Appendix D
Monee Reservoir

MONEE RESERVOIR INFLOW DIVERSION CALCULATIONS

PREPARED BY: AJM DATE: 1/26/2011
CHECKED BY: BJW DATE: 1/27/2011

Increment (ft) = 0.10

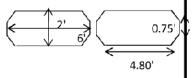
Box Culverts (west)

Inlet Orifice Control

$Q_{inlet} = CA(2gH)^{1/2}$ (from p. 468, Eq(1) from Design of Small Dams)

control elevation (ft)	748.30
C= (usually 0.6)	0.6
A (ft^2) Rectangular =	21.95

$A_{rectang}$ (ft^2) = 9.6
$A_{trapezoid}$ = 0.5(b1+b2)*h
$A_{trapezoid}$ (ft^2) = 1.375
Total Area (ft^2) = 10.975



Inlet Weir Control

$Q_{overflow} = CLH^{3/2}$ (from p.467 Design of Small Dams)

control elevation (ft)	747.30
C=	3.3
L (ft) =	9.60

This is for the low flow going through the culverts, using the culvert invert as the starting elevation

Overflow Weir Control

$Q_{overflow} = CLH^{3/2}$ (from p.467 Design of Small Dams)

control elevation (ft)	750.00
C=	3.3
L (749.9 to752) (ft) =	12.80

This is for the high flow at the top of the box culverts using the elevation above the culverts as the starting elevation

Elevation (ft)	Discharge (cfs)	Discharge (cfs)	Discharge (cfs)
747.30	#NUM!	0.0	#NUM!
747.40	#NUM!	1.0	#NUM!
747.50	#NUM!	2.8	#NUM!
747.60	#NUM!	5.2	#NUM!
747.70	#NUM!	8.0	#NUM!
747.80	#NUM!	11.2	#NUM!
747.90	#NUM!	14.7	#NUM!
748.00	#NUM!	18.6	#NUM!
748.10	#NUM!	22.7	#NUM!
748.20	#NUM!	27.0	#NUM!
748.30	0.0	31.7	#NUM!
748.40	33.4	36.5	#NUM!
748.50	47.3	41.6	#NUM!
748.60	57.9	47.0	#NUM!
748.70	66.8	52.5	#NUM!
748.80	74.7	58.2	#NUM!
748.90	81.9	64.1	#NUM!
749.00	88.4	70.2	#NUM!
749.10	94.5	76.5	#NUM!
749.20	100.3	83.0	#NUM!
749.30	105.7	89.6	#NUM!
749.40	110.8	96.4	#NUM!
749.50	115.8	103.4	#NUM!
749.60	120.5	110.5	#NUM!
749.70	125.1	117.8	#NUM!
749.80	129.4	125.2	#NUM!
749.90	133.7	132.8	#NUM!
750.00	137.8	140.5	0.0
750.10	141.8	148.4	1.3
750.20	145.7	156.5	3.8
750.30	149.5	164.6	6.9
750.40	153.2	172.9	10.7
750.50	156.8	181.3	14.9
750.60	160.3	189.9	19.6
750.70	163.7	198.6	24.7
750.80	167.1	207.4	30.2
750.90	170.4	216.4	36.1
751.00	173.7	225.5	42.2
751.10	176.9	234.7	48.7
751.20	180.0	244.0	55.5
751.30	183.1	253.4	62.6
751.40	186.1	263.0	70.0
751.50	189.1	272.7	77.6
751.60	192.0	282.5	85.5
751.70	194.9	292.4	93.6
751.80	197.7	302.4	102.0
751.90	200.5	312.6	110.6
752.00	203.3	322.8	119.5
752.10	206.0	333.2	128.5
752.20	208.7	343.6	137.8
752.30	211.4	354.2	147.3
752.40	214.0	364.9	157.1
752.50	216.6	375.7	167.0
752.60	219.2	386.5	177.1
752.70	221.7	397.5	187.4
752.80	224.2	408.6	197.9
752.90	226.7	419.8	208.6
753.00	229.1	431.1	219.5
753.10	231.6	442.5	230.6
753.20	234.0	454.0	241.8
753.30	236.3	465.6	253.2
753.40	238.7	477.3	264.8
753.50	241.0	489.1	276.6

*contours were used from elevation 750 to 754 to determine extra discharge for the diverted discharge (the channel bypassing the inlet to the reservoir)

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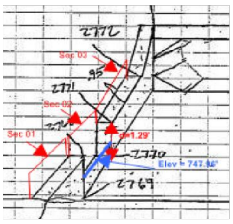
Diverted Downstream Channel (south)					
Overflow Weir Control-Sec 01		Overflow Weir Control-Sec 02		Overflow Weir Control-Sec 03	
$Q_{overflow} = CLH^{3/2}$ (from p.467 Design of Small Dams)		$Q_{overflow} = CLH^{3/2}$ (from p.467 Design of Small Dams)		$Q_{overflow} = CLH^{3/2}$ (from p.467 Design of Small Dams)	
control elevation (ft)	749.30	control elevation (ft)	748.00	control elevation (ft)	749.3
C=	3.3	C=	3.3	C=	3.3
L (up to elevation 750) (ft) =	2.80	L (ft) =	5.15	L (ft) =	5.36
 Sec 1 has a length of 2.80 until the discharge reaches elevation 750, then the length is increased by using contours		see figure to left showing section 2 defined.		see figure to left showing section 3 defined.	

Discharge (cfs)	Weir Length (ft)	Discharge (cfs)	Discharge (cfs)
#NUM!	2.8	#NUM!	#NUM!
#NUM!	2.8	#NUM!	#NUM!
#NUM!	2.8	#NUM!	#NUM!
#NUM!	2.8	#NUM!	#NUM!
#NUM!	2.8	#NUM!	#NUM!
#NUM!	2.8	#NUM!	#NUM!
#NUM!	2.8	#NUM!	#NUM!
#NUM!	2.8	0.0	#NUM!
#NUM!	2.8	2.2	#NUM!
#NUM!	2.8	6.3	#NUM!
#NUM!	2.8	11.5	#NUM!
#NUM!	2.8	17.7	#NUM!
#NUM!	2.8	24.8	#NUM!
#NUM!	2.8	32.6	#NUM!
#NUM!	2.8	41.0	#NUM!
#NUM!	2.8	50.1	#NUM!
#NUM!	2.8	59.8	#NUM!
#NUM!	2.8	70.1	#NUM!
#NUM!	2.8	80.8	#NUM!
#NUM!	2.8	92.1	#NUM!
0.0	2.8	103.8	0.2
0.3	2.8	116.1	1.0
0.8	2.8	128.7	2.2
1.5	2.8	141.8	3.7
2.3	2.8	155.3	5.3
3.3	2.8	169.2	7.2
4.3	2.8	183.5	9.3
8.9	4.6	198.2	11.5
10.9	4.6	213.2	13.9
13.0	4.6	228.6	16.4
15.2	4.6	244.4	19.0
17.5	4.6	260.5	21.8
20.0	4.6	276.9	24.7
22.5	4.6	293.7	27.7
25.1	4.6	310.8	30.9
27.9	4.6	328.3	34.1
30.7	4.6	346.0	37.5
33.6	4.6	364.1	40.9
36.7	4.6	382.4	44.5
39.8	4.6	401.1	48.2
42.9	4.6	420.0	51.9
46.2	4.6	439.2	55.8
49.5	4.6	458.8	59.7
52.9	4.6	478.6	63.7
56.4	4.6	498.6	67.8
60.0	4.6	519.0	72.0
63.6	4.6	539.6	76.3
633.9	43.3	560.5	80.7
669.5	43.3	581.6	85.1
705.7	43.3	603.1	89.6
742.5	43.3	624.7	94.2
779.9	43.3	646.6	98.9
818.0	43.3	668.8	103.6
856.6	43.3	691.2	108.5
895.8	43.3	713.9	113.3
935.6	43.3	736.8	118.3
976.0	43.3	759.9	123.3
1017.0	43.3	783.3	128.4
1058.5	43.3	806.9	133.6
1100.5	43.3	830.8	138.9
1195.9	45.3	854.9	144.2
1241.0	45.3	879.2	149.5
1286.7	45.3	903.7	155.0

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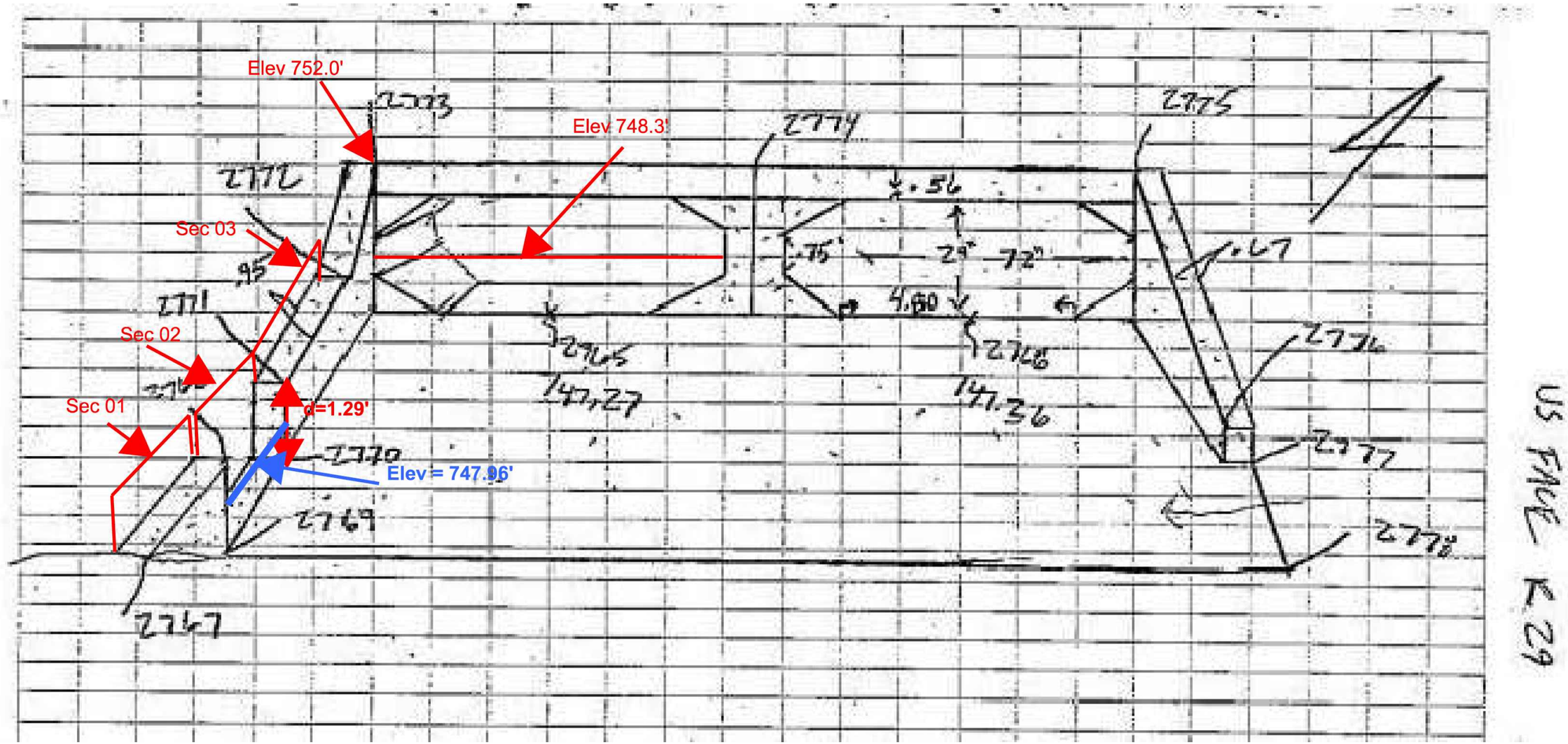

Input to HEC-HMS		
Total Discharge (cfs)	Diverted Discharge (cfs)	
0.0	#NUM!	inlet weir control start [747.30]
1.0	#NUM!	
2.8	#NUM!	
5.2	#NUM!	
8.0	#NUM!	
11.2	#NUM!	
14.7	#NUM!	
18.6	0.0	diversion weir start [747.96]
24.9	2.2	
33.3	6.3	
43.2	11.5	
51.1	17.7	inlet orifice control [748.30]
72.0	24.8	
90.4	32.6	
107.9	41.0	
124.9	50.1	
141.7	59.8	
158.5	70.1	
175.4	80.8	
192.4	92.1	
209.7	104.0	diversion overflow weir start [749.25]
228.2	117.4	
247.5	131.7	
267.5	147.0	
288.0	163.0	
309.1	179.7	
330.7	197.1	
356.3	218.5	inlet overflow weir start [750.00]
379.7	237.9	
405.0	258.0	
431.8	278.6	
459.9	299.8	
489.1	321.6	
519.2	344.0	
550.2	366.9	
582.1	390.3	
614.9	414.2	
648.4	438.6	
682.7	463.6	
717.7	489.0	
753.4	514.9	
789.9	541.2	
827.0	568.0	
864.8	595.2	
903.3	622.9	
942.4	651.0	
982.1	679.6	
1589.0	1275.1	
1661.7	1336.2	
1735.6	1398.3	
1810.6	1461.4	
1886.8	1525.4	
1964.0	1590.4	
2042.4	1656.3	
2121.8	1723.1	
2202.3	1790.7	
2283.9	1859.3	
2366.5	1928.7	
2450.1	1999.0	
2534.7	2070.2	
2673.1	2194.9	
2761.6	2269.8	
2851.2	2345.4	

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Morning Glory Structure with Trash Rack

Culvert Outlet at Monee Reservoir
Showing downstream channel

Culvert Outlet at Monee Reservoir

Inflow at Upstream End to Sediment Basin B

Diversion Weir at Upstream End

Inflow and Diversion at Upstream End of Monee before Sediment Basin B

RATING CURVE DERIVATION CHART - TAILWATER SET TO ELEV 728 PREPARED BY: AJM DATE: 11/02/2010
MORNING GLORY OUTLET STRUCTURE-MONEE RESERVOIR CHECKED BY: SMA DATE: 2/16/2011

NGVD datum to NAVD datum = +0.472-ft all elevations from plans were adjusted accordingly

		Circular Conduit		Tailwater Condition	
Normal Pool (ft)=	743.77	**D_i (conduit diameter) (ft)**	3.44	**Downstream Inlet Invert (ft)**	725.402
Top of Dam (ft) =	750.47	**D_o (conduit diameter) (ft)**	3.50	**TW Elevation (ft)**	728.9
Increment (ft) =	0.20	**Upstream Inlet Invert (ft)**	739.5		

Principal Spillway

Overflow Weir Control

$Q_{overflow} = CLH^{3/2}$ (from p.467 Design of Small Dams)

control elevation (ft)	743.8
C=	varies
L (ft) =	17.59

the L value represents an average "weir" length for very low flow for analysis purposes only

Inlet Orifice Control

$Q_{inlet} = CA(2gH)^{1/2}$ (from p. 468, Eq(1) from Design of Small Dams)

control elevation (ft)	739.51
C= (usually 0.6)	0.95
A (ft^2) Circular =	9.28

Outlet Control

$Q_{outlet} = A(2gH_f/K_L)^{1/2}$ (from p. 471 eq(7) from Design of Small Dams)

control elevation (ft) =	728.900	
a_n (net area though rack bars) =	36.9	
a_g (gross area of racks & supports) =	93.9	
Trashrack Loss coeff. (Kt)	1.119	Kt=1.45-0.45(an/ag)-(an/ag)^2
Discharge coeff., C	0.95	Table 10.1 DSD pg 458 3rd ed
Entrance Loss coeff. (Ke)	0.11	
Bend 1 - short radius 90 deg elbow		
Bend Radius, Rb	4.4	
Diameter of Bend Pipe, D	3.5	
Rb/D =	1.3	
Bend Loss coeff. (Kb1)	0.200	Figure 10.12 DSD pg 459 3rd ed
Bend 2 - long radius 90 deg elbow		
Bend Radius, Rb	5.3	
Diameter of Bend Pipe, D	3.5	
Rb/D =	1.5	
Bend Loss coeff. (Kb2)	0.160	Figure 10.12 DSD pg 459 3rd ed
Total pipe length including bends (ft	134.25	
Manning roughness coeff of pipe, n	0.012	
Pipe interior diameter, Di (ft) =	3.44	
f =	0.018	f = 185n^2/(D^1/3)
Friction Loss coeff. (fL/D)	0.689	
Expansion Loss coeff. (Kex)	0	
Contraction Loss coeff. (Kc)	0	
Gate Loss coeff. (Kg)	0.0	
Exit Velocity Head coeff. at outlet (K	1.0	
Total losses (K_L) =	3.3	

Elevation - Control Elevation = $H_f = K_L v^2/2g$ (from p. 456 Eq(7) from Design of Small Dams) Q = a(2gHT/KL)^.5

Head (ft)	Elevation (ft) NAVD	Discharge (cfs)	Discharge (cfs)	Discharge (cfs)	INPUT TO HMS Elevation	INPUT TO HMS Discharge
0.00	743.77	0.0	0.0	0.0	743.77	0.00
0.30	744.07	11.6	151.1	160.3	744.07	11.56
0.50	744.27	24.4	154.4	161.3	744.27	24.44
0.70	744.47	39.7	157.6	162.4	744.47	39.67
0.90	744.67	55.6	160.7	163.4	744.67	55.58
1.10	744.87	73.1	163.8	164.5	744.87	73.07
1.30	745.07	90.0	166.8	165.5	745.07	89.96
1.50	745.27	106.7	169.8	166.5	745.27	106.66
1.70	745.47	122.8	172.7	167.5	745.47	122.83
1.90	745.67	133.6	175.6	168.5	745.67	133.62
2.10	745.87	141.9	178.4	169.5	745.87	141.88
2.30	746.07	147.3	181.2	170.5	746.07	147.28
2.50	746.27	153.0	184.0	171.5	746.27	152.99
2.70	746.47	160.0	186.7	172.5	746.47	160.01
2.90	746.67	169.4	189.3	173.5	746.67	169.42
3.10	746.87	177.6	192.0	174.4	746.87	174.44
3.30	747.07	181.4	194.5	175.4	747.07	175.41
3.50	747.27	190.1	197.1	176.4	747.27	176.37
3.70	747.47	196.6	199.6	177.3	747.47	177.33
3.90	747.67	199.2	202.1	178.3	747.67	178.28
4.10	747.87	200.1	204.6	179.2	747.87	179.23
4.30	748.07	210.2	207.0	180.2	748.07	180.17
4.50	748.27	215.0	209.4	181.1	748.27	181.11
4.70	748.47	222.3	211.8	182.0	748.47	182.04
4.90	748.67	225.2	214.1	183.0	748.67	182.97
5.10	748.87	231.0	216.5	183.9	748.87	183.89
5.30	749.07	236.1	218.8	184.8	749.07	184.81
5.50	749.27	238.3	221.1	185.7	749.27	185.73
5.70	749.47	239.4	223.3	186.6	749.47	186.64
5.90	749.67	252.1	225.5	187.5	749.67	187.54
6.10	749.87	265.1	227.7	188.4	749.87	188.44
6.30	750.07	278.2	229.9	189.3	750.07	189.34
6.50	750.27	291.5	232.1	190.2	750.27	190.23
6.70	750.47	305.1	234.2	191.1	750.47	191.12

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DATE	SOURCE

Illinois Department of Transportation
Division of Aeronautics

SSA SouthSuburbanAirport

SSA MASTER PLAN - FLOODPLAINS REPORT
APPENDIX D-3
OUTLET RATING CURVE FOR MONEE RESERVOIR

Interpolation (to compare to As-Built plans)

744.50	41.85	158.03	162.53
745.00	83.92	165.76	165.11
746.00	145.43	180.23	170.16

Descrip	From As-Built Plans NGVD	NAVD = NGVD+0.472 NAVD	Discharge	NGVD	From As-Built Plans NAVD	DISCHARGE
Weir	743.70	744.17	0	743.7	744.172	0
Weir	744.50	744.97	29	744.4	744.872	60
Weir	744.75	745.22	46	745.15	745.622	123
Weir	745.00	745.47	70	745.25	745.722	140
Weir	747.00	747.47	280	745.75	746.222	163.5
Orifice (full open)	743.70	744.17	0	746.5	746.972	200
Orifice (full open)	744.00	744.47	30	748	748.472	232
Orifice (full open)	745.00	745.47	70		750	264.60
Orifice (full open)	745.40	745.87	80			
Orifice (full open)	746.00	746.47	90			
Orifice (full open)	746.40	746.87	100			
Orifice (full open)	747.00	747.47	110			
Orifice (full open)	747.75	748.22	120			
Orifice (40% open)	743.70	744.17	0			
Orifice (40% open)	745.00	745.47	30			
Orifice (40% open)	746.00	746.47	41			
Orifice (40% open)	747.00	747.47	49			
Orifice (40% open)	747.75	748.22	52			
TW-728	743.70	744.17	0			
TW-728	744.00	744.47	280			
TW-728	745.00	745.47	290			
TW-728	746.00	746.47	298			
TW-728	747.00	747.47	305			
TW-728	747.75	748.22	310			
TW-740	743.70	744.17	0			
TW-740	744.00	744.47	140			
TW-740	745.00	745.47	158			
TW-740	746.00	746.47	170			
TW-740	747.00	747.47	183		750.00	223.45
TW-740	747.75	748.22	195			

$Q=C_o(2\pi R_s)H_o^{3/2}$

From Design of Small Dams (Eq 28) pg 407

Rs (radius at top of stru 2.80
Elevation @ radius (ft) 743.8
P (height from radius tc 4.19

C_o taken from Design of Small Dams figure 9-57 pg 410
P/R_s is held constant. Computed value is 1.5, for simplicity rounded up to 2

Elev (NAVD)	H_o	H_o/R_s	P/R_s	C_o	
744.10	0.30	0.107	2.00	4.00	
744.30	0.50	0.179	2.00	3.93	
744.50	0.70	0.250	2.00	3.85	
744.70	0.90	0.321	2.00	3.70	
744.90	1.10	0.393	2.00	3.60	
745.10	1.30	0.464	2.00	3.45	@ 0.45 the weir partly submerges and begins transition to orifice control
745.30	1.50	0.536	2.00	3.30	
745.50	1.70	0.607	2.00	3.15	
745.70	1.90	0.679	2.00	2.90	
745.90	2.10	0.750	2.00	2.65	
746.10	2.30	0.821	2.00	2.40	
746.30	2.50	0.893	2.00	2.20	
746.50	2.70	0.964	2.00	2.05	
746.70	2.90	1.036	2.00	1.95	@ 1.0 the weir is completely submerged and acts as an orifice
746.90	3.10	1.107	2.00	1.85	
747.10	3.30	1.179	2.00	1.72	
747.30	3.50	1.250	2.00	1.65	
747.50	3.70	1.321	2.00	1.57	
747.70	3.90	1.393	2.00	1.47	
747.90	4.10	1.464	2.00	1.37	
748.10	4.30	1.536	2.00	1.34	
748.30	4.50	1.607	2.00	1.28	
748.50	4.70	1.679	2.00	1.24	
748.70	4.90	1.750	2.00	1.18	
748.90	5.10	1.821	2.00	1.14	
749.10	5.30	1.893	2.00	1.10	
749.30	5.50	1.964	2.00	1.05	
749.50	5.70	2.036	2.00	1.00	
749.70	5.90	2.107	2.00	1.00	
749.90	6.10	2.179	2.00	1.00	
750.10	6.30	2.250	2.00	1.00	
750.30	6.50	2.321	2.00	1.00	
750.50	6.70	2.393	2.00	1.00	

Illinois Department of Transportation
Division of Aeronautics

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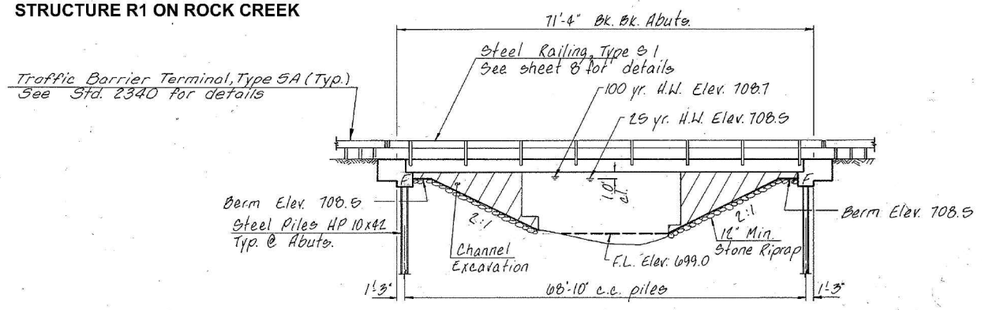
SSA MASTER PLAN - FLOODPLAINS REPORT
APPENDIX D-3 (CONT.)
OUTLET RATING CURVE FOR MONEE RESERVOIR

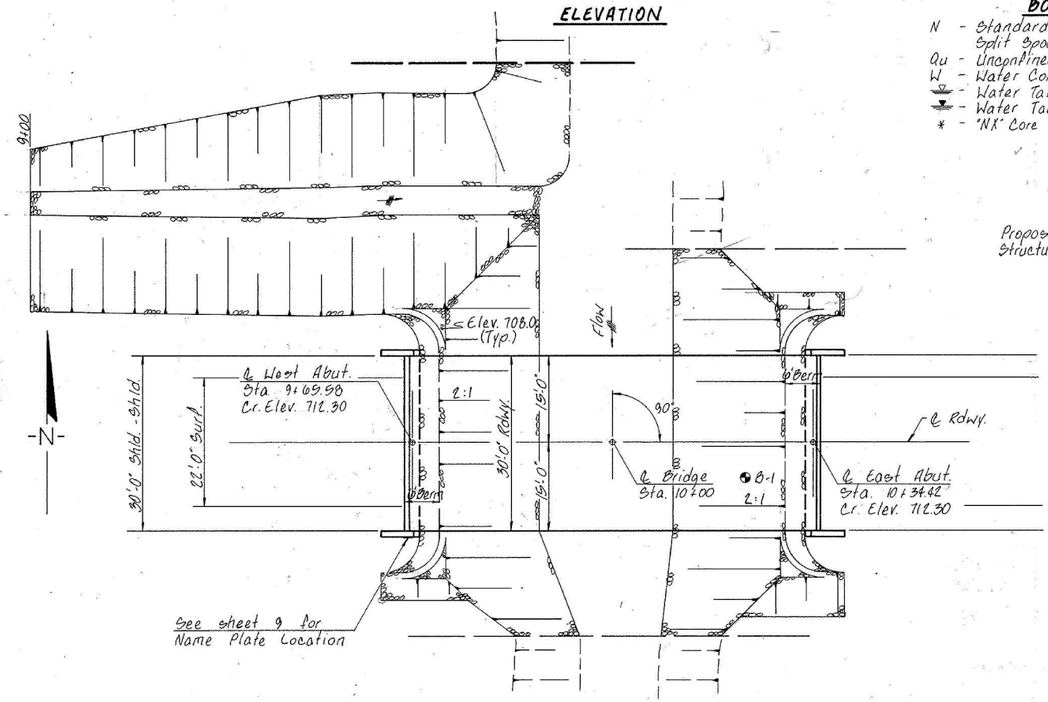
STRUCTURE R1 ON ROCK CREEK



ELEVATION

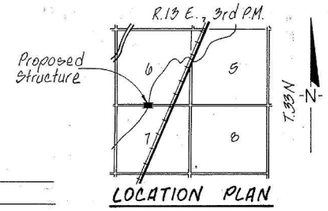
ROCK CREEK
BUILT 198- BY
WILL ROAD DISTRICT
WILL COUNTY
SEC. 85-22102-00-BR
STR. NO. 099-4953
LOADING H520

LETTERING FOR NAME PLATE
See Std. 2113

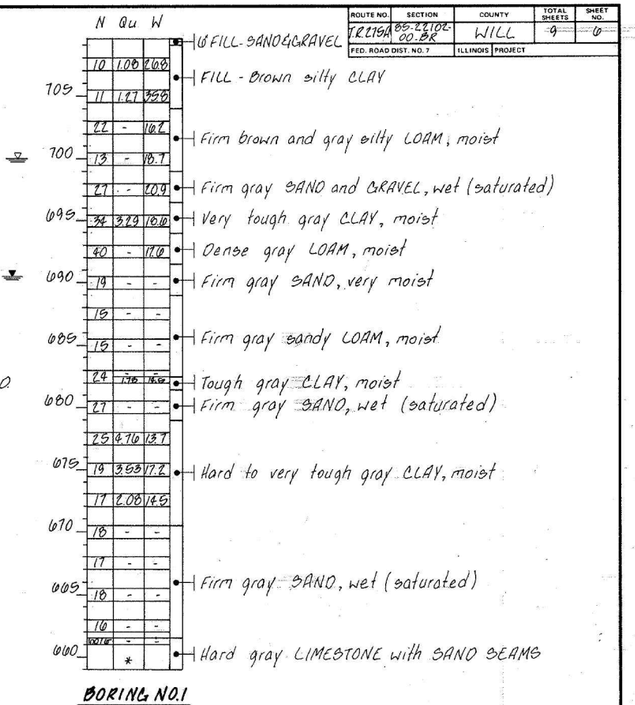


BORING DATA

N - Standard Penetration Test - Blows per foot to drive 2" O.D. Split Spoon Sampler 30" with 140# hammer falling 30"
Qu - Unconfined Compressive Strength - T/sf
W - Water Content - percentage of oven dry weight - %
▽ - Water Table while drilling
▼ - Water Table after completion
* - "NX" Core 100% Recovery 0% R.Q.D.



LOCATION PLAN



BORING NO. 1
6' Rt. Sta. 10+23

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Precast Prestressed Concrete Deck Beams (27" Depth)	Sq. Ft.	2,100		2,100
Class X Concrete	Cu. Yd.		18.8	18.8
Reinforcement Bars	Pound		2,440	2,440
Steel Railing, Type S 1	Lin. Ft.	151		151
Steel Piles HP 10x42	Lin. Ft.		432	432
Test Pile Steel: HP10x42	Each		1	1
Name Plates	Each		1	1
B ft. Conc. Surface Course, Mix. D, Cl. 1	Ton	20		20
Leveling Binder (Machine Method)	Ton	8		8
Bituminous Materials (Prime Coat)	Gallon	19		19
Stone Riprap	Sq. Yd.			730

GENERAL NOTES

The contractor shall drive one steel test pile in a permanent location at the West Abut., as directed by the Engineer, before ordering the remainder of the piles.

WATERWAY DATA

Drainage Area ____ 10.30 Sq. Mi.
Existing Opening (25 yr.) ____ 250 Sq. Ft.
Required Opening (25 yr.) ____ 380 Sq. Ft.
Proposed Opening (25 yr.) ____ 360 Sq. Ft.
Design Discharge (25 yr.) ____ 1,030 C.F.S.
Created Head (25 yr.) ____ 0.2 Ft.
100 yr. Discharge ____ 1,390 C.F.S.
100 yr. Created Head ____ 0.4 Ft.

Construction Permits: The requirements of the Division of Water Resources have been fulfilled in accordance with Statewide Permit No. 2.

DESIGN STRESSES

f'c = 3,000 psi (Prestressed Beams)
f'ci = 4,950 psi (Prestressed Beams)
fc = 1,400 psi (Class X Concrete)
f's = 270,000 psi (Prestressed Strands)
fsi = 189,000 psi (Prestressed Strands)
fs = 20,000 psi (Reinf. Bars - Field Units)
fy = 60,000 psi (Reinf. Bars - Precast Units)
n = 9 (Class X Concrete)

LOADING: HS 20-44
Design Specifications: AASHTO 1983 & 1984-85 Interims
25#/Sq. Ft. included in dead load for future wearing surface.

I certify that to the best of my knowledge, information and belief, that this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current AASHTO Standard Specifications for Highway Bridges.

Fred J. Stone Jr.
Illinois Structural No. 2934

FRED J. STONE JR. 2934 REGISTERED STRUCTURAL ENGINEER OF ILLINOIS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR2154	85-22102-00-BR	WILL	9	6
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

GENERAL PLAN & ELEVATION
SECTION 85-22102-00-BR
WILL ROAD DISTRICT
WILL COUNTY
STATION 10+00

COLLINS AND RICE
CONSULTING ENGINEERS

DESIGNED F.S. CHECKED M.B.
DRAWN R.N. DATE 7-23-80 NO. 2126

DATE	SOURCE

Illinois Department of Transportation
Division of Aeronautics

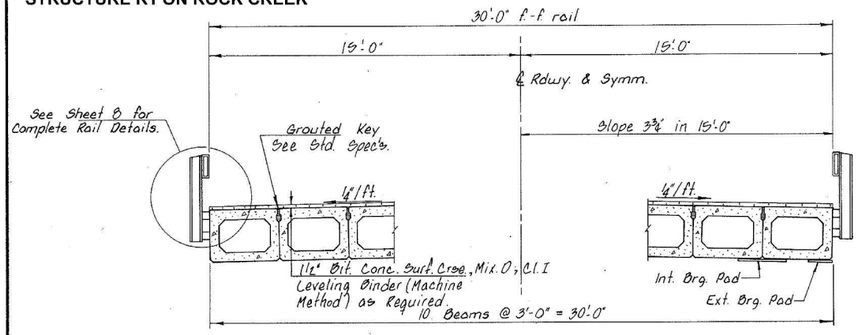
SSA SouthSuburbanAirport

SSA MASTER PLAN - FLOODPLAINS REPORT
APPENDIX D-4
AS BUILT/ RECORD DRAWINGS FOR MONEE RESERVOIR

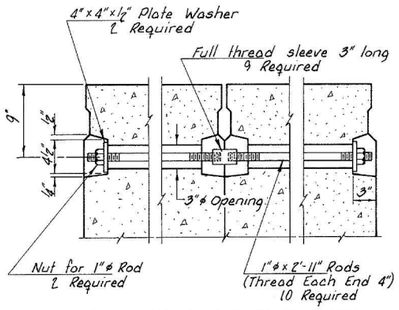
JAN 22, 2013 1:04 PM SCHEDRZ7

STRUCTURE R1 ON ROCK CREEK

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 2754	89-2210Z-00-BR	WILL	9	7
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		



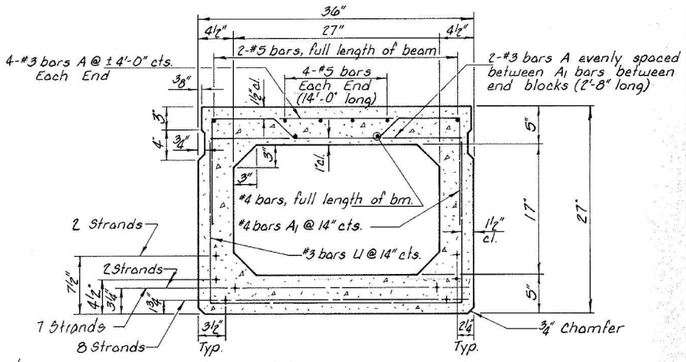
CROSS SECTION



TRANSVERSE TIE ROD DETAIL

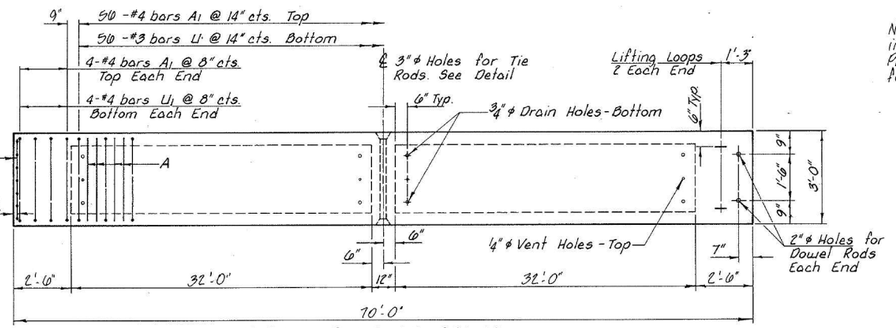
Note: A Calcium Nitrite corrosion inhibitor as covered in the Special Provisions, shall be used in the concrete for prestressed beams.

NOTE: Omit key on exterior face of outside beams.

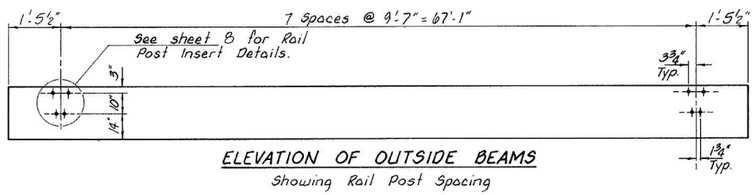


TYPICAL SECTION THRU BEAM

19 - ½" ϕ Strands Stressed to 28,900 Lbs. Each Place strands symmetrically about ℄ of beam. Use Standard Grid Pattern.

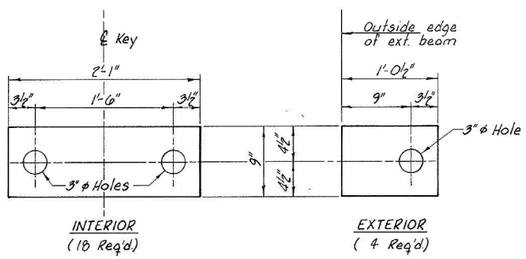


TYPICAL PLAN OF BEAMS

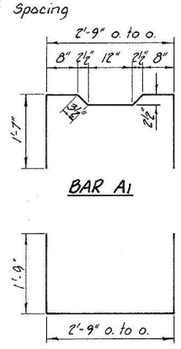


ELEVATION OF OUTSIDE BEAMS

Showing Rail Post Spacing



BEARING PAD DETAILS



BARS U & U1

NOTES

Required Release Strength, f'ci, shall be 4,950 p.s.i.

Prestressing steel shall be non-galvanized high strength, stress-relieved 7-wire strand, Grade 270.

The nominal diameter shall be ½" and the nominal cross-sectional area shall be 0.153 sq. in.

Lifting Loops shall be 7-wire stress-relieved, ½" ϕ - 270 ksi strands.

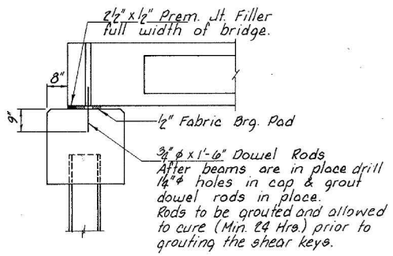
The 1" ϕ rods in the transverse tie assembly shall be tightened to a snug fit & the threads set. Pockets that receive tie rods on outside shall be filled with grout after ties are in place.

Reinforcement bars shall conform to AASHTO: M-31 or M-53, Grade 60.

The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two ⅛" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing.

Keyway surfaces shall be cleaned to remove form oil and other bond breaking material prior to shipment of the beams. Cleaning shall be done by sandblasting the keyway areas between top of the beam and the bottom edge of the key.

An equal substitution of the low-relaxation strands for the stress-relieved strands will be permitted.



SECTION AT ABUTMENTS

NOTE:
The loop shall be formed in a manner such that all strands are engaged during lifting. Loops shall be burned off after beams have been erected.

LIFTING LOOP DETAIL

Approved alternate may be substituted for the above.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Precast Prestressed Concrete Deck Beams (27" Depth)	Sq. Ft.	2,100
Bit. Conc. Surf. Crse., Mix. O; C.I.	Ton	20
Leveling Binder (Machine Method)	Ton	8
Bituminous Material (Prime Coat)	Gallon	19

SUPERSTRUCTURE
SECTION 89-2210Z-00-BR
WILL ROAD DISTRICT
WILL COUNTY
STATION 10+00

COLLINS AND RICE
CONSULTING ENGINEERS

DESIGNED F.B. CHECKED M.B.
DRAWN R.N. DATE 7-13-06 NO. 2126

JAN 22, 2013 1:07 PM SCHE00827

DATE	SOURCE

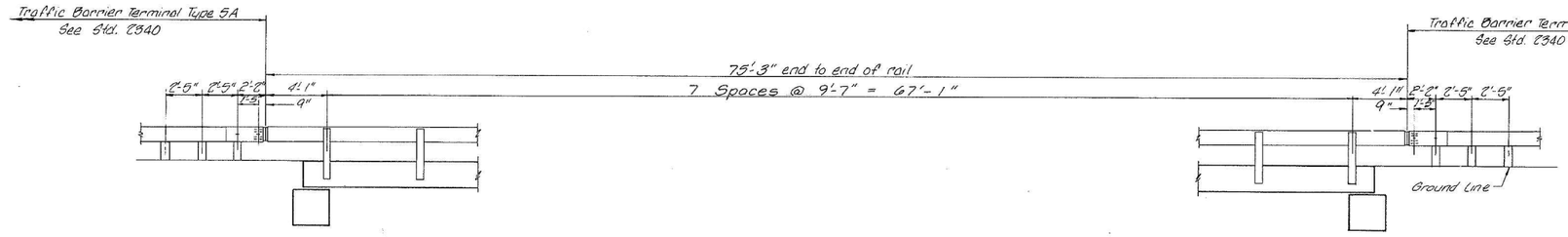
Illinois Department of Transportation
Division of Aeronautics

SSA
SouthSuburbanAirport

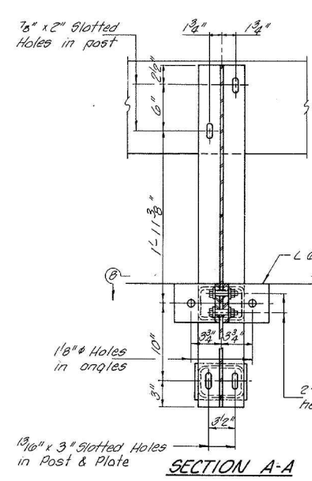
SSA MASTER PLAN - FLOODPLAINS REPORT
APPENDIX D-4 (CONT.)
AS BUILT/ RECORD DRAWINGS FOR MONEE RESERVOIR

STRUCTURE R1 ON ROCK CREEK

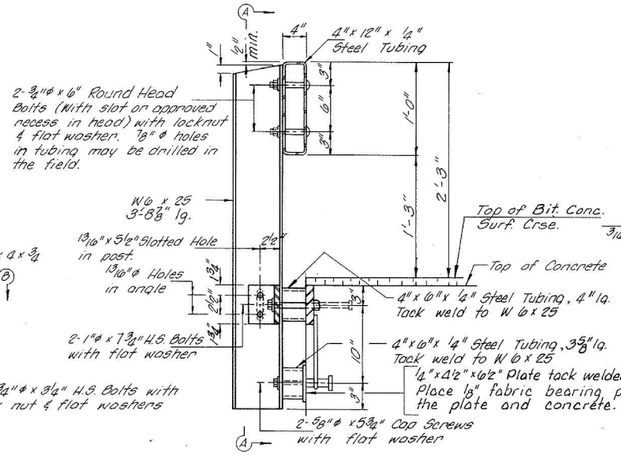
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	85-22102-00-BR	WILL	9	8
FED. ROAD DIST NO. 7	ILLINOIS	PROJECT		



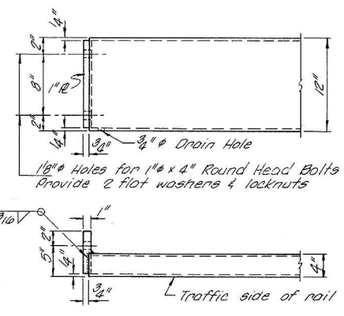
ELEVATION



SECTION A-A



SECTION AT RAIL POST



END OF RAIL DETAILS

NOTES

Hollow structural steel tubing shall conform to the requirements of A.S.T.M. designation A-500 Grade B Structural Steel Tubing.

All other steel shapes and plates shall conform to the requirements of A.A.S.H.T.O. designation M-183 except posts and angles shall conform to A.A.S.H.T.O. M-223, Grade 50.

Bolts, cap screws, and nuts shall conform to the requirement of A.S.T.M. designation A-307 except for high strength bolts, nuts and washers noted which shall conform to A.A.S.H.T.O. designation M-164.

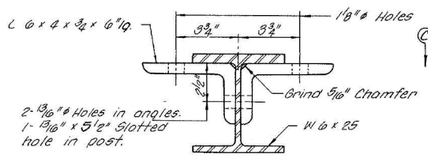
All bolts, nuts, cap screws, washers and lockwashers shall be galvanized in accordance with A.A.S.H.T.O. designation NM-232.

All posts, railing, rail splices, anchor devices and angles shall be galvanized after shop fabrication in accordance with A.S.T.M. A-385 and A.A.S.H.T.O. M-111. Galvanized rail shall not be painted.

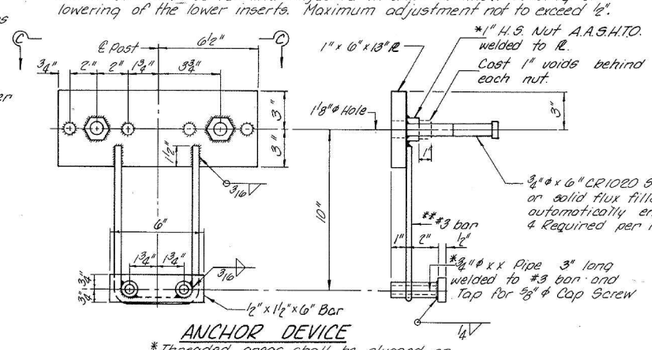
Railing shall be in accordance with Section 508 of the Standard Specifications, except as noted, and shall be paid for at the contract unit price per lineal foot for STEEL RAILING, TYPE S-1.

All field drilled holes shall be coated with an approved zinc rich paint before erection.

The 3/4"ø high strength bolts used to connect the 6 x 4 x 3/4 angles to the post shall be tightened in accordance with Art. 507.00(g)(3) of the Standard Specifications. The 1"ø high strength bolts connecting the angles to the concrete shall be tightened to a snug fit and given an additional 1/2 turn. The 5/8"ø cap screws in bottom of posts shall be tightened to a snug fit only, after the 3/4"ø high strength bolts have been tightened in accordance with Article 507.04(g)(3).

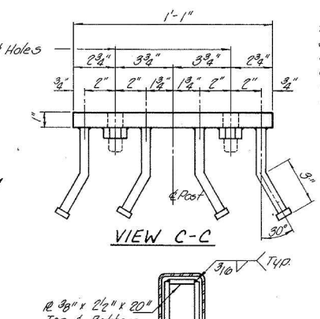


SECTION B-B

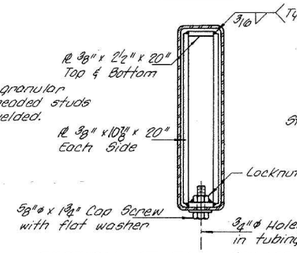


ANCHOR DEVICE

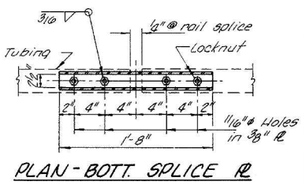
*Threaded areas shall be plugged or blocked off during casting of beam.



VIEW C-C



SECTION AT RAIL SPLICE



PLAN - BOTT. SPLICE ℝ

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Lin. Ft.	151

RAILING DETAILS
SECTION 85-22102-00-BR
WILL ROAD DISTRICT
WILL COUNTY
STATION 10+00

COLLINS AND RICE
CONSULTING ENGINEERS

DESIGNED F.S. CHECKED M.B.
DRAWN R.N. DATE 7-23-86 NO. 2126

JAN 22, 2013 1:09 PM SCHEDI0827

DATE	SOURCE

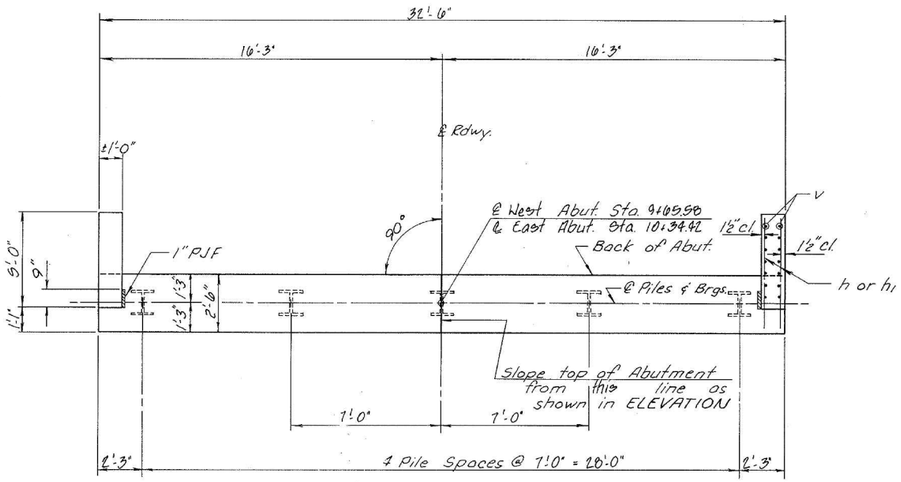
Illinois Department of Transportation
Division of Aeronautics

SSA SouthSuburbanAirport

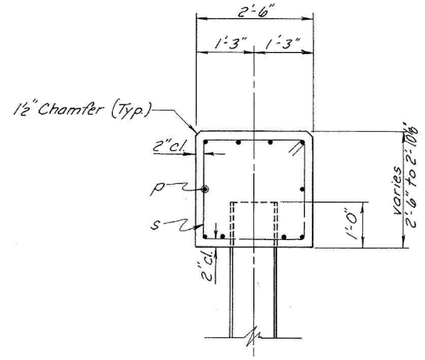
SSA MASTER PLAN - FLOODPLAINS REPORT
APPENDIX D-4 (CONT.)
AS BUILT/ RECORD DRAWINGS FOR MONEE RESERVOIR

STRUCTURE R1 ON ROCK CREEK

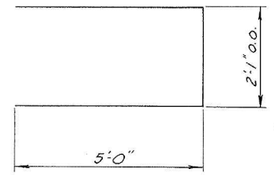
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.294	88-2210Z-00-BR	WILL	9	9
FED. ROAD DIST. NO. 7	ILLINOIS PROJECT			



PLAN



SECTION A-A



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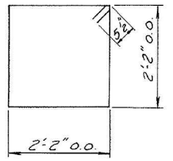

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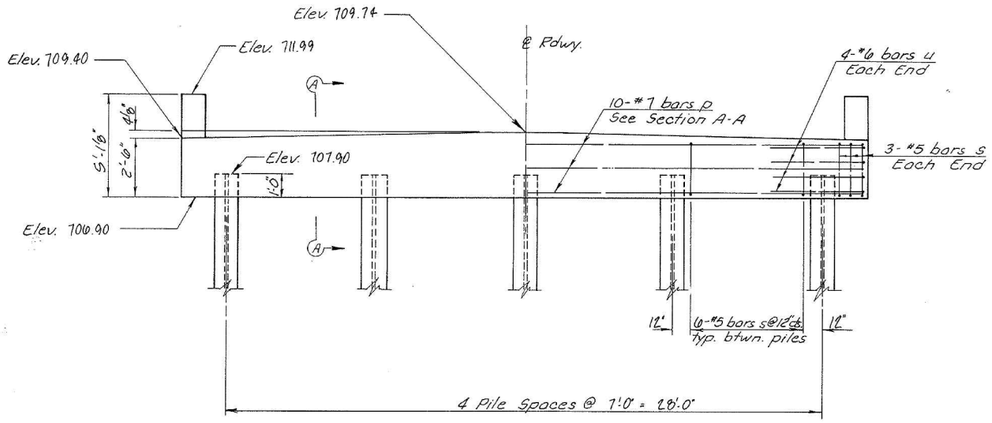
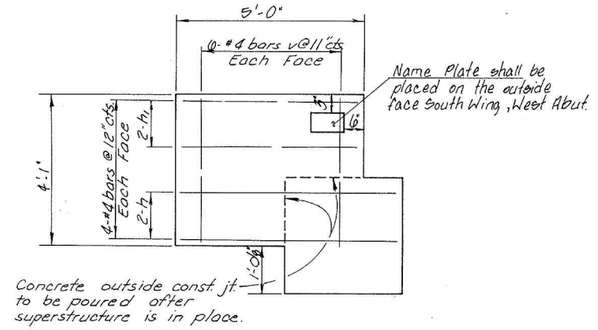


ELEVATION



ELEVATION-WING

BILL OF MATERIAL - 2 ABUT.

BAR	No. REQD.	SIZE	LENGTH	SHAPE
h	16	#4	5'-10"	—
h1	16	#4	4'-9"	—
p	20	#7	32'-2"	—
s	60	#5	9'-7"	□
u	16	#6	12'-1"	▭
v	48	#4	3'-10"	—
Class X Concrete			Cu. Yd	18.8
Reinforcement Bars			Pound	2,440
Steel Piles HP10x42			Lin. Ft	432
Test Pile Steel HP10x42			Each	1
Name Plates			Each	1

PILE DATA

Type _____ Steel HP 10 x 42
No. Req'd. (1 Abut) _____ 10*
Capacity _____ Drive to Refusal
Est. Length _____ 40 Feet/Pile

*Includes one test pile in a permanent location at the West Abut.

ABUTMENTS
SECTION 88-2210Z-00-BR
WILL ROAD DISTRICT
WILL COUNTY
STATION 10+00

COLLINS AND RICE
CONSULTING ENGINEERS

DESIGNED F.S. CHECKED M.B.
DRAWN R.N. DATE 7-23-80 NO. 2126

DATE	SOURCE

Illinois Department of Transportation
Division of Aeronautics

SSA SouthSuburbanAirport

SSA MASTER PLAN - FLOODPLAINS REPORT
APPENDIX D-4 (CONT.)
AS BUILT/ RECORD DRAWINGS FOR MONEE RESERVOIR

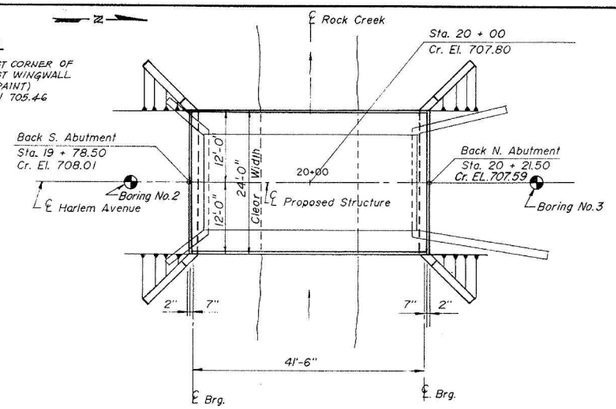
JAN 22, 2013 1:11 PM SCHEID0827

STRUCTURE R4 ON ROCK CREEK

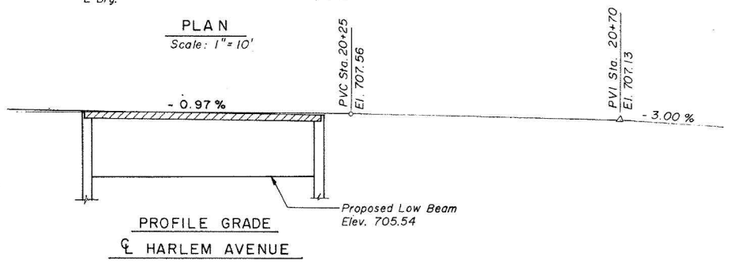
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		WILL	7	2
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT.		

BENCHMARKS

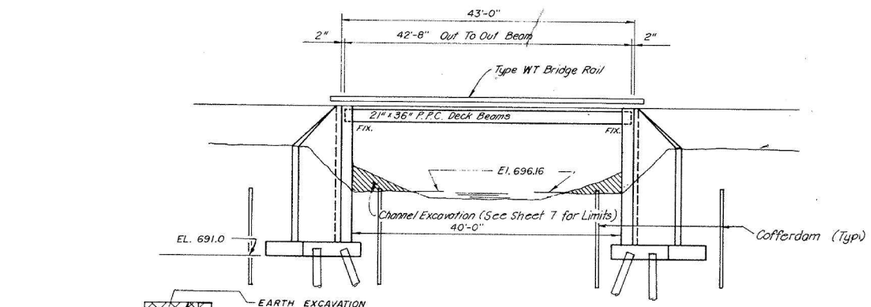
BM: SOUTHWEST CORNER OF SOUTHWEST WINGWALL (ORANGE PAINT) ELEVATION 705.46



PLAN
Scale: 1"=10'



PROFILE GRADE
℄ HARLEM AVENUE



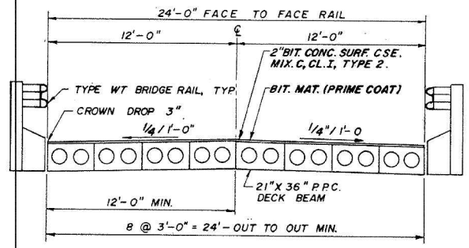
ELEVATION
1/8"=1'-0"

SECTION OF ABUTMENT SHOWING LIMITS OF
① CHANNEL EXCAVATION
② STRUCTURE EXCAVATION
③ POROUS GRANULAR BACKFILL

CHANNEL EXCAVATION
STRUCTURE EXCAVATION
EARTH EXCAVATION

ROCK CREEK
BUILT 1992 BY:
WILL TOWNSHIP
WILL COUNTY
MFT SECTION 90-22108-00-BR
STATION 20 + 00
STR. NO. 099-4958 LOADING HS20

NAME PLATE
(SEE STD 2113)



TYPICAL CROSS SECTION

BILL OF MATERIAL (BRIDGE)

ITEM	UNIT	QUANTITY		
		SUPER	SUB.	TOTAL
PCC MORTAR FAIRING COURSE	LIN. FT.	344	—	344
WATERPROOF MEMBRANE SYSTEM	SQ. YD.	115	—	115
CLASS X CONCRETE	CU. YD.	—	112	112
REMOVAL OF EXISTING STRUCT.	EA.	—	—	1
PRECAST PRESTRESSED CONCR. DECK BEAMS (21" DEPTH)	SQ. FT.	1024	—	1024
STEEL RAILING TYPE WT	LIN. FT.	86	—	86
BIT. MATERIALS (PRIME COAT)	GAL.	120	—	120
REINFORCEMENT BARS, EPOXY COATED	POUND	—	7620	7620
BITUMINOUS CONCRETE SURFACE COURSE MIXTURE C, CLASS I, TYPE 2	TON	35	—	35
NAME PLATE	EA.	1	—	1
STRUCTURE EXCAVATION	CU. YD.	—	420	420
CHANNEL EXCAVATION	CU. YD.	—	—	45
POROUS GRANULAR BACKFILL	CU. YD.	—	300	300
COFFERDAM	EACH	—	2	2
COFFERDAM EXCAVATION	CU. YD.	—	120	120
TEST PILES STEEL HP 10x42	EA.	—	2	2
FURNISHING STEEL PILES HP 10x42	LIN. FT.	—	1702	1702
REINFORCEMENT BARS	POUND	—	4960	4960
DRIVING STEEL PILES	LIN. FT.	—	1702	1702
METAL SHOES	EA.	—	48	48

I CERTIFY THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF, THIS BRIDGE DESIGN IS STRUCTURALLY ADEQUATE FOR THE DESIGN LOADING SHOWN ON THE PLANS. THE DESIGN IS AN ECONOMICAL ONE FOR THE STYLE OF STRUCTURE AND COMPLIES WITH REQUIREMENS OF THE CURRENT "AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES".

A. Tiverios — 4-25-91
ANTONIO TIVERIOS — DATE
ILLINOIS REGISTERED STRUCTURAL ENGINEER NO. 2150

STATE OF ILLINOIS · ANTONIO TIVERIOS · 81-2150 · CHICAGO, IL · REGISTERED STRUCTURAL ENGINEER

EXISTING STRUCTURE

THE EXISTING SUPERSTRUCTURE IS TO BE REMOVED. STEEL PONY TRUSS BRIDGE WITH WOOD DECK, 35 FT. LONG AND APPROXIMATELY 16' WIDE, ABUTMENTS AND WINGS ARE CONSTRUCTED OF CUT STONE

DESIGN SPECIFICATIONS

CONSTRUCTION PROCEDURES SHALL BE IN ACCORDANCE WITH THE ILLINOIS DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" ADOPTED JULY 1, 1988

WATERWAY INFORMATION

DRAINAGE AREA:	11 SQ. MI.
DESIGN DISCHARGE (15 YEAR):	1191 CFS
EXISTING OPENING:	263 SQ. FT.
REQUIRED OPENING:	322 SQ. FT.
PROPOSED OPENING:	334 SQ. FT.
CREATED HEAD FOR 15 YEAR FLOOD:	0 FT.
100 YEAR DISCHARGE:	1844 CFS
CREATED HEAD FOR 100 YEAR FLOOD:	0 FT.

DESIGN STRESSES

PRECAST PRESTRESSED CONCRETE UNITS 1/2" STRAND

f'c = 5,000 psi
f'ci = 4,000 psi
f's = 270,000 psi
f'si = 189,000 psi

SUBSTRUCTURE

f'c = 3,500 psi; fc = 1000 PSI
fy = 60,000 psi; fs = 24,000 PSI

DESIGN SPECIFICATION: 1989 AASHTO STANDARD SPECIFICATION AND ALL SUBSEQUENT INTERIMS AS APPLICABLE.

LOADING HS 20-44

THIS STRUCTURE WAS DESIGNED WITH AN ALLOWANCE OF 25/FT.^{2} FOR A FUTURE WEARING SURFACE.

GENERAL NOTES:

1. SEE PROPOSAL FOR BORING DATA.
2. REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-31 GRADE 60.
3. BACKFILL SHALL BE PLACED BEHIND THE ABUTMENT AFTER THE SUPERSTRUCTURE HAS BEEN POURED AND THE FALSEWORK REMOVED. SEE ARTICLE 502.11 OF THE STANDARD SPECIFICATIONS.
4. THE BACK FACE OF CLOSED ABUTMENTS & WING WALLS SHALL BE WATERPROOFED ACCORDING TO ARTICLE 503.11 OF THE STANDARD SPECIFICATIONS.
5. THE TOP SURFACE OF THE BEAMS SHALL BE FINISHED IN ACCORDANCE WITH ARTICLE 505.06 OF THE STANDARD SPECIFICATION EXCEPT THAT THE SURFACE SHALL NOT BE ROUGHENED BY BROOMING. THE FINISHED SURFACE SHALL BE FREE OF DEPRESSIONS OR HIGH SPOTS WITH SHARP CORNERS, AND THE TOP EDGE OF KEYS SHALL BE ROUNDED OR CHAMFERED A MINIMUM OF 1/4".
6. A CALCIUM NITRITE CORROSION INHIBITOR, AS COVERED IN THE SPECIAL PROVISIONS, SHALL BE USED IN THE CONCRETE FOR PRECAST PRESTRESSED CONCRETE DECK BEAMS.
7. THE CONTRACTOR SHALL DRIVE ONE STEEL HP 10 x 42 TEST PILE IN A PERMANENT LOCATION AT EACH ABUTMENT AS DIRECTED BY THE ENGINEER BEFORE ORDERING THE REMAINDER OF PILES.

NO.	DATE	REVISION	BY

DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION

MFT SECTION 90-22108-00-BR
STATION 20+00
WILL TOWNSHIP, WILL COUNTY

McDonough Associates Inc. Engineers / Architects

DESIGNED BY: R.K.T
CHECKED BY: S.M.R
DRAWN BY: R.K.T

DATE	SOURCE

Illinois Department of Transportation
Division of Aeronautics

SSA SouthSuburbanAirport

SSA MASTER PLAN - FLOODPLAINS REPORT
APPENDIX D-4 (CONT.)
AS BUILT/ RECORD DRAWINGS FOR MONEE RESERVOIR

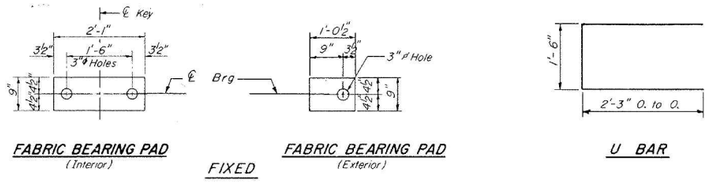
JAN 22, 2013 1:14 PM SCHEDDEZ7

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURE R4 ON ROCK CREEK

ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
		WILL		3
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

SHEET NO.
SHEETS

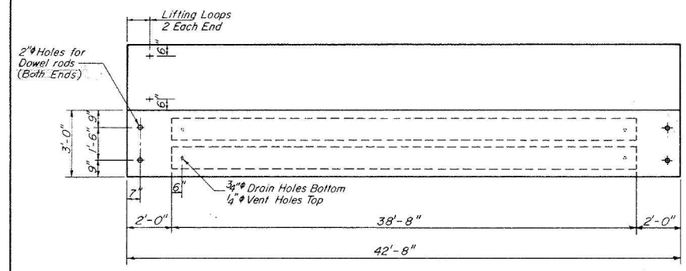


FABRIC BEARING PAD (Interior)

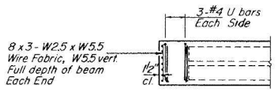
FIXED

FABRIC BEARING PAD (Exterior)

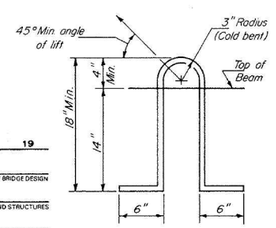
U BAR



PLAN



END PLAN

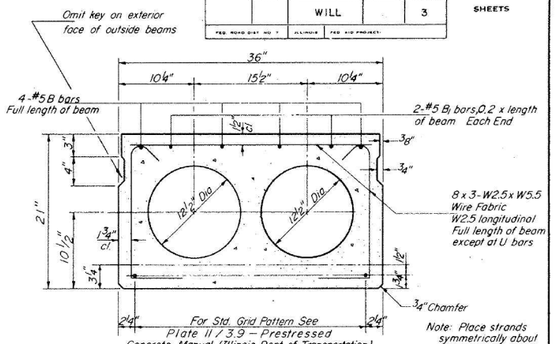


LIFTING LOOP DETAIL

DESIGNED	
CHECKED	
DRAWN	
CHECKED	

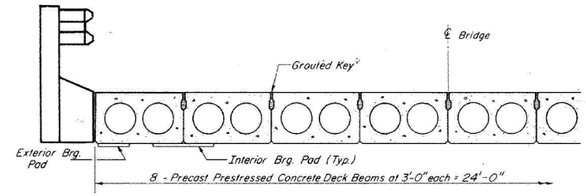
19
EXAMINED
ENGINEER OF BRIDGE DESIGN
PASSED
ENGINEER OF BRIDGES AND STRUCTURES
APPROVED
DIRECTOR OF HIGHWAYS

PD-3-SA 12-31-85



TYPICAL SECTION

13 - 1/2"ø Strands, Each Strand Stressed to 28,900 Lbs.
4 - Strands 1¾" up, 9 - Strands ¾" up,



HALF CROSS SECTION

NOTES

Prestressing steel shall be non-galvanized high strength, stress-relieved 7-wire strand, Grade 270. The nominal diameter shall be ½" and the nominal cross-sectional area shall be 0.153 sq.in.

Lifting loops shall be ½" diameter, 6 x 25 class wire rope with fiber core and shall have a minimum ultimate tensile strength of 21,000 lbs., Or 2 - ½" ø - 270 ksi strands, as shown.

Key surfaces shall be cleaned to remove form oil or other bond breaking material prior to shipment of the beams. Cleaning shall be done by sandblasting the keyway areas between top of the beam and the bottom edge of the key.

Reinforcement bars shall conform to AASHTO M-31 or M-53, Grade 60.

The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two ⅛" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing.

A Calcium Nitrite Corrosion Inhibitor, as covered in the Special Provisions, shall be used in the concrete for precast prestressed concrete deck beams.

Required Release Strength, f'ci, shall be 4,000 p.s.i.

An equal substitution of the low-relaxation strands for the stress-relieved strands will be permitted.

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
B	32	#5	42'-4"	——
B1	32	#5	9'-0"	——
U	96	#4	6'-0"	⊔
Precast Prestressed Concrete Deck Beams			Sq. Ft.	1024

NO.	DATE	REVISION	BY

DEPARTMENT OF TRANSPORTATION
SUPERSTRUCTURE
MFT SECTION 90-22108-00-BR
STATION 20+00
WILL TOWNSHIP, WILL COUNTY

McDonough Associates Inc.
Engineers / Architects

DESIGNED BY: RKT
CHECKED BY: SMR
DRAWN BY: RJO

JAN 22, 2013 1:15 PM SCHE00827

DATE	SOURCE

Illinois Department of Transportation
Division of Aeronautics

SSA SouthSuburbanAirport

SSA MASTER PLAN - FLOODPLAINS REPORT
APPENDIX D-4 (CONT.)
AS BUILT/ RECORD DRAWINGS FOR MONEE RESERVOIR

STRUCTURE R4 ON ROCK CREEK

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		WILL		4
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT=		

SHEET NO.
SHEETS

NOTES

Hollow structural steel tubing shall conform to the requirements of ASTM designation A-500 Grade B Structural Steel Tubing.

All other steel shapes and plates shall conform to the requirements of AASHTO M-183 except posts and angles shall conform to AASHTO M-223, Grade 50.

Bolts, cap screws and nuts shall conform to the requirements of ASTM designation A-307 except for high strength bolts, nuts and washers noted which shall conform to AASHTO M-164.

All bolts, nuts, cap screws, washers and lock washers shall be galvanized in accordance with AASHTO M-232.

All posts, railing, rail splices, anchor devices and angles shall be galvanized after shop fabrication in accordance with AASHTO M-111 and ASTM A-385. Galvanized rail shall not be painted.

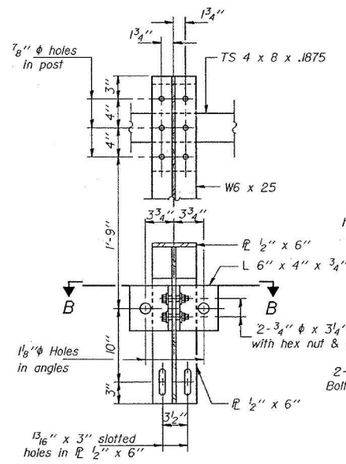
Railing shall be in accordance with Section 508 of the Standard Specifications, except as noted, and will be paid for at the contract unit price per lineal foot for STEEL RAILING, TYPE WT.

All field drilled holes shall be coated with an approved zinc rich paint before erection.

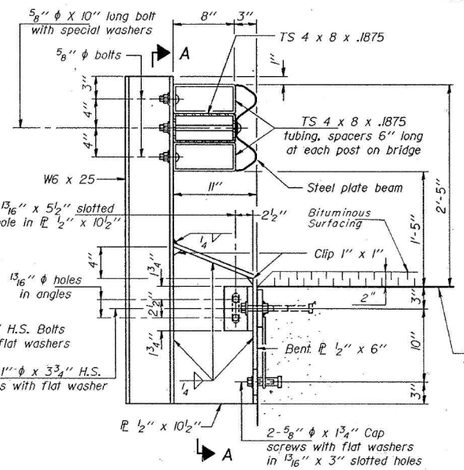
The $\frac{1}{2}$" x 6" plates that come in contact with concrete shall receive two coats of asphalt paint conforming to Section 714.08 Type B or place $\frac{1}{8}$" fabric bearing pads between the plates and concrete.

The $\frac{3}{4}$" high strength bolts used to connect the 6" x 4" x $\frac{3}{4}$" angles to the post shall be tightened in accordance with Article 507.04(g)(3) of the Standard Specifications. The 1" ϕ high strength bolts connecting the angles to the concrete shall be tightened to a snug fit and given an additional $\frac{1}{8}$ turn. The $\frac{5}{8}$" ϕ cap screws in bottom of posts shall be tightened to a snug fit only.

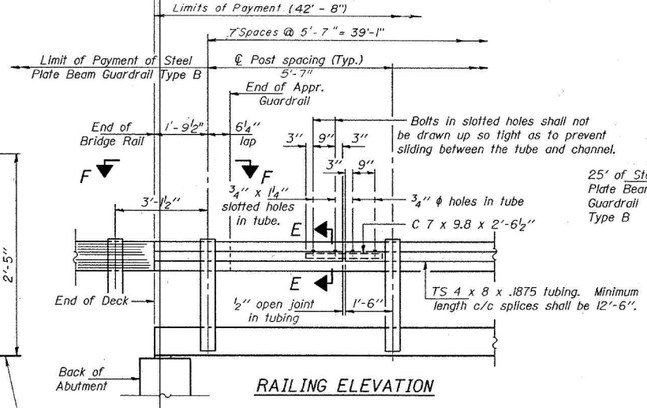
For multi-span bridges, sufficient $\frac{1}{4}$" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost incidental to Steel Railing.



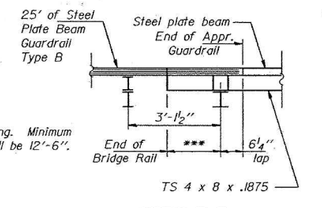
SECTION A-A



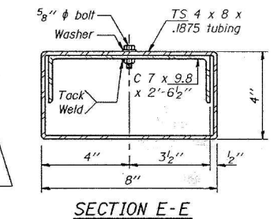
SECTION AT RAIL POST



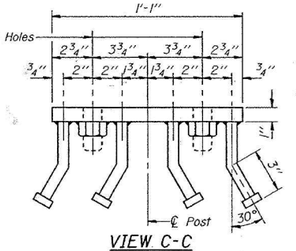
RAILING ELEVATION



VIEW F-F



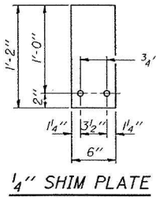
SECTION E-E



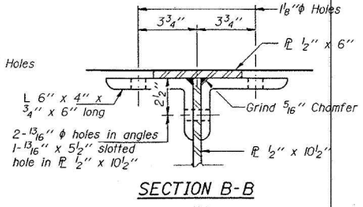
VIEW C-C

BILL OF MATERIAL

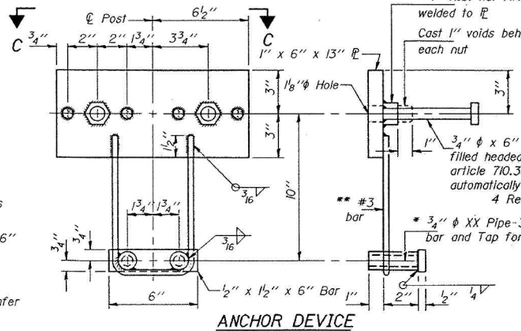
Item	Unit	Quantity
Steel Railing, Type WT	Lin. Ft.	86



¼" SHIM PLATE



SECTION B-B



ANCHOR DEVICE

* Threaded areas shall be plugged or blocked off during casting of beam.

** Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed ½".

DESIGNED	EXAMINED	19
CHECKED	PASSED	ENGINEER OF BRIDGE DESIGN
DRAWN	APPROVED	ENGINEER OF BRIDGES AND STRUCTURES
CHECKED		DIRECTOR OF HIGHWAYS

R-30

REVISION	BY

DEPARTMENT OF TRANSPORTATION

TYPE WT STEEL RAILING

MFT SECTION 90-22108-00-BR
STATION 20 + 00

WILL TOWNSHIP, WILL COUNTY

McDonough Associates Inc.
Engineers / Architects

DESIGNED BY:
CHECKED BY:
DRAWN BY: *

* IDOT STANDARD DRAWING

JAN 22, 2013 1:18 PM SCHEID0827

DATE	SOURCE

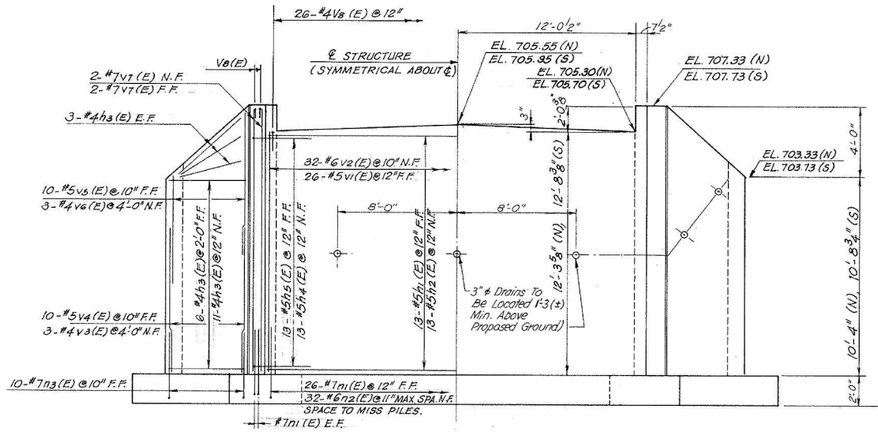
Illinois Department of Transportation
Division of Aeronautics

SSA
SouthSuburbanAirport

SSA MASTER PLAN - FLOODPLAINS REPORT
APPENDIX D-4 (CONT.)
AS BUILT/ RECORD DRAWINGS FOR MONEE RESERVOIR

STRUCTURE R4 ON ROCK CREEK

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		WILL	8	5
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT.		

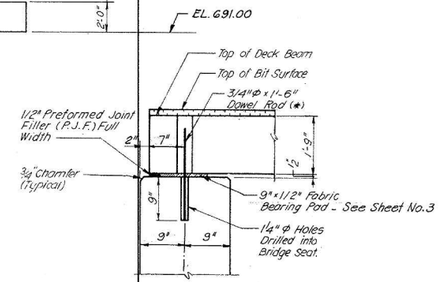


SHOWING REINFORCEMENT

SHOWING DIMENSIONS

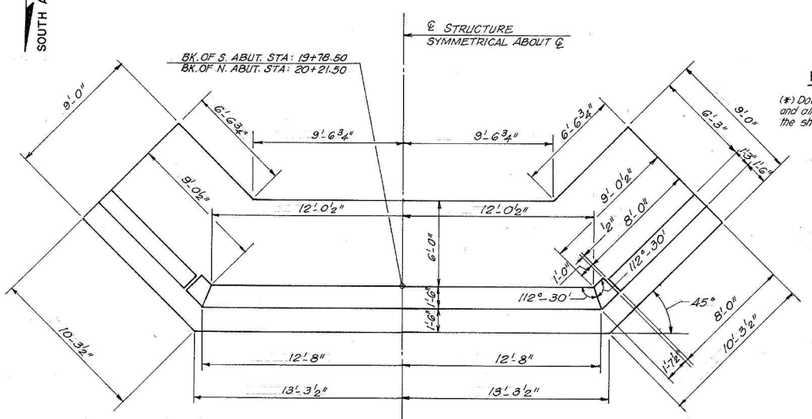
PILES NOT SHOWN SEE SHT. NO. 6 FOR PILE LOCATION.

ELEVATION



BEAM BEARING DETAIL

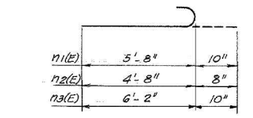
(*) Dowel Rods to be grouted after beams are in place and allowed to cure a min. 24 hours prior to grouting the Shear Keys.



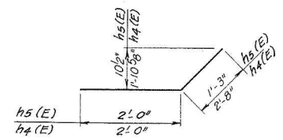
LAYOUT PLAN

LEGEND:

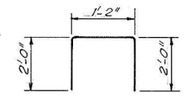
F.F. – FAR FACE
N.F. – NEAR FACE
E.F. – EACH FACE
(N) – AT NORTH ABUTMENT
(S) – AT SOUTH ABUTMENT



BARS n1(E), n2(E) & n3(E)



BARS h4(E) & h5(E)



BAR V8(E)

BILL OF MATERIAL
(FOR ONE ABUT.)

Bar	No.	Size	Length	Shape
h1(E)	13	#5	26'-6"	—
h2(E)	13	#5	25'-0"	—
h3(E)	46	#4	7'-8"	—
h4(E)	26	#5	4'-8"	—
h5(E)	26	#5	3'-3"	—
V1(E)	26	#5	12'-2"	—
V2(E)	32	#6	12'-2"	—
V3(E)	6	#4	8'-6"	—
V4(E)	20	#5	8'-6"	—
V5(E)	20	#5	7'-10"	—
V6(E)	6	#4	7'-6"	—
V7(E)	8	#7	14'-2"	—
V8(E)	30	#4	5'-2"	⊓
n1(E)	34	#7	6'-6"	⊃
n2(E)	32	#6	5'-4"	⊃
n3(E)	20	#7	7'-0"	⊃
t1	68	#5	8'-8"	—
t2	70	#6	8'-8"	—
W1	19	#5	26'-0"	—
W2	1	#5	23'-0"	—
W3	38	#5	10'-0"	—
W4	2	#5	8'-0"	—

CLASS X CONCRETE	CU. YDS	56.0
REINFORCEMENT BARS	LBS.	2480
REINFORCEMENT BARS (EPOXY COATED)	LBS.	3810
TEST PILE (HP10x42)	EACH	1
STEEL PILES (HP10x42)	LIN. FT.	851

REINFORCEMENT BARS DESIGNATED (E) SHALL BE EPOXY COATED.

NOTE:
WORK THIS SHEET WITH SHEET NO. 6

NO.	DATE	REVISION	BY

DEPARTMENT OF TRANSPORTATION
NORTH AND SOUTH ABUTMENTS
MFT SECTION 90-22108-00-BR
STATION 20+00
WILL TOWNSHIP, WILL COUNTY

McDonough Associates Inc. Engineers / Architects

DESIGNED BY: B.K.
CHECKED BY: R.U.O.
DRAWN BY: A.T.

DATE	SOURCE

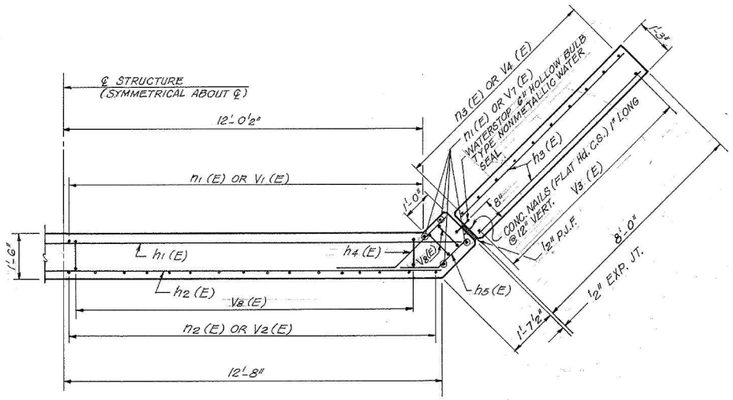
Illinois Department of Transportation
Division of Aeronautics

SSA SouthSuburbanAirport

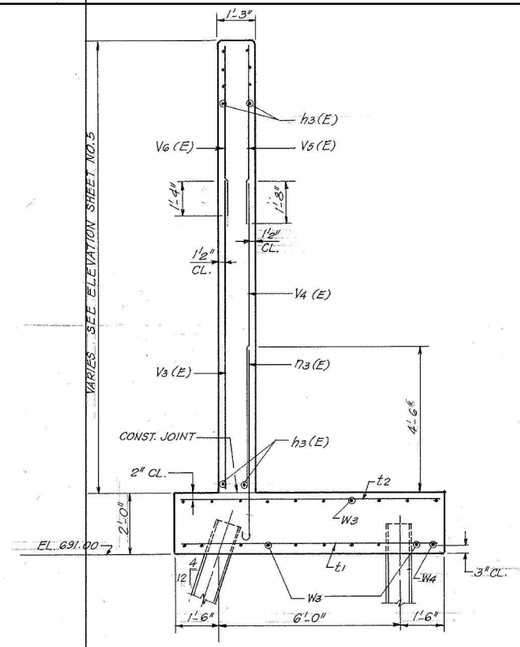
SSA MASTER PLAN - FLOODPLAINS REPORT
APPENDIX D-4 (CONT.)
AS BUILT/ RECORD DRAWINGS FOR MONEE RESERVOIR

JAN 22, 2013 1:20 PM SCHE0827

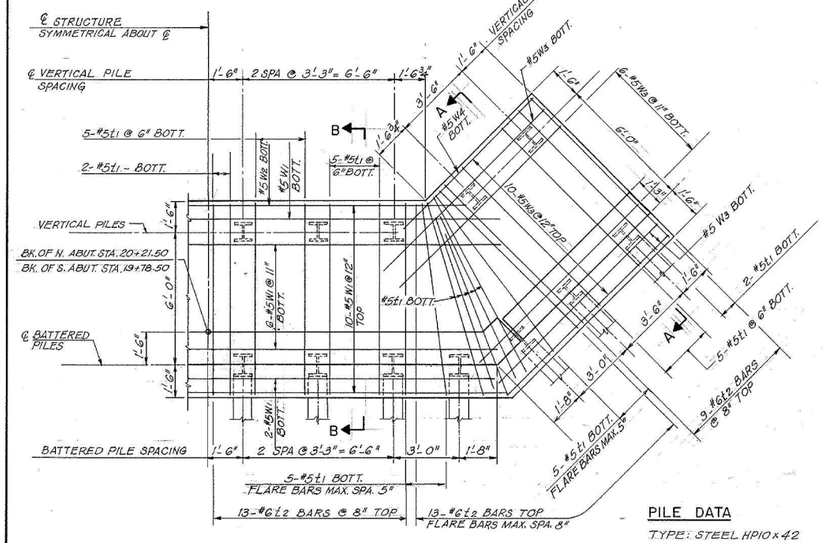
STRUCTURE R4 ON ROCK CREEK



TOP PLAN



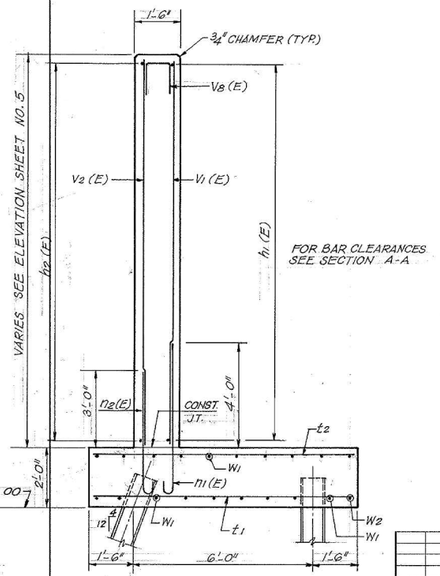
SECTION A - A



FOOTING PLAN

PILE DATA

TYPE: STEEL HP10 x 42
CAPACITY: REFUSAL
EST. LENGTH: 37 FT.
NO. REQ'D: 23 + 1 TEST PILE (PER ABUT.)



SECTION B - B

DEPARTMENT OF TRANSPORTATION
NORTH AND SOUTH ABUTMENTS
MFT SECTION 90-22108-00-BR
STATION 20+00
WILL TOWNSHIP, WILL COUNTY

DESIGNED	B.K.	McDonough Associates Inc. Engineers/Architects			SHEET NO.
DRAWN	RUO				6
CHECKED	A.T.	PROJECT NUMBER	SCALE	DATE	OF SHEETS
APPROVED		90051	NONE	4-26-91	

NO.	DATE	REVISION	BY

DATE	SOURCE

JAN 22, 2013 1:22 PM SCHEDDEZ7

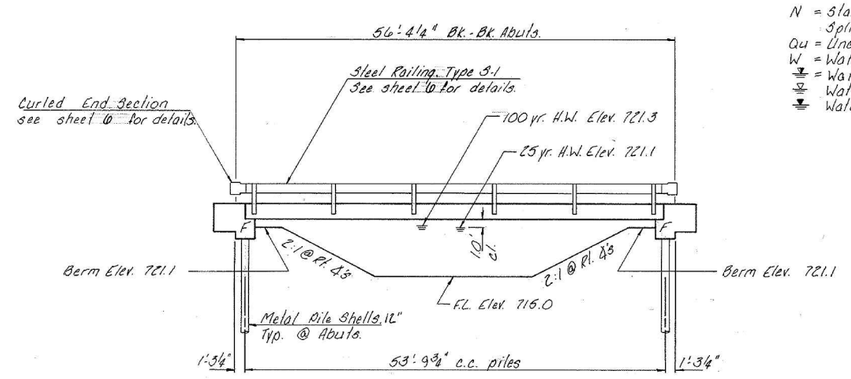
Illinois Department of Transportation
Division of Aeronautics

SSA SouthSuburbanAirport

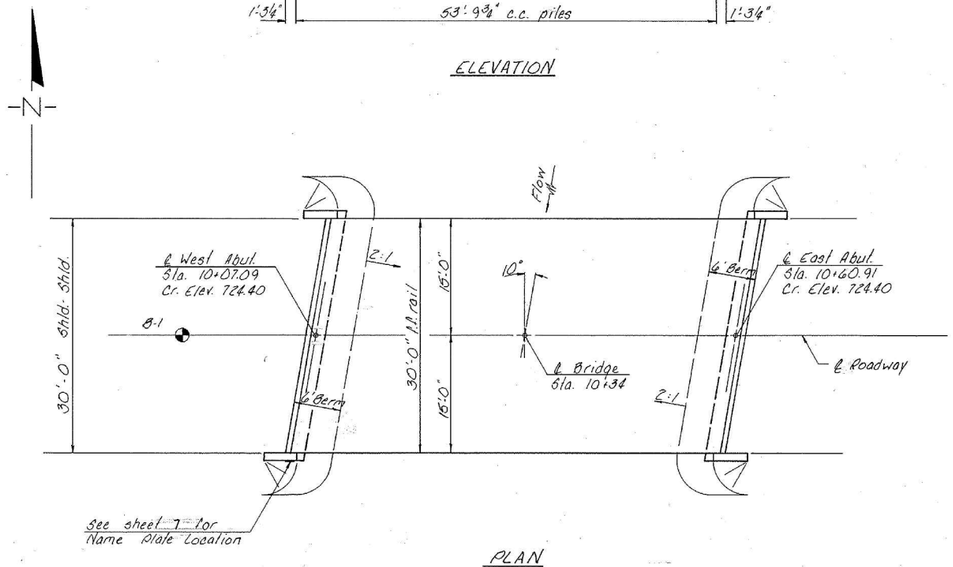
SSA MASTER PLAN - FLOODPLAINS REPORT
APPENDIX D-4 (CONT.)
AS BUILT/ RECORD DRAWINGS FOR MONEE RESERVOIR

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I.R. 911A	82-13112-00-BR	WILL	8	4
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

STRUCTURE R5 ON ROCK CREEK



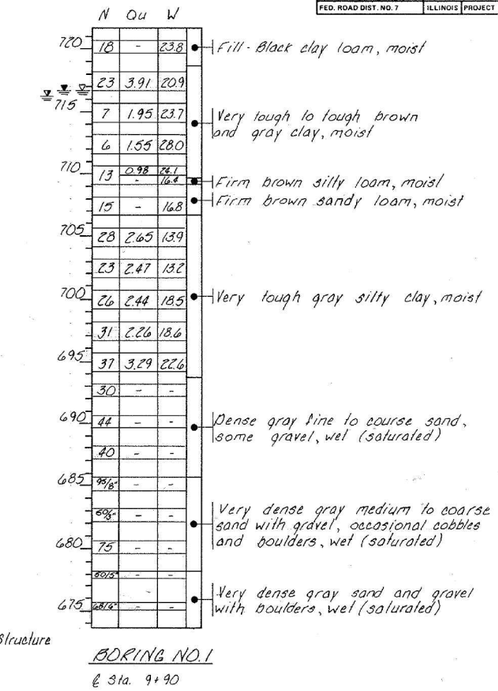
ELEVATION



PLAN

BORING DATA

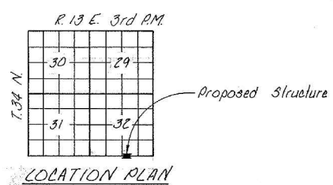
N = Standard Penetration Test - Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with 140# hammer falling 30"
Qu = Unconfined Compressive Strength - Tons/Sq.Ft.
W = Water Content - percentage of oven dry weight - %
▽ = Water Elev. while drilling
▽ Water Elev. after completion
▽ Water Elev. after 24 hours



BORING NO.1
℄ Sta. 9+90

STRUCTURE NO. 099-4654
ROCK CREEK
SEC. 82-13112-00-BR BUILT 198_
MONEE ROAD DISTRICT
WILL COUNTY
LOADING HS20

LETTERING FOR NAME PLATE
See Sld. 2113



LOCATION PLAN

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Precast Prestressed Concrete Deck Beams (21" Depth)	Sq.Ft.	1,650		1,650
Class X Concrete	Cu.Yd.		17.9	17.9
Reinforcement Bars	Pound		2,170	2,170
Steel Railing, Type 3-1	Lin.Ft.	107		107
Metal Pile Shells, 12"	Lin.Ft.		188	188
Test Pile Metal Shell	Each		1	1
Name Plates	Each		1	1
Bit. Conc. Surf. Crse., Class I	Ton	10		10
Leveling Binder (Machine Method)	Ton	0		0

GENERAL NOTES

The contractor shall drive one test pile in a permanent location at the East Abutment, as directed by the Engineer, before ordering the remainder of the piles.

WATERWAY DATA

Drainage Area ____ 5.33 Sq.Mi.
Existing Opening ____ N.A.
Required Opening (25 yr.) ____ 185 Sq.Ft.
Proposed Opening (25 yr.) ____ 185 Sq.Ft.
Design Discharge (25 yr.) ____ 650 C.F.S.
Created Head (25 yr.) ____ 0.4 Ft.
100 yr. Discharge ____ 880 C.F.S.
100 yr. Created Head ____ 0.7 Ft.

DESIGN STRESSES

f'c = 5,000 psi (Prestressed Beams)
f'ci = 4,800 psi (Prestressed Beams)
fc = 1,400 psi (Class X Concrete)
f's = 270,000 psi (Prestressed Strands)
fsi = 189,000 psi (Prestressed Strands)
fs = 20,000 psi (Reinf. Bars - Field Units)
fy = 60,000 psi (Reinf. Bars - Precast Units)
n = 9 (Class X Concrete)
Loading HS 20-44
Design Specifications: AASHTO 1977 & 1978-BE Interims.
25#/Sq.Ft. included in dead load for future wearing surface.

I certify that to the best of my knowledge, information, and belief, that this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current "AASHTO Standard Specifications for Highway Bridges".

Fred J. Stone Jr.
Illinois Structural No. 2934

GENERAL PLAN & ELEVATION
SECTION 82-13112-00-BR
MONEE ROAD DISTRICT
WILL COUNTY
STATION 10+34

COLLINS AND RICE
CONSULTING ENGINEERS

DESIGNED F.S. CHECKED R.N.
DRAWN R.N. DATE 9-18-80 NO. 1780

JAN 22, 2013 1:24 PM SCHEDB27

DATE	SOURCE

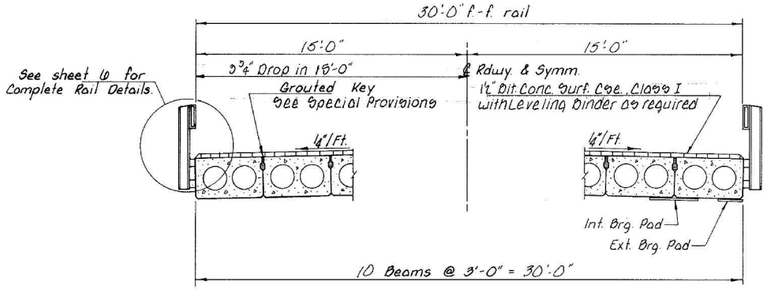
Illinois Department of Transportation
Division of Aeronautics

SSA
SouthSuburbanAirport

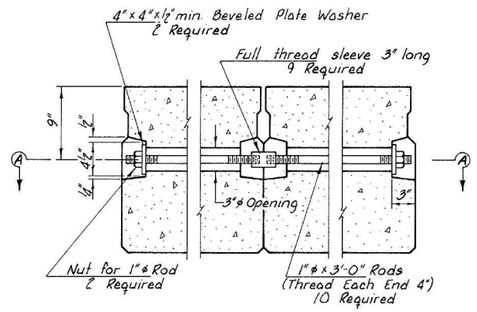
SSA MASTER PLAN - FLOODPLAINS REPORT
APPENDIX D-4 (CONT.)
AS BUILT/ RECORD DRAWINGS FOR MONEE RESERVOIR

STRUCTURE R5 ON ROCK CREEK

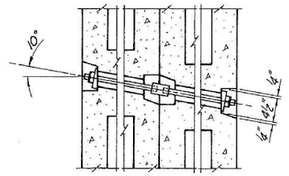
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 2774	82-1311Z-00-BR	WILL	8	5
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		



CROSS SECTION

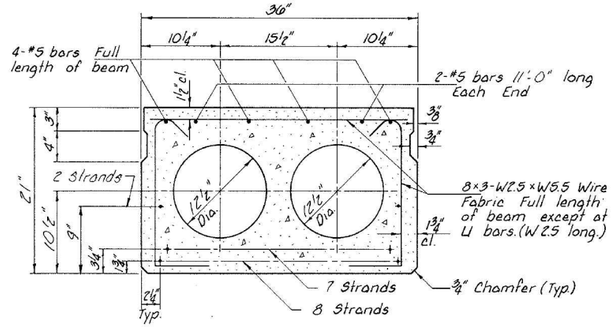


TRANSVERSE TIE ROD DETAIL



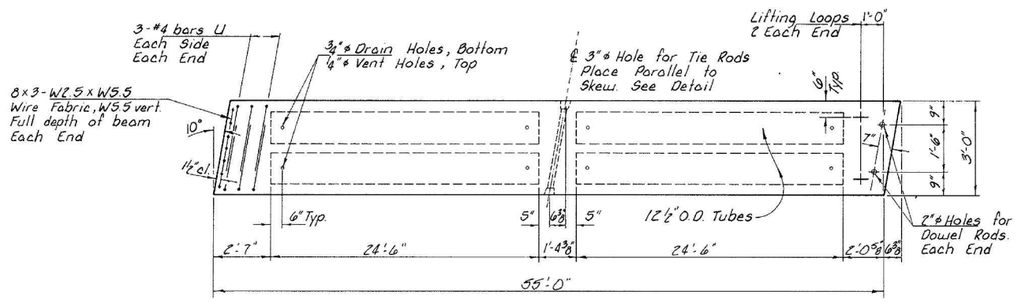
SECTION A-A

NOTE: Omit key on exterior face of outside beams.

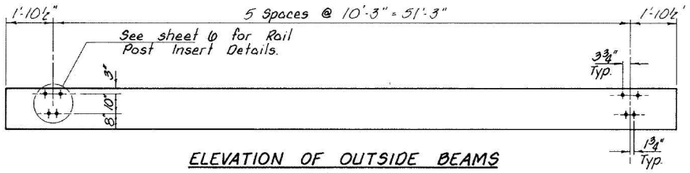


TYPICAL SECTION THRU BEAM

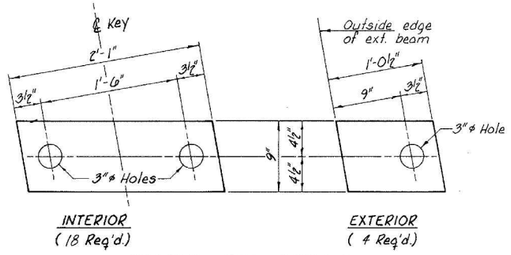
17-½"ø Strands Stressed to 28,900 Lbs. Each. Place strands symmetrically about ℄ of beam. Use Standard Grid Pattern.



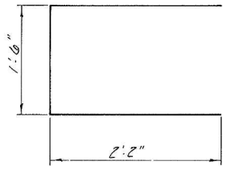
TYPICAL PLAN OF BEAMS



ELEVATION OF OUTSIDE BEAMS
Showing Rail Post Spacing



BEARING PAD DETAILS



BAR U

NOTES

Prestressing steel shall be non-galvanized high strength, stress-relieved 7-wire strand, Grade 270.

The nominal diameter shall be ½" and the nominal cross-sectional area shall be 0.153 sq. in.

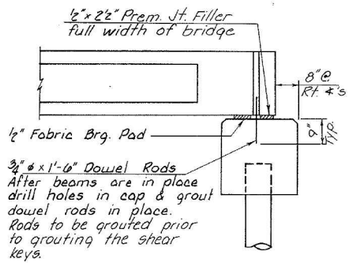
Lifting Loops shall be 7-wire stress relieved, 2-½"ø-270 ksi strands.

The 1"ø rods in the transverse tie assembly shall be tightened to a snug fit & the threads set. Pockets that receive tie rods on outside shall be filled with grout after ties are in place.

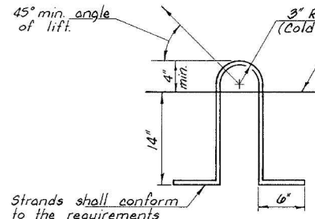
Reinforcement bars shall conform to AASHTO: M-31 or M-53, Grade 60.

The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two 16" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing.

A Calcium Nitrate Corrosion Inhibitor as covered in the Special Provisions shall be used in the concrete for precast prestressed concrete deck beams.



SECTION AT NORTH ABUT.



NOTE: The loop shall be formed in a manner such that all strands are engaged during lifting. Loops shall be burned off after beams have been erected.

LIFTING LOOP DETAIL
Approved alternate may be substituted for the above.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Precast Prestressed Concrete Deck Beams (21" Depth)	Sq. Ft.	1,650
Bit. Conc. Surf. Cse., Class I	Ton	16
Leveling Binder (Machine Method)	Ton	10

SUPERSTRUCTURE
SECTION 82-1311Z-00-BR
MONEE ROAD DISTRICT
WILL COUNTY
STATION 10+34

COLLINS AND RICE
CONSULTING ENGINEERS

DESIGNED F.S. CHECKED K.N.
DRAWN R.N. DATE 4-18-80 NO. 1780

JAN 22, 2013 1:27 PM SCHEID0827

DATE	SOURCE

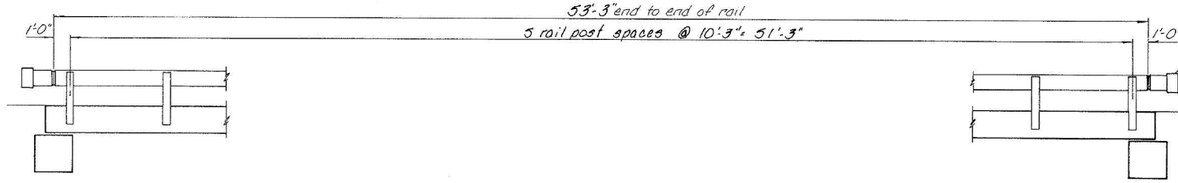
Illinois Department of Transportation
Division of Aeronautics

SSA
SouthSuburbanAirport

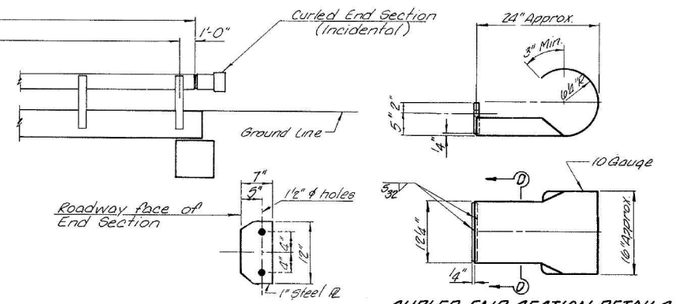
SSA MASTER PLAN - FLOODPLAINS REPORT
APPENDIX D-4 (CONT.)
AS BUILT/ RECORD DRAWINGS FOR MONEE RESERVOIR

STRUCTURE R5 ON ROCK CREEK

ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
F.A. 1211A	82-13112-00-BR	WILL	8	0
FED. ROAD DIST. NO. 7	ILLINOIS PROJECT			

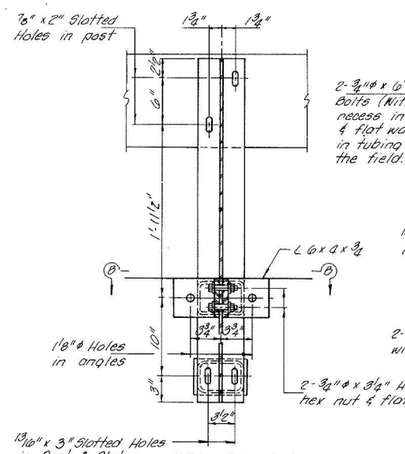


ELEVATION

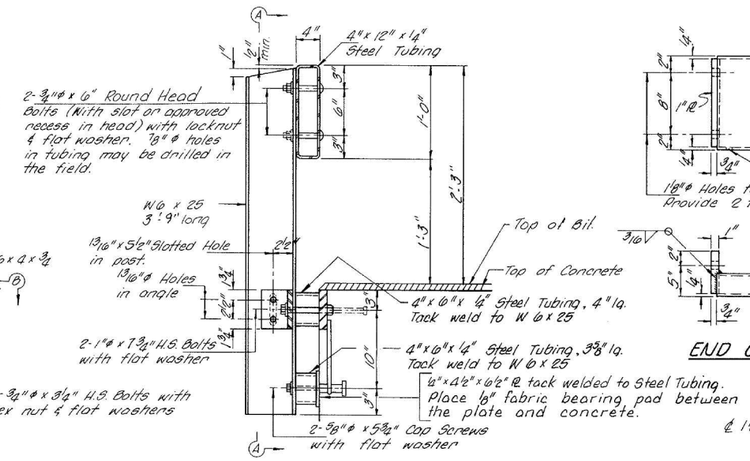


SECTION D-D

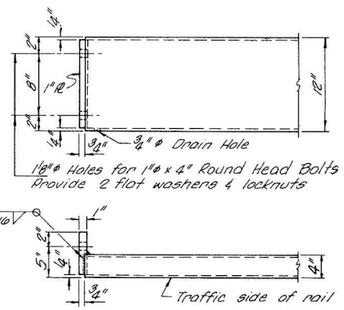
CURLED END SECTION DETAILS



SECTION A-A



SECTION AT RAIL POST



END OF RAIL DETAILS

NOTES

Hollow structural steel tubing shall conform to the requirements of A.S.T.M. designation A-500 Grade B Structural Steel Tubing.

All other steel shapes and plates shall conform to the requirements of A.A.S.H.T.O. designation M-183 except posts and angles shall conform to A.A.S.H.T.O. M-223, Grade 50.

Bolts, cap screws, and nuts shall conform to the requirement of A.S.T.M. designation A-307 except for high strength bolts, nuts and washers noted which shall conform to A.A.S.H.T.O. designation M-164.

All bolts, nuts, cap screws, washers and lockwashers shall be galvanized in accordance with A.A.S.H.T.O. designation M-232.

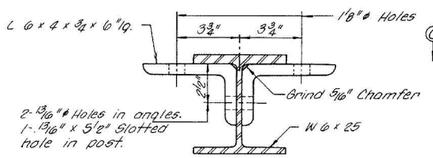
All posts, railing, rail splices, anchor devices and angles shall be galvanized after shop fabrication in accordance with A.S.T.M. A-385 and A.A.S.H.T.O. M-111. Galvanized rail shall not be painted.

Railing shall be in accordance with Section 508 of the Standard Specifications, except as noted, and shall be paid for at the contract unit price per lineal foot for STEEL RAILING, TYPE S-1.

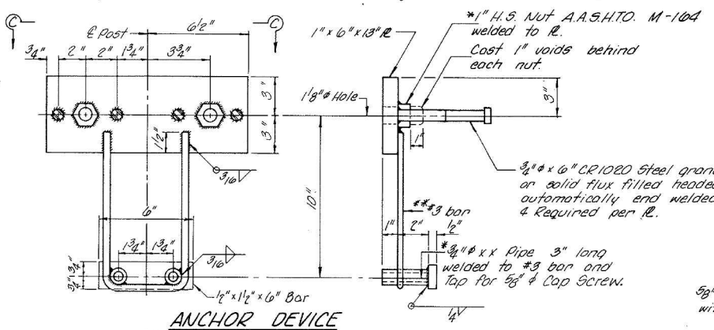
All field drilled holes shall be coated with an approved zinc rich paint before erection.

Curled End Sections shall conform to the requirements of A.A.S.H.T.O. M-180 Type 1, Class A.

The ¾" ø high strength bolts used to connect the 6 x 4 x ¾ angles to the post shall be tightened in accordance with Art 507.04(g)(3) of the Standard Specifications. The 1" ø high strength bolts connecting the angles to the concrete shall be tightened to a snug fit and given an additional ⅛ turn. The ⅝" ø cap screws in bottom of posts shall be tightened to a snug fit only, after the ¾" ø high strength bolts have been tightened in accordance with Article 507.04(g)(3).



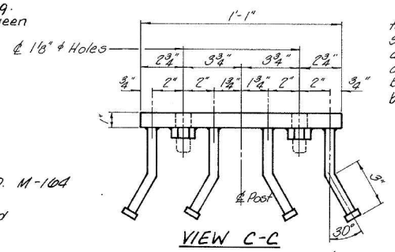
SECTION B-B



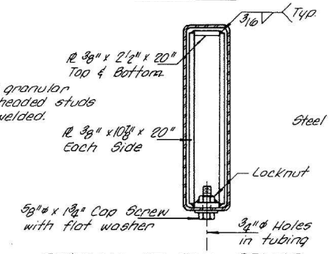
ANCHOR DEVICE

*Threaded areas shall be plugged or blocked off during casting of beam.

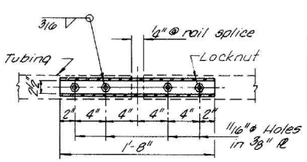
**Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed ½".



VIEW C-C



SECTION AT RAIL SPLICE



PLAN - BOTT. SPLICE ℄

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Lin. Ft.	107

RAILING DETAILS
SECTION 82-13112-00-BR
MONEE ROAD DISTRICT
WILL COUNTY
STATION 10+34

COLLINS AND RICE
CONSULTING ENGINEERS

DESIGNED F.S. CHECKED R.N.
DRAWN R.N. DATE 9-18-89 NO. 1780

JAN 22, 2013 1:28 PM SCHEDO827

DATE	SOURCE

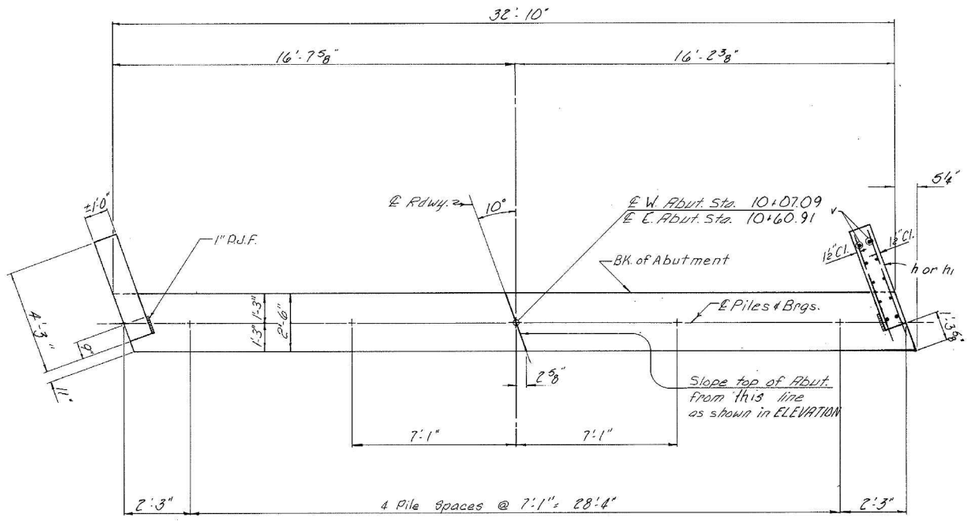
Illinois Department of Transportation
Division of Aeronautics

SSA SouthSuburbanAirport

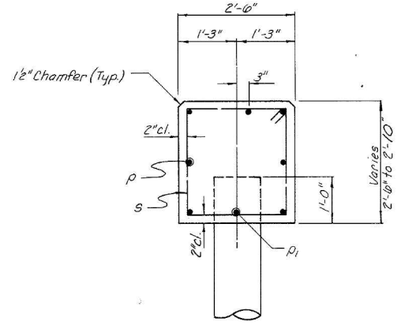
SSA MASTER PLAN - FLOODPLAINS REPORT
APPENDIX D-4 (CONT.)
AS BUILT/ RECORD DRAWINGS FOR MONEE RESERVOIR

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I.R. 277A	82-13112-00-BR	WILL	8	7
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

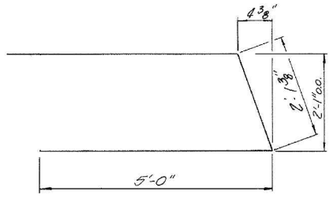
STRUCTURE R5 ON ROCK CREEK



PLAN



SECTION A-A



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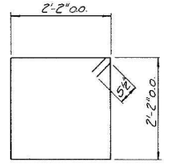

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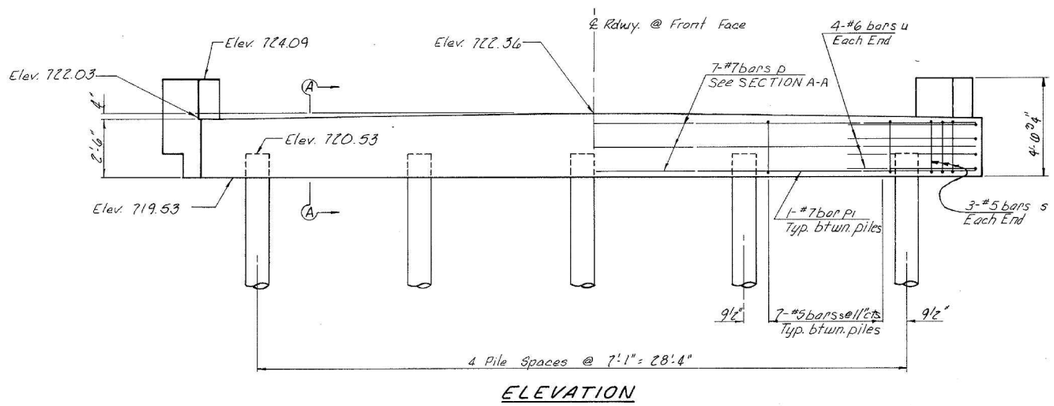
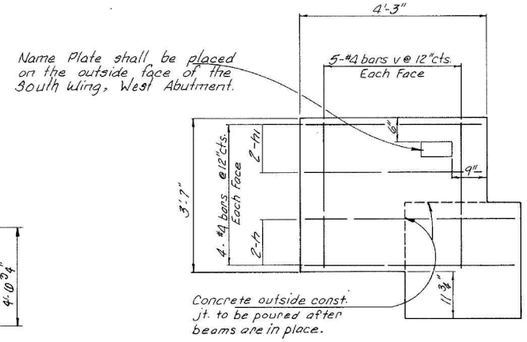


ELEVATION



ELEVATION - WING

PILE DATA

Type _____ Metal Pile Shells 12"
No. Req'd. (2 Abuts.) _____ 10*
Capacity _____ 30 Tons/Pile
Est. Length _____ 32 Feet/Pile

* Includes one test pile to be driven in a permanent location at the East Abutment

BILL OF MATERIAL-2 ABUTS.

BAR	NO.	SIZE	LENGTH	SHAPE
h	16	#4	4'-11"	—
h1	16	#4	4'-0"	—
p	14	#7	32'-6"	—
p1	6	#7	5'-10"	—
s	68	#5	9'-7"	⌐
u	16	#6	12'-1"	⌐
v	90	#4	3'-4"	—
Class X Concrete			Cu. Yd	179
Reinforcement Bars			Pound	4,170
Name Plates			Each	1
Metal Pile Shells, 12"			Lin. Ft.	288
Test Pile Metal Shell			Each	1

See Sheet 8 for Pile Details

ABUTMENTS
SECTION 82-13112-00-BR
MONEE ROAD DISTRICT
WILL COUNTY
STATION 10+34

COLLINS AND RICE
CONSULTING ENGINEERS

DESIGNED F.S. CHECKED R.N
DRAWN R.N. DATE 4-18-83 NO. 1780

DATE	SOURCE

Illinois Department of Transportation
Division of Aeronautics

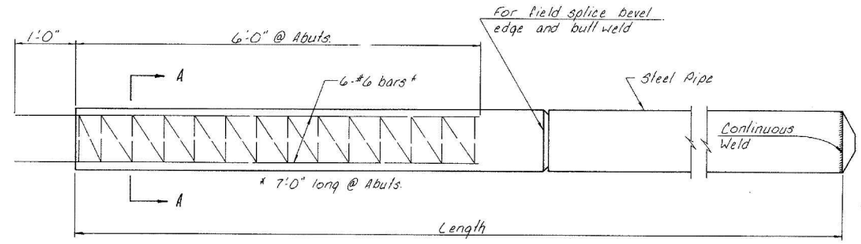
SSA SouthSuburbanAirport

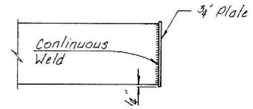
SSA MASTER PLAN - FLOODPLAINS REPORT
APPENDIX D-4 (CONT.)
AS BUILT/ RECORD DRAWINGS FOR MONEE RESERVOIR

JAN 22, 2013 1:33 PM SCHEDDE27

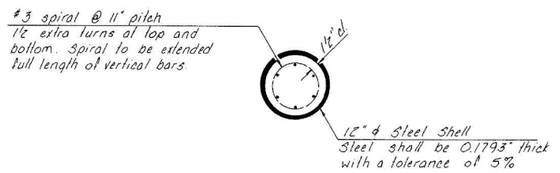
STRUCTURE R5 ON ROCK CREEK

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I.R. 57IA	82-13112-00-BR	WILL	8	8
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		





OPTIONAL FLAT END



SECTION A-A

Note: Cost of reinforcement in piling is incidental to the cost of driving piles.

DETAIL OF CAST IN PLACE CONCRETE PILES

PILE DETAILS
SECTION 82-13112-00-BR
MONEE ROAD DISTRICT
WILL COUNTY
STATION 10134

COLLINS AND RICE
CONSULTING ENGINEERS

DESIGNED F.S. CHECKED R.N.
DRAWN R.N. DATE 9-18-80 NO. 1780

JAN 22, 2013 1:34 PM SCHE00827

DATE	SOURCE

Illinois Department of Transportation
Division of Aeronautics

SSA SouthSuburbanAirport

SSA MASTER PLAN - FLOODPLAINS REPORT
APPENDIX D-4 (CONT.)
AS BUILT/ RECORD DRAWINGS FOR MONEE RESERVOIR

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A. 1129				SHEET NO.
F.A.	42-5B	WILL	12	2 SHEETS
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

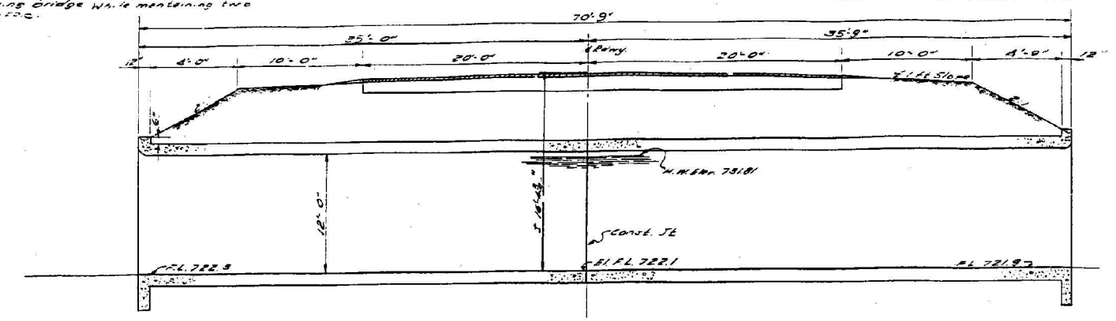
STRUCTURE R28 ON ROCK CREEK

STATION 1028+00
BUILT 195 BY
STATE OF ILLINOIS
S.B.I. Rt 49 Sec. 192 BR
LOADING H20-S16

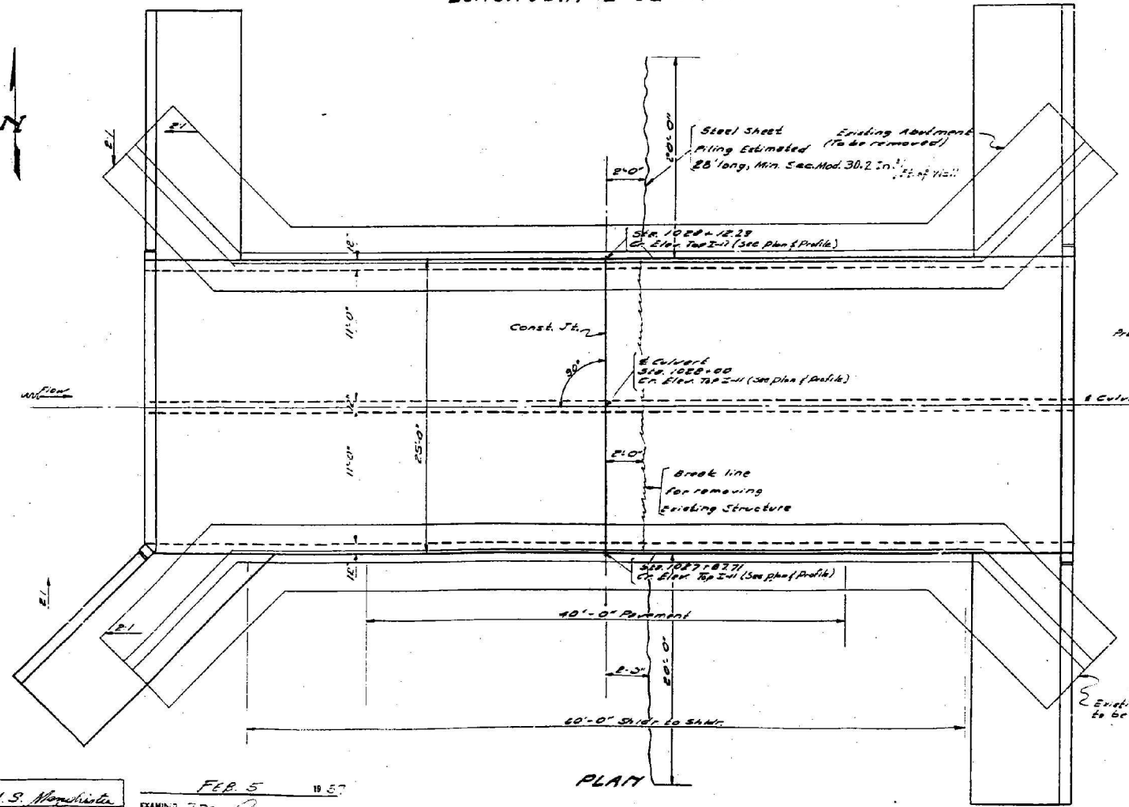
DETAIL OF NAME PLATE
See Std # 2113

GENERAL NOTES

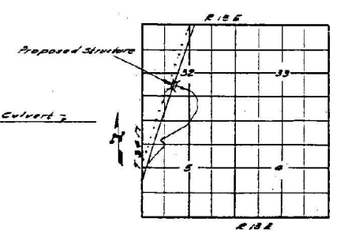
Bridge Contractor must maintain two lanes of traffic while removing Existing Structure one half at a time and constructing Proposed Culvert one half at a time as shown on plans
See Special Provisions for Steel sheet Piling
Temporary Timber Members presently supporting abutments shall be stock piled for Maintenance Dept. pick up. Cost to be incidental



LONGITUDINAL SECTION



PLAN



VERTICAL CURVE DATA
(See Plan & Profile)

WATERWAY INFORMATION

Drainage Area	3200 Acres
Character	Rolling, Wooded, Cultivated
Reg'd Opening (35 yr. Flood)	280 Sq. Ft.
Present Opening	216 Sq. Ft.
Proposed Opening	220 Sq. Ft.

DESIGN STRESSES

fc	20000 p.s.i. (Point)
fc	1200 p.s.i. (Barrel)
fc	1000 p.s.i. (Wings)
n	10

LOADING H20-S16-44

TOTAL BILL OF MATERIAL

ITEM	TOTAL
Class A Concrete	Cu Yds. 317.2
Reinforcement Bars	Lbs. 39570
Removal of Exist. Structure	Each 1
Name Plates	Each 1
Steel Sheet Piling	Sq. Ft. 1120

GENERAL PLAN & ELEVATION
S.B.I. RT. 49-SECT. 192 BR
WILL COUNTY
STATION 1028+00

DESIGNED	H. S. Monachesta	EXAMINED	FEB. 5 19 57
CHECKED	M. G. Tulin	PASSED	
DRAWN	H.S.M. Effective?	APPROVED	
CHECKED	M. G. Tulin		

Revised 4/1/57 for Centr. of ℄ of Rdwy. + steel Piling added
Revised 5/1/57 for Partial Wings.
Revised 6/13/57 for 12" Culverts.

JAN 22, 2013 1:55 PM SCHEDO827

DATE	SOURCE

Illinois Department of Transportation
Division of Aeronautics

SSA SouthSuburbanAirport

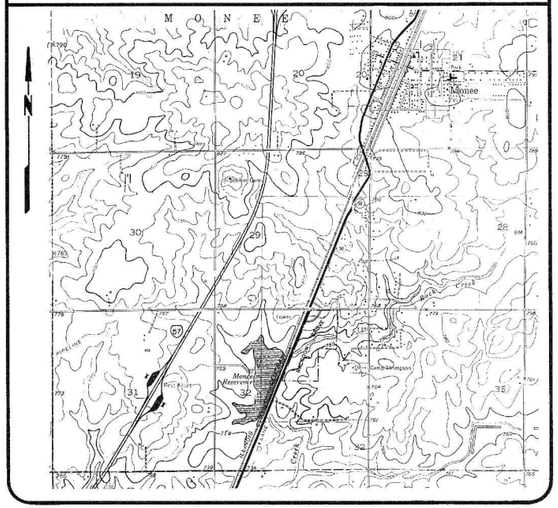
SSA MASTER PLAN - FLOODPLAINS REPORT
APPENDIX D-4 (CONT.)
AS BUILT/ RECORD DRAWINGS FOR MONEE RESERVOIR

MONEE RESERVOIR
OUTLET STRUCTURE IMPROVEMENTS

INDEX

DRAWING NUMBER	TITLE
198B-010	EXISTING HYDROLOGIC AND HYDRAULIC SURFACE WATER CONDITIONS
198B-011	ACCESS ROAD AND CONTRACTOR STAGING AREAS
198B-012	PLAN AND PROFILE-EXISTING CONDITIONS
198B-013	PLAN AND PROFILE-PROPOSED CONDITIONS
198B-014	STAGING OF INLET CONSTRUCTION
198B-015	TRASHRACK DETAILS
198B-016	DISSIPATION STRUCTURE DETAILS

LOCATION MAP



LEGEND

A — A CROSS SECTION

- 750 — GROUND CONTOUR
- 740 — TOP OF SEDIMENT CONTOUR
- 734 — BOTTOM OF SEDIMENT CONTOUR
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- FENCE
- RUINS
- x 751.6 SPOT ELEVATION
- SWAMP / MARSH
- POWER POLE
- GRAVEL ROAD
- 16" EDGE OF WOODS, TREE (TRUNK DIAMETER)
- RM 1 REFERENCE MARK LOCATION
- WATER SURFACE
- CONTRACTOR STAGING AND ALLOWABLE WORK AREAS
- ACCESS TO BE USED BY CONTRACTOR
- DITCH INVERT WITH FLOW DIRECTION
- TOP OF FILL / FILL SURFACE
- BOTTOM OF FILL / TOP OF CUT / CUT SURFACE
- BOTTOM OF CUT

LOCATION

SW 1/4, SECTION 32, T. 34 N- R. 13E.
MONEE TOWNSHIP
WILL COUNTY, ILLINOIS

JEFFREY R. SCHUH 42614 REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

Jeffrey R. Schuh 5/12/88
ENGINEER DATE

"AS BUILTS"
2/24/89

SITE OWNER :
THE FOREST PRESERVE
DISTRICT OF WILL COUNTY
CHERRY HILL RD. & RT. 52 R.R. 4
JOLIET, ILLINOIS 60433

PREPARED BY:
PATRICK ENGINEERING INC.
346 TAFT AVENUE
GLEN ELLYN, ILLINOIS 60137

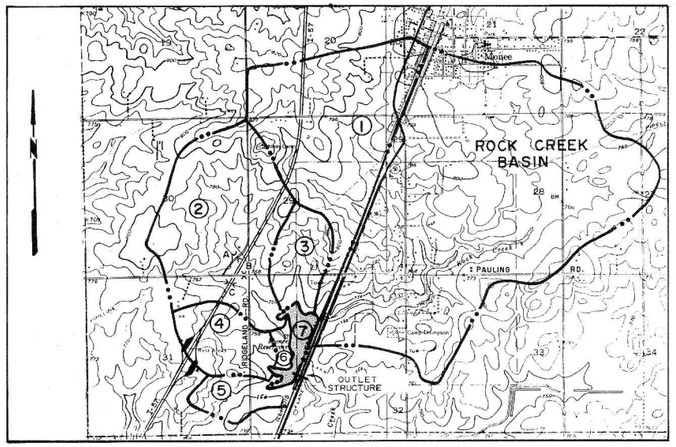
DATE	SOURCE

Illinois Department of Transportation
Division of Aeronautics

SSA SouthSuburbanAirport

SSA MASTER PLAN - FLOODPLAINS REPORT
APPENDIX D-4 (CONT.)
AS BUILT/ RECORD DRAWINGS FOR MONEE RESERVOIR

JAN 22, 2013 1:37 PM SCHE00827



MAP OF DRAINAGE AREAS

Scale 0 2000 Feet

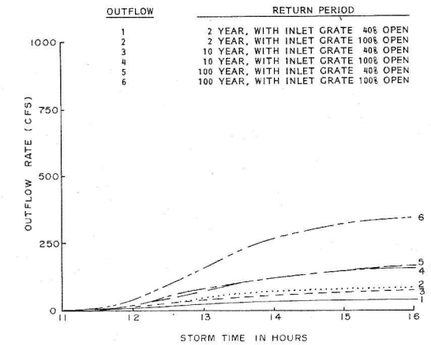
SUB-BASIN CHARACTERISTICS		
SUB-BASIN	RUNOFF CURVE NUMBER	DRAINAGE AREA (ac)
1	85	543.5
2	85	498.8
3	84	126.7
4	86	145.1
5	85	79.5
6	75	18.3
7	100	43.1
TOTAL		1,455.0

CULVERT TABLE

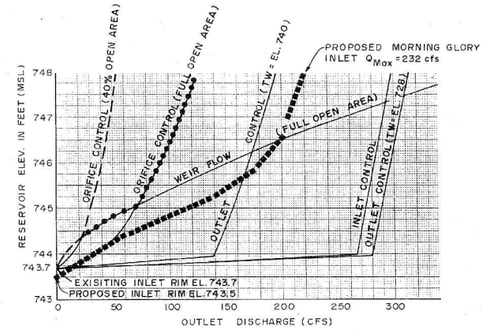
A TWIN 3'H X 6'W CONCRETE BOX CULVERT

B 5'H X 8'W CONCRETE BOX CULVERT

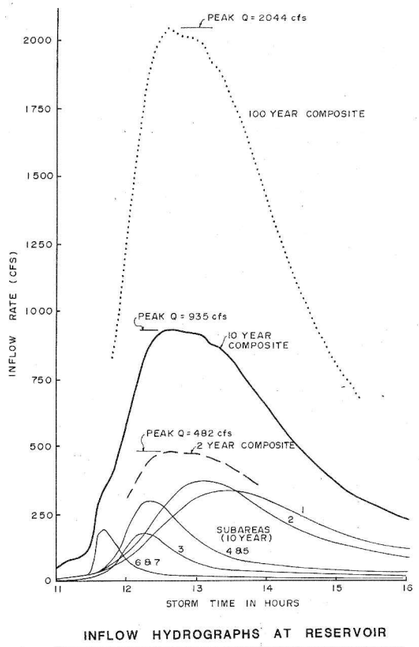
C 24" DIA. CONCRETE PIPE



OUTFLOW HYDROGRAPHS AT RESERVOIR OUTLET



OUTFLOW RATES FROM RESERVOIR OUTLET



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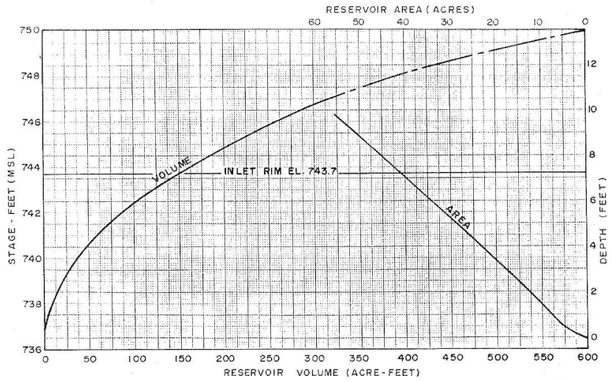
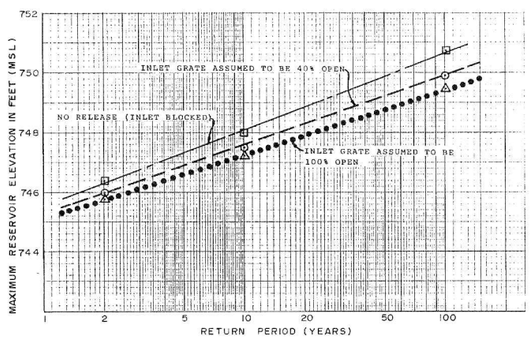


STAGE-AREA-VOLUME RELATIONSHIP



MAXIMUM RESERVOIR ELEVATION VS. RETURN PERIOD
FOR ORIFICE AND WEIR CONTROL AT THE OUTLET STRUCTURE

NOTES

1. DRAINAGE AREAS WERE DETERMINED WITH THE AID OF THE U.S.G.S. 7.5 MINUTE TOPOGRAPHICAL MAPS OF FRANKFORT, ILL, 1953, PHOTOREVISED 1973 AND STEGER, ILL, 1953, PHOTOREVISED 1973. ALSO UTILIZED WAS AN AERIAL TOPOGRAPHIC SURVEY, RACCOON GROVE, SHEET 2 OF 2, SCALE 1" = 100', CONTOUR INTERVAL = 2', DATED 11-21-77, BY AIR MAPS, INC., ELKHART, INDIANA. A SITE RECONNAISSANCE WAS MADE ON NOVEMBER 23, 1984, BY A PATRICK ENGINEERING ENGINEER.
2. SOIL TYPES WITHIN THE DRAINAGE BASINS WERE DETERMINED WITH THE AID OF THE WILL COUNTY SOIL MANUAL, PREPARED BY THE WILL COUNTY REGIONAL PLANNING DEPARTMENT, JUNE 1975.
3. GROUND COVER WAS DETERMINED ON THE BASIS OF OBSERVED CONDITIONS DURING FIELD RECONNAISSANCE IN NOVEMBER 1984.
4. INFLOW AND OUTFLOW HYDROGRAPHS WERE DETERMINED ON THE BASIS OF STORMS WITH 2, 10 AND 100 YEAR FREQUENCIES, 24 HOUR DURATION (REF. TECHNICAL LETTER 13, RAINFALL FREQUENCIES, ILLINOIS STATE WATER SURVEY, DECEMBER 1970), AND A SOIL CONSERVATION SERVICE (S.C.S.) TYPE II RAINFALL DISTRIBUTION. A COMPUTERIZED VERSION OF THE S.C.S. TR-55 PROCEDURES FOR CONVERTING RAINFALL TO RUNOFF WAS UTILIZED IN THE ANALYSIS.
5. TIME OF CONCENTRATION WERE BASED ON S.C.S. NEH-4 NOMOGRAPH VALUES WHICH WERE DETERMINED BY SCALING THE GROUND SLOPE AND DISTANCE AND GROUND COVER CONDITIONS FROM PREVIOUSLY REFERENCED MAPS.
6. THE OUTLET STRUCTURE WAS FIELD SURVEYED IN NOVEMBER 1984. THE TRASHRACK AND OUTLET CAP WERE PARTIALLY BLOCKED WITH DEBRIS.
7. A COMPUTERIZED VERSION OF THE STORAGE - INDICATION WORKING CURVE (MODIFIED PULS) METHOD OF RESERVOIR ROUTING WAS UTILIZED TO ESTIMATE THE WATER LEVEL IN THE RESERVOIR AS A FUNCTION OF THE INFLOW. THIS PROCEDURE ASSUMES THAT THE DISCHARGE FROM THE BASIN IS A FUNCTION OF THE STAGE - STORAGE CHARACTERISTICS OF THE BASIN AND ASSUMES A CONSTANT TAILWATER ELEVATION.
8. WATER SURFACE ELEVATIONS IN THE RESERVOIR ARE INDEPENDENT OF THE TAILWATER IN ROCK CREEK AND DEPEND UPON THE EFFICIENCY OF THE INLET ENTRANCE.
9. POSSIBLE SEEPAGE LOSS FROM THE RESERVOIR THROUGH THE RAILROAD EMBANKMENT WAS NOT CONSIDERED. NO SEEPAGE LOSS THROUGH THE RESERVOIR BOTTOM SEDIMENTS WAS ASSUMED.
10. FOR CONSTRUCTION OF THE SPILLWAY IMPROVEMENTS, THE INLET GRATE SHOULD BE CONSIDERED TO BE BLOCKED FOR INLET IMPROVEMENTS AND 100% OPEN FOR OUTLET IMPROVEMENTS. OUTLET IMPROVEMENTS MUST CONSIDER THE DISCHARGE FROM THE MORNING GLORY INLET IF IN PLACE. THE DISCHARGE FROM THE PROPOSED MORNING GLORY INLET IS SHOWN IN THE ABOVE GRAPH.

⚠ DRAWING REPRESENTS THE HYDROLOGIC CONDITIONS PRIOR TO CONSTRUCTION.

REV.	DATE	DESCRIPTION	DR BY	APP BY
⚠	2/24/89	"AS BUILT" INFORMATION ADDED	R.M.L.	J.C.S.

SCALE: AS SHOWN | JOB NO. 1988 | DATE: MAY, 1988 | DES BY K.M.B. | DR BY W.R.M. | CHK BY D.P.D. | APP BY D.P.D.

CLIENT: Forest Preserve District of Will Co.

PROJECT: MONEE RESERVOIR-RACCOON GROVE WILL COUNTY, ILLINOIS

SHEET TITLE: ⚠ ~~EXISTING~~ HYDROLOGIC & HYDRAULIC SURFACE WATER CONDITIONS

PATRICK ENGINEERING INC.
Geotechnical/Environmental Engineers
Glen Ellyn, Illinois

SHEET ____ OF ____ DRAWING NO. 198D-010

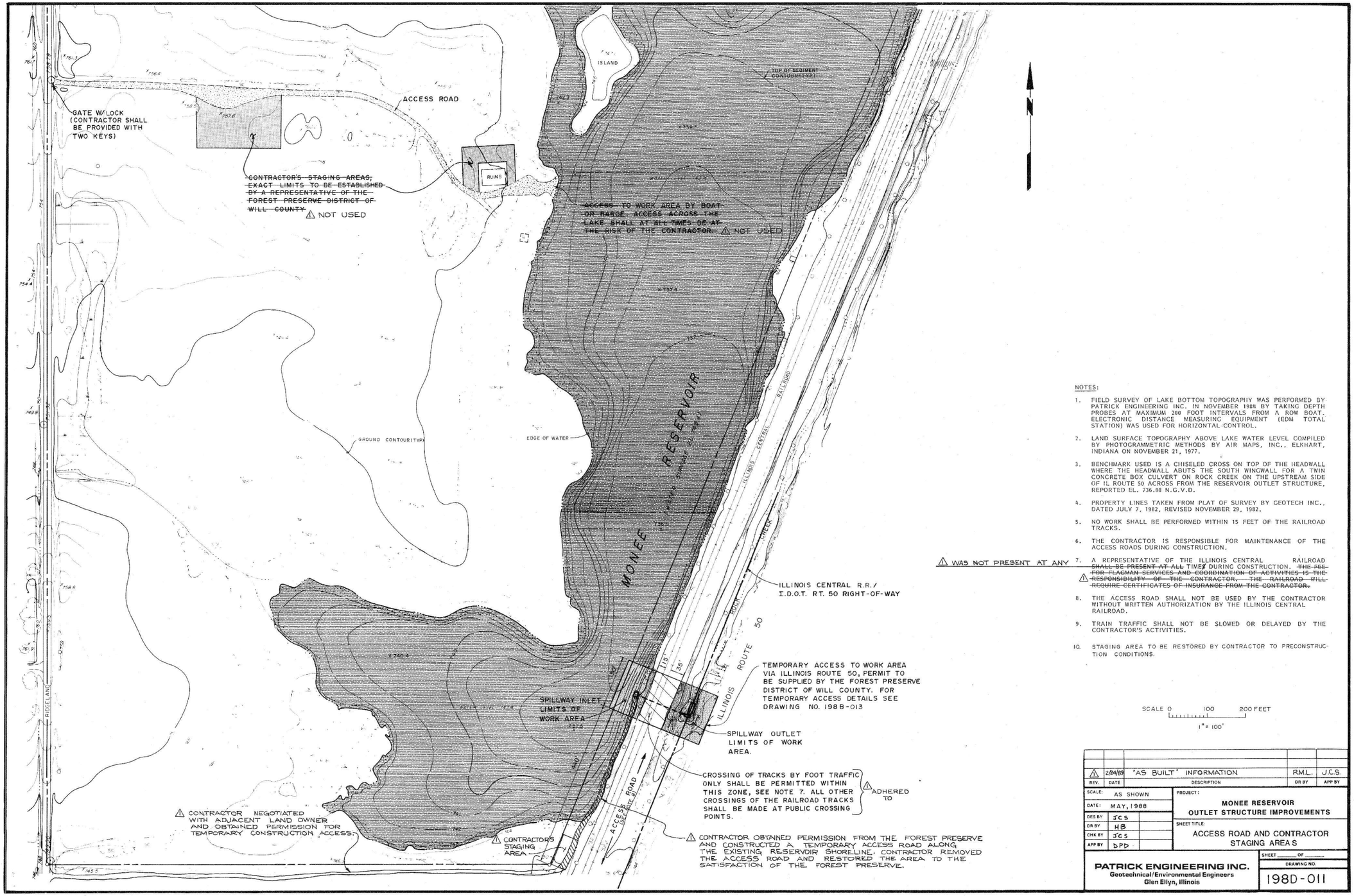
DATE	SOURCE

Illinois Department of Transportation
Division of Aeronautics

SSA SouthSuburbanAirport

SSA MASTER PLAN - FLOODPLAINS REPORT
APPENDIX D-4 (CONT.)
AS BUILT/ RECORD DRAWINGS FOR MONEE RESERVOIR

JAN 22, 2013 1:38 PM SCHE0827



NOTES:

1. FIELD SURVEY OF LAKE BOTTOM TOPOGRAPHY WAS PERFORMED BY PATRICK ENGINEERING INC. IN NOVEMBER 1984 BY TAKING DEPTH PROBES AT MAXIMUM 200 FOOT INTERVALS FROM A ROW BOAT. ELECTRONIC DISTANCE MEASURING EQUIPMENT (EDM TOTAL STATION) WAS USED FOR HORIZONTAL CONTROL.
2. LAND SURFACE TOPOGRAPHY ABOVE LAKE WATER LEVEL COMPILED BY PHOTOGRAMMETRIC METHODS BY AIR MAPS, INC., ELKHART, INDIANA ON NOVEMBER 21, 1977.
3. BENCHMARK USED IS A CHISELED CROSS ON TOP OF THE HEADWALL WHERE THE HEADWALL ABUTS THE SOUTH WINGWALL FOR A TWIN CONCRETE BOX CULVERT ON ROCK CREEK ON THE UPSTREAM SIDE OF IL ROUTE 50 ACROSS FROM THE RESERVOIR OUTLET STRUCTURE, REPORTED EL. 736.08 N.G.V.D.
4. PROPERTY LINES TAKEN FROM PLAT OF SURVEY BY GEOTECH INC., DATED JULY 7, 1982, REVISED NOVEMBER 29, 1982.
5. NO WORK SHALL BE PERFORMED WITHIN 15 FEET OF THE RAILROAD TRACKS.
6. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF THE ACCESS ROADS DURING CONSTRUCTION.
7. A REPRESENTATIVE OF THE ILLINOIS CENTRAL RAILROAD ~~SHALL BE PRESENT AT ALL~~ TIMES DURING CONSTRUCTION. ~~THE FEE FOR FLAGMAN SERVICES AND COORDINATION OF ACTIVITIES IS THE RESPONSIBILITY OF THE CONTRACTOR. THE RAILROAD WILL REQUIRE CERTIFICATES OF INSURANCE FROM THE CONTRACTOR.~~ ⚠ WAS NOT PRESENT AT ANY
8. THE ACCESS ROAD SHALL NOT BE USED BY THE CONTRACTOR WITHOUT WRITTEN AUTHORIZATION BY THE ILLINOIS CENTRAL RAILROAD.
9. TRAIN TRAFFIC SHALL NOT BE SLOWED OR DELAYED BY THE CONTRACTOR'S ACTIVITIES.
10. STAGING AREA TO BE RESTORED BY CONTRACTOR TO PRECONSTRUCTION CONDITIONS.

REV.	DATE	DESCRIPTION	DR BY	APP BY
⚠	2/24/89	'AS BUILT' INFORMATION	R.M.L.	J.C.S.

SCALE:	AS SHOWN
DATE:	MAY, 1988
DES BY	JCS
DR BY	HB
CHK BY	JCS
APP BY	DPD

PROJECT: MONEE RESERVOIR OUTLET STRUCTURE IMPROVEMENTS

SHEET TITLE: ACCESS ROAD AND CONTRACTOR STAGING AREAS

SHEET ____ OF ____ DRAWING NO. 198D-011

PATRICK ENGINEERING INC.
Geotechnical/Environmental Engineers
Glen Ellyn, Illinois

DATE	SOURCE

Illinois Department of Transportation
Division of Aeronautics

SSA SouthSuburbanAirport

SSA MASTER PLAN - FLOODPLAINS REPORT
APPENDIX D-4 (CONT.)
AS BUILT/ RECORD DRAWINGS FOR MONEE RESERVOIR

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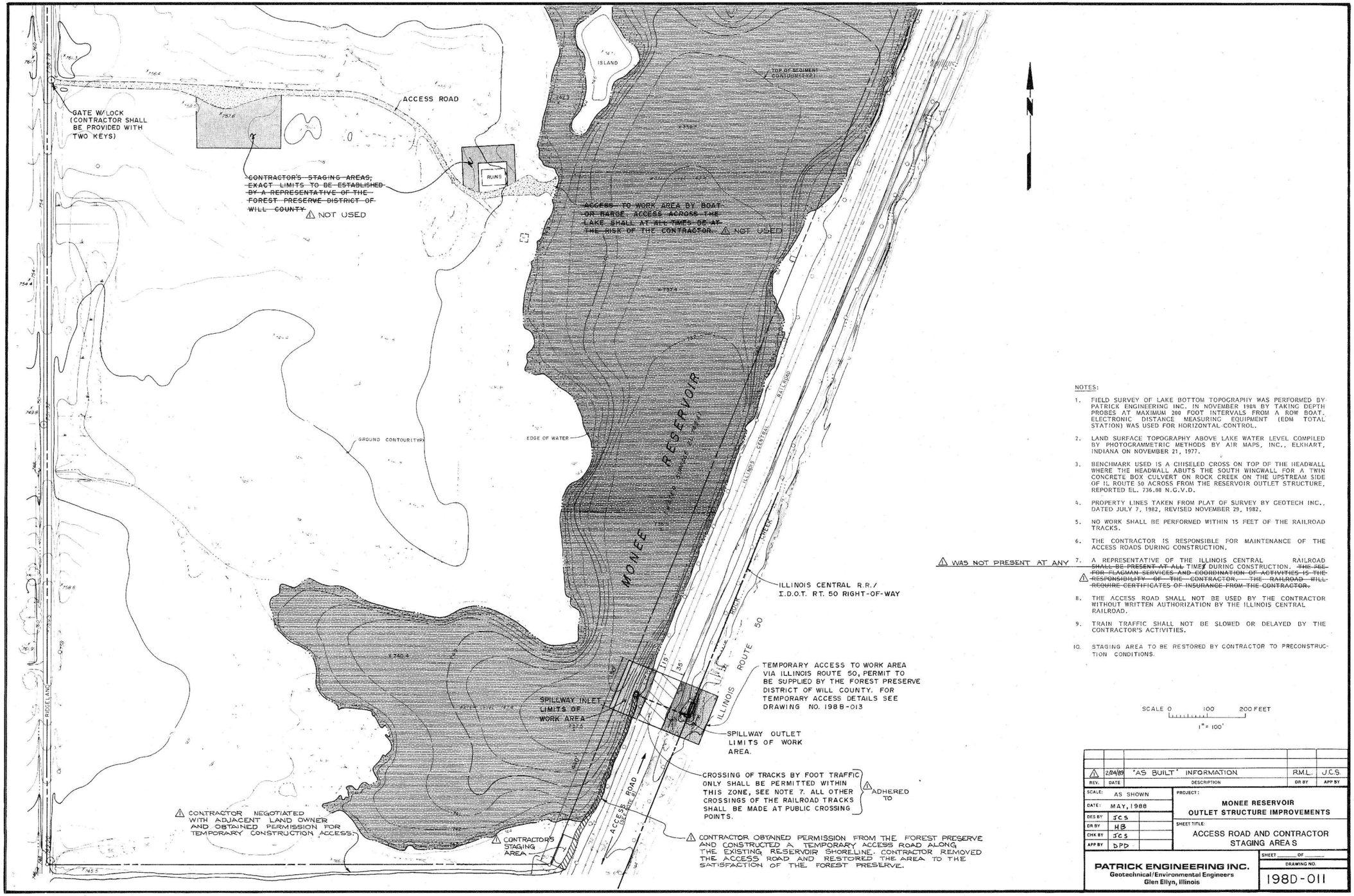

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REV.	DATE	DESCRIPTION	DR BY	APP BY
⚠	2/24/89	'AS BUILT' INFORMATION	R.M.L.	J.C.S.

SCALE:	AS SHOWN
DATE:	MAY, 1988
DES BY	JCS
DR BY	HB
CHK BY	JCS
APP BY	DPD

PROJECT:
MONEE RESERVOIR
OUTLET STRUCTURE IMPROVEMENTS

SHEET TITLE:
ACCESS ROAD AND CONTRACTOR STAGING AREAS

SHEET ____ OF ____
DRAWING NO.
198D-011

PATRICK ENGINEERING INC.
Geotechnical/Environmental Engineers
Glen Ellyn, Illinois

DATE	SOURCE

Illinois Department of Transportation
Division of Aeronautics

SSA
SouthSuburbanAirport

SSA MASTER PLAN - FLOODPLAINS REPORT
APPENDIX D-4 (CONT.)
AS BUILT/ RECORD DRAWINGS FOR MONEE RESERVOIR

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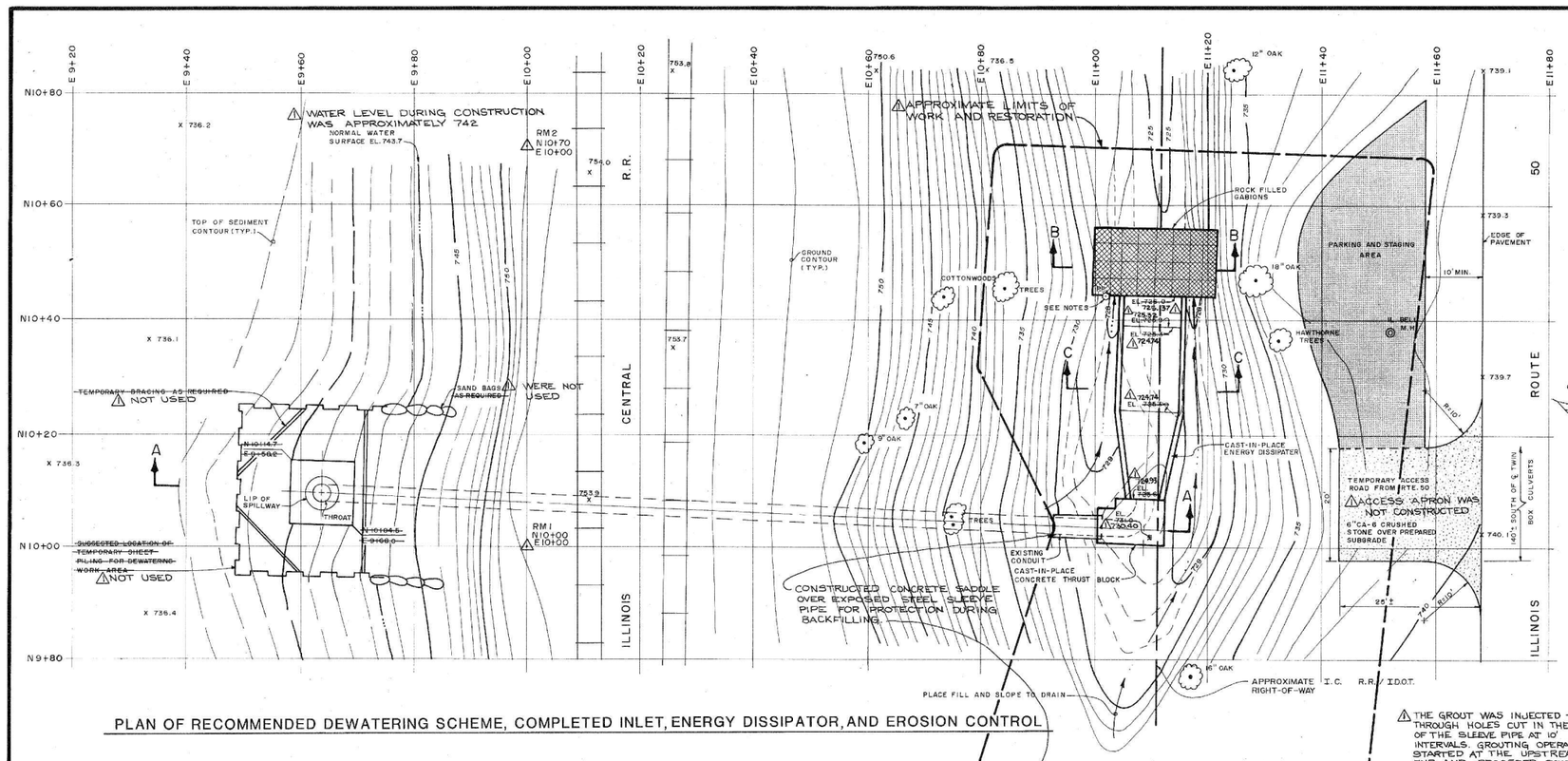
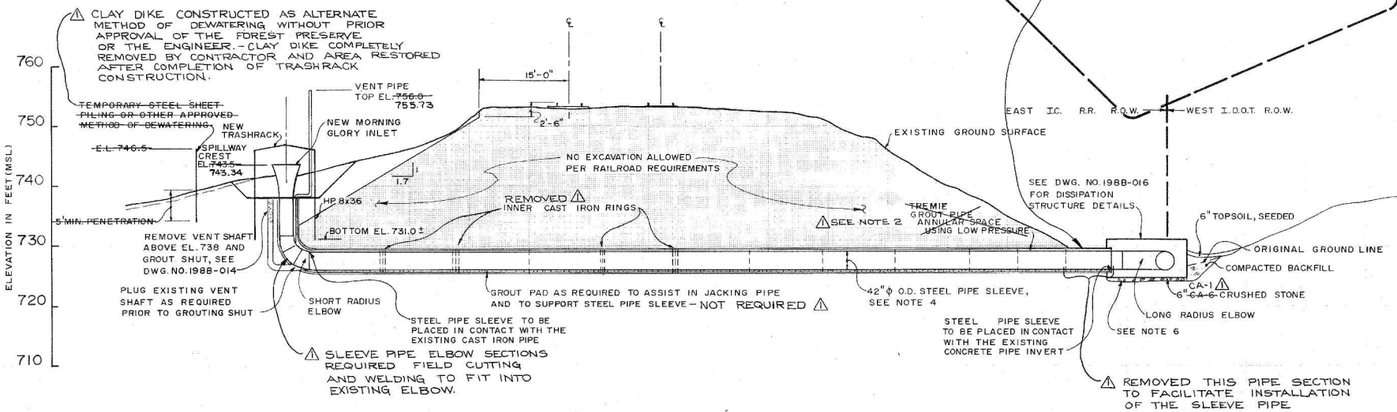
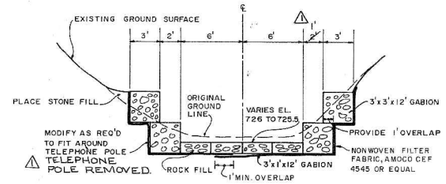


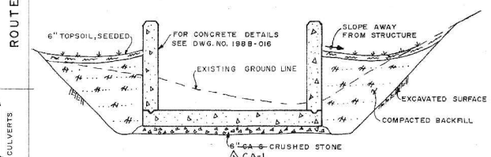
PLAN OF RECOMMENDED DEWATERING SCHEME, COMPLETED INLET, ENERGY DISSIPATOR, AND EROSION CONTROL



CROSS SECTION THROUGH COMPLETED INLET & CONDUIT, A-A



ROCK FILLED GABIONS
DITCH PROTECTION AT OUTLET, B-B



DISSIPATION STRUCTURE BACKFILL (TYP.) C-C

NOTES:

1. THE TEMPORARY ACCESS FROM ROUTE 50 SHALL BE MAINTAINED BY THE CONTRACTOR SO AS TO PREVENT THE TRANSPORT OF SOIL AND DEBRIS ONTO THE ILLINOIS ROUTE 50 PAVEMENT SURFACE. THE TEMPORARY ACCESS AND PARKING AND STAGING AREA SHALL BE RESTORED BY THIS CONTRACTOR TO THE PRECONSTRUCTION CONDITION AFTER PROJECT COMPLETION. PERMITS SHALL BE SUPPLIED BY THE FOREST PRESERVE DISTRICT.
2. THE GROUTING OF THE ANNULAR SPACE BETWEEN THE OLD CAST IRON PIPE AND THE NEW 42-INCH DIAMETER STEEL PIPE SLEEVE SHALL BE PERFORMED PRIOR TO DISSIPATION STRUCTURE CONSTRUCTION. ~~THE GROUT SHALL BE INJECTED VIA 1" ϕ PIPES WHICH ARE PLACED DURING PIPE JACKING OPERATIONS. THE PIPES MAY EITHER BE WITHDRAWN OR, MAY REMAIN IN PLACE PROVIDED THEY ARE FULLY GROUTED SHUT.~~ THE PRESSURE SHALL NOT EXCEED 20 PSI WITHOUT APPROVAL OF THE ENGINEER.
3. THE INNER CAST IRON RINGS MAY BE REMOVED BY THE CONTRACTOR, ~~AT HIS OWN RISK. TO FACILITATE PIPE JACKING OPERATIONS. REMOVAL OF THE RINGS MAY PRODUCE INFILTRATION QUANTITIES LARGE ENOUGH SUCH THAT DEWATERING OPERATIONS MAY BE REQUIRED.~~
4. THE 42" ϕ STEEL PIPE SLEEVE CAN BE INSTALLED USING A PIPE LENGTH WHICH IS CONVENIENT FOR THE CONTRACTOR FOR HANDLING PURPOSES. NO ADDITIONAL PAYMENT WILL BE MADE FOR PIPE LENGTH VARIATIONS DUE TO FIELD CONDITIONS. ⚠ CONTRACTOR USED 20 FOOT PIPE LENGTHS.
5. THE CONTRACTOR IS RESPONSIBLE FOR PRESERVATION OF UTILITIES DURING CONSTRUCTION. ⚠ ~~SPECIFICALLY,~~ THE POWERPOLE LOCATED AT THE END OF THE DISSIPATION STRUCTURE ~~SHALL BE BRACED AND MAINTAINED UNTIL ALL WORK IS COMPLETED.~~ ⚠ WAS REMOVED.
6. MINIMUM ALLOWABLE BEARING CAPACITY OF THE DISSIPATION STRUCTURE FOUNDATION SHALL BE 3000 PSF. SHOULD UNSUITABLE MATERIAL BE ENCOUNTERED AT THE DISSIPATION STRUCTURE FOUNDATION ELEVATION IT SHALL BE REMOVED AND REPLACED WITH CA-7, PLACED IN LIFTS AND COMPACTED TO ACHIEVE PARTICLE INTERLOCK. ⚠ CA-1 WAS PLACED AND COMPACTED IN AREAS WHICH WERE INADVERTENTLY OVEREXCAVATED.
7. TEMPORARY TRAFFIC CONTROL DEVICES SHALL BE USED IN ACCORDANCE WITH, AND SHALL CONFORM TO, THE STATE OF ILLINOIS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS. SPECIFICALLY, SIGNS SHALL BE PLACED NOTIFYING MOTORISTS USING ILLINOIS ROUTE 50 OF THE CONSTRUCTION ENTRANCE.

⚠ THE GROUT WAS INJECTED THROUGH HOLES CUT IN THE TOP OF THE SLEEVE PIPE AT 10' INTERVALS. GROUTING OPERATIONS STARTED AT THE UPSTREAM END AND PROCEEDED DOWNSTREAM. ONCE THE GROUT BEGAN FLOWING OUT OF THE SECOND HOLE (20') DOWNSTREAM OF THE INJECTION POINT THE NOZZLE WAS MOVED 10' DOWNSTREAM. THIS PROCEDURE WAS FOLLOWED THROUGHOUT THE GROUTING PROCESS.

NOT TO SCALE

REV.	DATE	DESCRIPTION	DR BY	APP BY
⚠	2/2/89	"AS BUILT" INFORMATION	R.M.L.	J.C.S.

SCALE:	AS SHOWN
DATE:	MAY, 1988
DES BY	JCS
DR BY	HB, WRM
CHK BY	JCS
APP BY	DPD

PROJECT: MONEE RESERVOIR OUTLET STRUCTURE IMPROVEMENTS

SHEET TITLE: ⚠ CONSTRUCTED ~~PROPOSED~~ PLAN & PROFILE CONDITIONS

PATRICK ENGINEERING INC.
Engineers • Geologists • Hydrologists
Glen Ellyn, Illinois

SHEET ____ OF ____
DRAWING NO. 198D-013

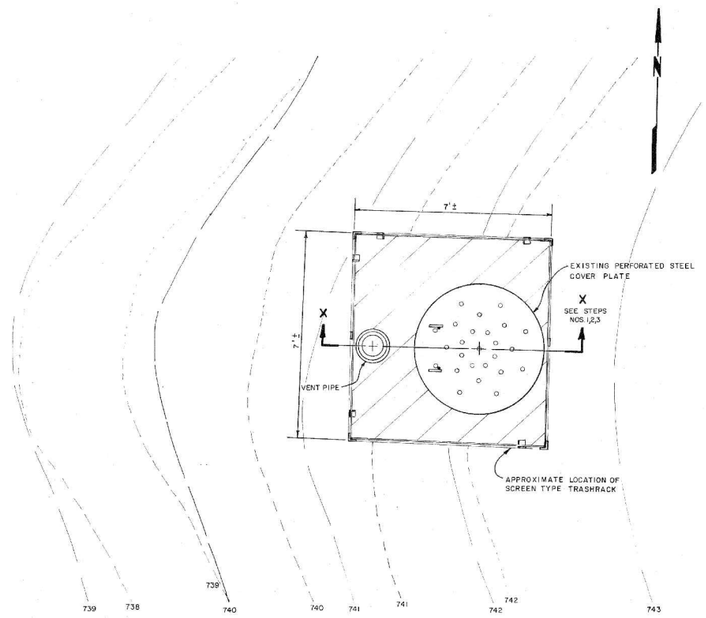
JAN 22, 2013 1:43 PM SCHEDDEZ7

DATE	SOURCE

Illinois Department of Transportation
Division of Aeronautics

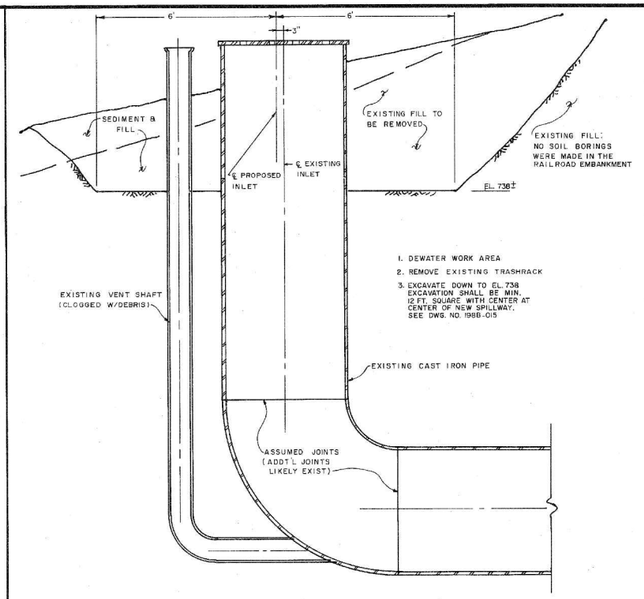
SSA SouthSuburbanAirport

SSA MASTER PLAN - FLOODPLAINS REPORT
APPENDIX D-4 (CONT.)
AS BUILT/ RECORD DRAWINGS FOR MONEE RESERVOIR

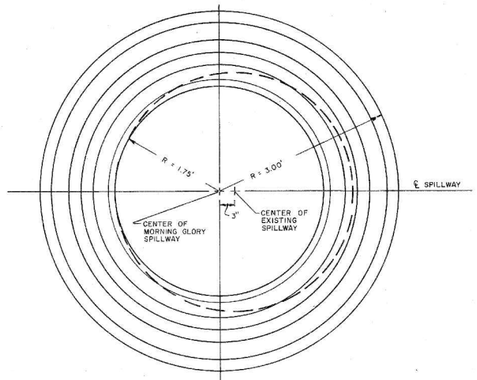


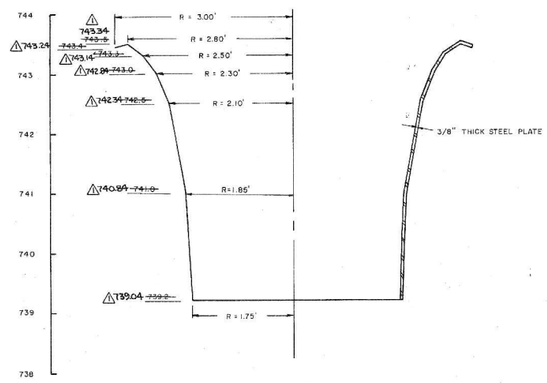
⚠PRIOR TO CONSTRUCTION

~~EXISTING~~ INLET CONDITIONS



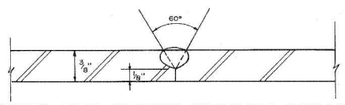
SECTION X-X, STEP 1





PLAN AND SECTION OF MORNING GLORY SPILLWAY

(TO BE SHOP FABRICATED ~~AND APPROVED BY ENGINEER~~ PRIOR TO SHIPPING TO JOB SITE)

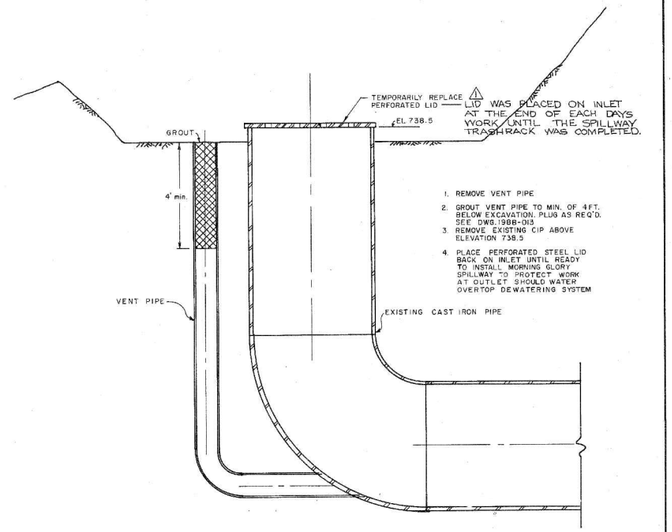


STEEL PIPE SLEEVE WELDING DETAIL

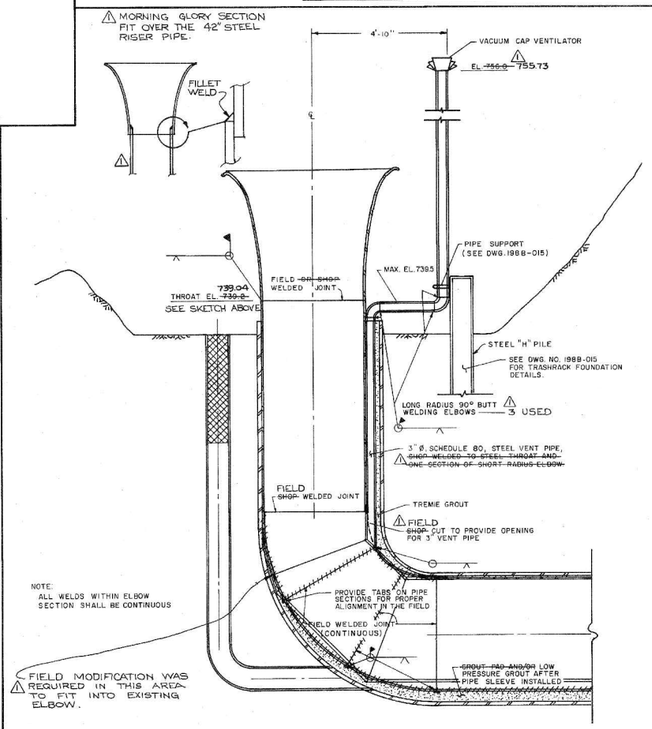
NOTES:

1. THE PLAN SHOWN FOR STAGING OF INLET CONSTRUCTION IS ONLY A RECOMMENDATION. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE METHODS, PROCEDURES, AND RESULTS OF SAME IN ACCOMPLISHING THE WORK.
2. THE WORK SHALL BE PERFORMED IN DRY CONDITIONS AND THE RESERVOIR WATER LEVEL SHALL BE MAINTAINED BY THE CONTRACTOR BETWEEN ~~EL. 746 AND 743.5~~ USING A SERIES OF PUMPS AND FORCE MAINS.

⚠WATER LEVEL DURING CONSTRUCTION WAS APPROXIMATELY 742.0 DUE TO VERY DRY SUMMER



STEP 2



STEP 3

REV.	DATE	DESCRIPTION	DR BY	APP BY
⚠	2/24/89	"AS BUILT" INFORMATION	R.M.L.	J.C.S.

SCALE:	AS SHOWN
DATE:	MAY, 1988
DES BY	JCS
DR BY	WAR
CHK BY	JCS
APP BY	DPD

PROJECT:
MONEE RESERVOIR
OUTLET STRUCTURE IMPROVEMENTS

SHEET TITLE:
STAGING OF INLET CONSTRUCTION

SHEET ____ OF ____
DRAWING NO.
198D-014

PATRICK ENGINEERING INC.
Engineers • Geologists • Hydrologists
Glen Ellyn, Illinois

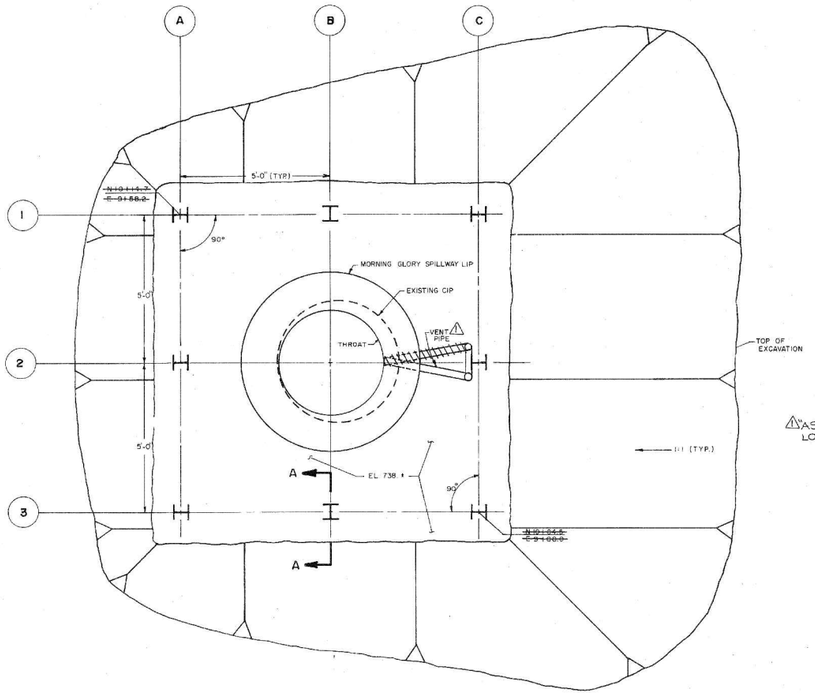
DATE	SOURCE

Illinois Department of Transportation
Division of Aeronautics

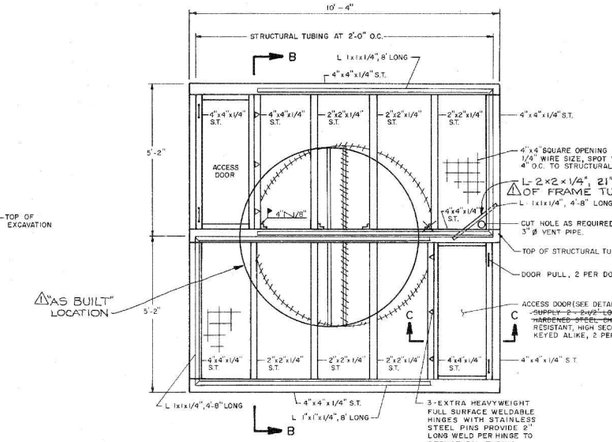
SSA SouthSuburbanAirport

SSA MASTER PLAN - FLOODPLAINS REPORT
APPENDIX D-4 (CONT.)
AS BUILT/ RECORD DRAWINGS FOR MONEE RESERVOIR

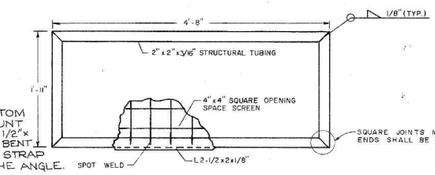
JAN 22, 2013 1:44 PM SCHE0827



TRASHRACK FOUNDATION PLAN

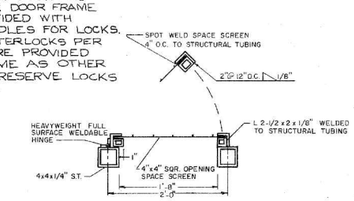


STRUCTURAL PLAN OF TRASHRACK

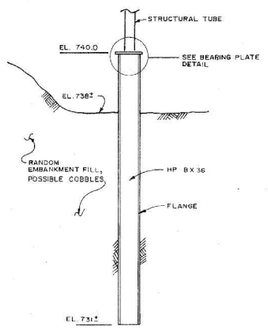


ACCESS DOOR FRAME - PLAN

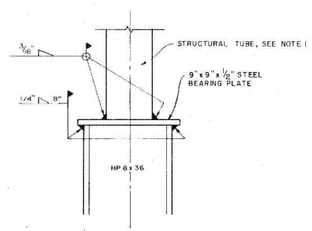
2 TABS PER DOOR AND 2 TABS PER DOOR FRAME WERE PROVIDED WITH COMMON HOLES FOR LOCKS. 2-#5 MASTERLOCKS PER DOOR WERE PROVIDED KEYED SAME AS OTHER FOREST PRESERVE LOCKS ON SITE.



ACCESS DOOR DETAIL, C-C

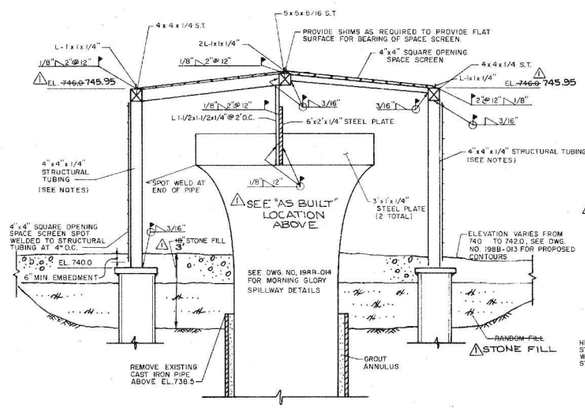


PILE FOUNDATION, A-A

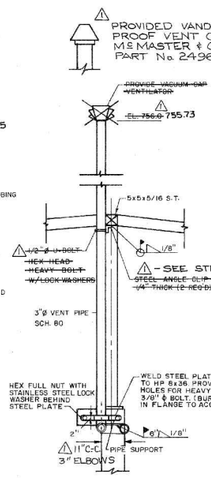


BEARING PLATE DETAIL

BEARING PLATES AND TRASHRACK LEGS WERE OFFSET ON "H" PILES AS REQUIRED TO CENTER TRASHRACK OVER THE SPILLWAY. OFFSET 2" MAXIMUM.



TRASHRACK CROSS-SECTION, B-B



VENT PIPE MOUNTING DETAIL

NOTES:

1. STRUCTURAL TUBES FOR COLUMN LINES A AND C SHALL BE 4" X 4" x 1/4", FOR COLUMN LINE B, 5" X 5" X 5/16" STRUCTURAL TUBES SHALL BE USED.
2. ACCESS DOOR FRAMES SHALL BE FABRICATED IN THE SHOP AND SHALL BE HOT DIP GLAVANIZED AFTER FABRICATION.
3. ENTIRE TRASHRACK STRUCTURE IS HOT DIP GALVANIZED. FIELD WELDS WERE CLEANED AND GIVEN 2 COATS OF ZINC OXIDE PAINT.

REV.	DATE	DESCRIPTION	DR BY	APP BY
1	2/24/89	"AS BUILT" INFORMATION	R.M.L.	J.C.S.

SCALE:	NOT TO SCALE
DATE:	MAY, 1988
DES BY	JCS / RLG
DR BY	WAR
CHK BY	JCS
APP BY	DPD

PROJECT: MONEE RESERVOIR OUTLET STRUCTURE IMPROVEMENTS

SHEET TITLE: TRASHRACK DETAILS

PATRICK ENGINEERING INC.
Engineers • Geologists • Hydrologists
Glen Ellyn, Illinois

SHEET ____ OF ____
DRAWING NO. 198D-015

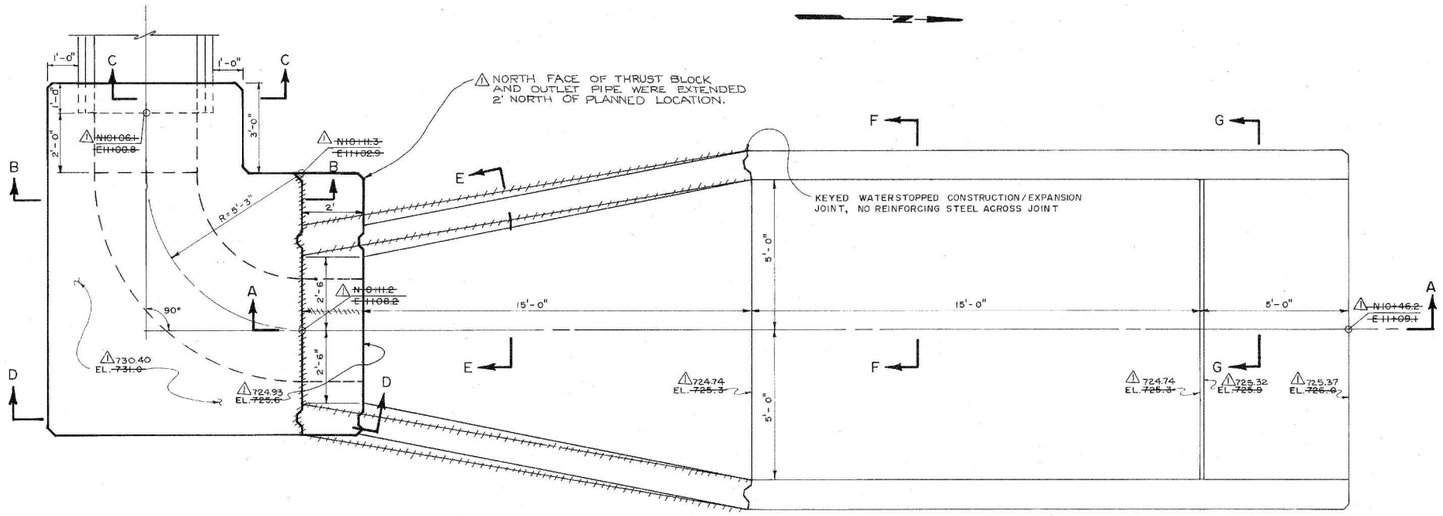
JAN 22, 2013 1:46 PM SCHE00827

DATE	SOURCE

Illinois Department of Transportation
Division of Aeronautics

SSA SouthSuburbanAirport

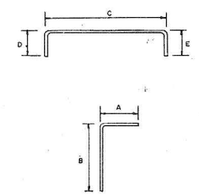
SSA MASTER PLAN - FLOODPLAINS REPORT
APPENDIX D-4 (CONT.)
AS BUILT/ RECORD DRAWINGS FOR MONEE RESERVOIR



PLAN OF THRUST BLOCK AND DISSIPATION STRUCTURE

DISSIPATION STRUCTURE REINFORCEMENT STEEL SCHEDULE								
			DIMENSIONS (FEET-INCHES)				
MARK	QUANTITY	LENGTH FEET-INCHES	A	B	C	D	E
B_1	30	4'-3"	1'-9"	2'-5"	~~11'-9"~~ 10'-9"	2'-6"	2'-6"
B_2	15	15'-5"					
B_3	11	7'-10"	3'-8"	4'-5"	~~11'-9"~~ 10'-9"	3'-4"	3'-4"
B_4	5	20'-5"					
V_1	60	6'-0"					
V_2	38	1'-3"*					
V_3	38	1'-9"*					
V_4	66	5'-3"					
V_5	16	5'-3"					
V_6	10	4'-9"					
V_7	2	4'-9"					
H_1	30	11'-3"*					
H_2	6	8'-3"					
H_3	4	5'-6"					
H_4	13	3'-6"					
H_5	21	8'-0"					
H_6	12	1'-6"					
	8	8'-0"*					
H_7	16	1'-6"*					
	8	2'-6"*					
	4	3'-6"*					
	4	4'-0"*					
	4	6'-0"*					
H_8	8	6'-0"					
H_9	4	1'-0"					
H_{10}	10	10'-0"					
H_{11}	12	2'-0"*					
	8	3'-0"*					
	4	9'-0"*					
	3	6'-0"*					
H_{12}	~~10~~ 14	6'-10"*					
H_{13}	10	8'-6"*					
H_{14}	10	10'-2"					
H_{15}	14	14'-6"					
	4	9'-6"					
	4	4'-6"					
H_{16}	20	10'-2"					
H_{17}	22	19'-9"					
H_{18}	10	14'-6"					
H_{19}	10	19'-6"					
H_{20}	6	14'-6"					
H_{21}	6	19'-6"					

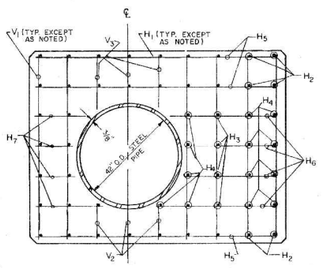
*FIELD CUT AS REQUIRED



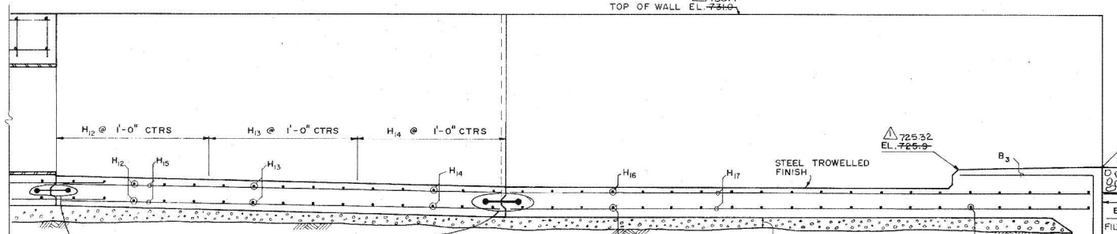
BAR TYPES

O.C. - ON CENTER
E.W. - EACH WAY
E.F. - EACH FACE
CL. - CLEARANCE
CTR.- CENTER

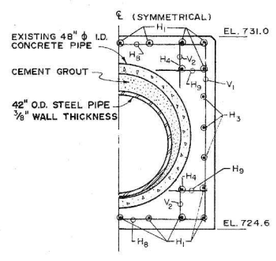
STANDARD ABBREVIATIONS



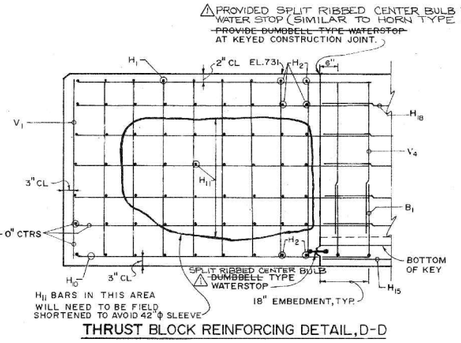
THRUST BLOCK REINFORCING DETAIL, B-B



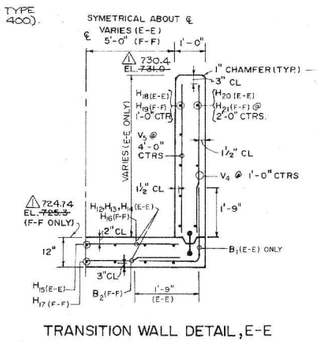
DISSIPATION STRUCTURE, A-A



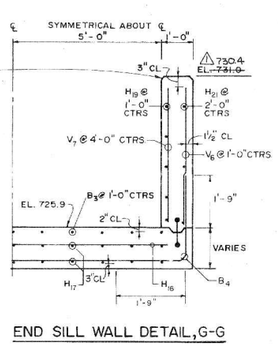
CONNECTION TO EXISTING OUTLET PIPE, C-C



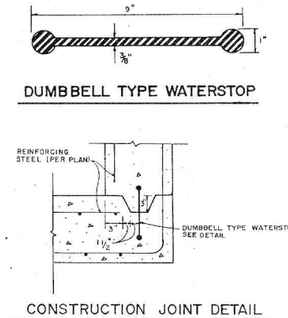
THRUST BLOCK REINFORCING DETAIL, D-D



TRANSITION WALL DETAIL, E-E
STILLING BASIN WALL DETAIL, F-F



END SILL WALL DETAIL, G-G



DUMBBELL TYPE WATERSTOP

CONSTRUCTION JOINT DETAIL

NOTES:

1. ALL REINFORCING STEEL SHALL BE GRADE 60, #4 DEFORMED BARS. ALL BARS EXTENDING THROUGH COLD JOINTS AND CONSTRUCTION JOINTS SHALL BE EPOXY COATED IN ACCORDANCE WITH IDOT SPECIFICATIONS.
2. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3500 PSI AT AN AGE OF 28 DAYS.
3. ALL EXPOSED CONCRETE EDGES SHALL HAVE A 1-INCH CHAMFER.

REV.	DATE	DESCRIPTION	DR BY	APP BY
1	2/24/88	"AS BUILT" INFORMATION	R.M.L.	J.C.S.

SCALE:	NOT TO SCALE
DATE:	MAY, 1988
DES BY	JCS
DR BY	BAF/MAR
CHK BY	JCS
APP BY	DPD

PROJECT: MONEE RESERVOIR OUTLET STRUCTURE IMPROVEMENTS

SHEET TITLE: DISSIPATION STRUCTURE DETAILS

PATRICK ENGINEERING INC.
Engineers • Geologists • Hydrologists
Glen Ellyn, Illinois

SHEET ____ OF ____
DRAWING NO. 198D-016

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Illinois Department of Transportation
Division of Aeronautics

SSA SouthSuburbanAirport

SSA MASTER PLAN - FLOODPLAINS REPORT
APPENDIX D-4 (CONT.)
AS BUILT/ RECORD DRAWINGS FOR MONEE RESERVOIR