US Army Corps
of Engineers®
Little Rock District

JOINT PUBLIC NOTICE

CORPS OF ENGINEERS – STATE OF ARKANSAS

Application Number: SWL 2014-00257-1
Date: July 5, 2018
Comments Due: July 30, 2018

TO WHOM IT MAY CONCERN: **Comments are invited on the work described below. Please see the Public Involvement section for details on submitting comments**.

Point of Contact. If additional information is desired, please contact the regulator, Johnny McLean, telephone number: (501) 340-1382, mailing address: Little Rock District Corps of Engineers, Regulatory Division, PO Box 867, Little Rock, Arkansas 72203-0867, email address: Johnny.L.McLean@usace.army.mil

Project Information. Pursuant to Section 404 of the Clean Water Act (33 U.S. Code 1344), notice is hereby given that

Arkansas Department of Transportation (ArDOT)
PO Box 2261
Little Rock, Arkansas 72203

has requested authorization for the placement of dredged and fill material in waters of the United States associated with replacing the Interstate 30 Bridge and approaches crossing the Arkansas River in Little Rock and North Little Rock as well as improving a portion of Interstate 30 (I-30) from Interstate 530 (I-530) and Interstate 440 (I-440) to Interstate 40 (I-40). The project would also improve a portion of I-40 from Highway 365 (MacArthur Drive) to US Highway 67/167 including associated interchanges. This project is commonly called the 30 Crossing Project. The proposed project is located in sections 2, 11 and 14, T. 1 N., R. 12 W., in sections 22, 25, 26, 27 and 35, T. 2 N., R. 12 W., and in section 30, T. 2 N., R. 11 W., Pulaski County, Arkansas.

The Arkansas River is part of the 445-mile McClellan-Kerr Arkansas River Navigation System (MKARNS), which begins where the White River meets the Mississippi River near Dumas, Arkansas and extends to the Port of Catoosa near Tulsa, Oklahoma. The I-30 Bridge is located at MKARNS Navigation Mile 118.5. Construction of the new I-30 Bridge over the Arkansas River would require authorization from the U.S. Coast Guard (USCG) in accordance with Section 9 of the Rivers and Harbors Act (33 U.S. Code 403).

The basic purpose of the ArDOT project is to increase the safety of vehicular traffic on I-30 and I-40 by correcting geometric deficiencies, modernizing infrastructure and maintaining a state of good repair, improving navigational safety on the MKARNS, correcting the I-30 Arkansas River Bridge deficiencies, and reducing traffic congestion by improving mobility on I-30 and I-40. The overall purpose of the project is to provide for increased travel speed and reduced travel time to downtown North Little Rock and Little Rock as traffic demand in this region increases in the future. The I-30 Arkansas River Bridge would be replaced with a new structure, correcting the functional and structural deficiencies and navigation safety issues. The project is not water dependent.

The total length of the project is approximately 7.3 miles. ArDOT attempted to minimize the impacts of the project by constructing the majority of the project on existing alignment and within their right-of-way. ArDOT has agreed to mitigate for the unavoidable impacts to wetlands, streams and floodplains. This project is the largest and one of several projects in the program known as the Connecting Arkansas Program (CAP). The CAP was approved by the voters and is an accelerated state highway construction and improvement program. A major component of the CAP is to implement a project (30 Crossing) to improve the I-30 corridor in downtown Little Rock and North Little Rock.

The project is located in a highly-urbanized area that is experiencing slow but steady population growth. According to Metroplan, the six-county metropolitan area around Little Rock has grown by 5.5 % since the 2010 census, which is faster than 4.5 % growth for the U.S. overall. Saline County remains the fastest-growing county in the four-county Central Arkansas region (Saline, Faulkner, Lonoke, and Pulaski Counties) while Faulkner County is the second fastest-growing county. Pulaski County is the slowest-growing county in Central Arkansas. According to *Imagine Central Arkansas, the 2040 Long Range Metropolitan Transportation Plan,* Central Arkansas is expected to grow from 671,400 people to almost one million people by 2040, with most of this growth expected in the counties surrounding Pulaski County.

The I-30 corridor generally consists of three main lanes in each direction with parallel one-way discontinuous frontage roads on each side of the interstate within the right-of-way along the outer edge. In the northern portion of the project area, the I-40 corridor consists of three to four main lanes in each direction with parallel one-way frontage roads on each side of the interstate between the I-30/I-40 interchange and North Hills Boulevard. Within the project area, both I-30 and I-40 are classified as interstates, which are the highest classification of principal arterials. Within the 7.3-mile corridor, there are four system (connections between interchanges) interchanges: I-30 with I-530 and I-440, I-30 with I-630, I-30 with I-40 and I-40 with Highway 67/167. There are seven service interchanges providing access to the local streets and multiple locations where I-30 crosses local streets without providing access. The Union Pacific Railroad (UPRR) crosses the project area at two locations. In regard to structural deficiencies, I-30 and I-40 were originally constructed with concrete pavement in the 1960's. In the 1980's, I-30 was overlaid with asphalt and I-40 was overlaid with concrete; therefore, it has been over 30 years since the pavement condition was improved. Portions of the project area will likely require some level of pavement rehabilitation within the expected timeframe of this project to meet adequate structural performance. Functional deficiencies that were identified as contributing to safety issues along the corridor include (1) short acceleration ramps that do not allow vehicles to reach highway speed before entering the interstate, (2) interchanges that are too close together, which causes congestion as vehicles try to enter and leave the interstate at the same time within a short distance, (3) sharp curves, which cause vehicles to slow and create congestion and (4) shoulders that are too narrow to permit a disabled vehicle to safely pull off the roadway or allow emergency vehicles to reach a crash site.

The I-30 Arkansas River Bridge was constructed in 1958 and was determined to be structurally deficient by ArDOT in September 2017. ArDOT also determined that portions of the bridge are fracture critical. The existing I-30 Arkansas River Bridge has a vertical clearance of 65.6 feet and horizontal clearance of 174.5 feet for commercial barge traffic. When the bridge was

constructed, one pier was constructed in what would eventually become the commercial navigation channel. This pier obstructs the channel and affects river navigation by dividing the channel into two navigational spans (left descending and right descending), with substandard (174.5 and 169.5 feet) horizontal navigational clearance in both spans. The five other bridge structures in downtown Little Rock have at least a 300-foot-wide open (no obstructions) span across the navigational channel. Also, the navigational opening for the I-30 Arkansas River Bridge does not line up with the adjacent Clinton and Junction Bridges. The reduced horizontal clearance due to the pier obstruction and poor alignment makes the I-30 Arkansas River Bridge difficult for barges to navigate safely and restricts their operational speed. Barge collision data provided by the USCG, indicates a total of five barge strikes have occurred at the site since 2001, with the two most recent since August 2013. Barges striking the bridge could cause the structurally deficient, fracture critical bridge to collapse. The USCG has requested that the proposed new bridge provide a minimum vertical clearance of 63 feet and horizontal clearance of 320 feet.

The construction method for this project would be Design-Build. In Design-Build, the Design-Builder is permitted to incorporate innovation into final design as long as the project purpose and need, environmental commitments and contractual obligations are met. This allows for innovation and cost efficiency. This would be the first time ArDOT has utilized this methodology for a project.

As part of the environmental assessment (EA) process, several alternatives were initially considered by the Federal Highway Administration and ArDOT. Action alternatives that did not meet the stated purpose and need were eliminated. In addition to the No-Action Alternative, four action alternatives were carried forward and evaluated in the EA. The four action alternatives are Alternative 1A: 8-Lane General Purpose with single point urban interchange (SPUI) at Highway 10, Alternative 1B: 8-Lane General Purpose with split diamond interchange (SDI) at Highway 10, Alternative 2A: 6-Lane with collector/distributor (C/D) and SPUI at Highway 10 and Alternative 2B: 6-Lane with C/D and SDI at Highway 10. The No-Action Alternative represents the case in which the proposed project is not constructed but could include future projects identified through the long-range planning process for maintaining a state of good repair as funding becomes available. The No-Action Alternative would not make any immediate improvements to the existing roadway or any bridges throughout the I-30 corridor. The No-Action Alternative does not meet the purpose and need for the project but it must be considered for comparison purposes in accordance with the National Environmental Policy Act (NEPA).

The EA and the proposed preliminary design are currently available for public inspection by visiting the 30 Crossing website (30Crossing.com) and the ArDOT website (ArDOT.gov). Print copies are available for viewing at the ArDOT Central Office Headquarters (Alternative Delivery Conference Room), located at 10324 Interstate 30 (Exit 130) in Little Rock; and at the Garver Headquarters, located at 4701 Northshore Drive in North Little Rock. The EA can also be viewed at the Central Arkansas Library, located at 100 South Rock Street in Little Rock; and at the Laman Library, located at 2801 Orange Street in North Little Rock.

Alternative 2B (6-Lane with C/D and SDI at Highway 10) (see Sheet 3 of 23) has been identified as the preferred alternative due to the following reasons related to the project goals: (1) It

improves local vehicle access to and from downtown Little Rock/North Little Rock by more directly connecting the frontage road system to the C/D lanes crossing the Arkansas River; (2) it optimizes opportunities for economic development by providing a continuous frontage road system between I-630 and East 4th Street and connection to the River Market and Clinton Center areas via President Clinton Avenue, 2nd Street and 3rd Street and allowing additional green space for public use in downtown Little Rock; (3) it enhances east-west connectivity, including bicycle and pedestrian connectivity, by removing the elevated ramps between President Clinton Avenue and 3rd Street and by replacing the elevated Highway 10 Spur with an improved at-grade 2nd Street; (4) it was identified by the local metropolitan planning organization (MPO) as the locally preferred alternative and has received the most public and business support.

A total of approximately 9.7 acres of wetlands would be adversely affected by the preferred alternative primarily through interchange construction and embankment widening. Approximately 6.6 acres of wetlands would be permanently impacted by the project and approximately 3.1 acres would be temporarily impacted. The 9.7 acres is comprised of 7.42 acres forested, 0.06 acres scrub-shrub, 1.20 acres of emergent wetlands, and 0.97 acres of shallow open water. The impacted wetlands would generally be considered medium-to-high value due to their ability to store flood water, filter sediments and nutrients, and provide habitat for animals in the Arkansas River ecosystem. The 2002 Charleston Method was used to calculate the mitigation credits needed for the unavoidable wetland impacts. ArDOT proposes to utilize 101.16 credits from an approved wetland mitigation bank.

The project would permanently impact seven streams totaling approximately 1,371 linear feet. Most of the streams at these locations have been previously altered through channelization, excavation and straightening for highway construction and storm water conveyance. The streams would be considered low-to-medium value. Three of the streams are perennial, one is intermittent and three are ephemeral. The permanent impacts at Fairman Ditch and the Arkansas River would exceed 300 linear feet and would require mitigation for the adverse impacts. The 2011 Little Rock District Stream Method was used to calculate the mitigation credits needed for the unavoidable stream impacts. ArDOT proposes to utilize 1,778.8 credits from an approved stream mitigation bank that services the area.

Temporary impacts to the Arkansas River would total approximately two acres. ArDOT proposes to conventionally (heavy equipment) remove all railing, concrete bridge deck, non-stability critical floorbeams and stringers. This material will not be allowed to enter the river. The remaining steel floorbeams and girders will be temporarily dropped into the river. All steel material dropped into the left descending navigation span will be removed within a maximum 24-hour MKARNS closure period to minimize impacts to commercial navigation. All other steel material will be removed as soon as possible. The existing reinforced concrete piers adjacent to the existing left descending channel will be demolished down to the mudline and removed within a 24-hour MKARNS closure period. The remaining reinforced concrete piers in the river will be demolished down to the mudline and removed from the water as soon as possible. It is likely that explosives will be used for the demolition of the existing piers, steel floorbeams and stringers. ArDOT proposes to remove all concrete debris greater than 6 inches in diameter from the navigation channel and all concrete debris greater than 12 inches in diameter from outside the navigation channel. The steel would be removed and recycled, and the concrete would be hauled

to an approved upland disposal site. Prior to any activities in the river, all river traffic would be confined to using the left descending navigation span. Only the existing left descending navigation span would be required to remain open during demolition of the existing bridge and construction of the new bridge, except for short closures. The right descending navigation span would be obstructed once construction of the new piers begins. Once the initial phases of the new bridge construction are completed, all eastbound and westbound highway traffic would be removed from the existing bridge to the new bridge. This would occur prior to any bridge demolition activities. The existing pier protection cells would be removed only after all traffic has been permanently removed from the existing bridge. Vehicular traffic flow across the bridge would be maintained during peak (morning and evening) times; only temporary disruptions are anticipated.

There are three Federally endangered or threatened species that have the potential to occur in the project area. They are the Interior Least Tern (*Sterna antillarum athalassos*), the Piping Plover (*Charadrius melodus*) and the Running Buffalo Clover (*Trifolium stoloniferum*). There are no recorded locations for any of the three species within the project area and no habitat exists for the Piping Plover or Running Buffalo Clover. The U.S. Fish and Wildlife Service concurred with ArDOT's finding that the proposed project may affect is not likely to adversely affect threatened or endangered species.

The project was evaluated to determine if any encroachment into special flood hazard areas and the 100-year floodplain, identified through the Federal Emergency Management Agency Flood Insurance Rate Maps, would occur. ArDOT identified three areas where encroachment would occur: the Arkansas River, Fourche Creek and the Dark Hollow Basin. Alternative 2B would place 11.2 Acre-feet of fill in the Fourche Creek floodplain and 17.4 Acre-feet in the Dark Hollow floodplain. Compensation storage areas totaling 11.9 Acre-feet and 26.1 Acre-feet would be created within the I-30/I-440/I-530 and I-30/I-40 interchanges, respectively, to compensate for the floodplain areas that have been filled. As part of the Design-Build process for the Arkansas River Bridge, ArDOT would work with the city floodplain administrators to determine if any compensation is needed for the fill(s) in the Arkansas River floodplain.

Alternative 2B would change travel patterns in downtown Little Rock due to the elimination of the Highway 10 interchange. This alternative would eliminate approximately 47 on-street parking spaces along East 2nd Street, Ferry Street and East 4th Street and, result in an increase of 15.7 acres of green space and provide an unobstructed open area under I-30 from the Arkansas River to 3rd Street. The project would require the acquisition of approximately 13.0 acres of right-of-way, affect 54 parcels of land and displace 5 businesses and 6 residences. All six residential displacements are located along Cypress Street in North Little Rock. Acquisition and relocation assistance would be provided to displaced persons in accordance with the *Uniform Relocation Assistance and Real Properties Acquisitions Policies Act of 1970*. It is anticipated that noise impacts would potentially occur along the entire corridor, including the areas of minority and/or low income populations, and would affect all users of the facility including environmental justice (EJ) and non-EJ populations. ArDOT identified 224 noise receptors that would experience future (2041) noise levels that are considered to be a noise impact. Noise abatement measures, such as construction of traffic noise barriers (walls), were evaluated for all areas with noise impacts. Fifteen noise barriers were evaluated and three were determined to be

feasible and reasonable. The three barriers are: (1) West of I-30 from 21st Street to Union Pacific Railroad in Little Rock, benefiting 84-86 residences, (2) West of I-30 between 17th Street and 21st Street in Little Rock, benefiting 30-33 residences, and (3) East of I-30 between 13th Street and 19th Street in North Little Rock, benefiting 87-139 residences. Construction activities such as demolition, hauling, grading, paving and bridge construction would result in temporary increases in noise along the project. Local noise ordinances may place restrictions on the contractor, including limiting certain activities to specified hours, in order to reduce construction noise impacts. The access changes in the area of the Curtis Sykes Drive and the Highway 10 interchange would occur in areas of high minority and/or low income populations. Access would not be eliminated, merely shifted in location. The aesthetic changes would primarily be temporary changes during construction and would occur throughout the project. The project would include enhancements to aesthetics including improved lighting and aesthetic design features that would occur throughout the project corridor, including minority and low-income areas. The greatest changes in aesthetics would occur in the Highway 10 interchange area, where the increase in green space would benefit minority and low-income populations. All five residential displacements and one commercial displacement are located in a census block with a minority population greater than 50% of the total population. Avoidance of these displacements is not possible since they lie along the segment of Cypress Street that would be extended over the UPRR from 9th Street to 13th Street. This would allow Cypress Street to become a one-way southbound frontage road and would improve connectivity throughout the surrounding neighborhood. These displacements would not be considered disproportionate to EJ populations, because the EJ communities are located throughout the corridor and the total population of the project area is predominantly minority.

There are a total of 136 listed or eligible historic properties within the area of potential effect (APE) for this project. ArDOT, in consultation with the State Historic Preservation Officer and Arkansas Historic Preservation Program, determined that the removal of the Locust Street Overpass would be the only adverse effect to historic properties. Additionally, after surveying all existing and new right-of-way, ArDOT determined that no cultural resources would be adversely affected. There are three parks along the Arkansas River that would be affected by the construction of the I-30 Arkansas River Bridge. The William J. Clinton Presidential Center and Park and the Julius Breckling Riverfront Park are administered by the City of Little Rock. The North Shore Riverwalk Park is administered by the City of North Little Rock. The proposed I-30 Arkansas River Bridge would be wider than the existing bridge and would require ArDOT to expand the air space agreement over the parks. Also, temporary construction easements would be required. Land acquisition for easements would be 2.3 acres for the Clinton Center Park, 0.1 acres for the Riverfront Park and 2.3 acres for the Riverwalk Park. FHWA determined that the project will not harm the protected features, assets or activities that make the parks important for recreation under Section 4(f).

There are 18 public and commercial utilities identified within the project corridor. The following types of public and commercial utilities are believed to be present: gas/petroleum, electric, water and sewer, and telecommunications/cable television. Many of these utilities are attached to the I-30 Arkansas River Bridge. Additionally, the UPRR owns and operates major rail utilities within the project corridor. Utilities present on the Arkansas River Bridge and utilizing the fiber optic transfer buildings at the south and north ends of the bridge will be

impacted by the bridge replacement and the replacement of the buildings at both bridge ends. The disposition of these utilities is not known at this time. Electric transmission lines at both the I-30/I-530/I-440 interchange and I-30/I-40 interchange may be affected by the project and may require relocation. Several large transverse sewer, water, and gas crossings of I-30 are present. It is unknown at this time whether the preferred alternative would have an impact on these utilities. For the replacement of the Arkansas River Bridge, the following options are being considered for relocation of the impacted utilities: (1) the Design-Build contractor will place new duct bank crossings on the new bridge and be responsible for connections to the existing facilities at the bridge ends, (2) the utility owners would be responsible for working out individual agreements with the Design-Build contractor and/or ArDOT to have their utilities accommodated within an installed duct bank, (3) the utilities would not cross the river on the I-30 Bridge but would bore under the river, or (4) the utilities would not cross the river on the I-30 Bridge but would use the Junction or Clinton Bridges. Ramp profile adjustments are being evaluated to avoid conflicts with the electric transmission lines. Vertical utility adjustments may also be needed due to changes in the roadway grades.

The location and general plan for the proposed work are shown on the enclosed sheets 1 through 23.

Section 408 Review. Under 33 United States Code Section 408, the U.S. Army Corps of Engineers (USACE) must review any proposals by private, public, tribal, or other federal entities, to make alterations to, or temporarily or permanently occupy or use, any USACE federally authorized Civil Works project. Proposed alterations must not be injurious to the public interest or affect the usefulness of the USACE project. There are three USACE projects that would be impacted by the 30 Crossing Project. They are the McClellan-Kerr Arkansas River Navigation System, the North Little Rock Levee/Floodwall and the Fourche Bayou Basin flood control project. A separate public notice will be sent out to solicit comments for these impacts. If additional information regarding the Section 408 review is desired, please contact Ms. Julia Smethurst, telephone number: (501) 324-5602, mailing address: Little Rock District Corps of Engineers, PO Box 867, Little Rock, Arkansas 72203-0867, email address: Julia.A.Smethurst@usace.army.mil

Water Quality Certification. By copy of this public notice, the applicant is requesting water quality certification from the Arkansas Department of Environmental Quality (ADEQ) in accordance with Section 401(a)(1) of the Clean Water Act. Upon completion of the comment period and a public hearing, if held, a determination relative to water quality certification will be made. Evidence of this water quality certification or waiver of the right to certify must be submitted prior to the issuance of a Corps of Engineers permit.

Cultural Resources. ArDOT staff archeologists have reviewed topographic maps, the National Register of Historic Places, and other data on reported sites in the area. The FHWA is the lead agency for coordination with all associated Native American Nations and tribal governments. The District Engineer invites responses to this public notice from Federal, State, and local agencies; historical and archeological societies; Native American Nations and tribal governments and other parties likely to have knowledge of or concerns with historic properties in the area.

Endangered Species. As stated above, The U.S. Fish and Wildlife Service concurred with ArDOT's finding that the proposed project may affect is not likely to adversely affect threatened or endangered species. A copy of this notice is being furnished to the U.S. Fish and Wildlife Service and appropriate state agencies and constitutes a request to those agencies to provide any new or additional information on threatened or endangered species.

Floodplain. We are providing copies of this notice to appropriate floodplain officials in accordance with 44 Code of Federal Regulations (CFR) Part 60 (Floodplain Management Regulations Criteria for Land Management and Use) and Executive Order 11988 on Floodplain Management.

Section 404(b)(1) Guidelines. The evaluation of activities to be authorized under this permit, which involves the discharge of dredged or fill material will include application of guidelines promulgated by the Administrator, Environmental Protection Agency, under authority of Section 404(b) of the Clean Water Act. These guidelines are contained in 40 Code of Federal CFR 230.

Public Involvement. Any interested party is invited to submit to the above-listed POC (Johnny McLean) written comments or objections relative to the proposed work on or before **July 30, 2018**. Substantive comments, both favorable and unfavorable, will be accepted and made a part of the record and will receive full consideration in determining whether this work would be in the public interest. The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit, which reasonably may be expected to accrue from the proposal, must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and, in general, the needs and welfare of the people.

The Corps of Engineers is soliciting comments from the public; Federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Any person may request in writing within the comment period specified in this notice that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing. The District Engineer will determine if

the issues raised are substantial and whether a hearing is needed for making a decision.

NOTE: The mailing list for this Public Notice is arranged by state and county(s) where the project is located, and includes any addressees who have asked to receive copies of all public notices. Please discard notices that are not of interest to you. If you have no need for any of these notices, please advise us so that your name can be removed from the mailing list.

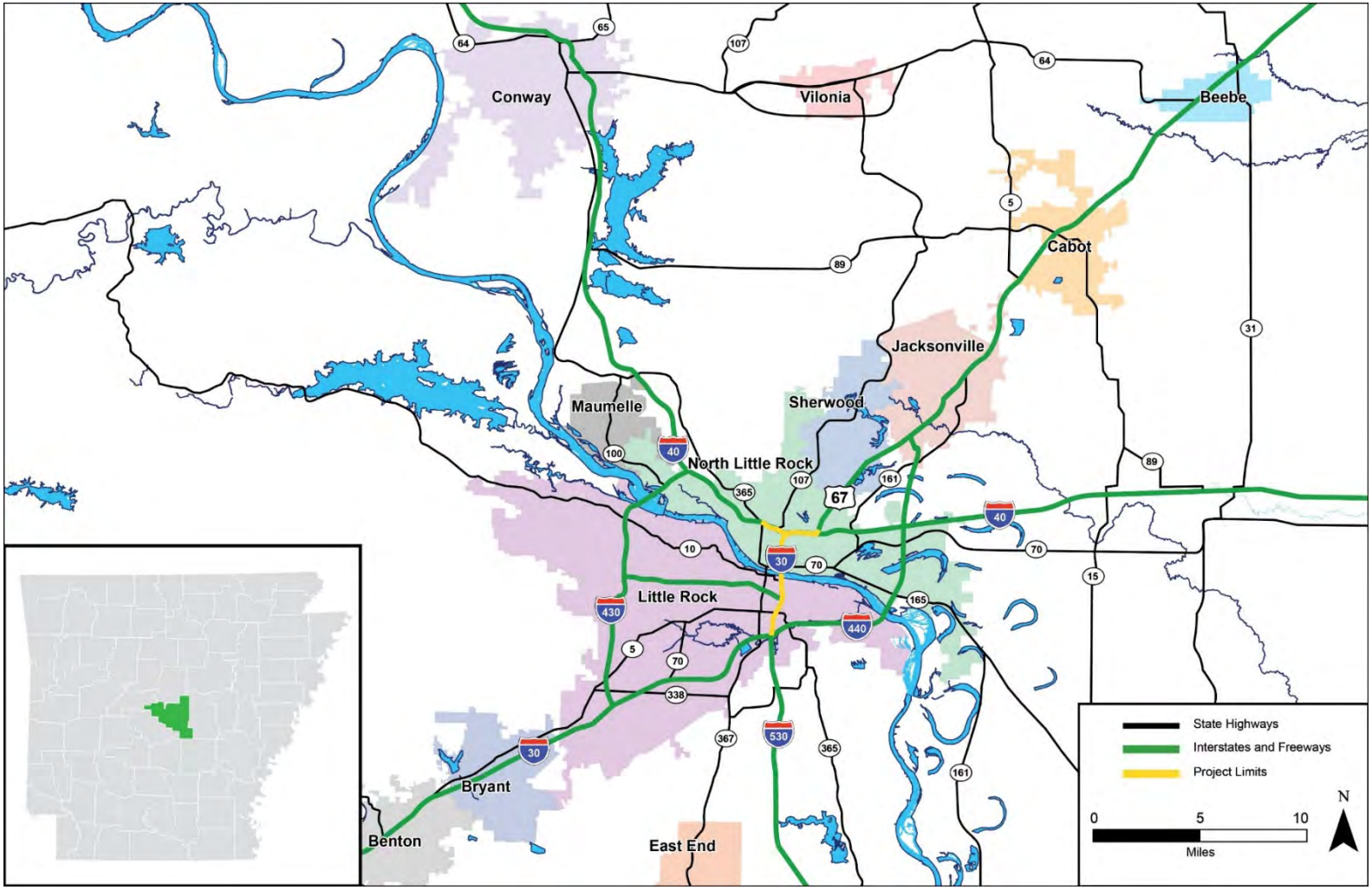
Enclosures

Approximate Coordinates of Project Center

Latitude: 34.750098 Longitude: -92.262672

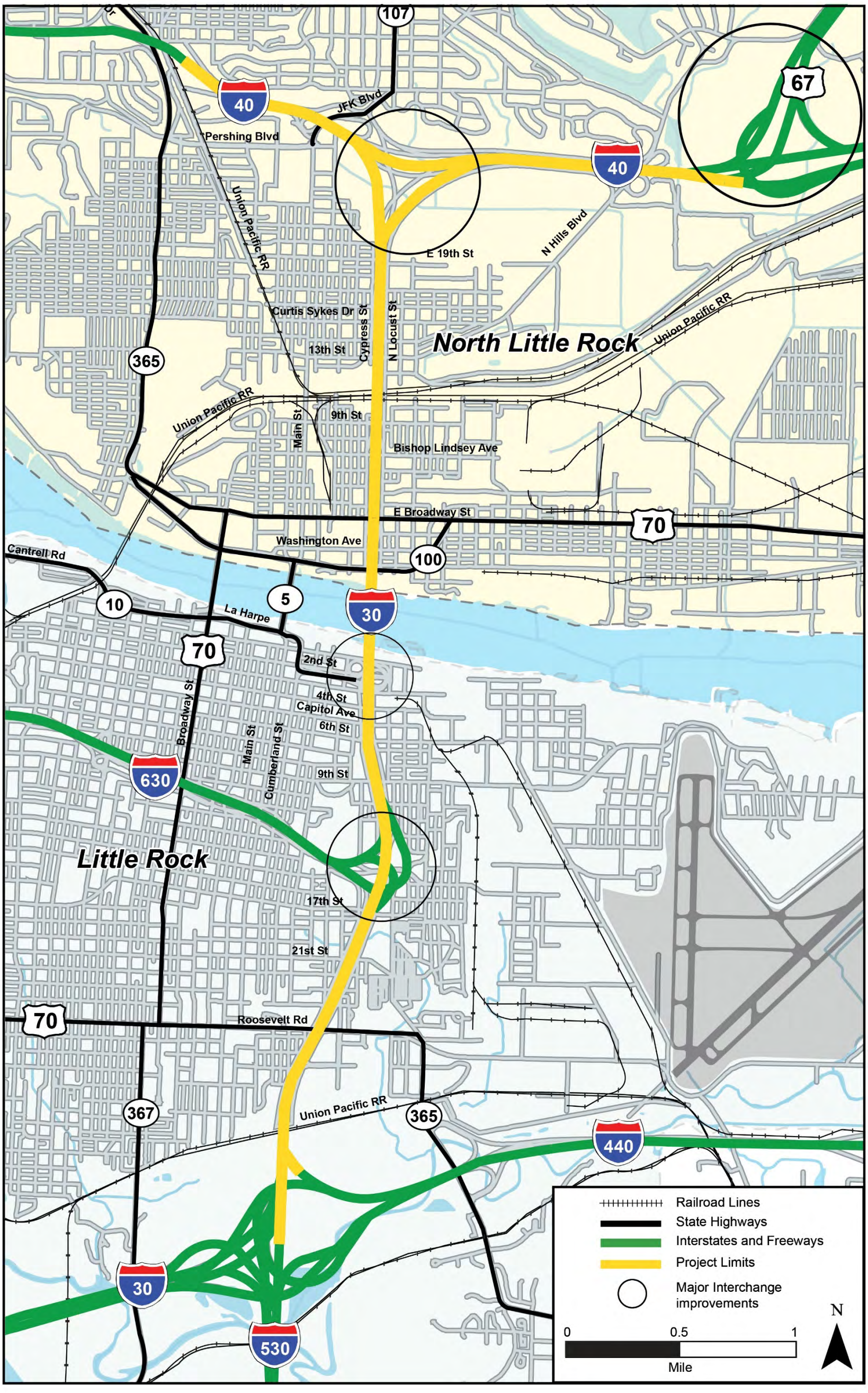
UTM Zone: 15N North: 3845577 East: 567487

Figure 1: Project Location Map



Source: Project Team, April 2017.

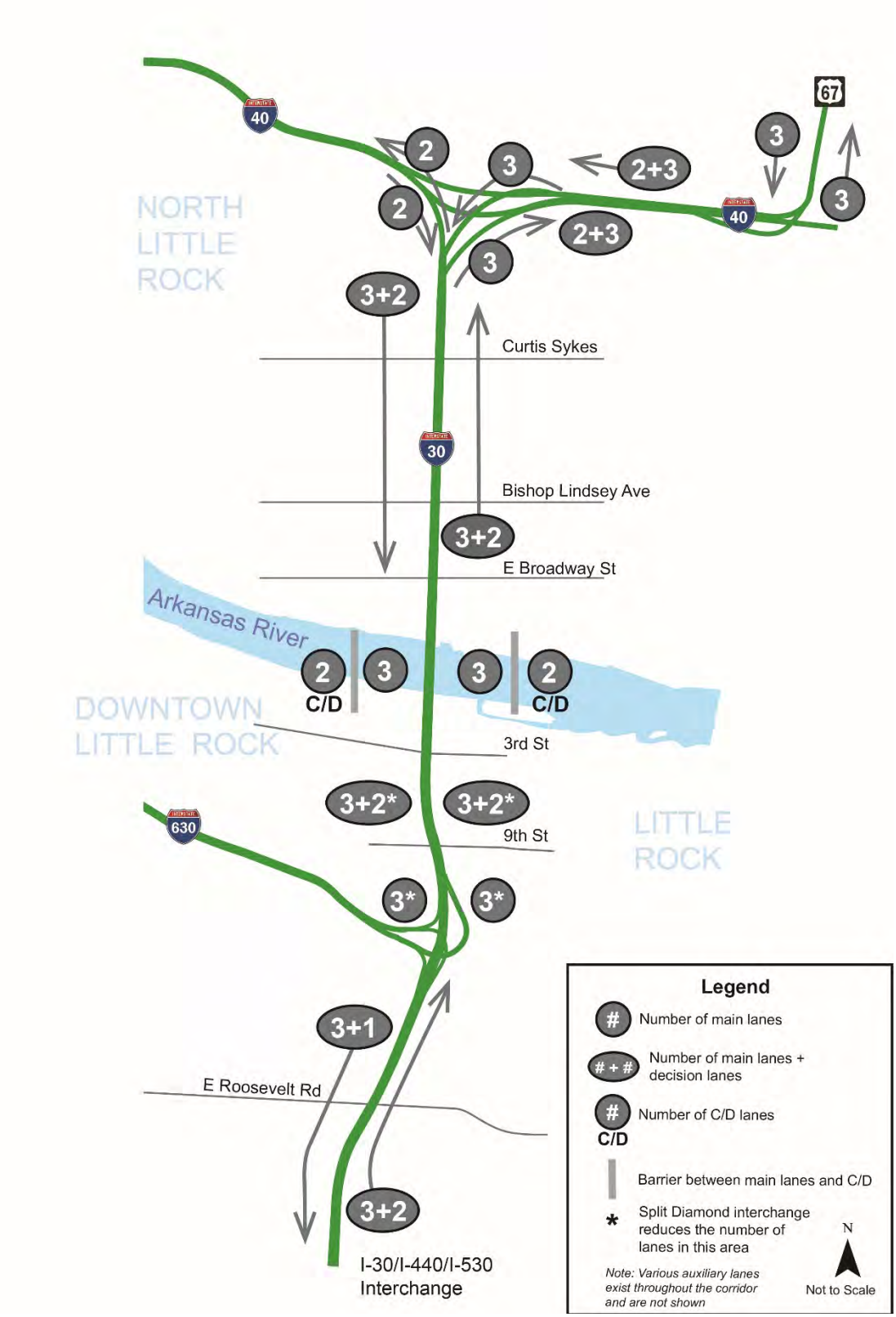
Figure 2: Project Area



Sheet 2 of 23

Source: Project Team, June 2017.

Figure 16: 6-Lane With C/D Action Alternative 2



Source: Project Team, May 2017.

Sheet 3 of 23

Figure 22: 6-Lane with C/D with SDI Action Alternative (2B)

Source: Project Team, January 2018.

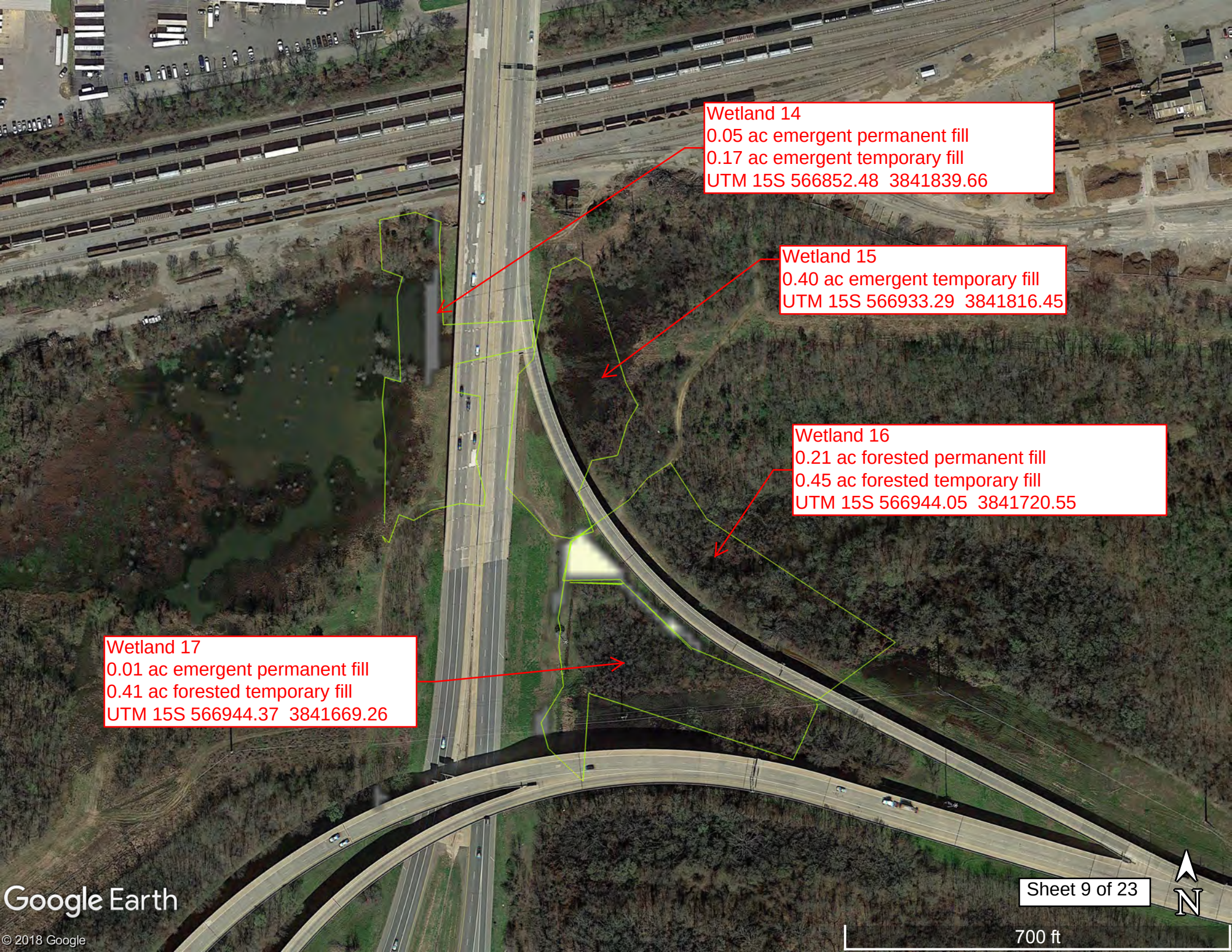
Sheet 4 of 23

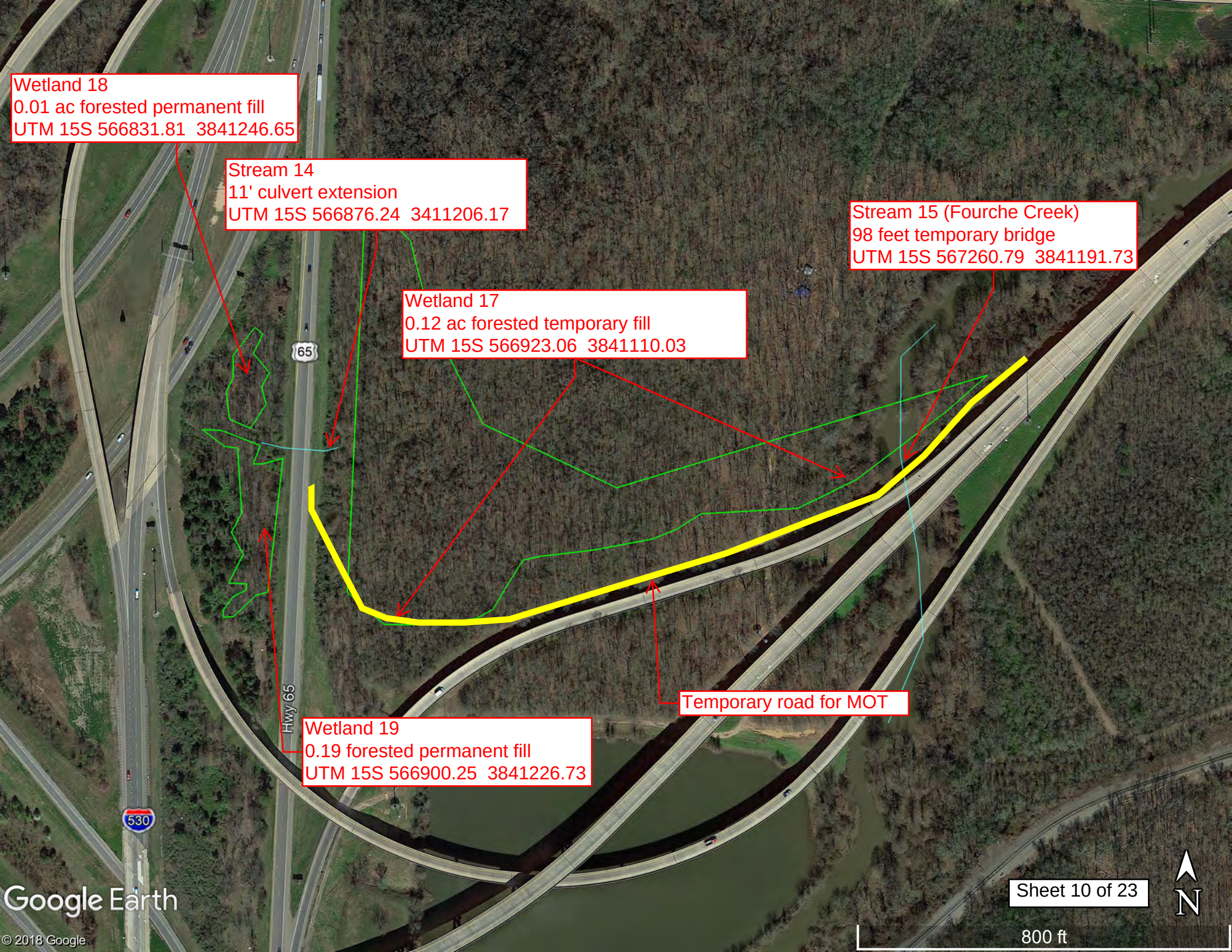

Wetland 10
Streams 5 &7
Wetlands 4, 5, 6 & 7
Streams 2 & 3
Temp Work Roads #3 & #4
Pulaski
Wetland 12
Little Rock
Temp Work Road #2
Gates
Wetlands 14, 15, 16, 17, 18 & 19
Streams 14 & 15
Temp Work Road #1
Sheet 5 of 23
N
2 mi
Google Earth
© 2018 Google

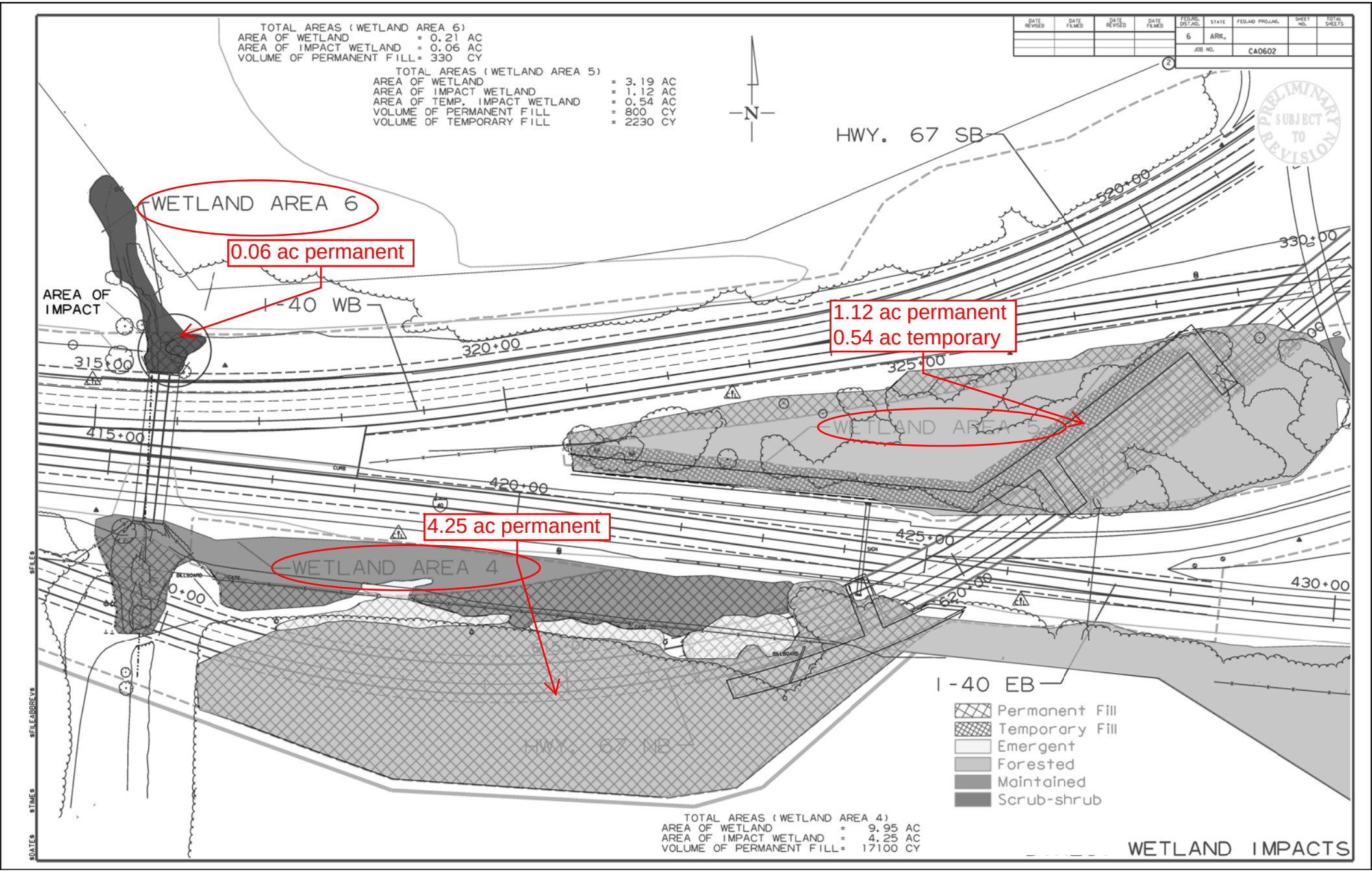

Wetland 6 & Stream 3
0.06 ac forested permanent fill
233' culvert extension
UTM 15S 569640.63 3848632.73
Wetland 5
1.12 ac forested permanent fill
0.54 ac forested temporary clear
UTM 15S 569961.51 3848597.13
U.S. Hwy 67
40
67
Wetland 7
0.67 ac permanent fill
UTM 15S 569407.46 3848467.40
Stream 2
116' culvert extension
UTM 15S 569996.32 3848597.13
Wetland 4
3.13 ac forested permanent fill
0.79 ac mowed ROW permanent fill
0.33 ac emergent permanent fill
UTM 15S 15S 569781.31 38485115.18
Google Earth
© 2018 Google
Sheet 6 of 23
N
1000 ft

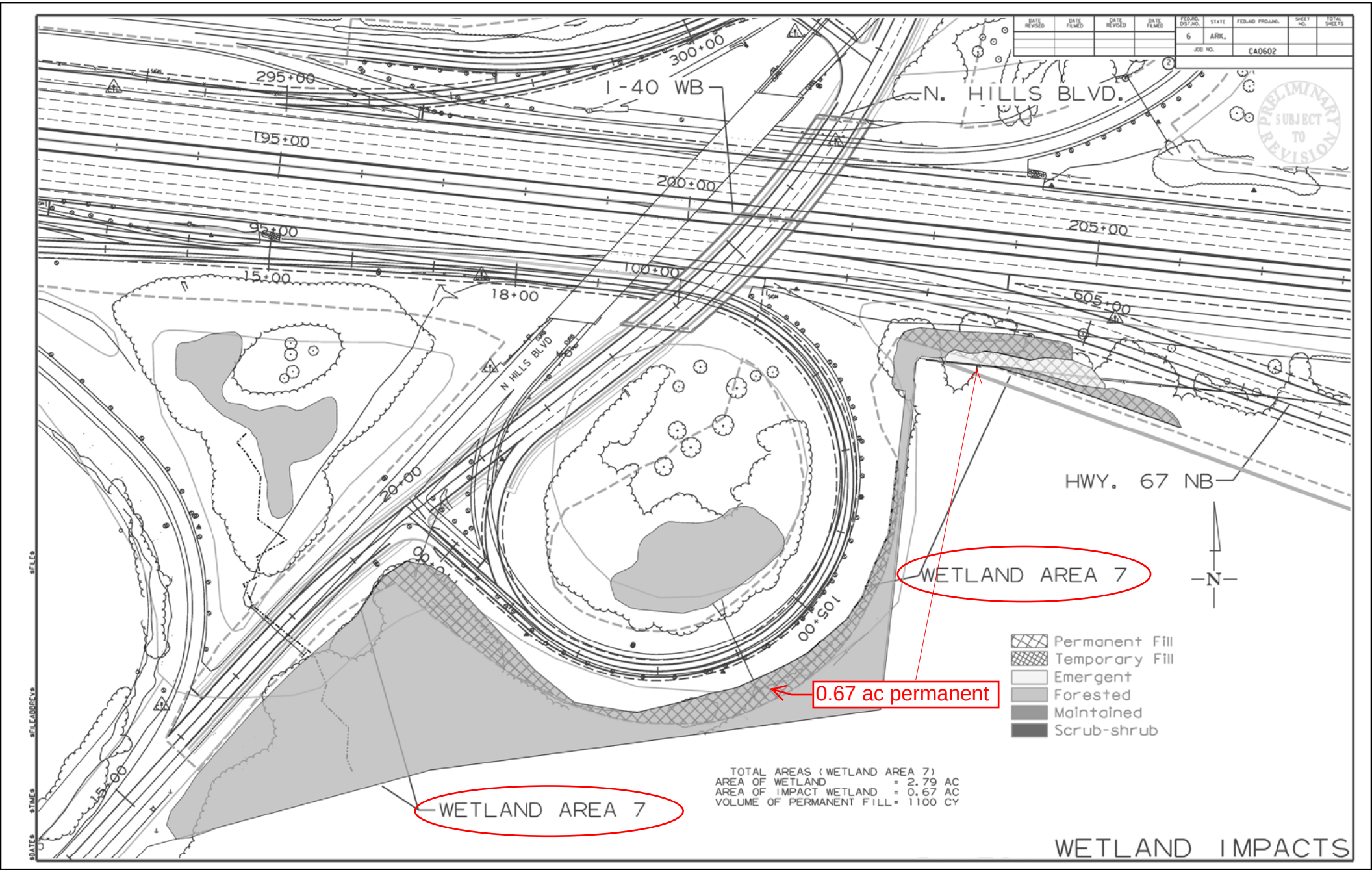

Wetland 10
0.02 ac emergent permanent fill
UTM 15S 567887.90 3848691.82
Stream 7
71' culvert extension
UTM 15S 567922.18 3848592.27
Stream 5
542' culvert extension
UTM 15S 567625.44 3848516.08
U.S. Hwy 67
30
Google Earth
© 2018 Google
Sheet 7 of 23
N
900 ft

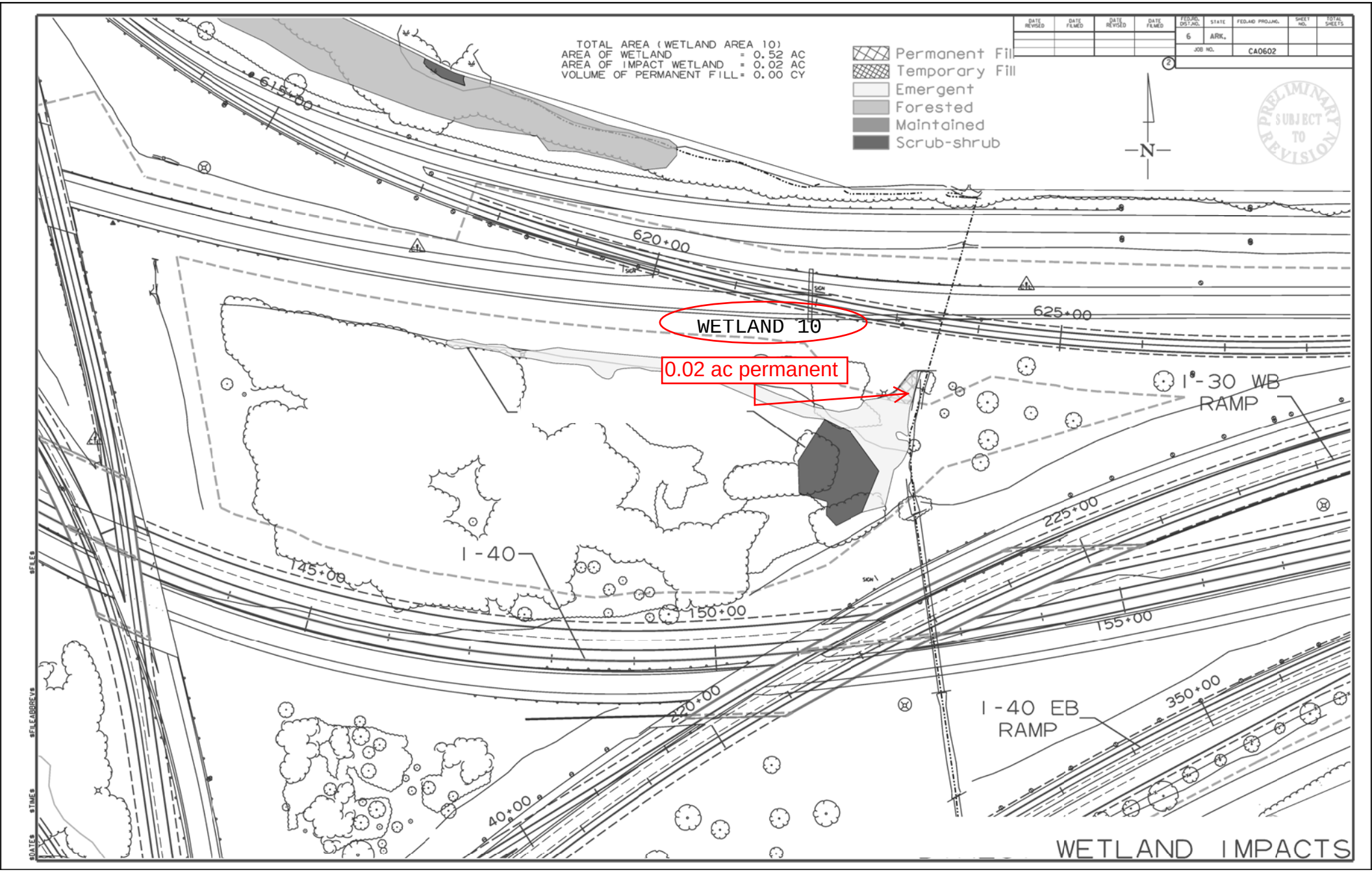

Wetland 12
0.97 ac Riverine temporary fill
Stream 10 (Arkansas River)
300' permanent riprap
UTM 15S 567485.44 3845373.71
67
Google Earth
© 2018 Google
Sheet 8 of 23
N
300 ft

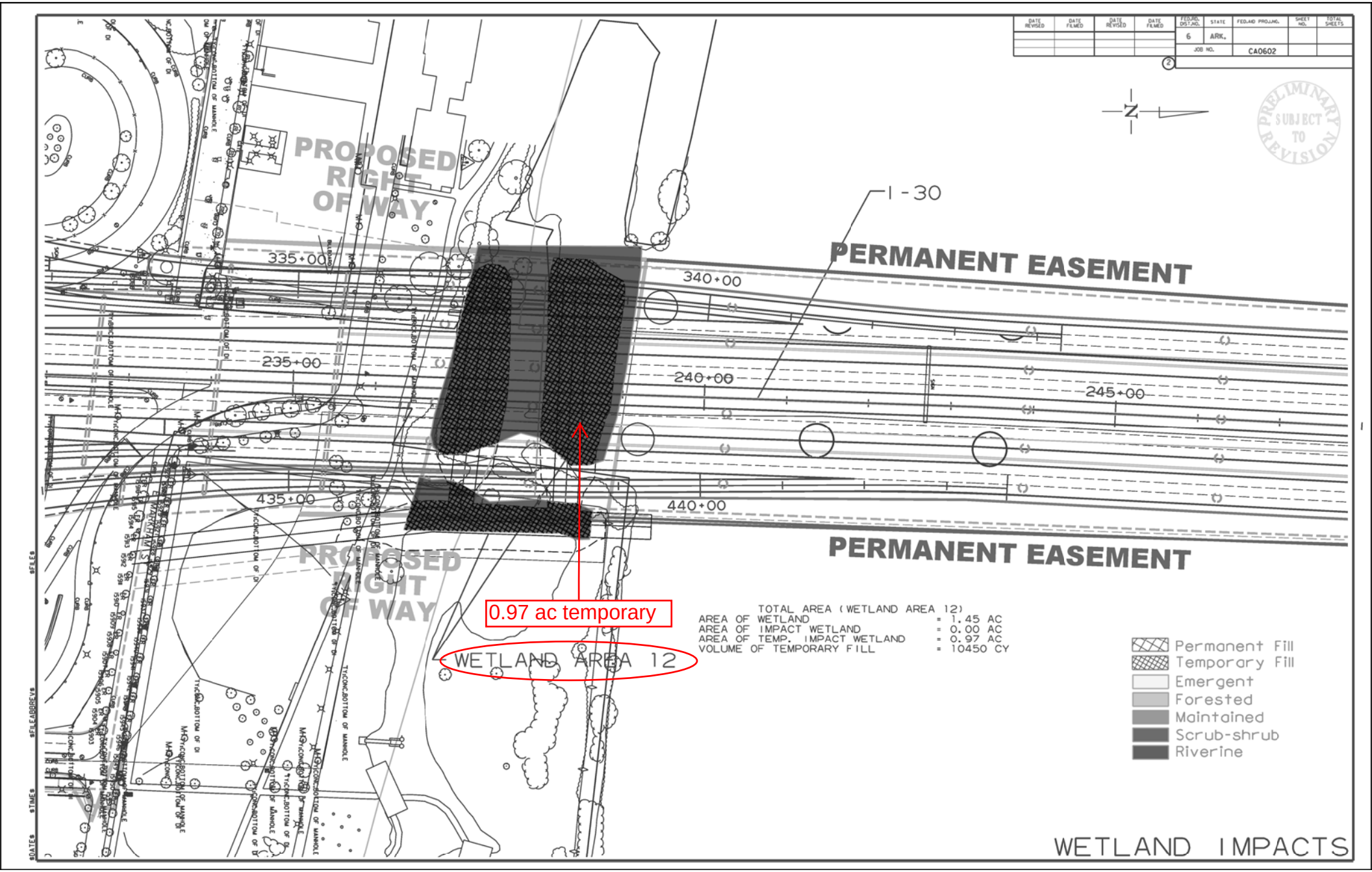

Wetland 14
0.05 ac emergent permanent fill
0.17 ac emergent temporary fill
UTM 15S 566852.48 3841839.66
Wetland 15
0.40 ac emergent temporary fill
UTM 15S 566933.29 3841816.45
Wetland 16
0.21 ac forested permanent fill
0.45 ac forested temporary fill
UTM 15S 566944.05 3841720.55
Wetland 17
0.01 ac emergent permanent fill
0.41 ac forested temporary fill
UTM 15S 566944.37 3841669.26
Google Earth
© 2018 Google
Sheet 9 of 23
N
700 ft

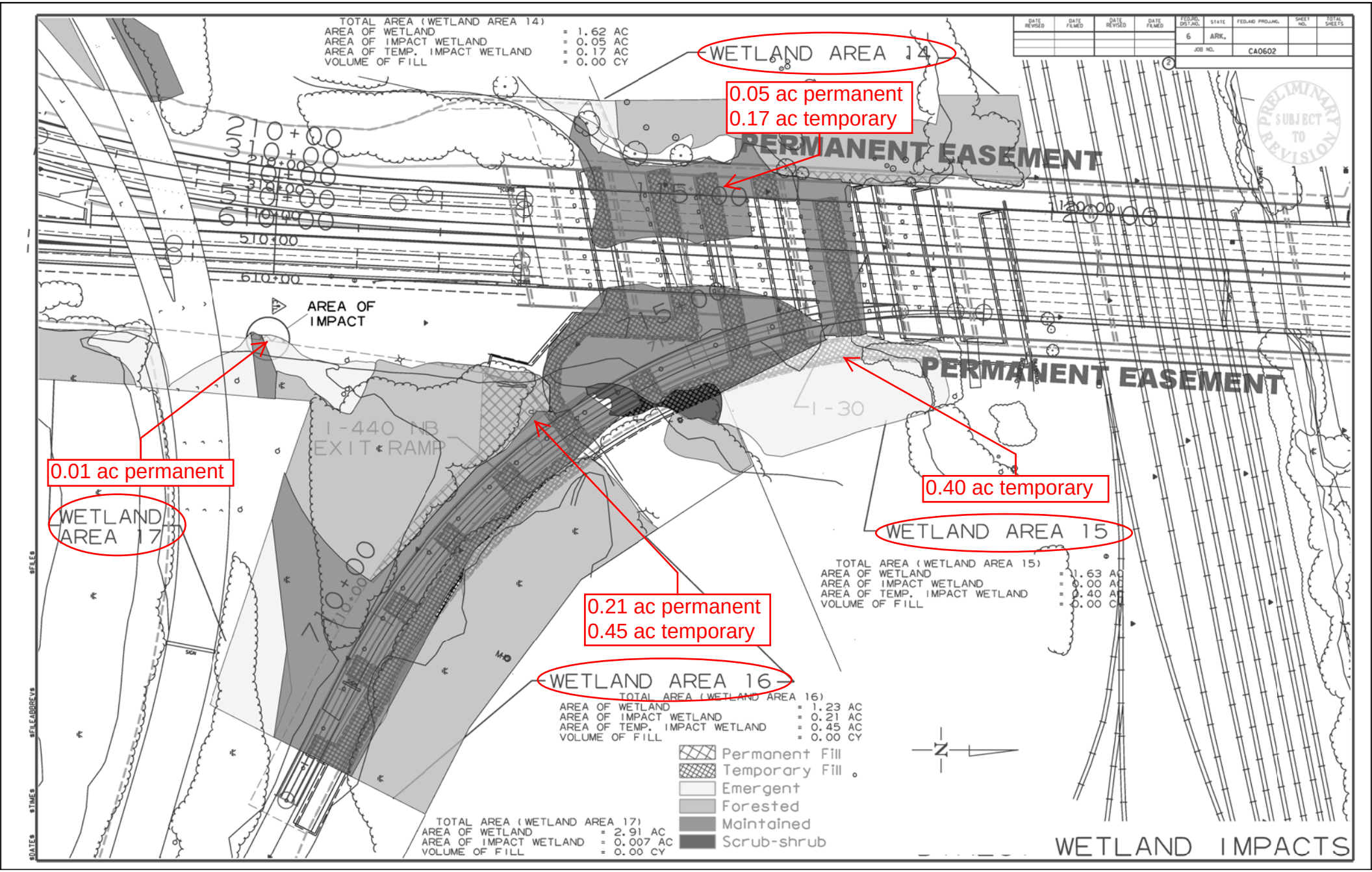

Wetland 18
0.01 ac forested permanent fill
UTM 15S 566831.81 3841246.65
Stream 14
11' culvert extension
UTM 15S 566876.24 3411206.17
Stream 15 (Fourche Creek)
98 feet temporary bridge
UTM 15S 567260.79 3841191.73
Wetland 17
0.12 ac forested temporary fill
UTM 15S 566923.06 3841110.03
65
Hwy 65
Temporary road for MOT
Wetland 19
0.19 forested permanent fill
UTM 15S 566900.25 3841226.73
530
Google Earth
© 2018 Google
Sheet 10 of 23
N
800 ft

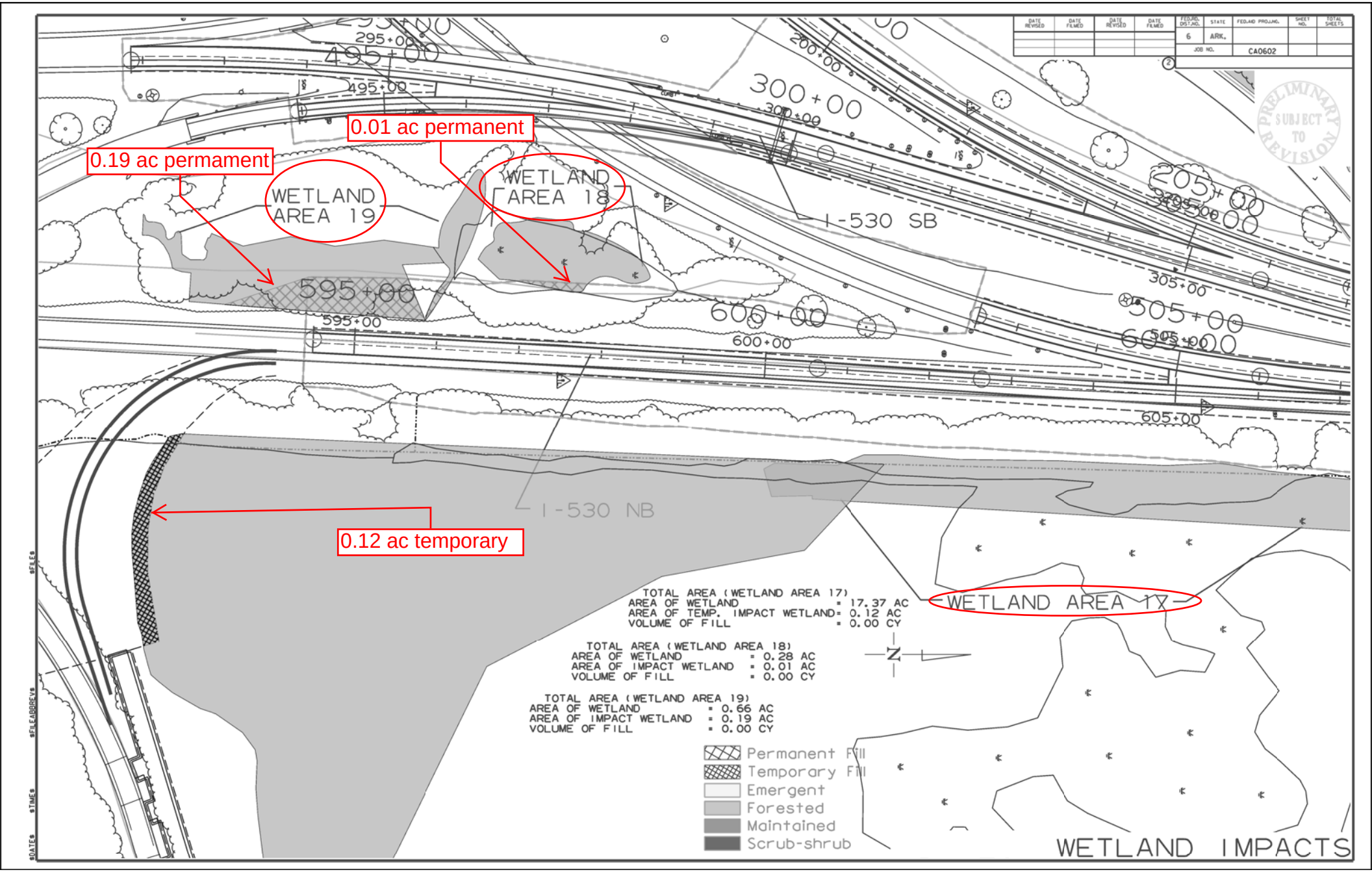

TOTAL AREAS (WETLAND AREA 6)
AREA OF WETLAND = 0.21 AC
AREA OF IMPACT WETLAND = 0.06 AC
VOLUME OF PERMANENT FILL = 330 CY
TOTAL AREAS (WETLAND AREA 5)
AREA OF WETLAND = 3.19 AC
AREA OF IMPACT WETLAND = 1.12 AC
AREA OF TEMP. IMPACT WETLAND = 0.54 AC
VOLUME OF PERMANENT FILL = 800 CY
VOLUME OF TEMPORARY FILL = 2230 CY
N
HWY. 67 SB
WETLAND AREA 6
0.06 ac permanent
AREA OF IMPACT
I-40 WB
1.12 ac permanent
0.54 ac temporary
WETLAND AREA 5
4.25 ac permanent
WETLAND AREA 4
I-40 EB
HWY. 67 NB
315+00
320+00
325+00
330+00
415+00
420+00
425+00
430+00
520+00
Permanent Fill
Temporary Fill
Emergent
Forested
Maintained
Scrub-shrub
TOTAL AREAS (WETLAND AREA 4)
AREA OF WETLAND = 9.95 AC
AREA OF IMPACT WETLAND = 4.25 AC
VOLUME OF PERMANENT FILL = 17100 CY
WETLAND IMPACTS
PRELIMINARY SUBJECT TO REVISION
FED.RD. DIST.NO. 6
STATE ARK.
JOB NO. CA0602

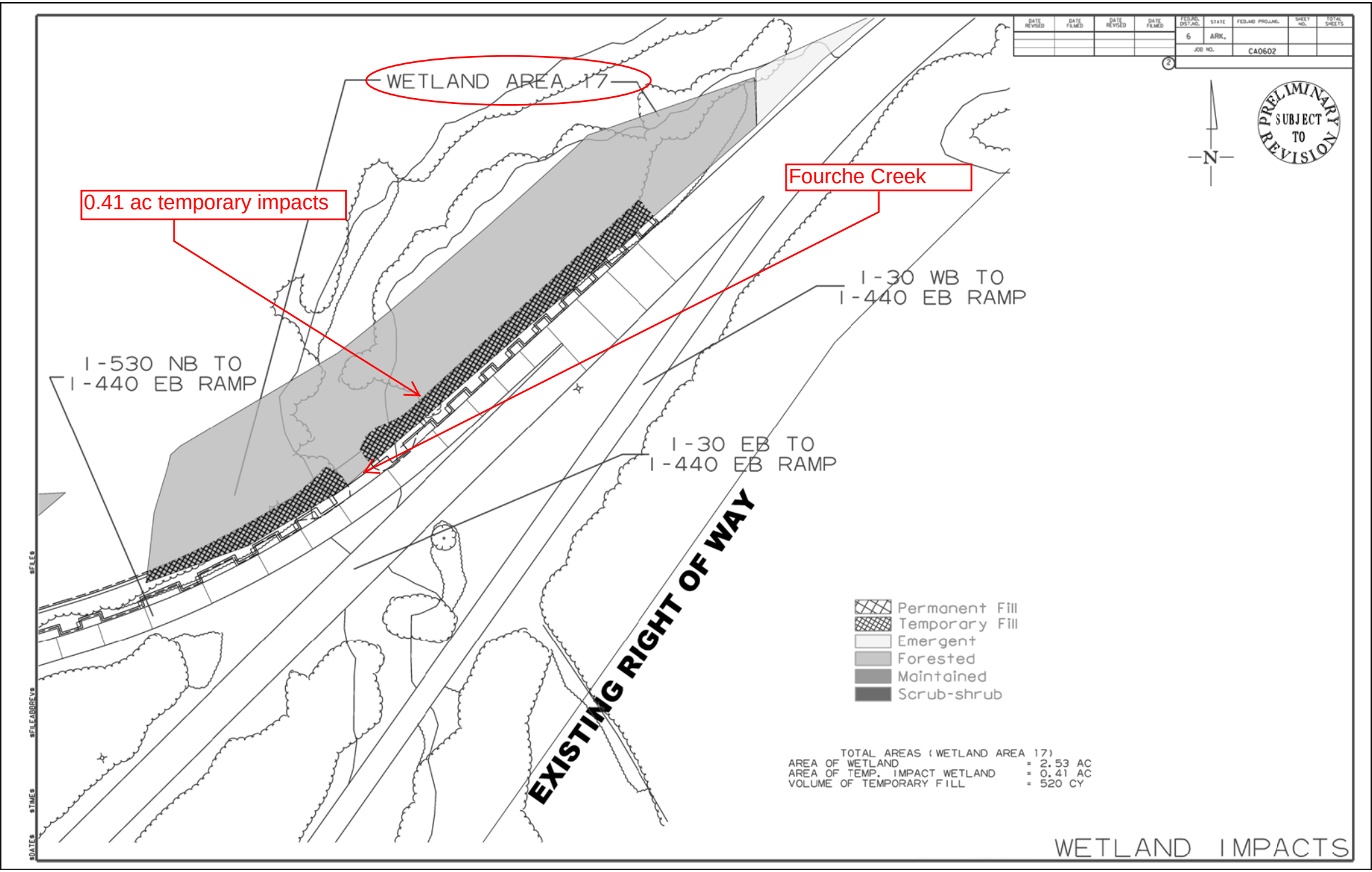

I-40 WB
N. HILLS BLVD.
HWY. 67 NB
N HILLS BLVD
295+00
300+00
195+00
200+00
95+00
15+00
18+00
100+00
205+00
605+00
20+00
105+00
WETLAND AREA 7
WETLAND AREA 7
0.67 ac permanent
Permanent Fill
Temporary Fill
Emergent
Forested
Maintained
Scrub-shrub
TOTAL AREAS (WETLAND AREA 7)
AREA OF WETLAND = 2.79 AC
AREA OF IMPACT WETLAND = 0.67 AC
VOLUME OF PERMANENT FILL= 1100 CY
PRELIMINARY SUBJECT TO REVISION
WETLAND IMPACTS


TOTAL AREA (WETLAND AREA 10)
AREA OF WETLAND = 0.52 AC
AREA OF IMPACT WETLAND = 0.02 AC
VOLUME OF PERMANENT FILL= 0.00 CY
Permanent Fill
Temporary Fill
Emergent
Forested
Maintained
Scrub-shrub
N
PRELIMINARY SUBJECT TO REVISION
615+00
620+00
625+00
WETLAND 10
0.02 ac permanent
I-30 WB RAMP
I-40
145+00
150+00
155+00
225+00
220+00
40+00
I-40 EB RAMP
350+00
WETLAND IMPACTS


PROPOSED RIGHT OF WAY
I-30
PERMANENT EASEMENT
335+00
340+00
235+00
240+00
245+00
435+00
440+00
PERMANENT EASEMENT
PROPOSED RIGHT OF WAY
0.97 ac temporary
WETLAND AREA 12
TOTAL AREA (WETLAND AREA 12)
AREA OF WETLAND = 1.45 AC
AREA OF IMPACT WETLAND = 0.00 AC
AREA OF TEMP. IMPACT WETLAND = 0.97 AC
VOLUME OF TEMPORARY FILL = 10450 CY
Permanent Fill
Temporary Fill
Emergent
Forested
Maintained
Scrub-shrub
Riverine
PRELIMINARY SUBJECT TO REVISION
WETLAND IMPACTS


TOTAL AREA (WETLAND AREA 14)
AREA OF WETLAND = 1.62 AC
AREA OF IMPACT WETLAND = 0.05 AC
AREA OF TEMP. IMPACT WETLAND = 0.17 AC
VOLUME OF FILL = 0.00 CY
WETLAND AREA 14
0.05 ac permanent
0.17 ac temporary
PERMANENT EASEMENT
PERMANENT EASEMENT
AREA OF IMPACT
I-440 NB EXIT RAMP
I-30
0.01 ac permanent
WETLAND AREA 17
0.40 ac temporary
WETLAND AREA 15
TOTAL AREA (WETLAND AREA 15)
AREA OF WETLAND = 1.63 AC
AREA OF IMPACT WETLAND = 0.00 AC
AREA OF TEMP. IMPACT WETLAND = 0.40 AC
VOLUME OF FILL = 0.00 CY
0.21 ac permanent
0.45 ac temporary
WETLAND AREA 16
TOTAL AREA (WETLAND AREA 16)
AREA OF WETLAND = 1.23 AC
AREA OF IMPACT WETLAND = 0.21 AC
AREA OF TEMP. IMPACT WETLAND = 0.45 AC
VOLUME OF FILL = 0.00 CY
Permanent Fill
Temporary Fill
Emergent
Forested
Maintained
Scrub-shrub
TOTAL AREA (WETLAND AREA 17)
AREA OF WETLAND = 2.91 AC
AREA OF IMPACT WETLAND = 0.007 AC
VOLUME OF FILL = 0.00 CY
FED.RD. DIST.NO. 6
STATE ARK.
JOB NO. CA0602
PRELIMINARY SUBJECT TO REVISION
WETLAND IMPACTS


0.19 ac permament
0.01 ac permanent
0.12 ac temporary
WETLAND AREA 19
WETLAND AREA 18
WETLAND AREA 17
I-530 SB
I-530 NB
595+00
600+00
605+00
TOTAL AREA (WETLAND AREA 17)
AREA OF WETLAND = 17.37 AC
AREA OF TEMP. IMPACT WETLAND = 0.12 AC
VOLUME OF FILL = 0.00 CY
TOTAL AREA (WETLAND AREA 18)
AREA OF WETLAND = 0.28 AC
AREA OF IMPACT WETLAND = 0.01 AC
VOLUME OF FILL = 0.00 CY
TOTAL AREA (WETLAND AREA 19)
AREA OF WETLAND = 0.66 AC
AREA OF IMPACT WETLAND = 0.19 AC
VOLUME OF FILL = 0.00 CY
Permanent Fill
Temporary Fill
Emergent
Forested
Maintained
Scrub-shrub
WETLAND IMPACTS
PRELIMINARY SUBJECT TO REVISION


WETLAND AREA 17
0.41 ac temporary impacts
Fourche Creek
I-30 WB TO
I-440 EB RAMP
I-530 NB TO
I-440 EB RAMP
I-30 EB TO
I-440 EB RAMP
EXISTING RIGHT OF WAY
Permanent Fill
Temporary Fill
Emergent
Forested
Maintained
Scrub-shrub
TOTAL AREAS (WETLAND AREA 17)
AREA OF WETLAND = 2.53 AC
AREA OF TEMP. IMPACT WETLAND = 0.41 AC
VOLUME OF TEMPORARY FILL = 520 CY
PRELIMINARY SUBJECT TO REVISION
N
STATE ARK.
JOB NO. CA0602
WETLAND IMPACTS

Wetland Impacts

Wetland	Station Range	Type	Impact Type	Temporary Impacts	Permanent Impacts
4	I-40 EB: 414+85 to 425+30	Forested	Fill		3.13
		Emergent	Fill		0.33
		Maintained	Fill		0.79
5	I-40 EB: 420+45 to 429+95	Forested	Fill	0.54	1.12
6	I-40 WB: 314+757 to 316+25	Scrub/shrub	Fill		0.06
7	N. HILLS BLVD.: 15+00 to 26+95	Forested	Fill		0.67
10	I-40: 145+70 to 153+00	Emergent	Fill		0.02
12	I-30 Arkansas River	Riverine		0.97	
14	I-30: 114+55 to 119+10	Emergent	Fill	0.17	0.05
15	I-440 NB EXIT RAMP 713+50 to 718+00	Emergent	Fill	0.40	
16	I-440 NB EXIT RAMP 708+10 to 713+40	Forested	Fill	0.45	0.21
17	I-530 NB: 600+00 to 613+40	Emergent	Fill		.01
17	Temp Bridge	Forested	Fill	0.41	

17	I-440 Temp. Exit ramp	Forested	Fill	0.12	
18	I-530 NB: 596+40 to 598+50	Forested	Fill		0.01
19	I-530 NB: 592+30 to 596+45	Forested	Fill		0.19
Total			**Temporary**	**2.09**	
Total			**Permanent**		**6.58**

Stream Impacts

Stream	Station Range		Type	Impact Type	Linear Feet
5	I-40 to I-30 WB RAMP: 212+20 to 213+85	Fairman Ditch	Perennial	Culvert Extensions	542
10	I-30 Arkansas River Bridge	Arkansas River	Perennial	Rip rap	300
Total					**842**

Stream Crossings

Stream	Station Range	Name	Type	Impact Type	Linear Feet
2	I-40 EB: 427+05 to 430+60	Unnamed	Ephemeral	Culvert Extension	116
3	I-40 EB: 415+35 to 415+55	Unnamed	Perennial	Culvert Extension	233
7	I-40 EB: 152+50 to 153+25	Unnamed	Intermittent	Culvert Extension	71
14	I-530 NB: 595+75	Unnamed	Ephemeral	Culvert Extension	11
15	No Alignment	Fourche Creek	Perennial	Temporary Bridge	98
Total					**529**

Required Mitigation Credits Worksheet

CA0602
30 Crossing
Pulaski County
7/5/2018

Factor	Wetland 4	Wetland 4	Wetland 4	Wetland 5	Wetland 6	Wetland 7	Wetland 10	Wetland 12	Wetland 14	Wetland 14	Wetland 15	Wetland 16	Wetland 17	Wetland 17	Wetland 18	Wetland 19
Wetland Type	Forested	Maintained	Emergent	Forested	Scrub/Shrub	Forested	Herbaceous	Riverine	Emergent	Emergent	Emergent	Forested	Forested	Emergent	Forested	Forested
Lost Type	Type A	Type C	Type B	Type A	Type B	Type A	Type B	Type B	Type B	Type B	Type B	Type A	Type A	Type B	Type A	Type A
	3.0	0.2	2.0	3.0	2.0	3.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	2.0	3.0	3.0
Priority Category	Secondary	Tertiary	Tertiary	Tertiary	Teriary	Tertiary	Tertiary	Tertiary	Secondary	Secondary	Secondary	Secondary	Secondary	Secondary	Secondary	Secondary
	1.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Existing Condition	Fully functional	Impaired	Impaired	Slightly Impaired	Slightly Impaired	Slightly Impaired	Very Impaired	Slightly Impaired	Slightly Impaired	Fully functional	Fully functional	Fully functional	Fully functional	Fully functional	Slightly Impaired	Slightly Impaired
	3.0	1.0	1.0	2.0	2.0	2.0	0.1	0.1	2.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0
Duration	Over 10	Over 10	Over 10	Over 10	Over 10	Over 10	Over 10	1 to 3	Over 10	1 to 3	1 to 3	Over 10	Over 10	Over 10	Over 10	Over 10
	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.5	1.0	0.5	0.5	2.0	2.0	1.0	2.0	2.0
Dominant Impact	Fill	Fill	Fill	Clear	Fill	Fill	Fill	fill	Fill	Fill	Fill	Clear	Fill	Fill	Fill	Fill
	3.0	3.0	3.0	1.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	1.0	3.0	3.0	3.0	3.0
Cumulative Impact	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
Sum of r Factors (R_x)	12.9	7.1	8.9	8.9	9.9	10.9	8.0	6.5	9.9	10.4	10.4	10.9	12.9	10.9	11.9	11.9
Impacted Area (AA_x)	3.13	0.79	0.33	1.66	0.06	0.67	0.02	0.97	0.05	0.17	0.40	0.66	0.53	0.01	0.01	0.19
RxAA=	**40.37**	**5.63**	**2.95**	**14.82**	**0.60**	**7.32**	**0.16**	**6.30**	**0.50**	**1.77**	**4.17**	**7.21**	**6.85**	**0.11**	**0.12**	**2.26**

Total Required Credits = Σ(RxAA) = 101.16

ADVERSE IMPACT
FACTORS FOR RIVERINE SYSTEMS WORKSHEET

Stream Type Impacted	Ephemeral 0.1			Intermittent 0.4			Perennial-OHWM width		
							<15' 0.4	15'-30' 0.6	>30' 0.8
Priority Area	Tertiary 0.1			Secondary 0.4			Primary 0.8		
Existing Condition	Functionally Impaired 0.1			Moderately Functional 0.8			Fully Functional 1.6		
Duration	Temporary 0.05			Recurrent 0.1			Permanent 0.3		
Activity	Clearing 0.05	Utility Crossing/Bridge Footing 0.15	Below Grade Culvert 0.3	Armor 0.5	Detention 0.75	Morpho-logic Change 1.5	Impound-ment (dam) 2.0	Pipe >100' 2.2	Fill 2.5
Cumulative Linear Impact	<100' 0	100'-200' 0.05	201-500' 0.1	501-1000' 0.2	>1000 linear feet (LF) 0.1 reach 500 LF of impact (example: scaling factor for 5,280 LF of impacts = 1.1)				

Factor	STREAM #5	STREAM #10	Dominant Impact Type 3	Dominant Impact Type 4	Dominant Impact Type 5
Stream Type Impacted	Intermittent	Perennial >3	blank	blank	blank
Priority Area	Tertiary	Primary	blank	blank	blank
Existing Condition	Functionally	Moderately F	blank	blank	blank
Duration	Permanent	Permanent	blank	blank	blank
Activity	Below Grade	Armor	blank	blank	blank
Cumulative Linear Impact	501-1000' 0	501-1000' 0	blank 0	blank 0	blank 0
Sum of Factors	M = 1.4	3.4	0	0	0
Linear Feet of Stream Impacted in Reach	LF= 542	300	0		0
M X LF	758.80	1,020	0	0	0

Total Mitigation Credits Required = (M X LF) = 1,778.8

SUMMARY OF FILL MATERIALS AND QUANTITIES

Location/Type	Volumes Below the OHWM	Excavation Below the OHWM
Fourche Creek		
Excavation for foundations		84
Fill for foundation	84	
Temporary Work Road 1	434	
SUB TOTAL	**518**	
Work Road 1a	3725	
Temporary Ramp Fill	12800	
Permanent Fill	7100	
Temporary Work Road 1b	7200	
SUB TOTAL	**30,825**	
Arkansas River Bridge		
Removal of old Bridge		
Foundations	2647	
Pier Protection	11556	
SUB TOTAL	**14,203**	
New Construction		
Excavation for foundations		10091
Removal of exsting pier/structure		14209
Fill for foundation	13785	
Fill for riprap south side	2233	
Temporary Work Road 2	10448	
SUB TOTAL	**26466**	
North Hills		
New construction		
Fill for embankment	**1034**	
I-40WB		
New construction		
Fill for embankment	**330**	
Ramp I40EB - Hwy67NB		
New construction		
Excavation for foundations		
Fill for foundation	331	
Fill for embankment	16734	
Fill for concrete riprap	11	
Temporary Work Road 3	2228	
Temporary Work Road 4	1455	
SUB TOTAL	**20759**	
TOTAL - Cubic Yards Fill	**94136**	

TOTAL - Cubic Yards Excavation **24384**