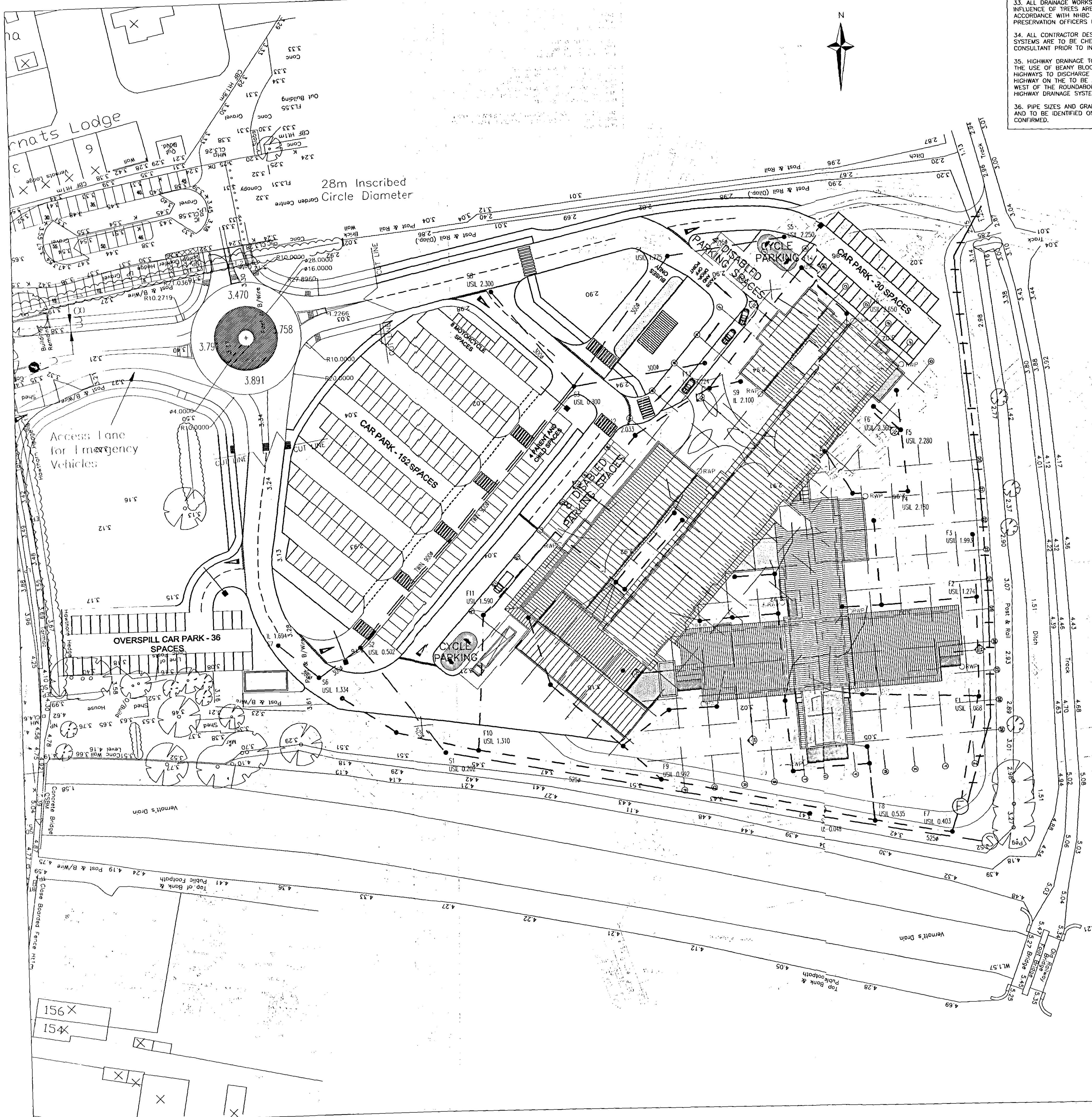




33. ALL DRAINAGE WORKS WITHIN THE ZONE OF INFLUENCE OF TREES ARE TO BE CONSTRUCTED IN ACCORDANCE WITH NHBC STANDARDS AND TREE PRESERVATION OFFICERS REQUIREMENTS.
34. ALL CONTRACTOR DESIGNED RAINWATER DRAINAGE SYSTEMS ARE TO BE CHECKED BY THE M&E CONSULTANT PRIOR TO INSTALLATION.
35. HIGHWAY DRAINAGE TO BE EFFECTED THROUGH THE USE OF BEANY BLOCK & GULLIES TO SUIT. HIGHWAYS TO DISCHARGE TO THE STORM SYSTEM. HIGHWAY ON THE TO BE ADAPTABLE SECTION ON THE WEST OF THE ROUNDABOUT TO DRAIN TO EXISTING HIGHWAY DRAINAGE SYSTEM
36. PIPE SIZES AND GRADIENTS ARE INDICATIVE ONLY AND TO BE IDENTIFIED ONCE PROPOSED LEVELS AREA CONFIRMED.

GENERAL NOTES

- DO NOT SCALE THIS DRAWING. IF IN DOUBT ASK.
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, ENGINEERS AND SPECIALISTS DRAWINGS AND SPECIFICATIONS.
- ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE. ALL LEVELS IN METRES UNLESS NOTED OTHERWISE.
- ANY DISCREPANCIES NOTED ON SITE ARE TO BE REPORTED TO THE ENGINEER IMMEDIATELY.
- STORM PUMPING STATION TO BE DESIGNED FOR CONSTRUCTION IN ACCORDANCE WITH SEWERS FOR ADOPTION - 5TH EDITION
- FOUL PUMPING STATION TO BE OPERATE ON A PUMP DITCH OR DUTY/STANBY SURFACE WATER TO OPERATE ON A DUTY/ASSIST BASICS
- THE BASE SPECIFICATION FOR DRAINAGE WORKS SHALL BE THE WATER AUTHORITIES ASSOCIATION 'SEWERS FOR ADOPTION (5TH EDITION)'
- ALL EXTERNAL BUILDING AND CAR PARK DRAINAGE TO BE CONSTRUCTED IN ACCORDANCE WITH BS8301 - CODE OF PRACTICE AND PART H OF THE BUILDING REGULATIONS LATEST EDITIONS.
- THE FOLLOWING PIPE STRENGTHS SHALL BE ADOPTED UNLESS NOTED OTHERWISE:-
 - PIPES UP TO AND INCLUDING 150MM DIA TO BE 28KN/M STRENGTH TO BS EN295
 - PIPES BETWEEN 225 - 300MM DIA TO BE CLASS 160 TO BS EN295 - 1
 - PIPES ABOVE 300MM DIA TO BE CLASS M CONCRETE
 - PLASTIC PIPES, BENDS AND JUNCTIONS TO BE PVC-U TO BS 4660 OR BS 5481 WITH FLEXIBLE JOINTS, KITEMARKED PLASTIC INSPECTION CHAMBERS TO MEET THE REQUIREMENTS OF BS 7158.
- ALL PIPE RUNS TO BE LAID WITH FLEXIBLE JOINTS.
- ALL PIPES ENTERING AND EXITING MANHOLES ARE TO BE CONNECTED WITH PIPE SOFFITS LEVEL UNLESS NOTED OTHERWISE.
- BEDDING AND SURROUND TO BE AS FOLLOWS:

LOCATION	COVER TO SOFFIT	BEDDING
ROADS	>1.2M	CLASS S GRANULAR BED AND SURROUND.
	<1.2M	CLASS 'A' CONCRETE SURROUND.
NON-ADAPTABLE 'SEWERS' BELOW CAR PARKING	>0.9M	CLASS S GRANULAR BED AND SURROUND.
	<0.9M	CLASS 'A' CONCRETE SURROUND.
HARD AND SOFT GRANULAR LANDSCAPING	>0.6M	CLASS S
	<0.6M	BED AND SURROUND. CLASS 'A' CONCRETE SURROUND.
- ALL PRECAST CONCRETE PRODUCTS (IE PIPES, MANHOLES RINGS ETC) SHALL BE OF SUITABLE CONCRETE M1 TO CATER FOR CLASS *** SULPHATES IF REQUIRED.
- PRE-FORMED CHANNELS ARE TO BE USED IN MANHOLES WHERE APPLICABLE.
- GRANULIFIC CONCRETE BENCHING TO BE STEEL TROWELLED TO A DENSE SMOOTH FACE NEATLY SHAPED AND FINISHED TO ALL BRANCH CONNECTIONS AND LAID IN ACCORDANCE WITH THE SPECIFICATION.
- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
- ALL CONNECTIONS TO BE TURNED IN DIRECTION OF FLOW USING PIPE KENDS.
- MANHOLE COVERS AND FRAMES TO BE DUCTILE IRON HEAVY DUTY GRADE 0400 DOUBLE TRIANGULAR TO BS EN124 AND ARE TO BE GRADE A STANDARD IN VEHICULAR TRAFFICKED AREAS.
- MANHOLE COVERS AND FRAMES TO BE DUCTILE IRON MEDIUM DUTY GRADE 8125 CIRCULAR OR RECTANGULAR TO BS EN124 POSITION OUTSIDE VEHICULAR TRAFFICKED AREAS.
- MANHOLE COVERS AND FRAMES TO BE DUCTILE IRON MEDIUM DUTY GRADE A15 COVERS IN SOFT LANDSCAPING.
- FIRST FLEXIBLE JOINT IN PIPES ADJACENT TO A MANHOLE SHALL BE A MAXIMUM OF 600MM FROM INSIDE FACE OF MANHOLE. CONNECTING TO ROCKER PIPE. THE LENGTH OF ROCKER PIPE IS AS FOLLOWS:-

PIPE DIAMETER	LENGTH OF ROCKER PIPE
150MM - 600MM	600MM
675MM - 750MM	1000MM
825MM & OVR	1250MM
- MANHOLES WITH OUTGOING PIPES GREATER THAN 600MM DIAMETER SHALL BE FITTED WITH GUARD BARS, SAFETY CHAINS OR OTHER SAFETY DEVICES.
- THE PRINCIPLE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING THE EXISTING LINE AND INVERT LEVELS OF ANY CONNECTION POINTS FOR BOTH THE FOUL AND SURFACE WATER SYSTEMS, PRIOR TO UNDERTAKING INSTALLATION OF ANY NEW DRAINAGE WORKS. ANY DEVIATION TO THE LEVELS AND POSITIONS INDICATED ON THE DRAWING SHOULD BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE PROJECT ENGINEER.
- ALL INVERTS SPECIFIED ARE OUTGOING (EXCEPT BACKDROP).
- ROAD C/LY CONNECTIONS TO BE 150MM DIA. LAID AT A MINIMUM GRADIENT OF 1:150 UNLESS NOTED OTHERWISE.
- RWP CONNECTIONS TO BE 100MM DIA. LAID AT A MINIMUM GRADIENT OF 1:80 UNLESS NOTED OTHERWISE.
- ALL FOUL CONNECTIONS TO BE 100MM DIA. LAID AT A MINIMUM GRADIENT OF 1:40 UNLESS NOTED OTHERWISE.
- ALL CONNECTIONS TO BE MADE BY PURPOSE MADE JUNCTIONS AS FAR AS PRACTICABLE.
- INTERNAL INSPECTION CHAMBERS & ACCESS FITTINGS TO BE PROVIDED WITH LOCKABLE DOUBLE SEALED MANHOLE COVER & FRAMES GRADE A15, B125 OR D400 TO BS EN124 TO SUIT LOADING CONDITIONS.
- ALL PETOL INTERCEPTORS ARE TO BE INSTALLED STRICTLY IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. WHERE LOCATED WITHIN TRAFFICKED AREAS A 300MM THICK CONCRETE COVER SHALL BE REINFORCED WITH 2 LAYERS A393 MESH SHALL BE CONSTRUCTED OVER THE PETROL INTERCEPTOR.
- ALL POLYPROPYLENE INSPECTION CHAMBERS SHALL BE IN ACCORDANCE WITH BS 7158.
- ALL DRAWS TO BE TESTED PRIOR TO BACKFILLING, AFTER BACKFILLING AND UPON COMPLETION OF HARD LANDSCAPING, IN ADDITION ALL DRAINS TO BE INSPECTED BY CCTV METHODS PRIOR TO HARD LANDSCAPING.

GENERAL NOTES

- This drawing should not be scaled. Dimensions to be verified on site. Any discrepancies should be referred to the Engineer prior to work being put in hand.
- This drawing is the property of Waterman Civils, and the drawing is issued on the condition that it is not copied, reproduced, related or disclosed to any unauthorised person, either wholly or in part without the consent in writing of Waterman Civils Limited.
- Plot: 04/06/06
- THIS DRAWING HAS BEEN PRODUCED FOR OUTLINE DESIGN PURPOSES. THE LAYOUT WILL BE SUBJECT TO DETAILED DESIGN AND FURTHER DISCUSSION WITH THE INTERNAL DRAINAGE AUTHORITY, ANGLIA WATER AUTHORITY AND ENVIRONMENT AGENCY.
 - IN ADDITION TO THE MAIN DRAINAGE RUNS SHOWN, BUILDING SERVICE AND LAND DRAINAGE WILL BE REQUIRED. DESIGN OF THESE WILL BE UNDERTAKEN ONCE LAYOUT AND BUILDING POSITIONS HAVE BEEN FINALISED.
 - PIPE SIZES SHOWN ARE APPROXIMATE ONLY AND SUBJECT TO DETAILED DESIGN.
 - ALLOW TEMPORARY AND PERMANENT LAND DRAINS AT TOE OF BATTER GREATER THAN 1.0m HIGH.
 - ANY EXISTING SPURS SHOULD BE IDENTIFIED AS PART OF A FULL GROUND INVESTIGATION AND IF NECESSARY, PROVISION SHOULD BE MADE FOR DISCHARGING GROUND WATER VIA A GROUNDWATER DRAINAGE TRENCH/BLANKET
 - DRAINAGE LAYOUT AND LEVELS SHALL BE IN ACCORDANCE WITH SEWERS FOR ADOPTION 5TH EDITION. LEVELS AND DIMENSIONS SUBJECT TO HYDRAULIC DESIGN FOLLOWING APPROVAL IN PRINCIPLE BY LOCAL AUTHORITY
 - ALL DEVELOPMENT DISCHARGE SHALL MAN MADE OIL INTERCEPTORS. DETAILS TO BE AGREED.

KEY:

- PROPOSED FOUL WATER SEWER
- PROPOSED SURFACE WATER SEWER
- PROPOSED RISING MAIN
- WATERCOURSE TO BE CULVERTED

Plot: 04/06/06

E	03.06	NEW HOSPITAL LAYOUT ADDED, REVISED LAYOUT	AH
D	02.06	NEW HOSPITAL LAYOUT ADDED	(KE)
C	02.06	OS MAPPING ADDED	NH
B	01/06	REVISED LAYOUT	(KE)
REV	00.00	ISSUED	XX
Rev	Date	Description	By

Amendments

SOUTH HOLLAND HOSPITAL

STORM & FOUL DRAINAGE

Client
LINCOLNSHIRE NHS TRUST

Architect
Watkins Gray International (WGI)

Waterman Civils
Consulting Engineers

Lockington Hall Business Centre Lockington DE74 2RH
01508 874587 01508 874623
info@waterman-group.co.uk www.waterman-group.co.uk

Stage C - Outline Design

Designed by	IKE	Checked by	HJP	Project No	35634
Drawn by	IKE	Date	17.01.2006	Computer File No	
Scale	1:500 @ A1				
work to figure dimensions only					

Publisher	Zone	Category	Number	Revision
WC	SA	92	001	E