/OR TRAFFIC MAINTENANCE AGGREGATE AS NECESSARY TO PREVENT PONDING OF WATER AND PROVIDE A SAFE TRAVELED WAY. IF THE EXCAVATED AREA IS DUE TO AN ASPHALT PAVEMENT PATCH AND THE CONTRACTOR IS PROVIDING ASPHALT, THEN IT SHALL BE LAID TO THE BOTTOM OF THE PROPOSED WEARING SURFACE. STOCKPILED MATERIALS SHALL BE STORED AWAY FROM TRAFFIC, AND ROADWAY WEDGES SHALL BE PROVIDED TO ELIMINATE ABRUPT ELEVATION CHANGES.

   b. MINOR STREETS INTERSECTING SOULT STREET: WHILE MAINTAINING ONE LANE OF TRAFFIC ADJACENT TO HIS WORK, THE CONTRACTOR SHALL COMPLETE FULL DEPTH PAVEMENT REPLACEMENT, MILL AND OVERLAY EXISTING ASPHALT CONCRETE AND REPAIRS AS SHOWN IN THE PLANS OR AS DIRECTED BY THE PROJECT ENGINEER. THE CONTRACTOR SHALL UTILIZE FLAGGERS TO SAFELY MAINTAIN TRAFFIC PAST THE WORK AREA. AT THE END OF EACH WORK DAY, THE CONTRACTOR SHALL CLOSE ALL OPEN TRENCHES AND EXCAVATIONS. ADDITIONALLY, DURING NON-WORKING HOURS, THE CONTRACTOR SHALL PROVIDE TWO-WAY TRAFFIC ON STREETS INTERSECTING SOULT STREET WITH MINIMUM LANE WIDTHS OF 10'. THE CONTRACTOR SHALL BACKFILL WITH SAND AND/OR TRAFFIC MAINTENANCE AGGREGATE AS NECESSARY TO PREVENT PONDING OF WATER AND PROVIDE A SAFE TRAVELED WAY. IF THE EXCAVATED AREA IS DUE TO AN ASPHALT PAVEMENT PATCH AND THE CONTRACTOR IS PROVIDING ASPHALT, THEN IT SHALL BE LAID TO THE BOTTOM OF THE PROPOSED WEARING SURFACE. STOCKPILED MATERIALS SHALL BE STORED AWAY FROM TRAFFIC, AND ROADWAY WEDGES SHALL BE PROVIDED TO ELIMINATE ABRUPT ELEVATION CHANGES.

   ⚠ c. AFTER THE CONTRACTOR MILLS THE EXISTING SURFACE, THE PROJECT ENGINEER SHALL INSPECT THE REMAINING ASPHALT CONCRETE THICKNESS. SHOULD AREAS EXIST WITH ONE INCH OR LESS OF ASPHALT CONCRETE, THE PROJECT ENGINEER SHALL INSTRUCT THE CONTRACTOR AS TO WHICH AREAS SHALL BE MILLED TO REMOVE ADDITIONAL ASPHALT CONCRETE. THE CONTRACTOR SHALL REMOVE THE REMAINING ASPHALT CONCRETE AS INSTRUCTED AT THE CONTRACT UNIT PRICE FOR MILLING ASPHALT PAVEMENT ITEM 509-01-00100.

   d. AFTER COMPLETION OF THE MILLING OPERATIONS, PROOF ROLLING OF THE ROADWAY SURFACE MAY BE REQUIRED AT THE DISCRETION OF THE ENGINEER TO LOCATE UNSTABLE AREAS.

   e. THE PROJECT ENGINEER OR HIS DESIGNEE SHALL INSPECT, IDENTIFY AND ADEQUATELY MARK PAVEMENT AREAS TO BE REPAIRED BY PAVEMENT PATCHING. THE PAVEMENT PATCHING REPAIRS WILL CONSIST OF PAVEMENT REPAIR AS PRESENTED IN THE PLANS AND SPECIFICATIONS OR AS DIRECTED BY THE PROJECT ENGINEER.

   f. AFTER MILLING AND PATCHING OPERATIONS ARE COMPLETE, THE PROJECT ENGINEER SHALL IDENTIFY ANY AREAS THAT REQUIRE LEVELING TO ADJUST THE CROSS SLOPE OR LONGITUDINAL GRADE OF THE PAVEMENT SURFACE. DURING THIS PHASE, ADJUSTMENTS OF ALL UTILITY STRUCTURES (IF REQUIRED) OR AS DIRECTED BY THE PROJECT ENGINEER SHALL BE DONE.

   g. THE ROADWAYS DESIGNATED FOR ASPHALT PAVEMENT OR OVERLAYS SHALL BE OVERLAID WITH TWO INCHES (AVG. DEPTH) OF ASPHALT CONCRETE. ONE LANE SHALL REMAIN OPEN ON ALL STREETS WITH MOVING OPERATIONG AND FLAGGERS TO SAFELY MAINTAIN TRAFFIC PAST THE WORK AREA.

2. THE CONTRACTOR SHALL SUBMIT A SEQUENCE OF CONSTUCTION AND TRAFFIC CONTROL PLAN TO THE PROJECT ENGINEER FOR REVIEW, COORDINATION, AND APPROVAL BY THE DEPARTMENT OF PUBLIC WORKS PRIOR TO THE START OF CONSTRUCTION. TRAFFIC CONTROL PLAN SHALL INCLUDE DETOUR SIGNS AND ADVANCED WARNING SIGNAGE FOR ALL SIDEROADS.

3. THE CONTRACTOR MAY CHOOSE TO CLOSE A PORTION OF THE ROADWAY AS WITH MOVING OPERATIONS AND IN ACCORDANCE WITH HIS APPROVED WORK PLAN, CONSTRUCTING THE REQUIRED REPAIRS, AND PROGRESSING ALONG THE PROJECT WHILE MAINTAINING TRAFFIC IN AT LEAST ONE LANE ADJACENT TO HIS WORK.

4. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL RESIDENTIAL STREETS FOR THE DURATION OF THE PROJECT. WHEN A CLOSURE IS REQUIRED, THE CONTRACTOR SHALL COORDINATE WITH THE PROJECT ENGINEER TO SCHEDULE CLOSURE TIME AND DURATION.

STATE OF LOUISIANA
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Randal J. Bonura
2/18/2021

SHEET NUMBER 64

PARISH ST. TAMMANY
CONTROL-SECTION 000-52
PROJECT ENI800001I

DESIGNED CRH
CHECKED RJB
DETAILED BBS
CHECKED RJB
SERIES NUMBER 1 OF 1

NO.	DATE	REVISION OR CHANGE ORDER DESCRIPTION	BY
1	2/18/2021	SUGGESTED SEQUENCE OF CONSTRUCTION NOTES REVISION	

SUGGESTED SEQUENCE OF CONSTRUCTION

SOULT ST. ROAD IMPROVEMENTS

HNTB

August 19, 2019

HNTB Corporation
2021 Lakeshore Drive, Suite 230
New Orleans, La 70122

Attention: Mr. Rick Hathaway

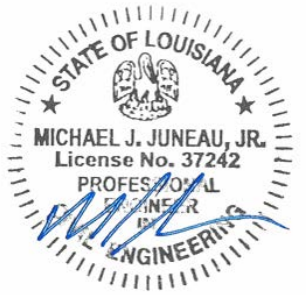
Re: Geotechnical Engineering Study
Soult Street Improvements
St. Tammany Parish, Louisiana
Premier File No.: 18-0082

Dear Mr. Hathaway:

This letter report provides recommendations for pavement design and fill placement required for the proposed turn lanes and roadway rehabilitation of Soult Street in Mandeville, Louisiana. The recommendations provided herein are based on the subsurface soil conditions encountered at various test locations.

We appreciate the opportunity to offer our services and look forward to working with you and the design team on this project. Please call with any questions you may have, or if Premier can be of additional service.

Respectfully submitted,
PREMIER GEOTECH AND TESTING, LLC



Digitally signed by Michael J Juneau, P.E., MBA
Date: 2019.08.19 10:46:11 -05'00'

Mike Juneau, P.E., MBA
President

Tyler Roberts
Project Manager

Attachments: *Pavement Design Calculation* Sheet
Boring Location Plan Sheet
Key to Boring Log Sheet
Boring Logs Sheets

FURNISHED INFORMATION

The proposed project will consist of rehabilitation of Soult Street from US190/Florida Blvd. to LA 1088 in St. Tammany Parish, Louisiana. It is understood that milling, patching and resurfacing of the existing road with asphalt pavement and widening of portions to construct three (3) new turn lanes will be performed. The road will be widened to accommodate turn lanes at the US 190 intersection, the Mandeville Middle School entrance and the LA 1088 intersection.

PAVEMENT RECOMMENDATIONS

Three (3) soil borings were drilled and sampled within the footprint of the proposed three (3) turn lane additions to a depth of about six (6) feet below existing grade, and five (5) asphalt cores/soil borings were drilled and sampled at specific locations along the existing roadway to a depth of about two (2) feet below existing asphalt pavement. The subsurface soils encountered at the project site consist of medium stiff to stiff sandy lean and fat clays with occasional silt and sand stratums within the roadway alignment. Generally, the subsurface soils encountered generally exhibited good strength characteristics with relatively high moisture contents.

The table below summarizes the subsurface soil encountered in the soil borings performed for the proposed new turn lanes (i.e., B-1, B-2 and B-3), and the existing pavement thickness, basecourse and subgrade encountered in test locations C-4 through C-8.

Test Location	**Pavement**			**Base**		**Sub-Base**	
	Type	*Asp Qty.*	*Depth*	*Type*	*Depth*	*Type*	*Depth*
B-1	None	na	na	None	na	Tn & Gr CL	0"-6'
B-2	None	na	na	None	na	Lt. Gr & Gr SI	0"-2'
						Gr & Tn CL	2'-6'
B-3	None	na	na	None	na	Gr & Tn CL	0"-2'
						Gr & Tn SA	2'-4'
						Gr & Tn CL	4'-6'
C-4	Asphalt	Fair	0"-3"	Soil Cement	3"-8"	Gr & Tn CL	8"-2'
C-5	Asphalt	Fair	0"-3"	Soil Cement	3"-11"	Gr CL	11"-2'
C-6	Asphalt	Fair	0"-3"	Soil Cement	3"-10"	Gr. & Tn CL	10"-2'
C-7	Asphalt	Poor	0"-3"	None	na	Tn & Gr CL	3"-2'
C-8	Asphalt	Poor	0"-3"	None	na	Tn & Gr CL	3"-2'

CL – Low Plasticity Clay; **CH** – High Plasticity; **SI** – Silt; **SA** - Sand

Pavement Section

Actual traffic type and frequency anticipated was not known at the time of this report. However, Premier assumed that the average daily traffic (ADT) will consist of mostly passenger vehicles and occasional truck traffic (e.g. Garbage trucks, school busses, etc.) and used the recommended *Residential streets, rural farm and residential roads* values in St. Tammany's Roadway Design Standards (Sec. 125-60) - *Anticipated Heavy Trucks Per Design Period* table

to determine the Load Equivalence Factor (LEF) and Total Design ESALs.

The pavement subgrade, subbase, base and pavement shall be prepared as described in St. Tammany Parish Code of Ordinances (Part-II, Sec. 125-59 & 60). The recommended pavement thicknesses presented below are considered typical and minimum for the assumed parameters at the site. We understand that budgetary considerations sometimes warrant thinner pavement sections than those presented. However, the client, the owner, and the project designers should be aware that thinner pavement sections may result in increased maintenance costs and lower than anticipated pavement life.

The specific design parameters used to develop the recommended pavement section are as follows. More specific design parameters and details are shown on the attached *Pavement Design Calculations* sheet generated using PaveXpress software.

Design Period	20 Years
Total Design ESALs (W18)	1,288,000
Load Equivalency Factor (LEF)	0.0194
Resilient Modulus, MR	6500 psi
Reliability	85%
Deviation	0.47 Flexible
Initial Serviceability	4.2
Terminal Serviceability	2.0
Drainage Coefficient	1.0 Pavement; 0.8 Base

With the aforementioned assumptions and in accordance with the St. Tammany Parish *Roadway Design Standards for Residential Subdivisions*, the following pavement section is recommended for Soult Street:

FLEXIBLE PAVEMENT	
Pavement Material	**Residential Street**
	Minimum Thickness, Inches
Asphaltic Concrete	5.0
Class II Base Course	12
Compacted and Proof Rolled Subgrade	yes

The base course shall meet the requirements of the latest edition of the St. Tammany Parish Code of Ordinances (Part-II, Sec. 125 – 59-60) and the Louisiana Standard Specifications for Roads and Bridges Manual (LSSRB), Section 1003.3D. The base and subbase course should be compacted to at least 95 percent of maximum dry density near the optimum moisture content in accordance with ASTM D698, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3)).

Pavement materials may be placed after the subgrade or structural fill has been properly proof rolled or compacted, and fine-graded. These activities shall be accomplished following the

Louisiana Department of Transportation and Development Standard Specifications for Road and Bridge Construction guidelines.

Asphaltic concrete should meet the requirements of the latest edition of the St. Tammany Parish Roadway Testing and Inspection Standards for Residential and Commercial Subdivisions (Sec. 40-032.03), and the requirements of Part V of the latest edition of the LSSRB. The aggregate base should meet the requirements of the latest edition of the St. Tammany Parish Code of Ordinances (Part-II, Sec. 125 – 59-60) and Sub-Section 1003 of the LSSRB. The base and structural fill should be compacted to at least 95 percent of the maximum dry density near the optimum moisture content in accordance with ASTM D698.

Water should not be allowed to pond behind curbs and saturate the base. In down grade areas, the limestone base shall extend through the slope to provide an exit path for any water accumulating under the pavement.

Base and Sub-Base Recommendations

Crushed Stone/Recycled Concrete Aggregate Material

Properly graded crushed stone or recycled crushed concrete meeting the requirements of Section 1003.03.1 and 1003.03.2 should be utilized beneath the pavements where specified in the *Recommended Pavement Sections* table presented in this report. The aggregate base material should be placed in accordance with the St. Tammany requirements and the latest edition of the LSSRB, and compacted to at least 95 percent of the maximum dry density as determined by ASTM D698. Placement and compaction of the aggregate material should be near optimum moisture.

Cement Stabilization

For cement stabilization, a minimum of 10% by volume of cement is recommended for preliminary consideration. Untreated soil with a LL greater than 35 and a PI greater than 15, or an organic content greater than 2 percent shall not be used for cement stabilization. Laboratory tests should be conducted on soil samples that are being considered for treatment at the time of or prior to construction to determine the optimum cement content. Cement treatment shall meet the requirements of Section 303 of the latest edition of the LSSRB. The cement treated base course shall yield a compressive strength of at least 300 psi as determined by a mix design in accordance with DOTD TR 432, Method B or C Standard Procedure.

The moisture content of the stabilized soil should be monitored throughout the curing process and moisture should be added as needed to ensure proper hydration and stabilization. Cement/lime stabilized clay should be placed in horizontal loose lifts not exceeding 8 inches in thickness, or less if necessary, to obtain adequate compaction. Each lift should be thoroughly and uniformly moisture-conditioned to within +1% to +3% of the optimum moisture content.

Please note that caution should be used when in-place cement treatment/stabilization is

performed in closely populated areas.

EARTHWORK RECOMMENDATIONS

Site Preparation

Premier recommends that all topsoil, stumps, vegetation, roots, soft, organic, or unsuitable soils in the construction areas of the proposed turn lanes be stripped from the site and either wasted or stockpiled for later use in non-structural areas. After stripping operations are completed, proof rolling of the subgrade is recommended as discussed later in this report. It should also be noted that it is not unusual for topsoil thickness to vary from these values in the open field. Oftentimes the topsoil can be deeper in low-lying areas, where erosion, wind and precipitation can deposit this material. There may be areas of the site that require additional, or possibly less stripping for the reasons discussed above. A representative of the Premier should determine and document the depth of removal at the time of construction.

The lean and fat clays can undergo a significant loss of stability when construction activities are performed during wetter portions of the year. Premier anticipates that the soils in the project area can become easily disturbed if subjected to conventional rubber tire or narrow track-type equipment and excessive moisture. Soils that become disturbed would need to be excavated and replaced; however, this remedial excavation may expose progressively wetter soils with depth, thus compounding the problem condition. Thus, a normal approach to subgrade preparation may not be possible. Appropriate wide-track equipment selection should aid in minimizing potential disturbance. In addition, and for these reasons, it will be advantageous to perform earthwork and foundation construction activities during dry weather.

Proof Rolling

After stripping to the proposed subgrade level, as required, the structure(s) area should be proof-rolled, where practical, with a 20-25-ton half-loaded tandem axle dump truck or similar heavy rubber-tired vehicle (typically with an axial load greater than nine (9) tons). Soils that are observed to rut or deflect excessively (greater than one (1) inch) under the moving load should be undercut and replaced with properly compacted structural fill material or rendered stable by using a combination of lime/ fly ash/ kiln dust. The proof-rolling and undercutting activities should be witnessed by a representative of Premier and should be performed during a period of dry weather. Care should be taken during construction activities not to allow excessive drying or wetting of exposed soils. The subgrade soils should be scarified and compacted to at least 95% of the materials' standard Proctor maximum dry density, in general accordance with ASTM procedures, to a depth of at least twelve (12) inches below the surface.

If achieving compaction or passing a proofroll where highly plastic fat clays are encountered, replacing this material with a low plasticity compacted soil or a dense positively drained graded crushed stone/concrete may be required. Alternatively, class "C" flyash or lime-treatment of the high plastic clay can be accomplished to reduce the plasticity index, improve workability, promote drying, and reduce shrink/swell potential. A representative of Premier's geotechnical

engineer should observe the subgrade soils, perform plasticity index tests, and estimate the approximate extent of the exposed fat clays. If it is desirable to modify the fat clays with a commercially available class “C” flyash or lime product, Premier recommends the actual application percent be determined by conducting a laboratory class “C” flyash or lime series test. The geotechnical engineer’s representative should observe the remediation procedures for compliance with the project plans and specifications.

Structural Clay Fill

Structural clay fill materials placed beneath the structural features or slabs should be free of organic or other deleterious materials and have a maximum particle size of less than three (3) inches. Structural clay fill soils are defined as having a liquid limit (LL) less than forty (40) and plasticity index (PI) between 12 and 22, and plots below the A-line on the plasticity chart, or as accepted by the Geotechnical Engineer of Record.

Utility Trench Backfill

Excavation for utility trenches shall be performed in accordance with OSHA regulations as stated in 29 CFR Part 1926. It should be noted that utility trench excavations have the potential to degrade the properties of the adjacent fill materials. Utility trench walls that are allowed to move laterally can lead to reduced bearing capacity and increased settlement of adjacent structural elements and overlying slabs.

Backfill for utility trenches is as important as the original subgrade preparation or structural fill placed to support either a foundation or slab. Therefore, it is imperative that the backfill for utility trenches be placed to meet the project specifications for the structural fill of this project. Premier recommends that flowable fill or lean mix concrete be utilized for utility trench backfill. If on-site soils are placed as trench backfill, the backfill for the utility trenches should be placed in four (4) to six (6) inch loose lifts and compacted to a minimum of 95% of the maximum dry density achieved by the standard Proctor test. The backfill soil should be moisture conditioned to be within 2% of the optimum moisture content as determined by the standard Proctor test. Up to four (4) inches of bedding material placed directly under the pipes or conduits placed in the utility trench can be compacted to the 90% compaction criteria with respect to the standard Proctor. Backfill of utility trenches should not be performed with water standing in the trench. If granular material is used for the backfill of the utility trench, the granular material should have a gradation that will filter protect the backfill material from the adjacent soils. If this gradation is not available, a geosynthetic non-woven filter fabric should be used to reduce the potential for the migration of fines into the backfill material. Granular backfill material shall be compacted to meet the above compaction criteria. The clean granular backfill material should be compacted to achieve a relative density greater than 75% or as specified by the geotechnical engineer for the specific material used.

Excavations

In Federal Register, Volume 54, Number 209 (October 1989), the United States Department of

Labor, Occupational Safety and Health Administration (OSHA) amended its "Construction Standards for Excavations, 29 CFR, part 1926, Subpart P". This document was issued to better enhance the safety of workers entering trenches or excavations. It is mandated by this federal regulation that excavations, whether they be utility trenches, basement excavation or footing excavations, be constructed in accordance with the new OSHA guidelines. It is Premier's understanding that these regulations are being strictly enforced and if they are not closely followed, the owner and the contractor could be liable for substantial penalties.

The contractor is solely responsible for designing and constructing stable, temporary excavations and should shore, slope, or bench the sides of the excavations as required to maintain stability of both the excavation sides and bottom. The contractor's "responsible person", as defined in 29 CFR Part 1926, should evaluate the soil exposed in the excavations as part of the contractor's safety procedures. In no case should slope height, slope inclination, or excavation depth, including utility trench excavation depth, exceed those specified in local, state, and federal safety regulations.

Premier is providing this information solely as a service to our client. Premier does not and will not assume responsibility for construction site safety or the contractor's or other parties' compliance with local, state, and federal safety or other regulations.

LIMITATIONS

The concept of risk is an important aspect of the geotechnical evaluation. The primary reason for this is that the analytical methods used to develop geotechnical recommendations do not comprise an exact science. The analytical tools which geotechnical engineers use are generally empirical and must be used in conjunction with engineering judgment and experience. Therefore, the solutions and recommendations presented in the geotechnical evaluation should not be considered risk-free and, more importantly, are not a guarantee that the interaction between the soils and the proposed structure will perform as planned. The engineering recommendations presented in the preceding section constitutes Premier's professional estimate of those measures that are necessary for the proposed structure to perform according to the proposed design based on the information generated and referenced during this evaluation, and Premier's experience in working with these conditions.

The recommendations submitted in this report are based on furnished project information by the design team and the subsurface information obtained from borings drilled by Premier. 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, Premier must be notified immediately to determine if changes in the foundation recommendations are required. If Premier is not notified in writing of such changes, Premier will not be responsible for the impact of those changes on the project.

The geotechnical engineer warrants that the findings, recommendations, specifications, or professional advice contained herein have been made in accordance with generally accepted professional geotechnical engineering practices in the local area. No other warranties are

implied or expressed.

After the plans and specifications are complete, the Geotechnical Engineer should be retained and 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.

The scope of Premier's services did not include any environmental assessment or investigation for the presence or absence or hazardous or toxic materials in the soil, groundwater, or surface water within or beyond the site studied. Any statements in this report regarding odors, staining of soils, or other unusual conditions observed are strictly for the information of our client.

This report has been prepared for the exclusive use by HNTB Corporation and their design team for the specific application to the proposed Soult Street Rehabilitation project located in Mandeville, Louisiana. The information and data obtained (i.e., Instrument of Service) and prepared by Premier Geotech and Testing, LLC may not be used or relied on by any other entity, now or at any point in the future, without the express, written consent from Premier Geotech and Testing, LLC.

PaveXpress

Project Information

Scenario Name	Soult Street
Scenario Description	
Estimated Completion Year	2019
State	Louisiana
Roadway Classification	Local
Pavement Type	New - Asphalt

Design Parameters

Design Period (Years)	20 years
Reliability Level (R)	85 Z_R=-1.036433
Combined Standard Error (S0)	0.47
Initial Serviceability Index (pi)	4.2
Terminal Serviceability Index (pt)	2.0
Change in Serviceability (ΔPSI)	2.20

Traffic Data

Completion Year Traffic	2,386,005
Load Equivalency Factor	0.0194
Completion Year ESALs	46,000
Design Period	20
Future Traffic Growth Rate (%)	3.4
ESAL Growth Rate (%)	0
Total Design ESALs (W18)	1,288,000

Pavement Structure

Surface Lifts None

Base Layers

Type	Layer Coef	Drainage	Thickness
Cement or Lime treated base	0.14	0.9	10

Resilient Modulus (MR) 6500 psi

Design Guidance

Surface
Cement or Lime treated
Subgrade

Required minimum design SN: 3.60

Layer Thicknesses (in)

Surface: 5.50

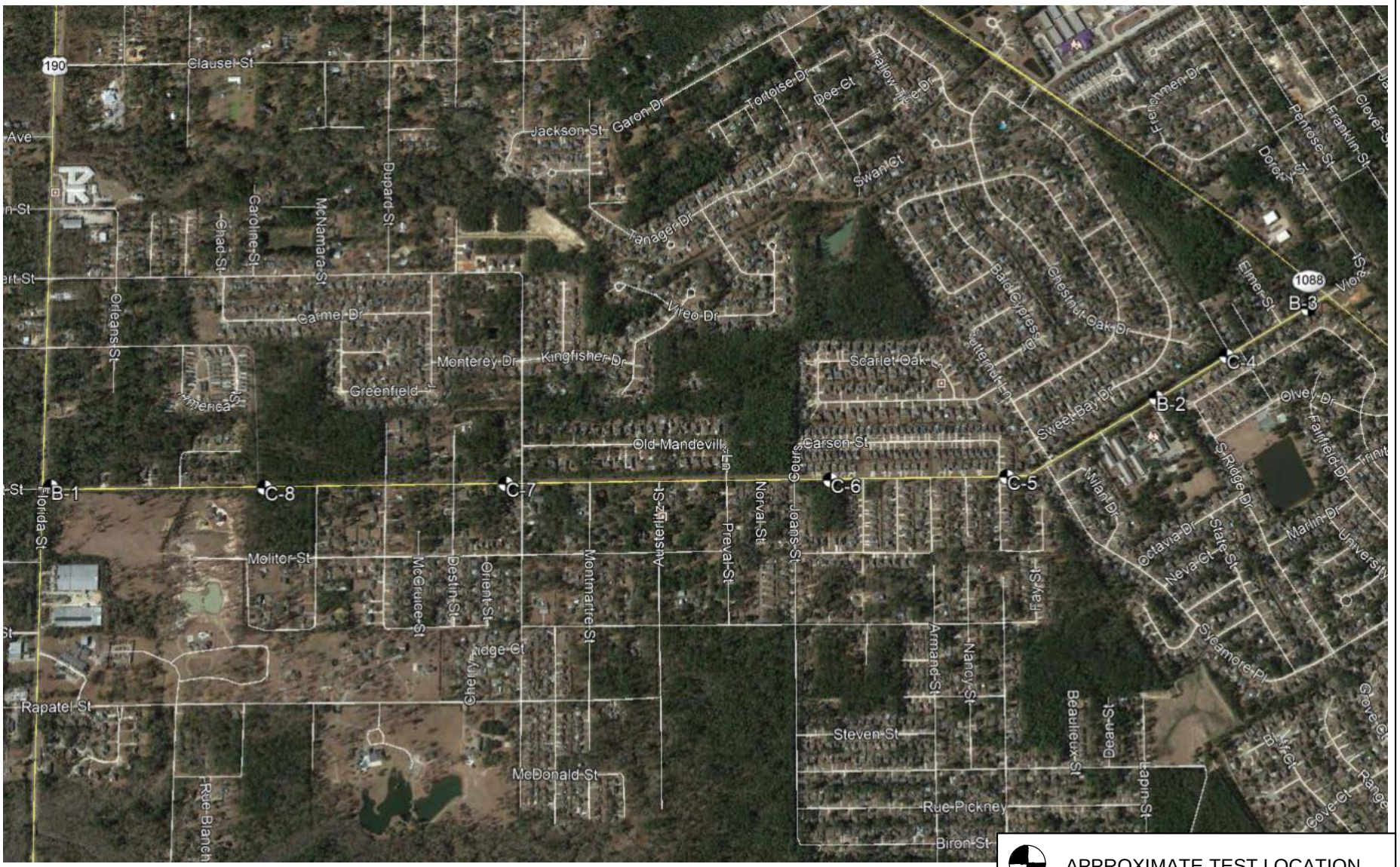
Cement or Lime treated base: 10.00

Total SN: 3.68

Design Notes

base

need to better deifne the subgrade modulus. this is going to affect the cals the most. Also, need to calculate realistic ESALs.



APPROXIMATE TEST LOCATION

N

PROPOSED SOULT STREET
IMPROVEMENTS
MANDEVILLE, LOUISIANA
PREMIER FILE NO.: 18-0082

Premier GEOTECH AND TESTING, LLC

TEST LOCATION PLAN

Premier GEOTECH AND TESTING, LLC

Project: Soult Street Improvements

Description: Pavement Rehabilitation

Parish: St. Tammany

DESIGN INFORMATION
(EXISTING ROADWAY)

Premier File No.: 18-0082

Date: August 19, 2019

Test Location	Pavement			Base		Sub-Base	
	Type	*Asp Qty.*	*Depth (in)*	*Type*	*Depth (in)*	*Type*	*Depth*
B-1	None	na	na	None	na	Tn & Gr CL	0"-6'
B-2	None	na	na	None	na	Lt. Gr & Gr SI	0"-2'
						Gr & Tn CL	2'-6'
B-3	None	na	na	None	na	Gr & Tn CL	0"-2'
						Gr & Tn SA	2'-4'
						Gr & Tn CL	4'-6'
C-4	Asphalt	Fair	0"-3"	Soil Cement	3"-8"	Gr & Tn CL	8"-2'
C-5	Asphalt	Fair	0"-3"	Soil Cement	3"-11"	Gr CL	11"-2'
C-6	Asphalt	Fair	0"-3"	Soil Cement	3"-10"	Gr. & Tn CL	10"-2'
C-7	Asphalt	Poor	0"-3"	None	na	Tn & Gr CL	3"-2'
C-8	Asphalt	Poor	0"-3"	None	na	Tn & Gr CL	3"-2'

CL - Low Plasticity Clay; **CH** - High Plasticity Clay; **SI** - Silt; **Sa** - Sand; **Org** - Organics

KEY TO SYMBOLS

Symbol	Description
Strata symbols	
	Low plasticity clay
	Silt
	Clayey sand
Misc. Symbols	
■	Unconfined Shear Strength
●	Triaxial Shear Strength
Soil Samplers	
	Undisturbed thin wall Shelby tube

Notes:

1. Exploratory borings were drilled on

2. Boring locations were located using handheld GPS technology.

3. These logs are subject to the limitations, conclusions, and recommendations in this report.

4. Results of tests conducted on samples recovered are reported on the logs.

PREMIER FILE# 18-0082

Premier GEOTECH AND TESTING, LLC

LOCATION: Mandeville, LA
COORDINATES: 30021'19.52"N 900 2'42.35"W

SURFACE EL.: EXISTING ROADWAY GRADE

DEPTH, FT	WATER LEVEL	SYMBOL	SAMPLES	BLOWS PER FOOT	STRATUM DESCRIPTION	STRATUM DEPTH, FT	CLASSIFICATION: UNIT DRY WT. PCF	CLASSIFICATION: PASSING NO 200 SIEVE, %	CLASSIFICATION: WATER CONTENT, %	CLASSIFICATION: LIQUID LIMIT	CLASSIFICATION: PLASTIC LIMIT	CLASSIFICATION: PLASTICITY INDEX (PI)	SHEAR STRENGTH
0					Medium, Tan and Light Gray LEAN CLAY with fine sand (CL)		103.9		19.6	40	18	22	
2				N=6	Medium, Light Gray and Tan LEAN CLAY with fine sand (CL)				17.6				
4				N=14	Stiff, Light Gray and Tan LEAN CLAY (CL)				17.5	49	15	34	
6					Boring Terminated at 6 Feet	6.0							
8													
10													
12													
14													

SHEAR STRENGTH

- Penetrometer
- Torvane
- Field Vane
- Unconfined
- Triaxial
- Miniature Vane

TONS PER SQ FT: 0.5, 1, 1.5, 2, 2.5

NOTES:

DRILLED DATE: 8/16/19
DRILLER: PREMIER GEOTECH
LOGGER: WW
TOTAL DEPTH (Ft): 6
WATER LEVEL: NE
BACKFILL: NATIVE SOIL CUTTINGS

LOG OF BORING B1
Soult Street Rehabilitation

PREMIER FILE# 18-0082

Premier GEOTECH AND TESTING, LLC

LOCATION: Mandeville, LA
COORDINATES: 30 22' 40.34"N 90 1' 56.48"W

SURFACE EL.: EXISTING ROADWAY GRADE

DEPTH, FT	WATER LEVEL	SYMBOL	SAMPLES	BLOWS PER FOOT	STRATUM DESCRIPTION	STRATUM DEPTH, FT	CLASSIFICATION: UNIT DRY WT. PCF	PASSING NO 200 SIEVE, %	WATER CONTENT, %	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX (PI)	SHEAR STRENGTH
0					Dense, Light Gray and Gray SILT with fine sand and trace clay (ML)		109.8		17.9	19	18	1	
2				N=5	Medium, Gray and Tan LEAN CLAY with fins sand (CL)	2.0			19.4	39	15	24	
4				N=7	Medium, Gray and Tan LEAN CLAY with fine sand (CL)				20.9				
6					Boring Terminated at 6 Feet	6.0							
8													
10													
12													
14													

SHEAR STRENGTH

- Penetrometer
- Torvane
- Field Vane
- Unconfined
- Triaxial
- Miniature Vane

TONS PER SQ FT: 0.5, 1, 1.5, 2, 2.5

NOTES:

DRILLED DATE: 8/16/19
DRILLER: PREMIER GEOTECH
LOGGER: WW
TOTAL DEPTH (Ft): 6
WATER LEVEL: NE
BACKFILL: NATIVE SOIL CUTTINGS

LOG OF BORING B2
Soult Street Rehabilitation

PREMIER FILE# 18-0082

Premier GEOTECH AND TESTING, LLC

LOCATION: Mandeville, LA
COORDINATES: 30 22' 54.87"N 90 1' 56.36"W

SURFACE EL.: EXISTING ROADWAY GRADE

DEPTH, FT	WATER LEVEL	SYMBOL	SAMPLES	BLOWS PER FOOT	STRATUM DESCRIPTION	STRATUM DEPTH, FT	CLASSIFICATION: UNIT DRY WT. PCF	PASSING NO 200 SIEVE, %	WATER CONTENT, %	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX (PI)	SHEAR STRENGTH
0					Medium, Gray and Tan LEAN CLAY with fine sand (CL)		102.3		20.9	20	12	8	
2					Dense, Tan and Gray clayey SAND (SC)	2.0	111.0		18.8	20	15	5	
4				N=12	Stiff, Light Gray and Tan LEAN CLAY with sand layers and lenses (CL)	4.0			13.5				
6					Boring Terminated at 6 Feet	6.0							
8													
10													
12													
14													

SHEAR STRENGTH: Penetrometer, Torvane, Field Vane, Unconfined, Triaxial, Miniature Vane
TONS PER SQ FT: 0.5, 1, 1.5, 2, 2.5

NOTES:

DRILLED DATE: 8/16/19
DRILLER: PREMIER GEOTECH
LOGGER: WW
TOTAL DEPTH (Ft): 6
WATER LEVEL: NE
BACKFILL: NATIVE SOIL CUTTINGS

LOG OF BORING B3
Soult Street Rehabilitation

PLATE