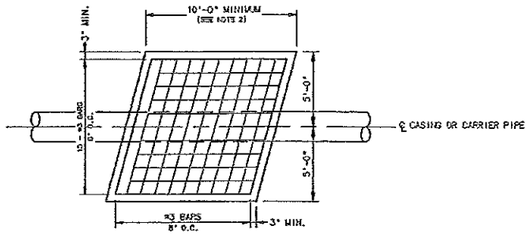
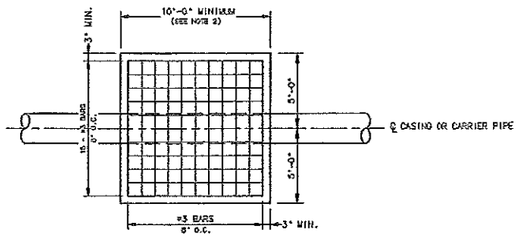
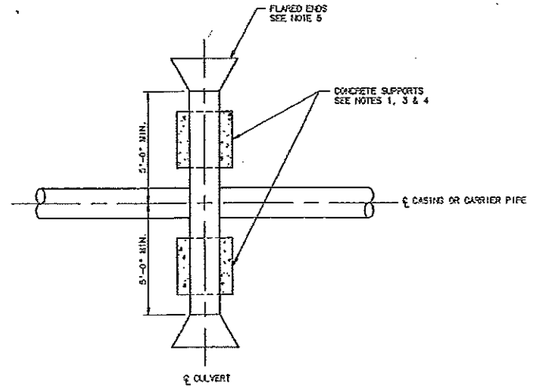


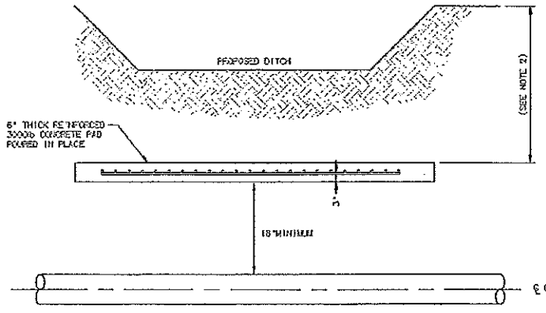
TOP VIEW CONCRETE PAD
NOT TO SCALE



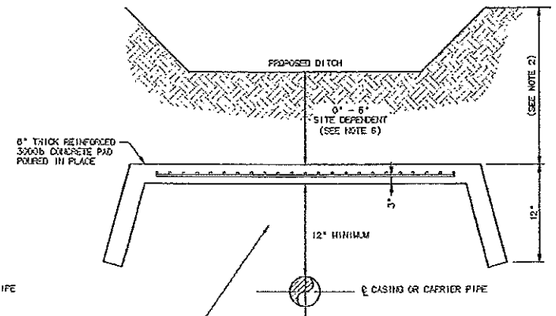
CONCRETE PAD DETAIL
NOT TO SCALE



TOP VIEW CULVERT
NOT TO SCALE

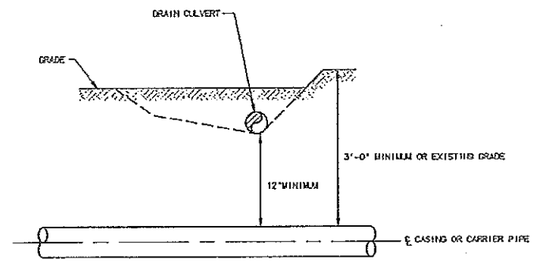


DETAIL "A"
REINFORCED CONCRETE PAD DETAIL
(24" COVER AND GREATER)
NOT TO SCALE



DETAIL "B"
REINFORCED CONCRETE PAD DETAIL
(LESS THAN 24" COVER)
NOT TO SCALE

NOTE:
ANY EXPOSED PIPE WILL HAVE TO BE INSPECTED AND COVERED WITH SANDBAGS & ROCKSHIELD BETWEEN PIPE AND CONCRETE PAD.



DETAIL "C"
CULVERT DETAIL
NOT TO SCALE

CONCRETE PAD NOTES:

1. IN AREAS WHERE THERE IS LESS THAN 24" OF COVER EITHER A CONCRETE PAD (DETAIL A) OR CULVERT (DETAIL C) SHALL BE INSTALLED.
2. THE WIDTH OF THE CONCRETE PAD TO EXTEND TO THE TOP OF DITCH LINE
3. CONCRETE SUPPORT SHALL BE PLACED ON UNDISTURBED SOIL.
4. AT NO TIME WILL CLEARANCE BETWEEN THE CONCRETE SUPPORT AND THE CARRIER PIPE BE LESS THAN 1'-0".
5. THE CONTRACTOR SHALL CONSTRUCT THE SIDES OF THE CONCRETE PAD PARALLEL TO THE CENTERLINES OF THE ROADWAY AND CARRIER PIPE.
6. DISTANCE BETWEEN TOP OF THE CONCRETE PAD TO THE BOTTOM OF DITCH WILL DEPEND ON THE TOTAL PIPE COVER. IF OVER 6' SEE DETAIL A.

CULVERT NOTES:

1. CONCRETE SUPPORTS TO BE SIZED AND LOCATED AS TO ALLOW A MAXIMUM CULVERT DEFLECTION OF 0.5 IN. OVER THE GAS PIPELINE, WHEN FULL OF WATER. CULVERT SIZE TO BE DETERMINED BY IOWA STATE HIGHWAY DEPARTMENT.
2. FLARED ENDS TO BE FABRICATED AND INSTALLED AT BOTH ENDS OF CULVERT TO PREVENT EROSION OF THE CULVERT SYSTEM.
3. CONCRETE SUPPORT SHALL BE PLACED ON UNDISTURBED SOIL.
4. AT NO TIME WILL CLEARANCE BETWEEN THE CONCRETE SUPPORT AND THE CARRIER PIPE BE LESS THAN 1'-0".

ISSUED FOR CONSTRUCTION

Approved By: Jeremy Jaubert
Approved By: D. Jake Holter

P-C-42	AVR TYPICAL BAR DITCH CROSSING EXISTING PIPELINES	1	8/24/09	NEI	ISSUED FOR CONSTRUCTION	182554	GLS
DRAWING NO.	TITLE	NO.	DATE	BY	DESCRIPTION	PROJ. ID	APPR.
REFERENCE DRAWINGS		REVISIONS					

HOLLAND ENGINEERING
ENGINEERING | SURVEYING | PIPELINE SERVICES
222 Horner Boulevard, Suite 2, Holland, Michigan 49423-5783, T 616-503-5535 F 616-392-2119
26555 Evergreen Rd. Ste. 430, Southfield, Michigan 48076, T 248-827-7322 F 248-827-7249
www.hollandengineering.com

TransCanada
In business to deliver
ANR Pipeline Company

DETAIL SHEET
4" MAIN, 6" LOOP, 6" LOOP & 12" LOOP
KEOKUK PIPELINES
CROSSING PROPOSED HARPER ROAD

Section: 30 & 31	Township: 67 & 68 N	Range: 4 & 5 W	
County: LEE COUNTY		State: IOWA	
Division: ESPONDAM		Op. Area: SAGVICH	
Drafter: NEYSRP	Date: 02/20/09	Project ID: 182554/187754	
Chkd: .	Date: .	Scale: AS NOTED	
Approved: .	Date: .	FERC/DOT: INTERSTATE GAS/ENVG	

SD-320-06-96.1 | Sheets: 1 of 1 | 1
Type: AUTOCAD

ENGLISH	IOWA DOT	DESIGN TEAM Cadwell\Strum		LEE	COUNTY	PROJECT NUMBER	NHSX-061-1(146)--3H-56	SHEET NUMBER	V.6