

1. 1:00 P.M. Agenda

Documents:

[2025-09-29 City Council WS Meeting Agenda.pdf](#)

2. Meeting Material

Documents:

[Notes On Westech Report.pdf](#)

[Yachats Tank Letter Report DRAFT 09-11-25.Pdf](#)

[Letter Report Figure Set 09-11-25 \(1\).Pdf](#)



CITY OF YACHATS

441 N Hwy 101, Civic Meeting Room 1

Monday, September 29, 2025, 1:00 pm

To Be Held In-Person & Via Zoom

Join Zoom Meeting

<https://us02web.zoom.us/j/82570205305>

Meeting ID: 825 7020 5305

CITY COUNCIL WORK SESSION MEETING

I. Follow-up Work on the Water Tank

*The Yachats City Council meetings are open to the public and interested citizens are invited to attend via Zoom. These are open meetings under Oregon law, but a work session is not a community forum; audience participation is at the discretion of the Council. Meetings are audio-recorded. The meeting are accessible to persons with disabilities. For accommodations, please call (541) 547-3565, or Oregon Relay 1-800-735-2900 (TDD) two days in advance. City of Yachats does not discriminate on the basis of race, color, religion, creed, gender, national origin, age, disability, marital or veteran status, sexual orientation, or any other legally protected status. Sign language or foreign language interpreter may be available, with advance notice. Call City Hall at 541-547-3565 or Oregon Relay 1-800-735-2900 (TDD) two days in advance.
POSTED September 23, 2025 By: Kimmie Jackson, Recorder*

Notes on Westech Letter of September 15, 2025

Site Evaluation for New Water Reservoir

Fisterra

Figure 1 of the Westech Report shows the proposed tank encroaching on an easement for ingress, egress and utilities that benefits the Claussen property to the south. The easement agreement requires written consent of the Grantee (Claussen) before any construction within the easement. See Agreement #3 of [Easement 2015-10064](#)

Alternate Site 1 – Figure 9 (Uhan)

This property is a residential lot in the Creekside Planned Unit Development (PUD). The owner has recently received a side yard setback variance from the City and is currently awaiting County approval of his building permit application. It's not likely he would consider a sale of his lot.

Regardless, the Creekside PUD is probably not an option for this project. The [Covenants, Conditions and Restrictions](#) (CC&Rs) restrict the lots to residential use only (Article 6.1) and the common areas to recreational use only (Articles 2.8 and 6.4). Conditions of approval of the PUD by the City also restrict the use of the common areas to recreational/open space.

Alternate Site 2 – Figure 10 (Fish/Bender)

This property consists of two adjacent lots in the Black Stone subdivision. The lots are both owned by the same party and the owners are currently seeking temporary housing in the area so they can oversee their upcoming build.

The Black Stone [Covenants, Conditions and Restrictions](#) also mandate residential-use only for all lots (Article 2.01(a)). While the common area might be an option, there is nothing at a suitable elevation.

Alternate Site 3 – Figure 11 (Rocha)

This site is part of a 40-acre parcel upon which the City recently negotiated [Temporary Restrictive Covenants](#). These restrictive covenants prohibit logging and require that the property “be maintained in its natural state”.

Alternate Site 4 – Figure 16 (Horizon Hill – Richer, Carlson and Riggs)

This site consists of three neighboring lots on Horizon Hill. One (Carlson) is a residential lot in the Black Stone subdivision (see Alternate Site 2 for concerns over CC&Rs). The second (Richer) is immediately outside of Black Stone but subject to similar deed restrictions. The third is a large tract of disqualified forestland owned by Ocean View Investments (a.k.a. Riggs).

Possible Alternatives

1) Yachats Memorial Park (Cemetery)

The “working” part of the cemetery consists of 2.18 acres adjacent to the highway. This parcel was gifted to the Yachats Memorial Park in 1940 with the stipulation that it only be used for cemetery purposes ([Cemetery Deed - 1940](#)). The remaining 11.82 acres was a gift in 1971 and contains a similar deed restriction, nullifying the transfer in the event of a change in use ([Cemetery Deed - 1971](#)).

2) Hansen ([TL 14-12-23-CC-2900 Aerial](#))

This lot is just north of the cemetery and a part of the [Powell Addition to Yachats](#). In 1992, the developer (Powell) negotiated a [Performance Agreement](#) with the City “in lieu of other assurances”, promising to bring water to the subdivision within two years. This never happened and the City didn’t hold Powell accountable for the breach. Mr. Hansen recently bought this 1.78 acre parcel (zoned R3) in the Powell Addition and has a vested interest in seeing water brought to the property.

Prepared by:
Katherine Guenther, City Planner
September 28, 2025

September 11, 2025

The Honorable Mayor and City Council
City of Yachats
201 Hwy 101 N.
Yachats, OR 97498

RE: Fistera Site Geotechnical Evaluation for a New Water Reservoir
JO. 3096.2060.0

Ladies and Gentlemen:

The following is a review of the geotechnical investigation of the Fistera site for the proposed new City of Yachats water reservoir to replace the existing Upper Radar Road reservoir. The attached report provides an overview of the project, a summary of the geotechnical findings, a budget level cost estimate of the work required to develop the site for the new water tank, and some additional options for the City to consider should the determine it is not in the City's best interest to move forward with the project at the Fistera site at this time.

Westech Engineering appreciates the opportunity to serve the City on this important project.

If you have any questions or need additional information regarding this matter, please contact us at (503) 585-2474.

Sincerely,

WESTECH ENGINEERING, INC.

Raymond C. Engel, P.E.
Project

Manager
rce
encl.

cc: Rick McClung, City of Yachats
Rick McClung, City of Yachats



RENEWS: 12/31/2025

Fisterra Site Geotechnical Investigation Summary For a proposed new City of Yachats Water Reservoir September 11, 2025

Executive Summary

The ultimate purpose of this project is for the City to construct a new 1,000,000 (1 MG) or larger water reservoir to replace the existing Upper Radar Road reservoir. On August 6-7, 2025 a geotechnical exploration consisting of two bore holes was conducted on the Fistera site in the northern part of the City of Yachats. The portion of the site where the work was done is a heavily wooded, relatively steep hillside. The bore holes revealed there is approximately 25 feet of native soil before reaching bedrock. The soils, ground slopes and bedrock are such that the geotechnical engineer considers the site suitable for the construction of the proposed new water reservoir. However, the site circumstances pose challenging and comparatively high costs to the development of the site before the tank can be constructed. Because these circumstances make a decision to develop this site for a new reservoir, Westech Engineering felt it would be helpful to provide a brief look at some other options the City might wish to consider.

While other options exist, the preliminary review of those options shows that they may prove to be as challenging and costly as developing the Fistera site. The options discussed in this letter report include other possible sites for a tank of similar size and serving the same water service zone, constructing smaller tanks on multiple sites while serving the same water service zone, and construction of a new 1 MG or larger tank at the top of the hill near Horizon Hill Road. This report provides a general overview of these options. Should the City decide not to move forward with the Fistera site, additional engineering planning and analysis would be needed to determine the potential viability and costs related to any other plan of interest to the City.

Fisterra Site Geotechnical Evaluation Summary

The City authorized Westech Engineering to perform a geotechnical investigation on Tax Lot 14-12-23-CC-03102-00 to determine the suitability of that site for a new City water tank. This parcel is currently owned by Elk Mountain Properties and located southeast of Diversity Drive. The parcel is of interest because it has an area at the appropriate elevation of approximately 220 ft and reasonable access to the site of interest. Figure 1 shows the overall parcel with elevation contours based on lidar data, the proposed site and the access route from Highway 101.

Acting as project manager for this project, Westech subcontracted the geotechnical investigation to Central Engineering Services. The field exploration was performed on August 6th and 7th. This consisted of two vertical bores at the proposed tank site approximately 50 ft apart with one bore on the uphill side of the tank and the second downhill from the first. Both bores produced similar results, each finding approximately 25 ft of native soils before encountering solid ledge rock. The bores were extended an additional 10 ft into the rock to verify that the rock was not a large boulder.

While the geotechnical investigation indicates that the site appears to have the potential to be used for a new City water tank, two key factors would make locating a tank in this location challenging and expensive. The first concern is the 25 ft depth to bedrock. The second is the steep slopes of the existing terrain. These two factors combine to require extremely tall retaining walls to create the level site needed for the tank and surrounding access area, and numerous tall support columns under the tank and downhill-side access drive area.

Before showing what would be required to construct a new water tank on this site it is important to provide a little more background information. The City is currently served by the 1 million gallon (1 MG) Upper Radar Road Reservoir and the 200,000 gallon Lower Radar Road Reservoir. A geotechnical investigation of the Upper Radar Road Reservoir Site determined that Reservoir sits on a geologically unstable region. The reason for the new 1 MG tank is to replace the Upper Radar Road tank.

In addition, the Lower Radar Road Reservoir is old and approaching the end of its useful life. During discussions between Westech Engineering and the City, the general path forward was based on replacing the two Radar Road reservoirs with two new separate tanks of the same size as the existing tanks. As the planning for the geotechnical investigation for the 1 MG tank progressed, the City stated to Westech it would like to look at the concept of constructing a single 1.5 MG tank instead of two separate tanks. For reference purposes, to match the 33.8 ft water depth of the south water tank on Crestview Drive the diameter of a 1.5 MG tank would be 87 ft, while a 1.0 MG tank diameter would be 71 ft, and a 0.5 MG tank diameter would be 50 ft. Tank diameter is important because the larger the tank the harder it is to construct on a steeply sloping hillside.

As part of the coordination of the geotechnical field work, Westech looked at the generic placement of 1.5 MG and 1.0 MG tanks on the site and noted that an 87 ft diameter tank was likely to be significantly more difficult to construct on the proposed site. When the field boring found that the bedrock was 25 ft deep, it quickly became clear that 1.5 MG tank was unlikely to fit, so the initial focus was on the 1.0 MG tank.

Figure 2 shows a plan view layout for a 1 MG tank with a 12 ft clear space on the uphill side of the tank and a 20 ft clear space on the downhill side of the tank. Figure 2 also shows the approximate locations for the two geotechnical bores. Figure 3 shows a profile or section view of that same tank. The tank has been placed so that a portion of the tank is directly on the rock and the remainder of the tank is on native soil. In this view you can see that a 47 ft tall wall is required on the uphill side of the tank and a 12 ft wall is required on the downhill side. Figures 4 and 5 show profiles for the retaining walls around the tank including the total wall area for each wall. The area of the south wall is approximately 5,400 sf while the north wall is approximately 2,300 sf, for a total wall area of 7,700 sf.

Westech Engineering provided Figures 2 to 5 to Central Engineering Services for geotechnical analysis and cost estimating purposes. Central Engineering Services recommends a cost of \$178 per square ft of wall. With 7,700 sf of wall, the rough estimate for the walls is about \$1,400,000 (\$1.4 M). In addition to the walls, vertical supports down to the rock are required for the portion

of the tank and the access roadway area not supported by the rock. Central Engineering Services estimates that supports, called rigid inclusions, should be placed at 8 ft on center for 105 total of rigid inclusions with an average depth of 22 ft and an estimated cost of \$260 per ft of depth. The total estimated cost of the rigid inclusions is \$600,000 (\$0.6 M). Thus, the total cost just to stabilize the hillside and support the tank is \$2 million dollars (\$2.0 M). This cost does not include the earthwork to cut and level the hillside, construct the access road, install a new waterline or construct the tank.

The earthwork to excavate the hillside to create the level ground for the tank is estimated to involve approximately 5,000 cubic yards of soil plus an additional 900 cubic yards of rock. At \$40 per cubic yard for soil and \$200 per cubic yard for rock, the earthwork cost would be approximately \$380,000, rounded to \$400,000. The roadway is approximately 1,400 feet long. Assuming a 20 ft wide, the area is 28,000 sf. Approximately 2,000 tons of crushed rock is needed to place a foot of rock on the roadway. At \$50/ton, the roadway would cost \$100,000 to rock.

Finally, it is important to mention that the geotechnical exploration to date is not all of the Geotech work which will be required prior to construction of a new water tank on this site. The current geotechnical work was intended to determine if the site could be used for the new tank, and if so, the issues and costs likely to be encountered if the project moves forward. Additional field exploration will be required prior to preparation of construction plans and specifications. The geotechnical engineer noted that while the possibility for significant surprises exists when the additional exploration is done, based on the findings so far the potential for major surprises appears to be relatively low. However, due to the complexity of the project and the potential for some unexpected new information, a contingency of \$500,000 is included in the current cost estimate.

From the discussion above, the cost for the basic development of the site for the water tank is as follows:

Access Road	\$100,000
Earthwork	\$400,000
Retaining Walls	\$1,400,000
Rigid Inclusions	\$600,000
Site Contingency	\$500,000
Total	\$3,000,000

For comparison purposes assuming basic earthwork and site costs at $\pm$ \$15/sf, a flatter half-acre site could be developed at a cost in the range of \$300,000 to \$400,000, excluding the access road. Since flatter sites are rare in the Yachats hills at the 220 elevation, Westech realizes that site development costs in that range are unrealistic. However, given the \$2,000,000 cost for the retaining walls and rigid inclusions required to develop this site, Westech is concerned that moving forward with this site may not be in the best interests of the City.

To help provide a more complete picture and scale for reference, a rough estimate for the cost of a 1 MG tank would be in the ballpark of \$3,000,000 for a concrete tank and \$2,200,000 for a steel tank.

As the City knows, other recent geotechnical work has identified risks and concerns with other reservoir sites in the area. The potential exists that other sites and/or options may prove to be as challenging and costly as this site. Despite that possibility, at this point Westech believes it would be appropriate to briefly present some additional information and ideas for the City's consideration so that the City can make a decision with regard to the current site against other possible options. The following information is very conceptual in nature. Should the City decide against developing the current site and be interested in looking at other options, Westech Engineering would be happy assist the City with exploring alternatives.

Alternative Water Tank Options Overview

Having summarized the information regarding the potential use of the Fisterra site, Westech Engineering believes it would be appropriate to mention to the City some other approaches the City might wish to consider for providing the City with a new water tank. The information in the following sections is intended to be conceptual in nature. Should the City decide to not move forward with a new water tank on the Fisterra site, Westech has develop some possible alternatives for the City to consider which include:

1. Alternate Sites, Tanks at the 220 ft Elevation
 - 1a. Single 1 MG Tank on an Alternate Site
 - 1b. Multiple smaller (500,000 gallon) Tanks on Multiple Sites
2. Alternate Site, 1 MG – 1.5 MG Tank at the 712 ft Elevation

At this point it is important to provide a brief overview of the full City of Yachats water system. Figure 6 shows the existing water service zones in the City. The Radar Road reservoirs serve the yellow and green areas. Several smaller 10,000-gallon reservoirs serve the other water service zones at higher elevations. Figure 7 shows the basic connectivity of the various elements in the City's water system. It should be noted that the normal fire code requirement for residential areas is a flow of 1,000 gpm that lasts for two hours (120 minutes), for a total supply of 120,000 gallons.

Figure 8 is provided to highlight the contours for the base elevations of the various City water tanks. With respect to the current project, the elevation of interest is the 220 ft contour. Not surprisingly, almost without exception the 220 ft contour sits in an area that is relatively steeply sloped. Furthermore, where somewhat flatter ground exists at or near the 220 ft contour development has already occurred leaving little or no room for a new water tank. There are a few potential exceptions to this which will be briefly discussed with respect to Option 1.

The other contour of potential interest is the 712 ft contour at the top of the hill on Horizon Hill Road. There is also another area that rises to the 712 ft elevation about 800 feet east of the north end of Horizon Hill Road. The 712 ft elevation will be addressed with respect to Option 2.

Option 1: Alternate Tank Sites at the 220 ft Elevation

Figures 9, 10, and 11 show several possible alternate sites at or near the 220 ft elevation. While there are a few sites that appear to have some potential for a new water tank, it should be noted that the number of potential alternate sites is small, and the problems and challenges at these sites may be as great or greater than those described above for the Fistera site.

The red circles are provided to give a general concept of the size of 1 MG tanks and/or 500,000 gallon tanks on each of the sites. The single tank shown on the site south of the Yachats River represents a 500,000 gallon tank. Westech Engineering would not recommend the City of Yachats have all of its storage for the lower water service zones south of the river.

Option 1a: Single 1 MG Tank on an Alternate Site

Figures 9 and 10 show several sites that appear to have some potential for the construction of a 1 MG water tank. These sites have slopes similar to or slightly flatter than the Fistera site. At this time Westech does not know anything about the geology, depth to rock or other potential geotechnical considerations for any of these sites. Potential advantages of these sites include better and easier access and locations more centrally situated within the City's water distribution system.

Option 1b: Multiple smaller (500,000 gallon) Tanks on Multiple Sites

In addition to the sites discussed in Option 1a above, one additional site is shown south of the Yachats River in Figure 11. This site is unique in that the 220 ft contour is at the top of the hill which would eliminate the need for tall, expensive walls. There is an existing access road that passes near this site, which also adds to the potential suitability of the site. As mentioned above, Westech believes that this site should not be used for a 1 MG tank which would put all of the City's major storage south of the river. However, should the City choose to consider a scenario where multiple 500,000 gallon tanks are constructed.

Figures 12 through 15 are similar to Figures 2 through 5 using a 500,000-gallon tank instead of a 1 MG tank. The walls for the 1 MG tank have been left in the plan view to provide a reference for comparing the size of the two footprints. The key data for cost estimating includes the wall area at 5,300 sf, the rigid inclusions estimated to be 85, and the earthwork with approximately 3,300 cubic yards of soil plus an additional 300 cubic yards of rock. Using these numbers, the cost for the basic development of the site for the 500,000 water tank is as follows:

Access Road	\$100,000 (no change)
Earthwork	\$200,000
Retaining Walls	\$1,000,000
Rigid Inclusions	\$500,000
Site Contingency	\$400,000 (scaled relative to the 1 MG tank)
Total	\$2,200,000

Thus, while the volume of the tank is reduced by half, the cost is still nearly 75% of the 1 MG tank. The implication for this is that simply reducing the tank size on sites similar the Fisterra site and using multiple sites could easily end up costing substantially more than constructing a 1 MG tank on the Fisterra site.

If the site south of the river could be developed for less than \$500,000, the combined site development costs could be somewhat less than the \$3M estimated for the 1 MG for the Fisterra site. There would still be the additional cost related to two 500,000 gallon tanks for a total of XXXM compared to a single 1 MG tank for XXXM. Two tanks would have some additional operational benefits related to redundancy for maintenance and localized water distribution disruption issues.

Option 2: Alternate Site, 1 MG – 1.5 MG Tank at the 712 ft Elevation

It is important to start the discussion of this section by saying that there is a good chance that this option would be more complex, more challenging, and probably be more expensive it addresses some concerns with the overall structure of the City's water system. The key concerns relate to the smaller (10,000 gallon) water tanks and multiple booster pump stations serving the higher elevation water service zones including the various Blackstone and the Horizon Hill zones and the fire protection capabilities in those areas. Complexity and cost issues include the construction of a new booster pump station to pump the necessary volume of water up to the top of the hill, the construction of over 2,000 feet of 12-inch waterline from the area of the Upper Radar Road Reservoir to the new tank at the top of the hill, pressure reducing stations for the various water service zones at lower elevations down the hill and potential upgrades to various parts of the distribution system to better connect the piping from the new reservoir to the existing distribution system.

Figure 16 shows potential locations for a new 1.5 MG water tank in the area of interest along Horizon Hill Road. In addition, there is a potential site roughly 800 feet east of the north end of Horizon Hill Road which can be seen on Figure 8.

As with all of the other information in the sections regarding options described above, this option is provided for the primary purpose of allowing the City to various potential courses of action prior to deciding what is in the best interest of the City.

Summary of the Options

Westech Engineering recognizes that the City faces a complicated and expensive decision regardless of what the City chooses. The Fisterra site is challenging due to the steep slopes and depth of soil down to bedrock. While it is challenging and expensive, the other options outlined above may provide to be as challenging or expensive. If the City decides for any option other than moving forward with the Fisterra site, additional research, master planning, geotechnical investigation and analysis would be required to determine the viability and potential costs associated with other options and sites.

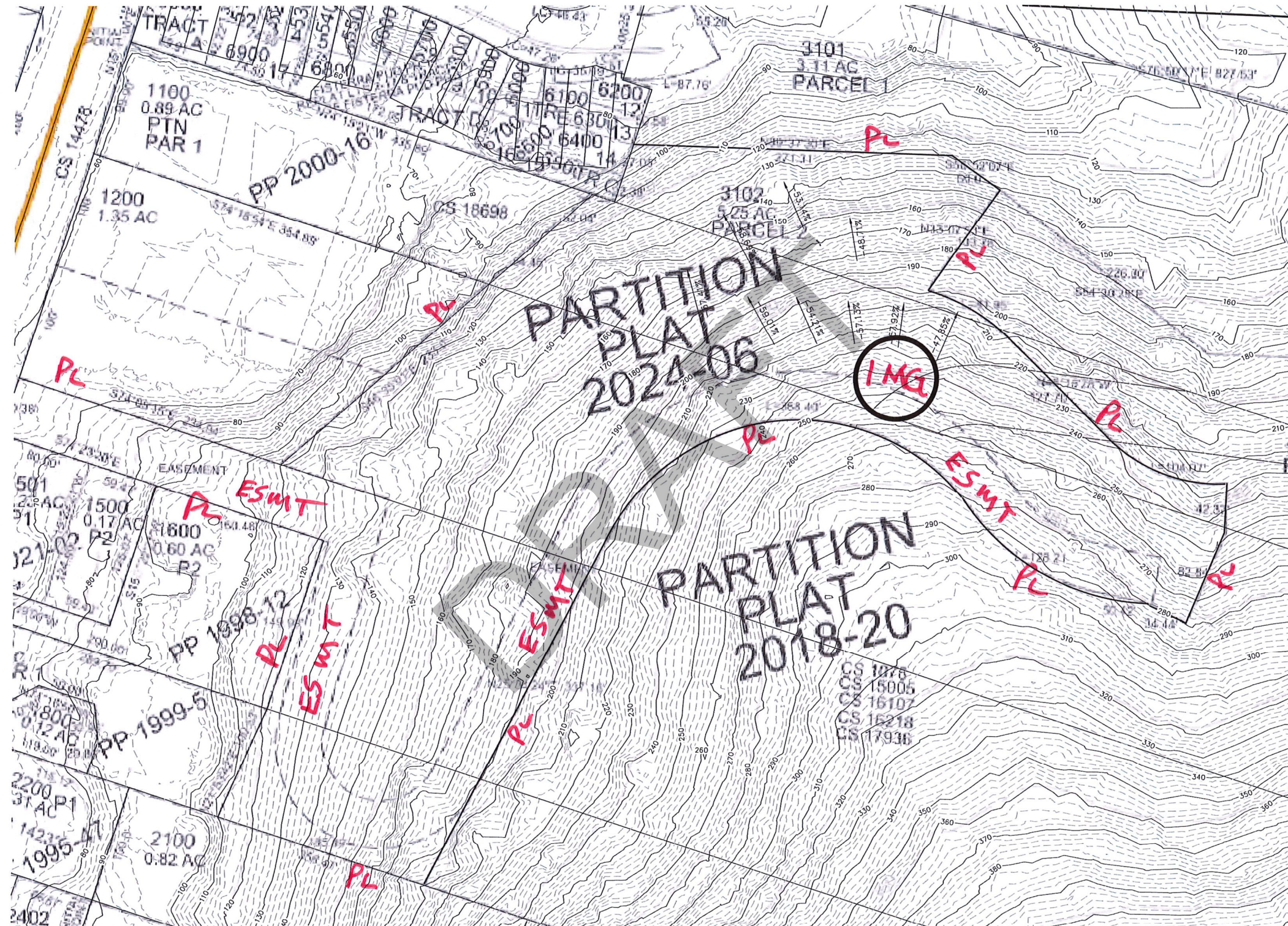
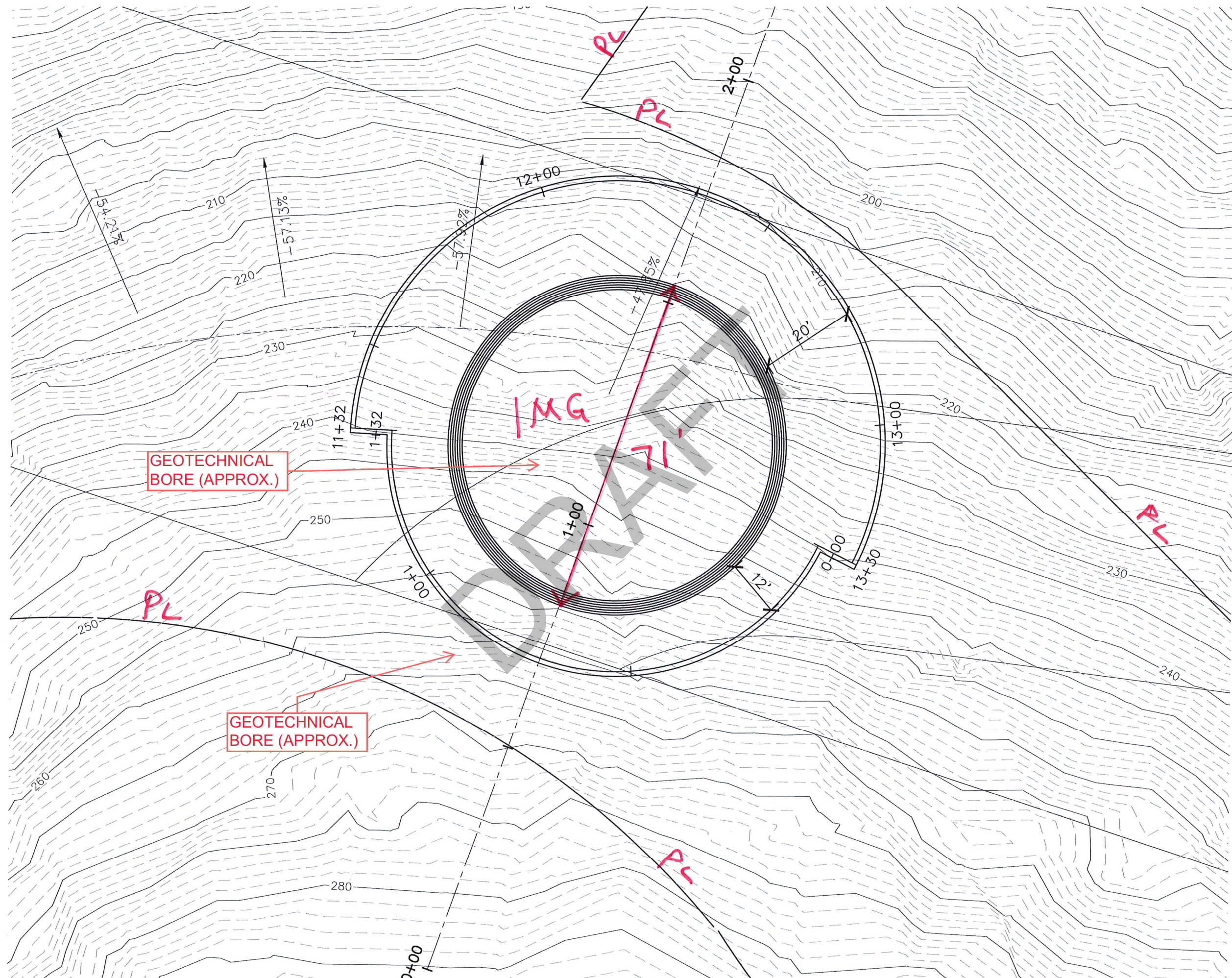


FIGURE 1
PROJECT SITE

1" = 100'



1"=20'

FIGURE 2
SITE PLAN VIEW

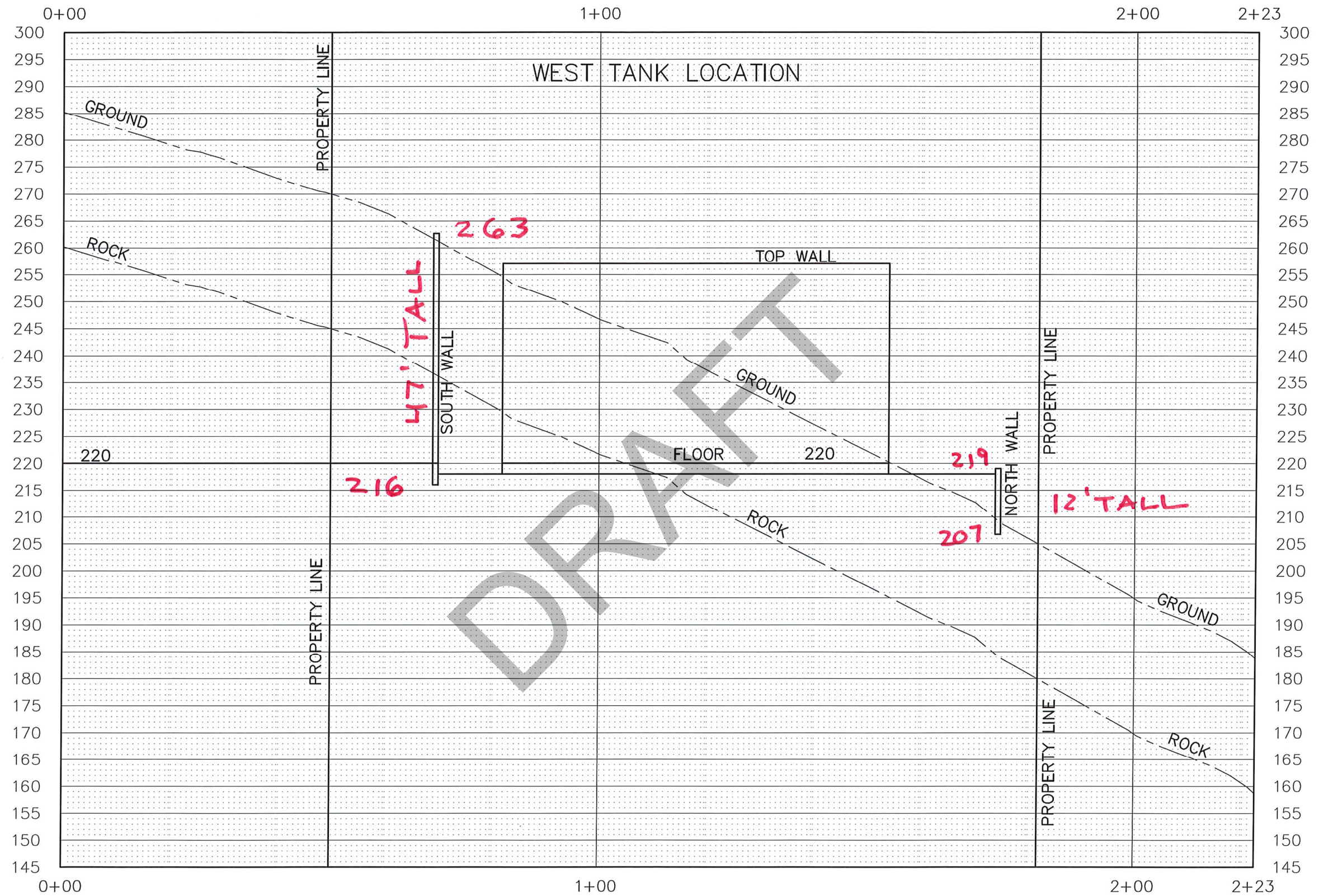


FIGURE 3
SITE PROFILE
VIEW

1"=20'

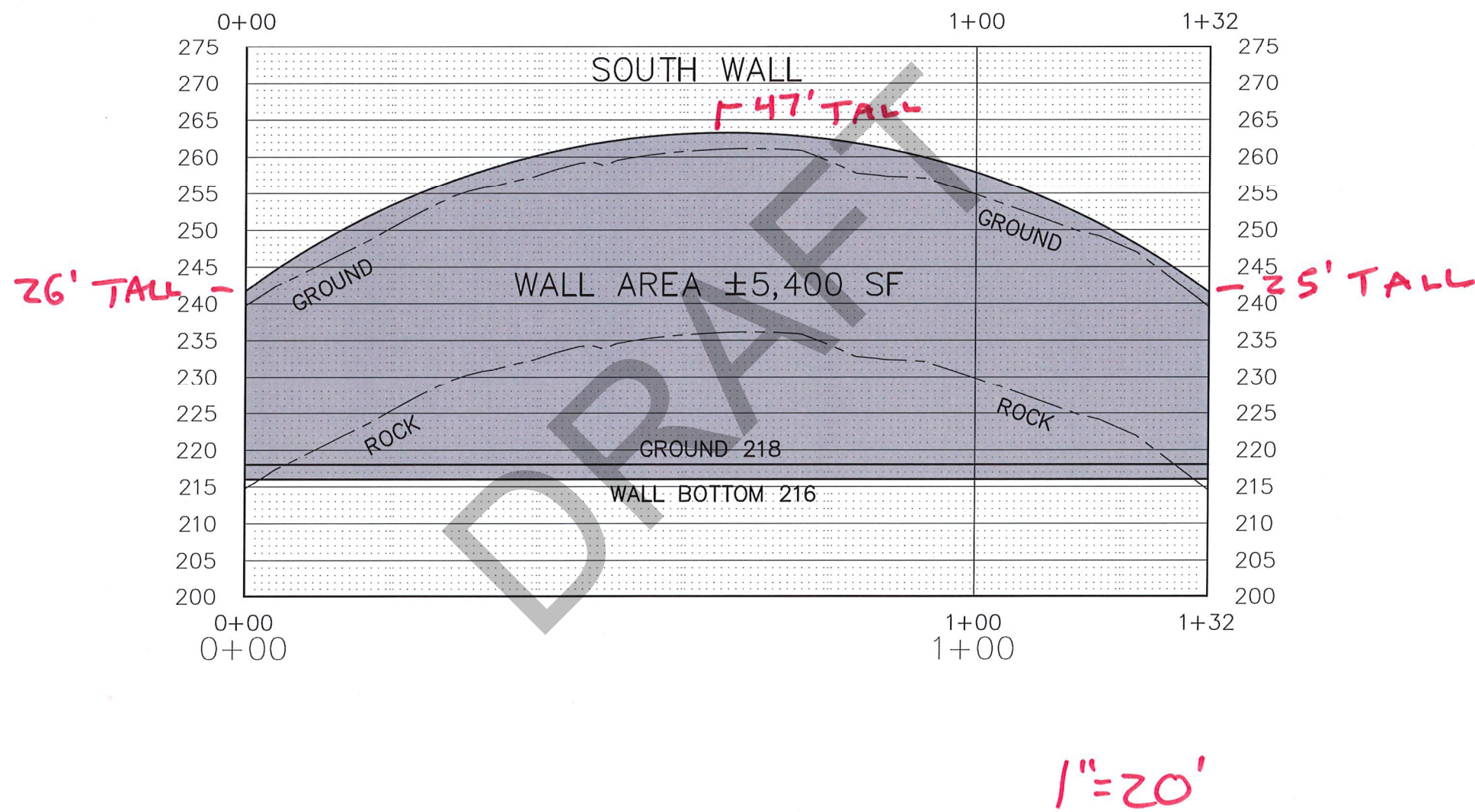


FIGURE 4
SOUTH WALL
PROFILE

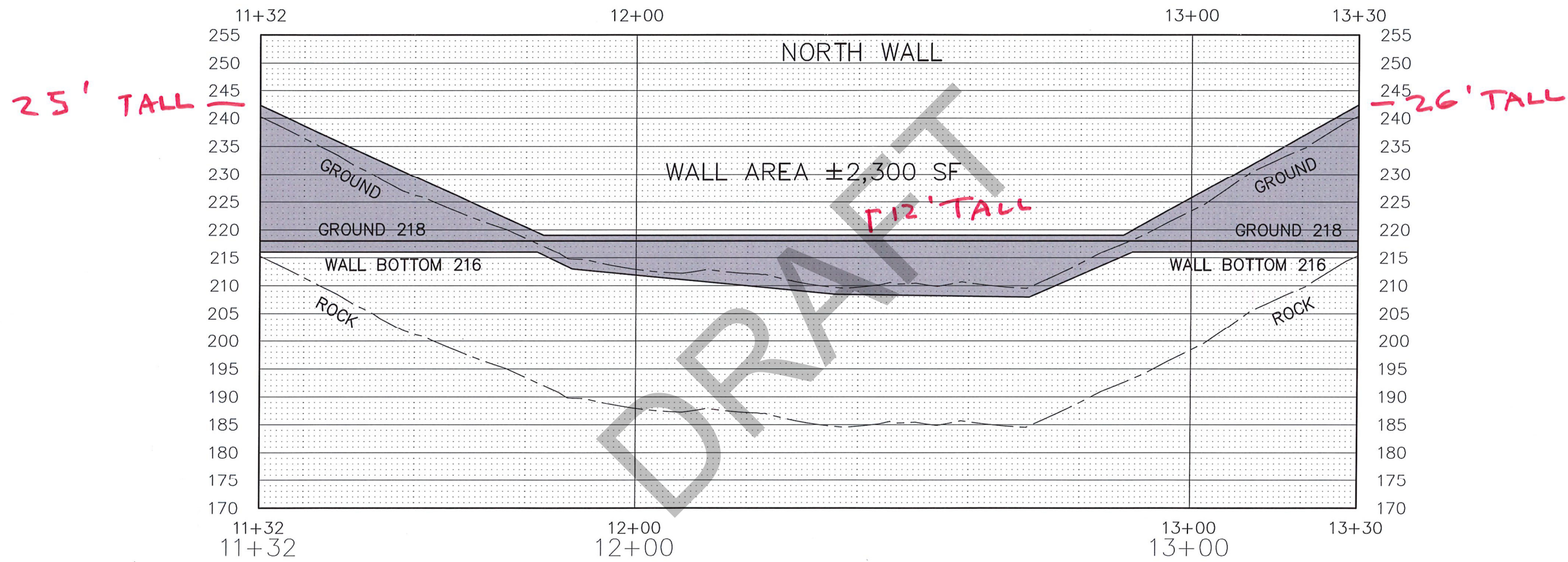


FIGURE 5
NORTH WALL
PROFILE

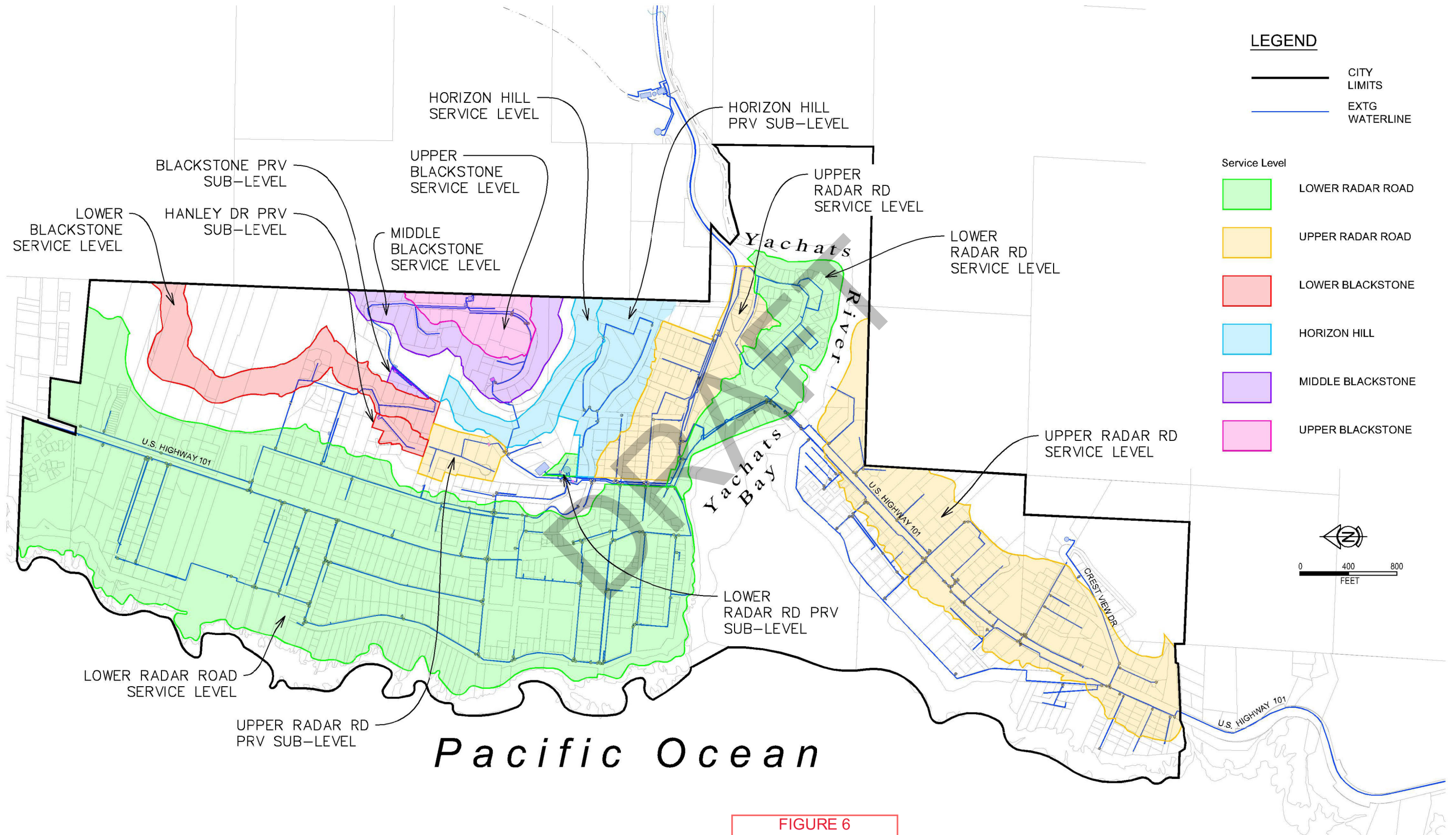


FIGURE 6
WATER SERVICE
LEVELS

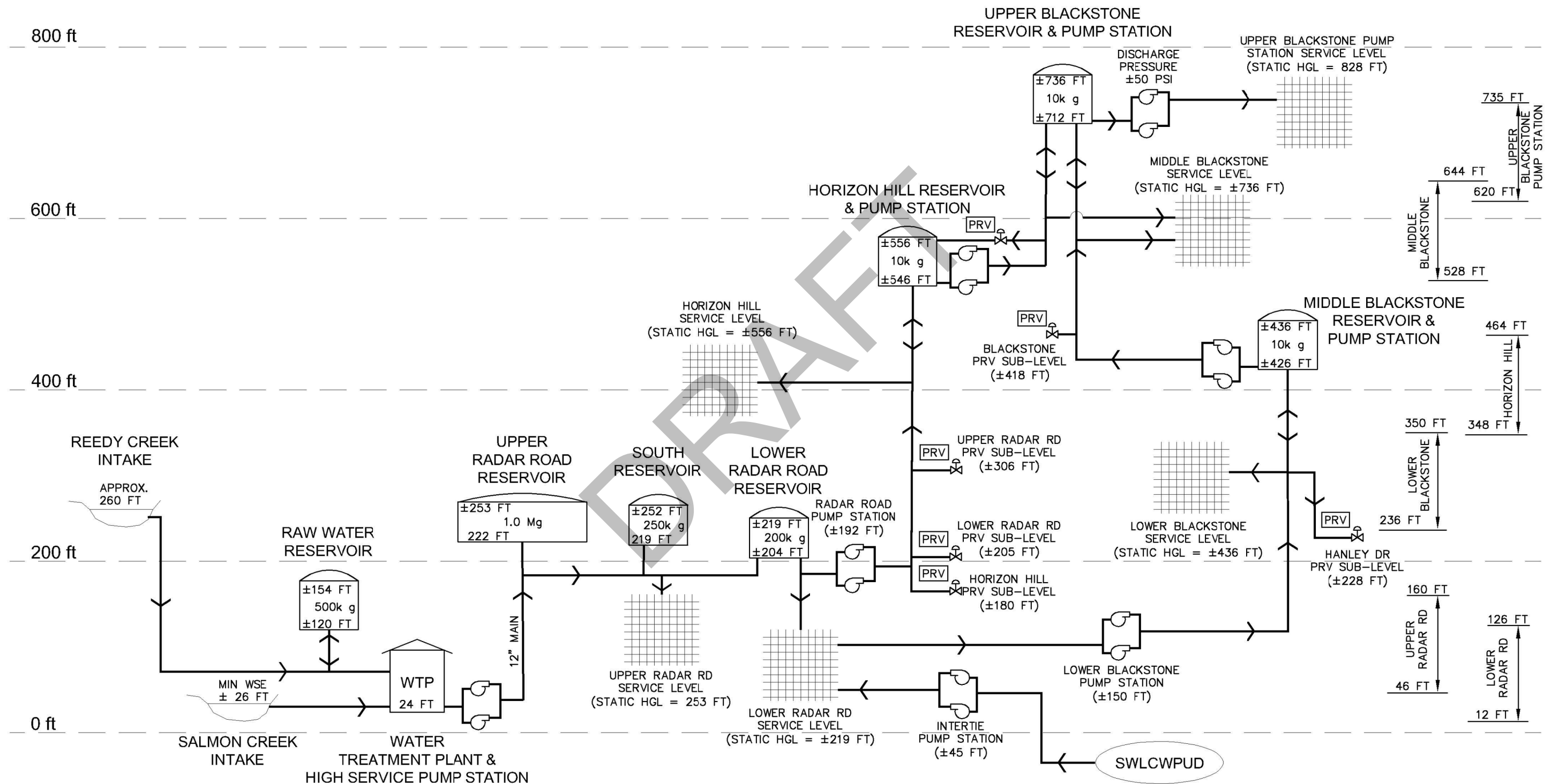
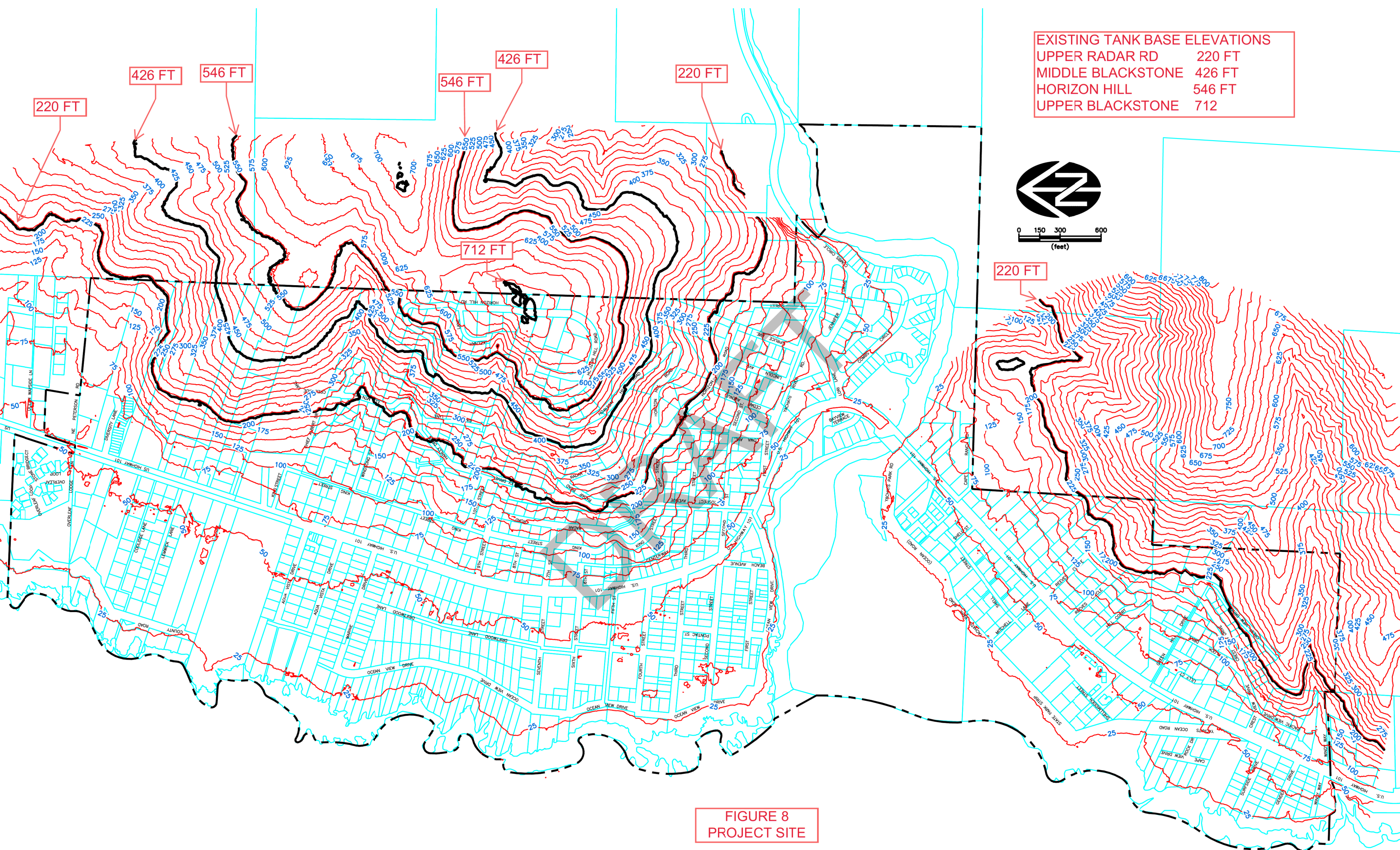


FIGURE 7
WATER SYSTEM
SCHEMATIC



EXISTING TANK BASE ELEVATIONS	
UPPER RADAR RD	220 FT
MIDDLE BLACKSTONE	426 FT
HORIZON HILL	546 FT
UPPER BLACKSTONE	712

FIGURE 8
PROJECT SITE

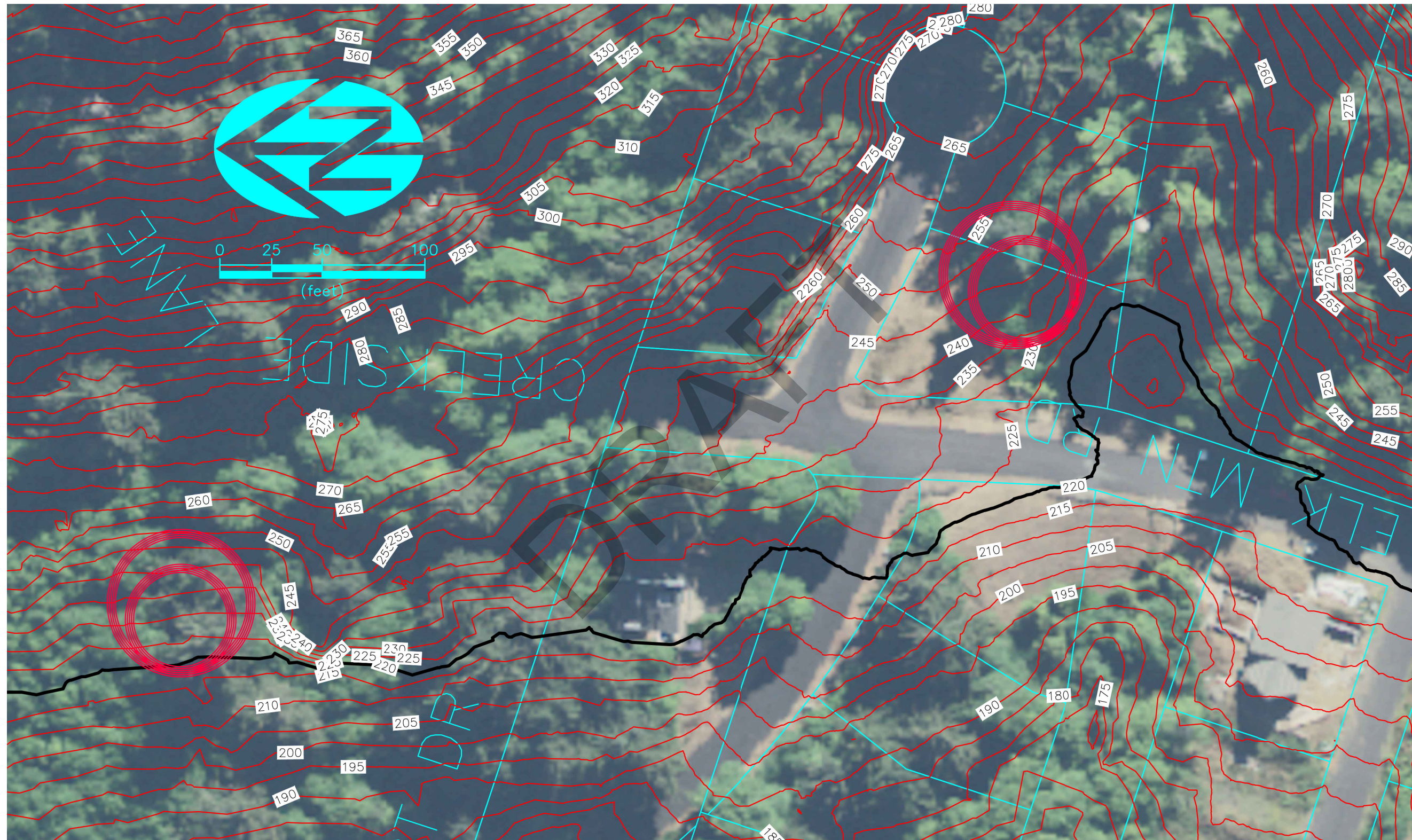


FIGURE 9
ELK MTN ROAD
AREA TANKS

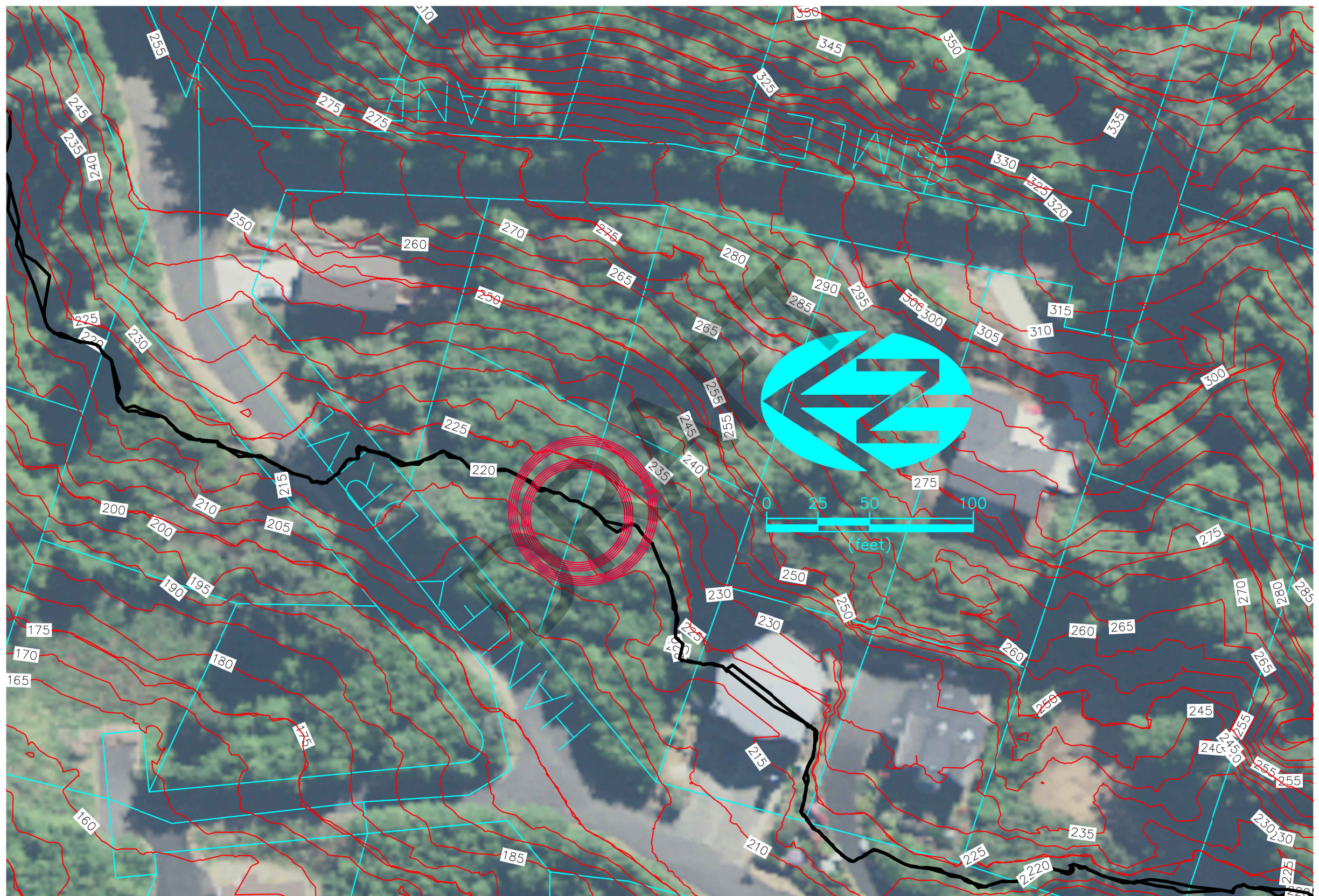


FIGURE 10
HANLEY DRIVE
AREA TANKS

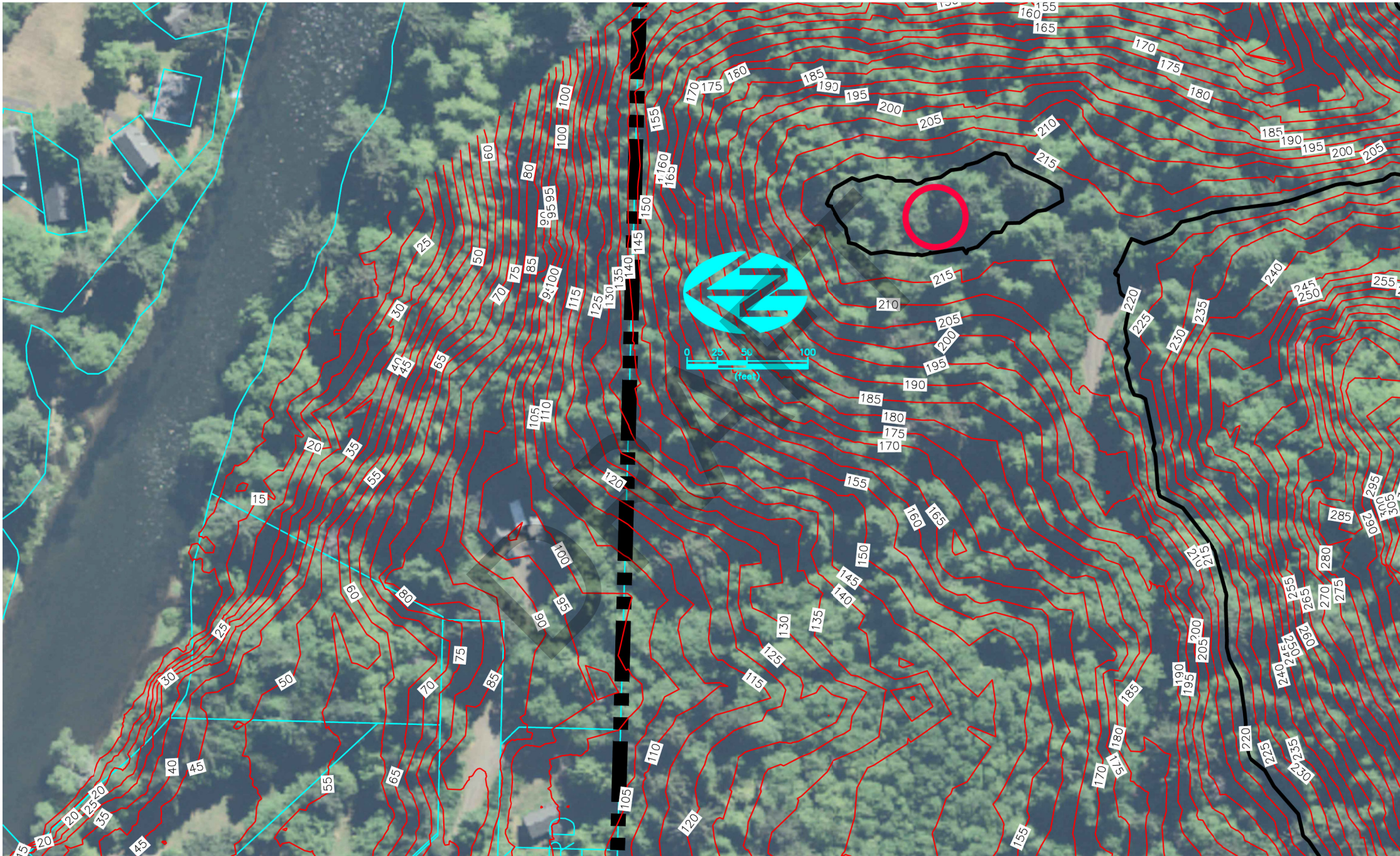
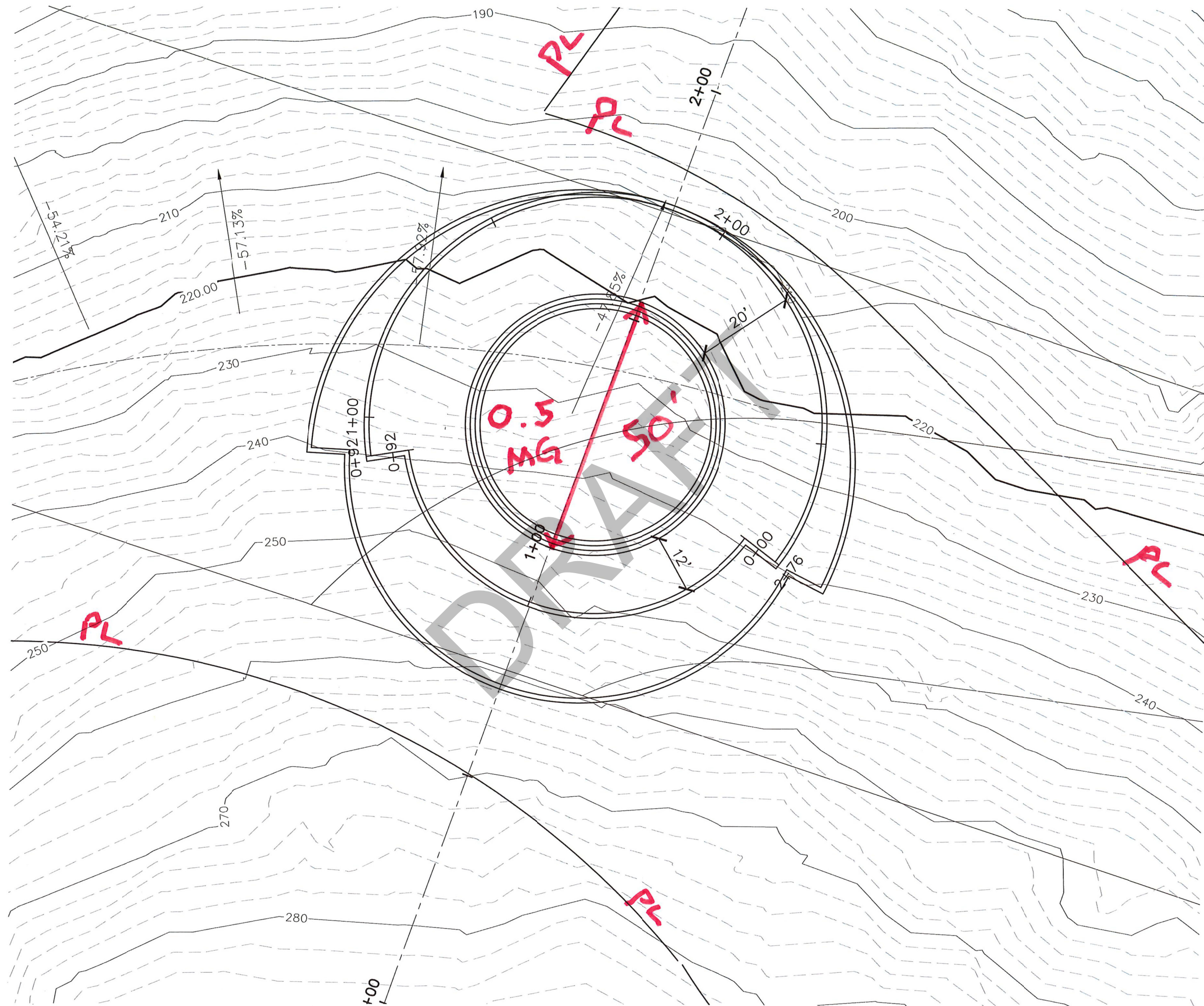


FIGURE 11
SOUTH YACHATS
AREA TANK



1" = 20'

FIGURE 12
SITE PLAN VIEW

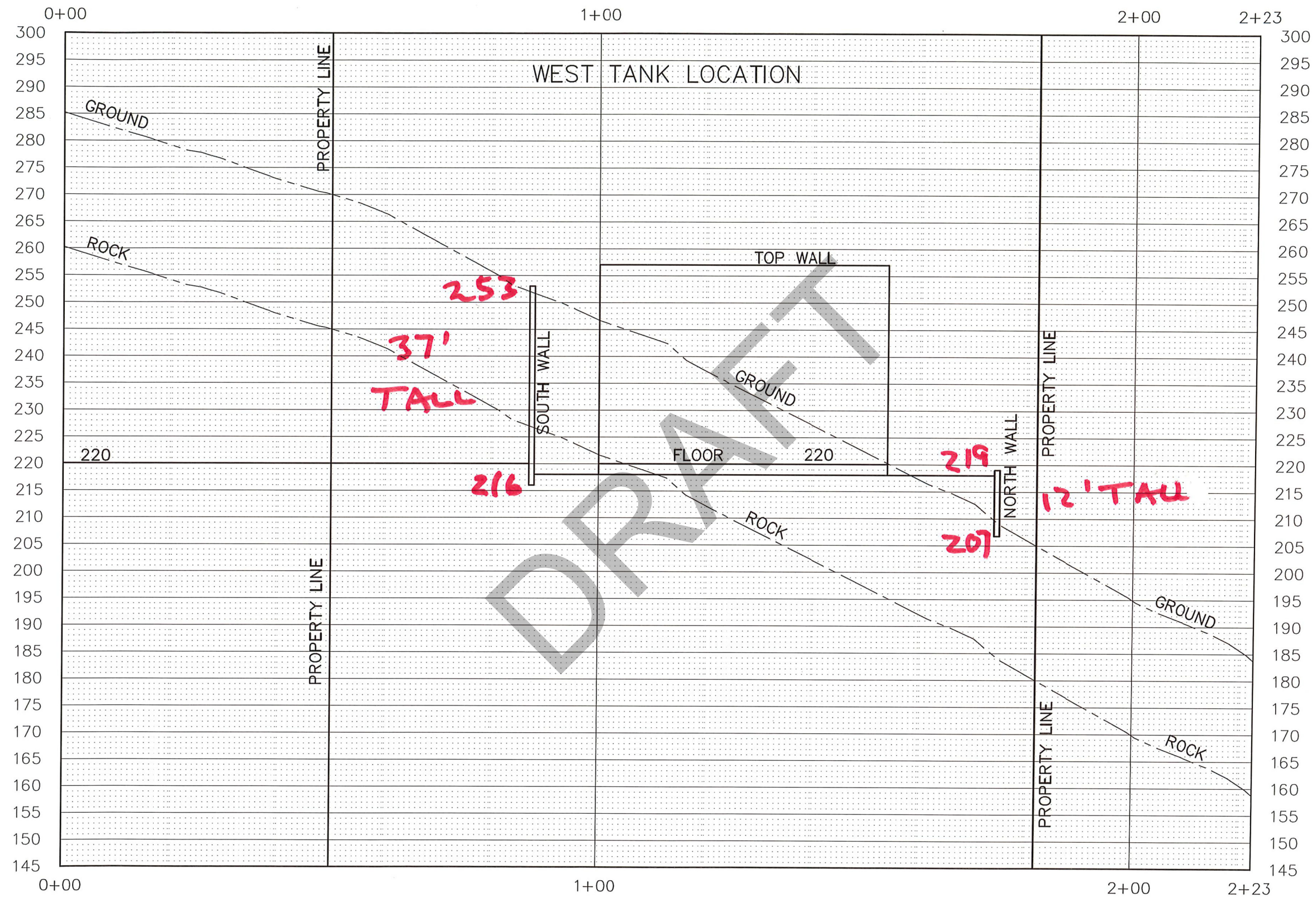


FIGURE 13
SITE PROFILE
VIEW

1"=20'

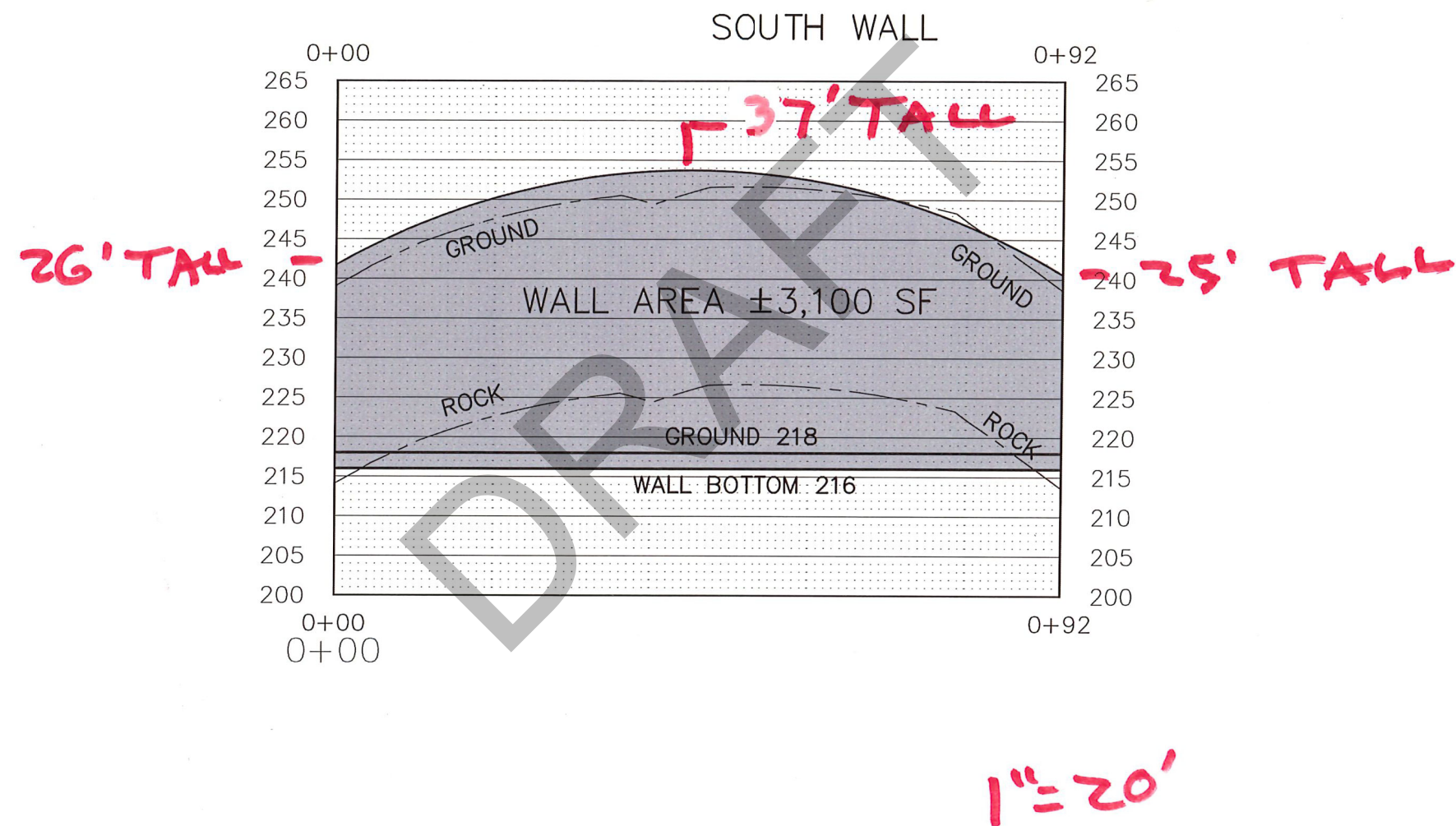


FIGURE 14
SOUTH WALL
PROFILE

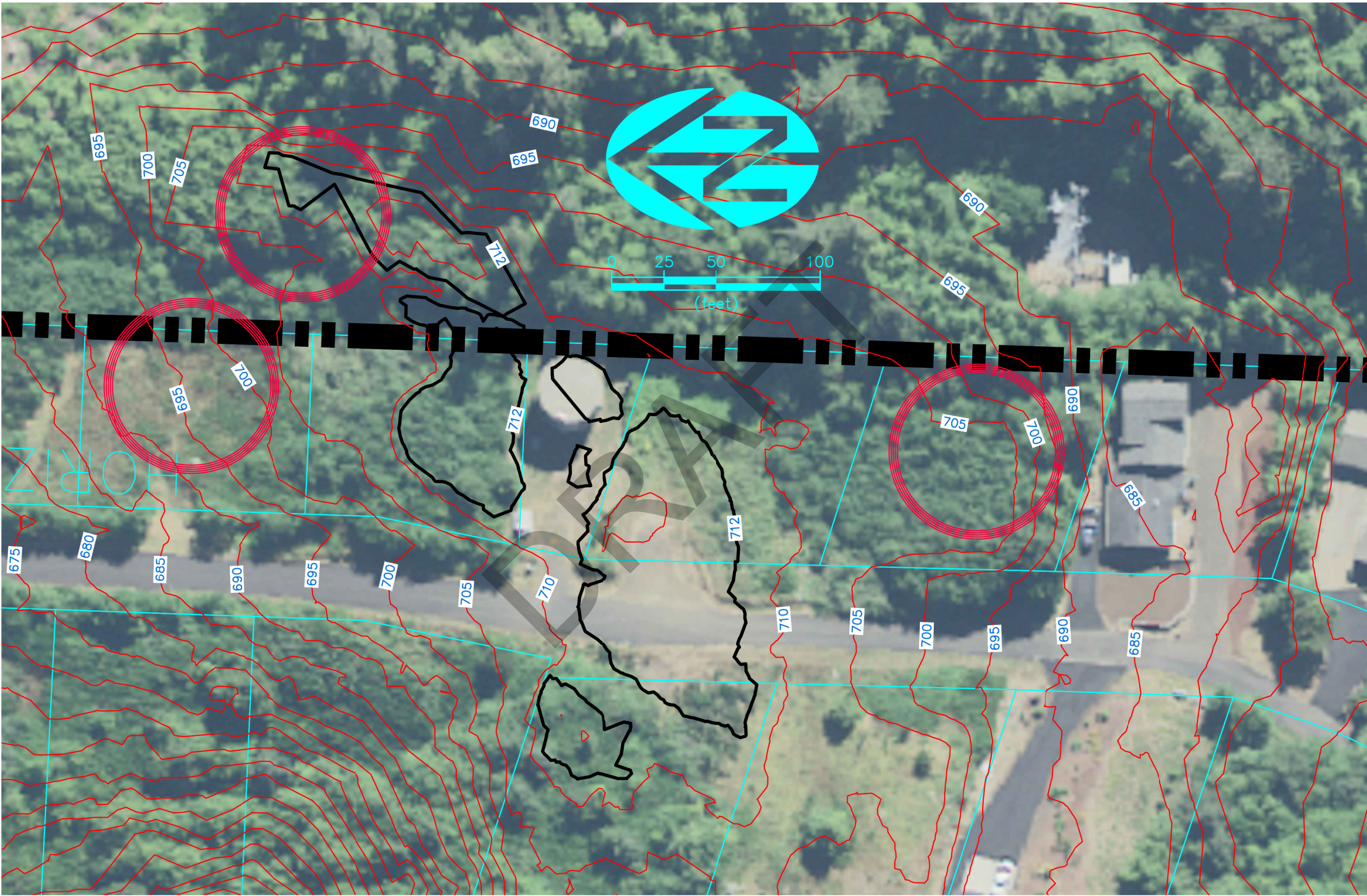


FIGURE 16
HORIZON HILL RD
AREA TANKS