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TITLE SHEET 1
 PLAN SHEET 4
 DETAIL SHEETS 5 - 7
 EC SHEETS EC-1 - EC-3
 STANDARD DWG 876.02

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

DIVISION FIVE

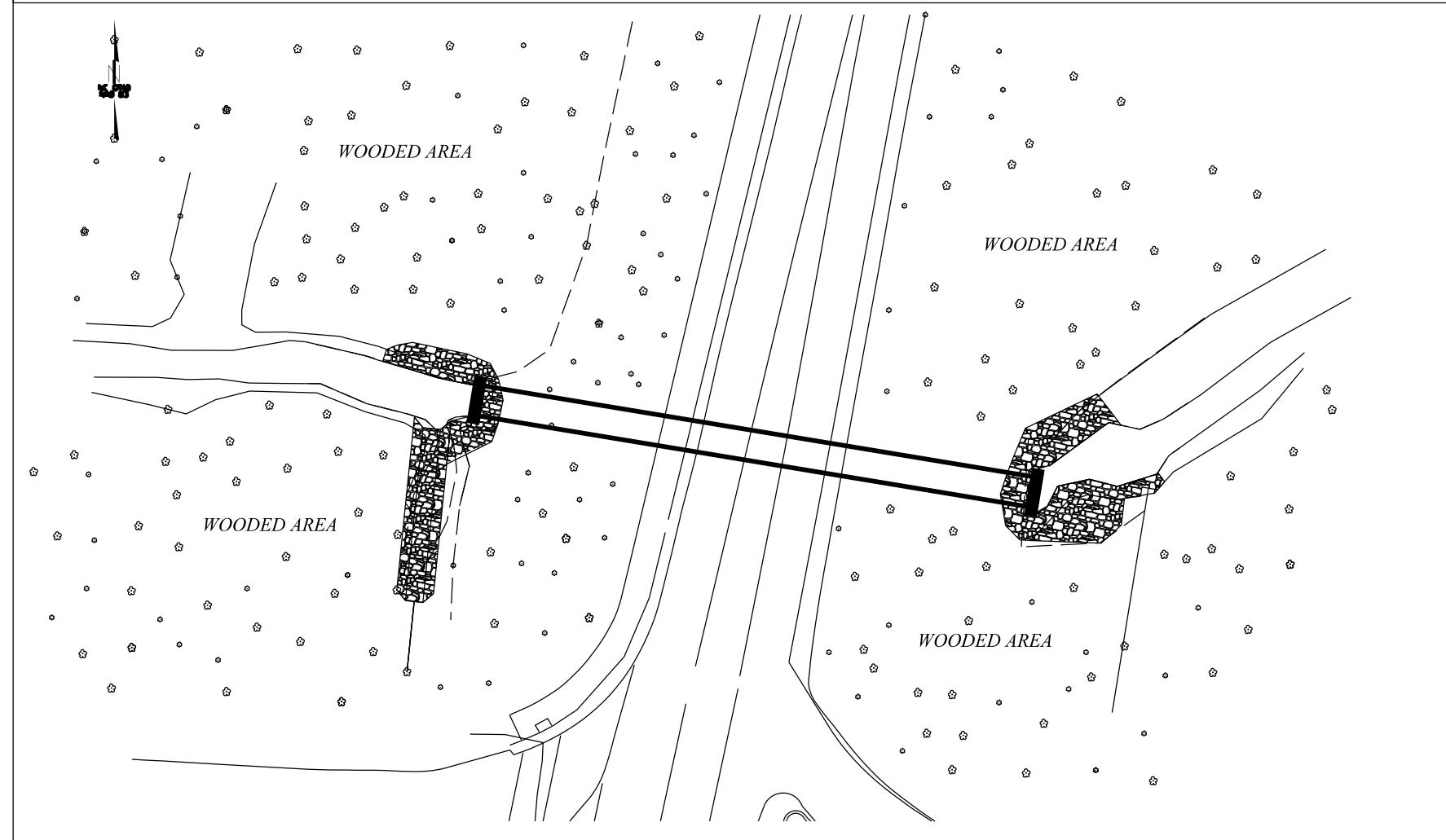
LOCATION: PIPE CROSSING ON NC-751 (ACADEMY RD)

TYPE OF WORK: GRADING AND DRAINAGE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	15405.1032012	1	9
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
15405.1032012		PE	
15405.1032012		CONST.	

PROJECT: 15405.1032012

INTERSECTION OF NC-751 (ACADEMY RD) AND BUS. 501 (DURHAM-CHAPEL HILL BLVD.)



Perform clearing by Method "II" shown on Standard Drawing No. 200.02 of the 2018 Roadway Standard Drawings.

PROJECT LENGTH

LENGTH ROADWAY PROJECT = APPROX. .05 MILES
 TOTAL LENGTH ROADWAY PROJECT = APPROX. .05 MILES

Prepared in the Office of:
DIVISION OF HIGHWAYS

1000 Birch Ridge Dr., Raleigh NC, 27610

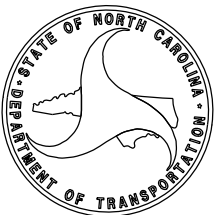
2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:

LETTING DATE:
 SEPTEMBER 9, 2020

Reese Briley
 PROJECT ENGINEER

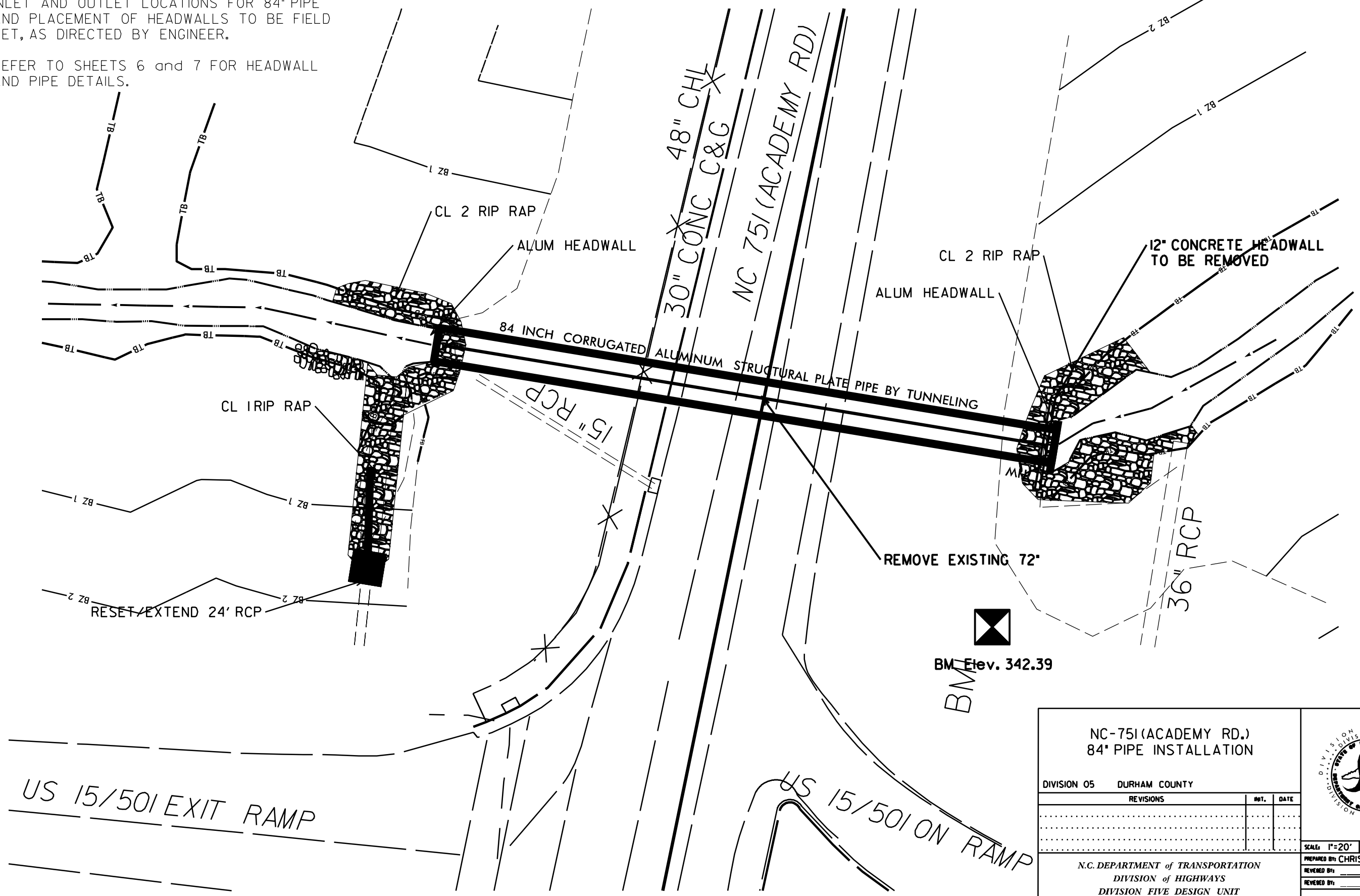
Chris Hoffman
 PROJECT DESIGN ENGINEER



84" ALUMINUM PIPE CENTERLINE TO BE AT SAME LOCATION AS EXISTING 72" PIPE CENTERLINE. PROVIDE OFFSET STAKES AS NEEDED FOR CONTROL.

INLET AND OUTLET LOCATIONS FOR 84" PIPE AND PLACEMENT OF HEADWALLS TO BE FIELD SET, AS DIRECTED BY ENGINEER.

REFER TO SHEETS 6 and 7 FOR HEADWALL AND PIPE DETAILS.

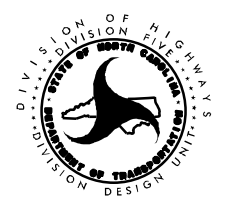


BM Elev. 342.39

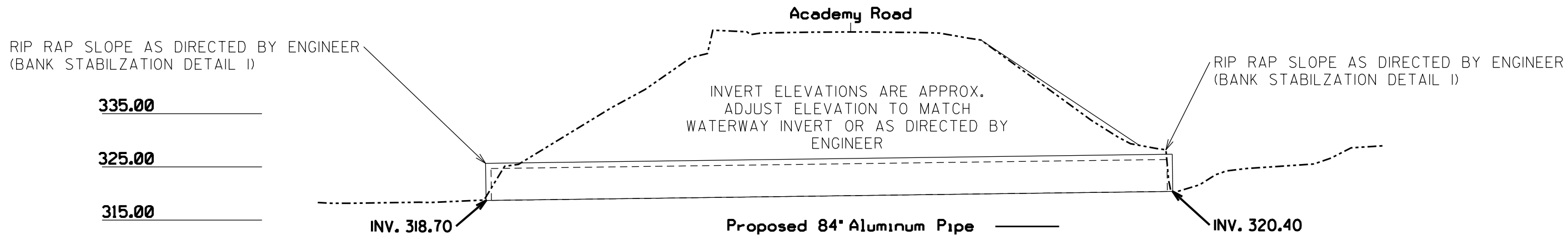
US 15/501 EXIT RAMP

US 15/501 ON RAMP

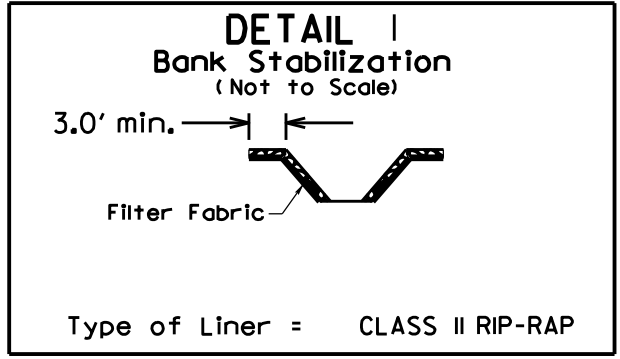
<p>NC-751 (ACADEMY RD.) 84" PIPE INSTALLATION</p>		
<p>DIVISION 05 DURHAM COUNTY</p>		
REVISIONS	NO.	DATE
<p>N.C. DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS DIVISION FIVE DESIGN UNIT</p>		



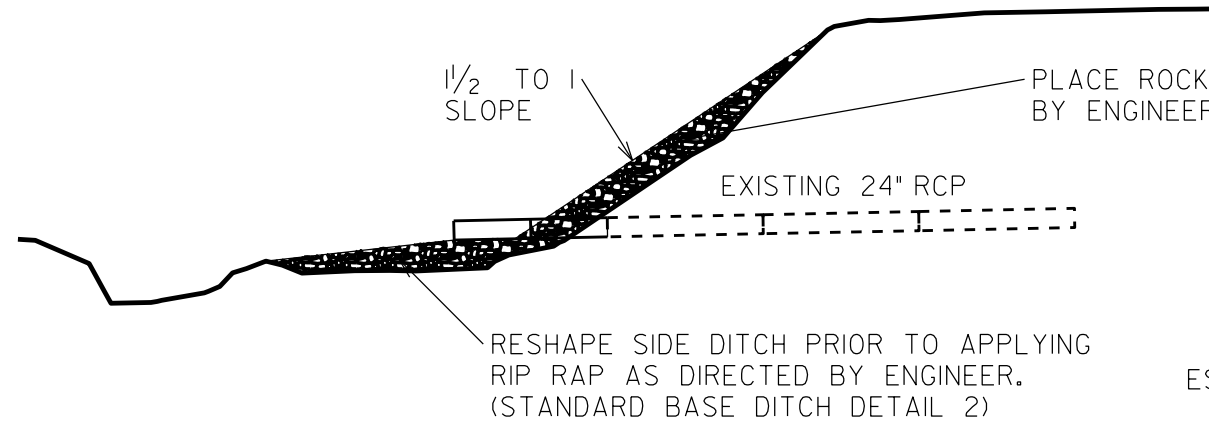
SCALE: 1"=20' DATE: _____
 PREPARED BY: CHRIS HOFFMAN
 REVIEWED BY: _____
 REVIEWED BY: _____



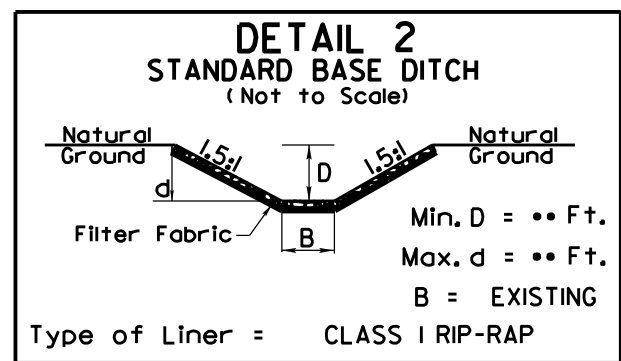
FROM UPSTREAM
EST 20 CY EXCAVATION
EST 60 TONS CL 2 RIP-RAP
FROM DOWNSTREAM
EST 20 CY EXCAVATION
EST 35 TONS CL 2 RIP-RAP
** VARIED TO TOP OF BANK



335.00
325.00
315.00

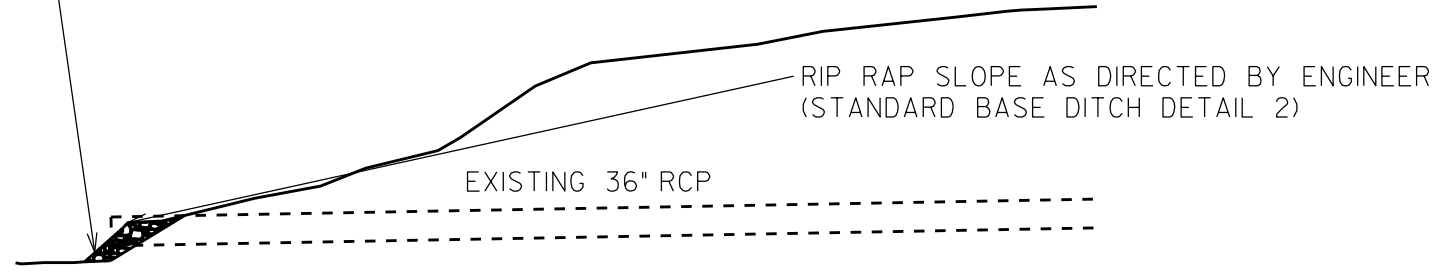


EST 5 CY EXCAVATION
EST 10 CY FILL
EST 15 TONS CL 1 RIP-RAP
** VARIED TO TOP OF BANK

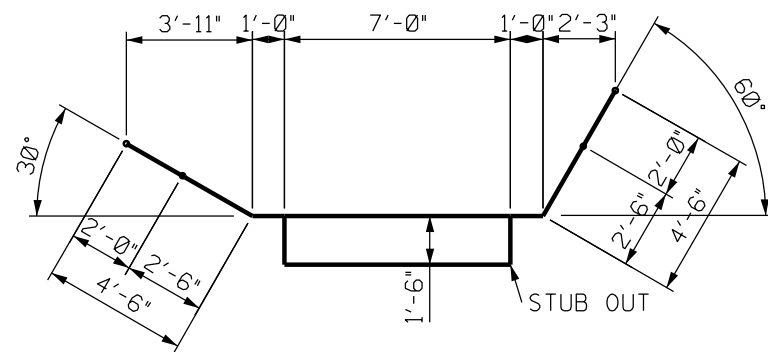


INSTALL ENERGY DISSIPATOR PADS AT PIPE
OUTLETS, AS DIRECTED BY ENGINEER.
(REFER TO ROADWAY STANDARD 876.02)

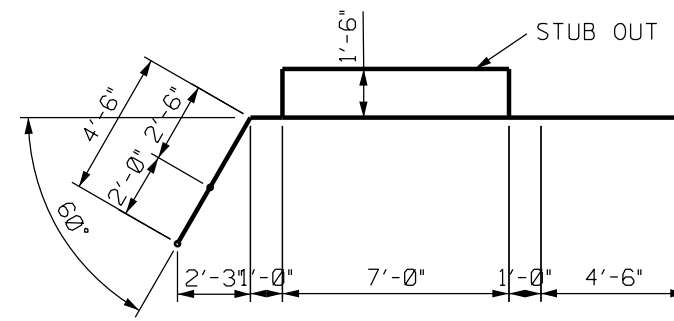
335.00
325.00
315.00



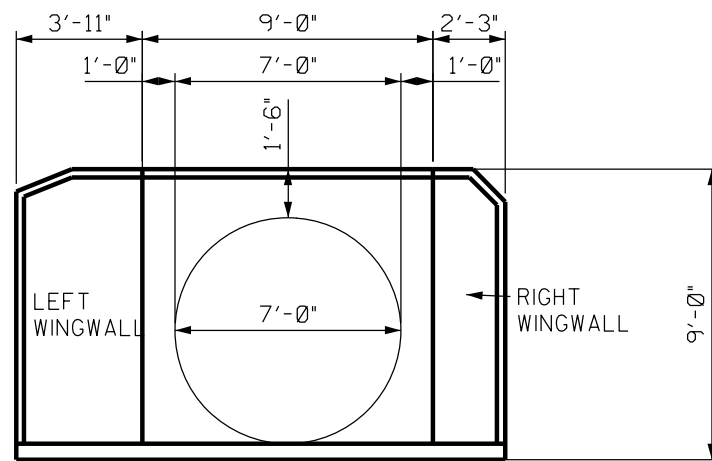
NC-75I (ACADEMY RD.) 84" PIPE INSTALLATION		
DIVISION 05 DURHAM COUNTY		
REVISIONS	INT.	DATE
N.C. DEPARTMENT of TRANSPORTATION DIVISION of HIGHWAYS DIVISION FIVE DESIGN UNIT		SCALE: 1"=20' PREPARED BY: CHRIS HOFFMAN REVIEWED BY: _____ DATE: _____



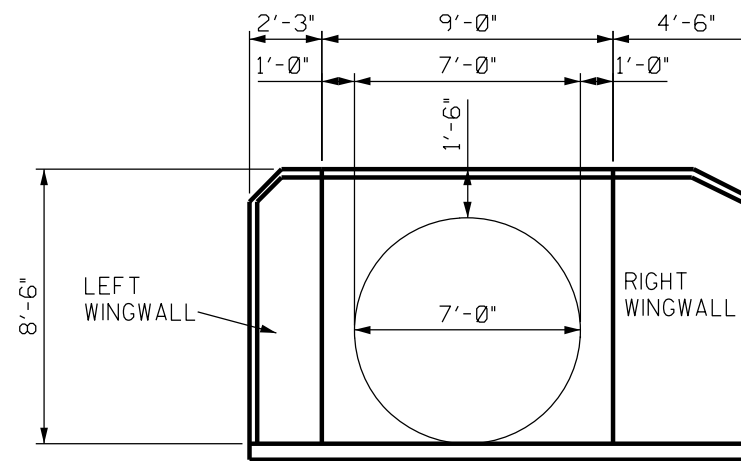
INLET HEADWALL & WINGS
PLAN VIEW



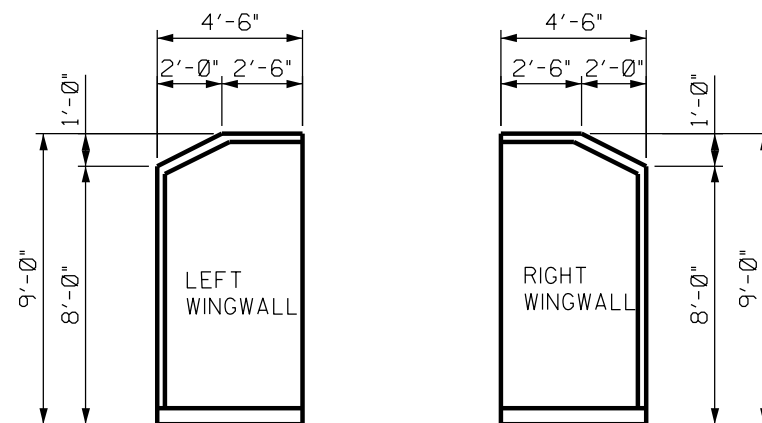
OUTLET HEADWALL & WINGS
PLAN VIEW



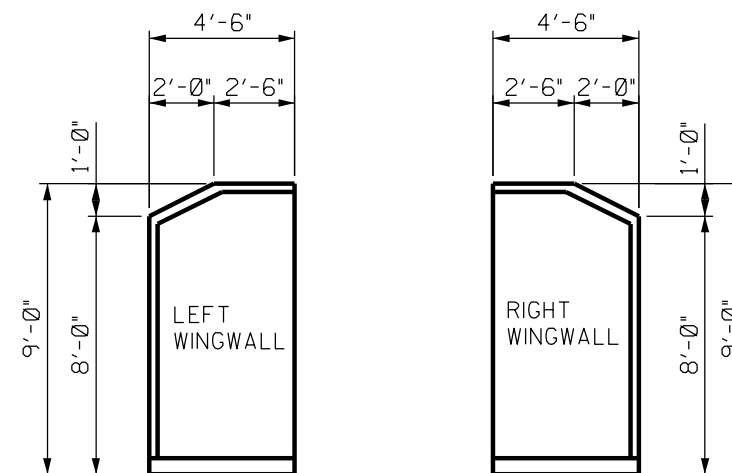
INLET HEADWALL & WINGS
END VIEW



OUTLET HEADWALL & WINGS
END VIEW

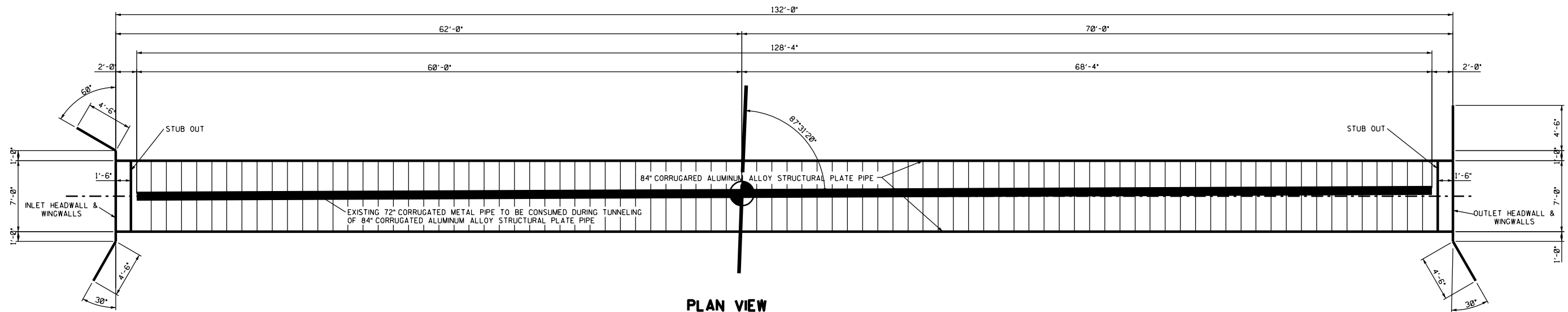


INLET HEADWALL & WINGS
DETAIL

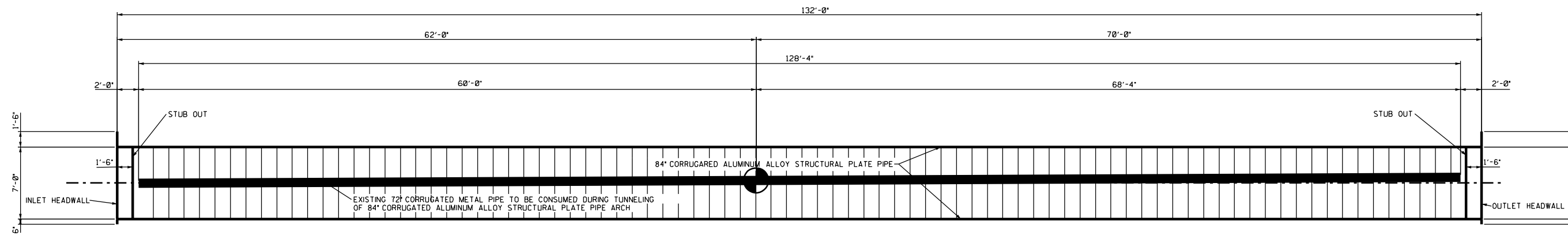


OUTLET HEADWALL & WINGS
DETAIL

<p>NC-75I (ACADEMY RD.) 84" PIPE INSTALLATION</p>		
<p>DIVISION 05 DURHAM COUNTY</p>		
REVISIONS	NO.	DATE
<p>N.C. DEPARTMENT of TRANSPORTATION DIVISION of HIGHWAYS DIVISION FIVE DESIGN UNIT</p>		<p>SCALE: N/A DATE: _____</p> <p>PREPARED BY: REESE BRILEY</p> <p>REVIEWED BY: _____</p> <p>REVIEWED BY: _____</p>



**PLAN VIEW
84" CORRUGATED ALUMINUM ALLOY STRUCTURAL PLATE**



**ELEVATION VIEW
84" CORRUGATED ALUMINUM ALLOY STRUCTURAL PLATE**

NC-751 (ACADEMY RD.)
84" PIPE INSTALLATION

DIVISION 05 DURHAM COUNTY

REVISIONS	NO.	DATE

N.C. DEPARTMENT of TRANSPORTATION
DIVISION of HIGHWAYS
DIVISION FIVE DESIGN UNIT



SCALE: N/A DATE: _____
PREPARED BY: REESE BRILEY
REVIEWED BY: _____
REVIEWED BY: _____

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

<i>SITE DESCRIPTION</i>	<i>STABILIZATION TIME</i>	<i>TIMEFRAME EXCEPTIONS</i>
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

EXAMPLE OF PUMP-AROUND OPERATION FOR PIPE REPLACEMENT IN JURISDICTIONAL STREAMS

PROJECT REFERENCE NO. 15405J032012	SHEET NO. EC-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

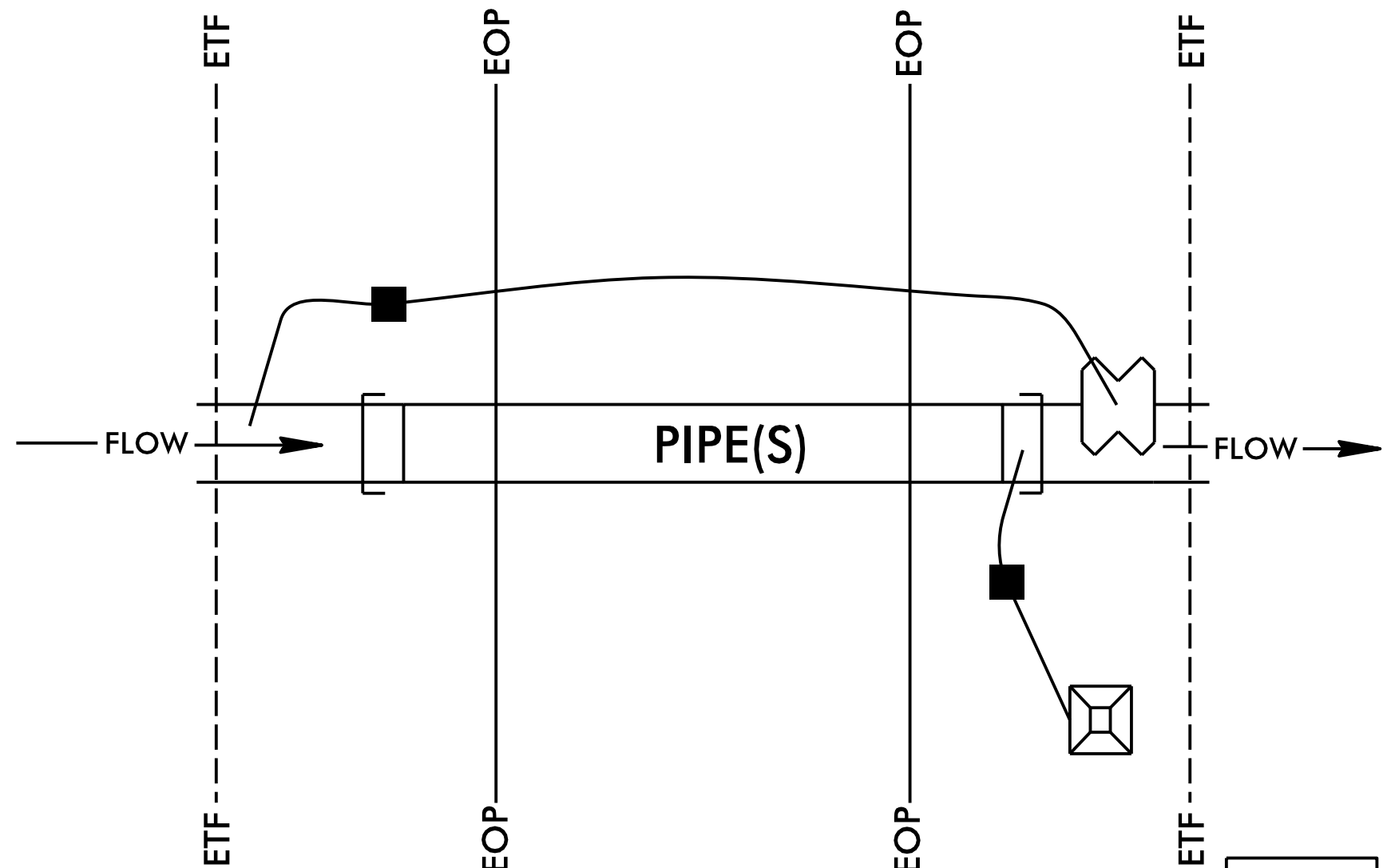
INSTALL PIPE(S) IN JURISDICTIONAL AREAS IN ACCORDANCE WITH NCDOT BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL

NOTES:

- 1) All excavation in jurisdictional streams shall be performed in only dry or isolated sections of the work zone.
- 2) Impervious dikes are to be used to isolate work from stream flow when necessary.
- 3) Maintenance of stream flow operations shall be incidental to the work. This includes the discharge pad, diversion pipes, pumps and hoses.
- 4) Pumps and hoses shall be of sufficient size to maintain stream flow and to dewater the work area.
- 5) Install special stilling basin in vegetated area within right of way. Discharge should be directed through vegetated buffer away from work site.
- 6) Install silt fence as directed to contain disturbed areas and/or excavated stockpiles.
- 7) Borrow material from or disposal of material to any unpermitted site will require a reclamation plan.

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.



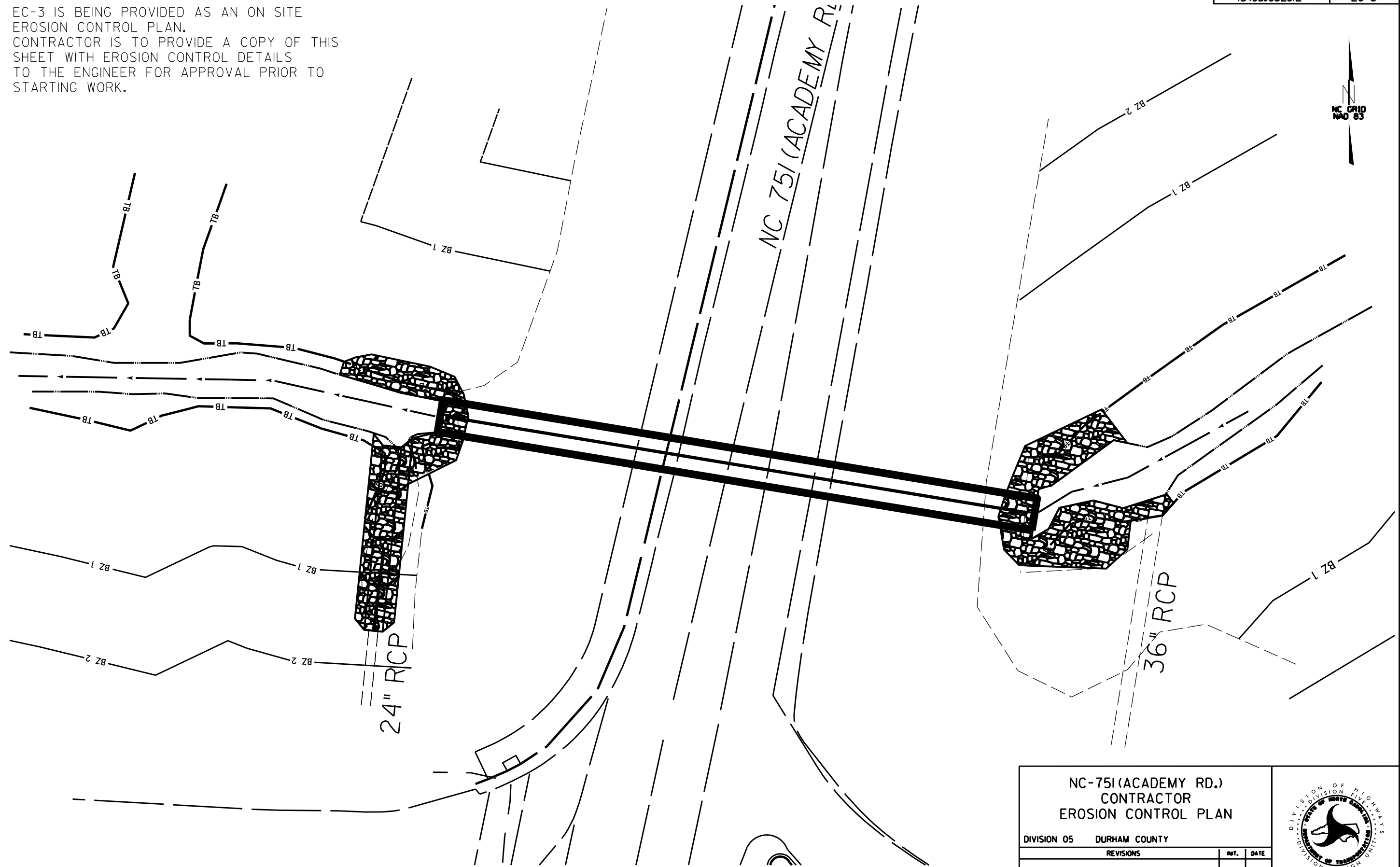
NOT TO SCALE

**ROADSIDE ENVIRONMENTAL UNIT
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.
2018 STANDARD SPECIFICATIONS**

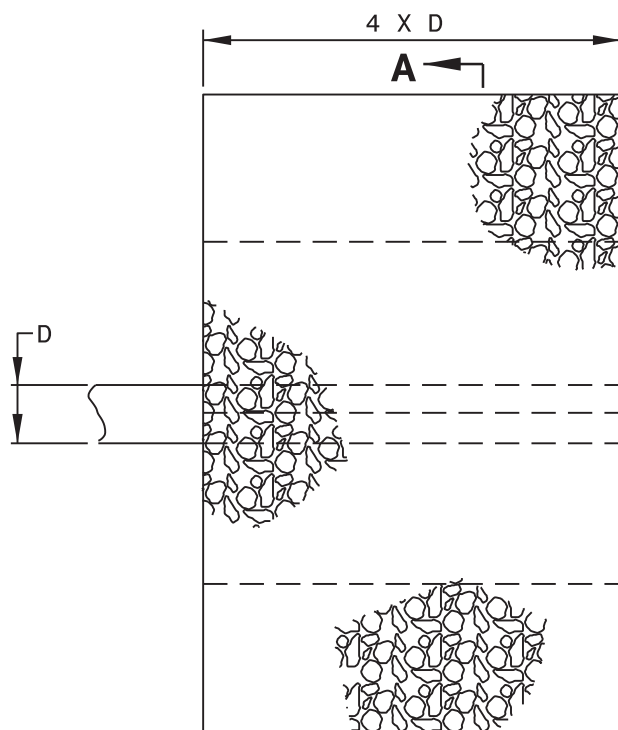
LEGEND:

	IMPERVIOUS DIKE
	PUMP
	SPECIAL STILLING BASIN
	STABILIZED DISCHARGE PAD (GEOTEXTILE)
EOP	EDGE OF PAVEMENT
ETF	EXISTING TRANSPORTATION FACILITY (ROW)

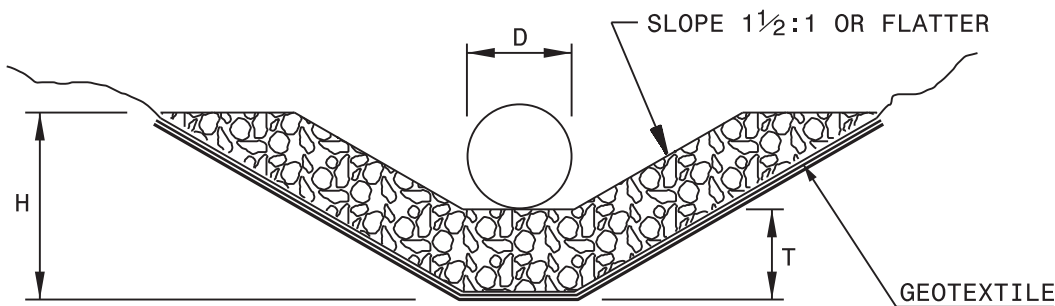
EC-3 IS BEING PROVIDED AS AN ON SITE
EROSION CONTROL PLAN.
CONTRACTOR IS TO PROVIDE A COPY OF THIS
SHEET WITH EROSION CONTROL DETAILS
TO THE ENGINEER FOR APPROVAL PRIOR TO
STARTING WORK.



NC-751 (ACADEMY RD.) CONTRACTOR EROSION CONTROL PLAN		
DIVISION 05 DURHAM COUNTY		
REVISIONS	INT.	DATE
N.C. DEPARTMENT of TRANSPORTATION DIVISION of HIGHWAYS DIVISION FIVE DESIGN UNIT		SCALE: 1"=20' DATE: date PREPARED BY: CHRIS HOFFMAN REVIEWED BY: _____ REVIEWED BY: _____



A
PLAN

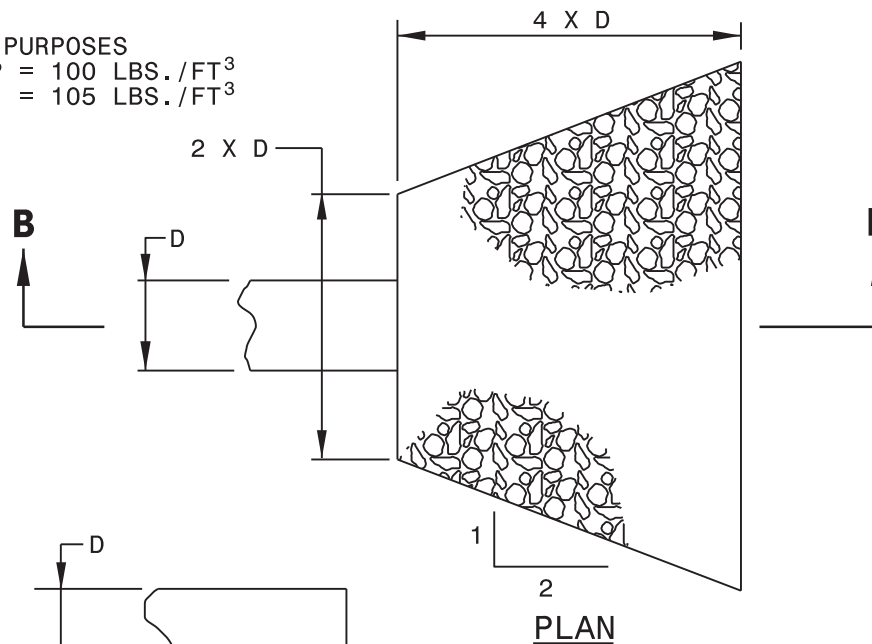


SECTION A-A
PIPE OUTLET WITH DITCH

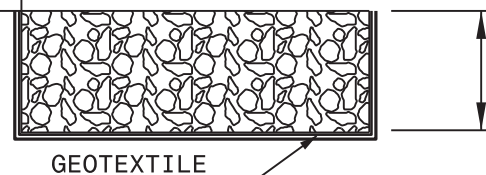
H= RIP RAP TO TOP OF PIPE (MAX. H = D + T)
 T= 15" CLASS I RIP RAP, UNLESS OTHERWISE SHOWN ON PLANS
 T= 12" CLASS 'B' RIP RAP, UNLESS OTHERWISE SHOWN ON PLANS

D	OUTLET W/DITCH					OUTLET W/O DITCH				
	CLASS 'B' RIP RAP		CLASS I RIP RAP			CLASS 'B' RIP RAP		CLASS I RIP RAP		
	TONS	GEO-TEXTILE (S.Y.)	S.Y.	TONS	GEO-TEXTILE (S.Y.)	TONS	GEO-TEXTILE (S.Y.)	S.Y.	TONS	GEO-TEXTILE (S.Y.)
12"	2	5	5	2	5	1	4	2	1	4
15"	2	7	7	3	7	1	5	3	2	6
18"	3	10	9	4	10	2	7	4	2	8
24"	5	14	15	7	15	3	11	7	4	12
30"	8	21	21	11	22	5	16	11	7	17
36"	11	28	29	15	30	7	22	16	10	23
42"	15	37	39	20	39	10	28	22	13	30
48"	-	-	49	26	50	-	-	28	17	38
54"	-	-	60	33	62	-	-	36	21	47
60"	-	-	73	40	75	-	-	44	26	56
66"	-	-	87	48	89	-	-	54	32	67
72"	-	-	102	57	104	-	-	64	38	78

NOTE:
 FOR CALCULATION PURPOSES
 CLASS 'B' RIP RAP = 100 LBS./FT³
 CLASS I RIP RAP = 105 LBS./FT³



PLAN



SECTION B-B
PIPE OUTLET WITHOUT DITCH