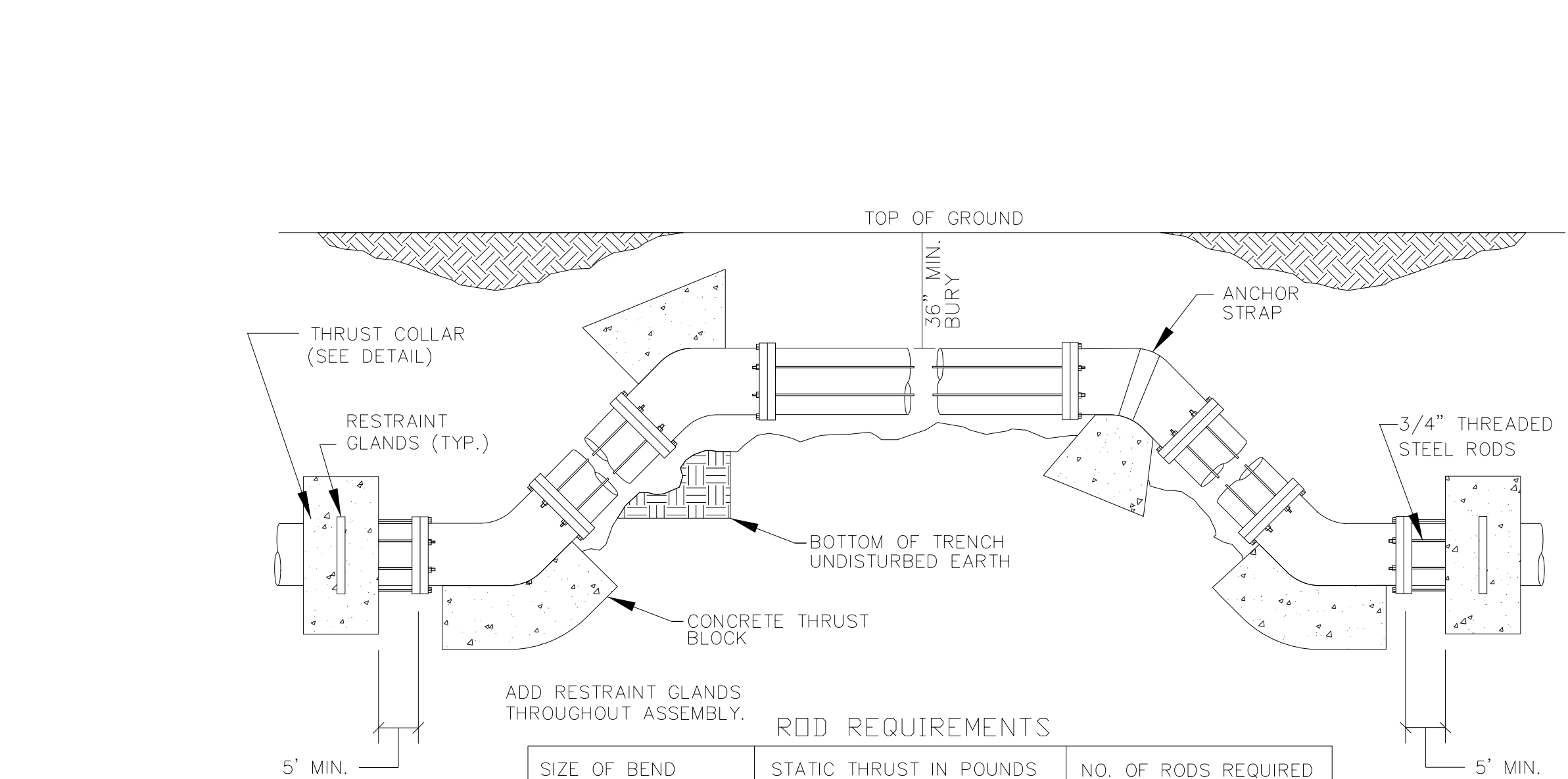


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# PROJECT TYPICAL DETAILS

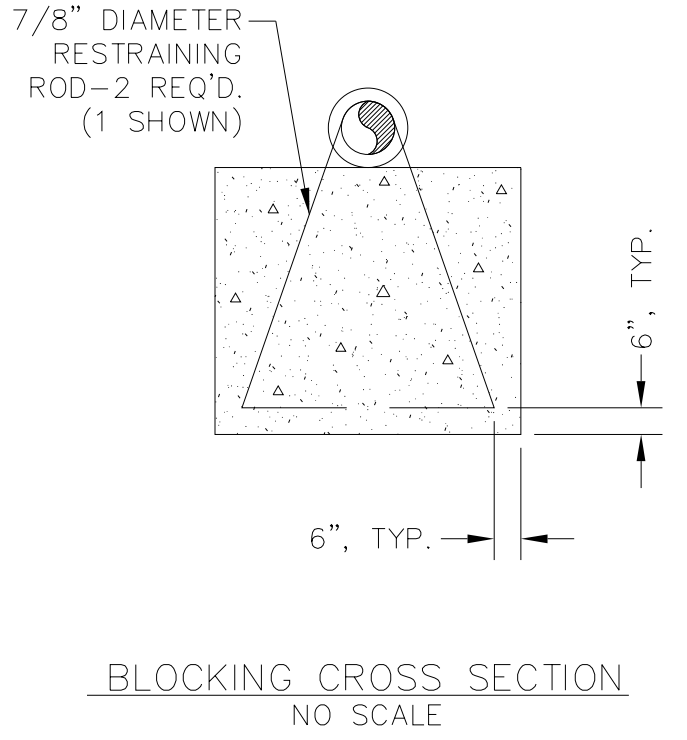
PROJECT REFERENCE NO.	SHEET NO.
B-4484	UC-3C
DESIGNED BY: ARV	
DRAWN BY: ARV	
CHECKED BY: RLB	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

## UTILITY CONSTRUCTION



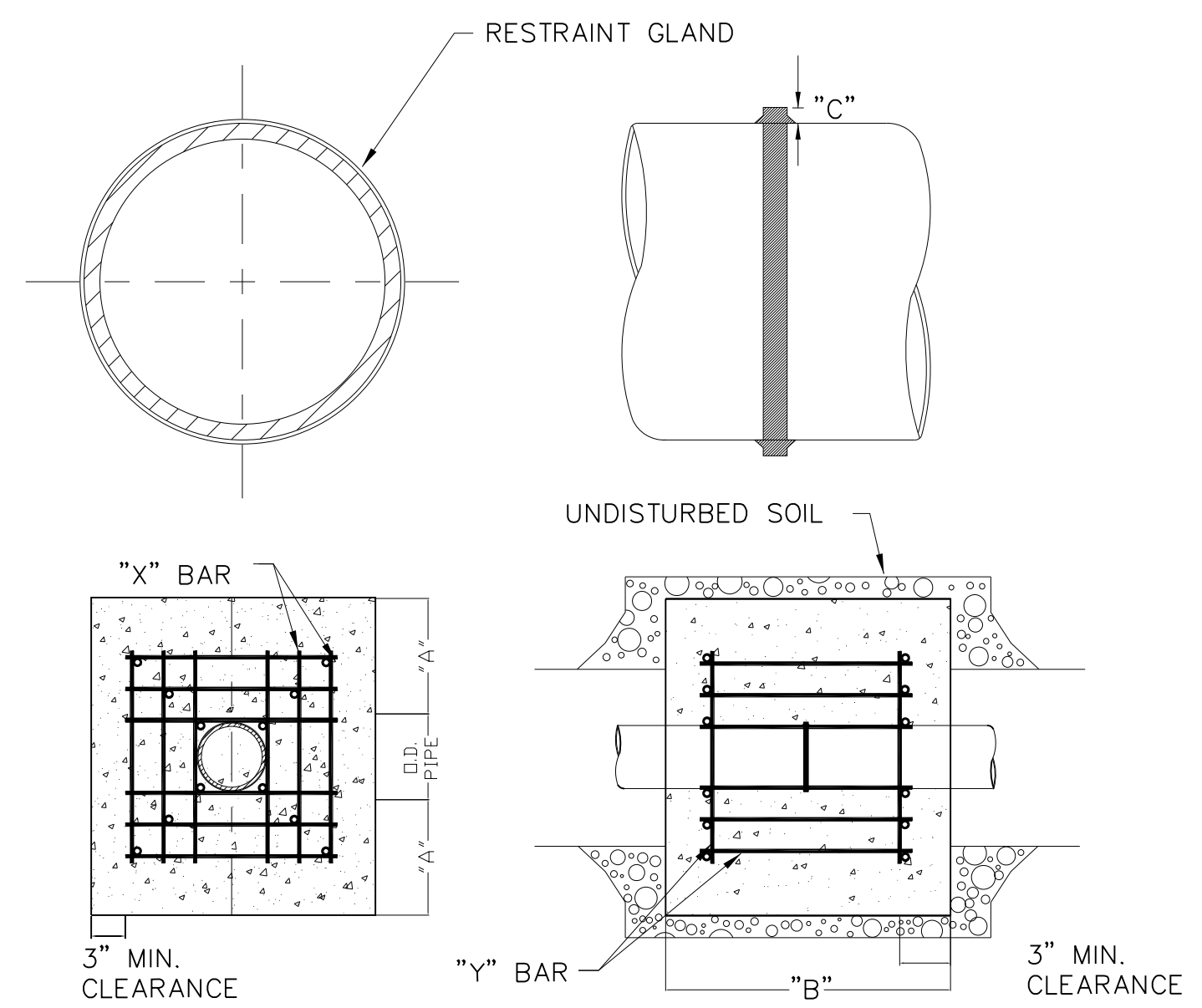
ADD RESTRAINT GLANDS THROUGHOUT ASSEMBLY.

SIZE OF BEND	STATIC THRUST IN POUNDS	NO. OF RODS REQUIRED
6"	4,328	4
8"	7,694	4
12"	17,312	4
16"	30,779	8
24"	69,252	8



- GENERAL NOTES:
- ALL FITTINGS SHALL BE WRAPPED IN POLYETHYLENE TO PREVENT CONCRETE FROM CONTACTING FITTINGS, BOLTS, OR ENDS OF MECHANICAL JOINT BENDS.
  - EACH FITTING SHALL BE SECURED BY TWO FORMS OF RESTRAINT. RESTRAINING GLANDS AND CONCRETE THRUST BLOCKING ARE PREFERRED. WEDGE-ACTION RESTRAINT GLANDS (I.E. MEGALUGS) ARE APPROVED ONLY FOR USE ON DUCTILE IRON PIPE. FULL-CIRCUMFERENTIAL PIPE RESTRAINT GLANDS (I.E. GRIP RINGS) MAY BE USED ON PVC OR DUCTILE IRON PIPE. ALL RESTRAINT GLANDS SHALL BE SPECIFICALLY DESIGNED FOR USE ON THE TYPE OF PIPE FOR WHICH THEY ARE BEING INSTALLED. OTHER FORMS OF RESTRAINT SUCH AS THREADED ROD, BELL RESTRAINT HARNESSSES, ETC. MAY BE APPROVED BY CRAVEN COUNTY ON A CASE-BY-CASE BASIS.
  - IF APPROVED FOR USE BY CRAVEN COUNTY, STEEL RODS AND BOLTS SHALL BE 3/4" HOT DIPPED GALVANIZED.
  - USE EYE BOLTS WHERE NECESSARY TO PROVIDE RESTRAINT OF MECHANICAL JOINTS AS REQUIRED BY MANUFACTURER.

THRUST BLOCKING DESIGN QUANTITY TABLE  
NOT TO SCALE



I.D. PIPE	REBAR SIZE	"X" BAR LENGTH	"X" BAR WEIGHT	"Y" BAR LENGTH	"Y" BAR WEIGHT	NO. REQUIRED
6" - 36"	#5	2'-2"+ O.D. PIPE	1.043 LBS/FT	1'-1"	1.1 LBS. EACH	X-24, Y-12
48" & greater	#6	3'-0"+ O.D. PIPE	1.502 LBS/FT	1'-3"	1.9 LBS. EACH	X-24, Y-12

I.D. PIPE	"A"	"B"	"C-6"-16", 20"-24", 30"-36", 48"
6" - 36"	1'-4"	1'-7"	2" 3" 4"
48" & greater	1'-8"	1'-9"	6"

- NOTES:
- CONCRETE SHALL BE 3000 PSI AND TRANSIT MIXED.
  - REINFORCING BARS SHALL BE DEFORMED AND TIED TOGETHER.
  - TRENCH BOTTOM WIDTH IN VICINITY OF THRUST BLOCK INSTALLATION SHALL BE THE MINIMUM WIDTH AS SHOWN ON STANDARD EMBEDMENT DETAIL.
  - BACKFILL TAMPED IN 6" LIFTS PER STANDARD EMBEDMENT DETAIL.

THRUST COLLAR DESIGN QUANTITY TABLE  
NOT TO SCALE

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 \$\$\$USERNAME\$\$\$