

Project: XXXX

Client: XXXX

Date: XXXX

Version: XXXX

STATION SCHEDULE

STATION	Coordinates			Type and Location		Dumpy Checks	
	Easting	Northing	Level	Type	Location	Sprinter	vs EDM
1	505,471.110	103,299.983	5.538	Type 4 - SP	TB, NE site	5.538	0.000
2	505,424.980	103,321.068	5.092	Type 4 - SP	TB, N site	5.092	0.000
3	505,360.185	103,356.405	4.170	Type 4 - SP	TB, NW site	4.170	0.000
4	505,325.375	103,292.797	2.162	Type 4 - SP	SW site	2.162	0.000
5	505,373.241	103,261.646	3.503	Type 4 - SP	S site	3.503	0.000
6	505,421.434	103,234.559	4.441	Type 4 - SP	SE site	4.441	0.000
7	505,450.333	103,229.119	4.018	SN to kerb	SE site on FP	4.017	-0.001

Existing	Residual Co-ordinates of Primary Controls			Type and Location		Original			Divergence		Dumpy Checks	
	Easting	Northing	Level	Description	Location	Easting	Northing	Datum	Plan	Level	Sprinter	vs EDM
15B	505,509.210	103,325.639	5.995	SN to peg	GV N of A259	505509.210	103325.637	5.973	0.002	0.022	5.997	0.002
16B	505,436.927	103,360.521	5.600	SN to peg	GV N of A259	505436.926	103360.525	5.595	0.004	0.005	5.601	0.001
17B	505,329.388	103,387.511	5.050	SN to asphalt	NW old AR	505329.388	103387.509	5.050	0.002	0.000	5.053	0.003

Existing	Check Sightings to Other Controls			Type and Location		Original			Divergence		Dumpy Checks	
	Easting	Northing	Level	Description	Location	Easting	Northing	Datum*	Plan	Level	Sprinter	vs EDM
R10A	505,519.445	103,284.835	8.698	RT to LP	N of AR	505519.457	103284.824	8.702	0.016	-0.004	N/A	N/A
R11A	505,557.598	103,270.950	8.851	RT to LP	N of AR	505557.608	103270.925	8.856	0.027	-0.005	N/A	N/A

* Previously computed by OLS resection to R2 & R5

EDM Precision Traversal Instrument: Leica TS09-Plus-5seconds Date: 12/02/2016

Traversal		Closure Divergence (6 vs 6')			Adjustment
Type	Route	Angular	Cartesian	Level	Distributed
Closed	6-5-4-3-2-1-6'	0°/0'/1"	1mm	3mm	Trivial

Spur Stations		Cross Sighting	
From	To	From	To
1	7	2	7A
1	15B	2	15C
1	16B	2	16C
4	17B	N/A	N/A
1	FS3A	7	FS3B

Abbreviations	
N/S/E/W	North/South/East/West
AR	Access Road
FP	Footpath
GPS	Global Positioning System (RTK)
GV	Grass Verge
LP	Lamp Post
TI	Traffic Island
RT	Retro Target
SN	Survey Nail
SP	Steel Pin
TB	Top of Bank

Check sightings		Divergence to primary sighting		
From	To	Primary	Plan(m)	Level(m)
5	1A	1	0.002	-0.002
4	1C	1	0.002	-0.003
4	2A	2	0.003	-0.002
7	2B	2	0.003	-0.001
6	3A	3	0.004	-0.002
5	3B	3	0.000	-0.002
2	4A	4	0.001	0.000

Check sightings		Divergence to primary		
From	To	Primary	Plan(m)	Level(m)
3	5A	5	0.002	0.001
3	6A	6	0.004	0.000
2	6B	6	0.002	-0.004
2	7A	7	0.002	0.000
2	15C	15B	0.000	0.000
2	16C	16B	0.000	-0.001
7	FSA3B	FSA3A	0.011	0.000

Orientation to Grid Baseline orientation to existing stations 15, 16 & 17. **Rotation:** 15 to 17 **Origin:** MIDPOINT **Datum:** Station 17

Target Co-ordinates						Translation Result			Residuals(mm) Source v Result			
Reference	GPS E	GPS N	GPS H	Station	Source	Easting	Northing	Level	E	N	H	2D
1	505509.210	103325.637	5.973	15B	Original	505509.210	103325.639	5.995	0	-2	-22	2
2	505436.926	103360.525	5.595	16B	Original	505436.927	103360.521	5.600	-1	5	-5	5
3	505329.388	103387.509	5.050	17B	Original	505329.388	103387.511	5.050	0	-2	0	2

Independent GPS Readings (12/02/2016) - Sanity Checks						Translation Result			Checks(mm) Source vs Translation				RTK Quality	
	GPS E	GPS N	GPS H	Station	Source	Easting	Northing	Level	E	N	H	2D	1D	2D
	505471.129	103299.984	5.509	1	GPS	505471.110	103299.983	5.538	19	1	-29	19	0.012	0.008
	505425.013	103321.070	5.064	2	GPS	505424.980	103321.068	5.092	33	2	-28	33	0.016	0.011
	505360.242	103356.420	4.176	3	GPS	505360.185	103356.405	4.170	57	15	6	59	0.018	0.012
	505325.445	103292.854	2.153	4	GPS	505325.375	103292.797	2.162	70	57	-9	90	0.011	0.008
	505373.284	103261.674	3.500	5	GPS	505373.241	103261.646	3.503	43	28	-3	51	0.012	0.009
	505421.444	103234.573	4.436	6	GPS	505421.434	103234.559	4.441	10	14	-5	17	0.011	0.008
	505509.199	103325.660	5.970	15B	GPS	505509.210	103325.639	5.995	-11	21	-25	24	0.024	0.020
	505436.973	103360.494	5.623	16B	GPS	505436.927	103360.521	5.600	46	-27	23	53	0.017	0.013
	505329.476	103387.523	5.080	17B	GPS	505329.388	103387.511	5.050	88	12	30	89	0.021	0.015
	505487.640	103221.891	4.426	FS3A	GPS	505487.674	103221.883	4.432	-34	8	-6	35	0.013	0.009
	505487.640	103221.891	4.426	FS3B	GPS	505487.663	103221.881	4.432	-23	10	-6	25	0.013	0.009

Dumpy checks

Instrument	Leica Sprinter 150m	
Staff	Aluminium telescopic x4	
2 Peg Test	Middle	3.5m to STN1
Station 2	1.712	1.873
Station 1	<u>1.265</u>	<u>1.426</u>
Difference	0.447	0.447

Accuracy - 1.5mm per 1km double run (manufacturer's figures)
 Coefficient of expansion 24ppm/°C (manufacturer's figures)

Check

Traversals

Datum	Backsight	Intermediate	Foresight	Staff section	Collimation	ReducedLevel	Station
5.538	0.119			2	5.657	5.538	1
		1.223		3	5.657	4.434	FS3
		1.640		3	5.657	4.017	7
			1.216	3	5.657	4.441	6
	0.944			1	5.385	4.441	6
		1.882		2	5.385	3.503	5
		3.223		4	5.385	2.162	4
		1.215		2	5.385	4.17	3
			0.293	1	5.385	5.092	2
	2.720			3	7.812	5.092	2
		2.273		3	7.812	5.539	1'
5.538	2.273			3	7.811	5.538	1
			2.210	3	7.811	5.601	16
	2.218			3	7.819	5.601	16
			1.822	2	7.819	5.997	15
	1.012			2	7.009	5.997	15
		1.956		2	7.009	5.053	17

Closure +1mm

Detail Checks

Various check sightings were made to development area perimeter including fences and kerbing.
 Check sightings are overlaid to original survey for assessment of design perimeter tolerance margins. See drawing version 8.4.