

BUTLER SPRINGS CHRISTIAN CAMP

3701 STATE RTE 41, HILLSBORO, OH 45133

CULVERT REPLACEMENT PROJECT

CAMP MAP



Jeffrey J. VonHandorf
MAY 7, 2024

BID DOCUMENT

DATE	DESCRIPTION	ENG
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DATE	DESCRIPTION	ENG
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CAMP MAP

LOCALE: HIGHLAND COUNTY STATE: OH

DESIGNED BY:

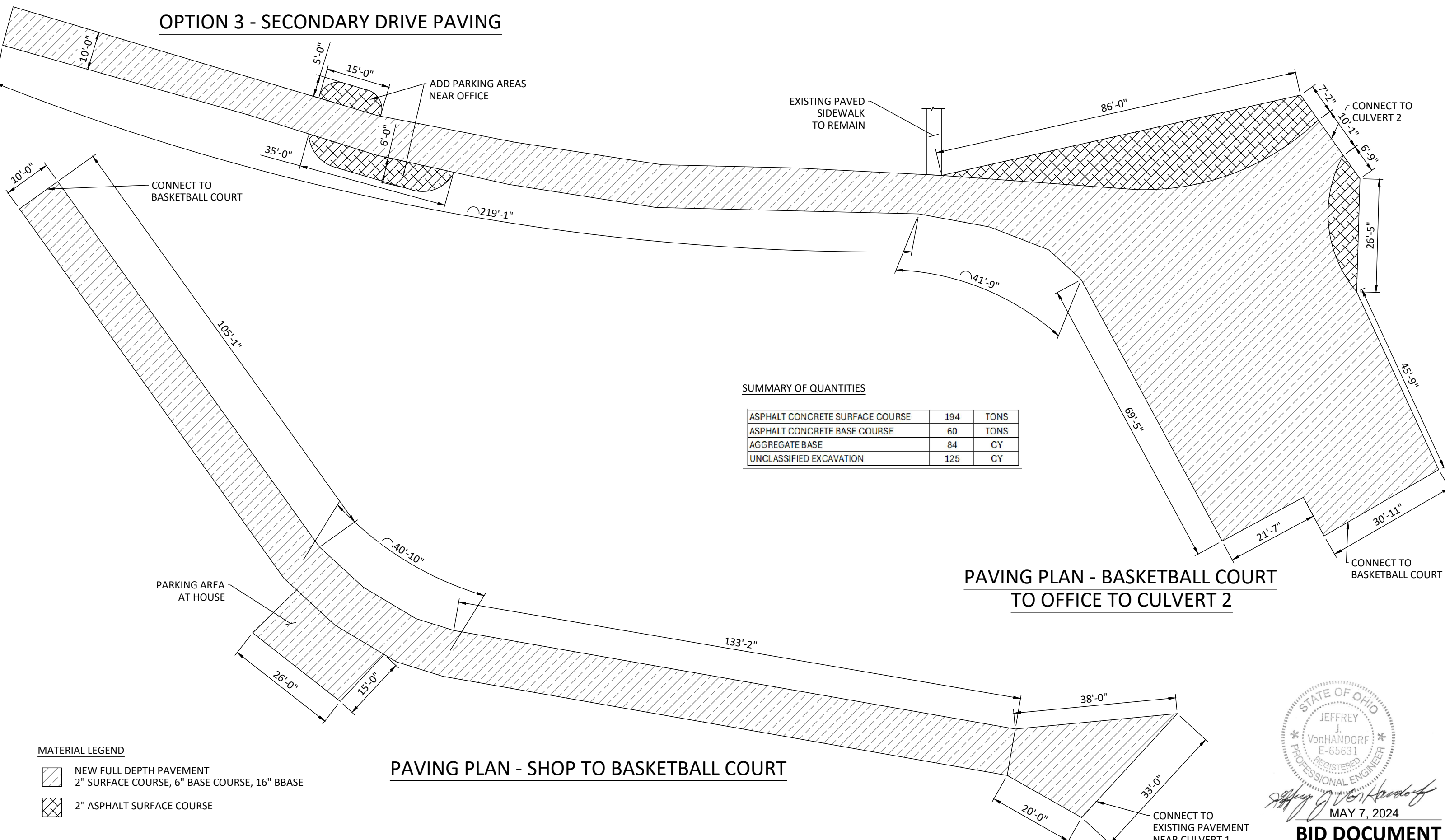
PRETEK GROUP

P.O. BOX 351
BELLBROOK, OH 45305
800.241.0925

PROJECT NUMBER: 23-356
DATE: 5/6/2024
DESIGNED BY: JJV
DRAWN BY: JJV
CHECKED BY: JJC

CO-1

OPTION 3 - SECONDARY DRIVE PAVING



SUMMARY OF QUANTITIES

ASPHALT CONCRETE SURFACE COURSE	194	TONS
ASPHALT CONCRETE BASE COURSE	60	TONS
AGGREGATE BASE	84	CY
UNCLASSIFIED EXCAVATION	125	CY

MATERIAL LEGEND

- NEW FULL DEPTH PAVEMENT
2" SURFACE COURSE, 6" BASE COURSE, 16" BBASE
- 2" ASPHALT SURFACE COURSE



Jeffrey J. VonHandorf
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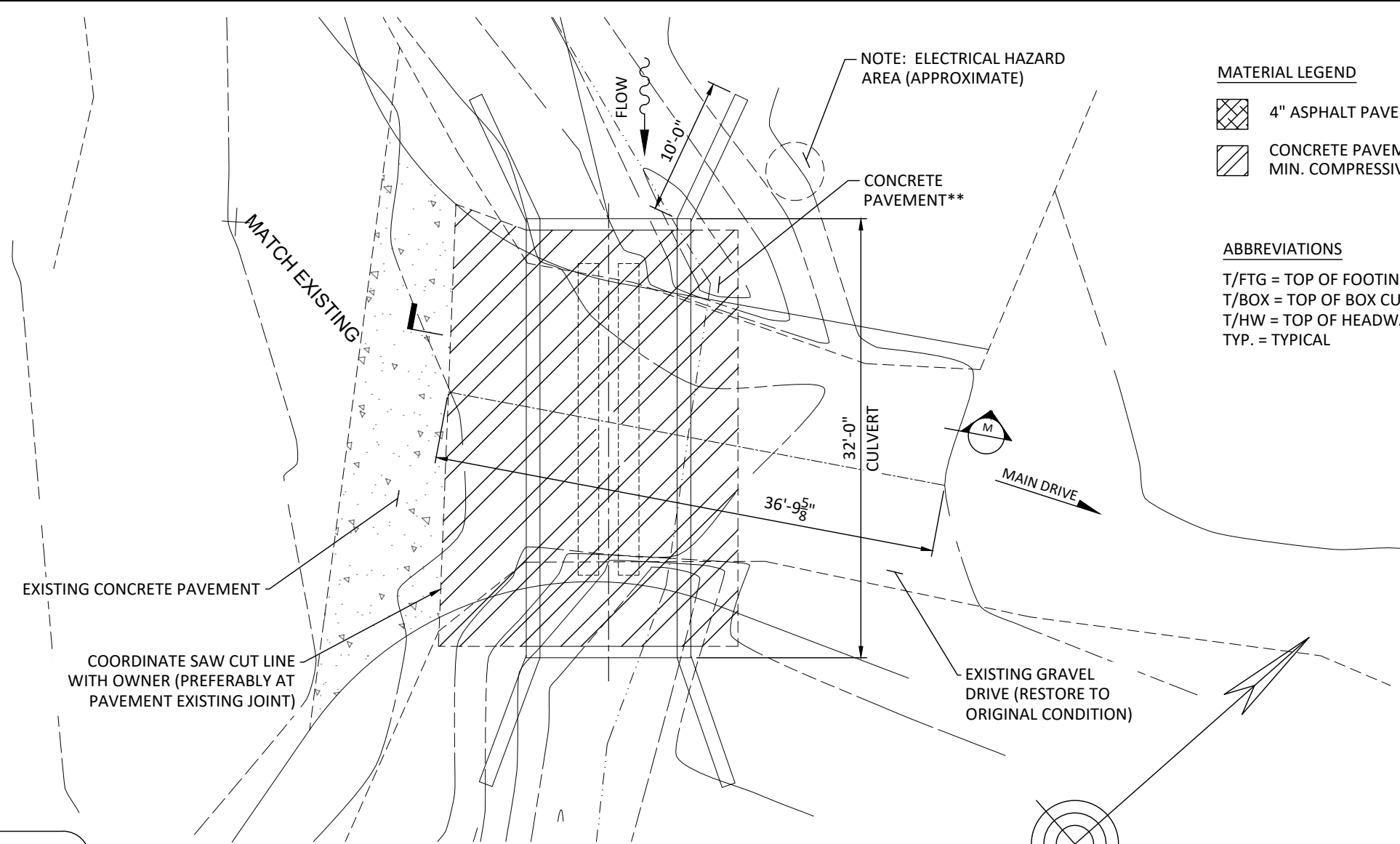
				BUTLER SPRINGS PAVING (OPTION 3)			
				LOCALE: HIGHLAND COUNTY			
					STATE: OH		
						DESIGNED & PROVIDED BY: P.O. BOX 351 BELLBROOK, OH 45305 800.241.0925	PROJECT NUMBER: 23-356 DATE: 5/6/2024 DESIGNED BY: JJV DRAWN BY: JJV CHECKED BY: JJC
							CO-2

SITE PLAN & SECTION - CULVERT 1

SUMMARY OF QUANTITIES

CONCRETE - FOUNDATION	12.1	CY
CONCRETE - BOX CULVERT (5 KSI)	13.5	CY
CONCRETE - HEADWALLS & WINGWALLS	5.0	CY
REINFORCING BARS - FOUNDATION	1144	LBS
REINFORCING BARS - BOX CULVERT	2471	LBS
REINFORCING BARS - HEADWALL/WINGWALL	622	LBS
CONCRETE PAVEMENT WITH BONDING AGENT	18	CY
FLOWABLE FILL BACKFILL	17	CY
EMBANKMENT MATERIAL / TOPSOIL	9	CY
ROADWAY BASE / GRAVEL DRIVE (ODOT 304)	8	CY
ASPHALT CONCRETE PAVEMENT	0	TONS
ROCK EXCAVATION	11	CY
UNCLASSIFIED EXCAVATION	47	CY
REMOVE EXISTING CORRUGATED METAL PIPES	1	EA
MOBILIZATION	1	EA
OPTION 1 STONE FORMLINER FINISH ON HW/WW	160	SF
OPTION 2 PEDESTRIAN RAIL	62	LF

NOTE: FINAL GRACING BY CONTRACTOR INCLUDED IN THIS CONTRACT. SEEDING/MULCHING BY OTHERS.



MATERIAL LEGEND

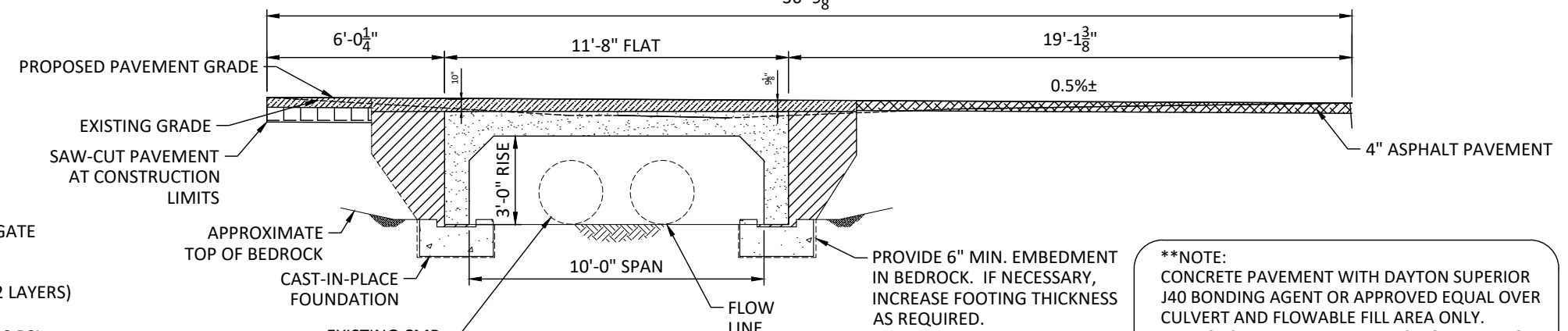
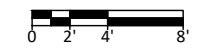
- 4" ASPHALT PAVEMENT (2 LAYERS)
- CONCRETE PAVEMENT, 4,000 PSI MIN. COMPRESSIVE STRENGTH

ABBREVIATIONS

- T/FTG = TOP OF FOOTING
- T/BOX = TOP OF BOX CULVERT
- T/HW = TOP OF HEADWALL
- TYP. = TYPICAL

NOTE: CULVERT / STREAM ALIGNMENT SUBJECT TO OWNER APPROVAL.

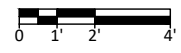
SITE PLAN



MATERIAL LEGEND

- ODOT 304 DENSE AGGREGATE BASE, 95% COMPACTION
- 4" ASPHALT PAVEMENT (2 LAYERS)
- FLOWABLE BACKFILL, 1,000 PSI MIN. COMPRESSIVE STRENGTH
- CONCRETE PAVEMENT, 4,000 PSI MIN. COMPRESSIVE STRENGTH

SECTION



*NOTE: ALL BACKFILL MATERIAL BEHIND BOX LEGS SHALL BE FLOWABLE FILL.

**NOTE: CONCRETE PAVEMENT WITH DAYTON SUPERIOR J40 BONDING AGENT OR APPROVED EQUAL OVER CULVERT AND FLOWABLE FILL AREA ONLY. REINFORCE PAVEMENT WITH A SINGLE LAYER OF #4 BARS @ 12" O.C OR EQUIVALENT MESH.



Jeffrey J. VonHandorf
MAY 7, 2024

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BUTLER SPRINGS CULVERT 1 (SHOP)

LOCALE: HIGHLAND COUNTY

STATE: OH

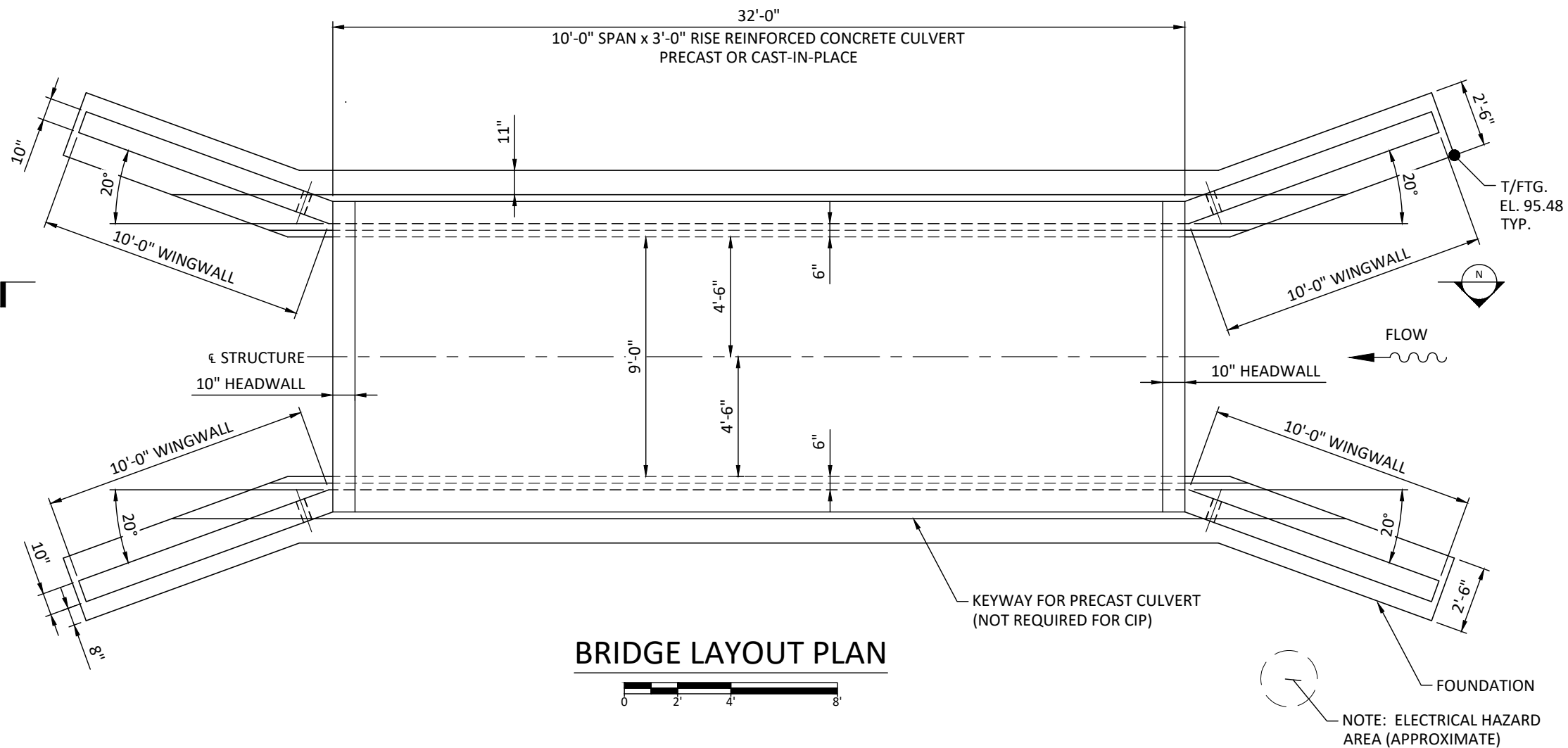
DESIGNED & PROVIDED BY:

P.O. BOX 351
BELLBROOK, OH 45305
800.241.0925

PROJECT NUMBER: 23-356
DATE: 5/6/2024
DESIGNED BY: JIV
DRAWN BY: JIV
CHECKED BY: JIC

C1-1

BRIDGE LAYOUT & SECTION - CULVERT 1



DESIGN NOTES

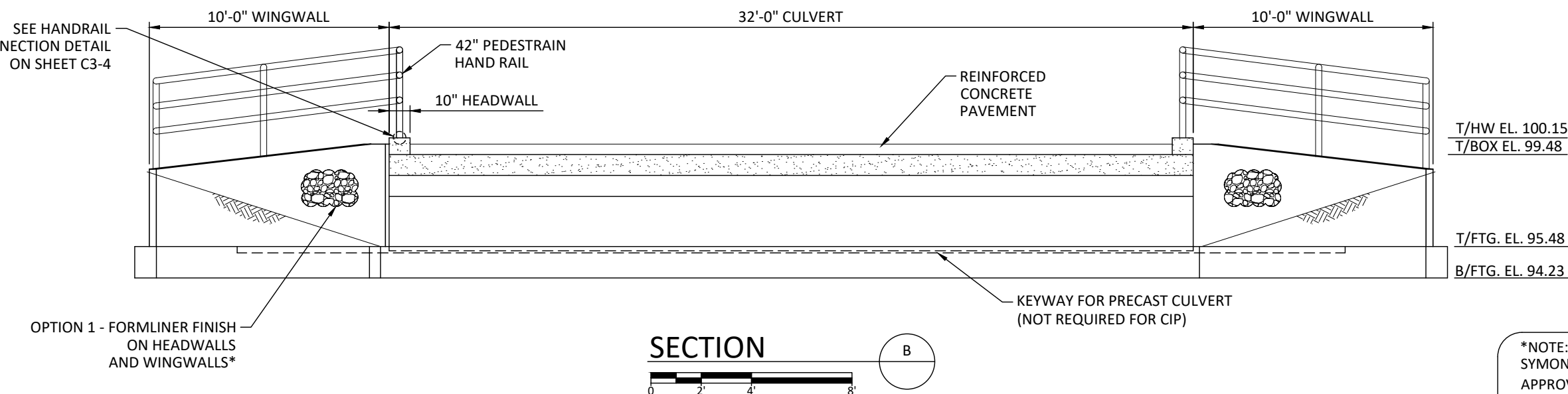
- THIS STRUCTURE IS DESIGNED IN ACCORDANCE WITH THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS "LRFD BRIDGE DESIGN SPECIFICATIONS", 9TH EDITION AND INTERIM SPECIFICATIONS TO DATE. DESIGN LOADS ARE AS FOLLOWS:
 BRIDGE UNITS: HL-93
 DESIGN FILL HEIGHT: 0'-0" MIN. TO 1'-0" MAX.
 HEADWALLS: EARTH PRESSURE + PEDESTRIAN LOADING
 WINGWALLS: EARTH PRESSURE + PEDESTRIAN LOADING
- FOUNDATION DESIGN BASED ON AN ASSUMED ALLOWABLE BEDROCK BEARING PRESSURE OF 3,500 PSF.
- CONFORMANCE TO THESE DRAWINGS, SPECIFICATIONS, AND EXISTING CONDITIONS, INCLUDING SCOUR, GRADING AND SOIL CONDITIONS SHALL BE VERIFIED BY OTHERS.
- THE ENGINEER HAS NOT BEEN RETAINED OR COMPENSATED TO PROVIDE DESIGN AND/OR CONSTRUCTION REVIEW SERVICES RELATED TO THE CONTRACTOR'S SAFETY PRECAUTIONS OR TO MEANS, METHODS, TECHNIQUES OR PROCEDURES FOR THE CONTRACTOR TO PERFORM THE WORK. THE UNDERTAKING OF PERIODIC SITE VISITS BY THE ENGINEER SHALL NOT BE CONSTRUED AS SUPERVISION OF ACTUAL CONSTRUCTION NOR MAKE HIM RESPONSIBLE FOR PROVIDING A SAFE PLACE FOR THE PERFORMANCE OF THE WORK BY THE CONTRACTOR, SUB-CONTRACTOR OR ANY PERSON ON THE SITE.

MATERIALS - CAST-IN-PLACE

- CONCRETE FOR CULVERTS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 5,000 PSI
- CONCRETE FOR FOUNDATIONS, HEADWALLS AND WINGWALLS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI
- REINFORCING STEEL SHALL CONFORM TO ASTM A615 OR A996 GRADE 60

MATERIALS - PRECAST

- CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 5,000 PSI
- REINFORCING STEEL SHALL CONFORM TO ASTM A615 OR A996 GRADE 60 FOR REBAR OR ASTM A497 FOR WELDED WIRE MESH
- PRECAST CULVERT UNITS SHALL CONFORM TO ASTM C1504



*NOTE: SYMONS AUSTIN ASHLAR STONE FORMLINER OR APPROVED EQUAL W/ 1 3/4" RELIEF. ADD RELIEF THICKNESS TO 10" STRUCTURAL WALL THICKNESS.



Jeffrey J. VonHandorf
 MAY 7, 2024

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BUTLER SPRINGS CULVERT 1 (SHOP)

LOCALE: HIGHLAND COUNTY

STATE: OH

DESIGNED & PROVIDED BY:

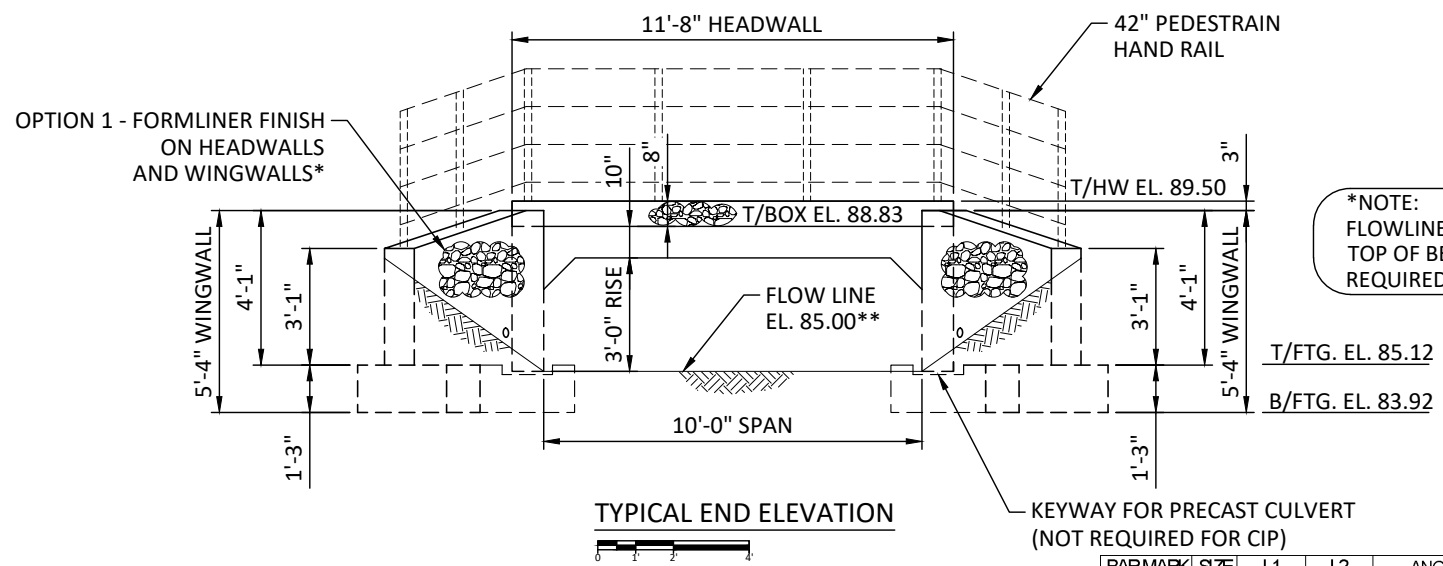
PRETEK GROUP

P.O. BOX 351
 BELLBROOK, OH 45305
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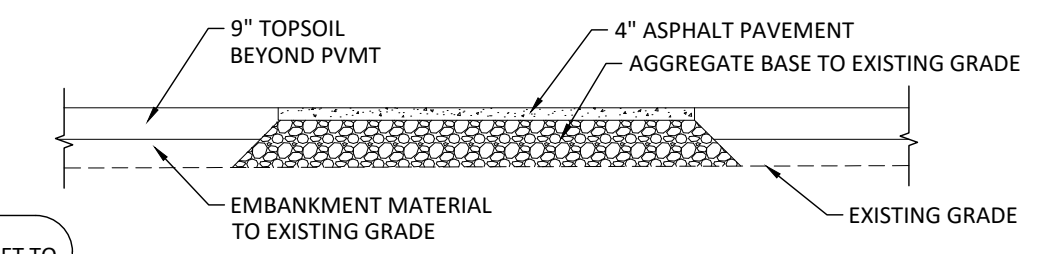
PROJECT NUMBER: 23-356
 DATE: 5/6/2024
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 DRAWN BY: JJV
 CHECKED BY: JJC

C1-2

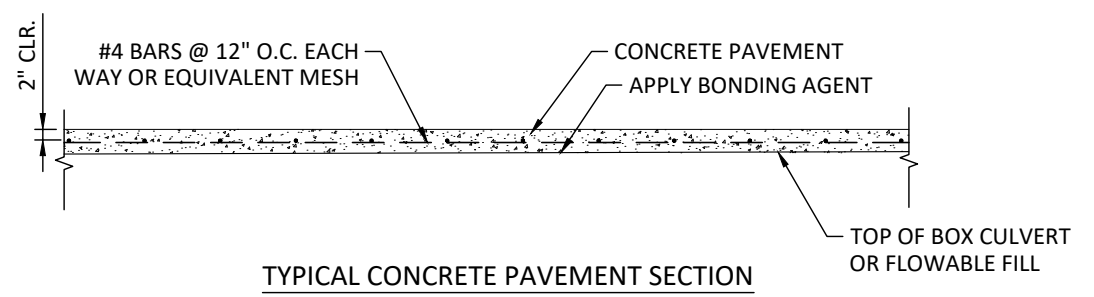
END ELEVATION & FOUNDATION REINFORCING - CULVERT 1



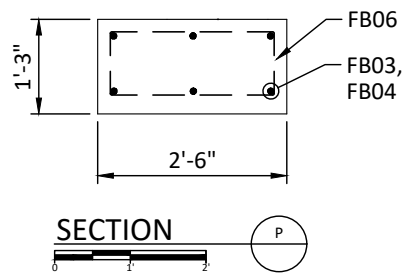
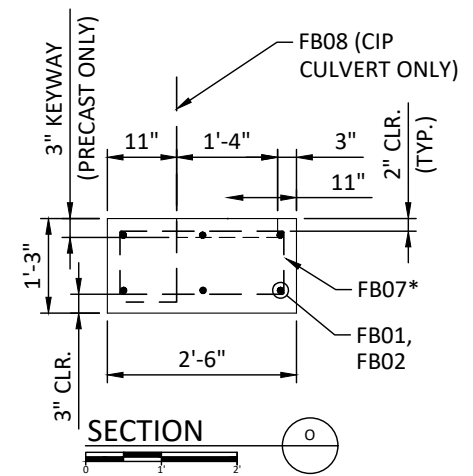
*NOTE:
FLOWLINE OR INVERT ELEVATION SHALL BE SET TO TOP OF BEDROCK. ADJUST ELEVATIONS AS REQUIRED AFTER EXCAVATION.



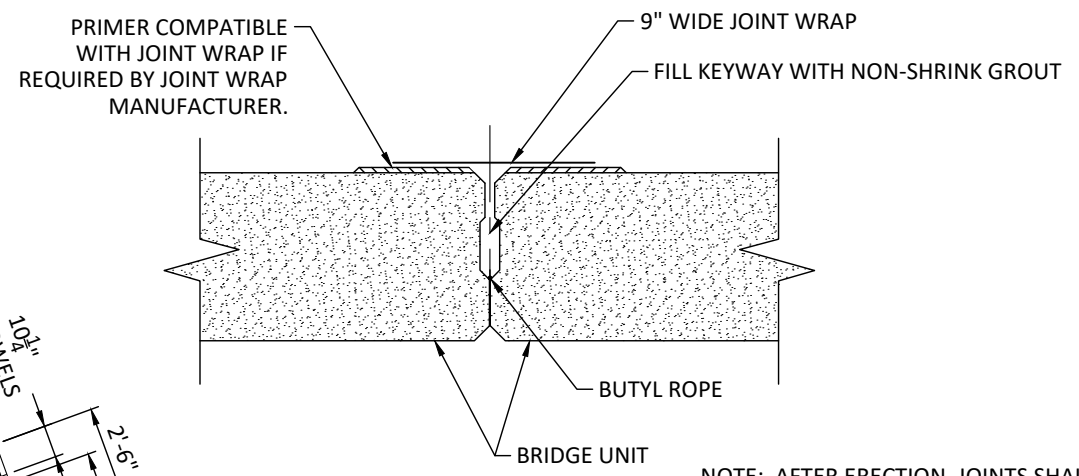
TYPICAL ASPHALT PAVEMENT SECTION



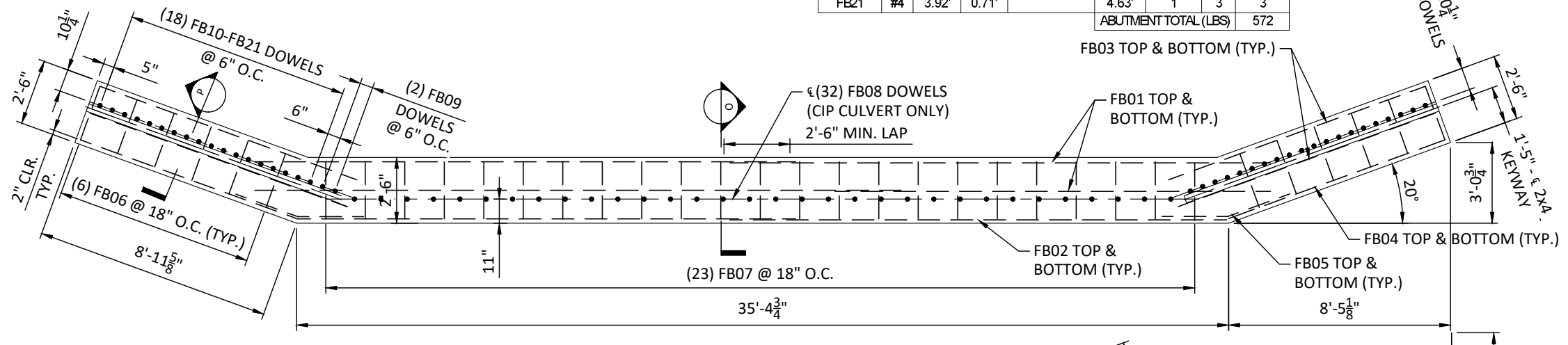
TYPICAL CONCRETE PAVEMENT SECTION



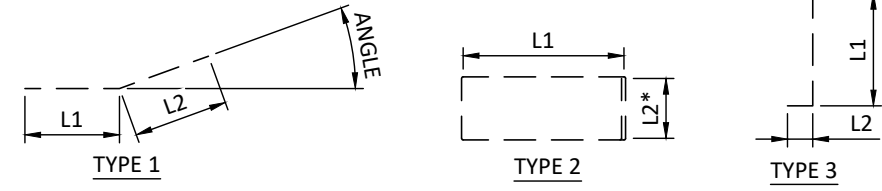
BAR MARK	SIZE	L1	L2	ANGLE	LENGTH	NUMBER	TYPE	WEIGHT
FB01	#5				20.67'	8	STR	172
FB02	#5				19.00'	4	STR	79
FB03	#5				10.40'	8	STR	87
FB04	#5				8.75'	4	STR	37
FB05	#5	3.00'	3.00'	20 DEG	6.00'	4	1	13
FB06	#4	2.17'	0.83'		6.83'	12	2	17
FB07	#4	2.17'	0.83'		6.83'	23	2	33
FB08	#4	3.50'	0.71'		4.21'	32	3	75
FB09	#4	4.92'	0.71'		5.63'	2	3	7
FB10	#4	4.83'	0.71'		5.54'	2	3	6
FB11	#4	4.75'	0.71'		5.46'	1	3	3
FB12	#4	4.67'	0.71'		5.38'	2	3	6
FB13	#4	4.58'	0.71'		5.29'	1	3	3
FB14	#4	4.50'	0.71'		5.21'	2	3	6
FB15	#4	4.42'	0.71'		5.13'	1	3	3
FB16	#4	4.33'	0.71'		5.04'	2	3	6
FB17	#4	4.25'	0.71'		4.96'	1	3	3
FB18	#4	4.17'	0.71'		4.88'	2	3	6
FB19	#4	4.08'	0.71'		4.79'	1	3	3
FB20	#4	4.00'	0.71'		4.71'	2	3	5
FB21	#4	3.92'	0.71'		4.63'	1	3	3
ABUTMENT TOTAL (LBS)								572



NOTE: AFTER ERECTION, JOINTS SHALL BE FILLED WITH NON-SHRINK GROUT. OMIT KEY ON EXTERIOR FACES OF END UNITS.



FOUNDATION REINFORCING PLAN



*NOTE:
SUBTRACT 3" FROM L2 LENGTH FOR PRECAST CULVERT FOUNDATION DUE TO KEYWAY

*NOTE:
SUBTRACT 3" FROM L2 LENGTH FOR PRECAST CULVERT FOUNDATION DUE TO KEYWAY



Jeffrey J. VonHondorf
MAY 7, 2024

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BUTLER SPRINGS CULVERT 1 (SHOP)

LOCALE: HIGHLAND COUNTY

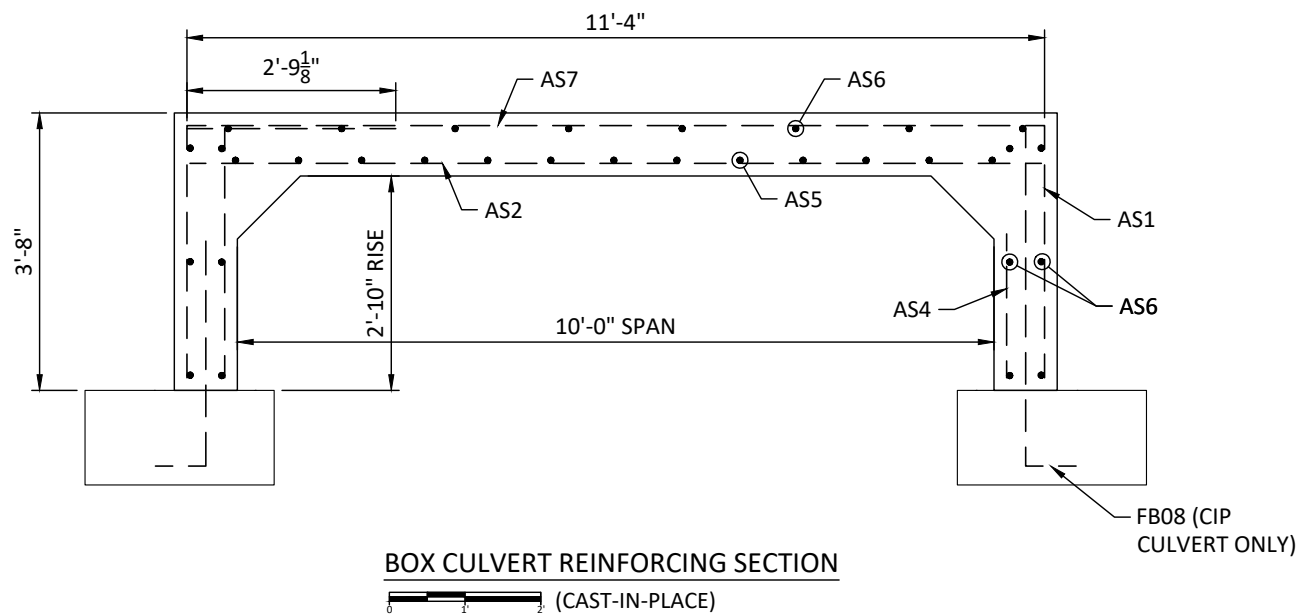
STATE: OH

DESIGNED & PROVIDED BY:
PRETEK GROUP
P.O. BOX 351
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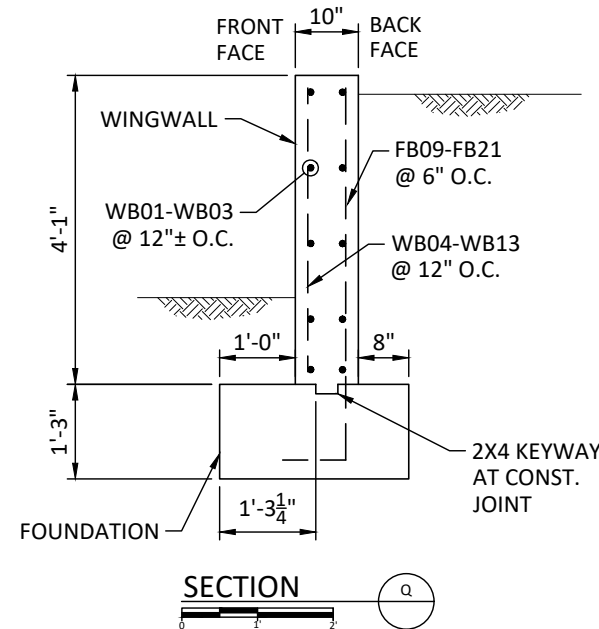
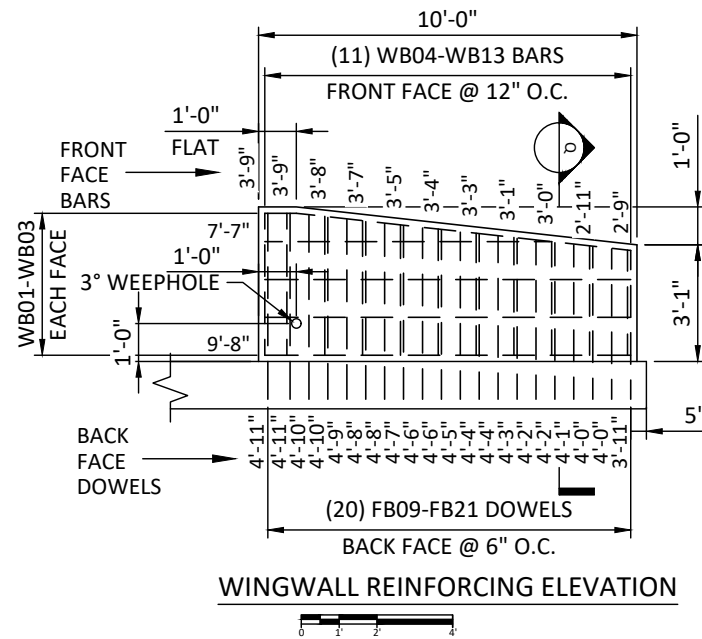
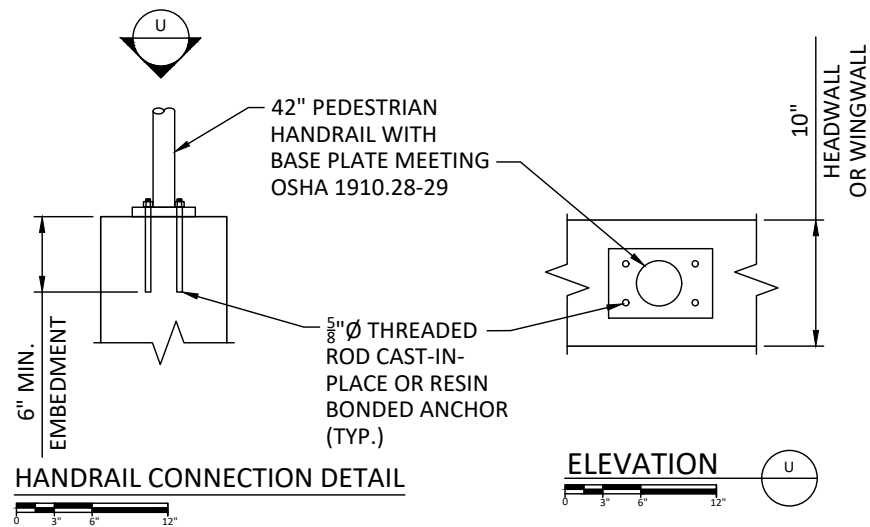
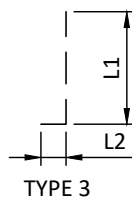
PROJECT NUMBER: 23-356
DATE: 5/6/2024
DESIGNED BY: JJV
DRAWN BY: JJV
CHECKED BY: JJC

C1-3

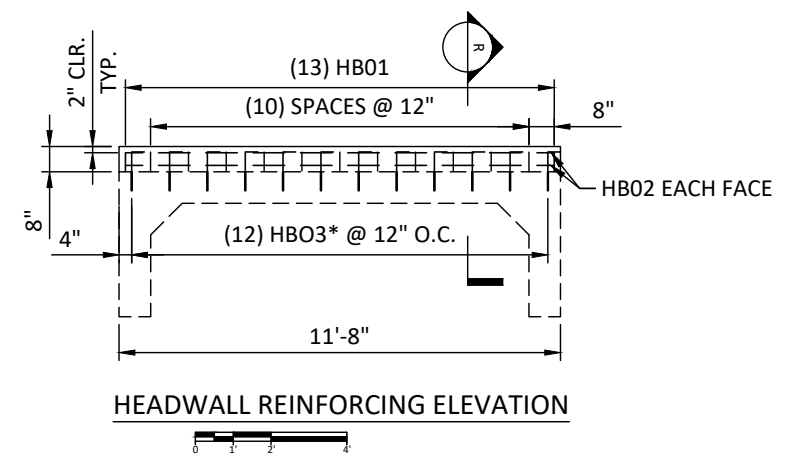
REINFORCING DETAILS - CULVERT 1



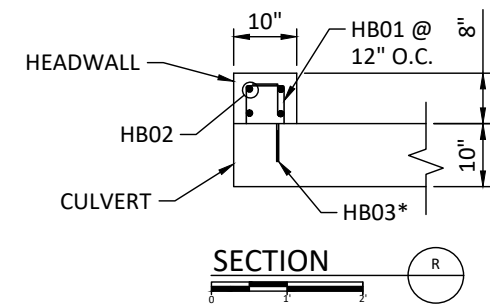
BAR MARK	SIZE	L1	L2	ANGLE	LENGTH	NUMBER	TYPE	WEIGHT
AS1	#4	4.50'	3.25'		7.75'	155	3	802
AS2	#4				11.25'	78	STR	586
AS4	#4				3.33'	64	STR	142
AS5	#4				31.75'	13	STR	276
AS6	#4				31.75'	20	STR	424
AS7	#4				11.25'	32	STR	240
CULVERT TOTAL (LBS)								2471



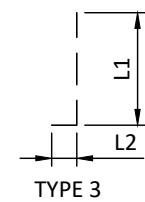
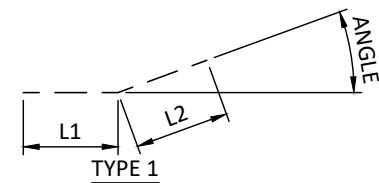
BAR MARK	SIZE	L1	L2	ANGLE	LENGTH	NUMBER	TYPE	WEIGHT
WB01	#5				9.67'	6	STR	61
WB02	#5				7.58'	2	STR	16
WB03	#5	0.83'	8.90'	6 DEG	9.73'	2	1	20
WB04	#4				3.75'	2	STR	5
WB05	#4				3.67'	2	STR	5
WB06	#4				3.58'	2	STR	5
WB07	#4				3.42'	2	STR	5
WB08	#4				3.33'	2	STR	4
WB09	#4				3.25'	2	STR	4
WB10	#4				3.08'	2	STR	4
WB11	#4				3.00'	2	STR	4
WB12	#4				2.92'	2	STR	4
WB13	#4				2.75'	2	STR	4
WINGWALL TOTAL (LBS)								120



*NOTE:
EMBED OR DRILL & EPOXY HB03 BARS 6" INTO CULVERT SLAB



BAR MARK	SIZE	L1	L2	ANGLE	LENGTH	NUMBER	TYPE	WEIGHT
HB01	#4	0.50'	0.50'		1.50'	13	STR	13
HB02	#5				11.33'	4	STR	47
HB03	#4	0.37'	1.00'		1.37'	12	3	11
HEADWALL TOTAL (LBS)								71



Jeffrey J. VonHandorf
MAY 7, 2024

BID DOCUMENT

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BUTLER SPRINGS CULVERT 1 (SHOP)

LOCALE: HIGHLAND COUNTY

STATE: OH

DESIGNED & PROVIDED BY:



P.O. BOX 351
BELLBROOK, OH 45305
800.241.0925

PROJECT NUMBER: 23-356

DATE: 5/6/2024

DESIGNED BY: JJV

DRAWN BY: JJV

CHECKED BY: JJC

C1-4

SITE PLAN & SECTION - CULVERT 2

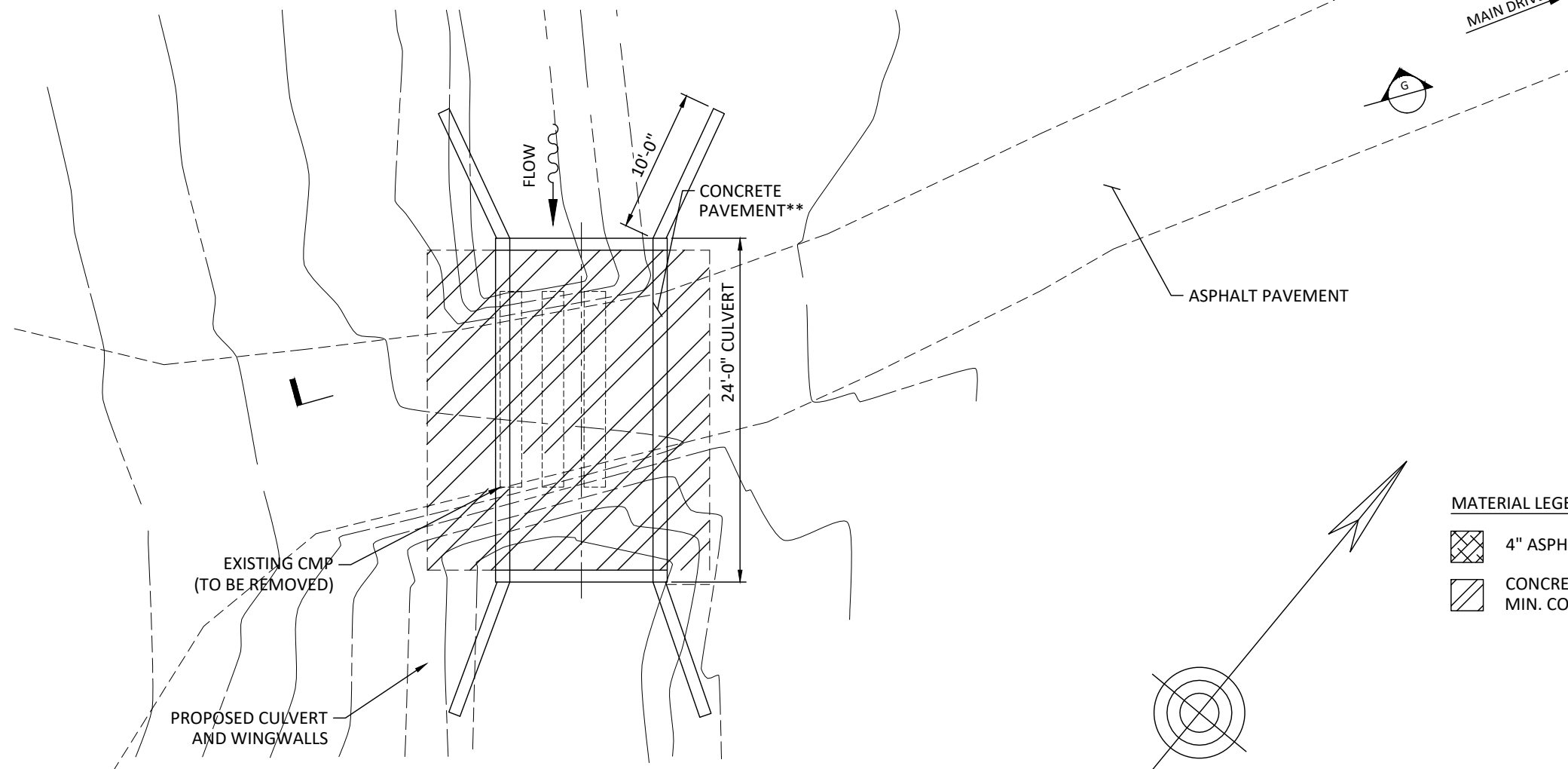
SUMMARY OF QUANTITIES

CONCRETE - FOUNDATION	10.3	CY
CONCRETE - BOX CULVERT (5 KSI)	13.5	CY
CONCRETE - HEADWALLS & WINGWALLS	5.0	CY
REINFORCING BARS - FOUNDATION	992	LBS
REINFORCING BARS - BOX CULVERT	1847	LBS
REINFORCING BARS - HEADWALL/WINGWALL	622	LBS
CONCRETE PAVEMENT WITH BONDING AGENT	6	CY
FLOWABLE FILL BACKFILL	13	CY
EMBANKMENT MATERIAL / TOPSOIL	5	CY
ROADWAY BASE (ODOT 304)	6	CY
ASPHALT CONCRETE PAVEMENT	0	TONS
ROCK EXCAVATION	8	CY
UNCLASSIFIED EXCAVATION	35	CY
REMOVE EXISTING CORRUGATED METAL PIPES	1	EA
MOBILIZATION	1	EA
OPTION 1 STONE FORMLINER FINISH ON HW/WW	160	SF
OPTION 2 - PEDESTRIAN HANDRAIL	62	LF

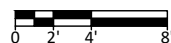
NOTE: FINAL GRACING BY CONTRACTOR INCLUDED IN THIS CONTRACT.
SEEDING/MULCHING BY OTHERS.

ABBREVIATIONS

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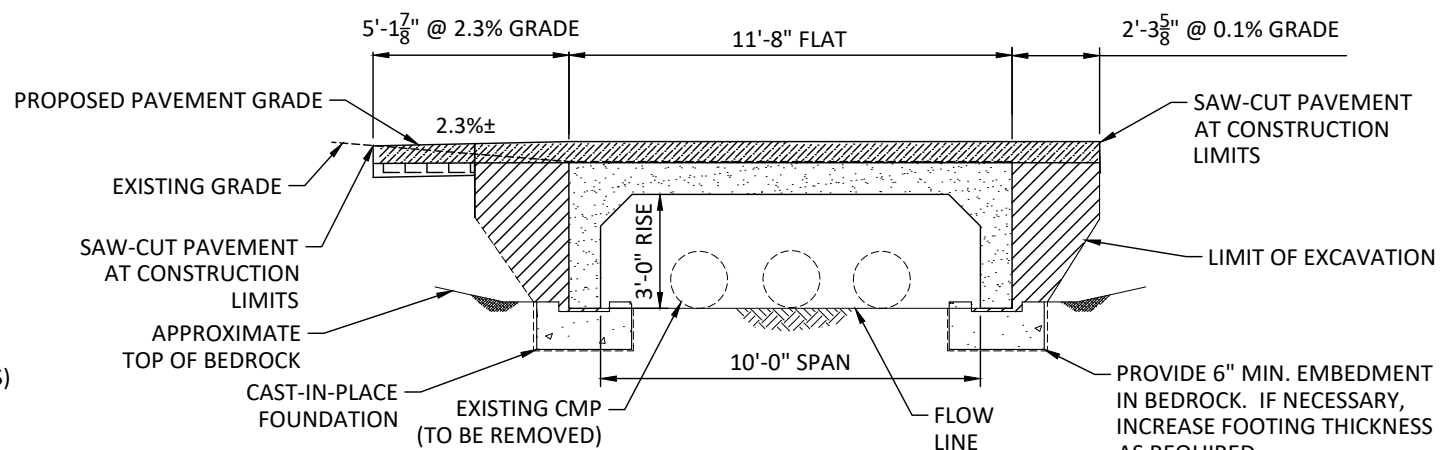


SITE PLAN

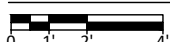


MATERIAL LEGEND

- 4" ASPHALT PAVEMENT (2 LAYERS)
- CONCRETE PAVEMENT, 4,000 PSI MIN. COMPRESSIVE STRENGTH



SECTION



MATERIAL LEGEND

- ODOT 304 DENSE AGGREGATE BASE, 95% COMPACTION
- 4" ASPHALT PAVEMENT (2 LAYERS)
- FLOWABLE BACKFILL, 1,000 PSI MIN. COMPRESSIVE STRENGTH
- CONCRETE PAVEMENT, 4,000 PSI MIN. COMPRESSIVE STRENGTH

*NOTE: ALL BACKFILL MATERIAL BEHIND BOX LEGS SHALL BE FLOWABLE FILL.

**NOTE: CONCRETE PAVEMENT WITH DAYTON SUPERIOR J40 BONDING AGENT OR APPROVED EQUAL OVER CULVERT AND FLOWABLE FILL AREA ONLY. REINFORCE PAVEMENT WITH A SINGLE LAYER OF #4 BARS @ 12" O.C OR EQUIVALENT MESH.



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BUTLER SPRINGS CULVERT 2 (MIDDLE)

LOCALE: HIGHLAND COUNTY

STATE: OH

DESIGNED & PROVIDED BY:



P.O. BOX 351
BELLBROOK, OH 45305
800.241.0925

PROJECT NUMBER: 23-356

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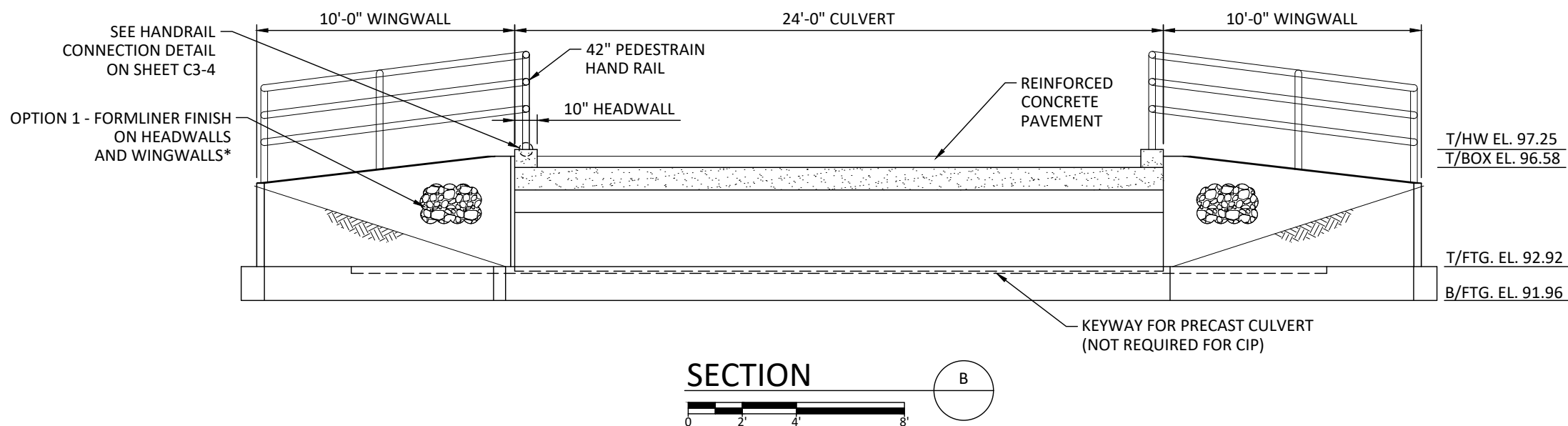
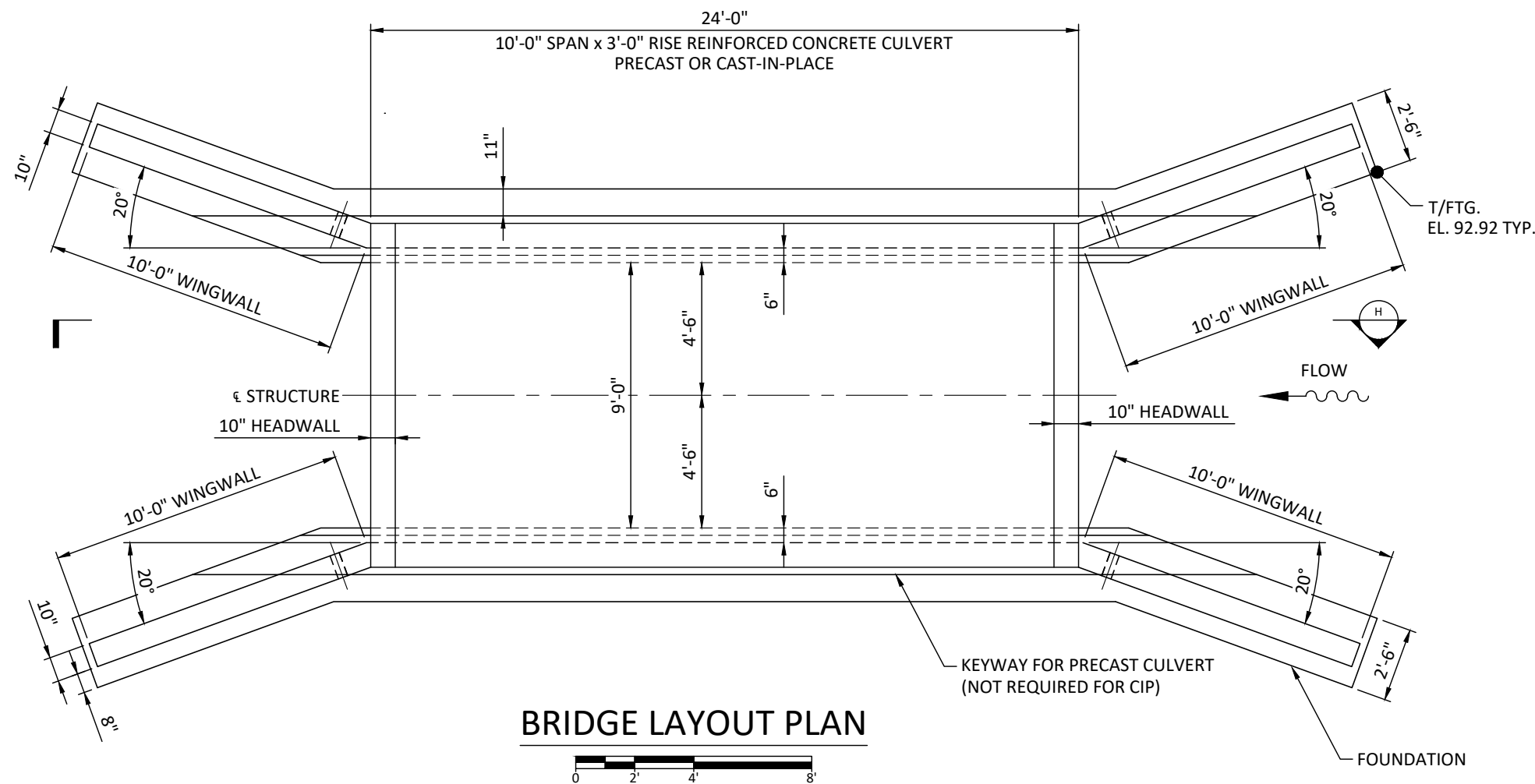
DESIGNED BY: JJV

DRAWN BY: JJV

CHECKED BY: JJC

C2-1

BRIDGE LAYOUT & SECTION - CULVERT 2



DESIGN NOTES

- THIS STRUCTURE IS DESIGNED IN ACCORDANCE WITH THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS "LRFD BRIDGE DESIGN SPECIFICATIONS", 9TH EDITION AND INTERIM SPECIFICATIONS TO DATE. DESIGN LOADS ARE AS FOLLOWS:
BRIDGE UNITS: HL-93
DESIGN FILL HEIGHT: 0'-0" MIN. TO 1'-0" MAX.
HEADWALLS: EARTH PRESSURE + PEDESTRIAN LOADING
WINGWALLS: EARTH PRESSURE + PEDESTRIAN LOADING
- FOUNDATION DESIGN BASED ON AN ASSUMED ALLOWABLE BEDROCK BEARING PRESSURE OF 3,500 PSF.
- CONFORMANCE TO THESE DRAWINGS, SPECIFICATIONS, AND EXISTING CONDITIONS, INCLUDING SCOUR, GRADING AND SOIL CONDITIONS SHALL BE VERIFIED BY OTHERS.
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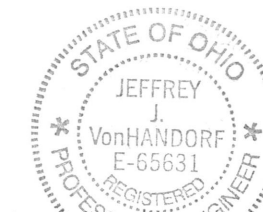
MATERIALS - CAST-IN-PLACE

- CONCRETE FOR CULVERTS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 5,000 PSI
- CONCRETE FOR FOUNDATIONS, HEADWALLS AND WINGWALLS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI
- REINFORCING STEEL SHALL CONFORM TO ASTM A615 OR A996 GRADE 60

MATERIALS - PRECAST

- CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 5,000 PSI
- REINFORCING STEEL SHALL CONFORM TO ASTM A615 OR A996 GRADE 60 FOR REBAR OR ASTM A497 FOR WELDED WIRE MESH
- PRECAST CULVERT UNITS SHALL CONFORM TO ASTM C1504

*NOTE:
SYMONS AUSTIN ASHLAR STONE FORMLINER OR APPROVED EQUAL W/ 1 3/4" RELIEF. ADD RELIEF THICKNESS TO 10" STRUCTURAL WALL THICKNESS.



Jeffrey J. VonHandorf
MAY 7, 2024

BID DOCUMENT

DATE	DESCRIPTION	ENG
7		
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BUTLER SPRINGS CULVERT 2 (MIDDLE)

LOCALE: HIGHLAND COUNTY

STATE: OH

DESIGNED & PROVIDED BY:

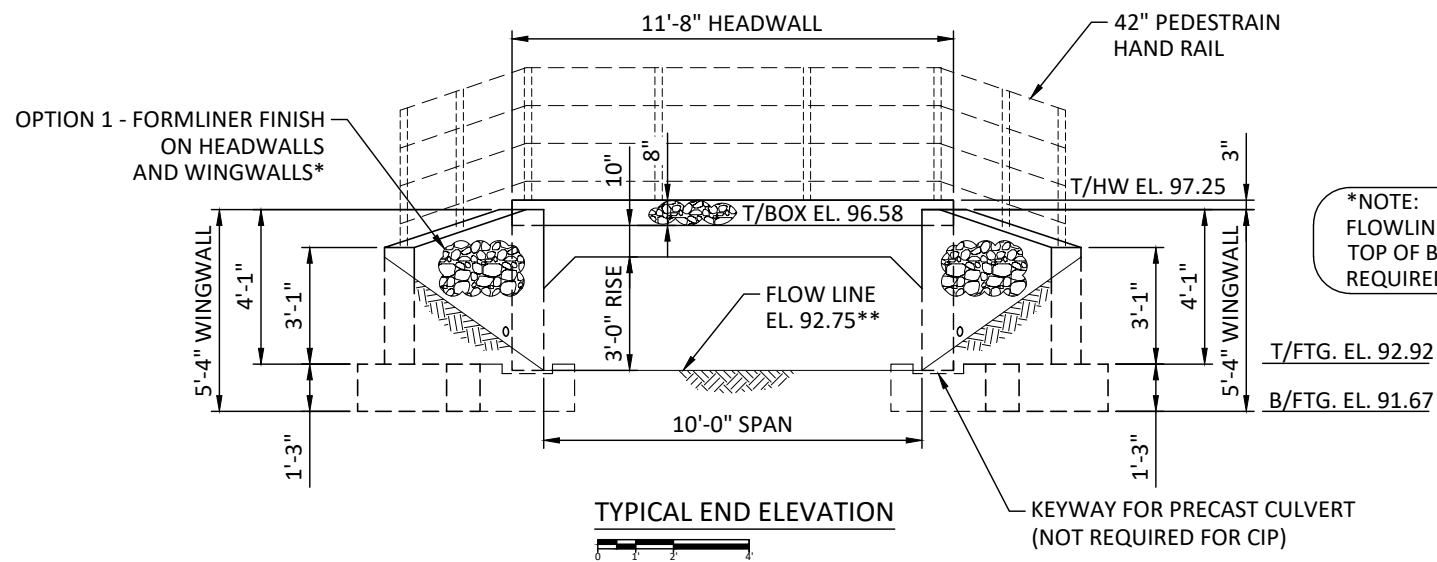
PRETEK GROUP

P.O. BOX 351
BELLBROOK, OH 45305
800.241.0925

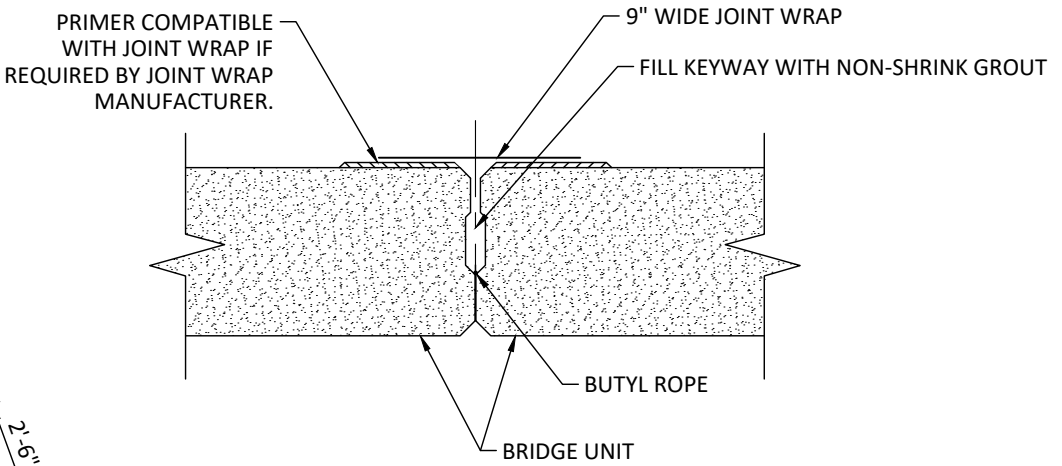
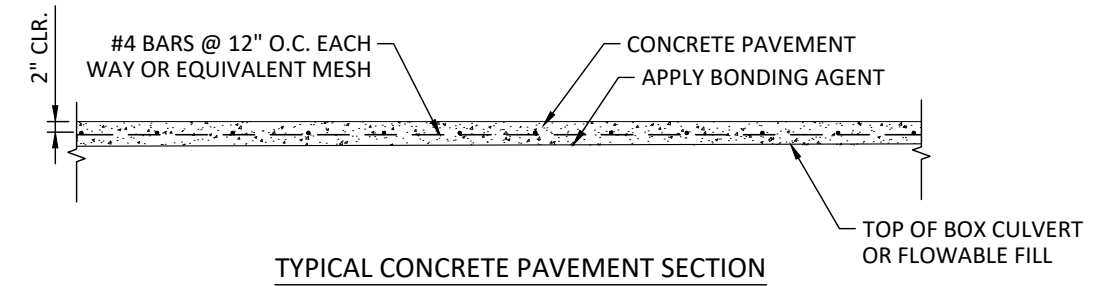
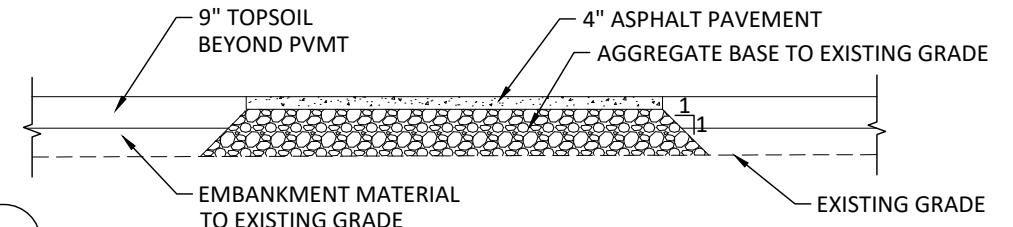
PROJECT NUMBER: 23-356
DATE: 5/6/2024
DESIGNED BY: JJV
DRAWN BY: JJV
CHECKED BY: JJC

C2-2

END ELEVATION & FOUNDATION REINFORCING - CULVERT 2

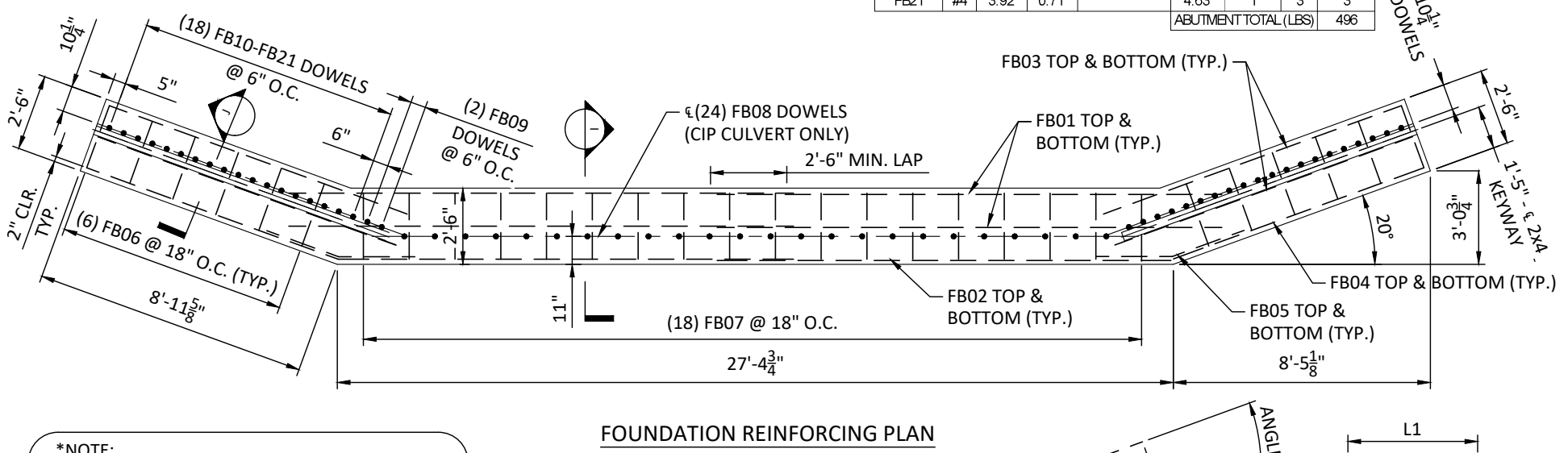
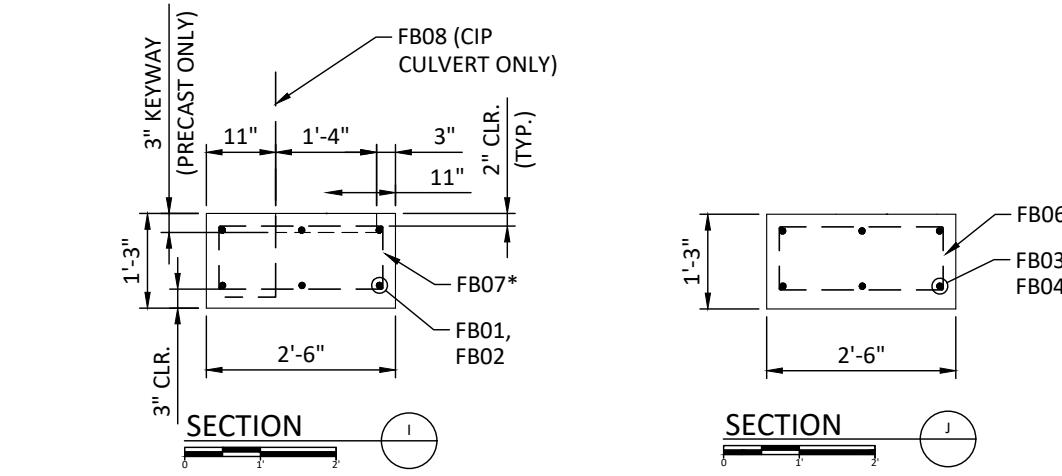


*NOTE:
FLOWLINE OR INVERT ELEVATION SHALL BE SET TO TOP OF BEDROCK. ADJUST ELEVATIONS AS REQUIRED AFTER EXCAVATION.

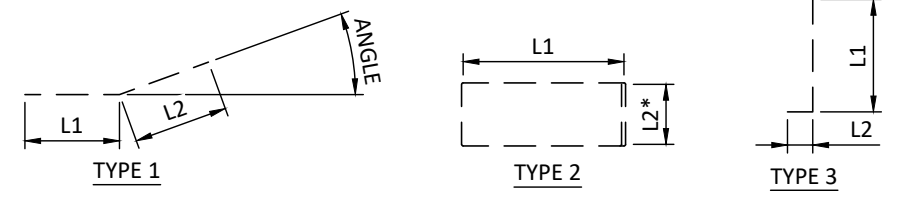


NOTE: AFTER ERECTION, JOINTS SHALL BE FILLED WITH NON-SHRINK GROUT. OMIT KEY ON EXTERIOR FACES OF END UNITS.

BAR MARK	SIZE	L1	L2	ANGLE	LENGTH	NUMBER	TYPE	WEIGHT
FB01	#5				16.67'	8	STR	139
FB02	#5				15.00'	4	STR	63
FB03	#5				10.40'	8	STR	87
FB04	#5				8.75'	4	STR	37
FB05	#5	3.00'	3.00'	20 DEG	6.00'	4	1	13
FB06	#4	2.17'	0.83'		6.83'	12	2	17
FB07	#4	2.17'	0.83'		6.83'	18	2	26
FB08	#4	3.50'	0.71'		4.21'	24	3	56
FB09	#4	4.92'	0.71'		5.63'	2	3	7
FB10	#4	4.83'	0.71'		5.54'	2	3	6
FB11	#4	4.75'	0.71'		5.46'	1	3	3
FB12	#4	4.67'	0.71'		5.38'	2	3	6
FB13	#4	4.58'	0.71'		5.29'	1	3	3
FB14	#4	4.50'	0.71'		5.21'	2	3	6
FB15	#4	4.42'	0.71'		5.13'	1	3	3
FB16	#4	4.33'	0.71'		5.04'	2	3	6
FB17	#4	4.25'	0.71'		4.96'	1	3	3
FB18	#4	4.17'	0.71'		4.88'	2	3	6
FB19	#4	4.08'	0.71'		4.79'	1	3	3
FB20	#4	4.00'	0.71'		4.71'	2	3	5
FB21	#4	3.92'	0.71'		4.63'	1	3	3
ABUTMENT TOTAL (LBS)								496



*NOTE:
SUBTRACT 3" FROM L2 LENGTH FOR PRECAST CULVERT FOUNDATION DUE TO KEYWAY



*NOTE:
SUBTRACT 3" FROM L2 LENGTH FOR PRECAST CULVERT FOUNDATION DUE TO KEYWAY



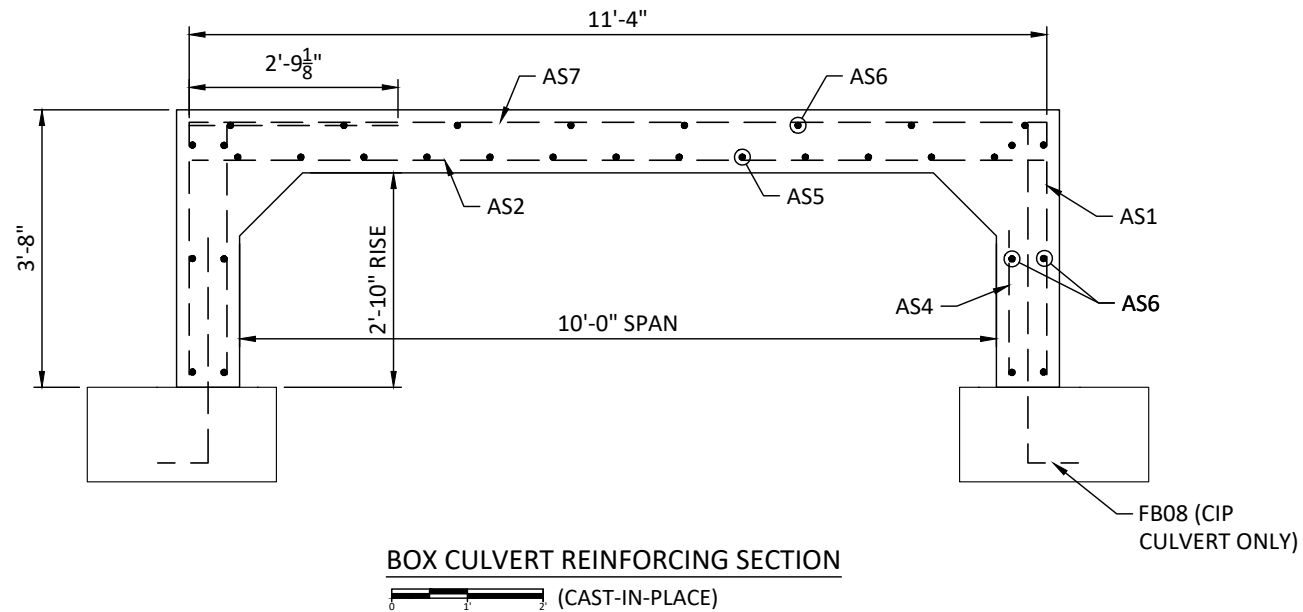
Jeffrey J. VonHandorf
MAY 7, 2024

BID DOCUMENT

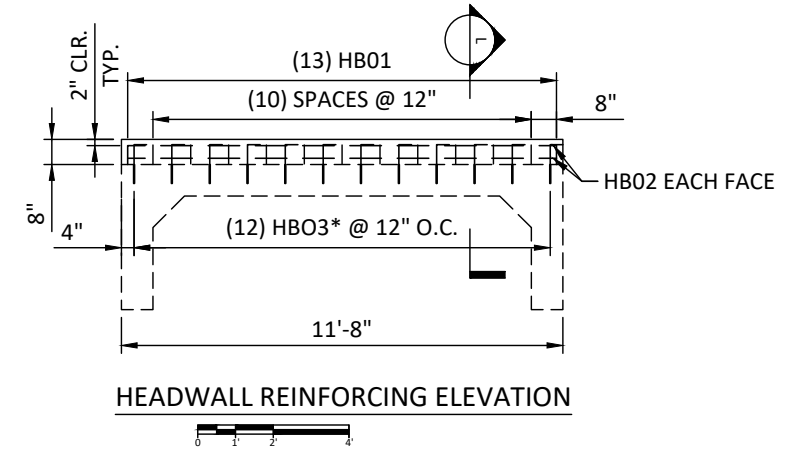
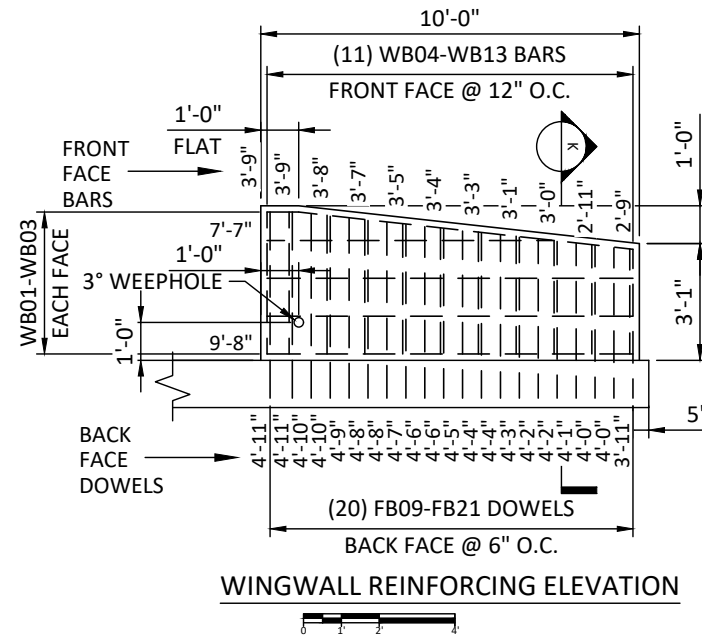
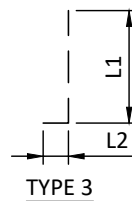
			<p>DATE</p> <p>DESCRIPTION</p> <p>ENG</p>			<p>LOCALE: HIGHLAND COUNTY</p> <p>STATE: OH</p>			<p>DESIGNED & PROVIDED BY:</p> <p>PRETEK GROUP</p> <p>P.O. BOX 351 BELLBROOK, OH 45305 800.241.0925</p>			<p>PROJECT NUMBER: 23-356</p> <p>DATE: 5/6/2024</p> <p>DESIGNED BY: JJV</p> <p>DRAWN BY: JJV</p> <p>CHECKED BY: JJC</p>			C2-3
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BUTLER SPRINGS CULVERT 2 (MIDDLE)

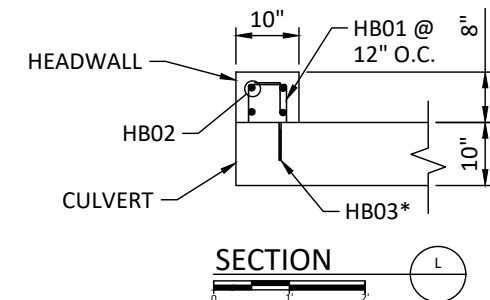
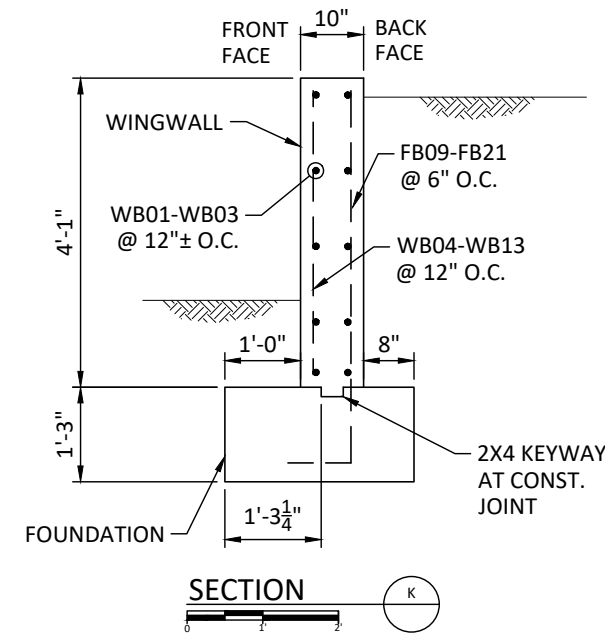
REINFORCING DETAILS - CULVERT 2



BARMARK	SIZE	L1	L2	ANGLE	LENGTH	NUMBER	TYPE	WEIGHT
AS1	#4	4.50'	3.25'		7.75'	116	3	601
AS2	#4				11.25'	58	STR	436
AS4	#4				3.33'	48	STR	107
AS5	#4				23.75'	13	STR	206
AS6	#4				23.75'	20	STR	317
AS7	#4				11.25'	24	STR	180
CULVERT TOTAL (LBS)								1847

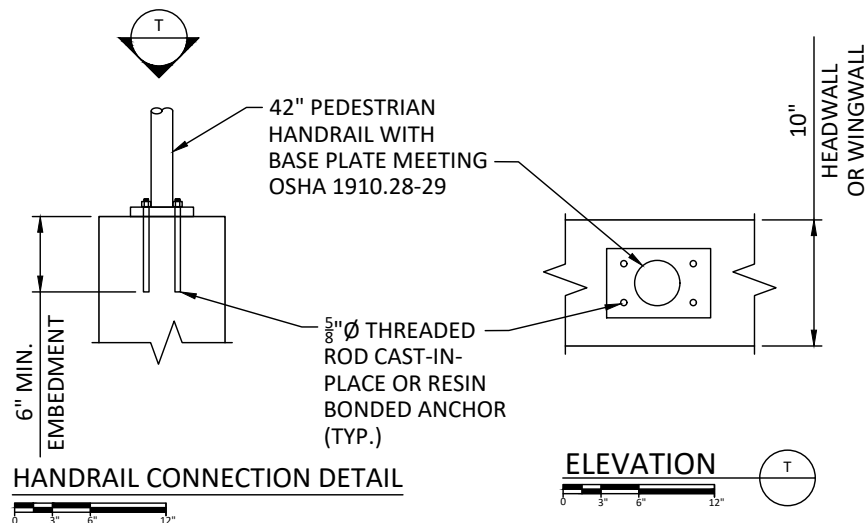
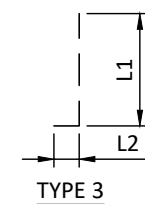
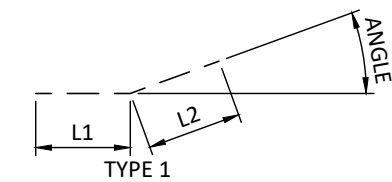


*NOTE:
EMBED OR DRILL & EPOXY HB03 BARS 6" INTO CULVERT SLAB



BARMARK	SIZE	L1	L2	ANGLE	LENGTH	NUMBER	TYPE	WEIGHT
HB01	#4	0.50'	0.50'		1.50'	13	STR	13
HB02	#5				11.33'	4	STR	47
HB03	#4	0.37'	1.00'		1.37'	12	3	11
HEADWALL TOTAL (LBS)								71

BARMARK	SIZE	L1	L2	ANGLE	LENGTH	NUMBER	TYPE	WEIGHT
WB01	#5				9.67'	6	STR	61
WB02	#5				7.58'	2	STR	16
WB03	#5	0.83'	8.90'	6 DEG	9.73'	2	1	20
WB04	#4				3.75'	2	STR	5
WB05	#4				3.67'	2	STR	5
WB06	#4				3.58'	2	STR	5
WB07	#4				3.42'	2	STR	5
WB08	#4				3.33'	2	STR	4
WB09	#4				3.25'	2	STR	4
WB10	#4				3.08'	2	STR	4
WB11	#4				3.00'	2	STR	4
WB12	#4				2.92'	2	STR	4
WB13	#4				2.75'	2	STR	4
WINGWALL TOTAL (LBS)								120



Jeffrey J. VonHandorf
MAY 7, 2024

BID DOCUMENT

DATE	DESCRIPTION	ENG
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BUTLER SPRINGS CULVERT 2 (MIDDLE)

LOCALE: HIGHLAND COUNTY

STATE: OH

DESIGNED & PROVIDED BY:



P.O. BOX 351
BELLBROOK, OH 45305
800.241.0925

PROJECT NUMBER: 23-356

DATE: 5/6/2024

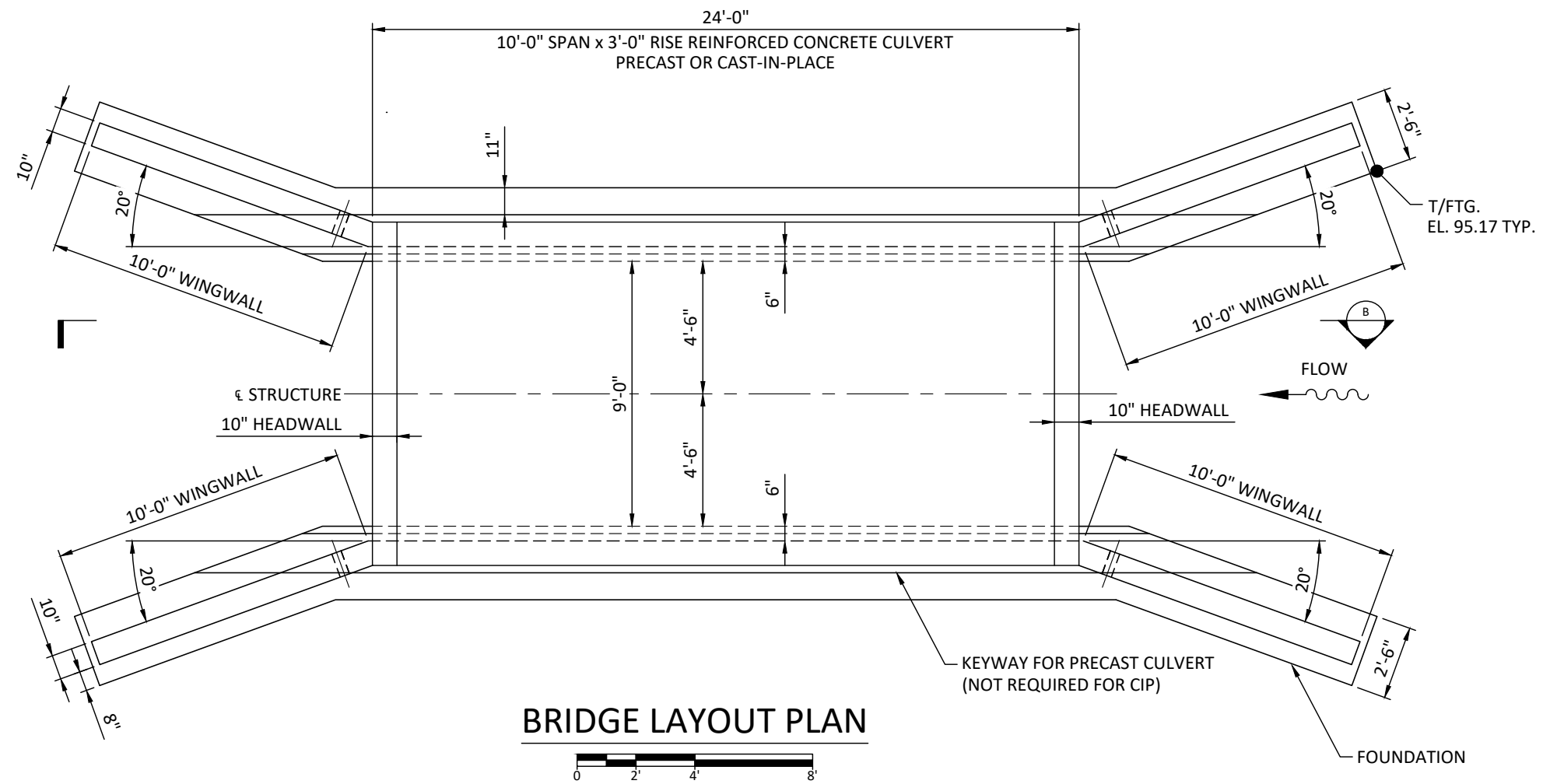
DESIGNED BY: JJV

DRAWN BY: JJV

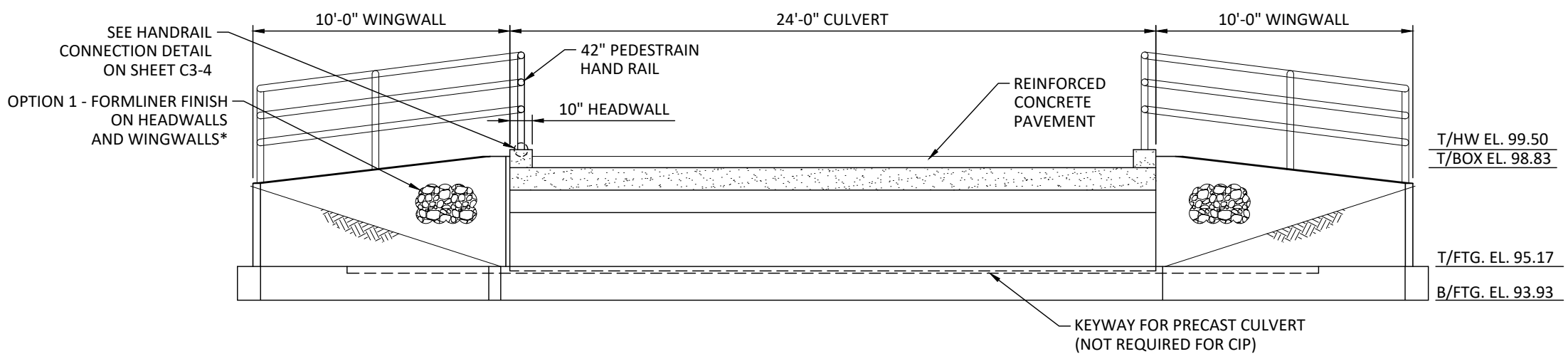
CHECKED BY: JJC

C2-4

BRIDGE LAYOUT & SECTION - CULVERT 3



BRIDGE LAYOUT PLAN



SECTION

DESIGN NOTES

1. THIS STRUCTURE IS DESIGNED IN ACCORDANCE WITH THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS "LRFD BRIDGE DESIGN SPECIFICATIONS", 9TH EDITION AND INTERIM SPECIFICATIONS TO DATE. DESIGN LOADS ARE AS FOLLOWS:
 BRIDGE UNITS: HL-93
 DESIGN FILL HEIGHT: 0'-0" MIN. TO 1'-0" MAX.
 HEADWALLS: EARTH PRESSURE + PEDESTRIAN LOADING
 WINGWALLS: EARTH PRESSURE + PEDESTRIAN LOADING
2. FOUNDATION DESIGN BASED ON AN ASSUMED ALLOWABLE BEDROCK BEARING PRESSURE OF 3,500 PSF.
3. CONFORMANCE TO THESE DRAWINGS, SPECIFICATIONS, AND EXISTING CONDITIONS, INCLUDING SCOUR, GRADING AND SOIL CONDITIONS SHALL BE VERIFIED BY OTHERS.
4. THE ENGINEER HAS NOT BEEN RETAINED OR COMPENSATED TO PROVIDE DESIGN AND/OR CONSTRUCTION REVIEW SERVICES RELATED TO THE CONTRACTOR'S SAFETY PRECAUTIONS OR TO MEANS, METHODS, TECHNIQUES OR PROCEDURES FOR THE CONTRACTOR TO PERFORM THE WORK. THE UNDERTAKING OF PERIODIC SITE VISITS BY THE ENGINEER SHALL NOT BE CONSTRUED AS SUPERVISION OF ACTUAL CONSTRUCTION NOR MAKE HIM RESPONSIBLE FOR PROVIDING A SAFE PLACE FOR THE PERFORMANCE OF THE WORK BY THE CONTRACTOR, SUB-CONTRACTOR OR ANY PERSON ON THE SITE.

MATERIALS - CAST-IN-PLACE

1. CONCRETE FOR CULVERTS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 5,000 PSI
2. CONCRETE FOR FOUNDATIONS, HEADWALLS AND WINGWALLS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI
3. REINFORCING STEEL SHALL CONFORM TO ASTM A615 OR A996 GRADE 60

MATERIALS - PRECAST

1. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 5,000 PSI
2. REINFORCING STEEL SHALL CONFORM TO ASTM A615 OR A996 GRADE 60 FOR REBAR OR ASTM A497 FOR WELDED WIRE MESH
3. PRECAST CULVERT UNITS SHALL CONFORM TO ASTM C1504

*NOTE:
 SYMONS AUSTIN ASHLAR STONE FORMLINER OR APPROVED EQUAL W/ 1 3/4" RELIEF. ADD RELIEF THICKNESS TO 10" STRUCTURAL WALL THICKNESS.



Jeffrey J. VonHandorf
 MAY 7, 2024

BID DOCUMENT

DATE	DESCRIPTION	ENG
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BUTLER SPRINGS CULVERT 3 (KITCHEN)

LOCALE: HIGHLAND COUNTY

STATE: OH

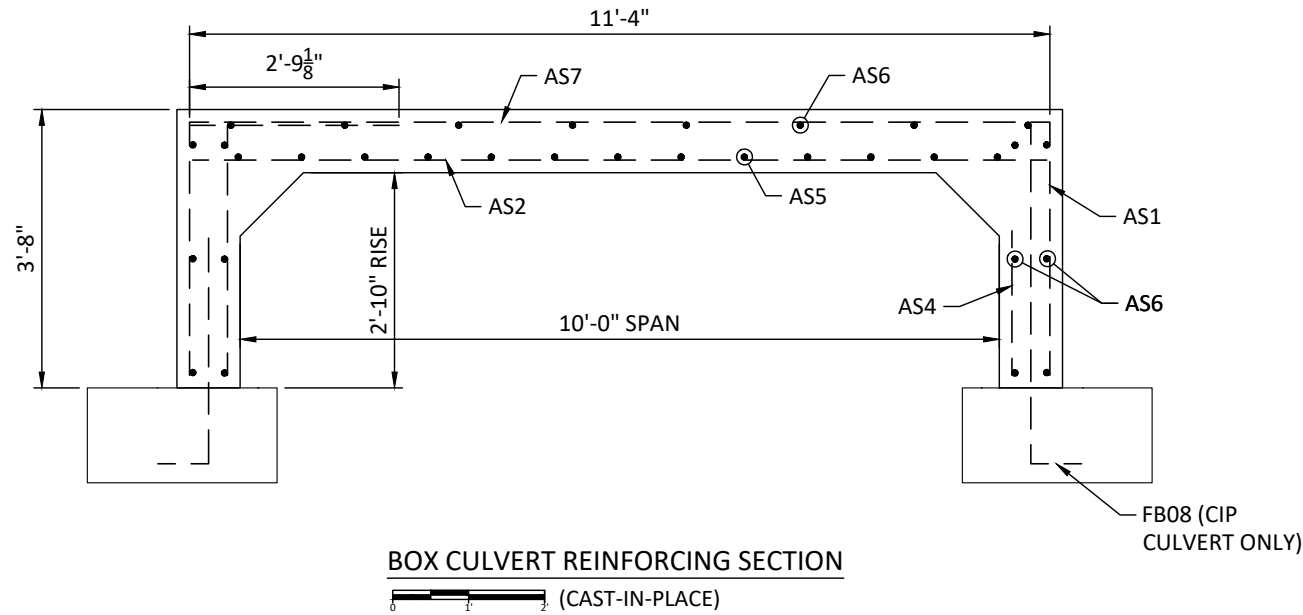
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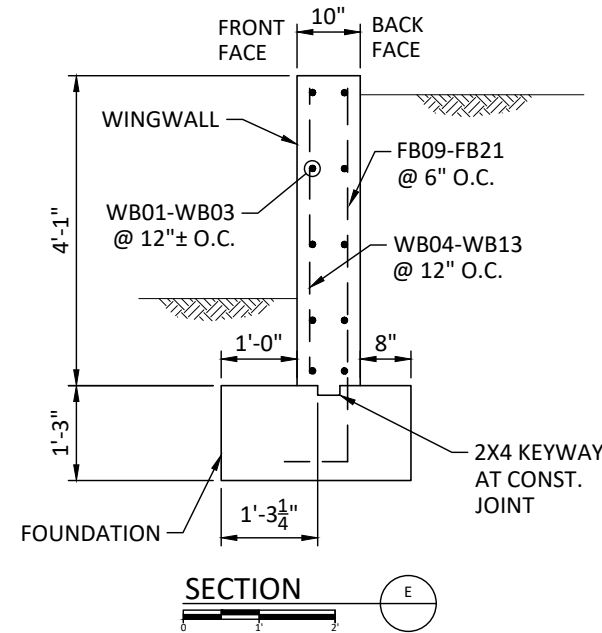
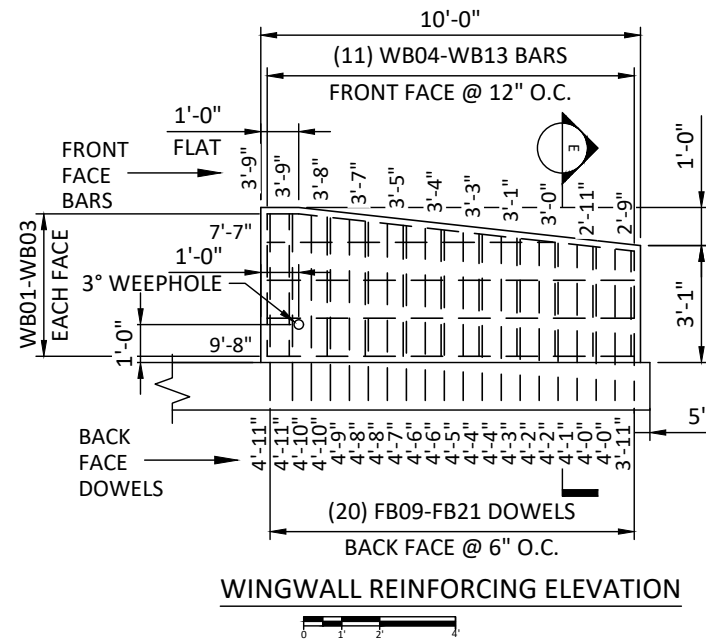
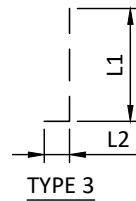
PROJECT NUMBER: 23-356
DATE: 5/6/2024
DESIGNED BY: JJV
DRAWN BY: JJV
CHECKED BY: JJC

C3-2

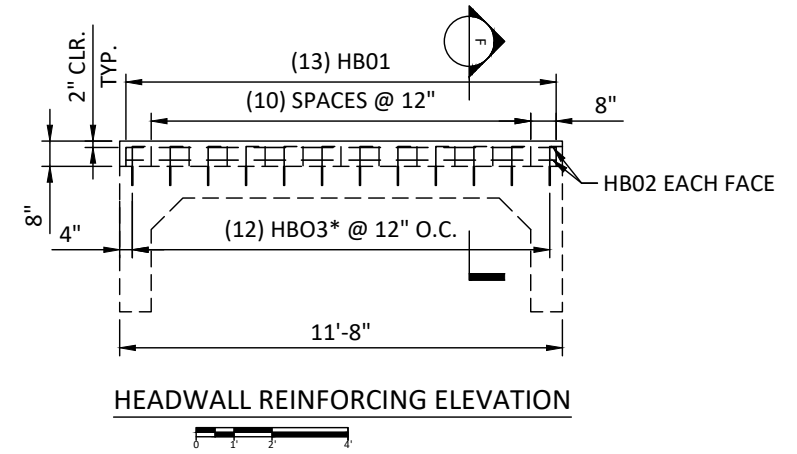
REINFORCING DETAILS - CULVERT 3



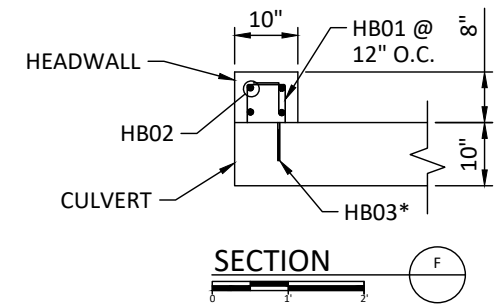
BARMARK	SIZE	L1	L2	ANGLE	LENGTH	NUMBER	TYPE	WEIGHT
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AS5	#4				23.75'	13	STR	206
AS6	#4				23.75'	20	STR	317
AS7	#4				11.25'	24	STR	180
CULVERT TOTAL (LBS)								1847



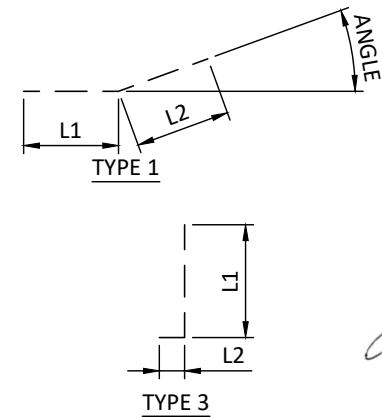
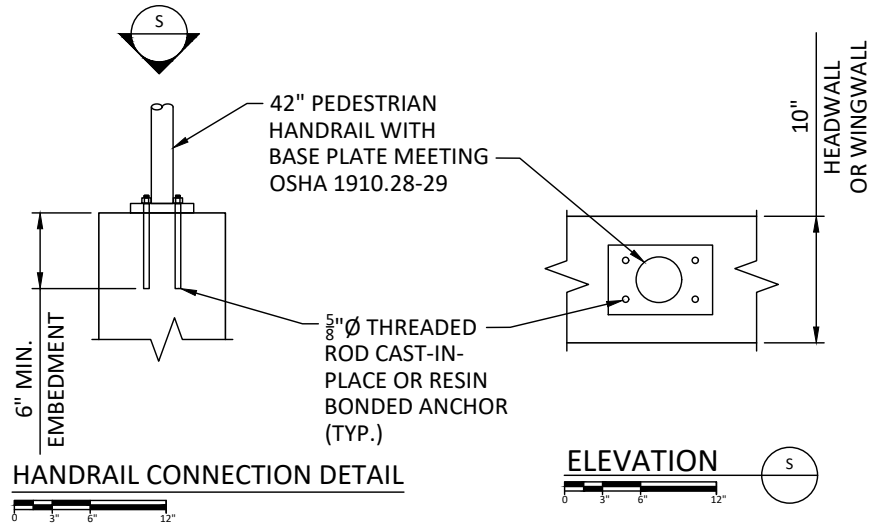
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WB04	#4				3.75'	2	STR	5
WB05	#4				3.67'	2	STR	5
WB06	#4				3.58'	2	STR	5
WB07	#4				3.42'	2	STR	5
WB08	#4				3.33'	2	STR	4
WB09	#4				3.25'	2	STR	4
WB10	#4				3.08'	2	STR	4
WB11	#4				3.00'	2	STR	4
WB12	#4				2.92'	2	STR	4
WB13	#4				2.75'	2	STR	4
WINGWALL TOTAL (LBS)								120



*NOTE:
EMBED OR DRILL & EPOXY HB03 BARS 6" INTO CULVERT SLAB



BARMARK	SIZE	L1	L2	ANGLE	LENGTH	NUMBER	TYPE	WEIGHT
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Jeffrey J. VonHandorf
MAY 7, 2024

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BUTLER SPRINGS CULVERT 3 (KITCHEN)

LOCALE: HIGHLAND COUNTY

STATE: OH

DESIGNED & PROVIDED BY:



P.O. BOX 351
BELLBROOK, OH 45305
800.241.0925

PROJECT NUMBER: 23-356

DATE: 5/6/2024

DESIGNED BY: JJV

DRAWN BY: JJV

CHECKED BY: JJC

C3-4