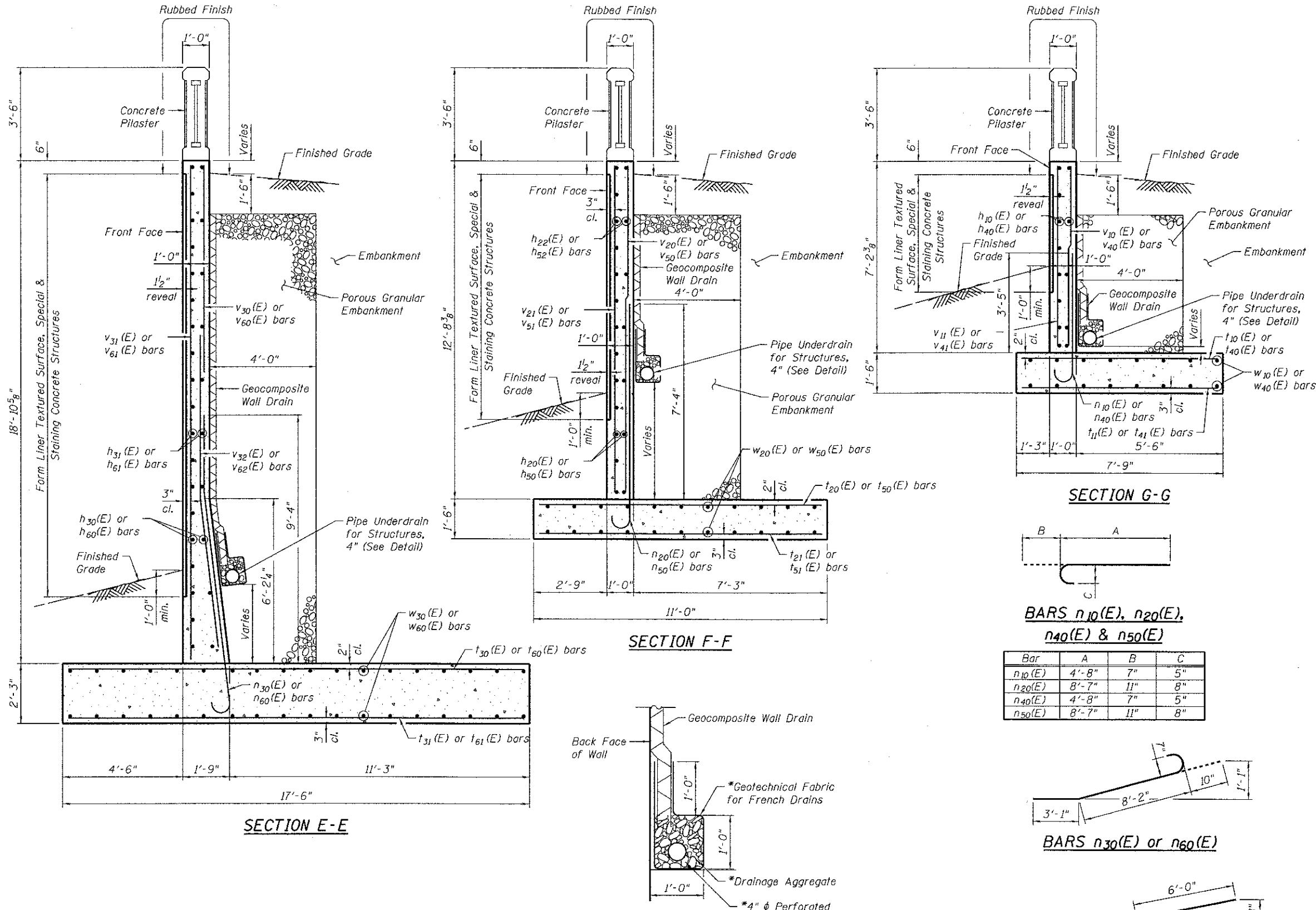
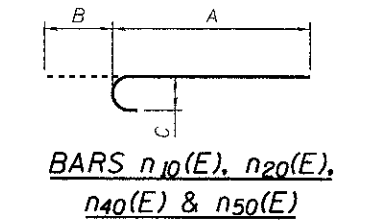


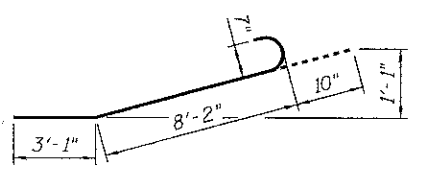
BILL OF MATERIAL



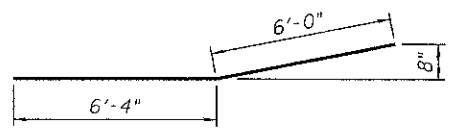
Bar	No.	Size	Length	Shape
h ₁₀ (E)	26	# 4	10'-8"	—
h ₁₁ (E)	26	# 5	7'-5"	—
h ₂₀ (E)	22	# 4	10'-8"	—
h ₂₁ (E)	34	# 5	10'-8"	—
h ₂₂ (E)	26	# 4	13'-11"	—
h ₃₀ (E)	22	# 4	11'-8"	—
h ₃₁ (E)	44	# 4	14'-11"	—
h ₄₀ (E)	26	# 4	10'-8"	—
h ₄₁ (E)	26	# 5	7'-5"	—
h ₅₀ (E)	22	# 4	10'-8"	—
h ₅₁ (E)	34	# 5	10'-8"	—
h ₅₂ (E)	26	# 4	13'-11"	—
h ₆₀ (E)	22	# 4	11'-8"	—
h ₆₁ (E)	44	# 4	14'-11"	—
n ₁₀ (E)	24	# 5	5'-3"	U
n ₂₀ (E)	28	# 8	9'-6"	U
n ₃₀ (E)	60	# 7	12'-1"	U
n ₄₀ (E)	24	# 5	5'-3"	U
n ₅₀ (E)	28	# 8	9'-6"	U
n ₆₀ (E)	60	# 7	12'-1"	U
t ₁₀ (E)	24	# 5	7'-5"	—
t ₁₁ (E)	24	# 5	7'-5"	—
t ₂₀ (E)	26	# 8	10'-8"	—
t ₂₁ (E)	26	# 5	10'-8"	—
t ₃₀ (E)	28	# 9	17'-2"	—
t ₃₁ (E)	28	# 6	17'-2"	—
t ₄₀ (E)	24	# 5	7'-5"	—
t ₄₁ (E)	24	# 5	7'-5"	—
t ₅₀ (E)	26	# 8	10'-8"	—
t ₅₁ (E)	26	# 5	10'-8"	—
t ₆₀ (E)	28	# 9	17'-2"	—
t ₆₁ (E)	28	# 6	17'-2"	—
v ₁₀ (E)	24	# 5	6'-10"	—
v ₁₁ (E)	8	# 4	6'-10"	—
v ₁₂ (E)	18	# 5	8'-10"	—
v ₁₃ (E)	18	# 5	6'-7"	—
v ₂₀ (E)	28	# 5	12'-4"	—
v ₂₁ (E)	8	# 4	12'-4"	—
v ₂₂ (E)	24	# 5	10'-10"	—
v ₂₃ (E)	24	# 5	8'-0"	—
v ₃₀ (E)	32	# 5	9'-6"	—
v ₃₁ (E)	8	# 4	18'-6"	—
v ₃₂ (E)	32	# 7	12'-4"	—
v ₄₀ (E)	24	# 5	6'-10"	—
v ₄₁ (E)	8	# 4	6'-10"	—
v ₄₂ (E)	18	# 5	8'-10"	—
v ₄₃ (E)	18	# 5	6'-7"	—
v ₅₀ (E)	28	# 5	12'-4"	—
v ₅₁ (E)	8	# 4	12'-4"	—
v ₅₂ (E)	24	# 5	10'-10"	—
v ₅₃ (E)	24	# 5	8'-0"	—
v ₆₀ (E)	32	# 5	9'-6"	—
v ₆₁ (E)	8	# 4	18'-6"	—
v ₆₂ (E)	32	# 7	12'-4"	—
w ₁₀ (E)	36	# 5	10'-8"	—
w ₂₀ (E)	48	# 5	12'-2"	—
w ₃₀ (E)	72	# 5	13'-2"	—
w ₄₀ (E)	36	# 5	10'-8"	—
w ₅₀ (E)	48	# 5	12'-2"	—
w ₆₀ (E)	72	# 5	13'-2"	—
Porous Granular Embankment		Cu. Yd.	224	
Structure Excavation, Special		Cu. Yd.	1,195	
Concrete Structures		Cu. Yd.	273.4	
Reinforcement Bars, Epoxy Coated		Pound	24,940	
Geocomposite Wall Drain		Sq. Yd.	131	
Pipe Underdrain for Structures, 4"		Foot	156	
Rubbed Finish		Sq. Ft.	241	
Form Liner Textured Surface, Special		Sq. Ft.	1104	
Staining Concrete Structures		Sq. Yd.	123	



Bar	A	B	C
n ₁₀ (E)	4'-8"	7"	5"
n ₂₀ (E)	8'-7"	11"	8"
n ₄₀ (E)	4'-8"	7"	5"
n ₅₀ (E)	8'-7"	11"	8"



BARS n₃₀(E) or n₆₀(E)



BARS v₃₂(E) or v₆₂(E)

MIN. BAR LAP

Bar Size	Class C
#7	5'-2"

Note:
 Maximum factored bearing pressure = 3,150 psf
 Factored bearing resistance available = 4,500 psf
 Maximum net allowable bearing resistance = 3,000 psf

PIPE UNDERDRAIN DETAIL
 * Included in the cost of Pipe Underdrain for Structures, 4"

N:\PROJ\0220087\01\Rollins\Design\Structure\CAD\0220087_01_007_Wingwall_Details.dgn



USER NAME	DESIGNED	REVISIONS
rdanley	MHT	-
	APD	-
	SRG	-
	APD	-

**MILLENNIUM TRAIL
LAKE COUNTY FOREST PRESERVES**

**WINGWALL DETAILS
STRUCTURE NO. 049-N008**
SHEET NO. S-7 OF S-12 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
181	12-F3000-01-BT	LAKE	118	56

CONTRACT NO. 63807
ILLINOIS FED. AID PROJECT