

Conference Opinion

**A-0009C Corridor K Appalachian Highway Development Project
WBS: 32572.1.FS10
Graham County, Stecoah and Robbinsville, North Carolina**

FWS Log # 21-068



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INTRODUCTION

A biological opinion (BO) is the document that states the opinion of the US Fish and Wildlife Service (Service) under the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1543) (ESA), as to whether a Federal action is likely to (1) jeopardize the continued existence of species listed as endangered or threatened; or (2) result in the destruction or adverse modification of designated critical habitat.

A conference opinion (CO) is equivalent to a BO but addresses species that are not yet listed under the ESA and/or proposed critical habitats not yet designated. Therefore, the ESA prohibitions against jeopardy, adverse modification, and taking do not yet apply. The Service may adopt a CO as a BO if the evaluated species/critical habitat are eventually listed/designated and while the action agency maintains discretion and involvement in the action.

The North Carolina Department of Transportation (NCDOT), Division 14, has proposed the A-0009C Corridor K Appalachian Highway Development Project (A9 Corridor K, for the purposes of this CO). The proposed project consists of the improvement and widening of portions of NC State Highways 28 and 143 (NC 28 and NC 143) from the Town of Stecoah to the Town of Robbinsville in Graham County, North Carolina. In previous correspondence, the Service provided NCDOT with concurrence on the determination that the project may affect, but is not likely to adversely affect (NLAA):

Indiana bat	(<i>Myotis sodalis</i>)	Endangered
Northern long-eared bat	(<i>Myotis septentrionalis</i> , NLEB)	Threatened

The same correspondence addressed federally listed species for which NCDOT determined the proposed work would have no effect:

Appalachian elktoe	(<i>Alasmidonta raveneliana</i>)	Endangered
Carolina northern flying squirrel	(<i>Glaucomys sabrinus coloratus</i>)	Endangered
Rock gnome lichen	(<i>Gymnoderma lineare</i>)	Endangered
Small whorled pogonia	(<i>Isotria medeoloides</i>)	Threatened
Spotfin chub	(<i>Erimonax monachus</i>)	Threatened
Virginia spiraea	(<i>Spirea virginiana</i>)	Threatened

Following recommendations from the Service to conference, NCDOT also determined the following at-risk species are not likely to be adversely affected by the proposed project:

Little brown bat	(<i>Myotis lucifugus</i>)	At-risk Species
Tricolored bat	(<i>Perimyotis subflavus</i>)	At-risk Species

These species were also addressed in the previous correspondence referred to above. The Service's recommendation for conferencing was offered to avoid disruption to ongoing or planned actions. Based on the information provided and the commitment to implement conservation measures, the Service stated that we would concur with NLAA determinations from

the NCDOT for the above at-risk species. These determinations can be adopted as concurrence if a final rule for these species becomes effective during the life of the project.

This document transmits the Service's opinion, based on our review of the proposed action and its effects on golden-winged warbler (*Vermivora chrysoptera*, GWWA), a petitioned species with a 2011 substantial 90-day finding that is now undergoing a 12-month status review to determine if it warrants listing under the Act.

This CO is based on information provided in the Biological Conference Report (Conference Report) for GWWA originally submitted to the Service by NCDOT on December 4, 2020 and revised/resubmitted on February 8, 2021; communications with experts on the effected species; annual field survey data; recent survey data from May 2021; and other sources of information. Project activities will directly impact nesting habitat for two identified breeding pairs of GWWA and will also occur in close proximity to the nesting habitat of another known breeding pair.

CONSULTATION HISTORY

This project has a very lengthy history of multi-agency coordination and consultation. The highlights only appear below, with many meetings, conference calls and emails not specifically listed below. The timeline for preparation of this CO overlapped with a period of transition for the Service NCDOT liaison positions located in the Asheville Ecological Services Field Office. This multi-month orientation interval, along with NCDOT's expressed project prioritization guidance, is reflected in the interim between receiving the completed Conference Report and completion of this CO.

- August 28, 2020 – Conference call between the Service, NCDOT, North Carolina Wildlife Resources Commission (NCWRC), United States Forest Service (USFS) and TGS Engineers to discuss project impacts on GWWA breeding locations and mitigative measures.
- July 31, 2020 – NCDOT requested section 7 concurrence from the Service via email.
- October 30, 2020 – Email comments provided by Service to NCDOT regarding species included in concurrence request.
- November 3, 2020 – NCDOT provided Service with revised concurrence request via email.
- November 17, 2020 – Service stated in an email to NCDOT that a Conference Report in support of a CO for GWWA would be necessary.
- November 23, 2020 – Service provided NCDOT with section 7 concurrence for species other than GWWA.
- December 4, 2020 – NCDOT provided Service a draft Conference Report for GWWA.
- January 5, 2021 – Service provided NCDOT with comments on the draft Conference Report, including input from NCWRC and USFS.
- February 8, 2021 – NCDOT provided Service with a final Conference Report.
- May 26-27, 2021 – Service conducted GWWA surveys at locations within project corridor.

1. DESCRIPTION OF THE PROPOSED ACTION AND ACTION AREA

1.1 GENERAL INFORMATION

As defined in the Service's section 7 regulations (50 CFR 402.02), "action" means "all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies in the United States or upon the high seas." The direct and indirect effects of the actions and activities must be considered in conjunction with the effects of other past and present Federal, state, or private activities, as well as the cumulative effects of reasonably certain future state or private activities within the action area. This CO addresses only those actions for which we believe adverse effects may result.

A description of the construction and related activities for the proposed project are described in the Conference Report, and have been included, with edits, below:

The A9 Corridor K project has been proposed to address improvements to NC 143 and NC 28 and their existing alignments from the Town of Robbinsville to the existing four-lane section east of Stecoah. Improvements will include the addition of passing, climbing, and turn lanes and shoulders and involve tree removal, grading, retaining wall construction, replacement of stream crossing structures (culverts), paving, and other related roadway facility improvements throughout the project area.

The project will require tree removal from an estimated maximum of 97 acres of mostly upland forest. Most clearing will be within about 100 feet of the existing roadway alignments. Grading may require jack-hammering, drilling, and blasting, primarily in the Stecoah Gap portion of the project area where slope cuts are required. Periodic hammering to remove culverts and associated structures as well as installation of new guardrail posts will occur. Night work and the use of temporary lighting will not occur except for a brief portion of construction of the Appalachian Trail and wildlife overpass at Stecoah Gap.

1.2 CONSERVATION MEASURES

Conservation measures represent actions, pledged in the project description, that the action agency will implement in order to minimize the effects of the proposed action on the species under review. Such measures should be closely related to the action and should be achievable within the authority of the action agency. We consider the beneficial effects of conservation measures in making our determination of whether the project will jeopardize the species and in the analysis of incidental take.

The proposed construction-related activities will result in the disturbance and potential degradation of established GWWA breeding habitat for three nesting pairs. Because of the significance of these established habitat patches for GWWA conservation, specifically in terms of supporting and sustaining successful breeding behaviors into the future, NCDOT has committed to working constructively with the Service and other agencies and species experts to avoid and minimize harmful impacts to GWWA habitat. Additionally, NCDOT has committed to conducting habitat enhancement activities aimed at mitigating for the anticipated negative

impacts at current breeding locations. The following conservation measures were included in the Conference Report:

The A9 Corridor K project is in the initial stages of design. However, the following will be incorporated into the project and contract, as appropriate, and documented by “Green Sheet” commitments to avoid and minimize impacts to GWWA:

1. Updated designs eliminated the need for a retaining wall downslope of the road near the Appalachian Trail parking lot at Stecoah Gap (Figure 2). Therefore, direct impacts to the GWWA nesting habitat at this location will be avoided. A similar refinement eliminated a retaining wall and some impact to GWWA nesting habitat downslope (south) of the road near Bill Rose Road (Figure 3).
2. Tree clearing on the project will occur from October 15 to April 1 to protect potential tree-roosting bats in the area, particularly Indiana bats. This measure may also help avoid direct impacts of the project on nesting birds, possibly including GWWA.
3. Forest clearing or select cutting/thinning will occur in two locations in the project area to potentially increase usable GWWA habitat. The primary enhancement area (approximately 0.65 acre), referred to as the Gap Site, is adjacent to known early successional habitat and GWWA breeding territory at Stecoah Gap, as outlined in Figure 2. The second enhancement area (approximately 0.85 acre) is habitat with record of a singing male GWWA near the intersection of NC 143 and NC 28 (Billboard Site, Figure 4). Enhancing habitat is considered an appropriate conservation opportunity due to the advancing age/structure of the woody vegetation and the possibility of returning it to suitable GWWA breeding habitat via clearing/thinning practices. These locations were proposed and discussed in an August 28, 2020 conference call about A9 Corridor K and GWWA with Sue Cameron and Janet Mizzi (Service), Chris Kelly (NCWRC), Johnny Wills (USFS), Stacy Oberhausen (TGS Engineers), and Dave McHenry (NCDOT).
4. Habitat creation specifications outlined in the GWWA Status Review and Conservation Plan (Roth et al. 2019) will be incorporated into the habitat enhancements as follows:
 - a. A target of 5-15 trees per acre will be retained (leave 3-9 trees at Gap Site and leave 4-12 trees at Billboard Site) with an overall goal of 10-30% canopy cover.
 - b. Tall tree (>3 feet) and short tree (<3 feet) coverage targets will be 5-35% and 10-30%, respectively.
 - c. Herbaceous cover and ground cover targets will be 5-25% and 10-15%, respectively.
5. Native vegetation will be planted on terraced retaining walls and a proposed wildlife overpass to be constructed in Stecoah Gap and, as needed, on GWWA enhancement areas to better meet vegetation coverage objectives. The enhancement areas and cut slopes in the project area will regenerate over time with native herbaceous and woody vegetation from the seedbank. Tree species and shrubs favored by GWWA, possibly including black locust (*Robinia pseudoacacia*), pin cherry (*Prunus pennsylvanica*), white oak

(*Quercus alba*), and blackberry (*Rubus sp.*) will be selected for planting. Seed mixes for erosion control and native planting will be coordinated with USFS personnel and will not include non-native invasive species (NNIS). There will be an emphasis on a larger component of broadleaf forbs over grasses in native seed mixes to benefit GWWA. General prescriptions for seeding as well as native vegetation planting are outlined in Appendix C.

6. Off-road equipment to be used for project construction shall be pressure washed to help remove propagules (seeds or vegetative parts capable of reproduction) of NNIS prior to being brought onto USFS property. To avoid effects to desirable species, NCDOT shall coordinate with the USFS on the timing, location, and method of all chemical treatments used after project completion for vegetation control. Control of NNIS (Princess tree (*Paulownia tomentosa*), multi-flora rose (*Rosa multiflora*), and other target species) will be pursued on terraced retaining walls, a proposed wildlife overpass to be constructed in Stecoah Gap, and as needed on GWWA enhancement areas the first growing season after construction.

1.3 ACTION AREA

The action area is defined as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action."

The overall project area of A9 Corridor K consists generally of the road corridor extending east from the Town of Robbinsville at US Highway 129 to the existing four-lane section east of Stecoah, which includes sections of NC 143, and NC 28, described in the Conference Report. The defined action area includes the immediate roadway construction project footprint, including work areas, staging areas, and access areas; as well as areas adjacent to and affected by roadway project activities. Of specific consideration in this CO are the areas in the vicinity of identified GWWA breeding habitat at and near Stecoah Gap. These areas begin at the curve near the intersection of Bill Rose Road with NC 143 and extend eastward to the intersection of NC 143 and NC 28 (Figure 1).

2. STATUS OF THE SPECIES

Species: Golden-winged warbler (*Vermivora chrysoptera*)

Family: Parulidae

Status: Petitioned for Listing

Date Listed: N/A

2.1 OVERVIEW

The GWWA was petitioned for listing on February 10, 2010 and a finding that the species may be warranted for listing (90 day finding) was published in the federal register on June 2, 2011. This species is a Neotropical migratory songbird with wintering grounds in portions of Central and Northern South America, and breeding range in North America extending through the Appalachian mountains from Georgia, north into Massachusetts, west into the Great Lakes

region and northward into Canada (Confer 1992, Cornell 2019). An early successional species, GWWAs require forest openings with dense patches of shrubs, herbaceous compositions of grasses and forbs, and sparse trees for their breeding habitat. The breeding season is relatively brief, lasting approximately six weeks (Buehler et al. 2007). Nests are constructed on the ground at the base of clumped herbaceous plants and clutches range from 3-6 eggs. The species is single brooded but is known to renest after a failed nesting attempt (Confer 1992). Nest success varies throughout the GWWA range, with excellent success reported in North Carolina (Buehler 2007). After leaving the nest, fledglings will disperse throughout varied habitat structure outside of the nesting territory including mature forest (Cameron et al. 2020). First year and adult birds will forage after the breeding season prior to embarking on the autumn migration to wintering grounds ranging from southeastern Mexico and Belize south through regions of Central America and into the Andes regions in Venezuela and Colombia (Streby et al. 2017).

The GWWA is declining throughout its entire range, with an annual average range-wide decline of -2.5% over the past 40+ years (Sauer et al. 2005). Especially precipitous declines (-8.3% per year, 98% overall) have been observed in the southeastern region (Rosenberg et al. 2016). These falling numbers are attributed to multiple factors, primarily habitat loss as early successional habitat reverts to mature forest and as grasslands and wetlands are altered through human activities. Fire suppression, rural development, and land use change are a few notable examples. Additional driving factors of declines include hybridization with the closely related blue-winged warbler (*Vermivora cyanoptera*) and nest parasitism from the brown-headed cowbird (*Molothrus ater*), phenomena observed more notably in the northern populations (Buehler et al. 2006); and loss of wintering ground habitat to deforestation and agricultural development. The Southern Appalachian GWWA population, occurring at generally > 600 meters elevation, appears to be limited mainly by habitat availability (Buehler et al. 2007).

In response to the observed decline of GWWA populations throughout the breeding range, the GWWA Working Group (GWWG) was formed in 2003. This group is composed of more than 140 biologists and managers engaged in research and conservation of GWWA. The GWWG spearheads workshops, presentations, and large-scale research efforts in support of better understanding and conserving GWWAs. Production of the *Golden-winged Warbler Status Review and Conservation Plan* and regional-specific management guidelines is provided by the GWWG to inform and guide conservation efforts throughout the species breeding range. In the Southern Appalachian region, biologists with NCWRC, the Service, and other regional agencies and organizations conduct annual breeding season monitoring for GWWA. The aim of this effort is to contribute to knowledge on habitat use and distribution throughout the GWWA range and inform conservation actions in the Southern Appalachians.

2.2 STATUS WITHIN THE ACTION AREA

The A9 Corridor K project area includes long-term breeding sites for GWWA in the “Southern Appalachian-Nantahala South Subregion” Focal Area (A-18) (Roth et al. 2012). The GWWA focal areas established in the *Golden-winged Warbler Status Review and Conservation Plan* are geographical groupings of core populations that are considered important to sustaining and enhancing the distribution of GWWA throughout the range. The A-18 Subregion includes most of Graham, northeast Cherokee, northeast Clay, and western Macon Counties in North Carolina.

In 2010, approximately 300 individual GWWA and 1500 acres of breeding habitat were estimated in this subregion. A 2018 study estimated 164 individuals within the subregion (Roth et al. 2019).

There are three identified breeding territories for GWWA within and adjacent to the proposed A9 Corridor K action area. Two of the territories are located in proximity to the intersection of Bill Rose Road and NC 143 (Bill Rose Road site), with one territory to the north-west of the roadway and the other to the south (Figure 3). The other territory is located at Stecoah Gap and NC 143 (Stecoah Gap site) (Figure 2). Each site has been monitored and confirmed annually during the breeding season for multiple years. The territories are composed of early successional vegetation adjacent to cleared openings and bordered predominately by mature forest. These territories are significant in that they have served as long-term habitat “anchors”, places that returning GWWA individuals depend upon for reproduction, foraging, and general breeding season success.

2.3 ENVIRONMENTAL BASELINE WITHIN THE ACTION AREA

Under section 7(a)(2) of the Act, when considering the effects of an action on federally proposed (in this case at-risk) or listed species, we are required to take into consideration the environmental baseline. The environmental baseline includes past and ongoing natural factors and past and present impacts from all Federal, state, or private actions and other activities in the action area (50 CFR 402.02), including Federal actions in the area that have already undergone section 7 consultation and the impacts from state or private actions that are contemporaneous with the consultation in progress. The environmental baseline for this CO considers all projects approved prior to the initiation of formal consultation.

The action area of the A9 Corridor K project is located in the eastern portion of Graham County, North Carolina. The project corridor is an existing two-lane roadway within a large tract of predominately forested land containing sections of residential and agricultural land uses. Several centuries of landscape modifications in the region, largely in the form of agriculture, silviculture, residential, and transportation development have resulted in alterations to and loss of natural successional stages of vegetative structure. Notably, open fields reverting to forest and fire suppression are considered limiting factors to GWWA populations in the Appalachian region (Buehler et al. 2007). Suitable breeding habitat within the action area is limited to small patches of succeeding forest cuts, shrubby wetlands, and utility and transportation rights-of-ways.

3. EFFECTS OF THE ACTION

Under section 7(a)(2) of the Act, "effects of the action" refers to the consequences, both direct and indirect, of an action on the species or critical habitat. The effects of the proposed action are added to the environmental baseline to determine the future baseline, which serves as the basis for the determination in this CO. Should the effects of the Federal action result in a situation that would jeopardize the continued existence of the species, we may propose reasonable and prudent alternatives that the Federal agency can take to avoid a violation of section 7(a)(2).

3.1 DIRECT EFFECTS

The A9 Corridor K project will cause direct effects to long-term GWWA breeding habitat locations via road construction related activities. Effects of the action have been minimized to the extent practicable, as described in the Conservation Measures section, but cannot be reduced to zero; therefore, the existing breeding pairs of GWWA will experience adverse impacts to their breeding habitat. Direct construction impacts including alterations to vegetative structure, alterations to topography from grading activities, drainage system installation, retaining wall construction, paving for a new right-of-way, and drainage and access easement development will occur within two long-term breeding territories adjacent to the Bill Rose Road site, comprising an impact area of 0.45 acres (Figure 3). Additionally, clearing activities will occur in upslope proximity to the breeding territory at the Stecoah Gap site (Figure 2). These activities, collectively, can be expected to reduce breeding habitat availability at the Bill Rose Road site and disrupt breeding behavior at both the Bill Rose Road and Stecoah Gap sites. Alteration to habitat as well as disturbance from construction machinery and noise is likely to displace breeding pairs from their nesting grounds.

3.2 INDIRECT EFFECTS

Indirect effects are those impacts that are caused by or result from the proposed action, are later in time, and are reasonably certain to occur.

The proposed roadway corridor improvements such as the addition of passing, climbing, and turn lanes as well as shoulder widening will support and potentially contribute to a greater volume of vehicle traffic moving through the area, which may increase the risk of vehicle strikes for GWWA.

The potential for unintentional introduction of NNIS through construction equipment and stabilization plantings could occur. NNIS can outcompete native plant species and can therefore alter the vegetative habitat composition and structure that native animal species, including GWWA, depend upon.

3.3 CUMULATIVE EFFECTS

Cumulative effects are those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation (50 CFR 402.02(d)).

An increase in traffic and accessibility to the area could result in land use changes and may promote both commercial and residential development; however, the Service has no clear or substantial information about any such projects that would make them reasonably certain to occur (50 CFR 402.17). Therefore, there are currently no cumulative effects anticipated in relation to the A9 Corridor K project.

3.4 BENEFICIAL EFFECTS

The proposed wildlife overpass crossing at Stecoah Gap will provide beneficial effects in the form of a vegetated corridor for GWWA to use for crossing the highway. This crossing option can be expected to reduce the occurrence of injury/mortality resulting from vehicle strikes.

3.5 CONCLUSION

In this CO, we have reviewed the current status of the GWWA; the environmental baseline for the action area; the effects of construction and operation of the A9 Corridor K improvements; conservation measures incorporated into the proposed action; any effects from consequences of the action; and any cumulative effects. It is the Service's opinion that implementing this project is not likely to jeopardize the continued existence of the GWWA. No critical habitat has been designated for this species; therefore, none will be affected.

4. INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulations pursuant to section 4(d) of the Act prohibit the taking of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct. Harm in the definition of "take" in the Act means an act which actually kills or injures wildlife. Such [an] act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering (50 CFR 17.3). Harass is defined as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns, which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not for the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered to be prohibited under the Act, provided that such taking is in compliance with the terms and conditions of this incidental take statement.

For at risk species or species proposed for listing under the Act, the prohibitions against taking the species found in section 9 of the Act do not apply until the species is listed. However, the Service advises the NCDOT to consider implementing the following reasonable and prudent measures. While GWWA is not yet proposed, it is a petitioned species currently undergoing the 12-month review process. If found "warranted" for listing, a proposed rule for GWWA could be published or the species could be designated a candidate for listing. If this CO is adopted as Biological Opinion following a listing or designation, these measures, with their implementing terms and conditions, will be non-discretionary.

4.1 AMOUNT OF TAKE ANTICIPATED

In the event of listing, we anticipate that incidental take of the GWWA will occur as a result of the proposed action. Impacts from road construction activities to established breeding territories are expected to result in harassment leading to harm in the form of breeding displacement and possible failed reproduction of the breeding pairs. Because this species exhibits strong site fidelity to its breeding territory, is single-brooded, and has a relatively short breeding season

(Confer 1992), the destruction or modification of that habitat is expected to result in at least one season of reduced or failed reproductive success. The adverse impacts from the loss of nesting territory on reproductive success is compounded by the low availability of optimal early successional breeding habitat in the region (Buehler et al. 2007). In other words, to successfully reproduce, a displaced breeding pair would have to disperse throughout the area and locate a suitable replacement territory; an effort which compromises reproductive success (Donovan et al. 1995). Additionally, direct disturbance to breeding pairs from adjacent construction activity, estimated to occur over three to four years, can be expected to result in disruptions to breeding and nesting behavior. Take, in the form of harm and/or harassment, is difficult to quantify or estimate in terms of number of individuals. Therefore, acreage and duration are used as a surrogate for take. Considering the loss of breeding territory, disturbance associated with construction activities, and adverse impacts on reproductive success, an amount of take is reasonably considered to be 0.45-acres of breeding habitat total over the life of the project and a duration of four breeding seasons. Should the project impacts exceed these levels of area or duration, reinitiation of consultation will be necessary.

4.2 EFFECT OF THE TAKE

In this CO, we have determined that the level of take associated with this project is not likely to result in jeopardy to the GWWA due to the relatively small impact acreage in breeding territories and the low numbers of GWWA thus affected. The proposed action will affect suitable breeding habitat and thus, individual breeding pairs, which is significant in relation to the immediate landscape; however, due to the much larger occupied area surrounding the action area, we have determined this project will not significantly affect the Southern Appalachian-Nantahala South Subregion GWWA at the population level.

4.3 REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize take of the GWWA. These nondiscretionary measures include, but are not limited to, the terms and conditions outlined in this CO.

- The Applicant will minimize the areas of disturbance within the action area to only the areas necessary for the safe and successful implementation of the proposed action and will carry out habitat improvement activities with input from the Service, NCWRC and USFS.

4.4 TERMS AND CONDITIONS

In order to be exempt from the prohibitions of section 9 of the Act, the Applicant must comply with the following terms and conditions, which implement the reasonable and prudent measures described previously. These terms and conditions are nondiscretionary.

- The Applicant will coordinate implementation of the habitat improvement efforts with agency partners (Service, NCWRC, USFS).

- Incorporate the planting of the following native forbs into GWWA habitat enhancement areas: goldenrod (*Solidago spp.*), fleabane (*Erigeron spp.*) and pokeweed (*Phytolacca americana*). While likely present to some degree in the seedbank, the use of these natives is encouraged to augment the herbaceous component of GWWA habitat.
- Follow recommendations provided in the *Best Management Practices for Golden-winged Warbler Habitats in the Appalachian Region*, GWWG publication when conducting GWWA habitat enhancement activities; specifically regarding structural components of habitat patches (GWWG 2019).
- NCDOT will provide the Service with an after-action report that describes the habitat improvement efforts.

4.5 CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. The following conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

- Control of existing NNIS within the project corridor, specifically lespedeza, princess tree, garlic mustard (*Alliaria petiolata*), miscanthus grass (*Miscanthus sinensis*) and multiflora rose. Conduct efforts to eliminate stands of these species and replace with native species.
- Conduct additional vegetative thinning activities at the Gap Site prior to construction to help maintain and augment GWWA breeding habitat. This site has become increasingly overgrown and has the potential to offer improved habitat quality through ongoing management and thinning efforts.

In order for us to stay informed about actions that minimize or avoid adverse effects or that benefit listed species or their habitats, we request notification of the implementation of any conservation recommendations.

4.6 REINITIATION/CLOSING STATEMENT

This concludes formal consultation on the actions outlined in your Conference Report for Golden-winged Warbler, dated February 8, 2021. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded, (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this CO, (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this CO, or (4) a new species is listed or critical habitat is

designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operation causing such take must cease, pending reinitiation.

5. LITERATURE CITED

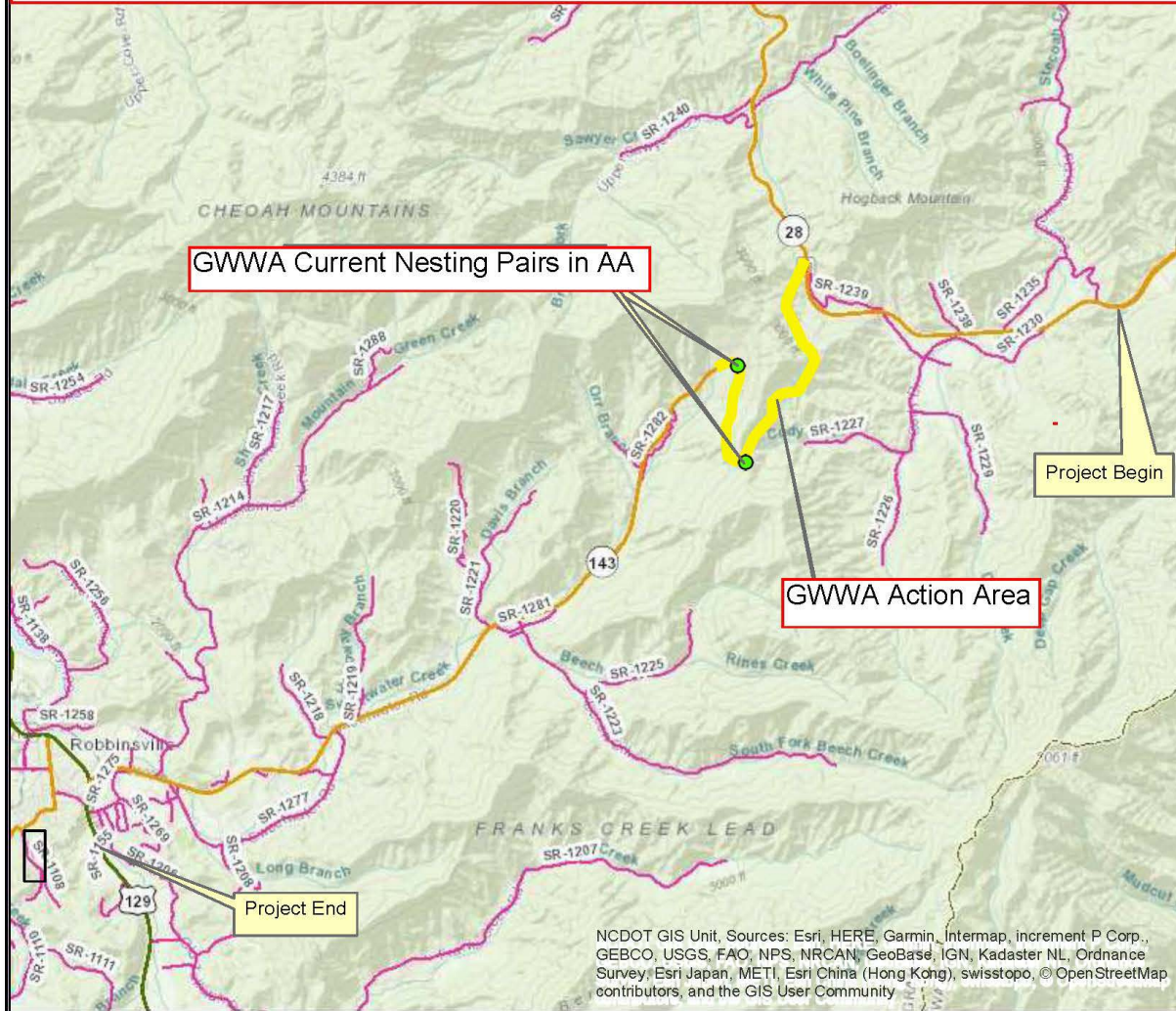
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Fish and Wildlife Service 50 CFR Part 17
[Docket No. FWS-R3-ES-2011-0028; MO 92210-0-0008]

APPENDIX A - FIGURES

Figure 1. A-0009C Project Area and GWWA Action Area



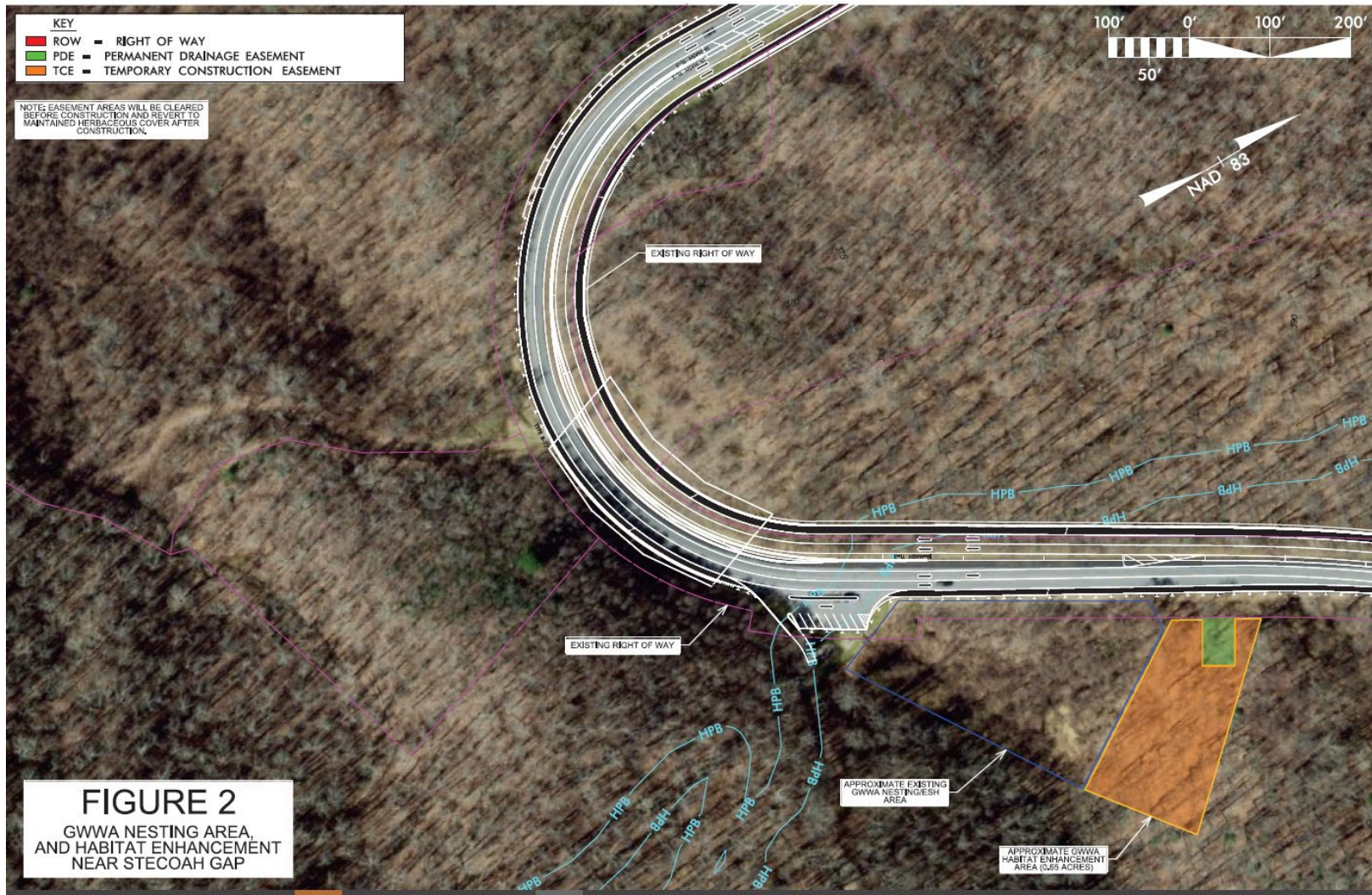
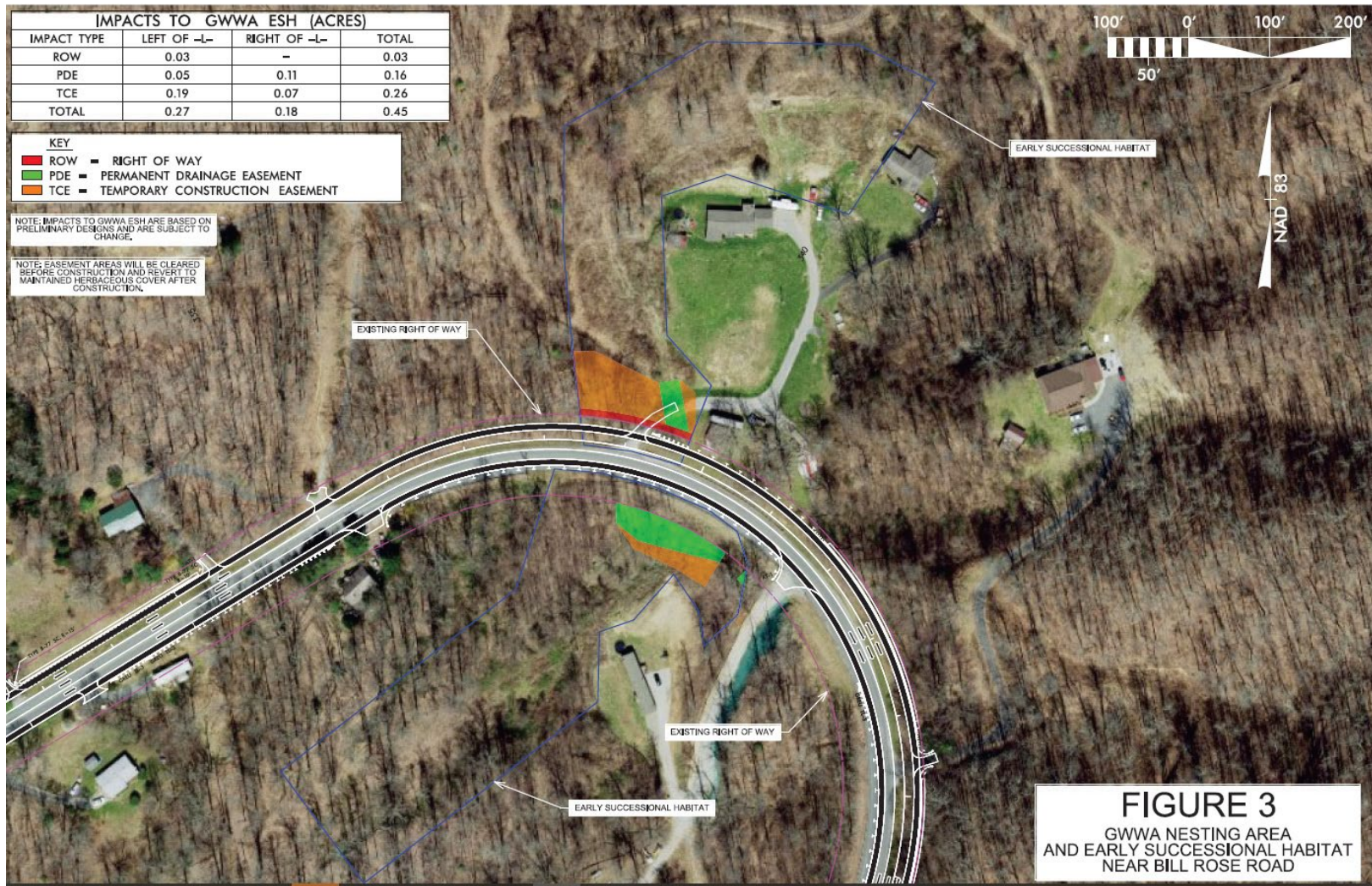


FIGURE 2
GWWA NESTING AREA,
AND HABITAT ENHANCEMENT
NEAR STECOAH GAP





APPENDIX B – DESIGN PLANS

CONTRACT: TIP PROJECT: A-0009CB

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

GRAHAM COUNTY

LOCATION: UPGRADE NC 143 FROM SR 1223 (BEECH CREEK RD) TO 0.5 MILES NORTH OF APPALACHIAN TRAIL

TYPE OF WORK: GRADING, PAVING, DRAINAGE, RETAINING WALLS, AND STRUCTURE

STATE	STATE PROJECT APPROPRIATION	FUND
N.C.	A-0009CB	1
32572.1.14	APD-0074(178)	FE
32572.2.14	APD-0074(178)	ROW/LITL
32572.3.14	APD-0074(178)	CONST.

See Sheet 1A For Index of Sheets

BEGIN PROJECT

END PROJECT

VICINITY MAP

RIGHT OF WAY PLANS

BEGIN TIP PROJECT A-0009CB
-L- STA. 208 + 00.00

END TIP PROJECT A-0009CB
-L- STA. 414 + 50.00

DESIGN EXCEPTION REQUIRED FOR HORIZONTAL CURVATURE AND HORIZONTAL SSD. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II. THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

3R GUIDELINES WERE USED FROM -L- 318+00 TO -L- STA 414+50 TO MINIMIZE IMPACTS TO TRIBAL AND USFS PROPERTY.

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2022 = 6590
ADT 2045 = 8800
K = 11 %
D = 57.5 %
T = 7 % +
V = 40 MPH
* TTST = 2% DUAL = 5%
FUNC CLASS = RURAL ARTERIAL
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT A-0009CB = 3.911 MILES
TOTAL LENGTH TIP PROJECT A-0009CB = 3.911 MILES

NCDOT CONTACT: WANDA H. AUSTIN, PE

PLANS PREPARED BY: JCS FOR ENGINEERS 2017 W. HUNTER ST. SHELBY, NC 27803 COMPLIANCE: POLA-C-0219

RIGHT OF WAY DATE: JULY 22, 2021

LETTING DATE: SEPTEMBER 20, 2022

NO STANDARD SPECIFICATIONS

HYDRAULICS ENGINEER

STRUCTURED: PE

ROADWAY DESIGN ENGINEER

STRUCTURE: PE

12/22/2016

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS
CONVENTIONAL PLAN SHEET SYMBOLS

PROJECT NUMBER NO. A 0009CB
SHEET NO. 18

BOUNDARIES AND PROPERTY:

Table listing symbols for boundaries and property: State Line, County Line, Township Line, City Line, Reservation Line, Property Line, Existing Iron Pin, Computed Property Corner, Property Monument, Parcel/Sequence Number, Existing Fence Line, Proposed Woven Wire Fence, Proposed Chain Link Fence, Proposed Barbed Wire Fence, Existing Wetland Boundary, Proposed Wetland Boundary, Existing Endangered Animal Boundary, Existing Endangered Plant Boundary, Existing Historic Property Boundary, Known Contamination Area: Soil, Potential Contamination Area: Soil, Known Contamination Area: Water, Potential Contamination Area: Water, Contaminated Site: Known or Potential, Buildings and Other Culture: Gas Pump Vent or UG Tank Cap, Sign, Wall, Small Mine, Foundation, Area Outline, Cemetery, Building, School, Church, Dam, Hydrology: Stream or Body of Water, Hydro, Pool or Reservoir, Jurisdictional Stream, Buffer Zone 1, Buffer Zone 2, Flow Arrow, Disappearing Stream, Spring, Wetland, Proposed Lateral, Tail, Head Ditch, False Sump.

RAILROADS:

Table listing symbols for railroads: Standard Gauge, RR Signal Milepost, Switch, RR Abandoned, RR Dismantled.

RIGHT OF WAY & PROJECT CONTROL:

Table listing symbols for right of way and project control: Secondary Horiz and Vert Control Point, Primary Horiz Control Point, Primary Horiz and Vert Control Point, Exist Permanent Easement Pin and Cap, New Permanent Easement Pin and Cap, Vertical Benchmark, Existing Right of Way Marker, Existing Right of Way Line, New Right of Way Line, New Right of Way Line with Pin and Cap, New Right of Way Line with Concrete or Granite RW Marker, New Control of Access Line with Concrete CA Marker, Existing Control of Access, New Control of Access, Existing Easement Line, New Permanent Easement, New Temporary Construction Easement, New Temporary Drainage Easement, New Permanent Drainage Easement, New Permanent Drainage / Utility Easement, New Permanent Utility Easement, New Temporary Utility Easement, New Aerial Utility Easement.

ROADS AND RELATED FEATURES:

Table listing symbols for roads and related features: Existing Edge of Pavement, Existing Curb, Proposed Slope Stakes Cut, Proposed Slope Stakes Fill, Proposed Curb Ramp, Existing Metal Guardrail, Proposed Guardrail, Existing Cable Guiderail, Proposed Cable Guiderail, Equality Symbol, Pavement Removal, Vegetation: Single Tree, Single Shrub.

Table listing symbols for hedges, woods, orchards, and vineyards: Hedge, Woods Line, Orchard, Vineyard.

EXISTING STRUCTURES:

Table listing symbols for existing structures: MAJOR: Bridge, Tunnel or Box Culvert, Bridge Wing Wall, Head Wall and End Wall; MINOR: Head and End Wall, Pipe Culvert, Footbridge, Drainage Box: Catch Basin, DI or JB, Paved Ditch Gutter, Storm Sewer Manhole, Storm Sewer.

UTILITIES:

Table listing symbols for utilities: POWER: Existing Power Pole, Proposed Power Pole, Existing Joint Use Pole, Proposed Joint Use Pole, Power Manhole, Power Line Tower, Power Transformer, UG Power Cable Hand Hole, H-Frame Pole, UG Power Line LOS B (S.U.E.*), UG Power Line LOS C (S.U.E.*), UG Power Line LOS D (S.U.E.*); TELEPHONE: Existing Telephone Pole, Proposed Telephone Pole, Telephone Manhole, Telephone Pedestal, Telephone Call Tower, UG Telephone Cable Hand Hole, UG Telephone Cable LOS B (S.U.E.*), UG Telephone Cable LOS C (S.U.E.*), UG Telephone Cable LOS D (S.U.E.*), UG Telephone Conduit LOS B (S.U.E.*), UG Telephone Conduit LOS C (S.U.E.*), UG Telephone Conduit LOS D (S.U.E.*), UG Fiber Optics Cable LOS B (S.U.E.*), UG Fiber Optics Cable LOS C (S.U.E.*), UG Fiber Optics Cable LOS D (S.U.E.*).

WATER:

Table listing symbols for water features: Water Manhole, Water Meter, Water Valve, Water Hydrant, UG Water Line LOS B (S.U.E.*), UG Water Line LOS C (S.U.E.*), UG Water Line LOS D (S.U.E.*), Above Ground Water Line.

TV:

Table listing symbols for TV features: TV Pedestal, TV Tower, UG TV Cable Hand Hole, UG TV Cable LOS B (S.U.E.*), UG TV Cable LOS C (S.U.E.*), UG TV Cable LOS D (S.U.E.*), UG Fiber Optic Cable LOS B (S.U.E.*), UG Fiber Optic Cable LOS C (S.U.E.*), UG Fiber Optic Cable LOS D (S.U.E.*).

GAS:

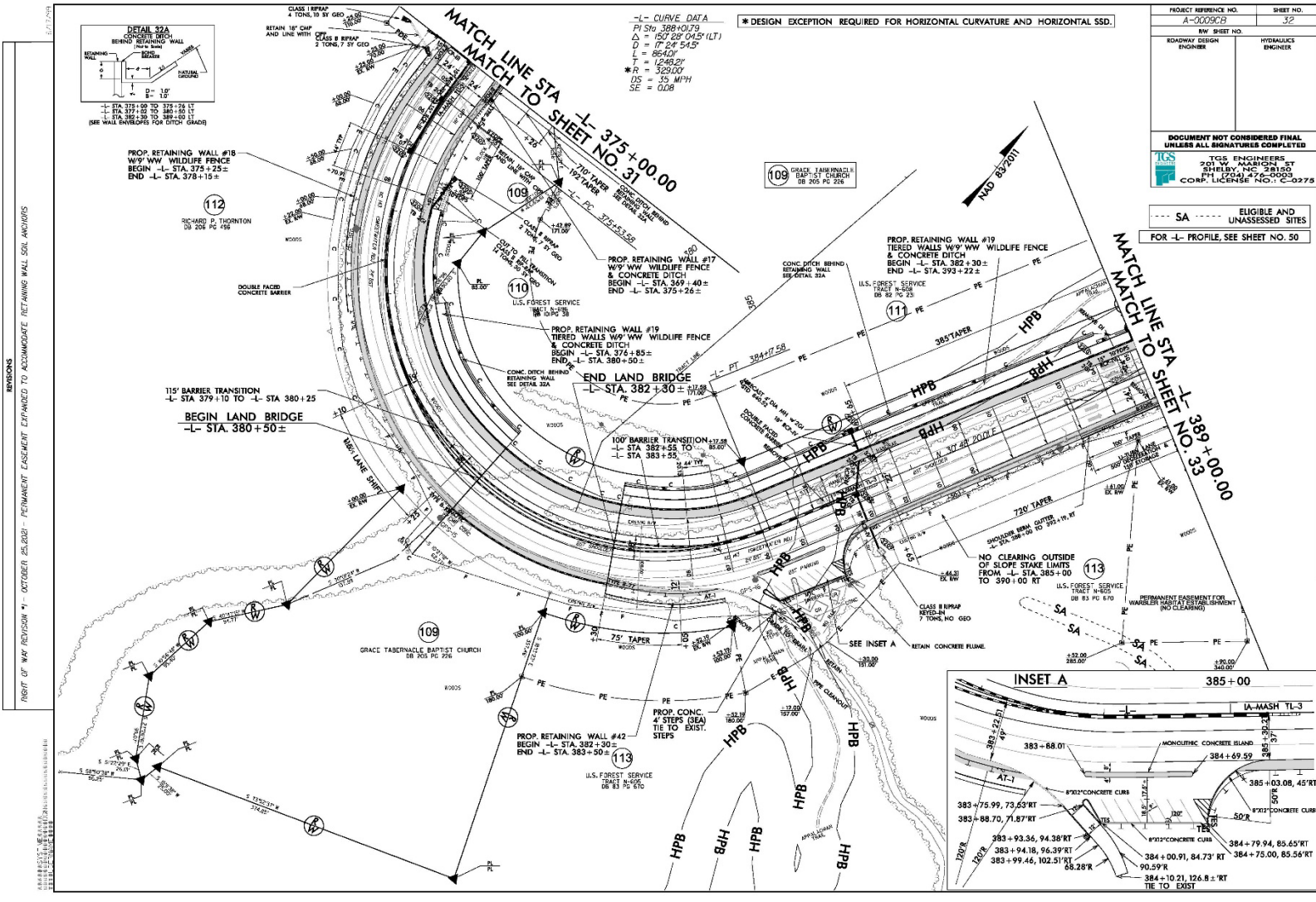
Table listing symbols for gas features: Gas Valve, Gas Meter, UG Gas Line LOS B (S.U.E.*), UG Gas Line LOS C (S.U.E.*), UG Gas Line LOS D (S.U.E.*), Above Ground Gas Line.

SANITARY SEWER:

Table listing symbols for sanitary sewer features: Sanitary Sewer Manhole, Sanitary Sewer Cleanout, UG Sanitary Sewer Line, Above Ground Sanitary Sewer, SS Forced Main Line LOS B (S.U.E.*), SS Forced Main Line LOS C (S.U.E.*), SS Forced Main Line LOS D (S.U.E.*).

MISCELLANEOUS:

Table listing symbols for miscellaneous features: Utility Pole, Utility Pole with Base, Utility Located Object, Utility Traffic Signal Box, Utility Unknown UG Line LOS B (S.U.E.*), UG Tank; Water, Gas, Oil, Underground Storage Tank, Approx. Loc., AG Tank; Water, Gas, Oil, Geoenvironmental Boring, UG Test Hole LOS A (S.U.E.*), Abandoned According to Utility Records, End of Information.

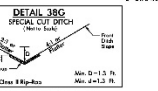
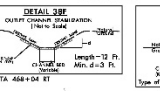
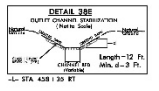
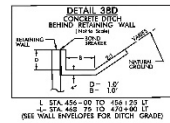
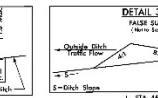
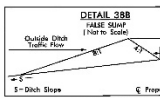
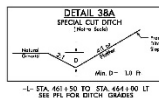


BRIDGONS
 RIGHT OF WAY REVISION 4 - OCTOBER 25, 2021 - PERMANENT EASEMENT EXPANDED TO ACCOMMODATE RETAINING WALL SOIL ANCHORS

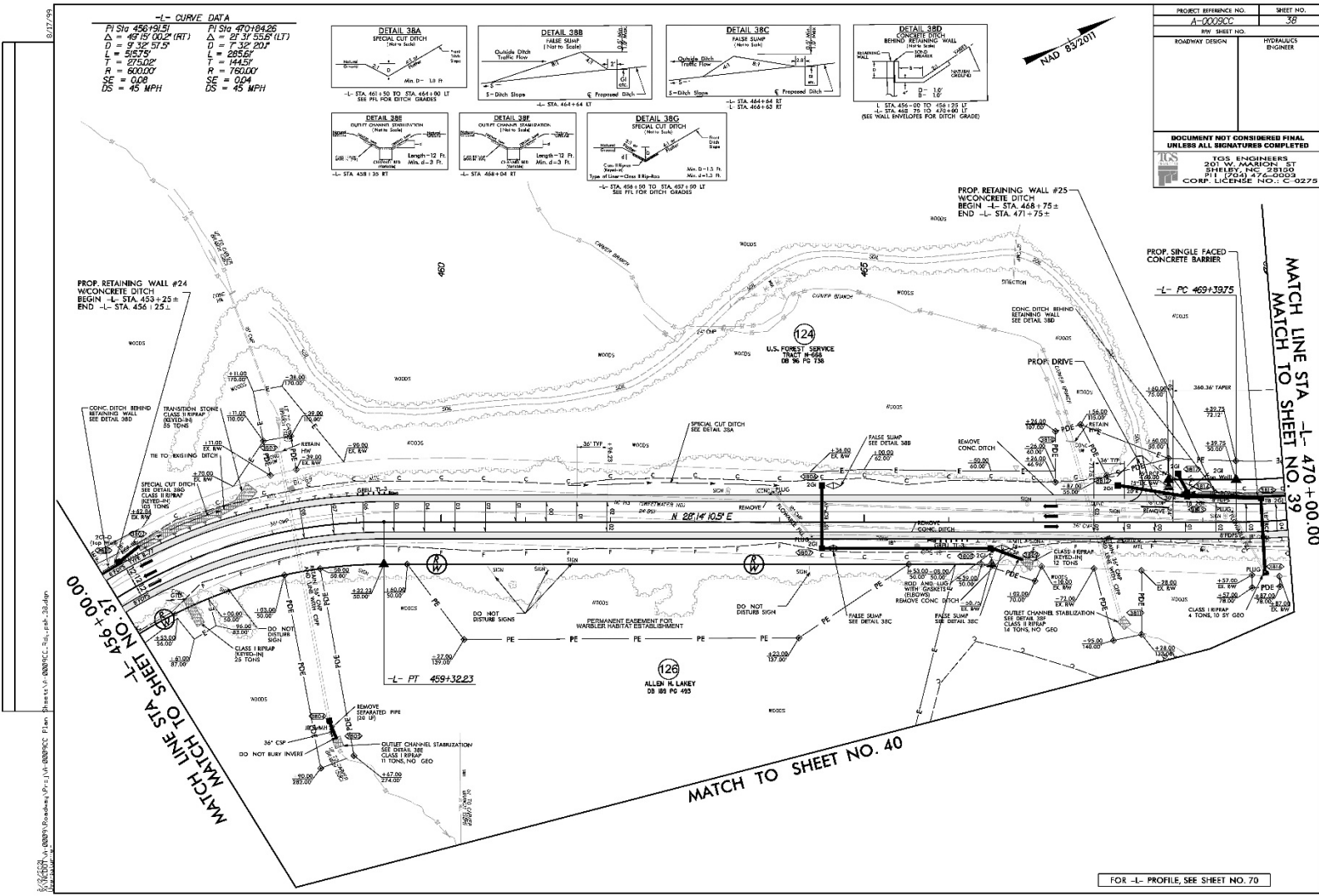
8/17/95

-L- CURVE DATA

PI Sta 456+91.51	PI Sta 470+84.26
$\Delta = 47.57002^\circ$ (RT)	$\Delta = 27.37355^\circ$ (LT)
$D = 9.32575'$	$D = 7.32204'$
$L = 5.6752'$	$L = 2.8556'$
$T = 27.632'$	$T = 14.45'$
$R = 600.00'$	$R = 760.00'$
$SE = 0.00'$	$SE = 0.04'$
$DS = 45$ MPH	$DS = 45$ MPH



PROJECT REFERENCE NO.	SHEET NO.
A-00900	38
R/W SHEET NO.	
ROADWAY DESIGN	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
 TCS ENGINEERS 201 W. MARSHALL ST SHREVEPORT, LA 70109 P 1 (704) 476-0000 CORP. LICENSE NO. C-0275	



FOR -L- PROFILE, SEE SHEET NO. 70

APPENDIX C – SEEDING AND PLANTING PLAN

Appendix C. A-0009C Stecoah Gap Area Seeding and Planting Guidelines (2-7-21)

Erosion Control Seeding

Spring - Summer (May 1- September 1)

- Hard fescue 50 lbs/acre
(may include/substitute creeping red fescue (*Festuca rubra*), chewings fescue (*Festuca rubra* ssp. *commutata*), redbow (*Agrostis alba*))
- German or browntop millet 15 lbs/acre
- Fertilizer and/or lime rates dependent on pre-construction soil testing
- Matting without nylon mesh will be used where needed
- Re-seed in fall with Fall-Winter mix

Fall - Winter (August 1- May 1)

- Hard fescue 50 lbs/acre
(may include/substitute creeping red fescue (*Festuca rubra*), chewings fescue (*Festuca rubra* ssp. *commutata*), redbow (*Agrostis alba*))
- Rye grain 25 lbs/acre
- Native warm season grasses (see Native Grass Seeding and Mulching below)
- Fertilize and/or lime rates dependent on pre-construction soil testing
- Matting without nylon mesh will be used where needed

Notes

- Repeat above if adequate ground cover is not achieved.
- Tall fescue, bluegrass, or *Sericea lespedeza* will **NOT** be used.
- A reduced fertilizer rate (from the typical) will be employed wherever native grasses are used.
- All matting used will be non-light dependent biodegradable matting

Native Seeding and Over-seeding

Native seed mixes for US Forest Service Property in NCDOT Division 14 are under development. On A-0009C, native seeding will be used with general erosion control seeding on disturbed soils in wildlife enhancement areas and on wildlife overpass. Native seed mixes will include a higher proportion (than typical) of broadleaf forbs versus grasses. Native seed mixes may include, but are not limited to, the following species, depending upon availability: Indiangrass, (*Sorghastrum nutans*), Virginia wildrye (*Elymus* spp.), partridge pea (*Chamaecrista fasciculata*), black-eyed susan (*Rudbeckia hirta*), switchgrass (*Panicum virgatum*), aster spp., mountain mint (*Pycnanthemum* spp.), goldenrod (*Solidago* spp.), purple coneflower, partridge pea, deer-tongue, tick trefoil, ox-eye sunflower, *Coreopsis* spp.

Native trees and shrubs

Native trees and shrubs will be planted on wildlife overpass and, as needed, in enhancement areas to achieve target cover requirements. Species may include, but are not limited to, the following species, depending upon availability: *Viburnum* spp., hazelnut (*Corylus* spp.), Carolina silverbell (*Halesia carolina*), blueberry (*Vaccinium* spp.), blackberry (*Rubus* spp.), black cherry (*Prunus serotina*), hawthorne (*Crataegus* spp.), maple (*Acer* spp.), white oak (*Quercus alba*), black locust (*Robinia pseudoacacia*), American beech (*Fagus grandifolia*).