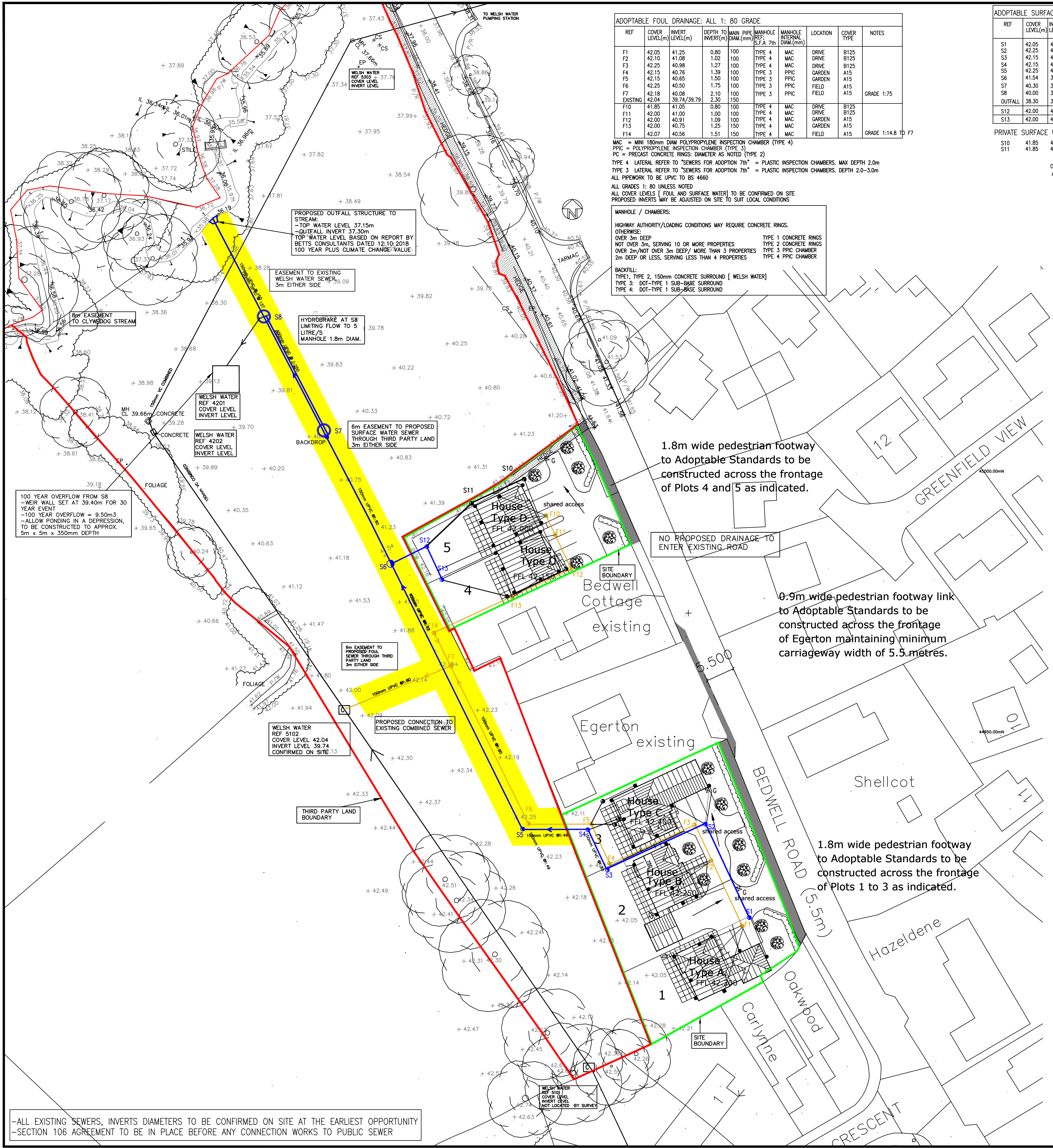




ADOPTABLE FOUL DRAINAGE: ALL 1: 80 GRADE										
REF	COVER LEVEL(m)	INVERT LEVEL(m)	DEPTH TO INVERT(m)	MAIN PIPE DIA.(mm)	MANHOLE DIA.(mm)	MANHOLE S.F.A 7th	LOCATION	COVER TYPE	NOTES	
F1	42.05	41.25	0.80	100	TYPE 4	MAC	DRIVE	B125		
F2	42.10	41.08	1.02	100	TYPE 4	MAC	DRIVE	B125		
F3	42.25	40.98	1.27	100	TYPE 4	MAC	DRIVE	B125		
F4	42.15	40.76	1.39	100	TYPE 3	PPIC	GARDEN	A15		
F5	42.15	40.65	1.50	100	TYPE 3	PPIC	GARDEN	A15		
F6	42.25	40.50	1.75	100	TYPE 3	PPIC	FIELD	A15		
F7	42.18	40.08	2.10	100	TYPE 3	PPIC	FIELD	A15	GRADE 1:75	
EXISTING	42.04	39.74/39.79	2.30	150						
F10	41.85	41.05	0.80	100	TYPE 4	MAC	DRIVE	B125		
F11	42.00	41.00	1.00	100	TYPE 4	MAC	GARDEN	A15		
F12	42.00	40.91	1.09	100	TYPE 4	MAC	GARDEN	A15		
F13	42.00	40.75	1.25	150	TYPE 4	MAC	GARDEN	A15		
F14	42.07	40.58	1.51	150	TYPE 4	MAC	FIELD	A15	GRADE 1:14.8 TO F7	

MAC = MINI 180mm DIAM POLYPROPYLENE INSPECTION CHAMBER (TYPE 4)
PPIC = POLYPROPYLENE INSPECTION CHAMBER (TYPE 3)
PC = PRECAST CONCRETE RINGS: DIAMETER AS NOTED (TYPE 2)
TYPE 4 LATERAL REFER TO 'SEWERS FOR ADOPTION 7th' = PLASTIC INSPECTION CHAMBERS. MAX DEPTH 2.0m
TYPE 3 LATERAL REFER TO 'SEWERS FOR ADOPTION 7th' = PLASTIC INSPECTION CHAMBERS. DEPTH 2.0-3.0m
ALL PIPEWORK TO BE UPVC TO BS 4660
ALL GRADES 1: 80 UNLESS NOTED
ALL COVER LEVELS (FOUL AND SURFACE WATER) TO BE CONFIRMED ON SITE
PROPOSED INVERTS MAY BE ADJUSTED ON SITE TO SUIT LOCAL CONDITIONS

MANHOLE / CHAMBERS:
HIGHWAY AUTHORITY/LOADING CONDITIONS MAY REQUIRE CONCRETE RINGS.
OTHERWISE:
OVER 3m DEEP TYPE 1 CONCRETE RINGS
NOT OVER 3m SERVING 10 OR MORE PROPERTIES TYPE 2 CONCRETE RINGS
OVER 2m/NOT OVER 3m DEEP/ MORE THAN 3 PROPERTIES TYPE 3 PPIC CHAMBER
2m DEEP OR LESS, SERVING LESS THAN 4 PROPERTIES TYPE 4 PPIC CHAMBER

BACKFILL:
TYPE 1: TYPE 2, 150mm CONCRETE SURROUND (WELSH WATER)
TYPE 3: DOT-TYPE 1 SUB-BASE SURROUND
TYPE 4: DOT-TYPE 1 SUB-BASE SURROUND

ADOPTABLE SURFACE WATER DRAINAGE										
REF	COVER LEVEL(m)	INVERT LEVEL(m)	DEPTH TO INVERT(m)	MAIN PIPE DIA.(mm)	MANHOLE DIA.(mm)	MANHOLE S.F.A 7th	LOCATION	COVER TYPE	NOTES	
S1	42.05	41.05	1.00	150	TYPE 4	MAC	DRIVE	B125	COLLECTS GULLY: GRADE 1:60	
S2	42.25	40.72	1.53	150	TYPE 3	PPIC	DRIVE	B125		
S3	42.15	40.46	1.69	150	TYPE 3	PPIC	DRIVE	B125		
S4	42.15	40.36	1.79	150	TYPE 3	PPIC	GARDEN	A15	GRADE 1:49	
S5	42.25	40.10	2.15	150	TYPE 3	PPIC	GARDEN	A15	GRADE 1:72	
S6	41.54	39.316	2.22	450	TYPE 3	PPIC	FIELD	B125		
S7	40.30	38.96/37.55	2.75	450/150	TYPE 2	PC	FIELD	B125	BACKDROP: GRADE 1:250	
S8	40.00	37.45	2.55	450/150	TYPE 2	PC	FIELD	B125	GRADE 1:136 FLOW CONTROL	
OUTFALL	38.30	37.30	1.00	150					SEE OUTFALL STRUCTURE DETAIL	
S12	42.00	40.56	1.44	150	TYPE 3	MAC	GARDEN	A15	GRADE 1:6 TO S8	
S13	42.00	41.00	1.00	150	TYPE 4	PPIC	GARDEN	A15	GRADE 1:21 TO S12	

PRIVATE SURFACE WATER DRAINAGE										
S10	41.85	40.85	1.00	150	TYPE 4	MAC	GARDEN	A15	COLLECTS GULLY	
S11	41.85	40.71	1.14	150	TYPE 4	MAC	GARDEN	A15		

OUTFALL STRUCTURE TO BE ADOPTED BY WELSH WATER
ALL GRADES 1: 80 UNLESS NOTED

DRAINAGE LEGEND

EXISTING PUBLIC DRAINAGE

EXISTING WELSH WATER COMBINED SEWER AND MANHOLE

PROPOSED ADOPTABLE DRAINAGE [WATER AUTHORITY]

MAIN DRAINAGE IN ROADS (TYPE 1/2: MIN. 1m FROM KERB)

F1 FOUL SEWER AND MANHOLE: 100mm DIAM UNLESS STATED

S1 SURFACE WATER SEWER AND MANHOLE

BOUNDARY TO AFFECTED THIRD PARTY LAND

ADOPTABLE EASEMENT: 6m OR AS NOTED

DRAINAGE TYPE 3/4 PPIC CHAMBERS, NOT UNDER ROADS:

MIN 0.5m FROM KERB OR PLOT BOUNDARY (where possible, shown oversize on plan for clarity)

FOUL ADOPTABLE

S60 SURFACE WATER ADOPTABLE

WATER AUTHORITY TYPE 4 (MINI-ACCESS CHAMBERS(180mm DIAM))

PROPOSED PRIVATE DRAINAGE:

SL1 PROPOSED SURFACE WATER AND 450mm INSPECTION CHAMBER/ MANHOLE

P-F1 PROPOSED 100mm FOUL AND 450mm INSPECTION CHAMBER / MANHOLE

PROPOSED 180mm DIAM. MINI-ACCESS CHAMBER

SOIL VENT PIPE

BACK INLET GULLY

RAINWATER PIPE

RODDING EYE

RE PRIVATE GULLY [SIZED AS A PUBLIC ROAD GULLY]

G DRAINAGE CHANNEL: 100mm DIA OUTLET [SEPARATE CHANNEL FOR EACH PROPERTY]

DRAWING GENERAL LEGEND

PFL 74.80 PROPOSED FINISHED FLOOR LEVEL

EXISTING LEVEL FROM SURVEY

DIRECTION OF FALL

74.87 PROPOSED LEVEL

TP TACTILE PAVING

EXTENT OF ADOPTABLE CARRIAGEWAY / FOOTPATH

DRAINAGE STATEMENT: PROPOSED 5 PLOTS

FOUL OFFERED FOR ADOPTION TO WELSH WATER AS AGREED. CONNECT TO EXISTING WELSH WATER SEWER IN ADJACENT FIELD (THIRD PARTY LAND).
SURFACE WATER TO DRAIN TO CLYWEDOG STREAM AT AN AGREED RATE OF 5 LITRE/S AGREED WITH WREXHAM DRAINAGE. PIPEWORK OFFERED TO WELSH WATER UNDER A SECTION 104 AGREEMENT
FLOW CONTROL (HYDROBRAKE) AT MANHOLE S8
OUTFALL TO BE APPROVED BY WREXHAM DRAINAGE.

100 YEAR OUTFALL TO DEPRESSION AREA

HIGHWAY STATEMENT:

1.8m FOOTPATH TO BE CONSTRUCTED OUT SIDE PLOTS 1-2 AND 4-5 AS NOTED
EXISTING ROAD WIDTH TO BE MAINTAINED.
NEW 0.9m FOOTPATH TO BE CONSTRUCTED OUTSIDE EXISTING EGERTON HOUSE - THIS ITEM TO BE CLARIFIED

Drawing List		
GENERAL ARRANGEMENT/ DRAINAGE LAYOUT	1437/01	
MANHOLE DETAILS	1437/04	
DRAINAGE DETAILS	1437/05	
LONG SECTIONS AND HIGHWAY SCHEDULES	1437/06	
DRAINAGE SECTION 104 (AS 01, COLOURED FOR WATER AUTHORITY)	1437/21	
HIGHWAYS SECTION 38	1437/22	

NOTES

Planning Layout information taken from ARCHITECTS Drawing Number 10110-04 - Revision A. dsj BY D.S JONES
DATE APRIL 2018
Survey information taken from

ADOPTABLE DRAINAGE:

- PIPE STRENGTH AND TYPE:
SEWERS FOR ADOPTION OF NOMINAL DIAMETER UP TO 900mm SHALL BE:
UPVC TO BS EN 1401-1 AND 12666-1 and SEWERS FOR ADOPTION 7th CI E2.21, E 2.22.
PIPES UP TO 500mm DIAMETER SHALL HAVE SHORT-TERM STIFFNESS NOT LESS THAN 8 kN/m² [S8]
PIPES GREATER THAN 500mm DIAMETER SHALL HAVE SHORT-TERM STIFFNESS NOT LESS THAN 2 kN/m² [S2]
- MANHOLE AND CHAMBERS:
PPIC CHAMBERS TO BE IN ACCORDANCE WITH SEWERS FOR ADOPTION 7th CI E2.31 and PRECAST CONCRETE MANHOLES TO E2.32 ALSO TO BS EN 13598 PARTS 1 AND 2
- BEDDING:
SHALL BE IN ACCORDANCE WITH SEWERS FOR ADOPTION 7th CI E2.25, E5.2, E5.4
- COVER:
MINIMUM COVER REQUIRED TO CROWN FOR ADOPTABLE DRAINAGE:
DOMESTIC GARDENS AND PATHS 0.35m
DRIVEWAYS, LIGHT PARKING AREAS 0.5m
PUBLIC OPEN SPACE 0.9m
ROADS 1.2m
COVER LESS THAN ABOVE WILL REQUIRE ADDITIONAL PROTECTION
- MANHOLE COVERS:
ALL COVERS TO BE SO SEWERS FOR ADOPTION 7th CI 2.32 and BS EN 125, BS 7903.
CARRIAGEWAY / PARKING: CLASS D400 -HEAVY DUTY
FOOTWAY / LANDSCAPING: CLASS B125-MEDIUM DUTY
PRIVATE GARDEN: CLASS A15-LIGHT DUTY

WELSH WATER NOTE:

THE DEVELOPER MUST SELF-VET AND CERTIFY THAT THE DESIGN CRITERIA, MATERIAL STANDARDS AND WORKMANSHIP SPECIFICATIONS FOR THE PROPOSED ADOPTABLE SEWERS CONFIRM WITH PART E of SEWERS FOR ADOPTION 7TH, THE WELSH MINISTERS STANDARDS AND THE REQUIREMENTS OF DCWW AS THE STATUTORY SEWERAGE UNDERTAKER
SUBJECT TO A SECTION 104 ADOPTION AGREEMENT BEING COMPLETE, A SECTION 106 APPLICATION TO CONNECT MUST BE MADE TO DCWW. THE DEVELOPER SHALL GIVE 21 DAYS NOTICE PRIOR TO CONNECTION. THE WORKS MAY ONLY BE UNDERTAKEN BY AN SSIP HEALTH & SAFETY APPROVED CONTRACTOR
THE ADOPTABLE MATERIALS AND WORKMANSHIP CONFORM TO PART E OF "SEWERS FOR ADOPTION" 7th EDITION

CONTRACTOR TO ENSURE THAT THE UPVC PIPES MEET WELSH WATER ADOPTABLE STANDARDS.
EXAMPLES:
POLYPIPE RIGID DRAIN: DOES NOT COMPLY
POLYPIPE RIGI-SEWER DOES COMPLY
PIPES TO BE LAID IN 3m Lengths, OR 10 X DIAMETER

PENDING HIGHWAYS and WELSH WATER APPROVAL PRELIMINARY

A	SURFACE WATER RE-DESIGNED	03.06.19	AK	AK
Rev	Description	Date	Drwn	Chkd

KANE DESIGN Civil Engineering Design

15 Winchester Way
Gresford
Wrexham
LL12 8HH
Tel: 01 978 855888

NIGEL COPELAND

Project
**PROPOSED DEVELOPMENT at BEDWELL ROAD
CROSS LANES, WREXHAM LL13 0TR**

DRAINAGE LAYOUT SECTION 104

DRAWING NUMBER	SCALE	1:400	@ A1
	DATE	18.02.19	REVISION
	DRAWN	AK	A
	CHECKED	A.K	