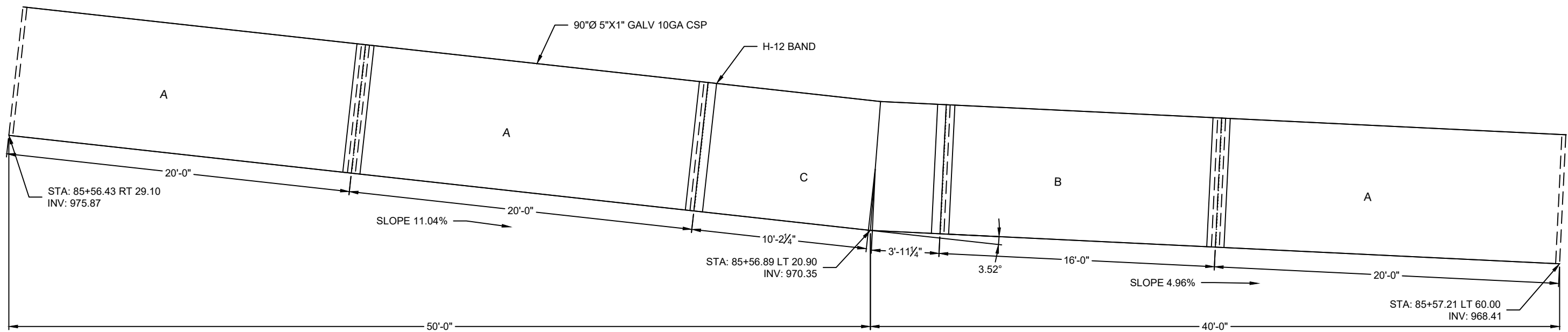
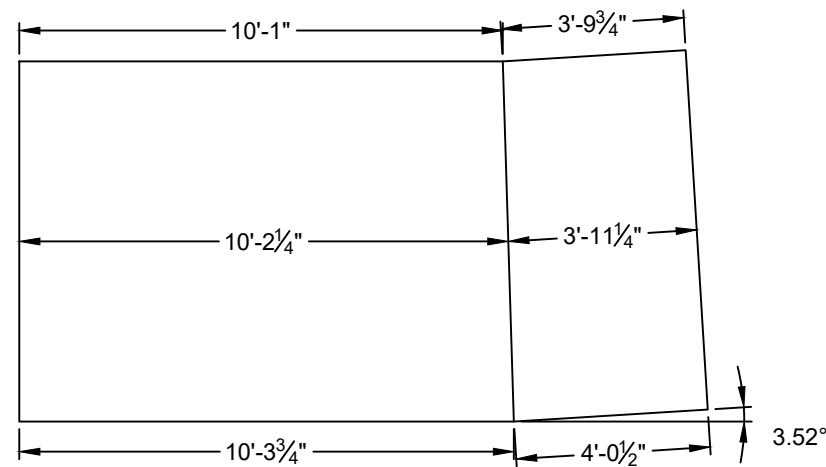


C:\USERS\JAMES PEREZ\ONE DRIVE - THE QUIKRETE COMPANIES\DWG\CMP-CON-A.DWG 3/6/2026 3:04 PM



ASSEMBLY (PROFILE VIEW)
SCALE: 1"=6'



FITTING "C" DETAIL
SCALE: 1"=4'

THE UNDERSIGNED HEREBY APPROVES THE ATTACHED (3) PAGES INCLUDING THE FOLLOWING:

- **WALL TYPE = NON-PERFORATED**
- **DIAMETER = 90"**
- **PIPE MATERIAL = 5"X1", GALV, 10GA**
- **JOINT TYPE = H-12 BAND W/ GASKETS**

CUSTOMER

DATE

CSP PIPE MATERIAL LIST

ITEM	FITTING	TYPE	QTY	Ø	CORRUGATION	GAGE	FINISH	WALL TYPE	LENGTH	TOTAL	PART NUMBER
500	A	PIPE	3	90"	5"X1"	10	GALV	SOLID	20.00	60.00	HP5GVL100902000NNC
501	B	PIPE	1	90"	5"X1"	10	GALV	SOLID	16.00	16.00	HP5GVL100901600NNC
502	C	4DEG ELBOW	1	90"	5"X1"	10	GALV	SOLID	14.12	14.12	HP5GVL100901500NNC
503	PB	H-12 HUGGER	4	90"	W/DBBS	12	GALV				PBH-12GV120902NC
504	GASKETS	FLAT	4	90"							BAFG09012

900486-010-CMP-CON-A

The design and information shown on this drawing is provided as a service to the project owner, engineer and contractor by Contech Engineered Solutions LLC ("Contech"). Neither this drawing, nor any part thereof, may be used, reproduced or modified in any manner without the prior written consent of Contech. Failure to comply is done at the user's own risk and Contech expressly disclaims any liability or responsibility for such use.

If discrepancies between the supplied information upon which the drawing is based and actual field conditions are encountered as site work progresses, these discrepancies must be reported to Contech immediately for re-evaluation of the design. Contech accepts no liability for designs based on missing, incomplete or inaccurate information supplied by others.

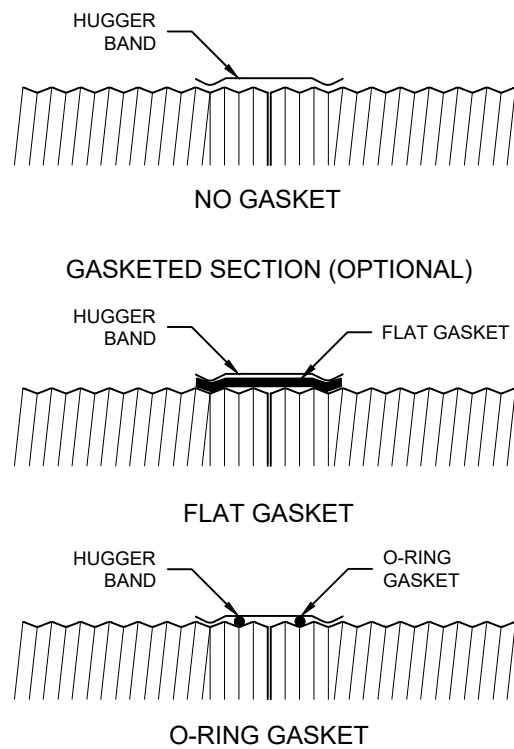
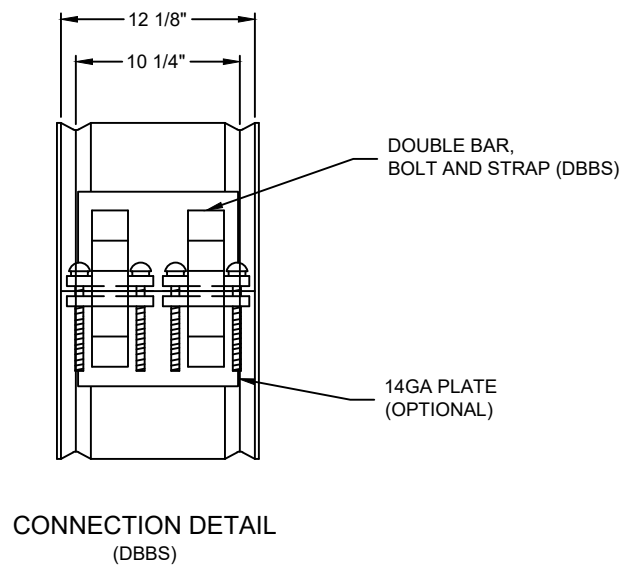
MARK	DATE	REVISION DESCRIPTION	BY

CONTECH
ENGINEERED SOLUTIONS LLC
www.ContechES.com
9100 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CONTECH
PIPE SOLUTIONS
CONTECH CONTRACT DRAWING

HEL-COR - 900486-010
ODOT SUM-303-3.216
LANCASTER, OH
SITE DESIGNATION: CULVERT

PROJECT No.: 900486	SEQ. No.: 010	DATE: 3/6/2026
DESIGNED:	DRAWN: JAP	
CHECKED:	APPROVED:	
SHEET NO.: p1 OF 3		

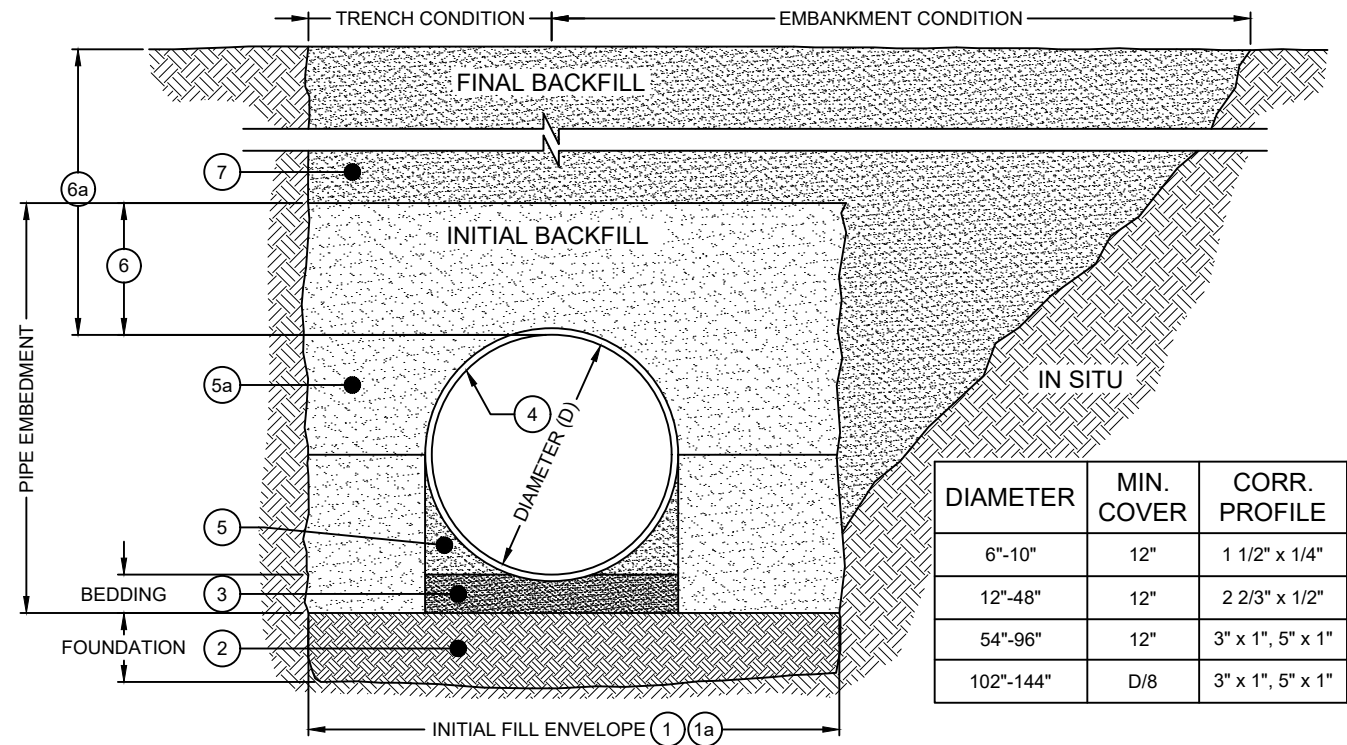


2 2/3"x1/2" RE-ROLLED END HEL-COR PIPE

GENERAL NOTES:

1. JOINT IS TO BE ASSEMBLED PER AASHTO BRIDGE CONSTRUCTION SPECIFICATION SEC 26.4.2.4.
2. BAND MATERIALS AND/OR COATING CAN VARY BY LOCATION. CONTACT YOUR CONTECH REPRESENTATIVE FOR AVAILABILITY.
3. BANDS ARE SHAPED TO MATCH THE PIPE-ARCH WHEN APPLICABLE.
4. BANDS ARE NORMALLY FURNISHED AS FOLLOWS:
 - 12" THRU 48" 1-PIECE
 - 54" THRU 96" 2-PIECES
 - 102" THRU 144" 3-PIECES
5. BAND FASTENERS ARE ATTACHED WITH SPOT WELDS, RIVETS OR HAND WELDS.
6. ALL CMP IS REROLLED TO HAVE ANNULAR END CORRUGATIONS OF 2 2/3"x1/2"
7. DIMENSIONS ARE SUBJECT TO MANUFACTURING TOLERANCES.
8. ORDER SHALL DESIGNATE GASKET OPTION, IF REQUIRED (SEE DETAILS ABOVE).

**H-12 HUGGER BAND DETAIL
NOT TO SCALE**



BACKFILL REQUIREMENTS FOLLOW THE GUIDELINES OF AASHTO LRFD BRIDGE DESIGN (SEC 12) AND CONSTRUCTION (SEC 26)

1. MINIMUM TRENCH WIDTH MUST ALLOW ROOM FOR PROPER COMPACTION OF HAUNCH MATERIALS UNDER THE PIPE. THE MINIMUM TRENCH WIDTH (12.6.6.1):
 PIPE ≤ 12": D + 16"
 PIPE > 12": 1.5D + 12"
- 1a. MINIMUM EMBANKMENT WIDTH (IN FEET) FOR INITIAL FILL ENVELOPE (12.6.6.2):
 PIPE < 24": 3.0D
 PIPE 24" - 144": D + 4'0"
 PIPE > 144": D + 10'0"
2. THE FOUNDATION UNDER THE PIPE AND SIDE BACKFILL SHALL BE ADEQUATE TO SUPPORT THE LOADS ACTING UPON IT (26.5.2).
3. ENGINEER TO DETERMINE IF BEDDING IS REQUIRED. BEDDING MATERIAL SHALL BE A RELATIVELY LOOSE MATERIAL THAT IS ROUGHLY SHAPED TO FIT THE BOTTOM OF THE PIPE, AND A MINIMUM OF TWICE THE CORRUGATION DEPTH IN THICKNESS, WITH THE MAXIMUM PARTICLE SIZE OF ONE-HALF OF THE CORRUGATION DEPTH (26.3.8.1, 26.5.3).
4. CORRUGATED STEEL PIPE (CSP / HEL-COR).
5. HAUNCH ZONE MATERIAL SHALL BE HAND SHOVELED OR SHOVEL SLICED INTO PLACE TO ALLOW FOR PROPER COMPACTION (26.5.4).
- 5a. INITIAL BACKFILL FOR PIPE EMBEDMENT TO MEET AASHTO A-1, A-2 OR A-3 CLASSIFICATION, OR APPROVED EQUAL, COMPACTED TO 90% STANDARD PROCTOR (T 99). MAXIMUM PARTICLE SIZE NOT TO EXCEED 3" (12.4.1.2). ALL LIFTS PLACED IN A CONTROLLED MANNER. IT IS RECOMMENDED THAT LIFTS NOT EXCEED AN 8" UNCOMPACTED LIFT HEIGHT TO PREVENT UNEVEN LOADING, AND THE LESSER OF 1/3 THE DIAMETER OR 24" AS THE MAXIMUM DIFFERENTIAL SIDE-TO-SIDE (26.5.4).
6. INITIAL BACKFILL ABOVE PIPE MAY INCLUDE ROAD BASE MATERIAL (AND RIGID PAVEMENT IF APPLICABLE). SEE TABLE ABOVE.
- 6a. TOTAL HEIGHT OF COMPACTED COVER FOR CONVENTIONAL HIGHWAY LOADS IS MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TOP OF RIGID PAVEMENT (12.6.6.3).
7. FINAL BACKFILL MATERIAL SELECTION AND COMPACTION REQUIREMENTS SHALL FOLLOW THE PROJECT PLANS AND SPECIFICATIONS PER THE ENGINEER OF RECORD (26.5.4.1).

NOTES:

- ENGINEER TO DETERMINE IF GEOTEXTILE SHOULD BE USED TO PREVENT SOIL MIGRATION INTO VARYING SOIL TYPES (PROJECT ENGINEER).
- FOR MULTIPLE BARREL INSTALLATIONS THE RECOMMENDED STANDARD SPACING BETWEEN PARALLEL PIPE RUNS SHALL BE PIPE DIA./2 BUT NO LESS THAN 12", OR 36" FOR PIPE DIAMETERS 72" AND LARGER.
- CONTACT YOUR CONTECH REPRESENTATIVE FOR NONSTANDARD SPACING (TABLE C12.6.7-1).

**TYPICAL BACKFILL DETAIL
NOT TO SCALE**

C:\USERS\JAMES PEREZ\ONE DRIVE - THE QUIKRETE COMPANIES\DYNAMIC365 - CONTECH - PROJECTS\900486\900486-010-CMP-CON-A.DWG 3/6/2026 3:05 PM

The design and information shown on this drawing is provided as a service to the project owner, engineer and contractor by Contech Engineered Solutions LLC ("Contech"). Neither this drawing, nor any part thereof, may be used, reproduced or modified in any manner without the prior written consent of Contech. Failure to comply is done at the user's own risk and Contech expressly disclaims any liability or responsibility for such use.

If discrepancies between the supplied information upon which the drawing is based and actual field conditions are encountered as site work progresses, these discrepancies must be reported to Contech immediately for re-evaluation of the design. Contech accepts no liability for designs based on missing, incomplete or inaccurate information supplied by others.

MARK	DATE	REVISION DESCRIPTION	BY

CONTECH
ENGINEERED SOLUTIONS LLC
www.ContechES.com
9100 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CONTECH
PIPE SOLUTIONS
CONTECH CONTRACT DRAWING

HEL-COR - 900486-010
ODOT SUM-303-3.216
LANCASTER, OH
SITE DESIGNATION: CULVERT

PROJECT No.: 900486	SEQ. No.: 010	DATE: 3/6/2026
DESIGNED:	DRAWN: JAP	
CHECKED:	APPROVED:	
SHEET NO.: p2 OF 3		

C:\USERS\JAMES PEREZ\ONE DRIVE - THE QUIKRETE COMPANIES\DYNAMIC\3685 - CONTECH - PROJECT\900486\900486-010-CMP-CON-A.DWG 3/6/2026 3:05 PM

NOTES:

- 1.) ALL ELEVATIONS, DIMENSIONS AND LOCATIONS OF RISERS AND INLETS, SHALL BE VERIFIED BY THE ENGINEER PRIOR TO RELEASING FOR FABRICATION.
- 2.) IN SITUATIONS WHERE A FINE-GRAINED BACKFILL MATERIAL IS USED ADJACENT TO THE PIPE SYSTEM, AND ESPECIALLY IN SITUATIONS INVOLVING HIGH GROUNDWATER TABLES, CONSIDERATION SHOULD BE GIVEN TO THE USE OF GASKETED PIPE JOINTS. AT THE VERY LEAST, THE PIPE JOINTS SHOULD BE WRAPPED IN A SUITABLE, NON-WOVEN GEOTEXTILE FABRIC TO PREVENT INFILTRATION OF FINES INTO THE PIPE SYSTEM.
- 3.) ALL FITTINGS AND REINFORCEMENT COMPLY WITH ASTM A998.
- 4.) SYSTEM MADE FROM: 90" Ø, 5"X1", GALV, 10GA., HEL-COR.
- 5.) MINIMUM COVER HEIGHT FOR PIPE DESCRIBED IN NOTE #4 IS 12".
- 6.) CONSIDERATIONS FOR CONSTRUCTION EQUIPMENT LOADS MUST BE TAKEN INTO ACCOUNT. SEE DETAIL ON THIS PAGE.
- 7.) ALL PIPE DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCES.
- 8.) ALL RISERS AND STUBS ARE 2 2/3" X 1/2" CORRUGATION AND 16 GAGE, UNLESS OTHERWISE NOTED.

INSTALLATION SPECIFICATION

PRE-CONSTRUCTION MEETING

PRIOR TO INSTALLATION OF THE DRAINAGE SYSTEM A PRE-CONSTRUCTION MEETING SHALL BE CONDUCTED. THOSE REQUIRED TO ATTEND ARE THE SUPPLIER OF THE DRAINAGE SYSTEM, THE GENERAL CONTRACTOR, SUB CONTRACTORS AND THE ENGINEER.

FOUNDATION/BEDDING PREPARATION

PRIOR TO PLACING THE BEDDING, THE FOUNDATION MUST BE CONSTRUCTED TO A UNIFORM AND STABLE GRADE. IN THE EVENT THAT UNSUITABLE FOUNDATION MATERIALS ARE ENCOUNTERED DURING EXCAVATION, THEY SHALL BE REMOVED AND BROUGHT BACK TO THE GRADE WITH A FILL MATERIAL AS APPROVED BY THE ENGINEER. ONCE THE FOUNDATION PREPARATION IS COMPLETE, THE 4 INCHES OF A WELL-GRADED GRANULAR MATERIAL SHALL BE PLACED AS THE BEDDING.

BACKFILL

THE BACKFILL SHALL BE AN A1, A2 OR A3 GRANULAR FILL PER AASHTO M-145 OR A WELL-GRADED GRANULAR FILL AS APPROVED BY THE ENGINEER (SEE INSTALLATION GUIDELINES). THE MATERIAL SHALL BE PLACED IN 8-INCH LOOSE LIFTS AND COMPACTED TO 90% AASHTO T99 STANDARD PROCTOR DENSITY. WHEN PLACING THE FIRST LIFTS OF BACKFILL IT IS IMPORTANT TO MAKE SURE THAT THE BACKFILL IS PROPERLY COMPACTED UNDER AND AROUND THE PIPE HAUNCHES. BACKFILL SHALL BE PLACED SUCH THAT THERE IS NO MORE THAN A TWO LIFT DIFFERENTIAL BETWEEN ANY OF THE PIPES AT ANY TIME DURING THE BACKFILL PROCESS. THE BACKFILL SHALL BE ADVANCED ALONG THE LENGTH OF THE DRAINAGE SYSTEM AT THE SAME RATE TO AVOID DIFFERENTIAL LOADING ON THE PIPE.

OTHER ALTERNATE BACKFILL MATERIAL MAY BE ALLOWED DEPENDING ON SITE SPECIFIC CONDITIONS. REFER TO TYPICAL BACKFILL DETAIL WITHIN THIS SET OF PLANS FOR TYPE OF MATERIAL REQUIRED.

MINIMUM COVER

BACKFILL SHALL BE PLACED TO THE PROPER ELEVATION OVER THE SYSTEM AS OUTLINED IN THE PLANS. MINIMUM COVER FOR CONSTRUCTION LOADING NEEDS TO BE DETERMINED BASED ON THE TYPE OF EQUIPMENT THAT IS PLANNED FOR CONSTRUCTION. PROPER COVER FOR CONSTRUCTION EQUIPMENT SHALL BE DETERMINED PRIOR TO THE PRE-CONSTRUCTION MEETING BY THE ENGINEER.

SPECIFICATION FOR CORRUGATED STEEL PIPE - GALVANIZED STEEL:

SCOPE

THIS SPECIFICATION COVERS THE MANUFACTURE AND INSTALLATION OF THE GALVANIZED CORRUGATED STEEL PIPE(CSP) DETAILED IN THE PROJECT PLANS.

MATERIALS

THE GALVANIZED STEEL COILS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M 218 OR ASTM A 929.

PIPE

THE CSP SHALL BE MANUFACTURED IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF AASHTO M-36 OR ASTM A 760. THE PIPE SIZES, GAGES AND CORRUGATIONS SHALL BE AS SHOWN ON THE PROJECT PLANS.

ALL FABRICATION OF THE PRODUCT SHALL OCCUR WITHIN THE UNITED STATES.

HANDLING AND ASSEMBLY

SHALL BE IN ACCORDANCE WITH NCSPAS (NATIONAL CORRUGATED STEEL PIPE ASSOCIATION) RECOMMENDATIONS.

INSTALLATION

SHALL BE IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SECTION 26, DIVISION II OR ASTM A 798 AND IN CONFORMANCE WITH THE PROJECT PLANS AND SPECIFICATIONS. IF THERE ARE ANY INCONSISTENCIES OR CONFLICTS, THE CONTRACTOR MUST BRING THEM TO THE ATTENTION OF THE SITE ENGINEER.

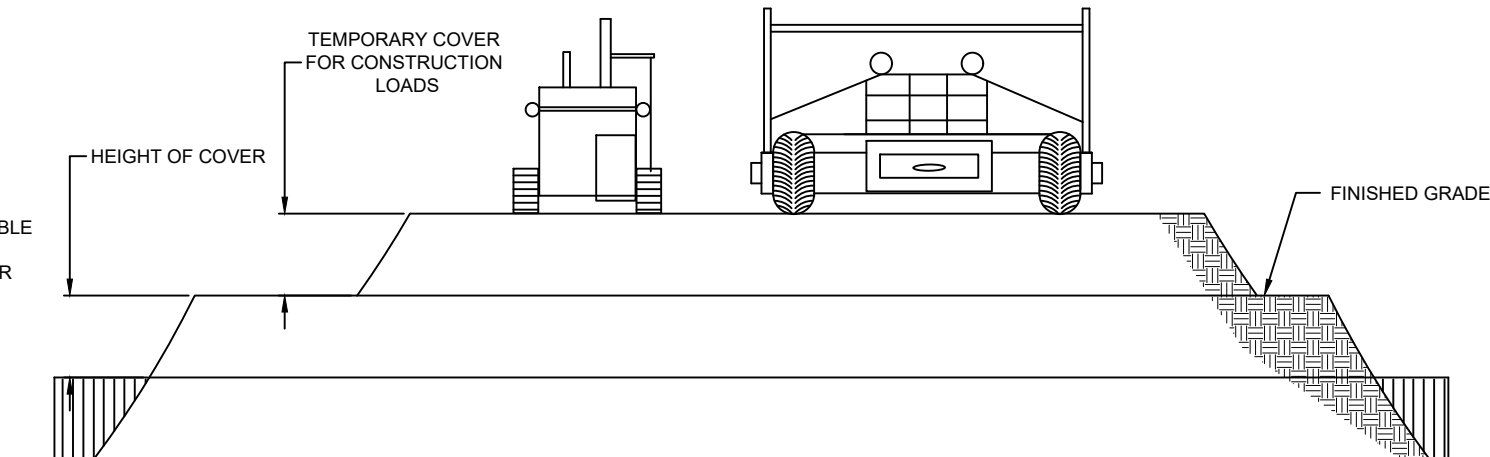
IT IS RESPONSIBILITY OF THE CONTRACTORS TO FOLLOW OSHA GUIDELINES FOR SAFE PRACTICES.

CONSTRUCTION LOADS

CONSTRUCTION LOADS MAY BE HIGHER THAT FINAL LOADS. FOLLOW THE MANUFACTURERS OR NCSPA'S GUIDELINES.

MATERIAL SPECIFICATION

SCALE: N.T.S.



CONSTRUCTION LOADS:

FOR TEMPORARY CONSTRUCTION VEHICLE LOADS, AN EXTRA AMOUNT OF COMPACTED COVER MAY BE REQUIRED OVER THE TOP OF THE PIPE. THE HEIGHT-OF-COVER SHALL MEET THE MINIMUM REQUIREMENTS SHOWN IN THE TABLE BELOW. THE USE OF HEAVY CONSTRUCTION EQUIPMENT NECESSITATES GREATER PROTECTION FOR THE PIPE THAN FINISHED GRADE COVER MINIMUMS FOR NORMAL HIGHWAY TRAFFIC.

DIAMETERS	AXLE LOADS (KIPS)			
	18-50	50-75	75-110	110-150
MINIMUM COVER (FT)				
15"-42"	2.0	2.5	3.0	3.0
48"-72"	3.0	3.0	3.5	4.0
78"-120"	3.0	3.5	4.0	4.0
126"-144"	3.5	4.0	4.5	4.5

**MINIMUM COVER MAY VARY, DEPENDING ON LOCAL CONDITIONS. THE CONTRACTOR MUST PROVIDE THE ADDITIONAL COVER REQUIRED TO AVOID DAMAGE TO THE PIPE. MINIMUM COVER IS MEASURED FROM THE TOP OF THE PIPE TO THE TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE.*

CONSTRUCTION LOADING DIAGRAM

N.T.S

900486-010-CMP-CON-A

The design and information shown on this drawing is provided as a service to the project owner, engineer and contractor by Contech Engineered Solutions LLC ("Contech"). Neither this drawing, nor any part thereof, may be used, reproduced or modified in any manner without the prior written consent of Contech. Failure to comply is done at the user's own risk and Contech expressly disclaims any liability or responsibility for such use.

If discrepancies between the supplied information upon which the drawing is based and actual field conditions are encountered as site work progresses, these discrepancies must be reported to Contech immediately for re-evaluation of the design. Contech accepts no liability for designs based on missing, incomplete or inaccurate information supplied by others.

MARK	DATE	REVISION DESCRIPTION	BY

CONTECH
ENGINEERED SOLUTIONS LLC
www.ContechES.com
9100 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CONTECH
PIPE SOLUTIONS
CONTECH CONTRACT DRAWING

HEL-COR - 900486-010
ODOT SUM-303-3.216
LANCASTER, OH
SITE DESIGNATION: CULVERT

PROJECT No.: 900486	SEQ. No.: 010	DATE: 3/6/2026
DESIGNED:	DRAWN: JAP	
CHECKED:	APPROVED:	
SHEET NO.: p3 OF 3		