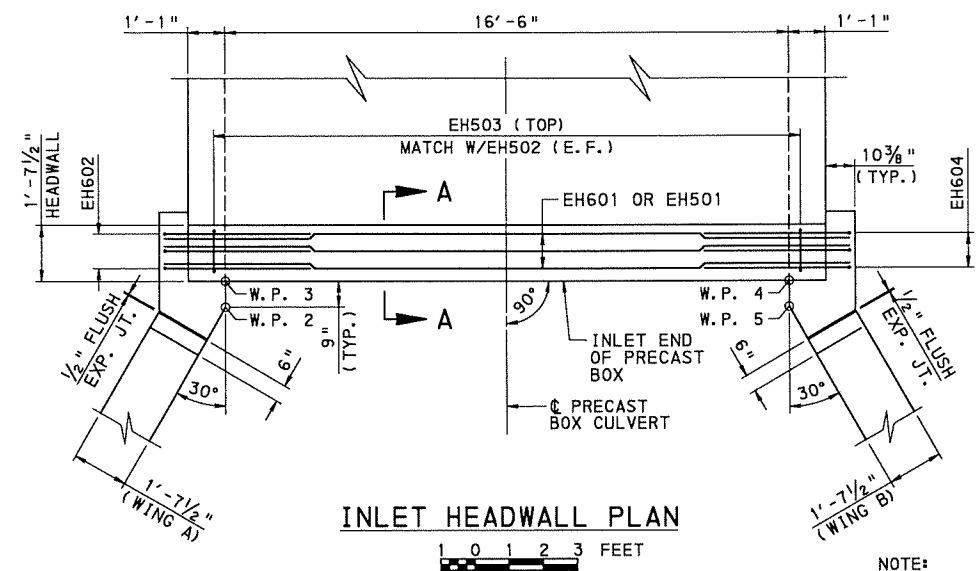
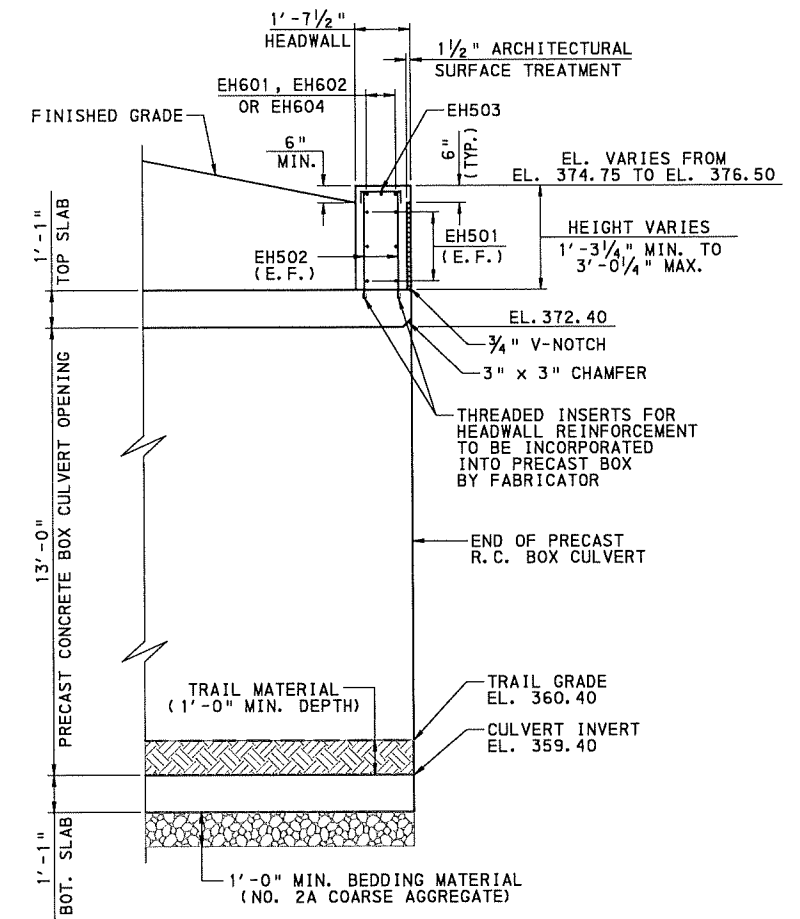


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 PLOTTED: 10/16/2017



INLET HEADWALL PLAN

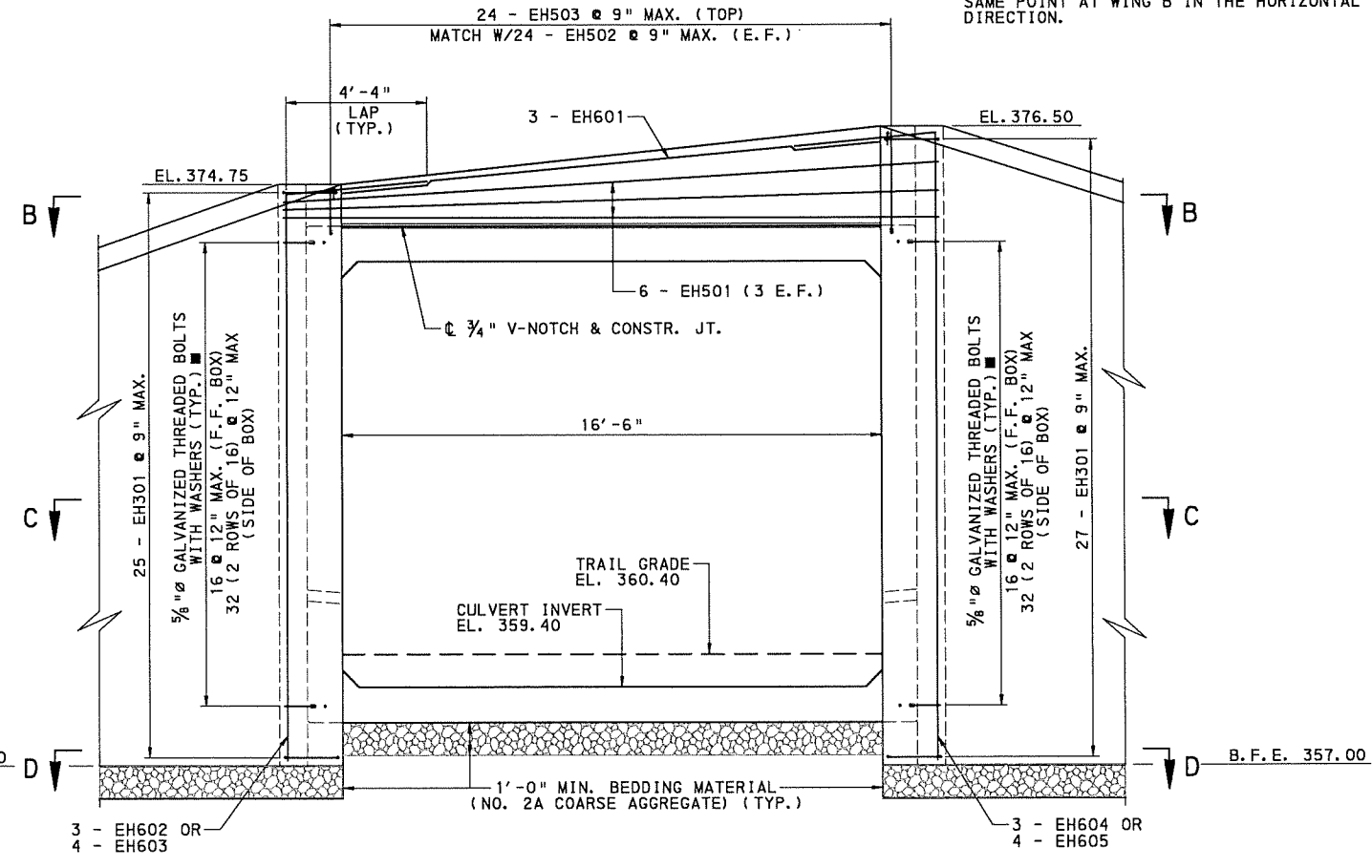
NOTE:
 THE LIMITS OF ARCHITECTURAL SURFACE TREATMENT EXTEND FROM 6 INCH BELOW TOP OF HEADWALL TO THE BOTTOM OF HEADWALL IN THE VERTICAL DIRECTION AND FROM THE POINT AT WHICH CAST-IN-PLACE COLLAR CONNECTS TO INSIDE FACE OF CULVERT AT WING A TO THE SAME POINT AT WING B IN THE HORIZONTAL DIRECTION.



TYPICAL PRECAST BOX SECTION A-A

- NOTES:
1. FOR GENERAL NOTES & TYPICAL SECTION SEE SHT. NO. 2.
 2. FOR STAKE-OUT PLAN SEE SHT. NO. 4.
 3. FOR PRECAST CULVERT DETAILS SEE SHT. NO. 5.
 4. FOR OUTLET HEADWALL DETAILS SEE SHT. NO. 7.
 5. FOR SECTIONS B-B, C-C & D-D SEE SHT. NO. 8.
 6. FOR REINFORCEMENT BAR SCHEDULE SEE SHT. NO. 9.
 7. FOR WING A & B DETAILS SEE SHT. NO. 10.

Mark	Description	By	Chk'd.	Recm'd.	Date
REVISIONS					



INLET HEADWALL ELEVATION

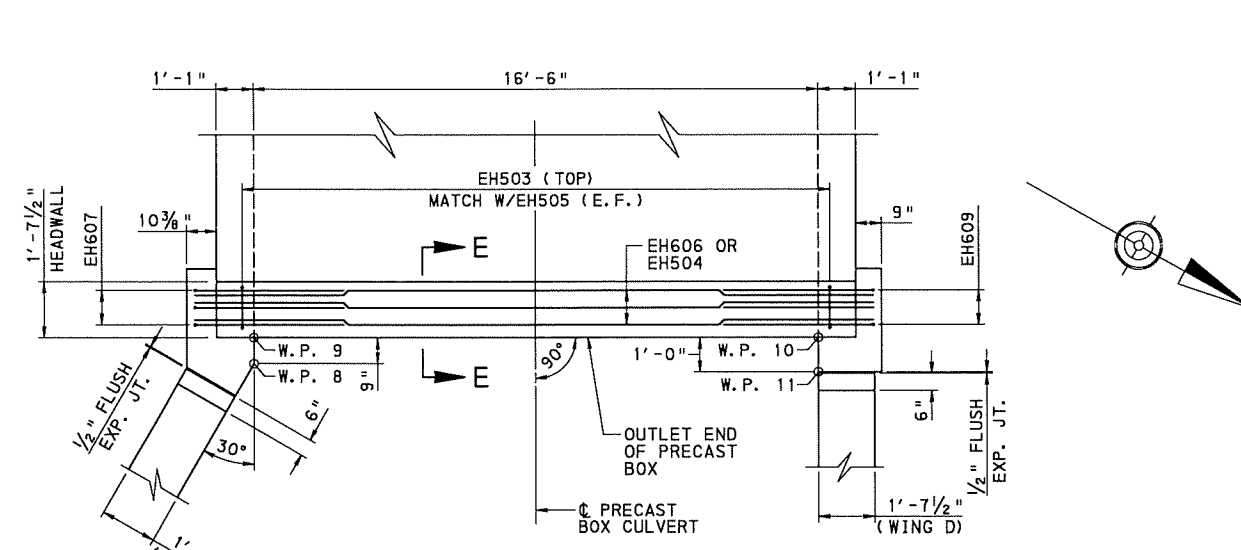
■ - (TO BE SUPPLIED BY PRECAST MANUFACTURER)

RADNOR TOWNSHIP
DELAWARE COUNTY
S. R. 1021 (RADNOR-CHESTER ROAD)
 SEGMENT 0040 OFFSET 2395
 STA. 102+24.63
 FORMER P & W R/W UNDER RADNOR-CHESTER ROAD
16'-6" SPAN X 13'-0" RISE
PRECAST CONCRETE BOX CULVERT
INLET HEADWALL DETAILS

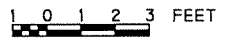
RECOMMENDED _____	SHEET <u>6</u> OF 11
	S-37320

DESIGNED BY: SVL	DRAWING BY: MLH
DES. CHKD. BY: CAS	DWG. CHKD. BY: CAS

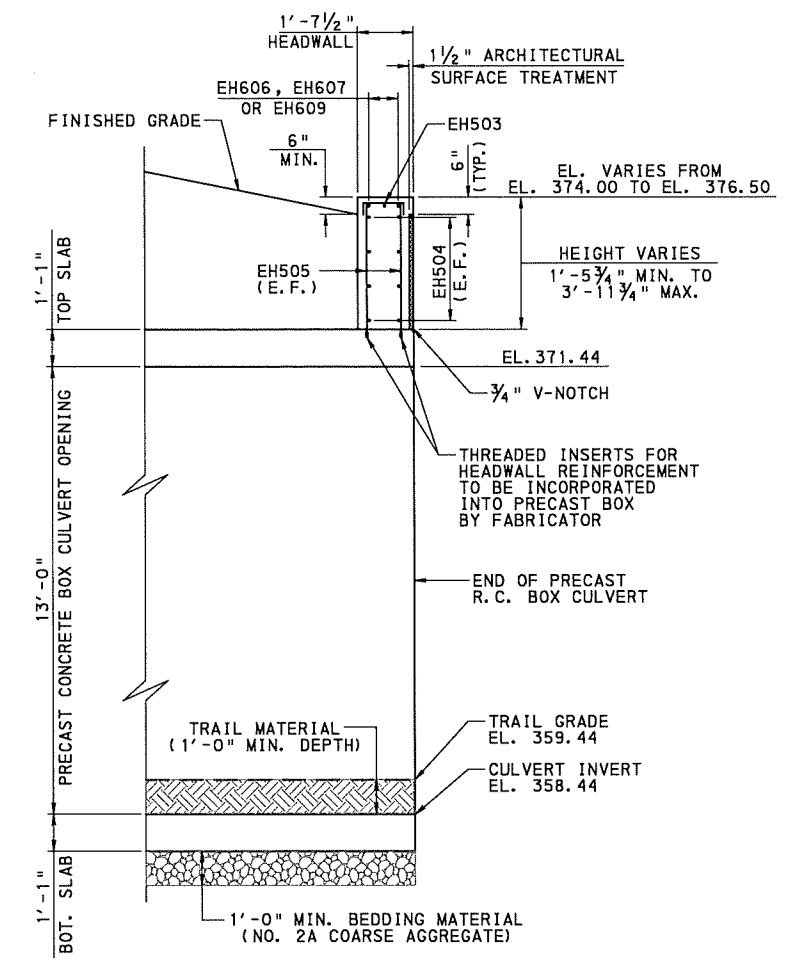
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 PLOTTED: 10/16/2017



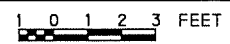
OUTLET HEADWALL PLAN



NOTE:
 THE LIMITS OF ARCHITECTURAL SURFACE TREATMENT EXTEND FROM 6 INCH BELOW TOP OF HEADWALL TO THE BOTTOM OF HEADWALL IN THE VERTICAL DIRECTION AND FROM THE POINT AT WHICH CAST-IN-PLACE COLLAR CONNECTS TO INSIDE FACE OF CULVERT AT WING C TO THE SAME POINT AT WING D IN THE HORIZONTAL DIRECTION.

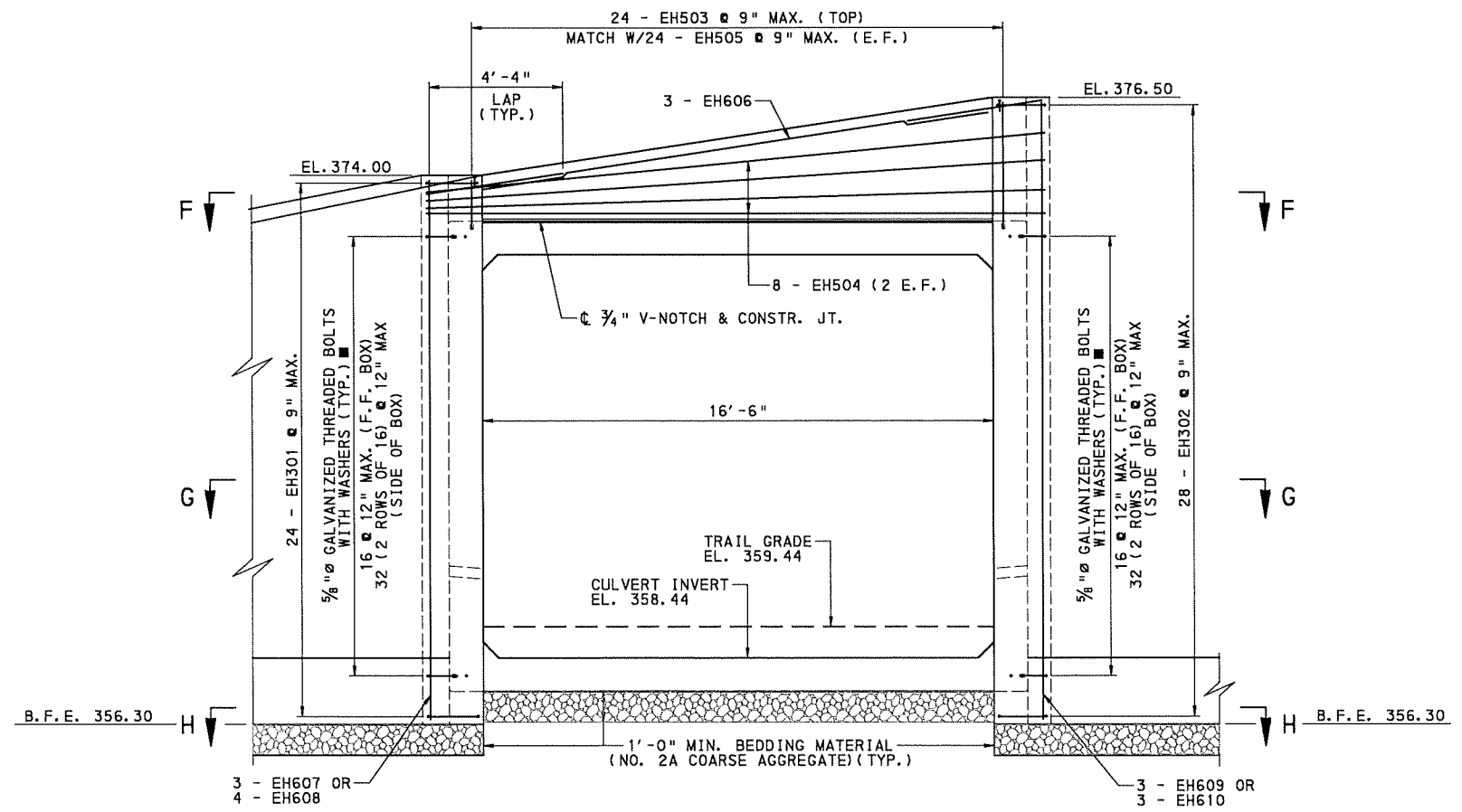


TYPICAL PRECAST BOX SECTION E-E

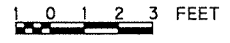


- NOTES:
1. FOR GENERAL NOTES & TYPICAL SECTION SEE SH. NO. 2.
 2. FOR STAKE-OUT PLAN SEE SH. NO. 4.
 3. FOR PRECAST CULVERT DETAILS SEE SH. NO. 5.
 4. FOR INLET HEADWALL DETAILS SEE SH. NO. 6.
 5. FOR SECTIONS F-F, G-G & H-H SEE SH. NO. 8.
 6. FOR REINFORCEMENT BAR SCHEDULE SEE SH. NO. 9.
 7. FOR WING C & D DETAILS SEE SH. NO. 11.

Mark	Description	By	Chk'd	Recm'd	Date
REVISIONS					



OUTLET HEADWALL ELEVATION



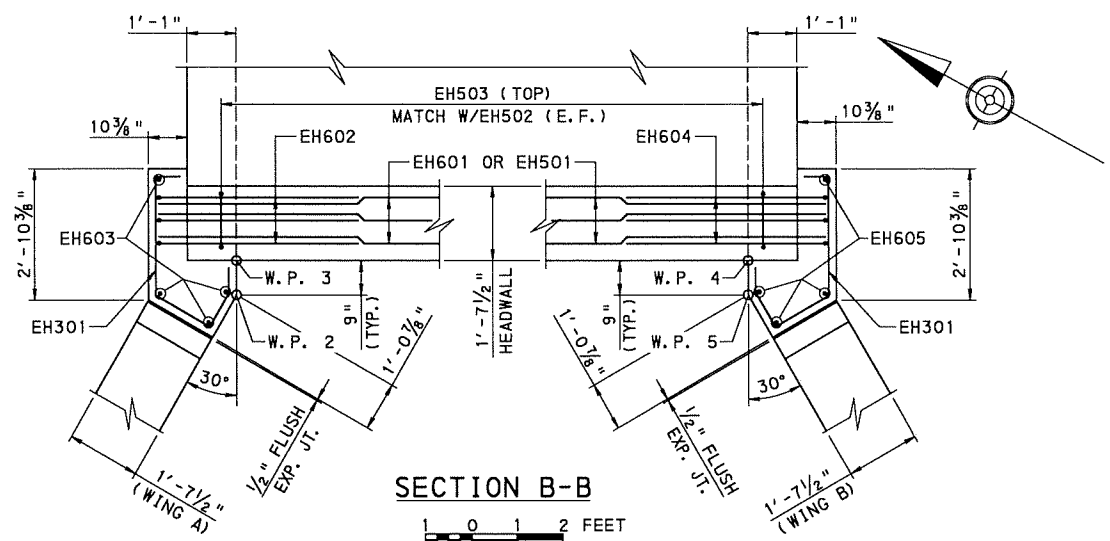
■ - (TO BE SUPPLIED BY PRECAST MANUFACTURER)

RADNOR TOWNSHIP
DELAWARE COUNTY
S. R. 1021 (RADNOR-CHESTER ROAD)
 SEGMENT 0040 OFFSET 2395
 STA. 102+24.63
 FORMER P & W R/W UNDER RADNOR-CHESTER ROAD
16'-6" SPAN X 13'-0" RISE
PRECAST CONCRETE BOX CULVERT
OUTLET HEADWALL DETAILS

SHEET 7 OF 11
 S-37320

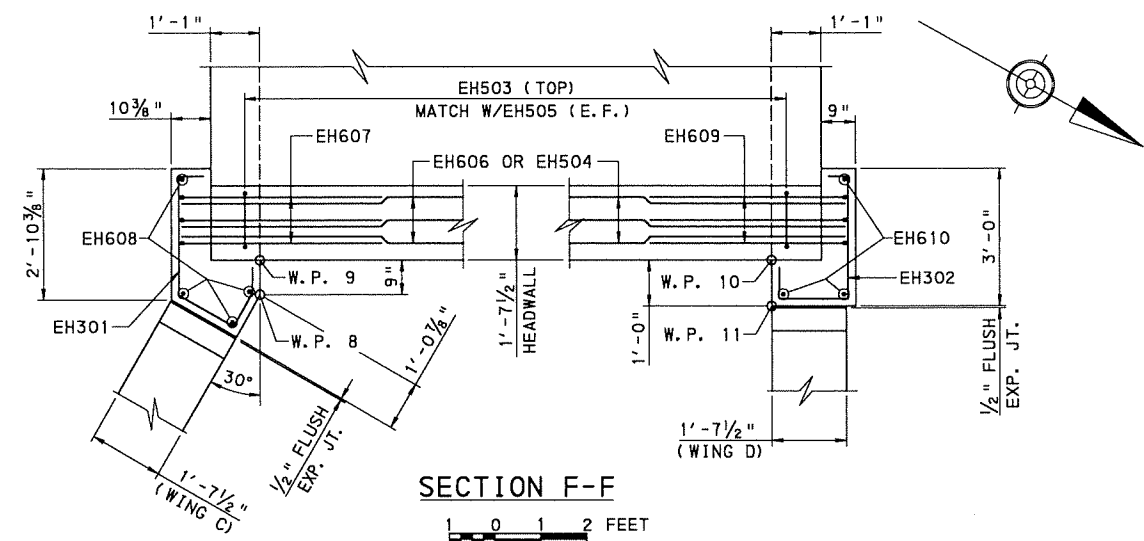
DESIGNED BY: SVL	DRAWING BY: MLH
DES. CHKD. BY: CAS	DWG. CHKD. BY: CAS

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 PLOTTED: 10/16/2017



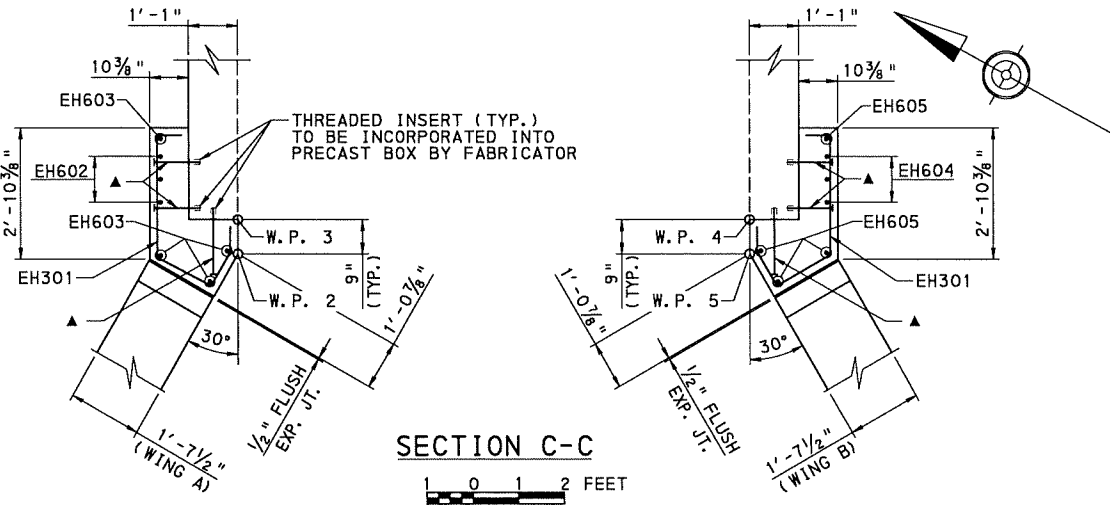
SECTION B-B

0 1 2 FEET



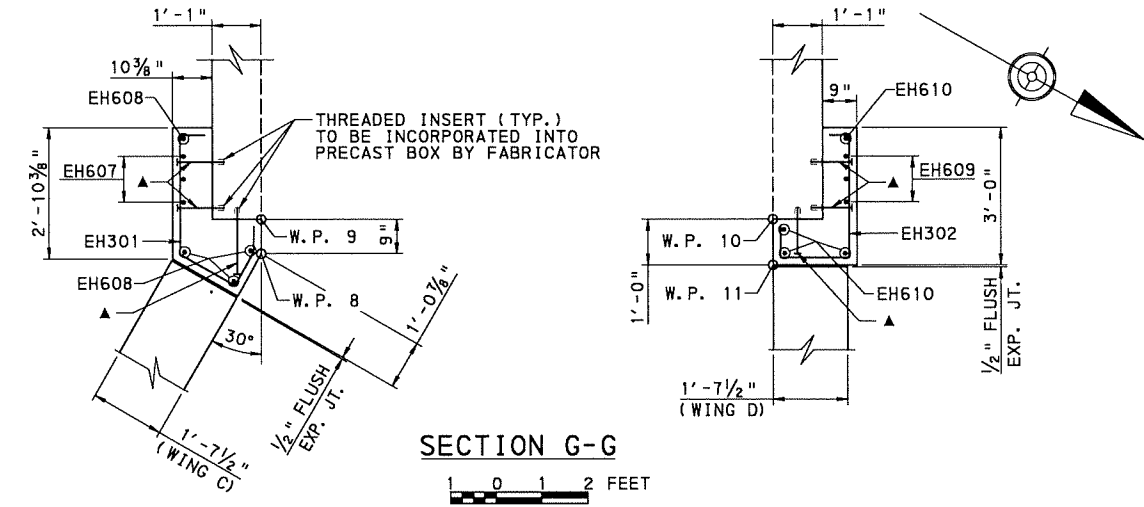
SECTION F-F

0 1 2 FEET



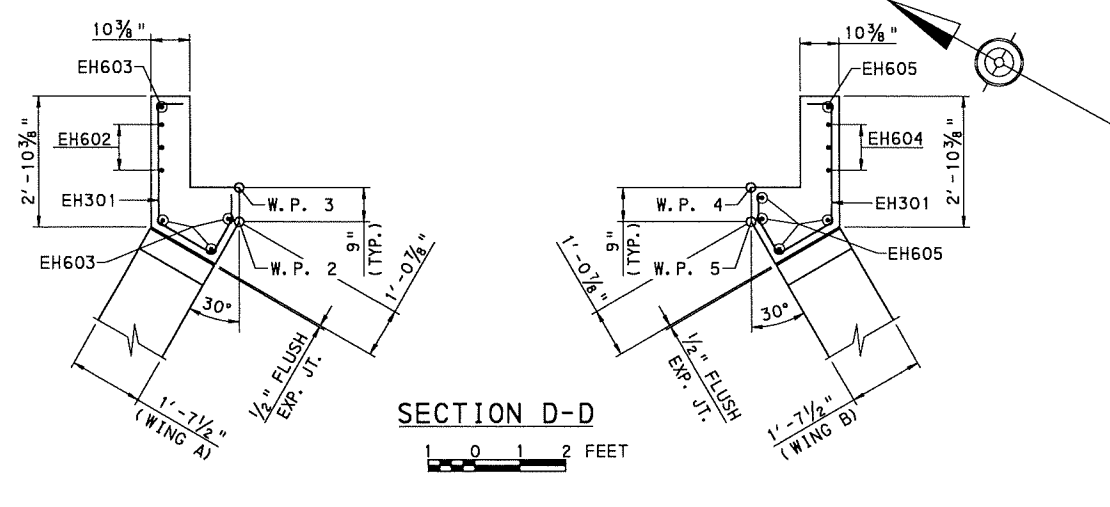
SECTION C-C

0 1 2 FEET



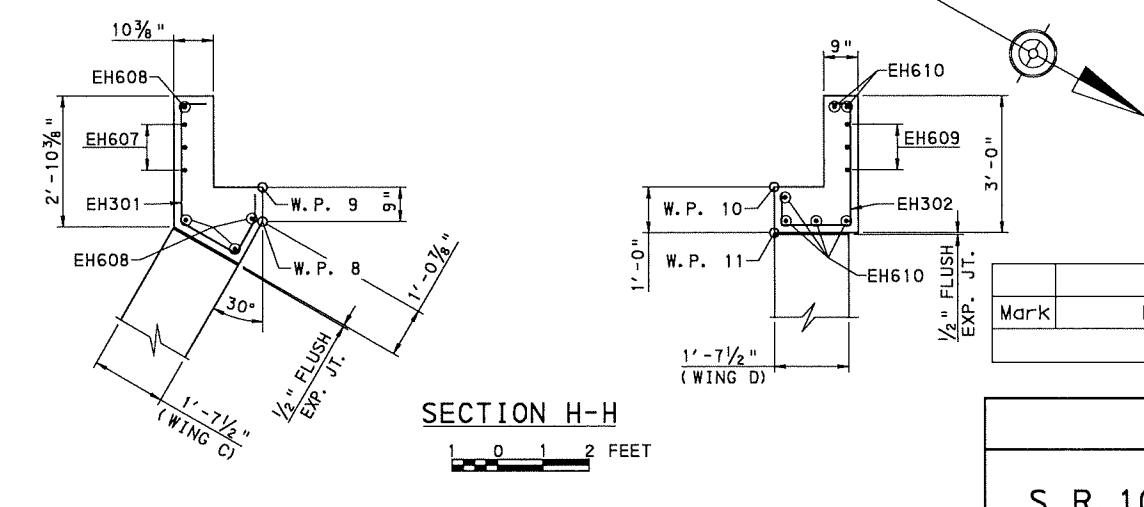
SECTION G-G

0 1 2 FEET



SECTION D-D

0 1 2 FEET



SECTION H-H

0 1 2 FEET

▲ 5/8" Ø GALVANIZED THREADED BOLTS WITH WASHERS SUPPLIED BY PRECAST BOX FABRICATOR.

- NOTES:**
1. FOR GENERAL NOTES & TYPICAL SECTION SEE SHT. NO. 2.
 2. FOR STAKE-OUT PLAN SEE SHT. NO. 4.
 3. FOR PRECAST CULVERT DETAILS SEE SHT. NO. 5.
 4. FOR INLET DETAILS AND SECTION B-B, C-C & D-D LOCATIONS SEE SHT. NO. 6.
 5. FOR OUTLET DETAILS AND SECTION F-F, G-G & H-H LOCATION SEE SHT. NO. 7.
 6. FOR REINFORCEMENT BAR SCHEDULE SEE SHT. NO. 9.
 7. FOR WING A & B DETAILS SEE SHT. NO. 10.
 8. FOR WING C & D DETAILS SEE SHT. NO. 11.

DESIGNED BY: SVL DRAWING BY: MLH
 DES. CHKD. BY: CAS DWG. CHKD. BY: CAS

Mark	Description	By	Chk'd.	Recm'd.	Date
REVISIONS					

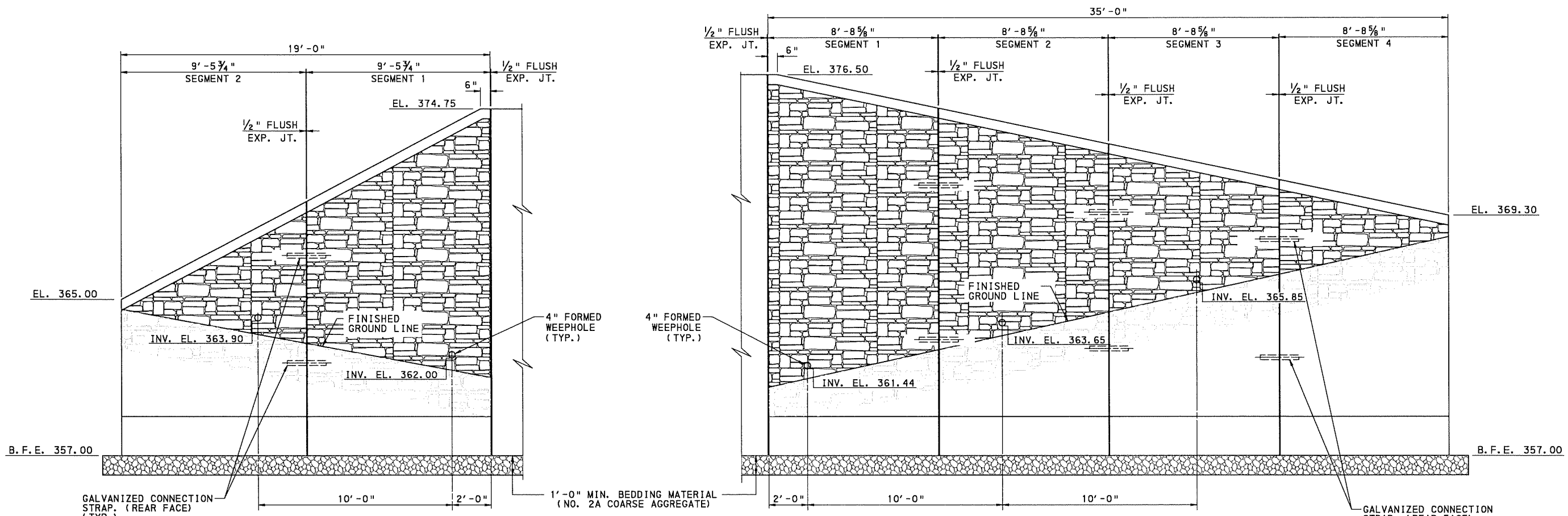
RADNOR TOWNSHIP
DELAWARE COUNTY
S. R. 1021 (RADNOR-CHESTER ROAD)
 SEGMENT 0040 OFFSET 2395
 STA. 102+24.63
 FORMER P & W R/W UNDER RADNOR-CHESTER ROAD
16'-6" SPAN X 13'-0" RISE
PRECAST CONCRETE BOX CULVERT
HEADWALL SECTIONS

RECOMMENDED _____

SHEET 8 OF 11

S-37320

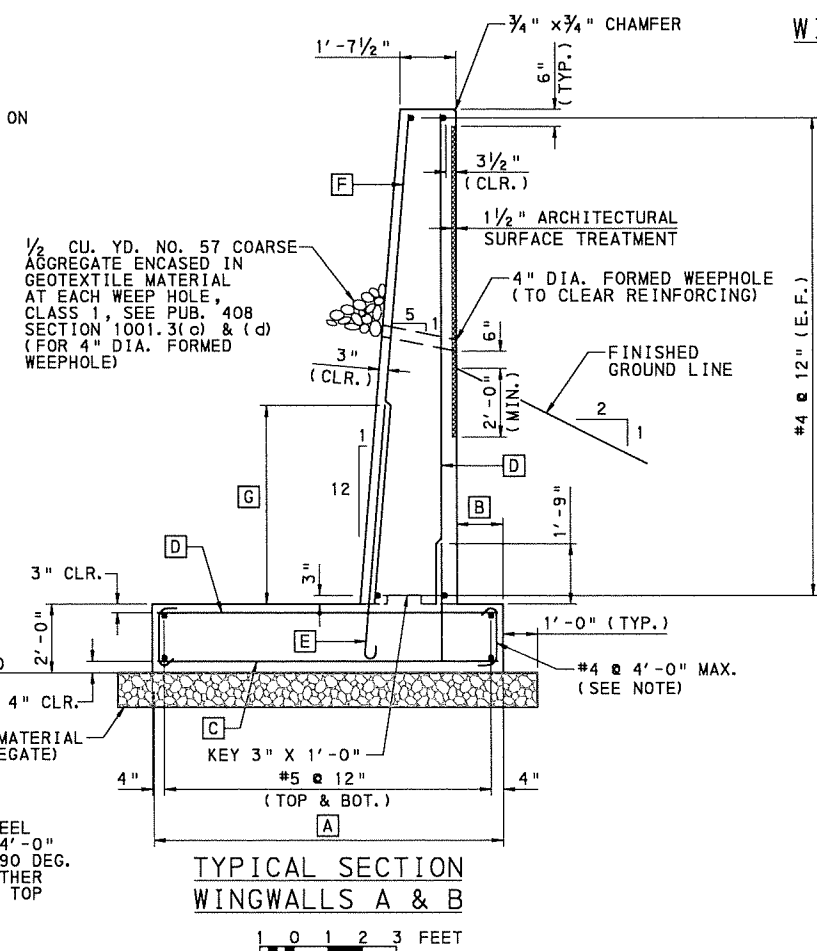
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 PLOTTED: 10/16/2017



NOTE:
 FABRICATOR MAY REVISE NUMBER OF SEGMENTS AND/OR SEGMENT LENGTHS BASED ON FABRICATION AND SHIPPING PREFERENCES. SUBMIT REVISIONS WITH THE SHIP DRAWINGS ALONG WITH REVISED WALL DESIGNS BASED ON THE 3/4 HEIGHT OF THE REVISED WALL SEGMENT DIMENSIONS.

WING DIMENSIONS & REINFORCEMENT TABLE							
	A	B	C	D	E	F	G
WING A, SEG. 1	11'-0"	1'-2 1/2"	#4 @ 9"	#6 @ 9"	#6 @ 9" (E)	#6 @ 18"	4'-10"
WING A, SEG. 2	8'-4"	1'-2 1/2"	#4 @ 9"	#4 @ 9"	#4 @ 12" (E)	#4 @ 12"	*
WING B, SEG. 1	12'-11"	1'-2 1/2"	#4 @ 9"	#7 @ 9"	#7 @ 9" (E)	#7 @ 18"	5'-11 1/2"
WING B, SEG. 2	15'-4"	1'-2 1/2"	#4 @ 9"	#8 @ 9"	#6 @ 9" (E)	#6 @ 18"	5'-11 1/2"
WING B, SEG. 3	15'-11"	1'-2 1/2"	#4 @ 9"	#8 @ 9"	#6 @ 9" (E)	#6 @ 18"	4'-6 1/2"
WING B, SEG. 4	15'-3"	1'-2 1/2"	#4 @ 9"	#8 @ 9"	#4 @ 6" (E)	#4 @ 12"	4'-6 1/2"

* - NO SPLICE. HOOKED BARS EXTEND TO TOP OF WALL.
 (E) - EPOXY COATED



NOTE:
 TIE TOP AND BOTTOM MATS OF REINFORCING STEEL WITH #4 TIE BARS AT A MAXIMUM SPACING OF 4'-0" IN BOTH DIRECTION. PROVIDE TIE BARS WITH 90 DEG. HOOK AT ONE END 135 DEG HOOK AT THE OTHER END. ALTERNATE 90 DEG AND 135 DEG HOOK AT TOP IN ALTERNATE TIES.

NOTES:
 1. FOR GENERAL NOTES & TYPICAL SECTION SEE SHT. NO. 2.
 2. FOR INLET HEADWALL DETAILS SEE SHT. NO. 6.

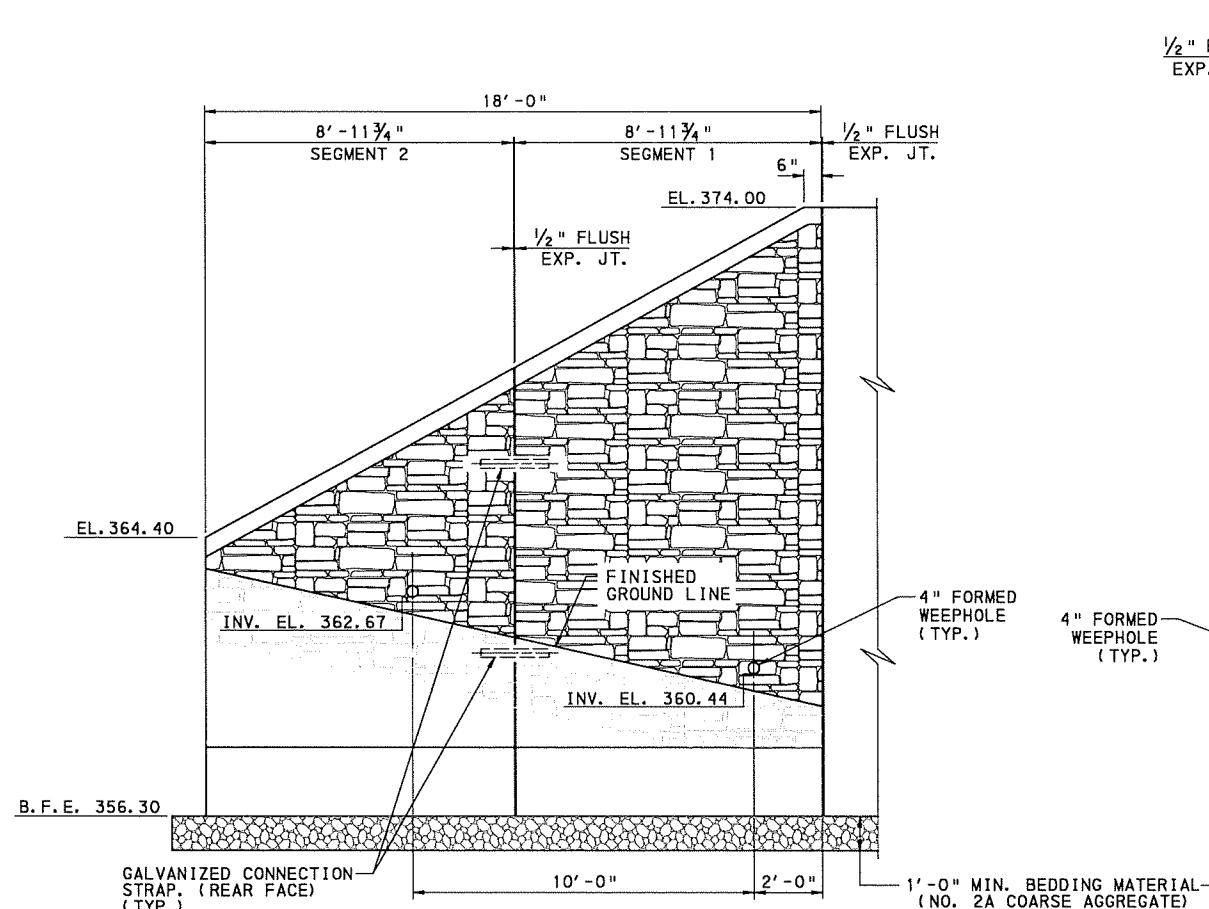
Mark	Description	By	Chk'd.	Recom'd.	Date
REVISIONS					

RADNOR TOWNSHIP
DELAWARE COUNTY
S. R. 1021 (RADNOR-CHESTER ROAD)
 SEGMENT 0040 OFFSET 2395
 STA. 102+24.63
 FORMER P & W R/W UNDER RADNOR-CHESTER ROAD
16'-6" SPAN X 13'-0" RISE
PRECAST CONCRETE BOX CULVERT
WING A & B DETAILS

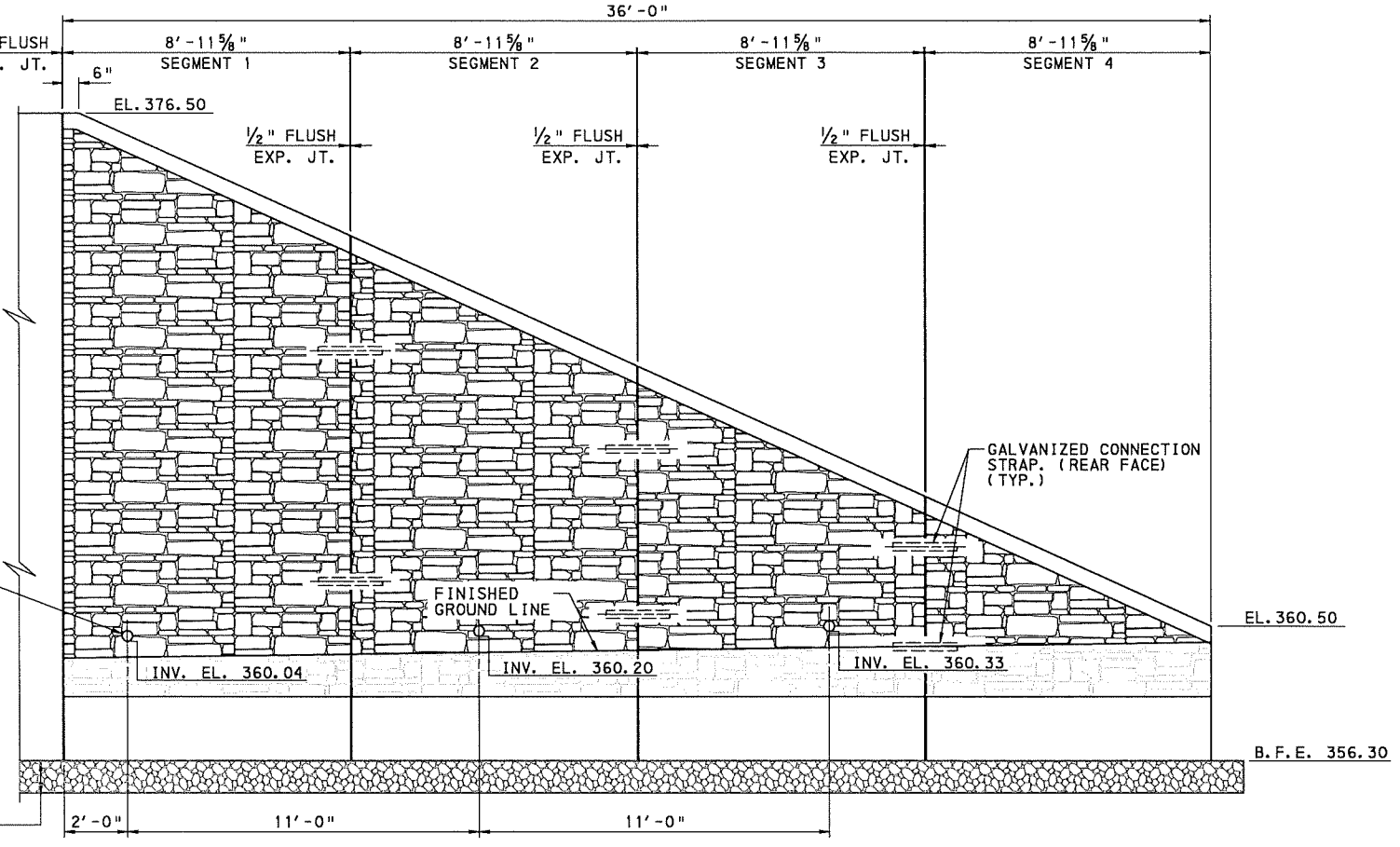
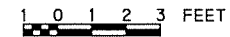
DESIGNED BY: CAS DRAWING BY: MLH
 DES. CHKD. BY: SVL DWG. CHKD. BY: CAS

RECOMMENDED _____ SHEET 10 OF 11
 S-37320

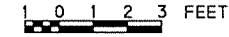
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 PLOTTED: 10/16/2017



WING C ELEVATION



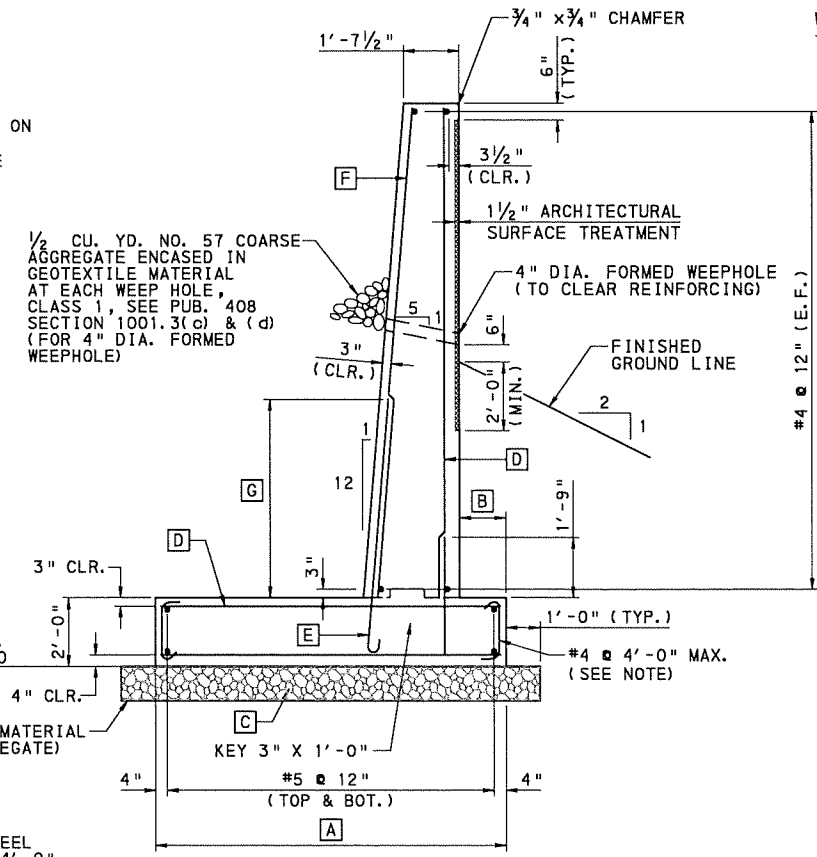
WING D ELEVATION



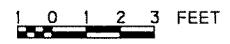
NOTE:
 FABRICATOR MAY REVISE NUMBER OF SEGMENTS AND/OR SEGMENT LENGTHS BASED ON FABRICATION AND SHIPPING PREFERENCES. SUBMIT REVISIONS WITH THE SHIP DRAWINGS ALONG WITH REVISED WALL DESIGNS BASED ON THE 2/3 HEIGHT OF THE REVISED WALL SEGMENT DIMENSIONS.

WING DIMENSIONS & REINFORCEMENT TABLE							
	A	B	C	D	E	F	G
WING C, SEG. 1	11'-0"	1'-2 1/2"	#4 @ 9"	#6 @ 9"	#6 @ 9" (E)	#6 @ 18"	4'-10"
WING C, SEG. 2	8'-4"	1'-2 1/2"	#4 @ 9"	#4 @ 9"	#4 @ 12" (E)	#4 @ 12"	*
WING D, SEG. 1	13'-8"	1'-5 1/2"	#4 @ 9"	#8 @ 12"	#7 @ 9" (E)	#7 @ 18"	6'-0"
WING D, SEG. 2	14'-1"	1'-2 1/2"	#4 @ 9"	#6 @ 6"	#5 @ 9" (E)	#5 @ 18"	5'-3 1/2"
WING D, SEG. 3	10'-3"	1'-2 1/2"	#4 @ 9"	#5 @ 12"	#4 @ 12" (E)	#4 @ 12"	*
WING D, SEG. 4	8'-2"	1'-2 1/2"	#4 @ 9"	#4 @ 9"	#4 @ 12" (E)	#4 @ 12"	*

* - NO SPLICE. HOOKED BARS EXTEND TO TOP OF WALL.
 (E) - EPOXY COATED



TYPICAL SECTION WINGWALLS C & D



NOTE:
 TIE TOP AND BOTTOM MATS OF REINFORCING STEEL WITH #4 TIE BARS AT A MAXIMUM SPACING OF 4'-0" IN BOTH DIRECTION. PROVIDE TIE BARS WITH 90 DEG. HOOK AT ONE END END 135 DEG HOOK AT THE OTHER END. ALTERNATE 90 DEG AND 135 DEG HOOK AT TOP IN ALTERNATE TIES.

NOTES:
 1. FOR GENERAL NOTES & TYPICAL SECTION SEE SHT. NO. 2.
 2. FOR OUTLET HEADWALL DETAILS SEE SHT. NO. 7.

Mark	Description	By	Chk'd	Recm'd	Date
REVISIONS					

RADNOR TOWNSHIP
DELAWARE COUNTY
S. R. 1021 (RADNOR-CHESTER ROAD)
 SEGMENT 0040 OFFSET 2395
 STA. 102+24.63
 FORMER P & W R/W UNDER RADNOR-CHESTER ROAD
16'-6" SPAN X 13'-0" RISE
PRECAST CONCRETE BOX CULVERT
WING C & D DETAILS

DESIGNED BY: CAS DRAWING BY: MLH
 DES. CHKD. BY: SVL DWG. CHKD. BY: CAS

RECOMMENDED _____ SHEET 11 OF 11
 S-37320