

Ponderosa Fire Department Addition Final Proposal

Prepared for Bill Mancini

Prepared by:
JAML Engineering Firm
Abdullah Alkhatat
Lionel Goy
Jocelyne Rivas
Marc Wasserman

CENE 476-001
December 9th, 2018

Table of Contents

List of Tables	iv
Table of Figures	iv
1.0 Project Understanding	1
1.1 Project Purpose	1
1.2 Project Background	1
1.2.1 Original Site Plan	3
1.3 Technical Considerations	5
1.3.1 Code Research	5
1.3.2 Property Zoning	5
1.3.3 Surveying	6
1.3.4 Structural and Architectural Design	6
1.3.5 Site Plan Development	6
1.4 Potential Challenges	7
1.4.1 Financial Constraints	7
1.4.2 Time Constraints	7
1.4.3 Planning Challenge	7
1.4.3 Congestion Challenge	7
1.5 Stakeholders	7
1.6 Exclusions	8
2.0 Scope of Services	8
2.1 Site Investigation	8
2.1.1 Obtain Plan Sets	8
2.1.2 Survey Land	8
2.1.3 Soil Sampling	8
2.1.4 Survey Data	8
2.2 Soil Testing	8
2.3 Metal Framing Company Research	8
2.3.1 Cost Research	8
2.3.2 Decision Matrix	9
2.4 Structural Design	9
2.4.1 Design Parameters	9

2.4.2 Foundation Design	9
2.4.3 Anchor Bolt Design.....	9
2.4.4 Floor Design	9
2.5 Construction Documents	9
2.5.1 Site Plan.....	9
2.5.2 Utility Locations	9
2.5.3 Foundation Plan and Details	9
2.5.4 Anchor Bolt Plan and Details.....	9
2.5.5 Floor Plans.....	10
2.6 Project Deliverables	10
2.6.1 Meeting Memo Binder.....	10
2.6.2 30% Report.....	10
2.6.3 60% Report.....	10
2.6.4 Final Report.....	10
2.6.5 Website	10
2.7 Project Management	10
2.7.1 Team, Client, Technical Adviser, and Grading Instructor Meetings.....	10
2.7.2 Construction Cost.....	10
2.7.3 Schedule.....	10
2.7.4 Project Deliverables	10
2.8 Project Limitations	11
2.8.1 Project Challenges.....	11
2.8.2 Project Exclusions.....	11
2.9 Project Impacts	11
3.0 Schedule.....	11
4.0 Staffing Plan	12
4.1 Staff Titles	12
4.2 Senior Personnel Qualifications.....	12
4.2.1 Senior Engineer	12
4.2.2 Engineer	12
4.2.3 Field Technician.....	12
4.2.4 Drafter.....	12
4.5 Engineering Intern.....	12

4.3 Staff Estimated Hours	13
4.4 Justification of Senior Personnel Hours	13
5.0 Cost of Engineering Services	14
5.1 Billing Rate	14
5.2 Total Cost	15
6.0 References	16

List of Tables

Table 1. Staff abbreviation code	12
Table 2. Total hour breaking down for staff.	13
Table 3. Bill rates for individual staff.	14
Table 4. Total cost for project with overhead and staff costs.	15

Table of Figures

Figure 1: Ponderosa Fire Station in Bellemont in relation to Arizona [1]	1
Figure 2: Front Face of the Existing Station	2
Figure 3: Street View of Existing Station	2
Figure 4: Job Site with Existing and Proposed Stations	3
Figure 5: Floor Plan of Existing Fire Station	4
Figure 6: Official Zoning Map of area of interest [3].....	5

1.0 Project Understanding

1.1 Project Purpose

The Ponderosa Fire Station (Station 82) in Bellemont, Arizona has an existing station but needs more space for housing firefighters, hosting community events, conducting meetings, and storing a battalion chief or ambulance. At any given time, the Ponderosa Fire Station houses up to five firefighters but only has the capacity to comfortably accommodate two. The station does not have an official meeting area and currently holds meetings in the firetruck bay. The station wishes to host community events that can hold 30- 50 people and sets this as their priority. The goal of this project is to design a building addition that flows with the existing station and meets the growing needs of the fire station.

1.2 Project Background

Station 82 is in Bellemont, Coconino County, Arizona on 1.4- acre of land. Figure 1 shows the location of the station in relation to the state of Arizona. The site is located 12 miles west of Flagstaff off of Route 66 on Shadow Mountain Drive. Figure 2 and 3 show the street view of the existing station.



Figure 1: Ponderosa Fire Station in Bellemont in relation to Arizona [1]



Figure 2: Front Face of the Existing Station



Figure 3: Street View of Existing Station

1.2.1 Original Site Plan

Within the property lines there is a parking lot, a firehouse, and a driveway. The parking is on the west end of the property and has 14 parking spaces. The existing structure is an 81'- 2" x 80' pre-engineered metal building. The driveway begins from the northeast end of the property from the main road, Shadow Mountain Drive, and wraps around and behind the firehouse. Figure 4 shows the site plan with the existing and proposed structure.

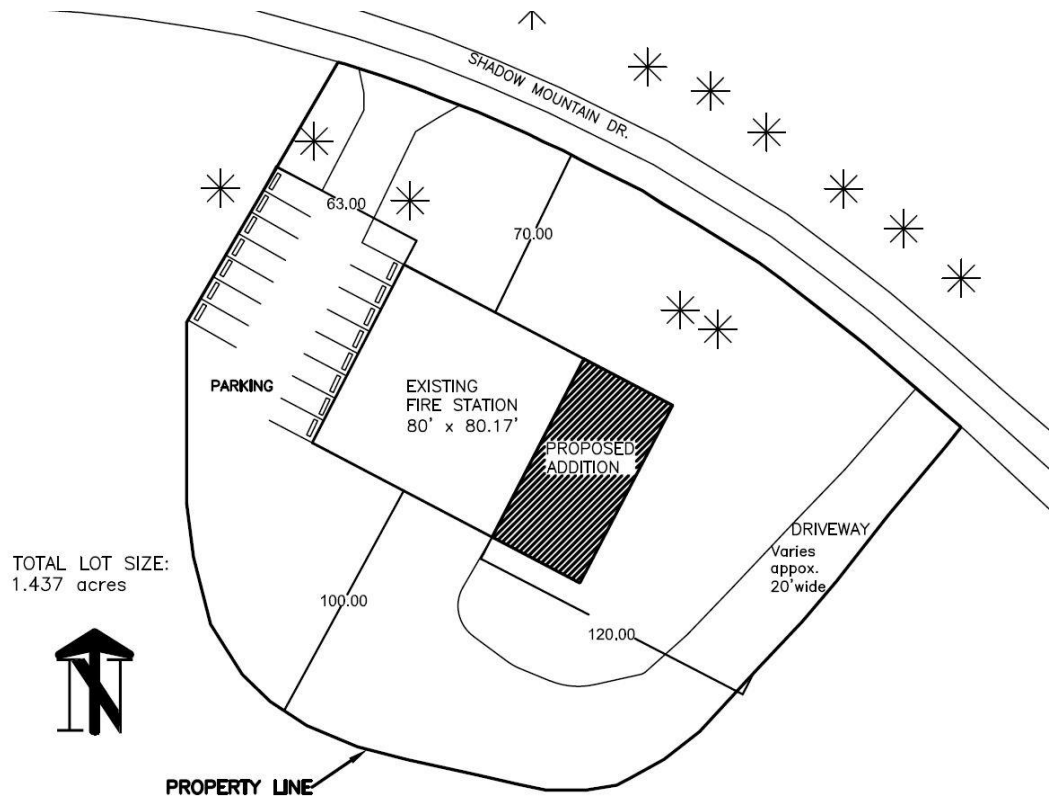


Figure 4: Job Site with Existing and Proposed Stations

The existing fire station has a fire truck bay, two dormitories, a kitchen, two full, bathrooms, a laundry room, and an office. The floor plan of the existing fire house can be seen in figure 5.

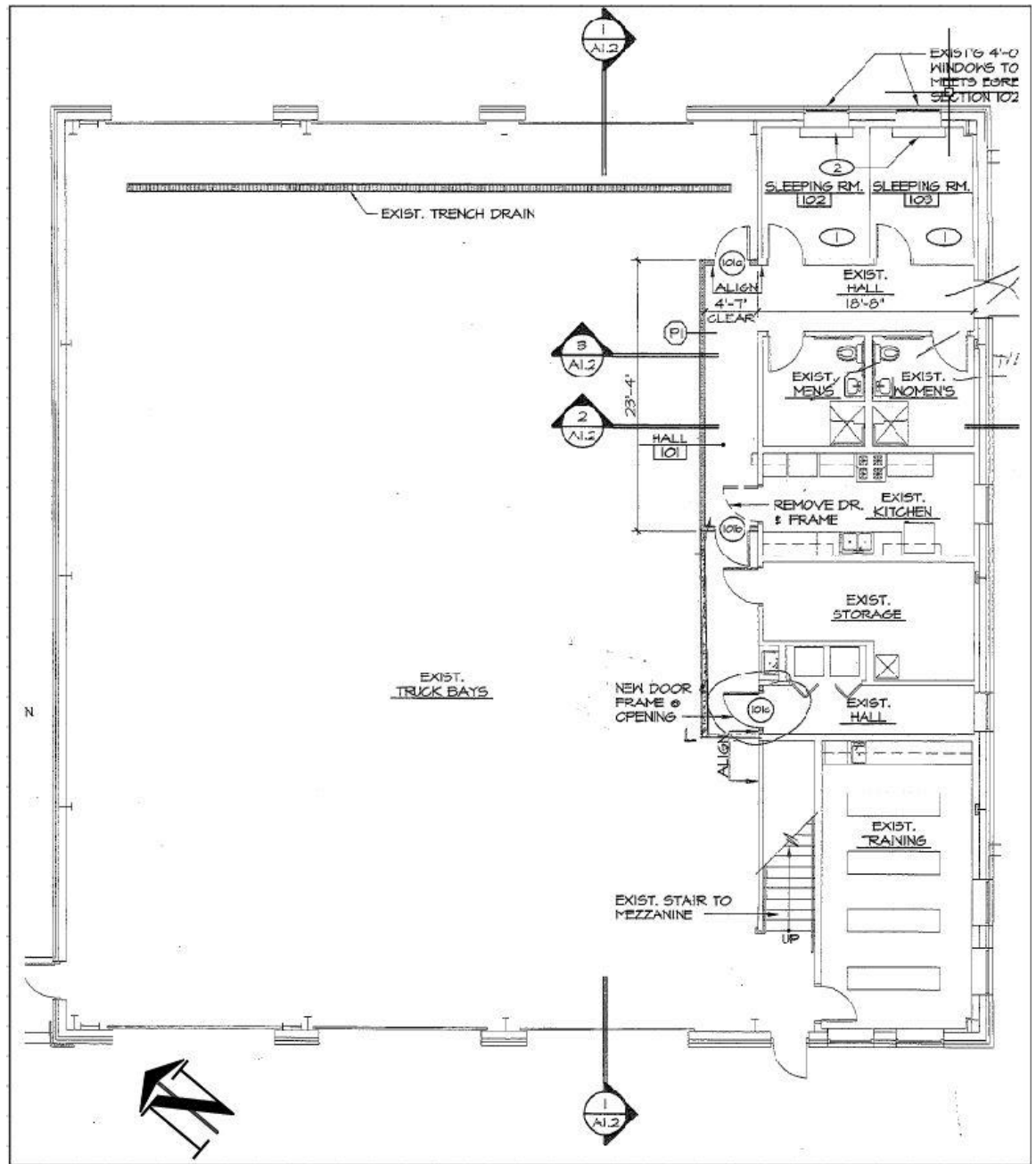


Figure 5: Floor Plan of Existing Fire Station

1.3 Technical Considerations

1.3.1 Code Research

The code research will determine what building codes are required to design the fire station addition. The project will follow the building codes outlined in the 2014 Coconino County Building Ordinance [2]. The codes outlined in the ordinance are the 2012 editions of the International Building Code, International Residential Code, International Mechanical Code, International Fuel Gas Code, International Plumbing Code, International Energy Conservation Code, National Electric Code [2]. The fire station addition will be designed in accordance with these codes and will continue to research additional codes related to the project.

1.3.2 Property Zoning

The Ponderosa Fire Station is currently in the CH-10,000 or commercial heavy zone. The perimeter of the site is surrounded by RS-6,000 or Residential Single-Family Zone. Northeast of the site is OS or Open Space and Conservation Zone. Northwest of the station is CH-10,000 zone, commercial heavy zone. Figure 6 below shows the zone of the site and surrounding area.

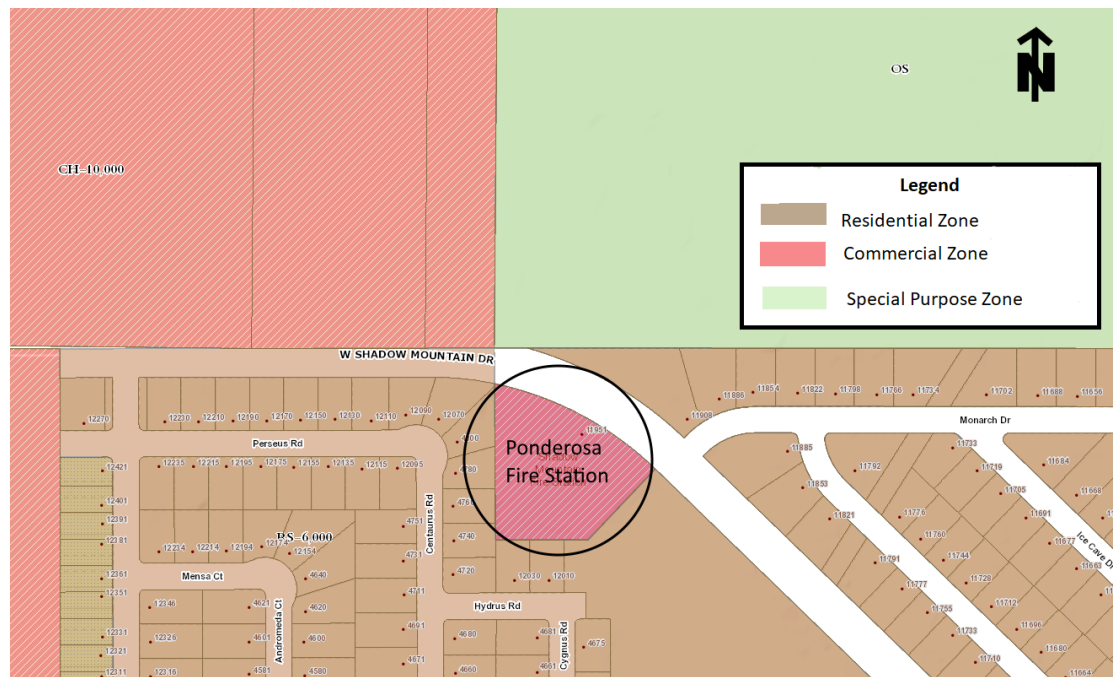


Figure 6: Official Zoning Map of area of interest [3]

The jobsite has an existing building and parking lot and driveway. According to the Coconino Zoning Ordinance, the setbacks for a semi- public use building such as a fire station must be a minimum of 20 feet from all property lines [4].

1.3.3 Surveying

Since the project is in Coconino County, a site survey is required by the county before any work can be done. Surveying the lot where Ponderosa Fire Station is located will provide property boundaries, elevations, and the geometric shape and area of the existing lot. The survey will help determine the locations of all manmade and natural features that exist on the lot. The survey will determine any elevation changes that exist on the lot which will be important when designing the foundation on the building addition.

1.3.4 Structural and Architectural Design

The structural design of the fire station addition will consist of a design layout of the addition and computation of design loads the new addition would have to accommodate. The structural design of the fire station addition will follow the codes outlined in Section 1.3.1 Code Research of this document. The room layout of the fire station addition will be determined by the needs and priority of the client. The computations of the design loads will be based on the design criteria outlined in the 2014 Coconino County Building Ordinance [2]. These design loads consist of dead loads, imposed live loads, and environmental loads. The Ponderosa Fire Station is in Climate Zone 5B and Seismic Risk Design Category C, which determines the snow load and seismic load requirements respectively [5]. Since the building addition will consist of sleeping rooms and habitable spaces, the required distributed live loads must also be computed. The materials used to design the beams, columns, and the building addition's other structural components will be considered. The dimensions of the structural components must also be designed to support the imposed design loads on the structure.

1.3.5 Site Plan Development

The site plan will display the layout and dimensions of the existing fire station, fire station addition, and all other current facilities within the lot. Coconino County requires a site plan to consist of general, existing, and proposed property information, and building footprint [6]. A site plan will be developed in accordance with the requirements outlined in the Coconino County Site Plan Checklist and Minimum Plan Requirements for Commercial Projects [7] [6]. Coconino County requires the design engineer, county engineer, and property owner/developer to be responsible for certain aspects of a project [8]. The design engineers of the project and will be responsible for the correctly preparing a complete set of construction plans that follow Coconino County guidelines and are responsible for any consequences of the final design [8]. The county engineer will be responsible only for reviewing and approving the final

plan [8]. The property owner/developer of Ponderosa Fire Station addition will be responsible for the implementation and construction of the final design [8].

1.4 Potential Challenges

1.4.1 Financial Constraints

The project is prone to some challenges which threaten to affect its outcome. One of the major challenges that can affect almost everything is the financial constraint budget of \$600,000 to \$800,000. Before embarking on the project, the team must draft a budget of all the expenses that will be used in the project. The materials that can be used will impact the final cost of the project. The team will source for locally available materials which are appropriate to reduce the cost.

1.4.2 Time Constraints

There is also, the potential challenge of time constraints. In this regard, the team must complete the project within the set time to avoid inconveniencing the client and at the same time spending extra money on unplanned schedule [10]. To solve this challenge, the team will ensure that all the objectives are met within the set time.

1.4.3 Planning Challenge

Planning the layout of site is a challenge since the area is limited. Therefore, there is need of a well thought out plan that will ensure that the new construction is appropriate for the function of the fire station property. For instance, with the addition of a garage, there is need to extend the existing driveway to facilitate easy access. The new addition will include space for housing firemen, conducting meetings, hosting community events with a capacity of 30-50 people, and storing the chief's fire truck. To address this challenge, the team will be required to carry out a design layout as approved by client before embarking on the actual job to ensure that everything fits appropriately without adversely affecting each other [11].

1.4.3 Congestion Challenge

Congestion is another challenge that the team will have to deal with. The fire station houses numerous fire trucks, ambulances and trucks. This congestion can hamper smooth operations of other activities in the compound such as quick movement in case of an emergency [12]. The best solution to this is prioritizing on the most crucial structures and put them first.[12]

1.5 Stakeholders

The Ponderosa Fire Department is part of the Coconino County fire district. This makes the district supervisors and district director external stakeholders. They are responsible for the budgeting and funding of the fire department. Taxes are the main funding of the

fire department falling under Special Taxing Districts of Coconino County [4]. Internal stakeholders for the fire department include all permanent members of the department. This included the Fire Chief, Assistant Chief, Office Manager, Captains, Lieutenants and volunteers. With a fire department, fire personnel work 24 hours a day 7 days a week. This makes all parties involved internal stakeholders [13].

1.6 Exclusions

The team will only research and design the foundation plan, anchor bolts, and determine design parameters. The structural frame, electrical, HVAC and Geotechnical aspects of the project will not be conducted due to the short time frame of 8 months and complexity of those designs.

2.0 Scope of Services

2.1 Site Investigation

The team will conduct an initial site visit to tour the existing fire station and buildable area. This will provide the team with knowledge of the current state of the site.

2.1.1 Obtain Plan Sets

The team will obtain plan sets of the existing building. The plan sets will provide information about the current structural components and dimensions.

2.1.2 Survey Land

The team will conduct a land survey of the area to determine the topography, the locations and distances of manmade and natural features, and the location of the property lines.

2.1.3 Soil Sampling

The team will take a soil sample from the proposed building area of the building addition. The team will conduct a consolidation test to determine the wet unit weight of the soil to help with the foundation design and analysis.

2.1.4 Survey Data

The team will upload the data points taken from the land survey and upload them into a drafting program and create a topographic map of the site.

2.2 Soil Testing

The team will conduct soil testing to determine the unit weight of the soil. The test includes a proctor test. The test will be conducted a minimum of two times to ensure quality results.

2.3 Metal Framing Company Research

2.3.1 Cost Research

The team will contact various metal framing companies to determine the cost of frame design and building materials based on the area of the building addition.

2.3.2 Decision Matrix

The team will use a decision matrix to evaluate and compare the cost of the different companies researched.

2.4 Structural Design

2.4.1 Design Parameters

The team will determine the imposed loads the building addition will encounter and support. The team will use the design loads outlined in the 2014 Coconino County Building Ordinance.

2.4.2 Foundation Design

The team will design the foundation for the building addition based on the design parameters computed from the load combinations.

2.4.3 Anchor Bolt Design

The team will design the anchor bolt connections for the building addition based on the design loads computed from the load combinations.

2.4.4 Floor Design

The team will design the floor layout of the building addition based on the client's needs and feedback.

2.5 Construction Documents

2.5.1 Site Plan

The team will create a complete site plan that follows the requirements required by Coconino County. The site plan will include general property information, existing property improvements, cross-section plans and proposed property improvements [6].

2.5.2 Utility Locations

The team will identify all existing nearby utilities and determine of relocation will be needed.

2.5.3 Foundation Plan and Details

The team will create a foundation plan based on the requirements outlined by Coconino County and the metal building supplier. The foundation plan will include all foundation, footing, stem walls and anchor bolts [6].

2.5.4 Anchor Bolt Plan and Details

The team will create an anchor bolt plan based on the required strength to resist uplift on the foundation. The anchor bolt plan will include the number of anchor bolts, location and strength of each anchor bolt [6].

2.5.5 Floor Plans

The team will create a floor plan based on the requirements outlined by Coconino County and the client. The floor plan will include all braced walls, panels, door and window dimensions, and emergency exit windows [6].

2.6 Project Deliverables

The team will submit all project deliverables for CENE 486.

2.6.1 Meeting Memo Binder

The team will keep record of all client, technical adviser, team, and grading instructor meetings. The team will compile all records into a binder and submit the deliverable by the required due date.

2.6.2 30% Report

The team will complete the 30% design report by the required due date.

2.6.3 60% Report

The team will complete and submit the 60% design report by the required due date.

2.6.4 Final Report

The team will complete and submit the final design report by the required due date.

2.6.5 Website

The team will complete and upload the team's Capstone website by the required due date.

2.7 Project Management

2.7.1 Team, Client, Technical Adviser, and Grading Instructor Meetings

The team will attend and keep record of all team, client, technical adviser, and grading instructor meetings throughout the duration of the project.

2.7.2 Construction Cost

The team will record and compare the construction cost of all design alternatives.

2.7.3 Schedule

The team will record and stay on the project schedule. The team will keep track of completed tasks and the due date of future tasks.

2.7.4 Project Deliverables

The team will complete and submit all project deliverables required by Capstone.

2.8 Project Limitations

2.8.1 Project Challenges

Challenges that the team can encounter are bad weather conditions such as heavy snowfall. This could impact fieldwork such as surveying and soil sampling. Since the project is located in Bellemont, travel constraints such as road closures and vehicle problems could be a challenge encountered by the team. The challenge of correctly designing the structural components of the building addition can be a challenge due to this project being the team's first experience designing a building this big and complex.

2.8.2 Project Exclusions

The team will not provide the structural framing of the building. The building frame will be provided by a steel manufacturer contracted by the client. The team will not be designing and creating an electric plan for the building addition. The team will also not design mechanical components of the building addition such as the HVAC system. The team will only complete two geotechnical tests on the soil sampled.

2.9 Project Impacts

The project and its final designs will impact the firefighters of Ponderosa Fire Station. This is due to the building addition's additional living quarters for the firefighters and expanded kitchen. The project will also impact the community of Bellemont as the building addition will feature a community room for the local population.

3.0 Schedule

The attached 11" x 17" document shows the projected schedule for the Ponderosa Fire Department addition. The total project will take 182 days to complete. The first task is an initial site investigation. This involves obtaining original plan sets, surveying the site and collecting a soil sample to be further analyzed. This process will take a total of 7 days. The second task will be to research and determine a manufacturer to design the metal frame work for the structure. Cost analysis and decision on the design will take 23 days. While the metal frame company is selected, the third task structural design be started. Once the frame company has been selected, anchor bolt design, foundation design and floor plans can be completed. The entire structural design task will be completed within 30 days. The fourth task is the creation of construction documents from the structural design. This task can be started one the design process starts is a predecessor to the design process and cannot be completed until the third task has finished. The construction documents will be completed within 50 days. The final two tasks are project deliverables and project management. These tasks will be on going throughout the entire project duration.

The critical path starts with the initial site visit. Without initial boundaries to the project site, the design process cannot be started. Determining the size and cost of the frame will determine the foundation design and anchor bolt design. The main portion of the team's deliverable is to

create construction documents that comply with local code. These plans cannot be completed without the completion of the previous tasks. The critical path must be followed in order for the addition fulfill the client’s requests.

4.0 Staffing Plan

4.1 Staff Titles

Table 1. Staff abbreviation code

Classification	Code
Senior Engineer	SENG
Engineer	ENG
Field Tech	FTECH
drafter	DRF
intern	INT

4.2 Senior Personnel Qualifications

4.2.1 Senior Engineer

The senior engineer will have minimum 15 years of experience in engineer designing and will charge a rate of \$255/hour. The hourly rate includes the overhead, traveling, software's, and equipment's.

4.2.2 Engineer

The engineer will have minimum 7 years of experience in engineer designing and will charge a rate of \$115/hour. The hourly rate includes the overhead, traveling, software's, and equipment's.

4.2.3 Field Technician

The technical engineer will have minimum 5 years of experience in engineer designing and will charge a rate of \$51/hour. The hourly rate includes the overhead, traveling, software's, and equipment's.

4.2.4 Drafter

The senior engineer will have minimum 5 years of experience in engineer drafting and will charge a rate of \$69/hour. The hourly rate includes the overhead, traveling, software's, and equipment's.

4.5 Engineering Intern

The engineering intern will do simple tasks such as material research, reviewing a construction plans, and helping in the site investigation. The intern experience will range between no experience and 6 months. The engineering intern will charge a rate of \$21/hour, this includes the overhead, traveling, software's, and equipment's.

4.3 Staff Estimated Hours

Table 2. Total hour breaking down for staff.

Tasks	SENG	ENG	FTECH	DRF	INT	Total Hours
1.0 Site Investigation						
1.1 Obtain Plan Sets	2	2			2	6
1.2 Survey Land			20		20	40
1.3 Soil Sampling			5		5	10
1.4 Survey Data			4		4	8
2.0 Lab Testing	1				24	25
3.0 Metal Frame Company Research						
3.1 Cost Research	15	15			10	40
3.2 Decision Matrix	10	10				20
4.0 Structural Design						
4.1 Design Perimeters	15	15	2		10	42
4.2 Anchor Bolt Design	4	10		2	10	26
4.3 Foundation Design	4	10		2	10	26
4.4 Floor Design	4	10		2	10	26
5.0 Construction Documents						
5.1 Site Plan	1	5		9	6	21
5.2 Utility Locations	1	4		15	12	35
5.3 Foundation Plan and Details	1	4		15	12	66
5.4 Anchor Bolt Plan and Details	1	5		25	25	56
5.5 Floor Plans	1	10		25	30	35
6.0 Project Deliverables						
6.1 Meeting Memo Binder	10					10
6.2 30% Report	5	5			2	12
6.3 60% Reprt	5	5			2	12
6.4 Final Report	7	7			2	16
6.5 Website		10				10
6.6 Final Presentation	2	2	2	2	2	10
7.0 Project Management						
7.1 Meetings	15	15	5	10	15	60
7.2 Construction Cost	10	10			10	30
7.3 Schedule	10	10			10	30
Total Hours	124	164	38	107	233	672

4.4 Justification of Senior Personnel Hours

The field technician has the lowest personal hours, as their work is limited to the site investigation, such as surveying, and soil sampling. The field technician also has a role in the team meeting to explain the findings of the site investigation. The drafter has the second lowest hours due to his major role in drafting the constructions documents such as site plans, and foundation plans. The senior engineer has the third lowest hour rate due to his task is to generate the proposals, plans, and sign off on all work done according the information provided from the client. The intern has the highest hour rate due to the importance to learn and understand the overall concepts relating to structure engineering, as well as developing his/her experience with various engineering

software's. The engineer has second highest hour rate due to his major role in structural analysis, the engineering workbook, and other inquires

5.0 Cost of Engineering Services

5.1 Billing Rate

The billing rate for all personnel is shown in the below. Table 3 shows all the staff's earnings rates per an hour, this includes the overhead, traveling, software's, and equipment's. The base pay used for the personnel are the average base pay for those positions and the benefit percentage was based off how much benefits the company wanted to provide. The company determined that a 33.33% profit was desired.

Table 3. Bill rates for individual staff.

Cost of Personal	Act Pay +		Act Pay	OH% of		Profit	Bill Rate
	Base Pay	Benefit		Base Pay	OH \$/hr		
SENG	\$100	12.5%	\$113	70%	\$191	33.3%	\$255
ENG	\$60	25.0%	\$75	15%	\$86	33.3%	\$115
FTECH	\$25	40.0%	\$35	10%	\$39	33.3%	\$51
DRF	\$30	33.3%	\$40	30%	\$52	33.3%	\$69
INT	\$15	0.0%	\$15	5%	\$16	33.3%	\$21

5.2 Total Cost

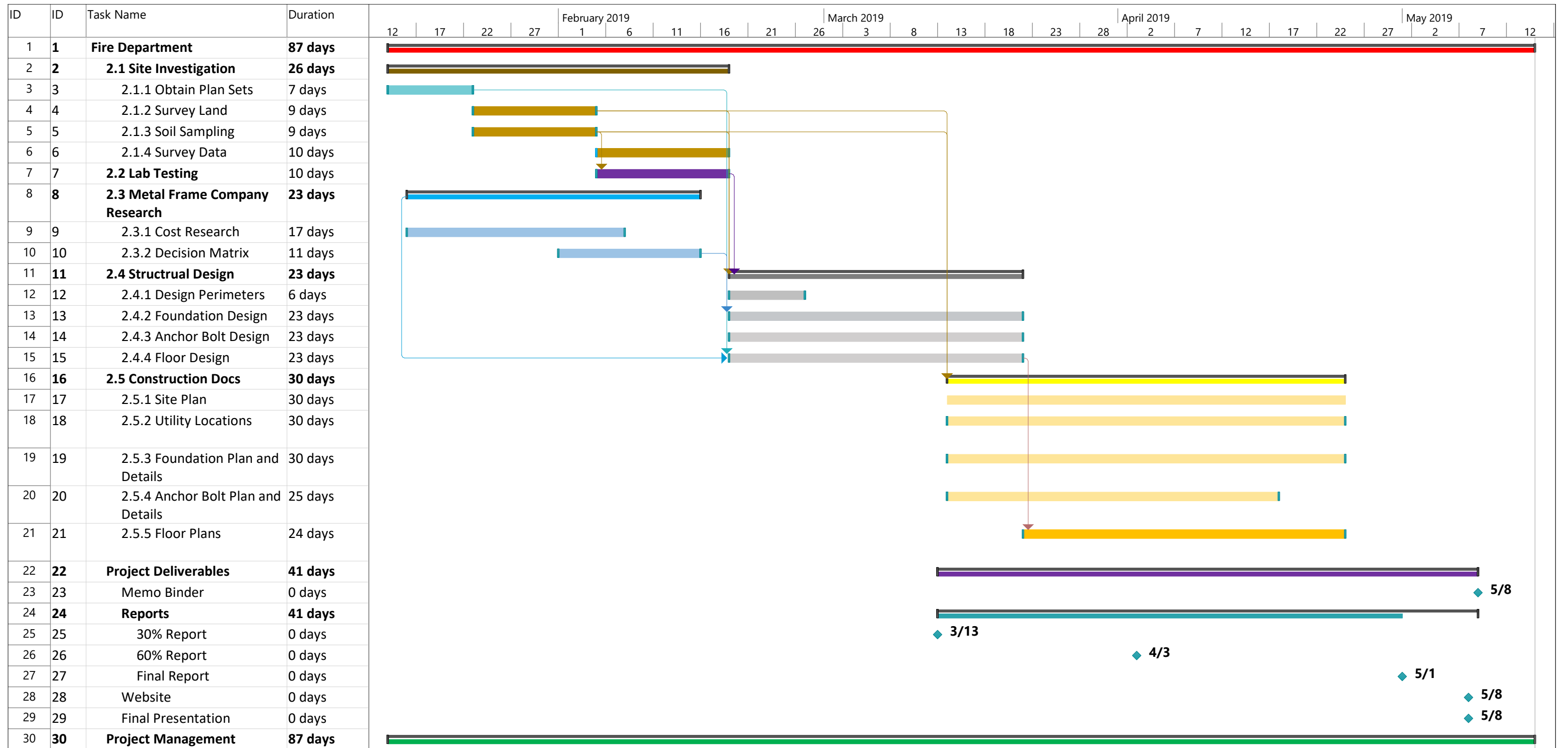
The total cost for engineering services for the project is shown below in Table 5. The overhead was added to the billing rate. The overhead included office supplies, drafting programs, insurance, office space rental and utilities. Travel was calculated to cost \$42 for the 5 visits to the site. Survey equipment was calculated to cost \$100/hr for a total of \$4,800. Soil testing will cost \$100/hr for a total of \$100. The total cost for engineering services will be \$69,636.

Table 4. Total cost for project with overhead and staff costs.

Total Cost				
	Classification	Hours	Rate (\$/hr)	Total Cost
1.0 Personal				
	SENG	124	\$255	\$31,620
	ENG	164	\$115	\$18,860
	FTECH	38	\$51	\$1,938
	DRF	107	\$69	\$7,383
	INT	233	\$21	\$4,893
	Total Personal			\$64,694
2.0 Travel				
	5 meetings x 15 miles/meeting		\$0.55/mile	\$42
3.0 Supplies				
	Survey equipments x 48 hours		\$100/hr	\$4,800
	Lab time x 1 hour		\$100/hr	\$100
4.0 TOTAL				\$69,636

6.0 References

- [1] Google Maps, "Google Maps," 2018. [Online]. Available: <https://www.google.com/maps/place/Ponderosa+Fire+District/@35.2375028,-111.8175314,1916m/data=!3m1!1e3!4m5!3m4!1s0x0:0x9a3f129a0b7c9664!8m2!3d35.2372423!4d-111.8164742>. [Accessed 22 September 2018].
- [2] "Building and Safety," 25 9 2018. [Online]. Available: <http://www.coconino.az.gov/624/Building-and-Safety> .
- [3] Coconino County, "View County Maps," [Online]. Available: <https://gismaps.coconino.az.gov/LandUseCases/>. [Accessed 2018 September 10].
- [4] Coconino County, "Coconino County Zoning Ordinance," 18 April 2017. [Online]. Available: <http://coconino.az.gov/DocumentCenter/View/16939/Complete-ZO-41817?bidId=>. [Accessed 10 September 2018].
- [5] "Community Development - Building & Safety," [Online]. Available: <http://www.coconino.az.gov/faq.aspx?TID=51> . [Accessed 23 9 2018].
- [6] "Building Permit Procedures and Minimum Plan Requirements for Commerical Projects," [Online]. Available: <http://www.coconino.az.gov/DocumentCenter/View/8835/Building-Permit-Procedures-and-Minimum-Plan-Requirements-for-Commercial-Projects>. [Accessed 22 September 2018].
- [7] "Site Plan Requirements," [Online]. Available: <http://www.coconino.az.gov/FormCenter/Community-Development-18/Site-Plan-Requirements-155>. [Accessed 23 9 2018].
- [8] "Coconino County Engineering and Constrction Criteria Manual," Coconino County, 2000.
- [9] J. Garia-Quevedo, A. Segarra-Blasco and M. Teruel, "Financail Constraints and the Failure of Innovation Projects.," *Technological Forecasting and Social Change*, vol. 127, pp. 127-140, 2018.
- [10] F. Harrison and D. Lock, *Advanced Project Management: A Structured Approach*, Routledge, 2017 .
- [11] H. Kerzner and H. R. Kerzner, *Project Management: A Systems Approach to Planning, Scheduling, and Controlling.*, John Wiley & Sons, 2017.
- [12] Z. Qu, W. Wang, A. Zhou, J. Liu and J. Feng, *Study on construction technology and quality control of municipal drainage engineering.*, Smart Construction Research, 2018.
- [13] "Stakeholders Have Explicit Expectations of Fire Departments," [Online]. Available: <https://www.newswise.com/articles/stakeholders-have-explicit-expectations-of-fire-departments>. [Accessed 21 September 2018].



Project: Fire Department Date: Sun 12/9/18	Task		Inactive Task		Manual Summary Rollup		External Milestone		Progress	
	Split		Inactive Milestone		Manual Summary		Deadline		Manual Progress	
	Milestone		Inactive Summary		Start-only		Baseline			
	Summary		Manual Task		Finish-only		Baseline Milestone			
	Project Summary		Duration-only		External Tasks		Baseline Summary			