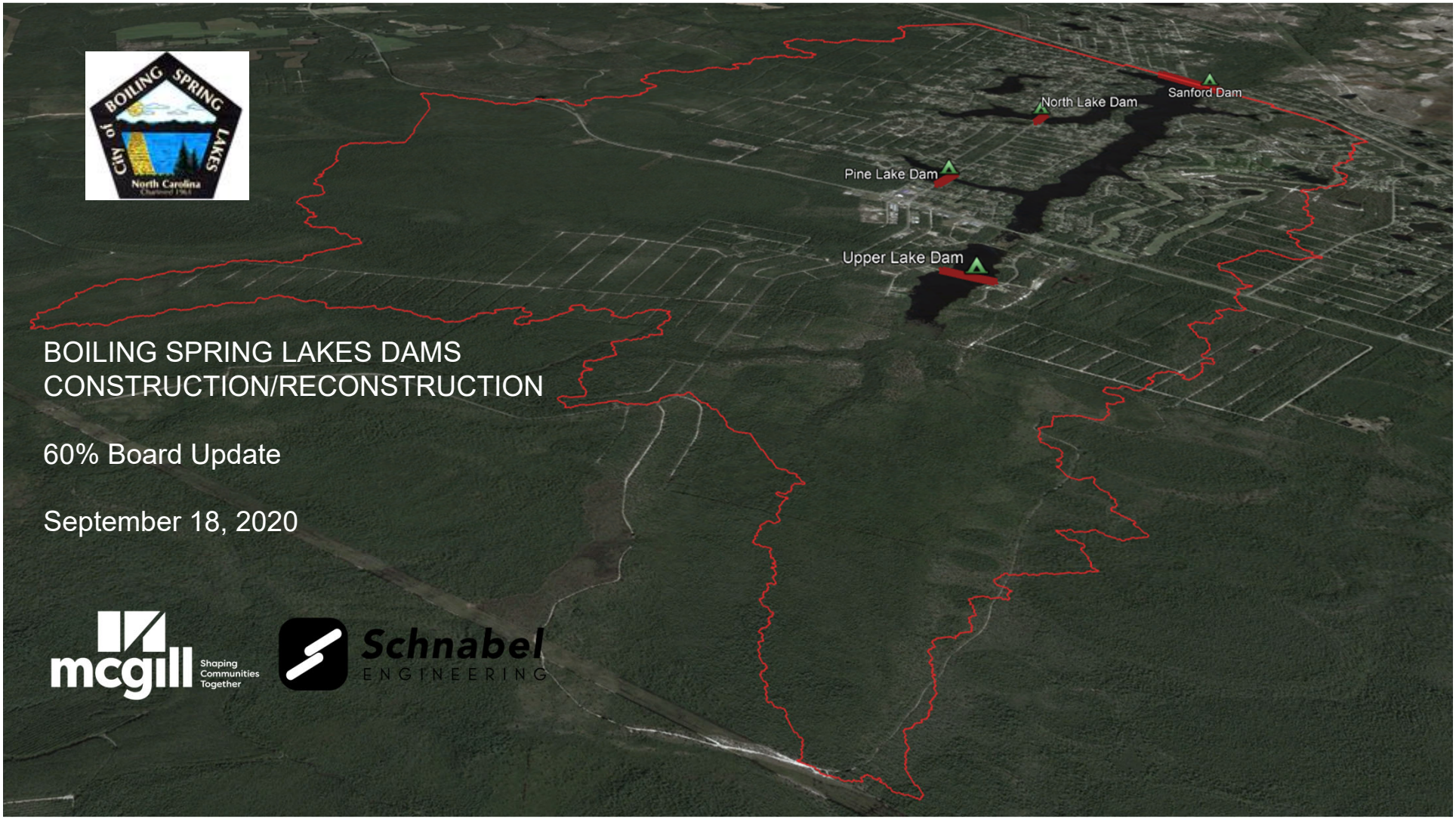


BOILING SPRING LAKES DAMS CONSTRUCTION/RECONSTRUCTION

60% Board Update

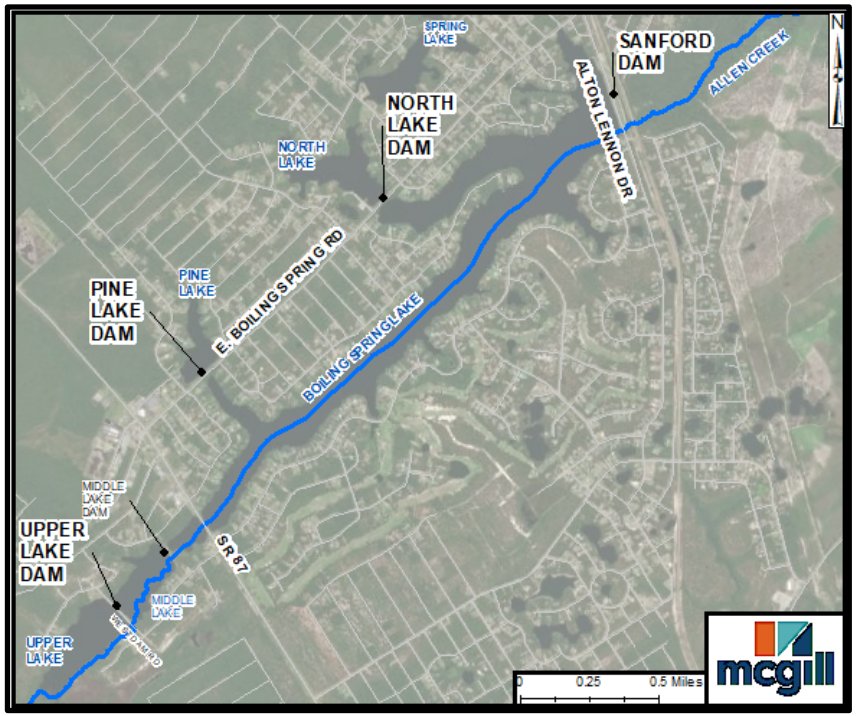
September 18, 2020

mcgill Shaping Communities Together

Schnabel ENGINEERING

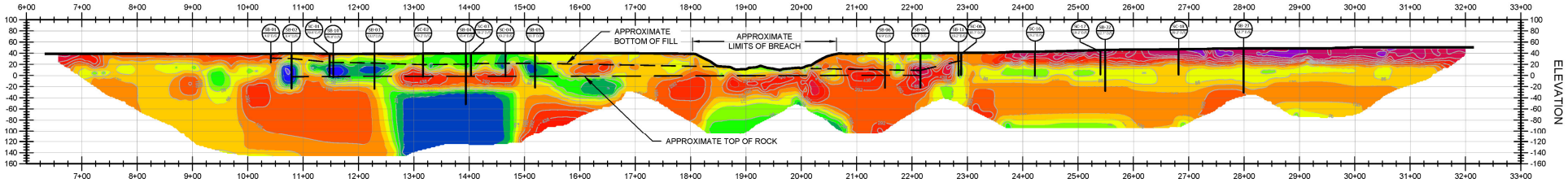
Agenda

- 60% Design Update
- Industry Day
- FEMA
- RFQ (Prequalification)
- Next Steps



60% Submittal Dam Safety Meeting

- Date: 7/31/2020
- Topics
  - ✓ Hydrology/Hydraulics and spillways
  - ✓ Control of water
  - ✓ Roads and utilities
  - ✓ Geotechnical exploration and evaluation
- Results – Approval of design concepts



Industry Day

- Date: 7/31/2020
- Topics
  - ✓ Mobilization and temporary construction facilities
  - ✓ Road closures and traffic controls, including acquisition of related permits
  - ✓ Power and telecom utility relocation/coordination
  - ✓ Erosion and sediment control
  - ✓ Control of water (stream diversion using cofferdams over 10 feet high)
  - ✓ Demolition
  - ✓ Cast-in-place concrete riser and box culvert spillways (4,000 cubic yards (CY) of structural concrete)
  - ✓ Approximately 98,000 CY of bulk excavation

Industry Day

- Topics (continued)
  - ✓ Embankment Construction including core materials, drains and filters (~110,000 CY of earthfill placement and ~7,400 CY of drainfill)
  - ✓ Construction of deep mixing panels, including soilcrete mix design, design and installation of temporary work platforms, demonstration panels, sampling and laboratory testing (~26,000 CY of soilcrete)
  - ✓ Roadway reconstruction
  - ✓ Sanford Dam only:
    - cutoff wall through the entire length 20 feet into the limestone rock (~80,000 square feet of wall profile area)
    - Installation of new instrumentation (structure monitoring points, vibrating wire piezometers, automated data collection and transmission equipment)

ID - Potential Maintenance of Traffic Routes

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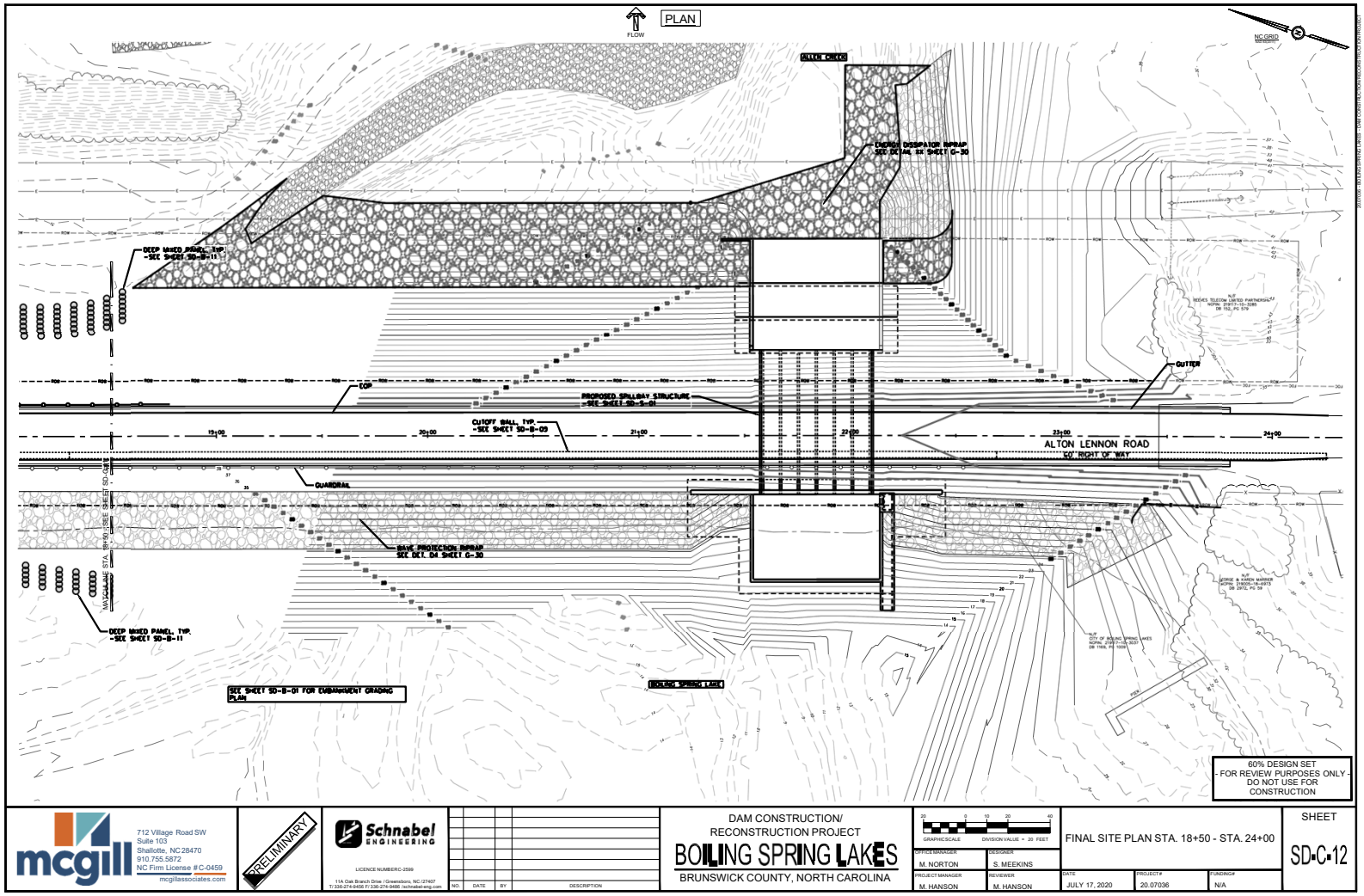
ID Sanford Dam



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NO.	DATE	BY	DESCRIPTION

DAM CONSTRUCTION/
RECONSTRUCTION PROJECT

BOILING SPRING LAKES

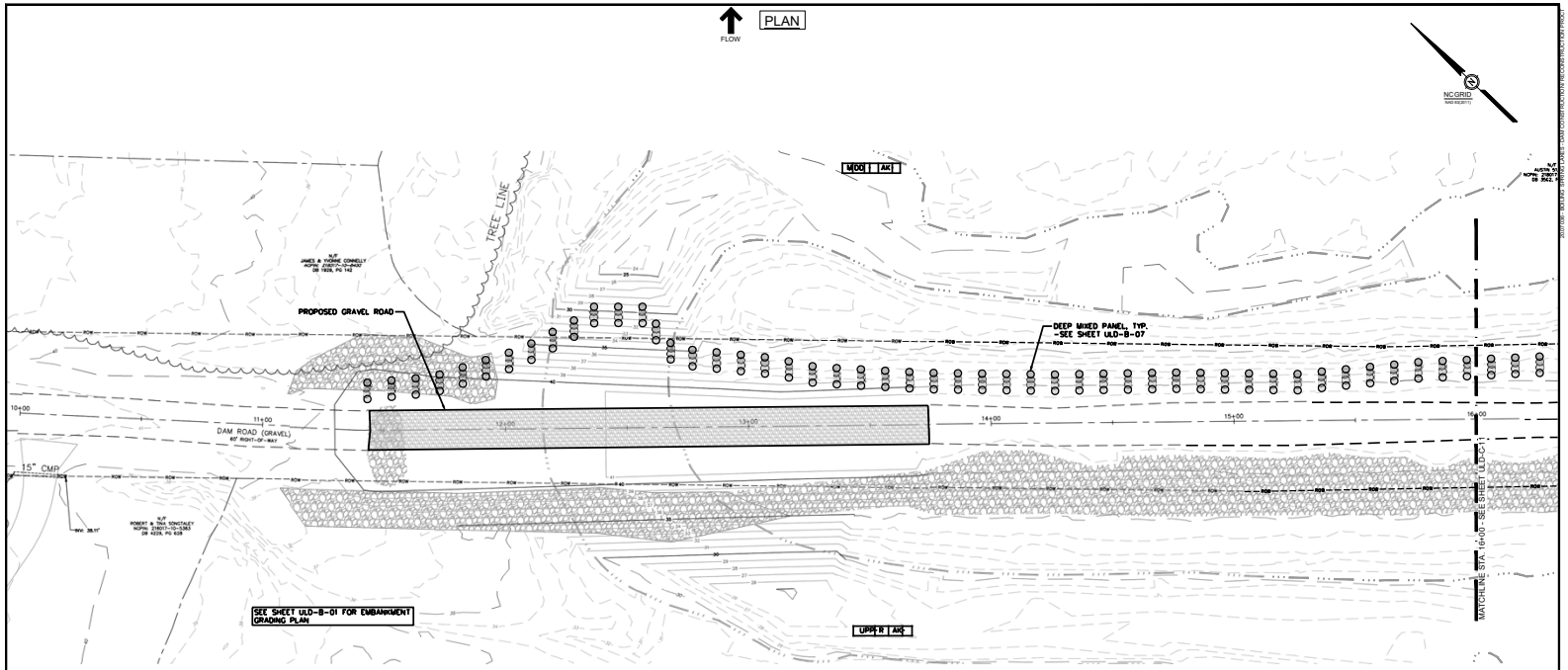
BRUNSWICK COUNTY, NORTH CAROLINA

GRAPHICSCALE 20 0 10 20 40 — DIVISION VALUE = 20 FEET

FINAL SITE PLAN STA. 18+50 - STA. 24+00

OFFICE MANAGER	DESIGNER	DATE	PROJECT#	FUNDING#
M. NORTON	S. MEEKINS	JULY 17, 2020	20.07036	N/A
PROJECT MANAGER	REVIEWER			
M. HANSON	M. HANSON			

SHEET
SD-C-12



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NO.	DATE	BY	DESCRIPTION

DAM CONSTRUCTION/
RECONSTRUCTION PROJECT

BOILING SPRING LAKES

BRUNSWICK COUNTY, NORTH CAROLINA

GRAPHIC SCALE: 20 0 10 20 40 — DIVISION VALUE = 20 FEET

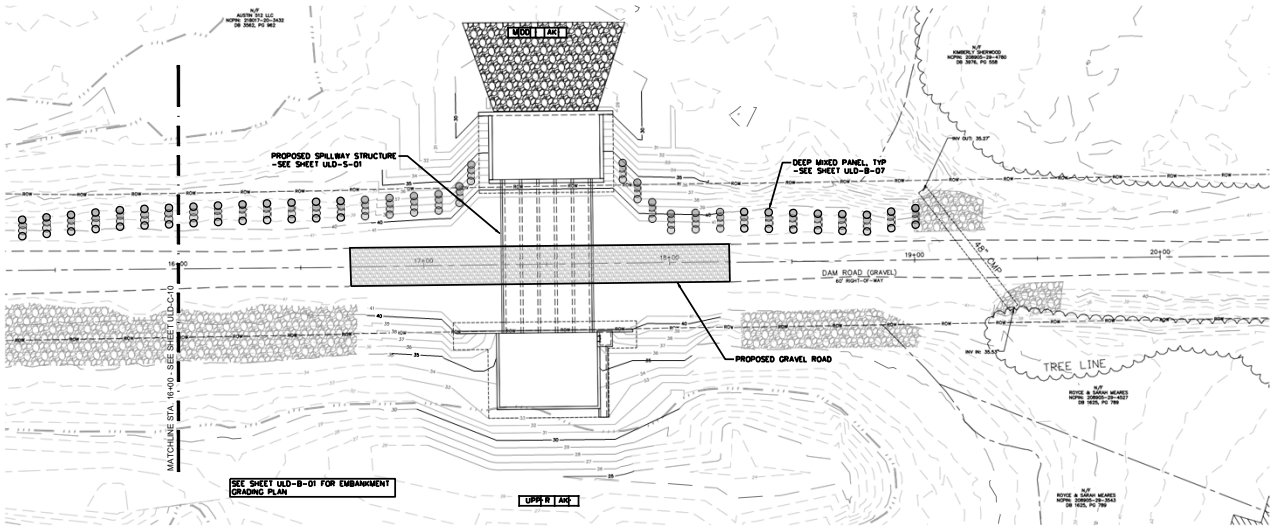
FINAL SITE PLAN STA. 10+00 - STA. 16+00

OFFICE MANAGER	DESIGNER			
M. NORTON	S. MEEKINS			
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
M. HANSON	M. HANSON	JULY 17, 2020	20.07036	N/A

SHEET
ULD-C-10

mcgill

I D U p p e r L a k e D a m



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NO.	DATE	BY	DESCRIPTION

DAM CONSTRUCTION/
RECONSTRUCTION PROJECT

BOILING SPRING LAKES

BRUNSWICK COUNTY, NORTH CAROLINA

GRAPHIC SCALE: 20 0 10 20 40 — DIVISION VALUE = 20 FEET

FINAL SITE PLAN STA. 16+00 - STA. 20+00

OFFICE MANAGER	DESIGNER			
M. NORTON	S. MEEKINS			
PROJECT MANAGER	REVIEWER	DATE	PROJECT #	FUNDING #
M. HANSON	M. HANSON	JULY 17, 2020	20.07036	N/A

SHEET

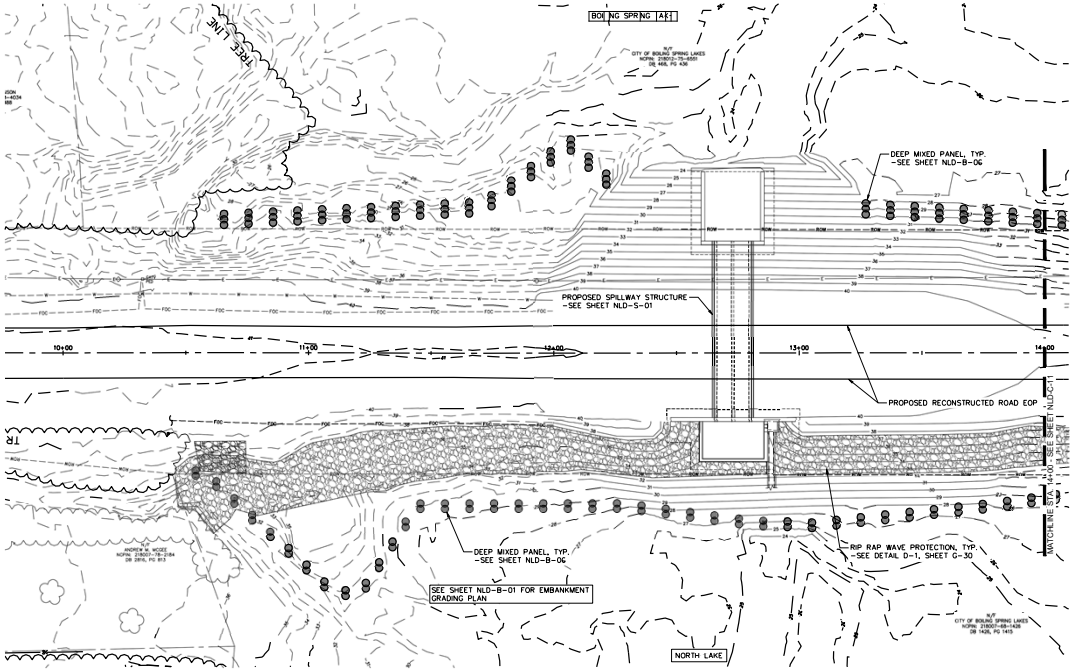
ULD-C-11

mcgill

ID North Lake Dam

PLAN

FLOW



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NO.	DATE	BY	DESCRIPTION

DAM CONSTRUCTION/
RECONSTRUCTION PROJECT

BOILING SPRING LAKES

BRUNSWICK COUNTY, NORTH CAROLINA

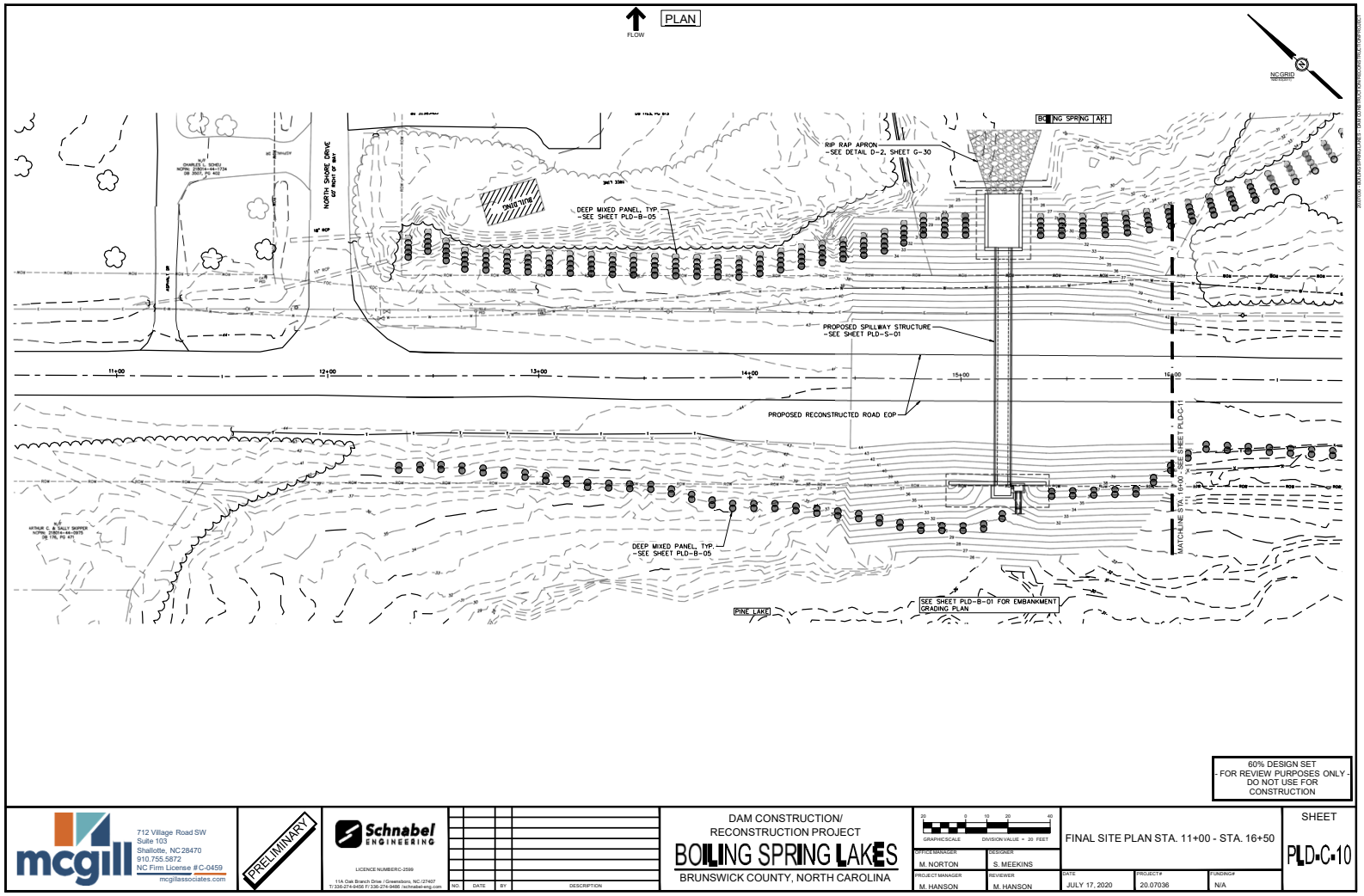
GRAPHIC SCALE — DIVISION VALUE = 20 FEET

FINAL SITE PLAN STA. 10+00 - STA. 14+00

OFFICE MANAGER	DESIGNER	DATE	PROJECT#	FUNDING#
M. NORTON	S. MEEKINS	JULY 17, 2020	20.07036	N/A
PROJECT MANAGER	REVIEWER			
M. HANSON	M. HANSON			

SHEET
NLD-C-10

I D P i n e L a k e D a m



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DAM CONSTRUCTION/
RECONSTRUCTION PROJECT

BOILING SPRING LAKES

BRUNSWICK COUNTY, NORTH CAROLINA

GRAPHIC SCALE 20 0 10 20 40 — DIVISION VALUE = 20 FEET

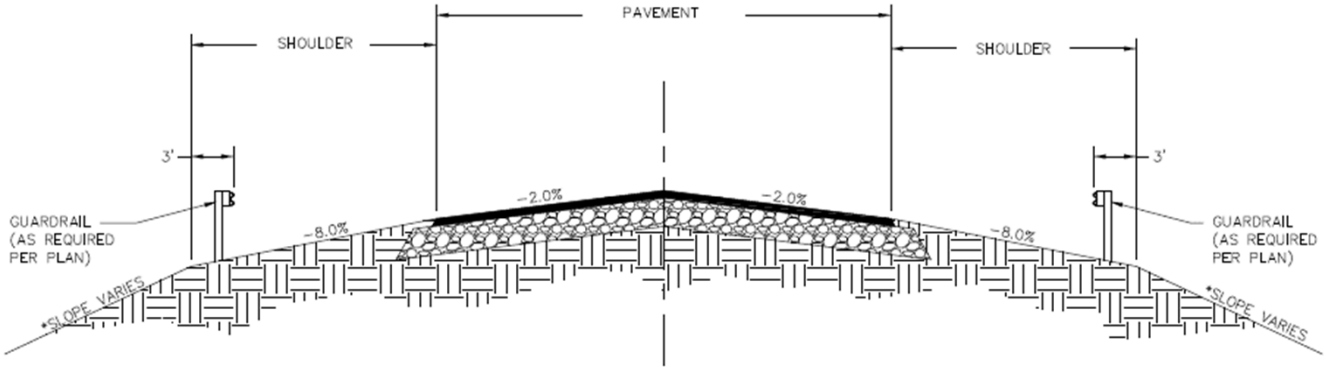
OFFICE MANAGER	DESIGNER
M. NORTON	S. MEEKINS
PROJECT MANAGER	REVIEWER
M. HANSON	M. HANSON

FINAL SITE PLAN STA. 11+00 - STA. 16+50

DATE	PROJECT#	FUNDING#
JULY 17, 2020	20.07036	N/A

SHEET
PLD-C-10

ID - Roadway and Utilities



Recent FEMA Coordination

- Date: 8/19/2020
- Topics
  - ✓ PLD, NLD and EBSR
  - ✓ NCDOT project
- Results
  - ✓ FEMA has agreed to allow 2 applicants to claim the same physical site – Success!
  - ✓ FEMA will reimburse cost for reconstruction of water control features back to pre-disaster condition
  - ✓ Codes and Standards are only applicable for original dam design (guardrail, low drain, etc.)
  - ✓ Submitted SOW to FEMA on 8/31/2020

RFQ

- Due to the complexity of the construction required and the overall magnitude of the project McGill/Schnabel recommends that the City prequalify bidders for this project.

- A Request for Qualifications (RFQ) will be publicly distributed. Qualification submittals from Contractor Teams will be reviewed by the City and Engineer of Record based on meeting minimum levels of experience with various unique construction methodologies required for this project. Contractor Teams will be notified regarding meeting minimum qualifications prior to distribution of the bid package.

RFQ

- For Prequalified Bids the NC GS requires
  - The City adopts an objective prequalification policy and
  - The City adopts the assessment tool and criteria for that specific project

- McGill has provided suggested language for Board adoption
- The Board is scheduled to meet October 6, 2020
- If approved, the RFQ is scheduled for release October 9, 2020

Next Steps

Critical Dates

- Submittal to Dam Safety 12/23/20
- Dam Safety Review 12/23/20 to 3/23/21
- Bidding and Contractor Selection 3/31/21 to 5/28/21
- Start Construction 5/28/21