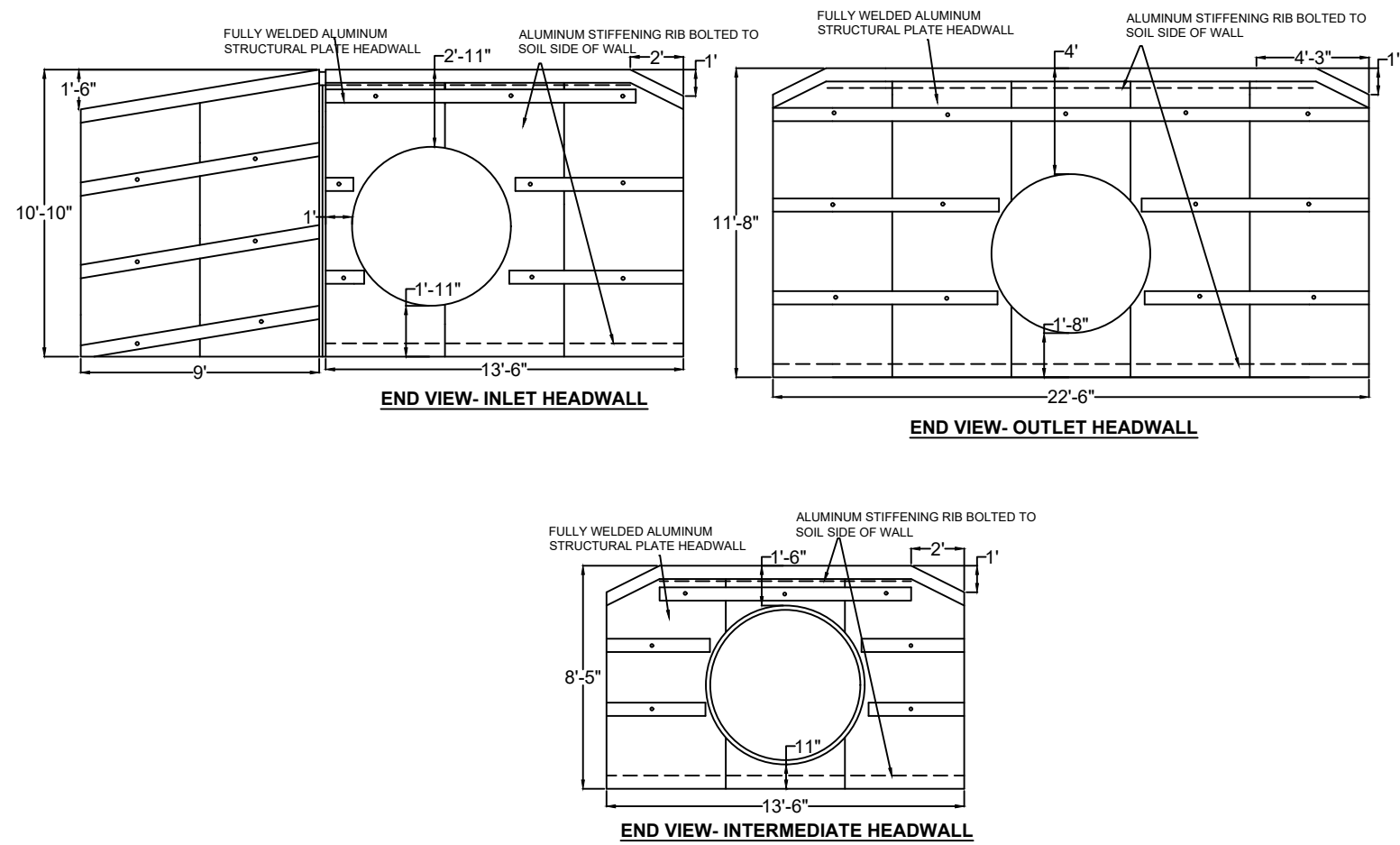


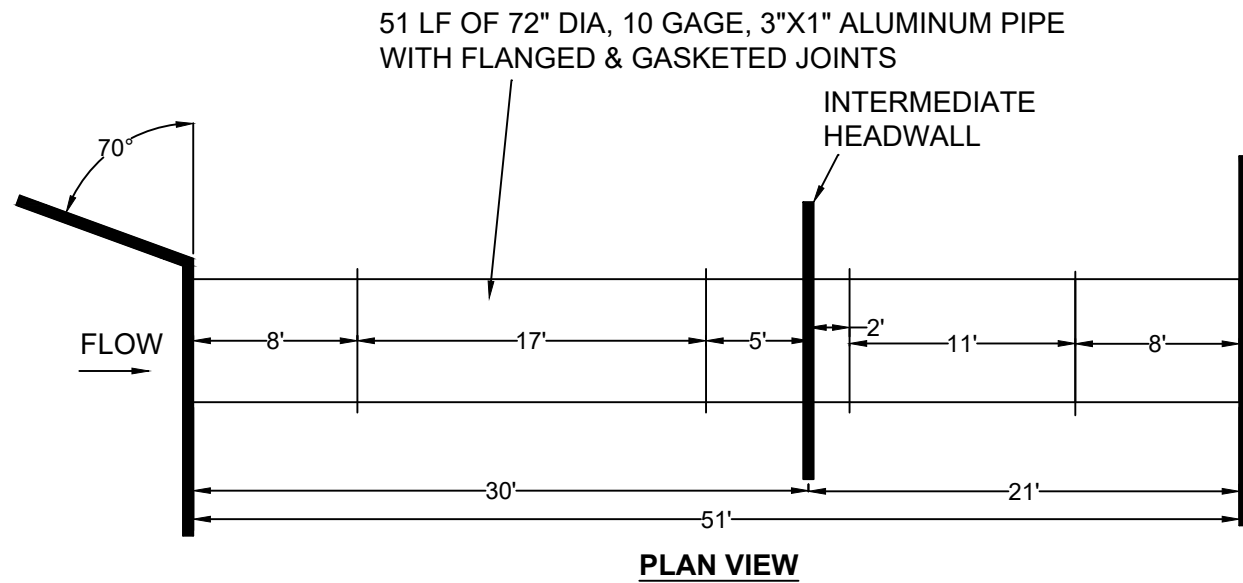
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DESCRIPTION	
NCDOT ALEXANDER CO 168 MILSTEAD ORCHARD LANE TAYLORSVILLE, NC	
POMONA PIPE PRODUCTS 4611 DUNDAS DR. GREENSBORO, NC 27407 336-292-8060	
POMONA PIPE PRODUCTS POMONAPIPEPRODUCTS.COM	
DATE: JAN 20, 2023 REV	SHEET
NOT TO SCALE	

**PROPOSED ELEVATIONS:**

TOP ∇ ROAD= 1202.91
 TOP OF HW IN= 1201.16
 TOP OF HW OUT= 1201.10
 TOP OF PIPE IN= 1198.27
 TOP OF PIPE OUT= 1197.16
 INV STREAM IN= 1193.28
 INV PIPE IN= 1192.27
 INV STREAM OUT= 1192.16
 INV PIPE OUT= 1191.16

DESCRIPTION

NCDOT ALEXANDER CO
 168 MILSTEAD ORCHARD LANE
 TAYLORSVILLE, NC

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 4611 DUNDAS DR
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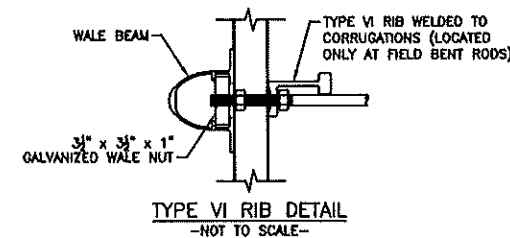



POMONAPIPEPRODUCTS.COM


DATE:
 JAN 20, 2023
 REV

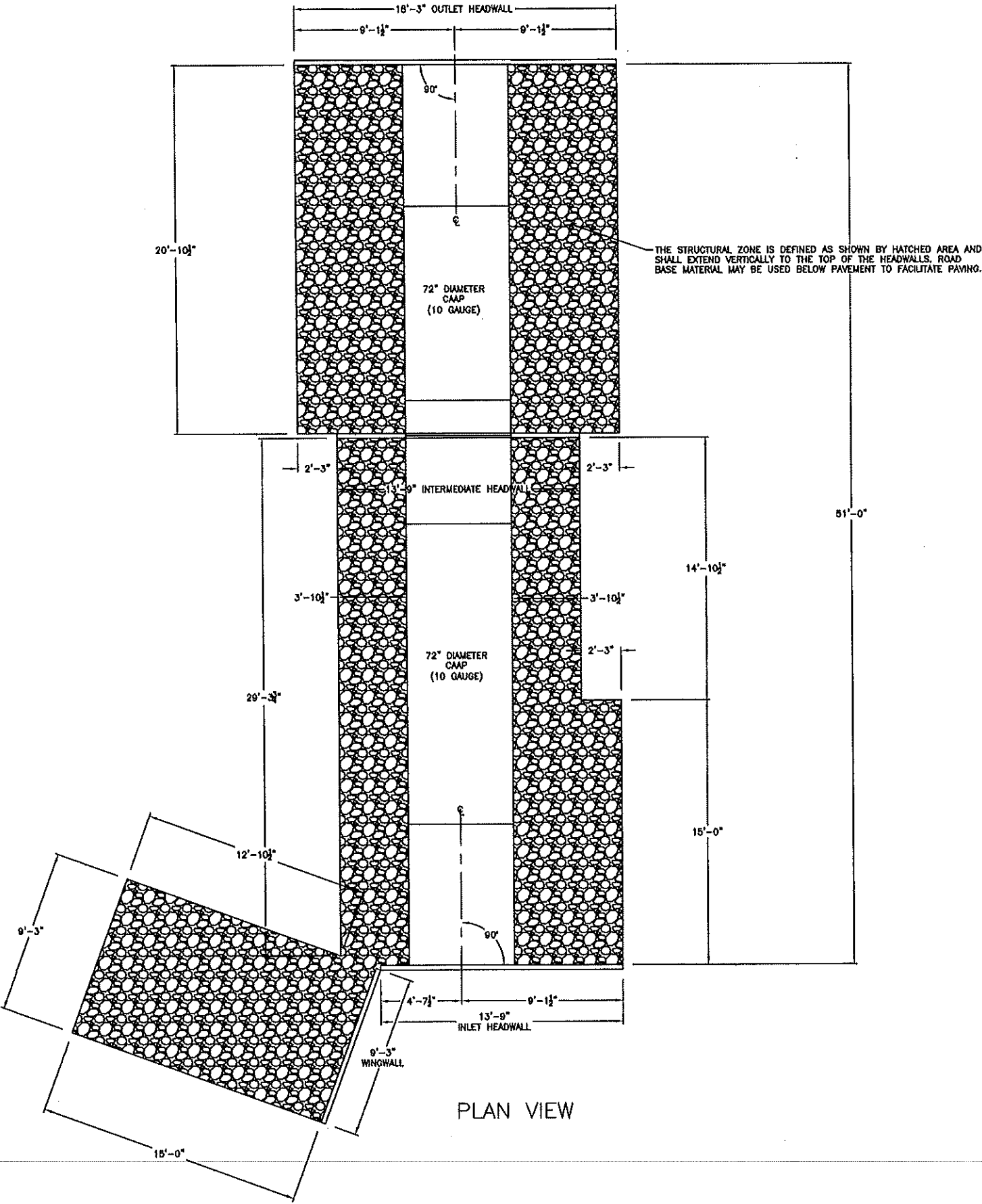
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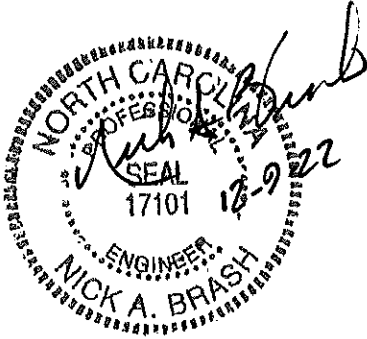


Comprehensive Construction Services, Inc.
 Construction

 1326 Grandin Road SW
 Roanoke, VA 24015
 (540) 344-3003
 FAX(540) 344-3337
 Firm License No. C-2875

ASSEMBLY REQUIREMENTS—HEADWALLS & WINGWALL							
HEAT NO.	RADIUS	MK	SHIP			T	REMARKS
			PIECES	"N"	LENGTH		
X	FLAT	(A)	3	12	9.25'	.200"	BEVEL CUT ON TOP
X	FLAT	(B)	2	12	9.25'	.200"	PIPE WELDED TO PLATE
X	FLAT	(C)	3	10	8.42'	.150"	PIPE WELDED TO PLATE
X	FLAT	(D)	2	15	11.67'	.200"	BEVEL CUT ON TOP
X	FLAT	(E)	2	15	11.67'	.200"	PIPE WELDED TO PLATE
		DM1	15	2	1.67'	.225"	DEADMAN WITH TYPE VI
		DM2	36	3	2.33'	.225"	DEADMAN WITH TYPE VI
			1		8.48'		ALUMINUM CAP BEAMS
			1		11.75'		ALUMINUM CAP BEAMS
			1		1.00'		ALUMINUM CAP BEAMS
			1		9.75'		ALUMINUM CAP BEAMS
			1		14.25'		ALUMINUM CAP BEAMS
			5		2.50'		ALUMINUM CAP BEAMS
			1		11.87'		ALUMINUM WALE BEAMS
			1		9.39'		ALUMINUM WALE BEAMS
			2		9.25'		ALUMINUM WALE BEAMS
			1		1.25'		ALUMINUM WALE BEAMS
			1		2.00'		ALUMINUM WALE BEAMS
			1		5.25'		ALUMINUM WALE BEAMS
			1		6.50'		ALUMINUM WALE BEAMS
			1		10.25'		ALUMINUM WALE BEAMS
			2		3.50'		ALUMINUM WALE BEAMS
			2		4.25'		ALUMINUM WALE BEAMS
			1		16.25'		ALUMINUM WALE BEAMS
			2		6.12'		ALUMINUM WALE BEAMS
			2		6.87'		ALUMINUM WALE BEAMS
			2		7.25'		ALUMINUM WALE BEAMS
			56				WALE NUTS
			5		3/4" DIA. X 18'-0" LONG RODS FOR DEADMAN ANCHORS		
			6		3/4" DIA. X 15'-0" LONG RODS FOR DEADMAN ANCHORS		
			10		3/4" DIA. X 14'-0" LONG RODS FOR DEADMAN ANCHORS		
			4		3/4" DIA. X 12'-0" LONG RODS FOR DEADMAN ANCHORS		
			26		3/4" DIA. X 10'-0" LONG RODS FOR DEADMAN ANCHORS		
			5		3/4" DIA. BENT RODS ATTACHED TO PIPE		
			1		3-PIECE WING ASSEMBLY		
SHIPMENT SUMMARY:							
SPECIFICATIONS: AASHTO M219						GAGE:	
APPROXIMATE SHIPPING WEIGHT:						TOP:	
CUSTOMER:						SIDES:	
						CORNER:	
						BOTTOM:	
PROJECT: NCDOT - IREDELL COUNTY HEADWALLS (0.200" & 0.150" THICKNESS) DIAMETER, 3" x 1" CORRUGATION, 10 GAUGE							
DRAWN BY: JEC			REVISIONS:				
CHECKED BY:		NO.	DATE	BY	NOTES		
APPROVED BY:		1					
DATE: 12/08/2022		2					
SCALE: NTS			LANE METAL PRODUCTS DIVISION				1FB #:
			of LANE ENTERPRISES, INC.				54-DM-12057694A
			CAMP HILL, PA				LANE PROJECT NUMBER:
							



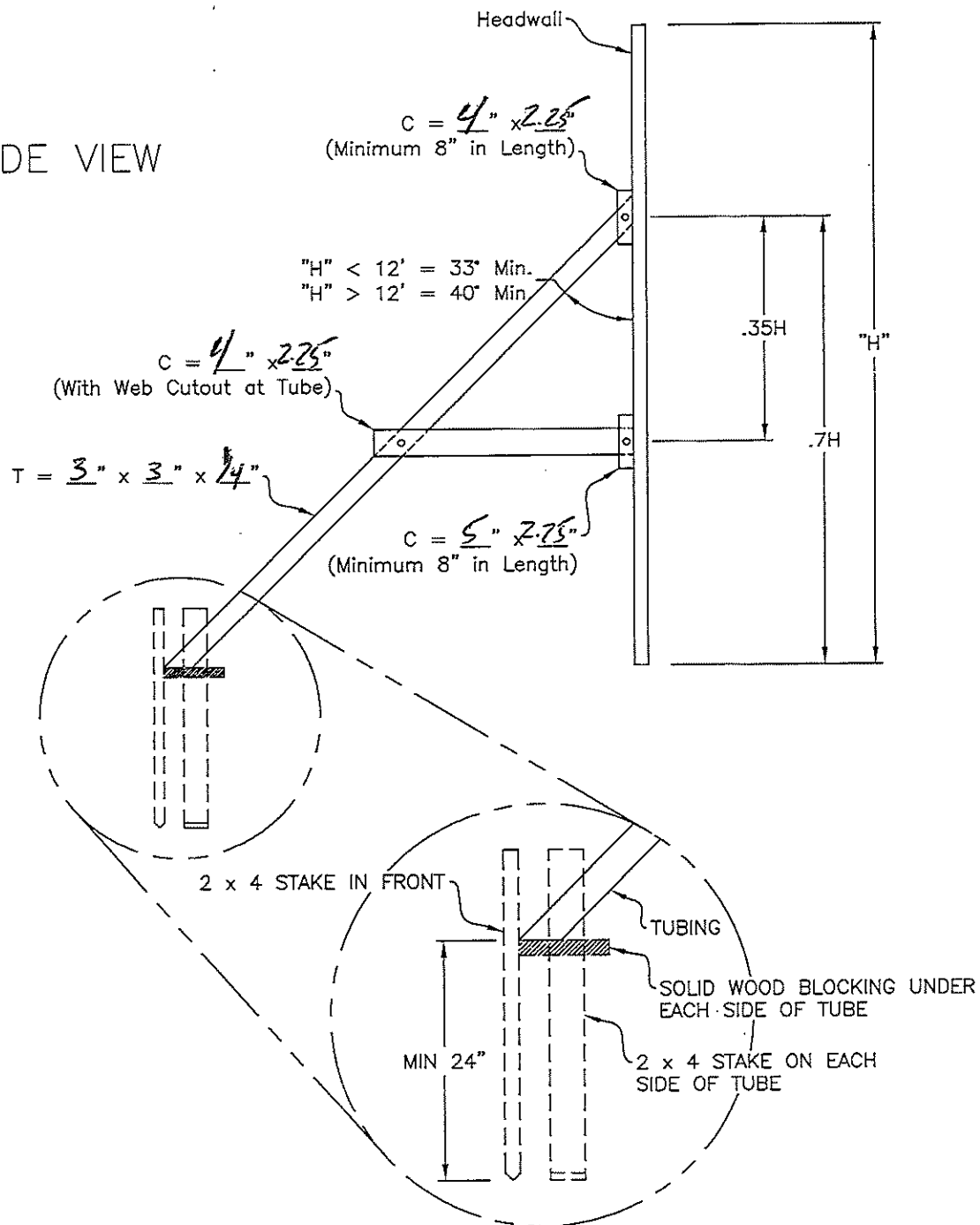
- Aluminum Structural Plate Headwall Installation Instructions:
- 1.) Aluminum structural plate headwalls shall conform to the latest requirements of AASHTO M219 or ASTM B746 with a minimum thickness of 0.200" (Inlet/Outlet) and 0.150" (Intermediate).
 - 2.) Headwalls may incorporate the full variety of shapes and sizes available in corrugated metal pipe and structural plate culverts (arch pipe, arch, box culvert, et al). Additionally, headwalls may be equipped with wingwalls of the same design and material. However, it shall be incumbent upon the project engineer to ensure constructability and structural adequacy through the implementation of submittal requirements (shop drawings, calculations, etc).
 - 3.) It shall be the responsibility of the installation crew to implement sound installation practices consistent with AASHTO LRFD Bridge Construction Practices. As necessary and at the discretion of the project engineer, the headwall manufacturer or other expertise may be enacted to supervise construction when a bid item for such activity has been included in the contract documents or project specifications.
 - 4.) The site shall be excavated per design plans and OSHA requirements. Bedding shall be prepared per Design Engineers specifications to achieve bearing capacity and establish line & grade. The headwall shall be properly placed at the design elevation by ensuring the stub is placed at grade for the culvert crossing.
 - 5.) Backfill placement and compaction shall be consistent with Section 26 of the AASHTO LRFD Bridge Construction Specifications. All backfill in the structural zone shall be #57 washed stone or other as approved by the engineer of record. Deadman anchors and rods shall be attached to the headwall & wings at the predetermined design elevations per design drawings.
 - 6.) The headwall shall be properly shored through the backfilling process. In general, the wall should be braced at the wale line located above the fill line until the corresponding anchor is completely embedded. The wall shall also be braced at the top anchor location until completely backfilled.
 - 7.) All steel components (nuts, bolts, tie back rods) shall have a hot-dipped galvanized coating.
 - 8.) As a matter of expedience and to the extent practical, the headwall-culvert system may be completely or partially assembled and lifted as a unit to facilitate placement of the unit in a prepared excavation complete with bedding to grade.



Comprehensive Construction Services, Inc.
1326 Grandin Road SW
Roanoke, VA 24015
(540) 344-3003
FAX(540) 344-3337
Firm License No. C-2875

SHIPMENT SUMMARY:				
SPECIFICATIONS:	AASHTO M219			GAGE:
APPROXIMATE SHIPPING WEIGHT:				TOP:
CUSTOMER:				SIDES:
				CORNER:
				BOTTOM:
PROJECT:	NCDOT - IREDELL COUNTY HEADWALLS (0.200" & 0.150" THICKNESS) 72" DIAMETER, 3" x 1" CORRUGATION, 10 GAUGE			
DRAWN BY:	JEC	REVISIONS:		
CHECKED BY:		NO.	DATE	BY
APPROVED BY:		1		
DATE:	12/08/2022	2		
SCALE:	NTS			
		LANE METAL PRODUCTS DIVISION of LANE ENTERPRISES, INC. CAMP HILL, PA		IFB #: 54-DM-12057694A LANE PROJECT NUMBER:

SIDE VIEW



LANE ENTERPRISES, INC.

TITLE:

HEADWALL BRACING TEMPLATE

DRAWN BY: JCH

DRAWING NUMBER:

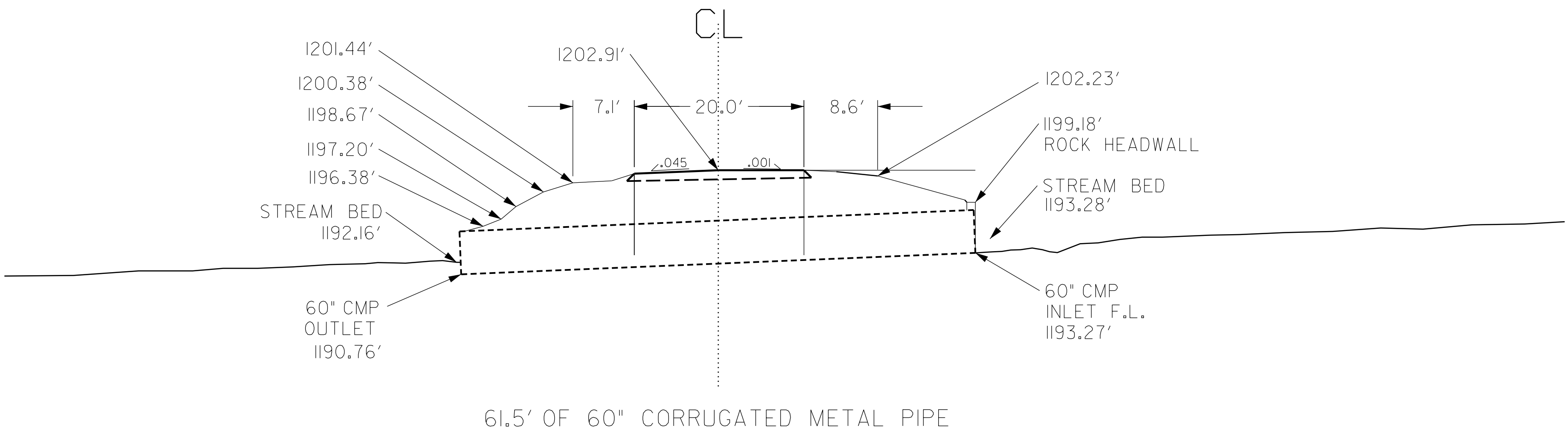
PAGE:

1 OF 1

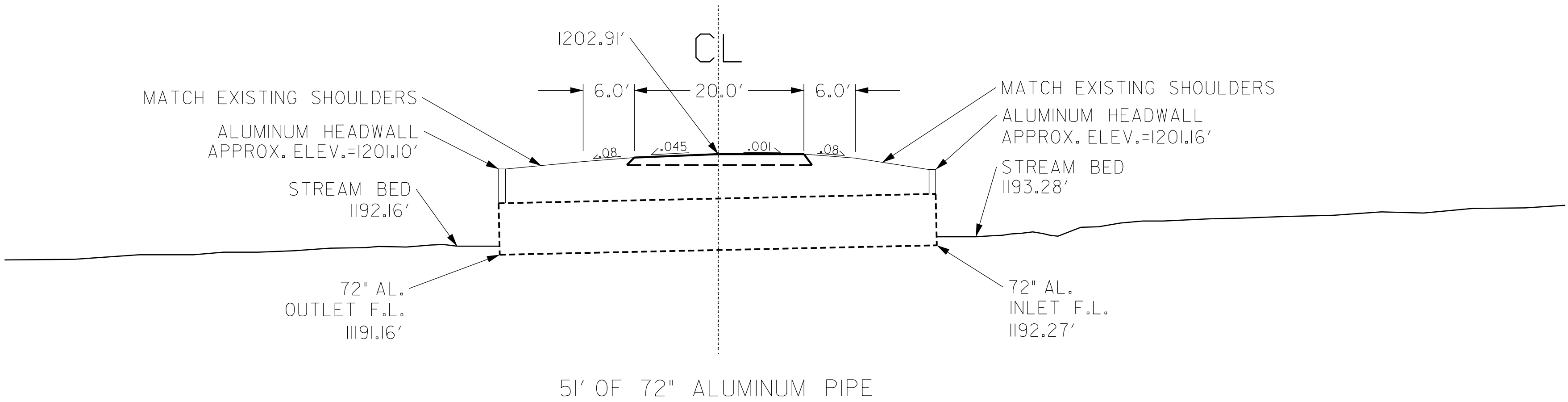
DATE:

6/7/07

TYPICAL SECTION



EXISTING ROADWAY TYPICAL SECTION



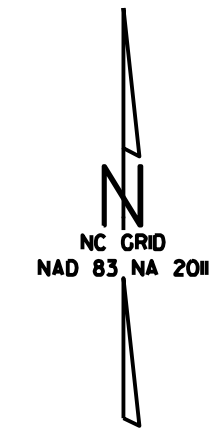
PROPOSED ROADWAY TYPICAL SECTION

PIPE REPLACEMENT
MILSTEAD ORCHARD LN SR 1350
ALEXANDER COUNTY NC

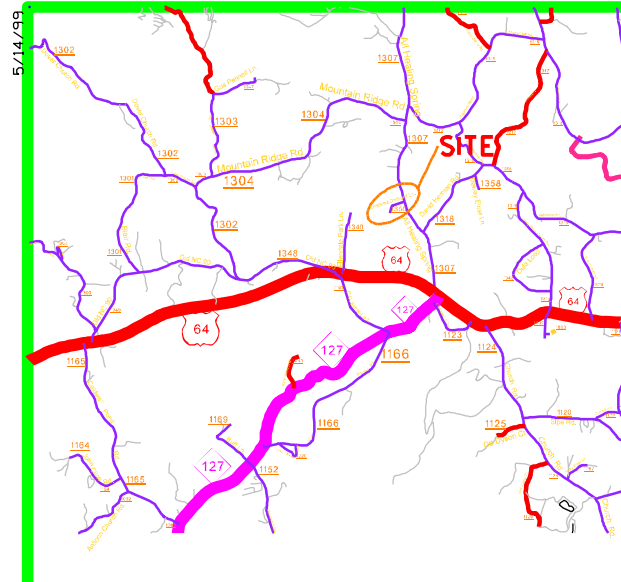
12B.200211

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

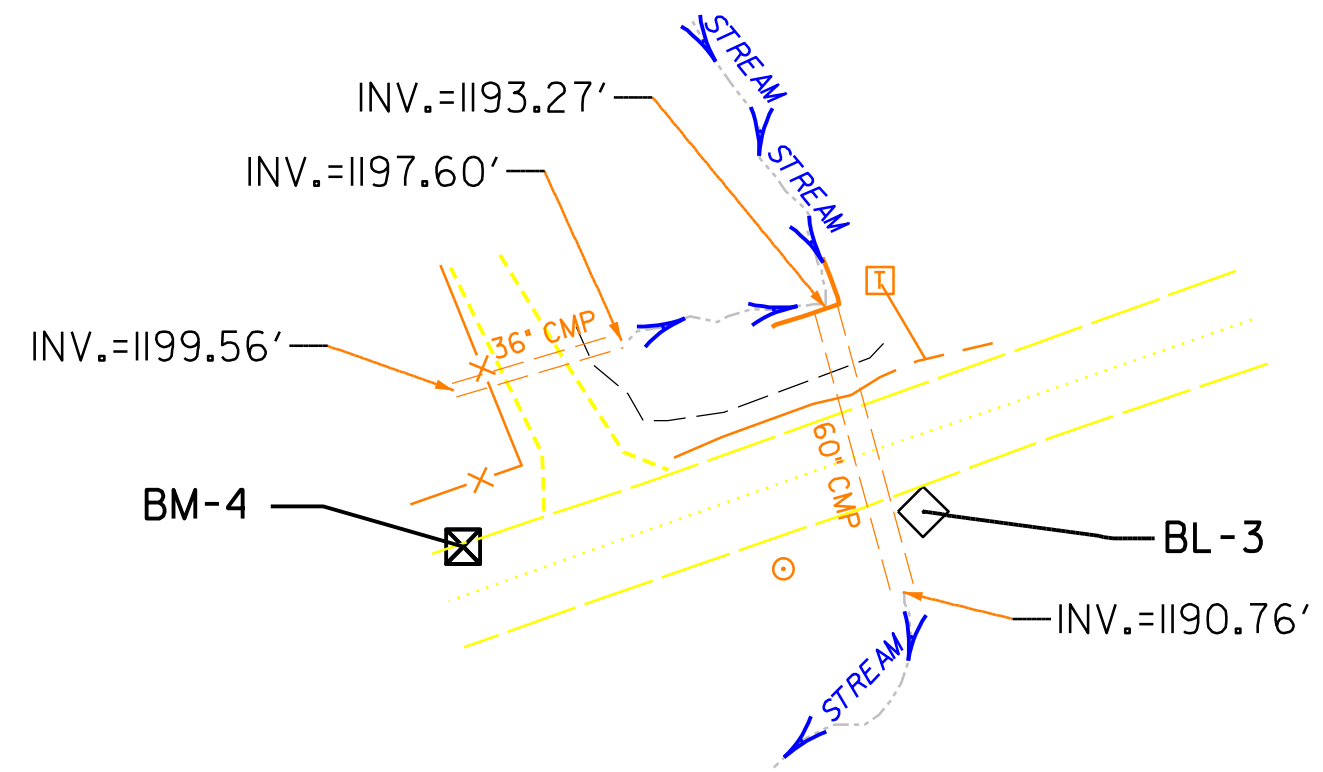
LOCATION: MILSTEAD ORCHARD LN
TYPE OF WORK: PIPE REPLACEMENT



BL-2

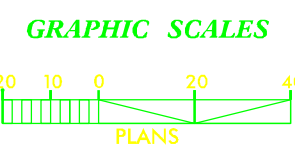


VICINITY MAP (NTS)
ALEXANDER COUNTY



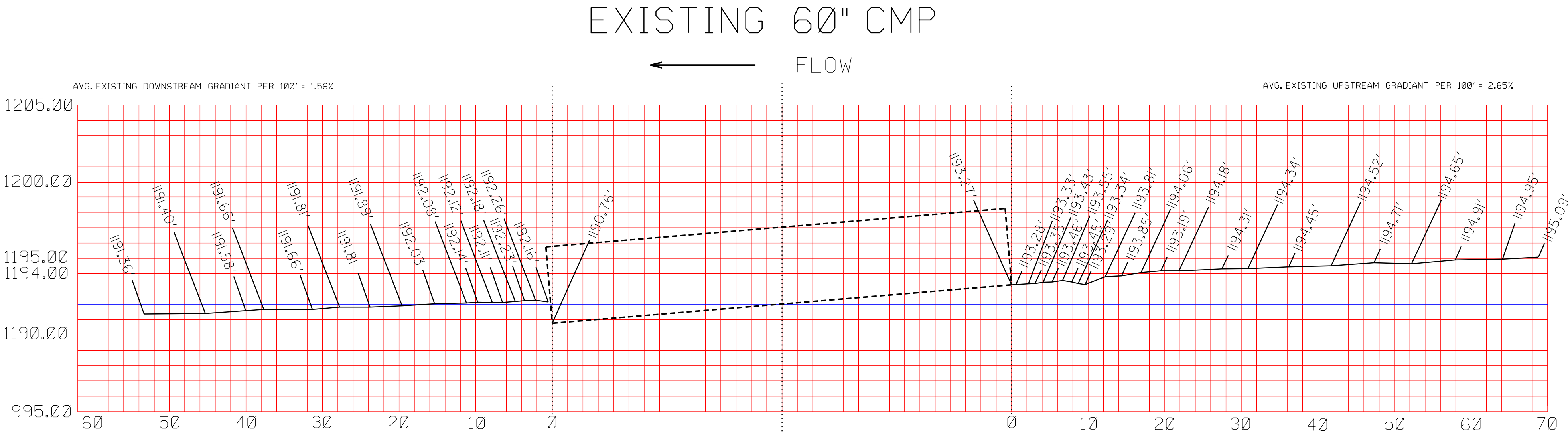
4 ELEVATION = 1205.90
N 803225 E 1328353
MAGNAIL @ EDGE OF PAVEMENT

BL	POINT	DESC.	NORTH	EAST	ELEVATION
1			803083.5770	1328099.9110	1219.76
2			803398.4890	1328762.4440	1197.10
3			803232.0980	1328448.5140	1201.25

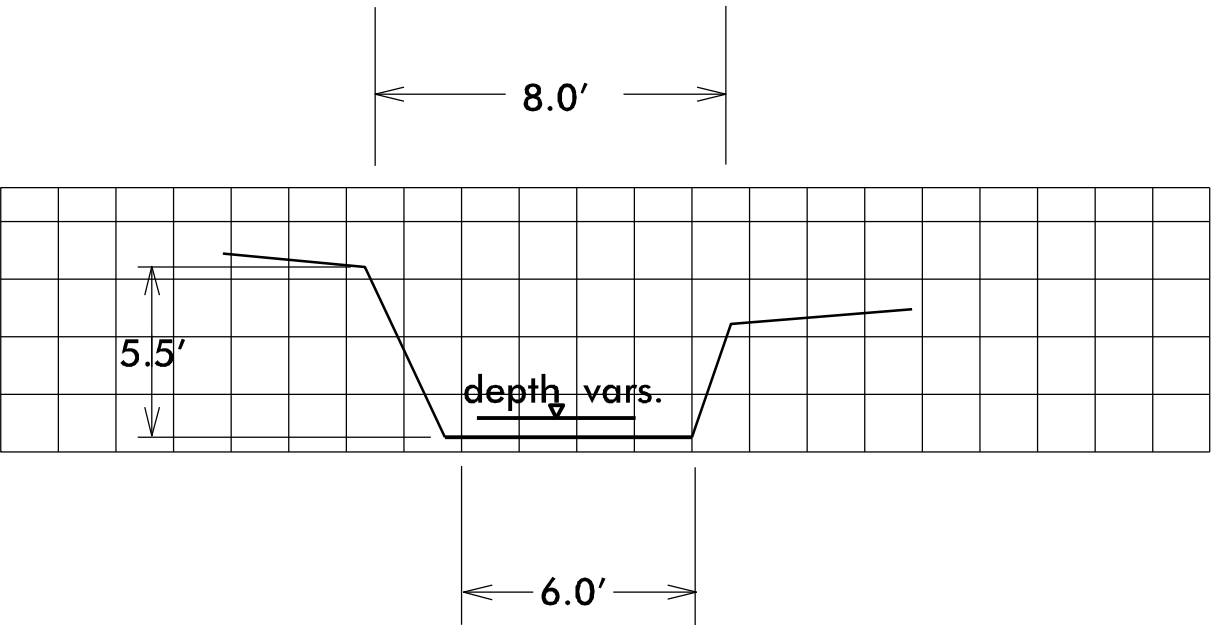


STATE	PROJECT	SHEET NUMBER
NC	MILSTEAD ORCHARD LN	3

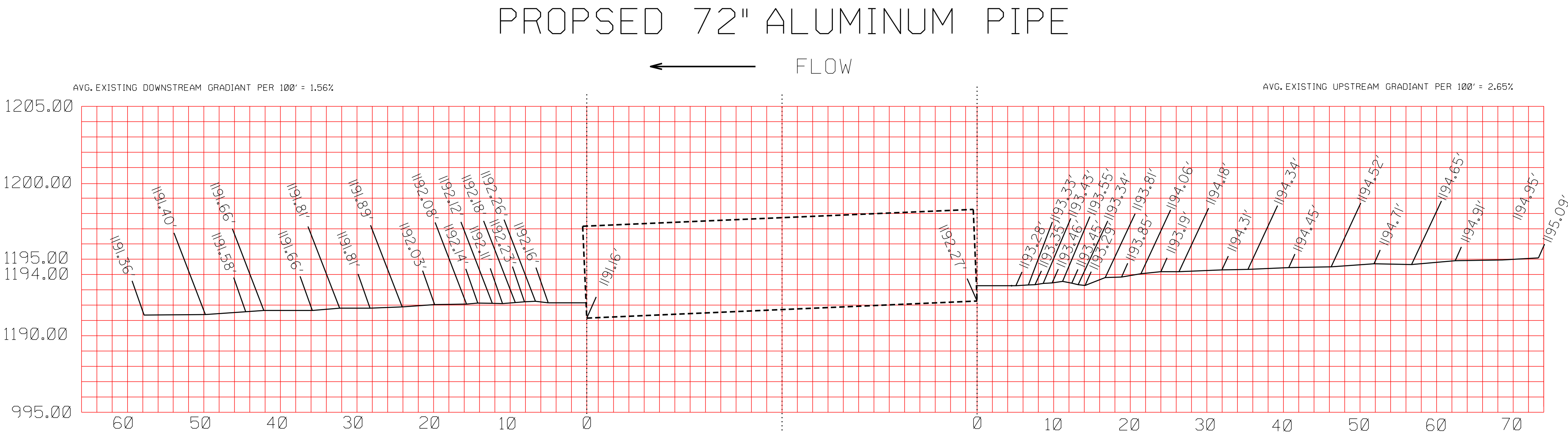
12B.200211



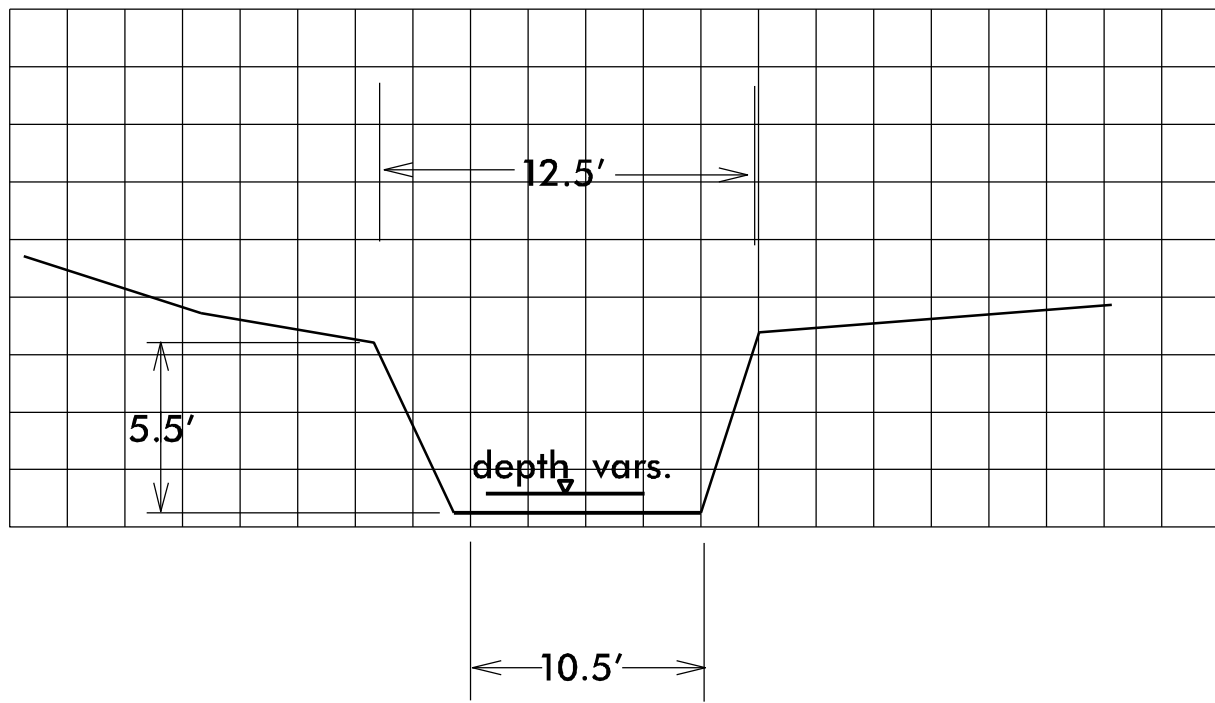
CL
Type = metalcorrugated
Invert Elevation = 1193.27'
Outlet Elevation = 1190.76'
TotalLength = 60.0'
Existing Gradient = -0.042%



Average Typical
Upstream Section

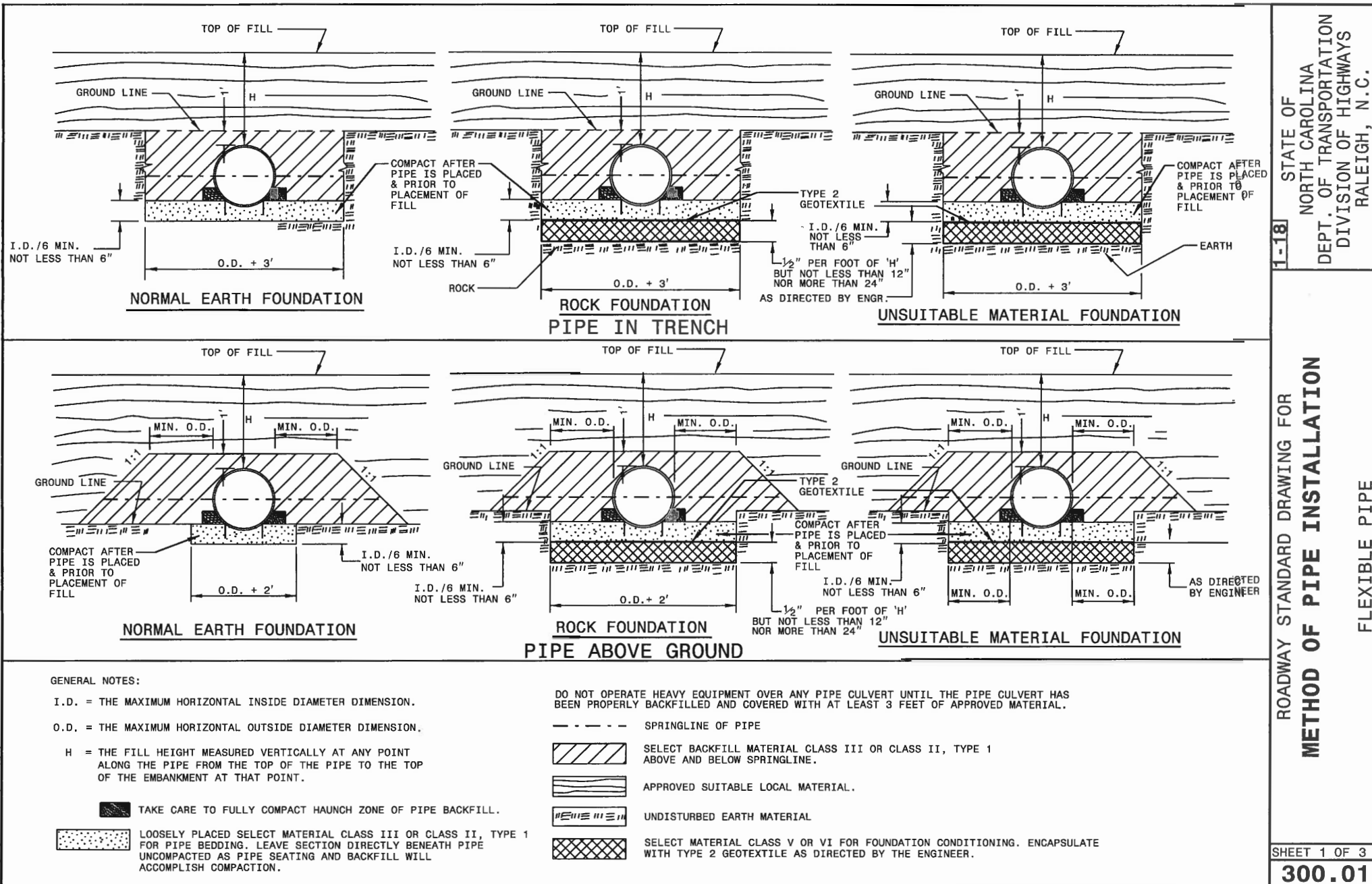


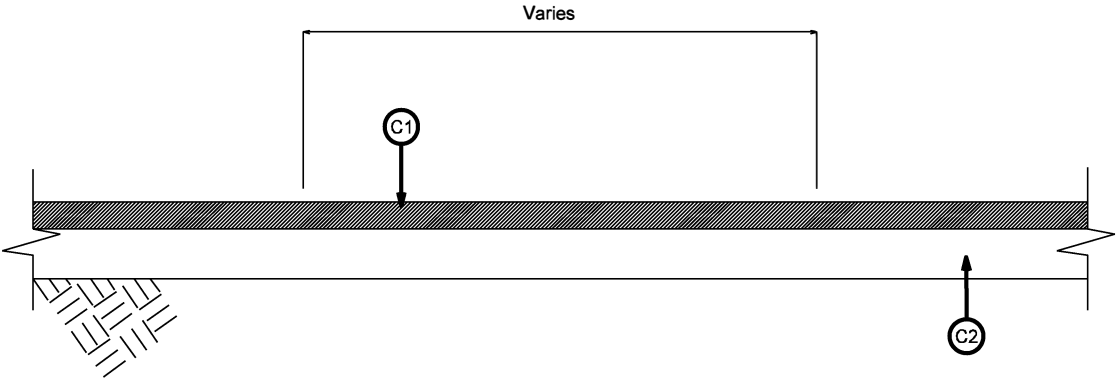
CL
Type = ALUMINUM PIPE
Invert Elevation = 1192.27'
Outlet Elevation = 1191.16'
TotalLength = 51.0'
Proposed Gradient = 0.022%



Average Typical
Downstream Section

PIPE REPLACEMENT
MILSTEAD ORCHARD LN SR 1350
ALEXANDER COUNTY NC





Asphalt Pavement Repair Typical Section

C1	Prop. Approx. 1.5" of Asphalt Conc. Surface Course Type S 9.5C at a rate of 168 lbs per syd
C2	Prop. Approx. 4" of Asphalt Conc. Base Course Type B 25.0 C at a rate of 448 lbs per syd

** To be paid as Asphalt Plant Mix Pavement Repair (Ton)

Division 12

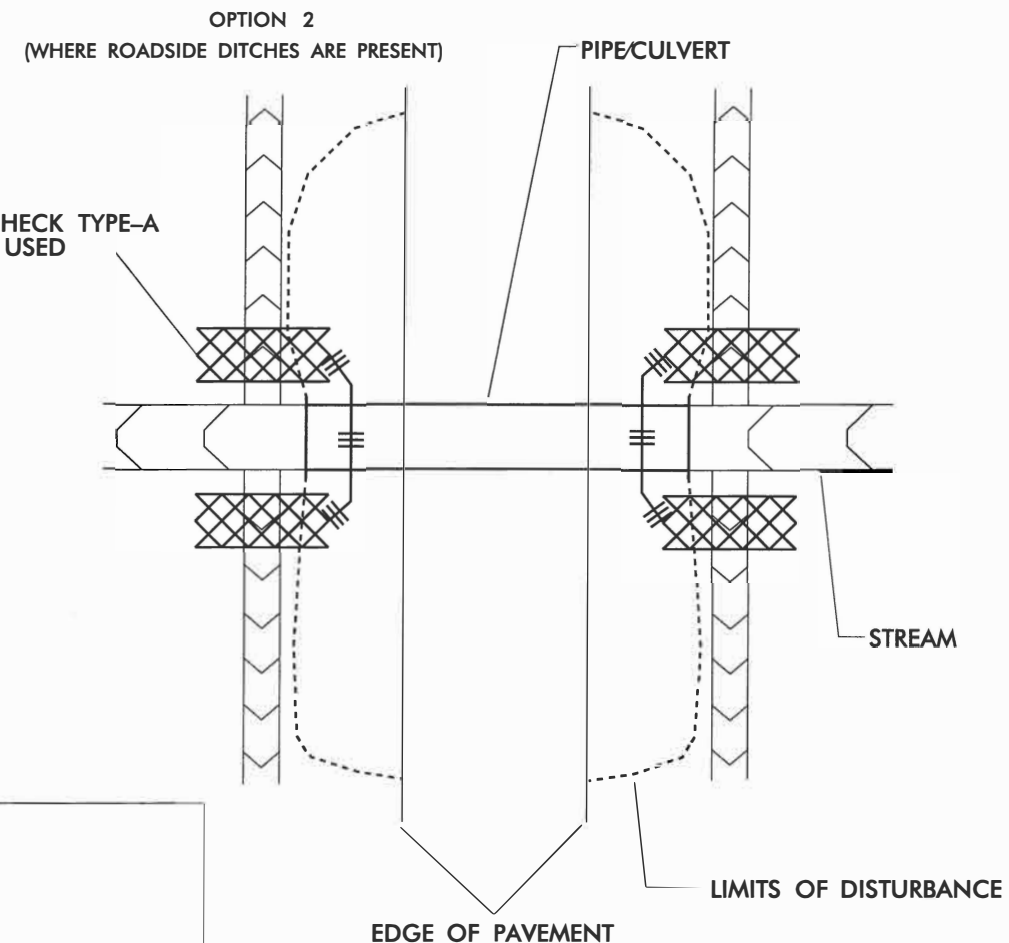
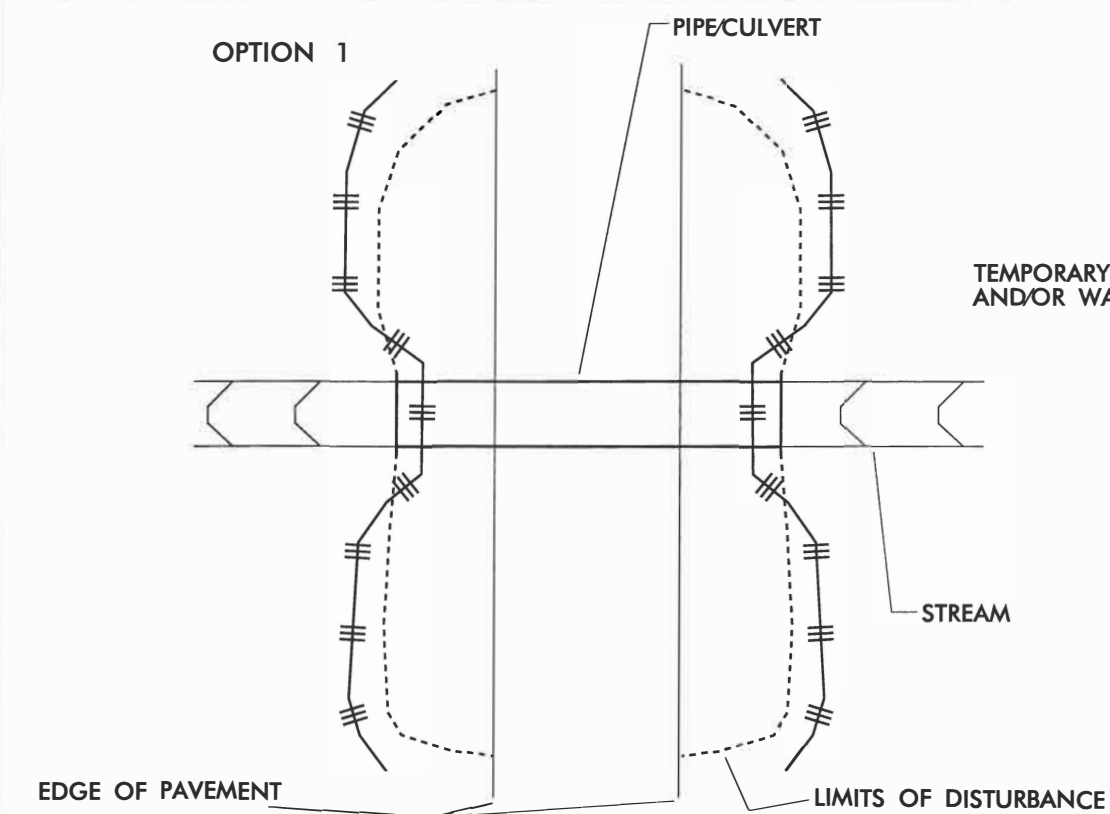
Secondary Road

Pavement Repair Detail

PROJECT REFERENCE NO.	SHEET NO.
12B.200211	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ROADSIDE ENVIRONMENTAL UNIT
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.
2018 STANDARD SPECIFICATIONS
DRAWINGS NOT DRAWN TO SCALE

LEGEND:	
	IMPERVIOUS DIKE
	PUMP
	SPECIAL STILLING BASIN
	STABILIZED DISCHARGE PAD (GEOTEXTILE)
EOP	EDGE OF PAVEMENT
ETF	EXISTING TRANSPORTATION FACILITY (ROW)
	TEMPORARY ROCK SILT CHECK TYPE-A AND/OR WATTLE
	TEMPORARY SILT FENCE



SEQUENCE OF CONSTRUCTION FOR TYPICAL WORK AREA:

1. INSTALL SPECIAL STILLING BASIN.
2. INSTALL UPSTREAM PUMP, TEMPORARY FLEXIBLE HOSE, AND STABILIZED DISCHARGE PAD.
3. PLACE UPSTREAM IMPERVIOUS DIKE AND BEGIN PUMPING OPERATIONS FOR STREAM DIVERSION DISCHARGING ONTO STABILIZED OUTLET PAD.
4. PLACE DOWNSTREAM IMPERVIOUS DIKE AND PUMPING APPARATUS. DEWATER WORK ZONE. AREA TO BE DEWATERED SHALL BE EQUAL TO ONE DAY'S WORK.
5. INSTALL PIPE(S), STREAM BED STABILIZATION, AND SLOPE STABILIZATION AS DIRECTED.
6. EXCAVATE ANY ACCUMULATED SILT AND DEWATER BEFORE REMOVAL OF IMPERVIOUS DIKES. REMOVE IMPERVIOUS DIKES, PUMPS, TEMPORARY FLEXIBLE HOSE, AND STABILIZED DISCHARGE PAD. (DOWNSTREAM IMPERVIOUS DIKES FIRST).
7. REMOVE SPECIAL STILLING BASIN AND RESTORE AREA TO ORIGINAL CONDITIONS.
8. STABILIZE ALL DISTURBED AREAS THROUGHOUT PROJECT WITH SEED AND MATTING FOR EROSION CONTROL.

NOTES:

INSTALL EROSION CONTROL MEASURES PRIOR TO ANY EARTH DISTURBING ACTIVITIES. INSTALL SPECIAL SEDIMENT CONTROL FENCE BREAKS OR TEMPORARY ROCK SILT CHECKS. TYPE-A AT LOW POINTS IN SILT FENCE.

FOR OPTION 1 INSTALL SILT FENCE SUCH THAT ALL EARTH DISTURBANCE IS CONTAINED. FOR CULVERT CONSTRUCTION SEQUENCING SEE THE PUMP AROUND DETAIL OR CONSULT "BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES".

ALL EXCAVATION IN JURISDICTIONAL STREAMS SHALL BE PERFORMED IN ONLY DRY OR ISOLATED SECTIONS OF THE WORK ZONE.

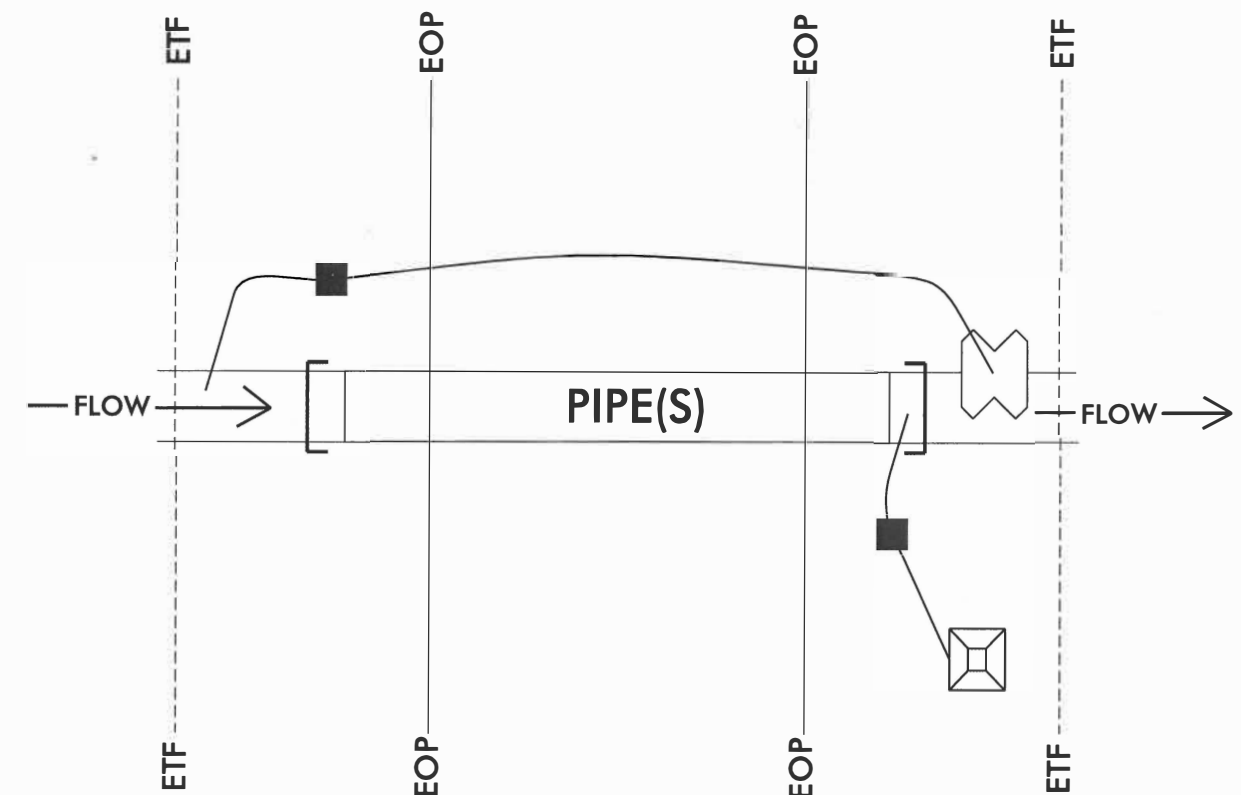
IMPERVIOUS DIKES ARE TO BE USED TO ISOLATE WORK FROM STREAM FLOW WHEN NECESSARY. MAINTENANCE OF STREAM FLOW OPERATIONS SHALL BE INCIDENTAL TO THE WORK. THIS INCLUDES THE DISCHARGE PAD, DIVERSION PIPES, PUMPS, AND HOSES.

PUMPS AND HOSES SHALL BE OF SUFFICIENT SIZE TO MAINTAIN STREAM FLOW AND TO DEWATER THE WORK AREA.

INSTALL SPECIAL STILLING BASIN IN VEGETATED AREA WITHIN RIGHT OF WAY. DISCHARGE SHOULD BE DIRECTED THROUGH VEGETATED BUFFER AWAY FROM WORK SITE.

INSTALL SILT FENCE AS DIRECTED TO CONTAIN DISTURBED AREAS AND/OR EXCAVATED STOCKPILES. BORROW MATERIAL FROM OR DISPOSAL OF MATERIAL TO ANY UNPERMITTED SITE WILL REQUIRE A RECLAMATION PLAN.

INSTALL PIPE(S) IN JURISDICTIONAL AREAS IN ACCORDANCE WITH NCDOT BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL.



PUMP-AROUND OPERATION FOR PIPE REPLACEMENT IN JURISDICTIONAL STREAMS EROSION CONTROL DETAIL