

Town of Ayer

**Radio Communications System Infrastructure Upgrade**  
**Project No. 17PD01**

**Bid Addendum #4**

**November 14, 2017**

The following bid addendum (Bid Addendum #4) amends and or supplements the Bid Documents as indicated below. Only official Bid Addenda alter the Bid Documents; any verbal discussion or responses are hereby declared null and void.

**Bid Addendum #4 (Issued on November 14, 2017):** Town Issued Answers/Responses to All Bidder Questions Submitted to the Town prior to and at the November 9, 2017 Pre-Bid Conference.

**[PLEASE SEE ATTACHMENT FOR BIDDER QUESTIONS AND TOWN ANSWERS/REPOSSES]**

Bid Addendum #4 has been issued in accordance with “Section 1.02 Bidding Requirements” of the Radio Communications System Infrastructure Upgrade (Project No. 17PD01) Bidding Contract Requirements and Specifications as follows:

Issuance of Addenda: Addenda will be issued by email or certified mail, return receipt requested or via the web portal to every bidder on record as having obtained bid documents. Copies of addenda will be available at locations where Contract Documents are filed for public inspection as listed in the advertisement and these instructions to bidders.

Addenda Must Be Acknowledged: Bidders shall acknowledge Addenda in the spaces provided on the bid forms. Failure of a bidder to acknowledge Addenda in the spaces provided on the bid form may cause rejection of the bid or lead to protest. Failure of a bidder to receive any addenda shall not relieve it from any obligation under its bid as submitted.

Bid Addendum #4 issued on November 14, 2017 by Robert A. Pontbriand, Ayer Town Administrator  
1 Main Street, Ayer, MA 01432; (978) 772-8220); [ta@ayer.ma.us](mailto:ta@ayer.ma.us)

## Ayer Bid Questions and Responses

### Project No. 17PD01, 14 November 2017

#### Bidder 1

1. We would like to request an extension of the bid due date by thirty (30) days. This would enable bidders to properly analyze the sites and research competitive pricing.

A: Town issued Addendum #3 on November 9, 2017 extending the deadline to 2:00 PM on Wednesday November 29, 2017.

2. Under Technical Specifications, Section II Tower Project Definition, B. Hilltop Site: would the town accept a self-supporting tower in place of the guyed tower specified?

A: As indicated in the Technical Specifications, section IV. E. page 41, contractors may offer alternatives or options, as long as they meet the intent of the Technical Specifications. A self-supporting tower may be offered as an option, but the Town desires that a guyed tower be offered in your primary proposal.

Contractors will be aware that while there are advantages to a self-supporting tower, the disadvantages include increased tower cost, and increased cost of the necessary larger foundation. Distances have been rough surveyed and there should be adequate room for the guy foundations for a guyed tower. A site plan is attached with the likely guy anchor locations shown; however the successful bidder will have to have the locations accurately surveyed.

3. Please clarify the compound fence sizes.

A: Fence distances are as follows:

- At the Hilltop site, the perimeter fence connecting to existing fence around water tank and surrounding both concrete pads to include the concrete shelter, propane tank, and generator = 290 linear feet.
- At the Hilltop site, around the meter pole and site disconnect, will require 51 feet of linear fence for the perimeter. Note that because there is a guy anchor for another pole within 36" of the meter pole, the fence will bisect that distance so as to not interfere with the guy anchor nor make it inaccessible to the utility company.
- Around three guy anchors, in order to maintain a distance of 6 ft. to the anchor, and 3 ft. of vertical clearance to the top of the fence, a trapezoidal shaped fence will be used with a total length of 64 feet around the perimeter, for each guy. This will be sufficient to clear the lower guy wire.
- Around the antenna structures at the APD, west, and east receiver sites, 8 ft. of clearance is necessary to the structure and the structure mounted enclosures and solar panels. This will require 64 ft. of linear fence at each of these sites.

4. Does the town have a site plan for the PDHQ to identify the utilities / sewer drain pipes?

A: Site Plan is attached.

5. Can the monopole locations move at the new water tank site and DPW site?

Note: This would allow for a shorter power run at the DPW and eliminate crossing the driveway.

A: The exact location at the DPW site will have to be coordinated with the DPW after bid award.

In regards to the power line run, see the answer to Bidder #2, question2 below.

This, and all sites, were optically sighted, as well as checked on topographic data bases for Fresnel clearances for the 23 GHz microwave paths. Final proposed locations, if bidder desires a change from that stated in the Technical Specifications, will have to be re-checked by the consultant for Fresnel and optical clearances. This may entail extra cost to the bidder.

Note: For the new water tank site we would like to move the tower over towards the wood line as this would allow for a better line of sight and a better southerly view for the solar panel.

A: It is assumed that you are wishing to move the antenna support structure southwest to the other side of the new water tank. If that is correct, the problem is that there is a line of trees to the northwest of the hard packed gravel road to the site. These trees are not far from the road, and will continue to grow over the years. Their foliage may block the 23 GHz microwave path even now, and likely make the obstruction worse over time as the trees grow. Of course, the trees could be taken down, but that would have to be coordinated with the Town, the property owner (which may be the town), and would add some cost.

The location shown, or an alternative location directly behind the new water tank to the southeast, already has unobstructed line of sight to the Hilltop water tank, as well as Fresnel clearance checked with topographic data.

If contractor insists on moving the antenna structure to the southwest, it would require a higher antenna structure or taking down the trees as previously noted. Tree removal should be minimized, and the Town has no provision for taking down trees, and the Town is not desirous of taking down trees on the site.

The philosophy in the design as presented in the Technical Specifications was to keep costs to the Town as low as possible.

6. Can spoils be dumped at the DPW location to save on cost of trucking to a remote facility?

A: No, Contractor must restore the site to original condition and all excess material must be disposed of in accordance with state and federal requirements.

7. Does the Town require compliance with local zoning and site plan requirements for new towers as required under their bylaws or is there a plan to use the Town's municipal exemption and then compliance with local permits is issuance of a building permit only?

A: Contractor will be required to obtain Trench Permits from the DPW where applicable. DPW will waive the fees.

## **Bidder 2:**

### **Town of Ayer MA- 120' New Tower:**

#### **Overall:**

1. Due to the SOW and the questions below requiring the clarity as needed to successfully bid this project by November 15th, can the bid due date be moved out to November 22nd.

A: Town issued Addendum #3 on November 9, 2017 extending the deadline to 2:00 PM on Wednesday November 29, 2017.

2. It takes a few days for a 5% bid bond once we have all the pricing in. Given that the answers are not due back till after November 9th, it does not allow for an enough time to get a accurate cost together

A: Town issued Addendum #3 on November 9, 2017 extending the deadline to 2:00 PM on Wednesday November 29, 2017.

3. Would Lease exhibits be acceptable for drawings as required at each location or are you looking for full CDs at each with all the details?

A: Documentation required is outlined in section IV. B. Each location needs to have the documentation indicated, with 2 digital copies and one printed. All the locations can be on each of the media (2 digital thumb drives, 1 printed binder) as long as the information is organized by site.

Manufacturer's manuals can be all in digital format, on CDs if that is the way they come, or else on thumb drives. You do NOT have to print off the manufacturer's manuals, as long as we receive in that case 3 digital copies.

4. Can a spun concrete pole be substituted at these locations below. There is concern that a wooden pole is not sturdy enough for the MW links specified, and the overall foot print of a monopole or lattice tower are too big for the area's specified. Especially at the Ayer PD. 2 Hilltop Site

A: As indicated in the Technical Specifications, section IV. E. page 41, contractors may offer alternatives or options, as long as they meet the intent of the Technical Specifications. The Technical Specifications section II.C. page 14 clearly indicate that other antenna structures are allowed, as long as the ANSI EIA/TIA 222-G wind specifications as stated are met, and the other general specifications such as mounting the weatherproof enclosures at approximately 5 foot height, per section III. D. 3. Page 32, can be met.

5. Why is a guyed communications tower being spec our and can a substitution be approved? Reason is that the guyed wire locations are not shown and may interfere with the existing fence/tree line. Assuming they are to be about 90' from the center of the proposed tower location

A: See answer to Bidder #1 question 2 above.

6. Can we get a length of fence proposed for this location? It is up for interpretation and we want to make sure we are all looking at it the same way to compare pricing

A: See answer to Bidder #1 question 3 above.

7. The fence proposed around the utility meter is spec to be no closer than 8' from the pole, but if we do that we will be fencing in the guyed wire anchor for the utility pole in the street. Please confirm that is what you are intending we do? It is encroaching upon the right of way. Can we get a length of fence proposed for this location?

A: The consultant will coordinate with the utility pole owner to find a mutually satisfactory solution such that the main disconnect can be secured behind a fence. For now, bidders should assume that the total fence length is that which is indicated in the Bidder #1 question 3 above.

8. Is there existing as-builts for the grounding system and utilities for this site and are they in a digital format?

A: It is assumed that you are referring to the Hilltop site. Appendix D included 2 site plot plans for the Hilltop site, one early one from 1985, and a current one except that the 2 smaller tanks have been removed and the water lines to those tanks have been deactivated.

A Digsafe process will have to be implemented prior to construction, and because the site has been primarily used by Ayer DPW, coordination with them is required.

There is no site grounding system at present; bidders are to include one per the Technical Specifications. When power was provided to the site, two 8 foot ground rods were driven in front of the utility entrance to the shelter, and the location is marked with two plastic conduits. Some photos and a plot plan with the approximate locations are attached herein.

9. Can any excess fill material be spread on site?

A: It is assumed that you are referring to the Hilltop site. No, Contractor must restore the site to original condition and all excess material must be disposed of in accordance with state and federal requirements.

10. Has the existing HVAC on the shelter been tested? Are we responsible for it.

A: Yes, the two HVAC units on the shelter have been tested by the Town's HVAC contractor and are working. Bidders are not responsible for the HVAC system in the shelter; if problems arise with these systems the Town will have its HVAC contractor deal with it.

#### **East Receiver Site:**

1. Can the location of the proposed pole be moved more southeast to keep it off the slope and away from the drainage area

A: See second answer to Bidder #1 question 5 above.

2. Can we get a length of fence proposed for this location? It is up for interpretation and we want to make sure we are all looking at it the same way to compare pricing

A: See answer to Bidder #1 question 3 above.

3. Is there existing as-builts for the grounding system and utilities for this site and are they in a digital format?

A: As-builts for the East Receiver site are attached herein.

Digsafe process will have to be implemented prior to construction, and because the site is primarily used by Ayer DPW, coordination with them is required.

There is no site grounding system at present; bidders are to include one per the Technical Specifications. The DPW SCADA system on location has a single ground rod driven for a grounding system, but this is inadequate for a communications site (R56 standard), and not located near enough to the likely location of the antenna structure to be of any use.

4. Can any excess fill material be spread on site?

A: No, Contractor must restore the site to original condition and all excess material must be disposed of in accordance with state and federal requirements.

**Ayer PD Site:**

1. Can the location of the proposed pole be moved to the back of the parking lot way from the building and residence 3

A: Putting the antenna structure at the back of the parking lot is a possibility, but then other issues arise which would need to be resolved:

- This would place the antenna structure much further from the PD HQ building, and the subsequent baseband coax run to the building would likely be much longer
- Also, locations for the indoor microwave unit in the PD HQ were surveyed, and the best location is the server room adjacent to the dispatch room where the indoor unit could be located along with other electronics and an existing grounding buss bar. Access for the baseband coax from the outdoor microwave unit on the antenna support structure is relatively easy through the outside wall of the sprinkler room, then to the electrical room, and then an approx. 90 foot run through the drop ceiling to the server room.

However, locating the antenna structure to the rear of the parking lot is a possibility, best discussed after bid award. It is suggested that all bidders assume the location shown in Appendix P, and changes can be made during final contract discussions with the winning bidder.

2. Has this location been approved by not only the abutter, but also the fall zone to the railroad company?

A: With the antenna structure rated for ANSI EIA/TIA 222-G wind specifications as stated, it is unlikely, although not impossible, that the antenna structure would collapse onto nearby structures or rights of way.

Location approvals have not yet been obtained because the exact locations may be changed by mutual agreement of the Town, the consultant, and the winning bidder. The Town and the consultant will coordinate approvals as required.

The rail line behind the APD HQ is owned by Pan Am and is used but not frequently. We are coordinating with the railroad on this issue.

3. Is there existing as-builts for the grounding system and utilities for this site and are they in a digital format?

A: Site Plan attached.

4. Can any excess fill material be spread on site, or relocated to other town land?

A: No, contractor must restore the site to original condition and all excess material must be disposed of in accordance with state and federal requirements.

**West Receiver Site (DPW):**

1. Can we get a length of fence proposed for this location? It us up for interpretation and we want to make sure we are all looking at it the same way to compare pricing

A: See answer to Bidder #1 question 3 above.

2. Is there is existing as-builts for the grounding system and utilities for this site and are they in a digital format?

A: DPW has some record drawings for the wastewater treatment plant. However it is the contractor's responsibility to verify the locations of all utilities.

Bidders should assume for purposes of bidding that the final location of the antenna structure will avoid any utilities or other underground obstacles. Assume an overhead power cable run of 100 feet from a nearby building with power to the antenna structure, and another 50 feet of inside wiring to a branch circuit or power panel.

Of course a site grounding system for the antenna support structure and radio enclosure must be installed by the bidder per the Technical specifications.

3. Can any excess fill material be spread on site?

A: No, Contractor must restore the site to original condition and all excess material must be disposed of in accordance with state and federal requirements.

4. Can we get a confirmation as to where the AC power is coming from. It mentions about 100', but are we to assume it is out of the existing panels in the electrical room. Does it need to be trenched or can a weather head be located on the building and then extended aerial to the pole. Please confirm.

A: See answer to question 2 above.

#### **Nashoba Valley Hospital In-Building Antenna System:**

1. Can a site walk be scheduled at this location before the bid due date?

A: A site walk was held around 3:00 PM after the new pre-bid conference on 9 November at 2:00 PM.

2. Do you have an exact length on the coax runs?

A: So that all bids are on an equal footing, all bidders should assume the following coax lengths:

- 200' of 7/8" fire rated radiating coax for the first floor
- 200' of 7/8" fire rated radiating coax for the second floor
- 100' total of 1/2" fire rated [NOTE-fire rating for this coax was not specified in the Technical Specifications but is now required] non-radiating coax to connect the radiating coaxes to the splitter, and the splitter to the roof mounted Yagi donor antenna

3. Is there is existing as-builts for the building for this site and are they in a digital format?

A: We don't believe these are necessary, because the site walk showed the attending bidders the likely runs.

The hospital has drop ceilings in most areas, and the walk through should answer most questions, so it should be possible to estimate the work required without further as-built drawings at this time.

4. Is there certain working hours or limitation in working at this location?

A: Normal business hours 8-5 are okay. Obviously working late at night will disturb sleeping patients.

### **Bidder #3:**

The purpose of this letter is to inform the Town of Ayer of specifications in its' 17PD01' Bid request which it specifically takes exception to for one of the following reasons:

1) Cited/recommended JPS SVM-3 / QMT-1 equipment is not currently in production; further research shows that hardware release is scheduled 1/2017 with alpha firmware. Therefore, bidder contests mandate to propose a solution based on this solution for a public safety entity with a mandatory drop-dead date. Bidder (See Attachment 1) and insists upon utilizing a proven manufacturer integrated system.

A: I believe this is a typo and you meant to type 1/2018.

This product was announced formally at IWCE 2017 in the spring, and I was told at the time that it would be delivering in the fall of 2017, which would have worked for the project timeline. Like with all major items of equipment a quote was received from the vendor. Alpha software is not acceptable for the Town. If they are now quoting alpha software only for early 2018, it is unlikely that this solution will work for the project schedule.

As indicated in the Technical Specifications, section IV. E. page 41, contractors may offer alternatives or options, as long as they meet the intent of the Technical Specifications. Therefore feel free to offer an equivalent offering from another manufacturer.

The design goal was to allow the voter equipment to operate over an Ethernet IP digital microwave circuit, keeping costs reasonable, and reducing or eliminating the need for A-D and D-A conversions and the associated extra equipment.

Contractors may be aware that some analog voting systems don't work well over digital links. Also fewer manufacturers today support analog voting, especially over digital links. This was one of the reasons that the P25 option for APD A channel was put into the Technical Specifications. However, P25 as stated in the specifications on page 36, is not required to be bid.

2) Cited/recommended power supply equipment does not contain required features that meet specifications of the bid; such as regulated load terminals, with independent charger terminals, or alarm status outputs. Bidder proposes Duracomm HE1U-xxxx-BBLVD-MU has been specified with SNMP monitoring for all charging devices. All devices are capable of management without use of separate analog inputs via SCADA over Ethernet.

A: It is assumed that you are referring to the units mentioned in the Technical Specifications III. B. 10., items D, E, F, Page 23.

As indicated in the Technical Specifications, section IV. E. page 41, contractors may offer alternatives or options, as long as they meet the intent of the Technical Specifications. Therefore feel free to offer an equivalent offering. If these units provide SNMP monitoring that is fine, as long as you describe how this information will be presented to the APD dispatchers. A SCADA system is already part of the Technical Specifications because many items of equipment don't have an SNMP output and need to be monitored for proper operation. The concern would be too many different screens or menus that need to be accessed for the dispatcher to see "the whole picture" of the health of the system.



3) Cited/Recommended Avtec parts list does not include any endpoint licenses (A or B licenses), nor required MDC1200 licenses, 4W E&M Conversion adapters, or mounting shelves. It is assumed these are also required for full operation with the departments current analog operations.

A: Per discussions with Avtec technical support, the Scout Outpost 2R device was cable of 4W audio and keying. If that is not correct, then bidders should contact Avtec and quote the necessary equipment.

AFD does tone out calls to its paid on-call members. If this requires extra equipment not mentioned in the Technical Specifications, then it should be added to your price.

It is consultant's understanding that the MDC 1200 patents Motorola held expired long ago, and a license was not needed for using that signaling. If required, please include it in your bid, along with any other licenses required by Avtec.

4) Cited/recommended networking equipment does not meet Avtec Scout specifications for switching equipment (DSCP Prioritization, Multicast, and VLAN Support). Lightly managed ethernet equipment has been specified accordingly; to allow prioritization of multicast traffic across the network.

A: Please quote the equipment you feel necessary for correct operation.

4b) Avtec will deny competitive vendors from performing work under system maintenance contracts. This system is under contract with Beltronics. Beltronics shall, upon request, perform all console related services at state bid pricing, as required.

A: Bidders should contact Avtec to determine their policies with regard to who can work on their systems. It is not unusual for manufacturers to require factory trained and authorized entities to do the work, to ensure quality.

5) Cited/recommended quote for solar system quote (Sunwize 201708-23053) is for 24.4 watts continuous (45.6ah/day); which is not enough to run the microwave system. Accordingly, the bid specification has 97.42 watt load – which does not match what was previously quoted. Please clarify exact loading, calculations, and math.

A: Attached.

5a) With alternate equipment being proposed, it is assumed if all objectives can be completed while running equipment on -48VDC native system without additional need for SCADA hardware on site to monitor cabinet temperature and enclosure switches, that this shall be acceptable to the consultant.

A: Regardless of running all remote receiver site equipment natively on -48 VDC, it is required that the remote sites be monitored as indicated in Appendix R.

Per Appendix R, remote sites must be monitored for: enclosure door opening (possible vandalism), temperature (to ensure batteries continue to function within specifications), -48 VDC (to ensure that the power supply system is operating properly), 12 VDC if required in your design, and humidity (for unexpected rain intrusion) for enclosure door being opened (implying vandalism if it is unexpected), and for enclosure temperature to be monitored to ensure that batteries are not exposed to unduly low temperatures. You have not mentioned,

6) Cited/recommended microwave solution specifies microwave manufacturer that bidder has not implemented, yet is expected to support 24x7x365 for 10+ years. Bidder takes exception to these requirements and will substitute a similar product of reputable manufacturer that meets all objective

requirements of ethernet transportation as required. Equipment shall be from a reputable manufacturer providing a similar baseband-over-coax solution at licensed 23ghz frequencies. The antennas specified by consultant are similar in design and specification to the competitive design.

A: As indicated in the Technical Specifications, section IV. D. page 41, contractors may take exception to the bid specifications, so in this case you don't have to offer compliant equipment. In this case you appear to be offering an alternative which will meet the intent of the Technical Specifications. That alternative needs to be well defined by bidder so that we can determine equivalency.

7) Cited/recommended Solar solution makes no mention of the 6" x 20' pipe, nor the requisite site work that needs to be performed to provide solar power at this site. There are no mark-ups for grounding the metal mounting pole, the individual panels, nor the battery cabinet to the site halo ground; nor are there any wind-ratings on the proposed solar equipment. The vendor wishes to raise these questions to the project engineer for clarification.

A: The solar equipment mentioned in the Technical Specifications on page 33, item 5, was intended to be mounted onto the antenna support structure, and the SunWize quote mentioned includes a bracket to mount to a utility pole. If bidder provides a different antenna support structure, then a different bracket suitable to that structure should be included in the bidder's costing.

The intent of mounting the solar panels at a height of 15 feet was to avoid vandalism. Bidders may offer other solutions for mounting, or ground mounting that affords protection from stones and the like thrown by vandals. In the latter case bidder would have to add additional fencing length to include the solar panels within the fence perimeter, with at least 8 feet of clearance to all panels, antenna support structures, and equipment enclosures.

Grounding for the remote receiver site is clearly specified for a 'Type A site' per R56 and some of those details were stated in the Technical Specifications on page 15.

The solar panels will be unlikely to comply to ANSI EIA/TIA 222-G wind specifications without a large increase in cost. Therefore it was deemed that these items may not survive, but are more easily replaceable, or temporary power could be provided. Even if temporary power could not be provided, the main Hilltop site would survive such winds, and although receiver voting would be compromised, the overall system would survive.

Bidders may wish to offer an ANSI EIA/TIA 222-G wind specification compliant solar system as an option.

On the other hand, it is imperative that towers and other antenna support structures comply to ANSI EIA/TIA 222-G wind specifications because they are not easily replaceable.

8) Cited/Recommended SCADA solution - There is mention of making the system indicate failure to the dispatcher, and allowing the dispatcher to choose functionality. I see no control methodology for switching to stand-by manually at Ayer PD Headquarters via the dispatch console. I also see no supervision of alarms via the inputs on this console. Dealer prefers to do integration with a vendor other than that recommended; however – all required contacts and alarm points can be monitored remotely via web browser, as required by this contract with proposed equipment. It is presumed that any solution that meets the objective goals of the project as described is acceptable to the engineer and customer.

A: Failure of the main APD or the main AFD transmitter will be indicated to the dispatcher by the RF power monitor, item 17. on page 29. This monitor is connected to the SCADA system (see Appendix R, inputs 8 & 9 for the Hilltop site. Thus dispatchers will be aware of declining or lack of RF power on the two major transmitters.

If the automatic main-standby switching option on page 37, item III. F. 3. is not purchased, then switching between the main and standby transmitters of APD and AFD will be done by someone going to the site and swapping coax antenna cables for the receiver and transmitter. Bidder should include provision to do this. This is not expected to entail any extra cost other than having the TX and RX cables from the duplexers be long enough to allow connection to either the main or the standby repeaters, and provision of any adapters that might be necessary if the connectors are different between the stations.

The SCADA system mentioned in the Technical Specifications uses a Web browser interface as indicated on page 35 item 3.

As indicated in the Technical Specifications, section IV. E. page 41, contractors may offer alternatives or options, as long as they meet the intent of the Technical Specifications. Therefore feel free to offer an equivalent offering.

9) Cited/Recommended solutions require solar powered sites to provide 12v solutions; dealers solution runs natively at -48vdc for all equipment; and it is assumed this is acceptable and that additional 12v DC-DC conversion is not required for future expansions.

A: If your solution provides for all solar powered site equipment to run natively on -48 VDC, then that design is presumably less cost and has reduced equipment and reduced points of failure, and hence is likely to be viewed favorably assuming all other requirements are met.

10) Cited/Recommended antenna is Sinclair SC-225M-HF5SM. Manufacturer cut sheet shows 164-174mhz bandwidth. Customer frequencies are approximately 156-159mhz; that the SC225M-HF4SM would be most appropriate as it is tuned to the customers' Alpha frequencies.

A: Sinclair SC 225M-HF6SNM will cover 150-160 MHz and was quoted to consultant by Sinclair Technical Support. This model is listed on Table 4 pages 27-28.

11) Is there a requirement for vendor to provide JPS solution when a better alternative exists compliant with bid requirements? Should this be acceptable, is elimination of unnecessary components due to this change frowned upon? (IE: 12VDC converters that are no longer required?).

A: This question has been answered for Bidder #3's question # 1.

As indicated in the Technical Specifications, section IV. D. page 41, contractors may take exception to the bid specifications, so in this case you don't have to offer compliant equipment. In this case you appear to be offering an alternative which eliminates unnecessary equipment such as 12 VDC converters, that would save cost and reduce points of failure, and such alternative would likely be viewed favorably assuming all other requirements are met.

### **Additional Issues that arose during the pre-bid conference:**

- A. Bidders should include in their costs:
  - 1. 2 replacements for the current smoke alarms in the shelter
  - 2. Check and replace as needed the magnetic door entry switch in the shelter
  - 3. Replace the battery powered emergency light
  
- B. During the Hospital tour the following additional issues came up:
  - 1. The concrete decking between floors is approx. 6" of concrete
  - 2. In some of the mechanical rooms (3-165, 2-171) there are asbestos floor tiles. These should be removed where core drilling is done to avoid an asbestos issue.
  - 3. Hospital requires that all cables be fire stopped, using Hilti materials.
  - 4. Installers putting in fire stopping material must be Hilti certified and trained, and the hospital will ask to see the card or certificate. Hospital will conduct free training for this in about 3 weeks.
  - 5. Contractors will have to provide documentation to hospital showing that the cable penetrations were made in a way to create a UL certified system. This will require pictures and a permit for each penetration.
  - 6. When going through a floor, hospital wants a sleeve through the hole, and then the entire assembly sealed with fire stop
  - 7. Cables cannot be supported on electrical conduits or sprinkler pipes as was done in the past. Cables must be supported on structural members only.
  - 8. 2' x 2' Ceiling tiles can only be opened one at a time, every 50 square feet, to prevent spread of communicable diseases
  - 9. The radiating cable will be run down inside the drop ceilings of the first and third floors, not the first and second floors as stated in the Technical Specs.
  - 10. The VHF Yagi donor antenna should use a weather resistant wall side mount like the other antennas located on the penthouse.
  - 11. Grounding of the donor antenna and lightning arrestor panel can be done via connection to the copper water pipes in the penthouse. There is also an electrical panel in the penthouse but it is preferred by the hospital that the ground be made to the water pipes, which have no PVC pipe intervening.
  - 12. Bidders should use the following coax cable lengths in estimating costs:
    - i. 30 feet of ½" LDF from the Yagi antenna to the inside of the penthouse and the splitter
    - ii. 20 ft. of ½" LDF across the penthouse mechanical room to the inside wall
    - iii. 200' of 7/8" radiating coax run in the drop ceiling of the third floor
    - iv. 40 ft. of ½" LDF from the penthouse mechanical room to the mechanical room 3-165 across the hall, and another 25 feet of ½" LDF to go through the 3<sup>rd</sup> and 2<sup>nd</sup> floors to the first floor hall
    - v. 200 ft. of 7/8" radiating coax run in the drop ceiling of the first floor

- C. Utility ground rods at the Hilltop site: one is approx. 13.5 feet in front of the shelter, the other is another 12 feet beyond the first one.
- D. Bidders requested GPS coordinates for the monopole locations. Please use the coordinates given in Appendix B.
- E. Bidders should ensure that the east receiver site antenna structure can also support, in addition to the antennas shown on Table 1, page 14, a Signal Communications Corp. fiberglass radomed 72 MHz antenna model 500T. This antenna is 84.8" in length, has a wind resistance area of 0.69 square feet, and a wind survival rating of 125 MPH. This antenna is for the AFD fire alarm repeater, which may be located at the East Receiver site at some future time. The power required for this 1 watt RF transmitter is so nominal that the solar panel for this site will accommodate the additional future load.
- F. Does the Town require a T1 plus Ethernet for the microwave equipment? Consultant was unable to find a microwave vendor that had equipment that carried less than Ethernet + T1. The major requirement is for Ethernet, which is expected to be sufficient for the foreseeable future link needs to these sites. If bidders can source link equipment that provides Ethernet only without the T1, that can be offered but it must be stated the exact baseband capacity available.

**Additional Information Provided to Bidders:**

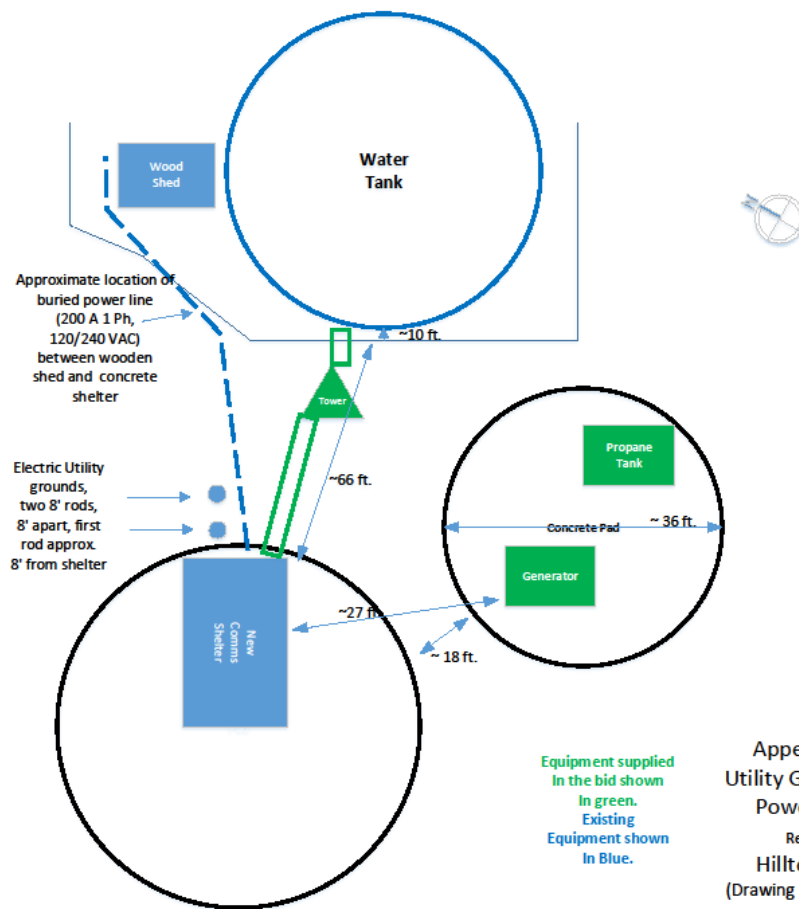
Re Bidder #2 Question 8 on existing site ground and utilities for Hilltop Site:  
Pictures of the utility ground rod locations and utilities and a plot plan for same are below.



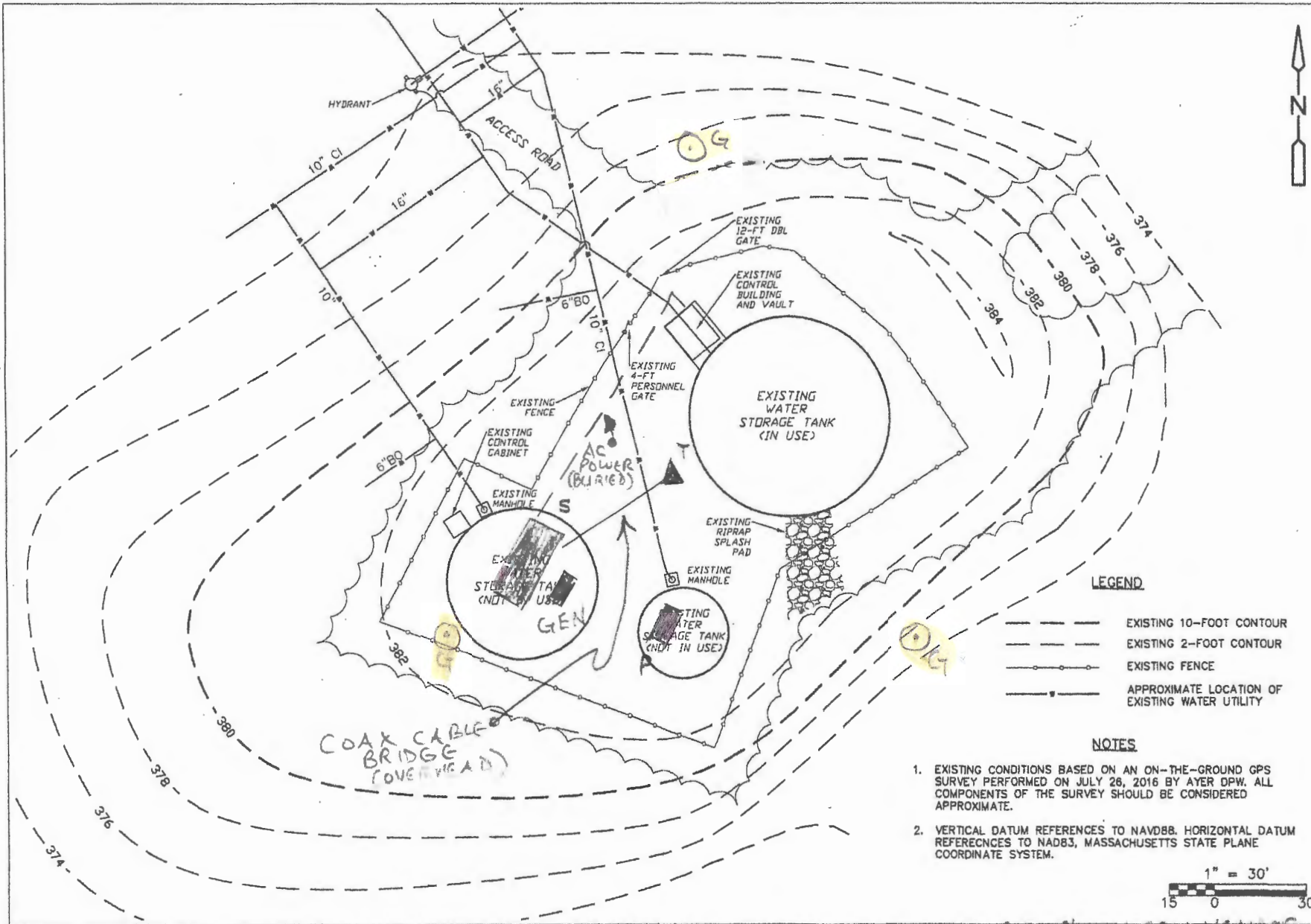
Location of 8' utility ground rods to concrete communications shelter



Power line run from wooden shed to concrete communications shelter



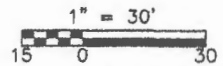
Appendix U  
 Utility Grounds &  
 Power Line  
 Rev 1.0  
 Hilltop Site  
 (Drawing not to scale)



**LEGEND**

	EXISTING 10-FOOT CONTOUR
	EXISTING 2-FOOT CONTOUR
	EXISTING FENCE
	APPROXIMATE LOCATION OF EXISTING WATER UTILITY

- NOTES**
- EXISTING CONDITIONS BASED ON AN ON-THE-GROUND GPS SURVEY PERFORMED ON JULY 28, 2016 BY AYER DPW. ALL COMPONENTS OF THE SURVEY SHOULD BE CONSIDERED APPROXIMATE.
  - VERTICAL DATUM REFERENCES TO NAVD88. HORIZONTAL DATUM REFERENCES TO NAD83, MASSACHUSETTS STATE PLANE COORDINATE SYSTEM.



ENGINEER:

Ayer DPW  
 25 Brook Street  
 Ayer, Massachusetts

REVISIONS:

NO.	DATE	DESCRIPTION

PROJECT:

**DEMOLITION OF STEEL WATER STORAGE TANKS**

FILE NAME:

AUTHOR:

DRAWN BY:

CHECKED BY:

DATE:

SHEET TITLE:

**EXISTING CONDITIONS PLAN**

SHEET:

**C-1**

NOTES: 1. LOCATIONS SHOWN ARE NOMINAL + SUBJECT TO CHANGE BY CHOSEN VENDOR  
 2. DIMENSIONS + LOCATIONS ARE APPROXIMATE  
 3. CHOSEN VENDOR RESPONSIBLE FOR DIG SAFE, SYS DESIGN, INSTALLATION  
 4. S = SHELTER. T = TOWER. G = GUY ANCHOR POINTS FOR 120' TOWER FOR RS-222G, 110 MPH WIND





Rev.	Description	By	Date

MASSACHUSETTS

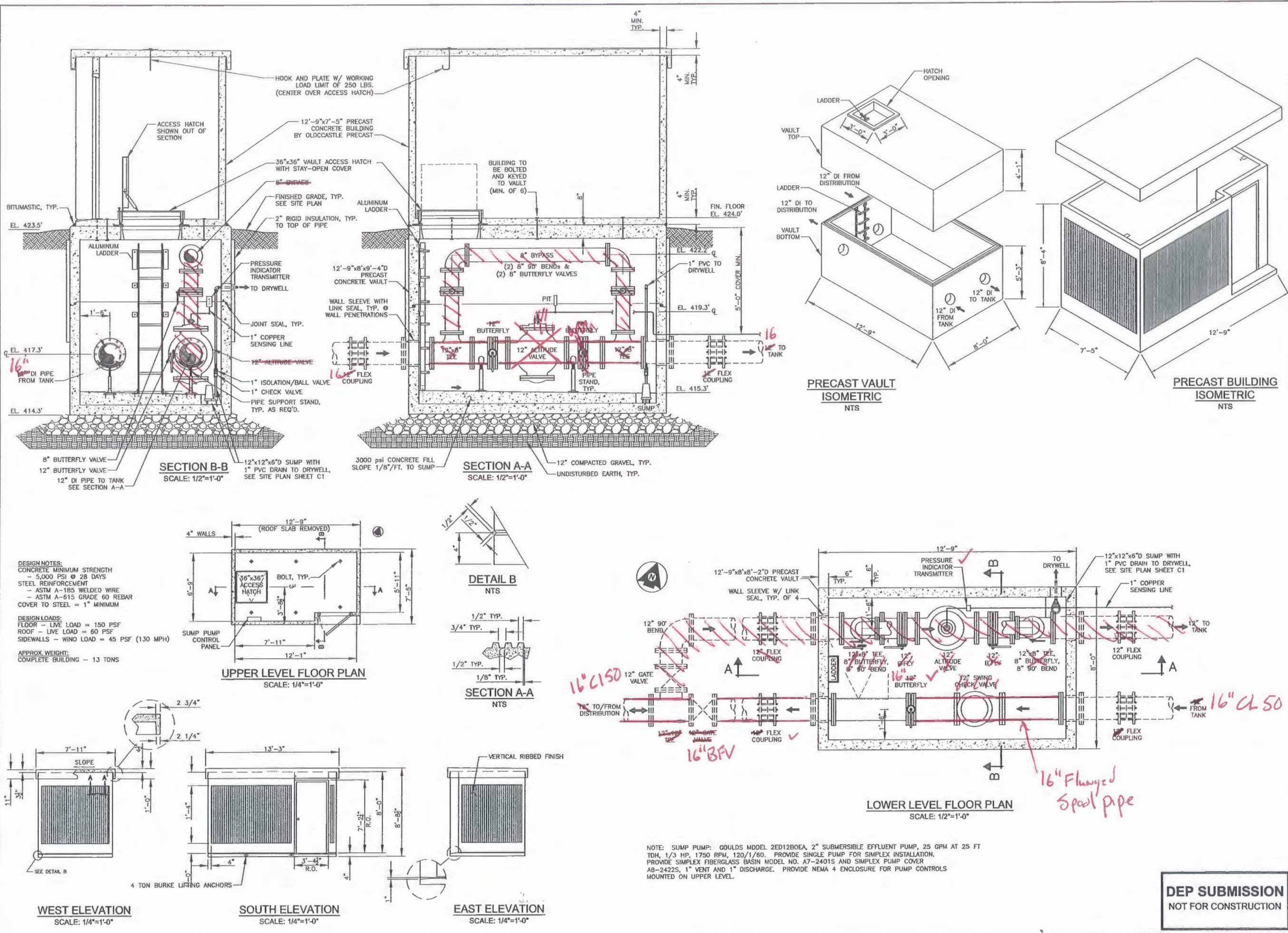
CRABTREE DEVELOPMENT  
 AYER WATER TANK  
**VALVE CONTROL BUILDING**

AYER



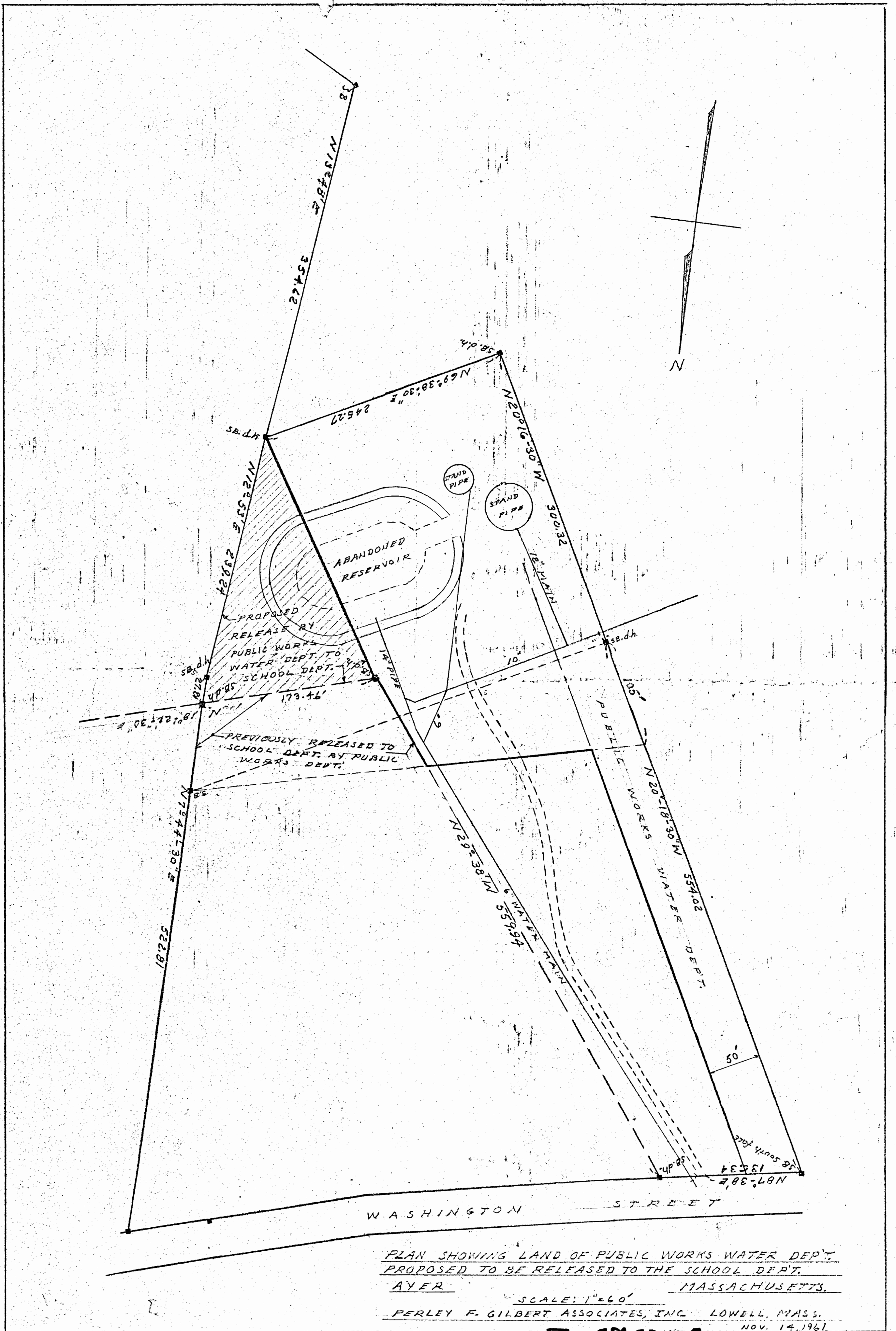
Project No.	9100006
Proj. Manager	G.F. MCCARTHY
Proj. Designer	R.L. JENKINS
Drawn By	K.A. BANNERMAN
Checked By	AS SHOWN
Scale	AS SHOWN
Approved	AS SHOWN
Date	APRIL 2005

Sheet of  
**C3**  
 D



**DEP SUBMISSION**  
 NOT FOR CONSTRUCTION

Remote RX Site Power Calculations										
24 Sept 2017, Panther Pines Consulting, LLC										
Green is worst case draw assumed										
Use	Radio	12VDC, A	24 VDC, A	-48 VDC, A	Notes	12 VDC A Req	24 VDC A Req	48 VDC A Req		
Mobile used as Receiver, RX	Moto CM 300	1.5				0.54				
Mobile used as Receiver, stdby	Moto CM 300	0.3								
JPS Voter encoder	QMT-1 in NXU2A encl.	0.5				0.5				
MW to east RX, 1+0	Cileo NW, 23 GHz			1.583				1.583		
SCADA	NetGuardian LT G2		?	0.1				0.1		
AFD Fire Alarm Repeater*		0.097								
					<b>Totals:</b>					
					watts	14.144	0.00	80.784	94.928	
Assumptions:	<b>RX %</b>	<b>Stdby %</b>								
1. Voting RX	20%	80%								
3. MW, SCADA, JPS Voter	100%									
		Deration factor per R56 6.7.3								
All batteries to last X hours at above duty cycles:	120	1.157			Min. Battery Ampacity:	144.39	0.00	233.67		
* installed at East Receiver Site in future. Not included in solar calcs. Adds 1.2 watts to total draw or about 1.2%. Not worth worrying about.										



PLAN SHOWING LAND OF PUBLIC WORKS WATER DEPT.  
 PROPOSED TO BE RELEASED TO THE SCHOOL DEPT.  
 AYER MASSACHUSETTS.

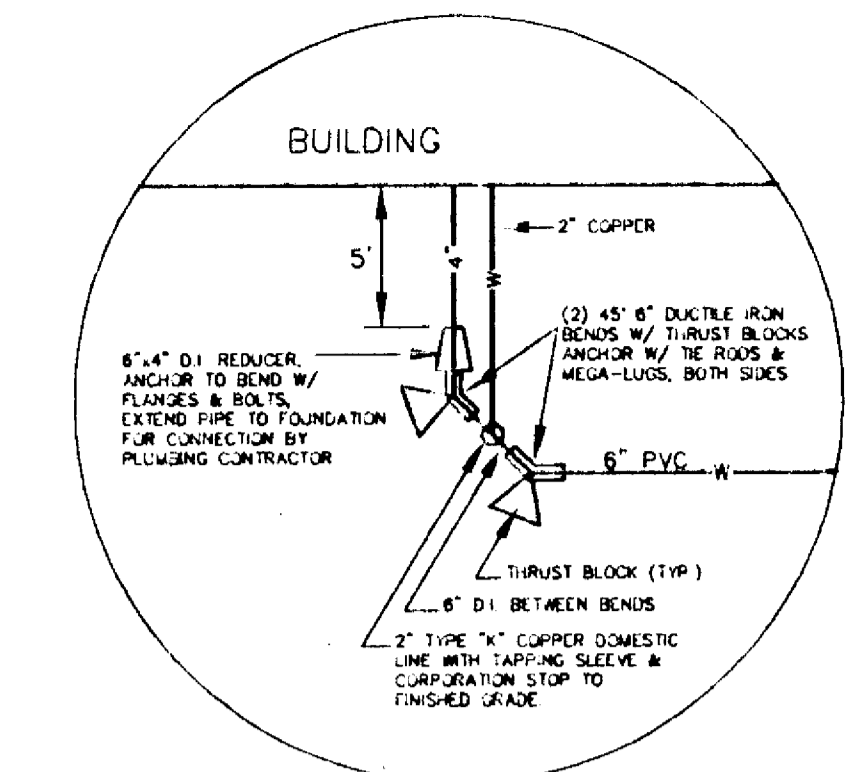
SCALE: 1"=60'  
 PERLEY F. GILBERT ASSOCIATES, INC. LOWELL, MASS.  
 NOV. 14, 1961

**LEGEND**

- EXISTING PROPERTY LINE
- STONEWALL
- EXIST EDGE OF PAVEMENT
- EDGE OF PAVEMENT W/ SLOPED GRANITE CURB
- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING TREELINE/ BRUSHLINE
- NYNEX TELEPHONE LINE
- OVERHEAD WIRES
- UTILITY POLE
- CATCHBASIN
- DRAIN MANHOLE
- DRAIN LINE
- HYDRANT
- WATER GATE
- WATER LINE
- SEWER MANHOLE
- SEWER LINE
- GAS GATE
- GAS LINE
- EXISTING BUILDING
- PROPOSED BUILDING WITH OVERHANG/SOFFIT
- LIGHT SIGN
- UNDERGROUND UTILITIES (CATV / TELEPHONE / DATA / FIRE ALARM / ELECTRIC)
- SILT FENCE/HAYBALE BARRIER
- PVI PROPOSED POST VALVE INDICATOR

**WATERLINE SCHEMATIC DETAIL**

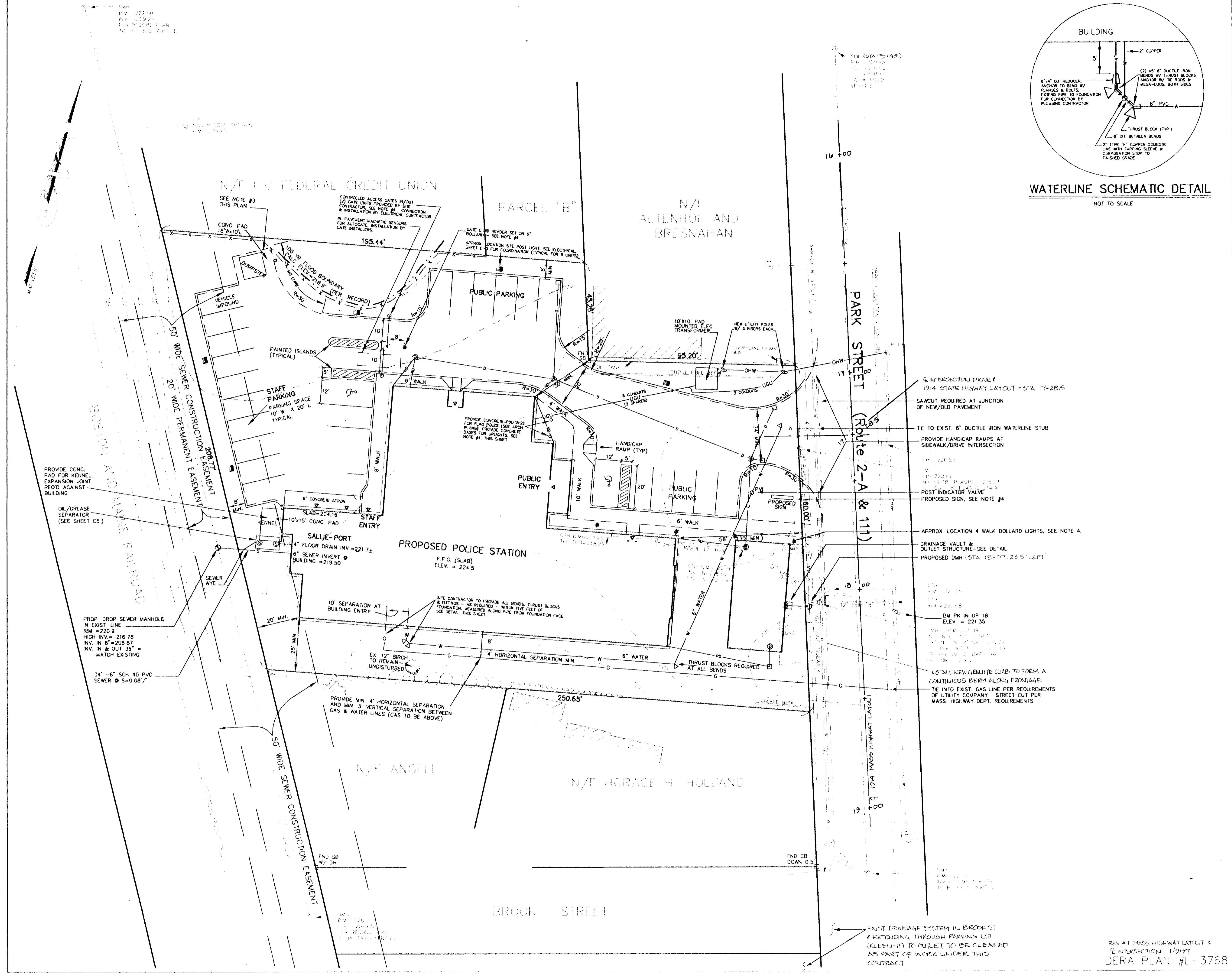
NOT TO SCALE



NOTE: ALL PIPE MEASUREMENTS ARE MADE FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE.

**PLAN NOTES:**

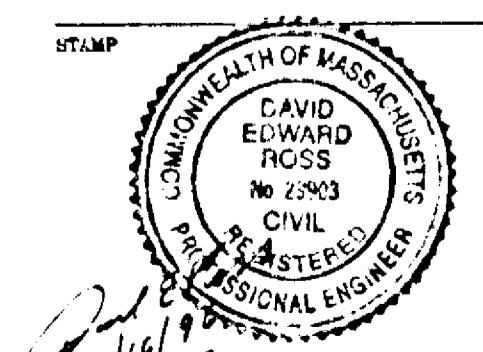
1. SEE PLAN P-1, PLUMBING PLAN AND SPECIFICATIONS SECTION 15400, PLUMBING, FOR SITE-RELATED WORK PROVIDED FOR IN THAT SECTION AND FOR COORDINATION PURPOSES.
2. SEE PLAN E-0, ELECTRICAL SITE PLAN AND SPECIFICATIONS SECTION 16000, ELECTRICAL, FOR SITE-RELATED WORK PROVIDED FOR IN THAT SECTION AND FOR COORDINATION PURPOSES.
3. SEE LANDSCAPE & IRRIGATION PLAN, C4 FOR FENCING TYPES & LOCATIONS.
4. SITE CONTRACTOR IS RESPONSIBLE FOR ALL FOUNDATIONS, EXCAVATION, BEDDING & BACKFILL FOR ALL SITE-ELECTRICAL SYSTEMS (LIGHTING, SIGN, ACCESS GATES, CARD READER & MAG DETECTOR), CONDUIT, WIRE, WIRING, FIXTURES & INSTALLATION BY ELECTRICAL CONTRACTOR.
5. ALL DISTURBANCE & SITEWORK WITHIN THE LIMITS OF ROUTE 2-A RIGHT-OF-WAY IS SUBJECT TO PERMIT REQUIREMENTS AS ISSUED BY THE MASS. HIGHWAY DEPT.



**David E. Ross Associates, Inc.**  
 Civil Engineers, Land Surveyors, Landscape Architects & Environmental Consultants  
 111 FITCHBURG ROAD  
 AYER, MA 01432-0368 (508) 772 - 6232

**STAHL ASSOCIATES ARCHITECTS**  
 100 CHAUNCY STREET  
 BOSTON, MA 02111 (617) 423 - 4555  
 JOB NO. 98-119 DATE 12/18/98 SCALE 1"=20'  
 DRAWN BY MLC/WEM CHECKED BY WEM/DER  
 TITLE

**SITE PLAN**



C2

REV #1 MASS. HIGHWAY LAYOUT & INTERSECTION 1/9/97  
 DERA PLAN #L-3768

EXIST DRAINAGE SYSTEM IN BROOK ST  
 EXTENDING THROUGH PARKING LOT  
 (CLEAN-IT) TO OUTLET TO BE CLEANED  
 AS PART OF WORK UNDER THIS  
 CONTRACT