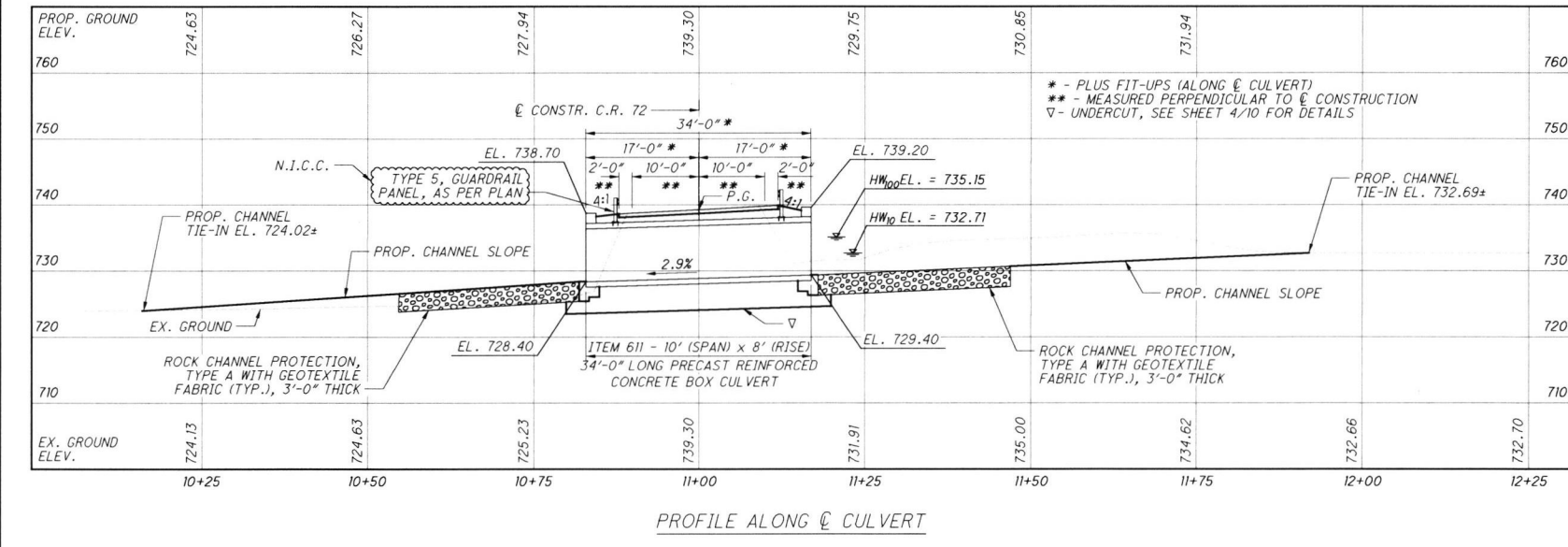
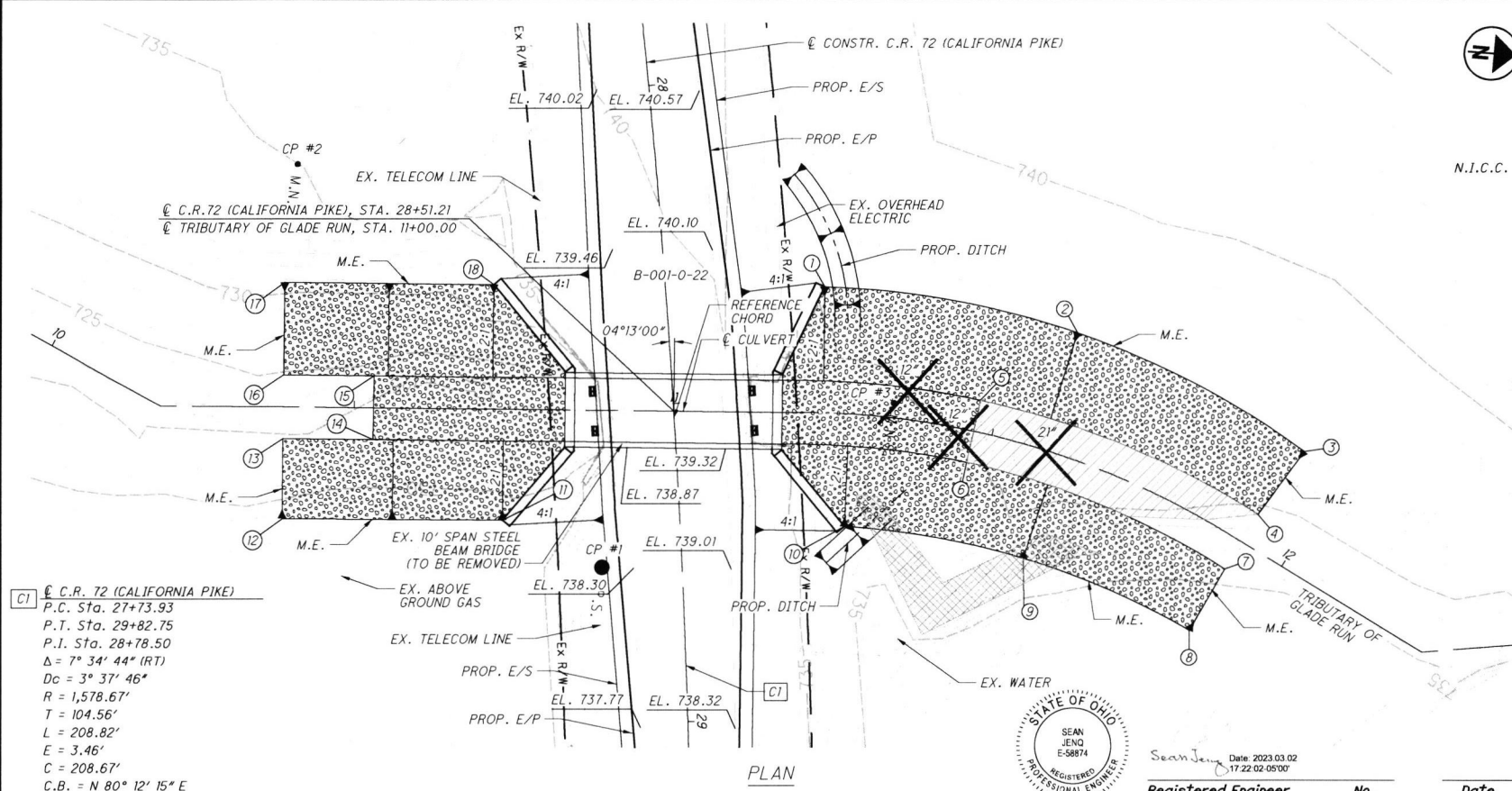


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**LEGEND:**  
 ROCK CHANNEL PROTECTION  
 EXCAVATION  
 TREE REMOVAL  
 EMBANKMENT  
N.I.C.C. - NOT IN CONSTRUCTION CONTRACT  
E/P - EDGE OF PAVEMENT DND - DO NOT DISTURB  
E/S - EDGE OF SHOULDER M.E. - MATCH EXISTING

**NOTES:**  
1. EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS-SECTIONS.  
2. THE EXTENTS OF GUARDRAIL AND PAVEMENT SHOWN ARE SCHEMATIC ONLY AND SHALL BE FINALIZED BY THE COUNTY.  
3. ALL GRADING SLOPES ARE TO BE DETERMINED IN THE FIELD.  
4. SEE SHEET 270 FOR PAVEMENT BUILD-UP OVER THE PROPOSED BOX CULVERT.  
5. SEE SHEET 370 FOR R.C.P. LOCATION TABLE.  
6. BACKFILL OF THE BOX CULVERT SHALL BE DONE BY COUNTY HIGHWAY FORCES.

SURVEY CONTROL POINTS			
CONTROL POINT	NORTHING	EASTING	ELEV.
CP #1 (I.P.S.)	349982.102	1870616.014	737.88
CP #2 (M.N.S.)	349926.760	1870559.228	735.51
CP #3 (M.N.S.)	350024.190	1870584.668	734.63

**TRAFFIC DATA**  
EXISTING A.D.T. (2022) < 400  
DESIGN YEAR A.D.T. (2042) < 400  
CURRENT AVERAGE DAILY TRUCK TRAFFIC = 2%

**HYDRAULIC DATA**  
DRAINAGE AREA: 0.28 SQUARE MILES  
EXISTING WATERWAY AREA: 98+ SQ. FT.  
PROPOSED WATERWAY AREA: 78 SQ. FT.  
 $Q_{100} = 158$  C.F.S.  $Q_{100} = 363$  C.F.S.  
 $V_{10} = 12.62$  FT./S.  $V_{100} = 15.19$  FT./S.  
 $HW_{10} = 732.71$   $HW_{100} = 735.15$   
 $HW_{10}$  CLEARS LOW EDGE OF THE PAVEMENT (738.66) BY 5.95 FT.

**EXISTING STRUCTURE**  
TYPE: 10' SINGLE-SPAN STEEL BEAM BRIDGE  
ROADWAY: 20'-0"±  
ALIGNMENT: TANGENT  
SKEW: 4"±  
LOADING: UNKNOWN  
APPROACH SLABS: NONE  
WEARING SURFACE: ASPHALT CONCRETE  
DISPOSITION: TO BE REPLACED

**PROPOSED STRUCTURE**  
TYPE: 10' (CLEAR SPAN) X 8' (RISE) PRECAST REINFORCED CONCRETE BOX CULVERT, TYPE A  
ROADWAY: 24'-0" F/F GUARDRAIL  
SPAN: 10'-0"± (ALONG C.R. 72)  
ALIGNMENT: SEE CURVE DATA  
SKEW: 4"± L.F. W.R.T. REFERENCE CHORD  
LOADING: HL-93 & 60 PSF FUTURE WEARING SURFACE  
CROWN: MATCH EXISTING  
APPROACH SLABS: NONE  
WEARING SURFACE: ASPHALT CONCRETE (3" MIN)  
COORDINATES:  
LATITUDE: N 39°57'37.52" LONGITUDE: W 82°50'39.58"

**PIKE COUNTY**  
STA. 28+51.21  
**CULVERT PLAN AND PROFILE**  
BRIDGE NO. PIK-CR72-0054  
OVER TRIBUTARY OF GLADE RUN  
**PIK-CR72-00-54**  
**CALIFORNIA PIKE**  
1/10  
1/10

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GENERAL NOTES

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO THE LRFD BRIDGE DESIGN SPECIFICATIONS\* ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2017, AND THE ODOT BRIDGE DESIGN MANUAL, 2020.

DESIGN LOADING:

HL-93  
FUTURE WEARING SURFACE (FWS) OF 0.060 KSF

DESIGN DATA:

CAST-IN-PLACE STRUCTURES  
CONCRETE CLASS QC1 - COMPRESSIVE STRENGTH 4.0 KSI  
REINFORCING STEEL - MINIMUM YIELD STRENGTH 60 KSI  
PRECAST STRUCTURES: FOR BOX AND PIPE CULVERTS SEE CMS SECTION 611.

FOUNDATION BEARING RESISTANCE:

WINGWALL AND CULVERT FOOTINGS, AS DESIGNED, PRODUCE A MAXIMUM SERVICE LOAD PRESSURE OF 1.73 KIPS PER SQUARE FOOT AND A MAXIMUM STRENGTH LOAD PRESSURE OF 2.18 KIPS PER SQUARE FOOT. THE FACTORED BEARING RESISTANCE IS 2.47 KIPS PER SQUARE FOOT.

ITEM 202 - STRUCTURE REMOVED, AS PER PLAN:

WHEN NO LONGER NEEDED TO MAINTAIN TRAFFIC, THE EXISTING BRIDGE SHALL BE REMOVED UPON RECEIVING PERMISSION FROM THE ENGINEER.

ITEM 503 - UNCLASSIFIED EXCAVATION, AS PER PLAN (INCLUDING CULVERT AND FOOTING UNDERCUT):

EXCAVATION LIMITS FOR THE PROPOSED STRUCTURE SHALL BE AS DEFINED IN 503.10. EXCAVATION OUTSIDE THESE LIMITS NECESSARY TO REMOVE THE EXISTING STRUCTURE SHALL BE INCLUDED IN 202 FOR PAYMENT.

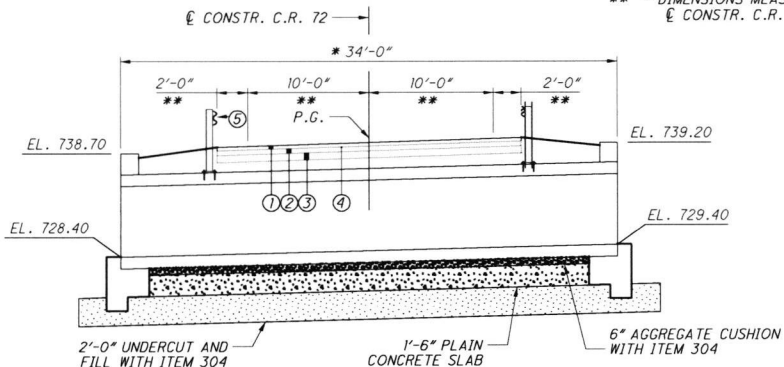
THIS ITEM ALSO INCLUDES THE UNDERCUT EXCAVATION UNDER CULVERT, FOOTINGS, AND CHANNEL EXCAVATION AREAS AS SPECIFIED ON THE SITE PLAN.

ITEM 511 - CONCRETE FOR STRUCTURES:

ALL EXPOSED CONCRETE EDGES SHALL BE CHAMFERED. PROVIDE A 3/4" (20mm) BEVEL ON ALL EXPOSED EDGES USING A TRIANGULAR STRIP BUILT INTO THE FORMS, AS PER CMS 508.03.

LEGEND:

- ① ITEM 441 - 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448) PG64-22
- ② ITEM 441 - 1 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448), PG64-22
- ③ ITEM 301 - 4" ASPHALT CONCRETE BASE, PG64-22 (449)
- ④ ITEM 407 - TACK COAT APPLIED @ 0.075 GAL./SQ. YD.
- ⑤ ITEM 606 - TYPE 5 GUARDRAIL PANEL



CULVERT SECTION ALONG CULVERT

WINGWALL AND HEADWALL CONCRETE:

THE WINGWALL AND HEADWALL CONCRETE SHALL BE POURED SEPARATELY. PROVIDE 24 HOURS MINIMUM BETWEEN THE WINGWALL AND HEADWALL CONCRETE POURS.

ITEM 611 - CONDUIT, MISC.: 10' (SPAN) X 8' (RISE) CONDUIT, TYPE A, 706.05, AS PER PLAN

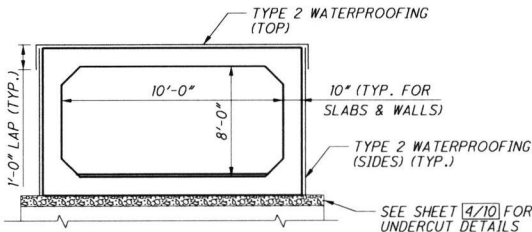
ALL REQUIREMENTS OF 706.05 AND ASTM C 1577 SHALL BE MET. INVENTORY LOAD RATING FACTOR PER HL-93 LOADING USING BrR OR BRASS-CULVERT SOFTWARE SHALL BE HIGHER THAN 1.10. THIS ITEM SHALL INCLUDE MECHANICAL CONNECTORS SPECIFIED IN THE PLANS.

N.I.C.C.

BACK FILLING: MATERIALS AND INSTALLATION PROCEDURE SHALL BE IN ACCORDANCE WITH 611.06.

PAYMENT FOR ALL NECESSARY LABOR, EQUIPMENT AND MATERIALS NEEDED TO COMPLETE THE ABOVE WORK SHALL BE INCLUDED IN THE UNIT BID FOR ITEM 611 - CONDUIT, MISC.: 10' (SPAN) X 8' (RISE) CONDUIT, TYPE A, 706.05, AS PER PLAN.

THE CONTRACTOR SHALL COORDINATE WITH THE CULVERT MANUFACTURER REGARDING CULVERT DIMENSIONS ON SHOP DRAWINGS, SUCH AS CULVERT UNIT LENGTHS, SLAB THICKNESS, AND WALL THICKNESS. THE CONTRACTOR SHALL SUBMIT BR100 LOAD RATING FORM PER ODOT BRIDGE DESIGN MANUAL REQUIREMENTS ALONG WITH THE SHOP DRAWINGS TO THE ENGINEER FOR REVIEW AND APPROVAL. THE CULVERT UNIT LENGTHS ON THE PRECAST UNIT PLACEMENT DIAGRAM IS FOR REFERENCE ONLY. THE CONTRACTOR SHALL ALSO COORDINATE WITH THE MANUFACTURER ABOUT AVAILABLE LAY LENGTHS FOR THE PROJECT AND AVOID PLACING GUARDRAIL POST ANCHOR PLATES DIRECTLY ON TOP OF CULVERT SECTION JOINT.



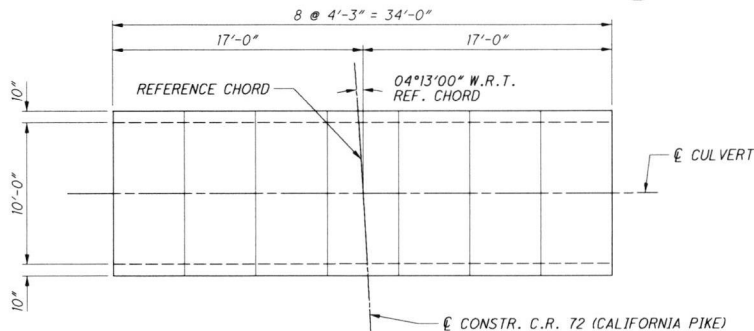
BOX CULVERT WATERPROOFING

- \* - DIMENSIONS MEASURED ALONG CULVERT PLUS FIT-UPS
- \*\* - DIMENSIONS MEASURED PERPENDICULAR TO CULVERT (CALIFORNIA PIKE)

ESTIMATED QUANTITIES					
ITEM	ITEM EXT	TOTAL	UNIT	DESCRIPTION	SEE SHEET
103	05000	LS		PREMIUM FOR CONTRACT PERFORMANCE BOND AND FOR PAYMENT BOND	
201	11000	LS		CLEARING AND GRUBBING	
202	11001	LS		STRUCTURE REMOVED, AS PER PLAN	2/10
304	20001	I20	CY	AGGREGATE BASE, AS PER PLAN	4/10
503	11100	LS		COFFERDAMS AND EXCAVATION BRACING	
503	21301	LS		UNCLASSIFIED EXCAVATION, AS PER PLAN (INCLUDING CULVERT AND FOOTING UNDERCUT)	2/10
509	10000	7793	LB	EPOXY COATED STEEL REINFORCEMENT	
511	46010	32	CY	CLASS QC1 CONCRETE, RETAINING/WINGWALL NOT INCLUDING FOOTING	
511	46510	54	CY	CLASS QC1 CONCRETE, FOOTING	
511	46610	2	CY	CLASS QC1 CONCRETE, HEADWALL	
511	53010	23	CY	CLASS QC1 CONCRETE, MISC.: UNDERCUT PLAIN CONCRETE SLAB	
512	10100	57	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
512	33000	132	SY	TYPE 2 WATERPROOFING	
516	13600	66	SF	1" PREFORMED EXPANSION JOINT FILLER	
601	32004	396	CY	ROCK CHANNEL PROTECTION, TYPE A WITH GEOTEXTILE FABRIC, 3'-0" THICK	
606	17901	4	EACH	GUARDRAIL POST, AS PER PLAN	10/10
611	97400	34	FT	CONDUIT, MISC.: 10' SPAN x 8' RISE CONDUIT, TYPE A, 706.05, AS PER PLAN (MAX. D.E.C. = 1'-10", MIN. D.E.C. = 1'-0")	2/10
614	11000	LS		MAINTAINING TRAFFIC	
623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING ***	
624	10000	LS		MOBILIZATION	

D.E.C. - DESIGN EARTH COVER

\*\*\* - LAYOUT FOR BOX CULVERT IS TO BE ACCOMPLISHED BY THE CONTRACTOR UTILIZING COORDINATES PROVIDED WITHIN THESE PROJECT PLANS.



PRECAST UNIT PLACEMENT

GENERAL NOTES AND ESTIMATED QUANTITIES

PIK - CR72-00.54  
CALIFORNIA PIKE

2 / 10

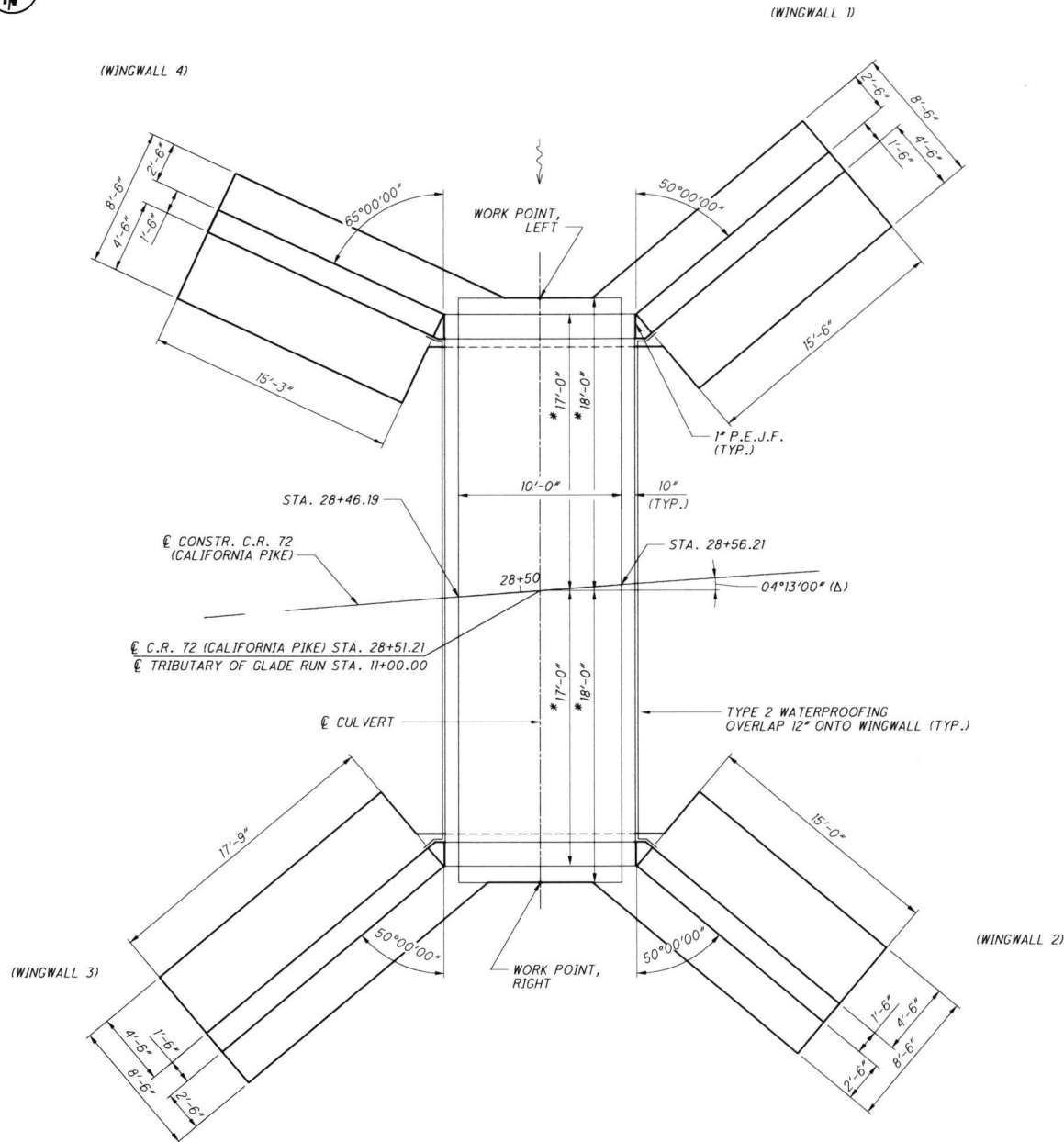
2 / 10

DESIGN AGENCY  
ms consultants, inc.  
2221 Schrock Road  
Columbus, Ohio 43229

DATE  
02/03/23  
REVIEWED  
YSJ  
DRAWN  
ATM  
DESIGNED  
ATM/DBL  
CHECKED  
YSJ

STRUCTURE FILE NUMBER  
BRIDGE NO. PIK-CR72-0054  
OVER TRIBUTARY OF GLADE RUN

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CULVERT AND WINGWALL LAYOUT

\* - PLUS FIT-UPS  
Δ - W.R.T. TO REFERENCE CHORD

ROCK CHANNEL PROTECTION LOCATION TABLE		
	NORTHING	EASTING
1	350011.15	1870567.96
2	350051.14	1870570.14
3	350088.67	1870584.16
4	350082.75	1870594.90
5	350037.44	1870582.52
6	350036.55	1870592.48
7	350078.66	1870604.02
8	350074.37	1870646.29
9	350047.20	1870606.30
10	350018.93	1870604.84
11	349965.64	1870610.58
12	349931.39	1870614.69
13	349929.92	1870602.20
14	349943.99	1870602.20
15	349942.85	1870590.65
16	349928.78	1870592.27
17	349927.12	1870577.85
18	1870574.11	1870575.40

WORK POINTS				
LOCATION	NORTHING	EASTING	STATION	OFFSET
LEFT	350008.00	1870588.20	28+52.52	17'-11 <sup>3</sup> / <sub>8</sub> " LT.
RIGHT	349972.23	1870592.31	28+49.87	17'-11 <sup>3</sup> / <sub>8</sub> " RT.

CULVERT AND FOOTING LAYOUT

BRIDGE NO. PIK-CR72-0054  
OVER TRIBUTARY OF GLADE RUN

PIK-CR72-00.54  
CALIFORNIA PIKE

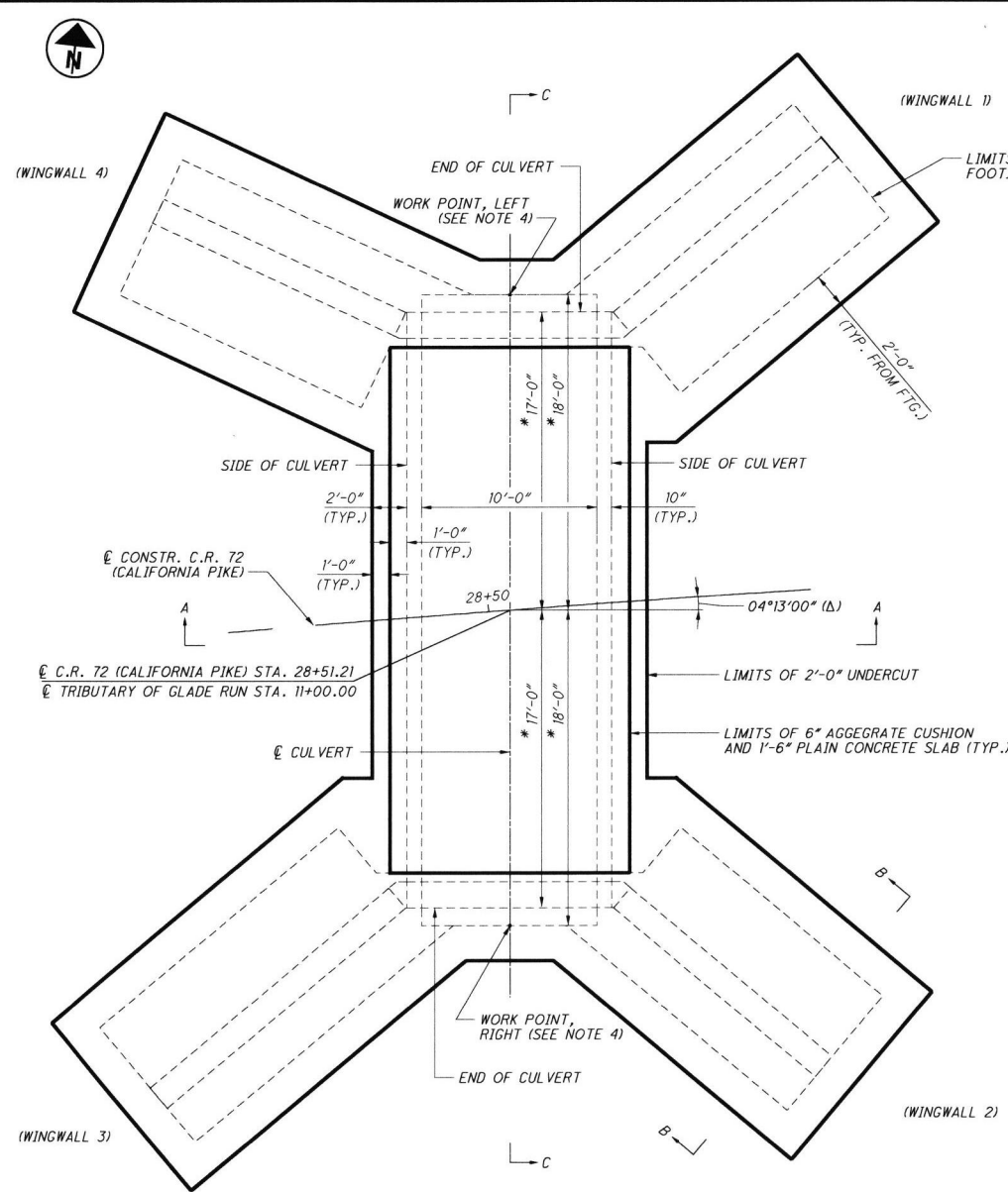
3 / 10

3 / 10

DESIGN AGENCY  
**ms consultants, inc.**  
2221 Schrock Road  
Columbus, Ohio 43229

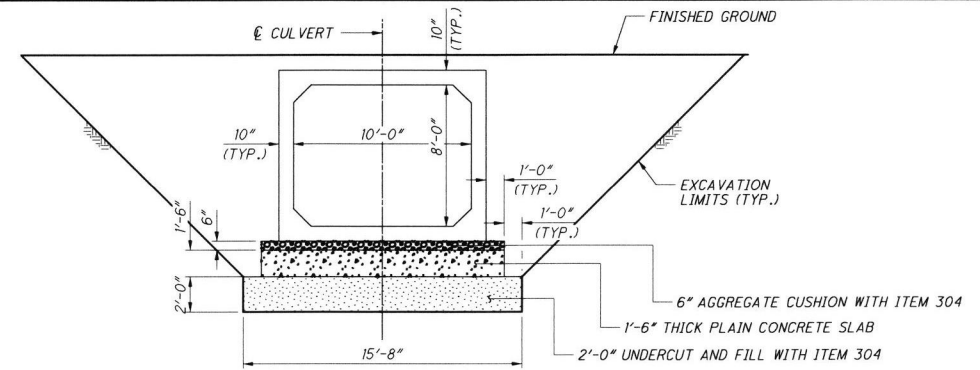
DESIGNED	DRAWN	REVIEWED	DATE
ATM/DBL	DBL	YSJ	02/03/23
CHECKED	REVISED	STRUCTURE TITLE NUMBER	
YSJ			

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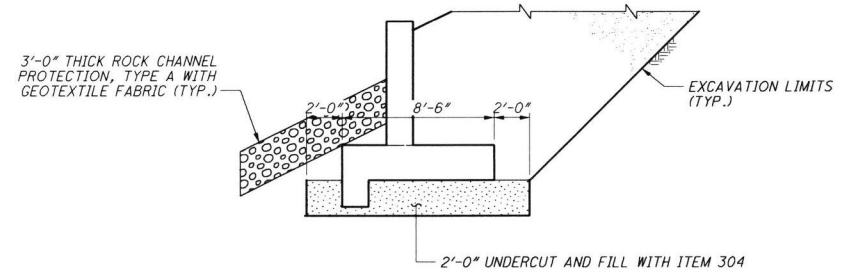


CULVERT AND FOOTING UNDERCUT PLAN

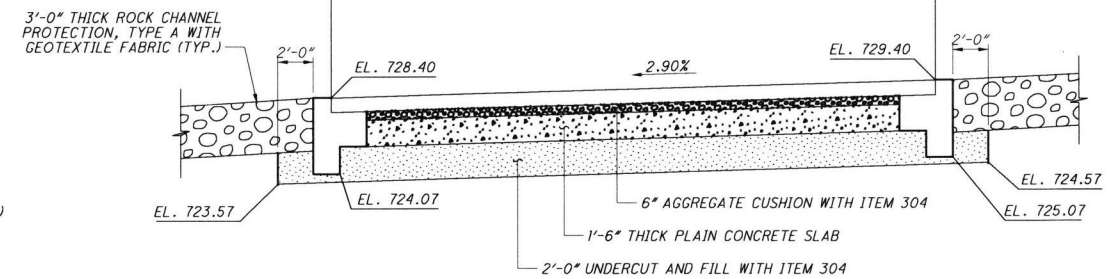
\* - PLUS FIT-UPS  
Δ - W.R.T. REFERENCE CHORD



SECTION A-A



SECTION B-B



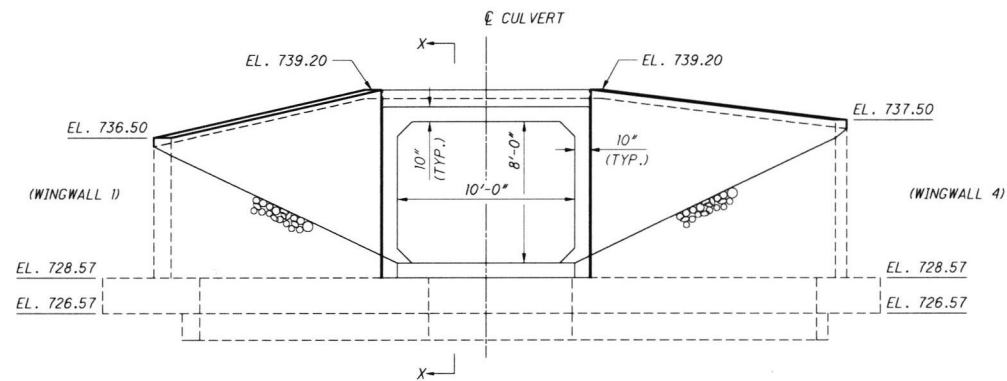
SECTION C-C

NOTES:

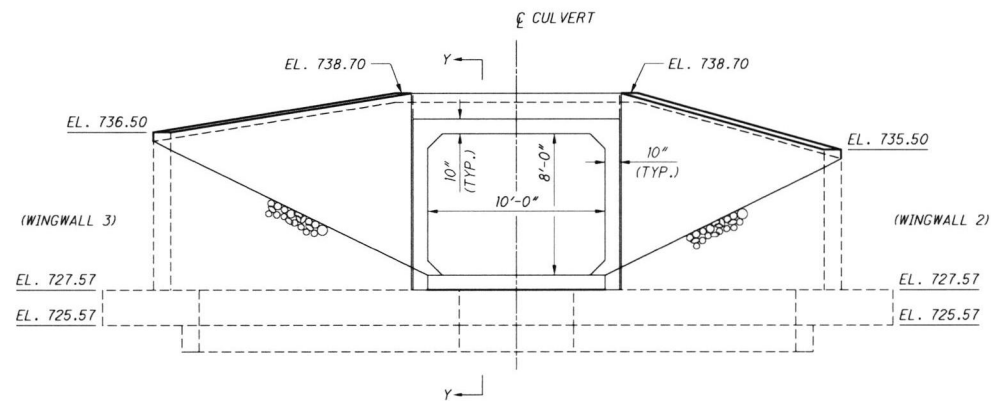
- REMOVAL OF UNSUITABLE SUBGRADE: EXCAVATE EXISTING SOIL 2'-0" BEYOND THE LIMITS OF CULVERT AND FOOTINGS AND TO A DEPTH OF 2 FEET BELOW THE BOTTOM OF FOOTINGS (EL. 724.57 AT INLET AND EL. 723.57 AT OUTLET).
- REPLACE UNDERCUT, AS SHOWN IN SECTION VIEWS FROM BOTTOM UP RESPECTIVELY, WITH 2'-0" OF COMPACTED AGGREGATE MATERIAL (ITEM 304), 1'-6" THICK OF PLAIN CONCRETE SLAB, AND 6" OF COMPACTED AGGREGATE CUSHION (ITEM 304).  
6" COMPACTED AGGREGATE CUSHION AND 2'-0" UNDERCUT FILL TO BE INCLUDED WITH ITEM 304 - AGGREGATE BASE, AS PER PLAN FOR PAYMENT.  
1'-6" THICK PLAIN CONCRETE SLAB TO BE INCLUDED WITH ITEM 511 - CONCRETE MISC.: CLASS QC1 CONCRETE WITH QC/QA, UNDERCUT PLAIN CONCRETE SLAB FOR PAYMENT.
- DISPOSE EXCAVATED MATERIAL PER CMS 105.16 AND 105.17.
- SEE SHEET 3/10 FOR WORK POINT INFORMATION.

DESIGN AGENCY	ms consultants, inc.
DATE	02/03/23
REVIEWED	YJS
DRAWN	DBL
DESIGNED	ATM/DBL
CHECKED	YJS
STRUCTURE FILE NUMBER	2221 Schrock Road Columbus, Ohio 43229
CULVERT AND FOOTING UNDERCUT DETAILS	BRIDGE NO. PIK-CR72-0054 OVER TRIBUTARY OF GLADE RUN
PIK - CR72-00.54	CALIFORNIA PIKE
4	10
4	10

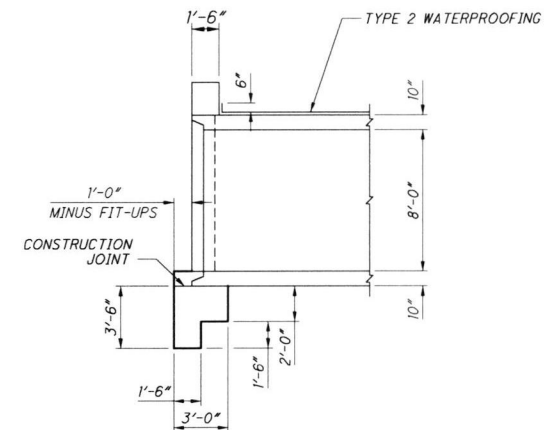
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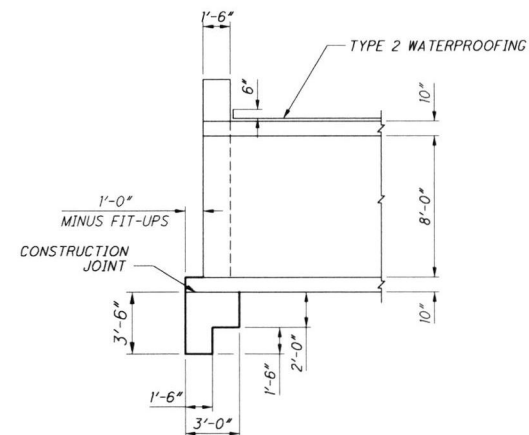
INLET ELEVATION  
FLOWLINE ELEVATION: EL. 729.40



OUTLET ELEVATION  
FLOWLINE ELEVATION: EL. 728.40



SECTION X-X

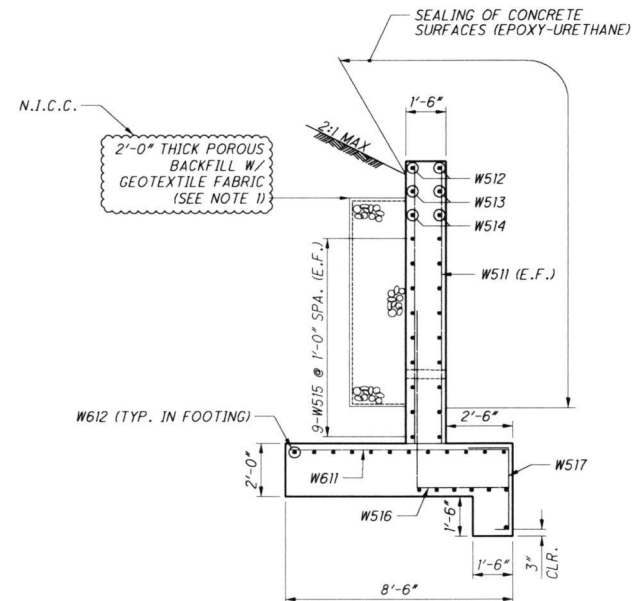


SECTION Y-Y  
(NO TONGUE AT OUTLET)

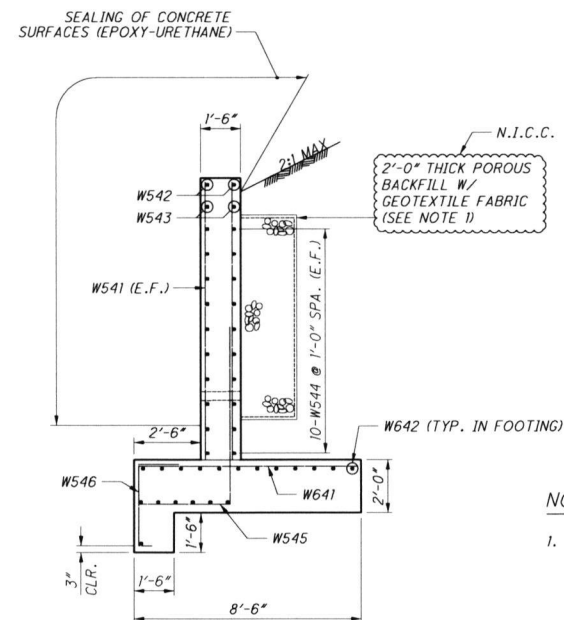
NOTES:

1. FOR UNDERCUT DETAILS, SEE SHEET 4/10.

DESIGN AGENCY	ms consultants, inc.
DATE	02/03/23
REVIEWED	YSJ
DRAWN	DBL
DESIGNED	ATM/DBL
CHECKED	YSJ
STRUCTURE FILE NUMBER	
INLET AND OUTLET VIEWS	PIK-CR72-00.54
BRIDGE NO. PIK-CR72-0054	CALIFORNIA PIKE
OVER TRIBUTARY OF GLADE RUN	
5	10
5	10



SECTION A-A

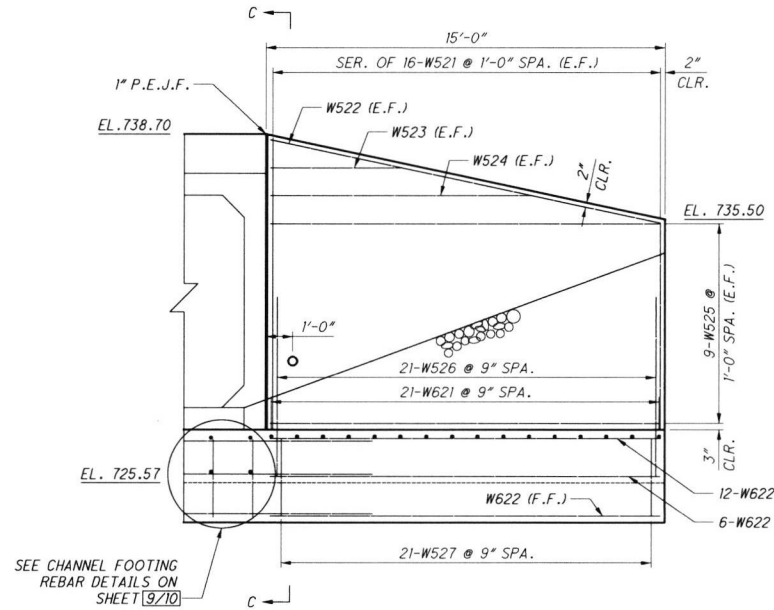


SECTION B-B

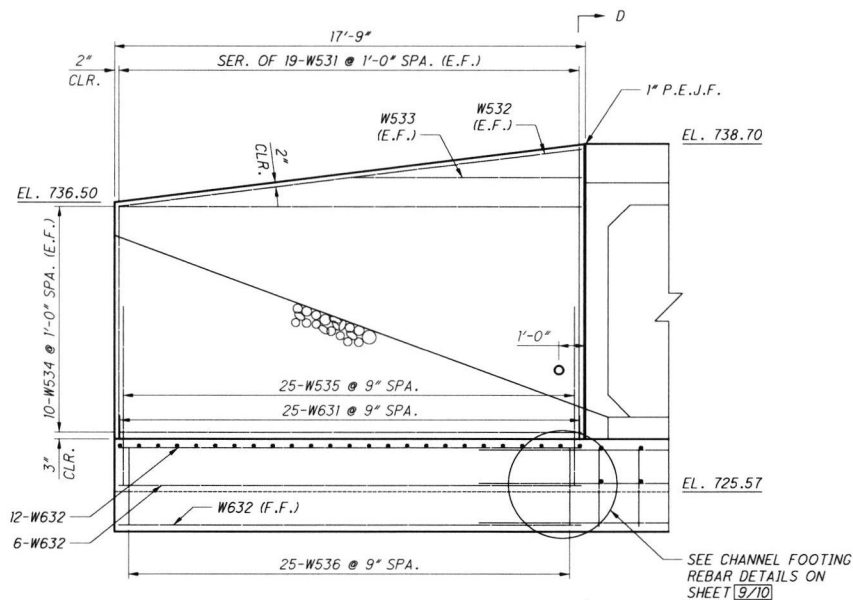
1. ITEM 518, POROUS BACKFILL WITH GEOTEXTILE FABRIC, AS PER PLAN 2'-0" THICK SHALL BE PLACED BETWEEN THE WINGWALLS ONLY AND SHALL EXTEND 2' BELOW THE EMBANKMENT SURFACE. GEOTEXTILE FABRIC SHALL BE PLACED BETWEEN THE POROUS BACKFILL AND REPLACED EXCAVATION ADJACENT TO THE STRUCTURE. IT SHALL TURN UNDER THE BOTTOM OF THE POROUS BACKFILL AND RETURN 6" ABOVE THE TOP ELEVATION OF THE WEEPHOLE.
2. 1" PREFORMED EXPANSION JOINT FILLER SHALL BE EXTENDED FROM TOP OF FOOTING TO TOP OF WALL.



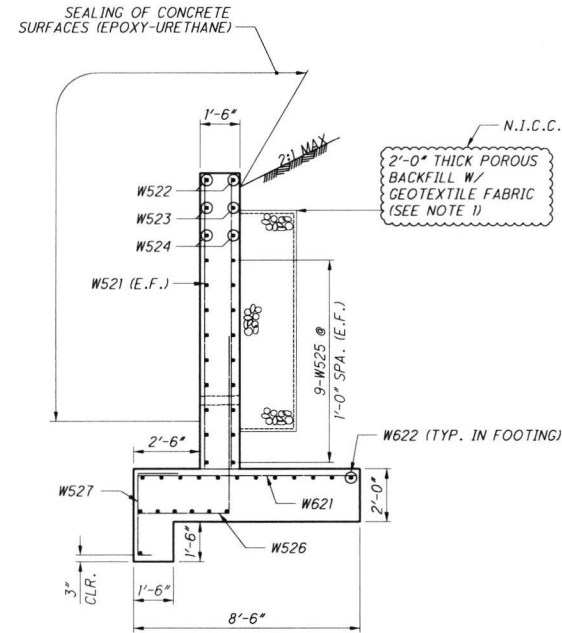
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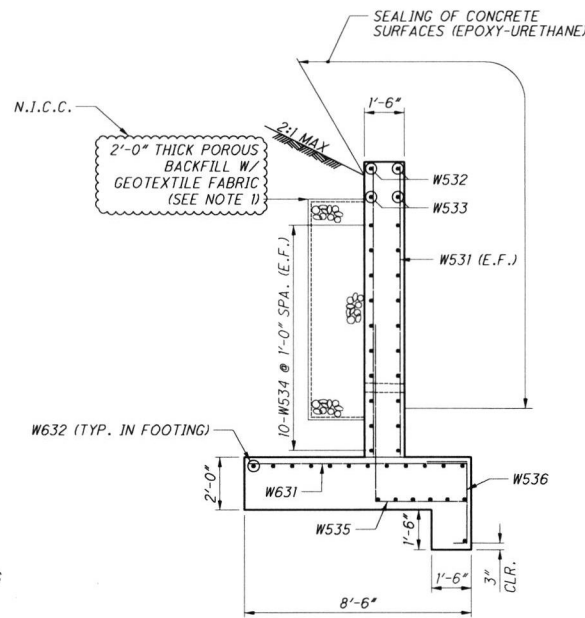
WINGWALL 2 ELEVATION  
4" DIA. WEEPHOLE FLOWLINE EL. = 730.40



WINGWALL 3 ELEVATION  
4" DIA. WEEPHOLE FLOWLINE EL. = 730.40



SECTION C-C

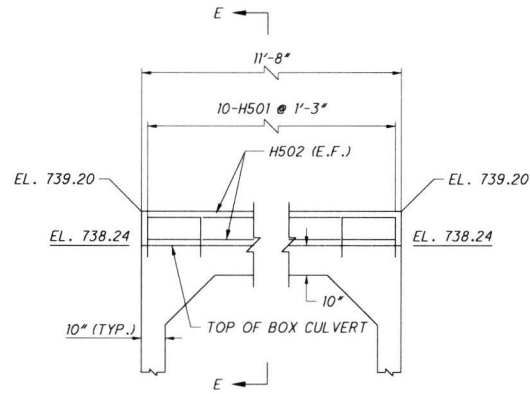


SECTION D-D

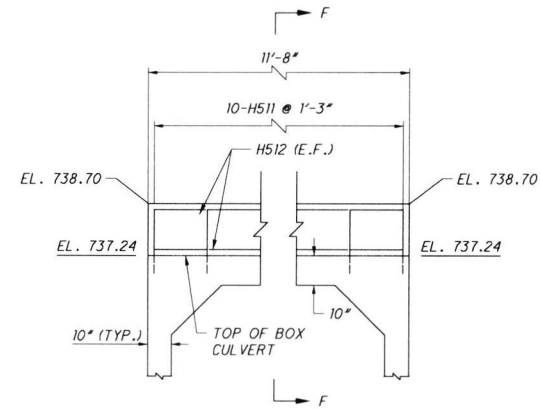
NOTES:

- ITEM 518, POROUS BACKFILL WITH GEOTEXTILE FABRIC, AS PER PLAN 2'-0" THICK SHALL BE PLACED BEHIND THE WINGWALLS ONLY AND SHALL EXTEND 12" BELOW THE EMBANKMENT SURFACE. GEOTEXTILE FABRIC SHALL BE PLACED BETWEEN THE POROUS BACKFILL AND REPLACED EXCAVATION ADJACENT TO THE STRUCTURE. IT SHALL TURN UNDER THE BOTTOM OF THE POROUS BACKFILL AND RETURN 6" ABOVE THE TOP ELEVATION OF THE WEEPHOLE.
- 1" PREFORMED EXPANSION JOINT FILLER SHALL BE EXTENDED FROM TOP OF FOOTING TO TOP OF WALL.

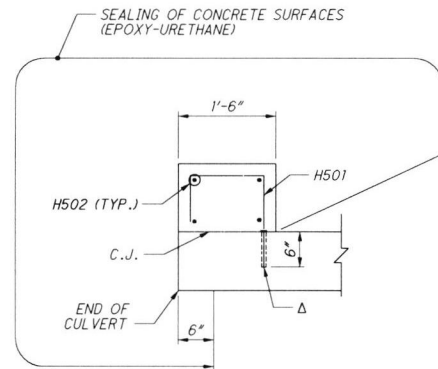
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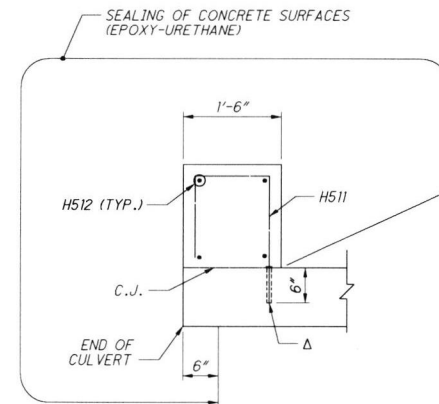
INLET HEADWALL REINFORCING DETAIL  
HEADWALL HEIGHT = 0'-11 1/2"



OUTLET HEADWALL REINFORCING DETAIL  
HEADWALL HEIGHT = 1'-5 1/2"



SECTION E-E  
(NOT TO SCALE)



SECTION F-F  
(NOT TO SCALE)

LEGEND:

- Δ MECHANICAL CONNECTOR OR PARTIAL DEPTH RESIN BONDED ANCHORS  
PER CMS 705.20 TO BE INCLUDED WITH ITEM 611 - CONDUIT MISC.:  
10' SPAN x 8' RISE CONDUIT, TYPE A, 706.05, AS PER PLAN FOR PAYMENT.

CULVERT HEADWALL DETAILS  
BRIDGE NO. PIK-CR72-0054  
OVER TRIBUTARY OF GLADE RUN

PIK-CR72-00.54  
CALIFORNIA PIKE

8/10

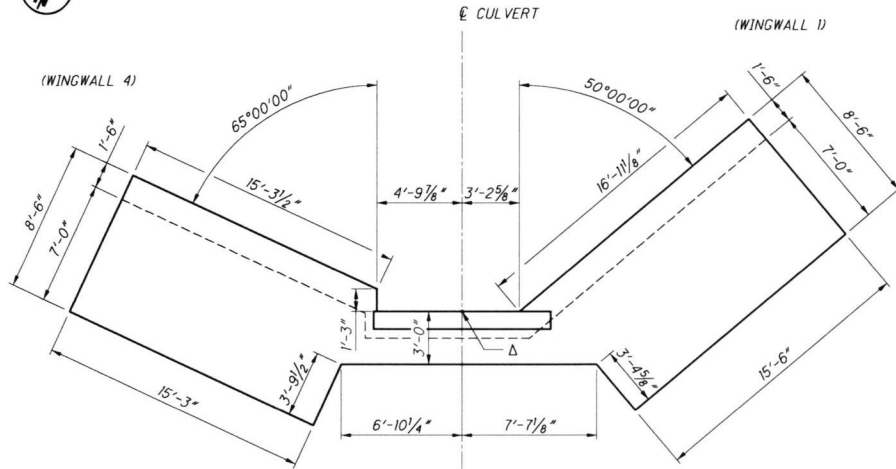
8/10

DESIGN AGENCY  
ms consultants, inc.  
2221 S. Main St.  
Columbus, Ohio 43229

REVIEWED DATE  
YSJ 02/03/23  
STRUCTURE FILE NUMBER  
DESIGNED DBL  
CHECKED YSJ  
DRAWN DBL  
REVISED

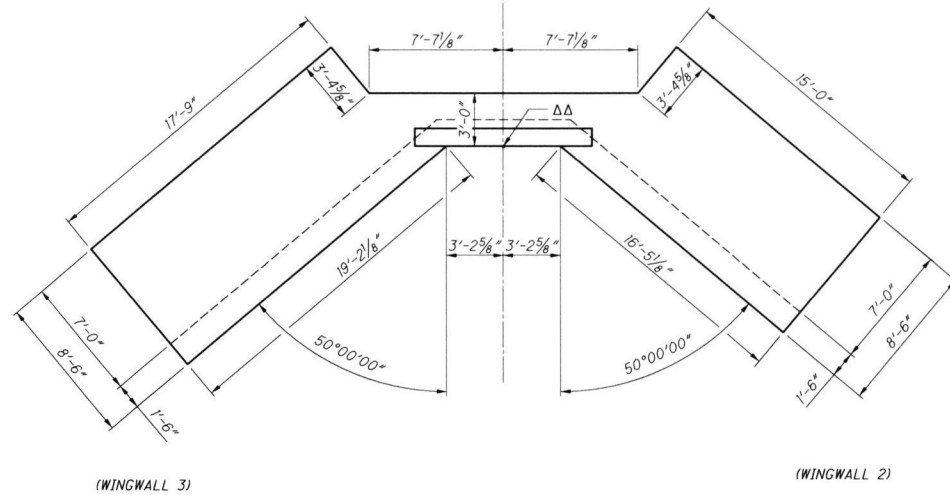
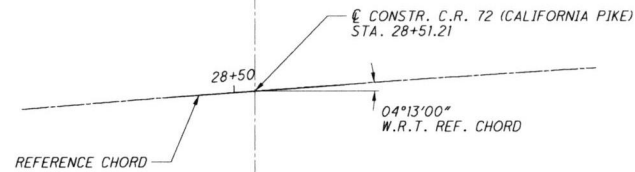


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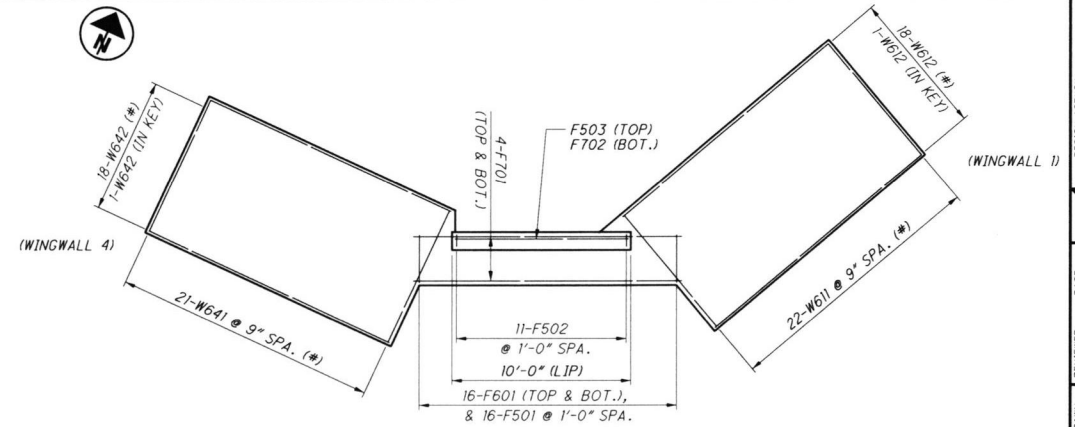
**LEGEND:**

Δ - WORK POINT LEFT  
ΔΔ - WORK POINT RIGHT



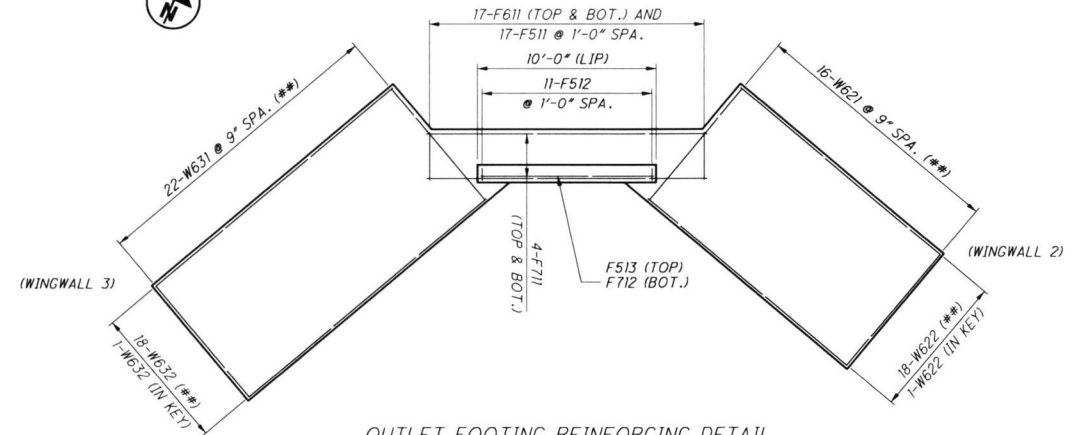
**FOOTING LAYOUT**

(FOR WORKPOINT STATIONS AND OFFSETS, SEE SHEET 3/10)



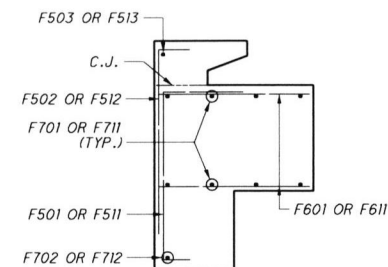
**INLET FOOTING REINFORCING DETAIL**

\* - FOR ADDITIONAL DETAILS FOR INLET WINGWALL FOOTING BARS, SEE SHEET 6/10.



**OUTLET FOOTING REINFORCING DETAIL**

\*\* - FOR ADDITIONAL DETAILS FOR OUTLET WINGWALL FOOTING BARS, SEE SHEET 7/10.



**TYPICAL FOOTING REINFORCING DETAIL**

	DESIGN AGENCY	DATE	REVIEWED	DRAWN	DESIGNED
	ms consultants, inc.	02/03/23	YSJ	DBL	DBL
	2221 Schrock Road	STRUCTURE FILE NUMBER	FILE NUMBER	REVIEWED	CHECKED
	Columbus, Ohio 43229			YSJ	YSJ
<b>CULVERT FOOTING DETAILS</b>					
BRIDGE NO. PIK-CR72-0054					
OVER TRIBUTARY OF GLADE RUN					
<b>PIK-CR72-00.54</b>					
<b>CALIFORNIA PIKE</b>					
9/10					
9/10					

