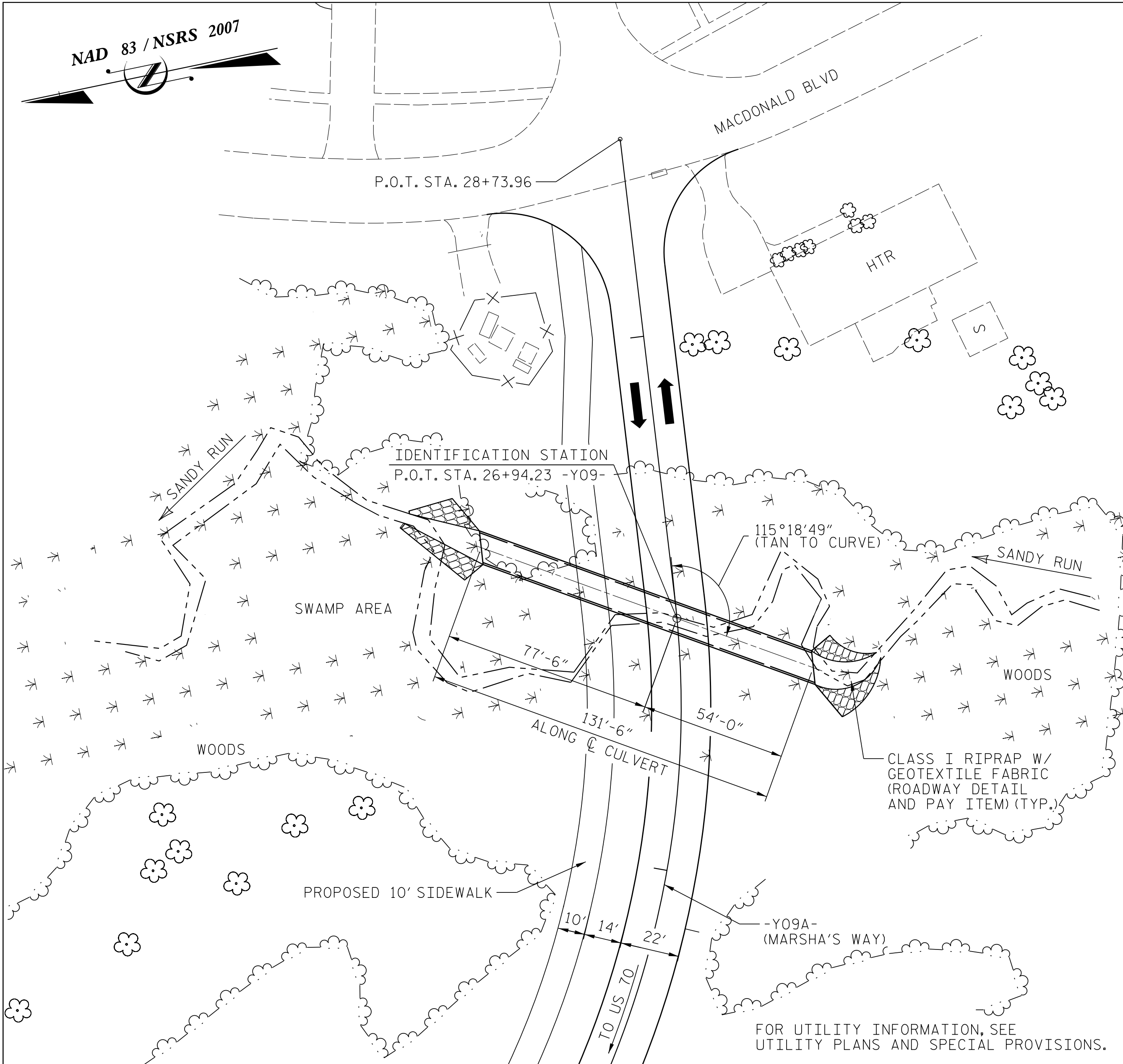


BENCH MARK: BM #7 - PK NAIL OVER 36" RCP IN MACDONALD BLVD. -Y09A- STA. 28+81.53, 171.3' RT.
ELEV. 26.55', NAVD 88



GRADE PT. ELEV. @ STA. 26+94.23 -Y09A- = 26.70
BED ELEV. @ STA. 26+94.23 -Y09A- = 7.91
ROADWAY SLOPES = 3:1

LOCATION SKETCH

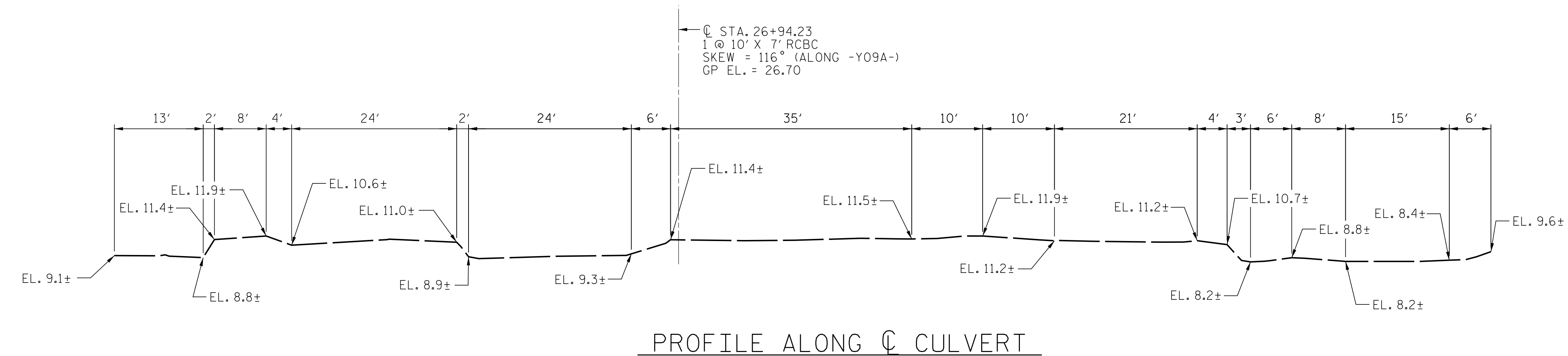
HYDRAULIC DATA		
DESIGN DISCHARGE	410	CFS
FREQUENCY OF DESIGN FLOOD	50	YR.
DESIGN HIGH WATER ELEVATION	16.5	FT.
BASE DISCHARGE (Q 100)	490	CFS
BASE FREQUENCY	100	YR.
BASE HIGH WATER ELEVATION	17.4	FT.

OVERTOPPING FLOOD DATA		
OVERTOPPING DISCHARGE	1150	CFS
FREQUENCY OF OVERTOPPING FLOOD	500+	YR.
OVERTOPPING FLOOD ELEVATION	24.8	FT.

TOTAL STRUCTURE QUANTITIES		
CLASS A CONCRETE		
BARREL @ 1.049	CY/FT	137.9 C.Y.
SILLS		1.1 C.Y.
EDGE BEAMS		1.5 C.Y.
WING ETC.		31.2 C.Y.
TOTAL		140.5 C.Y.
EPOXY COATED REINFORCING STEEL		
BARREL		32589 LBS.
WINGS ETC.		2420 LBS.
TOTAL		35009 LBS.
FOUNDATION CONDITIONING MATERIAL		105.1 TONS
CULVERT EXCAVATION		LUMP SUM

NOTES:

- ASSUMED LIVE LOAD ----- HL-93 OR ALTERNATE LOADING.
- DESIGN FILL----- 11.5 FT.
- 3" Ø WEEP HOLES INDICATED TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.
- CONCRETE IN CULVERTS TO BE POURED IN THE FOLLOWING ORDER:
 1. WING FOOTINGS AND FLOOR SLAB INCLUDING 4" OF ALL VERTICAL WALLS.
 2. THE REMAINING PORTIONS OF THE WALLS AND WINGS FULL HEIGHT FOLLOWED BY ROOF SLAB AND HEADWALLS.
- THE RESIDENT ENGINEER SHALL CHECK THE LENGTH OF CULVERT BEFORE STAKING IT OUT TO MAKE CERTAIN THAT IT WILL PROPERLY TAKE CARE OF THE FILL.
- DIMENSIONS FOR WING LAYOUT AS WELL AS ADDITIONAL REINFORCING STEEL EMBEDDED IN BARREL ARE SHOWN ON WING SHEET.
- TRANSVERSE CONSTRUCTION JOINTS SHALL BE USED IN THE BARREL, SPACED TO LIMIT THE POURS TO A MAXIMUM OF 70 FEET. LOCATION OF JOINTS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER.
- AT THE CONTRACTOR'S OPTION, HE MAY SPLICE THE VERTICAL REINFORCING STEEL IN THE INTERIOR FACE OF EXTERIOR WALL AND BOTH FACES OF INTERIOR WALLS ABOVE LOWER WALL CONSTRUCTION JOINT. THE SPLICE LENGTH SHALL BE AS PROVIDED IN THE SPLICE LENGTH CHART SHOWN ON THE PLANS. EXTRA WEIGHT OF STEEL DUE TO THE SPLICES SHALL BE PAID FOR BY THE CONTRACTOR.
- FOR CULVERT DIVERSION DETAILS AND PAY ITEM, SEE EROSION CONTROL PLANS.
- A 3 FOOT STRIP OF FILTER FABRIC SHALL BE ATTACHED TO THE FILL FACE OF THE WING COVERING THE ENTIRE LENGTH OF THE EXPANSION JOINT.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- ALL BAR SUPPORTS USED IN THE CULVERT BARREL AND WINGS AND ALL INCIDENTAL REINFORCING STEEL SHALL BE EPOXY COATED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
- NATIVE MATERIAL PLACED BETWEEN SILLS IN THE CULVERT SHALL PROVIDE A CONTINUOUS LOW FLOW CHANNEL. NATIVE MATERIAL CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE STREAM BED AT THE PROJECT SITE DURING CONSTRUCTION. NATIVE MATERIAL IS SUBJECT TO APPROVAL BY THE ENGINEER AND MAY BE SUBJECT TO PERMIT CONDITIONS.
- FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.



PROFILE ALONG CULVERT

DRAWN BY : NKB DATE : 03/16
CHECKED BY : JCM DATE : 03/16
DESIGN E.O.R. : JCM DATE : 05/16

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

AECOM
AECOM TECHNICAL SERVICES, INC.
701 CORPORATE CENTER DRIVE, SUITE 475
RALEIGH, NC 27607
(919) 854-6200 www.aecom.com
AECOM License No. F-0342

4/12/2017

NORTH CAROLINA PROFESSIONAL SEAL
030474
ENGINEER
JOHN C. MORRISON
DocuSign Envelope ID: A3FDE142C82F4A8

PROJECT NO. R-5516
CRAVEN COUNTY
STATION: 26+94.23 -Y09A-
SHEET 1 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
BARREL STANDARD

SINGLE 10 FT. X 7 FT.
CONCRETE BOX CULVERT
116° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			C2-1
2			4			TOTAL SHEETS 6

DATE: 4/7/2017 TIME: 2:37:40 PM
USER: jcm16036454-Struam Road\MOI_Technical\08_Structure\Cadd\Culverts\412_005_C2-LR5516_LOC.dgn