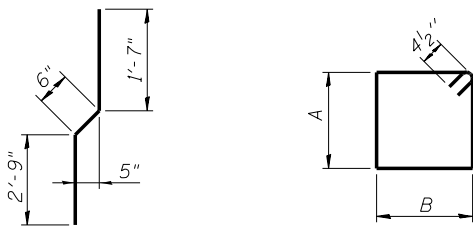


**SOUTH ABUTMENT
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h500(E)	16	#5	28'-0"	—
h501(E)	12	#6	28'-3"	—
h502(E)	9	#4	15'-0"	—
h503(E)	30	#4	14'-7"	—
h504(E)	14	#5	8'-6"	—
h505(E)	14	#5	8'-6"	—
h506(E)	9	#4	14'-4"	—
n500(E)	26	#6	13'-10"	—
n501(E)	12	#6	6'-11"	—
p500(E)	8	#7	3'-3"	—
p501(E)	5	#7	3'-1"	—
p502(E)	3	#7	4'-7"	—
p503(E)	6	#7	17'-6"	—
p504(E)	3	#7	13'-8"	—
p505(E)	3	#7	12'-6"	—
s500(E)	3	#4	15'-1"	—
s501(E)	30	#4	9'-5"	—
s502(E)	2	#4	15'-9"	—
v500(E)	53	#5	3'-9"	—
v501(E)	53	#4	4'-10"	—
v502(E)	53	#6	3'-3"	—
v503(E)	32	#6	7'-9"	—
v504(E)	6	#6	7'-4"	—
v505(E)	26	#6	8'-1"	—
Structure Excavation		Cu. Yd.	149	
Concrete Structures		Cu. Yd.	24.9	
Concrete Superstructure		Cu. Yd.	4.0	
Reinforcement Bars, Epoxy Coated		Pound	4,480	
Furnishing Steel Piles HPI2x53		Foot	80	
Driving Piles		Foot	80	
Pile Shoes		Each	2	
Concrete Encasement		Cu. Yd.	0.7	
Concrete Sealer		Sq. Ft.	310	
Granular Backfill for Structures		Cu. Yd.	104	

PILE DATA

Type: HPI2x53 with Pile Shoes
Nominal Required Bearing: 225 kips
Allowable Resistance Available: 75 kips
Est. Length: 40 ft.
No. Production Piles: 2
No. Test Piles: 0



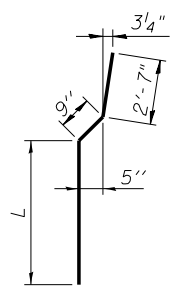
BAR v501(E)

BARS s500(E), s501(E), s502(E) & s510(E)

Bar	A	B
s500(E)	3'-2"	4'-0"
s501(E)	2'-2"	2'-2"
s502(E)	3'-6"	4'-0"
s510(E)	3'-4"	4'-0"

PILE DATA

Type: HPI2x53 with Pile Shoes
Nominal Required Bearing: 225 kips
Allowable Resistance Available: 75 kips
Est. Length: 55 ft.
No. Production Piles: 2
No. Test Piles: 0



BARS v505(E), v511(E) & v522(E)

Bar	L
v505(E)	4'-9"
v511(E)	4'-5"
v522(E)	4'-8"

**NORTH ABUTMENT
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h510(E)	16	#5	28'-9"	—
h511(E)	12	#6	29'-0"	—
h512(E)	14	#5	8'-6"	—
h513(E)	14	#5	8'-6"	—
h514(E)	30	#4	14'-8"	—
h515(E)	9	#4	15'-6"	—
h516(E)	9	#4	13'-11"	—
n500(E)	26	#6	13'-10"	—
n501(E)	12	#6	6'-11"	—
p510(E)	5	#7	3'-3"	—
p511(E)	3	#7	5'-2"	—
p512(E)	5	#7	4'-6"	—
p513(E)	3	#7	7'-0"	—
p514(E)	6	#7	14'-5"	—
p515(E)	3	#7	11'-1"	—
p516(E)	3	#7	15'-2"	—
s500(E)	3	#4	15'-1"	—
s501(E)	27	#4	9'-5"	—
s510(E)	2	#4	15'-5"	—
u510(E)	8	#5	8'-6"	—
u511(E)	16	#5	3'-2"	—
v500(E)	55	#5	3'-9"	—
v501(E)	55	#4	4'-10"	—
v502(E)	55	#6	3'-3"	—
v510(E)	32	#6	7'-8"	—
v511(E)	26	#6	7'-9"	—
v512(E)	6	#6	7'-3"	—
Structure Excavation		Cu. Yd.	69	
Concrete Structures		Cu. Yd.	23.5	
Concrete Superstructure		Cu. Yd.	4.0	
Reinforcement Bars, Epoxy Coated		Pound	4,630	
Furnishing Steel Piles HPI2x53		Foot	80	
Driving Piles		Foot	80	
Pile Shoes		Each	2	
Concrete Encasement		Cu. Yd.	0.7	
Concrete Sealer		Sq. Ft.	338	
Granular Backfill for Structures		Cu. Yd.	99	

PILE DATA

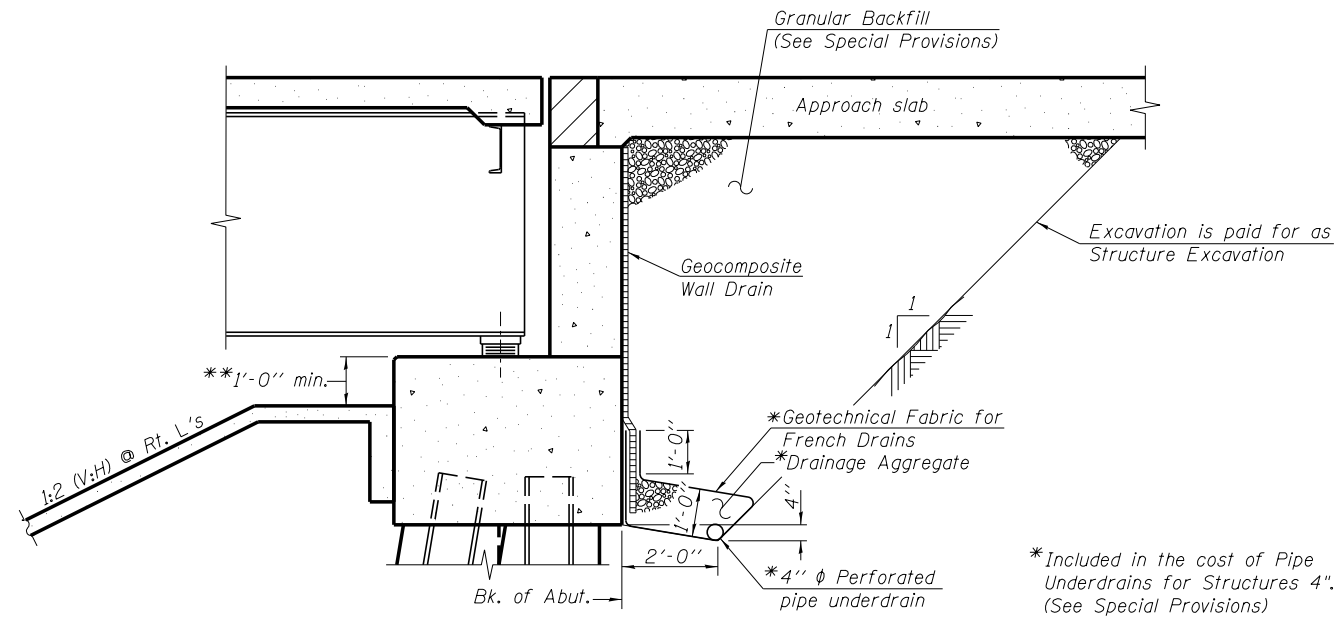
Type: HPI2x53 with Pile Shoes
Nominal Required Bearing: 225 kips
Allowable Resistance Available: 75 kips
Est. Length: 55 ft.
No. Production Piles: 2
No. Test Piles: 0

**RAMP F ABUTMENT
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h520(E)	8	#5	30'-2"	—
h521(E)	6	#6	30'-2"	—
h522(E)	9	#4	15'-1"	—
h523(E)	7	#4	14'-1"	—
h524(E)	14	#5	8'-6"	—
h525(E)	14	#5	8'-6"	—
h526(E)	28	#4	14'-8"	—
h527(E)	3	#4	12'-4"	—
h528(E)	3	#4	13'-1"	—
n500(E)	13	#6	13'-10"	—
n501(E)	6	#6	6'-11"	—
n520(E)	11	#6	16'-10"	—
n521(E)	6	#6	8'-5"	—
p520(E)	5	#7	3'-2"	—
p521(E)	3	#7	4'-8"	—
p522(E)	6	#7	14'-4"	—
p523(E)	3	#7	11'-9"	—
p524(E)	3	#7	13'-1"	—
p525(E)	12	#7	5'-11"	—
s500(E)	3	#4	15'-1"	—
s501(E)	29	#4	9'-5"	—
u510(E)	4	#5	8'-6"	—
u521(E)	4	#5	4'-7"	—
v500(E)	31	#5	3'-9"	—
v501(E)	31	#4	4'-10"	—
v502(E)	31	#6	3'-3"	—
v520(E)	32	#6	7'-8"	—
v521(E)	6	#6	7'-3"	—
Structure Excavation		Cu. Yd.	78	
Concrete Structures		Cu. Yd.	25.7	
Concrete Superstructure		Cu. Yd.	4.0	
Reinforcement Bars, Epoxy Coated		Pound	3,840	
Furnishing Steel Piles HPI2x53		Foot	110	
Driving Piles		Foot	110	
Pile Shoes		Each	2	
Concrete Encasement		Cu. Yd.	0.7	
Concrete Sealer		Sq. Ft.	238	
Granular Backfill for Structures		Cu. Yd.	71	

PILE DATA

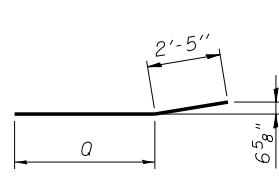
Type: HPI2x53 with Pile Shoes
Nominal Required Bearing: 225 kips
Allowable Resistance Available: 75 kips
Est. Length: 55 ft.
No. Production Piles: 2
No. Test Piles: 0



BACKFILL AND DRAINAGE DETAIL

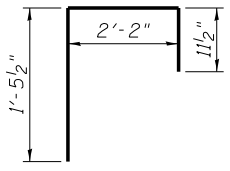
Note:
All drainage system components shall extend parallel to the abutment back wall until they intersect the wingwalls. The pipe shall extend under the wingwall, if necessary, until intersecting the side slopes. The pipes shall drain into concrete headwalls (See Article 601.05 of the Standard Specifications and Highway Standard 60110).

*Included in the cost of Pipe Underdrains for Structures 4. (See Special Provisions)
**Match existing berm elevation



BARS h502(E), h506(E), h515(E), h516(E), h522(E), h523(E) & h527(E)

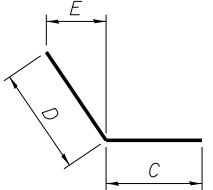
Bar	Q
h502(E)	12'-7"
h506(E)	11'-11"
h515(E)	13'-1"
h516(E)	11'-6"
h522(E)	12'-8"
h523(E)	11'-8"
h527(E)	9'-11"



BAR u521(E)

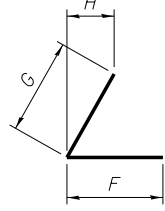
Bar	N	P
n500(E)	6'-3"	1'-4"
n520(E)	7'-9"	1'-4"
u510(E)	3'-2"	2'-2"

BARS n500(E), n520(E) & u510(E)



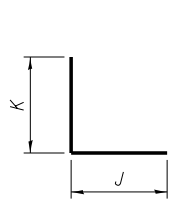
BARS h504(E), h512(E), h524(E), p500(E), p510(E), p520(E) & p525(E)

Bar	C	D	E
h504(E)	4'-11"	3'-7"	9 5/8"
h512(E)	4'-11"	3'-7"	2'-4 3/8"
h524(E)	4'-11"	3'-7"	1'-11 1/4"
p500(E)	1'-3"	2'-0"	5 3/8"
p510(E)	1'-3"	2'-0"	1'-3 7/8"
p520(E)	1'-2"	2'-0"	1'-0 7/8"
p525(E)	9"	5'-2"	4'-5 1/8"



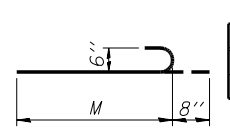
BARS h505(E), h513(E), h525(E), p501(E), p502(E) & p512(E)

Bar	F	G	H
h505(E)	3'-7"	4'-11"	1'-2 3/8"
h513(E)	4'-11"	3'-7"	2'-3 3/4"
h525(E)	3'-7"	4'-11"	2'-6 3/8"
p501(E)	1'-11"	2'-0"	5 7/8"
p502(E)	2'-7"	2'-0"	5 7/8"
p512(E)	2'-6"	2'-0"	1'-3 1/2"



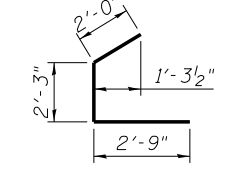
BARS n501(E) & n521(E)

Bar	J	K
p511(E)	2'-0"	3'-2"
p521(E)	2'-8"	2'-0"
v500(E)	1'-11"	1'-10"
u511(E)	1'-0"	2'-2"



BARS p511(E), p521(E), v500(E) & u511(E)

Bar	M
n501(E)	6'-3"
n521(E)	7'-9"



BAR p513(E)



Alfred Benesch & Company
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10093

FILE NAME =	USER NAME = jsurber
0160486.60J16.083.Abut.Bar_Bends_Bill.of	312-565-0450
	PLOT DATE = 8/6/2014

DESIGNED - AWH	REVISED -
CHECKED - AJK	REVISED -
DRAWN - KMS	REVISED -
CHECKED - AJK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ABUTMENT BAR BENDS AND BILL OF MATERIAL
STRUCTURE NO. 016-0486

SHEET NO. SG83 OF SG100 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
373	2013-038B-R	COOK	821	673
CONTRACT NO. 60J16			ILLINOIS FED. AID PROJECT	

Y:\chicago\100005\10093\Eng_Docs\11\SN_016_0486_0487_1st_Ave_over_Canal\Final\Final_0486_0160486_60J16_083.Abut.Bar_Bends_Bill.of_Material.dgn 7:50:15 PM 8/6/2014