

Construction Management And Engineering

Posted on January 23, 2020

Introduction

The current project study offers the previous data for the HD Woodson High School. This report comprises different sections, including the scheduling project, cost analysis, building structures, delivery system of the project and staffing plan of the school correspondingly.

The covered area of the HD High School is around 230,130 square feet. The high school will have the capacity to teach more than 900 students from grades 9 to 12, respectively. The school is intended around an increasing demand in the high school that is dedicated to science and technological subjects, including math and engineering (STEM). Interactive electronic board technology will be used in every classroom, and all the students will be provided with the laptops individually (Grover & Froese, 2016).

Building Systems Summary

Demolition Required

The existing building at the facility was first demolished before the Design-Build Phase origination. There was a hole of about 250 square feet with about 12 to 15 feet depth. That hole was filled with the structural leftover of the demolished building.

Structural Steel Frame

The floor system of the school will comprise columns and steel beams as the segment of the composite system. To carry the extra load, concentrically braced frames will be constructed. The usual columns range from W12*35 to W12*39 and W12*60 to W12*120, while the typical beams are W7*11, W15*25, and W17*35, respectively (Nicholas & Steyn, 2017).

Project Manager

Superintendent

The superintendent will coordinate with the project manager, safety coordinator, project scheduler, and design manager to set up and provide design contracts and construction contracts to

subcontractors and vendors. Collaborating with these parties will help ensure the safety and progress of the project while abiding by all local regulations and maintaining public safety.

Planning Engineer

Planning engineers determine and develop the most suitable and economically viable construction and engineering methods for projects. He will work closely with site managers and other engineers to ensure a project runs on schedule and that material supplies are sufficient.

Safety Coordinator

As the safety coordinator of the construction, my main duties are to ensure that all the workers from the company follow the health and safety laws accordingly. Also to make sure that state and national regulations are followed.

Design Engineer

The designer is the individual who provides designs, plans and strategies from the foundation through the construction (Hardin & McCool, 2015). This design can be from a new project or a current project. Lastly, the designer has to attend all the meetings to supervise and advise about issues or hazards that can be in the project.

Plan For Resolution Of Site Constraints

Project Manager

The designer, contractor, and PM should have scoped the area where the project would be occurring. It is possible that they were all in favor of the area, but when prepping for construction or during construction, it's possible that there may be unexpected rock, underground utilities, or soil contamination.

Superintendent

As there is limited roadway access, the superintendent will collaborate with subcontractors and vendors for the delivery of items, staging, and construction phasing. Subcontractors are made aware of the site constraints. Items will be delivered by transportation through roads, coordinated by the superintendent, to control traffic and reduce congestion.

Planning Engineer

The planning engineer will plan the mode of transportation of building materials. Only a hand full of semi-trucks a day will be allowed to go through the residential area. It will minimize the traffic through the town.

Safety Coordinator

Assure that machinery and equipment are located close to the construction site to keep it away from the general public, and since it is easier to monitor, display the proper signs on the streets to avoid accidents.

Design Engineer

To decrease the volume flow traffic crossing residential neighborhoods, the designer can ask for permission for the construction and design of an external road to connect and divert the construction traffic flow. He also needs to calculate the amount of material that the contractors can transport on the island.

Maintain Existing Operations

Project Manager

It is important for all parties to be sure that there is clarity regarding the processes and procedures. All ongoing work plans must be clarified with the PM, Designer, and Contractor before the schedule to identify tasks that need to be completed before or during the existing operations timeframe.

Superintendent

As two treatment facilities are currently in use, the project manager and superintendent will collaborate with facility management to efficiently coordinate the constant operation of the facilities. Construction vehicles and work zones shall not block access to these facilities.

Planning Engineer

Due to not being able to shut down the existing wastewater plant, the master schedule will need to be constructed to allow the outgoing operation of the plant safety Coordinator. Water testing so that the turbidity of the water does not exceed the standards of the water treatment plant and prevents

sludge from getting into the site.

Design Engineer

For the two existing wastewater treatment plants, the designer can meet with the other two general designers or shift engineers to organize and calculate the distribution of the waste of building materials.

Competition With Other Projects

Project Manager

A pre-construction conference should take place to determine if other plans and ours can share management, equipment, resources, labor, and such. He believes that as far as labor, the tasks are very specific and different. Therefore, it should be agreed upon by the PM that all large material deliveries should be made in the evening and ready for the next day's work to accommodate neighboring communities and the public from traffic.

Superintendent

The project manager and superintendent will coordinate with competing projects to permit the most efficient utilization of the area, resources, and transportation services to eliminate different operations.

Planning Engineer

A construction of school building will be constructed on-site for all construction needs. It will allow us to secure the vast number of cubic yards of concrete that will be required for the project. Electric power will be supported by the construction of a thermal/plant and with an agreement with the local electric company.

Safety Coordinator

Monitor that project hazards are reduced and weekly inspections of the sites are to be set. Excess material should be disposed of in areas in which the construction plans should not be interrupted.

Design Engineer

He needs to interact with the project manager and superintendent to coordinate all labor and materials. They can organize several boards with the suppliers to ensure all the construction material. Also, talk with the superintendent to ensure that he has an adequate amount of labor work.

Conclusions

The estimation at the high school in the United States over the year has focused and taking into account the other possible options that can boost the initially planned program for the development of the building. The information regarding the model of the building can be an exceptionally significant tool, and procedures in the development of the school are building (Harris & McCaffer, 2013).

Esteem engineering is the process that captures the assessing and creating plans for the development and also highlights the procedures to boost the value of the project (Hardin & McCool, 2015). Moreover, the stack of the green rooftop will augment the permitting capacity of the building, and the load on the single pillar of the steel may be reduced.

References

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