

APPENDIX D

Section 106 Consultation and Final MOA

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March 12, 2019 Section 106 Consulting Party Meeting



Deposition of:
Consulting Party Meeting

March 12, 2019

In the Matter of:
Mobile River Bridge Project

Freedom Court Reporting

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MOBILE RIVER BRIDGE AND BAYWAY PROJECT
SECTION 106 CONSULTING PARTY MEETING

ALDOT
Southwest Region, Building T
1701 I-65 West Service Road North
Mobile, Alabama 36618

March 12, 2019

10:00 A.M.

REPORTED BY:

Jan A. Mann, CSR
Henderson & Associates Court Reporters
260 North Joachim
Mobile, Alabama 36603

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1 March 12, 2019 10:00 a.m.
 2
 3 PROCEEDINGS
 4
 5 MR. WOOD: First, I want to welcome
 6 everybody here at the consulting party's meeting for
 7 Mobile Bridge and Bayway Project. My name is Andrew
 8 Wood. I am the project manager.
 9 Before we get started, I want to go
 10 around and maybe do some introductions. We have a court
 11 reporter here today so throughout the presentation and
 12 afterwards if you do have a comment or question if you
 13 could state your name so she can get that down. We will
 14 start over here for intros.
 15 MR. ISHAM: Ted Isham.
 16 MS. SHUMER: My name is Missi Shumer.
 17 I'm a consultant to ALDOT working on the environmental
 18 document.
 19 MR. HICKOX: Pat Hickox. I'm with the
 20 consultant advisory team working with ALDOT.
 21 MS. GREGG: I'm Allison Gregg. I'm the
 22 public information officer for the project.
 23 MS. DRAGOTTA: Stephanie Dragotta, ALDOT.
 24 I'm on the Mobile River Bridge Project team.
 25 MR. CHAMBLESS: Jesse Chambless, ALDOT

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1 environmental section.
 2 MR. BRAZIL: Brandon Brazil, ALDOT
 3 environmental section.
 4 MS. WALLER-TRUPP: Leanne Waller-Trupp,
 5 ALDOT environmental section.
 6 MS. PATTERSON: Pat Patterson, ALDOT
 7 environmental section.
 8 MS. OAKES: Allison Oakes, ALDOT
 9 environmental section.
 10 MR. KAYLSAVERA: Dolha Kayisavera, ALDOT
 11 environmental section.
 12 MS. CLAY: Natasha Clay, ALDOT
 13 environmental.
 14 MS. MONTGOMERY: Mary Lee Montgomery, the
 15 Conde-Charlotte Museum.
 16 MR. AMBERGER: Nick Amberger. City of
 17 Mobile, city engineer.
 18 MS. URQUHART: Lynne Urquhart, Federal
 19 Highway Administration.
 20 MR. BARTLETT: Mark Bartlett, Federal
 21 Highway.
 22 MS. PRICE: Lynne Price, USS Alabama
 23 Battleship Memorial Park.
 24 MR. HENRY: Walt Henry, ALDOT design.
 25 MR. WALKER: Steve Walker, ALDOT design,

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1 Montgomery.
 2 MR. WILLIAMS: Bruce Williams. Yorktown
 3 Baptist Church.
 4 MR. PATTERSON: Chester Patterson, City
 5 of Spanish Fort.
 6 MR. PERRY: Edwin Perry, ALDOT
 7 pre-construction.
 8 MR. SPRAGUE: Ramsey Sprague, Mobile
 9 Environmental Justice Action Coalition and (inaudible).
 10 MR. SLEDGE: I'm John Sledge. I'm the
 11 president of the Mobile Historic Development Commission,
 12 City of Mobile.
 13 MS. RAYFORD: Louise Rayford.
 14 Conde-Charlotte Museum.
 15 MS. HARRIS: Elizabeth Harris.
 16 Conde-Charlotte Museum.
 17 MR. WOOD: And on the phone?
 18 MS. MERRITT: Betsy Merritt, National
 19 Trust for Historic Preservation calling in from D.C.
 20 MS. SHUMER: Anyone else on the phone?
 21 MR. MERRITT: I think the Advisory
 22 Council on Historic Preservation was planning to call in
 23 so I would expect them soon.
 24 MR. WOOD: Okay. We will go ahead and
 25 get started and let them call in. For those that were

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1 here at the last meeting in May, this presentation is
 2 going to look very familiar.
 3 UNIDENTIFIED SPEAKER: Can you speak up a
 4 little bit?
 5 MR. WOOD: I'm sorry. This presentation
 6 is going to look very familiar. A lot of the same
 7 contents and same slides are in this one. Today's
 8 meeting is really to go over that fourth bullet, the
 9 expanded area of potential effects and the new
 10 consulting parties and to bring those individuals up to
 11 speed with this process we've been going through. So I
 12 will go through the project overview and then turn it
 13 over to our consultants to go through the rest of the
 14 presentation.
 15 So the purpose of need of the project,
 16 the first purpose of need is to increase the capacity of
 17 I-10. Everybody from this area is familiar with the
 18 congestion that backs up on Wallace Tunnel and the
 19 Bayway and that's what we are trying to fix.
 20 The second purpose of need is provide a
 21 direct route for vehicles transporting hazardous
 22 materials. Right now, vehicles with hazardous materials
 23 are prohibited from going through the tunnels so they
 24 have to divert through Downtown Mobile and up around the
 25 Cochrane Bridge. And then finally we want to minimize

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1 impacts to the maritime industry.
 2 Here is the overall map of the project
 3 and I will go into more detail in a minute on all this
 4 but it starts at the Broad Street interchange and ends
 5 just east of the Eastern Shore interchange in Daphne.
 6 Just south of the Wallace Tunnel is the Mobile River
 7 Bridge and then the Bayway will be rebuilt with eight
 8 lanes total above the hundred year storm surge.
 9 Here is a little zoomed in where the main
 10 span and high level approaches will be located. The
 11 main span bridge will be a cable safe structure. Six
 12 lanes total. The western tower will be located just
 13 next to the cruise terminal. The eastern tower will be
 14 located on the Pinto Pass peninsula near Austal. It
 15 will have a vertical clearance of two hundred and
 16 fifteen feet so that doesn't interfere with the maritime
 17 and cruise industries.
 18 Just for comparison, here is the new
 19 bridge versus the Cochrane Bridge. You can see it's
 20 quite a bit bigger. Here is the Ravenel Bridge in South
 21 Carolina with a vertical clearance of 185. And then the
 22 Golden Gate Bridge which is a good -- has a much longer
 23 span since it's a suspension bridge.
 24 Here we are zoomed in to the western high
 25 level approaches. It starts just east of the Virginia

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1 Street interchange. It will start rising up at a four
 2 percent grade to get to the two hundred and fifteen foot
 3 clearance. You can see it turning just past the Mobile
 4 County Jail.
 5 On the east side, we will go through the
 6 Austal parking lot and then tie back in to the new
 7 Bayway. These are a couple of conceptual renderings of
 8 the bridge. These are what it may look like. The final
 9 structure type hasn't been decided yet.
 10 And then just to give a little project
 11 history, this project has been studied for about twenty
 12 years and had multiple alternatives analyzed. In 2014,
 13 we signed a draft environmental impact statement and it
 14 identified four build alternatives and no build.
 15 The preferred alternative was B prime
 16 which may be hard to see on the map but it's the pink
 17 right below the yellow or right above the yellow. As I
 18 said, the DEIS was signed 2014 and public hearings were
 19 held soon after that.
 20 So now I will turn it over to Pat to go
 21 through what we have done since the signing of the DEIS.
 22 MR. HICKOX: Thank you, Andrew. Good
 23 evening, everyone. We'll touch on some of those
 24 activities since the July '14 time frame. A number of
 25 things have been accomplished on the project as you can

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1 see on this list starting with geotechnical studies. We
 2 did a geotechnical investigation as well as advance
 3 foundation testing program. Project wide survey
 4 including (unintelligible) and metric surveys of the
 5 existing Bayway channel and Bayway -- underwater Bayway
 6 topography.
 7 We formed a storm surge analysis
 8 including level one and level three analysis to help us
 9 determine the appropriate heights to place the new
 10 Bayway structure. Tolling of traffic studies as part of
 11 the project. Also bike and pedestrian alternative
 12 studies to look at ways to cross the Mobile River.
 13 Performed hazardous materials testing on the project.
 14 Noise and air studies for the B prime alignment.
 15 Developed a draft mitigation plan working
 16 with the agencies and performed refinements to the
 17 preferred alternative B prime. Those refinements
 18 included primarily the alignment on the west side of the
 19 project in the area of the high level approaches as
 20 Andrew mentioned.
 21 In the light blue, you can see the
 22 original draft DEIS alignment, and in the pink, you can
 23 see the refined B prime alignment which places the new
 24 bridge further away from Downtown Mobile thereby
 25 reducing impacts to the local neighborhoods.

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1 Touching on a little more detail on the
 2 interchanges, as Andrew mentioned, here is the basic
 3 layout of all of the interchanges that are being
 4 constructed or reconstructed as part of the project.
 5 So we will just work our way from west to
 6 east starting at Virginia Street. On the left side of
 7 the screen, you can see in purple those are the existing
 8 bridges that will either be rebuilt or built new, kind
 9 of in purple.
 10 In the orange, you can see the existing
 11 roadway -- not existing but the new roadway that will be
 12 built and then the light blue is the high level
 13 approaches, the kind of starting location on the west
 14 side of the project going towards the east.
 15 Virginia Street interchange, as you can
 16 see, there is a diverging diamond and it will allow --
 17 will begin kind of a start of the I-10 business. So the
 18 existing I-10 that goes through Wallace will be I-10
 19 business and the new bridge shown in the light blue
 20 crossing the Mobile River will become Interstate 10.
 21 So working our way towards the east, you
 22 can see the new bridge as it sweeps off towards the
 23 crossing of the Mobile River. Complete reconstruction
 24 of this interchange. This is the west tunnel or Canal
 25 Street/Water Street interchange. Allows for the removal

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1 of all the existing loop ramps. You are probably
 2 familiar with Downtown Mobile. You see the eye level
 3 loop ramps. Those will all be demolished as part of the
 4 project and connections between Canal and Water will be
 5 re-established with an (unintelligible) roadway
 6 including a new connector road that will connect
 7 Conception and Jackson across the project to South Royal
 8 Street and that also includes improvements to Water
 9 Street and Canal.

10 The next interchange just on the other
 11 side of the Wallace Tunnel includes reconstruction of
 12 the east tunnel interchange. It's configuration is
 13 primarily unchanged although there are improvements to
 14 the existing roadway U.S. 98 shown in orange there and
 15 you can also see the high level approaches from the main
 16 span coming down to match the new Bayway section towards
 17 the right-hand side of the screen.

18 The mid-bay interchange will be the next
 19 one that will be reconstructed basically maintaining its
 20 existing configuration as well. As well as the Eastern
 21 Shore interchange. The loop ramp will be maintained
 22 although there will be improvements to the roadway
 23 section to allow for better passage through the
 24 intersections and turning movements and that also
 25 includes removal and reconstruction of the existing

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1 overpass bridge at 90/98 and I-10 so those are the
 2 interchange.

3 A little bit about storm surge. Storm
 4 surge has become a predominant theme with regard to this
 5 project and other projects. This is a view of the
 6 impacts as a result of Hurricane Katrina. This is
 7 starting on the left side Highway 90 Pass Christian in
 8 Mississippi, Highway 90 Biloxi, Mississippi and I-10
 9 Twin Spans, Louisiana. And you can see basically the
 10 damage caused from the storm surge on these projects was
 11 significant. As a result of that, there has been a
 12 pretty major change with regard to how engineers design
 13 these structures to withstand storm surge.

14 This plot basically shows the difference
 15 between what we expect from a wave height and the bridge
 16 deck elevation of the existing. So the top black one is
 17 actually the existing Bayway elevation with the red that
 18 you can see crossing it and kind of meandering along its
 19 length is the one hundred year storm surge wave height
 20 which means at this point looking at this most of the
 21 existing Bayway would be significantly impacted by a one
 22 hundred year storm event, thus the reason why we are
 23 raising the existing -- raising and replacing the
 24 existing Bayway.

25 So what does this look like in

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1 cross-section. As you can see from this view as Andrew
 2 said, we are looking at four lanes in each direction
 3 providing a lot more capacity from a traffic standpoint.
 4 Building a new bridge in between the two existing. So
 5 you can see the two existing on each side of the new
 6 bridge and it's approximately, depending on where you
 7 are, one to eight feet higher in elevation.

8 I will just back up one. As you can tell
 9 from this plot, depends on where you are along the
 10 Bayway. The one hundred year storm wave heights vary so
 11 it just depends on where you are and what those heights
 12 need to be set at but on average one and eight feet we
 13 need to accomplish to put the bridge above those impact
 14 zones.

15 So on to the bicycle and pedestrian
 16 facilities. As I said, we did some studies associated
 17 with this project as well as public outreach. The draft
 18 DEIS is committed to a bike/ped route across the Mobile
 19 River. And we performed a bike workshop, bike and ped
 20 workshop October 27th of 2016. This included looking at
 21 the Bankhead Tunnel alternative, the Cochrane Bridge
 22 alternative as stated in the draft DEIS and ALDOT
 23 decided to also add the new Mobile River Bridge
 24 alternative as an option to look at as part of the
 25 public outreach.

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1 This is a map showing those alternatives.
 2 I will just step through these very quickly. Shown in
 3 the green, the Cochrane-Africatown USA shared use paths
 4 as you see in the top right-hand side of the screen.
 5 That is actually the preferred alternative that I will
 6 discuss shortly.

7 But as discussed, there have been a
 8 number of alternatives that were studied including the
 9 new Mobile River Bridge crossing as well as future
 10 extensions of the preferred alternative Cochrane as you
 11 can see in the top part of the screen going from the end
 12 of Cochrane at 165 to downtown and in the lower portion
 13 of the screen at Highway 90 taking from basically the
 14 service road at the end of Cochrane all the way to the
 15 Battleship. Those will be future extensions.

16 So a little bit about the ALDOT
 17 commitment here. This is the Cochrane-Africatown USA
 18 Bridge shared use path. The cross-section as you can
 19 see there at the top showing the existing Cochran Bridge
 20 cross-section of two lanes in each direction with
 21 shoulders. Fortunately the bridge is wide enough to
 22 accommodate still maintaining those two lanes. By
 23 reducing the shoulders, we can add two eight foot
 24 bike/ped paths in each direction on the bridge, as you
 25 can see on each side of the bridge there.

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1 So as I said, the path begins at I-165
 2 ramp at Bay Bridge Road and ends at the East Service
 3 Road U.S. 98 near the Cochrane Bridge approach on the
 4 east side. Two productive bike paths will be provided
 5 with future extensions to Downtown as well as the
 6 Battleship Park.

7 One of the other base requirements we are
 8 going to make as part of this project is providing a
 9 belvedere on the new Mobile River Bridge. The access to
 10 the belvedere which is basically an overlook -- and you
 11 can see by the top left-hand screen is an artist
 12 rendering of that overlook at the tower on the west side
 13 of the river.

14 So this belvedere access starts at this
 15 location here. As you can see, here is the stair tower
 16 near the beginning of the main span unit leading to a
 17 bike path. It will take you out to the belvedere
 18 located again adjacent to one of the major main span
 19 bridge towers. The other views, the other renderings
 20 you can see there are basically views of what this
 21 belvedere may look like.

22 ALDOT also decided to add other potential
 23 options as part of this project. They will be included
 24 in the procurement phase we are currently in. One is a
 25 full bike path across -- bike and pedestrian path across

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1 the new Mobile River Bridge. This will include a twelve
 2 foot bike and pedestrian path on the full length of the
 3 bridge starting in the area of Virginia Street, up the
 4 high level approaches, across the main span and down the
 5 high level approaches off the east side of the project.

6 We are also looking as another option,
 7 option two which would be also including an east
 8 elevator and stair tower very similar to the base option
 9 as I just mentioned that will allow connections across
 10 the main span unit to the east side of the river. At
 11 this location, an elevator and stair access will also be
 12 provided. The path connects between the belvedere and
 13 the west elevator stair tower.

14 With that, we are going to go over the
 15 alternative delivery method anticipated with the
 16 project.

17 MS. GREGG: Hi, everybody. I am Allison
 18 Gregg. I am the public information officer for the
 19 project and I want to talk about alternative delivery
 20 method and what that means is how we are going to make
 21 the project come to fruition.

22 The project we estimate to cost
 23 approximately two billion dollars and ALDOT's annual
 24 operating budget for the entire state is about one point
 25 two billion.

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1 So ALDOT in order to fund this project is
 2 looking at creative ways to get the funding and one of
 3 the ways that we are doing that is developing a
 4 public/private partnership and that's where ALDOT, as
 5 the public entity, partners with a private organization
 6 to help deliver the project in a much more timely
 7 manner.

8 We will enter into a fifty-five year
 9 concession agreement and that's for five years of
 10 construction and then for fifty years of maintenance and
 11 operation.

12 There are a lot of benefits for the
 13 project to be -- to go through the P3 -- we call it P3
 14 method. As I mentioned earlier, there is limited
 15 funding available for the state so this helps us
 16 leverage funding and partner with national
 17 organizations. It's actually a trend that is happening
 18 across the country and is really being encouraged by the
 19 U.S. DOT for states to go after this type of project
 20 delivery.

21 And finally the risk transfer. The
 22 tolling revenues and construction costs, you know, that
 23 goes on to the concessionaire. We will develop a set of
 24 technical provisions that will be part of the contract,
 25 part of the concession agreement and these really

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1 describe the work related and, you know, the operating
 2 procedures so to say for the project. And the
 3 environmental commitments will be incorporated into the
 4 technical provision.

5 We will collect tolls on the new
 6 facilities. So the toll rate being studied right now is
 7 looking between three to six dollars. We will feature
 8 all electronic tolling and this is important so that you
 9 don't have to stop at the toll booth to pay the toll.

10 You will have either a transponder that will go to an
 11 account or it will take the gantries, the instruments
 12 across the freeway, they will take pictures of the
 13 license plate and then mail the bill to the registered
 14 owner of that car.

15 So that's important. We want to make
 16 sure people know if your brother borrows your car and
 17 goes through the tolls, you are still going to get the
 18 bill -- and also to keep your license plates up to date.

19 We are committed to having a toll-free
 20 route or -- excuse me. And I will talk about that in a
 21 second. But the toll route right here includes the
 22 Mobile River Bridge, the Wallace Tunnel and the Bayway.

23 The toll-free route includes the
 24 Causeway, Bankhead Tunnel and Cochrane-Africatown
 25 Bridge. And now I will turn it over to Missi Shumer.

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1 MS. SHUMER: So in order to address the
 2 changes that have occurred in the project since the
 3 draft DEIS was signed in 2014, particularly those
 4 related to tolling, we are preparing a supplemental
 5 draft DEIS and we anticipate signatures of this document
 6 this month. We've been working very closely with
 7 Federal Highway Administration to get to a point where
 8 we can make that happen.

9 After the document is signed, we will
 10 have public hearings and those are anticipated to occur
 11 in May of this year and that will give the public an
 12 opportunity to review what has been presented in the
 13 document and the changes that have occurred in the
 14 project since the last time we had public hearings in
 15 2014.

16 The final decision is anticipated late
 17 this summer and it will come in the form of a combined
 18 final environmental impact statement and record of
 19 decision which won't happen until after the public
 20 hearings occurred and comments from the public and
 21 agencies have been addressed.

22 So over the course of this project, we
 23 had numerous Section 106 Consulting Party meetings
 24 dating all the way back to 2003, and during these
 25 meetings, we have discussed a variety of topics

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1 including the project itself, the need for the project,
 2 the potential effects of the project. We talked a lot
 3 about viewshed impacts and the determination of effects
 4 that could occur from the project.

5 Our most recent meeting was in May of
 6 2018, and at that meeting, we went through the draft
 7 memorandum of agreement that has been developed in
 8 consultation with the consulting parties as well as
 9 Federal Highway Administration Advisory Council on
 10 Historic Preservation and the state historic
 11 preservation officer.

12 We have also had numerous rounds of
 13 written consultation which are listed here with the most
 14 recent one occurring in February of this year. That was
 15 the invitation to this consulting party meeting but also
 16 transmitted to you an updated draft memorandum of
 17 agreement that was revised based on the comments we have
 18 received from consulting parties since May of last year
 19 as well as to update it for the expanded area of
 20 potential effect and new consulting parties which we are
 21 about to talk about.

22 So one of the key elements of Section 106
 23 consultation is determination of effect, and based on
 24 consultation activities that are listed on those
 25 previous slides, the Federal Highway Administration

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1 issued a letter to the Alabama Historical Commission in
 2 May of 2015 stating that the project may have an adverse
 3 visual effect on the Church Street East Historic
 4 District and the Lower Dauphin Historic District.

5 In June of 2015, the Alabama Historical
 6 Commission concurred with the adverse effect
 7 determination and this determination is the basis for
 8 the draft memorandum of agreement that you all have
 9 copies of.

10 So why are we here today? With the
 11 addition of tolling, the traffic studies have shown that
 12 traffic will divert to the non-tolled -- some of the
 13 traffic will divert to the non-tolled route. So when we
 14 started looking at impacts, the draft DEIS did not
 15 include tolling. It did not include those traffic
 16 diversion impacts.

17 So we looked at the area of potential
 18 effect that was previously identified and determined
 19 that it needed to be expanded to include the area along
 20 the Cochrane Bridge route as well as Bay Bridge Road.
 21 And within that area, you can see -- it's kind of hard
 22 to see on the screen but at the top of the screen in the
 23 pink is the Africatown Historic District which is within
 24 that expanded area of potential effect and we also
 25 wanted to make sure that the US 90/98 Causeway was

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1 included in that area of potential effect as well since
 2 that's a route where traffic will divert with the toll.

3 So ALDOT took a look at the Africatown
 4 Historic District and the US 90/98 Causeway and
 5 resources within the entire expanded area of potential
 6 effect and determined that there would be no adverse
 7 effect on historic resources in those areas. The state
 8 historic preservation officer concurred with this no
 9 adverse effect by letter dated February 8, 2019.

10 ALDOT as part of this consultation with
 11 the state historic preservation office committed to
 12 installing interpretive and historic signage along Bay
 13 Bridge Road, Africatown Boulevard and the
 14 Cochrane-Africatown USA Bridge shared use path, that
 15 path talked about earlier. So this is in line with the
 16 neighborhood plan that's been developed for this area
 17 and just to bring some attention to the historic nature
 18 of Africatown.

19 So with the expanded area of potential
 20 effect, we have invited some additional consulting
 21 parties to participate in the consultation process.
 22 Section 106 Consultation really revolves around historic
 23 resources and people who have an interest in or a
 24 jurisdiction over the resources within those historic
 25 areas are invited to participate as consulting parties.

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1 So these different consulting parties
 2 that are listed here are our new consulting parties and
 3 we are hoping that today is helpful in catching you up
 4 to speed and giving some background to the information
 5 that was sent with our invitation to the meeting today.
 6 Any questions at this point? Sure.
 7 MR. WILLIAMS: Yes, ma'am. Chris
 8 Williams, Yorktown Baptist Church in the Africatown
 9 community. Have y'all -- I shouldn't say y'all. Has
 10 the Department decided to include any of the churches in
 11 that area to be consulted?
 12 MS. SHUMER: So we did send invitations
 13 to churches within the area but we did not receive any
 14 acceptance of those invitations.
 15 MR. WILLIAMS: I'm the pastor of Yorktown
 16 and I haven't received any information.
 17 MS. SHUMER: Okay. We can make sure that
 18 the information that was sent gets to you. Let's make
 19 sure we have your correct information if you don't mind.
 20 MR. WILLIAMS: Okay.
 21 MS. SHUMER: That will be great. And I
 22 know -- I think the sign-in sheet -- if you haven't
 23 signed in, please sign in but the sign-in sheet, if we
 24 can get your correct mailing address, that would be
 25 helpful so I will be happy to get that after the

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1 meeting.
 2 MR. WILLIAMS: I will do that.
 3 MS. SHUMER: We are glad you are here.
 4 So now we are going to go through the draft memorandum
 5 of agreement and the draft memorandum of agreement is
 6 going to be the document that guides what happens to
 7 make sure that impacts are either avoided, minimized or
 8 we provide mitigation for potential impacts.
 9 So it's been through four rounds of
 10 revisions I think now based on comments from consulting
 11 parties and a lot of this is a repeat from May but some
 12 of it, some of it is new.
 13 So one of the concerns from historic --
 14 from consulting parties on historic structures is the
 15 impacts of vibrations during construction, particularly
 16 those related to pile driving activities.
 17 So ALDOT had a vibration study conducted
 18 and basically it found that there is little to no risk
 19 to adjacent structures beyond the one hundred and fifty
 20 feet for modern structures and two hundred and fifty
 21 feet for sensitive structures which is what we would
 22 consider an historic structure.
 23 So ALDOT has committed to requiring that
 24 the contractor concessionaire survey and monitor for
 25 potential damage for all modern structures within a

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1 hundred and fifty feet of pile driving activities and
 2 all structures, all historic or sensitive structures
 3 within two hundred and fifty feet of those activities.
 4 The draft MOA specifically calls out some
 5 historic resources or structures that need to be
 6 monitored regardless of whether they are within that one
 7 hundred and fifty or two hundred and fifty feet radius.
 8 These include the Christ Church Cathedral, Old City Hall
 9 History Museum of Mobile. Also going to monitor the
 10 Wallace and Bankhead Tunnels. And as a result of
 11 consultation last time around, we've added the
 12 Conde-Charlotte Museum and the Phoenix Fire Museum to
 13 that list.
 14 So this is just a graphic to give you an
 15 idea of what that hundred and fifty feet or that two
 16 hundred and fifty feet radius looks like. The green
 17 marks are potential bridge foundation locations and the
 18 reddish orange smaller circle is the one hundred and
 19 fifty foot radius and the yellow is the two hundred and
 20 fifty foot radius.
 21 So as Allison mentioned, we are going to
 22 have technical provisions in our contract with the team
 23 that's selected to move ahead with this project and
 24 those provisions, those contract documents will address
 25 how vibrations will be monitored and how mitigation will

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1 be handled during construction. So this includes a
 2 vibration monitoring plan and a pre and post
 3 construction condition assessment. So they will go out
 4 and look at all the resources that are going to be
 5 monitored before construction begins as well as after.
 6 If at any time -- there are sensors, for
 7 lack of a better word, that will monitor the vibration
 8 levels and if the levels are exceeded, then work will
 9 stop in that area and they will review the area for any
 10 damage, and if there is any damage, then it would be
 11 mitigated within the federal and state requirements.
 12 Aesthetics. As we said, we do have
 13 adverse visual effects on two downtown historic
 14 districts. ALDOT has taken a kind of different approach
 15 on this project by developing an aesthetic steering
 16 committee and this committee is comprised of primarily
 17 consulting parties. There are nine, I believe, and all
 18 but one of them are consulting parties.
 19 They all -- everybody on the committee
 20 has different backgrounds. We have tried to represent
 21 Mobile and Baldwin Counties and different types of
 22 groups in this committee. The framework for the
 23 committee is included in the draft memorandum of
 24 agreement and so far we've had five meetings with this
 25 group.

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1 And the first meeting was really to get
 2 everybody up to speed on the project and what the
 3 purpose of the committee was and then we started going
 4 through precedent images of other bridge projects,
 5 identified things that we like, things that we don't
 6 like, what do we want this bridge to say about our
 7 community and to reflect its setting and to be
 8 appropriate for its setting.
 9 And we took all of that information and
 10 we've developed a draft aesthetic guidelines book which
 11 is up here in the front if you would like to look at it
 12 before you leave today but these aesthetic guidelines
 13 will set the basis for the aesthetics packages that will
 14 be included in the teams that are going after the
 15 project.
 16 So they include things such as
 17 architectural themes, land use, landscaping, materials
 18 and finishes, what types of materials, colors, the types
 19 of structures. You know, we think about the main span
 20 bridge and the cable-stayed bridge but there are a lot
 21 of other structural components such as retaining walls
 22 and smaller piers under the approaches leading up to the
 23 main span. And of course the Bayway which is over seven
 24 miles long so that in itself is quite an impressive
 25 structure.

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1 So all of those were taken into
 2 consideration along with the bike and pedestrian
 3 facilities, not just what will be on the bridge or what
 4 will be on the Cochrane-Africatown Bridge and Bay Bridge
 5 Road Africatown Boulevard route but also the local
 6 streets and how they will all connect to the things such
 7 as the belvedere on the bridge and other areas and the
 8 area underneath the bridge and lighting which is a key
 9 component in any roadway or transportation project.
 10 So we do have minimum criteria for
 11 roadways and bridges for safety, for the safety of the
 12 traveling public, and at the request of the consulting
 13 parties, we will defer the selection of light fixtures
 14 until late in the design so that we can make sure we
 15 have the latest technology available and that's what we
 16 are using to do things like minimize light spill.
 17 So whether the light fixtures have
 18 shields on them to minimize spill into the adjacent
 19 neighborhoods, onto residential areas, there is a lot of
 20 opportunity out there with different types of bulbs and
 21 LED's and energy efficiency.
 22 So that will all be incorporated into the
 23 aesthetics package and that aesthetics package will be
 24 reviewed by the Aesthetic Steering Committee and they
 25 will provide input to ALDOT on their preferences

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1 regarding lighting.
 2 So this is a rendering, nighttime
 3 rendering of what the aesthetic lighting on the bridge
 4 could look like and this is another view looking towards
 5 Downtown. So the first one is looking from Downtown
 6 toward the bridge and this one is looking from kind of
 7 the river area north.
 8 Landscaping is a key component to helping
 9 mitigate visual effects so we really have an emphasis --
 10 as we went through the aesthetic guidelines, there was
 11 an emphasis being compatible with land use plans and
 12 making sure that our landscaping requirements allow for
 13 development that the cities or municipalities on both
 14 sides of the bay want to see.
 15 So the concessionaire will be required to
 16 develop a landscape and management plan for areas within
 17 ALDOT's right-of-way and these landscaping requirements
 18 will be defined and reviewed by a registered landscape
 19 architect. This landscape plan will be reviewed by the
 20 Aesthetic Steering Committee and will be included in the
 21 contract provisions for the project.
 22 As we did the viewshed impact assessment,
 23 the importance of the tree canopy in shielding some of
 24 these views of the bridge from the historic districts in
 25 Downtown became very apparent.

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1 And so ALDOT is partnering with the City
 2 of Mobile and their Right Tree Right Place Program to
 3 provide for some trees around Downtown Mobile in areas
 4 that are outside of ALDOT's right-of-way and the goal of
 5 this program is to make sure that as it says the right
 6 tree is put in the right place so that the root systems
 7 don't destroy our roads and don't destroy out sidewalks
 8 but we also have the shielding from the trees that can
 9 be really helpful in minimizing visual impacts.
 10 So moving on to our consultation on the
 11 USS Alabama Memorial Battleship Park, we have -- early
 12 on, we identified concerns by the commission about
 13 access to their facility and making sure that travelers
 14 could make it to their -- knew where to get off the
 15 interstate to get to Battleship Memorial Park.
 16 So we have had several meetings. The
 17 most recent ones, there was one in March of 2016 and one
 18 in April of 2017 and the Battleship commission is here
 19 today and was also here last May but we looked at a
 20 variety of ways to give better access or change access
 21 to the park and those did not meet the geometric design
 22 criteria for safety.
 23 So the access to the Battleship Park will
 24 remain as it exists today but ALDOT has looked at
 25 developing and has developed a preliminary signage plan

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1 out. We are going to be affected a great deal by it.
2 MS. SHUMER: And I will defer to ALDOT or
3 FHEA. We will take that under advisement. I think
4 there are -- there are two separate types of impacts
5 that we are talking about. This meeting really is
6 focused on the historic district aspects.
7 MR. WILLIAMS: Africatown is an historic
8 area.
9 MS. SHUMER: Then there's the
10 environmental justice component that we're working as a
11 separate track but I think we would be happy to talk to
12 you at the end of this meeting if possible about your
13 concerns that you've mentioned and see what we can do to
14 address those concerns if that's satisfactory.
15 MR. HOLT: I have a question.
16 MS. SHUMER: Sure.
17 MR. HOLT: My name is James Holt and I
18 was born in the Africatown community. I don't live
19 there now but I come frequently and I'm very involved in
20 the community. What Reverend Williams is raising as a
21 concern is something that we experienced with the
22 construction of the Cochrane Bridge through the
23 Africatown community. The street scape, the landscape,
24 buildings. I don't know -- I wasn't in Mobile at the
25 time and I don't know if there were persons put on

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1 committees to address some of these concerns.
2 So this is why this project is so dear to
3 us is because of what we experienced with the Africatown
4 construction, the widening of the streets, the movement
5 of historic sites and some disturbance at the historic
6 gravesite which was a major concern of ours.
7 So this is why there are meetings that
8 will be conducted after this one or if special meetings
9 need to be conducted so that we can be a part of and
10 express our concerns going forward.
11 MS. SHUMER: Absolutely.
12 MS. MERRITT: This is Betsy Merritt from
13 the National Trust. Could I follow up on that comment?
14 When you asked for questions on the telephone, I was
15 going to suggest that I think we need a way to resolve
16 the disagreement about the no adverse effect
17 determination regarding the Africatown Historic
18 District, and although the SHPO office has signed off,
19 the consulting parties have not and certainly
20 disagreement is expected even if you haven't received
21 the letters already.
22 And so I think we need to talk about the
23 path forward for resolving those disagreements which
24 presumably may need to be referred to the advisory
25 council on historic preservation.

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1 MS. SHUMER: Comment received.
2 MR. WOOD: I just want to follow up on
3 Mr. Hope's comment. We understand what you're saying
4 and we are reaching out. We've had meetings at the
5 community center already and we have a meeting
6 scheduled --
7 MS. GREGG: Next Tuesday.
8 MR. WOOD: -- next Tuesday. At which --
9 MS. GREGG: Six o'clock at Union Baptist.
10 MR. WOOD: We understand the impact
11 that's going to happen because of the increased traffic
12 and we want to meet with as many people as we can and
13 get feedback on the mitigation we can do. Everything --
14 you know, what we can do to help the community because
15 we realize that there will be increase in traffic
16 through that area. So we are trying to reach out as
17 much as we can and we hope you've gotten the invitation
18 or at least heard about the meeting next week with --
19 MS. GREGG: Manzi.
20 MR. WOOD: Councilman Manzi is leading it
21 for us and we plan to have further meetings after that
22 as well. So we hear what you are saying and we are
23 trying to reach out and see what we can do and
24 whatever -- if you can help us to increase that reach
25 out and bring people from the community into those

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1 meetings more than we can. You know the community well
2 so anything you can do to assist us in getting people
3 there so that their voices can be heard, we greatly
4 appreciate it.
5 MS. MERRITT: This is Betsy Merritt
6 again. Just to be clear, you're saying that you
7 recognize that this traffic impact is going to be a
8 problem but you are not willing to call it an adverse
9 effect for purposes of Section 106, right?
10 MR. WOOD: Well, I'm going to go back to
11 what Missi said, that these are two separate issues.
12 There's the impact to historic resources with no adverse
13 impact and then there's environmental justice impacts is
14 what these meetings are about. There's two different
15 topics being discussed right now.
16 MS. MERRITT: So you're saying the
17 traffic has adverse impacts but not on the historic
18 district. Is that the distinction you are trying to
19 make?
20 MS. SHUMER: Correct.
21 MR. WOOD: Yes.
22 UNIDENTIFIED SPEAKER: If we disagree,
23 how do we challenge that is I believe the nature of
24 Betsy's inquiry. If the Alabama Historic Commission has
25 already signed off without consulting parties having

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1 consented, how do we resolve that and how does ALDOT
 2 help us resolve this?
 3 MS. SHUMER: Well, I think that the first
 4 step is to provide written comments in response to the
 5 letters that were sent for this meeting and then we will
 6 go through the consultation process to address those
 7 concerns, you know, but there is also on the
 8 environmental justice side of it, you know, attendance
 9 at these meetings and the meeting next Tuesday and
 10 making sure that we have feedback from the community is
 11 critical to making sure that, you know, we are
 12 addressing the concerns and we are providing mitigation
 13 for those concerns from an environmental justice impact
 14 standpoint and I think that's the key.
 15 And if there's a disagreement, I mean
 16 there was a disagreement earlier on in this project and
 17 we've gone through the consultation process and we have
 18 addressed it and moved from there. I mean if you have
 19 an adverse effect, you provide mitigation. That's the
 20 mechanism in the draft memorandum of agreement and this
 21 process is how that happens.
 22 MR. SPRAGUE: (Inaudible.) I'm hoping we
 23 can get to a place where we agree -- we can have some
 24 discussions with the Alabama Historic Commission and
 25 consultation with you.

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1 MS. SHUMER: Well, absolutely and the
 2 Alabama Historic Commission was invited. They just were
 3 not able to participate. Oh, they are here. They are
 4 here now. Sorry.
 5 MR. SPRAGUE: (Inaudible) we ask y'all
 6 why you thought there were no adverse impacts.
 7 UNIDENTIFIED SPEAKER: Unfortunately I
 8 haven't been involved much in this process but my
 9 understanding and we are given certain regulations and
 10 tools by the Historical Preservation Act for --
 11 (Court reporter interruption.)
 12 MS. SHUMER: Speak up a little bit,
 13 please.
 14 UNIDENTIFIED SPEAKER: My understanding
 15 is that what was last proposed by DOT was physical
 16 ground disturbance and disturbed public right-of-way.
 17 So under the NHAP, there would be no adverse effect but
 18 we don't weigh in on --
 19 MR. SPRAGUE: (Inaudible).
 20 UNIDENTIFIED SPEAKER: We don't have a
 21 (inaudible). I mean we could, I suppose, be interested
 22 party but we don't -- I don't have an avenue for that.
 23 We're going by just what the National Historic
 24 Preservation on 106. There are certain criteria that
 25 has to be met, certain things that have to happen under

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1 that law.
 2 MR. SPRAGUE: So the fact that Union
 3 Baptist would be historic on national register would be
 4 completely blocked off and inaccessible to high traffic
 5 that is --
 6 (Court reporter interruption.)
 7 MS. SHUMER: We are having issues for our
 8 court reporter being able to hear.
 9 MR. SPRAGUE: I said so the fact that
 10 Union Baptist Church which is an historic -- registered
 11 on National Historic Preservation in the historic
 12 district as a point of interest -- sorry I'm not getting
 13 the language exactly right on the designation but that
 14 site is reliant upon traffic accessibility along Bay
 15 Bridge Africatown Boulevard today and the fact that the
 16 traffic would block that access regularly is not a
 17 concern that the National Historic Preservation can
 18 speak to. That was my question and she said no.
 19 MR. WOOD: We are putting a signal there
 20 as part of the environmental justice. Access all along
 21 the Causeway we know will be an issue because of
 22 increased traffic so we are doing an access management
 23 plan to make sure people can get to historic resources,
 24 the Battleship, the restaurants, the state parks so that
 25 is something we are going to take care of but that is

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1 separate from the Section 106 discussion. As she was
 2 just saying, there are laws about impacts and adverse
 3 effects. That doesn't fall under that.
 4 MS. SHUMER: The physical disturbance, to
 5 echo what the SHPO representative said, is for the
 6 shared use path and it would be all within ALDOT's
 7 existing previously disturbed right-of-way. So that's
 8 where the no adverse effect determination came from.
 9 But SHPO did ask that we put in
 10 historical and interpretative signage along the roads.
 11 They actually asked for it I think just along the bridge
 12 but ALDOT has committed to put it along the entire route
 13 through Africatown. So that is something that was added
 14 even though there was no adverse effect determination.
 15 So again I think that it's important and
 16 it's not that we are trying to downplay your concerns
 17 about the impacts to Africatown. It's just that there
 18 is two separate settings and two separate sets of
 19 regulations and in this particular case, the focus of
 20 Section 106 consultation is on historic resources and
 21 the adverse effect determination under the National
 22 Historic Preservation Act whereas we have the
 23 environmental justice track which please come next
 24 Tuesday.
 25 MS. GREGG: I will get you information to

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1 make sure you get the invite.
 2 MS. SHUMER: It's critical because we are
 3 not trying to say that there are no adverse effects on
 4 Africatown as a whole. It's just the difference between
 5 the historic district and Africatown as a whole from an
 6 environmental justice perspective. We have a few more
 7 slides to go through on next steps and --
 8 MS. GREGG: So our next steps as Missi
 9 was saying is to provide comments on the draft MOA, and
 10 then from there, ALDOT and FHWA will update the draft
 11 MOA to address those comments. We will continue phase
 12 one and two archeological surveys. We will then
 13 finalize the MOA and it will be signed by the various
 14 parties and we will continue the Section 106
 15 consultation throughout design and construction. As we
 16 said, construction will start in 2020 and expected to be
 17 about a five year construction window.
 18 Our upcoming project milestones -- I see
 19 I just gave away with my last bullet. Industry review
 20 period is ongoing. Signing the supplemental draft
 21 environmental impact statements later this month. We
 22 will have public hearings in May and those are scheduled
 23 for both sides of the bay.
 24 Following the public hearings, we will
 25 get the final environmental impact statement and the


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1 record of decision approval and then we will select the
 2 proposer early next year and start construction in 2020.
 3 We do have a website where you can follow along online
 4 and, Natasha, we have put your email up there to be in
 5 contact with us. And now we will open it up for --
 6 MR. WOOD: Anymore questions or comments
 7 we will be happy to discuss. All right.
 8 MS. MERRITT: This is Betsy Merritt,
 9 National Trust. I will raise another issue. One
 10 question I have is about the potential viability of the
 11 private tolling agreement. And we do tolling a lot in
 12 the Northeast, but even in urban areas like Washington,
 13 DC, we find that often the revenue generated from these
 14 public private tolling projects turns out to be less
 15 than expected because of avoidance using alternatives
 16 that aren't tolled and so it's a problem.
 17 And I don't know. It may be difficult to
 18 find a private entity that's willing to undertake this
 19 kind of arrangement given that even in urban areas where
 20 they are used to paying toll it often generates a lot
 21 less revenue than expected. So just wondering if there
 22 were studies out there about the projected success, that
 23 sort of thing.
 24 MR. WOOD: We have conducted a tolling
 25 and revenue study and I believe the draft of that is on

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1 the website if you would like to take a look at that.
 2 And then we are currently in the procurement process and
 3 have three teams competing for the project and all three
 4 of those are very experienced with P3 projects and
 5 tolling projects around the country and the world.
 6 And they will each be doing their own
 7 tolling and revenue and determining the viability
 8 themselves and so far they have not raised any concerns
 9 about it not being a viable way to finance this project.
 10 MS. MERRITT: Okay. Can you say again
 11 what the website is? I wasn't able to hear that
 12 earlier. What's the name of the website?
 13 MR. WOOD: It's www.mobileriverbridge,
 14 all one word, dot com.
 15 MS. GREGG: And Betsy, this is Allison
 16 Gregg. I want to make sure that -- I'm not sure that
 17 those studies are up there yet but I will make sure they
 18 are on there for y'all.
 19 MS. MERRITT: Okay. Thank you.
 20 MR. WOOD: Anybody else? With that, I
 21 thank everybody for coming and we will look forward to
 22 further communication and discussions.
 23
 24 END OF PROCEEDINGS
 25

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1 CERTIFICATE
 2
 3
 4 STATE OF ALABAMA)
 5 MOBILE COUNTY)
 6
 7 I hereby certify that the above
 8 proceedings were taken down by me and transcribed by me
 9 and that the above is a true and correct transcript of
 10 the said proceedings.
 11 I further certify that I am neither of
 12 counsel nor of kin to the parties nor in anywise
 13 financially interested in the outcome of this case.
 14
 15
 16
 17 
 18 JAN A. MANN
 19 COMMISSIONER - NOTARY PUBLIC
 20 ACCR NO. 321
 21
 22
 23
 24
 25

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DISPOSITION OF COMMENTS RECEIVED FROM CONSULTING PARTIES – MARCH 12, 2019 MEETING

Yorktown Baptist Church

	Comment	Response
1.	Has the Department decided to include any of the churches in the area to be consulted?	Yes. Based upon recommendations from the State Historic Preservation Office, ALDOT invited organizations and/or individuals who have indicated they have an interest in the Africatown Historic District to serve as Consulting Parties. The list of Section 106 Consulting Parties and those invited to be Consulting Parties is included in Section 6.4 of the Supplemental Draft Environmental Impact Statement. Yorktown Baptist Church was not on the list, but by letter dated April 29, 2019, ALDOT provided Section 106 information to Africatown churches along with invitations to be a Consulting Party.
2.	Will there be future consulting party meetings with the historic districts and organizations in Africatown that have not happened yet?	If there is a need to have additional meetings to discuss Section 106 topics as they relate to the Africatown Historic District, then additional meetings will be held. The next steps in the Section 106 process are to finalize the Memorandum of Agreement that documents how adverse effects will be mitigated. Section 106 consultation will continue through the design, construction, and post-construction phases to ensure the Section 106 Consulting Parties are kept informed and the requirements of the Memorandum of Agreement are met.

	Comment	Response
3.	<p>It does not appear that anyone from the Africatown area is on the Aesthetic Steering Committee. Is it possible to get a representative from Africatown on this committee because you are going to increase traffic in Africatown. You are going to increase injuries on that roadway, the fatalities on the main road, the Bay Bridge Africatown Boulevard. We need to include Africatown in each and every one of these committees and each and every one of your proposals because most of Africatown is feeling left out. We are going to be affected a great deal by it.</p>	<p>The purpose of the Aesthetic Steering Committee is to develop aesthetic guidelines for the aesthetic treatments of the new Mobile River Bridge, which is approximately three miles south of Africatown and will not have an adverse visual effect on the Africatown community.</p> <p>ALDOT recognizes that the proposed project will result in increased traffic on Bay Bridge Road within Africatown and, as noted in Section 4.6.5 of the signed Supplemental Draft Environmental Impact Statement, ALDOT will work with the Africatown community to implement the mitigation measures through community outreach, public meetings, and/or a steering committee. This will provide continued opportunities for involvement of Africatown representatives to promote compatibility with plans for the Africatown community's development and growth.</p>

James Hope, Hope Community Center

	Comment	Response
1.	<p>This project is so dear to us because of what we experienced with the Africatown construction, the widening of the streets, the movements of historic sites, and some disturbance at the historic gravesite which was a major concern of ours. So this is why there are meetings that will be conducted after this one or if special meetings need to be conducted so that we can be a part of and express our concerns going forward.</p>	<p>The Mobile River Bridge and Bayway Project will not result in the movement of historic sites or disturbance of historic gravesites or other historic resources. As noted in Section 4.13.3, all work to provide improved bicycle/pedestrian facilities will be performed within existing right-of-way that has been previously disturbed.</p> <p>An Africatown community meeting with ALDOT and Councilman Manzie was already scheduled and held on March 19, 2019. The meeting was well-attended, and citizens were given the opportunity to ask</p>

		<p>questions and make verbal and/or written comments. These comments will be included in and addressed in the Final Environmental Impact Statement/Record of Decision for the project. Various earlier efforts to reach the Africatown community are documented in Section 4.6.4 of the Supplemental Draft Environmental Impact Statement.</p> <p>ALDOT will continue to hold community meetings in Africatown to give residents and interested citizens the opportunity to voice their concerns and identify ways to address those concerns through the environmental, design, and construction phases.</p>
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Elizabeth Merritt, National Trust for Historic Preservation

	Comment	Response
1.	<p>Just to be clear, you are saying that you recognize that this traffic impact is going to be a problem, but you are not willing to call it an adverse effect for purposes of Section 106, right? The traffic has adverse impacts but not on the historic district.</p>	<p>Correct. The proposed project would increase traffic along Bay Bridge Road, but the traffic would not result in adverse effects on the historic district. See Section 4.13.3 of the Supplemental Draft Environmental Impact Statement for a more detailed discussion of the effects of the project on the Africatown Historic District.</p>
2.	<p>One question I have is about the potential viability of the private tolling agreement. It may be difficult to find a private entity that's willing to undertake this kind of arrangement. So I am just wondering if there were studies out there about the projected success.</p>	<p>ALDOT has conducted a tolling and revenue study, the draft of which is available on the www.mobileriverbridge.com website. ALDOT is currently in the procurement phase, and three teams are competing for the project, all of which are experienced with this type of project and tolling projects around the world. Each team will perform their own tolling and revenue study to determine the viability of the project. At this time, none of them</p>

	Comment	Response
		have raised concerns about it not being a viable way to finance the project.

Ramsay Sprague

	Comment	Response
1.	Why did the SHPO think there are no adverse impacts?	SHPO is given certain regulations and tools under the Historic Preservation Act. There are certain criteria that have to be met for an action to be considered an adverse effect. Under these criteria, there would be no adverse effect on the Africatown Historic District, as noted in SHPO's letter dated February 8, 2019 in Appendix L of the Supplemental Draft Environmental Impact Statement.
2.	So the fact that traffic would block access to the Union Baptist Church, which is a registered point of interest on the NRHP, would not constitute an adverse effect?	As noted in Sections 4.6.5 and 4.18.2 of the Supplemental Draft Environmental Impact Statement, ALDOT will install a traffic signal at the entrance to the Union Baptist Church to prevent access to the church from being blocked due to traffic and to allow people to get into and out of church during congested times. ALDOT is also placing historical/interpretive signage along Bay Bridge Road through Africatown at the request of SHPO, even though there was a no adverse effect determination for the historic district.

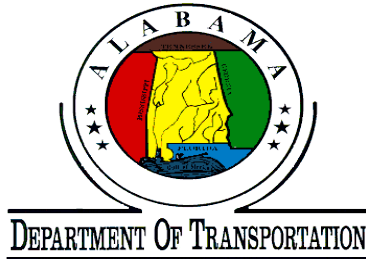
Section 106 Consultation Subsequent to SDEIS

From: [May, Melinda](#)
To: [Historic Mobile Preservation Society](#); [Honorable Chris Elliot](#); [Honorable Connie Hudson](#); [Honorable Dane Haygood](#); [Honorable Michael McMillan](#); [Honorable Ossia Edwards](#); [Honorable Sandy Stimpson](#); [Major General Janet Cobb](#); [Mr. Anderson Flen](#); [Mr. David Clarke](#); [Mr. Douglas Kearley](#); [Mr. Herndon Inge](#); [Mr. James Hope](#); [Mr. Joe Womack](#); [Mr. John Sledge](#); [Mr. Tilmon Brown](#); [Mr. Walter Meigs](#); [Ms. Amanda McBride](#); [Ms. Carolyn Jeffers](#); [Ms. Cynthia Walton](#); [Ms. Elizabeth Harris](#); [Ms. Elizabeth Merritt](#); [Ms. Elizabeth Stevens](#); [Ms. Katherine Frangos](#); [Ms. Lee Anne Wofford](#); [Ms. Mandy Ranslow](#); [Ms. Mary Cousar](#); [Ms. Wendy Crocker](#)
Cc: [Clay, Natasha](#); [Patterson, Pat M](#); [Kavisavera, Dolha](#); missi@shumerconsulting.com
Subject: Public Hearing Notice
Date: Friday, April 26, 2019 4:44:20 PM
Attachments: [MRB Public Hearing Notice.pdf](#)

Good Afternoon,

Per your involvement as a Consulting Party, please see the attached Public Hearing notice for the I-10 Mobile River Bridge and Bayway project.

Melinda May
Engineering Assistant
Design Bureau/ETS
AL Department of Transportation
1409 Coliseum Blvd
Montgomery, AL 36110
Phone: (334)242-6738



Public Hearing

Project No. DPI-0030(005) I-10 Mobile River Bridge and Bayway Mobile and Baldwin Counties

The Alabama Department of Transportation (ALDOT) Southwest Region (Mobile Area) extends an invitation to ALL interested individuals to attend and participate in a Public Hearing regarding the Supplemental Draft Environmental Impact Statement.

ALDOT will present the same information at both meetings. The meeting format will be an open house from 4:30-8 pm. The public may review project information, exhibits, and the Supplemental Draft Environmental Impact Statement. ALDOT's presentation is scheduled to start at 5:30 pm. Those wishing to provide comments during the formal public forum portion of the open house must register at the sign-in table. Each speaker will have a two (2) minute limit. Verbal comments will be recorded and will become part of the public record, along with written comments received. Representatives of ALDOT will be available to answer questions throughout the meeting.

For additional information, visit www.mobileriverbridge.com. For individuals requiring special assistance, please call Allison Gregg at (251) 604-9790. Special assistance should be requested at least five days prior to the meeting.

CLICK THE LINK BELOW FOR DIRECTIONS

Place: [Spanish Fort Community Center](#)

7361 Spanish Fort Blvd
Spanish Fort, AL 36527

Date: Tuesday, May 7, 2019

Time: 4:30-8 pm

Place: [Mobile Civic Center](#)

401 Civic Center Drive
Mobile, AL 36602

Date: Thursday, May 9, 2019

Time: 4:30-8 pm

Comment forms will be provided. These may be filled out and returned at the meeting, submitted online at www.mobileriverbridge.com, e-mailed to mrbenvironmental@dot.state.al.us, faxed to (251) 473-3624, or mailed by 5 pm on May 23, 2019. The mailing address is:

ALDOT – Mobile River Bridge and Bayway Project
ATTN: Matt Ericksen, P.E.
1701 I-65 West Service Road N
Mobile, AL 36618



ALABAMA DEPARTMENT OF TRANSPORTATION

1409 Coliseum Boulevard, Montgomery, Alabama 36110
P. O. Box 303050, Montgomery, Alabama 36130-3050



Kay Ivey
Governor

John R. Cooper
Transportation Director

April 29, 2019

«Title» «First_Name» «Last_Name»
«Company_Name»
«Address_Line_1»
«Address_Line_2»
«City», «State» «ZIP_Code»

RE: Section 106 Consulting Parties Invitation
ALDOT Project DPI-0030(005)
I-10 Mobile River Bridge and Bayway Project
Mobile and Baldwin Counties, Alabama

Dear Sir or Madam:

The Federal Highway Administration (FHWA), in cooperation with the Alabama Department of Transportation (ALDOT), is studying the above-referenced project. The project will include constructing a new bridge on I-10 over the Mobile River in four possible locations, Build Alternatives A, B, B prime (B'), and C. Additional information on the project, including a copy of the Draft Environmental Impact Statement (DEIS) signed in 2014, as well as the Supplemental Draft Environmental Impact Statement (SDEIS) signed in 2019, may be found at www.mobileriverbridge.com.

It has been determined that tolling I-10 across the Mobile River and Bayway will be necessary to fund the project. Current traffic studies indicate that this may result in increased traffic in several areas, including Bay Bridge Road. As part of the Supplemental DEIS we have evaluated potential effects of the proposed project on the Africatown Historic District. At this time, we do not anticipate adverse effects on the historic district.

We extend to your organization (you) an invitation to become a Section 106 Consulting Party with the FHWA and ALDOT for the proposed project. Section 106 of the National Historic Preservation Act requires Federal agencies to consider the effects of their projects on historic properties. The regulation implementing Section 106 may be found in Title 36, Code of Federal Regulations (CFR), Part 800. Under this regulation, certain individual or organizations with demonstrated interest in the project may participate as consulting parties due to the nature of their legal or economic relation to the project or affected properties or their concern with the project's effects on historic properties, 36 CFR 800.2(c)(5). The acceptance of this invitation does not imply that your organization (you) either supports the proposed project or has any special expertise with respect to the evaluation of the Section 106 process.

Page 2
April 29, 2019

If you accept this invitation, **please respond in writing by May 31, 2019**, regarding your acceptance of this invitation to become a Section 106 Consulting Party.

Your response may be mailed to:

**Alabama Department of Transportation
Attn: Ms. Natasha Clay
Environmental Technical Section
1409 Coliseum Boulevard
Montgomery, AL 36110**

We would also like to invite you to attend one of the Public Hearings for the project. The dates and locations are:

Date: Tuesday, May 7, 2019
Time: 4:30-8:00 PM
Place: Spanish Fort Community Center
7361 Spanish Fort Blvd
Spanish Fort, AL 36527

Date: Thursday, May 9, 2019
Time: 4:30-8:00 PM
Place: Mobile Civic Center
401 Civic Center Drive
Mobile, AL 36602

Should you have any questions, please feel free to contact our office at (334) 242-6315. Thank you for your cooperation and interest in this project.

Sincerely,

Steven E. Walker, P. E.
State Design Engineer

By: _____


Natasha Clay
State Environmental Administrator

SW/NC
Attachments

c: FHWA
ALDOT Mobile River Bridge Project Office

First Hopewell Baptist Church
1674 Shelby St
Mobile, AL 36610

Pastor Chris Williams
Yorktown Missionary Baptist Church
851 East St
Mobile, AL 36610

Reverend Rodney J. Armstrong, SSJ
Our Mother of Mercy Catholic Church
805 East St
Mobile, AL 36610

Pastor Derrick Tucker
Union Baptist Church
508 Africatown Blvd
Mobile, AL 36610

May 3, 2019

«Title» «First_Name» «Last_Name»
«Company_Name»
«Address_Line_1»
«Address_Line_2»
«City», «State» «ZIP_Code»

RE: Draft Memorandum of Agreement for ALDOT Project DPI-0030(005)
I-10 Mobile River Bridge and Bayway
Mobile and Baldwin Counties, Alabama

Dear Sir or Madam:

Per 36 CFR 800.6(b)(2), the Alabama Department of Transportation (ALDOT) and the Federal Highway Administration (FHWA) have consulted and shall continue to consult with the State Historic Preservation Office (SHPO), the Advisory Council on Historic Preservation (Council), and other Consulting Parties (CP) to assure adverse effects to historic properties are avoided, minimized, or mitigated per the final Section 106 Memorandum of Agreement (MOA). Previous consultation activities have led to the development of a Draft MOA to document mitigation measures for historic resources. The most recent Section 106 Consulting Party meeting was held on March 12, 2019.

Copies of the following items are also enclosed:

- March 12, 2019 Section 106 CP Meeting Summary;
- March 12, 2019 meeting transcript;
- March 12, 2019 disposition of comments;
- March 22, 2019 responses to Herndon Inge comments (e-mail dated February 27, 2019);
- March 29, 2019 Letter to Consulting Parties notifying them of signed Supplemental Draft Environmental Impact Statement (SDEIS);
- April 26, 2019 E-mail to Consulting Parties with Public Notice for Public Hearings;
- April 29, 2019 Letter to Africatown churches;
- Draft MOA as included in the SDEIS; and
- Historic Resources excerpt from the SDEIS.

Page 2
May 3, 2019

Please take this opportunity to review the enclosed materials and provide your feedback by the close of the formal comment period on the Supplemental Draft Environmental Impact Statement, which ends on May 23, 2019. Please make sure to raise any concerns that have not yet been addressed. The Section 106 MOA will be amended, as necessary, to address comments received. The final Section 106 MOA will be signed and included in the Final Environmental Impact Statement/Record of Decision for the project.


Your comments should be e-mailed to mrbenvironmental@dot.state.al.us or mailed to:

Ms. Natasha Clay
Alabama Department of Transportation
Environmental Technical Section
1409 Coliseum Boulevard
Montgomery, Alabama 36110

Thank you for your continued cooperation and interest in this project.

Sincerely,

Steven E. Walker, P.E.
State Design Engineer

By: 
Natasha Clay
State Environmental Administrator
Environmental Technical Section

SEW/NC/mem

pc: ETS File

Mr. John Sledge
Mobile Historic Development
Commission
PO Box 1827
Mobile, AL 36633-1827

Ms. Elizabeth Merritt
National Trust for Historic Preservation
2600 Virginia Ave NW
Suite 1100
Washington, DC 20037

Mr. John Hildreth
National Trust for Historic Preservation
William Aiken House
456 King St - 3rd Floor
Charleston, SC 29403

Ms. Lee Anne Wofford
Alabama Historical Commission
468 S Perry St
Montgomery, AL 36130

The Honorable Sandy Stimpson
Mayor of Mobile
PO Box 1827
Mobile, AL 36633-1827

Commissioner Connie Hudson
President
Mobile County Commission
205 Government St
Mobile, AL 36644-1001

The Honorable Dane Haygood
Mayor of Daphne
PO Box 400
Daphne, AL 36526

The Honorable Michael McMillan
Mayor of Spanish Fort
PO Box 7226
Spanish Fort, AL 36527

Commissioner Chris Elliot
Baldwin County Commission
1100 Fairhope Ave
Fairhope, AL 36532

Mr. Walter Meigs
BAE Systems/Southeast
Shipyards Alabama, LLC
PO Box 3202
Mobile, AL 36652

Ms. Wendy Crocker
BAE Systems/Southeast
Shipyards Alabama, LLC
PO Box 3202
Mobile, AL 36652

Ms. Mary Cousar
6 St Joseph St
Mobile, AL 36602

Ms. Elizabeth Stevens
Downtown Mobile Alliance
PO Box 112
Mobile, AL 36601

Ms. Elizabeth Harris
Colonial Dames and Conde-Charlotte
Museum House
104 Theatre St
Mobile, AL 36602

Mr. Ray Harris
Signal Shipyard/Bender Shipbuilding
& Repair Co
601 S Royal St
Mobile, AL 36602

Mr. Douglas Burtu Kearley
Ten Wisteria Ave
Mobile, AL 36607

Mr. Herndon Inge
PO Box 40188
Mobile, AL 36640

Ms. Ann Bedsole
6 St Joseph St
Mobile, AL 36602

Ms. Carolyn Jeffers
Christ Church Cathedral
115 S Conception St
Mobile, AL 36602

Historic Mobile Preservation Society
300 Oakleigh Place
Mobile, AL 36604

Ms. Katherine Frangos
Friends of the Museum
10 Wisteria Ave
Mobile, AL 36607

Major General Janet Cobb
USS ALABAMA Battleship
Memorial Park
PO Box 65
Mobile, AL 36601-0065

Mr. Tilmon Brown
Restore Mobile
PO Box 40037
Mobile, AL 36640

Ms. Mandy Ranslow
Advisory Council on
Historic Preservation
401 F Street NW
Washington, DC 20001-2637

Mr. Anderson Flen
Mobile County Training School
800 Whitley St
Prichard, AL 36610

Mr. Joe Womack
Africatown C.H.E.S.S.
812 Center St
Mobile, AL 36610

Robert L. Hope Community Center
c/o Mr. James Hope
50507 Stonebridge Ln
Birmingham, AL 35242

Ms. Ossia Edwards
Prichard City Council
216 East Prichard Ave
Prichard, AL 36610

Ms. Cynthia Walton
National Historic Landmarks
National Park Service, SE Region
100 Alabama St. SW
Atlanta, GA 30303

CHRISTOPHER L. WILLIAMS, SR.

6717 Spice Pond Road, Eight Mile, Al 36613
(251) 675-6051 (H) (251) 421-0809 (C) pastorymbc@bellsouth.net

+<={{ _____ }}=>+

6717 Spice Pond Road
Eight Mile, Al 36613
May 06, 2019

May 06, 2019

Ms. Natasha Clay
Environmental Technical Section
1409 Coliseum Boulevard
Montgomery, Al 36110

Dear Ms. Clay

I am writing to confirm my acceptance of your invitation to become a Section 106 Consulting Party with the FHWA and ADOT for ADOT Project DPI-0030(005) I-10 Mobile River Bridge and Bayway Project, Mobile and Baldwin County, Alabama.

Thanks for the invitation to be apart of this exciting project. I feel confident that I can and will make a significant contribution to it and I am grateful for the opportunity you have given me to assist on it.

I look forward to working with you and the team. I appreciate this opportunity and am very happy to help.

Sincerely,



Christopher L. Williams, Sr.



U.S. Department
of Transportation
**Federal Highway
Administration**

Alabama Division

June 12, 2019

9500 Wynlakes Place
Montgomery, AL 36117
334-274-6352

Alabama.FHWA@dot.gov

In Reply Refer To:
HDA-AL

Ms. Mandy Ranslow
FHWA Liaison/Program Analyst
Advisory Council on Historic Preservation
401 F Street, NW
Washington DC 20001

Subject: Federal-Aid Project DPI-0030(005)
I-10 Mobile River Bridge and Bayway Project
Mobile and Baldwin Counties, Alabama

Dear Ms. Ranslow:

As you are aware, the Federal Highway Administration signed the Supplemental Draft Environmental Impact Statement (SDEIS) for the Mobile River Bridge and Bayway Project in Mobile and Baldwin Counties, Alabama on March 26, 2019. Per 36 CFR 800.6, the Alabama Department of Transportation (ALDOT) and FHWA are continuing to consult with the State Historic Preservation Office (SHPO), the Advisory Council on Historic Preservation (Council), and other Consulting Parties to seek ways to avoid, minimize, or mitigate the possible adverse effects of our project on historic properties. A Section 106 Draft Memorandum of Agreement (MOA) has been prepared based on input from the Consulting Parties.

The public and agency comment period ended on May 23, 2019. A summary of comments received on the Draft MOA and pertaining to historic resources and responses to those comments is enclosed. The enclosed final Draft MOA has been revised to address comments received from your office on May 28, 2019. No other comments resulted in changes to the Draft MOA. The most recent version of the MOA is enclosed for your review and comment prior to it being circulated for signature and inclusion in the FEIS/ROD.

We respectfully request that you review the attached and provide any additional comments you may have by June 25, 2019. If you have any questions or concerns, please contact Ms. Lynne Urquhart of my staff at (334) 274-6371 or lynne.urquhart@dot.gov.

Sincerely,



Mark D. Bartlett, P. E.
Division Administrator

By e-mail

Enclosures

cc: Section 106 Consulting Parties
Mr. David Clarke (electronic w/attachment)

June 13, 2019

«Title» «First_Name» «Last_Name»
«Company_Name»
«Address_Line_1»
«Address_Line_2»
«City», «State» «ZIP_Code»

RE: Final Draft Memorandum of Agreement
ALDOT Project DPI-0030(005)
I-10 Mobile River Bridge and Bayway
Mobile and Baldwin Counties, Alabama

Dear Sir or Madam:

Attached for your information is a CD with the following items:

- A copy of the June 12, 2019 letter to the Advisory Council on Historic Preservation;
- Disposition of Comments Related to Historic Resources Subsequent to SDEIS; and
- Final Draft Memorandum of Agreement.

Thank you for your continued support and interest in this project.

Sincerely,

Steven E. Walker, P. E.
State Design Engineer

By: 
Natasha Clay
State Environmental Administrator

SEW/NC/mem
C: ETS File

Mr. John Sledge
Mobile Historic
Development Commission
PO Box 1827
Mobile, AL 36633-1827

Ms. Elizabeth Merritt
National Trust for Historic Preservation
2600 Virginia Ave NW
Suite 1100
Washington, DC 20037

Mr. John Hildreth
National Trust for Historic Preservation
William Aiken House
456 King St - 3rd Floor
Charleston, SC 29403

Ms. Lee Anne Wofford
Alabama Historical Commission
468 S Perry St
Montgomery, AL 36130

The Honorable Sandy Stimpson
Mayor of Mobile
PO Box 1827
Mobile, AL 36633-1827

Commissioner Connie Hudson
President
Mobile County Commission
205 Government St
Mobile, AL 36644-1001

The Honorable Dane Haygood
Mayor of Daphne
PO Box 400
Daphne, AL 36526

The Honorable Michael McMillan
Mayor of Spanish Fort
PO Box 7226
Spanish Fort, AL 36527

Commissioner Chris Elliot
Baldwin County Commission
1100 Fairhope Ave
Fairhope, AL 36532

Ms. Mary Cousar
6 St Joseph St
Mobile, AL 36602

Ms. Elizabeth Stevens
Downtown Mobile Alliance
PO Box 112
Mobile, AL 36601

Ms. Elizabeth Harris
Colonial Dames and Conde-Charlotte
Museum House
104 Theatre St
Mobile, AL 36602

Mr. Ray Harris
Signal Shipyard/Bender Shipbuilding
& Repair Co
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Mobile, AL 36602

Mr. Douglas Burtu Kearley
Friends of the Museum
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Ms. Ossia Edwards
Prichard City Council
216 East Prichard Ave
Prichard, AL 36610

Ms. Cynthia Walton
National Park Service, SE Region
100 Alabama St. SW
Atlanta, GA 30303

From: [Mandy Ranslow](#)
To: [Urquhart, Lynne \(FHWA\)](#)
Cc: [Clarke, David \(FHWA\)](#); [Bartlett, Mark \(FHWA\)](#); [Heisler, Timothy \(FHWA\)](#)
Subject: RE: DPI-0030(005), Mobile & Baldwin Counties, Alabama, Mobile River Bridge & Bayway Project
Date: Monday, June 17, 2019 1:49:27 PM

Thank you Lynne for addressing our comments. I have no further comments or questions. Once all other signatories sign the MOA please send it to me and I will get it signed and executed on our end.

Thanks!
-mandy-

From: Lynne.Urquhart@dot.gov [mailto:Lynne.Urquhart@dot.gov]
Sent: Wednesday, June 12, 2019 5:48 PM
To: Mandy Ranslow
Cc: David Clarke; Mark D. Bartlett; timothy.heisler@dot.gov
Subject: DPI-0030(005), Mobile & Baldwin Counties, Alabama, Mobile River Bridge & Bayway Project

Good Afternoon Mandy,

Please see the attached letter with enclosures on the subject project. Hopefully, this is the last edits to the Section 106 Memorandum of Agreement (MOA). Please let me know if you have any questions or concerns. Thanks.

Lynne A. Urquhart
Environmental Engineer

FHWA, Alabama Division
9500 Wynlakes Place
Montgomery, AL 36117
(334) 274-6371

Disposition of Comments Related to Historic Resources Subsequent to SDEIS

	Commenter	Comment	Response
1.	<p>USS ALABAMA Battleship Memorial Park, comment submitted on May 7, 2019</p>	<p>The Mobile River Bridge Project, now years into planning, has begun to take on some form and shape. The bridge makes such basic changes to Interstate 10 and Battleship Parkway that it is of vital interest to the Commission. Specifically, we are interested in an early exit onto the Causeway, now called the Veterans Memorial Exit.</p> <p>At Battleship Park, we expect to remain the number one tourist attraction in the state of Alabama. The Causeway, including either end, represents substantial commercial weight.</p> <p>The Mobile River Bridge project and its ramifications for Battleship Park and neighbors will bring a new dimension to the Causeway and the Eastern Shore and is an important and ongoing concern.</p> <p>Our subject is the Veterans Memorial Exit on Mobile River East, which has been in and out of the plan and competed with the \$50 million bicycle/pedestrian plan, which has also been in and out of the plan. This exit, leading to the industries on the east side of the river, to Battleship Park and to the Causeway commerce, is an extremely important element. It is a mystery why any planner would consider omitting it and closing off the east end of the Causeway from the freeway. The veterans, with the South Alabama Veterans Council, have submitted many documents and letters and resolutions in favor of the exit. The ALDOT leadership has been to a Battleship Commission meeting to discuss it.</p>	<p>ALDOT and FHWA have met with the USS ALABAMA Battleship Memorial Park Commission on several occasions throughout the development of this project. The most recent presentation to the Commission was made on April 21, 2017, where concerns about access to the Park and potential impacts that could result as part of the proposed project were discussed. ALDOT shared information on their evaluation of several options to provide more direct access to the Park. Concepts providing direct access to the Park via a new ramp or relocation of the Park's entrance could not meet design criteria for safe roadway conditions; therefore, they were not advanced for further consideration. ALDOT has committed to maintaining existing access to the Park in the final condition of the proposed project.</p> <p>Travelers will not be deadended on the Causeway. Travelers will still be able to exit onto and off of I-10 to the Causeway at the same locations as in the current condition.</p> <p>ALDOT has also committed to installing additional supplemental signage to direct travelers to the Park.</p> <p>This and additional information can be found in Sections 4.13.5 and 4.18.2 of the SDEIS and the Section 106 MOA.</p>

	Commenter	Comment	Response
2.	USS ALABAMA Battleship Memorial Park, letter dated May 22, 2019	<p>The Commission has voiced its opposition to the proposed construction as designed to a variety of state and federal officials. The route and design differs in 2019, of course; however, our concerns and objections remain constant. The USS ALABAMA Battleship Commission’s comments to the Supplemental Draft Environmental Impact Statement are as follows:</p> <ul style="list-style-type: none"> - If the estimated 2039 traffic flow through the Wallace Tunnel exceeds 100,000 vehicles daily, the environmental impact of air pollution, vehicle fluid, and tire residue will be substantial and adverse to Battleship Memorial Park in general. With base funding of bridge construction now potentially dependent on a tolling solution, more traffic will descend on the Causeway (US Highway 90). The potential environmental impact is unknown for those out-years, but it cannot be deemed benign. - Wild bird populations will be affected. Battleship Memorial Park is Site 29 on the Alabama Coastal Birding Trail. Visitors and birdwatches alike use our Nature Observation Deck overlooking Pinto Pass and the Mobile Bay mudflats. Battleship Memorial Park is home to many bird species, including overwintering waterfowl such as Canadian geese, which hatch their young here. Shorebirds are abundant around the saltwater marsh. Our 4 raised Osprey nest boxes usually have 2 families raising young each spring. The Long-billed Curlew, herons, egrets, ibis, Gull-billed Terns, Least Bittern, Yellow- and Black- 	<p>The proposed project may result in more traffic on the Causeway due to traffic diverting to avoid the toll. ALDOT has identified and committed mitigation measures to offset potential impacts related to traffic diversion on the Causeway. Additional information on this topic can be found in Sections 4.4.1, 4.16.1, and 4.18.2 of the SDEIS. Additional information specific to traffic projections and anticipated levels of service can be found in Section 4.1.5 and Table 4 of the SDEIS.</p> <p>Wild birds currently use the areas along the Alabama Coastal Birding Trail, including the Battleship Memorial Park site that is currently located in close proximity to the existing Causeway and I-10 Bayway. Traffic is projected to increase on these routes with or without the proposed project. The proposed project would not prevent visitors and birdwatchers from using the nature observation deck overlooking Pinto Pass and Mobile Bay mudflats, which is located approximately 0.5 mile south of the Causeway.</p> <p>Traffic analyses indicate that traffic on the Causeway will increase with the implementation of the proposed project. However, traffic will also increase without construction of the proposed project as more people divert from I-10 to the Causeway to avoid congestion.</p>

	Commenter	Comment	Response
		<p>crowned Night Herons, Short-billed Dowitches, Black-bellied Plovers, and Black-necked Stilt all make Battleship Memorial Park part of their natural habitat.</p> <ul style="list-style-type: none"> - Wildlife indigenous to and traversing Battleship Memorial Park (alligators, foxes, armadillo, opossum, and other occasional and stray creatures) will also be exposed to air pollution and runoff residue from increased Causeway traffic. 	<p>Traffic models show that the intersections of the Causeway at Addisco Road will operate at a failing level of service with or without the project in the year 2040. The intersection of the Causeway at Bankhead Tunnel will improve with the proposed project, which should reduce the idling air emissions compared to the No Build scenario. The Clean Air Act requires the USEPA to set primary standards that are “requisite to protect public health with an adequate margin of safety.” These standards include considerations of populations that may have increased risks for health effects, such as children, the elderly, and individuals with pre-existing health conditions or diseases.</p> <p>An air quality analysis was performed for the project. The traffic analysis found that the worst congestion would occur on Bay Bridge Road. The air quality analysis determined that air quality emissions at this location would be substantially below the National Ambient Air Quality standards; therefore, other intersections are expected to be below those standards as well. The air quality analysis performed indicates that adverse impacts related to air quality are not anticipated. More information related to the air quality analysis is included in Section 4.11 and Appendix K of the SDEIS.</p> <p>Additional runoff would be experienced with increases in traffic in both the No Build and Build scenarios. Measures to be implemented for stormwater management as part of the proposed project are described in Sections 4.8 and 4.14 of the SDEIS.</p>

	Commenter	Comment	Response
3.	Herndon Inge, III, letter dated May 21, 2019	<p>LOW BUILD option:</p> <ul style="list-style-type: none"> - Not previously seriously considered/evaluated - Would relieve “view impact” objections - Would reduce “skyline impact” objections - Would relieve “constructive taking” objections - Would reduce vibrations from piling foundation - Would reduce “economic dead zone” objections - Would reduce “noise impact” objections - To open for the passage for 4 to 6 ships per day, and the balance of the day to close for car/truck and bicycle traffic - Plenty of “low build” designs to consider/evaluate - Would reduce incline, easier for bicycle and pedestrian and cars/truck traffic - Would reduce impact on ALL neighborhoods - Would reduce impact on ALL historic resources - Could place corridor almost anywhere - Would prevent over 5 years of litigation - Would reduce costs - Would reduce impact to Mobile’s Gulfquest Maritime Museum and Cruise Terminal - Would be easier to connect to new Mobile Bay crossing 	<p>The third component of the project’s purpose and need is to minimize impacts on the maritime industry. To construct a bridge with a lower vertical clearance would result in adverse impacts on the maritime industry along the Mobile River.</p> <p>A report evaluating air draft clearance was prepared in 2012 in response to input from stakeholders requesting that the air draft clearance be increased from 190 feet to 215 feet. The evaluation found that increasing the air draft clearance to 215 feet would allow the Port of Mobile to remain competitive in the cruise industry and container cargo shipping with other ports that are unobstructed. Additionally, an air draft clearance of 215 feet would accommodate larger cruise ships with air drafts ranging up to 210 feet. The Air Draft Clearance Analysis report is included in Appendix C of the DEIS.</p> <p>Moveable bridge types, including a bascule bridge and a vertical lift bridge, were evaluated as part of the Alternatives Screening Evaluation and the 2014 DEIS. The longest bascule bridges in the world are approximately 300 feet long. A span length of approximately 1,200 feet is required to span the Mobile River Federal Navigation Channel. A bascule bridge was not found to meet technical/practical and feasible/reasonable criteria for this project due to the limitations in span length. The Alternatives Screening Evaluation found that a vertical lift bridge would require vertical towers of nearly 500 feet to lift the main bridge span from a low elevation of 140 feet to a high elevation of 215 feet; therefore, it would not appreciably lessen the visual impacts associated with construction of a new</p>

	Commenter	Comment	Response
			<p>bridge across the Mobile River. The vertical lift bridge would also be substantially more expensive to construct, maintain, and operate compared to a cable-stayed bridge. This and additional information on bridge types can be found in Section 3.2.4.5 and Appendix C of the 2014 DEIS.</p>
		<p>MOVE corridor 2 miles South:</p> <ul style="list-style-type: none"> - Would relieve “view impact” objections - Would reduce “skyline impact” objections - Would relieve “constructive taking” objections - Would reduce “economic dead zone” objections - Would reduce impact on ALL neighborhoods - Would reduce impact on ALL historic resources - Would prevent over 5 years of litigation - Would reduce cost of acquiring rights of way - Would reduce impact to Mobile’s Gulfquest Maritime Museum and Cruise Terminal - Would be easier to connect to new Mobile Bay crossing - Would “cluster” local industries - Would save the \$50,000 in immature trees offered in Memorandum of Agreement - Exit would leave plenty of room to still enter Mobile’s Business District - Would satisfy obligations of Section 106 and Section 4(f) - Would decrease adverse impact on the style, theme, feeling, ambiance, quiet, and peace of historic neighborhoods, historic structures, plazas, parks, waterfront protected areas, then complying with Federal law. 	<p>The Alternatives Screening Evaluation looked at a range of reasonable alternatives which included alternatives similar to what is noted in this comment (Alternatives 7, 8, and 14). These alternatives would begin in proximity to Michigan Avenue or Broad Street, cross McDuffie Island, and connect to the I-10 Bayway to continue to Daphne. Alternative 7 would be approximately 2.4 miles south of the Wallace Tunnel. Alternative 8 would be located approximately 1.6 miles south of the Wallace Tunnel, and Alternative 14 would be located approximately 1.3 miles south of the Wallace Tunnel.</p> <p>Alternatives 7 and 8 were not carried forward for more detailed design because of their potential for impacts to previously undisturbed wetlands, submerged aquatic vegetation, and essential fish habitat; hazardous materials sites, businesses, disposal areas, and the maritime industry; and to underwater archaeological sites. The Alternatives Screening Evaluation notes that while Alternatives 7 and 8 would reduce impacts on downtown Mobile Historic Districts, they would completely bypass Battleship Park to the south.</p> <p>Alternative 7 would require a main span bridge length of approximately 2,350 feet to span the navigation channel and authorized turning basin. This span length contributes to the alternative being estimated to cost</p>

	Commenter	Comment	Response
			<p>approximately twice as much as the four Build Alternatives. With the replacement of the Bayway (rather than widening the existing), this alternative would continue to cost twice as much as the four Build Alternatives.</p> <p>Alternative 14 was eliminated from further consideration for potential impacts to wetlands, essential fish habitat, archaeological sites, businesses, disposal areas, and maritime facilities. Maintaining existing access to USS ALABAMA Battleship Park would also be difficult with this alternative.</p> <p>This and additional information regarding the range of alternatives considered can be found in Section 3.2 and Appendix B of the 2014 DEIS.</p>
4.	<p>Herndon Inge, III, Verbal Comments at May 9, 2019 Public Hearing</p>	<p>The practical answer to crossing the bridge has only been considered here, not the cumulative impact on the central business district, historic Mobile, tourist impressions of our beautiful city downtown, Cooper Riverside Park, the waterfront, historic neighborhoods, aesthetics, its residents, its history, and the very reason that we're here. The Alt B corridor will ruin downtown, Mobile's past and future for --- to prevent a few hours of delay and the four to six ships per day that cross under the bridge.</p>	<p>Cumulative impacts of the project were considered and evaluated as part of the NEPA process. These impacts are addressed in Section 4.19.4 of the 2014 DEIS and Section 4.16.2 of the SDEIS.</p> <p>Potential impacts on downtown Mobile and tourism are addressed in Sections 4.3 and 4.4 of the 2014 DEIS.</p> <p>Potential impacts of the proposed project on historic resources are described in Sections 4.15 of the 2014 DEIS and Section 4.13 of the SDEIS. A Viewshed Impact Assessment was performed in consultation with the Section 106 Consulting Parties to evaluate the visual effects of the project on historic resources, including cumulative impacts. The Viewshed Impact Assessment is summarized in Section 4.16 of the 2014 DEIS and is included in Appendix J of the 2014 DEIS.</p>

	Commenter	Comment	Response
			<p>Direct impacts to Cooper Riverside Park and the waterfront are not anticipated. Viewshed renderings from Cooper Riverside Park and the waterfront are contained in Appendix J of the DEIS.</p> <p>The Section 106 MOA was developed in consultation with the Section 106 Consulting Parties to develop appropriate mitigation measures for adverse effects on historic resources.</p>
		I will look out my window and see the 551 feet, two towers, and the 215-foot vertical clearance roadway from my window, and it's ridiculous and insulting for you engineers to say that the visual impact is mitigated by \$50,000 of tree cover that will not be mature in our lifetime.	ALDOT has made commitments related to mitigation for viewshed impacts, including lighting, bridge aesthetics, and visual effects. These commitments are documented in Stipulations A, B, and C of the Section 106 MOA.
		And the way y'all have bypassed the impact – FHWA has said there was an impact. You guys said there was not an impact. That guy {FHWA} listens.	Based on consultation among ALDOT, FHWA, and Consulting Parties, the determination of effects was revised from “no adverse effect” to “adverse visual effect” on the Church Street East Historic District and the Lower Dauphin Street Historic District. This change is discussed in Section 4.13.1 of the SDEIS, and the consultation with the Section 106 Consulting Parties related to the determination of effects can be found in Appendix L of the SDEIS.
5.	Herndon Inge, III, Letter dated April 16, 2019	Note: Comment letter from Mr. Inge contained the same comments that were received on June 8, 2018 and February 27, 2019.	Responses to these comments are included on Pages L-267, L-268, L-321, and L-322 in Appendix L of the SDEIS.
6.	City of Mobile, Letter dated May 23, 2019	I am writing to support the ALDOT's I-10 Mobile River Bridge and Bayway Project. This project is an important transportation infrastructure project that will improve the mobility, safety, security, and efficiency along the I-10 corridor in Mobile and Baldwin Counties. The South Alabama region has	Comment noted.

	Commenter	Comment	Response
		<p>experienced tremendous growth in recent years and a reliable interstate system is vital to maintaining and increasing that growth. The Mobile River Bridge and Bayway Project will provide great benefits for citizens, travelers, and businesses, as well as regional and interstate commerce.</p> <p>As an elected official, I fully support the project and ALDOT's efforts to deliver it.</p>	
7.	USEPA, Region 4, Letter dated May 22, 2019	The EPA notes that FHWA and ALDOT continue to consult with the SHPO and Section 106 Consulting Parties regarding historic resource concerns and ALDOT will need to conduct additional archaeological surveys on some of the alternatives. The EPA recommends that the FEIS should document the results of the consultation process, any remaining survey results, and the final requirements in the Memorandum of Agreement.	The results of the consultation process and final requirements for the project, including consultation requirements on the remaining archaeological survey results, are included in the Section 106 MOA. The signed Section 106 MOA will be included with the Combined FEIS/ROD.
8.	Carol Adams-Davis, Verbal Comments at May 9, 2019 Public Hearing (also submitted in writing)	<p>There's another popular route that was not included in the DEIS but publicly supported for years. If you start just east of Michigan Avenue on existing I-10 and go straight across the Bay using the north end of McDuffie Island and by Little Sand Island, you will end up in Daphne where ALDOT can design an appropriate connection to the existing I-10 on the Eastern Shore. This could present an opportunity to mitigate the longstanding problems on the existing Highway 98.</p> <p>This suggested route would avoid the negative impacts on the historic district, parks, residential neighborhoods, schools, and nursing homes.</p>	<p>The Alternatives Screening Evaluation looked at a range of reasonable alternatives which included alternatives similar to what is noted in this comment (Alternatives 7, 8, and 14). These alternatives would begin in proximity to Michigan Avenue or Broad Street, cross McDuffie Island, and connect to the I-10 Bayway to continue to Daphne. Alternative 7 would be approximately 2.4 miles south of the Wallace Tunnel. Alternative 8 would be located approximately 1.6 miles south of the Wallace Tunnel, and Alternative 14 would be located approximately 1.3 miles south of the Wallace Tunnel.</p> <p>Alternatives 7 and 8 were not carried forward for more detailed design because of their potential for impacts to previously undisturbed wetlands, submerged aquatic</p>

	Commenter	Comment	Response
		It would alleviate construction problems regarding noise in downtown, high quality issues downtown, air quality issues downtown, vibrations due to historic buildings, settling after completion, closing tourist attractions.	<p>vegetation, and essential fish habitat; hazardous materials sites, businesses, disposal areas, and the maritime industry; and to underwater archaeological sites. The Alternatives Screening Evaluation notes that while Alternatives 7 and 8 would reduce impacts on downtown Mobile Historic Districts, they would completely bypass Battleship Park to the south.</p> <p>Alternative 7 would require a main span bridge length of approximately 2,350 feet to span the navigation channel and authorized turning basin. This span length contributes to the alternative being estimated to cost approximately twice as much as the four Build Alternatives. With the replacement of the Bayway (rather than widening the existing), this alternative would continue to cost twice as much as the four Build Alternatives.</p> <p>Alternative 14 was eliminated from further consideration for potential impacts to wetlands, essential fish habitat, archaeological sites, businesses, disposal areas, and maritime facilities. Maintaining existing access to USS ALABAMA Battleship Park would also be difficult with this alternative.</p>
9.	Katherine Frangos, Friends of the Museum, e-mail dated May 13, 2019	Please remove my name from all communication involving Friends of the Museum.	As requested, Ms. Frangos was removed from the list of Consulting Parties in the Section 106 MOA, and the address for the Friends of the Museum was updated.
10.	Christopher Williams, York Missionary Baptist	Acceptance of invitation to serve as a Section 106 Consulting Party.	Reverend Williams was added to the list of Consulting Parties in the Section 106 MOA.

	Commenter	Comment	Response
	Church, letter dated May 6, 2019		
11.	Mobile Historic Development Commission, e-mails from John Sledge dated June 5, 2019 and e-mail from Paige Largue dated June 6, 2019	<p>I do think it would be good to include an AfricaTown representative on the Aesthetic Committee for the proposed I-10 Mobile River Bridge. That community represents an important constituency.</p> <p>I support John’s suggestion to include the Africatown community in stakeholder meetings. The Cochrane-Africatown USA Bridge has seen an increase in traffic over the last few years. I think the proposed I-10 bridge could adversely impact their flow of traffic.</p>	<p>ALDOT has committed to developing an Africatown/Plateau Steering Committee after the Combined FEIS/ROD is approved. ALDOT believes that Africatown’s interests would be better served by a steering committee that will be comprised of members of the community to focus on impacts and benefits to Africatown/Plateau rather than being part of an overall bridge aesthetics committee. This commitment is included in the Combined FEIS/ROD.</p>
12.	Alabama Historical Commission, e-mail dated June 5, 2019	<p>We have a concern with the notes from the March 2019 Consulting Parties meeting in Mobile. Page 2 of the meeting notes states: SHPO stated that the Section 106 regulations do not consider disturbance within previously disturbed right-of-way an adverse effect on a historic property.</p> <p>We believe this statement does not accurately reflect our intended meaning. While disturbances within previously disturbed right-of-way is not an adverse effect on archaeological resources, we did not mean to imply or convey that it could not be an adverse effect on historic resources. Visual effects on standing structures was not included in this statement.</p>	<p>Meeting minutes have been revised to reflect this change. The revision is included in the errata sheet contained in Section 2.0 of the FEIS.</p>

Final Section 106 Memorandum of Agreement



Preserving America's Heritage

July 10, 2019

Ms. Lynne Urquhart
Environmental Engineer
FHWA-Alabama Division
9500 Wynlake Place
Montgomery, AL 36117

Ref: *I-10 Mobile River Bridge and Bayway Project*
Mobile and Baldwin Counties, Alabama
ACHPConnect Log Number: 005065

Dear Ms. Urquhart:

Enclosed is your copy of the fully executed Section 106 agreement (Agreement) for the referenced undertaking. By carrying out the terms of the Agreement, Federal Highway Administration will fulfill its responsibilities under Section 106 of the National Historic Preservation Act (NHPA) and the regulations of the Advisory Council on Historic Preservation, "Protection of Historic Properties" (36 CFR Part 800). Please ensure that all consulting parties are provided a copy of the executed Agreement in accordance with 36 CFR 800.6(c)(9). The original Agreement will remain on file at our office.

If we may be of further assistance as the Agreement is implemented, please contact Ms. Mandy Ranslow at (202) 517-0218 or by e-mail at mranslow@achp.gov and reference the ACHPConnect Log Number above.

Sincerely,

Jaime Loichinger
Assistant Director
Federal Permitting, Licensing, and Assistance Section
Office of Federal Agency Programs

Enclosure

ADVISORY COUNCIL ON HISTORIC PRESERVATION

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D-60

MEMORANDUM OF AGREEMENT
AMONG THE FEDERAL HIGHWAY ADMINISTRATION
THE ALABAMA STATE HISTORIC PRESERVATION OFFICE
THE ALABAMA DEPARTMENT OF TRANSPORTATION
AND THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING THE
I-10 MOBILE RIVER BRIDGE AND BAYWAY
MOBILE AND BALDWIN COUNTIES, ALABAMA
FEDERAL-AID PROJECT DPI-0030 (005)

WHEREAS the Alabama Department of Transportation (ALDOT) has requested funding for Project DPI-0030(005) (undertaking) in Mobile and Baldwin Counties with Federal-Aid funds from the Federal Highway Administration (FHWA) pursuant to 23 USC 101 et seq. Federal-Aid Highways; and

WHEREAS, the undertaking, consists of constructing a new 6-lane bridge on I-10 across the Mobile River and replacing the existing I-10 bridges across Mobile Bay with 8 lanes of new bridges in Mobile and Baldwin Counties; and

WHEREAS, FHWA and ALDOT, in consultation with the Alabama State Historic Preservation Officer (SHPO) and Consulting Parties, have defined the undertaking's Area of Potential Effect (APE) as an area range starting at the I-10 and Broad Street Interchange, moving northward to Virginia Street then west to Ann Street, north to Springhill Avenue, east to Beauregard Street and then crossing the Federal Mobile Harbor Navigation Channel approximately 500' north of US-90 and approximately 500' south of I-10 to the Eastern Shore. An addition to the APE includes a 1,000' corridor to the north centered on US-90 then Bay Bridge Road past I-165 to Velma St. in Prichard. (*See Attachment #1*); and

WHEREAS, FHWA and ALDOT have determined that the undertaking may have an adverse visual effect on the Church Street East Historic District and the Lower Dauphin Street Historic District (*See Attachment #1*), which are listed in the National Register of Historic Places; FHWA and ALDOT have also determined that the undertaking may have an adverse effect on archaeological sites (*See Attachment #2*); FHWA and ALDOT have consulted with the SHPO pursuant to 36 CFR 800, the regulations implementing Section 106 of the *National Historic Preservation Act* (54 USC 306108) and

WHEREAS, FHWA and ALDOT have documented that consultation in the *Draft Environmental Impact Statement (DEIS) signed July 22, 2014* and the *Supplemental DEIS signed on March 26, 2019*; and

WHEREAS, FHWA and ALDOT have consulted with the Section 106 Consulting Parties and Federally-recognized tribes with historical ties to Alabama listed in *Attachment #3* regarding the effects of the undertaking on historic properties; and

WHEREAS, in accordance with 36 CFR 800.6(a)(1), FHWA has notified the Advisory Council on Historic Preservation (ACHP) of its adverse effect determination with specified documentation, and the ACHP has chosen *to* participate in the consultation pursuant to 36CFR 800.6(a)(1)(iii); and

WHEREAS, the ALDOT is an invited signatory to this Memorandum of Agreement; and

WHEREAS, the public and Consulting Parties have been afforded the opportunity to consult and comment on the Project;

NOW, THEREFORE, FHWA, the SHPO, the ALDOT and the ACHP agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properties.

I. STIPULATIONS

FHWA and ALDOT shall ensure that the following measures are carried out:

- A. **Lighting:** Lighting associated with the bridge approaches, bridges, ramps, roadway widening, and other components of the project shall be designed to meet current design criteria, while minimizing light pollution. In order to incorporate the newest technology available at the time of construction, lighting fixtures will not be specified until later in the design process. Measures to minimize light pollution on residential areas along I-10 shall be incorporated into the project through the use of light shielding technology, fixtures, and other means as appropriate. Measures to minimize light pollution on historic resources will be developed with input from the SHPO and Section 106 Consulting Parties through the Aesthetic Steering Committee. ALDOT will consult with FHWA, the Aesthetic Steering Committee, and the selected design team during the design phase to ensure compliance with the Section 106 Memorandum of Agreement. *Attachment #7* describes the Aesthetic Steering Committee in more detail.
To prevent or minimize collision and nesting by migratory fowl, the maximum allowable duration for strobe (beacon) lighting on the bridge tower(s) will be requested in Federal Aviation Administration (FAA) permit application(s) for the project. These lighting requirements will be coordinated with the U.S. Coast Guard (USCG) for compliance with navigational lighting requirements and the FAA for air traffic requirements as part of the permitting process.
- B. **Bridge Aesthetics:** Opportunities to incorporate bridge aesthetics and contextual design of the proposed project will be developed as the design progresses with input from the SHPO and Section 106 Consulting Parties through the Aesthetic Steering Committee. ALDOT will consult with FHWA, the Aesthetic Steering Committee, and the selected design team during the design phase to ensure compliance with the Section 106 Memorandum of Agreement.
- C. **Visual:** Aesthetic and landscape plans for areas within ALDOT's right-of-way, including areas beneath the bridge, will be developed and implemented. ALDOT will consult with FHWA, the Aesthetic Steering Committee, and the selected design team during the design phase to ensure compliance with the Section 106 Memorandum of Agreement.

ALDOT understands the importance of maintaining and improving the tree canopy within downtown Mobile in areas that are outside of ALDOT's right-of-way. To achieve this, ALDOT has partnered with the City of Mobile in the *Right Tree, Right Place* program. This program places appropriate trees and landscaping throughout the City of Mobile. ALDOT has committed to contribute \$50,000 to the *Right Tree, Right Place* program to help maintain and improve the tree canopy in downtown Mobile. The City of Mobile will be responsible for administering this money. The *Right Tree, Right Place* Committee will make sure that trees and landscaping are implemented within the City's right-of-way that are compatible with the setting and comply with municipal regulations.

- D. **Archaeology:** Phase I archaeological surveys and limited Phase II testing have been conducted. Due to widespread disturbed historic overburden present in many areas, a program of integrated Phase I and Phase II (Phase I/II) evaluation has been employed. This approach utilizes specialized heavy machinery to remove disturbed overburden to expose, record, and sample undisturbed cultural features and zones in areas where standard Phase I techniques are inadequate. The SHPO and the tribes have been consulted on this approach. The SHPO gave their approval, and the tribes expressed no *concerns*.

The project's APE has been divided into survey blocks to organize and record fieldwork results. There are 17 Survey Blocks plus 5 other named areas being investigated for this project. Each Survey Block contains smaller parcels delineated by ownership tracts, ranging from 1 to 9 tracts per Survey Block. There are 61 tracts associated with the project. Some of the tracts are not yet accessible for archaeological investigation, but fieldwork will proceed when the properties become available. Survey Blocks are shown in *Attachment #2*.

No ground-disturbing activities will be allowed on any parcels containing identified or potential archaeological sites until Phase I, Phase II, and/or Phase III investigations are complete and the results have been coordinated with the SHPO and tribes.

Impacts from the undertaking will be documented as the design progresses and as additional access to the potentially affected parcels is obtained.

Efforts will be made to avoid and/or minimize impacts on archaeological sites listed on, eligible for, or potentially eligible for listing on the NRHP. For sites where impacts cannot be avoided, mitigation will be performed in the form of Phase III Data Recovery or other approved alternative mitigation plans, as coordinated with the SHPO and tribes. Where required, Phase III Data Recovery investigations will be performed at affected parcels once specific impact locations are known and prior to commencement of ground-disturbing activities.

Attachment #4 Post-Review Discovery Plan outlines procedures that shall be followed in the event intact archaeological deposits are uncovered during the course of the undertaking.

Attachment #5 and *Attachment #6* contain *The Alabama Burial Act* and *The Advisory Council on Historic Preservation's Policy Statement Regarding Treatment of Burial Sites, Human Remains, and Funerary Objects*, respectively.

- E. Historic Battleship Park:** ALDOT and FHWA met with the Battleship USS ALABAMA Memorial Park Commission on April 21, 2017 to discuss the Commission's concerns about access to the Park and potential impacts that could occur as result of this project. ALDOT evaluated several options to provide more direct access to the Park. Concepts providing direct access to the Park via a new ramp or relocating the Park's entrance could not meet design criteria for safe roadway conditions; therefore, they were not advanced for further construction. Existing access to the Battleship USS ALABAMA Memorial Park would not be altered in the final condition of this project.

In order to improve signage directing travelers to the Park, ALDOT has developed a preliminary signage plan for the USS ALABAMA Battleship Memorial Park including proposed locations and types of signs. The plan was developed with input from the SHPO and the USS ALABAMA Battleship Memorial Park Commission. New signs are proposed to supplement the existing signs along the I-10 corridor. The signs will direct travelers from I-10 to the Park. ALDOT met with the USS ALABAMA Battleship Memorial Park Commission on August 10, 2018, to give them an update on the project and the latest signage plan. ALDOT will meet with the USS ALABAMA Battleship Memorial Park Commission to finalize the signage plan prior to approving the final signage plan before construction begins.

Access to the USS ALABAMA Battleship Memorial Park will be maintained before, during, and after construction.

- F. Vibrations:** ALDOT conducted a study to evaluate potential vibration impacts for pile driving and to help identify construction methodologies that would avoid vibration impacts to properties in proximity of the project (*Attachment #8*). Based on the study, ALDOT has committed to:

1. Limit vibration to a maximum level of 0.5 inch per second for modern structures and 0.1 inch per second for historic structures at the location of the structure.
2. Survey and monitor for potential vibration damage for all modern structures within 150 feet of vibration-causing construction operations and all historic structures within 250 feet of vibration-causing construction operations. In addition, due to concerns raised by the Section 106 Consulting Parties, vibrations will also be monitored at Christ Church Cathedral, Old City Hall (History Museum of Mobile), Condé-Charlotte Museum House, Phoenix Fire Museum, Austal, the Wallace Tunnel, and the Bankhead Tunnel. These structures are well beyond the distance where vibration levels of 0.5 and 0.1 inch per second were projected to occur based on the vibration study and, therefore, represent conservative survey distances to ensure adjacent structures are not damaged.
3. Require the Concessionaire to obtain the services of a competent vibration or seismologist consultant to conduct vibration surveys and monitor and record ground vibrations during the entire demolition and construction phase operations. If at any time the maximum vibration level is exceeded, the Concessionaire will be required to make appropriate changes to reduce vibration to acceptable levels prior to continuing operations.
4. Prior to acceptance of the project, the Concessionaire will be required to submit a vibration report covering the life of the project. Photographic, video and other surveys of surrounding structures and utilities (pre-construction and post-construction) will be made as part of the documentation record.
5. Any damage to historic structures due to vibrations resulting from construction activities will be repaired/restored in accordance with ALDOT Specification 107.12, 107.14 and 107.15 *Protection and Restoration of Property, Landscape and Utility Facilities*, 36CFR 800.12 *Emergency Situations* and 36 CFR 68 *The Secretary of Interior's Standards for the Treatment of Historic Properties*.

G. Public Involvement: Public Hearings were held on May 7 and May 9, 2019. The public, local agencies, and Section 106 Consulting Parties were given the opportunity to provide input regarding available design information as part of the public involvement process. The Section 106 Consulting Parties will be notified in writing (via letter and/or e-mail) of all future public involvement activities.

II. DURATION

This MOA will expire if its terms are not carried out within 10 years from the date of its execution. Prior to such time, FHWA and ALDOT may consult with the other signatories to reconsider the terms of the MOA and amend it in accordance with Stipulation VI below.

III. POST-REVIEW DISCOVERIES

If properties are discovered that may be historically significant or unanticipated effects on historic properties found, the FHWA shall implement the discovery plan included as *Attachment #4*, Post Review Discoveries Plan of this MOA.

IV. MONITORING AND REPORTING

Each year following the execution of this MOA until it expires or is terminated, ALDOT shall provide all parties to this MOA and the ACHP, a summary report detailing work undertaken pursuant to its terms. Such report shall include any scheduling changes proposed, any problems encountered, and any disputes and objections received in FHWA's efforts to carry out the terms of this MOA.

V. DISPUTE RESOLUTION

Should any signatory to this MOA object at any time to any actions proposed or the manner in which the terms of this MOA are implemented, FHWA shall consult with such party to resolve the objection. If FHWA determines that such objection cannot be resolved, FHWA will:

- A. Forward all documentation relevant to the dispute, including the FHWA's proposed resolution, to the ACHP. The ACHP shall provide FHWA with comments on the resolution of the objection within thirty (30) days of receiving adequate documentation. Prior to reaching a final decision on the dispute, FHWA shall prepare a written response that takes into account any timely advice or comments, regarding the dispute from the ACHP, signatories and provide them with a copy of this written response. FHWA will then proceed according to its final decision.
- B. If the ACHP does not provide its advice regarding the dispute within the thirty (30) day time period, FHWA may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, FHWA shall prepare a written response that takes into account any timely comments regarding the dispute from the signatories to the MOA, and provide them and the ACHP with a copy of such written response.
- C. FHWA's responsibility to carry out all other actions subject to the terms of this MOA that are not the subject of the dispute remain unchanged.

VI. AMENDMENTS

This MOA may be amended when such an amendment is agreed to in writing by all signatories. The amendment will be effective on the date a copy signed by all of the signatories is filed with the ACHP.

VII. TERMINATION

If any signatory or concurring party to this MOA determines that its terms will not or cannot be carried out, that party shall immediately consult with the other signatories to attempt to develop an amendment per Stipulation VI, above. If within thirty (30) days an amendment cannot be reached, any signatory may terminate the MOA upon written notification to the other signatories.

Once the MOA is terminated, and prior to work continuing on the undertaking, FHWA must either (a) execute an MOA pursuant to 36CFR 800.6 or (b) request, take into account, and respond to the comments of the ACHP under 36CFR 800.7. FHWA shall notify the signatories as to the course of action it will pursue.

Execution of this MOA by the FHWA and SHPO and the ACHP, and implementation of its terms evidence that FHWA has taken into account the effects of this undertaking on historic properties.

SIGNATORIES:

FEDERAL HIGHWAY ADMINISTRATION

By: Mark D. Bartlett 6/27/19
Mark Bartlett, Division Administrator Date

ADVISORY COUNCIL ON HISTORIC PRESERVATION

By: Janice Skye 7-11-2019
for John M. Fowler, Executive Director Date

ALABAMA STATE HISTORIC PRESERVATION OFFICE

By: Lee Anne Wofford June 27, 2019
Lee Anne Wofford, Deputy SHPO Date

INVITED SIGNATORY:

ALABAMA DEPARTMENT OF TRANSPORTATION

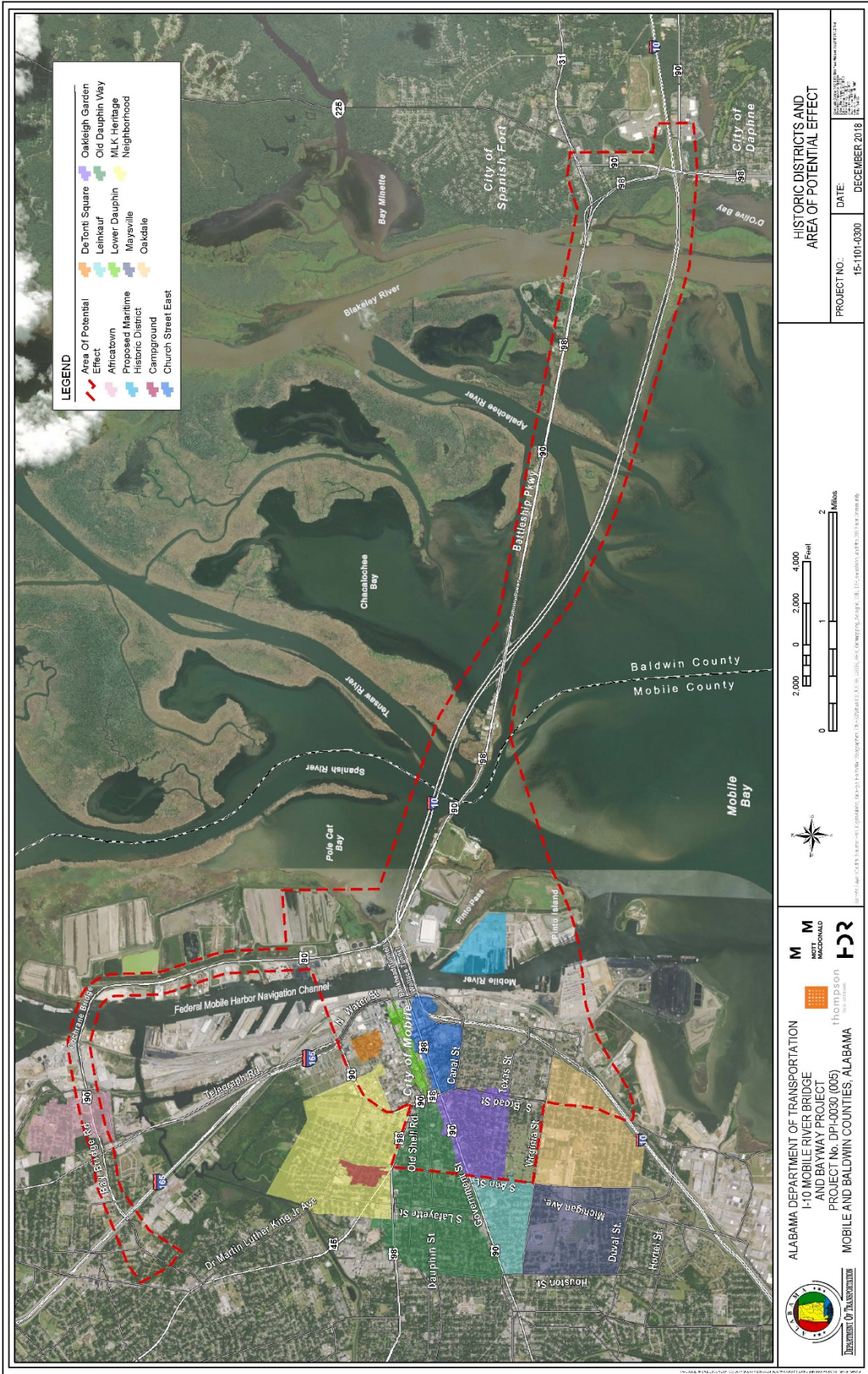
By: John R. Cooper 6-27-19
John R. Cooper, Transportation Director Date

Attachment #1. Area of Potential Effect (APE)

The Area of Potential Effect (APE), for the I-10 Mobile River Bridge project was established in consultation with the State Historic Preservation Officer (SHPO) and other Section 106 Consulting Parties (*see Attachment #3*).

The FHWA has defined the undertaking's APE as a range starting at I-10 and Broad Street in the Oakdale Historic District, moving northward to Virginia Street then west to Ann Street. The Ann Street border goes north to Springhill Avenue then east to Beauregard Street. The APE follows Beauregard Street and then crosses the Federal Mobile Harbor Navigation Channel approximately 500' north of US-90 and approximately 500' south of I-10 to the Eastern Shore. An addition to the APE includes a 1,000' corridor to the north, centered on US-90 then Bay Bridge Road past I-165 to Velma Street in Prichard.

National Register listed Historic Districts included in the APE are: The Church Street East Historic District, the Oakleigh Garden Historic District, Lower Dauphin Historic District, DeTonti Square Historic District, Oakdale Historic District, Maysville Historic District, and the Africatown Historic District.

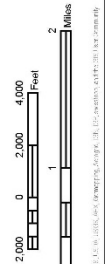


LEGEND

- Area Of Potential Effect
- Africatown
- Proposed Maritime Historic District
- Campground
- Church Street East
- DeToni Square
- LeinKauf
- Lower Dauphin
- Maysville
- Oakdale
- Oakleigh Garden
- Old Dauphin Way
- MLK Heritage Neighborhood

HISTORIC DISTRICTS AND AREA OF POTENTIAL EFFECT

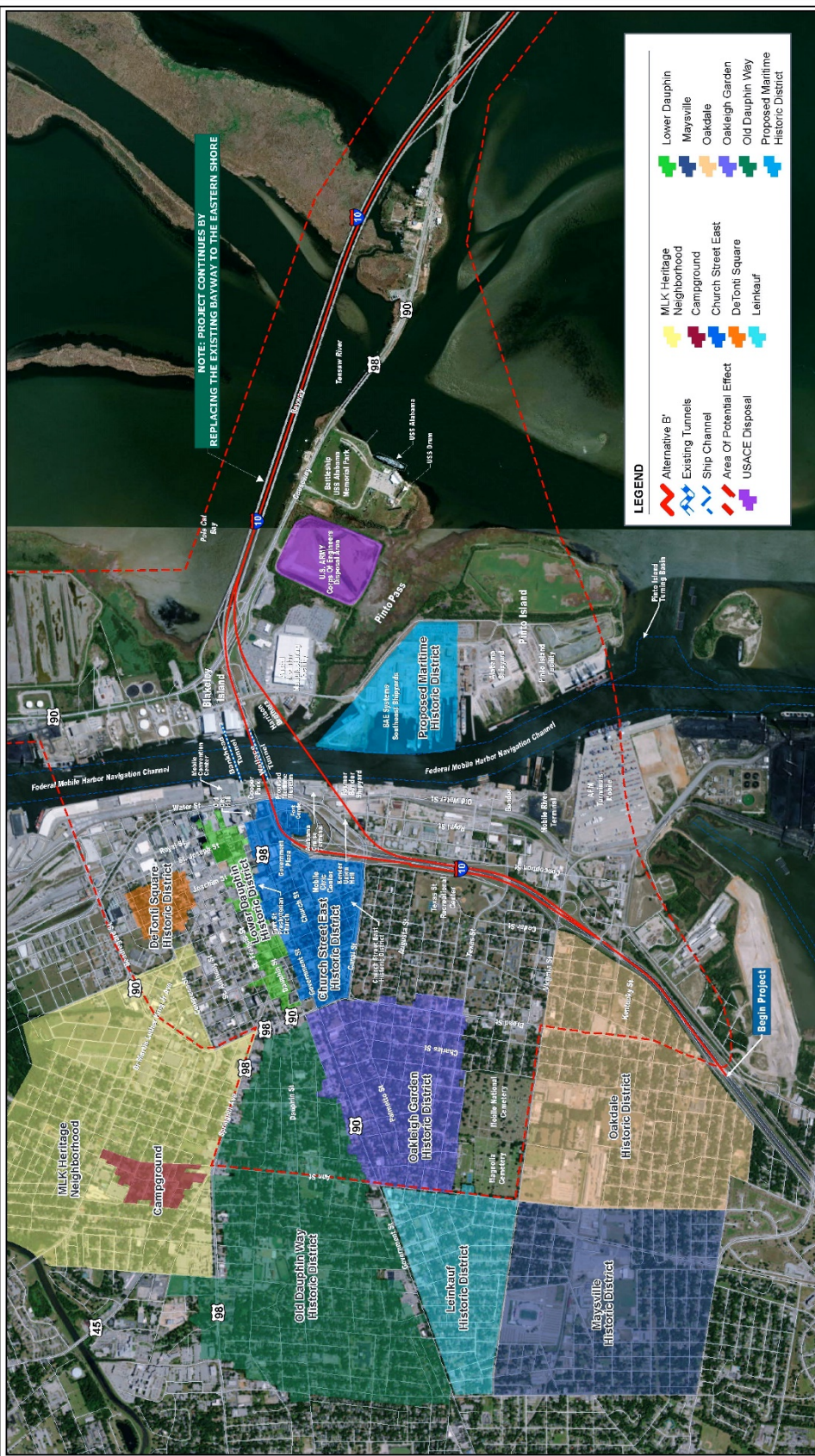
PROJECT NO: 15-101-0300
 DATE: DECEMBER 2018



ALABAMA DEPARTMENT OF TRANSPORTATION
 I-10 MOBILE RIVER BRIDGE AND BAYWAY PROJECT
 PROJECT NO. DP10030 (005)
 MOBILE AND BALDWIN COUNTIES, ALABAMA

M M MOBILE METROPOLITAN AUTHORITY
FDR THOMPSON CONSULTANTS





HISTORIC DISTRICTS AND AREA OF POTENTIAL EFFECT

PROJECT NO.: 15-1101-0300 DATE: DECEMBER 2018

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Alabama Department of Transportation
I-10 MOBILE RIVER BRIDGE AND BAYWAY PROJECT
PROJECT NO. DP-10301 (005)
MOBILE AND BALDWIN COUNTIES, ALABAMA

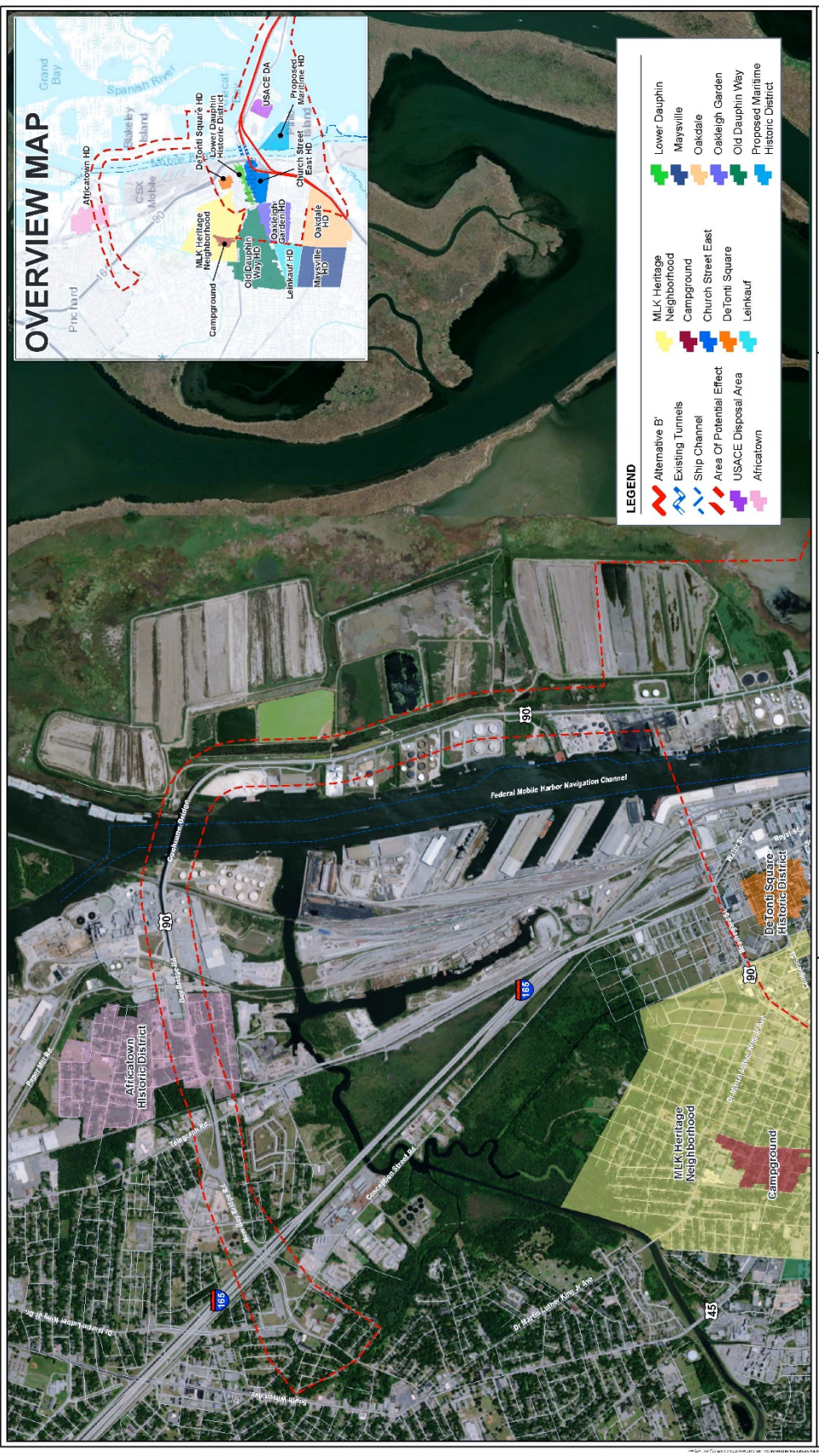
theicon CONSULTANTS

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Alabama Department of Transportation
I-10 MOBILE RIVER BRIDGE AND BAYWAY PROJECT
PROJECT NO. DP-10301 (005)
MOBILE AND BALDWIN COUNTIES, ALABAMA

theicon CONSULTANTS

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LEGEND

- Alternative B
- Existing Tunnels
- Ship Channel
- Area Of Potential Effect
- USACE Disposal Area
- Africatown
- MLK Heritage Neighborhood
- Campground
- Church Street East
- DeToni Square
- Leinkauf
- Lower Dauphin
- Maysville
- Oakdale
- Oakleigh Garden
- Old Dauphin Way
- Proposed Maritime Historic District

ALABAMA DEPARTMENT OF TRANSPORTATION
 I-10 MOBILE RIVER BRIDGE AND BAYWAY PROJECT
 PROJECT No. DPI-0030 (005)
 MOBILE AND BALDWIN COUNTIES, ALABAMA

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 MOTT MACDONALD

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 thompson consultants

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HISTORIC DISTRICTS AND AREA OF POTENTIAL EFFECT

PROJECT NO.: 15-110-0380 DATE: DECEMBER 2018

Attachment #2. Archaeological Investigation Maps {REDACTED}

Attachment #3. Section 106 Consulting Parties and Tribal Contact Information

Section 106 Consulting Party Contact Information

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Commissioner Connie Hudson
President
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The Honorable Dane Haygood
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The Honorable Michael McMillan
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Downtown Mobile Alliance
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Signal Shipyard/Bender Shipbuilding &
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Friends of the Museum
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Ms. Ann Bedsole
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Ms. Carolyn Jeffers
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Robert L. Hope Community Center
c/o Mr. James Hope
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Attachment #4. Post-Review Discovery Plan

- A. When notified by the Concessionaire or other outside party, ALDOT shall notify FHWA immediately if it appears that a FHWA funded undertaking has affected a previously unidentified property that may be eligible for the *National Register* or affected a known historic property in an unanticipated manner.
 - 1. ALDOT shall require the Concessionaire to stop construction activities in the vicinity of the discovery and shall require the Concessionaire to take all reasonable measures to avoid or minimize harm to the property until FHWA concludes consultation with SHPO or THPO or Tribes.
 - 2. FHWA shall notify SHPO or THPO and Tribes at the earliest possible time, but no later than 72 hours, and consult to develop actions that will take into account the effects of the undertaking.

- B. When notified by a Concessionaire, ALDOT shall notify FHWA at the earliest possible time, but no later than 72 hours, if intact archaeological deposits are uncovered in the course of any undertaking.
 - 1. ALDOT shall require the Concessionaire to stop all work immediately in the vicinity of the discovery and take reasonable measures to avoid or minimize harm to the finds. The site and all archaeological findings shall be secured and access to the APE of the individual project restricted.
 - 2. The Concessionaire shall inform FHWA immediately and FHWA shall consult with SHPO or THPO and Tribes.
 - 3. Work in the APE of the project cannot resume until consultation is completed or until an archeologist who meets the *Professional Qualifications* determines the extent of the archeological deposit. Work may then resume in unaffected areas of the APE outside of the delineated deposit.

- C. If an unmarked grave, indications of a burial, or human remains are present, compliance with the Alabama Cemetery and Human Remains Protection Act is required.
 - 1. ALDOT shall require the Concessionaire to stop work immediately in the vicinity of the discovery and secure the area. ALDOT shall immediately notify FHWA and the law enforcement agencies of the discovery.
 - 2. Within twenty-four hours of notification by ALDOT, FHWA shall notify and coordinate with the Tribes. The local law enforcement officials, in concert with a professional bioarchaeologist, shall assess the nature and age of the human skeletal remains. FHWA shall notify the Alabama Historical Commission at the earliest possible time after the discovery. If the coroner, bioarchaeologist, and/or appropriate local official determines that the human skeletal remains are older than 50 years of age, the Alabama Historical Commission has jurisdiction over the remains until final determinations of origin are made.
 - 3. In all cases, FHWA shall follow guidelines set forth by the ACHP in its “Human Remains Policy.”

- D. In cases where the human remains are determined to be American Indian:
 - 1. FHWA shall take the lead in working with Tribes and the Alabama Historical Commission and consulting parties to ensure compliance with the Alabama Cemetery and Human Remains Protection Act and other applicable laws. In addition, FHWA shall follow guidelines set forth by the ACHP in its “Human Remains Policy.”

2. FHWA shall hold a consultation meeting about the remains with Tribes and representatives of the Alabama Historical Commission as necessary. Such a consultation meeting may include a site visit to review the situation.
 3. In all cases, the preferred action is to avoid further disturbance of the remains, unless there is no alternative to further disturbance.
- E. FHWA shall also notify SHPO or THPO and Tribes of any time constraints, and FHWA and SHPO or THPO and Tribes shall mutually agree upon timeframes for this consultation. ALDOT and the Concessionaire may participate in this consultation. FHWA shall provide SHPO or THPO and/or Tribes with written recommendations that take into account the effect of the undertaking. If SHPO or THPO and Tribes do not object to FHWA's recommendations within the agreed upon timeframe, FHWA shall require the Concessionaire to modify the scope of work as necessary to implement the recommendations.

Attachment #5. The Alabama Burial Act

ALABAMA HISTORICAL COMMISSION

The State Historic Preservation Office

468 S. Perry Street Montgomery, Alabama 36130-0900

Voice: (334)242-3184

Fax: (334)262-1083

www.preserveala.org



Desecration, defacement, etc., of memorial of dead; invasion or mutilation of corpse.

Code of Alabama 1975, §13A-7-23.1, as amended

(a) Any person who willfully or maliciously injures, defaces, removes, or destroys any tomb, monument, gravestone, burial mound, earthen or shell monument containing human skeletal remains or associated burial artifacts, or other structure or thing placed or designed for a memorial of the dead, or any fence, railing, curb, or any enclosure for the protection or ornamentation of any tomb, monument, gravestone, burial mound, earthen or shell monument containing human skeletal remains or associated burial artifacts, or other structure before mentioned, or for any enclosure for the burial of the dead, or any person who willfully and wrongfully or maliciously destroys, removes, cuts, breaks, or injures any tree, shrub, plant, flower, decoration, or other real or personal property within any cemetery or graveyard shall be guilty of a Class A misdemeanor.

(b) Any person who willfully or maliciously desecrates, injures, defaces, removes, or destroys any tomb, monument, structure, or container of human remains, burial mound, earthen or shell monument containing human skeletal remains or associated burial artifacts, and invades or mutilates the human corpse or remains shall be guilty of a Class C felony and upon conviction the person shall be punished as provided by law.

(c) The provisions of subsections (a) and (b) shall not apply to any person holding a permit issued by the Alabama Historical Commission pursuant to subsection (d), to anyone operating a cemetery under standard rules and regulations and maintenance procedures, or to any person otherwise authorized by law to remove or disturb a tomb, monument, grave marker, burial mound, earthen or shell monument, or similar structure, or its contents, as described in subsections (a) and (b), nor shall the provisions of subsections (a) and (b) apply to any person authorized to take any action on municipal property.

(d) The Alabama Historical Commission, to provide for the lawful preservation, investigation, restoration, or relocation of human burial remains, human skeletal remains, or funerary objects, shall promulgate rules and regulations for the issuance of a permit and may issue a permit to persons or companies who seek to restore, preserve, or relocate human burial remains, human skeletal remains, funerary objects, or otherwise disturb, a place of burial."

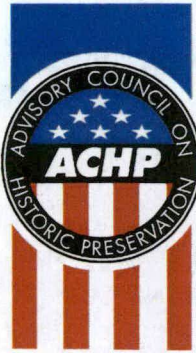
(Acts 1980, No. 80-706, p. 1424; Acts 1993, No. 93-770, §1; Acts 1993, 1st Ex. Sess., No. 93-905, p. 201, §1;

Act 2010-723).

See also Administrative Code, Chapter 460-X-10.01

This paper is for reference purposes only and does not constitute legal advice.

Attachment #6. Advisory Council on Historic Preservation- Policy Statement Regarding Treatment of Burial Sites, Human Remains and Funerary Objects



Preserving America's Heritage

ADVISORY COUNCIL ON HISTORIC PRESERVATION

POLICY STATEMENT REGARDING

TREATMENT OF BURIAL SITES, HUMAN REMAINS AND FUNERARY OBJECTS

Preamble: This policy offers leadership in resolving how to treat burial sites, human remains, and funerary objects in a respectful and sensitive manner while acknowledging public interest in the past. As such, this policy is designed to guide federal agencies in making decisions about the identification and treatment of burial sites, human remains, and funerary objects encountered in the Section 106 process, in those instances where federal or state law **does not prescribe a course of action**.

This policy applies to all federal agencies with undertakings that are subject to review under Section 106 of the National Historic Preservation Act (NHPA; 16 U.S.C. § 470f), and its implementing regulations (36 CFR Part 800). To be considered under Section 106, the burial site must be or be a part of a historic property, meaning that it is listed, or eligible for listing, in the National Register of Historic Places.

The Advisory Council on Historic Preservation (ACHP) encourages federal agencies to apply this policy throughout the Section 106 process, including during the identification of those historic properties. In order to identify historic properties, federal agencies must assess the historic significance of burial sites and apply the National Register criteria to determine whether a property is eligible. Burial sites may have several possible areas of significance, such as those that relate to religious and cultural significance, as well as those that relate to scientific significance that can provide important information about the past. This policy does not proscribe any area of significance for burial sites and recognizes that the assessment must be completed on a case-by-case basis through consultation.

The policy is not bound by geography, ethnicity, nationality, or religious belief, but applies to the treatment of all burial sites, human remains, and funerary objects encountered in the Section 106 process, as the treatment and disposition of these sites, remains, and objects are a human rights concern shared by all.

This policy also recognizes the unique legal relationship between the federal government and tribal governments as set forth in the Constitution of the United States, treaties, statutes and court decisions, and acknowledges that, frequently, the remains encountered in Section 106 review are of significance to Indian tribes.

Section 106 requires agencies to seek agreement with consulting parties on measures to avoid, minimize, or mitigate adverse effects to historic properties. Accordingly, and consistent with Section 106, this policy does not recommend a specific outcome from the consultation process. Rather, it focuses on issues and perspectives that federal agencies ought to consider when making their Section 106 decisions. In many cases, federal agencies will be bound by other applicable federal, tribal, state, or local laws that do

prescribe a specific outcome, such as the Native American Graves Protection and Repatriation Act (NAGPRA). The federal agency must identify and follow applicable laws and implement any prescribed outcomes.

For undertakings on federal and tribal land that encounter Native American or Native Hawaiian human remains and funerary objects, NAGPRA applies. NHPA and NAGPRA are separate and distinct laws, with separate and distinct implementing regulations and categories of parties that must be consulted.¹ Compliance with one of these laws does not mean or equal compliance with the other. Implementation of this policy and its principles does not, in any way, change, modify, detract or add to NAGPRA or other applicable laws.

Principles: When burial sites, human remains, or funerary objects will be or are likely to be encountered in the course of Section 106 review, a federal agency should adhere to the following principles:

Principle 1: Participants in the Section 106 process should treat all burial sites, human remains and funerary objects with dignity and respect.

Principle 2: Only through consultation, which is the early and meaningful exchange of information, can a federal agency make an informed and defensible decision about the treatment of burial sites, human remains, and funerary objects.

Principle 3: Native Americans are descendants of original occupants of this country. Accordingly, in making decisions, federal agencies should be informed by and utilize the special expertise of Indian tribes and Native Hawaiian organizations in the documentation and treatment of their ancestors.

Principle 4: Burial sites, human remains and funerary objects should not be knowingly disturbed unless absolutely necessary, and only after the federal agency has consulted and fully considered avoidance of impact and whether it is feasible to preserve them in place.

Principle 5: When human remains or funerary objects must be disinterred, they should be removed carefully, respectfully, and in a manner developed in consultation.

Principle 6: The federal agency is ultimately responsible for making decisions regarding avoidance of impact to or treatment of burial sites, human remains, and funerary objects. In reaching its decisions, the federal agency must comply with applicable federal, tribal, state, or local laws.

Principle 7: Through consultation, federal agencies should develop and implement plans for the treatment of burial sites, human remains, and funerary objects that may be inadvertently discovered.

Principle 8: In cases where the disposition of human remains and funerary objects is not legally prescribed, federal agencies should proceed following a hierarchy that begins with the rights of lineal descendants, and if none, then the descendant community, which may include Indian tribes and Native Hawaiian organizations.

¹ The ACHP's publication *Consulting with Indian Tribes in the Section 106 Process* and the National Association of Tribal Historic Preservation Officers' publication *Tribal Consultation: Best Practices in Historic Preservation* provide additional guidance on this matter.

DISCUSSION:

Principle 1: Participants in the Section 106 process should treat all burial sites, human remains and funerary objects with dignity and respect.

Because the presence of human remains and funerary objects gives a historic property special importance as a burial site or cemetery, federal agencies need to consider fully the values associated with such sites. When working with human remains, the federal agency should maintain an appropriate deference for the dead and the funerary objects associated with them, and demonstrate respect for the customs and beliefs of those who may be descended from them.

Through consultation with descendants, culturally affiliated groups, descendant communities, and other parties, federal agencies should discuss and reach agreement on what constitutes respectful treatment.

Principle 2: Only through consultation, which is the early and meaningful exchange of information, can a federal agency make an informed and defensible decision about the treatment of burial sites, human remains, and funerary objects.

Consultation is the hallmark of the Section 106 process. Federal agencies must make a “reasonable and good faith” effort to identify consulting parties and begin consultation early in project planning, after the federal agency determines it has an undertaking and prior to making decisions about project design, location, or scope.

The NHPA, the ACHP’s regulations, and Presidential Executive Orders set out basic steps, standards, and criteria in the consultation process, including:

- Federal agencies have an obligation to seek out all consulting parties [36 CFR § 800.2(a)(4)], including the State Historic Preservation Officer (SHPO)/Tribal Historic Preservation Officer (THPO) [36 CFR § 800.3(c)].
- Federal agencies must acknowledge the sovereign status of Indian tribes [36 CFR § 800.2(c)(2)(ii)]. Federal agencies are required to consult with Indian tribes on a government-to-government basis in recognition of the unique legal relationship between federal and tribal governments, as set forth in the Constitution of the United States, treaties, statutes, court decisions, and executive orders and memoranda.
- Consultation on a government-to-government level with Indian tribes cannot be delegated to non-federal entities, such as applicants and contractors.
- Federal agencies should solicit tribal views in a manner that is sensitive to the governmental structures of the tribes, recognizing their desire to keep certain kinds of information confidential, and that tribal lines of communication may argue for federal agencies to provide extra time for the exchange of information.

- Properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization may be determined eligible for inclusion on the National Register [16 U.S.C. § 470a(d)(6)(A)], and federal agencies must consult with any Indian tribe or Native Hawaiian organization that attaches religious and cultural significance to such historic properties [16 U.S.C. § 470a(d)(6)(B) and 36 CFR § 800.2(c)(2)(ii)(D)].

Principle 3: Native Americans are descendants of original occupants of this country. Accordingly, in making decisions, federal agencies should be informed by and utilize the special expertise of Indian tribes and Native Hawaiian organizations in the documentation and treatment of their ancestors.

This principle reiterates existing legal requirements found in federal law, regulation and executive orders, and is consistent with positions that the ACHP has taken over the years to facilitate enfranchisement and promote broad participation in the Section 106 process. Federal agencies must consult with Indian tribes on a government-to-government basis because they are sovereign nations.

Indian tribes and Native Hawaiian organizations bring a special perspective on how a property possesses religious and cultural significance to them. Accordingly, federal agencies should utilize their expertise about, and religious and cultural connection to, burial sites, human remains, and associated funerary objects to inform decision-making in the Section 106 process.

Principle 4: Burial sites, human remains and funerary objects should not be knowingly disturbed unless absolutely necessary, and only after the federal agency has consulted and fully considered avoidance of impact and whether it is feasible to preserve them in place.

As a matter of practice, federal agencies should avoid impacting burial sites, human remains, and funerary objects as they carry out their undertakings. If impact to the burial site can be avoided, this policy does not compel federal agencies to remove human remains or funerary objects just so they can be documented.

As this policy advocates, federal agencies should always plan to avoid burial sites, human remains, and funerary objects altogether. When a federal agency determines, based on consultation with Section 106 participants, that avoidance of impact is not appropriate, the agency should minimize disturbance to such sites, remains, and objects. Accordingly, removal of human remains or funerary objects should occur only when other alternatives have been considered and rejected.

When a federal agency determines, based on consultation with Section 106 participants, that avoidance of impact is not appropriate, the agency should then consider any active steps it may take to preserve the burial site in place, perhaps through the intentional covering of the affected area, placement of markers, or granting of restrictive or other legal protections. In many cases, preservation in place may mean that, to the extent allowed by law, the locations of burial sites, human remains, and funerary objects should not be disclosed publicly. Alternatively and consistent with the Section 106 regulations [36 CFR § 800.5(a)(2)(vi)], natural deterioration of the remains may be the acceptable or preferred outcome of the consultation process.

Principle 5: When human remains or funerary objects must be disinterred, they should be removed carefully, respectfully, and in a manner developed in consultation.

When the federal agency decides that human remains or funerary objects must be disturbed, they should be removed respectfully and dealt with according to the plan developed by the federal agency in consultation. "Careful" disinterment means that those doing the work should have, or be supervised by people having, appropriate expertise in techniques for recognizing and disinterring human remains.

This policy does not endorse any specific treatment. However, federal agencies must make a reasonable and good faith effort to seek agreement through consultation before making its decision about how human remains and/or funerary objects shall be treated.

The plan for the disinterment and treatment of human remains and/or funerary objects should be negotiated by the federal agency during consultation on a case-by-case basis. However, the plan should provide for an accurate accounting of federal implementation. Depending on agreements reached through the Section 106 consultation process, disinterment may or may not include field recordation. In some instances, such recordation may be so abhorrent to consulting parties that the federal agency may decide it is inappropriate to carry it out. When dealing with Indian tribes, the federal agency must comply with its legal responsibilities regarding tribal consultation, including government-to-government and trust responsibilities, before concluding that human remains or funerary objects must be disinterred.

Principle 6: The federal agency is ultimately responsible for making decisions regarding avoidance of impact to or treatment of burial sites, human remains, and funerary objects. In reaching its decisions, the federal agency must comply with applicable federal, tribal, state, or local laws.

Federal agencies are responsible for making final decisions in the Section 106 process [36 CFR § 800.2(a)]. The consultation and documentation that are appropriate and necessary to inform and support federal agency decisions in the Section 106 process are set forth in the ACHP's regulations [36 CFR Part 800].

Other laws, however, may affect federal decision-making regarding the treatment of burial sites human remains, and funerary objects. Undertakings located on federal or tribal lands, for example, are subject to the provisions of NAGPRA and the Archaeological Resources Protection Act (ARPA). When burial sites, human remains, or funerary objects are encountered on state and private lands, federal agencies must identify and follow state law when it applies. Section 106 agreement documents should take into account the requirements of any of these applicable laws.

Principle 7: Through consultation, federal agencies should develop and implement plans for the treatment of burial sites, human remains, and funerary objects that may be inadvertently discovered.

Encountering burial sites, human remains, or funerary objects during the initial efforts to identify historic properties is not unheard of. Accordingly, the federal agency must determine the scope of the identification effort in consultation with the SHPO/THPO, Indian tribes and Native Hawaiian

organizations, and others before any archaeological testing has begun [36 CFR § 800.4(a)] to ensure the full consideration of avoidance of impact to burial sites, human remains, and funerary objects.

The ACHP's regulations provide federal agencies with the preferred option of reaching an agreement ahead of time to govern the actions to be taken when historic properties are discovered during the implementation of an undertaking. In the absence of prior planning, when the undertaking has been approved and construction has begun, the ACHP's post-review discovery provision [36 CFR § 800.13] requires the federal agency to carry out several actions:

- (1) make reasonable efforts to avoid, minimize, or mitigate adverse effects to such discovered historic properties;
- (2) notify consulting parties (including Indian tribes and Native Hawaiian organizations that might attach religious and cultural significance to the affected property) and the ACHP within 48 hours of the agency's proposed course of action;
- (3) take into account the recommendations received; and then
- (4) carry out appropriate actions.

NAGPRA prescribes a specific course of action when Native American and Native Hawaiian human remains and funerary objects are discovered on federal or tribal lands in the absence of a plan—cessation of the activity, protection of the material, notification of various parties, consultation on a course of action and its implementation, and then continuation of the activity. However, adherence to the plan under Principle 5 would cause new discoveries to be considered “intentional excavations” under NAGPRA because a plan has already been developed, and can be immediately implemented. Agencies then could avoid the otherwise mandated 30 day cessation of work for “inadvertent discoveries.”

Principle 8: In cases where the disposition of human remains and funerary objects is not legally prescribed, federal agencies should proceed following a hierarchy that begins with the rights of lineal descendants, and if none, then the descendant community, which may include Indian tribes and Native Hawaiian organizations.

Under the ACHP's regulations, “descendants” are not identified as consulting parties by right. However, federal agencies shall consult with Indian tribes and Native Hawaiian organizations that attach religious and cultural significance to burial sites, human remains and associated funerary objects, and be cognizant of their expertise in, and religious and cultural connection to, them. In addition, federal agencies should recognize a biological or cultural relationship and invite that individual or community to be a consulting party [36 CFR § 800.3(f)(3)].

When federal or state law does not direct disposition of human remains or funerary objects, or when there is disagreement among claimants, the process set out in NAGPRA may be instructive. In NAGPRA, the “ownership or control” of human remains and associated funerary objects lies with the following in descending order: specific lineal descendants; then tribe on whose tribal lands the items were discovered; then tribe with the closest cultural affiliation; and then tribe aboriginally occupying the land, or with the closest “cultural relationship” to the material.

Definitions Used for the Principles

- **Burial Site:** Any natural or prepared physical location, whether originally below, on, or above the surface of the earth, into which as a part of the death rite or ceremony of a culture, individual human remains are deposited [25 U.S.C. 3001.2(1)].
- **Consultation:** The process of seeking, discussing, and considering the views of other participants, and, where feasible, seeking agreement with them regarding matters arising in the Section 106 review process [36 CFR § 800.16(f)].
- **Consulting parties:** Persons or groups the federal agency consults with during the Section 106 process. They may include the State Historic Preservation Officer; the Tribal Historic Preservation Officer; Indian tribes and Native Hawaiian organizations; representatives of local governments; applicants for federal assistance, permits, licenses, and other approvals; and/or any additional consulting parties [based on 36 CFR § 800.2(c)]. Additional consulting parties may include individuals and organizations with a demonstrated interest in the undertaking due to the nature of their legal or economic relation to the undertaking or affected properties, or their concern with the undertaking's effects on historic properties [36 CFR § 800.2(c)(6)].
- **Disturbance:** Disturbance of burial sites that are listed in or eligible for listing in the National Register of Historic Places will constitute an adverse effect under Section 106. An adverse effect occurs when "an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, setting, materials, workmanship, feeling, or association" [36 CFR § 800.5(a)(1)].
- **Federal land:** Lands under a federal agency's control. Mere federal funding or permitting of a project does not turn an otherwise non-federal land into federal land (see *Abenaki Nation of Mississquoi v. Hughes*, 805 F. Supp. 234 (D. Vt. 1992), aff'd, 990 F. 2d 729 (2d Cir. 1993) (where the court found that a Clean Water Act permit issued by the US Army Corps of Engineers did not place the relevant land under federal "control" for NAGPRA purposes).
- **Funerary objects:** "items that, as part of the death rite or ceremony of a culture, are reasonably believed to have been placed intentionally at the time of death or later with or near individual human remains" [25 U.S.C. 3001(3)(B)].
- **Historic property:** "Any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. It includes artifacts, records, and remains that are related to and located within such properties, and it includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register of Historic Places criteria" [36 CFR § 800.16(1)].
- **Human remains:** The physical remains of a human body. The term does not include remains or portions of remains that may reasonably be determined to have been freely given or naturally shed by the individual from whose body they were obtained, such as hair made into ropes or nets [see 43 CFR § 10.2(d)(1)].
- **Indian Tribe:** "An Indian tribe, band, nation, or other organized group or community, including a Native village, Regional Corporation or Village Corporation, as those terms are defined in Section 3 of the Alaska Native Claims Settlement Act [43 U.S.C. 1602], which is recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians" [36 CFR § 800.16(m)].
- **Native American:** Of, or relating to, a tribe, people, or culture that is indigenous to the United States [25 U.S.C. 3001 (9)]. Of, or relating to, a tribe, people, or culture indigenous to the United States, including Alaska and Hawaii [43 CFR 10.2(d)].

- **Native Hawaiian:** Any individual who is a descendant of the aboriginal people who, prior to 1778, occupied and exercised sovereignty in the area that now constitutes the state of Hawaii [36 CFR § 800.16(s)(2)].
- **Native Hawaiian Organization:** Any organization which serves and represents the interests of Native Hawaiians; has as a primary and stated purpose the provision of services to Native Hawaiians; and has demonstrated expertise in aspects of historic preservation that are significant to Native Hawaiians [36 CFR § 800.16(s)].
- **Policy statement:** A formal statement, endorsed by the full ACHP membership, representing the membership's collective thinking about what to consider in reaching decisions about select issues, in this case, human remains and funerary objects encountered in undertakings on federal, tribal, state, or private lands. Such statements do not have the binding force of law.
- **Preservation in place:** Taking active steps to ensure the preservation of a property.
- **Protection of Historic Properties:** Regulations [36 CFR Part 800] implementing Section 106 of the National Historic Preservation Act.
- **Section 106:** That part of the National Historic Preservation Act which establishes a federal responsibility to take into account the effects of undertakings on historic properties and to provide the Advisory Council on Historic Preservation a reasonable opportunity to comment with regard to such action.
- **State Historic Preservation Officer:** The official appointed or designated pursuant to Section 101(b)(1) of NHPA to administer the state historic preservation program.
- **Tribal Historic Preservation Officer:** The official appointed by the tribe's chief governing authority or designated by a tribal ordinance or preservation program who has assumed the responsibilities of the SHPO for purposes of Section 106 compliance on tribal lands in accordance with Section 101(d)(2) of NHPA.
- **Treatment:** Under Section 106, "treatments" are measures developed and implemented through Section 106 agreement documents to avoid, minimize, or mitigate adverse effects to historic properties.

Acronyms Used for the Policy Statement

- **ACHP:** Advisory Council on Historic Preservation.
- **ARPA:** Archaeological Resources Protection Act [16 U.S.C. 470aa-mm].
- **NHPA:** National Historic Preservation Act [16 U.S.C. § 470f].
- **NAGPRA:** The Native American Graves Protection and Repatriation Act [25 U.S.C. 3001 et seq].
- **SHPO:** State Historic Preservation Officer
- **THPO:** Tribal Historic Preservation Officer

[The members of the Advisory Council on Historic Preservation unanimously adopted this policy on February 23, 2007]

Attachment #7. Aesthetic Steering Committee Framework

A. Purpose of Aesthetic Steering Committee

Major infrastructure projects around the U.S. have increasingly included an Aesthetics Steering Committee to assist in engaging communities with the aesthetic design. For this project, ALDOT will develop an Aesthetic Steering Committee to provide input on preferences regarding the aesthetics of the project. The Aesthetic Steering Committee will serve on behalf of the community and Section 106 Consulting Parties to provide input on likes, dislikes, and preferences related to aesthetics so that ALDOT can communicate those preferences to the proposing teams and ensure that commitments related to aesthetics are upheld as the project is designed and constructed.

To encourage open and honest feedback on aesthetic preferences, the members of the committee will not be released to the proposing teams or the public until after a team is selected to design, build, finance, operate, and maintain the project. During the pre-proposal phase, the proposing teams will receive input from the Committee through ALDOT. After a team is selected, the winning team will work directly with the Aesthetic Steering Committee and ALDOT to finalize the aesthetic components of the project.

B. Members of Aesthetic Steering Committee

The Aesthetic Steering Committee will be comprised of members from Mobile and Baldwin Counties. The following organizations will be invited to participate as members of the Aesthetic Steering Committee:

- [REDACTED]

Eight of the nine organizations invited to serve on the Committee are Section 106 Consulting Parties. The invitees consist of individuals and organizations with interests in historic resources, as well as the region as a whole. They have a diverse background in terms of training and education, which will allow them to provide a variety of perspectives as part of this process.

C. Roles and Responsibilities of Committee

The involvement of the Aesthetic Steering Committee will be a collaborative process that occurs through in-person meetings. The Aesthetic Steering Committee will meet with ALDOT as needed to develop Aesthetic Guidelines for the project and to provide feedback on the Aesthetic and Landscape Plans submitted by the proposing teams. The Committee will also work with the selected team during the final design and construction phase(s) of the project.

The Aesthetic Steering Committee will be responsible for assisting ALDOT in the development of Aesthetic Guidelines to address commitments and preferences related to the following aesthetic elements:

- Land use compatibility,
- Aesthetics,
- Landscaping,
- Form commonality,
- Materials and finishes,
- Barriers,
- Retaining walls,
- Overhead gantries and sign structures,
- Bridge structures,
- Interchange areas,
- Straddle bents,
- High level approaches to main span of bridge,
- Bicycle/pedestrian amenities and connectivity,
- Treatment of areas beneath the Mobile River Bridge and its approach structures,

- Roadway and bridge lighting, and
- Aesthetic lighting.

The Aesthetic Steering Committee will also provide input on appropriate themes and regional context that should be used by the teams to create a project that reflects the culture and history of the project area and complements its setting.

The following table provides a list of activities in which the Aesthetic Steering Committee will participate:

<i>Activity</i>	<i>Purpose/Focus</i>
Initial Meeting	<ul style="list-style-type: none"> • Learn about the proposed project through available design information, including typical sections, maps, and a visualization/animation. • Discuss various aesthetic components to be included in the project. • Review photographs and drawings of bridges and other project components (such as ramps, interchanges, roadways, lighting, etc.) from projects around the world to identify likes and dislikes. • Discuss what makes the Mobile and Baldwin County region unique and what aspects should be incorporated into themes for the project.
Meeting on Precedent Images	<ul style="list-style-type: none"> • Review precedent images showing different aesthetic components (bridge railings, retaining walls, roadway lighting, bridge lighting, aesthetic lighting, landscaping, colors, materials, etc.) to identify likes and dislikes.
Meeting on Draft Aesthetic Guidelines	<ul style="list-style-type: none"> • Review Draft Aesthetic Guidelines developed based on input received from Committee during previous meetings.
Meeting to Review Pre-Proposal Preliminary Aesthetic and Landscape Plans – Submittal #1	<ul style="list-style-type: none"> • Review pre-proposal preliminary Aesthetic and Landscape Plans submitted by proposing teams. The primary aesthetic elements contained in this initial submittal from the proposing teams are expected to include the following: overall design approach and theme, main span bridge and structures, retaining walls, aesthetic lighting, landscape and urban design, and pedestrian access. • Provide comments on submittals, focusing on likes, dislikes, and how well the package reflects the preferences set forth in the Aesthetic Guidelines. • ALDOT to share the feedback from the Committee with the proposing teams.
Meeting to Review Pre-Proposal Preliminary Aesthetic and Landscape Plans – Submittal #2	<ul style="list-style-type: none"> • Review revised preliminary Aesthetic and Landscape Plans submitted by proposing teams. The primary aesthetic elements contained in this initial submittal from the proposing teams are expected to include the following: overall design approach and theme, main span bridge and structures, retaining walls, aesthetic lighting, landscape and urban design, and pedestrian access. • Provide comments on submittals, focusing on likes, dislikes, and how well the package reflects the preferences set forth in the Aesthetic Guidelines. • ALDOT to share the feedback from the Committee with the proposing teams.
Meeting to Review Pre-Proposal Preliminary Aesthetic and Landscape Plans – Submittal #3	<ul style="list-style-type: none"> • Review revised preliminary Aesthetic and Landscape Plans submitted by proposing teams. The primary aesthetic elements contained in this initial submittal from the proposing teams are expected to include the following: overall design approach and theme, main span bridge and structures, retaining walls, aesthetic lighting, landscape and urban design, and pedestrian access. • Provide comments on submittals, focusing on likes, dislikes, and how well the package reflects the preferences set forth in the Aesthetic Guidelines. • ALDOT to share the feedback from the Committee with the proposing teams.
Meeting to Review	<ul style="list-style-type: none"> • Review Aesthetic and Landscape Plans submitted as part of each team’s proposal.

<i>Activity</i>	<i>Purpose/Focus</i>
Aesthetic and Landscape Plans Submitted with Proposals	<ul style="list-style-type: none"> • Provide comments on submittals. • ALDOT to use the feedback from the Committee to evaluate the Aesthetic and Landscape Plans in each team's proposal.
Meeting(s) with Selected Team during Design and Construction Phase(s)	<ul style="list-style-type: none"> • Meet directly with the selected team and ALDOT to finalize the details of Aesthetic and Landscape Plans. • Provide input on more detailed components of the project, such as light fixtures, colors, types of materials, signage, aesthetic lighting, barriers, and other elements. • May require multiple meetings.

D. Updates to Section 106 Consulting Parties regarding Aesthetic Steering Committee Activities

ALDOT will provide summaries of Aesthetic Steering Committee activities to Section 106 Consulting Parties after the meetings occur.

Attachment #8. Vibrations Study

Final Report on Vibrations Due to Pile Driving at the Mobile River Bridge Site

Research Project 930-839R

INVESTIGATION OF PILE SETUP (FREEZE) IN ALABAMA

Development of a Setup Prediction Method and Implementation into LRFD Driven Pile Design

Addendum: Pile Driving Vibration Monitoring of the Future Mobile River Bridge Project



John Cleary, Ph.D., P.E. (P.I. for Vibration Monitoring)

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June 12, 2015

ACKNOWLEDGEMENT

The Alabama Department of Transportation sponsored this project. Their support for this study is greatly appreciated.

DISCLAIMER

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ABSTRACT

All projects have some amount of inherent risk; one such risk associated with construction projects is the potential for ground vibrations that could damage nearby structures. Research has been conducted on the effects of vibrations on structures; however, the expected levels of vibration are dependent on several factors including the soil conditions at the construction site. Therefore, site-specific investigations are often recommended.

After concerns were raised by the Alabama Department of Transportation (ALDOT) about damage potential at a project site in South Alabama, an addendum was added to a research project related to investigating pile setup in Alabama soils. The purpose of the addendum was to investigate ground vibrations from pile driving at a project site near the Mobile River in Mobile, Alabama.

An investigation and vibration monitoring program was developed for four pile sizes that are often used by the Alabama Department of Transportation (ALDOT). The piles included thirty-six inch square and twenty-four inch square concrete piles, as well as, two steel H-Piles. The piles were driven using typical installation techniques and the vibration levels at various distances from the piles were monitored.

The investigation found that the largest vibrations were observed while driving the thirty-six inch concrete pile. The maximum vibrations observed had a magnitude of 0.82 inches per second at fifty feet from the pile. The vibrations at 150 feet from the pile had dissipated to 0.15 inches per second. The results of the monitoring program and a literature review determined that an allowable vibration level of 0.5 inches per second for modern structures and 0.1 inches per second for potentially sensitive structures should be established for construction activity at or near the location of the project site. Additionally, a survey distance of 150 feet for modern structures and 250 feet for potentially sensitive structures is recommended.

INTRODUCTION

Background

The following report contains the analysis of ground vibrations generated during a pile driving research study located at the Mobile River Bridge Project Site. The project site, owned by the Alabama Department of Transportation (ALDOT), is located on the Mobile River just south of the Alabama Cruise Terminal, Figure 1. The study consisted of monitoring ground vibrations during the installation of four driven piles; two precast concrete piles and two steel H-piles. The study was conducted in response to concerns raised by ALDOT related to possible damage of nearby structures from ground-borne vibrations. The primary objective of this project was to determine the distance that pile driving operations can be conducted with minimal risk to nearby structures. To accomplish this, the vibration levels at various distances from the driven piles were determined and a prediction equation for other distances was developed. This study was conducted by researchers from the Department of Civil Engineering at the University of South Alabama between August 15, 2013 and August 27, 2013.

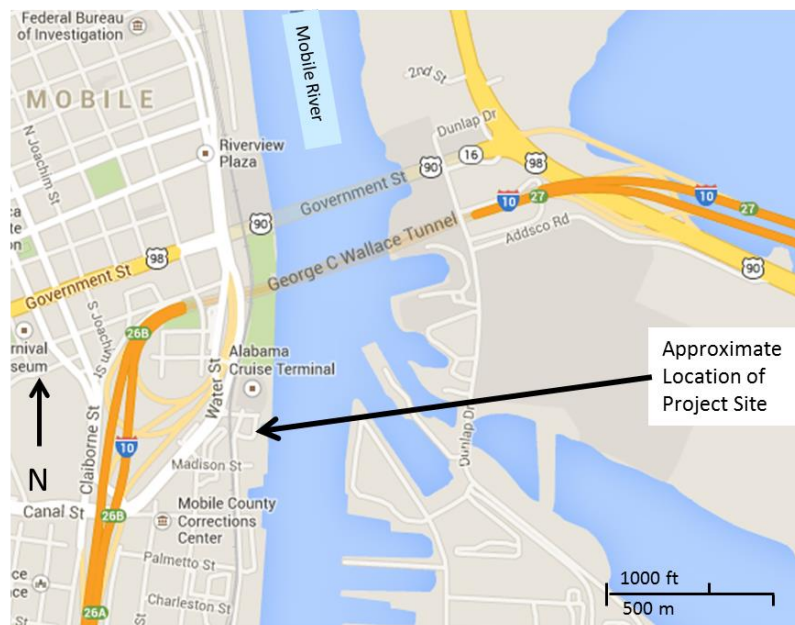


Figure 1: Location of project site, Mobile, AL (Google 2013)

Objective

This project consisted of several objectives. The first was to determine the vibration levels from typical piles used by ALDOT. The second objective was to develop a methodology to predict vibrations at any distance from the pile. The third and final objective of the project was to develop guidelines on allowable vibrations for the project site.

Scope

The scope of this report is limited to the vibrations portion of the larger project: *Investigation of Pile Setup (Freeze) In Alabama: Development of a Setup Prediction Method and Implementation into LRFD Driven Pile Design; Addendum: Pile Driving Vibration Monitoring of the Future Mobile River Bridge Project* (Research Project 930-839R).

The vibrations portion of the project was limited to the aforementioned location near the Mobile River. The project included monitoring vibrations during pile installation and restrikes, analysis of vibration data, development of vibration prediction methodology, and vibration limit recommendations.

Report Organization

The report is organized into five main sections: Introduction, Literature Review, Experimental Design, Results, and Conclusions. Each section contains sub sections as needed.

LITERATURE REVIEW

Construction Vibrations

Ground vibrations are commonly generated from several sources including roadway traffic, railroad traffic, and construction activity. Vibrations can be measured and quantified using several different parameters including: displacement, velocity, and acceleration. Ground vibrations are typically measured by the velocity of the ground surface and reported as Peak Particle Velocity or PPV. Typical units of PPV are inches per second (in/sec) in the US system or millimeters per second (mm/sec) in the SI system of units. Typical construction activity that generates vibrations includes: pile driving, heavy equipment operation, concrete breaking (jackhammers), and truck/equipment traffic. Although the level of vibrations generated from these sources can vary widely, some typical vibration levels have been included in Table 1.

Table 1: Typical ground vibrations from construction equipment (Hanson, Towes and Lance 2006)

Equipment		PPV (in/sec) (Distance = 25 ft.)
Pile Driver (impact)	upper range	1.518
	typical	0.644
Pile Driver (vibratory)	upper range	0.734
	typical	0.170
Bulldozer	large	0.089
	small	0.003
Caisson Drilling		0.089
Loaded Trucks		0.076
Jackhammer		0.035

Table 1 shows that under typical conditions, pile driving has the potential to create large vibration levels, relative to other construction activity. The pile installation method, however, can affect the level of vibrations. High displacement piles are typically driven using an impact hammer and low displacement piles are sometimes driven using a vibratory hammer. Research has shown that the vibration magnitudes from vibratory hammers are typically smaller than from impact hammers. Additionally, installation techniques such as pre-boring and jetting can reduce vibration levels from impact pile driving (Woods 1997).

The mechanism of vibration formation is the transfer of energy from the pile driving hammer to the pile and then to the surrounding soil. The transfer of energy comes from two main sources. The first is the skin friction that is developed along the surface of the pile and the second is the displacement of the soil at the pile tip. For high displacement piles, the main source of energy transfer is at the pile tip. Several factors can affect the magnitude of vibrations including pile size, pile type, soil type, and the hammer energy. The most important factor in determining vibration levels is the distance from the pile, since vibrations will mitigate or dampen with distance from the source (Dowding 1996).

Damage Thresholds

Vibrations generated from construction activity can cause several concerns at adjacent structures that range from annoyance to structural damage. Several studies have been conducted to determine the relationship between vibration levels, human perception, and structural damage. Table 2 contains a summary of a study reported by Hendriks (2002) for continuous vibrations. The study concluded that vibration levels that are large enough to “annoy people” are at threshold levels for architectural damage to structures that contain plaster walls or ceilings. Since these levels are below levels of even minor structural damage, the perception of building occupants can sometimes lead to discrepancies in the effects of vibrations. The values listed in Table 2 are generally conservative when compared to pile driving vibrations since they were developed for continuous vibrations. Pile driving operations develop discontinuous vibrations that can reduce the damage potential (Hendriks 2002).

Table 2: Continuous vibration levels and effects (Hendriks 2002)

Vibration Level (Peak Particle Velocity)	Human Reaction	Building Effects
0.006-0.019 in/sec	Threshold of perception;	Vibrations unlikely to cause damage
0.08 in/sec	Vibration readily perceptible	Recommended upper level for ruins and ancient monuments
0.1 in/sec	Continuous vibrations begin to annoy people	Virtually no risk of “architectural” damage to normal buildings
0.2 in/sec	Vibrations annoying to people in buildings	Threshold at which there is a risk of “architectural” damage to normal dwelling- houses with plaster wall and ceilings
0.4-0.6 in/sec	Vibrations considered unpleasant by people subjected to continuous vibrations	Vibrations at a greater level than normally expected from traffic, but would cause “architectural” damage and possible minor structural damage

In addition to the many studies to determine the effect of vibrations on structures, several State and Federal Agencies, as well as, International Organizations have developed guidelines on permissible vibration levels due to construction activity. Much of the early work related to vibrations was performed by the United States Bureau of Mines (USBM) in the 1970’s and 80’s (Siskind, et al. 1980). This research focused on vibrations from blasting operations. Figure 2 shows the recommended vibration limits for blasting as a function of frequency. The limits range from 0.2 to 2.0 inches per second (in/sec).

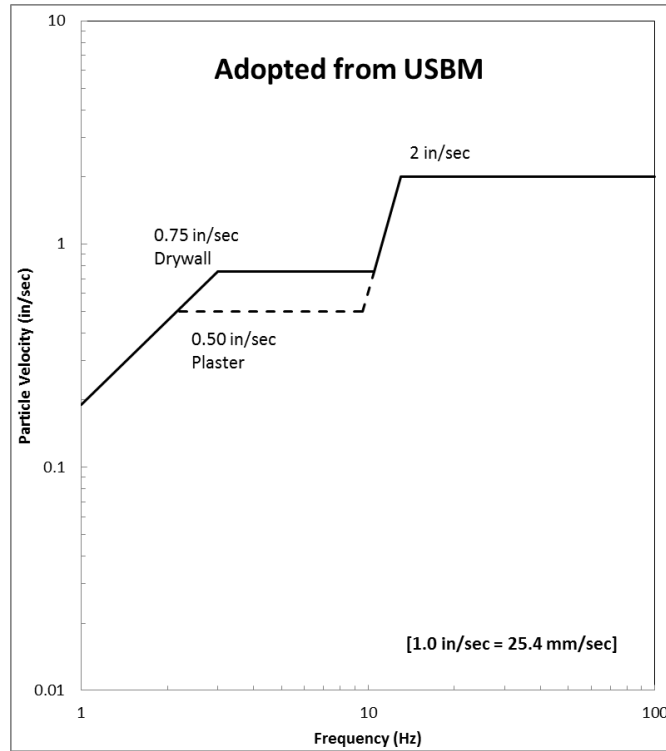


Figure 2: Vibration limits from the USBM (Siskind, et al. 1980)

The American Association of State Highway and Transportation Officials (AASHTO) and the Federal Transit Administration (FTA) have developed guidelines for vibration limits that range from 0.1 to 1.5 in/sec depending on the structure type as shown in Table 3.

Table 3: AASHTO and FTA criteria for construction vibrations

Organization/Jurisdiction	Comments	PPV (in/sec)
American Association of State Highway and Transportation Officials (AASHTO 1990)	Residential buildings, plastered walls	0.2-0.3
	Residential buildings in good repair with gypsum board walls	0.4-0.5
	Engineered structures, without plaster	1.0-1.5
	Historic sites or other critical locations	0.1
Federal Transit Administration (FTA 2006)	Reinforced-concrete, steel or timber	0.5
	Engineered concrete and masonry	0.3
	Non-engineered timber and masonry	0.2
	Buildings extremely susceptible to vibration damage	0.12

The vibration criteria developed by the various states also have a wide range of values as shown in Table 4. If the table is carefully analyzed, the vibration limits can be divided into several categories including: modern structures, sensitive structures, and miscellaneous structures. The range of vibration limits for modern structures is from 0.4 to 1.0 in/sec and sensitive structures have a range of 0.08 to 0.2 in/sec. These vibration limits correlate well to the AASHTO and FTA limits. A thorough review of construction vibration limits can be found in several reports including: (Tao and Zhang 2012), (Wilson Ihrig & Associates 2012), and (Cleary 2013).

Table 4: State criteria for construction vibrations

Organization/Jurisdiction	Comments	PPV (in/sec)
California Department of Transportation (Caltrans 2002)	Upper level for possible damage	0.4-0.6
	Threshold for damage to plaster	0.20
	Ruins and ancient monuments	0.08
Florida DOT (FDOT 2010)	All construction	0.5
	Fresh concrete	1.5
Iowa DOT (Iowa DOT n.d.)	Project specific specification	0.2
Louisiana Department of Transportation and Development (Tao and Zhang 2012)	General scenario	
	- New requirements	0.5
	- Old requirements	0.2
	Historic structures or loose sandy soil	0.1
New Hampshire DOT (NH DOT 2010)	Modern Homes	0.75
	Older Homes	0.50
New York City DOT (New York City DOT 2009)	Piles driven adjacent to subway structures (may be lowered)	0.5
Rhode Island DOT (RIDOT 2010)	Lower limits may be applied by engineer	1.0

Dynamic Settlement

In addition to structural damage and human perception, dynamic settlement can occur due to construction vibrations. Research has shown that if loose cohesionless soils (loose sands) are present, relatively low vibration levels can cause densification (Dowding 1996). This densification can lead to settlement related damage in adjacent structures. Loose sands are typically defined as having a relative density less than 40% (Tao and Zhang 2012). Dynamic settlement has occurred in some soils at vibration levels as low as 0.1 in/sec. If loose sands are located on or near a project site, then special considerations for construction vibrations need to be considered.

Vibration Prediction

Since it is typically unrealistic for most construction projects to conduct full scale testing to determine the expected levels of vibrations and since only a discrete number of locations are measured during testing, several methods have been developed to predict vibration levels. The first prediction equations were developed as early as 1912 by Golitsin who developed a simple equation to predict the peak particle displacement of ground vibrations from earthquakes. The equation, as reported by (Bayraktar, et al. 2013) is as follows,

$$A_2 = A_1 \sqrt{r_1/r_2} e^{-\gamma(r_2-r_1)}, \quad (1)$$

where A_1 is the peak particle displacement of ground vibrations at a distance r_1 from the source, A_2 is the peak particle displacement of ground vibrations at a distance r_2 from the source, and γ is a vibration attenuation coefficient.

More recently, several methods have been developed to predict the peak particle velocity (PPV) from construction activity, pile driving in particular. Hendriks (2002) reported several equations to predict the propagation of construction vibrations. The first equation presented by Hendriks was first reported by Richart, et.al. (1970), who cited Bornitz (1931),

$$V = V_o (D_o/D)^{0.5} e^{\alpha(D_o-D)} \quad (2)$$

where V is the peak particle velocity at distance D , V_o is the peak particle velocity at reference distance D_o , and α is a vibration attenuation parameter that must be determined experimentally.

Hendriks (2002) also reported a simplified equation for pile driving vibrations that is similar to an equation reported by Woods (1997) as follows,

$$V = V_o (D_o/D)^k \quad (3)$$

where V is the peak particle velocity at distance D , V_o is the peak particle velocity at reference distance D_o , and k is a vibration attenuation parameter that must be determined experimentally.

Several researchers have found that a better correlation with predicted and measured vibrations could be determined by including the energy of the pile driving hammer in the equation. This approach is often referred to as the “scaled-distance” approach. One commonly used equation was developed by Wiss and reported by Bayraktar, et al. (2013),

$$v = k [D/\sqrt{W_t}]^{-n} \quad (4)$$

where W_t is the energy of the source, v is the peak particle velocity at distance D , k is the intercept value of the peak particle velocity at a scaled distance of $D/(W_t)^{1/2}$ equal to one, and n is a vibration attenuation parameter that must be determined experimentally.

The previous equations are relatively accurate at predicting ground vibrations when compared to experimental data, however, they all require testing to determine the soil parameters. Jones & Stokes (2004) performed an extensive literature review and determined that the following equation, with the assumed values shown, could be used to predict pile driving vibrations without experimental evaluations:

$$PPV_{Impact\ Pile\ Driver} = PPV_{Ref}(25/D)^n(E_{equip}/E_{ref})^{0.5} \quad (5)$$

where $PPV_{Impact\ Pile\ Driver}$ is the peak particle velocity at distance D in feet, PPV_{Ref} is equal to 0.65 in/sec for a reference pile driver at 25 feet, E_{ref} is equal to 36,000 ft-lb (rated energy of reference pile driver), E_{equip} is the rated energy of impact pile driver in foot-pounds, and n is a vibration attenuation parameter with a recommended value of 1.1.

Jones and Stokes also provided a table, Table 5, with suggested “n” values based on the soil type.

Table 5: Suggested “n” values based on soil class: Adopted from (Jones & Stokes 2004)

Soil Class	Description of Soil	Suggested Value of “n”
I	Weak or soft soils: loose soils, dry or partially saturated peat and muck, mud, loose beach sand, and dune sand, recently plowed ground, soft spongy forest or jungle floor, organic soils, top soil. (shovel penetrates easily)	1.4
II	Competent soils: most sands, sandy clays, silty clays, gravel, silts, weathered rock. (can dig with shovel)	1.3
III	Hard soils: dense compacted sand, dry consolidated clay, consolidated glacial till, some exposed rock. (cannot dig with shovel, need pick to break up)	1.1
IV	Hard, competent rock: bedrock, freshly exposed hard rock. (difficult to break with hammer)	1.0

EXPERIMENTAL DESIGN

Overview

The main objective of this research was to determine the distance from nearby structures that pile driving operations can be conducted with minimal risk to those structures. It is important to note that these guidelines were developed for typical piles used by ALDOT at the project site. The project was divided into two phases, collecting data during pile driving and analyzing the data. The information related to the project site, the test piles, the pile driving equipment, and the data collection equipment is located below.

Project Site

The project site is located on the west bank of the Mobile River, just south of the Alabama Cruise Terminal. The soil profile at the site consists primarily of sandy soils to a depth of 90 feet below the ground surface with a clay layer located at an approximate depth of 90 to 110 feet. Table 6 contains a summary of the soil layers that were defined by a standard penetration test (SPT) conducted at the project site. Appendix A contains the details of the soil investigations conducted by an ALDOT drill crew and Southern Earth Sciences.

Table 6: Soil profile at site location

Depth (ft.)	Basic Material	Average Blow Count	Consistency
0-23.5	Sand	12	Loose to Medium
23.5-89.5	Sand	31	Medium to Dense
89.5-108.5	Clay	28	Stiff to Very Stiff
108.5-115	Sand	27	Medium

Figure 3 contains a plan view of the project site. The dashed line in the figure represents the approximate property boundary. Note that the pile locations are approximate and the drawing is not to scale. The arc lines shown in the drawing represent the approximate distance from the piles to where the monitoring equipment was located.

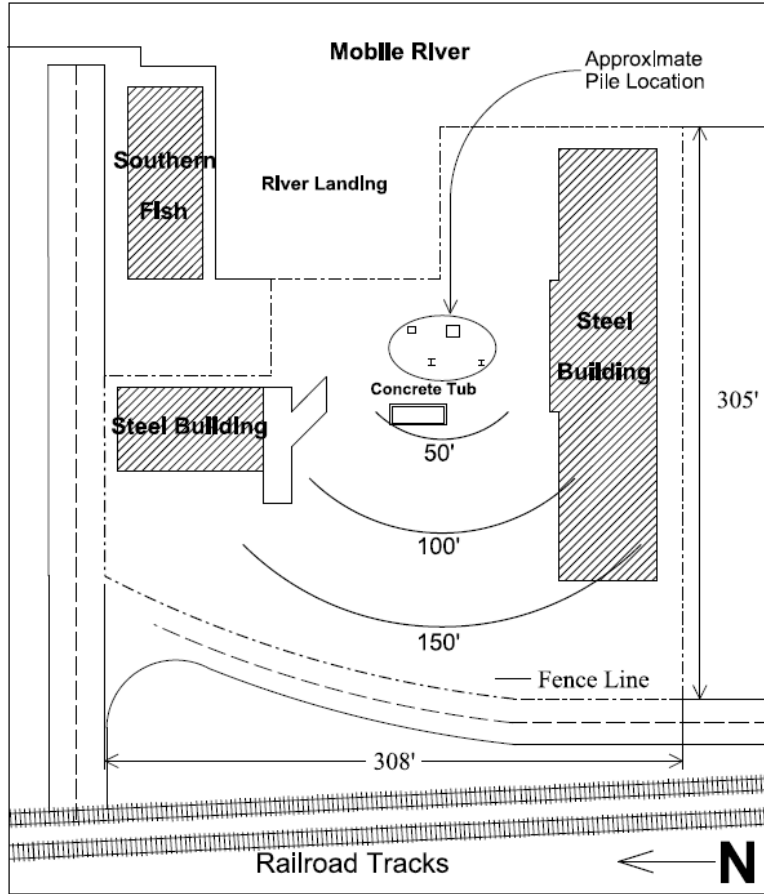


Figure 3: Plan view of Mobile River Bridge Project Site

Four test piles were driven for this project, two prestressed precast concrete piles (PPC) and two steel H-Piles. Table 7 contains descriptions of the piles and Appendix B contains the details of the two pile driving hammers utilized on this project. The piles were installed using typical techniques including pile jetting or vibration followed by driving with a diesel hammer. The concrete piles were jetted to a depth of approximately 30 feet and driven to the final elevation using a Delmag Model D-62-22 diesel hammer. A vibratory driver was used to drive the steel HP 14 to 55 feet and the HP 12 to 15 feet. The steel piles were then driven to the final elevation using an APE Model D30-42 diesel hammer.

Table 7: Pile descriptions

Pile	Cross Section	Material	Length
#1	24" Square	Precast Concrete	81 ft
#2	36" Square	Precast Concrete	89 ft
#3	HP14x117	Steel	106 ft
#4	HP12x53	Steel	70 ft

Vibration Monitoring

Data collectors were placed at various locations throughout the pile installation and testing process. The data collectors utilized for this project were Minimate Plus tri-axial geophones manufactured by Instantel. Each tri-axial geophone unit contains three geophones oriented on three mutually perpendicular axes. The units come with software allowing data collection and analysis in several configurations. For this research, the units were configured to collect histogram data during two-second intervals. When configured in this way the data collector measures all vibrations over the interval, but only records the maximum PPV and the frequency that it occurred at for each geophone over the two second interval.

The geophones were placed at predetermined distances from each pile during installation. Three of the data collectors were located at approximately 50, 100, and 150 feet. A fourth data collector, which had two geophone units attached to it, was located at various distances throughout testing to collect additional information. Table 8 contains a detailed account of the location of each data collector during testing.

During the initial driving of the 36-inch PPC pile, geophone number three was located at the edge of the project site near Southern Fish and Oyster, an adjacent property owner. The fourth data collector had one geophone unit placed at 100 feet from the pile and the other geophone unit was attached to the brick façade of a building that was located on the project site. Please note that the 30-day restrike was at 32-days for the 36-inch concrete pile and 31-days for the 24-inch concrete pile.

Table 8: Geophone location during testing

Initial Drive	Pile Type	Geophone Unit					#4b
		#1	#2	#3	#4a		
Aug. 19, 2013	36" PCP	50 ft	150 ft	69 ft	100 ft	Building	
Aug. 20, 2013	24" PCP	99.5 ft	142 ft	n/a	n/a	n/a	
Aug. 21, 2013	HP 12	53 ft	101 ft	144 ft	n/a	n/a	
Aug. 21, 2013	HP 14	58 ft	106 ft	146 ft	n/a	n/a	
24 Hour Restrike							
Aug. 22, 2013	HP 12	50 ft	150 ft	100 ft	n/a	n/a	
Aug. 22, 2013	HP 14	50 ft	150 ft	100 ft	n/a	n/a	
3-Day Restrike							
Aug. 22, 2013	36" PCP	50 ft	n/a	100 ft	n/a	n/a	
Aug. 23, 2013	24" PCP	50 ft	150 ft	100 ft	n/a	n/a	
7-Day Restrike							
Aug. 26, 2013	36" PCP	50 ft	150 ft	100 ft	75 ft	125 ft	
Aug. 27, 2013	24" PCP	50 ft	150 ft	100 ft	75 ft	125 ft	
30-Day Restrike							
Sept. 20, 2013	36" PCP	50 ft	150 ft	100 ft	n/a	n/a	
Sept. 20, 2013	24" PCP	55 ft	155 ft	105 ft	n/a	n/a	
Sept. 20, 2013	HP 12	50 ft	150 ft	100 ft	n/a	n/a	
Sept. 20, 2013	HP 14	50 ft	150 ft	100 ft	n/a	n/a	

RESULTS

Vibration Levels

Vibrations were monitored during installation and restrikes on the 36-inch concrete pile at three, seven, and thirty days. A communication error occurred between the ALDOT personnel, the pile driving contractor, and the research team during the installation of the 24-inch concrete pile which resulted in the start of driving prior to the installation of the vibration monitors. Due to this error, the 24-inch concrete pile only had vibrations monitored during the final stage of driving and at all restrikes. The steel piles were monitored during installation and during the one day and thirty day restrikes.

Baseline vibration data was collected at the project site by monitoring vibration levels due to railroad activity from a pair of railroad tracks located adjacent to the project site, Figure 3. The approximate distance from the tracks to the data collectors was determined and the vibration levels from train activity were evaluated. Due to the relatively low vibration levels recorded during train activity, baseline data was not collected for truck traffic.

The vibration data collected from the project site was analyzed and the peak particle velocity (PPV) from each pile was recorded. Table 9 contains a summary of the results. The largest recorded vibration during this study occurred while driving the 36-inch concrete pile and resulted in a PPV of 0.82 inches per second at a distance of 50 feet.

Table 9: Maximum PPV (in/sec) during pile driving operations

Vibration Source	Horizontal Distance from Pile		
	50 feet	100 feet	150 feet
36" Concrete Pile	0.82	0.28	0.15
HP14x117	0.18	0.09	0.11
HP12x53	0.23	0.07	0.08
Railroad Activity	0.03 ¹	0.02 ¹	0.02 ¹

¹The approximate distances were 60, 110, and 160 feet

Figure 4 shows the maximum PPV for the 36-inch concrete pile, the H-Piles, and railroad activity observed during testing. Since the maximum vibrations occurred during the beginning of the driving process, the 24-inch concrete pile was not included in this figure. The figure confirms that the largest vibrations recorded were associated with the installation of the 36-inch concrete pile.

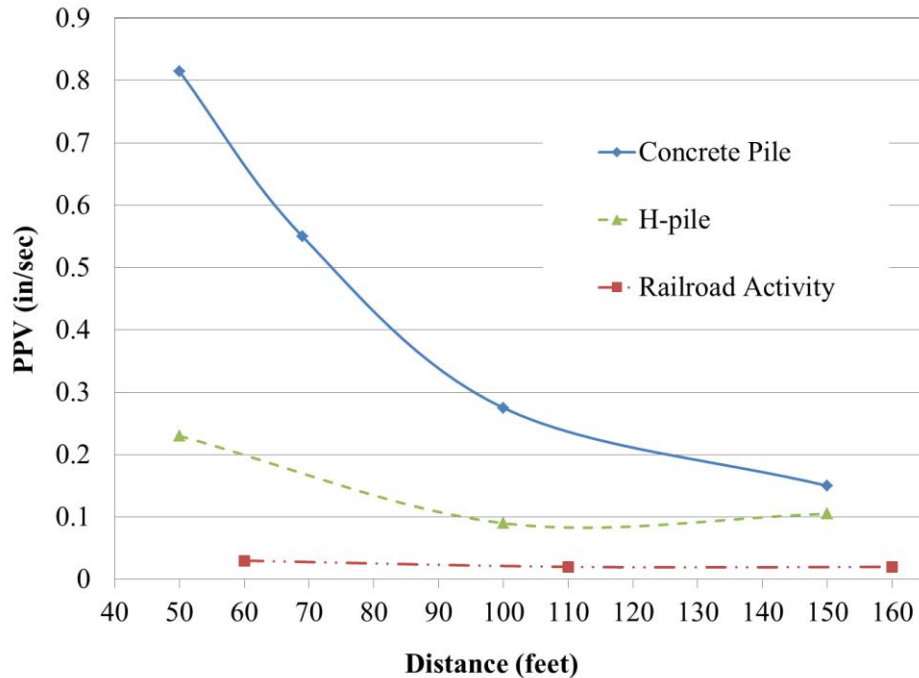


Figure 4: Maximum recorded vibration levels during pile installation

During the driving of the 36-inch concrete pile, one of the geophones was attached to the brick façade of a building that was located on the project site. The building was located to the south of the piles, Figure 3, and was approximately 90 feet from the 36-inch concrete pile. The brick façade was located on the west end of the building and was approximately 140 feet from the pile. The data from this geophone was analyzed and it was determined that the vibration levels were below the threshold for detection, 0.005 in/sec. This indicates that the ground vibrations did not have enough energy to cause vibrations in the building. Additionally, crack width monitors were installed on the outside wall of the building. The crack widths and lengths were monitored throughout the project and it was determined that there were no changes in any of the cracks.

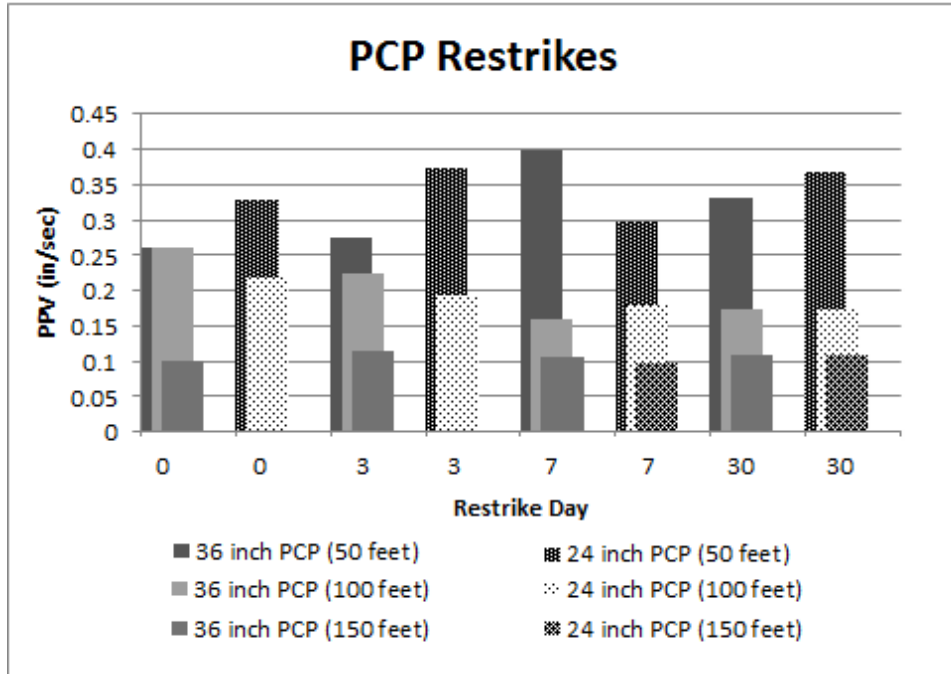


Figure 5: Bar chart of restrikes on precast concrete piles (PCP)

An analysis was performed to compare the vibrations between the 24- and 36-inch concrete piles since data was not collected throughout the driving of the 24-inch pile. Figure 5 shows a bar chart of the vibration levels for each of the concrete piles during the restrikes, note that day zero is at the end of drive. Figure 6 shows the same data in the form of a data plot. The data indicates that the vibration levels for the 24- and 36-inch concrete piles are similar and that the maximum vibrations, near the start of driving, would be expected to be approximately equal for each concrete pile.

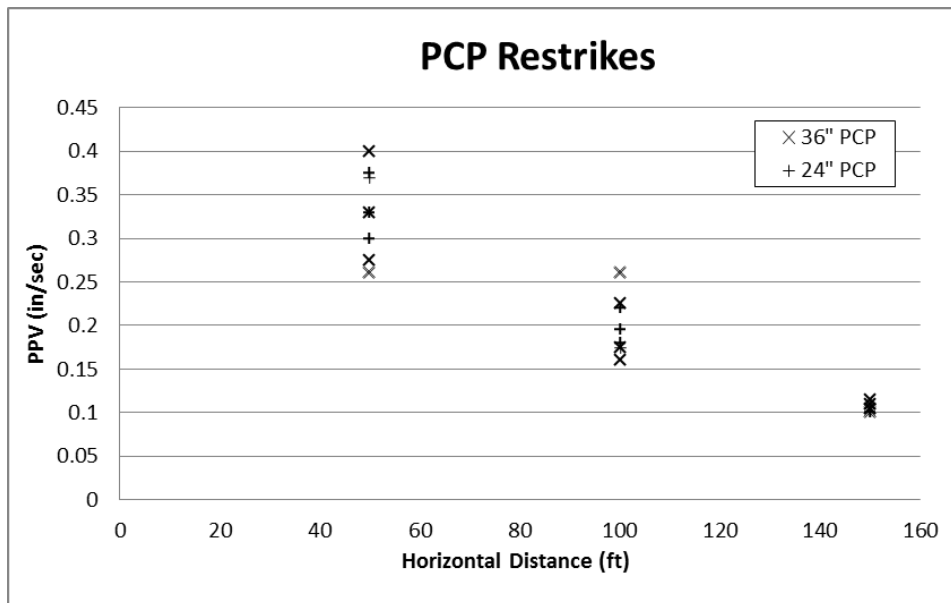


Figure 6: Data plot of restrikes on precast concrete piles (PCP)

Prediction Equation

The second major objective of this project was to develop a methodology to predict the vibration level at various distances from the pile location. Since the primary use of this research is for determining the vibration levels for piles typically used by ALDOT located at or near the project site, two prediction equations were developed. The equations are based on the maximum peak particle velocities while driving the 36-inch concrete pile and the H-piles. Both equations are based on Equation 3, as presented by Hendriks (2002), where the vibration attenuation parameter (k) was determined with the experimental data. Equation 6 was developed to predict vibrations for 36 inch concrete pile,

$$PPV = 0.15 \left(\frac{150}{d} \right)^{1.6}, \quad (6)$$

and Equation 7 was developed to predict vibrations for the H-piles,

$$PPV = 0.23 \left(\frac{50}{d} \right)^{1.6}, \quad (7)$$

where, in both equations, PPV is the peak particle velocity at distance (d) in inches per second and d is the distance from the pile in feet.

Figure 7 shows a plot of the experimental data and the peak particle velocities based on the prediction equation. The results indicate that the prediction equation model fit the experimental data well. However, due to the unusual increase in vibration magnitude at 150 feet for the H-piles, the prediction equation under-predicts the vibration magnitude at 150 feet. It was also noted that the soil attenuation parameter (k) for both equations was determined to be 1.6. This was expected since the parameter is primarily dependent on the soil properties and less dependent on the pile type or hammer energy.

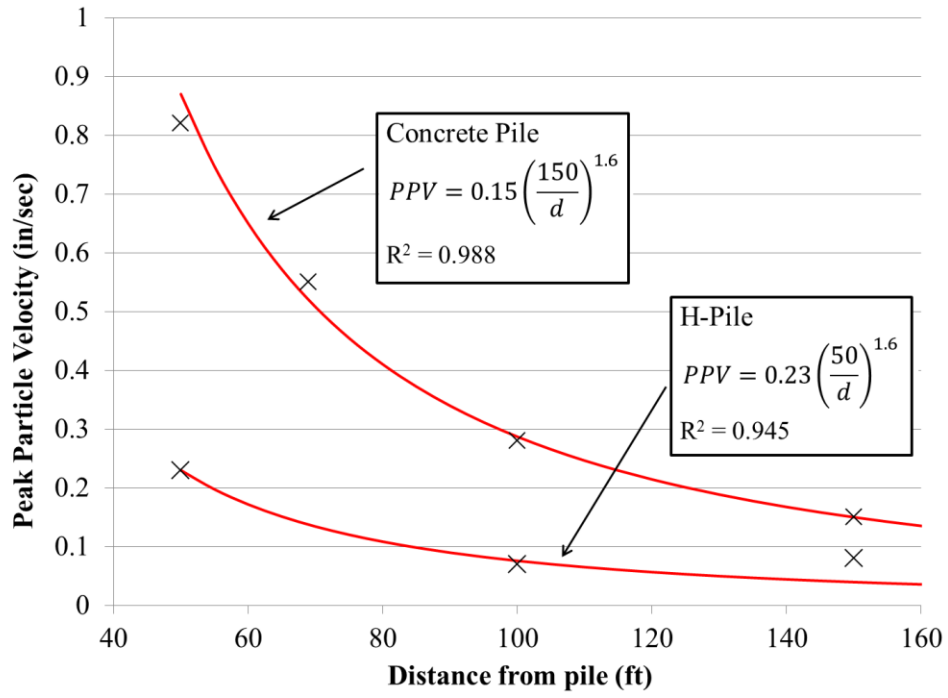


Figure 7: Peak particle velocity versus distance

CONCLUSIONS

The experimental data shows that the largest vibrations occurred during the installation of the 36-inch concrete pile, which was recorded as 0.82 inches per second. According to the research presented in Table 2 (Hendriks 2002), a vibration level of 0.82 inches per second has the potential to cause structural damage to an adjacent structure. However, this vibration was recorded at a distance of 50 feet from the pile; the vibration level at 100 feet from the pile was reduced to 0.275 inches per second. This vibration level could cause potential architectural damage to buildings constructed with plaster, but would not likely cause structural damage. At 150 feet the vibration levels were reduced to 0.15 inches per second, a level that would have little to no risk of damage to adjacent structures.

Based on the experimental data and a thorough review of the literature, it is recommend that a maximum vibration level of 0.5 inches per second for modern structures and 0.1 inches per second for potentially sensitive structures be allowed for construction activity at or near the location of the project site. These vibration levels are the allowable levels at the location of the structure. To determine if any structures should be surveyed and monitored for potential vibration damage, a survey distance of 150 feet for modern structures and 250 feet for potentially sensitive structures should be established. The monitoring distances should be measured from the source of the vibration. The ground vibration prediction equation that was developed would estimate a peak particle velocity of 0.15 inches per second at 150 feet and 0.07 inches per second at 250 feet. The survey distances are well beyond the distance where the prediction equation would estimate vibration levels of 0.5 and 0.1 inches per second and therefore would represent conservative survey distances to ensure adjacent structures are not damaged.

Recommendations for Future Research

The research presented in this report contains detailed analysis for a particular location in the state of Alabama; however, data has not been collected and analyzed for other regions of the state with differing soil conditions. A state wide research project should be initiated to determine vibration propagation and attenuation criteria for soil conditions located throughout the state. This data could be used to develop prediction equations that could be used in project planning. Additionally, the results of this research could be used to develop model vibration specifications for the state of Alabama.

In addition to the research mentioned above, it is recommended that a vibration monitoring program be developed for any large scale construction projects in urban environments. These programs could be used not only to ensure the construction activity is not damaging nearby structures, but to ensure the public that the DOT is proactive in preventing damage.

REFERENCES

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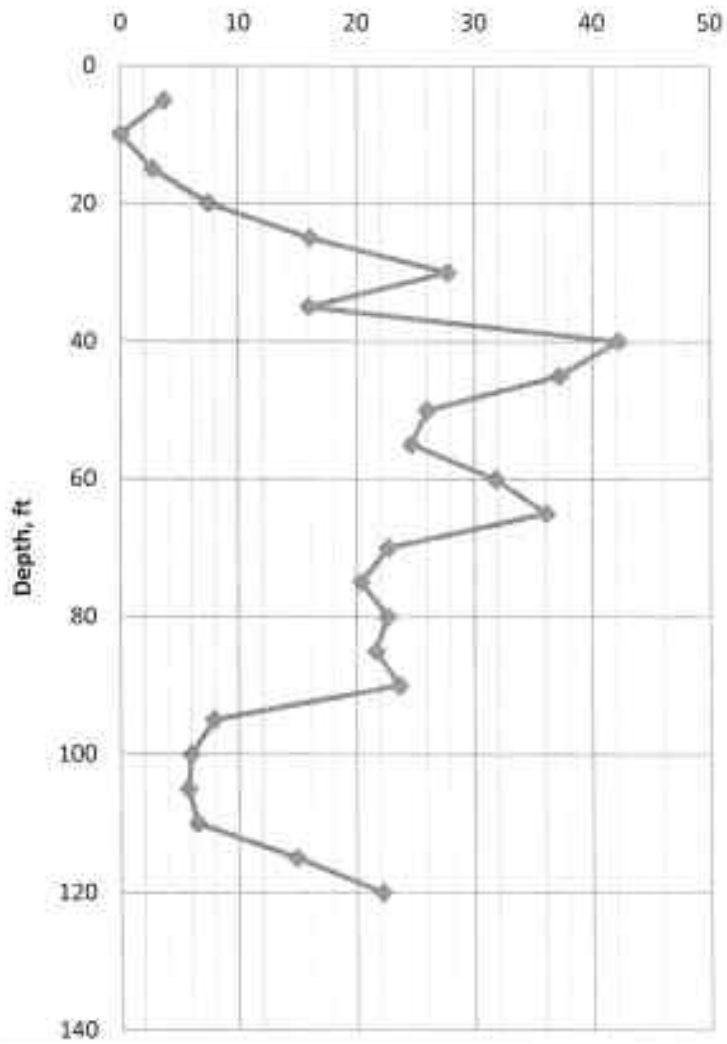
Appendix A: Soil Reports

Two soil investigations were performed at the site. The first was a Standard Penetration Test (SPT), which was performed at two locations. The first location, labeled B-1 in the documents that follow, was located at a property owned by ALDOT that is several hundred feet to the west of the project site. This location was an alternate location for testing. The second location, labeled B-2, was at the project site in the vicinity of where the test piles were installed. The SPT test was performed by an ALDOT drill crew.

The second soil investigation performed was a Seismic Cone Penetration Test (SCPT). Two locations were also investigated, both on the project site. The first test was performed at the location of the test piles and the second was located at 100 to 120 feet from the test piles. The results of both investigations are included here. The SCPT was conducted by Southern Earth Sciences.

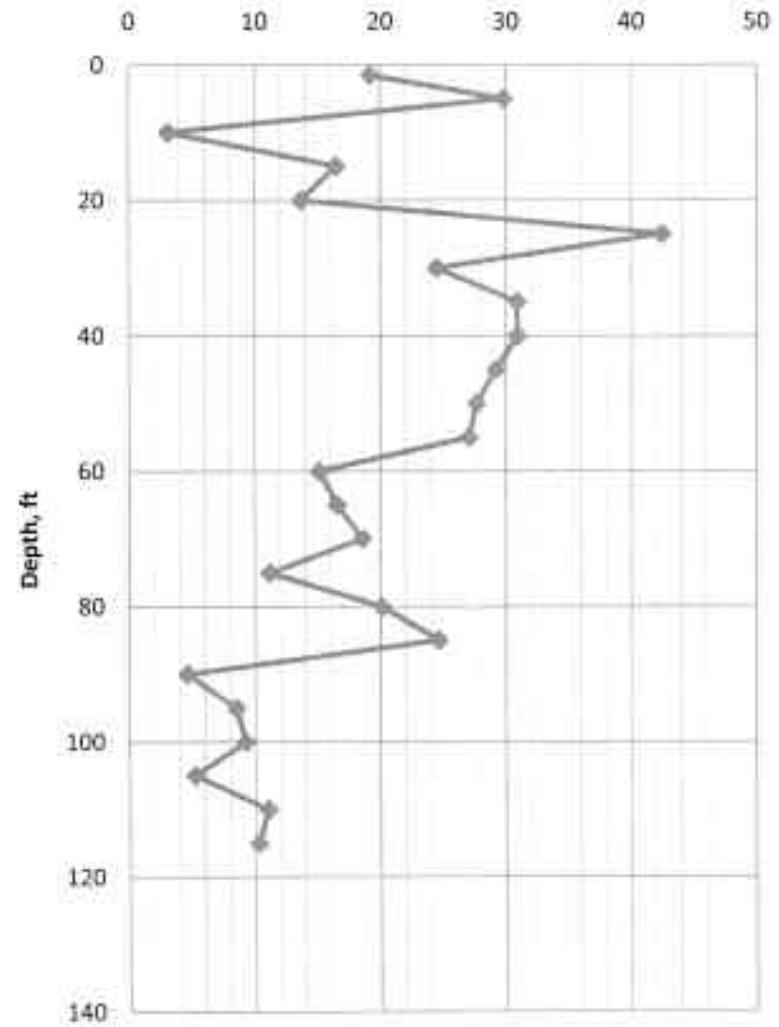
B-1

N_{160} Corrected Blow Count



B-2

N_{160} Corrected Blow Count



Project# DPI-0030 (005) Division 9th

Station _____ Offset _____ Ft _____

Ground Elev. 0.0 Water Elev. in Hole _____

Depth of Strata BOR# B-1 Visual BOR Loc. _____

From	To	Consistency or Density	Approx. Moisture	Color	Basic Matl.
0.0	0.3	Asphalt			
0.3	18.5	v. loose	Moist	Br	br sand
18.5	23.5	Loose	Moist	Br	SAND
23.5	38.5	Med	Moist	TAN	SAND
38.5	63.5	Dense	Moist	TAN	sand
63.5	68.5	Very Dense	Moist	TAN	sand
68.5	93.5	Dense	Moist	Tan	sand
93.5	108.5	stiff	Moist	Gray	Clay
108.5	118.5	HARD	Moist	Gray	Clay
118.5	120.0	DENSE	Moist	Gray	SAND

Remarks by Driller Installed well monitor
 GPS Cord. 42' 1"
 LAT. Water - 10' 3" 24Has
 LONG. _____

County Mobile Date 8-8-12

C/L Driller Young/Evans

Type Drill Used SE 9050 Total Hole Depth 120.0

Identification CME 550x 2 25 Hollow Steels

Other Pertinent Components	Sample No.	Penetration or Sample Elev.		"N" Blow			"N" Value
		From	To	5	1.0	1.5	
	* 1-A	3.5	5.0	1	1	1	2
w/ clay	* 1-B	8.5	10.0	W	0	H	UGH
	* 1-C	13.5	15.0	W	1	1	2
	1-D	18.5	20.0	1	2	4	6
	1-E	23.5	25.0	5	5	9	14
	1-F	28.5	30.0	10	12	14	26
	1-G	33.5	35.0	9	7	9	16
w/ sand	* 1-H	38.5	40.0	26	23	22	45
w/ sand	* 1-I	43.5	45.5	23	23	19	42
large matl	1-J	48.5	50.0	11	14	17	31
	1-K	53.5	55.0	9	16	15	31
	1-L	58.5	60.0	18	20	22	42
	* 1-M	63.5	65.0	20	23	27	50
	* 1-N	68.5	70.0	14	16	17	33
	1-O	73.5	75.0	7	15	16	31

* Samples in JARS

Project# DP1-0030 (005) Division 9th

Station _____ Offset _____ Ft _____

Ground Elev. 0.0 Water Elev. in Hole _____

Depth of Strata BOR# B-2 Visual BOR Loc. _____

From	To	Consistency or Density	Approx. Moisture	Color	Basic Matl.
0.0	0.2	Topsoil	---		
0.2	3.5	Loose	Moist	Br	SAND
3.5	8.5	Med	Moist	Br	SAND
8.5	13.5	✓ Loose	Moist	Br	SAND
13.5	23.5	Med	Moist	Gray	SAND
23.5	28.5	Dense	Moist	Tan	SAND
28.5	33.5	Med	Moist	Tan	SAND
33.5	58.5	Dense	Moist	Tan	SAND
58.5	78.5	Med	Moist	Tan	SAND
78.5	89.5	Dense	Moist	Tan	SAND
89.5	93.5	STIFF	Moist	Gray	CLAY
93.5	103.5	✓ STIFF	Moist	Gray	CLAY
103.5	108.5	STIFF	Moist	Gray	CLAY
108.5	115.0	Med	Moist	Gray	SAND

Remarks by Driller _____

GPS Cord. _____

LAT. _____

LONG. _____

County Mobile Date 8-9-12

C/L Driller TURNER/ EVANS

Type Drill Used SE 9050 Total Hole Depth 115.0

Identification CME 550X 2.25 Hollow Steels

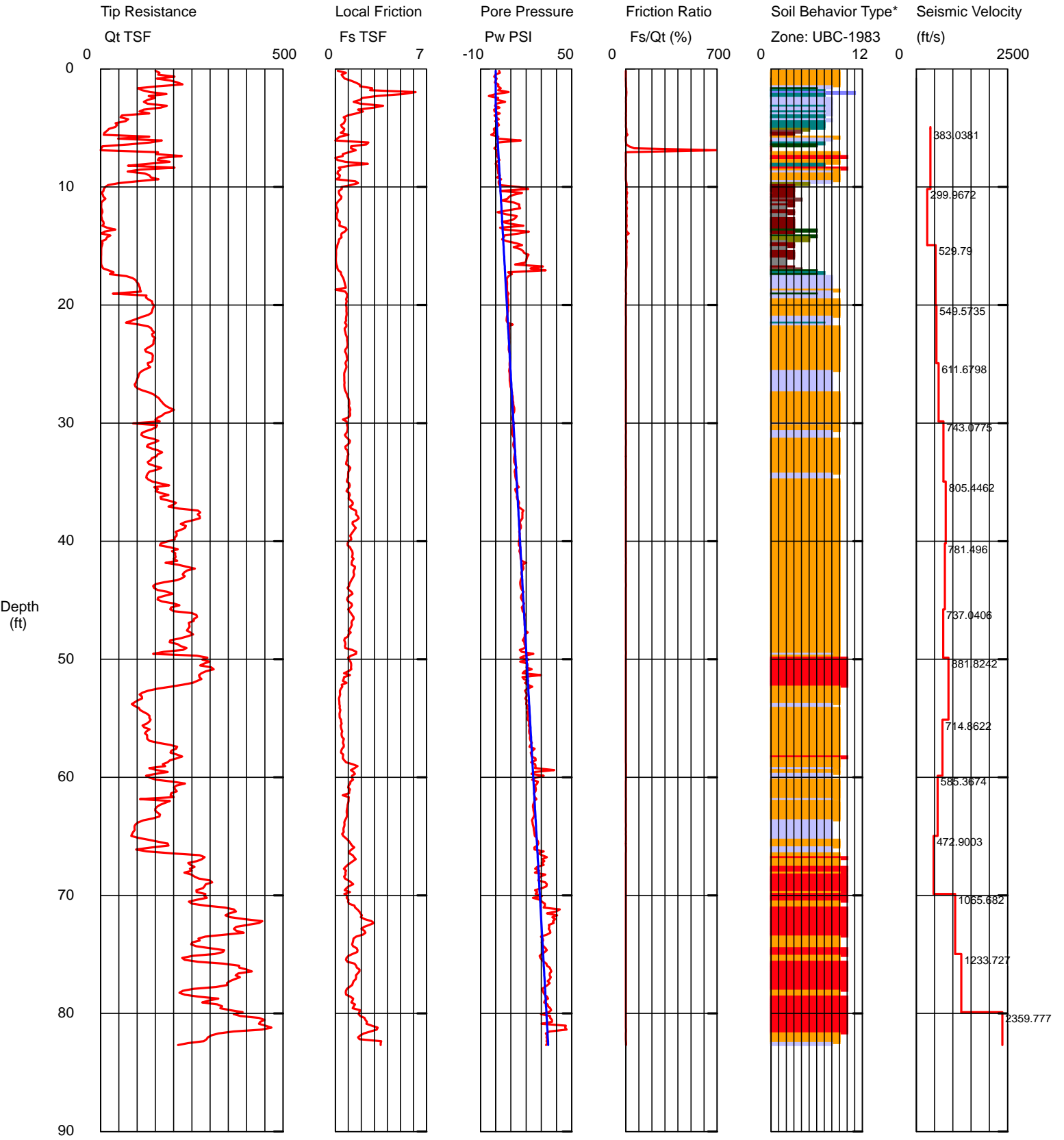
Other Pertinent Components	Sample No.	Penetration or Sample Elev.		"N" Blow			"N" Value
		From	To	5	1.0	1.5	
	* 2-A	0.0	1.5	9	4	4	8
w/ Gravel	* 2-B	3.5	5.0	5	7	9	16
w/ org. mat'l	* 2-C	8.5	10.0	1	1	1	2
	* 2-D	13.5	15.0	2	5	7	12
	2-E	18.5	20.0	5	4	7	11
	* 2-F	23.5	25.0	16	18	19	37
	2-G	28.5	30.0	10	11	12	23
	* 2-H	33.5	35.0	7	15	16	31
	2-I	39.5	40.0	7	13	20	33
	2-J	43.5	45.0	9	14	19	33
w/ SAND & org mat'l	2-K	49.5	50.0	7	15	18	33
	2-L	53.5	55.0	10	16	18	34
	* 2-M	58.5	60.0	10	10	10	20
	2-N	63.5	65.0	6	12	11	23
	2-O	68.5	70.0	12	17	10	27

* JAR Sample

Southern Earth Sciences

Operator: Mike Wright
 Sounding: SCPT-1
 Cone Used: DDG0892

CPT Date/Time: 8/14/2013 9:08:56 AM
 Location: Test Pile Evaluation
 Job Number: 13-000



Maximum Depth = 82.68 feet

Depth Increment = 0.164 feet

- | | | | |
|--------------------------|-----------------------------|----------------------------|--------------------------------|
| 1 sensitive fine grained | 4 silty clay to clay | 7 silty sand to sandy silt | 10 gravelly sand to sand |
| 2 organic material | 5 clayey silt to silty clay | 8 sand to silty sand | 11 very stiff fine grained (*) |
| 3 clay | 6 sandy silt to clayey silt | 9 sand | 12 sand to clayey sand (*) |

Groundwater measured at 3.1'

N30.68546 W88.03791

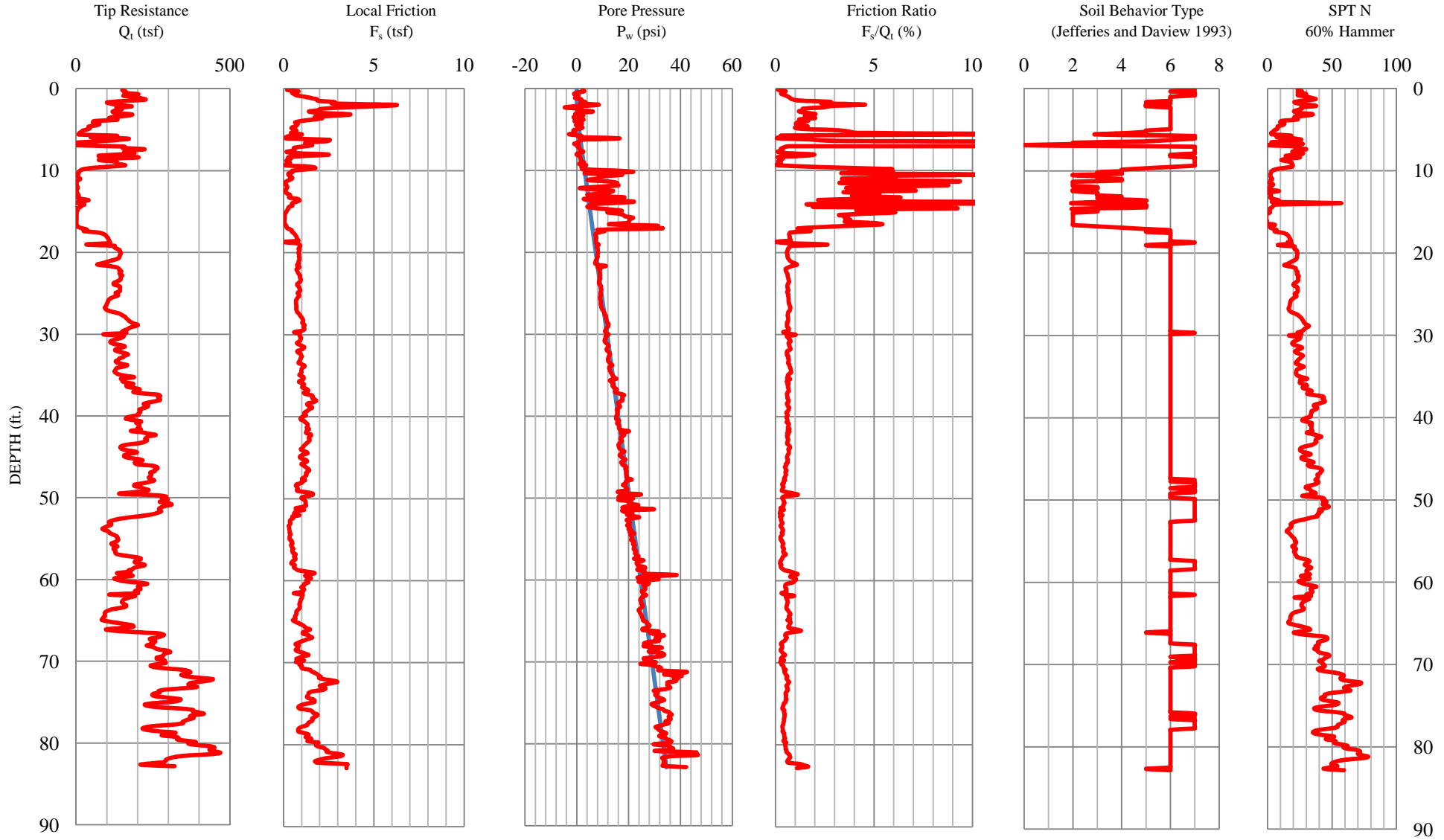
*Soil behavior type and SPT based on data from UBC-1983

CONE PENETRATION TEST LOG

Project Name: Test Pile Evaluation
Project No.: 13-000
Sounding: SCPT-1

Cone Used: DDG0892
Operator: Mike Wright
CPT Date: 8/14/2013

Groundwater Level: 3.1 feet
Elevation: Unknown
Lat/Long: N30.68546 W88.03791



Baseline Data:

	Qt (tsf)	Fs (tsf)	Pw (psi)
Initial Baseline:	0	0	0
Final Baseline:	-0.602	0.002	-0.172

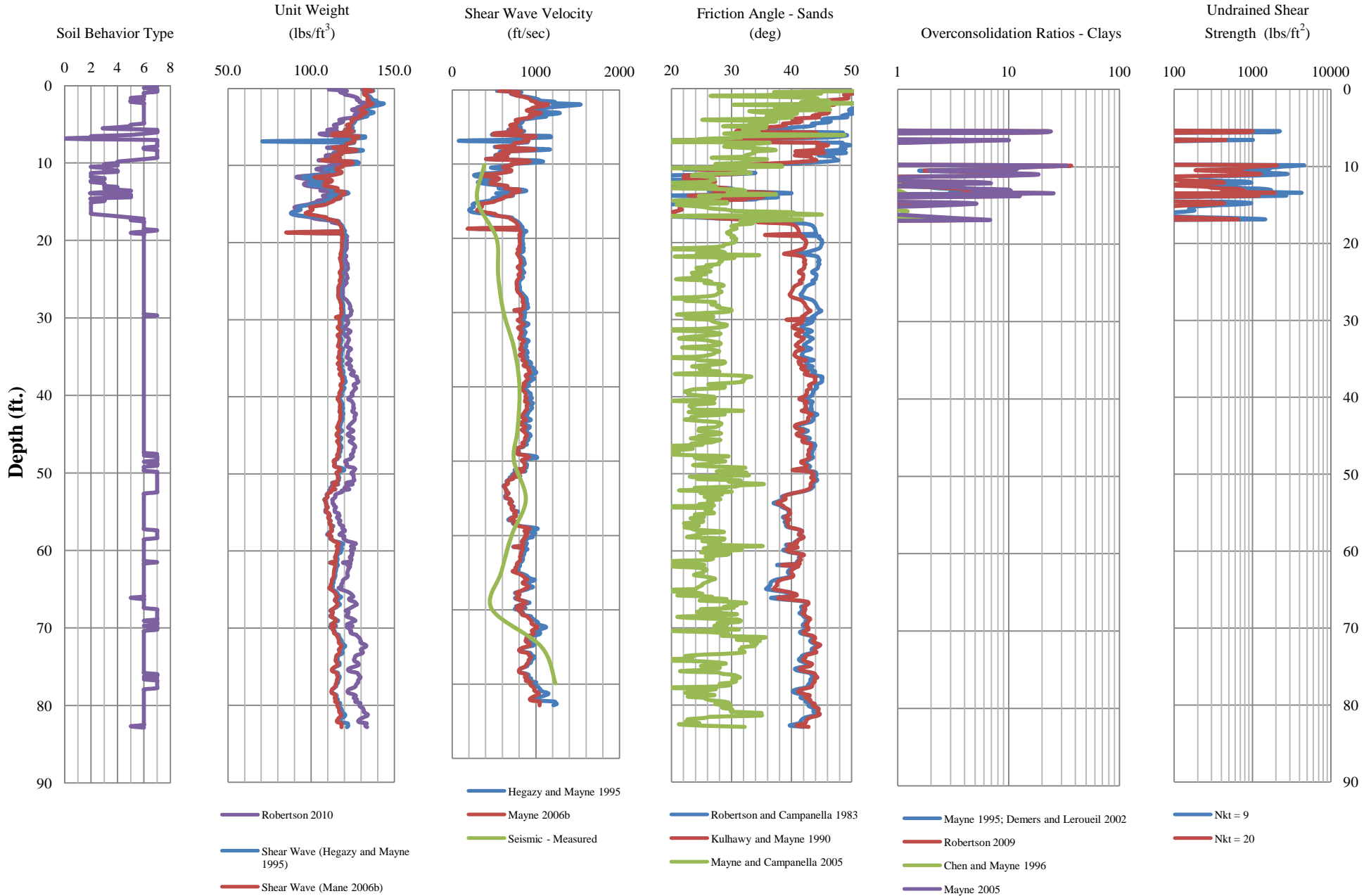
SPT N, SOIL BEHAVIOR TYPE, OR ZONE NUMBER FROM CPT CLASSIFICATION INDEX, Ic
Organic Clay Soils = 2, Clays = 3, Silt Mixtures = 4, Sand Mixtures = 5, Sands = 6, Gravelly Sands = 7

CONE PENETRATION TEST LOG

Project Name: Test Pile Evaluation
Project No.: 13-000
Sounding: SCPT-1

Cone Used: DDG0892
Operator: Mike Wright
CPT Date: 8/14/2013

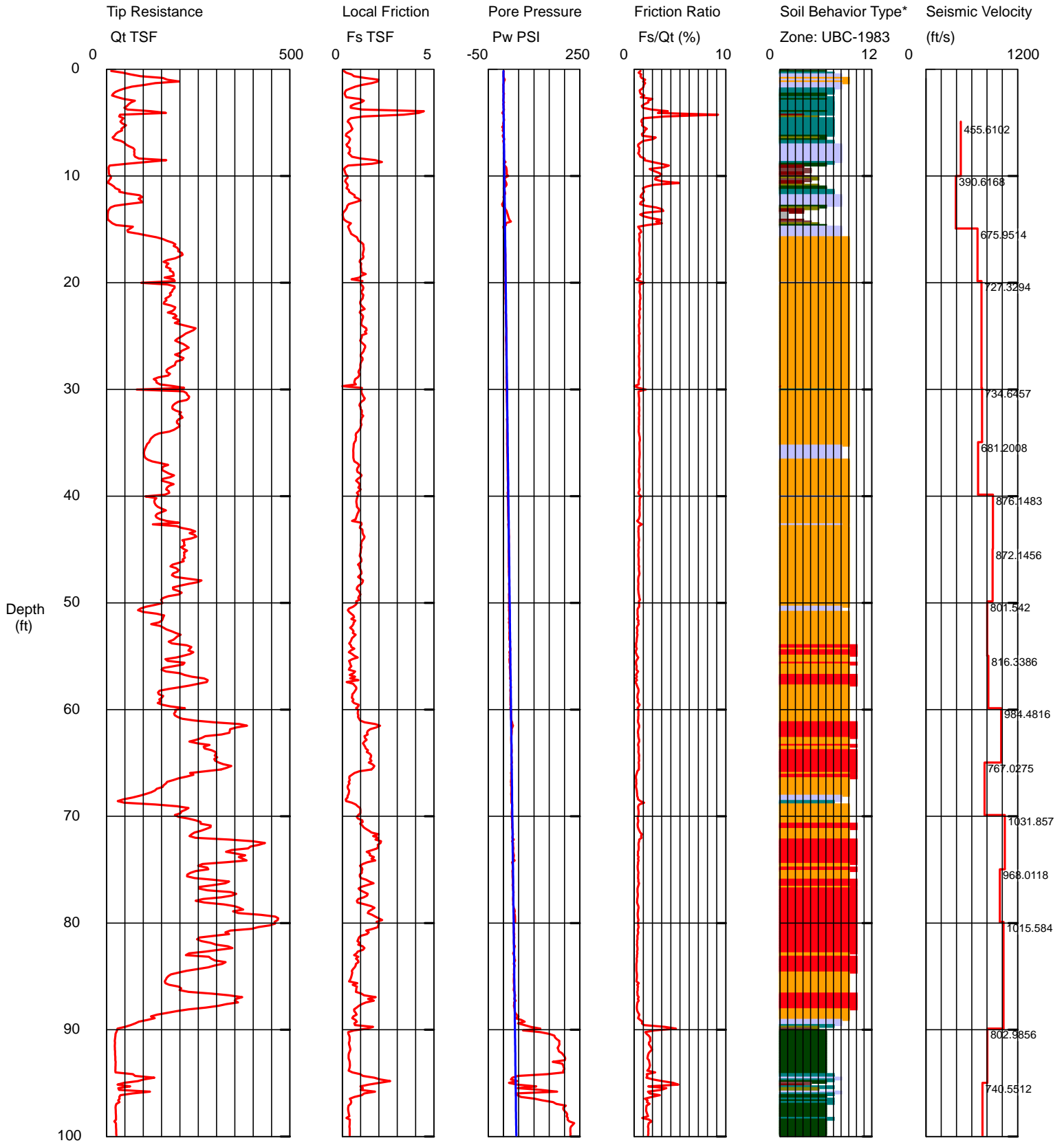
Groundwater Level: 3.1 feet
Elevation: Unknown
Lat/Long: N30.68546 W88.03791



Southern Earth Sciences

Operator: Mike Wright
 Sounding: SCPT-2
 Cone Used: DDG0892

CPT Date/Time: 8/14/2013 10:35:15 AM
 Location: Test Pile Evaluation
 Job Number: 13-000



Maximum Depth = 99.90 feet

Depth Increment = 0.164 feet

- 1 sensitive fine grained
 - 2 organic material
 - 3 clay
- Groundwater measured at 3.2'

- 4 silty clay to clay
- 5 clayey silt to silty clay
- 6 sandy silt to clayey silt

- 7 silty sand to sandy silt
- 8 sand to silty sand
- 9 sand

- 10 gravelly sand to sand
- 11 very stiff fine grained (*)
- 12 sand to clayey sand (*)

N30.68541 W88.03821

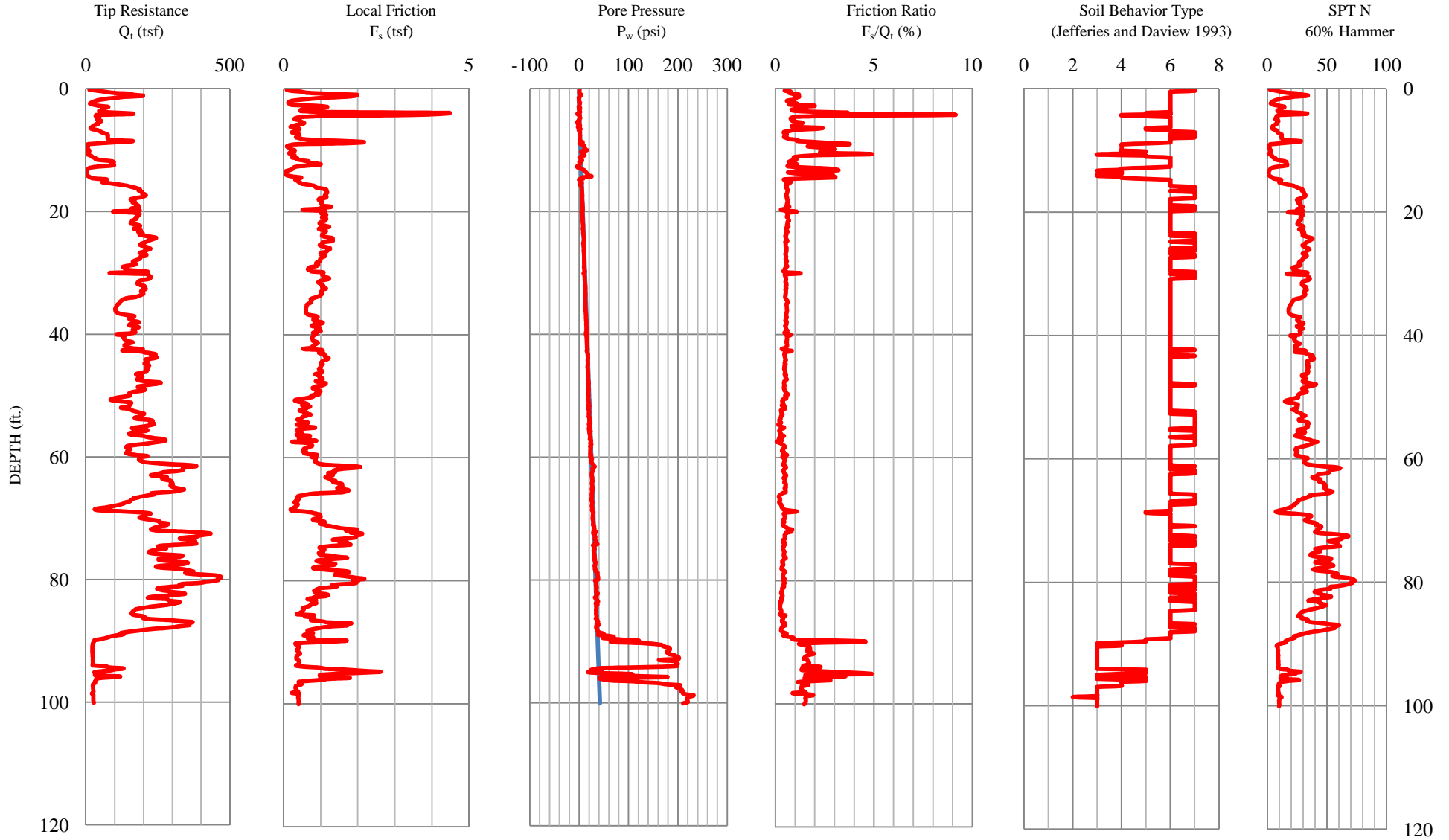
*Soil behavior type and SPT based on data from UBC-1983

CONE PENETRATION TEST LOG

Project Name: Test Pile Evaluation
Project No.: 13-000
Sounding: SCPT-2

Cone Used: DDG0892
Operator: Mike Wright
CPT Date: 8/14/2013

Groundwater Level: 3.2 feet
Elevation: Unknown
Lat/Long: N30.68541 W88.03821



Baseline Data:

	Q_t (tsf)	F_s (tsf)	P_w (psi)
Initial Baseline:	0	0	0
Final Baseline:	0.357	0.012	0.210

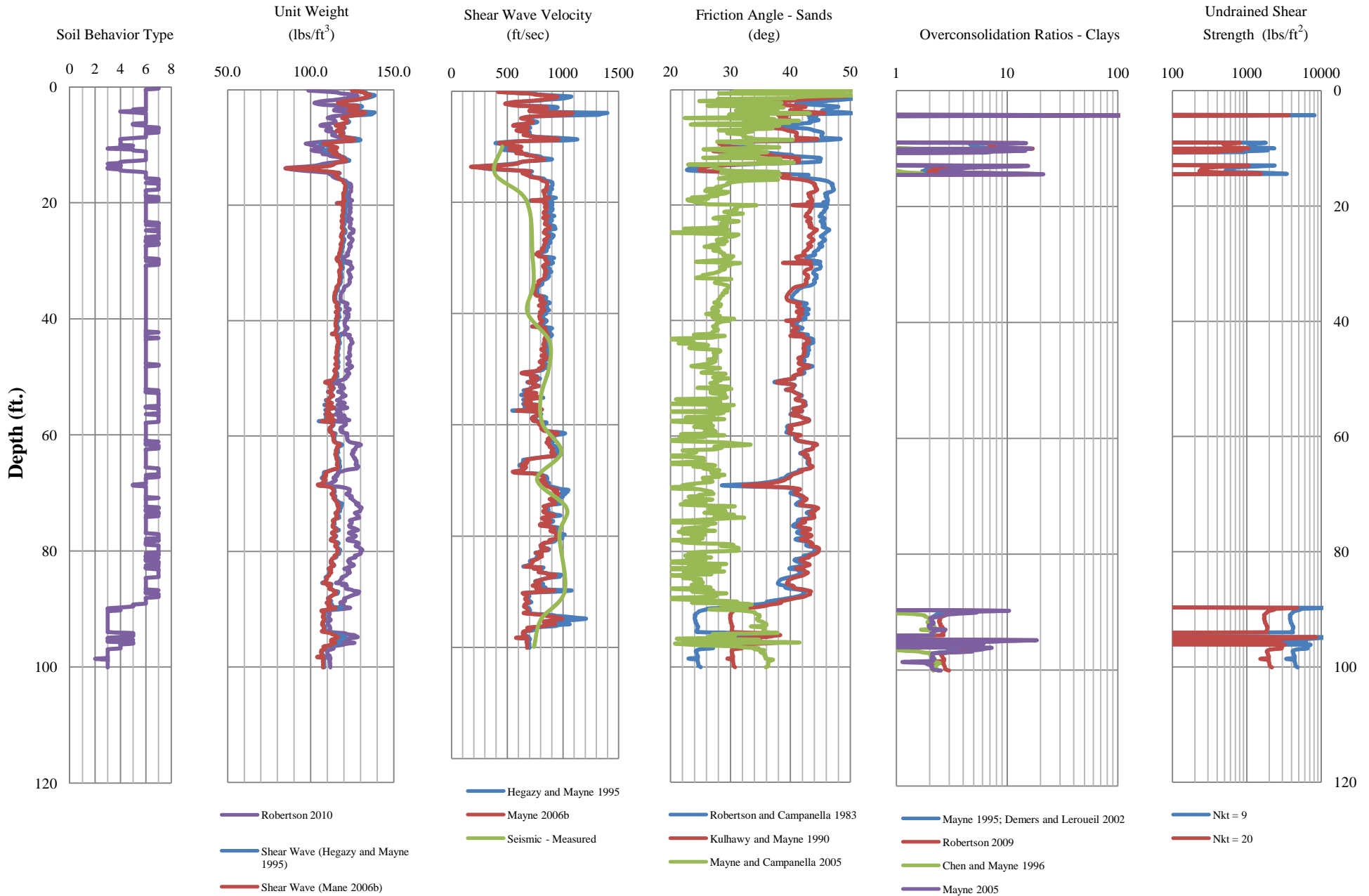
SPT N, SOIL BEHAVIOR TYPE, OR ZONE NUMBER FROM CPT CLASSIFICATION INDEX, I_c
 Organic Clay Soils = 2, Clays = 3, Silt Mixtures = 4, Sand Mixtures = 5, Sands = 6, Gravelly Sands = 7

CONE PENETRATION TEST LOG

Project Name: Test Pile Evaluation
Project No.: 13-000
Sounding: SCPT-2

Cone Used: DDG0892
Operator: Mike Wright
CPT Date: 8/14/2013

Groundwater Level: 3.2 feet
Elevation: Unknown
Lat/Long: N30.68541 W88.03821



Appendix B: Pile Driving Hammer Information

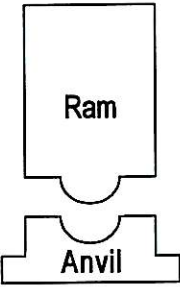
	Fuel Setting #1	Fuel Setting #2	Fuel Setting #3	Fuel Setting #4
Concrete Piles used Delmag Model D-62-22 Single Acting Diesel Hammer				
<u>36 in PCP</u>				
Setting Usage	Down to 43 feet	43 to 45 feet	45 to 48 feet	48 feet to end Restrikes
Rated Energy	78,960 ft. lbs.	109,725 ft. lbs.	138,960 ft. lbs.	165,000 ft. lbs
<u>24 in PCP</u>				
Setting Usage	Down to 61 feet	61 feet to end Restrikes	N/A	N/A
Rated Energy	78,960 ft. lbs.	109,725 ft. lbs.		
Steel Piles used APE Model D30-42 Single Acting Diesel Hammer				
<u>HP 14</u>				
Setting Usage	N/A	N/A	Entire depth Restrikes	N/A
Rated Energy			66,977 ft. lbs.	
<u>HP 12</u>				
Setting Usage	N/A	Entire depth Restrikes	N/A	N/A
Rated Energy		55,070 ft. lbs		

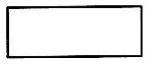
FORM C-14 **ALABAMA DEPARTMENT OF TRANSPORTATION**
 Revised 08-07-95 **PILE AND DRIVING EQUIPMENT DATA FORM**

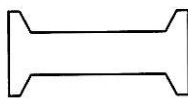
Project Number USA Test Pile & Vibration	County Mobile	Division 9th
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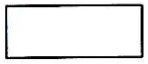
Pile Driving Contractor or Subcontractor Jordan Pile Driving Inc.	Bridge Identification Number N/A
--	-------------------------------------


Details of access method to pile top for dynamic testing are: Attached Not Applicable

Hammer Components		Hammer	Manufacturer: <u>Delmag</u> Model: <u>D-62-22</u> Type: <u>S.A. Diesel</u> Serial No.: <u>238</u> Rated Energy: <u>165,000</u> (ft.-lbs.) at <u>11.3</u> (ft.) Length of Stroke Modifications: <u>Adjustable Fuel Pump</u> <table border="1"> <tr> <td>Pump Setting 1</td> <td>78,960 ft. lbs.</td> </tr> <tr> <td>Pump Setting 2</td> <td>109,725 ft. lbs.</td> </tr> <tr> <td>Pump Setting 3</td> <td>136,950 ft. lbs.</td> </tr> <tr> <td>Pump Setting 4</td> <td>165,000 ft. lbs.</td> </tr> </table>	Pump Setting 1	78,960 ft. lbs.	Pump Setting 2	109,725 ft. lbs.	Pump Setting 3	136,950 ft. lbs.	Pump Setting 4	165,000 ft. lbs.
	Pump Setting 1	78,960 ft. lbs.									
Pump Setting 2	109,725 ft. lbs.										
Pump Setting 3	136,950 ft. lbs.										
Pump Setting 4	165,000 ft. lbs.										

	Capblock (Hammer Cushion)	Material: <u>Aluminum & Micarta Alternating</u> Thickness: <u>6</u> (in.) Area: <u>381</u> (in. ²) Modulus of Elasticity - E : <u>450 KSI</u> (P.S.I.) Coefficient of Restitution - e : <u>0.8</u>
---	----------------------------------	---

	Pile Cap	<table border="1"> <tr> <td>Helmet</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Bonnet</td> <td><input type="checkbox"/></td> </tr> <tr> <td>Anvil Block</td> <td><input type="checkbox"/></td> </tr> <tr> <td>Drivehead</td> <td><input type="checkbox"/></td> </tr> </table> Weight : <u>10,000</u> (lbs.) Note: Should include weight of striker plate.	Helmet	<input checked="" type="checkbox"/>	Bonnet	<input type="checkbox"/>	Anvil Block	<input type="checkbox"/>	Drivehead	<input type="checkbox"/>
Helmet	<input checked="" type="checkbox"/>									
Bonnet	<input type="checkbox"/>									
Anvil Block	<input type="checkbox"/>									
Drivehead	<input type="checkbox"/>									

	Pile Cushion	Cushion Material: <u>Plywood</u> Thickness: <u>10</u> (in.) Area: <u>576</u> (in. ²) Modulus of Elasticity - E : <u>45 KSI</u> (P.S.I.) Coefficient of Restitution - e : <u>0.5</u>
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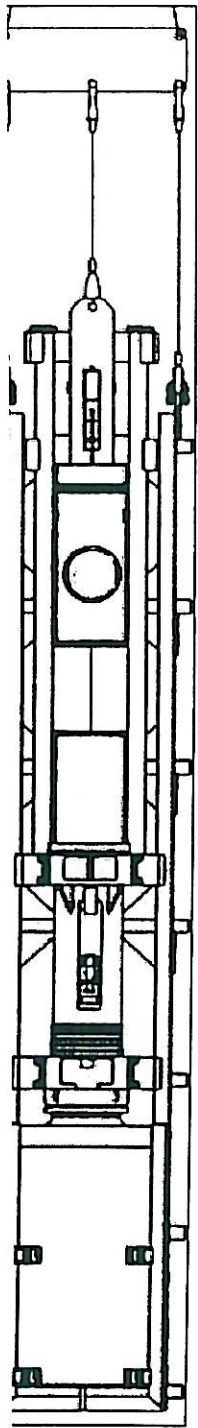
	Pile	Pile Type: <u>36" x 36" & 24" x 24" Prestressed Concrete Test Pile</u> Length (in Leads): <u>89' & 81'</u> (ft.) Weight / Ft: <u>936 & 510</u> (lbs./ft.) Wall Thickness: <u>NA</u> (in.) Taper: <u>NA</u> Cross Sectional Area: <u>489 & 898</u> (in ²) Design Pile Capacity: _____ (Tons) Description of Splice: <u>N/A</u> Tip Treatment Description: <u>N/A</u>
---	-------------	--

Note: If mandrel is used to drive this pile, attach separate manufacturer's detail sheet(s) including weight and dimensions.

Submitted By: Davis Daniel Date: _____

Model D62-22 Diesel Hammer

Maximum obtainable energy	203,216 ft-lbs
Maximum obtainable stroke	178 inches
Pump setting 1: (minimum)	78,956 ft-lbs
Pump setting 2:	109,749 ft-lbs
Pump setting 3:	137,186 ft-lbs
Pump setting 4: (maximum)	164,250 ft-lbs
Stroke at rated energy	135 inches
Energy at rated stroke	165,000 ft-lbs
Speed (blows per minute)	36-50
Ram	13,700 lbs
Anvil	2,833 lbs
Hammer weight (includes trip device)	29,491 lbs
Typical operating (weight with drive cap)	32,963 lbs
Fuel tank (runs on diesel or bio-diesel)	25.86 gal
Oil tank	8.32 gal
Weight	1100 lbs
Diameter	25 inches
Thickness	8 inches
Type	Monocast MC 901
Diameter	25 inches
Thickness	2 inches
Elastic-modulus	285 kips per square inch
Coeff. of restitution	0.8
Weight (fits 8 by 26 inch leads)	1,350 lbs
Diesel or Bio-diesel fuel	5.28 gal/hr
Lubrication oil	0.84 gal/hr
**Grease twice per day	
Length overall	232.6 inches
Length over cylinder extension	272.0 inches
Impact block diameter	27.9 inches
Width over bolts	32.6 inches
Hammer width overall	31.5 inches
Width for guiding- face to face	22.0 inches
Hammer center to pump guard	19.3 inches
Hammer center to bolt center	15.0 inches
Hammer depth overall	38.2 inches
Minimum clearance for leads	19.7 inches



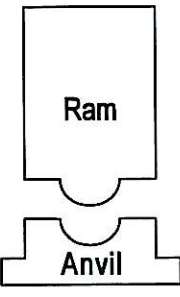
FORM C-14 **ALABAMA DEPARTMENT OF TRANSPORTATION**
 Revised 08-07-95 **PILE AND DRIVING EQUIPMENT DATA FORM**

Project Number: USA Test Pile & Vibration
 County: Mobile
 Division: 9th

Pile Driving Contractor or Subcontractor: Jordan Pile Driving Inc.
 Bridge Identification Number: N/A

Details of access method to pile top for dynamic testing are: Attached Not Applicable

Hammer Components

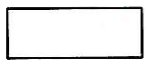


Hammer

Manufacturer: APE Model: D30-42
 Type: S.A. Diesel Serial No.:
 Rated Energy: 74,419 (ft.-lbs.) at 11.25 (ft.) Length of Stroke

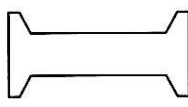
Modifications: Adjustable Fuel Pump

Pump Setting 1	37,209 ft. lbs.
Pump Setting 2	55,070 ft. lbs.
Pump Setting 3	66,977 ft. lbs.
Pump Setting 4	74,419 ft. lbs.



Capblock (Hammer Cushion)

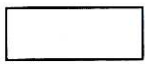
Material: Aluminum & Micarta Alternating
 Thickness: 4 (in.) Area: 398 (in.²)
 Modulus of Elasticity - E : 285 (P.S.I.)
 Coefficient of Restitution - e : 0.8



Pile Cap


Helmet
 Bonnet
 Anvil Block
 Drivehead

Weight : 1,704 (lbs.)
 Note: Should include weight of striker plate.



Pile Cushion

Cushion Material: N/A
 Thickness: N/A (in.) Area: N/A (in.²)
 Modulus of Elasticity - E : N/A (P.S.I.)
 Coefficient of Restitution - e : N/A



Pile

Pile Type: HP 12 x 53 & HP 14 x117
 Length (in Leads): 70' & 106' (ft.)
 Weight / Ft: 53 & 117 (lbs./ft.)
 Wall Thickness: N/A (in.) Taper: NA
 Cross Sectional Area: (in.²)
 Design Pile Capacity: (Tons)
 Description of Splice: Mechanical

Tip Treatment Description:

Note: If mandrel is used to drive this pile, attach separate manufacturer's detail sheet(s) including weight and dimensions.

Submitted By: Davis Daniel Date: _____

APE Model D30-42 Single Acting Diesel Impact Hammer

D30-42 Finishing Dolphin Piles.



MODEL D30-42 (3.0 metric ton ram)

SPECIFICATIONS

Stroke at maximum rated energy	135 in (343 cm)
Maximum rated energy (Setting 4)	74,419 ft-lbs (100.47 kNm)
Setting 3	66,977 ft-lbs (90.42 kNm)
Setting 2	55,070 ft-lbs (74.34 kNm)
Minimum rated energy (Setting 1)	37,209 ft-lbs (50.23 kNm)
<i>(Variable throttle allows for infinite fuel settings)</i>	

Maximum obtainable stroke	157 in (381 cm)
Maximum obtainable energy	86,546 ft-lbs (117 kNm)
Speed (blows per minute)	34-53

WEIGHTS

Ram	6,615 lbs (3,000 kg)
Anvil	1,358 lbs (616 kg)
Anvil cross sectional area	367.94 in ² (2373.80 cm ²)
Hammer weight (includes trip device)	13,571 lbs (6,154 kg)
Typical operating (weight with DB26 and H-beam insert)	16,223 lbs (7,357 kg)

CAPACITIES

Fuel tank (runs on diesel or bio-diesel)	17.4 gal (65 liters)
Oil tank	5 gal (19 liters)

CONSUMPTION

Diesel or Bio-diesel fuel	2.6 gal/hr (9.84 liters/hr)
Lubrication	0.26 gal/hr (1 liters/hr)
Grease	8 to 10 pumps every 45 minutes of operation time.

Optional Variable Throttle Control.



STRIKER PLATE FOR DB 26

Weight	628 lbs (284 kg)
Diameter	22.5 in (57.15 cm)
Area	398 in ² (2567.74 cm ²)
Thickness	6 in (15.24 cm)

CUSHION MATERIAL

Type/Qty	Micarta / 2 each
Diameter-DB26	22.5 in (57.15 cm)
Thickness	1 in (25.4 mm)

Drive Base Assembly.



Type/Qty	Aluminum / 3 each
Thickness	1/2 in (12.7 mm)
Diameter	22.5 in (57.15 cm)
Total Combined Thickness	3.5 in (8.89 cm)
Area	398 in ² (2567.74 cm ²)
Elastic-modulus	285 ksi (1,965 mpa)
Coeff. of restitution	0.8

DRIVE CAP

DB 26:	1,076 lbs (488 kg)
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INSERT WEIGHT

H-Beam insert for 12" (305 mm) and 14" (355 mm):	948 lbs (430 kg)
Large pipe insert for sizes 12" to 24" diameter:	1,830 lbs (830 kg)

MINIMUM BOX LEAD SIZE/OPERATING LENGTH

Minimum box leader size	8 in x 26 in (20.32 cm x 66 cm)
Operating length as described above	354 in (900 cm)



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Note: All specifications are subject to change without notice 08/20/2012