

MITIGATION WORK PLANS A REGULATOR'S PERSPECTIVE

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Compensatory Mitigation Webinar Series

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OUTLINE



- Regulations
 - What do they say?
 - What else?
- Prospectus Mitigation Plan
 - What is required by Norfolk District at this stage?
 - Why is it important?
- Conceptual Mitigation Work Plan
 - What is required by Norfolk District at this stage?
- Final Mitigation Work Plan
 - What is required by Norfolk District at this stage?
- As built Plan
 - What is required?
 - Why is it important?
- Things to Remember

WHAT IS IN THE REGULATION?

33CFR 332.4(c)(7)

Mitigation Work Plan. Detailed written specs and work description for the compensatory mitigation project (CMP), including but not limited to:

- Geographic boundaries of project
- Construction methods
- Timing and sequence
- Sources of water
- Methods for establishing the desired plant community
- Plans to control invasive species
- Proposed grading plan (elevations/slopes of substrate)
- Soil management
- Erosion control



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WHAT IS NOT IN THE REGULATIONS...BUT SHOULD BE CONSIDERED AND CONSIDERED EARLY

- Property interest
 - Easements
 - Rights-of way
 - Adjacent properties
- Local requirements
 - FEMA Floodplain
 - Erosion and sediment control
 - Zoning
- Threatened and Endangered Species
- Historic Properties



NEWTON CREEK EASEMENT

-  PROPERTY BOUNDARY (8.24 AC)
-  TIDAL WETLAND CREATION (3.48 AC)
-  TIDAL WETLAND ENHANCEMENT (0.73 AC)
-  TIDAL WETLAND PRESERVATION (0.65 AC)
-  TIDAL CHANNEL CREATION (0.36 AC)
-  TIDAL CHANNEL PRESERVATION (0.20 AC)
-  UPLAND BUFFER, PLANTING (0.78 AC)
-  UPLAND BUFFER, ENHANCEMENT (1.80 AC)



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NEWTON CREEK EASEMENT

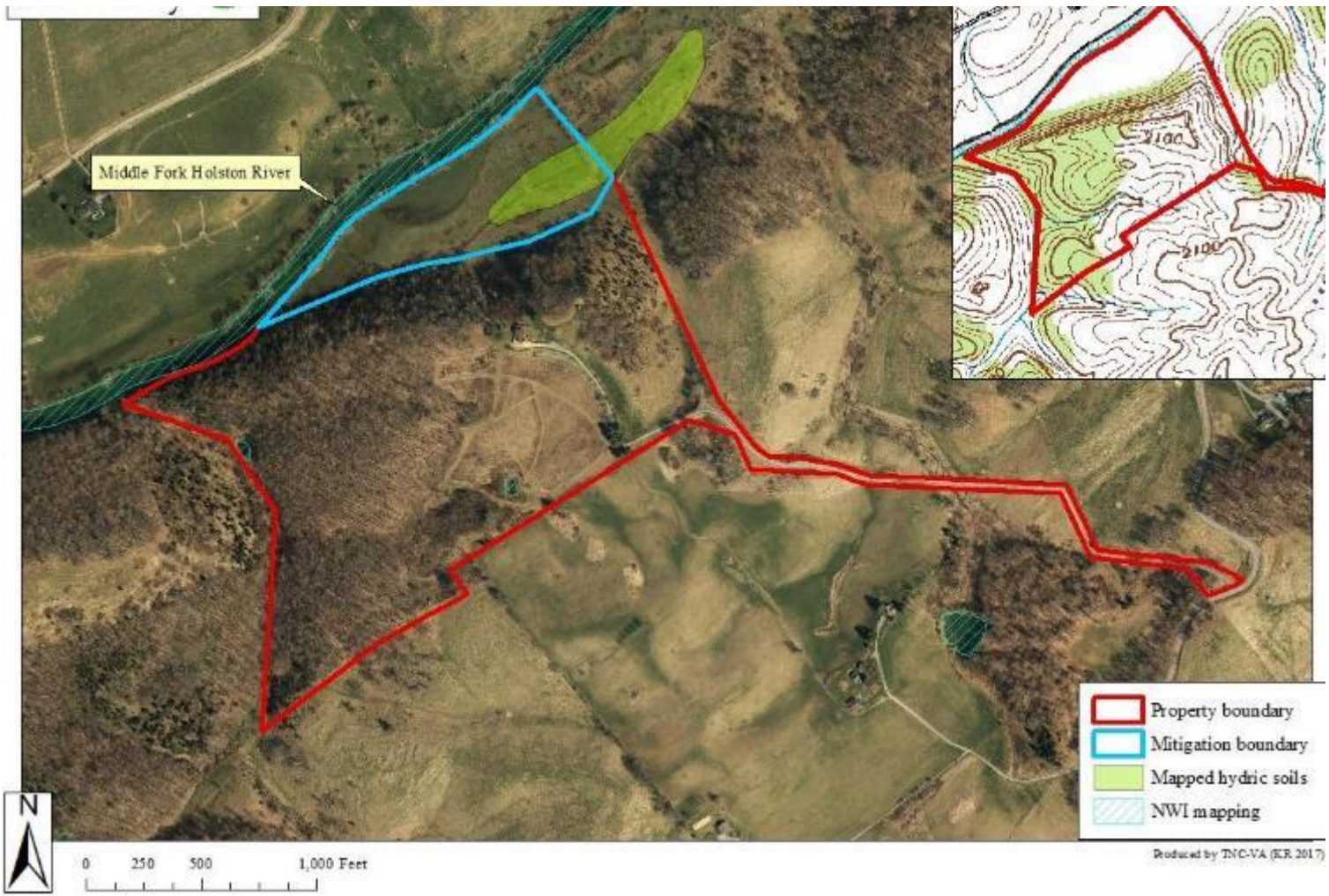
	PROPERTY BOUNDARY (8.24 AC)
	TIDAL WETLAND CREATION (3.48 AC)
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	UPLAND BUFFER ENHANCEMENT (1.80 AC)



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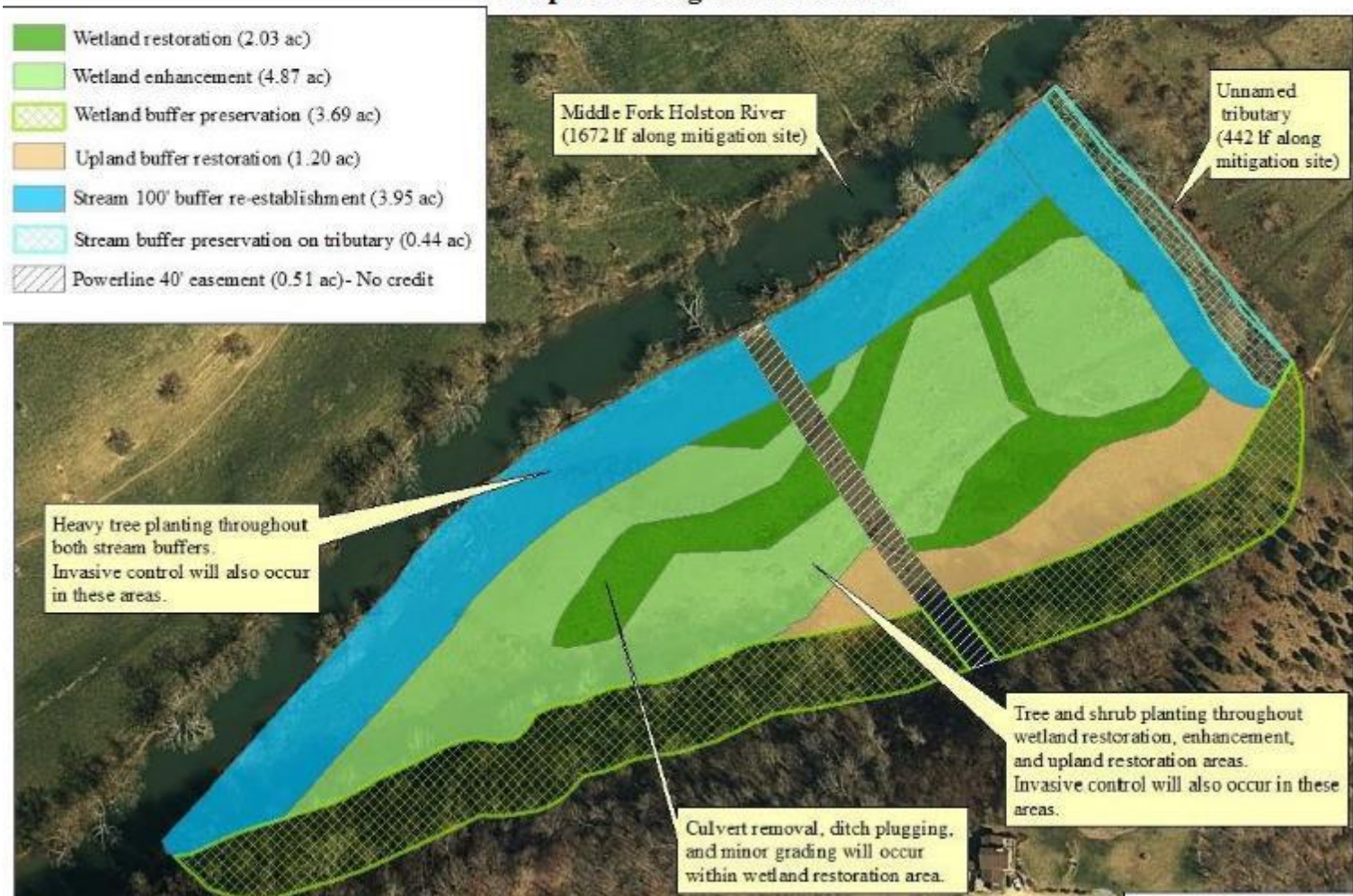
HISTORIC PROPERTIES



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HISTORIC PROPERTIES

TN-12 South Fork Holston (Emory & Henry College) Proposed Mitigation Activities



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PROSPECTUS

- Draft Prospectus
- IRT Meeting
- IRT Site Visit
- Complete Prospectus

- PROPERTY BOUNDARY (0.84 AC)
- TIDAL WETLAND CREATION (8.46 AC)
- TIDAL WETLAND ENHANCEMENT (0.73 AC)
- TIDAL WETLAND PRESERVATION (0.65 AC)
- TIDAL CHANNEL CREATION (0.80 AC)
- TIDAL CHANNEL PRESERVATION (0.20 AC)
- UPLAND BUFFER PLANTING (0.78 AC)
- UPLAND BUFFER ESTABLISHMENT (1.20 AC)



CONCEPTUAL MITIGATION WORK PLAN (CMWP)

- Location and Vicinity Maps
- Existing or Baseline Conditions
- Proposed Mitigation Activities
- Phase Plan
- Water Budget
- Soil Data
- Wetland Preliminary Grading Plan
- Proposed Planting Plan
- Proposed Invasive Species Management Plan



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CONCEPTUAL MITIGATION WORK PLAN (CMWP)

Submitted for review prior to commencement of construction activities (permit verification)

Level of Design Completion????

Provide checklists



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FINAL MITIGATION WORK PLAN (FMWP)

- Grading Plans at a 1"=50' contour and 0.5 ft contour intervals
- Erosion and Sediment Control Plans
- Construction Methods and Details
- Final Invasive Species Management Plan
- Credit Analysis
- Soil Amendments
- Final Planting Plan
- Location of Proposed Structures
- Anticipated Project Constraints



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FINAL MITIGATION WORK PLAN (FMWP)

Submitted with Mitigation Banking Instrument prior to signature

Level of Design Completion ??????

Provide checklists



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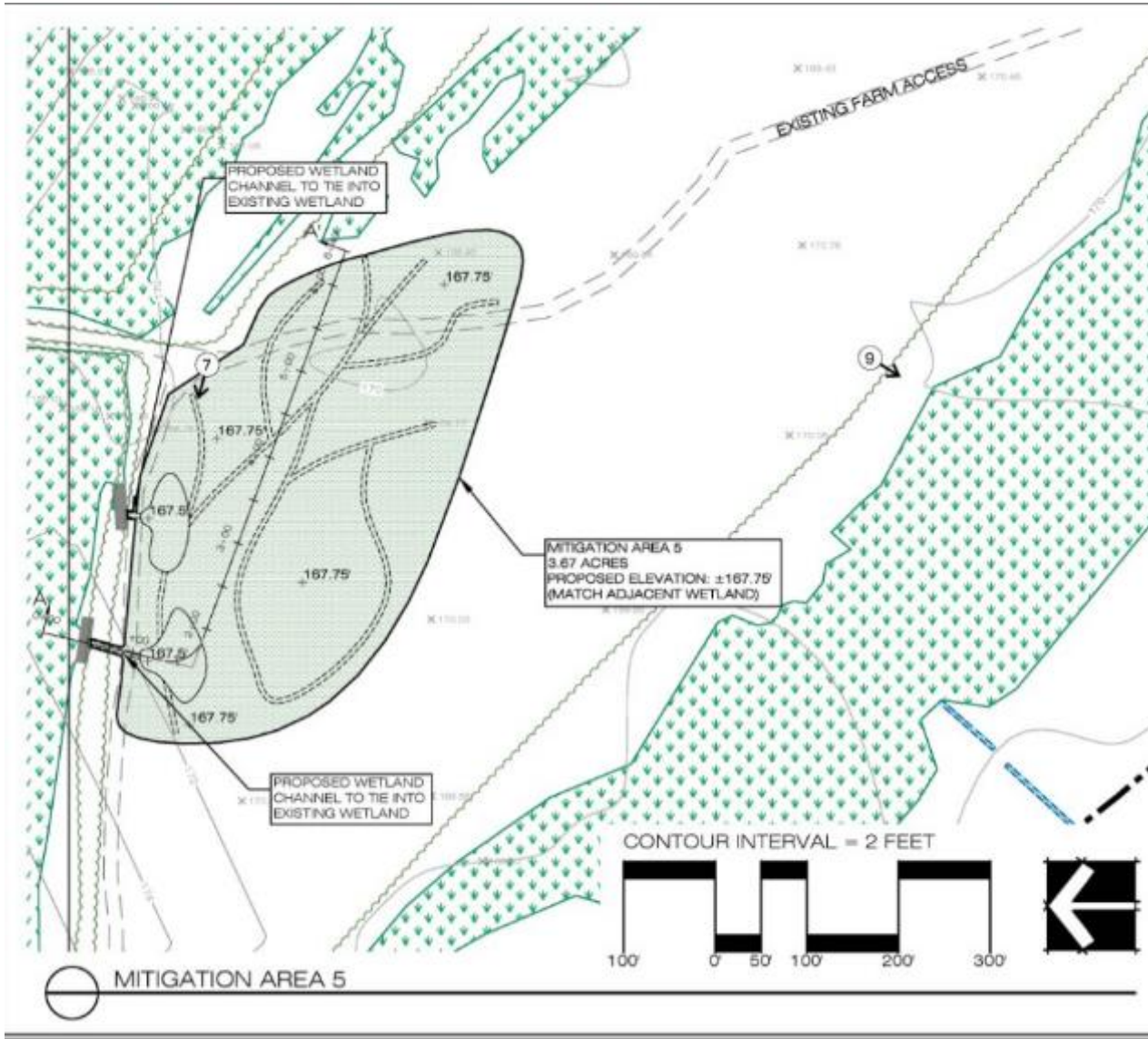
REEDY CREEK OVERALL



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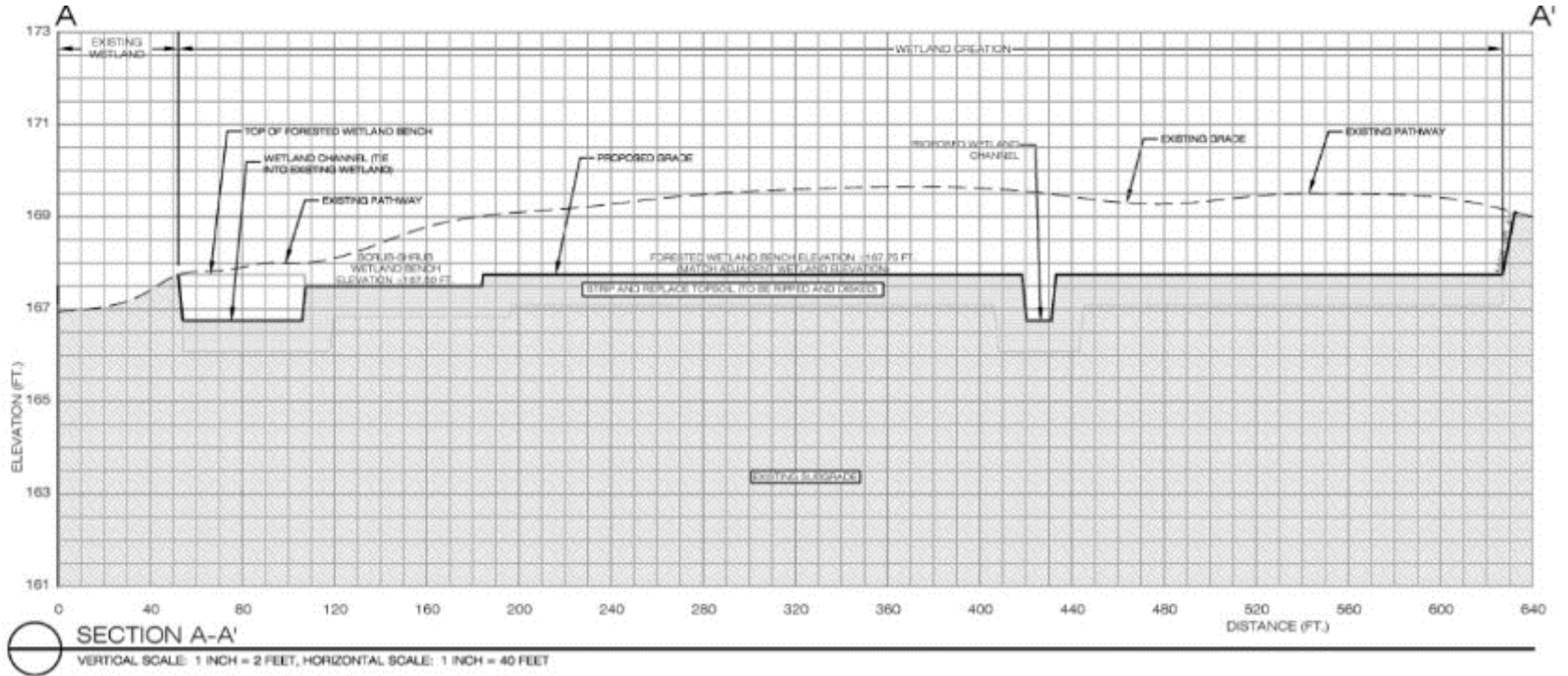
REEDY CREEK GRADING PLAN



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REEDY CREEK GRADING PLAN



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REEDY CREEK PLANTING PLAN



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REEDY CREEK PLANTING PLAN

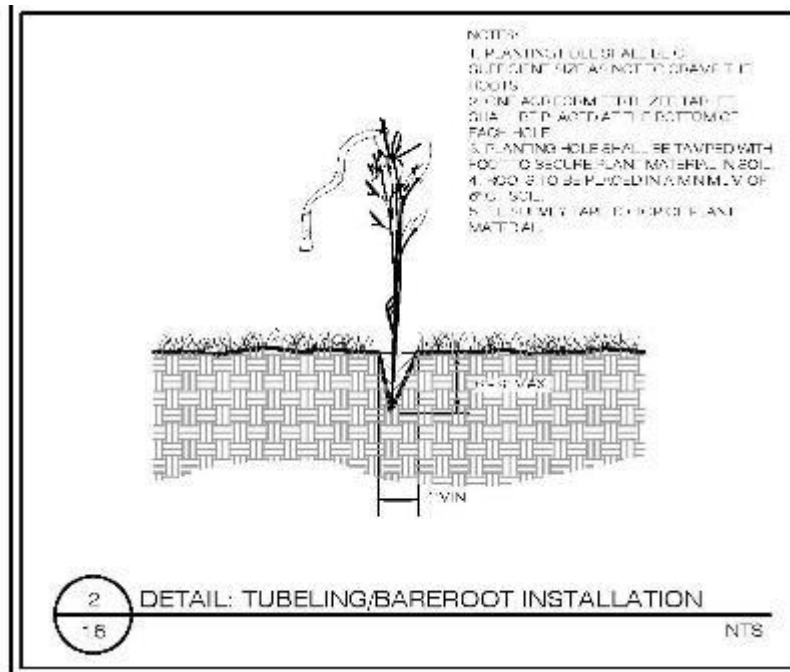
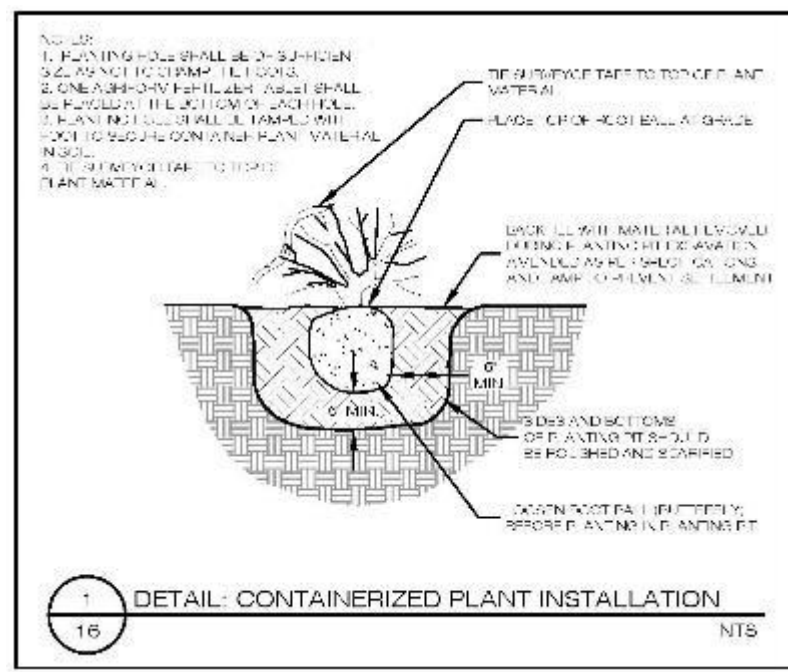
LEGEND	BOTANICAL NAME	COMMON NAME	SPECIFICATION	INDICATOR	REMARKS
WETLAND STABILIZATION SEED MIX					
	BIDENS ARISTOSA	BUR MARIGOLD	SEED	FACW-	WETLAND STABILIZATION SEED MIX SHALL BE APPLIED ON ALL WETLAND RESTORATION AREAS AT A RATE OF 15 LBS./AC.
	CAREX FRANKII	FRANKS SEDGE	SEED	OBL	
	CAREX VULPINOIDEA	FOX SEDGE	SEED	OBL	
	ECHINOCHLOA MURICATA	BARNYARD GRASS	SEED	FACW+	
	COREOPSIS TINCTORIA	PLAINS COREOPSIS	SEED	FAC-	
	ELYMUS VIRGINICUS	VIRGINIA WILD RYE	SEED	FACW-	
	ELIATORIUM COELESTINUM	MISTFLOWER	SEED	FAC	
	JUNCUS EFFUSUS	SOFT RUSH	SEED	FACW+	
	PANICUM ANCEPS	BEAKED PANICGRASS	SEED	FAC	
	PANICUM DICHTOMIFLORUM	SMOOTH PANIC GRASS	SEED	FACW-	
	PANICUM RIGIDULUM	REDTOP PANICGRASS	SEED	FACW+	
	SCIRPUS CYPERINUS	WOOLGRASS	SEED	FACW+	
WETLAND PLANT PALETTE					
	ALNUS SERRULATA	TAG ALDER	CONTAINER	OBL	PLANT AT DENSITY OF 400 STEMS/ACRE FOR WETLAND CREATION AND 200 STEMS/ACRE FOR ENHANCEMENT. PLANT ACCORDING TO INDICATOR STATUS. DISTRIBUTE RANDOMLY AMONG SPECIES.
	BETULA NIGRA	RIVER BIRCH	CONTAINER	FACW	
	CEPHALANTHUS OCCIDENTALIS	BUTTON BUSH	CONTAINER	OBL	
	CORNUS AMOMUM	SILKY DOGWOOD	CONTAINER	FACW	
	FRAXINUS PENNSYLVANICA	GREEN ASH	CONTAINER	FACW	
	HAMAMELIS VIRGINIANA	AMERICAN WITCH-HAZEL	CONTAINER	FAC-	
	LINDERA BENZOIN	SPICEBUSH	CONTAINER	FACW-	
	PLATANUS OCCIDENTALIS	SYCAMORE	CONTAINER	FACW-	
	QUERCUS PALUSTRIS	PIN OAK	CONTAINER	FACW	
	SALIX NIGRA	BLACK WILLOW	CONTAINER	FACW+	
	SAMBUCUS CANADENSIS	COMMON ELDERBERRY	CONTAINER	FACW-	
	ULMUS AMERICANA	AMERICAN ELM	CONTAINER	FACW-	
	VACCINIUM CORYMBOSUM	HIGHBUSH BLUEBERRY	CONTAINER	FACW-	
	VIBURNUM DENTATUM	ARROW-WOOD	CONTAINER	FAC	
GENERAL STABILIZATION SEED MIX					
	LOLIUM PERENNE (SGP. MULTIFLORUM)	ANNUAL RYEGRASS	SEED	FACU-	SEED MIX SHALL BE HYDROSEEDING AT A RATE OF 25 LBS. PER ACRE TO ALL DISTURBED SOIL OUTSIDE OF MITIGATION WORK AREAS.
	CHAMAECRISTA FASCICULATA	PARTRIDGE PEA	SEED	FACU	
	PANICUM VIRGATUM	SWITCHGRASS	SEED	FAC	



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REEDY CREEK PLANTING PLAN



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AS-BUILT PLAN

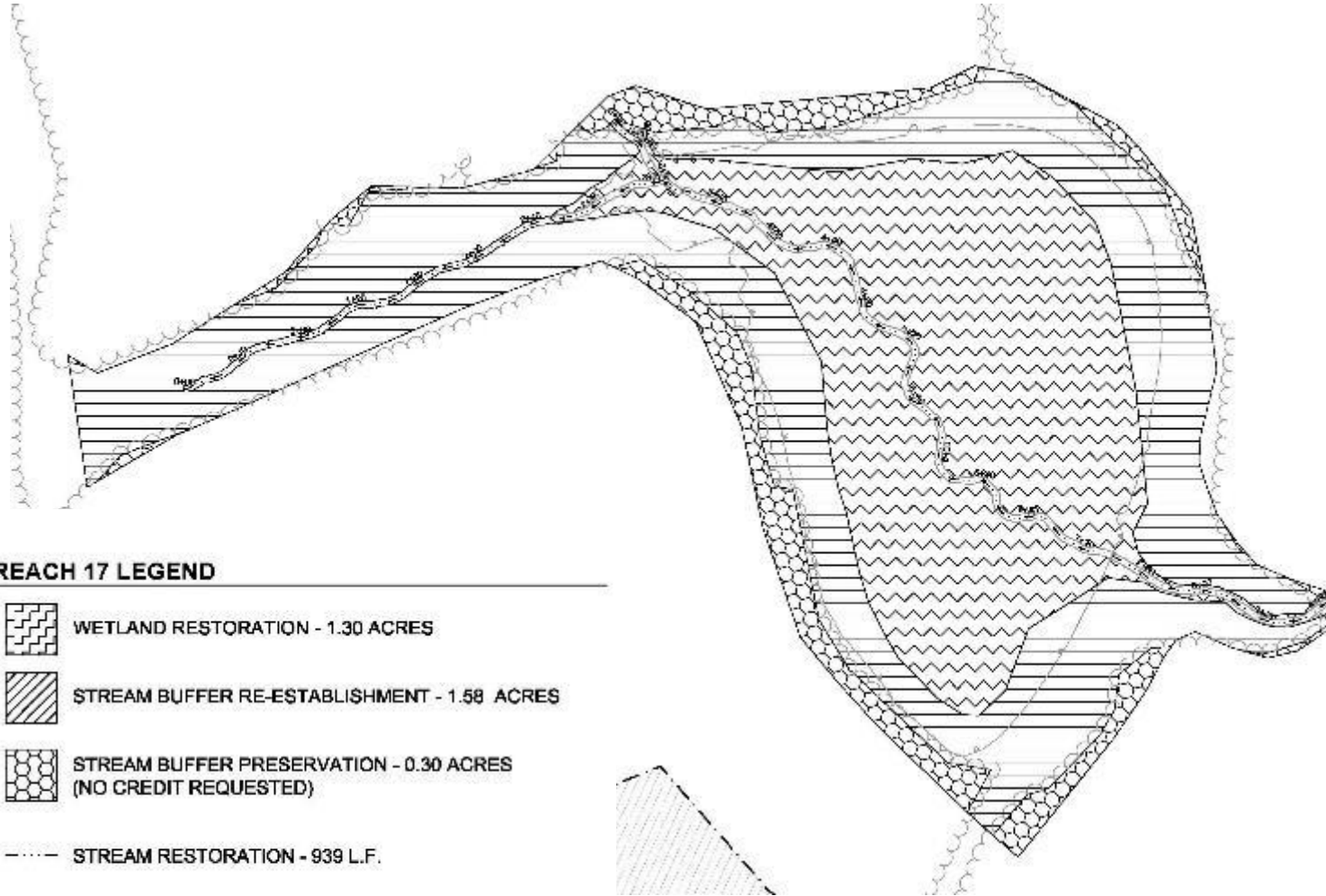
- Plan view maps
 - Boundaries
 - Topography
 - Wetlands, buffers, structures, monitoring stations, wells, etc.
- Photographs
- Planting composition, density, locations
- Revised Credit totals and explanation of difference



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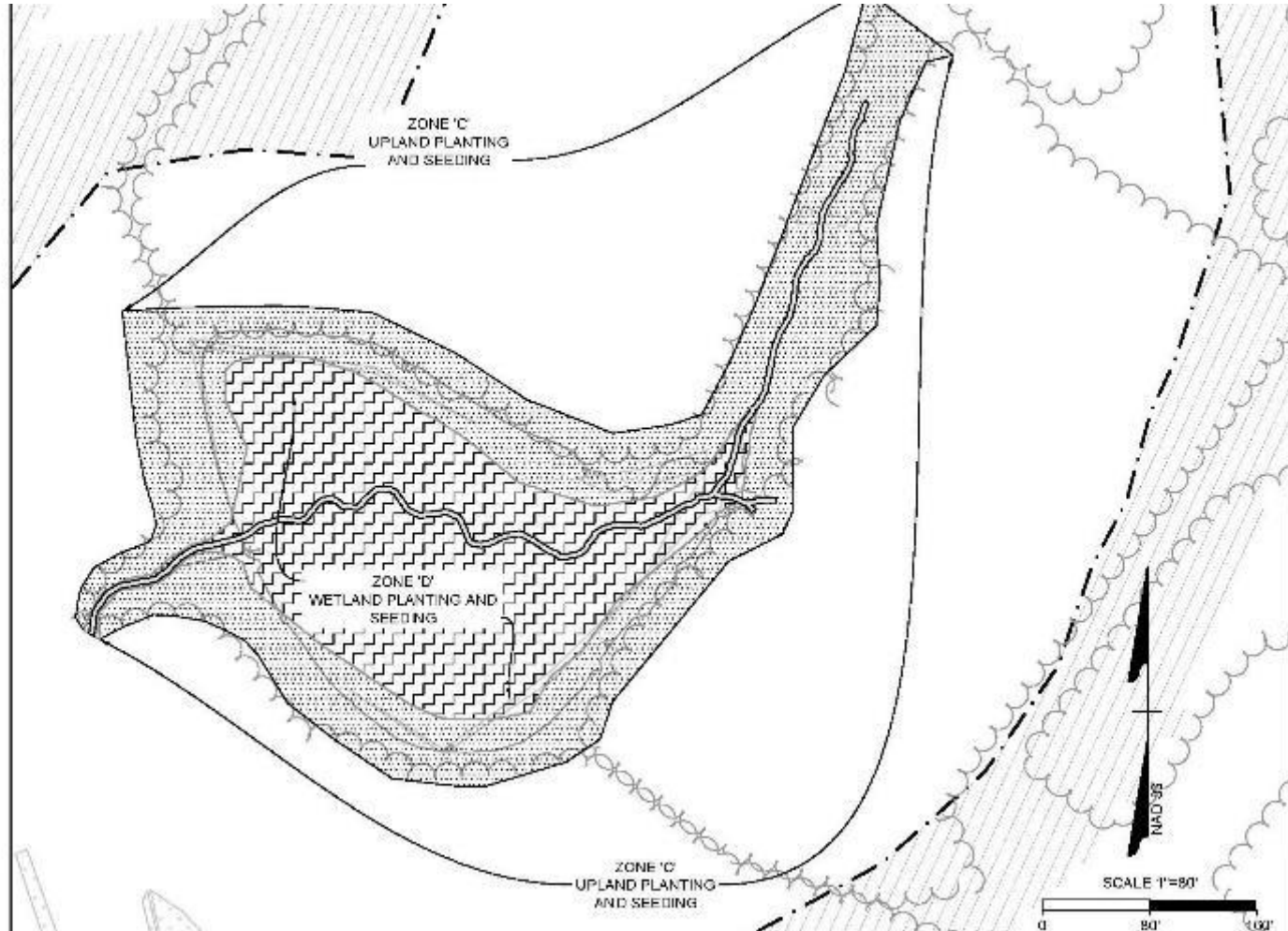
REEDY CREEK AS-BUILT PLAN



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REEDY CREEK AS-BUILT PLAN



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THINGS TO REMEMBER

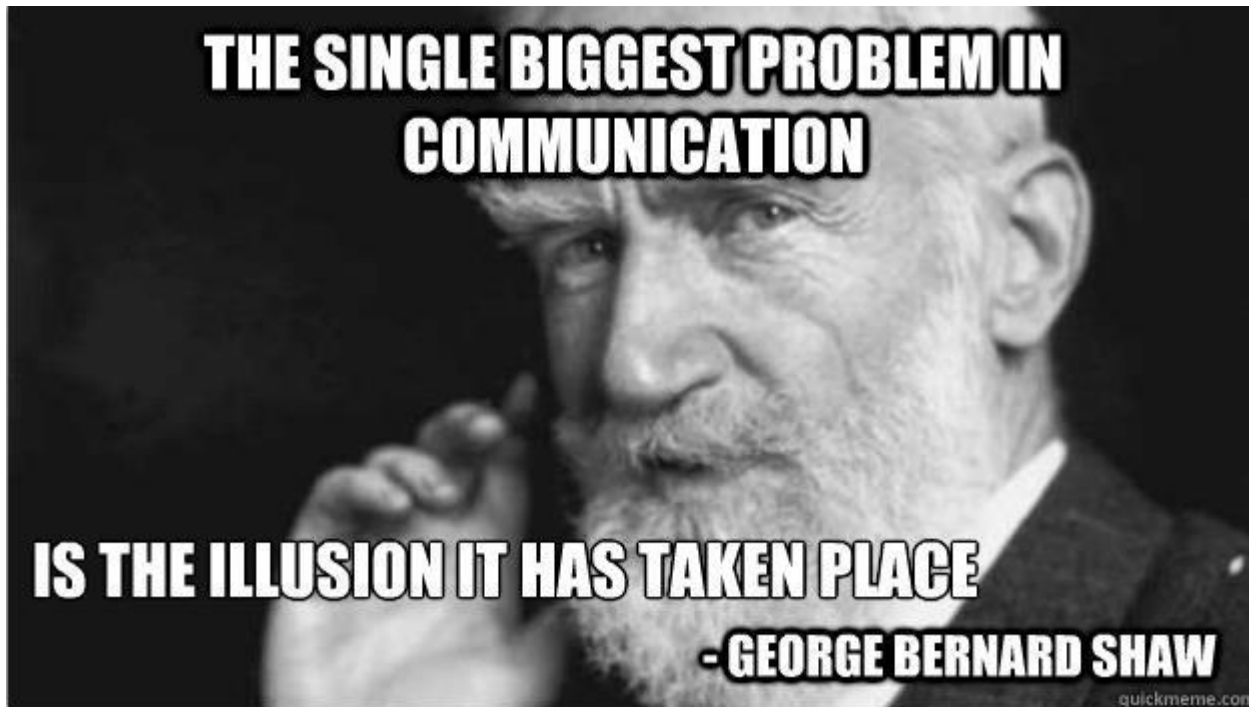
- Communication is imperative
 - Early and Often
- Site visits are extremely important
- Clear and consistent message
- Corps District requirements are different
- Make sure local requirements are known and considered early
 - Floodplain
 - E&S
- Threatened & Endangered Species
- Historic Properties



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THANK YOU!!!



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