Site Engineer -basic requirements.

Introduction.

Most -if not all, of the people that decided to pursue a career in Engineering, got drawn into the profession by the awe-inspiring cranes, machinery, excavators and all such other equipment of gigantic proportions.
The allure the profession brings is so compelling that it has remained crucial in measuring the growth of a people or nation. Indeed, since the construction of the great pyramid -ably supervised by Imhotep (builder of the step Pyramid at Saqqarah, Egypt ~2550 BCE), the urge by man to create and break the frontiers has not waned.

Simply defined, Civil Engineering is that branch of professional engineering discipline that deals with the design, construction, and maintenance of the physical and naturally built environment, including public works such as roads, bridges, canals, dams, airports, sewage systems, pipelines, structural component of buildings and railways. (Re: "Civil engineering" from Wikipedia, the free encyclopedia.)
It is considered the second oldest engineering discipline after military engineering and requires the application of physical and scientific principles for solving the problems of society.

For a successful engineering career, understanding is required in the following subjects / area of interest:

1. Structures
2. Material Science
3. Geography
4. Geology
5. Soils
6. Hydrology
7. Environmental science
8. Mechanics
9. Project management
10. Et all

Competence

At entry level, knowledge best forms the basis for which competence is presumed and engagement as a site engineer premised.
Key performance indices would later prove mere obtainment of a glowing certificate grossly inadequate in the workspace. Why? *Because understanding in application of basic principles of relevant courses taught in school to solving day to day challenges encountered on site is the hallmark of competence.*
A brilliant fellow who is stand-offish on site would no doubt have a far lower competence rating than the average guy that is relational, open to suggestion and ideas from artisans and trades men leveraging on their collective experiences as the basis for troubleshooting

and resolving the problem; after all, ***the essence of engineering is "deploying physical and scientific principles" to solving societal problems***; little wonder our society is replete with all comers in the building space as artisans have risen to the occasion in many instances, bringing the experience gained in similar tasks executed in time past to solving problems supposed brilliant minds are unable to crack.

Competence as such is scarcely handed over to you with your degree; rather, earned via hard work and collaboration with others in healthy work environments.

Management

The success or otherwise of the engineer hinges on the effectiveness of optimizing the following:

1. Material
2. Time
3. Resources -i.e., personnel, equipment, and money.

The art of optimal utilization of materials requires tact and determination. A sensible engineer would have the site set up in such a way that aggregates -i.e., Granite and Sand, are tipped on concrete paving (75 – 100mm thick, sloped 1 – 0.5% outwards respectively). This way, full material utilization is guaranteed and the likelihood of over saturation of aggregates reduced to the barest minimum.
As much as practicable, entry and exiting of trucks must be planned to have little or no impact on the works.

Reinforcement steel must be always kept clear off the ground and laid straight on elevated platforms; some 450 – 500mm off the ground, to conserve integrity of steel as well as ascertain effectiveness of it bonding with concrete on the long run.

Time is the currency of business. It is the primary constant in construction as projects are construed and signed off on it.
Every hour spent on site must be judiciously accounted for whilst slips and near misses are to be logged and modalities for catch-up worked out prior to departure from site in scenarios such are recorded.
A resourceful manager would harbor zero tolerance for idleness and old wife tale excuses. As such, daily target setting and appraisal of the same is necessary for the project duration not to be exceeded.
The site is a business arena and not a gossip space.

Resources at the disposal of the engineer would have to be accounted for; hence, being a site engineer comes with huge responsibility as the success or failure of the project in part or whole hinges on this key component. You can not be tolerating escapades and be negligent in following-up on equipment maintenance schedule and hope to finish the job well.
This component in production is too important to be allowed to slide.

Personality:

Being likeable is one disposition we all must pursue intentionally; knowing when to talk and when to be quiet even when it's glaring you are right is an attribute an engineer must imbibe.
The fact that we are ingenious and exude much confidence is enough to win you lots of enemies and dent your fledgling career.
So, what do we do? Stay fair to all.
My experience in my few years of practice is that people listen and accept the truth when it's being requested rather than when freely expressed and advanced unguardedly.

Good guys end up as losers, exploited and ultimately discarded earlier than later -a colossal liability to keep around.
Ambitious people end up selling out the firm for favors and end up being sidelined by the same people that prompted his illicitness.
You honestly would not expect anyone to whom you divulge the company trade secretes to consider you worthy of recommendations.

A smart quiet fellow is indeed the delight of all -Client, consultants, and his employer.
Asking relevant questions with the intent to know and perhaps seek clarifications on grey areas would win you favors as opposed to provoking senseless arguments just to show off.

Above all, ensure your disposition exudes expertise and unmistakable professionalism -*even when all you are doing is putting forward the firm's hitherto agreed position on a matter, without getting personal with anyone as much as possible.*

Remember, emphasis is on fairness to all -yourself inclusive.

Be a team player.

You can not possibly be regarded as a team player when in the first instance you are clueless regarding the matter in discuss.
Study and seek to understand well what the requirements of the drawings and all other related documents are; general notes come to mind here as the tendency to overlook this extremely important body of information is quite high.
The general notes could be compared to the Car owner's manual; adherence to which unwarranted / unpleasant outcomes are avoided.

Concern yourself with the services engineers / contractor's requirements and stay ahead of them in matters regarding attendance et all. If there are grey areas flag them off quickly and alert those concerned well ahead of work execution. This buck-passing thing renders all concerned grossly incompetent.

It is customary for engineers in this clime to jettison the provision of the bar bending schedule and embrace convenience. This is not encouraged; rather, make your intentions

crystal clear and ensure that the consultant grants you permission to forge ahead with it; otherwise, stick to the original design.
The intention here is geared more at building synergy rather than creating the Consultant / Contractor dichotomy.

Leadership.

Sleep and wake the project entrusted in your care.

Take personal interest in all aspects of the work -including those of subcontractors.
Be accessible to all, listen and encourage full disclosure on all areas but be unapologetic in taking decisions in the best interests of client and firm respectively.
Imbibe a great sense of ownership and not employee mentality. Your success depends greatly on it.