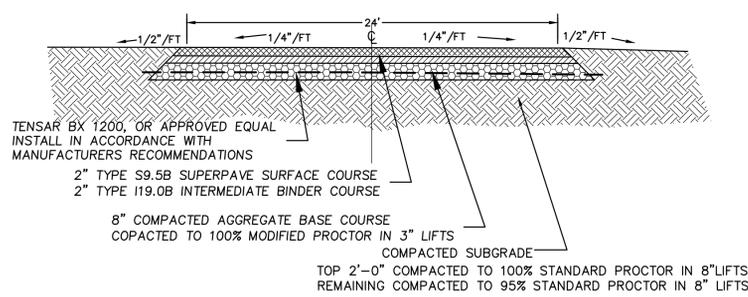
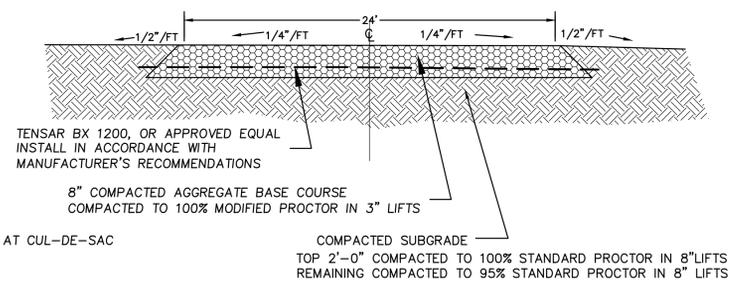


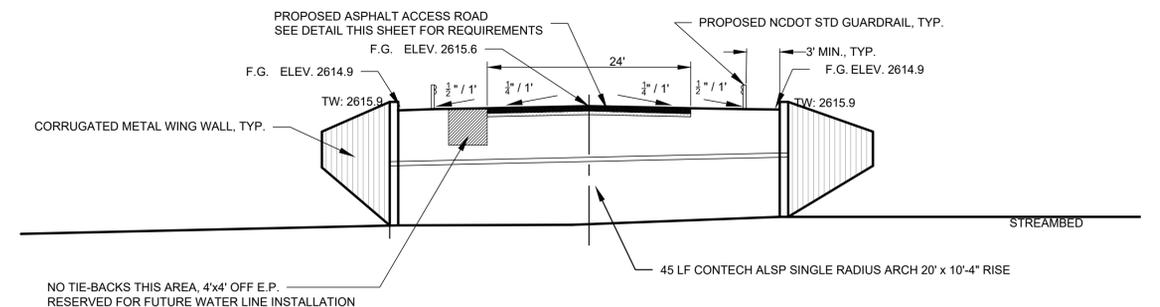
**ALSP SINGLE-RADIUS ARCH WITH WING WALLS**  
NOT TO SCALE



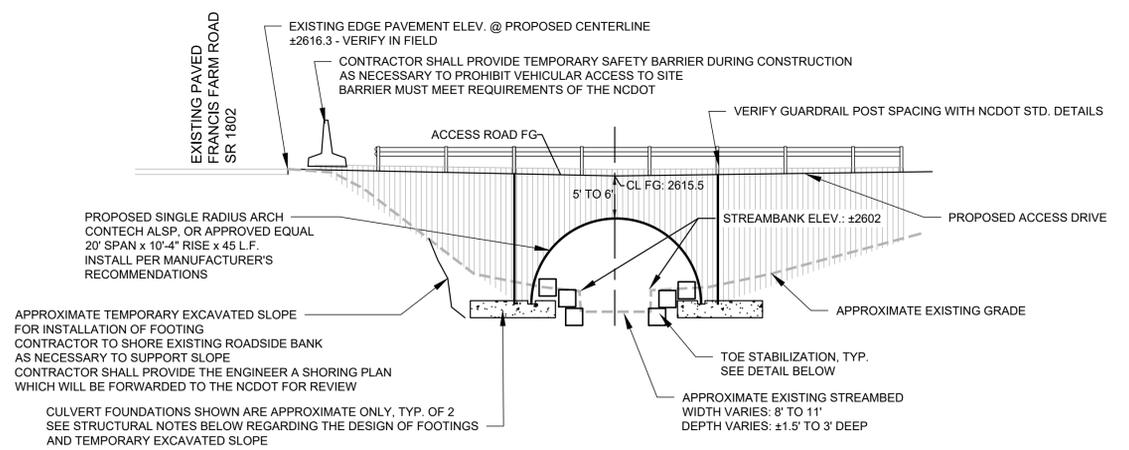
**ASPHALT ROAD AT STREAM CROSSING ROAD SECTION**  
NOT TO SCALE



**GRAVEL ROAD AT STREAM CROSSING ROAD SECTION**  
NOT TO SCALE



**SECTION A-A**  
NOT TO SCALE



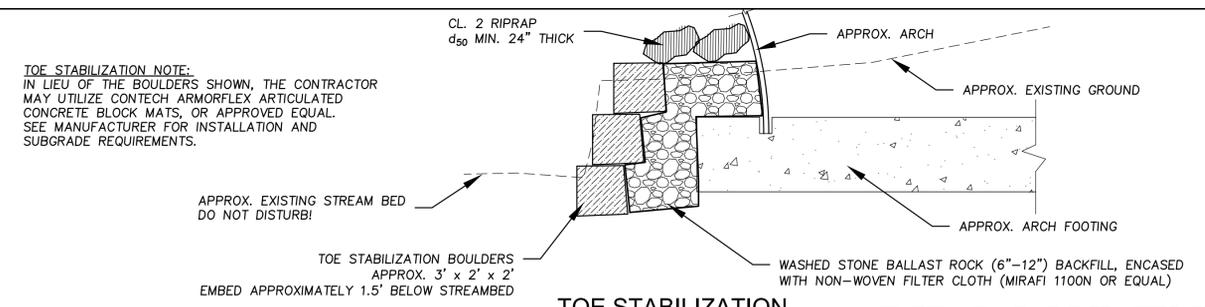
**SECTION B-B**  
NOT TO SCALE

- ARCHED CULVERT AND WING WALL STRUCTURAL NOTES:**
1. THE CONTRACTOR SHALL PROVIDE DRAWINGS SEALED BY A NORTH CAROLINA PROFESSIONAL ENGINEER REGARDING THE STRUCTURAL DESIGN OF THE SINGLE-RADIUS ARCH AND WING WALLS, INCLUDING FOUNDATIONS AND SOIL BACKFILL.
  2. A REPORT OF GEOTECHNICAL EXPLORATION CONDUCTED BY BLE, INC AT 3 LOCATIONS ALONG THE ALIGNMENT FOR THE STRUCTURAL CULVERT IS PROVIDED AS PART OF THE BID DOCUMENTS FOR USE BY THE CONTRACTOR'S ENGINEER.
  3. SOIL LOADS (SEE GRADING PLAN FOR HEIGHT OF SOIL OVER CULVERT) AND H-20 LOADING MUST BE CONSIDERED IN THE DESIGN.
  4. THE REQUIRED BEARING CAPACITY OF THE STRUCTURAL FILL SOILS MUST ALSO BE INCLUDED IN THE DESIGN.
  5. PROVISIONS MUST BE MADE IN THE DESIGN OF THE WALL TO ACCOMMODATE SATURATED CONDITIONS ENCOUNTERED DURING HIGH FLOW EVENTS (AT LEAST TO TOP OF ARCH). DRAINAGE BACKFILL AND WEEP SYSTEM DETAILS SHALL BE PROVIDED WITH DESIGN/SHOP DRAWING SUBMITTAL.
  6. A COFFER DAM OR PUMP AROUND SYSTEM IS REQUIRED TO BE UTILIZED FOR THE INSTALLATION OF THE TOE STABILIZATION BOULDERS. THE CONTRACTOR SHALL PROVIDE THE ENGINEER PLANS FOR THE SYSTEM TO BE USED, AT LEAST 4 WEEKS PRIOR TO BEGINNING THIS CONSTRUCTION. THE ENGINEER WILL FORWARD THE PLANS TO THE NCDOT-LAND QUALITY SECTION FOR THEIR REVIEW AND APPROVAL PRIOR TO BEGINNING THE IMPLEMENTATION OF THE COFFER DAM/PUMP AROUND AND ASSOCIATED TOE STABILIZATION MEASURES.

- ARCHED CULVERT NOTES:**
1. VERIFY EXISTING ELEVATIONS PRIOR TO BEGINNING CONSTRUCTION! NOTIFY ENGINEER OF ANY DISCREPANCIES WITH THE PROPOSED ELEVATIONS VERSUS THE ACTUAL ELEVATIONS.
  2. DO NOT ALLOW WET CONCRETE TO COME INTO CONTACT WITH LIVE STREAM.
  3. UNDERCUT AND REPLACE UNSUITABLE SOILS AS NECESSARY BENEATH FOOTINGS.
  4. INSTALL ARCH DURING PERIODS OF DRY WEATHER TO MINIMIZE THE POSSIBILITY OF STREAM BANK SOILS ENTERING STREAM.
  5. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN THE NECESSARY TRAFFIC CONTROL PERMITS FROM THE NCDOT AND TO PROVIDE TRAFFIC CONTROL AS NEEDED DURING CONSTRUCTION.

**NOTES**

**STREAM CROSSING DETAIL**  
NOT TO SCALE



**TOE STABILIZATION**  
NOT TO SCALE

**BID DOCUMENTS**

SIGNED AND DATED:					
THIS DOCUMENT HAS BEEN DIGITALLY SIGNED AND SEALED IN ACCORDANCE WITH THE STANDARD CERTIFICATION REQUIREMENTS FOUND IN NC ADMINISTRATIVE CODE 21-56.1103(E). THIS DIGITAL SIGNATURE HAS BEEN FOUND BY THE NC BOARD OF EXAMINERS FOR ENGINEERS AND SURVEYORS TO MEET THESE STANDARDS. PLEASE CONTACT THE SIGNER IF YOU NEED ASSISTANCE IN VALIDATING THE SIGNATURE.		NO.	DATE	BY	DESCRIPTION

**FRANCIS FARM LANDFILL RESTRICTIVE COVER IMPLEMENTATION**  
**HAYWOOD COUNTY**  
HAYWOOD COUNTY, NORTH CAROLINA

OFFICE MANAGER MDC		DESIGNER DAP		DATE NOVEMBER 2019		PROJECT # 14.00708		FUNDING # N/A	
PROJECT MANAGER JRB		REVIEWER JRB							

SHEET  
**C-509**

L:\ROAD\STREET\DRAWINGS\2014\14.00708 - FFLP ACAD\DESIGN\SOLID WASTE\DRAWINGS\CONSTRUCTION\DWGS\14.00708-CD-STREAM CROSSING PLAN AND DETAIL.DWG PLOT DATE: 12/23/2019 2:17 PM DAVE PASKO