50% Design Engineer's Estimate of Probable Construction Cost

PROJECT:	**BMG Airport Stormwater Improvements**		
NUMBER:	**10019716.00.002**		
EST. BY:	**Paul Smith, Woolpert**	**DATE:**	**5/20/2024**
CHECK BY:	**NIck Kowalkowski, Woolpert**	**DATE:**	**5/20/2024**

Item#	Section	Plan Designation	Item Description	Quantity	Unit	Unit Price	Amount
1			Mobilization	1	LS	$180,000.00	$180,000.00
2			Traffic Control	1	LS	$120,000.00	$120,000.00
3			Erosion Control	1	LS	$100,000.00	$100,000.00
4			Grading and restoration of Infield Area between Taxiway B-2 and Runway 35	1	LS	$20,000.00	$20,000.00
5			De-icing Fluid Storage Tank Complete System Install and all Appurtenances	1	LS	$90,000.00	$90,000.00
6			Roof drains 8" PVC pipe	718	LF	$20.00	$14,360.00
7			Roof drains 12" PVC pipe	16	LF	$50.00	$800.00
8			Roof drains 15" PVC pipe	164	LF	$75.00	$12,296.88
9		G	15" R.C. Pipe Culverts, Class III	2467	LF	$120.00	$296,040.00
10		G	18" R.C. Pipe Culverts, Class III	1083	LF	$150.00	$162,381.25
11		G	24" R.C. Pipe Culverts, Class III	1780	LF	$200.00	$356,000.00
12		G	30" R.C. Pipe Culverts, Class III	94	LF	$275.00	$25,850.00
13		G	36" R.C. Pipe Culverts, Class III	96	LF	$325.00	$31,200.00
14		G	42" R.C. Pipe Culverts	148	LF	$350.00	$51,800.00
15		G	48" R.C. Pipe Culverts, Class III	64	LF	$550.00	$35,200.00
16			Cast-In-Place Endwalls including foundation	10	CY	$1,500.00	$15,000.00
17		E	CIPP Lining 8" PVC Pipe	87	LF	$90.00	$7,837.50
18		E	CIPP Lining 12" R.C. Pipe Culverts	382	LF	$85.00	$32,450.45
19		E	CIPP Lining 15" R.C. Pipe Culverts	408	LF	$150.00	$61,234.38
20		E	CIPP Lining 18" R.C. Pipe Culverts	240	LF	$225.00	$54,000.00
21		E	CIPP Lining 24" R.C. Pipe Culverts	530	LF	$287.00	$152,247.52
22		E	CIPP 30" R.C. Pipe Culverts	846	LF	$230.00	$194,685.42
23		E	CIPP 42" Lining R.C. Pipe Culverts	288	LF	$325.00	$93,600.00
24		E	CIPP 48" Lining R.C. Pipe Culverts	1132	LF	$400.00	$452,850.00
25		E	CIPP 30" Lining Corrugated Metal Pipe	236	LF	$230.00	$54,280.00
26		E	CIPP 48" Corrugated Metal Pipe	46	LF	$400.00	$18,241.67
27			Remove and Replace catch Basin	1	EA	$4,000.00	$4,000.00
28			New Slab top open throat inlet	2	EA	$3,500.00	$7,000.00
29			Remove and Replace Manhole - add standard reference	3	EA	$4,000.00	$12,000.00
30		A	Point Repair at separated joint	6	EA	$600.00	$3,600.00
31		B	Internal seal at separated joint	8	EA	$300.00	$2,400.00
32		G	Demolish Existing Storm Pipe	5031	LF	$8.00	$40,244.00
33		H	Hydro Jetting to Clear Internal Blockages	6493	LF	$8.00	$51,941.67
34		K	Concrete Apron at existing inlet/structure, K	9	EA	$1,500.00	$13,500.00
35		L	Concrete Apron at new inlet/structure grate, L	19	EA	$1,500.00	$28,500.00
36		M	Concrete Apron at existing grate, M	9	EA	$1,500.00	$13,500.00
37		N	Concrete Apron and Replace grate	1	EA	$2,200.00	$2,200.00
38		O	Remove debris and re-grade and existing FES	10	EA	$800.00	$8,000.00
39		P	Remove and Replace with New FES	43	EA	$1,200.00	$51,600.00
40		Q	Remove debris and sediment at endwall. Regrade and Stabilize.	3	EA	$500.00	$1,500.00
41		R	Remove and replace with new endwall. Regrade and Stabilize.	3	EA	$3,000.00	$9,000.00
42		R	Install L Type Endwall	10	CY	$1,500.00	$15,000.00
43			Fill Minor Ditch	12292	LF	$4.00	$49,168.00
44		S	Regrade Existing Ditch/ Channel	6280	LF	$4.00	$25,121.67
45		T	Proposed Ditch	187	LF	$20.00	$3,740.00
46		T	Proposed V Ditch 3:1 Side Slope	2103	LF	$5.00	$10,515.00
47		T	Proposed Ditch 1' Flat bottom 3:1 Side Slope	450	LF	$7.00	$3,150.00
48		T	Proposed Ditch 2' Flat bottom 3:1 Side Slope	2382	LF	$8.00	$19,054.67
49		T	Proposed Ditch 2' Flat bottom 3:1 Side Slope 4' depth	151	LF	$18.00	$2,718.00
50		T	Proposed Ditch 3' Flat bottom 3:1 Side Slope	711	LF	$10.00	$7,110.00
51		T	Proposed Ditch 4' Flat bottom 3:1 Side Slope	2995	LF	$28.00	$83,860.00
52		T	Proposed Concrete Lined Swale	2606	LF	$35.00	$91,208.54
53		T	Proposed Grass Swale Regrade 400LF 1.7% Slope (Sheet 102)	400	LF	$4.00	$1,600.00
54		T	Concrete Lined Ditch	1747	LF	$35.00	$61,134.79
55		V	Permanent TRM Turf Reinforced Matting with seeding	1257	SY	$20.00	$25,149.01
56		Y	Install Riprap apron (20 tons ea. at 30 Locations)	600	TN	$125.00	$75,000.00
57		Z	Sinkhole repair	13	EA	$300.00	$3,900.00
58			Milling Asphalt Pavement, 0.0" to 2.0"	850	SY	$15.00	$12,750.00
59			Taxiway: P-209 Crushed Aggregate Base	849	TN	$40.00	$33,952.46
60			Taxiway: P-602 Bituminous Prime Coat (Spray: 0.143 lb/sq ft)	1	TN	$600.00	$331.89
61			Taxiway: P-401 Superpave Bituminous Binder	241	TN	$125.00	$30,142.45
62			Taxiway: P-401 Superpave Bituminous Surface Overlay	193	TN	$135.00	$26,043.08
63			Roadway: Concrete	458	TN	$125.00	$57,244.86
64			Roadway: P-401 Superpave Bituminous Surface Overlay	28	TN	$135.00	$3,792.80
65			Roadway: Varying depth of compacted aggregate size no. 53	573	TN	$40.00	$22,921.95
66			Flowable Fill Storm Pipes	102	CY	$125.00	$12,750.00
67			Fill eroded area and stabilize around Inlet.	1	EA	$500.00	$500.00
68			Secure manhole ring to structure	1	EA	$250.00	$250.00
69			Replace Grate Seal	2	RA	$250.00	$500.00
70			Remove debris and sediment in inlet	1	EA	$400.00	$400.00
71			Re-apply Pipe Bituminous Lining (as directed)	40	LF	$100.00	$4,000.00
72			Metal posts removal before CIPP	2	EA	$250.00	$500.00
73			Remove and replace Headwall	1	EA	$5,000.00	$5,000.00
74			Connecting SD Pipe to Existing Structure - Core, Install and Grouting	1	EA	$500.00	$500.00

	Subtotal	$3,570,349.90
20.0%	Construction Contingency	$714,069.98
	Construction Cost	$4,284,419.89
15.0%	Construction Engineering	$642,662.98
	50% Design Level Estimate	**$4,927,082.87**