General Notes

G1. Do not scale drawings.

G2. This drawing is to be read in conjunction with all other relevant drawing issues and the specification.

G3. All building materials, components and workmanship to comply with the appropriate public health acts, building regulations, British standards and codes of practice and the appropriate manufacturer's recommendations.

G4. For all specialist work see relevant drawings.

G5. Any discrepancies, errors or omissions to be reported to the project co-ordinator for further instructions before commencement of works.

G6. The term "Engineer" on Considine Ltd documents shall be direct reference to Considine Ltd, unless otherwise noted.

G7. The Engineer is not responsible for dimensions, except where shown on their drawings. All setting out information, dimensions, etc, shall be calculated from the Architect's drawings.

G8. All temporary propping to be to Contractor's design. The safety and stability of a structure in the temporary condition is the responsibility of the Contractor, until all bracing and stability elements have been installed.

G9. All dimensions are in millimetres (mm) unless noted otherwise.

G10. Work to figured dimensions only.

G11. For location of service penetrations through structure see Service Engineer's drawings.

G12. All proprietary products to be installed in accordance with the Manufacturer's instructions/recommendations.

G13. For dimensioned layouts of walls see Architect's drawings.

G14. Any discrepancies, errors, omissions ambiguities between these drawings and/or those of others to be reported to the project co-ordinator and the Engineer for further instructions before commencement of works.

Health & Safety / CDM Regulations 2015

R1. All drawings are to be read in conjunction with the Health and Safety plan and all risk assessments.

R2. The drawings and specification of the works shall be read in conjunction with the Architect & Third Party drawings and the following documentation.

R3. Prior to the commencement of civil engineering works the contractor shall undertake trial pits to acquaint themselves with the soils investigation and ground conditions, and where necessary provide temporary shoring where deep excavations are undertaken.

R4. Appropriate records to be maintained throughout the works to ensure prompt and sufficient completion of the Health and Safety File documentation, including As Built records, at the end of the project.

Private Drainage Notes

D1. All building drainage works to be in accordance with BS EN 752 Drain & Sewer Systems Outside Buildings and the current building regulations.

D2. For precise locations of RWP's, SVP's, SS's and BIG's refer to Architect's plans. Where DP's are noted on the drawing, this indicates the aforementioned have not yet been confirmed by the Architect.

D3. For precise locations and setting out of houses, private drives and parking areas - refer to the Architect's plans.

D4. Private manhole and inspection chamber cover, invert level and sizes shown on manhole schedules.

D5. Cover levels to be adjusted locally to suit finished ground levels.
All Manholes which are less than 2.0m internal depth are to be provided with double access covers unless otherwise noted in design.

D6. Manhole covers to be ductile iron class D400 in carriageways (minimum frame depth shall be 150mm in all classes of road category except residential cul-de-sacs where block paving is not used, minimum depth shall be 100mm), class B125 in car parking areas and class A15 only in pedestrian areas and footways. All to BS EN 124 having 600mm minimum clear opening, non-ventilating type with closed keyways, unless otherwise noted.

D7. PPIC'S:-
Cast iron cover and plastic frame is suitable for use where wheel loads do not exceed 1.5 tonnes. Covers to be bolt down type.

For heavy loading installations cover to be replaced with appropriate type.

D8. Geometry and location of existing chambers, manholes and sewers to be verified on site prior to drainage works commencing or procurement of materials.

D9. Gullies:-
Gullies ref. 'RG' shall be trapped PC concrete 900 dp x 450mm dia. with 150 dia. outlet and 150mm ST4 concrete surround.

Gullies ref. 'YG' shall be trapped PC concrete/clay extra strength 600 dp x 300mm dia. with 100 dia. outlet and 150mm ST4 concrete surround. All gullies shall have tops to BS EN124:1994 Class A15 in pedestrian only areas, B125 in light car parking areas, and D400 in roads and other parking areas. All in accordance with Building Regulations.

D10. Bedding shall be 150mm granular bed surround (Type S) where cover:

i) Greater than 450mm for 100 dia. rigid pipes in soft landscape areas.

ii) Greater than 600mm for all pipe dia's greater than 100mm in soft landscape areas.

iii) Greater than 900mm for Thermoplastic pipes in trafficked areas. Greater than 1.2m for Vitrified Clay pipes and Ductile Iron pipes in trafficked areas.

iv) Greater than 1.2m for all pipes in adopted areas.

All other cases including gully connections use 100mm (min.) concrete protection, (Type Z).

D11. Access shall be provided at the base of all RWP'S using trapped access gullies bedded and surrounded in 150mm ST4 concrete.

D12. Private pipe runs to enter into top half of existing sewers, soffit to soffit. All new pipe connections to be via y-junctions (oblique junctions).

D13. Pipes at manholes to be soffit to soffit unless noted otherwise.

D14. If a drain passes beside a building, the foundations of the building should be taken deep enough so as not to surcharge the drain on 45° spread of loading.

D15. Ensure min. 150mm clear distances between pipes crossing, unless otherwise clearly noted on layout.

D16. Pipes shall be at a min. gradient 1:40 (1:80 if minimum 1 WC is connected), unless proposed invert levels indicate otherwise.

D17. Pipework and fittings for private network to be Thermoplastic, 100 dia., unless otherwise noted.

i) Thermoplastic pipes and fittings shall comply with BS EN 1401-1, BS EN 1852 and BS EN 12666-1.

ii) Vitrified clay pipes and fittings shall comply with BS EN 295-1 and BS 65 for surface water pipes.

iii) Ductile iron pipes and fittings shall comply with BS EN 598. Flanges for pipes and pipeline fittings shall comply with BS EN 1092-2.

iv) Concrete pipes and fittings shall comply with BS EN 1916 and BS 5911-1. All pipes and fittings shall have gasket type joints of spigot and socket or rebated form.

v) Thermoplastic structured wall pipe shall comply with BS EN 13476, WIS 4-35-1.

D18. All existing drains to become redundant shall be excavated or sealed with PFA cement grout, complying with structural engineer's requirements when within the vicinity of a proposed or existing structure.

D19. The minimum depth of rest bends below the lowest foul water connection for building up to and including 5 storeys in height shall be:

Single dwellings:
450mm for 1, 2 & 3 storey.
750mm for 4 & 5 storey.

Where the building has more than 5 storeys, ground floor appliances should discharge into their own stack.

Multiple dwellings:
750mm for 2, 3, 4 & 5 storey.

The minimum centre line radius of a rest bend shall be 200mm.

D20. Pipes passing through foundations and structures shall be sleeved and have flexible pipe joints located on both sides in accordance with the building regulations and structural engineer requirements.

D21. All mortar shall be 3:1 sand:cement unless stated otherwise.

D22. All concrete shall be in accordance with BS EN 206 with sulphate resistance to suit ground conditions.

D23. All catchpits to have minimum 300mm sump unless noted otherwise.

D24. For inspection chambers with a depth greater than 1.20m, reduced access chambers are required. A restriction cap reducing opening to 350mm is to be installed.

D25. Where pipes cross with less than 200mm separation, a concrete surround must be provided in accordance with the construction details.

D26. The last private network pipe that connects to the public drainage network to be form in Extra Strength Vitrified Clay.

Adoptable Drainage Notes

AD1. Drawings to be read in conjunction with the Design and Construction Guidance (DCG) for foul and surface water sewers, unless otherwise noted.

AD2. Chambers with outgoing pipes greater than 900mm diameter shall be fitted with safety chains.

AD3. Manhole diameters (Type A and Type B only) should be in accordance with Table 1.

Table 1

Diameter of Largest Pipe in Manhole (mm)	Minimum Internal Diameter of Manhole (mm)
Less than 375	1200
375 - 450	1350
500 - 700	1500
750 - 900	1800
Greater than 900	Pipe Diameter +900

AD4. Pipe bedding shall be as per Table 2.

Table 2

Protection.	Minimum cover.	Location.
150mm granular bed and surround.	0.35m	Domestic gardens and pathways without any possibility of vehicular access.
	0.50m	Domestic driveways, parking areas, and yards with height restrictions to prevent entry by vehicles >7.5 tonnes.
	0.90m	Domestic driveways, parking areas, and narrow streets without footways with limited access for vehicles >7.5 tonnes, and agricultural land and public open space.
	1.20m	Other highways and parking areas with unrestricted access to vehicles >7.5 tonnes.
Concrete.	Less than minimum cover as specified above.	

AD5. All concrete and cement mortar must be sulphate resisting.

AD6. Manhole tops shall comply with BS EN 124, BS 7903, and CD 534, be the non ventilating type with closed keyways, embossed FW and SW for foul water and surface water sewers respectively (unless otherwise required by the Sewer Authority), and shall be:-

i) A non-rocking design which does not rely on the use of cushion inserts.

ii) Class D400 in carriageways (including pedestrian streets), hardshoulders and parking areas, minimum frame depth shall be 150mm in all classes of road category except residential cul-de-sacs where block paving is not used, minimum depth shall be 100mm.

iii) Class B125 in footways and pedestrian areas.

iv) Class A15 in soft landscaped areas.

v) Manhole tops to be bedded on cement mortar except for NRSWA Road Categories I, II, or III, (trunk roads and dual carriageways, all other a roads & bus service routes) where bedding shall be polyester resin bedding mortar.

vi) All Manholes which are less than 2.0m internal depth are to be provided with double access covers unless otherwise noted in design.

AD7. Cover levels to be adjusted locally to suit finished ground levels and surface profile.

AD8. Geometry and location of existing chambers, manholes and sewers to be verified on site prior to drainage works commencing or procurement of materials.

AD9. Pipes at manholes to be soffit to soffit unless otherwise stated.

AD10. Gravity pipework shall be:-

- Vitrified clay to CL E2.18 of DCG.
- Concrete to CL E2.19 of DCG.
- Ductile Iron to CL E2.20 of DCG.
- Thermoplastic structured wall to CL E2.22 of DCG.

AD11. All mortar shall be 3:1 Sand:Cement unless stated otherwise.

AD12. All concrete shall be GEN3 and in accordance with BS 5328.

AD13. Plastic chambers and rings shall comply with BS EN 13598-1 & BS EN 13598-2 or have equivalent independent approval.

AD14. The last private network pipe that connects to the public drainage network to be form in Extra Strength Vitrified Clay.

Southern Water Specific Adoptable Drainage Notes

SW1. The following notes are to be adhered to when constructing adoptable drainage works within Southern Water's jurisdiction.

SW2. Man-entry chambers to have minimum 675mm x 675mm clear opening size.

SW3. No step irons to be constructed.

SW4. Plastic gravity pipework to withstand jetting pressure of 2600 psi in accordance with WIS 4-35-01.

Private External Works Notes

EW1. All pre-cast concrete products shall be hydraulically pressed and shall have granite aggregate.

EW2. All concrete bedding and backing shall be ST2 to BS EN 8500.

EW3. All concrete kerb units shall be in accordance with BS EN 1340.

EW4. CBR values (percentage) to be confirmed by on site testing by an approved testing company and reported to the Engineer prior to construction. Soft spots to be removed and refilled with capping material prior to further construction. Designs based on assumed CBR rates are in abeyance and subject to change.

EW5. All earthworks, inclusive of sub-base materials, shall comply with Series 600 of Specification for Highway Works (SHW).

EW6. All unbound, cement and other hydraulically bound mixtures shall comply with Series 800 of Specification for Highway Works (SHW).

EW7. All bituminous bound materials shall comply with Series 900 of Specification for Highway Works (SHW).

EW8. All concrete materials shall comply with Series 1000 of Specification for Highway Works (SHW).

EW9. All kerbs, footways and paved areas shall comply with Series 1100 of Specification for Highway Works (SHW).

EW10. All kerbs, footways and paved areas shall comply with Series 1100 of Specification for Highway Works (SHW).

EW11. All block pavement is to be edged with two stretcher course rows when laid against walls, kerbs or similar, bedded into 75-100mm ST2 concrete. Block pavement around ironwork to have 1 stretcher course. Block pavement with no edging identified on layout is to be edged with two stretcher course rows bedded and backed with 75-100mm ST2 concrete.

EW12. All material within 450mm of the proposed ground level shall be non-frost susceptible.

EW13. Topsoil shall comply with BS 3882. It shall be fertile medium loam free from any perennial weeds, weed seeds, contamination, rubble, subsoil and stones bigger than 20mm and have a maximum stone content of 20%. Unless otherwise specified by others.

EW14. Where external levels are less than 150mm below FFL, a raised DPC / Tanking may be required. Where external levels are greater than 150mm below FFL, facing brickwork or equivalent for the building construction type may be required. All details to be in accordance with Architect's requirements and any deviations to the above to be reported to Considine prior to construction.

Adoptable Highway Notes

H1. All adoptable highway works to comply with 'EW' notes and 'H' notes, whereby the more stringent requirement is adhered to.

H2. Highways, Footways and associated adoptable features to be constructed in accordance with the local Highway Authority's requirements and specifications, including approved details.

H3. All work within the Highway, Footway and associated adoptable features shall also be constructed in accordance with the Specification for Highway Works (SHW).

H4. All material within 450mm of the proposed ground level shall be non-frost susceptible.

H5. All high friction surfacing to be cold applied MMA (Methyl Methcrylate).

DO NOT SCALE THIS DRAWING. ALL SETTING OUT TO ARCHITECT'S DETAILS AND DRAWINGS

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWING ISSUES AND THE SPECIFICATION.

CDM 2015 RESIDUAL RISKS

GROUND

1. Comply with all requirements of the Site Investigation Report for soil stability and contamination issues.
2. Locate, protect and divert as necessary all existing services on site prior to excavation.
3. Scan areas to be dug prior to excavation due to possible unknown and uncharted services.
4. Support or batter back as necessary excavations in unstable ground.
5. Ensure not to excavate below a 45° line below existing adjacent foundations.

EXISTING

1. Maintain stability of existing structures at all times.
2. Devise temporary works for carrying out alterations to existing building.
3. Build up new supports or provide temporary support prior to breaking out existing structures. Contractor to provide method statements for structural engineer review.
4. Ensure occupants and members of the public are adequately protected from any hazardous conditions resulting from intrusive investigations.
5. Client/Contract Administrator to provide Asbestos Survey Report to Contractor. Asbestos containing materials may be present within the existing ground or building. Contractor to be aware of a potential presence when disturbing existing materials. Asbestos containing materials are to be identified, controlled and managed strictly in accordance with the Control of Asbestos regulations. Please note specific actions may require specialist advice/assistance and/or require notification to the HSE.

EXISTING SERVICES

1. Be aware of possible working with live drainage flow and foul effluent during construction. The Contractor shall assess and implement a safe working system and equipment (PPE) as necessary.

HIGHWAY

1. Suitable traffic management must be provided when working within or adjacent to the highway, as per national standards and guidelines. Appropriate working widths and safety zones to be provided during periods of mobilisation, material delivery and demobilisation required.
2. Services within Highway are often 'double stacked'. Contractor to be aware and take appropriate precautions.

WORKMANSHIP

1. Provide adequate protective clothing, breathing apparatus and fire extinguishing apparatus.
2. Take steps to contain water from lubrication of cutting tools.
3. Cover projecting reinforcement bars so as not to cause any harm.
4. Provide lifting machinery where necessary, taking appropriate precautions to prevent harm during operation.

MAINTENANCE

1. The drainage networks shall likely require maintenance throughout their lifetime. Maintenance must be carried out by trained and competent persons only, with access to confined spaces avoided where possible.

The above residual risks are for non-standard hazards. It is assumed that a competent principal contractor with the relevant skills, knowledge and experience of construction of this type of work will be appointed who will be aware of the standard hazards.

Rev	Amendment	Drn	Chk	Date
P01	Preliminary Issue	SJ	MJF	06.01.25

considine
civil + structural engineers
25 Hollingworth Court, Turkey Mill
Ashford Road, Maidstone. Kent ME14 5PP
t: 01622 919918 e: info@considine.co.uk
www.considine.co.uk

Client:
MR MICHAEL OTHEN-REEVES

Project:
MORELANDS BARN
NALDRETTS LANE, RUDGWICK
HORSHAM, RH12 3BU

Drawing Title:
CONSTRUCTION NOTES

considine ref	drawn by	date	drawing scales	original paper size
6363	SJ	DEC'24	NTS	A1

drawing reference :

project	originator	volume	level	type	role	number
6363	- CON -	00 -	00 -	DR -	C -	1400

status :	status description :
S0	SUITABLE FOR INFORMATION
revision :	revision status :
P01	PRELIMINARY

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