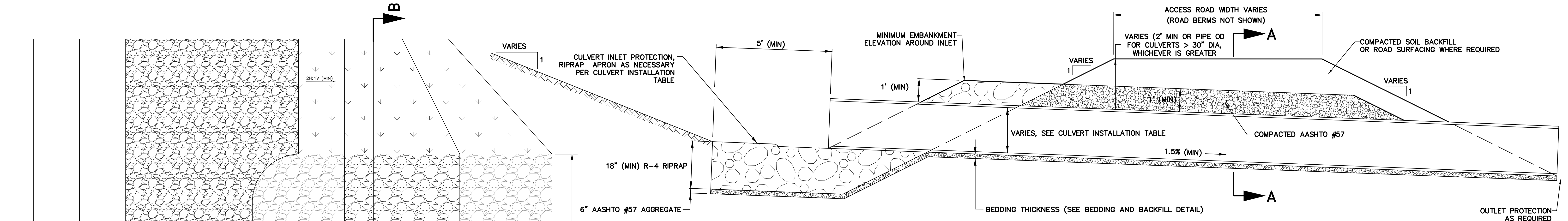


Wednesday, January 3, 2018 4:57:56 PM

R:\2015\525966 - SGI Disposal Embankment Drawings\Northern Tract\Exhibit 12-Culvert Details-R0.dwg



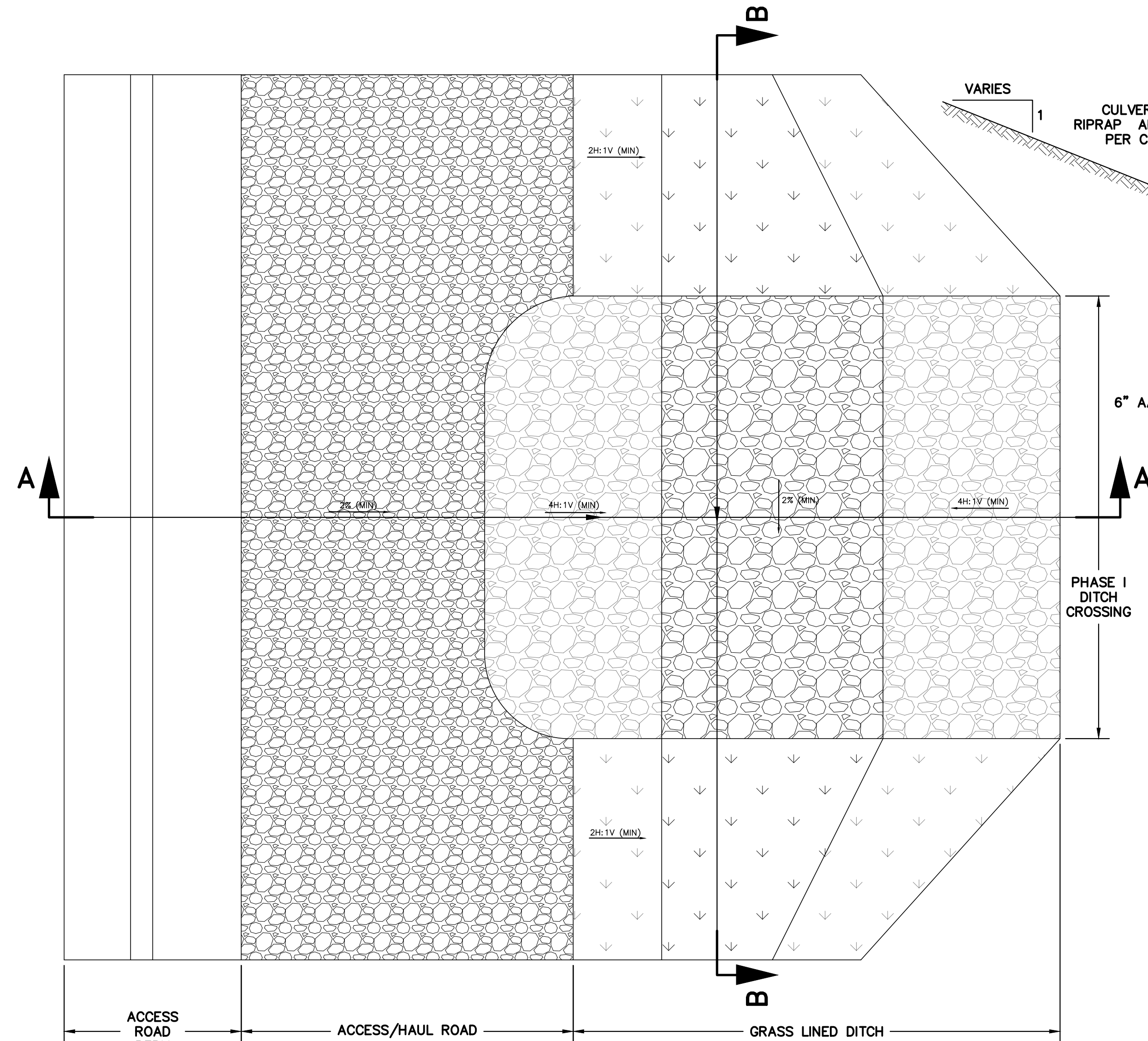
**② TYPICAL CULVERT PROFILE
(RIPRAP APRON INLET PROTECTION SHOWN)**
NTS

NOTES:
1. UTILIZE RIPRAP APRON INLET PROTECTION UNLESS OTHER DETAILS PROVIDED ELSEWHERE IN THE DRAWINGS.

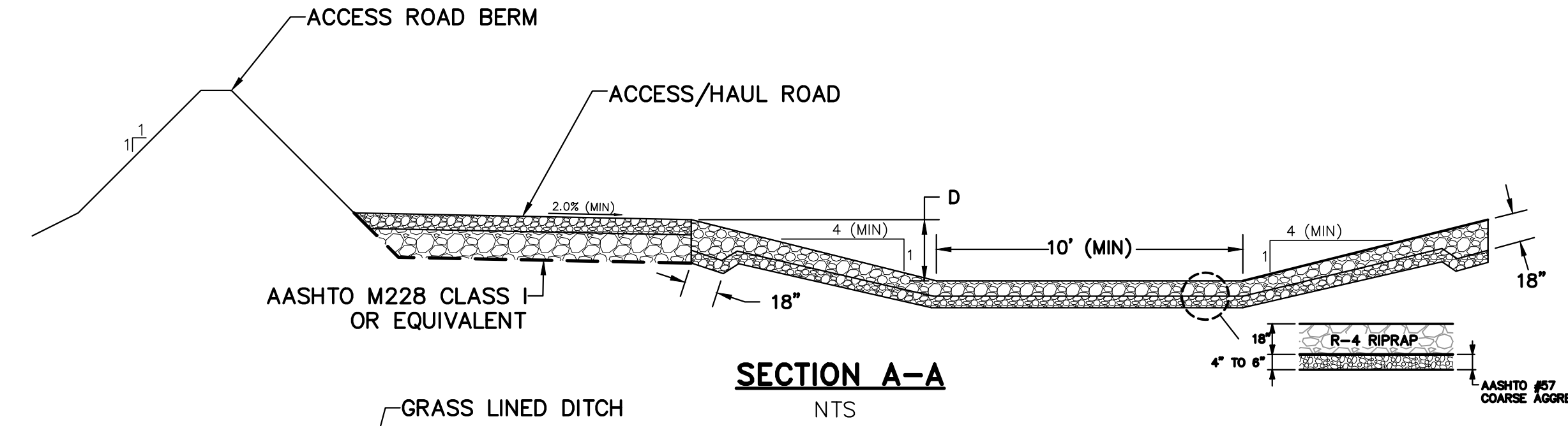
① CULVERT INSTALLATION TABLE

CULVERT INSTALLATION TABLE												
CULVERT NAME/NO.	INTERNAL PIPE DIAMETER (IN.)	PIPE MATERIAL TYPE	UPSTREAM INVERT EL. (FEET)	DOWNSTREAM INVERT EL. (FEET)	2D LENGTH (FEET)	3D LENGTH (FEET)	SLOPE	REQUIRED MINIMUM COVER (FEET)	BEDDING AND BACKFILL	MINIMUM EMBANKMENT ELEVATION AROUND INLET (FEET)	INLET PROTECTION	OUTLET ⁽³⁾ PROTECTION
C-1 (1)	30"	CPEP	1054.84	1054.10	75.8'	75.8'	0.98%	2.0	AASHTO NO. 57	1060.00	RIPRAP APRON	NONE
C-1 (2)	30"	CPEP	1054.85	1054.05	80.2'	80.2'	1.00%	2.0	AASHTO NO. 57	1060.00	RIPRAP APRON	NONE
C-2 (1)	36"	CPEP	1054.80	1054.15	65.5'	65.5'	1.00%	2.0	AASHTO NO. 57	1060.00	RIPRAP APRON	NONE
C-2 (2)	36"	CPEP	1054.80	1054.13	67.3'	67.3'	1.00%	2.0	AASHTO NO. 57	1060.00	RIPRAP APRON	NONE
C-3 (1)	36"	CPEP	1004.80	1004.06	74.3'	74.3'	1.00%	2.0	AASHTO NO. 57	1010.00	RIPRAP APRON	NONE
C-3 (2)	36"	CPEP	1004.80	1004.05	74.8'	74.9'	1.00%	2.0	AASHTO NO. 57	1010.00	RIPRAP APRON	NONE
C-4 (1)	36"	CPEP	1004.80	1004.04	76.0'	76.0'	1.00%	2.0	AASHTO NO. 57	1010.00	RIPRAP APRON	NONE
C-4 (2)	36"	CPEP	1004.80	1004.05	74.9'	74.9'	1.00%	2.0	AASHTO NO. 57	1010.00	RIPRAP APRON	NONE

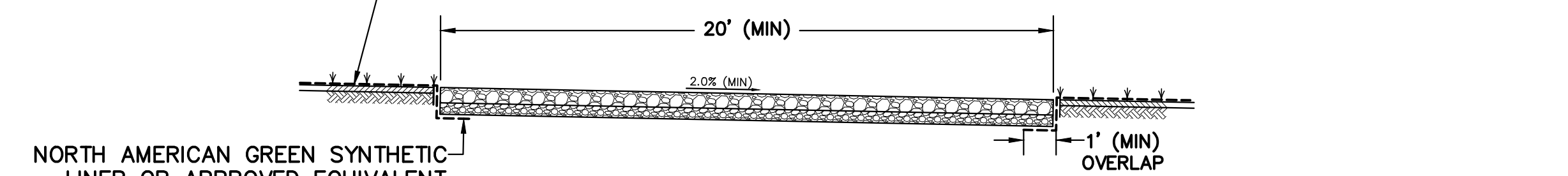
NOTES:
1. CPEP = DUAL WALL, CORRUGATED POLYETHYLENE PIPE CONFORMING TO THE REQUIREMENTS OF AASHTO M294, TYPE S.
2. GROUND SURFACE ADJACENT TO CULVERT INLETS SHALL BE THE MINIMUM HEADWATER ELEVATION, OR HIGHER, ALL-AROUND.
3. CULVERTS ARE ANTICIPATED TO OUTLET ONTO COMPETENT ROCK THEREBY NO OUTLET PROTECTION WOULD BE NEEDED. HOWEVER, A RIPRAP APRON SHOULD BE USED IF NEEDED TO PREVENT EROSION, AS SHOWN ON THE ASSOCIATED PLAN VIEW DRAWINGS.



TYPICAL PLAN
NTS



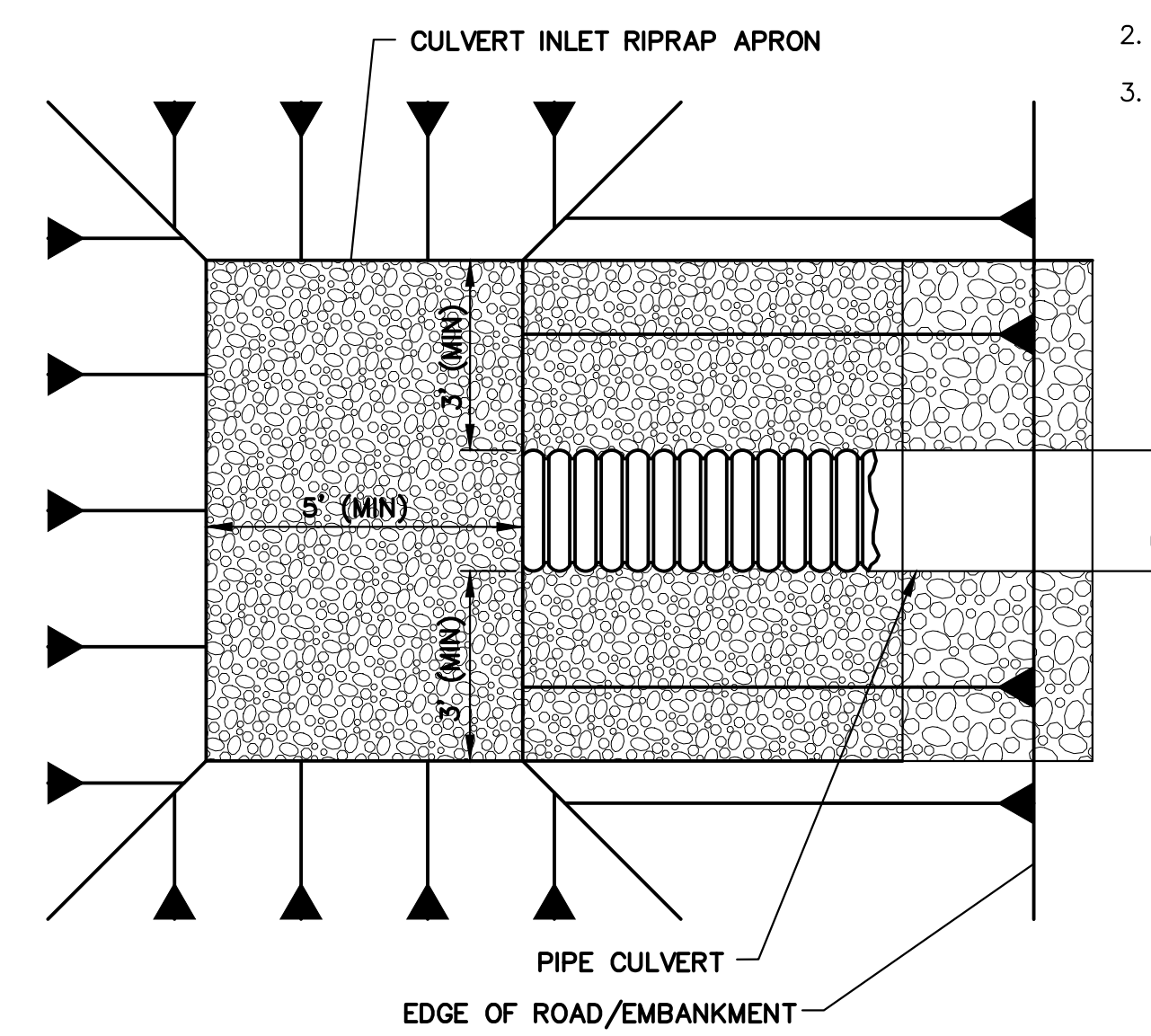
SECTION A-A
NTS



SECTION B-B
NTS

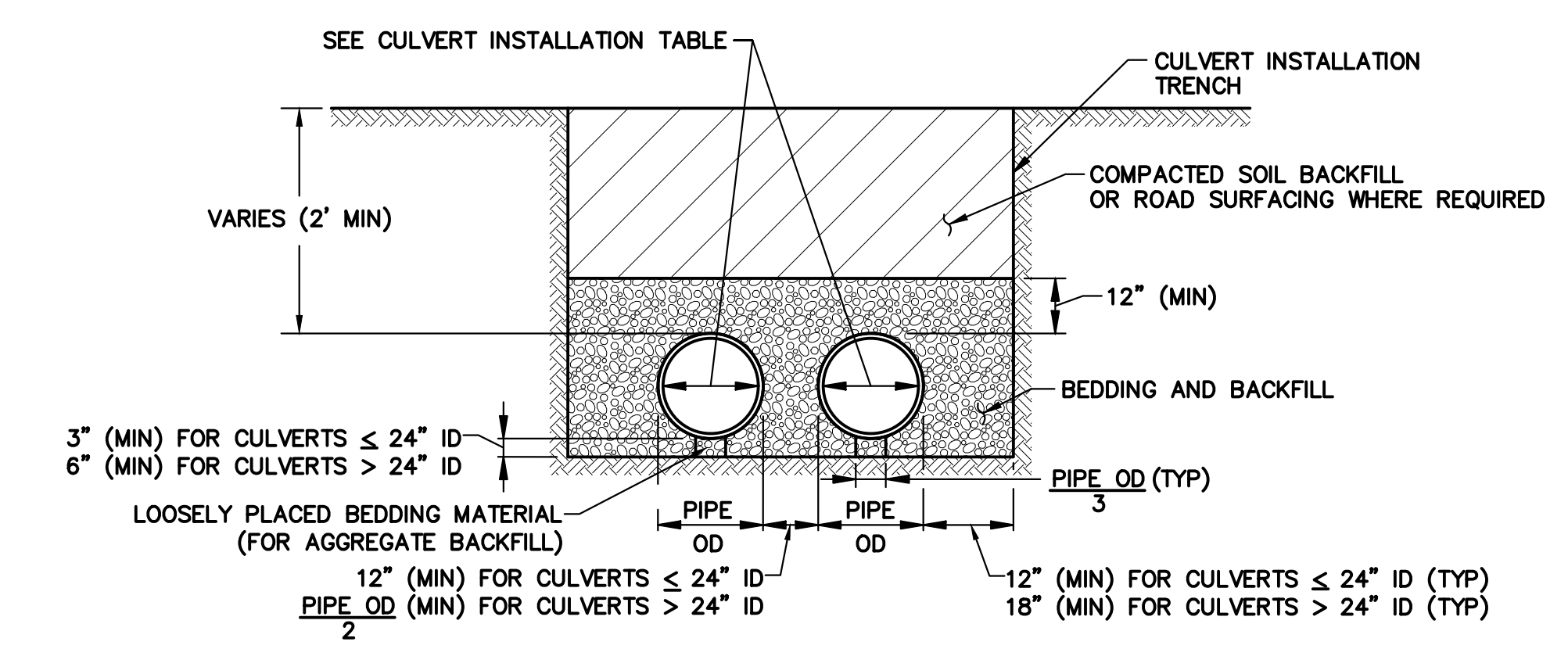
⑤ PHASE I DITCH CROSSING

NOTES:
1. REFER TO SHEET 24 - DITCH DETAILS OF EXHIBIT 12 FOR TYPICAL GRASS LINED DITCH SPECIFICATIONS.
2. REFER TO SHEET 25 - DETAILS OF EXHIBIT 12 FOR TYPICAL ACCESS/HAUL ROAD SPECIFICATIONS.



③ RIPRAP APRON INLET PROTECTION
NTS

NOTES:
1. UTILIZE RIPRAP APRON INLET PROTECTION WHERE ALTERNATE INLET PROTECTION CONFIGURATIONS ARE NOT SPECIFIED ON THE DESIGN DRAWINGS.



④ BEDDING & BACKFILL DETAIL
NTS

NOTES / REVISIONS						
ISSUED FOR	DATE	REV.	REVISION DESCRIPTION	MADE BY	CHKD BY	DATE
		4				
		3				
		2				
		1				

SEAL:

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ENGINEERING & ENVIRONMENTAL CONSULTANTS

SGI

PROJECT NUMBER: 152596A
FILE NAME: Exhibit 12-Culvert Details-R0.dwg

DRAWN BY: AJM
CHECKED BY: RMS/MDW
DATE: 9/30/2016
DATE: 12/22/2017

SPECIALTY GRANULES LLC
CHARMIAN - NORTHERN TRACT QUARRY

EXHIBIT 12
CULVERT - DETAILS

SCALE: AS SHOWN
DRAWING NO. 23
REV 0