

- GENERAL SAFETY NOTES:**
1. WHERE THE BASE (ROAD BASE) HAS BEEN USED AS A TEMPORARY RUNNING SURFACE DURING THE CONTRACT IT SHALL BE THOROUGHLY CLEANED AND POWER WASHED AS NECESSARY. AFTER DRYING AND IMMEDIATELY BEFORE THE BINDER COURSE IS LAID A TACK COAT OF BITUMEN EMULSION CLASS A1-40 OR K1-40 TO BS4344 SHALL BE APPLIED AT A RATE OF 0.35-0.55 LITRES/SQ METER.
 2. ALL RADIUS KERBS WITH A RADIUS OF 12m OR LESS SHALL BE FORMED WITH PROPRIETARY RADIUS KERBS.

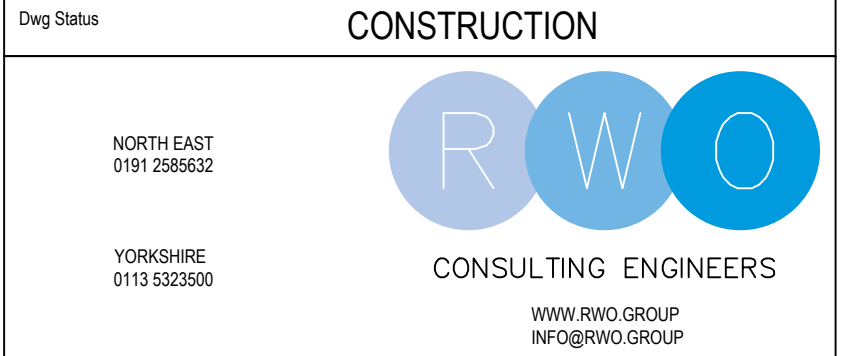
- HEALTH & SAFETY:**
- 1. CONTRACTOR SHOULD BE AWARE OF GENERAL CONSTRUCTION RISKS TO PREVENT SLIPS, TRIPS AND FALLS AND TAKE NECESSARY PRECAUTIONS WITHOUT SPECIAL INSTRUCTION.
- ROADS & DRAINAGE**
- 2. CONTRACTOR TO PROVIDE TRENCH SUPPORTS AS APPROPRIATE AND ENSURE THAT PLANT REMAINS A SAFE DISTANCE FROM TRENCHES PRIOR TO ISLANDING DRAINAGE.
 - 3. WHERE TRENCH EXCAVATIONS ARE REQUIRED, THE SITE SHOULD BE KEPT TO A MINIMUM AND ALL TRENCHES SHOULD BE SURROUNDED BY A BARRIER.
 - 4. CONNECTIONS TO EXISTING SERVICES TO BE MADE BY APPROVED CONTRACTOR ONLY.
 - 5. CONTRACTOR TO MAKE OPERATIVES AWARE OF ASSOCIATED DANGERS TO HEALTH SUCH AS LEPTOSPIROSIS (WELLS DISEASE) AND RECOMMENDED PRECAUTIONS. ADEQUATE WELFARE FACILITIES AND PROTECTIVE CLOTHING TO BE PROVIDED AS REQUIRED.
- UNFINISHED MANHOLES MUST BE COVERED WITH LOAD BEARING MATERIALS AND SURROUNDED WITH BARRIERS.**

- PHASE 5: CABLES**
7. CONTRACTOR TO OBTAIN ALL SERVICE RECORDS PRIOR TO WORKS COMMENCING.
8. SERVICE RECORDS TO BE REFERRED TO PRIOR TO WORK COMMENCING. CONTRACTOR TO PROCEED WITH CAUTION AND SERVICES TO BE LOCATED BY HAND DIG AND PROTECTED ACCORDINGLY.
- EXCAVATION/FILL**
9. CONTRACTOR TO ENSURE RELEVANT MEASURES ARE TAKEN TO KEEP PLANT AND PEOPLE A SAFE DISTANCE FROM STEEP SLOPES DURING THE WORKS.
10. CONTRACTOR TO ENSURE THAT PROCEDURES ARE IN PLACE TO KEEP PEOPLE A SAFE DISTANCE FROM WORKING PLANT WHERE NECESSARY.
11. CONTRACTOR TO REFER TO GROUND INVESTIGATION REPORT FOR CONTAMINATION TESTS AND TO PROVIDE ADEQUATE WELFARE FACILITIES AND PROTECTIVE CLOTHING AS REQUIRED.

- ## RAINAGE SPECIFICATIONS FOR YORKSHIRE WATER
1. ALL ADAPTABLE SEWER WORKS AND MATERIALS TO BE IN ACCORDANCE WITH "CODE FOR ADOPTION", THE RELEVANT BRITISH/EUROPEAN AND YORKSHIRE WATER'S STANDARDS/REGULATIONS/ADDENDUM TO THE MECHANICAL AND ELECTRICAL SPECIFICATION AND KITEMARKED.
 2. ALL SIZES OF COVER SHALL HAVE A CLEAR OPENING OF 500mm AND SHALL BE CLASS D20 TO BS EN 124 WITH 150mm DEEP FRAMES IN HIGHWAYS.
 3. FILLED GROUND MUST BE FILLED AND CONSOLIDATED UNDER THE SUPERVISION AND TO THE SATISFACTION OF YORKSHIRE WATER. ALL MATERIALS MUST BE PROPERLY CARRIED OUT.
 4. YORKSHIRE WATER IS NOT OBLIGED TO ACCEPT FILTER DRAINLAND DRAINAGE RUN-OFF INTO THE PUBLIC SEWER NETWORK OR ADAPTABLE DRAINAGE SYSTEM **(DIRECTLY OR IN-DIRECTLY)**. AN ALTERNATIVE METHOD OF DISPOSAL OF THE LAND DRAINAGE RUN-OFF WILL THEREFORE BE REQUIRED AND YOU WILL HAVE TO OBTAIN THE NECESSARY CONSENT FROM THE DRAINAGE SYSTEM WITH REGARD TO THE DISPOSAL OF THE FILTER DRAINLAND DRAINAGE RUN-OFF.
 5. COVER SIZES SHALL BEARING THE BS1 KITEMARK OR BE REJECTED BY YORKSHIRE WATER INSPECTOR. ALL COVER SIZES SHALL BE TO THE REQUIREMENTS OF THE BRITISH STANDARD BS EN 124. THE COVER FRAME, A LOADING BEARING SLAB SHOULD BE FITTED ABOVE THE COVER SLAB TO BRING THE SIZE DOWN TO 600mm x 600mm FOR THE LAND DRAINAGE SPECIFIED COVER SIZE. PLEASE REFER TO CONCRETE DESIGN AND CONSTRUCTION ASSOCIATION (CPA), TECHNICAL BULLETIN ISSUED AUTUMN 2004 FOR KITEMARKED COVER SLAB OPENING SIZES.
 6. SULPHATE RESISTANT CEMENT (**C20-C42**) AND PRECAST CONCRETE PRODUCTS MUST BE USED AND A LABORATORY REPORT PROVIDED PROOFING THAT SUCH PRECAUTIONS ARE NOT NECESSARY.
 7. THE ADAPTABLE SEWERS SHOULD BE A MINIMUM OF 1m IN MANHOLES 1.5m FROM KERB LINES AND SERVICE MARGINS.
 8. SEWERS MUST HAVE 5 METRES CLEARANCE FROM TREES AND HEDGES OR THE NEAREST OF THE CANOPY.
 9. SEWERS TO BE LAID IN CLASS "3" BEDDING (150mm GRANULAR BED AND SURROUND), WHERE DEPTH OF COVER TO TOP OF THE SEWER IS LESS THAN 1.2m IN HIGHWAYS AND VERGES (OR LESS THAN 500mm IN NON HIGHWAY ACCESS AREAS) THEN A CONCRETE SLAB SHOULD BE PROVIDED ABOVE GRANULAR BED AND SURROUND.
 10. BEDDING AND BACKFILL MATERIAL TO CONFORM TO THE REQUIREMENT OF WATER INDUSTRY SPECIFICATION 4-8-02 (**TABLE A2**).
 11. THE NUMBER SIZE OF MANHOLE WITH MORE THAN ONE CONNECTION IN THEM MAY NOT BE INCREASED AN INCREMENT TO ACCOMMODATE THE CONNECTIONS AND BENEFITS.
 12. YORKSHIRE WATER POLICY IS THAT TYPE "C" BROCK MANHOLES AND 1050mm DIA MANHOLE RINGS ARE NOT TO BE USED IN CONCRETE BEDDING WITH 150mm GRANULAR BED AND SURROUND WITH 1000mm DIA RINGS, WITH THE OPENING SIZED OVER THE CHANNEL, WHERE DEPTH OF COVER TO PIPE, SOFIT IS 1.1 - 1.5m.
 13. ALL ADAPTABLE 150mm SEWER PIPES TO BE KITEMARKED (CERTIFIED TO BS 4-3-01 AND BS EN13478). ADAPTABLE 150mm SEWER PIPES TO BE LAID IN MAXIMUM 1% LENGTHS UNLESS THERE IS A SPECIFIC OPERATIONAL NEED TO LAY LONGER LENGTHS. PLASTIC CHANNEL SECTIONS IN MANHOLES ARE NOT ACCEPTABLE AND YORKSHIRE WATER WOULD PREFER CLAYWARE CHANNEL IN MANHOLES. PLASTIC PIPE IN MANHOLES IS NOT ACCEPTABLE BECAUSE THEY FLOAT AND A SATISFACTORY FIXING CANNOT BE OBTAINED ON THE BENCHING.
 14. THE MINIMUM CRUSHING STRENGTH FOR GLAY PIPES SHALL BE AS FOLLOWS: 100mm DIA, 40kn/m², 150mm DIA, 45kn/m² AND 225mm DIA, 60kn/m². THE MINIMUM CRUSHING STRENGTH FOR CONCRETE PIPES SHALL BE: -CLASS 120 TO EN 1916/S891-11-2002. PLASTIC PIPES SHOULD CONFORM TO BS 4-3-01 AND BS EN13476.
 15. WHERE A B/S2 COVER AND FRAME HAS BEEN APPROVED, THIS MUST NOT BE COATED IN PLASTIC AND MUST HAVE LIFTING EYES AND BE SIZED TO ACCOMMODATE STANDARD LIFTING KEYS. SCREW DOWN COVERS ARE NOT ACCEPTABLE.

- OTHER DRAINAGE NOTES**
1. ALL PRIVATE DRAINAGE DRAINS SHALL BE CARRIED OUT IN ACCORDANCE WITH BUILDING REGULATIONS 2002 EDITION.
2. CONTRACTOR TO ESTABLISH POSITION SIZE AND DEPTH OF ALL EXISTING SEWERS AND SERVICES PRIOR TO COMMENCEMENT OF WORK.
3. THE CONTRACTOR SHALL ALLOW FOR THE PROTECTION, TEMPORARY AND PERMANENT SUPPORT, AND TEMPORARY AND PERMANENT DIVERSION WORKS, AS NECESSARY TO ALL EXISTING SERVICES.
4. THE CONTRACTOR SHALL ALLOW FOR ALL TRAFFIC MANAGEMENT IN CONNECTION WITH ROAD AND SEWER WORKS.
5. THE CONTRACTOR SHALL ALLOW FOR KEEPING SEWER TRENCHES AND EXCAVATIONS AS DRY AS PRACTICABLE BY PUMPING FROM TEMPORARY SUNKS AND DOWNSHEDS AS APPROPRIATE. THE POINT TO WHICH EFFLUENT IS DISCHARGED SHALL BE TO THE PUBLIC DRAINAGE.
6. FOR PIPE SPECIFICATION PLEASE REFER TO ADDITIONAL NOTES.
7. VITRIFIED CLAY PIPES AND FITTINGS SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS EN853 AND BE SPECIFICALLY DESIGNED AND MANUFACTURED TO BE EXTRA STRENGTH TO BS EN853.
8. EQUIVALENT BS EN246 PIPE CRUSHING STRENGTH.
9. PRECAST CONCRETE PRODUCTS SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS 5911 AND BE SPECIFICALLY DESIGNED AND MANUFACTURED TO BE EXTRA STRENGTH TO BS EN246.
10. GULLY GRATES AND FRAMES SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS EN124 AND BE A NON-SKIDDING DESIGN WITH CAPTIVE HINGED ACCESS AND BE BENCHMARKED, LOAD CLASS D400 FOR ROADS AND CLASS D200 FOR FOOTPATHS.
11. BACKFILLING AND REINSTATEMENT TO TRENCHES IN PUBLIC HIGHWAYS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS AND SPECIFICATIONS OF THE ADOPTING AUTHORITY, OR, IN THE ABSENCE OF SUCH, IN ACCORDANCE WITH THE REQUIREMENTS AND SPECIFICATIONS OF THE HIGHWAYS AGENCY. THE PROVISIONS OF H.A.U.C. "SPECIFICATION FOR THE REINSTATEMENT OF OPENINGS IN HIGHWAYS" JUNE 1992, BOTH UNDER SECTION 1 OF THE NEW ROADS AND STREET WORKS ACT 1991.
12. ALL TRADITIONAL RAINWATER PIPE DOWN COMES SHOULD BE DISCHARGED TO TRAPPED GULLIES.
13. ALL SEWIFIC DRAINAGE DOWN COMES TO MANUFACTURERS SPECIFICATION.
14. ALL ROAD GULLIES ARE TO BE TRAPPED GULLIES.
15. ALL GULLY LEADS BE 150mm DIAMETER.
16. ALL SEWIFIC EXISTING DRAINAGE TO BE GRUBBED UP OR GROUTED, ANY EXISTING LINE DRAINAGE SHOULD BE REPORTED TO THE ENGINEER AND RECONNECTED.
17. ALL ROAD GULLIES & LEADS TO BE CLEARED OF DEBRIS UPON COMPLETION OF WORKS.
18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF DRAINAGE WHICH IS NOT KEPT CLEAR OF DEBRIS AND SHOULD ALLOW FOR JETTING THROUGH THE NEW & EXISTING DRAINAGE UPON COMPLETION.
19. CONTRACTOR TO TAKE MEASURES TO PROTECT HIS OPERATIVES WITH RESPECT TO THE PRESENCE OF EXISTING TRENCHES AND EXCAVATIONS THROUGH THE USE OF GAS MONITORING EQUIPMENT AND BREATHING APPARATUS AS REQUIRED.
20. CONTRACTOR TO APPLY FOR SEWER PERMITS AND ROAD OPENING PERMITS AS NECESSARY FROM THE RELEVANT AUTHORITIES, PRIOR TO COMMENCEMENT OF WORKS.
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77. CONTRACTOR TO APPLY FOR SEWER PERMITS AND ROAD OPENING PERMITS AS NECESSARY FROM THE RELEVANT AUTHORITIES, PRIOR TO

07/04/2024	UPDATED I.D. SWMMH2	TA	RO	12
17/03/2025	UPDATED TO SUIT SITE LAYOUT REV C6	TA	RO	11
17/03/2025	UPDATED TO SUIT SITE LAYOUT REV C6	TA	RO	10
19/02/2025	UPDATED NETWORK TO SUIT CONTRACTOR COMMENTS	TA	RB	9
12/02/2025	UPDATED TO SUIT REVISED LEVELS AND SITE LAYOUT	TA	RB	8
04/02/2025	UPDATED TO SUIT SITE LAYOUT	TA	RB	7
25/09/2023	UPDATED TO SUIT CLIENT COMMENTS	RPB	RB	6
11/09/2023	UPDATED TO SUIT CLIENT COMMENTS	RPB	RB	5
01/09/2023	TENDER ISSUE	RPB	RB	4
08/08/2023	ATTENUATION AMENDED. FLOW CONTROL DETAILS AMENDED	RPB	RO	3
	Revisions	Drawn	Checked	Rev



CARNELL MANAGEMENT SERVICES LIMITED

ROCKINGHAM
BIRDWELL

PROPOSED MANHOLE SCHEDULES

DO NOT SCALE	Scale @ A1:	Drawn RPB	Checked RB	Date 30/06/2023
Job No Y22018		Dwg No D201		Rev 12

SURFACE WATER MANHOLE SCHEDULE									
MH REFERENCE	INVERT LEVELS	COVER LEVELS	DEPTH TO INVERT	TYPE	SIZE	COVER TYPE	COVER & FRAME	COORDINATES	
1	2250 - 136.794 2250 - 136.794	138.200	1.571	B	1.200	D400	600 x 600	E434907.000 N400471.823	
2	1500 - 137.473 2250 - 137.753 3000 - 137.323	138.817	1.659	B	1.200	D400	600 x 600	E434935.573 N400475.124	
3	1500 - 137.388 3000 - 137.238 3750 - 137.313	138.858	1.621	B	1.500	D400	600 x 600	E434913.681 N400482.426	
4	3750 - 137.162 28000 - 132.861	138.787	5.925	SPECIAL ACCESS SHAFT	2.800	D400	600 x 600	E434920.641 N400504.061	
5	1500 - 137.677 1500 - 137.677	138.748	1.150	B	1.200	D400	600 x 600	E434908.615 N400532.997	
6	1500 - 137.550 1500 - 137.550	138.923	1.373	B	1.200	D400	600 x 600	E434893.413 N400521.467	
7	1500 - 137.268 1500 - 137.268 2250 - 137.193	138.755	1.562	SPECIAL ACCESS SHAFT	2.800	D400	600 x 600	E434899.007 N400510.881	
8	2250 - 138.200 1500 - 137.522 2250 - 137.522	139.060	1.538	B	1.200	D400	600 x 600	E434884.965 N400535.026	
9	2250 - 137.015 2250 - 137.015 3000 - 136.940	138.837	1.897	B	1.200	D400	600 x 600	E434911.132 N400516.353	
10	28000 - 132.836 3000 - 136.883 28000 - 132.836	138.686	5.850	A	2.800	D400	600 x 600	E434923.740 N400513.669	
11	1500 - 137.106 1500 - 137.106 1500 - 137.106	138.512	1.406	B	1.200	D400	600 x 600	E434923.234 N400547.487	
12	1500 - 136.099 1500 - 136.099 2250 - 136.024	138.120	2.096	B	1.200	D400	600 x 600	E434924.215 N400557.279	
13	1500 - 136.305 1500 - 136.205	137.375	1.245	B	1.200	D400	600 x 600	E434916.339 N400570.999	
14	1500 - 136.981 1500 - 136.981 1500 - 136.981 2250 - 136.981	138.406	1.425	B	1.200	D400	600 x 600	E434971.010 N400542.308	
15	2250 - 138.425 2250 - 137.657	139.083	1.426	B	1.200	D400	600 x 600	E434937.396 N400520.842	
16	2250 - 137.503 2250 - 137.657 3000 - 136.503	138.643	2.140	B	1.200	D400	600 x 600	E434951.797 N400542.817	
17	28000 - 132.723 2250 - 135.840 1500 - 135.915 3000 - 135.989 35000 - 132.023	138.235	6.212	SPECIAL ACCESS SHAFT	3.500	D400	600 x 600	E434937.583 N400556.581	
18	35000 - 131.922 35000 - 131.922	137.189	5.267	SPECIAL ACCESS SHAFT	3.500	D400	600 x 600	E434950.041 N400595.240	
19	1500 - 135.830 1500 - 135.830 3000 - 135.830	137.311	1.481	B	1.200	D400	600 x 600	E434988.145 N400582.711	
20	3000 - 135.759 2250 - 135.703 3000 - 135.759	137.274	1.571	B	1.200	D400	600 x 600	E434972.281 N400593.689	
21	1500 - 136.000 3000 - 135.692 3000 - 135.692	137.229	1.537	B	1.200	D400	600 x 600	E434967.535 N400595.652	
22	1500 - 135.437 2250 - 135.362	136.928	1.566	B	1.200	D400	600 x 600	E434946.468 N400621.539	
23	2250 - 135.206 2250 - 135.206	137.087	1.881	B	1.200	D400	600 x 600	E434944.923 N400611.941	
23A	2250 - 135.083 2250 - 135.083	137.092	2.009	B	1.200	D400	600 x 600	E434944.875 N400602.866	
(FLOW CONTROL) 24	35000 - 131.884 3000 - 136.034 2250 - 135.034 2250 - 131.834	136.877	5.043	SPECIAL ACCESS SHAFT	3.500	D400	600 x 600	E434952.043 N400601.750	
25	2250 - 131.314 21000 - 131.314	136.660	5.346	B	3.000	D400	600 x 600	E434951.263 N400606.596	
IC 1	2250 - 137.343	138.768	1.425	PPIC	0.450	C250	450 x 450	E434922.950 N400430.061	
IC 2	1500 - 138.235	138.834	0.599	PPIC	0.450	D400	450 x 450	E434967.943 N400464.531	
IC 3	1500 - 137.542 1500 - 137.542	138.888	1.346	PPIC	0.450	C250	450 x 450	E434882.742 N400533.093	
IC 4	1500 - 136.305 1500 - 136.305	137.330	1.025	PPIC	0.450	C250	450 x 450	E435011.794 N400597.870	
IC 5	1500 - 136.201 1500 - 136.201	137.296	1.095	PPIC	0.450	C250	450 x 450	E434996.886 N400602.507	
IC 6	1500 - 135.991	136.805	0.814	PPIC	0.450	D400	450 x 450	E434991.268 N400603.615	

FOUL WATER MANHOLE SCHEDULE								
MH REFERENCE	INVERT LEVELS	COVER LEVELS	DEPTH TO INVERT	TYPE	SIZE	COVER TYPE	COVER & FRAME	COORDINATES
EX1	1500' - 134.604 1500' - 137.366	138.428	3.824	B	1.200	D400	600 x 600	E434889.980 N400511.275
EX2		138.619	3.298	B	1.200	C250	600 x 600	E434905.254 N400487.577
EX3	1500' - 135.612 1500' - 134.095	138.609	4.514	B	1.200	D400	600 x 600	E434919.374 N400049.932
1	1500' - 136.351	137.242	1.150	B	1.200	D400	600 x 600	E434924.781 N400618.407
2	1500' - 135.713 1500' - 135.713 1500' - 135.713	137.182	1.469	B	1.200	D400	600 x 600	E434944.093 N400600.897
3	1500' - 135.560 1500' - 135.560 1500' - 135.560	137.648	2.088	B	1.200	D400	600 x 600	E434934.921 N400580.186
4	1500' - 135.355 1500' - 135.355	138.469	3.114	B	1.200	D400	600 x 600	E434928.217 N400550.132
5	1500' - 136.500 1500' - 135.259 1500' - 135.773 1500' - 135.259	138.385	3.126	B	1.200	D400	600 x 600	E434923.743 N400536.512
6	1500' - 137.280 1500' - 137.280 1500' - 135.642	138.722	3.080	B	1.200	D400	600 x 600	E434923.777 N400448.921
IC 1	1500' - 136.136	136.785	0.649	PPIC	0.450	C250	450 x 450	E434971.343 N400607.411
IC 2	1500' - 136.040 1500' - 136.040	137.301	1.261	PPIC	0.450	C250	450 x 450	E434965.411 N400594.619
IC 5	1500' - 136.658	137.425	0.767	PPIC	0.450	C250	450 x 450	E434931.951 N400585.115
IC 6	1500' - 136.681	137.332	0.651	PPIC	0.450	C250	450 x 450	E435000.599 N400569.512
IC 7	1500' - 136.685	137.413	0.728	PPIC	0.450	C250	450 x 450	E434968.692 N400549.943
IC 8	1500' - 136.303 1500' - 136.303 1500' - 136.303	137.980	1.677	PPIC	0.450	C250	450 x 450	E434991.897 N400540.524
IC 9	1500' - 138.292	138.923	0.631	PPIC	0.450	C250	450 x 450	E434979.126 N400496.688
IC 10	1500' - 136.224 1500' - 136.224 1500' - 136.224	138.608	2.384	PPIC	0.450	C250	450 x 450	E434987.819 N400529.341
IC 11	1500' - 136.079	138.325	2.246	PPIC	0.450	C250	450 x 450	E434957.957 N400548.632
IC 12	1500' - 135.923 1500' - 135.923	138.573	2.650	PPIC	0.450	D400	450 x 450	E434945.000 N400543.691
IC 16	1500' - 137.120	138.845	1.725	PPIC	0.450	C250	450 x 450	E434914.921 N400554.949
IC 17	1500' - 137.492	138.845	1.353	PPIC	0.450	D400	450 x 450	E434883.234 N400527.354
IC 18	1500' - 138.338	138.875	0.537	PPIC	0.450	C250	450 x 450	E434942.302 N400420.731
IC 19	1500' - 137.427 1500' - 137.427	138.835	1.408	PPIC	0.450	C250	450 x 450	E434923.434 N400426.881