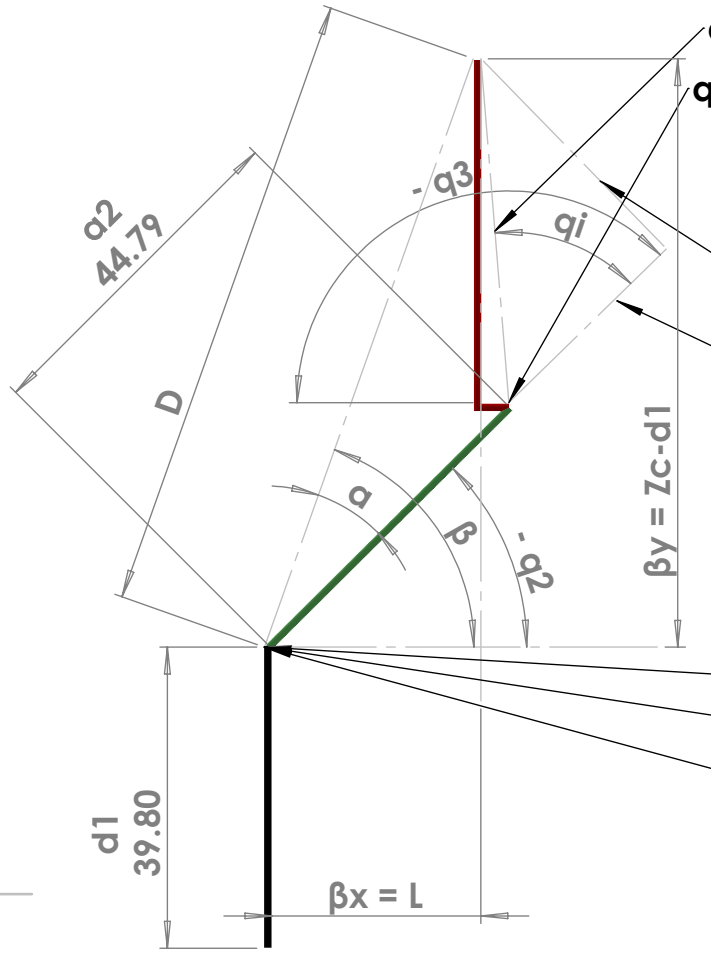
```
q1 = atan2(Yc, Xc);

L = norm(Xc, Yc);

a3_m = norm(a3, d4);

qi = - acos((-(a2^2 + a3_m^2 -  D^2))...
                / (2 * a2 * a3_m));
```

we take qi for elpow up

```
q3 = -(qi + atan2(d4, a3));

ay = a3_m * sin(qi);

ax = a3_m * cos(qi) + a2;

βx = L ;

βy = Zc - d1;

α = atan2(ay, ax);

β = atan2(βy, βx);

q2 = -(β - α);
```



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:		FINISH:		DEBURR AND BREAK SHARP EDGES		DO NOT SCALE DRAWING	REVISION
	NAME	SIGNATURE	DATE				TITLE:
DRAWN							
CHK'D							
APPV'D							
MFG							
Q.A				MATERIAL:		DWG NO.	A4
						Inverse	
				WEIGHT:		SCALE:1:10	SHEET 1 OF 1