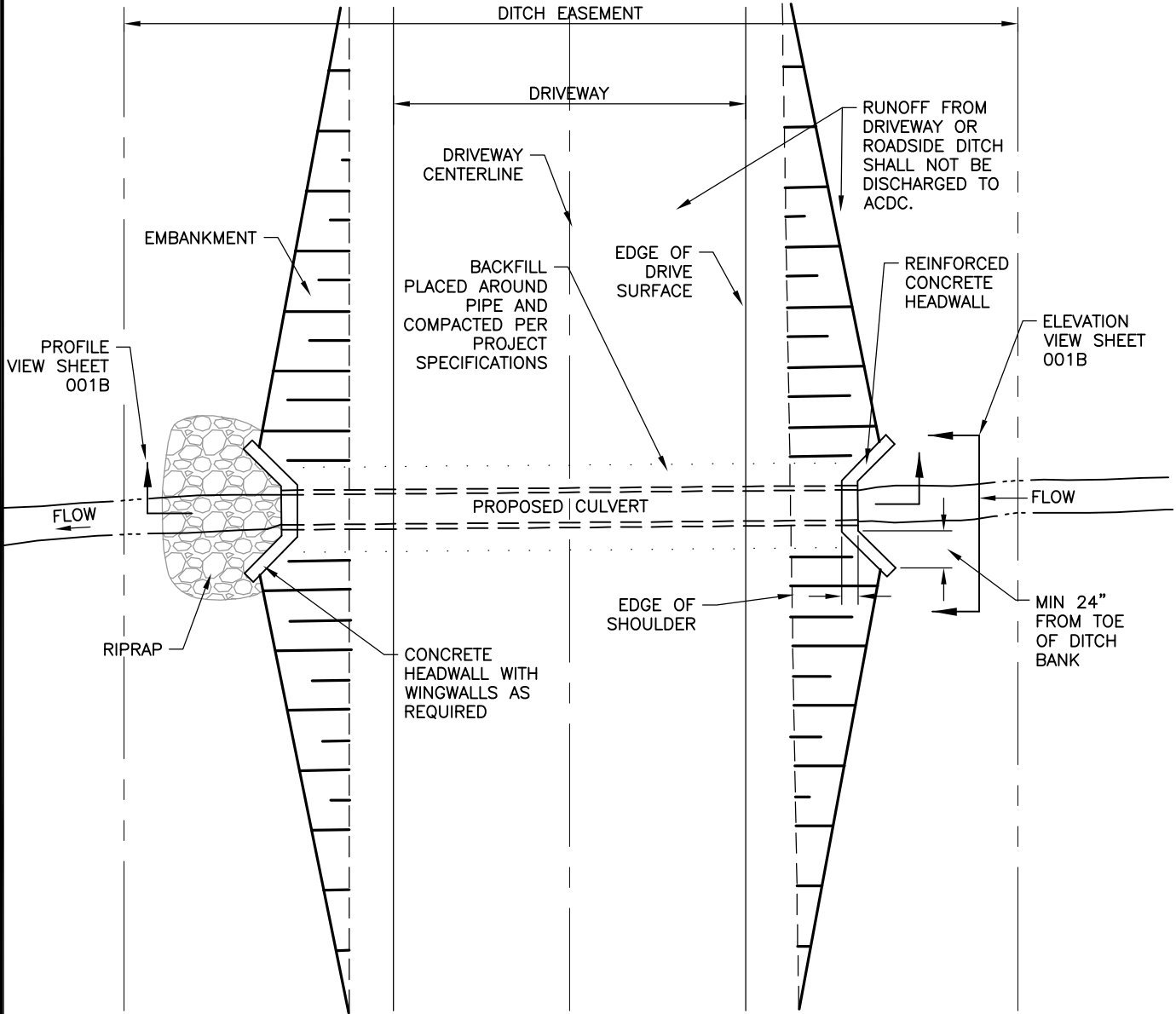


NOTE:

APPLICANT SHALL PROVIDE PROJECT SPECIFIC DESIGN DRAWINGS, SPECIFICATIONS, AND DETAILS FOR ALL PROPOSED CULVERT CROSSINGS. DRAWINGS SHALL INCLUDE PLAN, PROFILE, ELEVATION, AND STRUCTURAL DETAILS AT A MIN. THE FOLLOWING INFORMATION SHALL BE SHOWN AT A MIN. FOR 100' EITHER SIDE OF PROPOSED CULVERT.

- STRUCTURES AND DETAILS (PROPOSED AND EXISTING)
- PROPERTY BOUNDARIES
- DITCH AND CULVERT DESIGN DETAILS (PROPOSED AND EXISTING)
- GRADING AND ELEVATIONS OF ALL ROADWAY, STRUCTURES, CULVERT, AND OTHER IMPROVEMENTS
- ORDINARY AND/OR HIGH WATER MARK IF DIFFERENT
- DITCH CAPACITY



PLAN VIEW

ACDC TYPICAL CULVERT SIZES*:

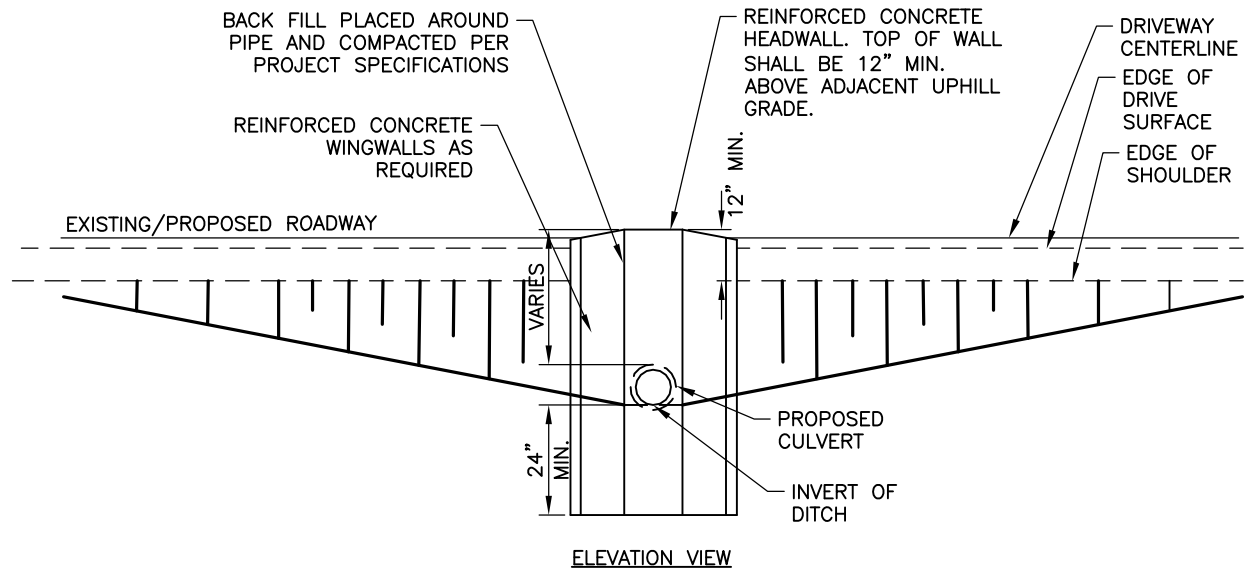
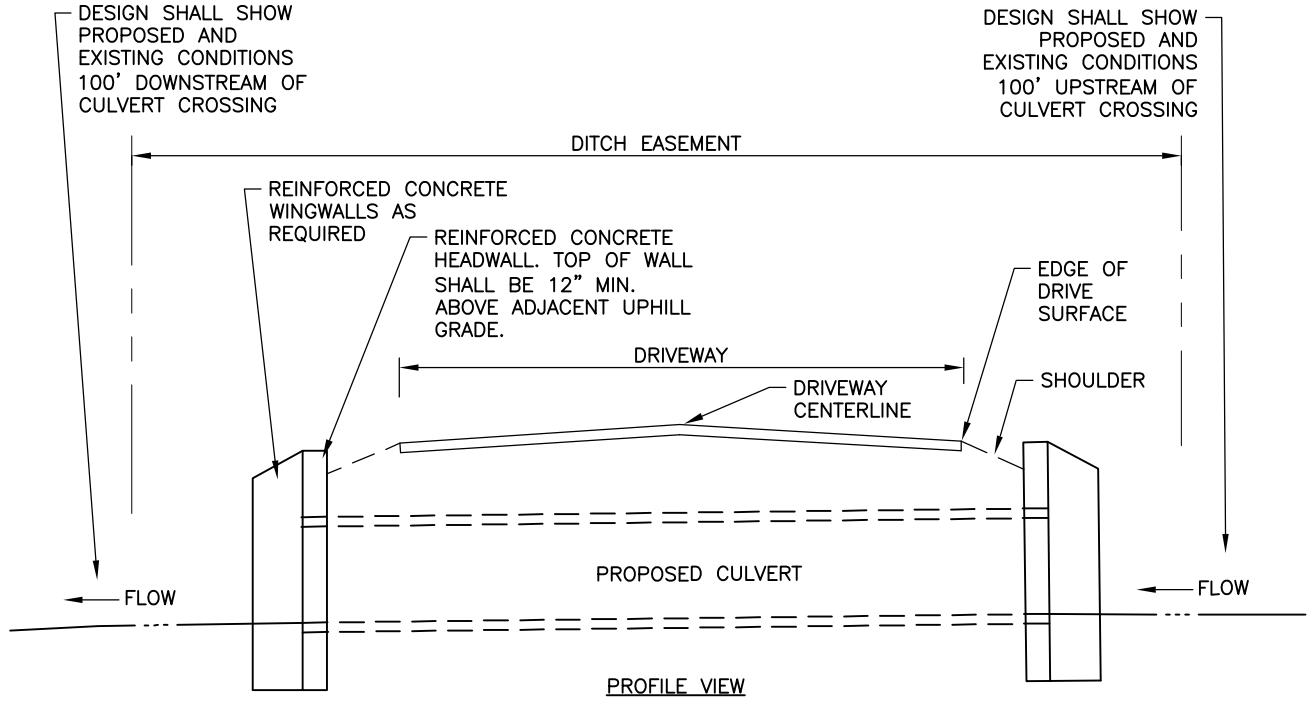
- i) 7' DIA - INTAKE (90 CFS+/-) TO HERMOSA CREEK (70 CFS ±)
- ii) 5' DIA. - HERMOSA CREEK TO TRIMBLE LANE (50 CFS ±)
- iii) 4' DIA. - TRIMBLE LANE TO SPRING CREEK (40 CFS ±)
- iiij) 3' DIA. - SPRING CREEK - END
- iv) HWY 160 AND COUNTY ROAD CROSSINGS REQUIRE SPECIAL DESIGN

* HORIZONTAL ELLIPTICAL PIPE IS PREFERRED FOR CULVERT CROSSINGS
 FLOW RATES SHOWN ARE APPROXIMATE. CULVERT SIZES AND FLOWS SHALL BE VERIFIED BY APPLICANT ENGINEER AND SHOWN IN DRAWINGS.

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DRAFT

Animas Consolidated Ditch Co.
P.O. Box 377, Durango, CO 81302

Ditch Culvert Crossing
Elevation and Profile View

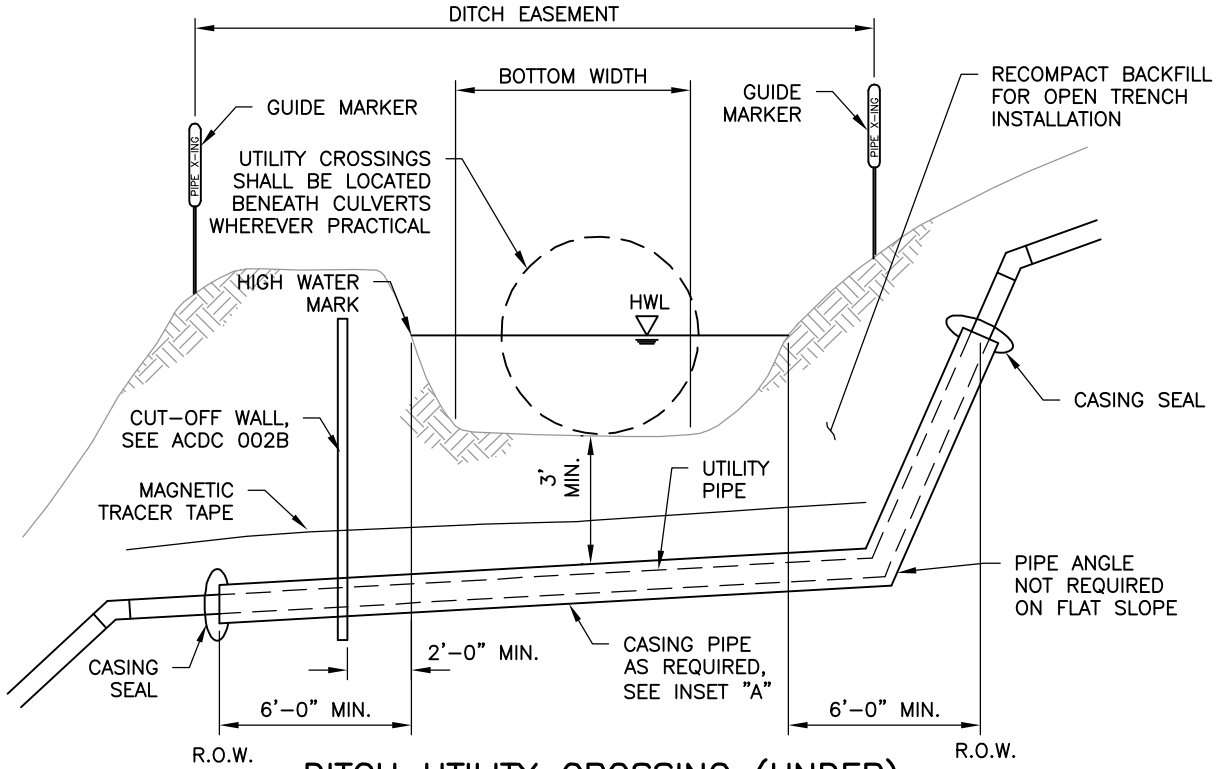
Approved:	XXX
Date:	03/06/17
Scale:	N.T.S.
File:	Culvert

Sht. ACDC
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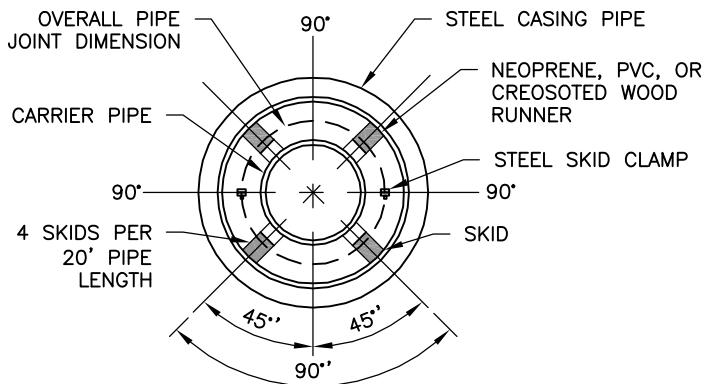
NOTES:

1. APPLICANT SHALL PROVIDE PROJECT SPECIFIC DESIGN FOR UTILITY CROSSINGS. AT A MIN. THE DESIGN SHALL INCLUDE THE FOLLOWING ELEMENTS AS SHOWN IN THIS DETAIL INCLUDING:
 - UTILITY SIZE(S) AND LOCATION(S)
 - CASING CARRIER PIPE AND SIZE
 - PEDESTAL AND OR/METER LOCATIONS
 - APPLICABLE DETAILS
2. IF EXISTING DITCH BOTTOM WIDTH IS LESS THAN 5' OPEN TRENCH INSTALLATION IS ACCEPTABLE. APPLICANT SHALL PROVIDE MITIGATION MEASURES TO REPAIR AND STABILIZE DITCH FOR OPEN TRENCH CONSTRUCTION WITH APPLICATION FOR ACDC APPROVALS. BACKFILL SHALL BE FLOWFILL OR APPROVED EQUAL UP TO 6" BELOW DITCH FLOWLINE.
3. UTILITY CROSSING SHALL BE LOCATED BENEATH NEW CULVERTS IF PRACTICAL.



DITCH UTILITY CROSSING (UNDER)

N.T.S.



**INSET "A"
PIPE CASING**

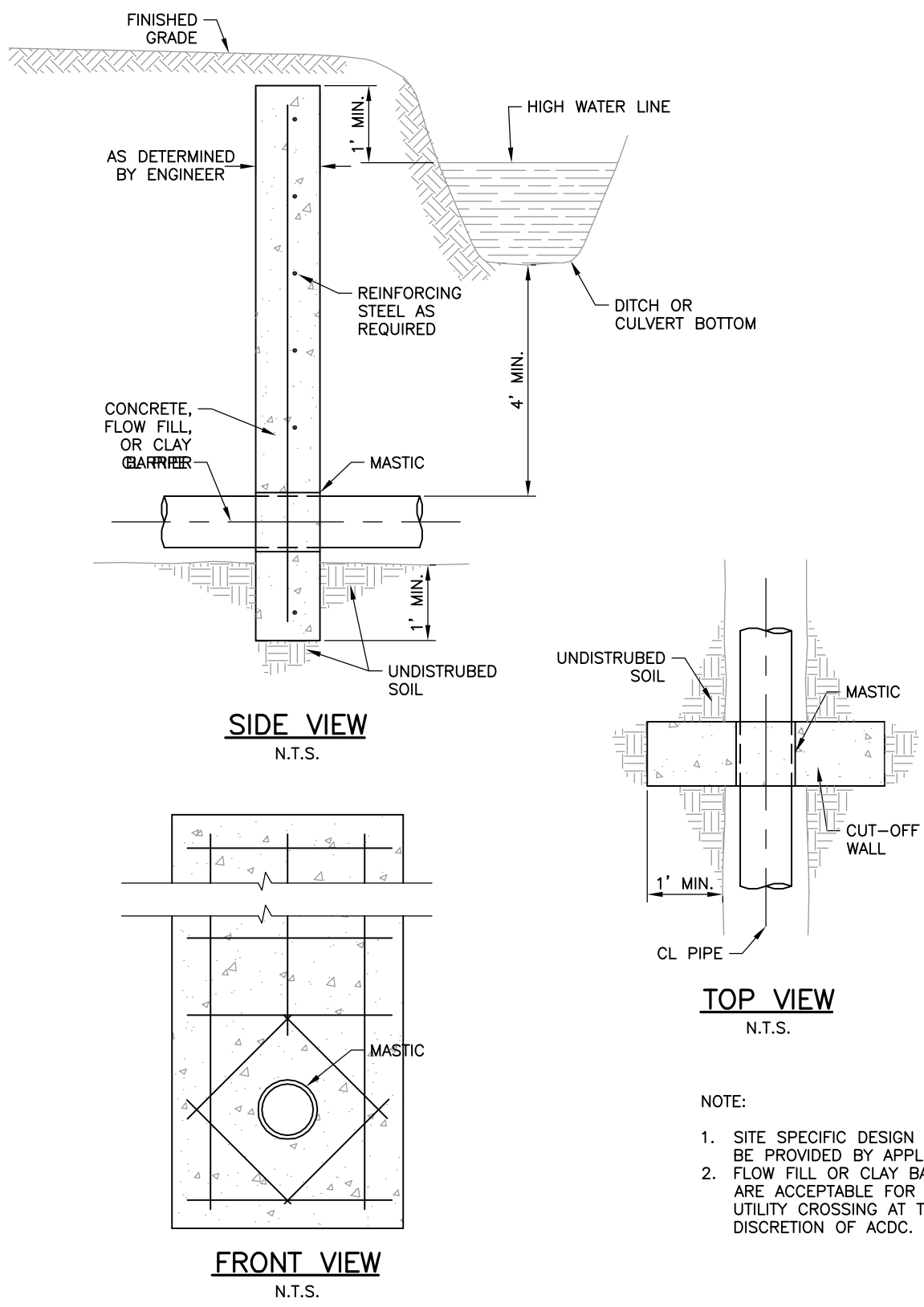
N.T.S.

ADAPTED FROM:

NEVADA IRRIGATION DISTRICT,
DENVER WATER DEPARTMENT,
AND FLORIDA DITCH COMPANIES.

DRAFT

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- NOTE:
1. SITE SPECIFIC DESIGN SHALL BE PROVIDED BY APPLICANT
 2. FLOW FILL OR CLAY BARRIER ARE ACCEPTABLE FOR MOST UTILITY CROSSING AT THE DISCRETION OF ACDC.

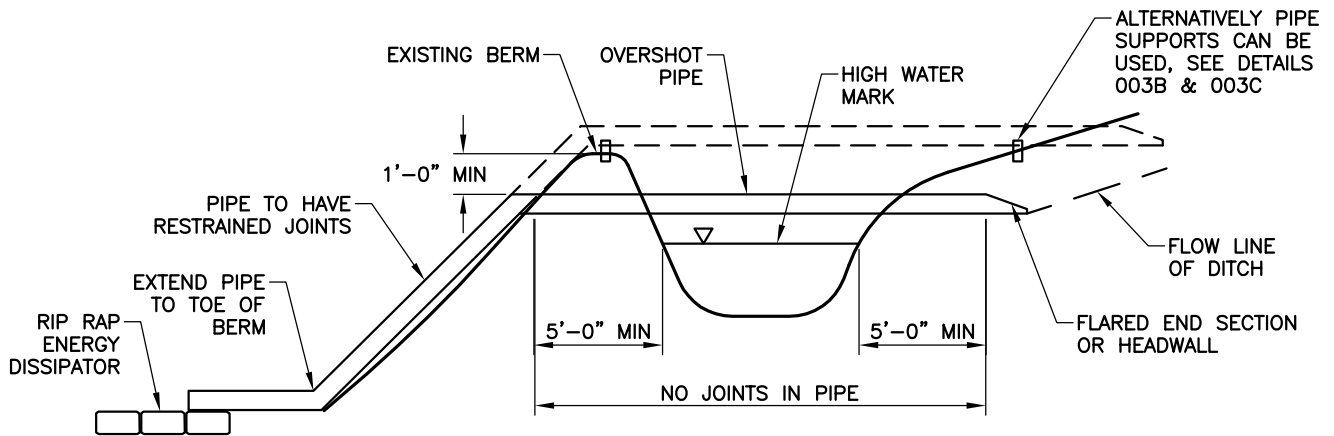
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Animas Consolidated Ditch Co. P.O. Box 377, Durango, CO 81302	Cut-Off Wall Standard Detail	Approved: XXX Date: 03/06/17 Scale: N.T.S. File: CutOffWall	Sht. ACDC 002B
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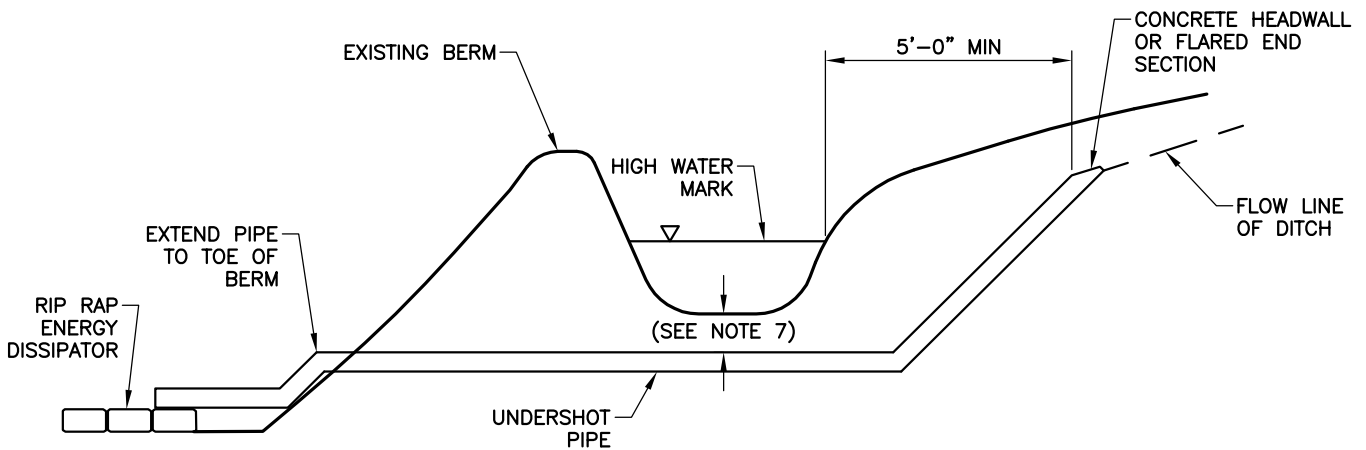
NOTES:

1. OWNER SHALL BE RESPONSIBLE FOR SIZING UNDERSHOT/OVERSHOT PIPE FOR BOTH DIAMETER AND BEAM STRENGTH.
2. OVERSHOT PIPE SHALL BE RIGID SUCH THAT MINIMAL DEFLECTION OCCURS WHEN FULLY LOADED WITH WATER.
3. UNDERSHOT/OVERSHOT PIPE SHALL BE MINIMUM #12 GAUGE CMP OR APPROVED EQUIVALENT.
4. THE CANAL CROSS SECTION MUST BE RECONSTRUCTED TO ITS ORIGINAL SHAPE. BACKFILL MATERIAL MUST BE SIMILAR TO THE EXCAVATED MATERIAL AND BE COMPACTED TO ITS ORIGINAL DENSITY OR GREATER. RECONSTRUCTION IN GUNITED SECTIONS WILL REQUIRE SPECIAL ATTENTION AS DIRECTED BY NID.
5. INLET TO UNDERSHOT/OVERSHOT SHALL HAVE APPROPRIATE SIZED STRUCTURE TO DIRECT FLOW INTO PIPE. RIP RAP ENERGY DISSIPATOR SHALL BE PLACED AT THE OUTLET OF PIPE AT TOE OF CANAL BERM.
6. THE UNDERSHOT/OVERSHOT MAY REQUIRE EXTENDING BEYOND THE PRESENT CANAL CROSS SECTION IF IT IS ANTICIPATED THAT THE CANAL WILL BE ENLARGED.
7. UNDERSHOT CLEARANCE:
 1'-6" MINIMUM UNDER DITCH
 1'-0" MINIMUM UNDER CULVERT
8. CROSSING APPLICANT SHALL PROVIDE PROJECT SPECIFIC DESIGN.



CANAL STORM WATER CROSSING (OVERSHOT)

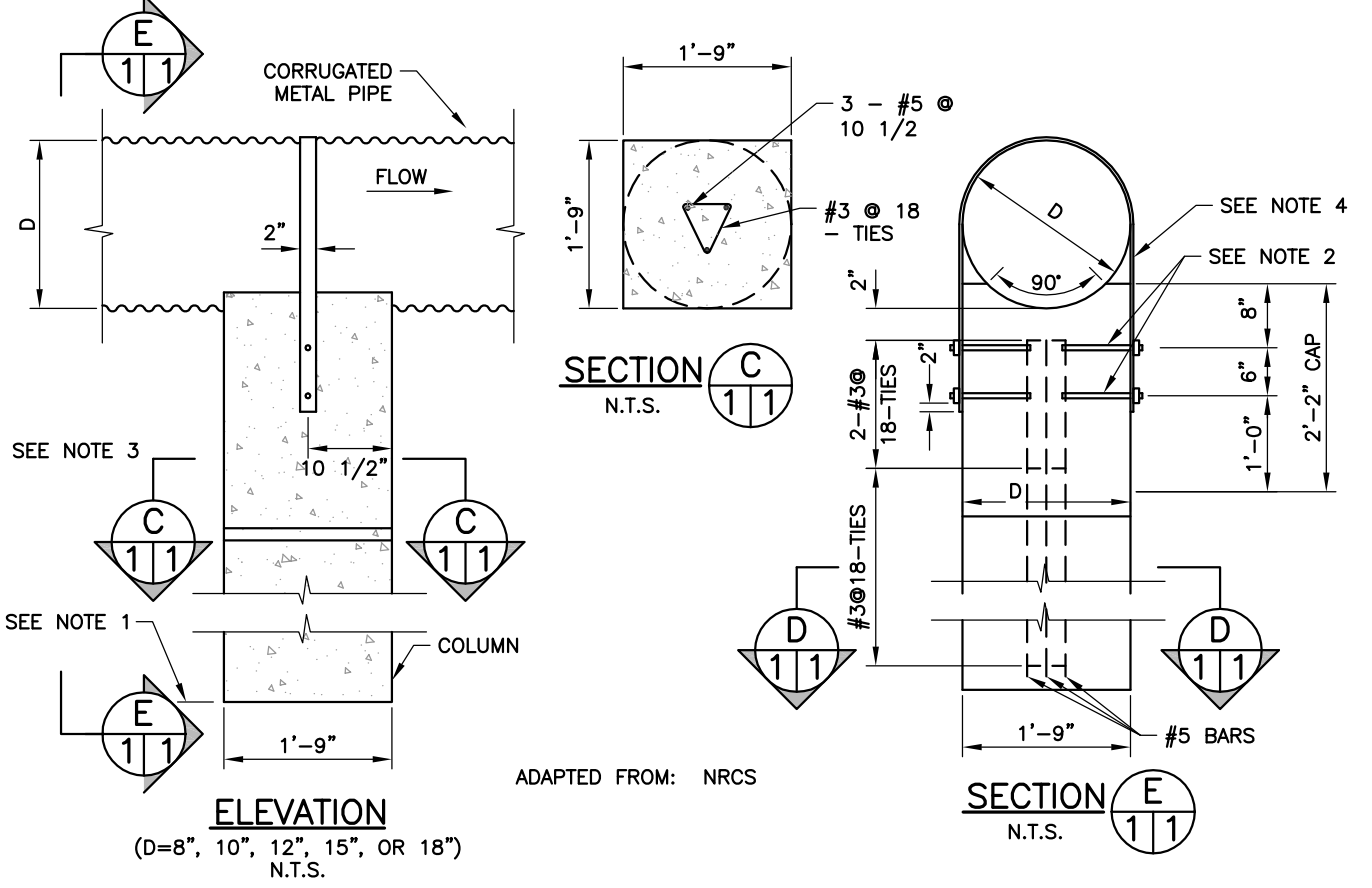
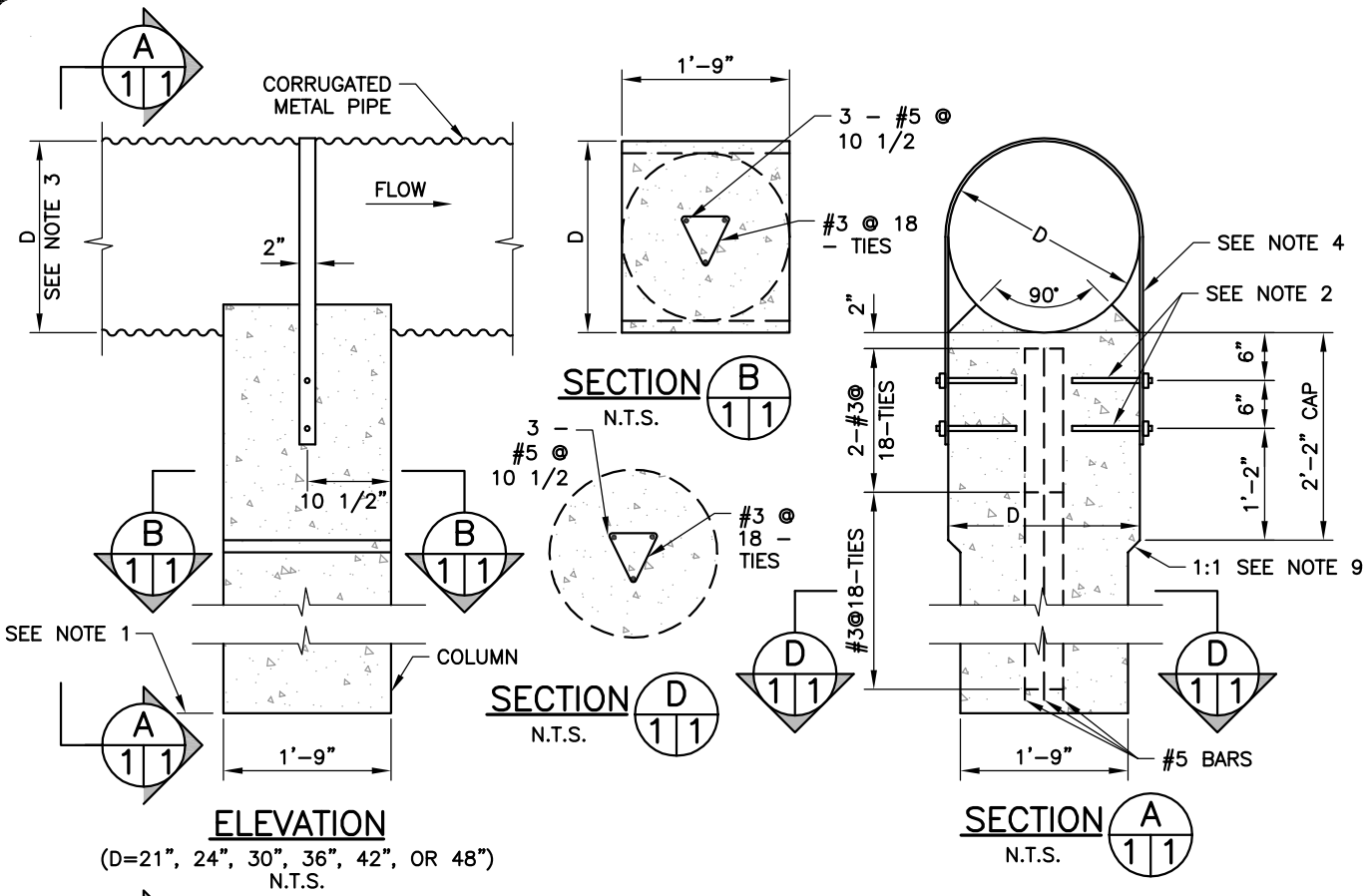
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CANAL STORM WATER CROSSING (UNDERSHOT)

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ADAPTED FROM: NRCS

Animas Consolidated Ditch Co.
P.O. Box 377, Durango, CO 81302

Drainage Culvert or Stream Crossing - Above
Standard Detail (2)

Approved:	XXX
Date:	03/06/17
Scale:	N.T.S.
File:	DrainageCulvertAbove

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NOTES:

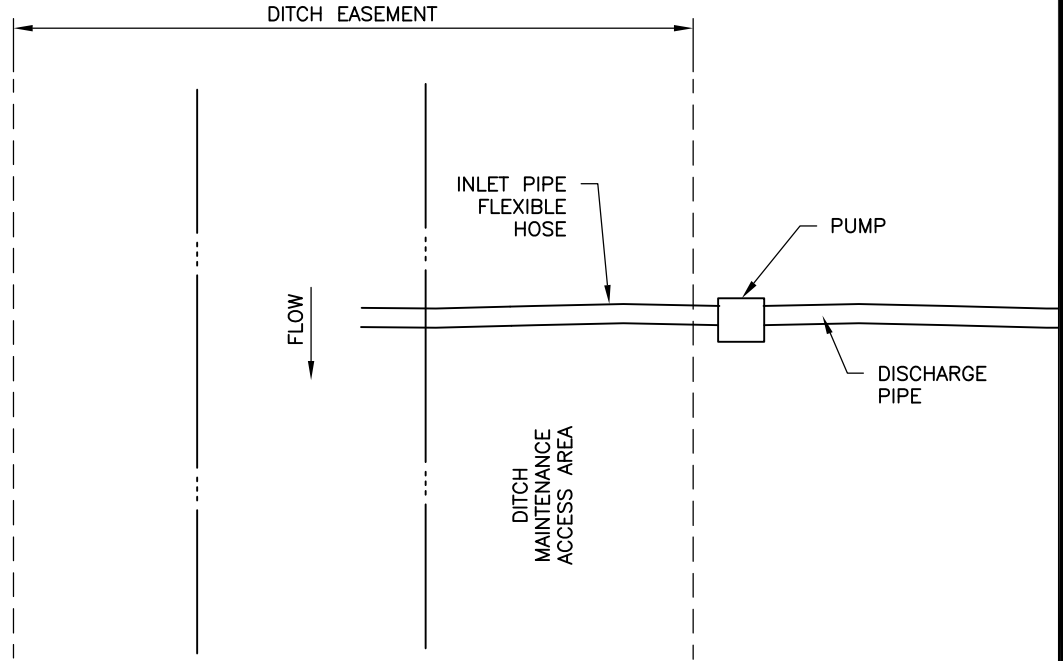
1. EXCAVATE HOLE AS NECESSARY TO REACH AN ADEQUATE SUPPORT MATERIAL. APPROXIMATE ELEVATION OF BOTTOM OF PIPE SUPPORT IS SHOWN ON CROSS SECTION OF DAM ALONG CL OF PRINCIPAL SPILLWAY, ACTUAL DEPTH TO BE DETERMINED BY THE ENGINEER.
2. 4 GALVANIZED 5/8" DIA. x 10" LONG BOLTS, SET 8 1/2" IN CONCRETE AS SHOWN.
3. D = DIAMETER OF CORRUGATED METAL PIPE.
4. GALVANIZED STEEL STRAP 3/8" THICK x 2" WIDE.
5. EXPOSED CONCRETE EDGES SHALL BE CHAMFERED 3/4 INCH OR ROUNDED.
6. BAR SPLICES SHALL BE STAGGERED WITH BARS LAPPED AT LEAST 30 DIAMETERS, BUT NOT LESS THAN 12 INCHES.
7. STEEL SHALL BE POSITIONED IN THE CENTER OF THE SECTION, UNLESS OTHERWISE SHOWN.
8. STRUCTURE SHALL BE INSTALLED IN ACCORDANCE WITH NATURAL RESOURCES CONSERVATION SERVICE ENGINEERING STANDARD AND SPECIFICATIONS NO. COLO.-378 "POND".
9. USE 2:1 FOR D = 48".
10. USE STANDARD DETAIL ACDC 002B FOR BELOW GRADE CULVERT CROSSING.

ADAPTED FROM NRCS

QUANTITIES

DIA. C.M.P. (INS.)	LENGTH OF STEEL STRAP FT. -INS.	VOL. OF CONC. IN CAP CU. YDS.	VOL. OF CONC. IN COLUMN CU. YDS./LIN. FT.
8	4-1	0.24	0.09
10	4-6	0.24	0.09
12	4-11	0.24	0.09
15	5-7	0.24	0.09
18	6-3	0.24	0.09
21	6-10	0.26	0.09
24	7-8	0.29	0.09
30	8-9	0.36	0.09
36	10-0	0.43	0.09
42	11-4	0.48	0.09
48	12-8	0.54	0.09

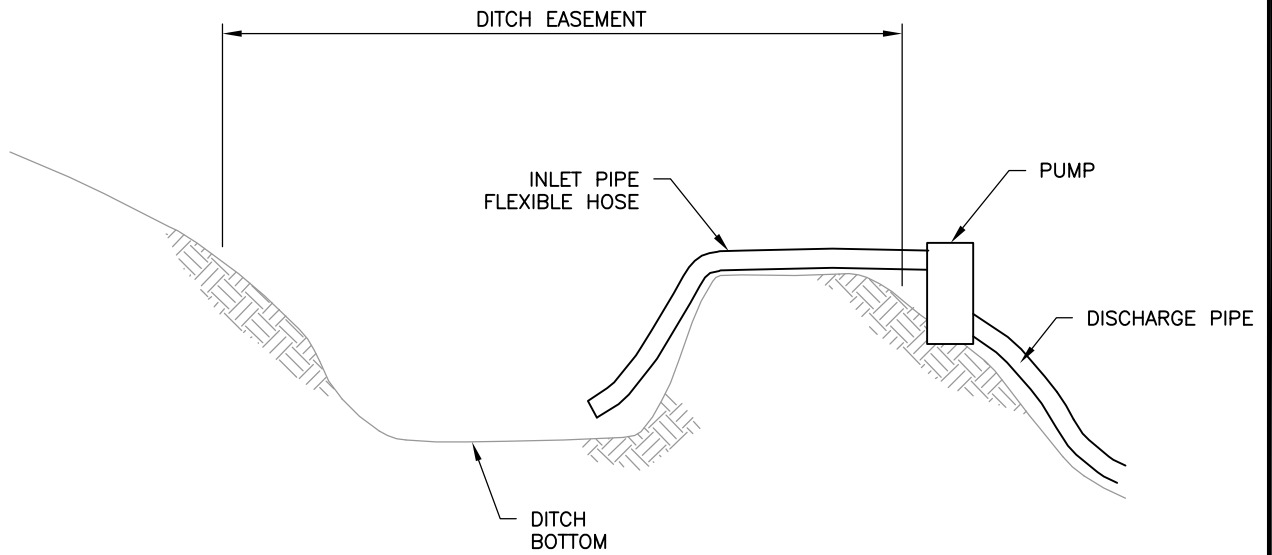
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PROFILE
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NOTES:

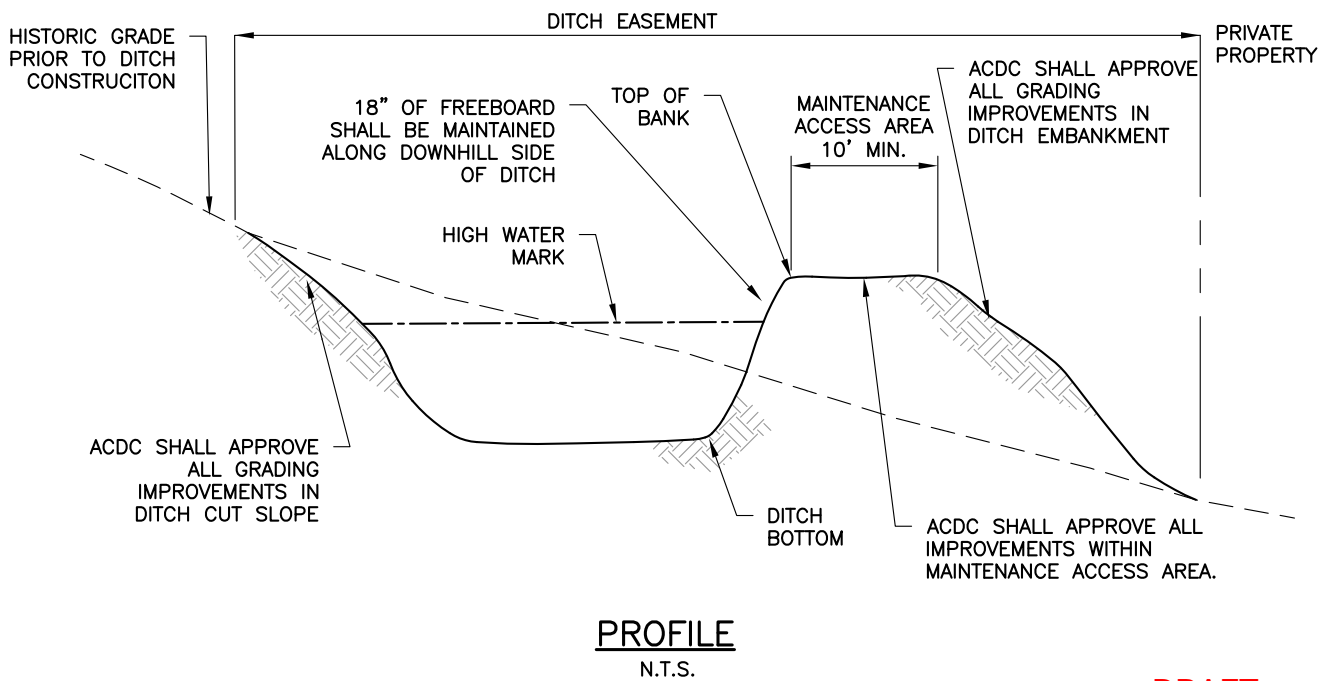
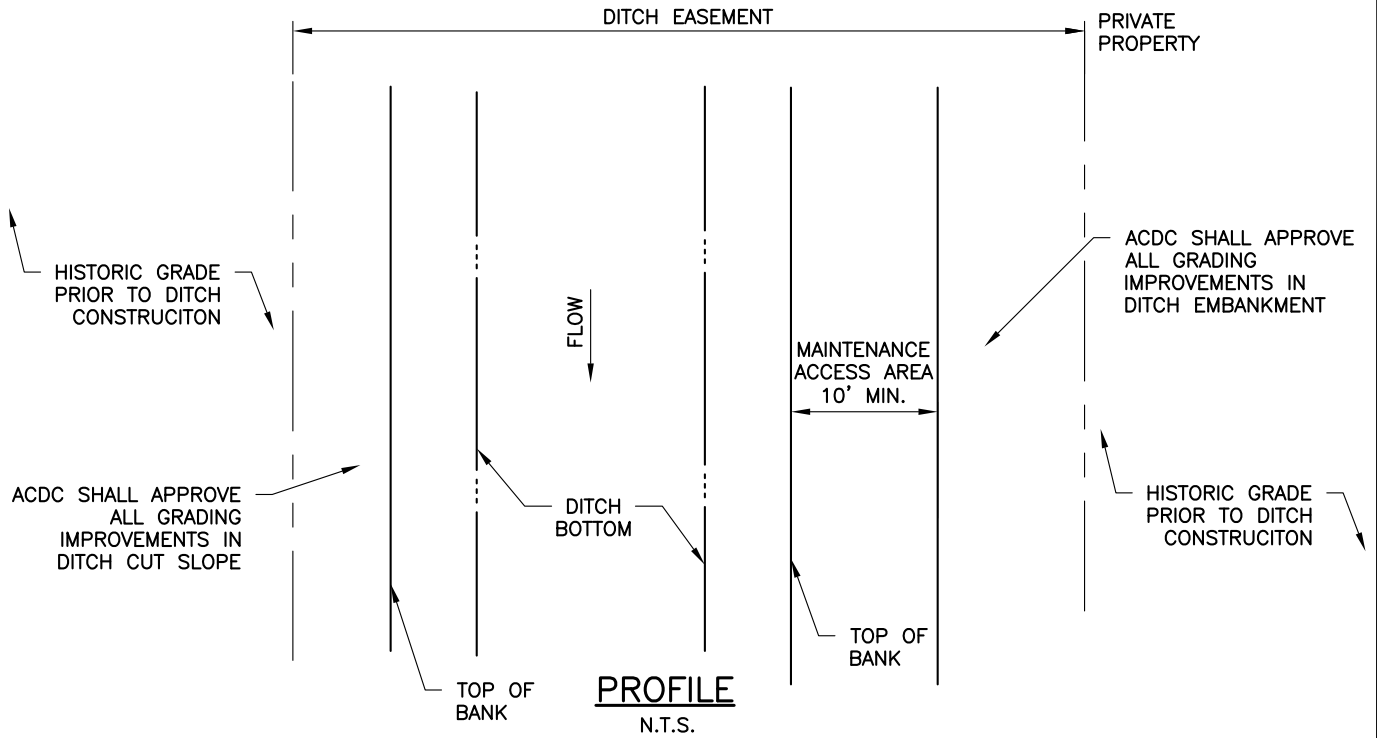
1. PUMP INSTALLATION, MAINTENANCE, AND ASSEMBLY IS THE RESPONSIBILITY OF OWNER.
2. FLEXIBLE INLET PIPE SHALL BE REMOVABLE FOR RELATED DITCH MAINTENANCE.



PROFILE
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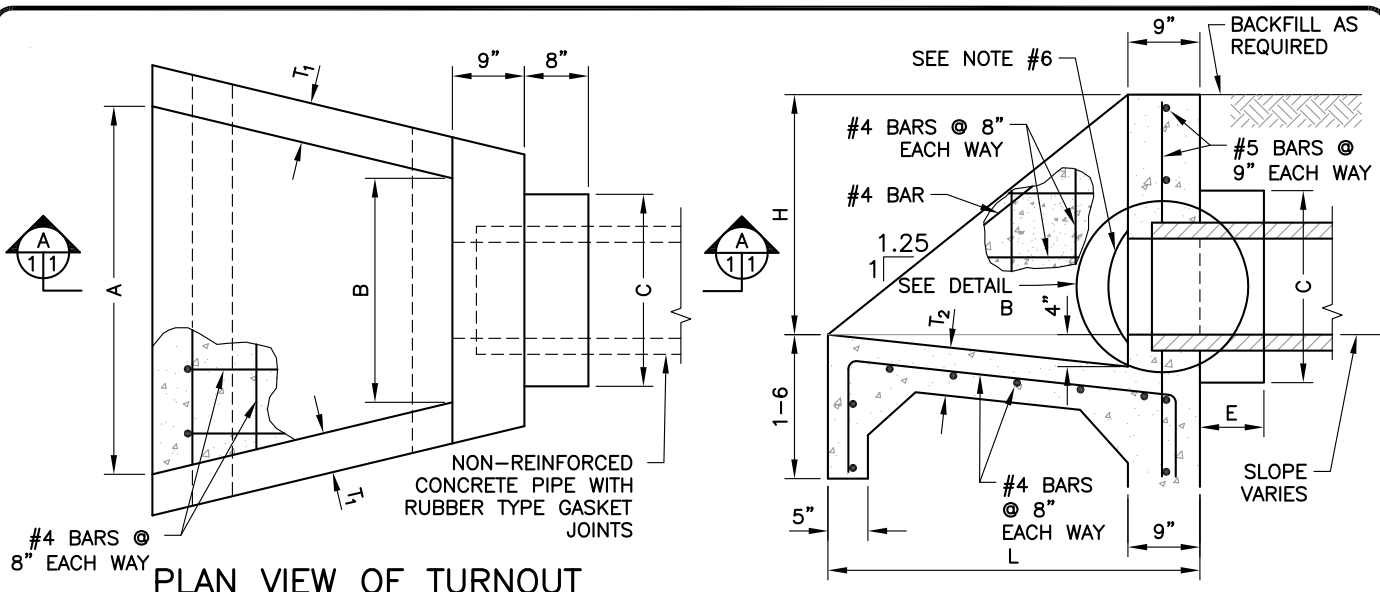
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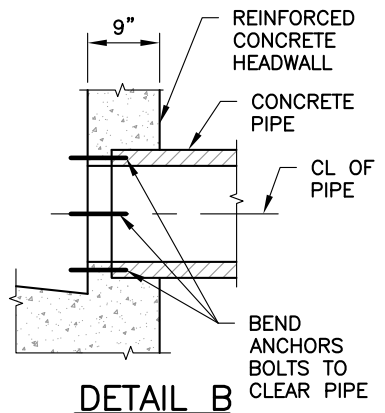


PLAN VIEW OF TURNOUT

SECTION A
11

DIMENSIONS, CAPACITIES AND QUANTITIES OF TURNOUT FOR VARIOUS PIPE DIAMETERS

TYPE	LETTERS REFER TO DIMENSIONS								DESIGN CAPACITY C.F.S.	QUANTITIES	
	TURNOUT									CONCRETE CU. YDS.	REINFORCING STEEL LBS.
	A	B	C	E	H	L	T ₁	T ₂			
FT.-INS.	FT.-INS.	FT.-INS.	INS.	FT.-INS.	FT.-INS.	INS.	INS.				
12	3-10	2-4	—	—	2-6	3-10½	5	6	4	0.78	97
	3-10	2-4	—	—	3-6	5-1½	5	6	4	1.08	136
	3-10	2-4	—	—	4-6	6-4½	5	6	4	1.42	179
	3-10	2-4	—	—	5-6	7-7½	6	7	4	2.10	236
	3-10	2-4	—	—	6-6	8-10½	6	7	4	2.55	286
15	4-0	2-6	—	—	2-7½	4-0¾	5	6	6	0.82	103
	4-0	2-6	—	—	3-7½	5-3¾	5	6	6	1.14	142
	4-0	2-6	—	—	4-7½	6-6¾	5	6	6	1.49	185
	4-0	2-6	—	—	5-7½	7-9¾	6	7	6	2.16	242
	4-0	2-6	—	—	6-7½	9-0¾	7	8	6	3.03	307
18	4-6	3-0	2-10	8	2-9	4-2¼	5	6	8	1.09	135
	4-6	3-0	2-10	8	3-9	5-5¼	5	6	8	1.33	165
	4-6	3-0	2-10	8	4-9	6-8¼	5	6	8	1.81	226
	4-6	3-0	2-10	8	5-9	7-11¼	6	7	8	2.53	282
	4-6	3-0	2-10	8	6-9	9-2¼	7	8	8	3.45	348
21	5-0	3-6	3-2½	8	2-10½	4-4¼	5	6	8	1.24	151
	5-0	3-6	3-2½	8	3-10½	5-7¼	5	6	8	1.61	197
	5-0	3-6	3-2½	8	4-10½	6-10¼	5	6	8	2.03	251
	5-0	3-6	3-2½	8	5-10½	8-1¼	6	7	8	2.79	311
	5-0	3-6	3-2½	8	6-10½	9-4¼	7	8	8	3.77	381



DETAIL B

ADAPTED FROM: NRCS

NOTES:

1. EXPOSED CONCRETE EDGES SHALL BE CHAMFERED 3/4 INCH OR ROUNDED.
2. REINFORCING BAR SPACING IS CENTER TO CENTER OF BARS. BAR COVER IS CLEAR DISTANCE BETWEEN SURFACE OF BAR AND FACE OF CONCRETE AND SHALL BE 2" FOR FORMED AND TOP SURFACES AND 3" FOR SURFACES PLACED AGAINST EARTH, UNLESS OTHER WISE SHOWN.
3. IN SECTIONS WITH A SINGLE MAT OF REINFORCING STEEL, THE STEEL SHALL BE POSITIONED IN THE CENTER OF THE SECTION, UNLESS OTHER WISE SHOWN.
4. REINFORCING BARS SHALL BE CONTINUOUS OR SPLICED FROM FLOOR AND WALLS INTO ADJACENT FLOORS, WALLS AND SLOPES.
5. BAR SPLICES SHALL BE STAGGERED WITH BARS LAPPED AT LEAST 30 BAR DIAMETERS, BUT NOT LESS THAN 12 INCHES.
6. INSTALL A SLIDE GATE (ARMCO MODEL 101C OR EQUAL) AS RECOMMENDED BY THE MANUFACTURE. USE A SPIGOT BACK GATE (A FLAT BACK GATE MAY BE USED WHEN APPROVED BY THE ENGINEER). GATE SHALL BE THE SAME DIAMETER AS PIPE.
7. TYPE 15 MEANS A 15 INCH PIPE.
8. OTHER NON-STANDARD DESIGNS - MUST BE ADAPTED TO THE SPECIFIC SITE.

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