

STATE OF MAINE DEPARTMENT OF TRANSPORTATION



UNION KNOX COUNTY

ROUTE 17
FEDERAL PROJECT NO. 2423700
PROJECT LENGTH : 0.01 MILES
LARGE CULVERT NO. 46462

PLAN LEGEND

Town, County, State	_____	Catch Basins	▣ Existing	■ Proposed
Property Lines	-----	Manholes	○ Existing	● Proposed
R/W Lines-Existing	=====	Proposed Underdrain	-----	
R/W Lines-Proposed	=====	Proposed Ditch	-----	
Culvert-Existing	=====	Existing Ditch	-----	
Culvert Proposed	=====	Utility Poles	⊕ Existing	⊕ Proposed
Curbing	Existing Proposed	Fire Hydrants	⊙ Existing	⊙ Proposed
Type 1	=====	Existing Water Line	-----	
Type 3	=====	Existing San. Sewer	-----	
Type 5	=====	Existing San. Sewer Manhole	⊙	
Outline of Bodies of Water	-----	Guardrail-Existing	-----	
Exposed Bedrock	-----	Guardrail-Proposed	-----	
Buildings	-----	Guardrail-Cable, Other	-----	
Trees	⊗ Conifer ⊗ Deciduous	Centerline-Existing	-----	
Tree Line	-----	Centerline-Proposed	-----	
Clearing Limit Line	-----	Travelway-Existing	-----	
Railroad	-----	Travelway-Proposed	-----	
Boring	⊕ HB-XXX-###	Probe	⊕ P-#.##X	
Pavement Core	● PC-#		## = Depth	
Test Pit	⊕ TP-XXX-###		X = W (Weathered Rock)	
			R (Refusal)	
			NR (No Refusal)	

INDEX OF SHEETS

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SPECIFICATIONS

Design: Load and Resistance Factor Design per AASHTO LRFD Bridge Design Specifications, Ninth Edition 2020.

MATERIALS

Composite: See Specifications

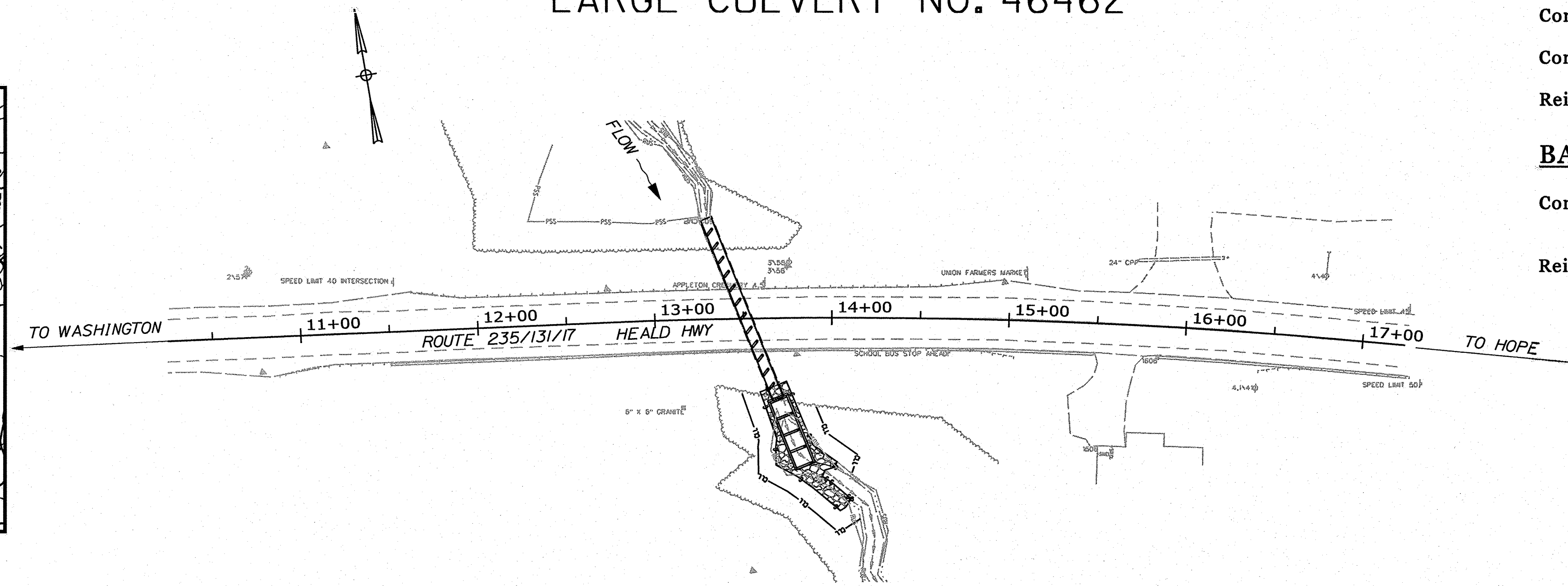
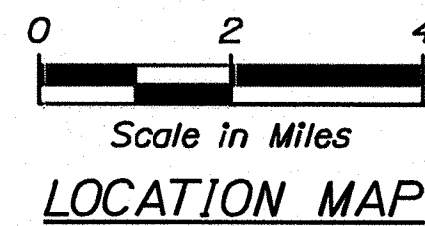
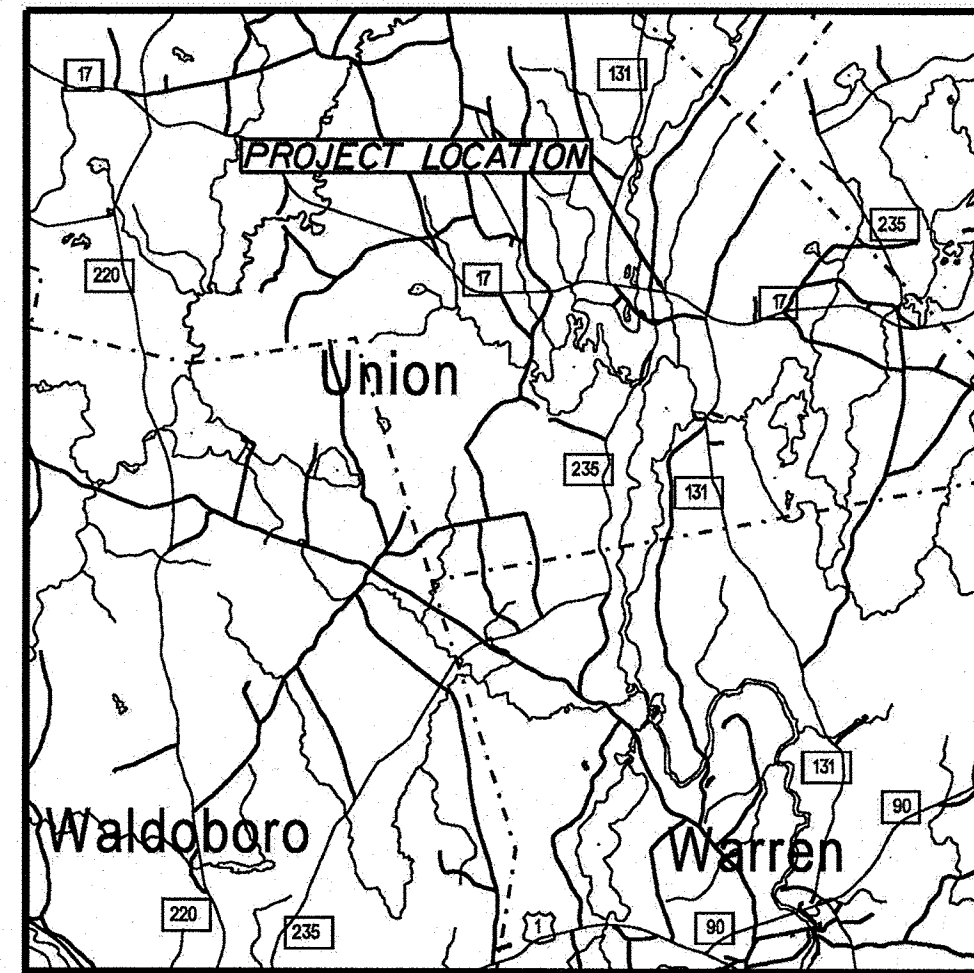
Concrete: Class "A"

Reinforcing Steel: ASTM A 615/A 615M, Grade 60

BASIC DESIGN STRESSES

Concrete: Class "A" f'c = 4,000 psi

Reinforcing Steel: ASTM A 615/A 615M, Grade 60 fy = 60,000 psi



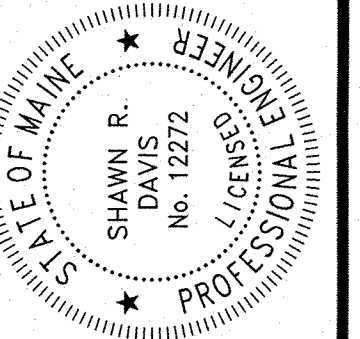
TRAFFIC DATA ROUTE 17

Current (2022) AADT	7480
Future (2042) AADT	8230
DHV - % of AADT	11%
Design Hour Volume	905
% Heavy Trucks (AADT)	9%
Directional Distribution (DHV)	60%
Design Speed (mph)	50
Functional Class	Minor Arterial
Corridor Priority	2

PROJECT LOCATION:	IN THE TOWN OF UNION ON ROUTE 17, LOCATED 0.06 MILES EAST OF TOWN HOUSE ROAD
PROGRAM AREA:	HIGHWAY PROGRAM
SCOPE OF WORK:	LARGE CULVERT REHABILITATION: INVERT LINING

TYLIN INTERNATIONAL

STATE OF MAINE DEPARTMENT OF TRANSPORTATION	APPROVED	DATE
COMMISSIONER	<i>[Signature]</i>	3/2/22
CHIEF ENGINEER	<i>[Signature]</i>	3/2/22



PROJECT INFORMATION	PROGRAM	SHAWN DAVIS	SHAWN DAVIS	SHAWN DAVIS	PROJECT RESIDENT	CONTRACTOR	PROJECT COMPLETION DATE
	PROJECT MANAGER	SHAWN DAVIS	SHAWN DAVIS	I. Y. INL	PROJECT RESIDENT	CONTRACTOR	PROJECT COMPLETION DATE
	DESIGNER	SHAWN DAVIS	SHAWN DAVIS	I. Y. INL	PROJECT RESIDENT	CONTRACTOR	PROJECT COMPLETION DATE
	CONSULTANT	SHAWN DAVIS	SHAWN DAVIS	I. Y. INL	PROJECT RESIDENT	CONTRACTOR	PROJECT COMPLETION DATE
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UNION
ROUTE 17
TITLE SHEET

SHEET NUMBER
1
OF 9

Date: 2/22/2022

Username:

Division: HIGHWAY

Filename: ...\\00\HIGHWAY\MSTA\001_Title.dgn

WIN 24237.00 FEDERAL PROJECT NO. 2423700

Date: 3/31/2022

Username:

Division: HIGHWAY

Filename: ... \00\HIGHWAY\MS\TA\002_Notes.dgn

ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	QUANTITY	UNIT
203.25	GRANULAR BORROW	23	CY
206.07	STR ROCK EXC - DR & MINOR STR	40	CY
502.2483	PUMPED GROUT	5	CY
502.325	STRUCTURAL CONCRETE CULVERT INVERT LINING (23 CY)	1	LS
502.326	STRUCTURAL CONCRETE - FISH WEIRS (50 CY)	1	LS
503.12	REINFORCING STEEL, FABRICATED AND DELIVERED	11,760	LB
503.13	REINFORCING STEEL, PLACING	11,760	LB
511.07	COFFERDAM: (UP-STREAM)	1	LS
511.07	COFFERDAM: (DOWN-STREAM)	1	LS
524.301	TEMPORARY STRUCTURAL SUPPORT	1	LS
610.08	PLAIN RIPRAP	280	CY
620.58	EROSION CONTROL GEOTEXTILE	390	SY
629.05	HAND LABOR, STRAIGHT TIME	5	HR
631.12	ALL PURPOSE EXCAVATOR (INCLUDING OPERATOR)	5	HR
631.172	TRUCK - LARGE (INCLUDING OPERATOR)	5	HR
652.34	CONE	20	EA
652.35	CONSTRUCTION SIGN	250	SF
652.36	MAINTENANCE OF TRAFFIC CONTROL DEVICES	30	CD
652.38	FLAGGER	125	HR
652.41	PORTABLE CHANGEABLE MESSAGE SIGN	2	EA
656.75	TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL	1	LS
659.10	MOBILIZATION	1	LS

GENERAL NOTES:

- CLEARING LIMITS SHALL BE 10 FEET BEYOND AND PARALLEL TO THE CONSTRUCTION SLOPE LINES OR AS SHOWN ON THE PLANS UNLESS OTHERWISE AUTHORIZED BY THE RESIDENT.
- ALL CLEARING SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO SPERATE PAYMENT WILL BE MADE. THE ACTUAL LINES FOR CLEARING SHALL BE ESTABLISHED IN THE FIELD BY THE CONTRACTOR AS INDICATED ON THE PLANS AND APPROVED BY THE RESIDENT.
- ALL WASTE MATERIAL NOT USED ON THE PROJECT SHALL BE DISPOSED OF OFF THE PROJECT IN ACCEPTABLE WASTE AREAS REVIEWED BY THE RESIDENT. GRADING, SEEDING AND MULCHING OF WASTE AREAS SHALL BE CONDISERED INCIDENTAL.
- GRANULAR BORROW USED TO BACKFILL MUCK EXCAVATION OR IN LOW WET AREAS TO 1 FOOT ABOVE WATER LEVEL OR OLD GROUND SHALL MEET REQUIREMENTS FOR GRANULAR BORROW MATERIAL FOR UNDERWATER BACKFILL AS SPECIFIED IN STANDARD SPECIFICATIONS ITEM 703.19, GRANULAR BORROW.
- ANY DAMAGE TO THE SLOPES CAUSED BY THE CONTRACTOR'S EQUIPMENT, PERSONNEL, OR OPERATION SHALL BE REPAIRED TO THE SATISFACTION OF THE RESIDENT. ALL WORK, EQUIPMENT, AND MATERIALS REQUIRED TO MAKE REPAIRS SHALL BE AT THE CONTRACTOR'S EXPENSE.
- THE PROJECT GEOTECHNICAL REPORT TITLED "GEOTECHNICAL DATA REPORT FOR THE REHABILITATION OF: LARGE CULVERT #46462" SOILS REPORT 2022-02, 2/16/2022, CAN BE ACCESSED AT MAINEDOT WEBSITE [HTTP://WWW.MAINE.GOV/MDOT/CONTRACTORS/](http://www.maine.gov/mdot/contractors/).
- GEOTECHNICAL INFORMATION FURNISHED OR REFERRED TO IN THE BID DOCUMENTS IS FOR THE USE OF THE BIDDERS. NO ASSURANCE IS GIVEN THAT THE INFORMATION OR INTERPERTATIONS WILL BE REPRESENTATIVE OF THE ACTUAL SUBSURFACE CONDITIONS THROUGHOUT THE CONSTRUCTION SITE. MAINEDOT WILL NOT BE RESPONSIBLE FOR ANY INTERPERTATIONS OR CONCLUSIONS DRAWN FROM THE GEOTECHNICAL INFORMATION. THE BORING LOGS PROVIDED IN THE BID DOCUMENTS (IF ANY) PRESENT FACTUAL AND INTERPRETIVE SUBSURFACE INFORMATION COLLECTED AT DISCRETE LOCATIONS. DATA PROVIDED MAY NOT BE REPRESENTATIVE OF THE SUBSURFACE CONDITIONS BETWEEN BORING LOCATIONS.
- NO SEPARATE PAYMENT FOR SUPERINTENDENT OR FOREMAN WILL BE MADE FOR THE SUPERVISION OF EQUIPMENT AND LAYOUT OF WORK BEING PAID FOR UNDER THE EQUIPMENT RENTAL ITEMS.

FISH WEIRS AND INVERT LINING NOTES

- VOIDS UNDER THE CULVERT CAUSED BY EROSION, SHALL BE GROUTED AS DIRECTED BY THE RESIDENT. ALL MATERIALS AND HARDWARE NEEDED FOR GROUTING SHALL BE PAID FOR UNDER ITEM 502.2483, PUMP GROUT.
- ALL DEBRIS IN THE EXISTING PIPE SHALL BE REMOVED AND DISPOSED OF PROPERLY. SURFACES OF THE PIPE AGAINST WHICH CONCRETE IS TO BE PLACED SHALL BE THOROUGHLY CLEANED SO AS TO REMOVE ALL LOOSE CORROSION. IN AREAS WHERE THE METAL IS NONEXISTENT, A PRELIMINARY CONCRETE PLACEMENT SHALL BE MADE, USING FORMS WHERE REQUIRED, TO FILL VOIDS AND TO ESTABLISH THE ORIGINAL LINES OF THE PIPE. PAYMENT FOR THIS WORK WILL BE CONSIDERED INCIDENTAL TO ITEM NO. 502.325, STRUCTURAL CONCRETE CULVERT INVERT LINING. THE FINAL CONCRETE PLACEMENT SHALL THEN BE MADE AS SHOWN.
- THREE (3) ROWS OF SHEAR CONNECTORS SHALL BE STAGGERED LONGITUDINALLY AT 12-IN. SPACING ALONG EACH SIDE OF THE PIPE BARREL. SHEAR CONNECTORS SHALL BE 1/2-IN. ϕ X 3-IN. STUDS OR MACHINE BOLTS WELDED TO THE CRESTS OF THE PIPE CORRUGATIONS. APPROXIMATELY 660 SHEAR CONNECTORS ARE REQUIRED. ADDITIONALLY ELEVEN (11) SHEAR CONNECTORS SHALL BE SPACED AT 1'-6" SPACING AROUND THE OUTLET OF THE PIPE AS SHOWN ON THE SPECIAL DETAILS. SHEAR CONNECTORS SHALL BE 1/2 -IN. ϕ X 6-IN STUDS OR MACHINE BOLTS WELDED TO THE CRESTS OF THE PIPE CORRUGATIONS. SHEAR CONNECTIONS SHALL NOT BE PAID FOR DIRECTLY. PAYMENT WILL BE CONSIDERED INCIDENTAL TO ITEM 502.325, STRUCTURAL CONCRETE CULVERT INVERT LINING.
- THE BEVELLED OUTLET END OF THE EXISTING CULVERT WILL BE CUT BACK TO A VERTICAL FACE AS SHOWN ON THE CROSS SECTIONS. THIS WORK WILL BE CONSIDERED INCIDENTAL TO ITEM 502.325, STRUCTURAL CONCRETE CULVERT INVERT LINING.
- PAYMENT FOR THE ASPHALT EMULSION WILL BE CONSIDERED INCIDENTAL TO ITEM 502.325, STRUCTURAL CONCRETE CULVERT INVERT LINING.
- IF BEDROCK IS ENCOUNTERED WITHIN THE AREA OF THE PROPOSED GRANULAR BORROW BENEATH THE OUTLET BUNKER, THE GRANULAR BORROW MAY BE OMITTED AS DIRECTED BY THE RESIDENT AND THE BOTTOM SLAB OF THE BUNKER CAST DIRECTLY ON THE BEDROCK. BOTTOM CONCRETE COVER SHALL BE INCREASED TO 3" MINIMUM. THE CONCRETE TOP SURFACE AND REINFORCEMENT LOCATION SHALL REMAIN AS SPECIFIED ON THE PLANS. ADDITIONAL CONCRETE REQUIRED WILL BE PAID FOR AT THE IMPLIED CONTRACT PRICE PER CUBIC YARD FOR ITEM 502.326. PRIOR TO INSTALLATION OF THE BUNKER THE BEDROCK SHALL BE THOROUGHLY CLEANED. THIS CLEANING WILL BE CONSIDERED INCIDENTAL TO ITEM 502.326.
- THE EXISTING PIPE MAY HAVE SLIGHT DEFORMATIONS REQUIRING FIELD BENDING AND/OR CUTTING OF THE REINFORCING STEEL. ANY CUTTING AND BENDING TO FIELD FIT REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO ITEM 503.13, REINFORCING STEEL PLACING.
- REINFORCING STEEL SHALL HAVE A MINIMUM CONCRETE COVER OF 2 INCHES UNLESS OTHERWISE SHOWN.
- CONCRETE SHALL HAVE A ROUGH BROOM OR GUN FINISH ALONG THE ENTIRE LENGTH OF THE PIPE INVERT.
- STREAM WATER SHALL NOT BE ALLOWED CONTACT WITH FRESH CONCRETE UNTIL THE PH IS 8.5 OR LESS AND WITHIN THE PH UNIT OF THE BACKGROUND PH LEVEL IN THE STREAM.
- WASH IN EXCAVATED STREAMBED MATERIAL DURING PLACEMENT OF THE PROPOSED RIPRAP TO FILL THE VOIDS OF THE RIPRAP AND TO PROVIDE A COVER OF STREAMBED MAERIAL OVER THE FINISH GRADE. THIS WORK WILL BE CONSIDERED INCIDENTAL TO ITEM 610.08, PLAIN RIPRAP.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
2423700
WIN
24237.00
CULVERT NO. 46462
HIGHWAY PLANS

SIGNATURE
P.E. NUMBER
DATE

PROJ. MANAGER	S. DAVIS	BY	S. DAVIS	DATE	
DESIGN-DETAILED	D. BURHANS		D. BURHANS	1/21	
CHECKED-REVIEWED	S. DAVIS		S. DAVIS	1/21	
DESIGN-DETAILED					
REVISIONS 1					
REVISIONS 2					
REVISIONS 3					
REVISIONS 4					
FIELD CHANGES					

UNION
ROUTE 17
GENERAL NOTES &
ESTIMATED QUANTITIES

SHEET NUMBER

2

OF 9

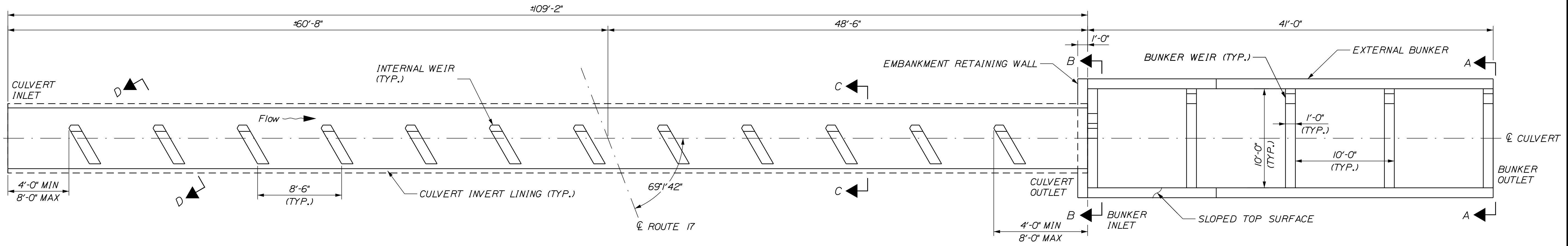


Date: 2/22/2022

Username:

Division: HIGHWAY

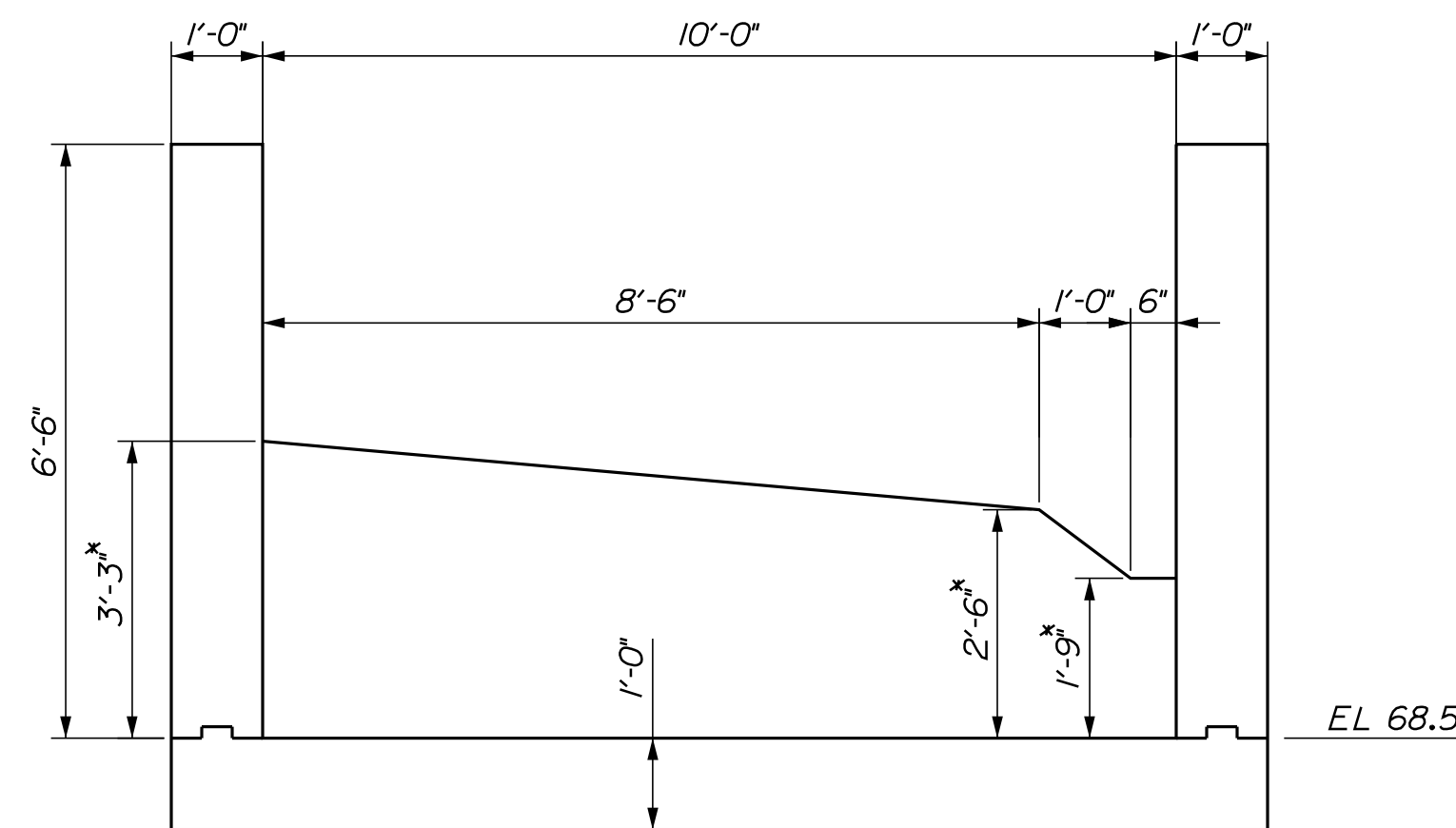
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CULVERT & BUNKER PLAN
NOT TO SCALE

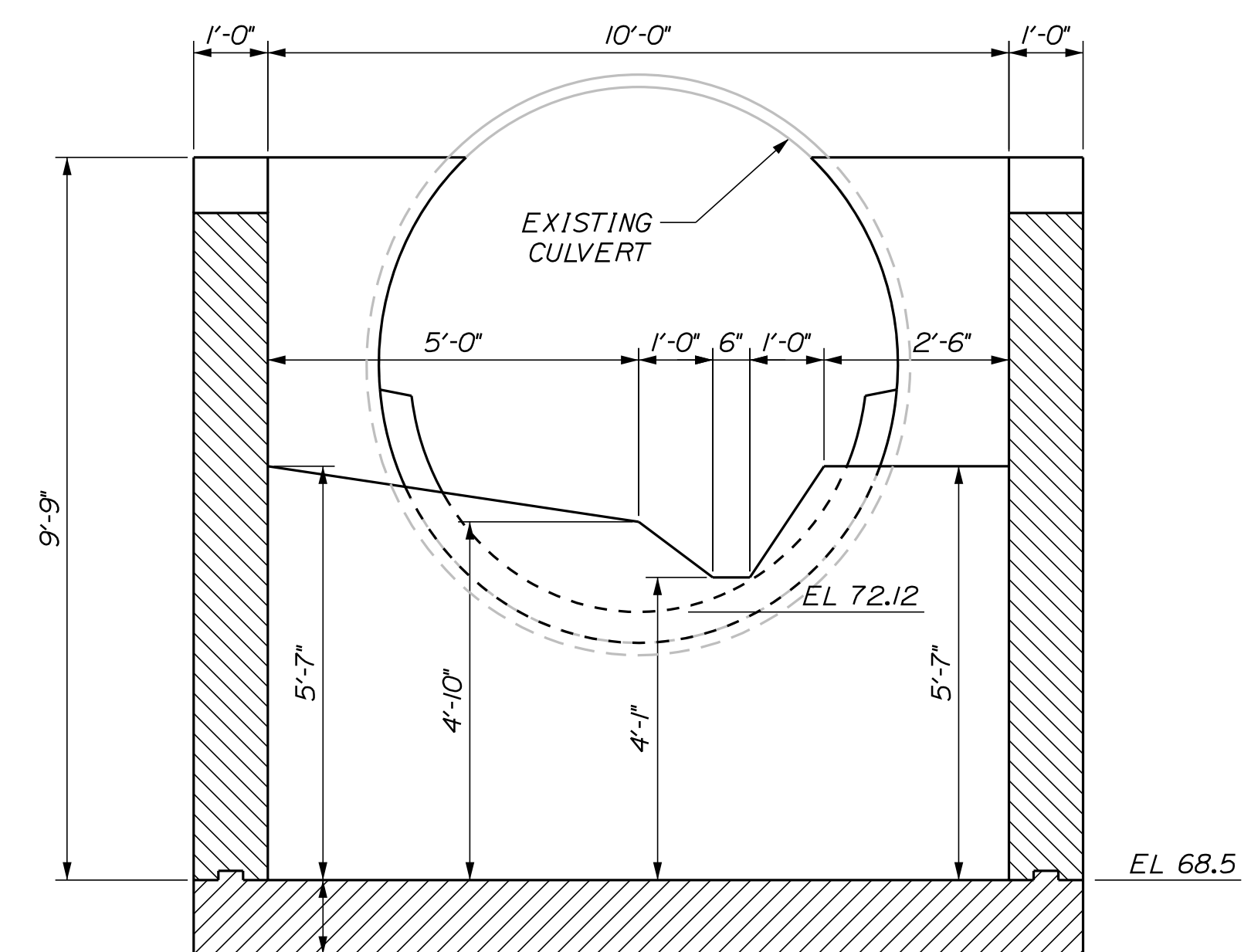
NOTES:

- EXISTING PIPE VERTICAL INNER DIAMETER = ±90". THE EXACT DIMENSIONS AND SHAPE OF EXISTING CULVERT TO BE DETERMINED/VERIFIED BY THE CONTRACTOR.
- EXISTING PIPE HORIZONTAL INNER DIAMETER = ±84". THE EXACT DIMENSIONS AND SHAPE OF EXISTING CULVERT TO BE DETERMINED/VERIFIED BY THE CONTRACTOR.
- INVERT LINING SHALL EXTEND VERTICALLY UP CULVERT WALLS AS REQUIRED TO ADEQUATELY PROVIDE CONNECTION BETWEEN THE INVERT LINING AND THE CULVERT. THIS IS ESTIMATED AT 2.5'-3" BASED UPON FIELD EXAMINATION.
- THE ANTICIPATED OUTLET INVERT ELEVATION OF THE EXISTING PIPE AFTER REMOVAL OF LAST 11 FEET IS 71.70. THE CONTRACTOR SHALL MEASURE THE OUTLET INVERT ELEVATION AFTER PIPE REMOVAL. IF THE MEASURED OUTLET INVERT ELEVATION IS MORE THAN 2" HIGHER THAN 71.70, THE ENGINEER SHALL BE NOTIFIED FOR POTENTIAL REVISION OF THE BUNKER WEIR TOP ELEVATIONS. THE BUNKER WEIR CONCRETE SHALL NOT BE POURED UNTIL THE PROCESS OF MEASURING ELEVATIONS AND POTENTIALLY UPDATING THE BUNKER WEIR TOP ELEVATIONS IS COMPLETE.
- CULVERT INVERT LINING AND CULVERT INTERNAL WEIRS WILL BE PAID FOR UNDER ITEM 502.325, "STRUCTURAL CONCRETE CULVERT INVERT LINING" AND UNDER 503 REINFORCING STEEL ITEMS. THE OUTLET BUNKER AND OUTLET BUNKER WEIRS WILL BE PAID FOR UNDER ITEM 502.326, "STRUCTURAL CONCRETE - FISH WEIRS" AND UNDER 503 REINFORCING STEEL ITEMS.

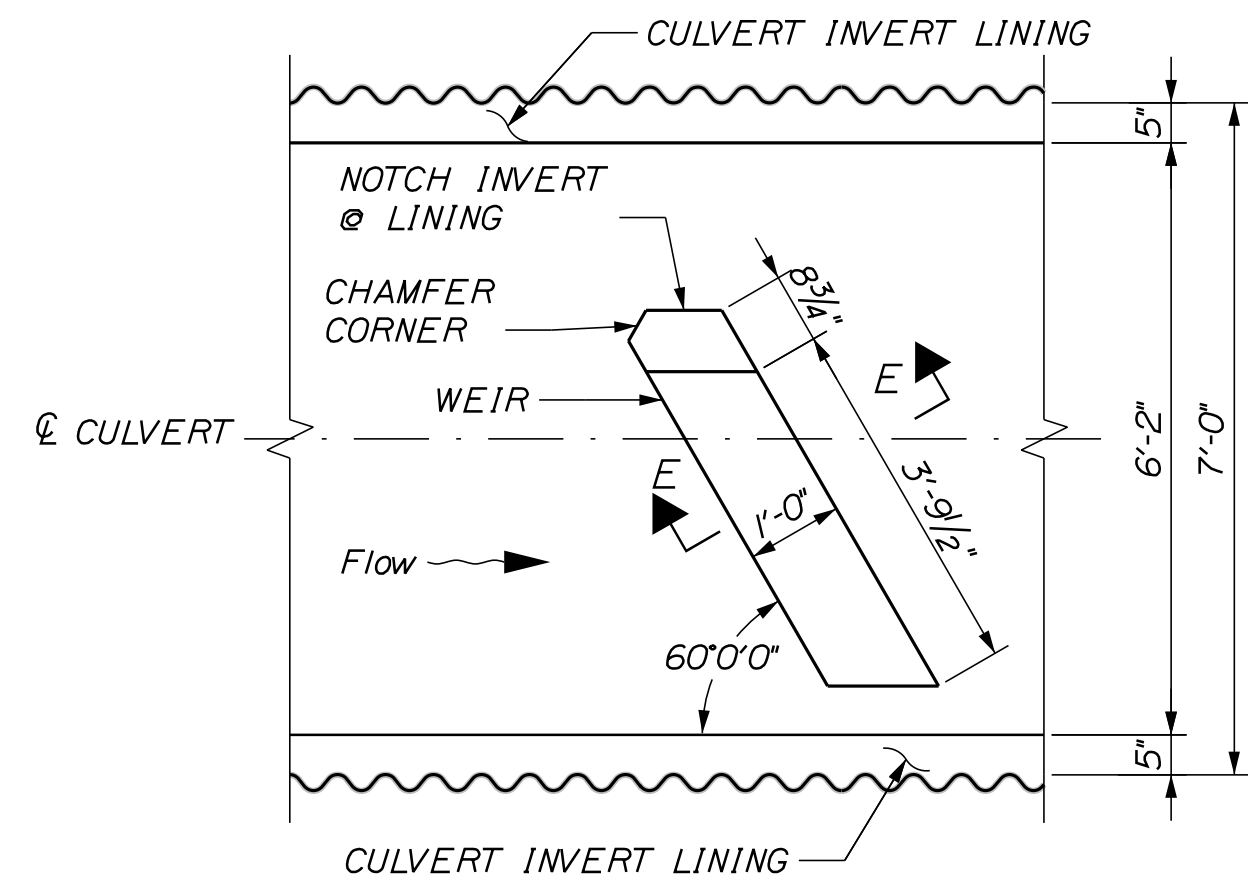


SECTION A-A
TYPICAL EXTERNAL BUNKER WEIR
NOT TO SCALE

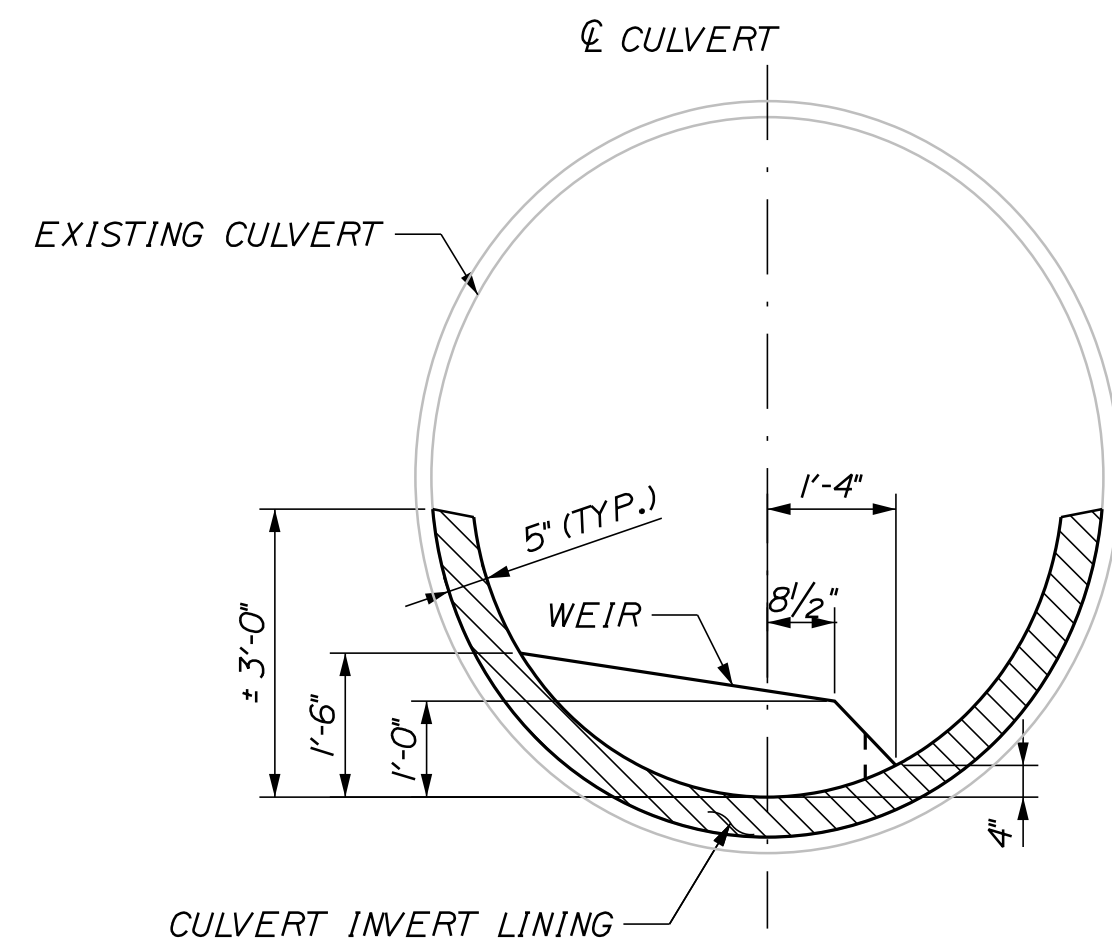
* PROCEEDING FROM BUNKER OUTLET UPSTREAM TOWARDS CULVERT OUTLET, INCREASE VERTICAL DIMENSIONS BY 7" FOR EACH WEIR. SEE CROSS SECTION SHEET FOR ADDITIONAL DETAILS.



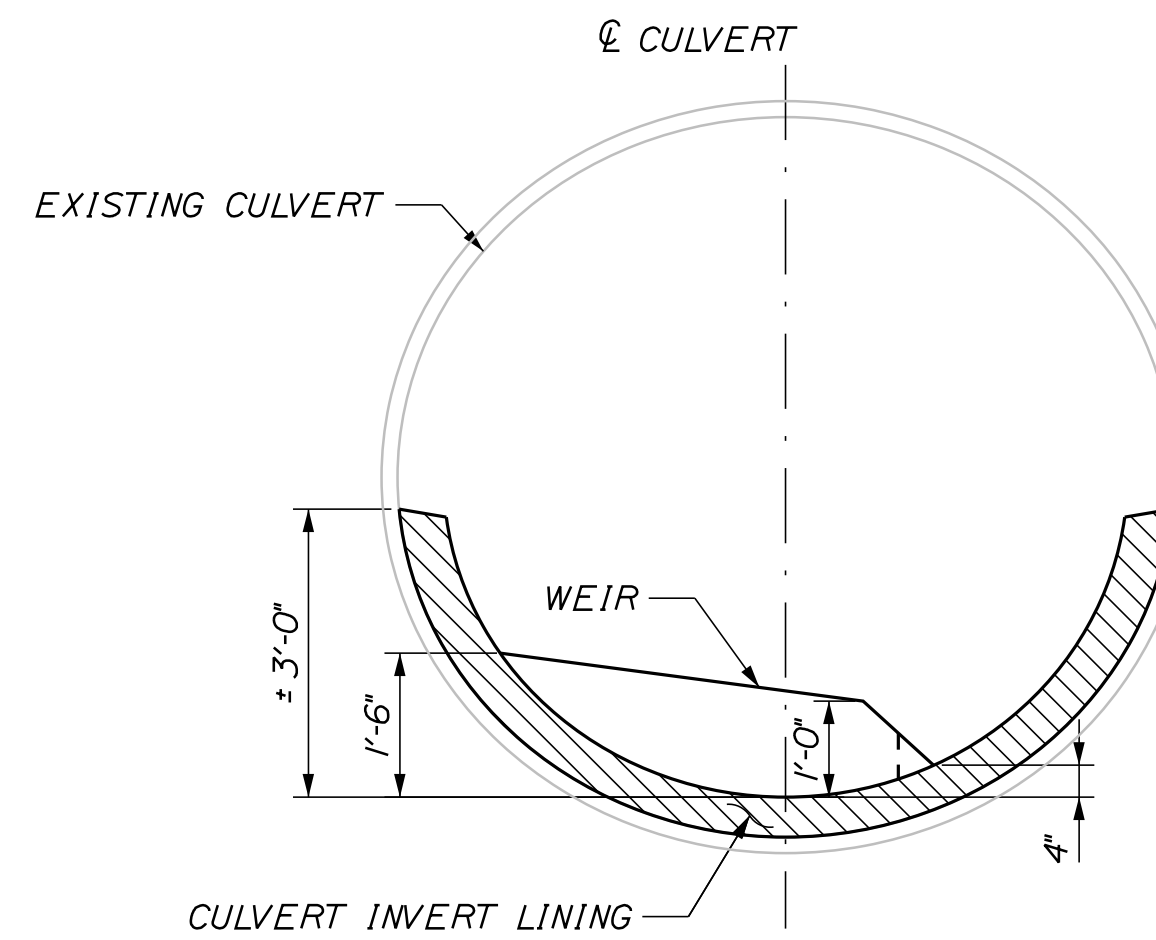
SECTION B-B
1ST EXTERNAL BUNKER WEIR
NOT TO SCALE



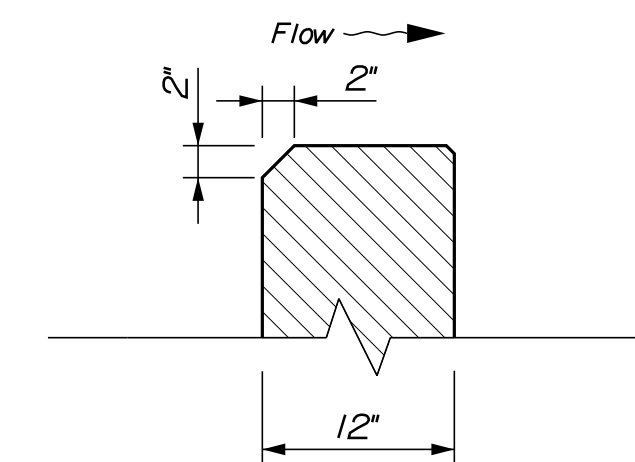
INTERNAL WEIR
PLAN VIEW
NOT TO SCALE



SECTION C-C
PERPENDICULAR TO CULVERT
NOT TO SCALE



SECTION D-D
PERPENDICULAR TO WEIR
NOT TO SCALE



SECTION E-E
PERPENDICULAR TO WEIR
NOT TO SCALE

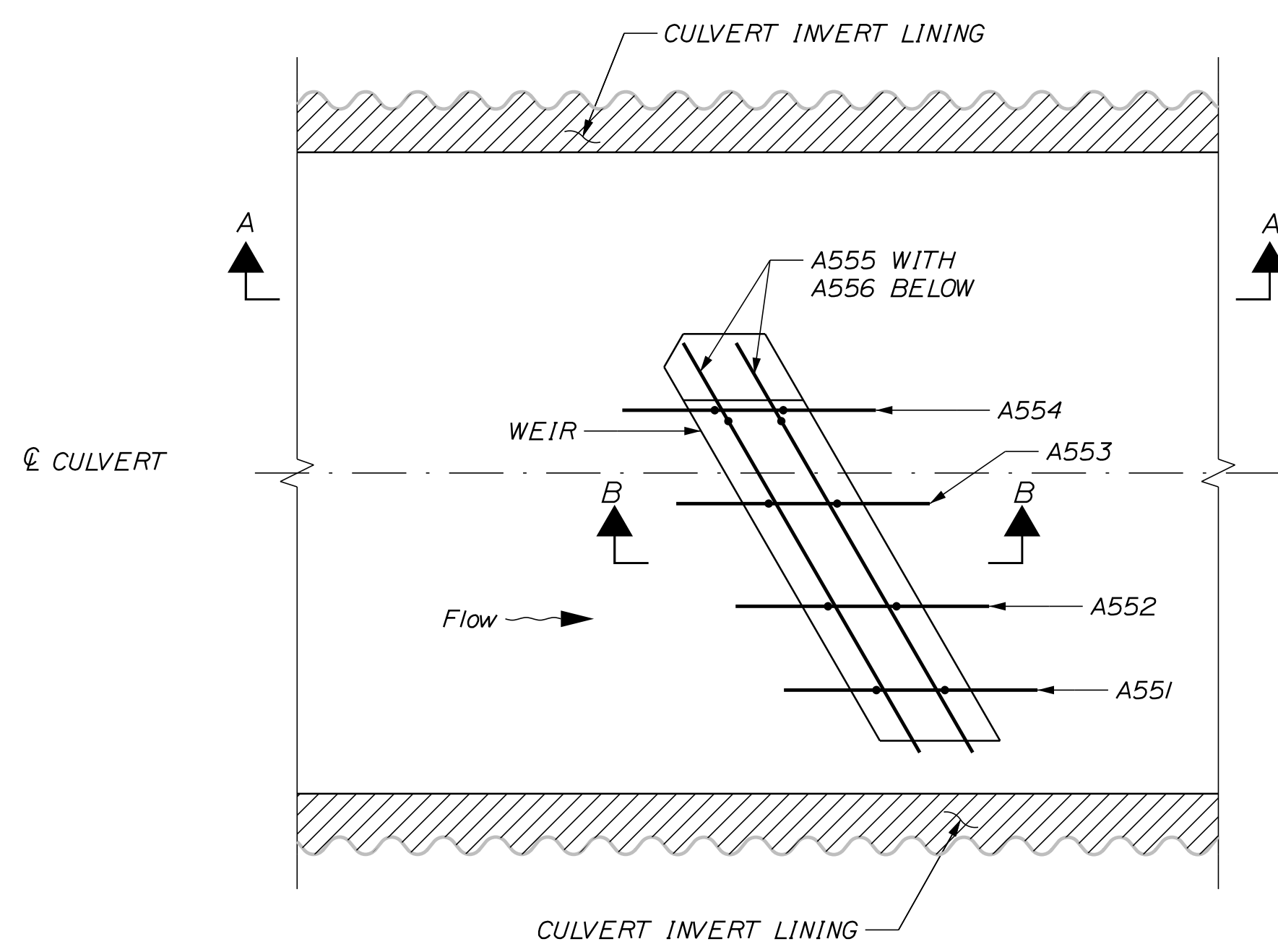
PROJ. MANAGER	BY	DATE	SIGNATURE	P.E. NUMBER	DATE
S. DAVIS	D. BURHANS	1/21			
CHECKED-REVIEWED	S. DAVIS	1/21			
DESIGN DETAILED					
REVISIONS 1					
REVISIONS 2					
REVISIONS 3					
REVISIONS 4					
FIELD CHANGES					

Date: 2/22/2022

Username:

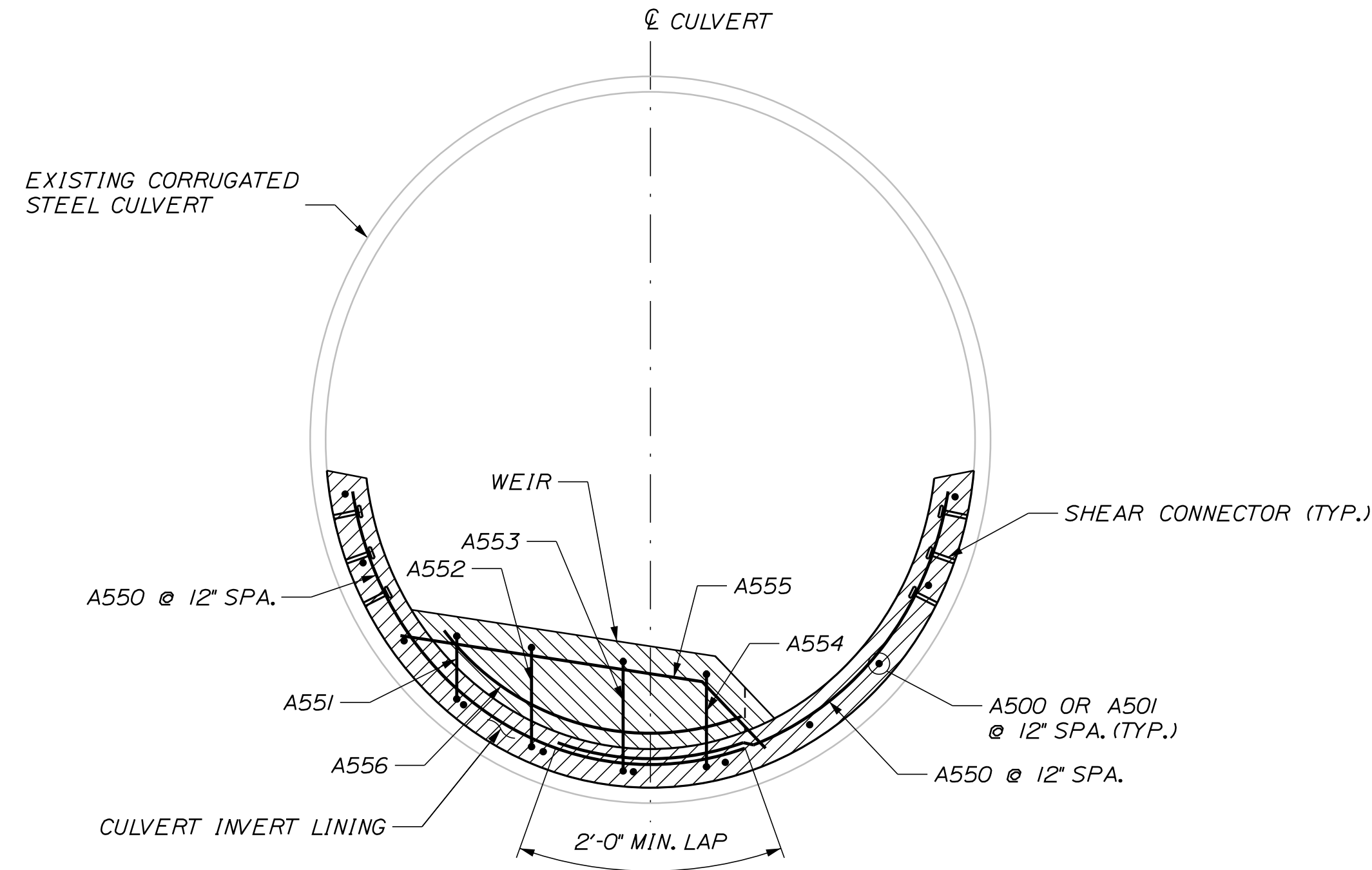
Division: HIGHWAY

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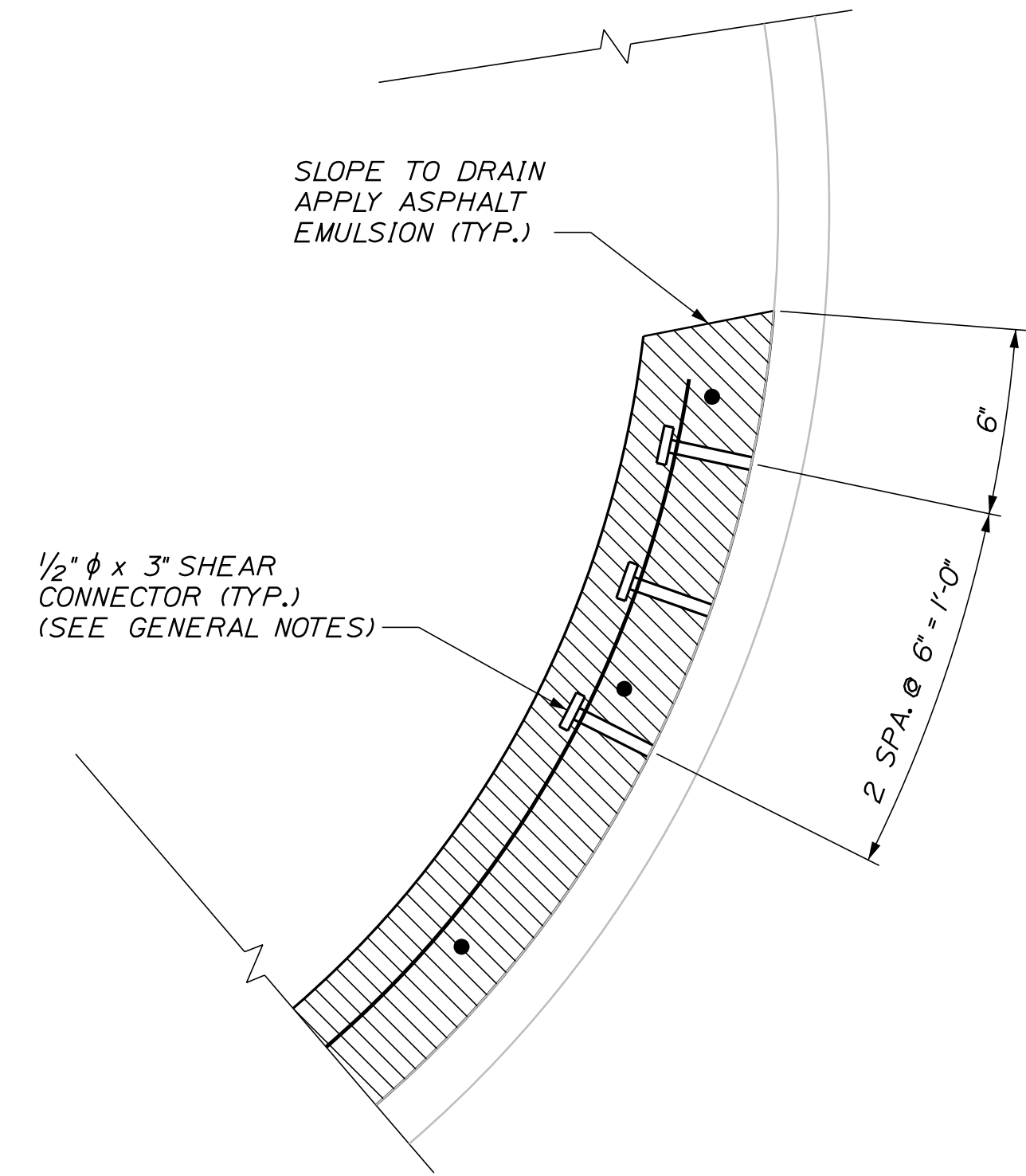
**INTERNAL WEIR
REINFORCING PLAN VIEW**
NOT TO SCALE

INVERT LINING REINFORCEMENT
NOT SHOWN FOR CLARITY

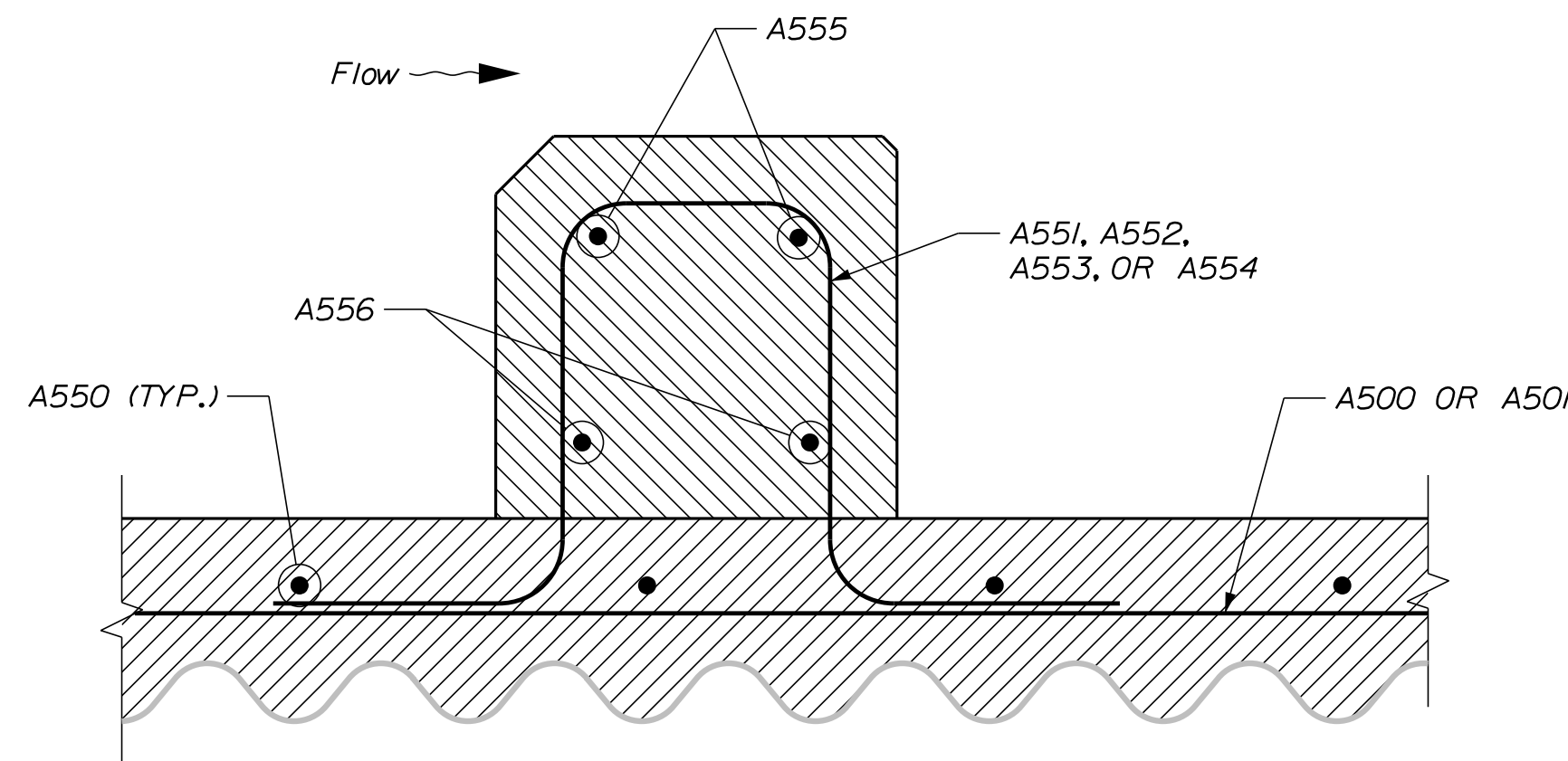


**CULVERT INVERT LINING
REINFORCING SECTION**
NOT TO SCALE

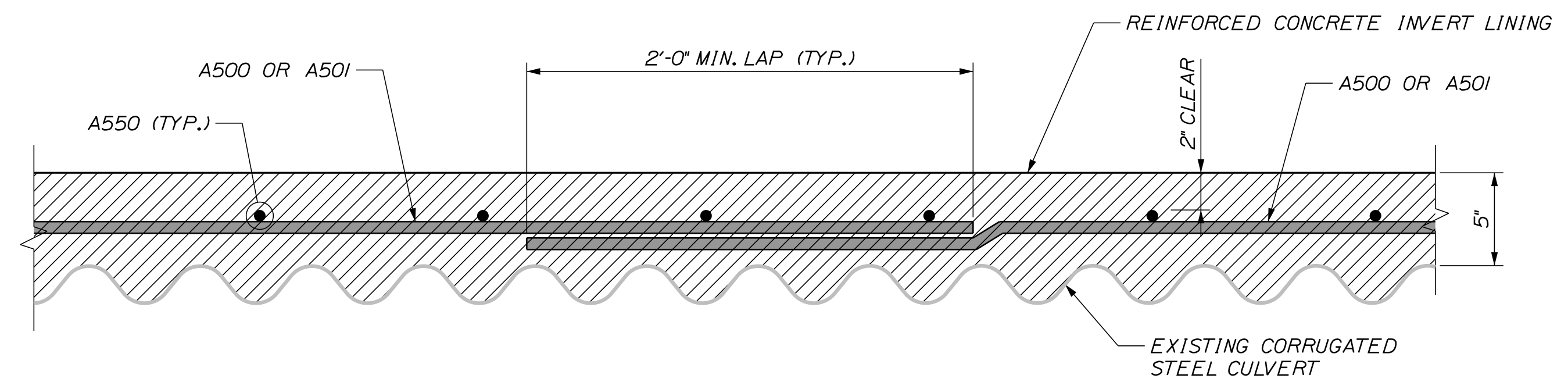
SECTION CUT PERPENDICULAR TO CULVERT
LOOKING UPSTREAM



CONNECTION DETAIL
NOT TO SCALE



**SECTION B-B
TYPICAL WEIR REINFORCEMENT**
NOT TO SCALE



**SECTION A-A
REINFORCED CONCRETE
INVERT LINING REINFORCEMENT**
NOT TO SCALE

STATE OF MAINE
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2423700

WIN
CULVERT NO. 46462
HIGHWAY PLANS

PROJ. MANAGER	BY	DATE
S. DAVIS	D. BURHANS	1/21
CHECKED-REVIEWED	S. DAVIS	1/21
DESIGN-DETAILED		
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UNION
ROUTE 17
SPECIAL DETAILS
SHEET 2 OF 3

SHEET NUMBER

4

OF 9

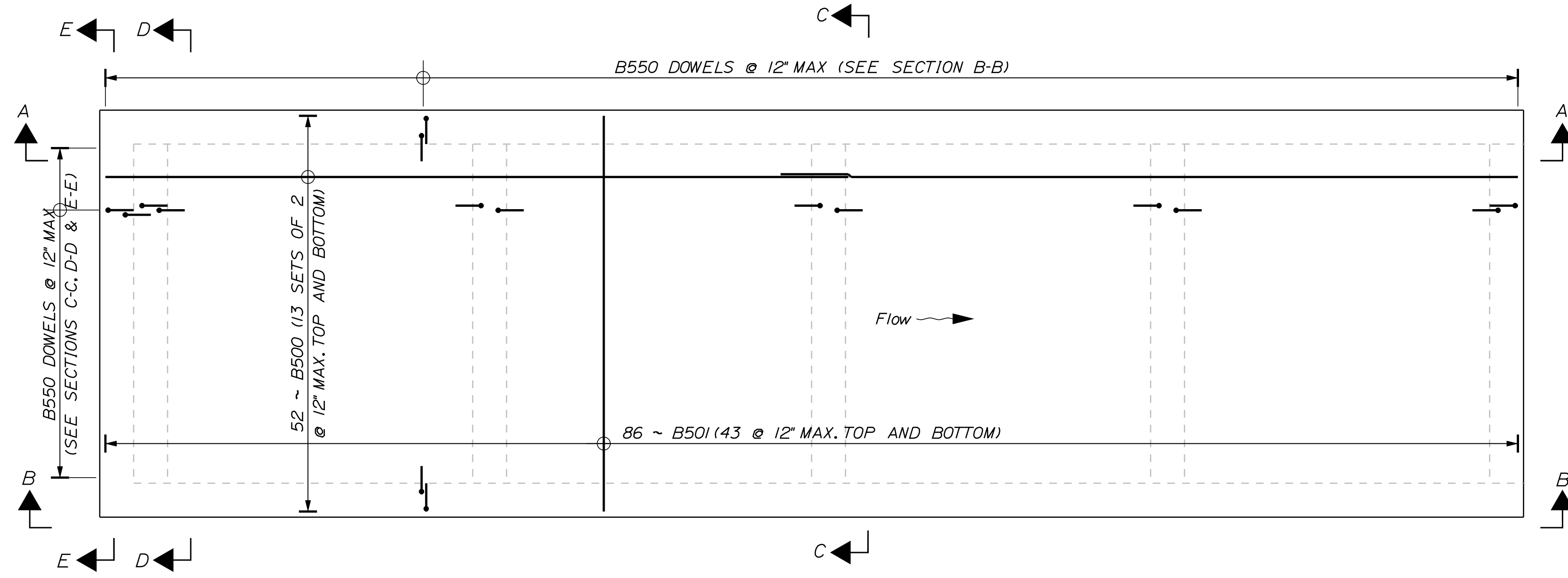
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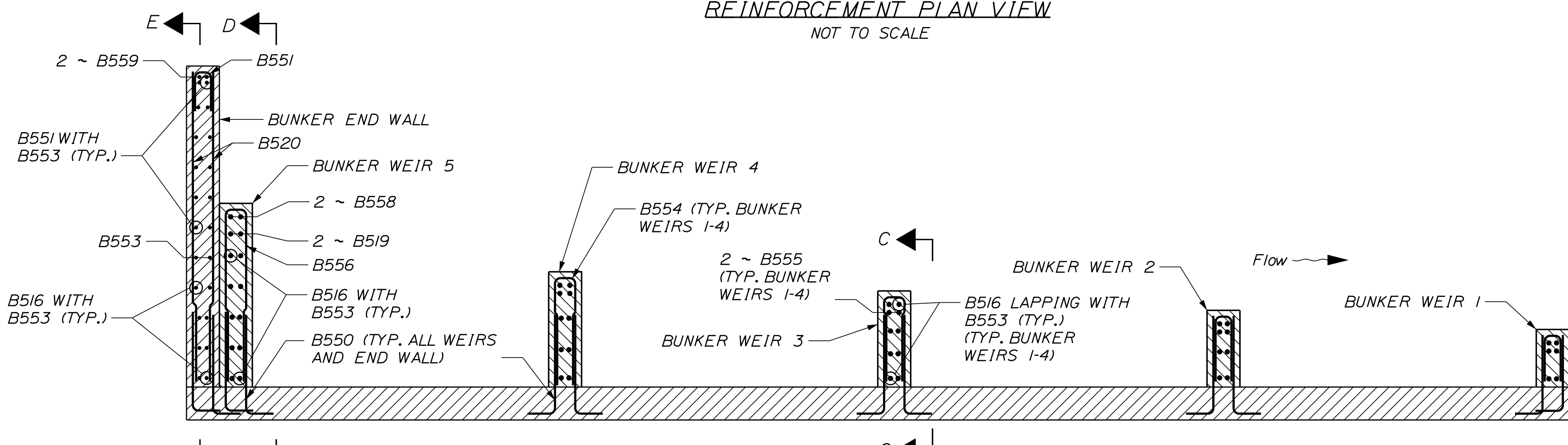
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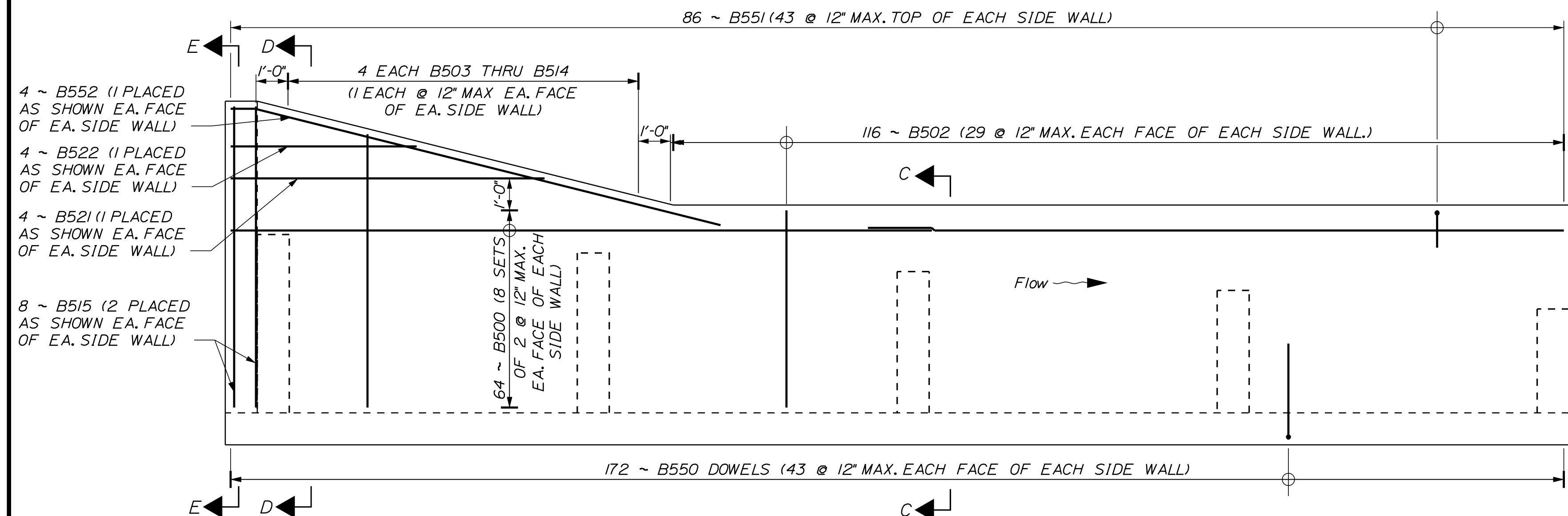
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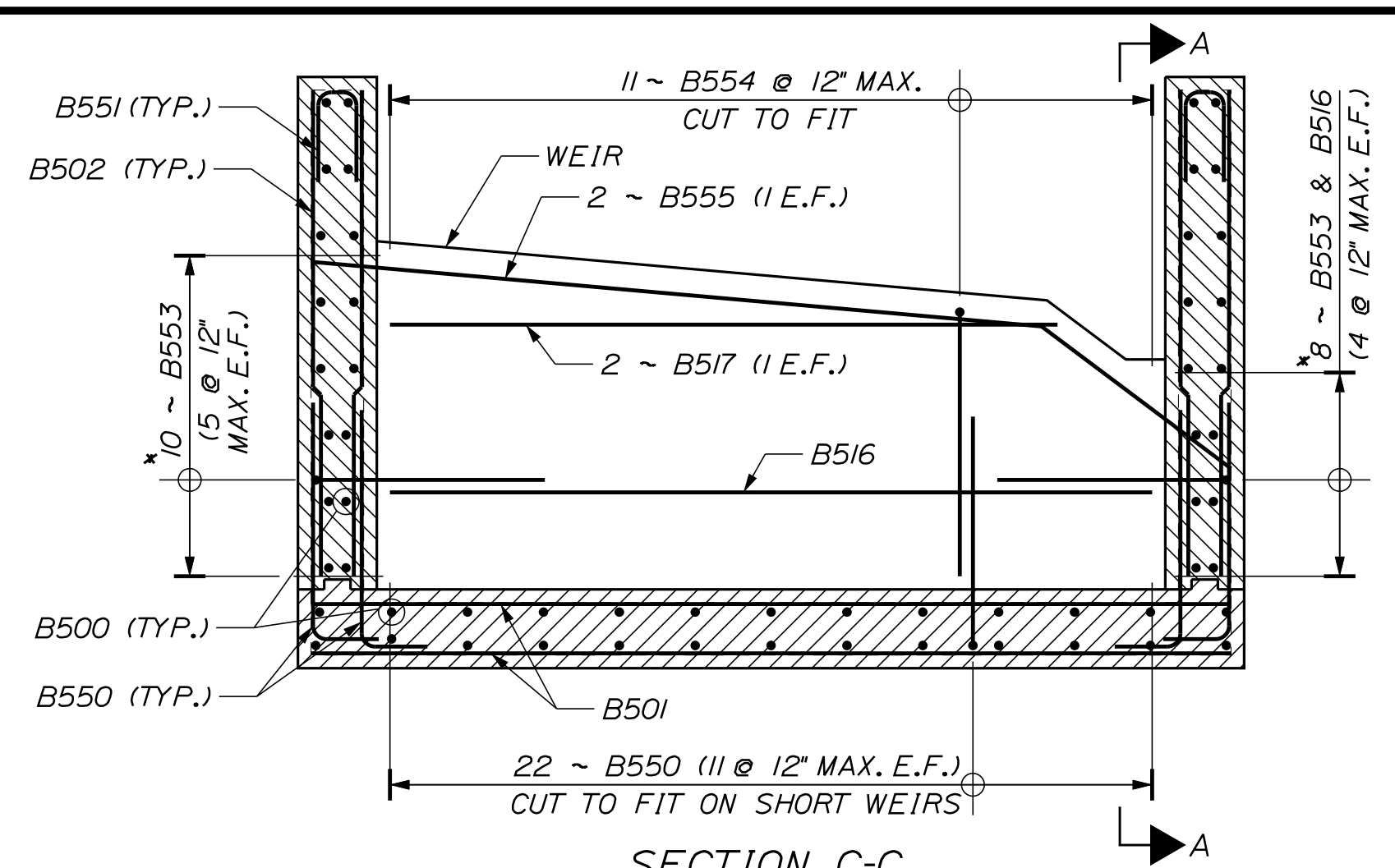
EXTERNAL BUNKER BOTTOM SLAB REINFORCEMENT PLAN VIEW
NOT TO SCALE



EXTERNAL BUNKER SECTION A-A
NOT TO SCALE
(BOTTOM SLAB STEEL NOT SHOWN FOR CLARITY)

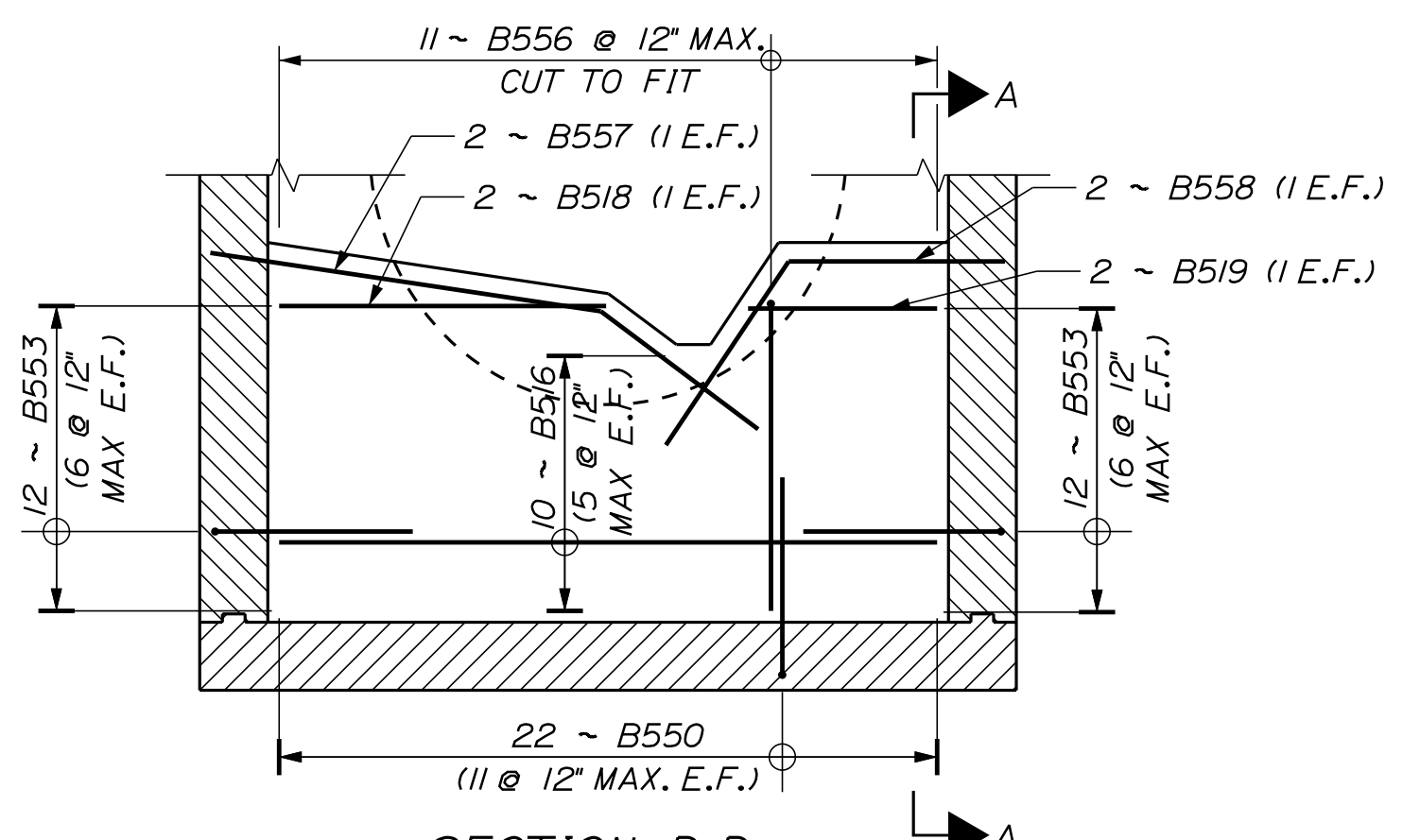


EXTERNAL BUNKER SECTION B-B
NOT TO SCALE
(BOTTOM SLAB STEEL NOT SHOWN FOR CLARITY)
(END WALL AND WEIR DOWELS NOT SHOWN FOR CLARITY)



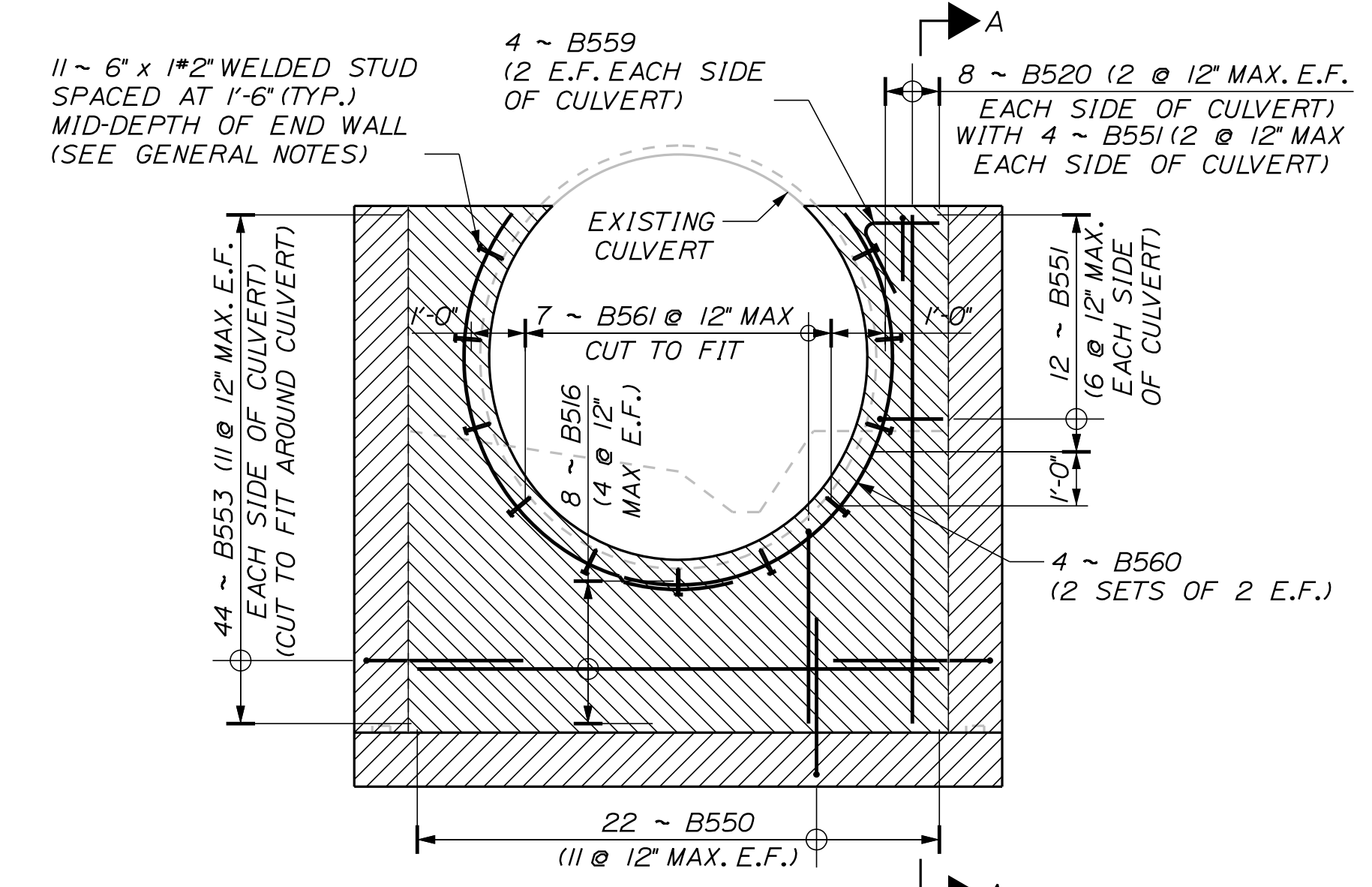
SECTION C-C
TYPICAL BUNKER SIDE WALL AND WEIR REINFORCEMENT
NOT TO SCALE

* NOTE: ADJUST QUANTITY OF B553 AND B516 AT EACH BUNKER WEIR (1 THROUGH 4) AS APPROPRIATE FOR WEIR GEOMETRY TO MAINTAIN SPACING AT 12" MAX
NOTE: QUANTITY OF WEIR REINFORCEMENT BARS SHOWN ARE FOR ONE WEIR ONLY OF 4 (FOUR) TYPICAL WEIRS REQUIRED. TOTAL QUANTITY FOR WEIR REINFORCEMENT WILL BE GENERALLY 4 TIMES THE QUANTITY SHOWN ABOVE, OTHER THAN ADJUSTMENT FOR B552 AND B516 LISTED ABOVE.



SECTION D-D
BUNKER WEIR 5 REINFORCEMENT
NOT TO SCALE

BUNKER SIDE WALL AND BOTTOM SLAB REINFORCEMENT SHOWN FOR CLARITY



SECTION E-E
BUNKER END WALL REINFORCEMENT
NOT TO SCALE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
2423700
WIN
24237.00
CULVERT NO. 46462
HIGHWAY PLANS

PROJ. MANAGER	BY	DATE	SIGNATURE	P.E. NUMBER	DATE
S. DAVIS	D. BURHANS	1/21			
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REVISIONS 3					
REVISIONS 4					
FIELD CHANGES					

PROJ. MANAGER	BY	DATE	SIGNATURE	P.E. NUMBER	DATE
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REVISIONS 3					
REVISIONS 4					
FIELD CHANGES					

UNION
ROUTE 17
SPECIAL DETAILS
SHEET 3 OF 3

SHEET NUMBER

5

OF 9

TYLIN INTERNATIONAL

Date: 2/22/2022

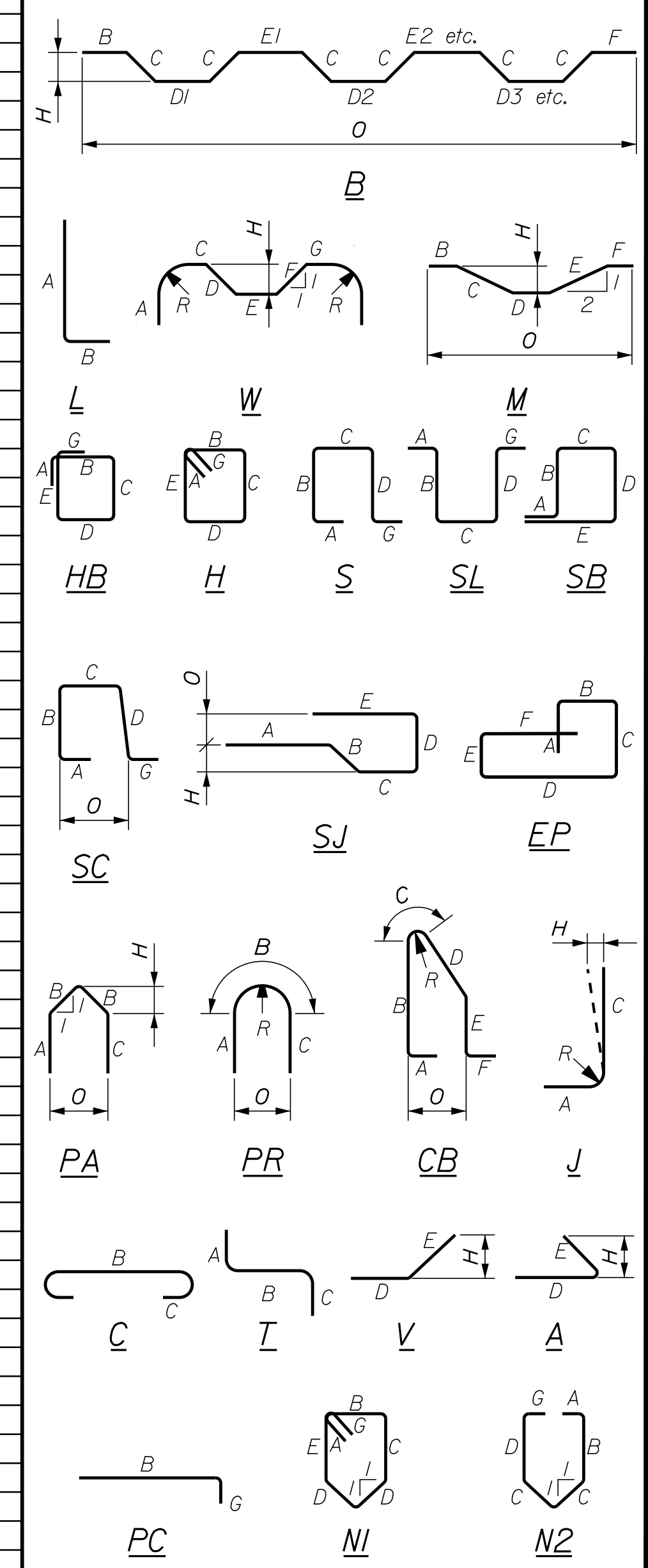
Username:

Division: HIGHWAY

Filename: ... \MSTA\006_Reinf_Schedule.dgn

STRAIGHT BARS				BENT BARS															
MARK	QTY.	LENGTH	LOCATION	MARK	QTY.	LENGTH	TYPE	A	B	C	D	E	F	G	H	K	O	R	LOCATION
CULVERT INVERT LINING & WEIRS																			
A500	22	40'-0"	LONG. INVERT LINING	A550	220	6'-0"	PR	0"	6'-0"	0"	-	-	-	-	-	-	5'-2"	3'-3"	INVERT LINING TRANSVERSE
A501	11	33'-6"	LONG. INVERT LINING	A551	12	3'-9"	SL	10"	8"	9"	8"	-	-	10"	-	-	-	-	INTERNAL WEIR STIRRUP
				A552	12	4'-7"	SL	10"	1'-1"	9"	1'-1"	-	-	10"	-	-	-	-	INTERNAL WEIR STIRRUP
				A553	12	4'-9"	SL	10"	1'-2"	9"	1'-2"	-	-	10"	-	-	-	-	INTERNAL WEIR STIRRUP
				A554	12	4'-5"	SL	10"	1'-0"	9"	1'-0"	-	-	10"	-	-	-	-	INTERNAL WEIR STIRRUP
				A555	24	4'-10"	V	-	-	-	3'-10"	1'-0"	-	-	7"	-	-	-	INTERNAL WEIR TOP
				A556	24	4'-1"	PR	0"	4'-1"	0"	-	-	-	-	-	-	3'-10"	3'-6"	INTERNAL WEIR BOTTOM
EXTERNAL BUNKER & WEIRS																			
B500	116	21'-10"	LONG. BOT. SLAB & SIDE WALL	B550	304	3'-10"	L	10"	3'-0"	-	-	-	-	-	-	-	-	-	BOTTOM SLAB DOWELS
B501	86	11'-8"	TRANS. BOT. SLAB	B551	102	3'-0"	S	0"	1'-2"	8"	1'-2"	-	-	0"	-	-	-	-	SIDE WALL TOP U & END WALL U
B502	116	6'-2"	VERT. SIDE WALL	B552	4	15'-9"	V	-	-	-	15'-0"	9"	-	-	2"	-	-	-	SIDE WALL SLOPED TOP
B503	4	6'-5"	VERT. SIDE WALL	B553	138	3'-10"	L	10"	3'-0"	-	-	-	-	-	-	-	-	-	WEIR SIDE DOWELS
B504	4	6'-8"	VERT. SIDE WALL	B554	44	9'-10"	S	0"	4'-7"	8"	4'-7"	-	-	0"	-	-	-	-	WEIR VERTICAL U
B505	4	6'-11"	VERT. SIDE WALL	B555	8	12'-3"	V	-	-	-	9'-3"	3'-0"	-	-	1'-7"	-	-	-	WEIR TOP BAR
B506	4	7'-2"	VERT. SIDE WALL	B556	11	11'-0"	S	0"	5'-2"	8"	5'-2"	-	-	0"	-	-	-	-	WEIR 5 VERTICAL U
B507	4	7'-5"	VERT. SIDE WALL	B557	2	8'-8"	V	-	-	-	5'-9"	2'-11"	-	-	1'-5"	-	-	-	WEIR 5 TOP BAR
B508	4	7'-8"	VERT. SIDE WALL	B558	2	6'-5"	V	-	-	-	3'-3"	3'-2"	-	-	2'-8"	-	-	-	WEIR 5 TOP BAR
B509	4	7'-11"	VERT. SIDE WALL	B559	4	2'-10"	A	-	-	-	1'-5"	1'-5"	-	-	1'-3"	-	-	-	END WALL TOP BAR
B510	4	8'-2"	VERT. SIDE WALL	B560	4	10'-3"	PR	0"	10'-3"	0"	-	-	-	-	-	-	7'-11"	4'-3"	END WALL AROUND CULVERT
B511	4	8'-5"	VERT. SIDE WALL	B561	7	8'-8"	S	0"	4'-0"	8"	4'-0"	-	-	0"	-	-	-	-	END WALL VERTICAL U
B512	4	8'-8"	VERT. SIDE WALL																
B513	4	8'-11"	VERT. SIDE WALL																
B514	4	9'-2"	VERT. SIDE WALL																
B515	8	9'-5"	VERT. SIDE WALL																
B516	48	9'-8"	TRANS. WEIR & END WALL																
B517	8	8'-4"	TRANS. WEIRS 1-4																
B518	2	4'-9"	TRANS. WEIR 5																
B519	2	2'-9"	TRANS. WEIR 5																
B520	8	9'-5"	VERT. END WALL																
B521	4	9'-9"	LONG. SIDE WALL																
B522	4	5'-9"	LONG. SIDE WALL																

TYPE - BENDING DIAGRAMS



All dimensions are out-to-out of bar.
 Bending details and hooks shall conform to the recommendations of the current revision of ACI Standard 315 and ACI Standard 318.

GENERAL NOTES

The first two digits following the letter(s) of the mark indicate the size of the bar:
 Mark *A0502* = bar size #5
 Mark *P0805* = bar size #8
 Mark *S1150* = bar size #11

Each crank bar, Type B, may be replaced by two (2) straight bars (one top and one bottom) of the same bar size as the crank bar. Payment in either case shall be based on crank bars as schedule on the plans.

Bar marks ending with an 'E' indicate epoxy coating required. Bar marks ending with an 'S' indicate stainless steel bar is required. Bar marks ending with a 'G' indicate Glass Fiber Reinforced Polymer (GFRP) bar is required.

STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION
 2423700
 WIN 24237.00
 HIGHWAY PLANS
 CULVERT NO. 46462

PROJ. MANAGER	S. DAVIS	DATE	1/21
DESIGN-DETAILED	D. BURHANS	DATE	1/21
CHECKED-REVIEWED	S. DAVIS	SIGNATURE	
DESIGN-DETAILED		P.E. NUMBER	
REVISIONS 1		DATE	
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

UNION
 ROUTE 17
 REINFORCING STEEL
 SCHEDULE

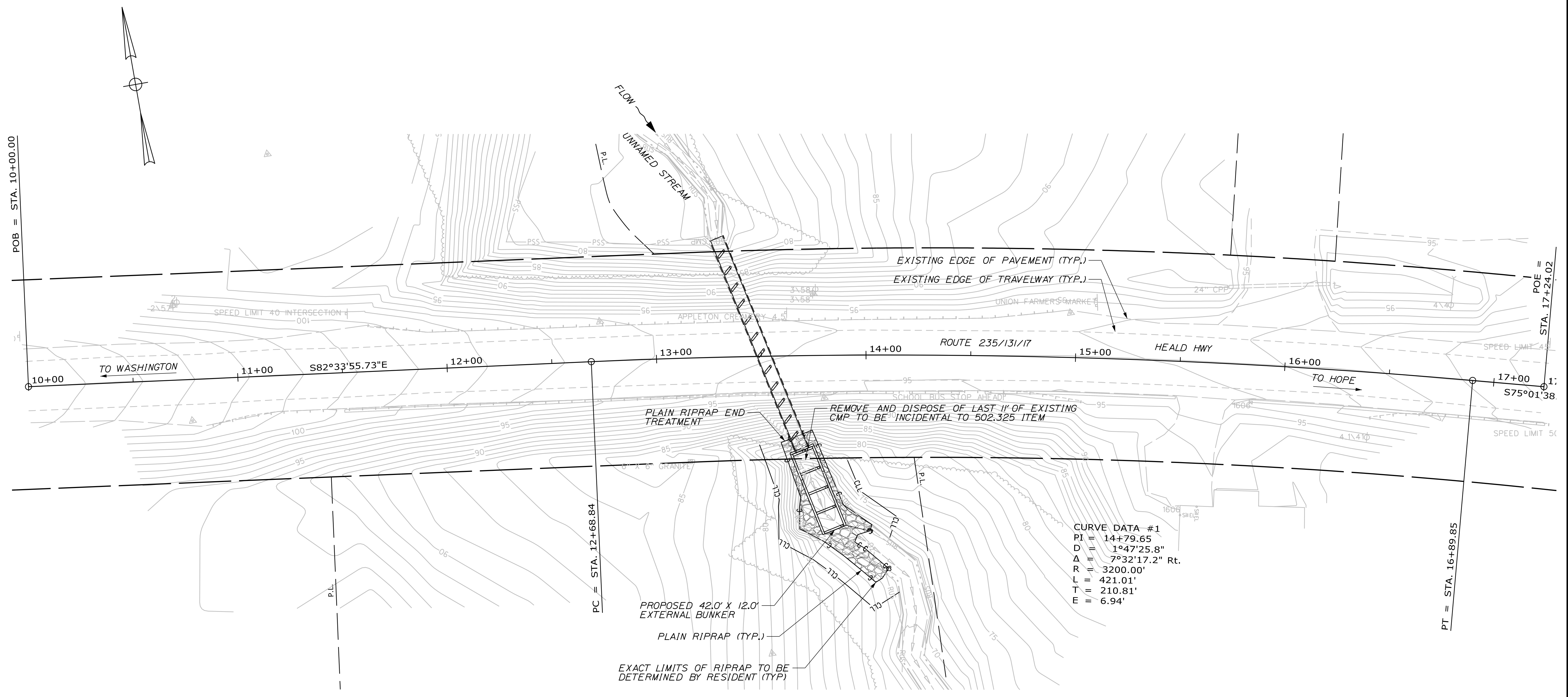
SHEET NUMBER
6
 OF 9

TYLIN INTERNATIONAL

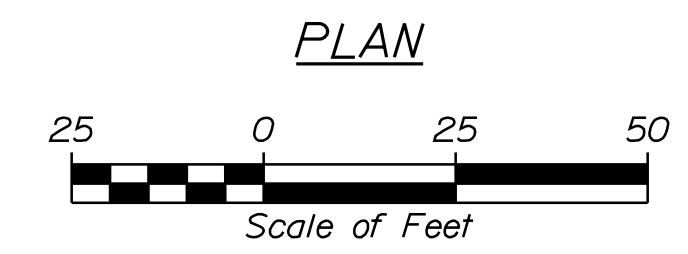
Date: 2/22/2022

Username:

Filename: ... \000\HIGHWAY\MSTA007_HDPlan.dgn Division: HIGHWAY



- NOTES:
- ITEM 610.08 - PLAIN RIPRAP TO BE USED AROUND PIPE AND OUTLET STRUCTURE AS SHOWN ON PLANS, AND TO PROTECT SLOPES AS DIRECTED BY THE RESIDENT.
 - GUARDRAIL MAY BE REMOVED TO ALLOW FOR THE CONSTRUCTION ACCESS. THIS WORK WILL BE CONSIDERED INCIDENTAL TO THE 502 ITEMS, AND ADDRESSED IN THE CONTRACTOR'S TRAFFIC CONTROL PLAN.
 - THE ROADWAY EMBANKMENT SLOPE, WITHIN 25 FEET OF THE CULVERT CENTERLINE, SHALL NOT BE DISTURBED ABOVE ELEVATION 84 WITHOUT PRIOR APPROVAL OF THE RESIDENT.



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
2423700
WIN
24237.00
CULVERT NO. 46462
HIGHWAY PLANS

DATE	SIGNATURE
DATE	P.E. NUMBER
DATE	DATE

PROJ. MANAGER	BY	DATE
S. DAVIS	D. BURHANS	1/21
DESIGN-DETAILED	S. DAVIS	1/21
CHECKED-REVIEWED		
DESIGN-DETAILED		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

UNION
ROUTE 17
GENERAL PLAN

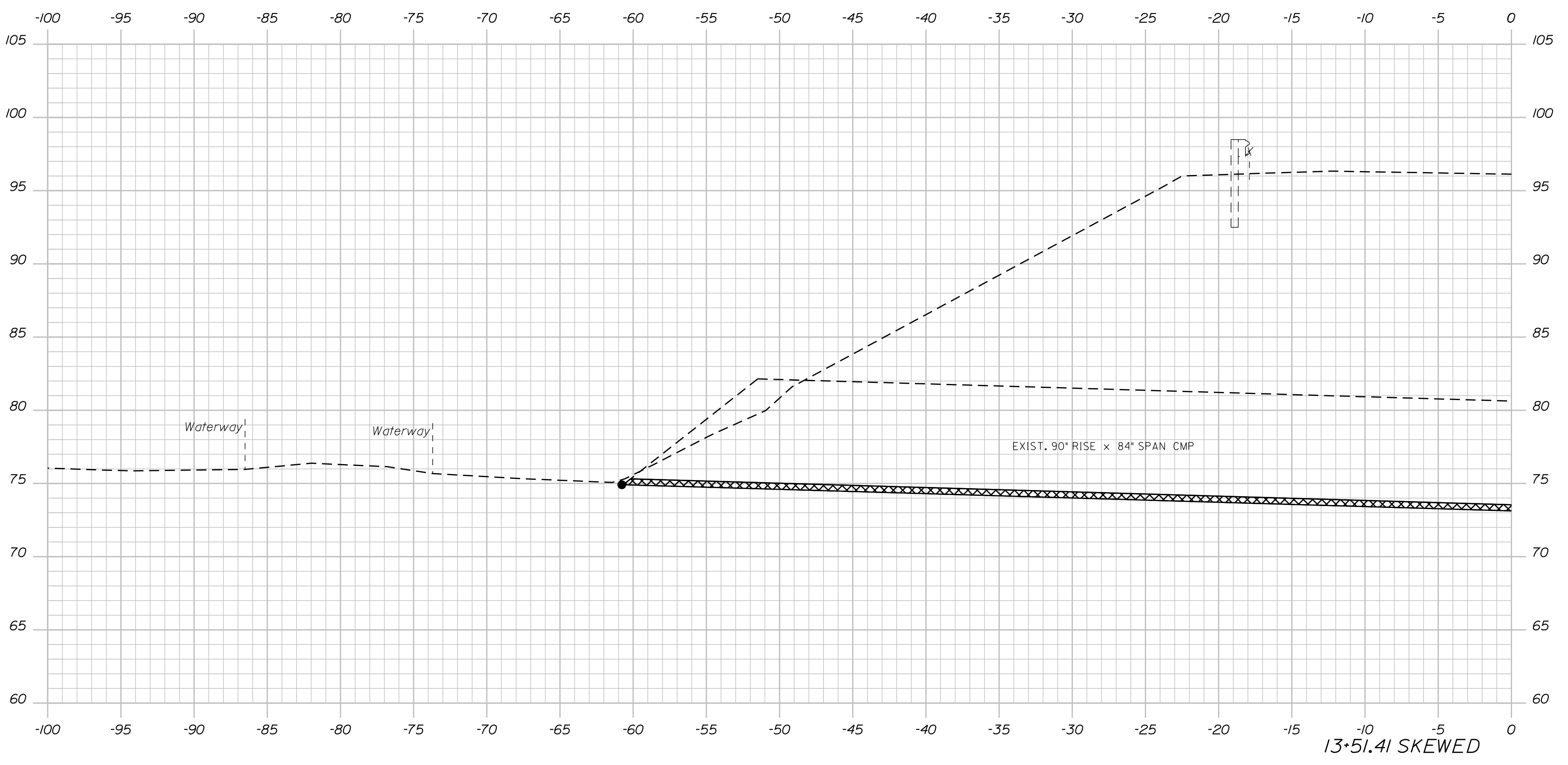
SHEET NUMBER

TYLIN INTERNATIONAL

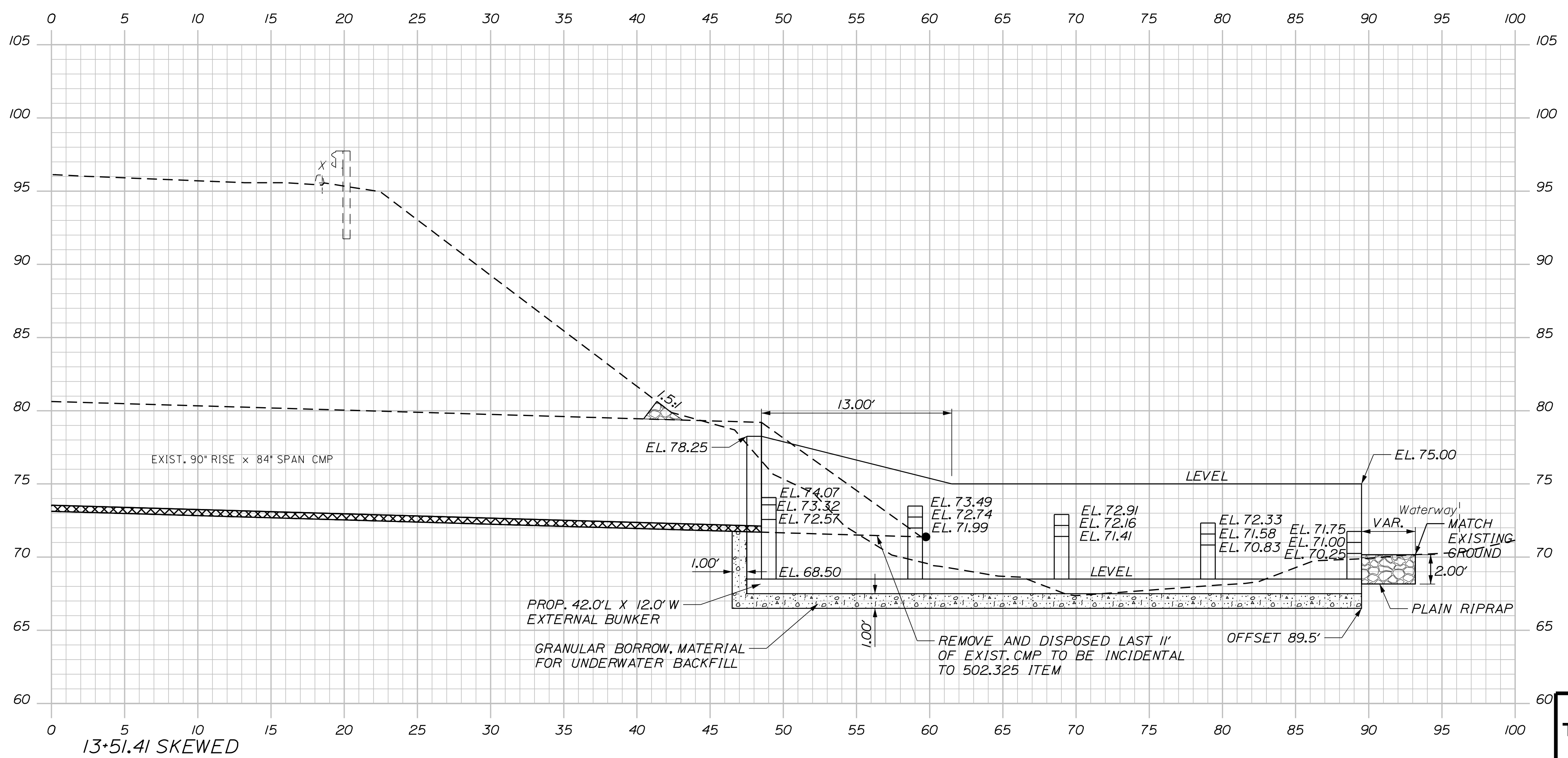
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Filename: ... \HIGHWAY\MSTA\008_XSections.dgn Division: HIGHWAY



NOTE:
SEE SPECIAL DETAILS SHEETS FOR PIPE LINER,
INTERNAL WEIR, AND EXTERNAL BUNKER DETAILS.



STATE OF MAINE DEPARTMENT OF TRANSPORTATION		2423700		WIN 24237.00		CULVERT NO. 46462		HIGHWAY PLANS	
UNION ROUTE 17		CROSS SECTION		SHEET NUMBER		8		OF 9	
PROJ. MANAGER	S. DAVIS	BY	S. DAVIS	DATE	1/21	SIGNATURE	P.E. NUMBER	DATE	
DESIGN-DETAILED	D. BURHANS	CHECKED-REVIEWED	S. DAVIS	DESIGN-DETAILED	1/21				
DESIGN-DETAILED		DESIGN-DETAILED		REVISIONS 1					
		REVISIONS 2		REVISIONS 3					
		REVISIONS 4		FIELD CHANGES					

TYLIN INTERNATIONAL

Date: 2/2/2022

Username: Benjamin.Singer

Division: ROW

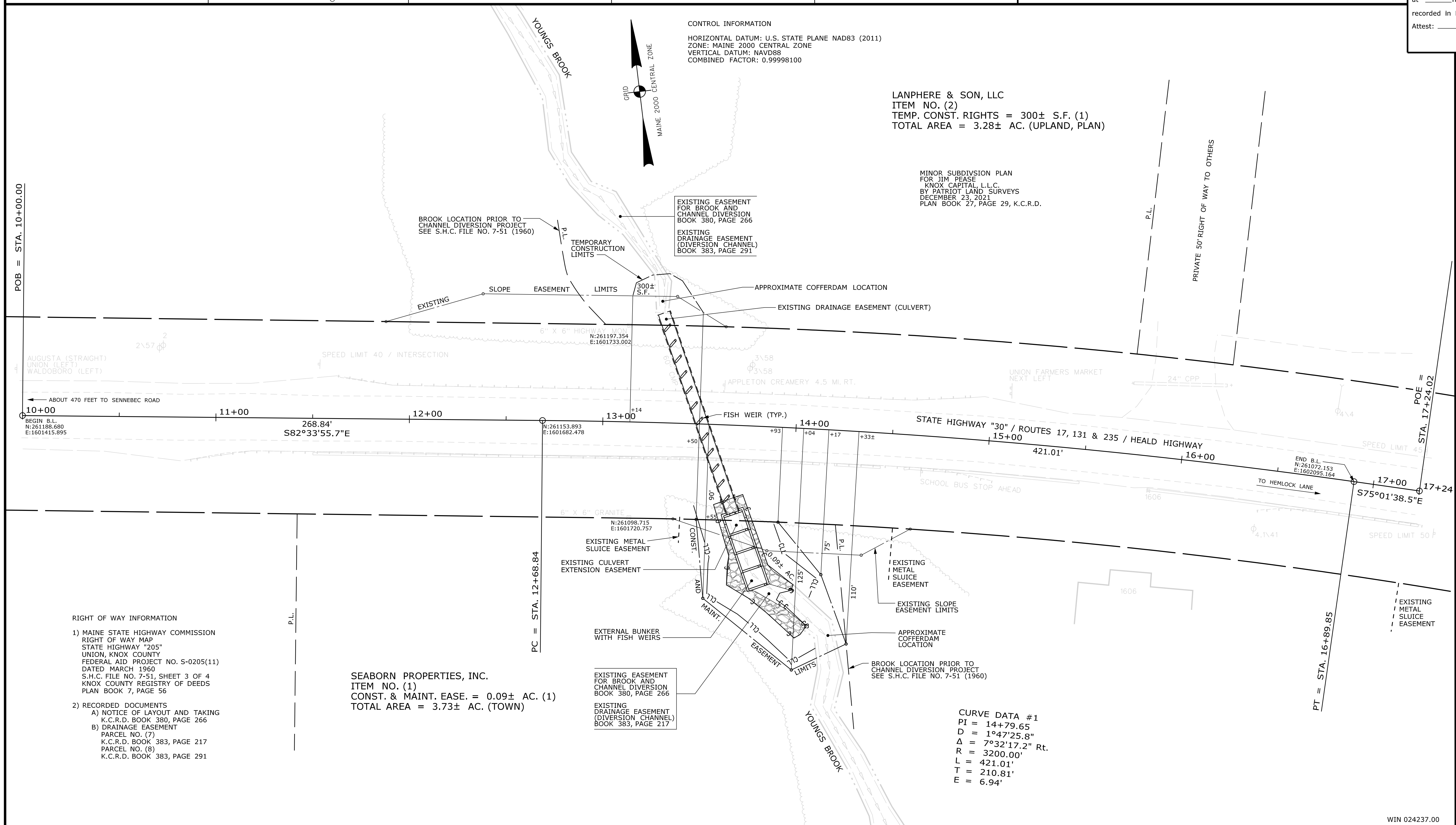
Filename: ... \00\ROW\WSTA\001_RWPLAN1.dgn

PLAN LEGEND	
<p>Town, County, State _____</p> <p>Approx. Property Lines _____ P.L.</p> <p>Existing Right of Way _____ L.O.W.P.</p> <p>Limits of Wrought Portion _____ C.O.A.</p> <p>Control Of Access _____</p> <p>New Right of Way _____</p> <p>New Easement _____</p> <p>New Temporary Rights _____</p> <p>New R/W Within Existing R/W _____</p>	<p>New R/W Along Existing R/W</p> <p>Building _____</p> <p>Trees Conifer _____ Deciduous _____</p> <p>Tree Line _____</p> <p>Water Edge _____</p> <p>Ledge _____</p> <p>Fence CHAIN LINK _____ BARB WIRE _____ STOCKADE _____</p> <p>Sign _____</p> <p>Well _____</p> <p>Mallbox _____</p>
<p>Sanitary Sewer _____</p> <p>Telephone Line _____</p> <p>Electric Line _____</p> <p>Water Line _____</p> <p>Underdrain Line _____</p> <p>Gas Line _____</p> <p>Guardrail _____</p> <p>Culvert _____</p>	<p>Proposed _____</p> <p>Traveler Way _____</p> <p>Ditch _____</p> <p>Catch Basin _____</p> <p>Manhole _____</p> <p>Sewer Manhole _____</p> <p>Utility Pole _____</p> <p>Fire Hydrant _____</p> <p>Curbing _____</p>
<p>Cut Line _____</p> <p>Stonewall _____</p> <p>Baseline _____</p> <p>Monument _____</p> <p>Iron Rod Found _____ IRF</p> <p>Replacement Pin Set _____</p>	<p>Fill Line _____</p> <p>Retaining Wall _____</p> <p>_____ 10+00 _____ 11+00 _____ 12+00</p> <p>Traverse Point _____</p> <p>Pipe Found _____ IPF</p>

THIS PLAN WAS PREPARED IN CONNECTION WITH THE DEPARTMENT'S ACQUISITION OF REAL PROPERTY FOR TRANSPORTATION PURPOSES. IT CANNOT BE USED TO ESTABLISH LEGAL BOUNDARIES BETWEEN ABUTTING PROPERTY OWNERS.

STATE OF MAINE
REGISTRY OF DEEDS

COUNTY _____
RECEIVED _____,
at _____ h _____ m _____ M and
recorded in Plan Bk _____, Pg. _____
Attest: _____ REGISTER



ITEM	TECH	CHECKED
EXISTING CONDITION PLAN	G.L.L.	J.D.F.
FINAL RIGHT OF WAY	B.S.	J.D.F.
AREAS	B.S.	J.D.F.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
16 STATE HOUSE STATION - AUGUSTA, ME 04333-0016 - 207-624-3460

UNION
RIGHT OF WAY MAP

REVISIONS			PLAN FILED IN PLAN BOOK				PAGE COUNTY RECORD				
NO.	DATE	DESCRIPTION	BY	NO.	GRANTOR	INSTRUMENT	DATE	BOOK	PAGE	BRUCE A. VAN NOTE	COMMISSIONER

STATE HIGHWAY "30"
ROUTES 17, 131 & 235 / HEALD HIGHWAY
UNION KNOX COUNTY
FEDERAL AID PROJECT NO. 2423700

SEPTEMBER 2021 RIGHT-OF-WAY MAP
SCALE 1" = 25' SHEET 1 OF 1

D.O.T. FILE NO. 7-171

SHEET NUMBER
9
OF 9