Productivity and Cost

Terminology

WBS – WORK BREAKDOWN STRUCTURE - Unique 4-digit “cost code” used by the project team to track cost and claim quantities against a budget.

CBS – COST BREAKDOWN STRUCTURE - Shows the position or location of the WBS compared to its hierarchy. Can be a parent or terminal code.

ACCT CODE – ACCOUNT CODE - Standard company code for typical work. Allows for standard tracking of historical costs.

OB – ORIGINAL BUDGET - Budget based on the original estimate.

CB – CURRENT BUDGET - Original budget + approved owner change orders.

CE – CURRENT ESTIMATE - Most accurate representation of the work – based on take-offs.

QTY – QUANTITY - The total amount of a piece of the scope of work we are installing.

UOM – UNIT OF MEASURE - The unit of the quantity we are installing (LF, CY, DI, EA).

MH – MAN-HOUR - The amount of time budgeted, spent, or earned for a scope of the work.

MHF – MAN-HOUR FACTOR - The number of hours required to perform an activity divided by a defined quantity.

G/L – GAIN OR LOSS - The man-hour or dollar gain loss for a given scope of work, found by subtracting the earned value less the spent value.

%CMP – PERCENT COMPLETE - The percent complete of the quantity installed versus the CE quantity.

PF – PRODUCTIVITY FACTOR - Ratio of earned hours over budget hours – demonstrates if your operation is being efficient or productive. Greater than 1.0 is good.

CF – COMPENSATION FACTOR - Ratio to determine if the crew composite cost is better or worse than budget.

LEI – LABOR EFFICIENCY INDEX - Product of PF and CF – demonstrates if your operation is making money overall from a compensation factor and productivity factor.

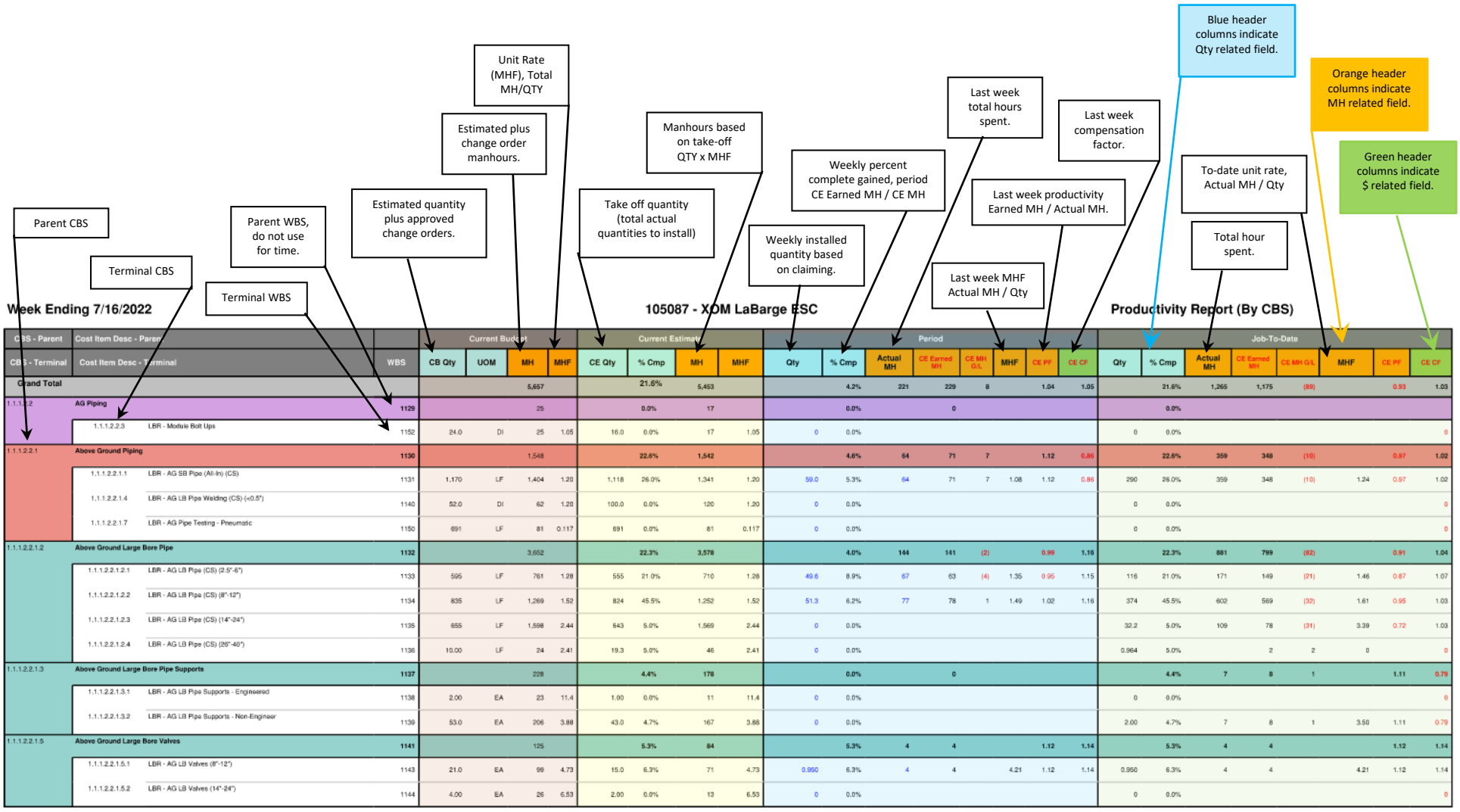
Calculations and Goal Setting Formulas

Description	Column Header	Calculation	Single Letter ID
Unit Rate	MHF	MHF = Manhours / Quantiy	U
Budget Manhours	MH	MH = Qty X MHF	B
Earned Manhours	CE Earned MH	Earned MH = Installed Qty x CE MHF	E
Percent Complete	% Cmp	% Cmp = Earned hours / Budget hours	%
Productivity Factor	PF	PF = Earned MH / Actual MH	P
Compensation Factor	CF	CF = Budget $ per hour / Actual $ per hour	C
Labor Effiency Index	LEI	LEI = PF x CF	L

Crew Goal Setting Formulas

Hours Quantities Units	H Q U	Quantity Hours Hours	× ÷ ÷	Unit (MHF) Unit (MHF) Quantity	= = =	Hour Quantity Unit (MHF)
Productivity Factor	E P A	Productivity Earned Hours Earned Hours	× ÷ ÷	Actual Hours Actual Hours Productivity	= = =	Earned Hours Productivity Actual Hours
Earned Hours	E Q U	Quantity Earned Hours Earned Hours	× ÷ ÷	Unit (MHF) Unit (MHF) Quantity	= = =	Earned Hours Quantity Unit (MHF)
Duration/ Crew Size	B D C	Duration Hours Budget Hours Budget Hours	× ÷ ÷	Crew Size Crew Size Duration	= = =	Budget Hours Duration Crew Size
Percent Complete	I B %	Budget Quantity Installed Quantity Installed Quantity	× ÷ ÷	% Complete % Complete Budget Quantity	= = =	Installed Quantity Budget Quantity % Complete
Percent Complete	E B %	Budget Hours Earned Hours Earned Hours	× ÷ ÷	% Complete % Complete Budget Hours	= = =	Earned Hours Budget Hours % Complete
Compensation Factor	B C A	Comp Factor Bid Comp Factor Bid Comp Factor	× ÷ ÷	Actual Comp Rate Actual Comp Rate Comp Factor	= = =	Bid Comp Rate Comp Factor Actual Comp Rate
Labor Efficiency Index (LEI)	L P C	Productivity LEI LEI	× ÷ ÷	Comp Factor Comp Factor Productivity	= = =	LEI Productivity Comp Factor

Productivity Report



CBS - Parent	Cost Item Desc - Parent		Current Budget				Current Estimate				Period							Job-To-Date							
CBS - Terminal	Cost Item Desc - Terminal	WBS	CB Qty	UOM	MH	MHF	CE Qty	% Cmp	MH	MHF	Qty	% Cmp	Actual MH	CE Earned MH	CE MH G/L	MHF	CE PF	CE CF	Qty	% Cmp	Actual MH	CE Earned MH	CE MH G/L	MHF	CE PF	CE CF
Grand Total					5,657			21.6%	5,453			4.2%	221	229	8		1.04	1.05		21.6%	1,265	1,175	(89)		0.93	1.03
1.1.1.2.2	AG Piping	1129			25			0.0%	17			0.0%		0						0.0%						
	1.1.1.2.2.3 LBR - Module Bolt Ups	1152	24.0	DI	25	1.05	16.0	0.0%	17	1.05	0	0.0%							0	0.0%						0
1.1.1.2.2.1	Above Ground Piping	1130			1,548			22.6%	1,542			4.6%	64	71	7		1.12	0.86		22.6%	359	348	(10)		0.97	1.02
	1.1.1.2.2.1.1 LBR - AG SB Pipe (All-In) (CS)	1131	1,170	LF	1,404	1.20	1,118	26.0%	1,341	1.20	59.0	5.3%	64	71	7	1.08	1.12	0.86	290	26.0%	359	348	(10)	1.24	0.97	1.02
	1.1.1.2.2.1.4 LBR - AG LB Pipe Welding (CS) (<0.5")	1140	52.0	DI	62	1.20	100.0	0.0%	120	1.20	0	0.0%							0	0.0%						0
	1.1.1.2.2.1.7 LBR - AG Pipe Testing - Pneumatic	1150	691	LF	81	0.117	691	0.0%	81	0.117	0	0.0%							0	0.0%						0
1.1.1.2.2.1.2	Above Ground Large Bore Pipe	1132			3,652			22.3%	3,578			4.0%	144	141	(2)		0.99	1.16		22.3%	881	799	(82)		0.91	1.04
	1.1.1.2.2.1.2.1 LBR - AG LB Pipe (CS) (2.5"-6")	1133	595	LF	761	1.28	555	21.0%	710	1.28	49.6	8.9%	67	63	(4)	1.35	0.95	1.15	116	21.0%	171	149	(21)	1.46	0.87	1.07
	1.1.1.2.2.1.2.2 LBR - AG LB Pipe (CS) (8"-12")	1134	835	LF	1,269	1.52	824	45.5%	1,252	1.52	51.3	6.2%	77	78	1	1.49	1.02	1.16	374	45.5%	602	569	(32)	1.61	0.95	1.03
	1.1.1.2.2.1.2.3 LBR - AG LB Pipe (CS) (14"-24")	1135	655	LF	1,598	2.44	643	5.0%	1,569	2.44	0	0.0%							32.2	5.0%	109	78	(31)	3.39	0.72	1.03
	1.1.1.2.2.1.2.4 LBR - AG LB Pipe (CS) (26"-40")	1136	10.00	LF	24	2.41	19.3	5.0%	46	2.41	0	0.0%							0.964	5.0%		2	2	0		0
1.1.1.2.2.1.3	Above Ground Large Bore Pipe Supports	1137			228			4.4%	178			0.0%		0						4.4%	7	8	1		1.11	0.79
	1.1.1.2.2.1.3.1 LBR - AG LB Pipe Supports - Engineered	1138	2.00	EA	23	11.4	1.00	0.0%	11	11.4	0	0.0%							0	0.0%						0
	1.1.1.2.2.1.3.2 LBR - AG LB Pipe Supports - Non-Engineer	1139	53.0	EA	206	3.88	43.0	4.7%	167	3.88	0	0.0%							2.00	4.7%	7	8	1	3.50	1.11	0.79
1.1.1.2.2.1.5	Above Ground Large Bore Valves	1141			125			5.3%	84			5.3%	4	4			1.12	1.14		5.3%	4	4			1.12	1.14
	1.1.1.2.2.1.5.1 LBR - AG LB Valves (8"-12")	1143	21.0	EA	99	4.73	15.0	6.3%	71	4.73	0.950	6.3%	4	4		4.21	1.12	1.14	0.950	6.3%	4	4		4.21	1.12	1.14
	1.1.1.2.2.1.5.2 LBR - AG LB Valves (14"-24")	1144	4.00	EA	26	6.53	2.00	0.0%	13	6.53	0	0.0%							0	0.0%						0

Weekly period is Sunday through Saturday. Final productivity report is available every Tuesday evening at 10:00 pm.	Estimate Qty & Hrs + approved change orders.	Take Off Qty and hours.	Last week installed quantities, hours, and metrics.	Last week plus previous installed quantities, hours, and metrics.