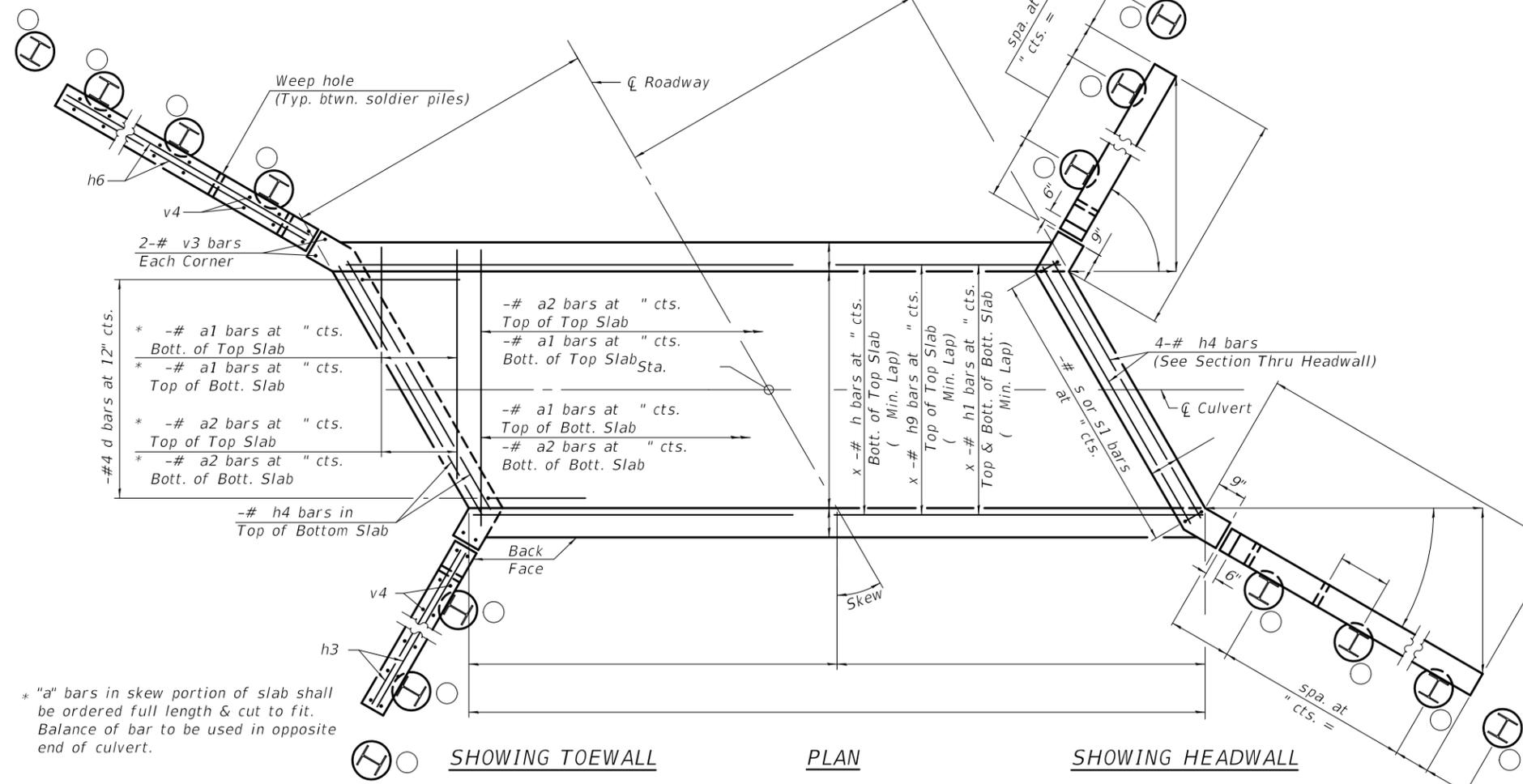
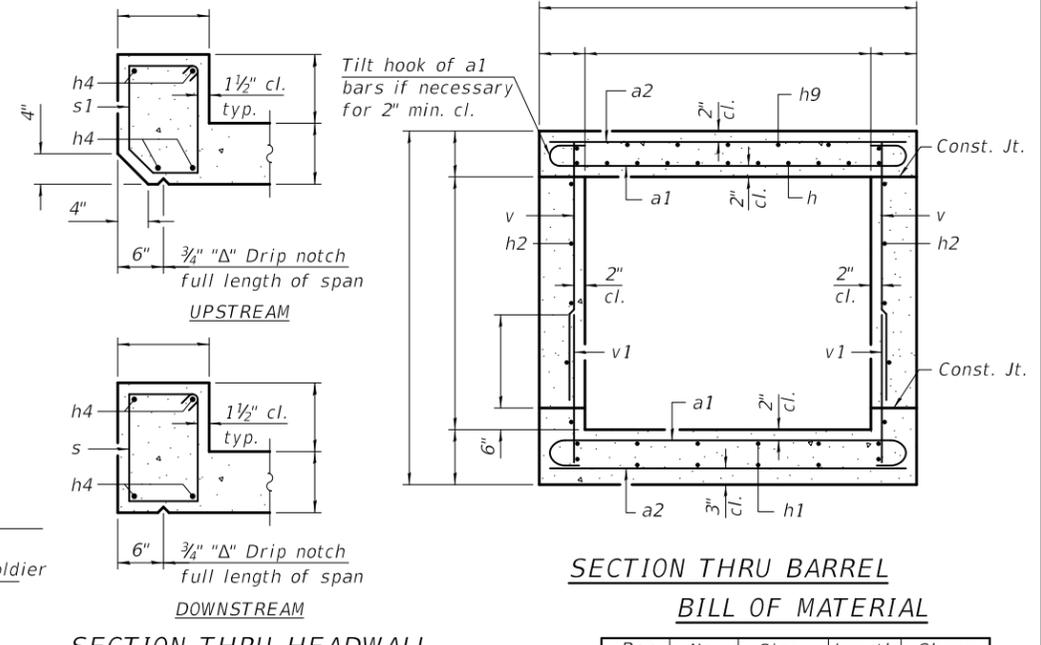
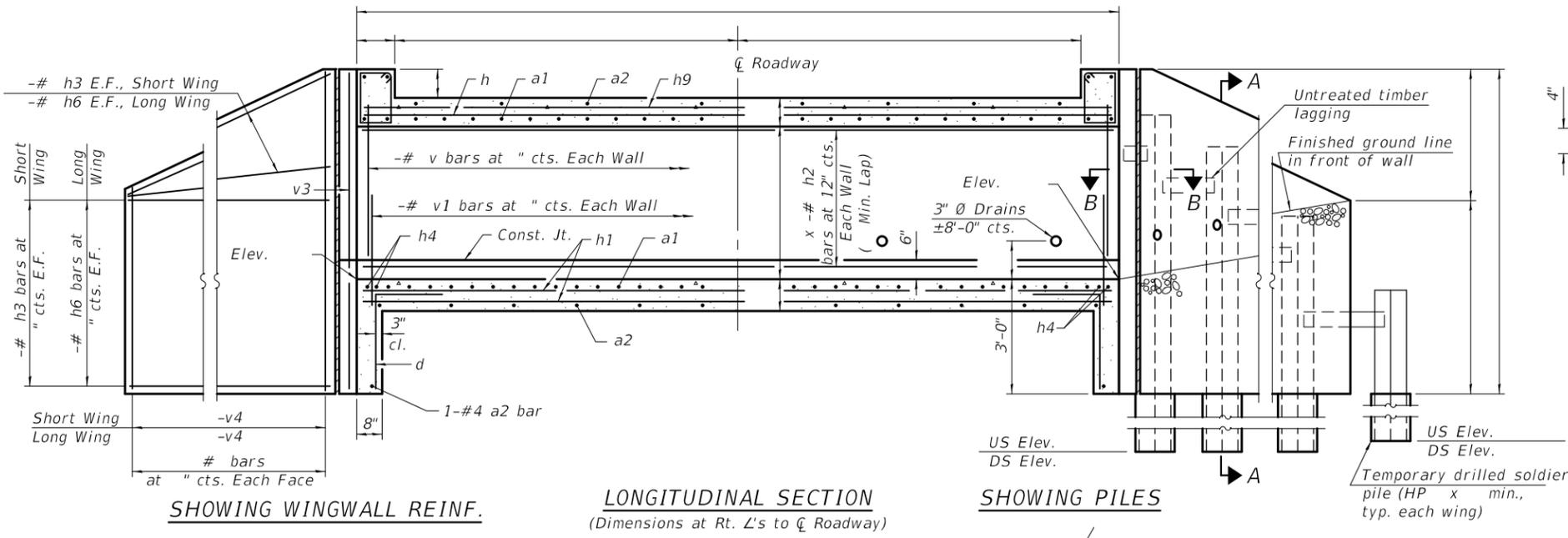


CELL / MODEL NAME	DESCRIPTION	DATE
SP-SK-DETAILS_2 of 2	Soldier Pile Wingwall, Skewed Culverts, Details	2/17/2017
SP-ZS-DETAILS_2 of 2	Soldier Pile Wingwall, Zero Skew Culverts, Details	2/17/2017
TSA-SB-SP-LS_1 of 2	2 rows of reinf in top slab; 1 row of reinf in each sidewall; Soldier Pile Wingwalls, Left Skew	2/17/2017
TSA-SB-SP-RS_1 of 2	2 rows of reinf in top slab; 1 row of reinf in each sidewall; Soldier Pile Wingwalls, Right Skew	2/17/2017
TSA-SB-SP-ZS_1 of 2	2 rows of reinf in top slab; 1 row of reinf in each sidewall; Soldier Pile Wingwalls, Zero Skew	2/17/2017
TSA-SC-SP-LS_1 of 2	2 rows of reinf in top slab; 2 rows of reinf in each sidewall; Soldier Pile Wingwalls, Left Skew	2/17/2017
TSA-SC-SP-RS_1 of 2	2 rows of reinf in top slab; 2 rows of reinf in each sidewall; Soldier Pile Wingwalls, Right Skew	2/17/2017
TSA-SC-SP-ZS_1 of 2	2 rows of reinf in top slab; 2 rows of reinf in each sidewall; Soldier Pile Wingwalls, Zero Skew	2/17/2017
TSB-SB-SP-LS_1 of 2	1 row of reinf in top slab; 1 row of reinf in each sidewall; Soldier Pile Wingwalls, Left Skew	2/17/2017
TSB-SB-SP-RS_1 of 2	1 row of reinf in top slab; 1 row of reinf in each sidewall; Soldier Pile Wingwalls, Right Skew	2/17/2017
TSB-SB-SP-ZS_1 of 2	1 row of reinf in top slab; 1 row of reinf in each sidewall; Soldier Pile Wingwalls, Zero Skew	2/17/2017
TSB-SC-SP-LS_1 of 2	1 row of reinf in top slab; 2 rows of reinf in each sidewall; Soldier Pile Wingwalls, Left Skew	2/17/2017
TSB-SC-SP-RS_1 of 2	1 row of reinf in top slab; 2 rows of reinf in each sidewall; Soldier Pile Wingwalls, Right Skew	2/17/2017
TSB-SC-SP-ZS_1 of 2	1 row of reinf in top slab; 2 rows of reinf in each sidewall Soldier Pile Wingwalls, Zero Skew	2/17/2017



* "a" bars in skew portion of slab shall be ordered full length & cut to fit. Balance of bar to be used in opposite end of culvert.

Notes:
 Bars indicated thus 12 x 4-#5 etc. indicates 12 lines of bars with 4 lengths per line.
 At the Contractor's option, a longer v1 bar may be ordered to replace the v bar. No reduction in quantities shall be made for this substitution.
 See sheet of for soldier pile wingwall details.

TSA-SB-SP-LS

2-17-2017

FILE NAME =	USER NAME =	DESIGNED -	REVISD -
		CHECKED -	REVISD -
		DRAWN -	REVISD -
		CHECKED -	REVISD -

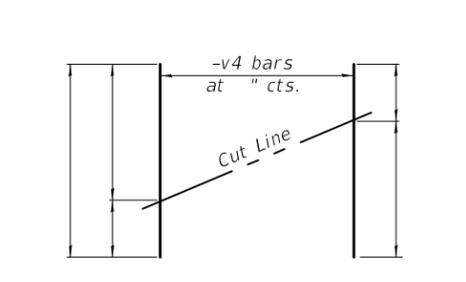
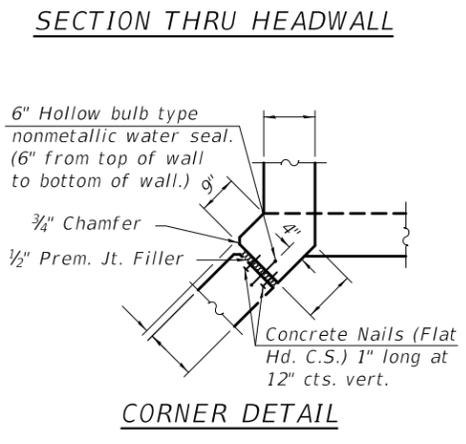
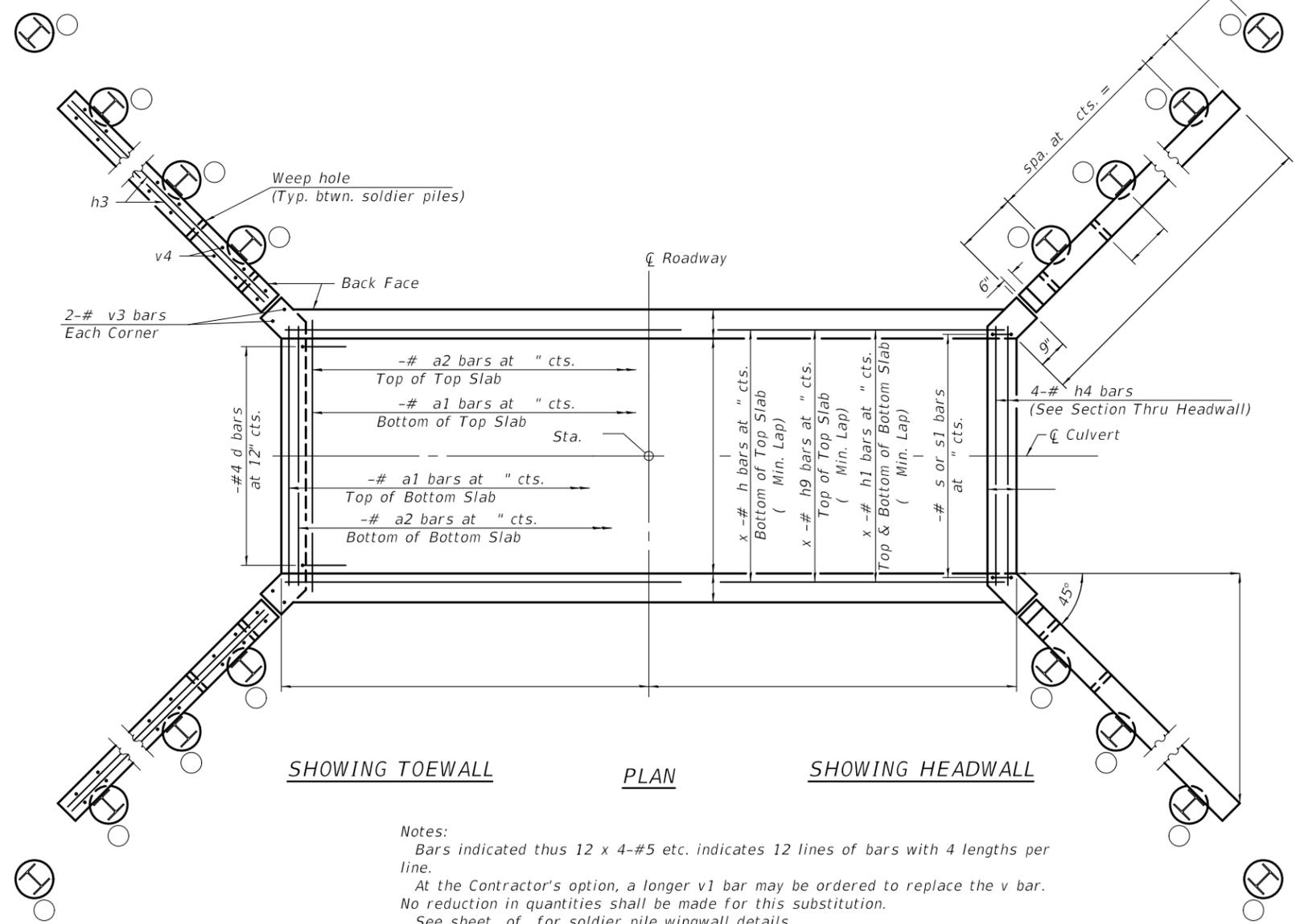
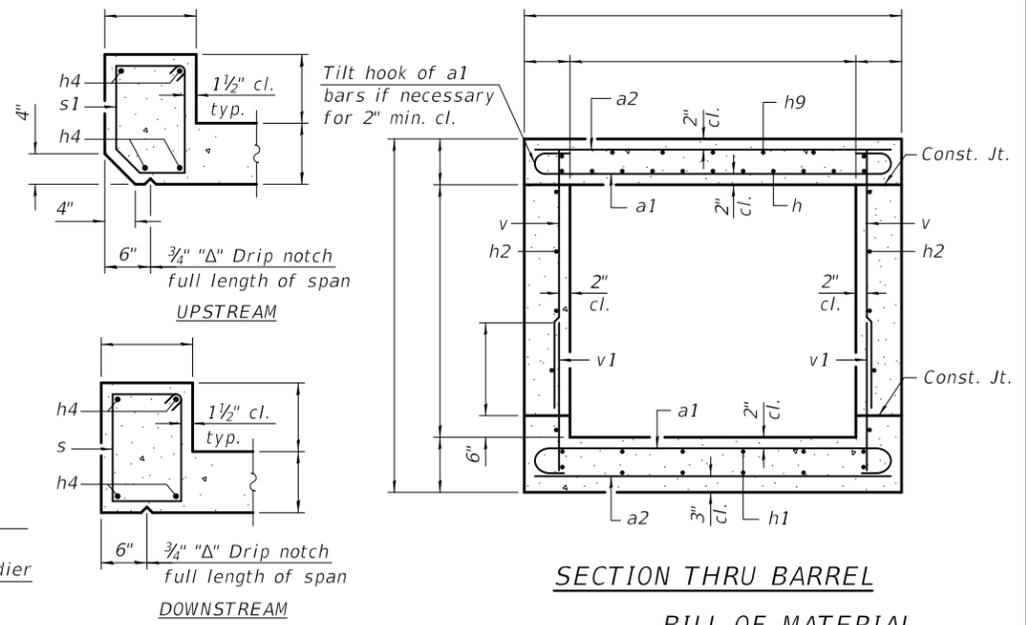
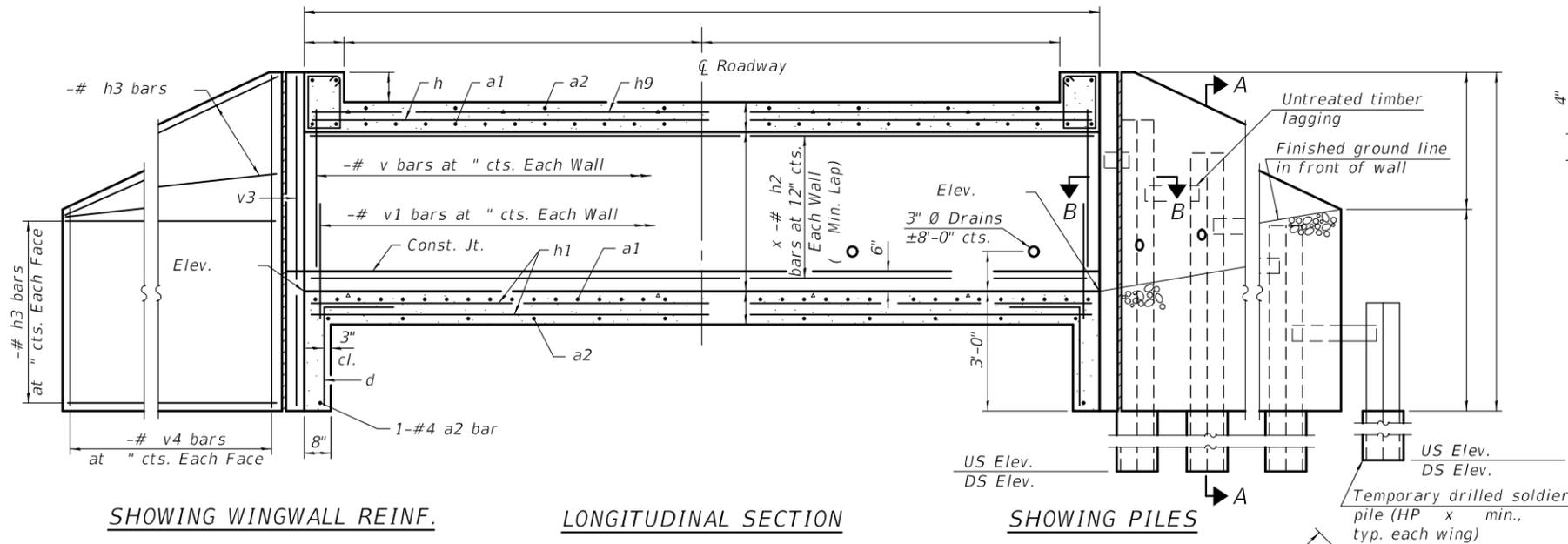
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

CULVERT DETAILS
 STRUCTURE NO.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				

ILLINOIS FED. AID PROJECT

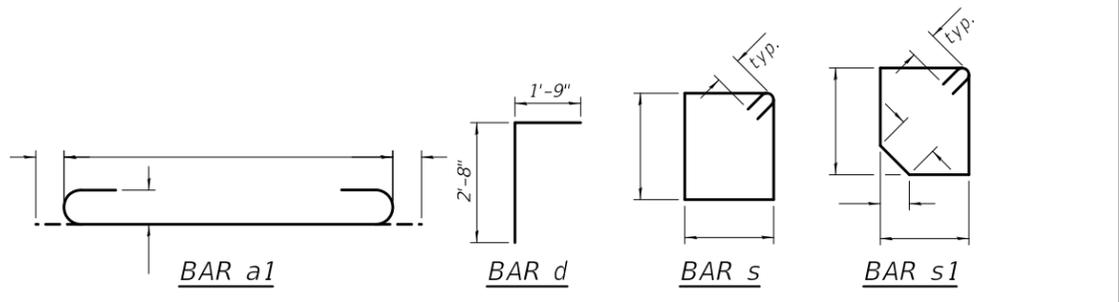
(Sheet 1 of 2)



FIELD CUTTING DIAGRAM
Order bars shown full length. Cut as shown and use remainder of bars in opposite wingwall.

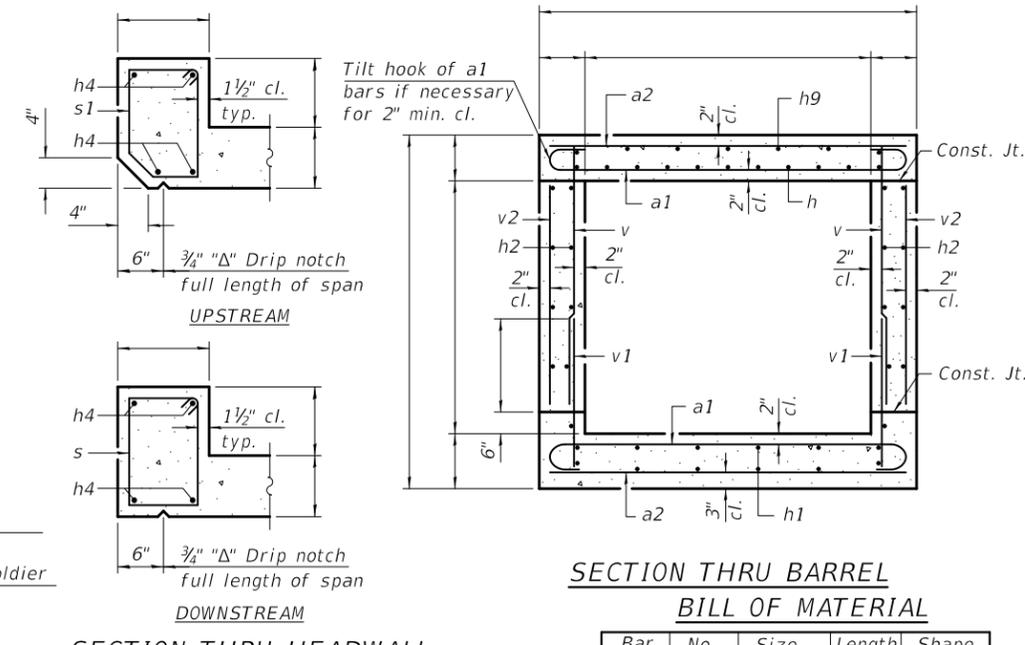
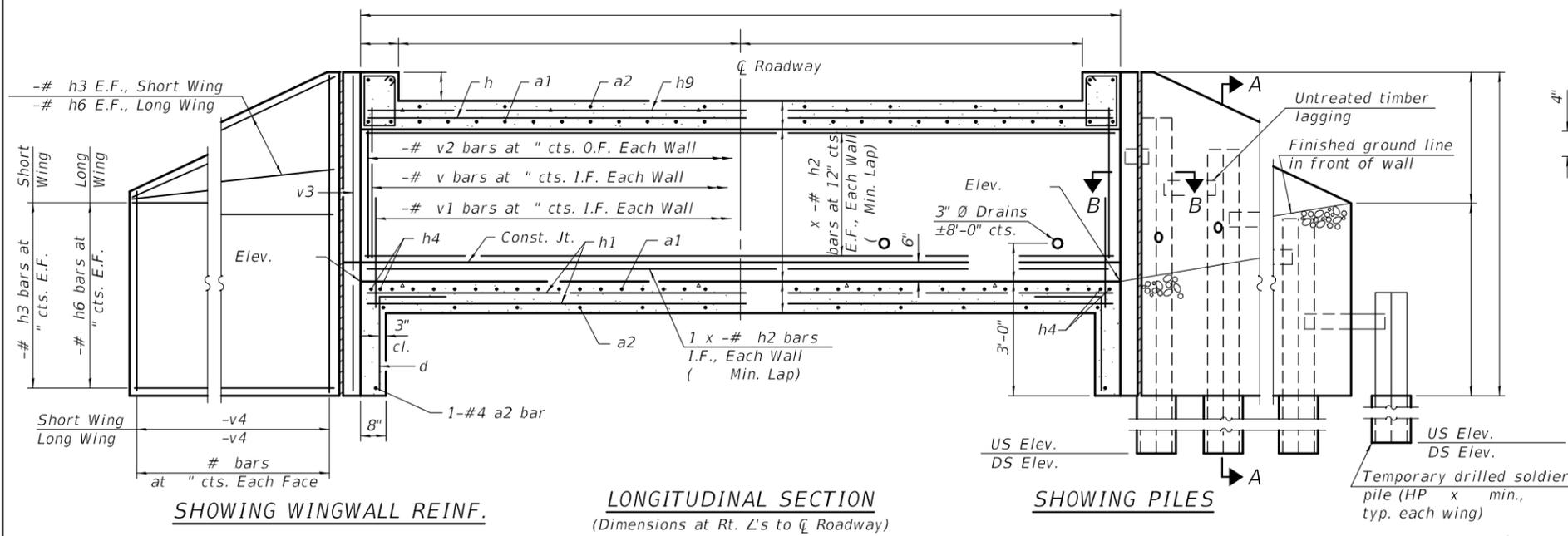
BILL OF MATERIAL

Bar No.	Size	Length	Shape
a1	#		U
a2	#		—
d	#4	4'-5"	L
h	#		—
h1	#		—
h2	#		—
h3	#		—
h4	#		—
h9	#		—
s	#		—
s1	#		—
v	#		—
v1	#		—
v3	#		—
v4	#		—
Concrete Box Culverts			Cu. Yd.
Reinforcement Bars			Pound
Furnishing Soldier Piles			Foot
Drilling and Setting Soldier Piles (In soil)			Cu. Ft.
Drilling and Setting Soldier Piles (In rock)			Cu. Ft.
Untreated Timber Lagging			Sq. Ft.
Geocomposite Wall Drain			Sq. Yd.
Stud Shear Connectors			Each

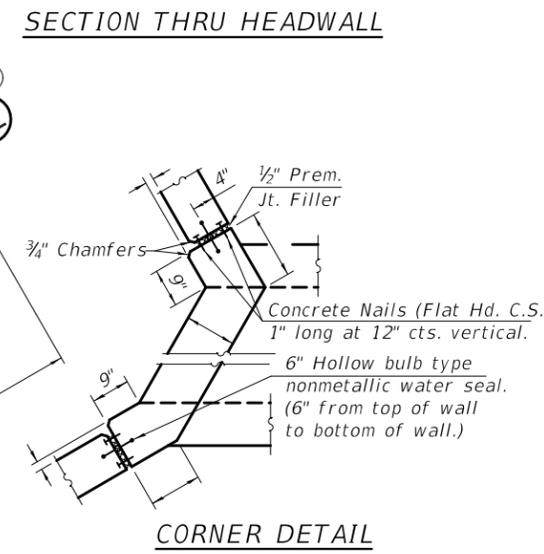
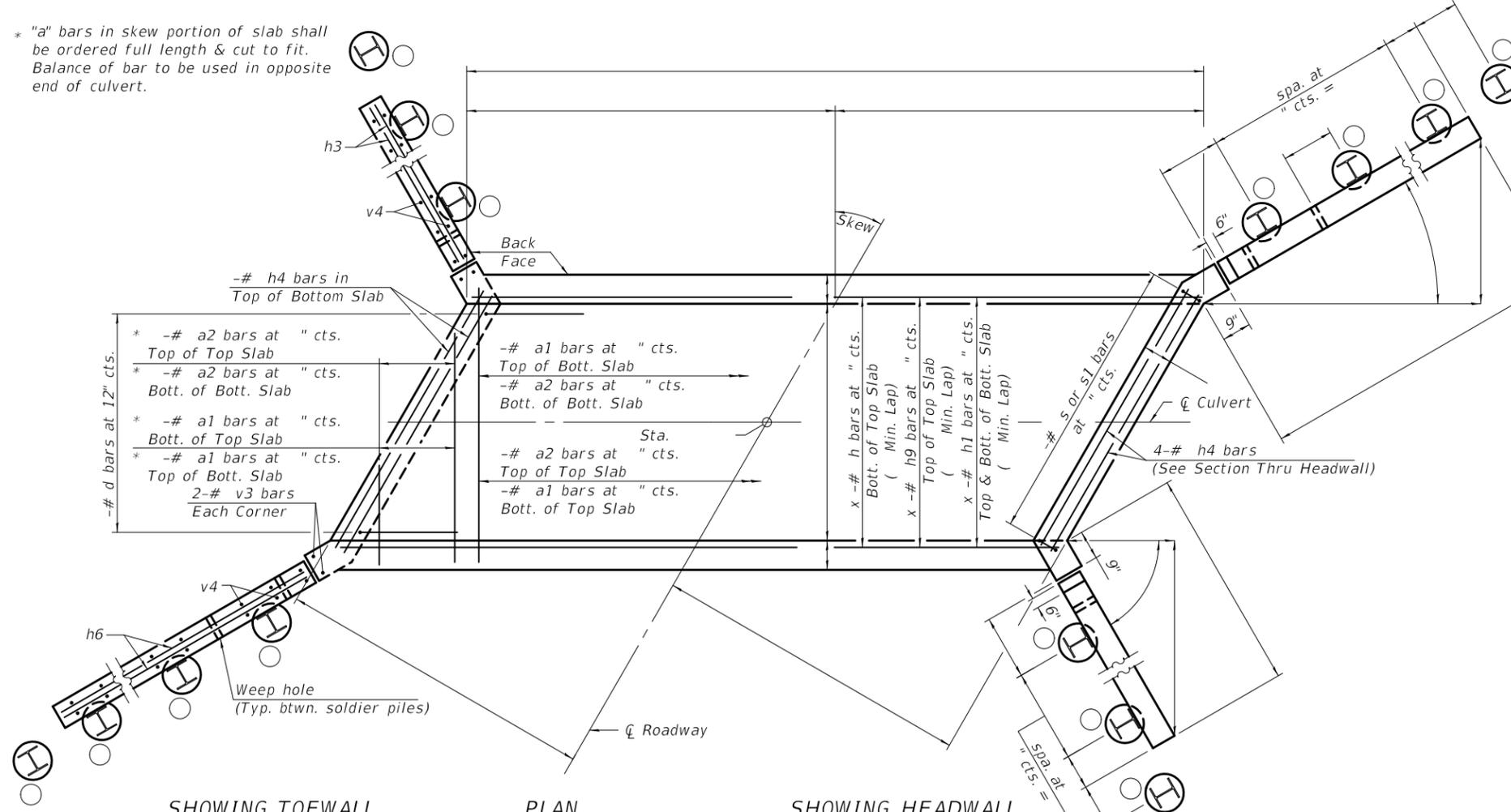


TSA-SB-SP-ZS 2-17-2017

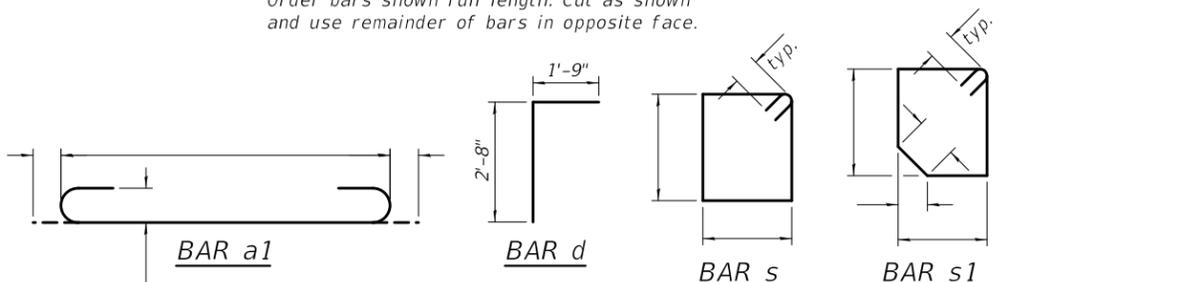
Notes:
Bars indicated thus 12 x 4-#5 etc. indicates 12 lines of bars with 4 lengths per line.
At the Contractor's option, a longer v1 bar may be ordered to replace the v bar. No reduction in quantities shall be made for this substitution.
See sheet of for soldier pile wingwall details.



* "a" bars in skew portion of slab shall be ordered full length & cut to fit. Balance of bar to be used in opposite end of culvert.



Bar	No.	Size	Length	Shape
a1		#		U
a2		#		U
d		#4	4'-5"	L
h		#		U
h1		#		U
h2		#		U
h3		#		U
h4		#		U
h6		#		U
h9		#		U
s		#		U
s1		#		U
v		#		U
v1		#		U
v2		#		U
v3		#		U
v4		#		U
Concrete Box Culverts				Cu. Yd.
Reinforcement Bars				Pound
Furnishing Soldier Piles				Foot
Drilling and Setting Soldier Piles (In soil)				Cu. Ft.
Drilling and Setting Soldier Piles (In rock)				Cu. Ft.
Untreated Timber Lagging				Sq. Ft.
Geocomposite Wall Drain				Sq. Yd.
Stud Shear Connectors				Each



TSA-SC-SP-RS 2-17-2017

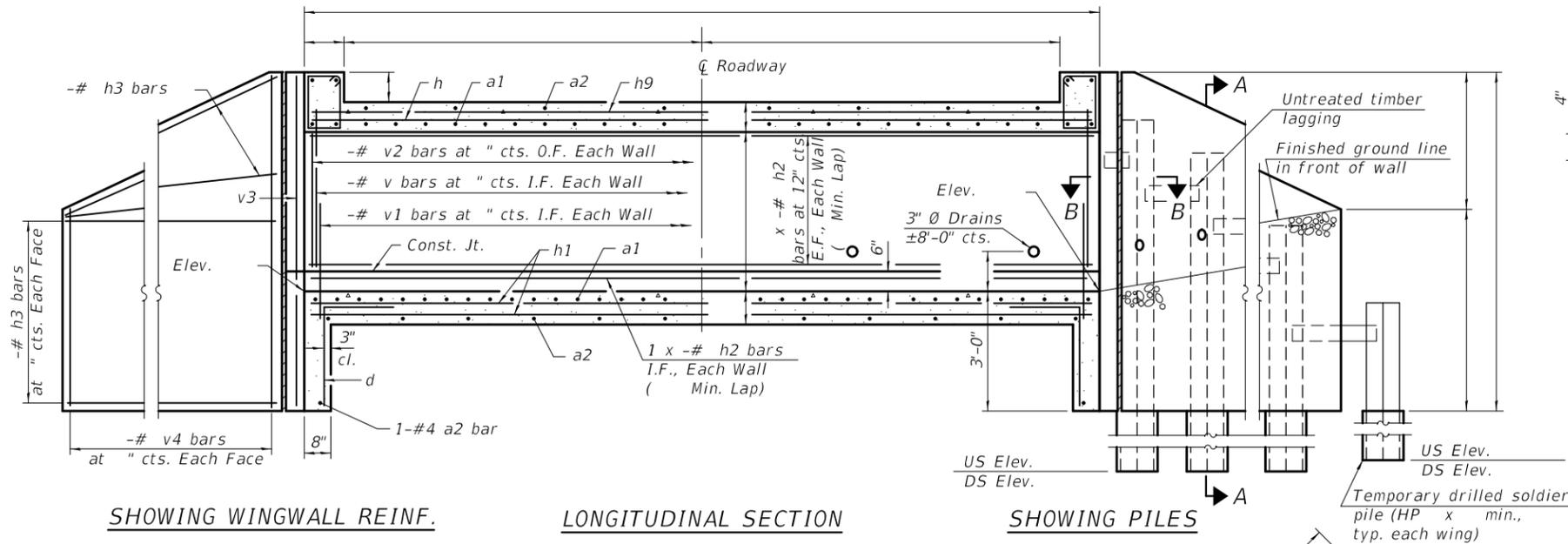
Notes:
 Bars indicated thus 12 x 4-#5 etc. indicates 12 lines of bars with 4 lengths per line.
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 No reduction in quantities shall be made for this substitution.
 See sheet of for soldier pile wingwall details.

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
		CHECKED -	REVISED -
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		CHECKED -	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

CULVERT DETAILS
 STRUCTURE NO.

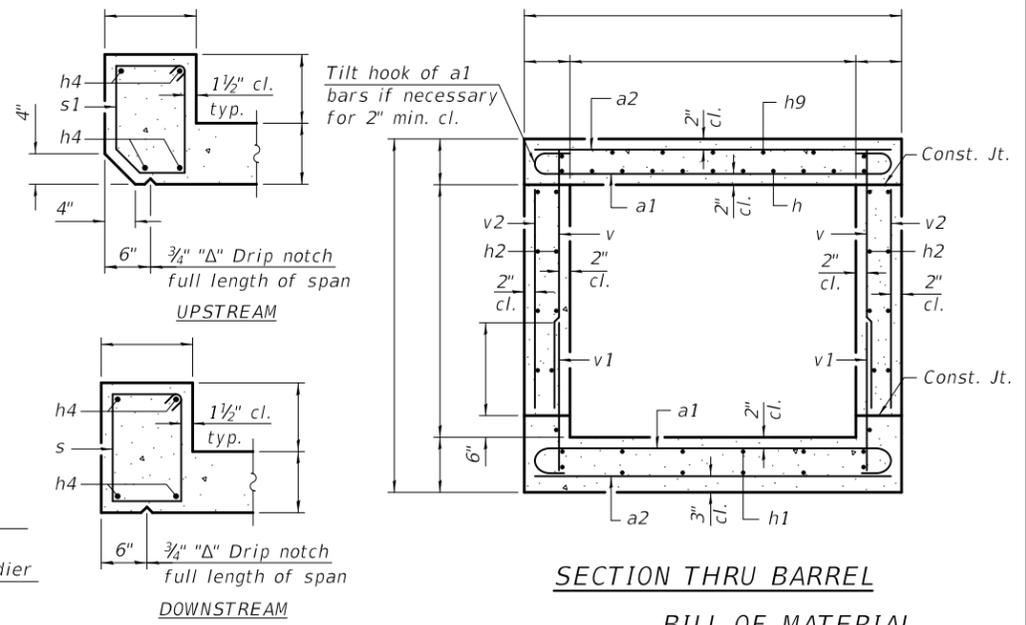
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				



SHOWING WINGWALL REINF.

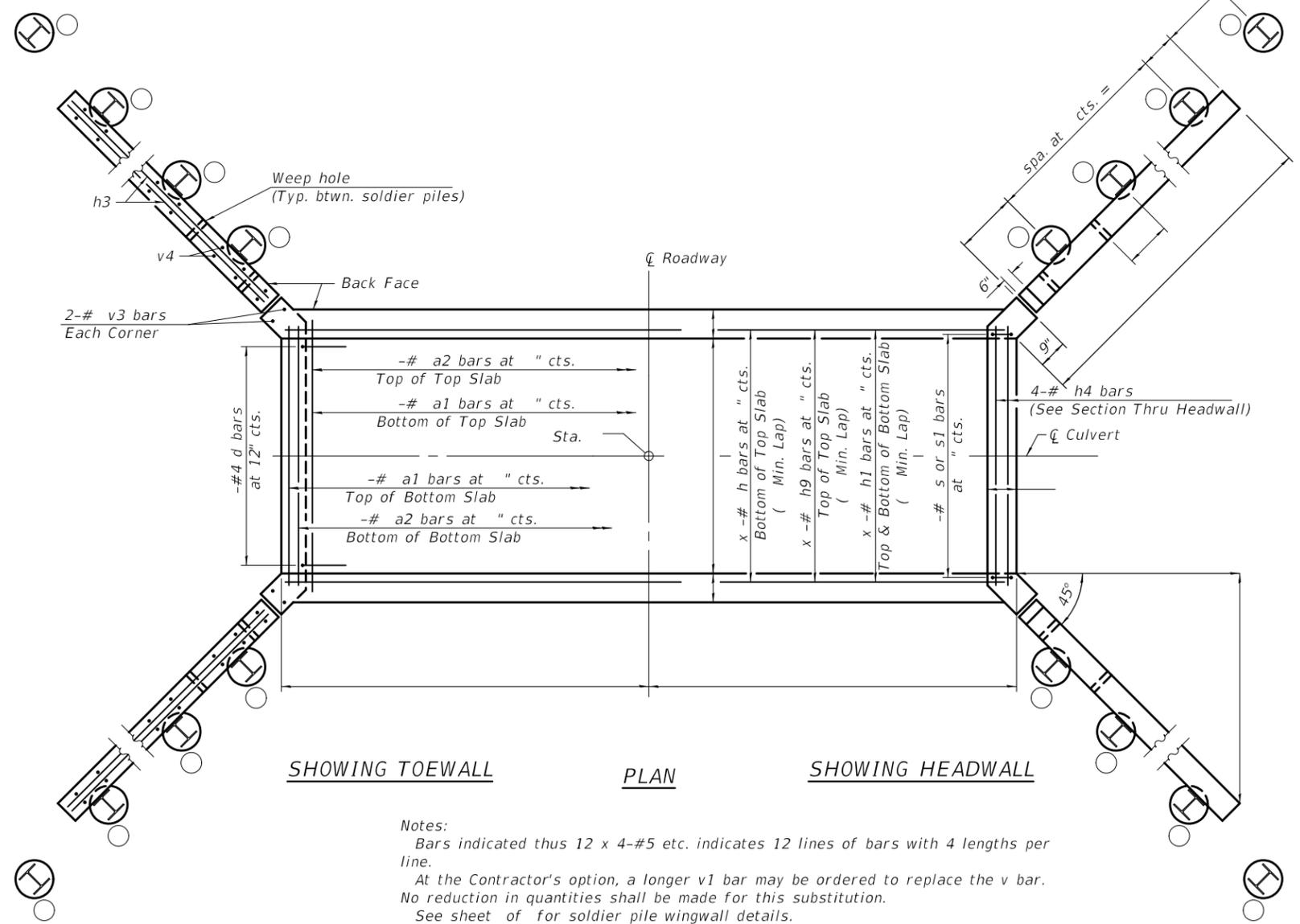
LONGITUDINAL SECTION

SHOWING PILES



SECTION THRU HEADWALL

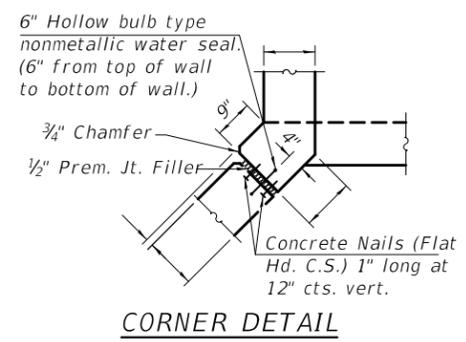
SECTION THRU BARREL



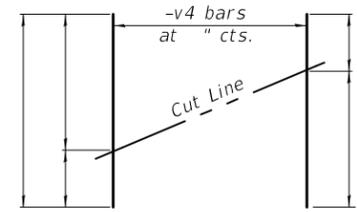
SHOWING TOEWALL

PLAN

SHOWING HEADWALL

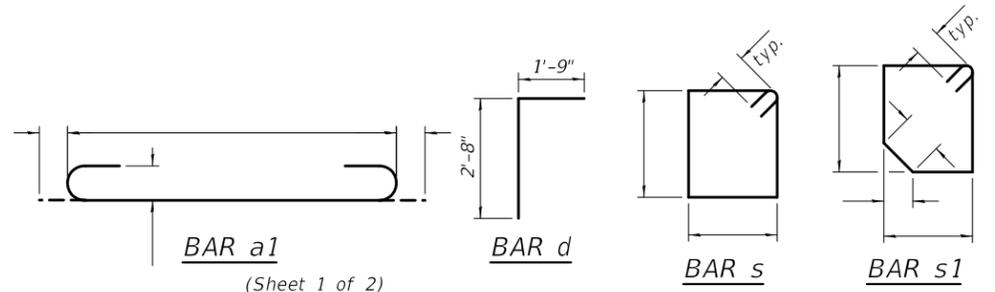


CORNER DETAIL



FIELD CUTTING DIAGRAM

Order bars shown full length. Cut as shown and use remainder of bars in opposite wingwall.



BAR a1

BAR d

BAR s

BAR s1

(Sheet 1 of 2)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a1	#			
a2	#			
d	#4		4'-5"	
h	#			
h1	#			
h2	#			
h3	#			
h4	#			
h9	#			
s	#			
s1	#			
v	#			
v1	#			
v2	#			
v3	#			
v4	#			
Concrete Box Culverts			Cu. Yd.	
Reinforcement Bars			Pound	
Furnishing Soldier Piles			Foot	
Drilling and Setting Soldier Piles (In soil)			Cu. Ft.	
Drilling and Setting Soldier Piles (In rock)			Cu. Ft.	
Untreated Timber Lagging			Sq. Ft.	
Geocomposite Wall Drain			Sq. Yd.	
Stud Shear Connectors			Each	

Notes:
 Bars indicated thus 12 x 4-#5 etc. indicates 12 lines of bars with 4 lengths per line.
 At the Contractor's option, a longer v1 bar may be ordered to replace the v bar.
 No reduction in quantities shall be made for this substitution.
 See sheet of for soldier pile wingwall details.

TSA-SC-SP-ZS

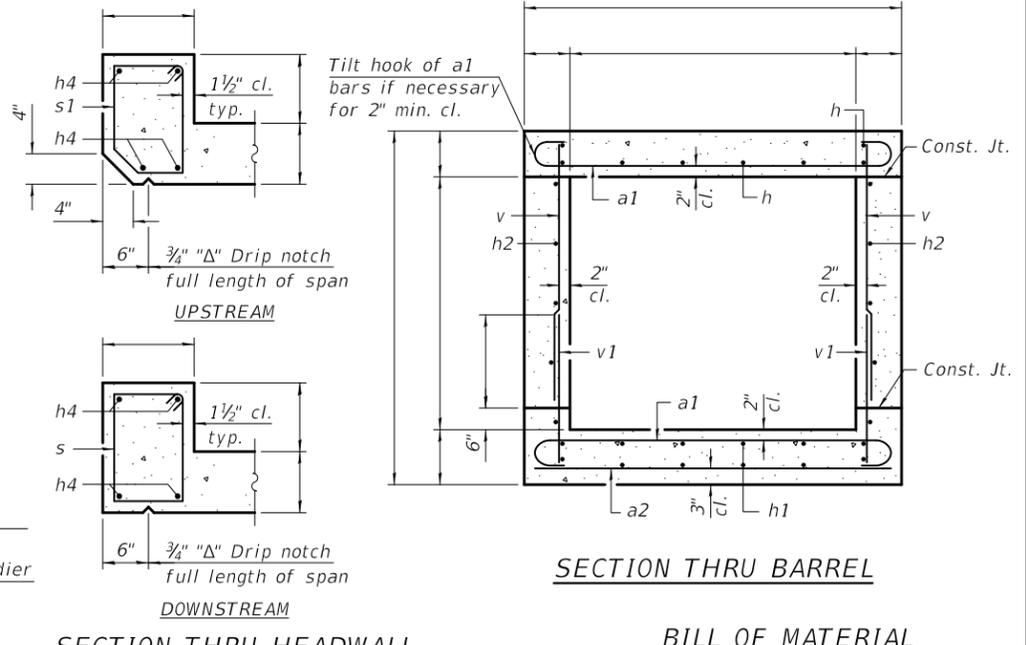
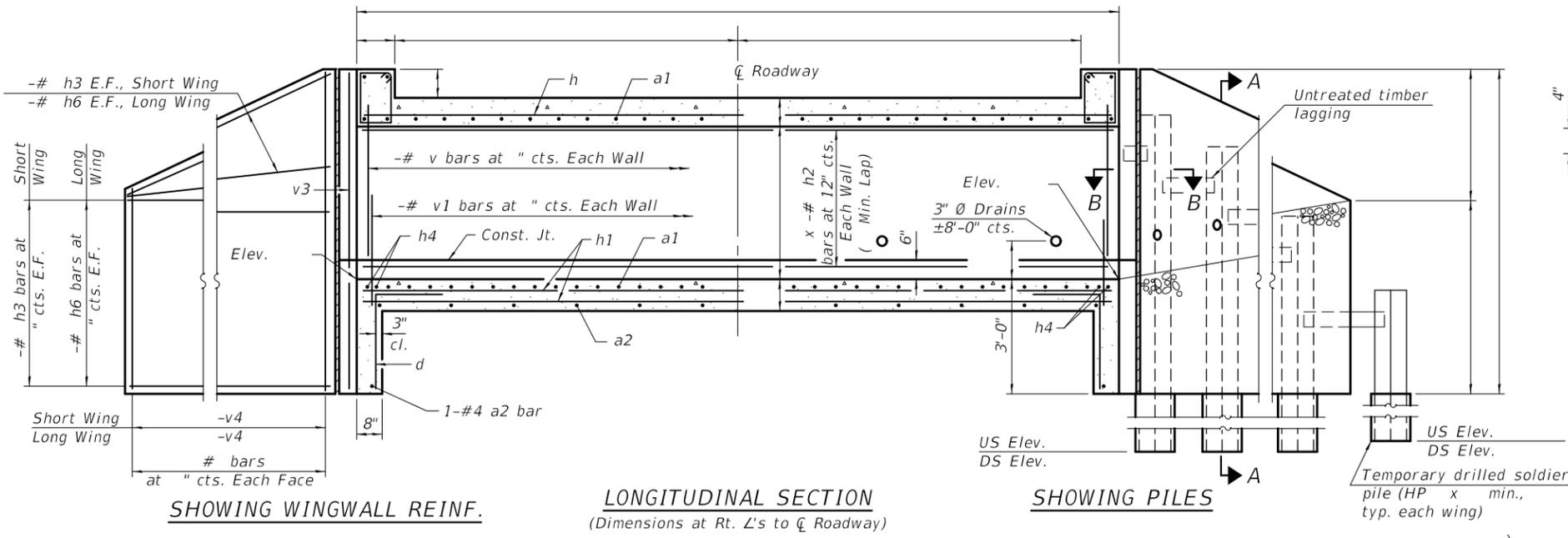
2-17-2017

FILE NAME =	USER NAME =	DESIGNED -	REVISD -
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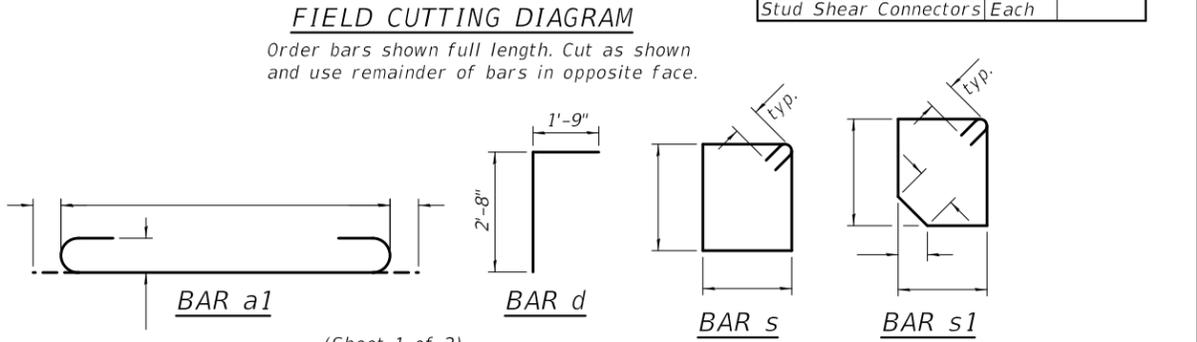
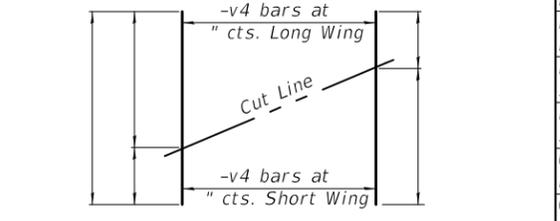
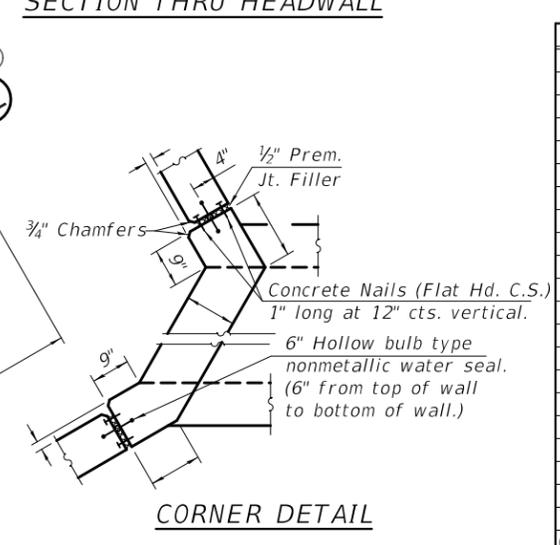
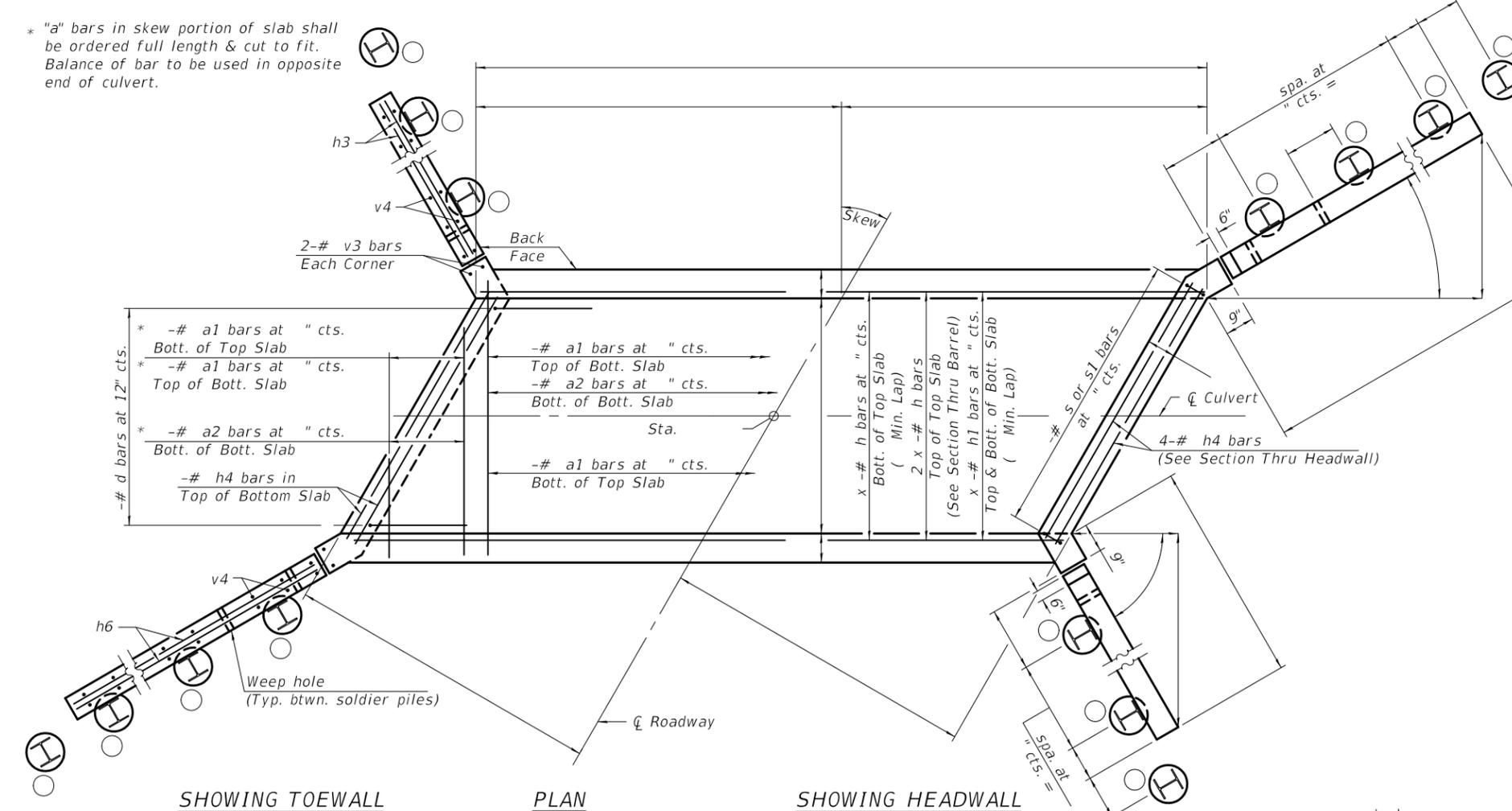
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

CULVERT DETAILS
 STRUCTURE NO.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				



* "a" bars in skew portion of slab shall be ordered full length & cut to fit. Balance of bar to be used in opposite end of culvert.



BILL OF MATERIAL

Bar	No.	Size	Length	Shape	
a1		#		U	
a2		#		—	
d		#4	4'-5"	L	
h		#		—	
h1		#		—	
h2		#		—	
h3		#		—	
h4		#		—	
h6		#		—	
s		#		—	
s1		#		—	
v		#		—	
v1		#		—	
v3		#		—	
v4		#		—	
				Concrete Box Culverts	Cu. Yd.
				Reinforcement Bars	Pound
				Furnishing Soldier Piles	Foot
				Drilling and Setting Soldier Piles (In soil)	Cu. Ft.
				Drilling and Setting Soldier Piles (In rock)	Cu. Ft.
				Untreated Timber Lagging	Sq. Ft.
				Geocomposite Wall Drain	Sq. Yd.
				Stud Shear Connectors	Each

Notes:
 Bars indicated thus 12 x 4-#5 etc. indicates 12 lines of bars with 4 lengths per line.
 At the Contractor's option, a longer v1 bar may be ordered to replace the v bar.
 No reduction in quantities shall be made for this substitution.
 See sheet of for soldier pile wingwall details.

TSB-SB-SP-RS 2-17-2017

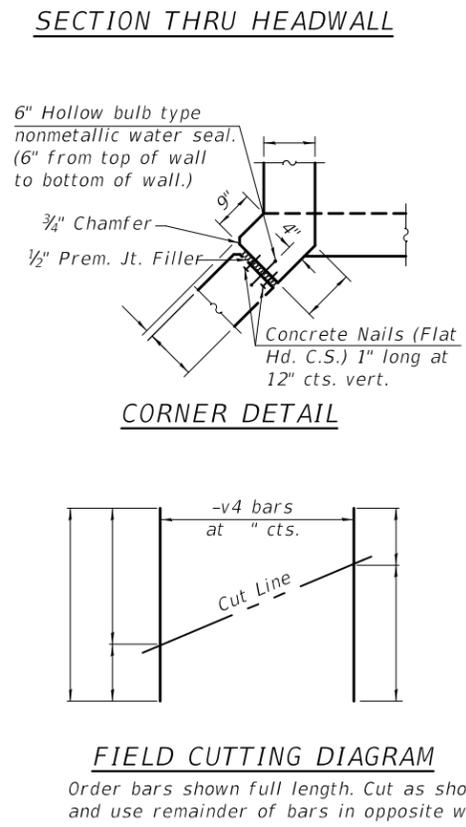
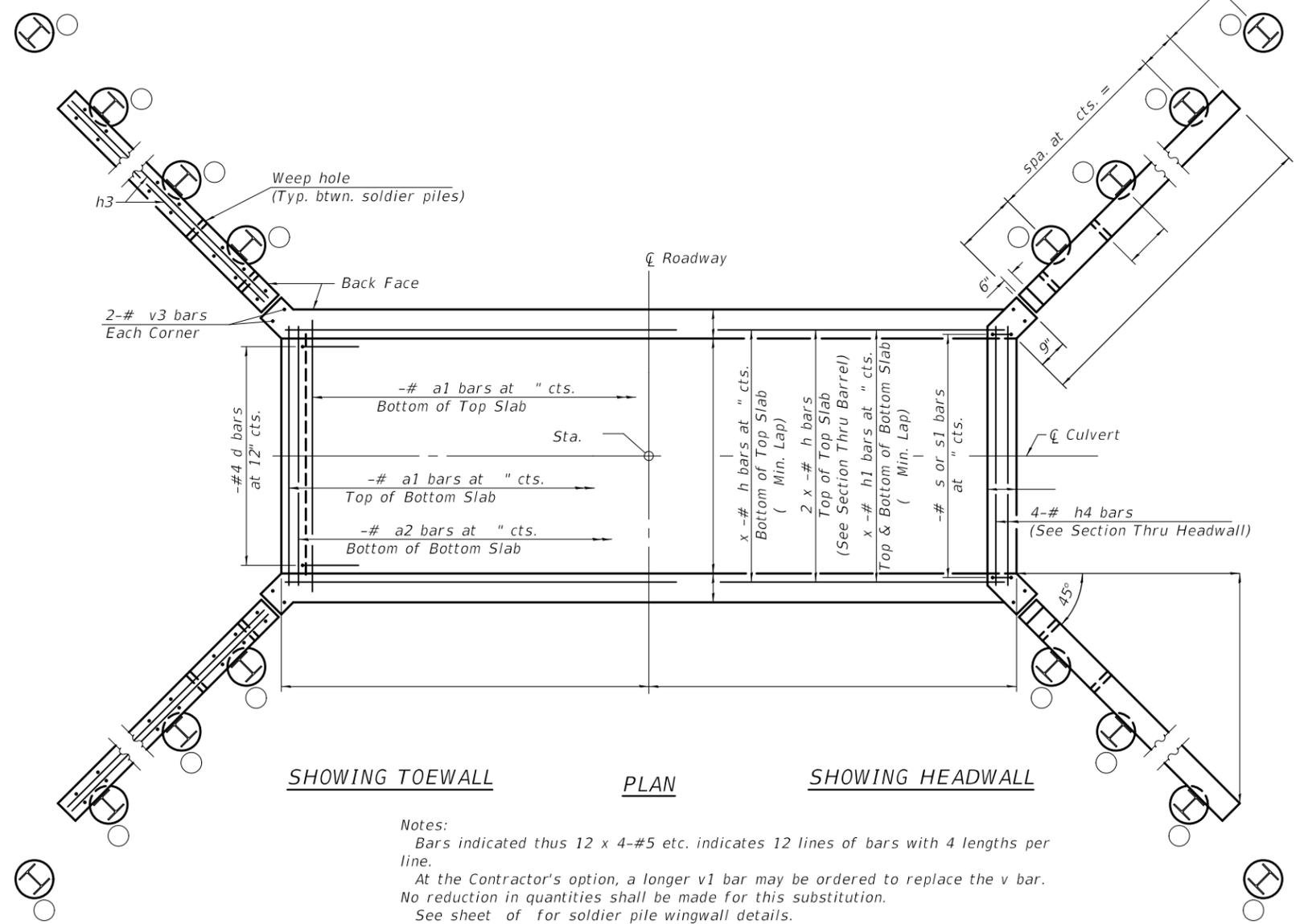
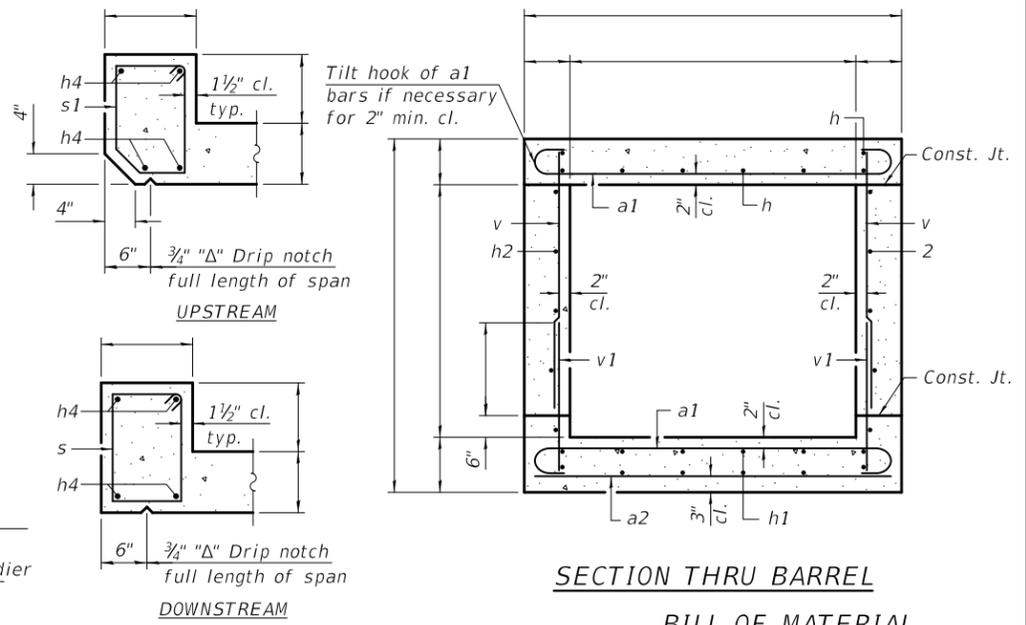
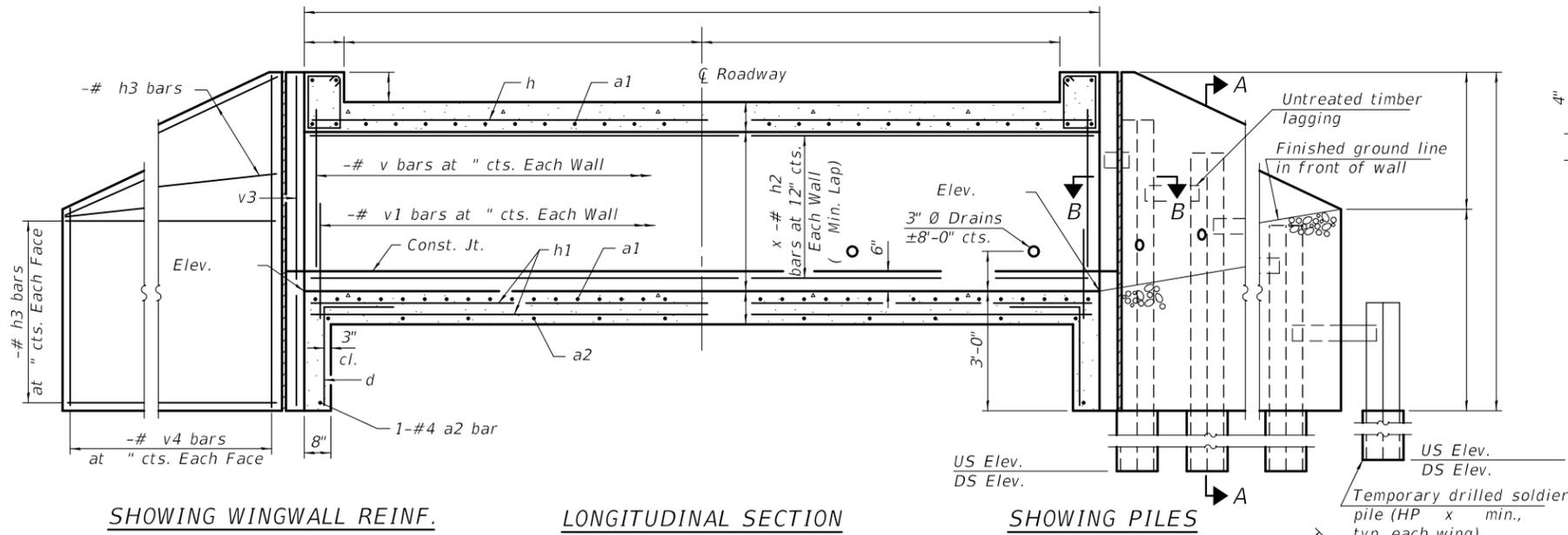
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**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**CULVERT DETAILS
 STRUCTURE NO.**

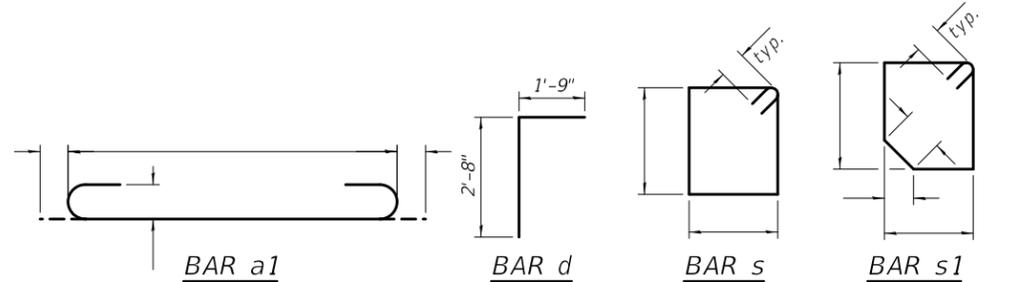
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				

(Sheet 1 of 2)



BILL OF MATERIAL

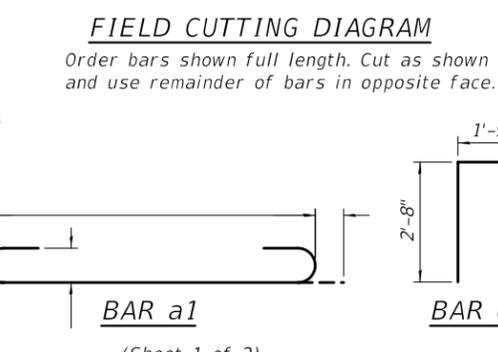
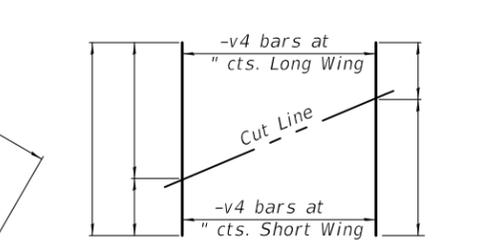
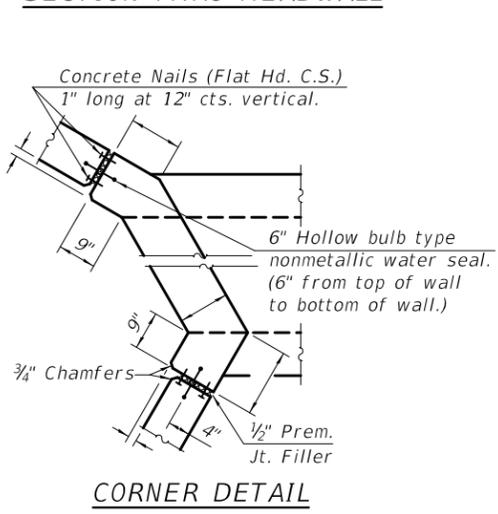
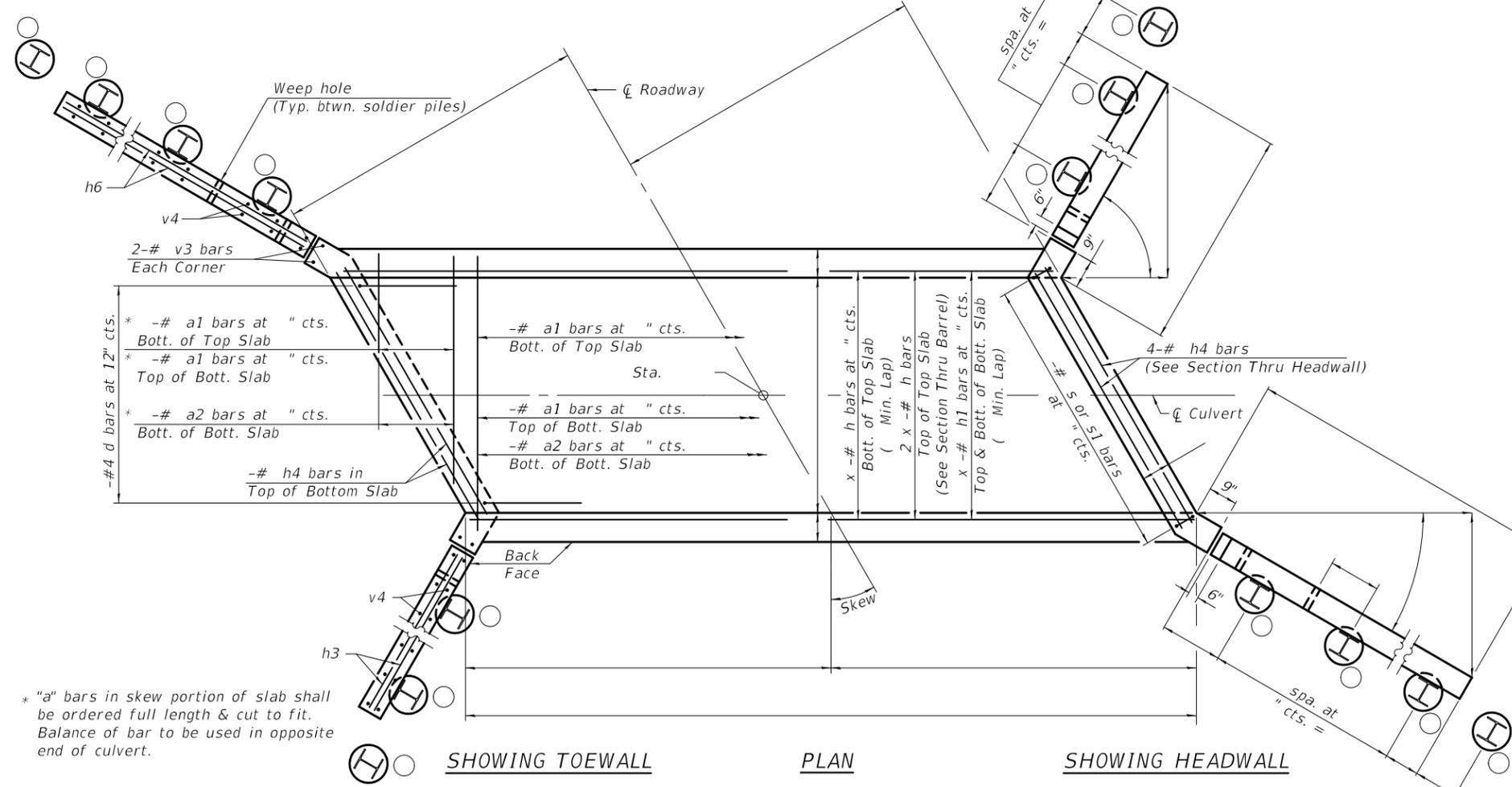
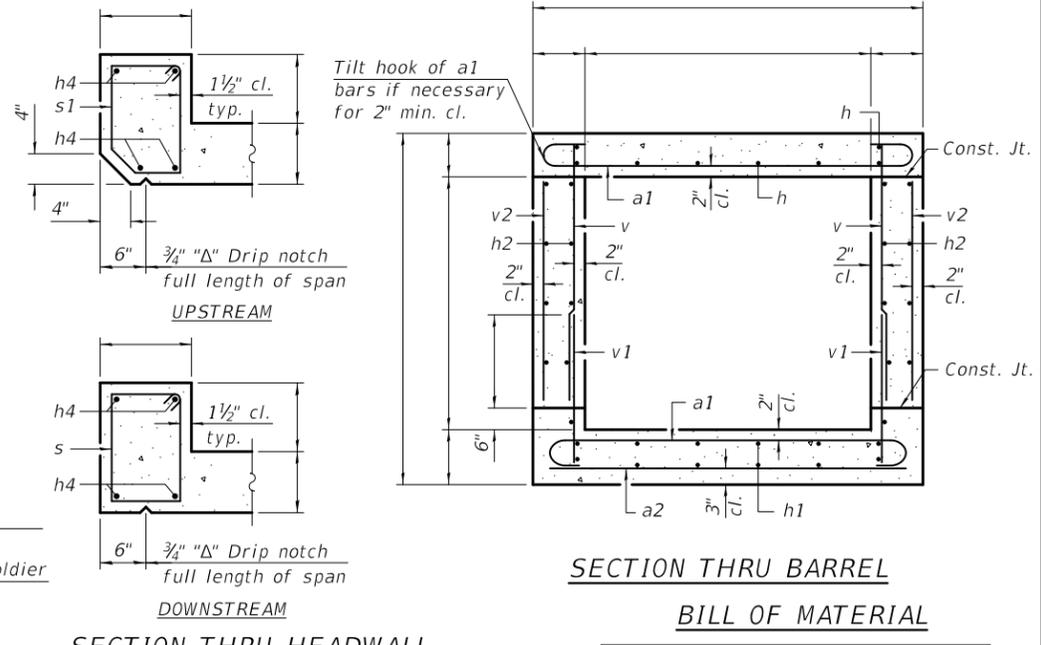
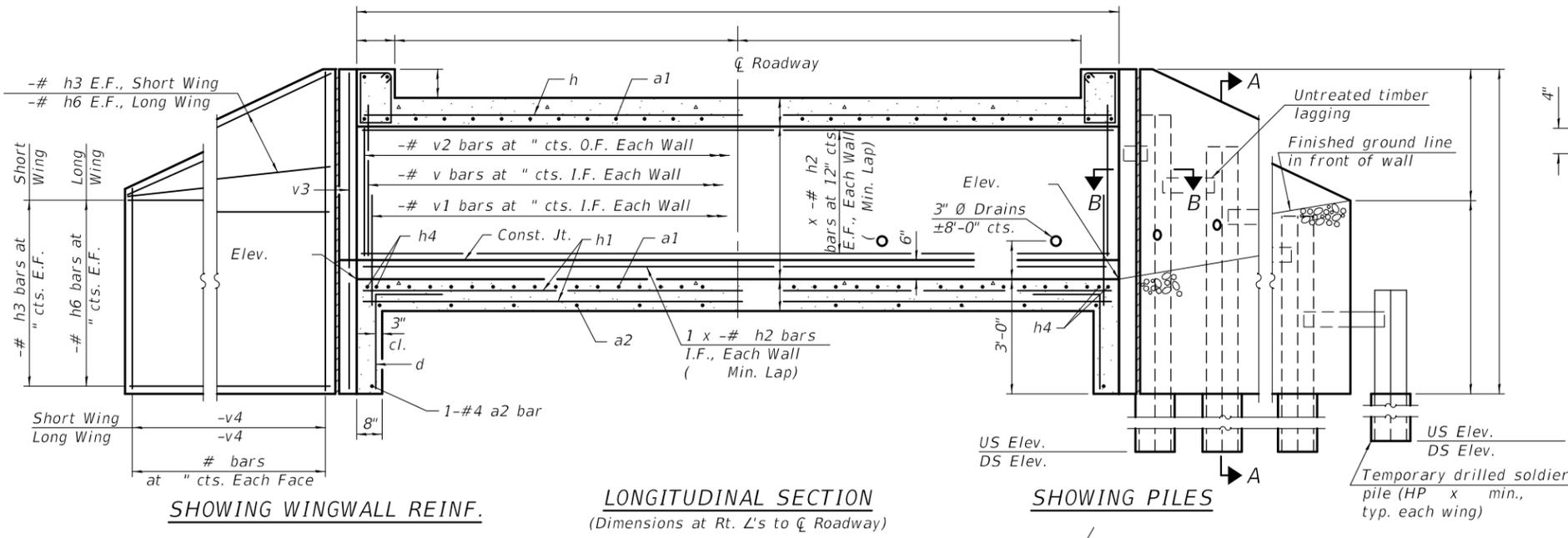
Bar No.	Size	Length	Shape
a1	#		U
a2	#		U
d	#4	4'-5"	L
h	#		—
h1	#		—
h2	#		—
h3	#		—
h4	#		—
s	#		U
s1	#		U
v	#		—
v1	#		—
v3	#		—
v4	#		—
Concrete Box Culverts	Cu. Yd.		
Reinforcement Bars	Pound		
Furnishing Soldier Piles	Foot		
Drilling and Setting Soldier Piles (In soil)	Cu. Ft.		
Drilling and Setting Soldier Piles (In rock)	Cu. Ft.		
Untreated Timber Lagging	Sq. Ft.		
Geocomposite Wall Drain	Sq. Yd.		
Stud Shear Connectors	Each		



TSB-SB-SP-ZS

2-17-2017

Notes:
 Bars indicated thus 12 x 4-#5 etc. indicates 12 lines of bars with 4 lengths per line.
 At the Contractor's option, a longer v1 bar may be ordered to replace the v bar.
 No reduction in quantities shall be made for this substitution.
 See sheet of for soldier pile wingwall details.



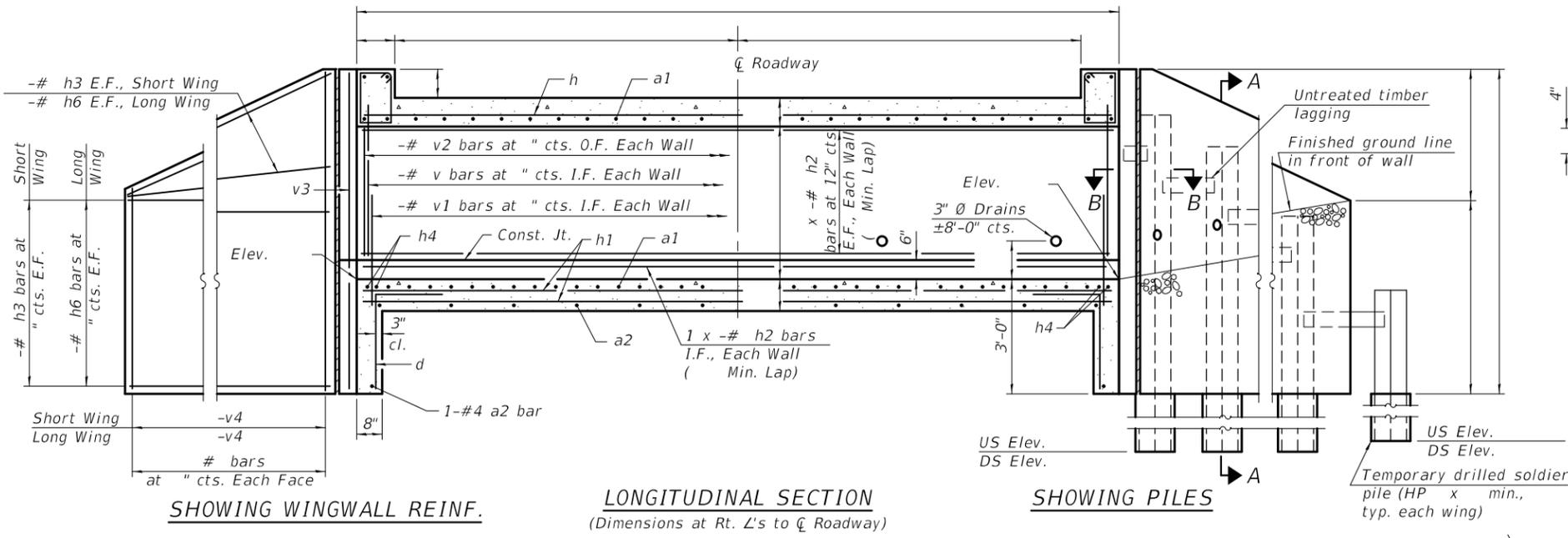
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a1		#		
a2		#		
d		#4	4'-5"	
h		#		
h1		#		
h2		#		
h3		#		
h4		#		
h6		#		
s		#		
s1		#		
v		#		
v1		#		
v2		#		
v3		#		
v4		#		

Concrete Box Culverts	Cu. Yd.
Reinforcement Bars	Pound
Furnishing Soldier Piles	Foot
Drilling and Setting Soldier Piles (In soil)	Cu. Ft.
Drilling and Setting Soldier Piles (In rock)	Cu. Ft.
Untreated Timber Lagging	Sq. Ft.
Geocomposite Wall Drain	Sq. Yd.
Stud Shear Connectors	Each

* "a" bars in skew portion of slab shall be ordered full length & cut to fit. Balance of bar to be used in opposite end of culvert.

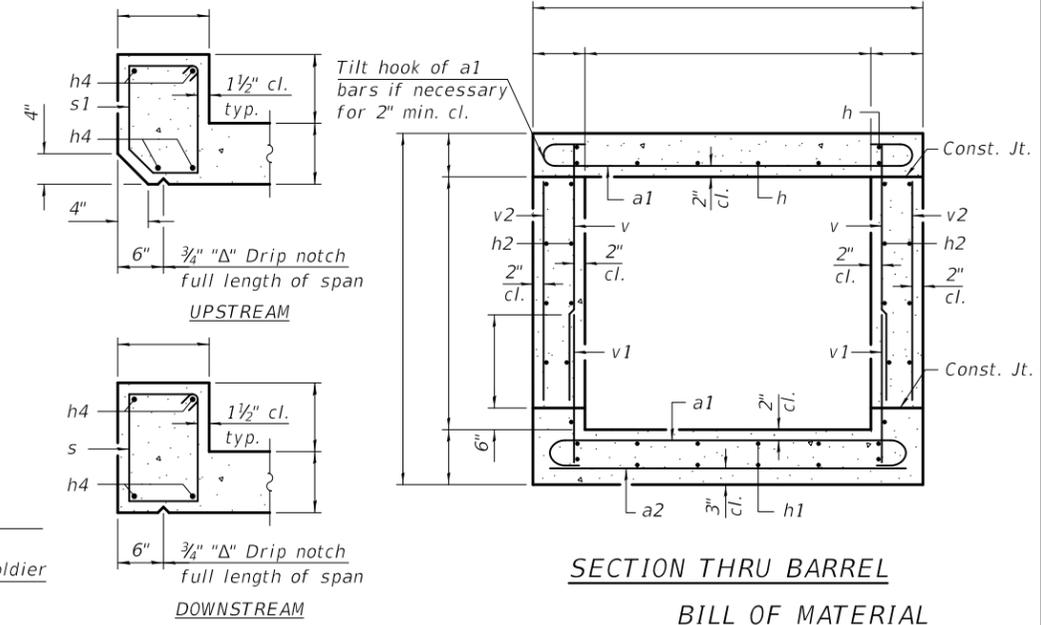
Notes:
 Bars indicated thus 12 x 4-#5 etc. indicates 12 lines of bars with 4 lengths per line.
 At the Contractor's option, a longer v1 bar may be ordered to replace the v bar. No reduction in quantities shall be made for this substitution.
 See sheet of for soldier pile wingwall details.



SHOWING WINGWALL REINF.

LONGITUDINAL SECTION
(Dimensions at Rt. L's to C Roadway)

SHOWING PILES



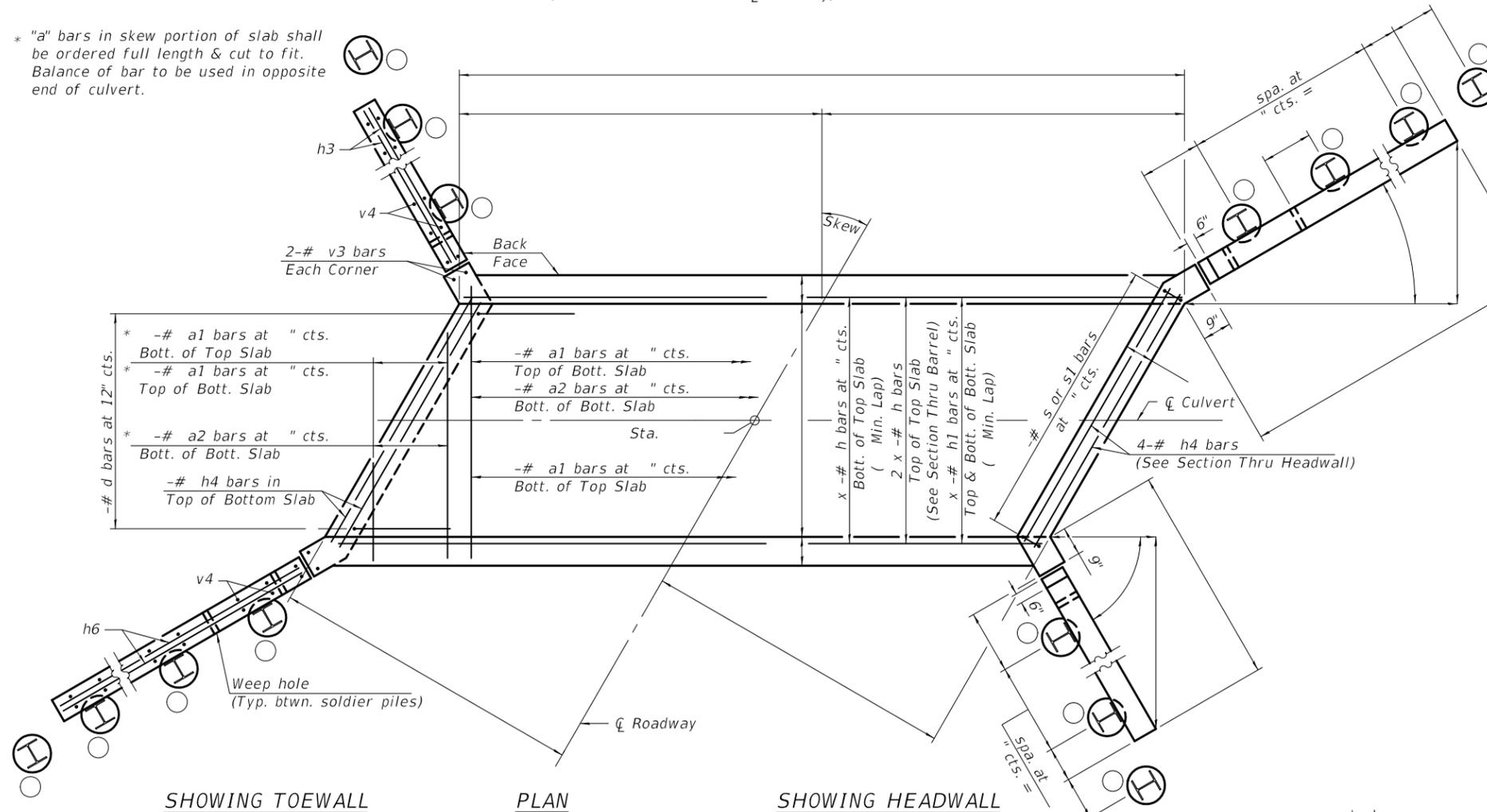
SECTION THRU BARREL

SECTION THRU HEADWALL

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a1		#		
a2		#		
d		#4	4'-5"	
h		#		
h1		#		
h2		#		
h3		#		
h4		#		
h6		#		
s		#		
s1		#		
v		#		
v1		#		
v3		#		
v4		#		
Concrete Box Culverts				Cu. Yd.
Reinforcement Bars				Pound
Furnishing Soldier Piles				Foot
Drilling and Setting Soldier Piles (In soil)				Cu. Ft.
Drilling and Setting Soldier Piles (In rock)				Cu. Ft.
Untreated Timber Lagging				Sq. Ft.
Geocomposite Wall Drain				Sq. Yd.
Stud Shear Connectors				Each

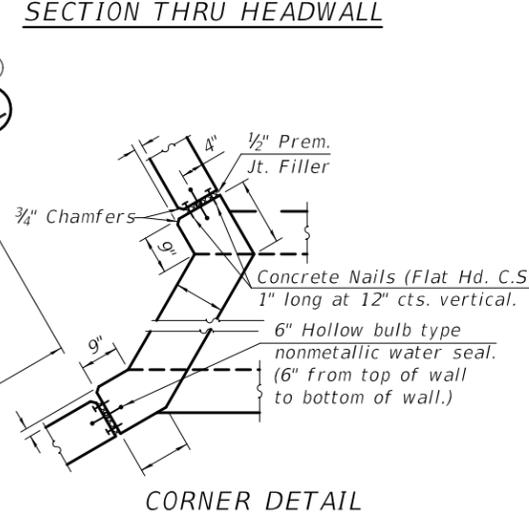
* "a" bars in skew portion of slab shall be ordered full length & cut to fit. Balance of bar to be used in opposite end of culvert.



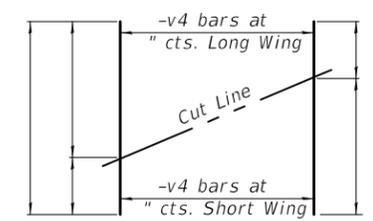
SHOWING TOEWALL

PLAN

SHOWING HEADWALL

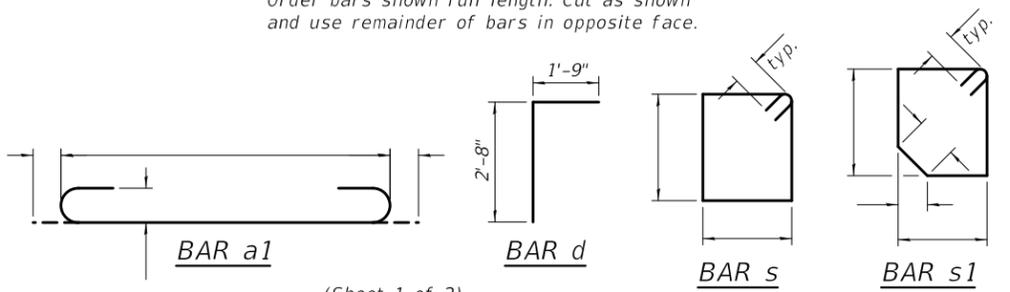


CORNER DETAIL



FIELD CUTTING DIAGRAM

Order bars shown full length. Cut as shown and use remainder of bars in opposite face.



(Sheet 1 of 2)

Notes:
 Bars indicated thus 12 x 4-#5 etc. indicates 12 lines of bars with 4 lengths per line.
 At the Contractor's option, a longer v1 bar may be ordered to replace the v bar. No reduction in quantities shall be made for this substitution.
 See sheet of for soldier pile wingwall details.

TSB-SC-SP-RS

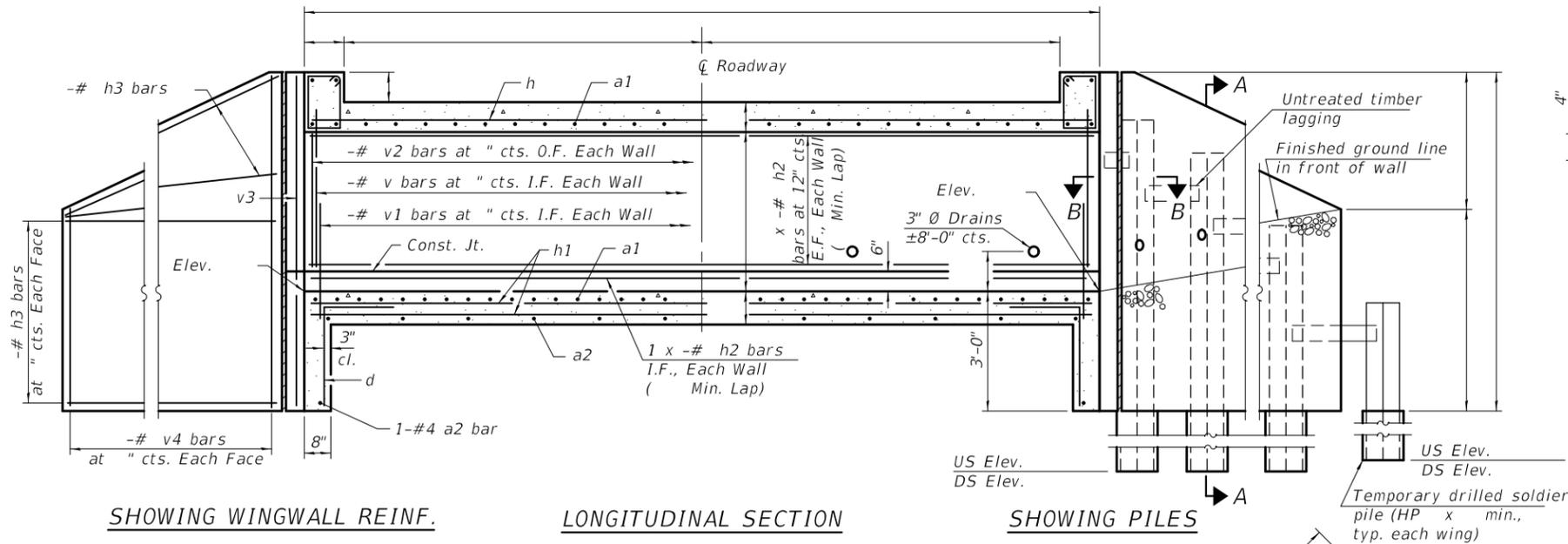
2-17-2017

FILE NAME =	USER NAME =	DESIGNED -	REVISD -
		CHECKED -	REVISD -
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		CHECKED -	REVISD -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CULVERT DETAILS
STRUCTURE NO.

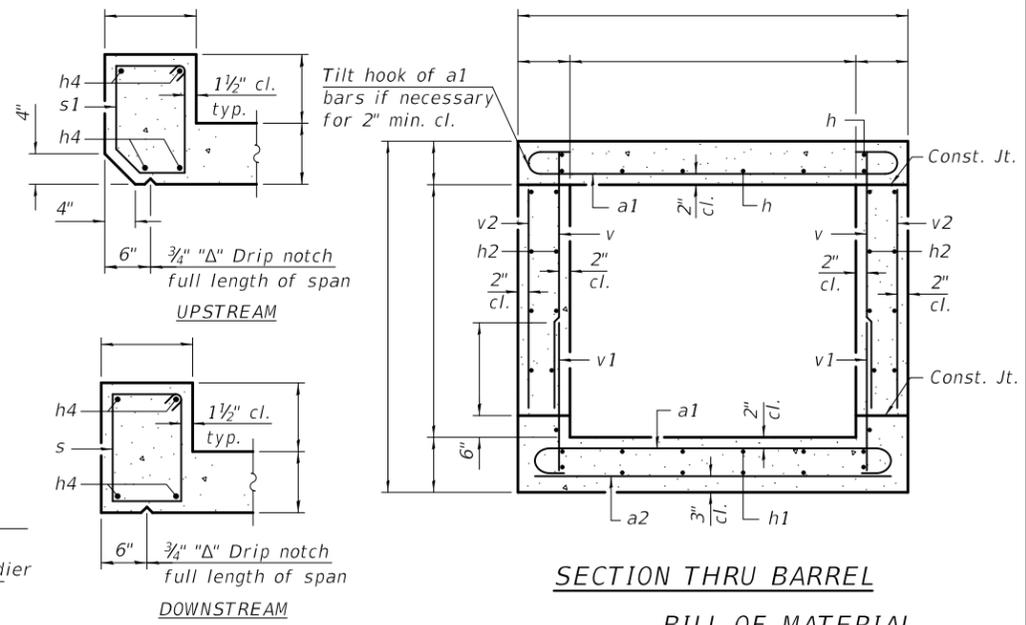
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				



SHOWING WINGWALL REINF.

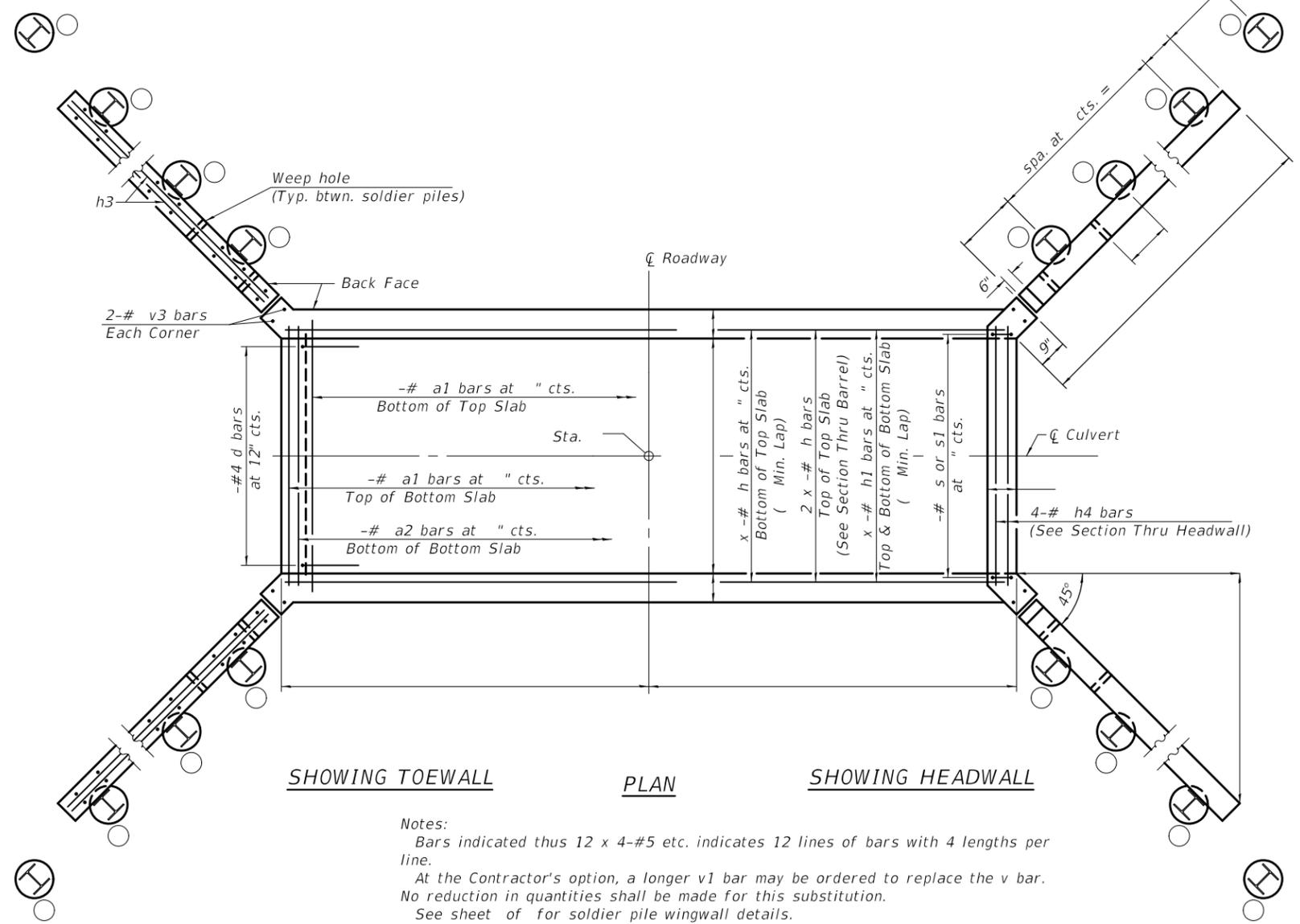
LONGITUDINAL SECTION

SHOWING PILES



SECTION THRU HEADWALL

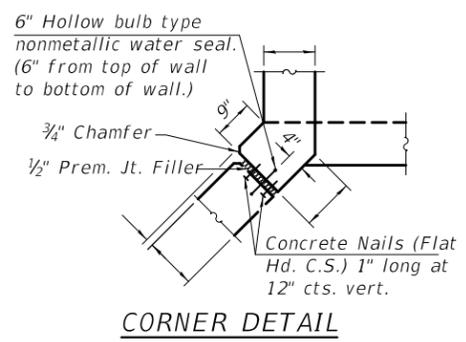
SECTION THRU BARREL



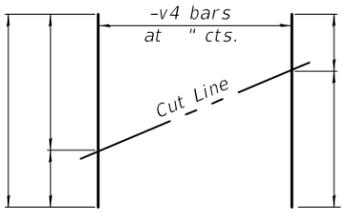
SHOWING TOEWALL

PLAN

SHOWING HEADWALL

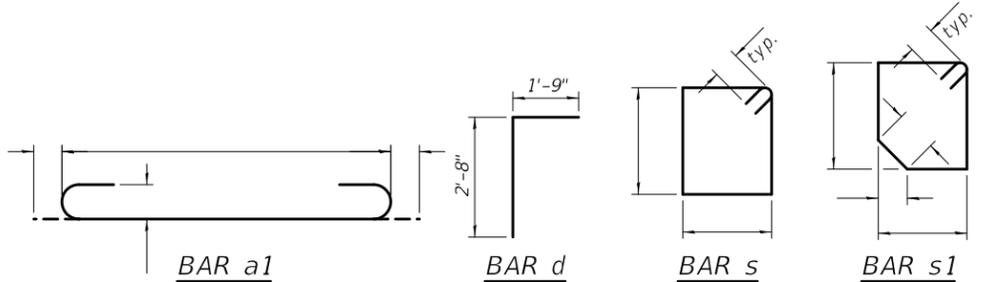


CORNER DETAIL



FIELD CUTTING DIAGRAM

Order bars shown full length. Cut as shown and use remainder of bars in opposite wingwall.



BAR a1

BAR d

BAR s

BAR s1

BILL OF MATERIAL

Bar No.	Size	Length	Shape
a1	#		
a2	#		
d	#4	4'-5"	
h	#		
h1	#		
h2	#		
h3	#		
h4	#		
s	#		
s1	#		
v	#		
v1	#		
v2	#		
v3	#		
v4	#		
Concrete Box Culverts			Cu. Yd.
Reinforcement Bars			Pound
Furnishing Soldier Piles			Foot
Drilling and Setting Soldier Piles (In soil)			Cu. Ft.
Drilling and Setting Soldier Piles (In rock)			Cu. Ft.
Untreated Timber Lagging			Sq. Ft.
Geocomposite Wall Drain			Sq. Yd.
Stud Shear Connectors			Each

Notes:
 Bars indicated thus 12 x 4-#5 etc. indicates 12 lines of bars with 4 lengths per line.
 At the Contractor's option, a longer v1 bar may be ordered to replace the v bar.
 No reduction in quantities shall be made for this substitution.
 See sheet of for soldier pile wingwall details.

TSB-SC-SP-ZS

2-17-2017

FILE NAME =	USER NAME =	DESIGNED -	REVISIONS -
		CHECKED -	REVISIONS -
		DRAWN -	REVISIONS -
		CHECKED -	REVISIONS -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

CULVERT DETAILS
 STRUCTURE NO.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				

(Sheet 1 of 2)