



TOVANI HART

# Washington State Patrol Fire Training Academy Master Plan

2013



# WASHINGTON STATE PATROL

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## FIRE TRAINING ACADEMY

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### ACKNOWLEDGEMENTS

#### Master Plan Steering Committee

*Fire Prevention Bureau, Washington State Patrol*

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Mr. Paul Perz	Assistant State Fire Marshal
Mr. Phil Cane	Fire Training Academy Administrator

*Fire Service Representatives*

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Bryan Pearson	WSFTSO
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### Master Plan Stakeholder Representatives

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Eric Steppe	Bellevue Police Bomb squad
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Det. Daniel Hawse	King County Sheriff's Office
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Russ Hobbs	Kittitas Co. FD 7
Bill Hoover	Kirkland Fire
Larry Peabody	Kirkland Fire-Rescue
David Walker	City of Kirkland Fire/Bldg
Wayne Kier	North Kitsap Fire & Rescue
Paul Stewart	Central Kitsap Fire & Rescue
Rob Law	Central Kitsap Fire & Rescue
Doug Richards	South Kitsap & Fire Rescue
Ron Satterfield	Mason County
Greg Seals	Mason County
Joeseeph Rigney	McNeil Island Fire Dept.
Greg Becken	Port of Moses Lake
Pat Risley	East Pierce Fire & Rescue
Brett Bigger	Renton Fire & Emergency Services
Lt. Brad Gould	Renton Fire & Emergency Services
Erik Wallgren	Renton Fire & Emergency Services
Ed Johnson	City of Sea-Tac Fire Dept
Eddie Nelson	Seattle Fire
Mike Makela	Snohomish County Fire Marshal's Office
Lee Law	City of Tacoma Fire Dept
Cari Coll	Vashon Island F&R/King Co. Fire TO's
Parry Boogard	Valley Regional FA
Chief Huffman	Vancouver Fire Dept
Ron Bowen	Office of the State Fire Marshal
Robert Bradley	Olympia Fire Dept.
Jeffrey Dukes	Union Pacific Railroad
Frank Mazna	Vancouver Fire Dept
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Vince Fairhurst	WSDOT State Incident Response Team
Myron Meikle	WSP Bomb Squad
Cliff Pratt	WSP
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### EXECUTIVE SUMMARY

The following Master Plan provides an overview of the critical facility modifications required to re-establish the Washington State Patrol Fire Training Academy as the premier fire training facility in the State of Washington. The Fire Protection Bureau plays a key role in maintaining and improving response capabilities across the State and the Fire Training Academy is a primary tool in executing that requirement. Although once a premier facility both in the State as well as the Northwest, time and insufficient funding have diminished the capacity to maintain that status. Recent years have forced the facility to focus on maintaining basics levels of service as opposed to providing state-of-the-art facilities and programs that serve to enhance the safety and response capabilities of firefighters and emergency response personnel statewide.

The rapidly changing service environment and increasing demands on the fire service make it crucial that departments throughout the State have access to realistic and effective training facilities that accurately reflect real world challenges. The ability to fund and maintain state-of-the-art training facilities is beyond most if not all departments in the State, but the lack of access to such facilities increases risk to uniform and civilian personnel alike. The void in realistic training facilities also makes it difficult to enhance response capabilities statewide in a manner that allows preparedness to keep pace with the ever-increasing challenges of a dangerous world. Agencies both large and small must rely on the State to lead efforts in improving response capabilities and many of the required facilities only become viable when utilized by a large and diverse audience.

The opening of the Washington State Patrol Fire Training Academy in 1984 represented a giant step forward in enhancing the availability of high quality fire training facilities and programs in the State of Washington. The idea of creating centralized training facilities came about from the recognition that existing training facilities across the State were inadequate. Increasing environmental concerns and the high cost of constructing and maintaining facilities made it difficult for individual departments to build and sustain quality training facilities for their personnel. The objective for developing the Fire Training Academy was to fill that void with State-of-the-art facilities accessible by all agencies in the State. Upon opening, the facility accomplished that goal by providing firefighters throughout Washington State with access to live fire-training environments otherwise unavailable. Many of the stakeholders involved with the early days of the facility recall the excitement of training at the new facility and the frequency with which the facility was utilized. The ability to burn realistic fuels was a major draw of the facility and continues to be to this day. Over the years additional training elements were added to the site including the addition of Aircraft Rescue Fire Fighting training props in the late 90s. The Fire Training Academy has maintained a key role in the training of firefighters ever since training thousands of firefighters each year.



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Although the academy continues to play an important role in preparing firefighters, the lack of available funding to complete, maintain and enhance facilities at the site has not only limited its potential effectiveness, but over the years has also led to diminishing use by many of the agencies it was designed to serve. Many of these users, including volunteer agencies, have limited access to other available options. The void in major enhancements has also seen many of the training areas and props become obsolete and ineffective and this has limited usage by many of the larger departments who have also sought alternative facilities. Many times these options are also of limited effectiveness but they are local and reduce the cost of training personnel.

Although fire departments and response agencies across the State have made the best of available funding, the lack of investment has created a situation quite similar to that when the Fire Training Academy was conceived. The pace of funding for repairs, improvements and new facilities has not kept pace with the rapidly changing service environment and thus not only are many of the training elements beyond their useful life, many no longer represent best practices in the training of firefighters. Diminishing relevance and capabilities at the Fire Training Academy over the years has led many users to seek alternatives based on cost and proximity and this serves to exacerbate the problem of maintaining a healthy and sustainable fire training resource for the State.

The Master Development Plan outlined in this document represents requirements to restore the Fire Training Academy to the resource it was always intended to be. There are no easy answers to the challenges faced but the stakes are too high to be left unaddressed. The growing threats to communities across the State and nation are highlighted on an almost daily basis and we are frequently reminded of the consequences of being unprepared.



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## FIRE TRAINING ACADEMY

### 1.0 INTRODUCTION



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## FIRE TRAINING ACADEMY

### 1.1 Project Information

#### 1.1.1 Project Title

Master Plan for the Washington State Patrol Fire Training Academy

#### 1.1.2 Project Goals

- Identify/Describe training needs for the region and modifications necessary at the Academy to meet those needs
- 
- Develop justification for improvements at the Academy.
- 
- Provide a plan for the complete build-out of the campus
- 
- Establish the priorities for development
- 
- Define requirements to satisfy the needs of King County with respect to future improvements at the Academy.

#### 1.1.3 Agency Name

The Washington State Patrol Fire Training Academy (WSP/FTA).

#### 1.1.4 Project Number

2012-270A

#### 1.1.5 History of the Washington State Patrol Fire Training Academy

The need for adequate and centralized fire service training facilities was recognized in results of a survey of existing training facilities in 1961. A permanent committee of the Washington State Association of Fire Chiefs was formed in 1966 to work toward establishment of a training center. This committee, titled the King county Fire Chiefs Association, and the Washington State Commission for Vocational Education (CVE) convinced the King County Council to pass a resolution indicating the council would make a site available.

After a site near Enumclaw was denied a conditional use permit in 1979, a 48-acre site near North Bend Washington (34 miles east of Seattle) owned by the Weyerhaeuser Corporation was chosen in 1980. The site is part of a larger 120-acre parcel that was formerly used as a gravel borrow source and crushing/washing operation for construction of nearby Interstate 90.

The Fire Service Training Center opened in 1984 (becoming fully operational in 1986) and was managed by the CVE. In January of 1986, the Fire Service Training Center and the Fire Marshal's office (formerly under the state Insurance Commissioner) were merged into the state's Department of Community Development under the name "Fire Protection Services". The Department of Community Development was revised to include trade in 1992, and renamed the Department of Community, Trade, and Economic Development (CTED).



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Fire Protection Services was moved from the Department of Commerce formally Community Trade and Economic Development (CTED) to the Washington State Patrol in 1995 and renamed “Fire Protection Bureau”, where it remains today. The facility is now titled the Washington State Patrol Fire Training Academy (WSP/FTA).

In 1996, the WSP/FTA leased an additional 3 acres from the Department of Natural Resources for the installation of an Aircraft Rescue and Fire Fighting Facility, bringing the total acreage of the site to 51.

### 1.1.6 Mission of the Washington State Patrol

*“The Washington State Patrol makes a difference every day, enhancing the safety and security of our state by providing the best in public safety services.”*

### 1.1.7 Project Methodology

The master plan was developed with Washington State Patrol and the Fire Protection Bureau through a series of interactive workshops including emergency first responders from a variety of agencies throughout our region. Founded on the outcomes described by the project goals, the workshops included both presentation and discussion of current practices, future possibilities and frank conversations about what works and what doesn’t with respect to training emergency first responders and what direction the Fire Training Academy should take in the future.

Guided by the Executive Steering Committee, the design team began by conducting a target hazard study with the assistance of Stakeholders from across our state. They identified the most challenging conditions experienced by first responders in our region. The results of the target hazard study are included in section 3.0. The design team also investigated and analyzed the current status of the infrastructure and facilities at the Academy and discussed our findings in the workshops with the two groups. A review of those components follows in section 2.0.

The requirements of King County with respect to future development at the site was identified via a Land-Use Pre-Application Meeting and subsequent conversations with several agencies which are summarized in the memorandum in Appendix item 6.1.

The Master Development Plan identified in section 4.0 is the result of an iterative design process that went through several changes with respect to facility and infrastructure components and their locations. Upon review and acceptance of the conceptual Master Development Plan by both the Executive Steering Committee and the Stakeholder Group an implementation plan was developed based on the most pressing training needs and the potential for revenue generation through expanded training opportunities and offerings. The resulting plan is comprised of six phases over the next 15 years as identified in section 5.0.



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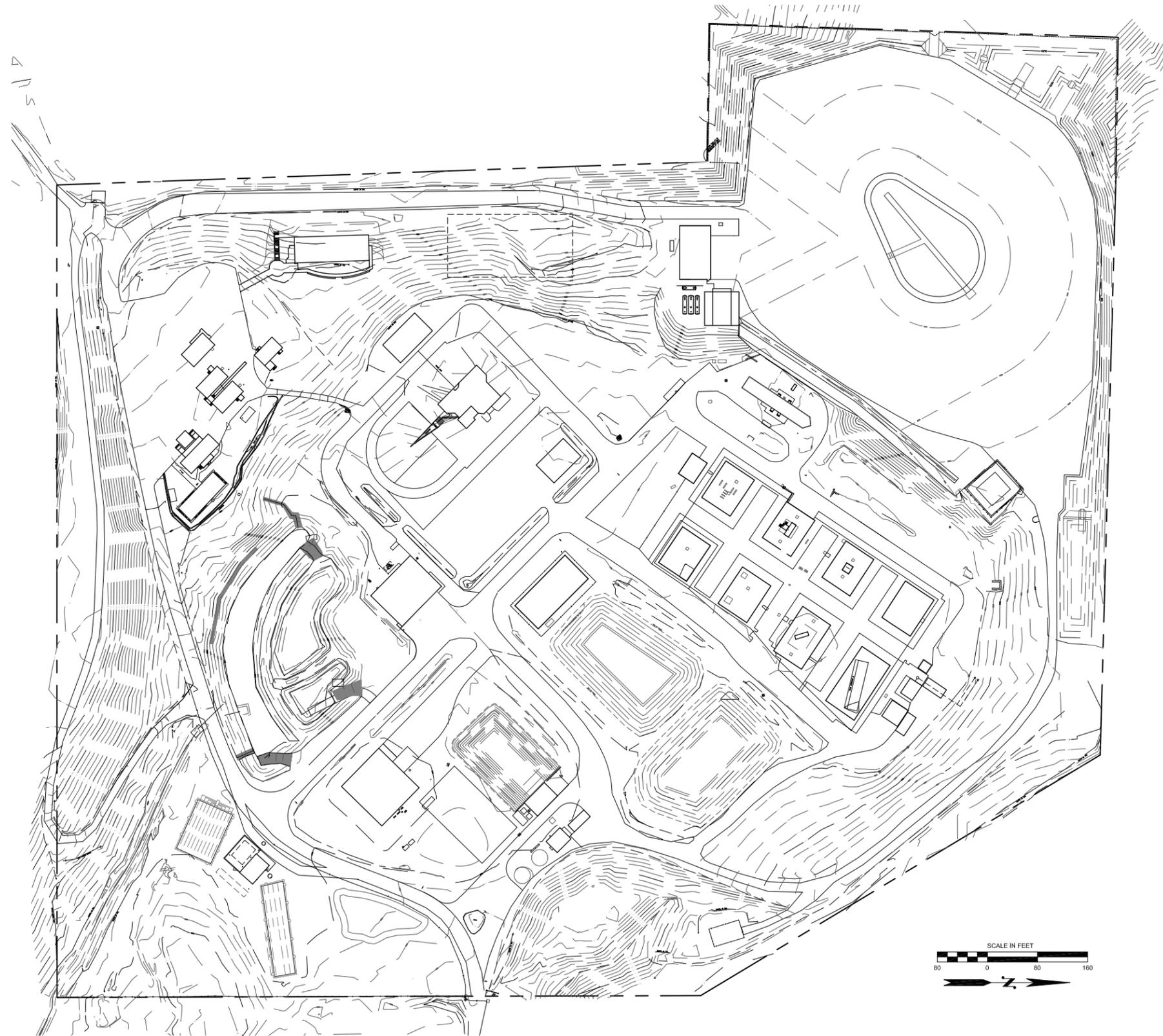
**2.0 THE EXISTING SITE**



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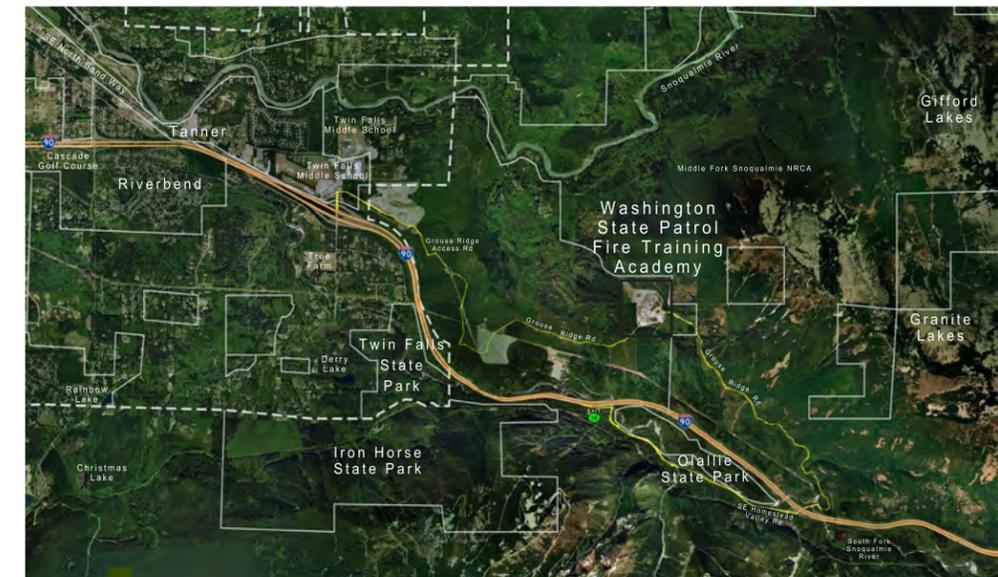
**2.1 Existing Site Information**

The WSP/FTA is located in a deep valley in the Cascade Mountains. Access to the site is from exit 38 on Interstate 90, up a winding paved road. The site is about a 15 to 20 minute drive from North Bend, Washington.

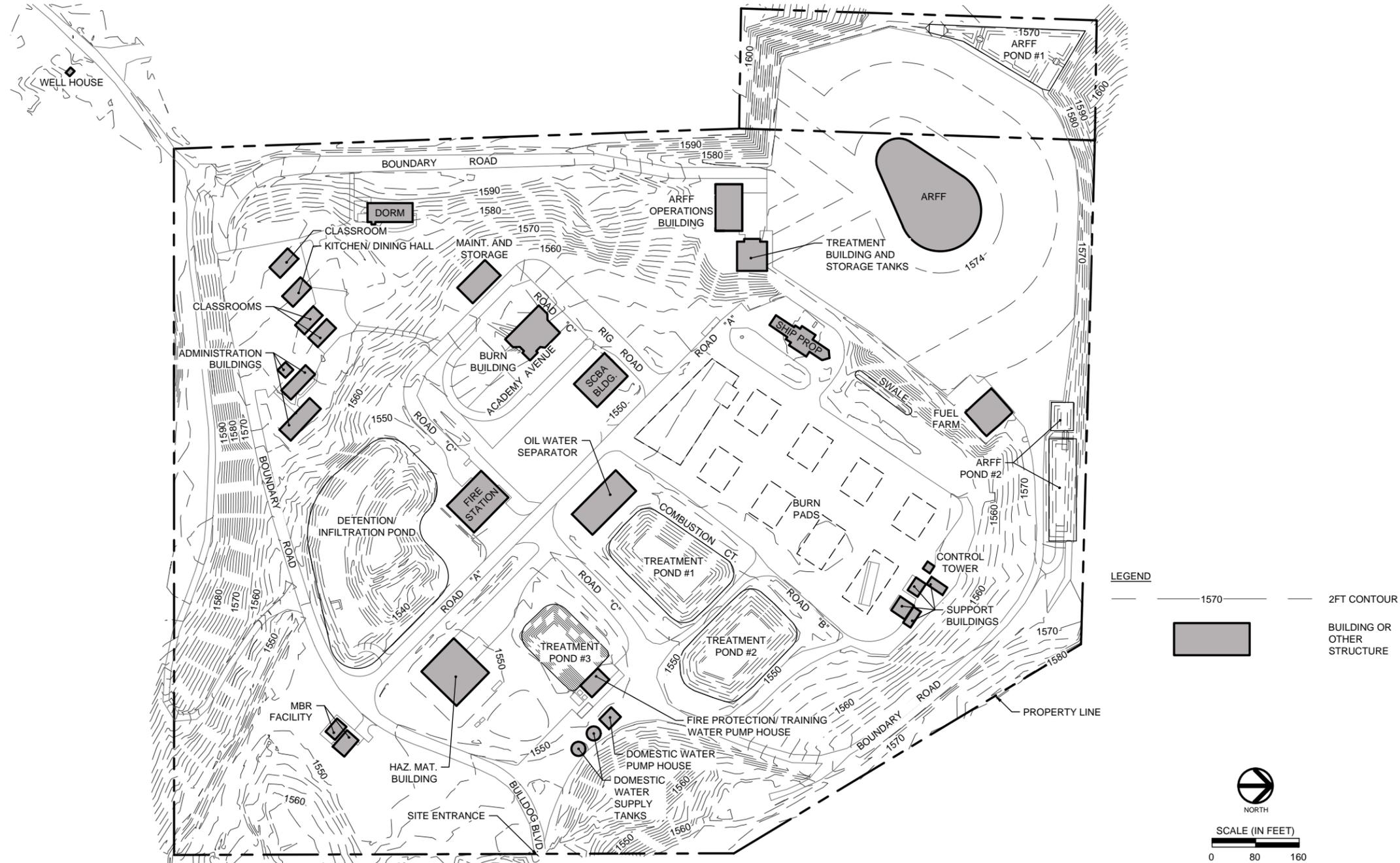
The property is located in unincorporated King County, and is zoned as Forest (F) and has a special-use permit for use as a fire training academy. See Appendix 6.1

Surrounding landowners include the Department of Natural Resources and Weyerhaeuser Corporation. The adjacent properties are largely undeveloped. Access to some adjacent sites is currently accomplished by going through the Fire Training Academy.

The remote location of the site provides an excellent atmosphere for training.



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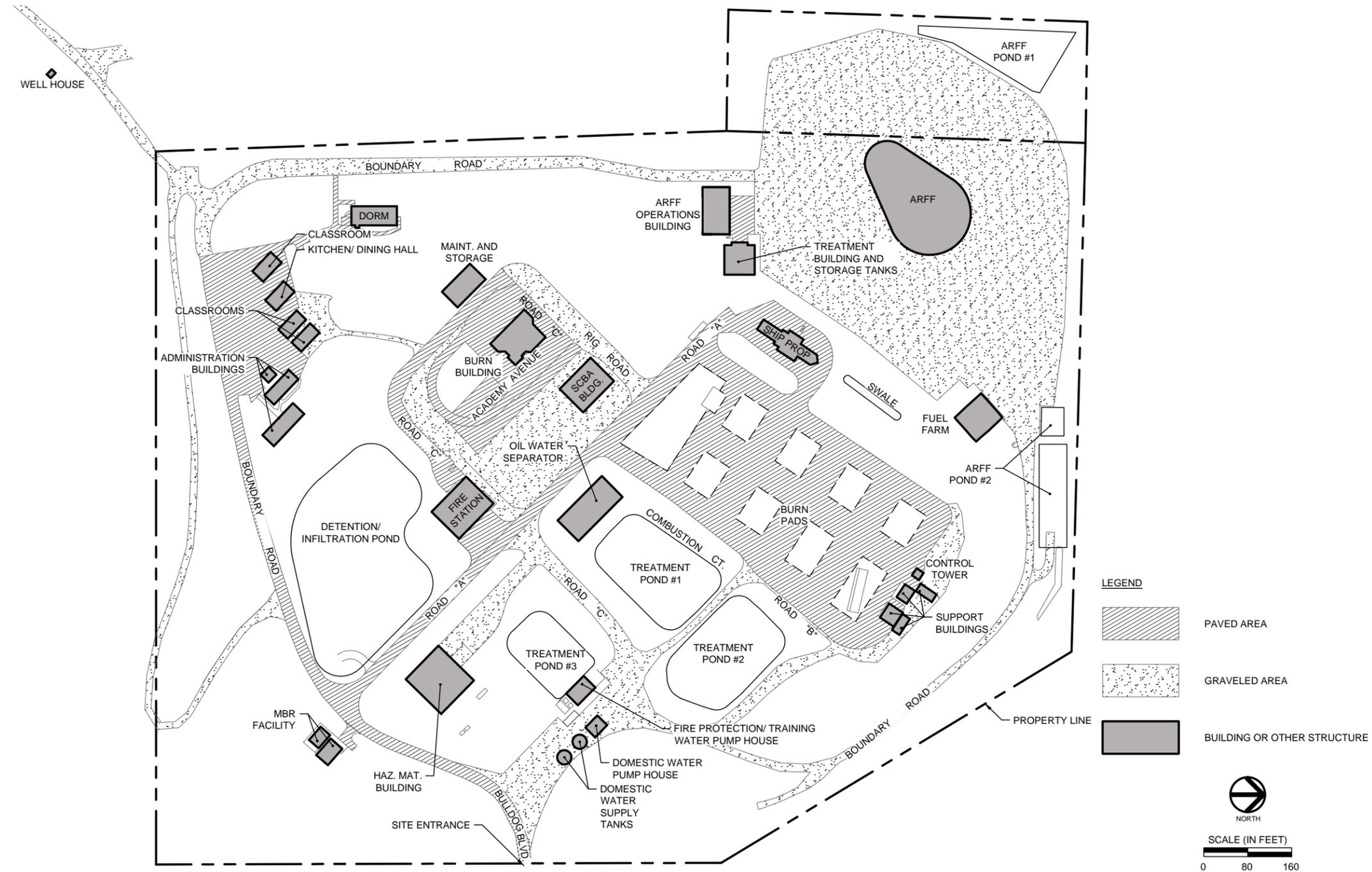
**2.2 Existing Topography**

The site was formerly a gravel borrow pit for the construction of I-90. The site is generally lower than surrounding areas with the exception of the southeast portions of the site. Grade transitions from the developed site areas to undisturbed portions of the site are typically steep cut slopes, ranging from 18% to nearly vertical. The elevations on the developed portions of the site are separated into two general areas: the Lower Area and the Higher Area.

- **Lower Area:** The lower area of this site is at an elevation of approximately 1,550 feet (NGBD 29 datum). This lower area includes the Burn Pads, Burn Building, and the Treatment Ponds, which comprise approximately half of the site.
- **Higher Area:** The higher area of the site generally varies in elevation between 1,570 and 1,590 feet. This higher area includes the Admin/Classroom/Dorm Complex (Campus Area) and the ARFF.

The perimeter of the site is generally surrounded by forested hills. The lowest area of the site is the Detention Pond at an elevation of approximately 1,540 feet. The Detention Pond discharges to the southeast.

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**2.3 Existing Circulation and Parking**

**Vehicular Circulation**

Existing vehicular circulation is comprised of both asphalt pavement and compacted gravel surfacing. The existing circulation provides passenger vehicle, emergency vehicle, training vehicle, and maintenance vehicle access to the majority of the site.

Gravel surfaces are more difficult to maintain and include typical maintenance issues such as snowplowing, ruts, wash boarding, potholes, and tire hazards.

The asphalt pavement areas include Bulldog Boulevard (entry road), Boundary Road (between MBR Facility and Campus Area), Road "A," Road "B" (around perimeter of Burn Pads), Road "C" (between Maintenance Building and Burn Building) and Academy Avenue (adjacent to Burn Building).

The crushed gravel areas include Road "C" (between Treatment Pond #1 and #3), Boundary Road (around perimeter of site), and Rig Road (west side of Burn Building).

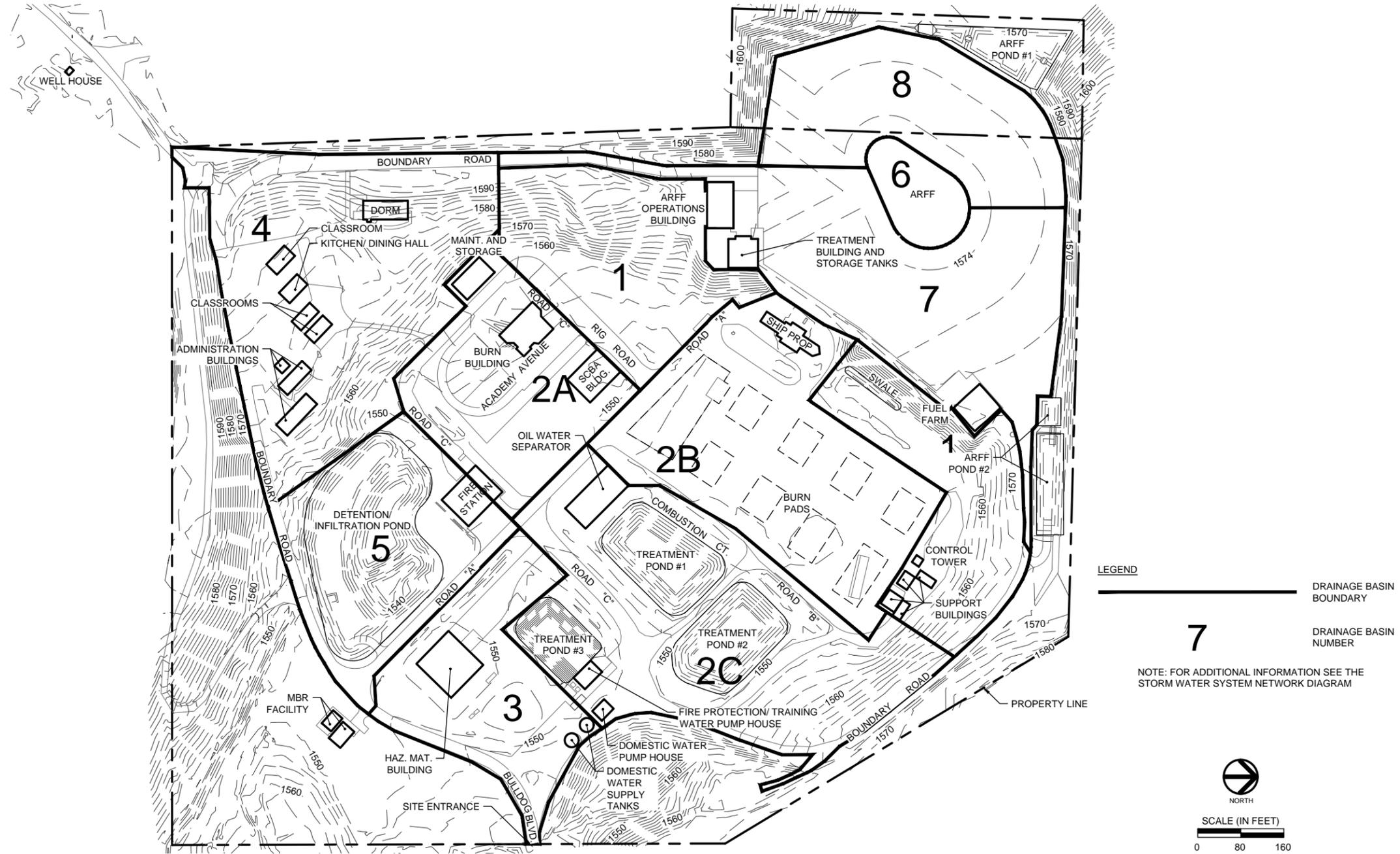
**Pedestrian Circulation**

Pedestrian circulation is comprised of both asphalt pavement and compacted gravel surfacing. Vehicular circulation is shared with pedestrian circulation and additional pedestrian walkways are provided at the Dorm, Campus Area, and the Burn Building.

**Parking**

Parking consists of both asphalt pavement and compacted gravel surfacing. There are approximately 35 designated parking spaces at the Campus Area. Most operations and maintenance facilities have a few unmarked vehicle parking spaces. Overflow parking is provided on the shoulder of Boundary Road, within the ARFF, and the north side of Treatment Pond #2.

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**2.4 Existing Drainage Basins**

The storm water management system for the site serves multiple functions and includes two primary storm water facilities. The first storm water management system serves non-active burn fire training areas in the Campus Area. The second storm water management system serves the ARFF, the Burn Pad Training Area, and directs runoff to the treatment/reclaimed water storage facility.

Generally the Campus area drainage system collects, conveys, treats, attenuates peak flow, and discharges surface water runoff generated by rainfall events. Generally the ARFF and Burn Pad Training area drainage system collects, conveys, pretreats and/or treats, and stores for re-use runoff generated by fire training events and surface water runoff generated by rainfall events.

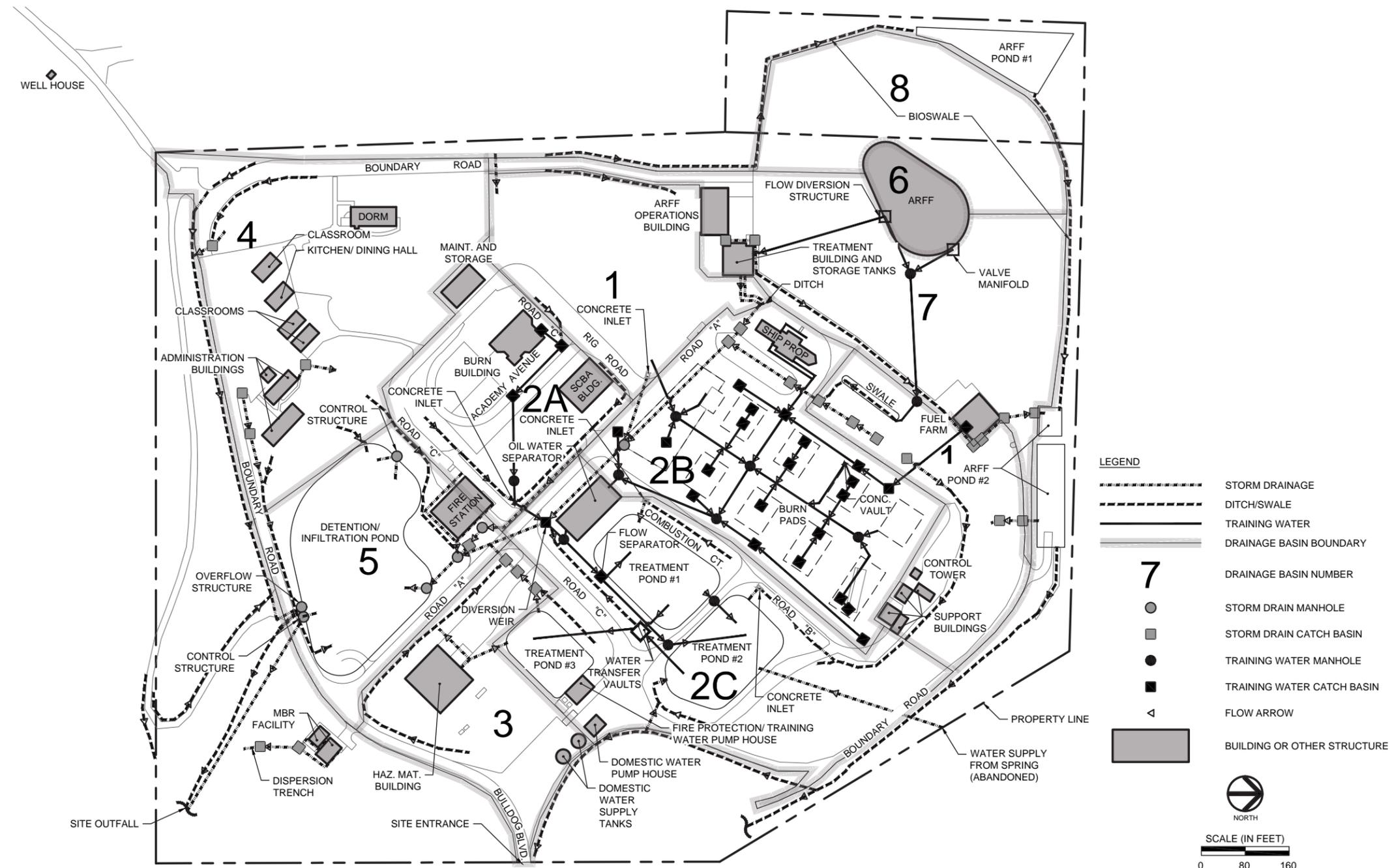
Based upon review of the site topography, other existing information and field visits, the site can be delineated into eight (8) drainage basins.

The Campus Area includes Basins 1, 3, 4, and 5. This area is entirely developed with impervious areas, buildings, roads, parking, compacted gravel, storm water facilities, and pervious landscaped areas. Storm water runoff generated on these basins is collected and conveyed to the Detention Pond. The Detention Pond provides storm water runoff treatment and peak runoff rate attenuation. Storm water treatment is provided for typical storm water runoff from office buildings, roads, parking, and dormitory facilities. Storm water is detained and released to downstream drainage ways via a pipe (low flows) and open ditch (high flows).

The ARFF and Burn Pad Training Areas include Basins 2, 6\*, 7, and 8. These areas are entirely developed with impervious areas, buildings, roads, parking, compacted gravel, storm water facilities, fire training pads and props, and pervious landscaped areas. Surface water runoff generated by fire training and rainfall events in these basins is collected and conveyed to the Treatment Pond/Reclaimed Water Storage system. Water stored in the Treatment Pond/Reclaimed Water Storage system is used for Fire Protection and Fire Training Water. The Treatment Pond/Reclaimed Water Storage system pretreats and/or treats water prior to re-use.

\*Because of the use of aviation fuel, Basin 6 has a separate storage facility/treatment facility with overflow bypass to the Treatment Pond/Reclaimed Water Storage system.

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**2.5 Existing Site Drainage**

The Campus Area includes Basins 1\*, 3, 4, and 5. The primary collection and conveyance system includes catch basins, inlets, open swales and pipes. Storm water runoff collected in these basins is directed to the Detention Pond. The Detention Pond provides storm water runoff treatment and peak runoff rate attenuation. Storm water treatment is provided for typical storm water runoff from office buildings, roads, parking, and dormitory facilities. Storm water is detained and released to downstream drainage ways via a pipe (low flows) and open ditch (high flows).

\*Basin 1 surface water runoff can be redirected to the Treatment Pond/Reclaimed Water Storage system.

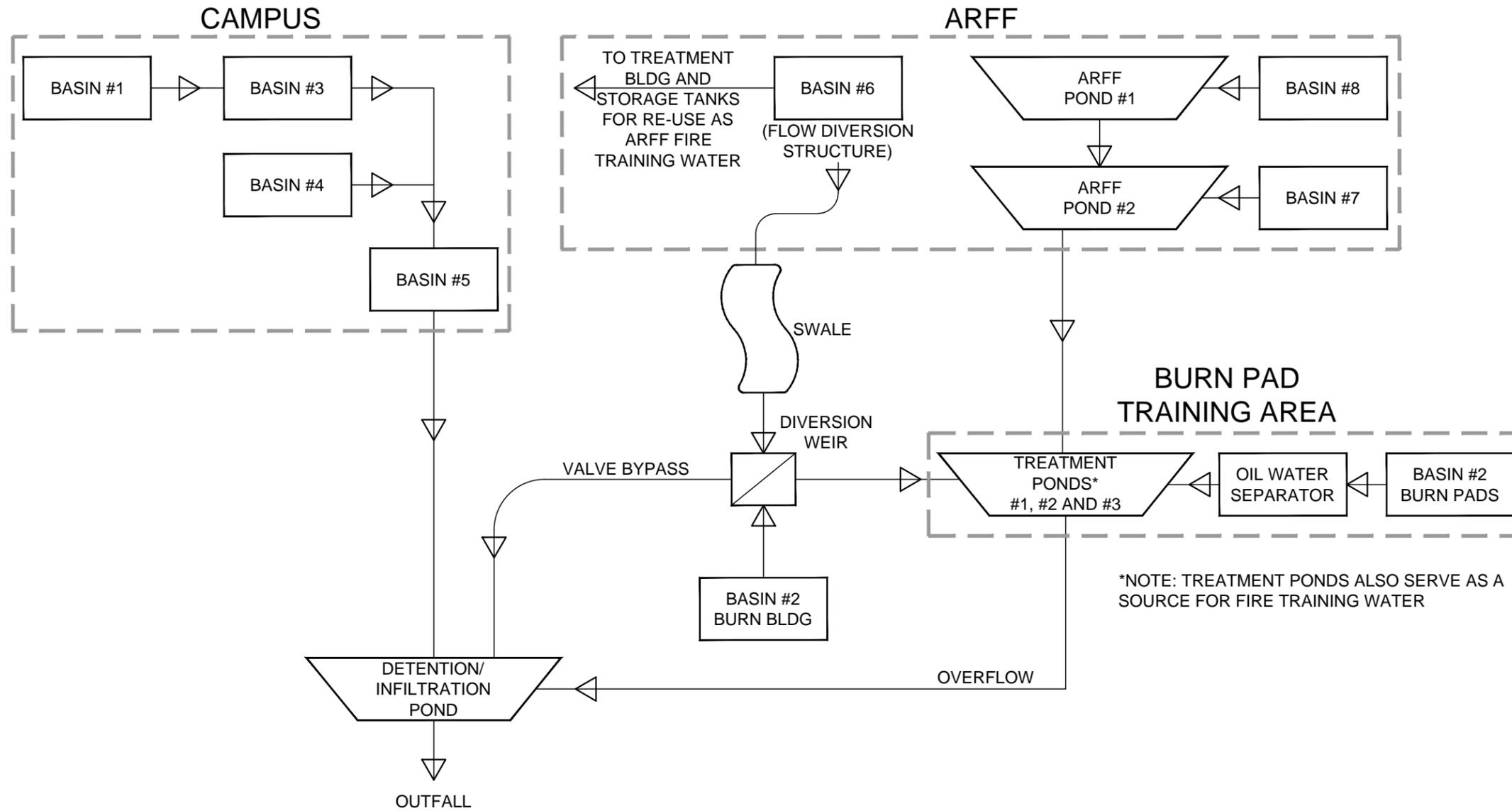
The ARFF and Burn Pad Training Areas include Basins 2, 6, 7, and 8. The primary collection and conveyance system includes catch basins, inlets, open swales and pipes. Surface water runoff generated by fire training and rainfall events in these basins is collected and conveyed to the Treatment Pond/Reclaimed Water Storage system. Because surface water runoff from fire training activities potentially contains elements not typically found in storm water runoff, the Treatment Pond/Reclaimed Water Storage system pre-treats and/or treats water prior to re-use. Water stored in the Treatment Pond/Reclaimed Water Storage system is used for Fire Protection and Fire Training Water.

Drainage Basin 2 is divided into three sub-basins 2A, 2B and 2C. Drainage Basin 2A (Burn Building) surface water runoff flows to a diversion weir that can direct water to the Treatment Ponds/Reclaimed Water Storage system or directly to the Detention Pond. Drainage Basin 2B (Burn Pads) surface water runoff flows to an oil/water separator for pre-treatment and is then discharged to the Treatment Pond/Reclaimed Water Storage system. Surface water runoff from Drainage Basin 2C flows to Treatment Ponds/Reclaimed Water Storage system #1, #2 and #3. Overflow from the Treatment Pond/Reclaimed Water Storage system discharges into the Detention Pond.

Surface water runoff in Basin 6 (ARFF) is collected in a pit beneath the ARFF. The pit has a flow diversion structure that diverts surface water runoff to the ARFF Treatment Building and Storage Tanks or to a bioswale that conveys water the Treatment Pond/Reclaimed Water Storage system. Water that is treated in the ARFF Treatment Building may be reused as fire training water for the ARFF facility.

Surface water runoff in Basin 7 flows into a ditch on the east side of the ARFF area and is conveyed into ARFF Pond # 2.

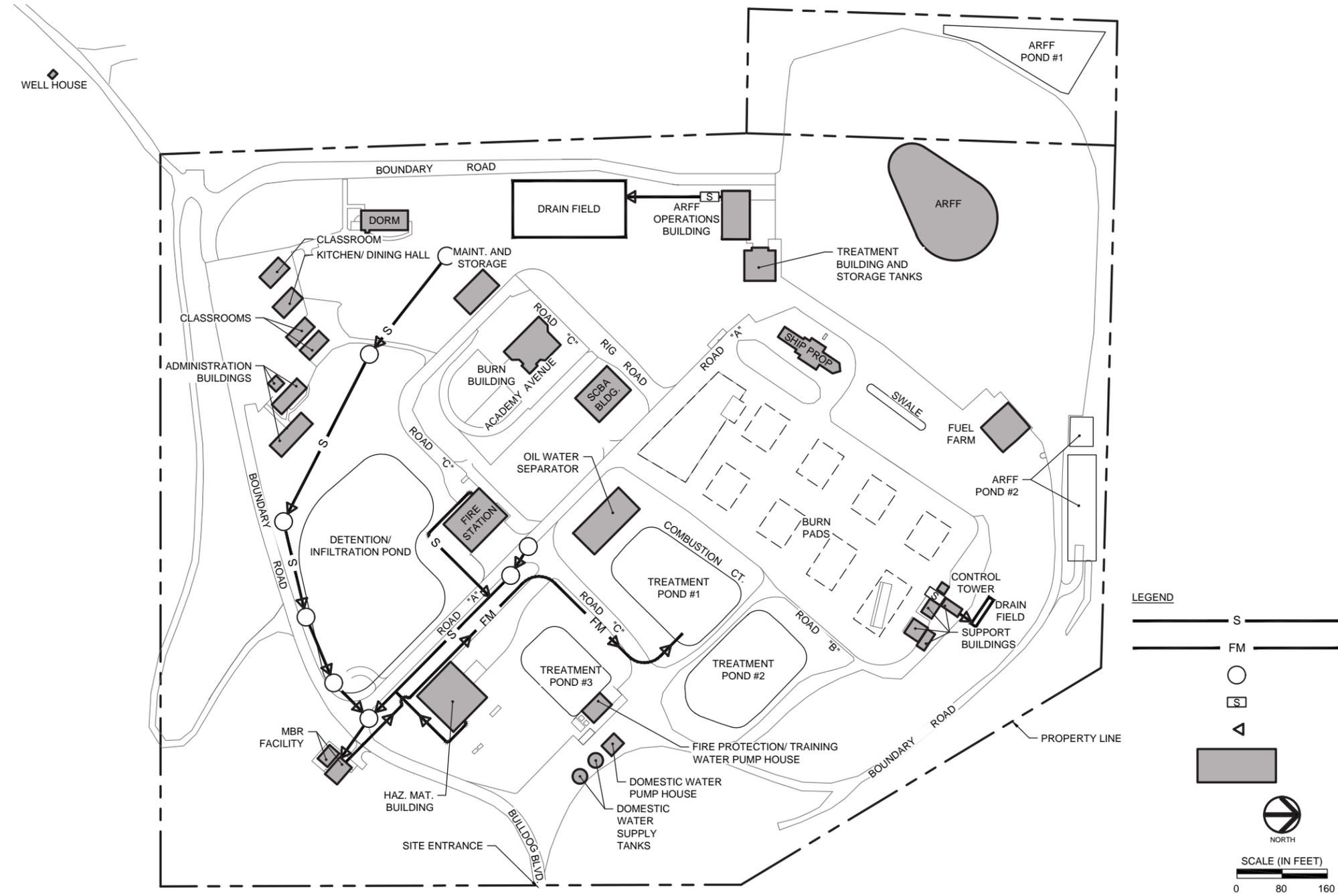
Surface water runoff from Basin 8 flows to ARFF Pond #1 and is conveyed to ARFF Pond #2. ARFF Pond #2 discharges into a ditch and this water is conveyed into Treatment Pond/Reclaimed Water Storage system #2.



2.6 Existing Storm Water System Network Diagram

This network diagram illustrates basins, collection and conveyance systems, interconnections, by-passes, overflows, and connection to the oil water separator.

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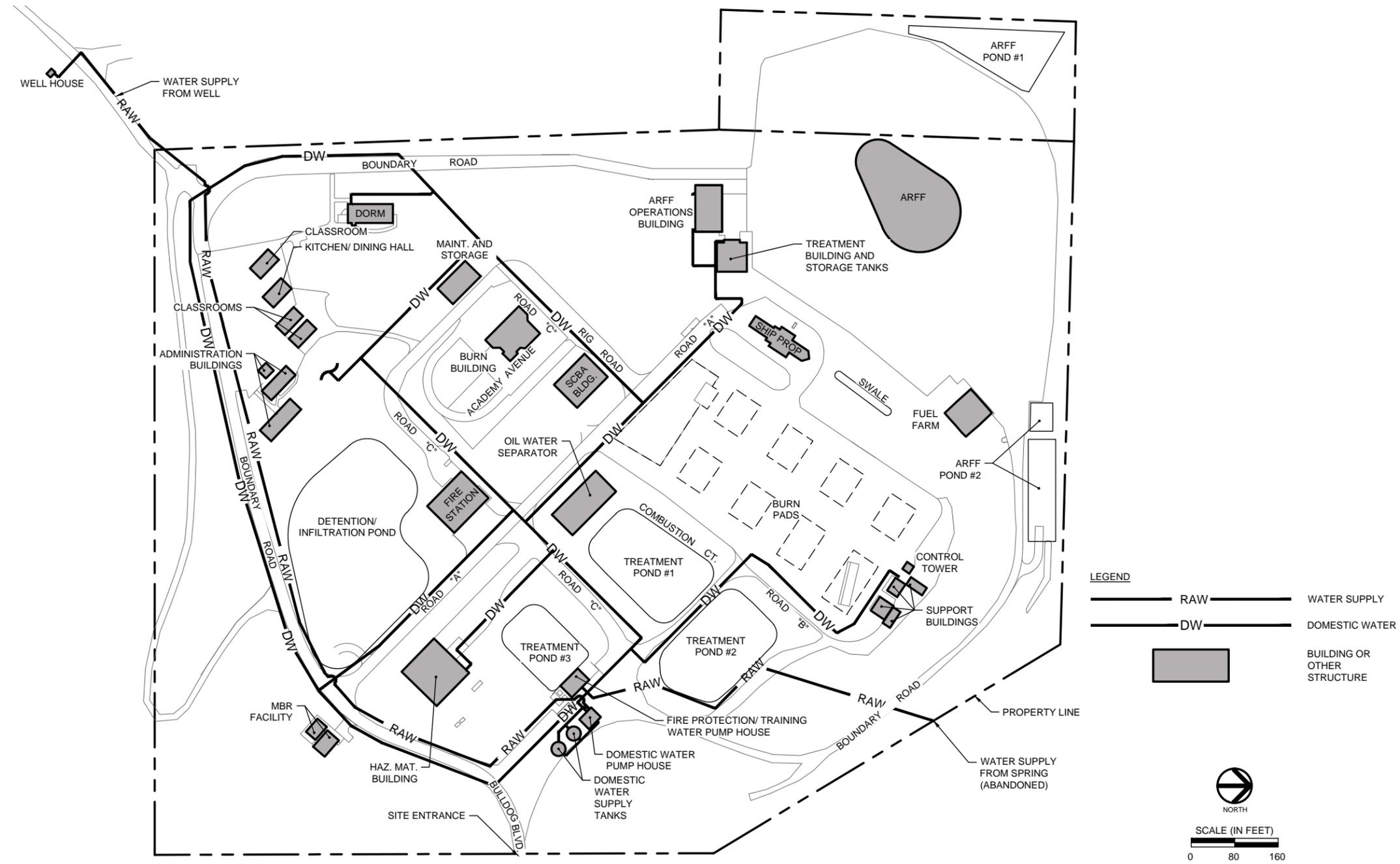
**2.7 Existing Sanitary System**

Domestic wastewater from the Campus Area, the Maintenance Building near the Detention Pond, and the Hazardous Materials Building gravity flows to the Membrane Bio-Reaction (MBR) facility. The MBR facility treats domestic wastewater by means of a membrane bioreactor and ultraviolet disinfection. The MBR facility treats domestic wastewater to Class A reclaimed water standards (highest reuse potential and least restrictions on its use). The reclaimed water is pumped from the MBR facility to Treatment Pond/Reclaimed Water Storage system #1 where it is comingled with storm water and used for fire training exercises and/or fire protection.

Domestic wastewater from the Control Tower and Support Buildings north of the burn pads is served by an independent septic tank and drainfield.

Domestic wastewater from the ARFF Operations Building is served by an independent septic tank and drainfield.

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**2.8 Existing Domestic Water**

The site is served by three separate water systems: Domestic Water, Fire Protection Water, and Fire Training Water. The Domestic Water and Fire Protection/Fire Training Water systems are distinct and separate. The Domestic Water's sole source is from a well. The Fire Protection Water and Fire Training Water are sourced from the Treatment Pond/Reclaimed Water Storage system. Supplemental Fire Protection/Fire Training Water is provided by reclaimed water from the MBR and Domestic Water.

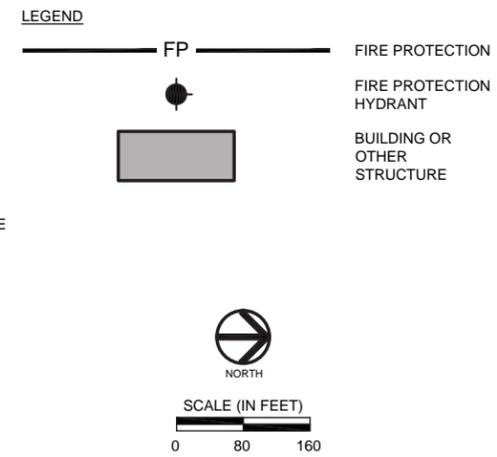
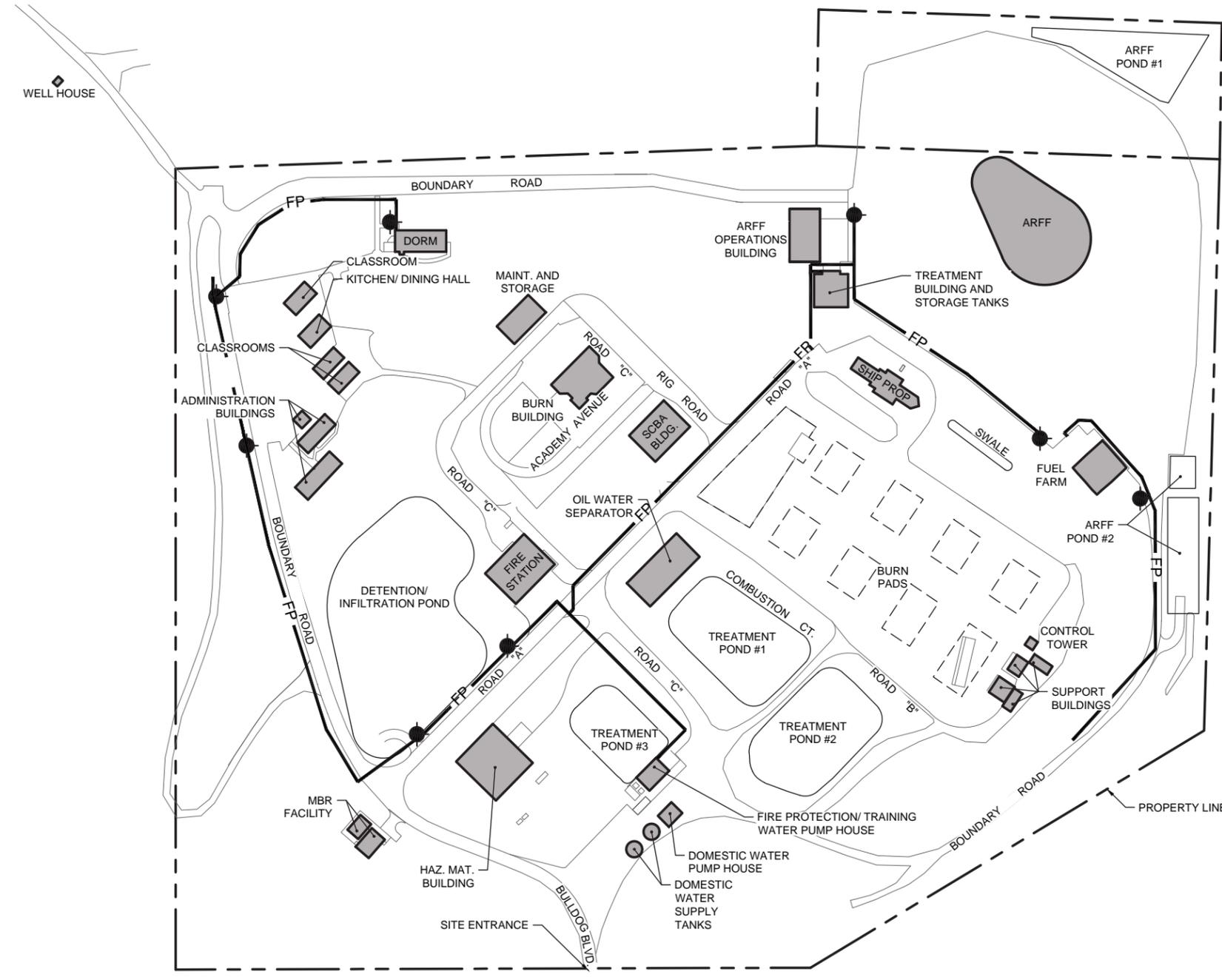
The primary domestic water source for the site is a well located outside the southwest property corner.

A pump located in the Well House pumps well water to the Domestic Water Pump House located on the east side of the site. Domestic water is stored in the Domestic Water Supply Tanks. Domestic water is pumped from the Domestic Water Supply Tanks to locations around the site.

Domestic water supplies the toilets, sinks, drinking fountains, hose bibs, etc. in many of the buildings on site.

The water supply from the spring, located in the eastern portion of the site, is abandoned.

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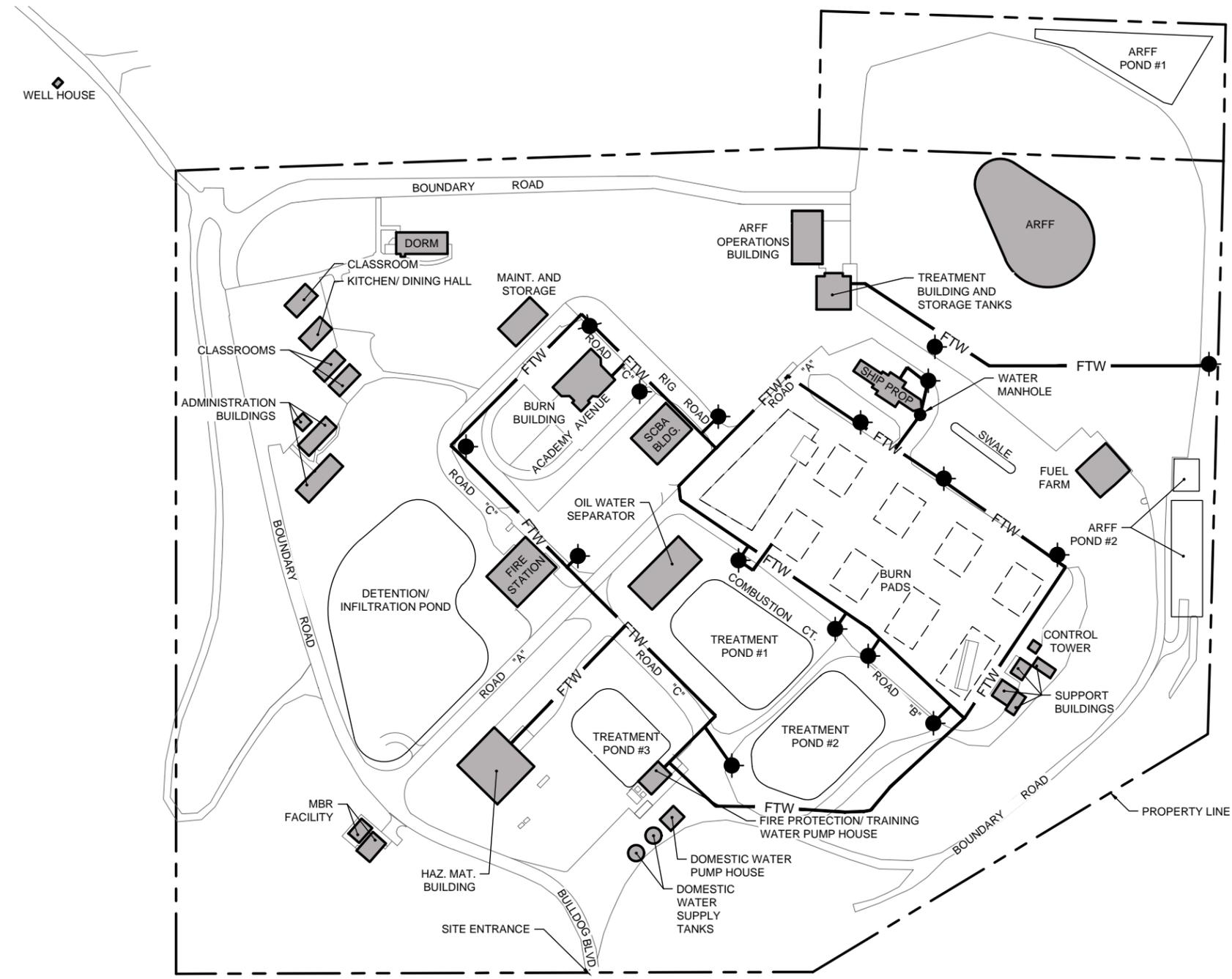
**2.9 Existing Fire Protection Water**

The existing Fire Protection Water system consists of water lines that feed the fire protection hydrants. The source of the Fire Protection Water is three treatment ponds that are supplied by the sites' pollution generating storm water run-off. Supplemental Fire Protection/Fire Training Water is provided by reclaimed water from the MBR and Domestic Water. The treatment pond water is pumped from the Fire Protection/Training Pump House to the hydrants.

The Fire Protection hydrants are spaced around the site in locations that can provide emergency fire suppression to major buildings. There are eight (8) existing Fire Protection Hydrants at the following locations throughout the site:

- Campus Area (3)
- Road "A" adjacent to the Detention Pond (2)
- ARFF area (3)

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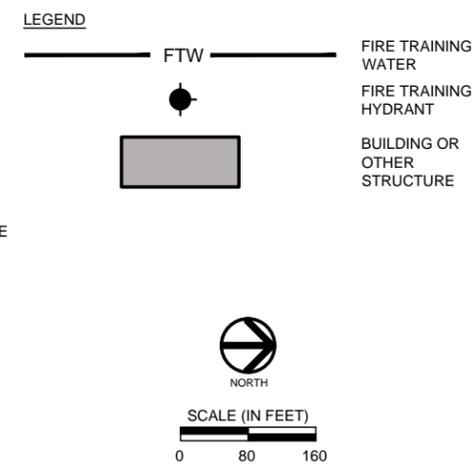
**2.10 Existing Fire Training Water**

The existing Fire Training Water system consists of water lines that feed the fire training hydrants. The primary source of the Fire Training Water is the Treatment Pond/Reclaimed Water Storage system that is supplied by the sites storm water run-off. Supplemental Fire Protection/Fire Training Water is provided by reclaimed water from the MBR and Domestic Water. The treatment pond water is pumped from the Fire Protection/Training Pump House to the hydrants.

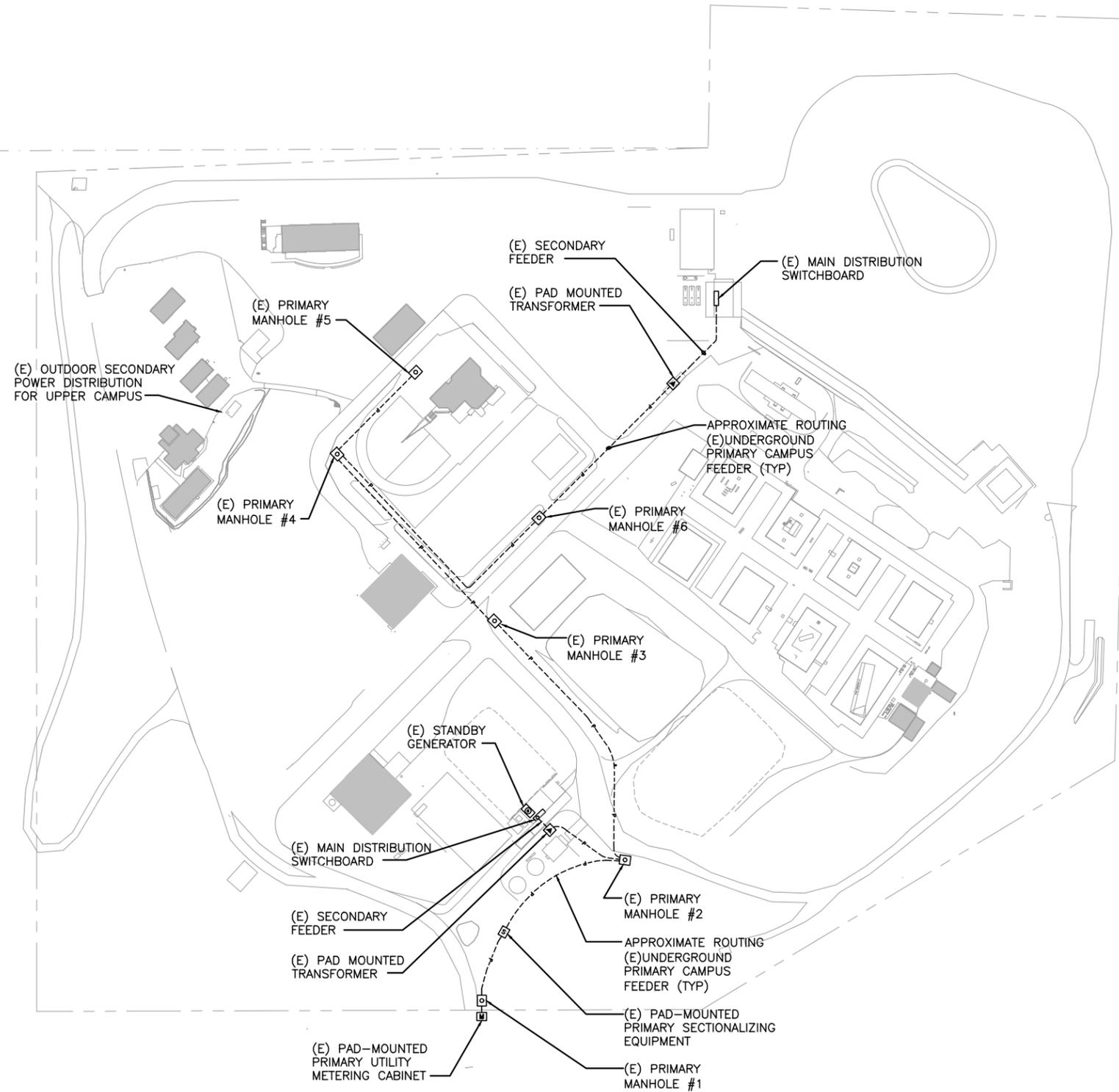
The Fire Training hydrants are spaced around the site in locations near the fire training facilities. The purpose of the hydrants is to supply water to assist in fire training exercises. There are fourteen (14) existing Fire Training Hydrants at the following locations throughout the site:

- Burn Pads (6)
- Ship Prop (2)
- Burn Building (5)
- Treatment Pond #2 (1)

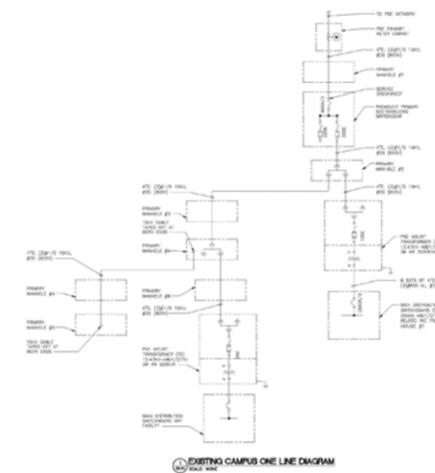
The ARFF area has an independent Fire Protection/Training system. Storm water from ARFF area is collected in the ARFF Treatment Building and Tanks. This water is treated and pumped to two (2) Fire Training Hydrants. One is located on the east edge and there is another hydrant located in the northeast corner of the ARFF area.



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**1**  
E1.01 **EXISTING SITE PLAN - ELECTRICAL UNDERGROUND**  
SCALE: 1" = 160'-0"



2.11 Existing Electrical Distribution

Power

The electrical service for the campus consists of a primary power service, at 12,470 Volts, 3-phase, from the local utility (Puget Sound Energy). The electrical point of service for the campus is a pad-mounted primary utility metering cabinet located near the east access road's entrance to the campus. An underground primary power ductbank extends west to a pad-mounted sectionalizing cabinet, which serves as the campus electrical service disconnect. From this point, a primary power underground ductbank and manhole system distributes 12,470V power through-out campus. Refer to "Existing Campus One Line Diagram".

Per the available as-built drawings, the primary power feeder includes 3#1/0, 15kV copper cables & 1#2, 600V ground in an underground ductbank. Per the 2011 National Electrical Code, Table 310.60(C)77, the ampacity of this feeder is 200 Amps providing an overall system capacity of:

$$200 \text{ Amps} * 12.47 \text{ kV} * 1.73 = 4,314 \text{ kVA}$$

The measured peak electrical demand load at the site, per the previous 12-months of utility bills, is 392kW at 12.47kV, 3 phase. Assuming an estimated power factor of 0.85, the calculated peak electrical demand is:

$$461 \text{ kVA} @ 125\% \text{ (NEC factor)} = 577 \text{ kVA, (13\% of electrical service capacity)}$$

Currently, there are two electrical connections to the primary power system on campus. First, a 2000kVA pad-mounted transformer provides power for the main switchboard MDS located in the Pump House. Switchboard MDS - rated 2500 Amps @ 480Y/277 Volts, 3 phase, 4 wire – provides secondary power to the majority of the campus buildings including administration, dormitory, fire station, pump house (and associated water pumps) and support facilities. A second pad-mounted transformer, rated 500kVA, provides secondary power to the AARF aircraft training and associated support buildings located at the northwest portion of the campus.

2.12 Existing Communication Systems

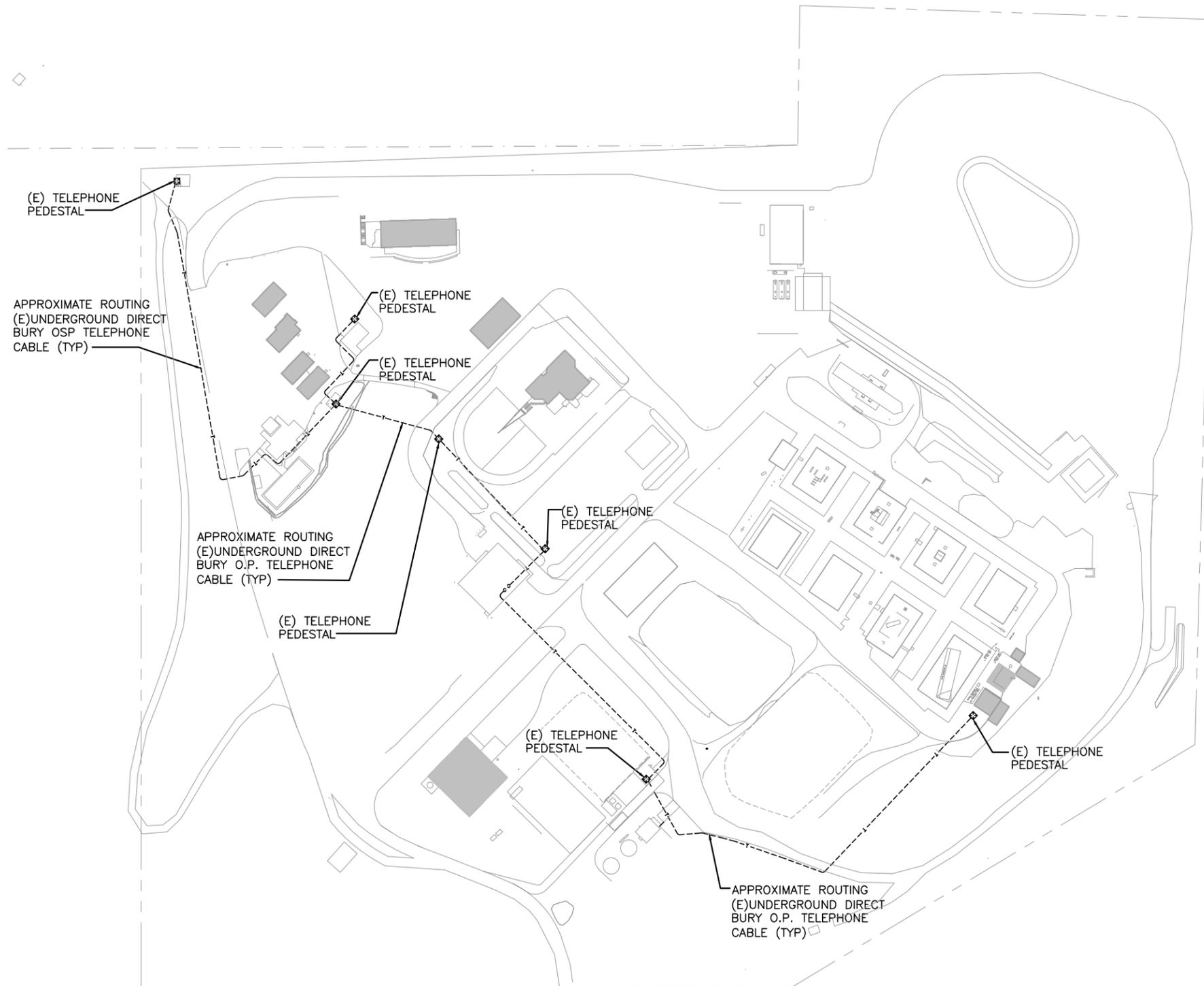
**Telecommunications**

The existing telecommunication infrastructure is comprised primarily of direct buried copper outside plant and existing telephone pedestals that appear to be owned by the telephone company. The majority of the pedestals are located on the south end and up along the east side of the property. The existing services enter on the southwest corner of the property.

There is minimal multimode optical fiber backbone cabling that has been installed to provide for low-bandwidth connections between a couple buildings. This existing multimode optical fiber cabling has been installed in an "ad-hoc" configuration and does not provide for a long term communications solution.

**Fire Alarm**

A campus style fire alarm system does not exist. Standalone fire alarm systems are provided at select buildings with local dialers.



**EXISTING SITE PLAN - TELECOMMUNICATION UNDERGROUND**  
 SCALE: 1" = 160'-0"  
 1  
 E1.02

**WASHINGTON STATE PATROL  
FIRE TRAINING ACADEMY**

MAINTENANCE &  
STORAGE BUILDING

ALL MODULAR  
CLASSROOMS  
OFFICES & DINING  
FACILITIES



ARFF  
INFRASTRUCTURE  
AND PROPS

TRAINING PADS

TRAINING FIELD  
SUPPORT  
STRUCTURES

**2.13 Existing Facilities Recommended for Replacement**

The academic and administrative facilities located in the southwest corner of the site consist of pre-manufactured and mobile units converted into classrooms, food service, dormitories, and administrative facilities. All are 10-20 years old.

**Maintenance and Storage Building**

An existing pole barn that is open on much of the north east side. This building is used for a variety of functions including storage of pallets, as an outdoor classroom space and as a maintenance shop, located at the south east end of the structure. The weakness of the structural design is in the poles that extend below grade where rot may occur and in being wood sided which has not weathered the heavy use experienced daily, well. Repairing the building is not an effective use of funds.

**All Modular Classrooms, Offices and Dining Facilities**

These wood framed structures are all over 20 years old and have exceeded their useful life. Repairing these structures is not an effective use of funds.

**ARFF Infrastructure and Props**

Existing fuel piping and valves have provided almost 15 years of effective training and are nearing the end of their safe operating life. Maintenance personnel have indicated their concerns with fuel and fire which sometimes spreads into the covered utility runs. The high intensity heat associated with training on this prop has deformed and damaged the steel prop components. As constructed, this prop provides only "target practice" for users with little contextual relevance.

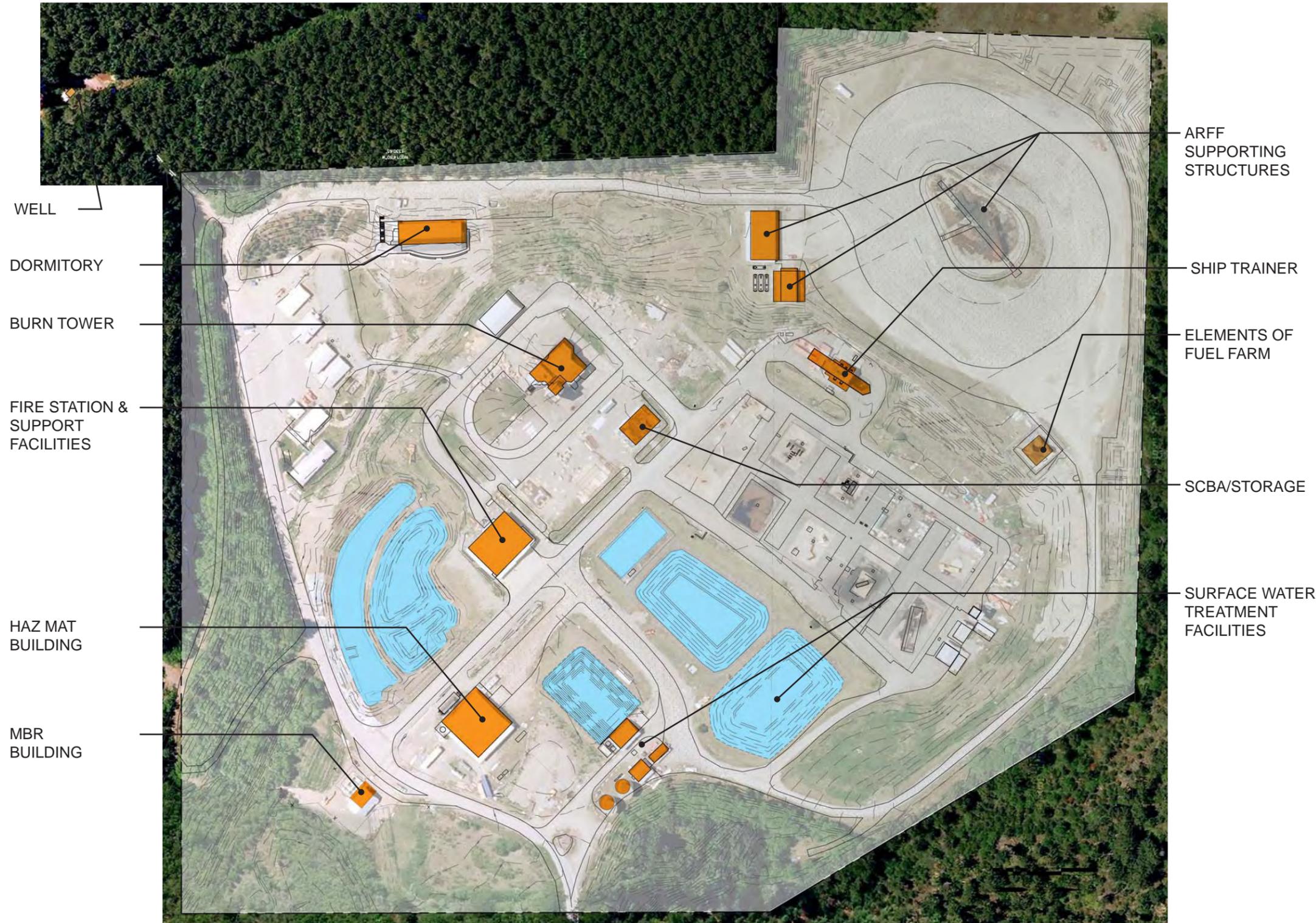
**Training Pads**

Typical of many older facilities, these elements are outdated and provide little training value for any firefighter. There is too much open space surrounding each element and the layout, without critical contextual features, require no command decision making skills. The exposed fuel piping and vales that have minimal protections create safety hazards.

**Training Field Support Structures**

Supporting obsolete training pad components, these structures provide little to no benefit to the operations of the facility. The tower appears to have not been used in years and this area of the site has become a collection point for unnecessary or unwanted materials and small, deteriorating one-time use props and debris. The heavy use inflicted on these buildings has taken its toll and they will be in need of replacement in the near future. Water intrusion was noted in several structures including one with significant electrical gear.

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FIRE TRAINING ACADEMY**



2.14 Existing Facilities With Future Potential

**Dormitory**  
Recently constructed, the CMU and steel framed building containing forty beds should be retained for use as a recruit housing facility. Drawbacks include the lack of private bathroom facilities and the double occupancy design of each room.

**ARFF Supporting Structures**  
The operations and treatment buildings at the ARFF site are pre-engineered metal buildings that are in reasonable shape for their age and the functions they support. Ongoing typical maintenance including painting and minor interior wall patching will be required but will extend the serviceable life of the buildings.

**Ship Trainer**  
The main component of the ship trainer, the conning tower, is cast in place concrete and in reasonable shape for its age and the function it serves. With the exception of the fact that the "ship deck" fills with water and should be redesigned to more appropriately mimic the look and feel of a ship within water, this prop should be retained for future use. The connex boxes associated with this prop are in need of replacement.

**Fuel Farm**  
Overall the fuel farm tanks and valving are in acceptable condition considering their age. As identified in previous master plan documents, future replacements and extensions of fuel lines to new props should occur via underground pipe runs for safety.

**SCBA/Storage Building**  
The recently completed pre-engineered metal building is in good shape and is in an effective location for uses associated with the adjacent, current uses. Future development will benefit from this building's utility.

**Surface Water Management Structures**  
The pre-engineered metal buildings associated with water pumping and treatment are in reasonable condition for their age. Minor maintenance including painting will extend their serviceable life into the future.

**Hazardous Materials Building**  
A pre-engineered metal building with a drive through high bay, this building is in good condition for its age. This building currently houses fitness facilities, classroom space, confined spaces props and has a rail car prop nearby.

**MBR Building**  
This recently completed CMU building is in good condition with no signs of distress.

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**FIRE TRAINING ACADEMY**

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**3.0 TARGET HAZARD STUDY**



TOVANI HART



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Older, often Deteriorating Construction



Large Commercial Port Facilities



Heavy Industry



Storage of Large Quantities of Hazardous Materials



Large Commercial Retail



High Occupancy Public Assembly

**3.1 Target Hazard Study Information**

The vision for the FTA is to create realistic training environments that closely duplicate the challenges encountered by firefighters across the State. Too often training facilities do little to recreate the context in which service is provided and thus serve to limit the effectiveness of training. Training in context is a key factor in limiting injury or death and improving performance, as it is the only way to create the stress and information overload common in chaotic emergency events.

To this end a Target Hazard Photo Survey and Study was conducted as part of the master planning process. Stakeholders from across the State were asked to document photos of target hazards in their service area with emphasis on capturing those hazards they found difficult to duplicate for training purposes. The goal of the study was to find common areas of concern that could be duplicated in facilities added or improved at the FTA. Each department was asked to provide 5 photos of target hazards in their area along with a brief description of the nature of the Hazard. After the photos and data were collected they were examined for common themes and reoccurring building or hazard types. The Steering committee and Stakeholders then confirmed this information during one of several workshops conducted at the FTA.

The Survey revealed common concerns shared throughout the State and provided areas of emphasis that should be addressed to serve both small and large departments. They include the following:

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Multi-Family Commercial and Residential Housing with Underground Parking



Large Historic Structures

Based on the Target Hazard information confirmed by the Steering Committee and Stakeholders, the master plan team began to develop concepts and plans for incorporating findings into the master plan for the FTA. The process included examining existing buildings for potential improvements as well as reexamining those structures proposed under the burn building pre-design. The process then looked at what additional buildings or training props were necessary to respond to the findings of the Target Hazard Study with an emphasis on creating realistic context for each. The proposed response to the Target Hazard Study was then presented again to the Steering Committee and Stakeholders group during subsequent workshops and further refined based on input received.

Facilities proposed in this master plan represent the design team and stakeholder response to the Target Hazard Study.



Public Marina and Commercial Waterfront

High Rise Structures



Lumber Industry Facilities

Large Commercial Office and Warehouse Structures



Rural Lodging and Commercial Facilities lacking fire protection



Aircraft and Other Heavy Manufacturing



**WASHINGTON STATE PATROL**

**FIRE TRAINING ACADEMY**

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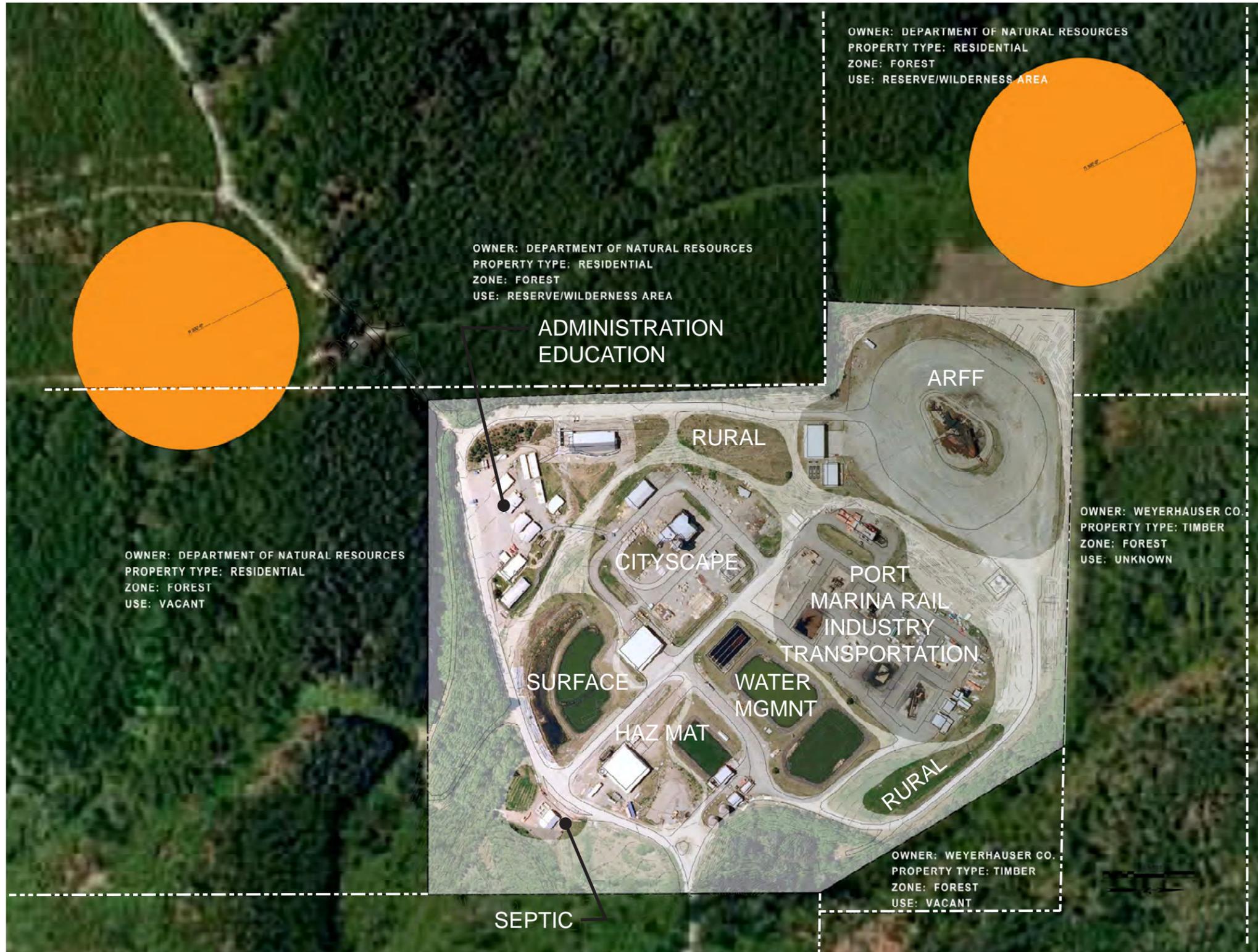
**4.0 MASTER PLAN**



TOVANI HART



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**4.1 Proposed Use Zones**

Establishing the design of the Master Development Plan began by zoning the site into logical functional and activity groups including buildings and target hazards. The design team attempted to group facilities with an understanding of existing infrastructure, common adjacent hazards and how communities develop in our state, always guided by the desire to develop realistic context.

During the design process the potential for expanding the utility of the campus for use by law enforcement agencies via development of a bomb range was discussed. Due to the remote location of the site the design team was asked to identify potential areas of adjacent properties where this function could be accommodated. The opportunity for disposing of explosives of up to five pounds in size was identified as a reasonable maximum. Further investigation and establishment of a program for bomb robot training and a bomb range is necessary. Such a facility will increase multi agency training opportunities.

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**4.2 Master Development Plan**

The Master Development Plan represents the complete build-out of the site including all potential target hazards and necessary supporting structures. It is important to understand that this plan is intended to be revisited, confirmed and improved with each phase of development. One of the goals of the plan was to increase the density of development to more accurately depict realistic contexts providing greater opportunities for command decision making challenges. The plan incorporates significant facilities related to transportation hazards which were discussed at length in the Stakeholder workshops. It was agreed that transportation incidents present some of the most dangerous and challenging situations for emergency response personnel. Where possible and effective at improving training opportunities the design team integrated existing facilities along with non-burning support buildings, urban search and rescue structures and investigation-oriented buildings for density and context development. These types of facilities also provide opportunities for multiple agencies to work together in a combined response exercise gaining valuable experience in working effectively together. Remote classroom spaces are recommended at key locations around campus providing areas where exercises and trainee performance can be evaluated and discussed without having to retreat to the main buildings. Some will include self contained breathing apparatus (SCBA) support and restroom facilities.

**LEGEND**

- |                                                                                           |                                                         |
|-------------------------------------------------------------------------------------------|---------------------------------------------------------|
| ① EXISTING DORMITORY                                                                      | ②① RUNNING FUEL SPILL PROP                              |
| ② SWIFT WATER                                                                             | ②② NEW RAIL PROP                                        |
| ③ WILDLAND INTERFACE                                                                      | ②③ NEW INDUSTRIAL                                       |
| ④ ARFF & SUPPORT BUILDINGS                                                                | ②④ NEW TANK FARM PROP                                   |
| ⑤ EXISTING SURFACE WATER STRUCTURE                                                        | ②⑤ NEW 3 SIDED MANUFACTURE PROP STORAGE/SUPPORT         |
| ⑥ DEMOLISH ALL MODULAR STRUCTURES                                                         | ②⑥ EXISTING TRAINING FUEL FARM                          |
| ⑦ NEW ADMIN/CLASSROOM/DINING BUILDING                                                     | ②⑦ OVERTURNED TANKER PROP                               |
| ⑧ NEW REHABILITATION BURN BUILDING                                                        | ②⑧ NEW TRANSPORTATION /HIGHWAY                          |
| ⑨ NEW COMMERCIAL BURN BUILDING                                                            | ②⑨ NEW HIGHWAY OVERPASS                                 |
| ⑩ EXISTING BURN BUILDING TO REMAIN INTACT AND AUGMENTED TO URBAN SEARCH AND RESCUE (USAR) | ③① NEW VEHICLE EXTRICATION                              |
| ⑪ CAR FIRE IN PARKING LOT                                                                 | ③② EXISTING SEWER BUILDING                              |
| ⑫ NEW RESIDENTIAL BURN BUILDING                                                           | ③③ EXISTING HAZARDOUS MATERIALS BUILDING                |
| ⑬ NEW MAINTENANCE & PALLET STORAGE                                                        | ③④ NEW TRENCH/CONFINED SPACES                           |
| ⑭ EXISTING SCBA BUILDING                                                                  | ③⑤ EXISTING DOMESTIC WATER STRUCTURES                   |
| ⑮ NEW APARTMENT BURN BUILDING                                                             | ③⑥ NEW RAIL CROSSING                                    |
| ⑯ NEW PALLET STORAGE BUILDING                                                             | ③⑦ EXTEND EXISTING RAIL LINE                            |
| ⑰ EXISTING FIRE STATION                                                                   | ③⑧ EXISTING WELL                                        |
| ⑱ EXISTING SHIP TRAINER                                                                   | ③⑨ COVERED OUTDOOR CLASSROOM WITH TOILET & SCBA SUPPORT |
| ⑲ NEW MOAT & MARINA PROP IN NEW WATER/DOCK                                                | ③⑩ ARSON INVESTIGATION                                  |
| ⑳ CONTAINER PROP                                                                          | ④① ARRIVAL MONUMENT                                     |
|                                                                                           | ④② EXISTING TRAINING WATER PUMP HOUSE                   |
|                                                                                           | ④③ EXISTING DOMESTIC WATER TREATMENT                    |

**WASHINGTON STATE PATROL**

**FIRE TRAINING ACADEMY**

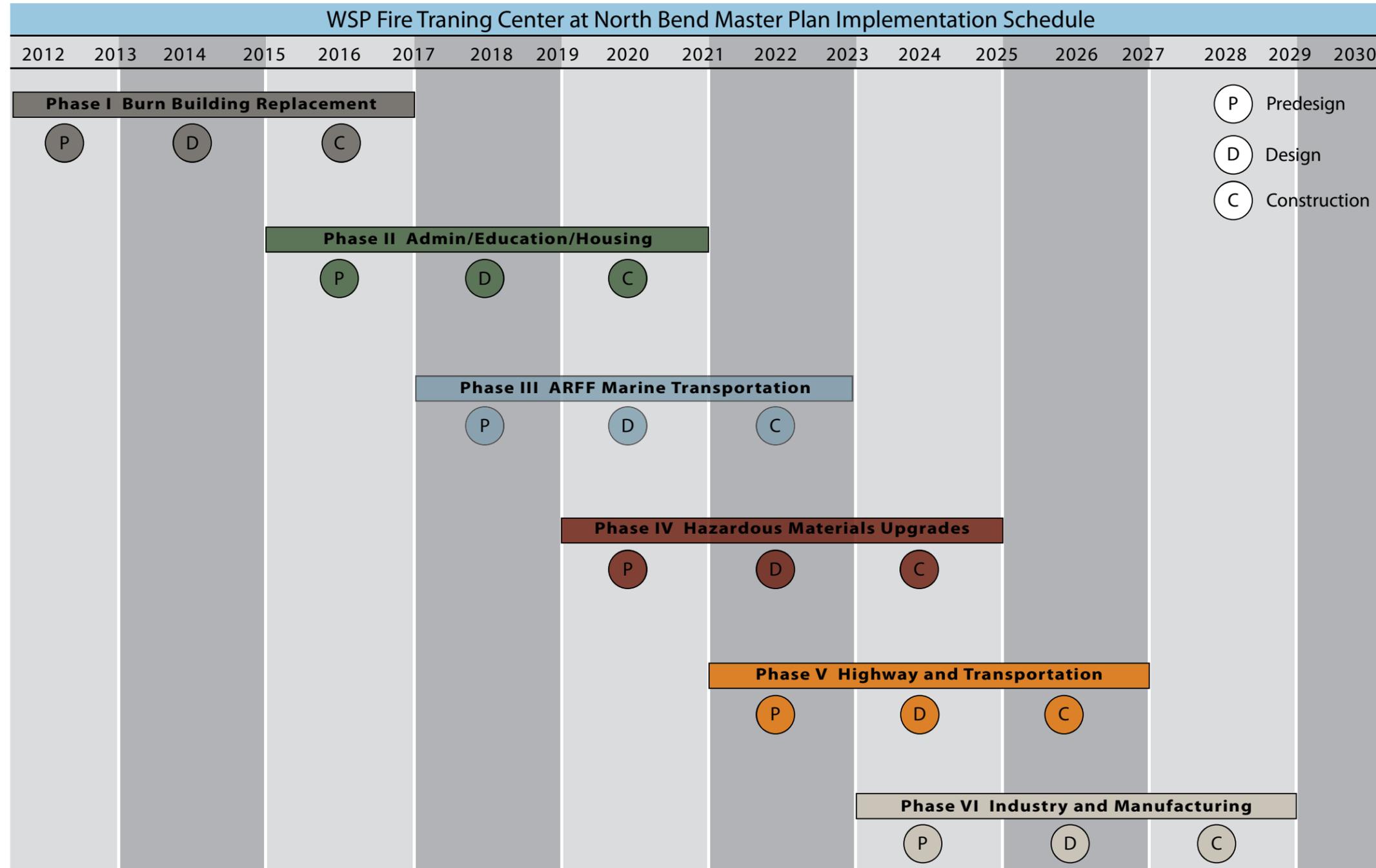
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**5.0 IMPLEMENTATION**



TOVANI HART

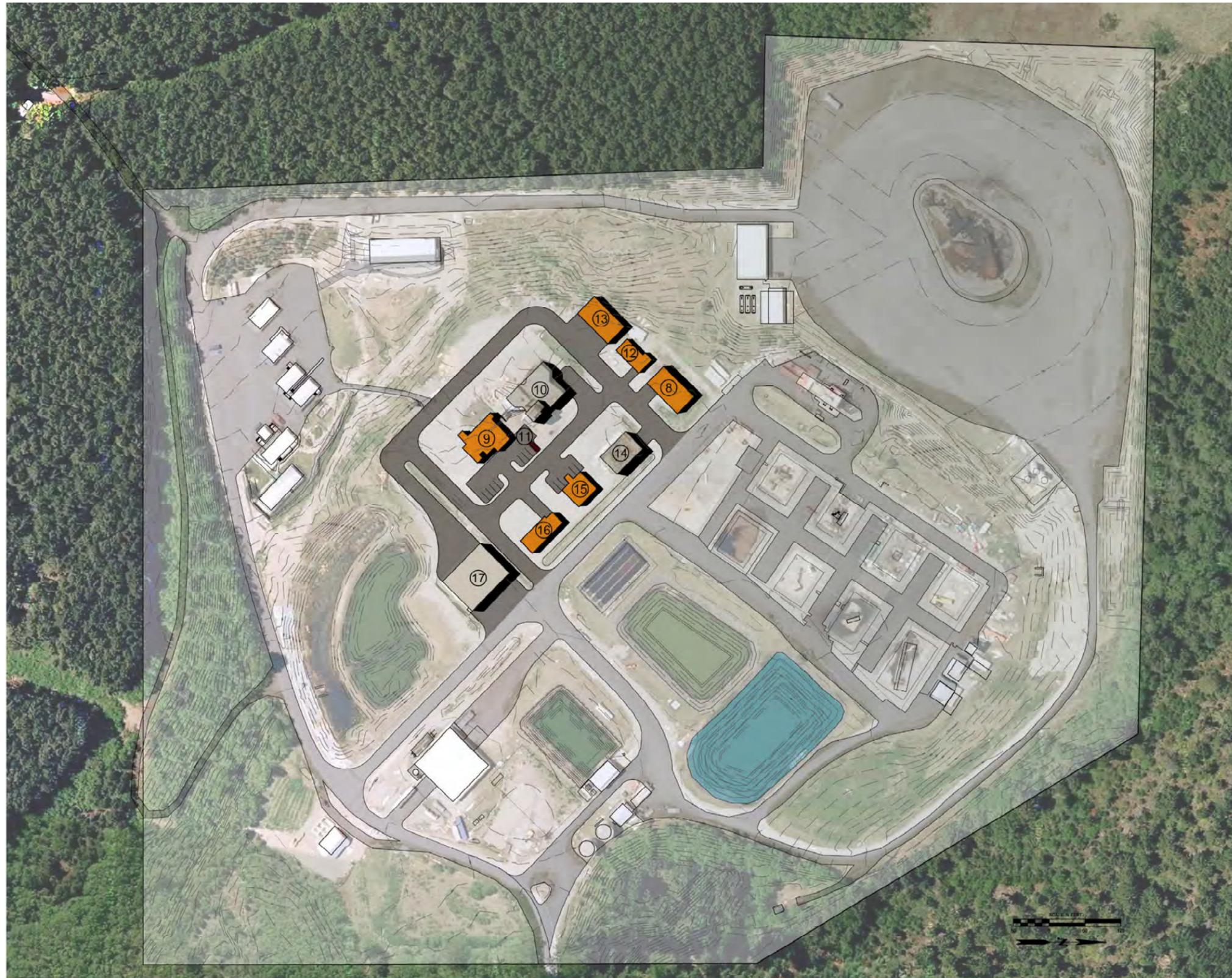




5.0.1 Recommended Implementation Schedule

The implementation schedule was developed to align with the state funding calendar and includes the three typical phases of predesign, design and construction for each development phase.

- (P) Predesign
- (D) Design
- (C) Construction



5.1.1 Phase One Burn Building Replacement

Pre-design: 2012  
Design: 2013 - 2015  
Construction: 2015 - 2017

Using the recently completed pre-design document as a starting point the design team assembled the components into a denser cityscape and integrated existing buildings to create more challenging exposures. The overall projected cost of Phase I is \$16 million. Phase I improvements include:

- Single Family Residential Burn Structure
- Multi-Family Residential Burn Structure
- Commercial High Rise Burn Structure
- Classroom Re-Hab Building
- Maintenance and Storage Building Replacement
- Sitework
- Drainage Treatment Pond Expansion
- Utilities
- Furnishings Fixtures and Equipment (FFE)

LEGEND

- ⑧ NEW REHABILITATION BURN BUILDING
- ⑨ NEW COMMERCIAL BURN BUILDING
- ⑩ EXISTING BURN BUILDING TO REMAIN INTACT AND AUGMENTED TO URBAN SEARCH AND RESCUE (USAR)
- ⑪ CAR FIRE IN PARKING LOT
- ⑫ NEW RESIDENTIAL BURN BUILDING
- ⑬ NEW MAINTENANCE & PALLET STORAGE
- ⑭ EXISTING SCBA BUILDING
- ⑮ NEW APARTMENT BURN BUILDING
- ⑯ NEW PALLET STORAGE BUILDING
- ⑰ EXISTING FIRE STATION

# WASHINGTON STATE PATROL

## FIRE TRAINING ACADEMY

### Phase One – Burn Building Replacement

#### General

Phase 1 includes construction of a new Single Family Residential Burn Structure (12), Multi-family Residential Burn Structure (15), Commercial High Rise Burn Structure (9), Classroom Re-Hab Building (8), Maintenance and Storage Building Replacements (13) and Pallet Storage Building (16) shown in exhibit 1A. It also includes the expansion of Treatment Pond #2 shown in exhibit 1B.

#### Circulation and Parking

New paving on Road “A”, Road “B”, Road “C”, Academy Avenue, Arson Avenue and driveways associated with building improvements; paving limits shown in Exhibit 1A.

#### Site Drainage

A majority of the new site drainage requirements in Phase 1 results from the addition of multiple burn buildings. The surface water run-off generated by fire training activities and rainfall events is collected and conveyed to the Treatment Pond/Reclaimed Water System (Exhibit 1A). To accommodate increased drainage volumes, for this and later phases, the Oil Water Separator and Treatment Pond #2 will be modified in Phase 1 (Exhibit 1B) to meet detention requirements.

New ditch will be constructed on the south side of Road “A” (between Road “C” and Road “B”) to accommodate roadway runoff. The ditch will discharge into the existing Detention/Infiltration Pond (Exhibit 1A).

#### Sanitary Sewer

New sanitary sewer connections are required for the new Classroom Re-Hab Building and the Maintenance and Storage Building Replacement. These laterals will discharge via a new sanitary sewer main to a new sanitary sewer manhole in the intersection of Road “A” and Road “B”. A sewer stub will be constructed beyond the new pavement limits in Road “A” (Exhibit 1A).

New sanitary sewer main will be constructed in Road “A” (between Road “B” and Road “C”) to connect new laterals with the existing conveyance system leading into the existing MBR facility. In addition the existing manhole near the intersection of Road “A” and Road “C” will be replaced (Exhibit 1A).

#### Domestic Water

New domestic water connections are required for the new Classroom Re-Hab Building and the Maintenance and Storage Building Replacement. These connections will be made, via new laterals, to an existing domestic water line in Road “B” (Exhibit 1A).

Extend existing domestic water line in Road “A” from the intersection with Road “C” to the intersection with Road “B”. This extension is stubbed beyond the new pavement limits in Road “A” (Exhibit 1A).

#### Fire Protection Water

New Fire protection hydrants are required to serve the new Classroom Re-Hab Building and Maintenance and Storage Building Replacement. These hydrants are supplied by an extension of the Fire Protection line in the intersection of Road “A” and Road “B” via a cut-in cross. New fire protection water line is conveyed in Road “B” and Arson Avenue and is stubbed beyond new paving limits for Arson Avenue and Road “B” for connection in a future phases (Exhibit 1A).

Fire protection pumps have not been evaluated for their capacity to meet potential increases in demand. Fire protection pumps should be evaluated for capacity.



## WASHINGTON STATE PATROL

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### FIRE TRAINING ACADEMY

#### Fire Training Water

New fire training hydrants are required to serve the new Single Family Residential Burn Structure, Multi-family Residential Burn Structure, Commercial High Rise Burn Structure and the Multi Story Arson Investigation Building (building to be constructed in phase 2). Most Hydrants can be served from the existing fire training water loop. An additional fire training water main will be required along Academy Avenue to serve the Multi-family Residential the Burn Structure and Commercial High Rise Burn Structure (Exhibit 1A).

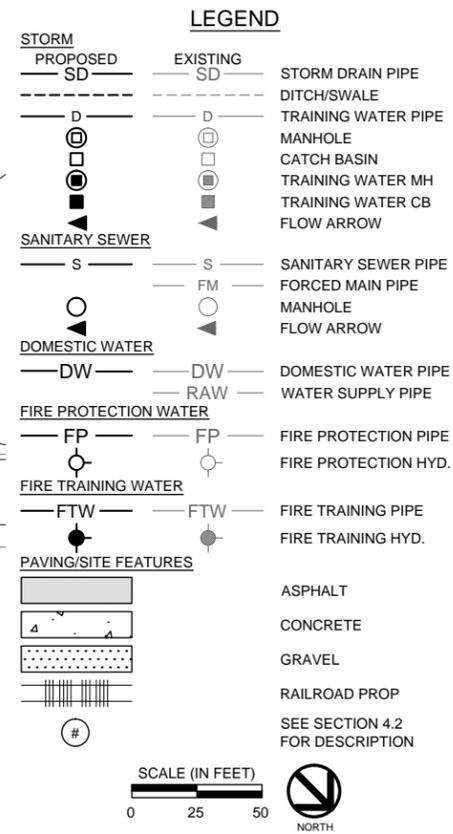
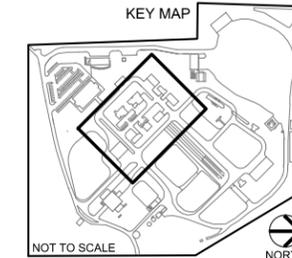
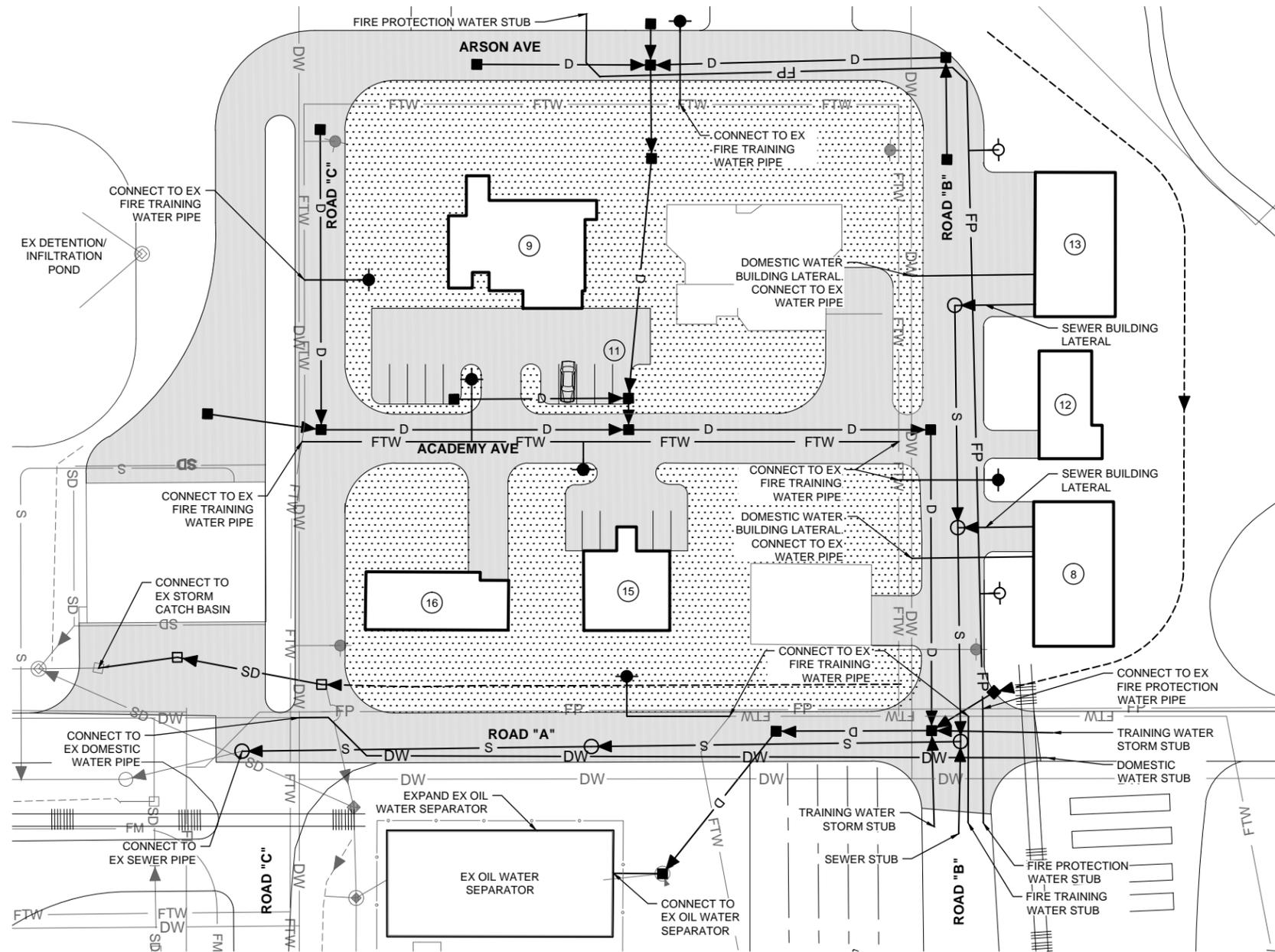
A new fire training water stub is provided beyond new paving limits in Road "B" at the intersection with Road "A".

Fire training pumps have not been evaluated for their capacity to meet potential increases in demand. Fire training pumps should be evaluated for capacity.



**WASHINGTON STATE PATROL  
FIRE TRAINING ACADEMY**

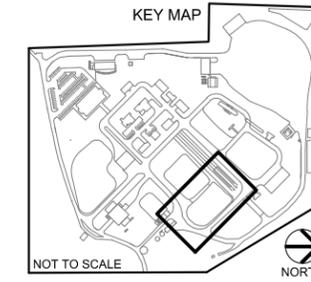
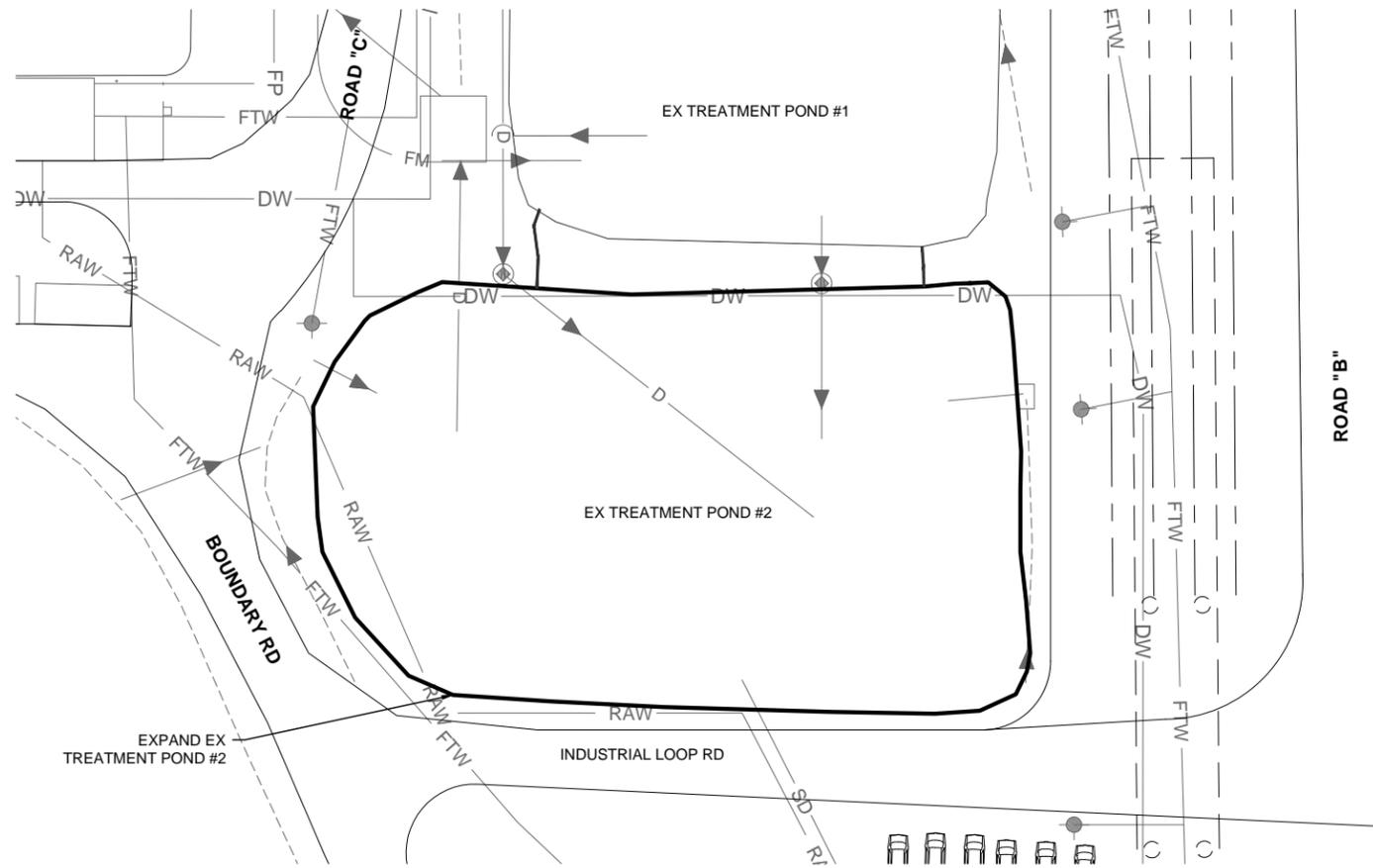
5.1.2 Exhibit 1A



- LEGEND**
- ⑧ NEW REHABILITATION BURN BUILDING
  - ⑨ NEW COMMERCIAL BURN BUILDING
  - ⑩ EXISTING BURN BUILDING TO REMAIN INTACT AND AUGMENTED TO URBAN SEARCH AND RESCUE (USAR)
  - ⑪ CAR FIRE IN PARKING LOT
  - ⑫ NEW RESIDENTIAL BURN BUILDING
  - ⑬ NEW MAINTENANCE & PALLET STORAGE
  - ⑭ EXISTING SCBA BUILDING
  - ⑮ NEW APARTMENT BURN BUILDING
  - ⑯ NEW PALLET STORAGE BUILDING
  - ⑰ EXISTING FIRE STATION

**WASHINGTON STATE PATROL  
FIRE TRAINING ACADEMY**

5.1.3 Exhibit 1B



**LEGEND**

<b>STORM</b>		
PROPOSED	EXISTING	
SD	SD	STORM DRAIN PIPE
- - -	- - -	DITCH/SWALE
D	D	TRAINING WATER PIPE
⊙	⊙	MANHOLE
□	□	CATCH BASIN
⊙	⊙	TRAINING WATER MH
■	■	TRAINING WATER CB
▲	▲	FLOW ARROW
<b>SANITARY SEWER</b>		
S	S	SANITARY SEWER PIPE
FM	FM	FORCED MAIN PIPE
⊙	⊙	MANHOLE
▲	▲	FLOW ARROW
<b>DOMESTIC WATER</b>		
DW	DW	DOMESTIC WATER PIPE
RAW	RAW	WATER SUPPLY PIPE
<b>FIRE PROTECTION WATER</b>		
FP	FP	FIRE PROTECTION PIPE
⊙	⊙	FIRE PROTECTION HYD.
<b>FIRE TRAINING WATER</b>		
FTW	FTW	FIRE TRAINING PIPE
●	●	FIRE TRAINING HYD.
<b>PAVING/SITE FEATURES</b>		
[Solid Grey Box]		ASPHALT
[Dotted Box]		CONCRETE
[Cross-hatched Box]		GRAVEL
[Vertical Lines Box]		RAILROAD PROP
#		SEE SECTION 4.2 FOR DESCRIPTION

SCALE (IN FEET)  
0 25 50

NORTH



**WASHINGTON STATE PATROL  
FIRE TRAINING ACADEMY**



**5.2.1 Phase Two Combine Administrative/Educational Building**

Predesign: 2015 - 2017  
Design: 2017 - 2019  
Construction: 2019 - 2021

The main strategic addition of this phase is upgraded administrative and educational facilities. The existing modular structures are well beyond their useful life and present a barrier to reaching fire service students and others throughout the state. Combining several needs into one facility capitalizes on the economy of scale reduces the overall area of site development and improves access and usability of the services provided. The overall projected cost of Phase II is \$30 million. Phase II improvements include:

- Multi-Services Building
- Administration
- Dining
- Education
- Hotel - Single Occupant Rooms
- Parking Areas
- Entry Signage
- Sitework
- Utilities
- Furnishings Fixtures and Equipment

**Cityscape Upgrades**

- Multi-Story Arson Investigation
- Existing Burn Tower to remain intact and augmented for Urban Search and Rescue (USAR) training
- Sitework
- Utilities

**LEGEND**

- ① EXISTING DORMITORY
- ⑥ DEMOLISH ALL MODULAR STRUCTURES
- ⑦ NEW ADMIN/CLASSROOM/DINING BUILDING
- ③⑨ ARSON INVESTIGATION
- ④⑩ ARRIVAL MONUMENT

# WASHINGTON STATE PATROL

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## FIRE TRAINING ACADEMY

Phase Two – Combined Administrative/Educational Building

### General

Phase 2 includes construction of a new Admin/Classroom/Dining building (7), a new Arson Investigation building (39) and a new parking configuration shown in Exhibit 2.

### Circulation and Parking

New parking configuration to support proposed Admin/Classroom/Dining Building (View 1 of Exhibit 2). New Paving on Boundary Road near new parking configuration (View 1 of Exhibit 2) and near the arrival monument between Bulldog Boulevard and Road “C” (View 2 of Exhibit 2).

### Site Drainage

The surface water run-off created by the new parking configuration and Admin/Classroom/Dining Building is conveyed to the existing Detention/Infiltration pond, which will be modified to accommodate additional storm flow.

The water run-off from the hillside on the north and west sides of the Admin/Classroom/Dining Building flows into a ditch/swale at the base of the hill. This run-off is conveyed to a catch basin behind Arson Avenue that was constructed in Phase 1 and ultimately flows to the treatment ponds.

### Sanitary Sewer

New Admin/Classroom/Dining building is situated directly above an existing sanitary sewer main. This main will be relocated around the south and east sides of the building, through the new parking lot.

New sanitary sewer connection is required for the Admin/Classroom/Dining building and will connect to the relocated sanitary sewer main which ultimately conveys to the MBR facility.

### Domestic Water

New domestic water connection is required for the new Admin/Classroom/Dining Building. This connection will be made, via a new lateral, to the existing domestic water line just north of the new building.

### Fire Protection Water

New fire protection hydrants are required to serve the new Admin/Classroom/Dining Building. These hydrants are supplied by a new fire protection loop connecting the existing fire protection loop in Boundary Road and the stub behind Road “B”, provided in Phase 1.

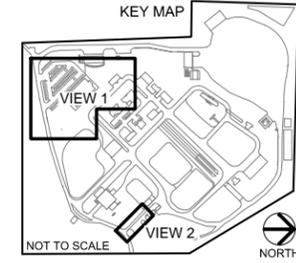
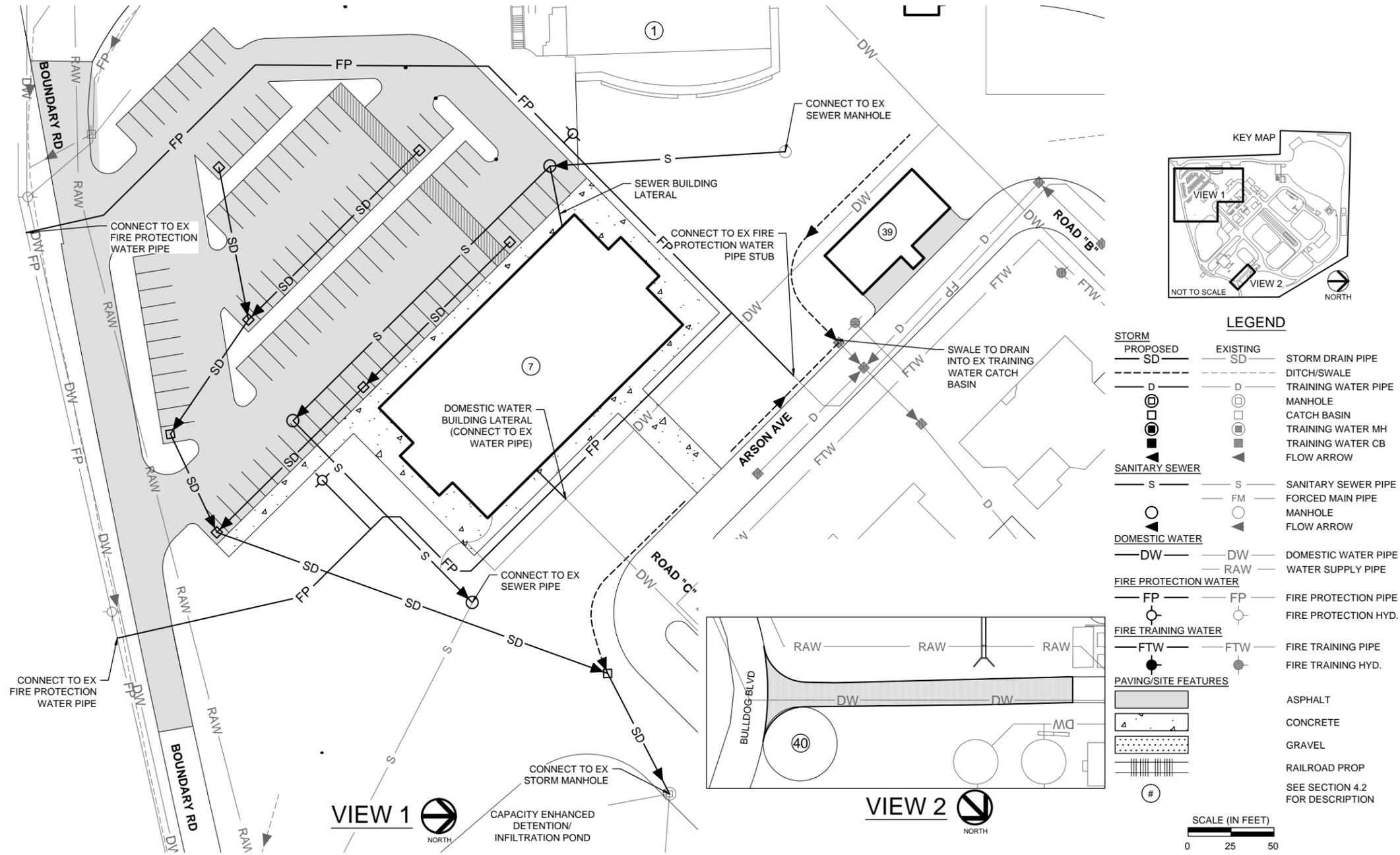
### Fire Training Water

There are no fire training water improvements in Phase 2.



**WASHINGTON STATE PATROL  
FIRE TRAINING ACADEMY**

5.2.2 Exhibit 2



**LEGEND**

<b>STORM</b>		
PROPOSED	EXISTING	
SD	SD	STORM DRAIN PIPE
D	D	DITCH/SWALE
⊕	⊕	TRAINING WATER PIPE
⊕	⊕	MANHOLE
⊕	⊕	CATCH BASIN
⊕	⊕	TRAINING WATER MH
⊕	⊕	TRAINING WATER CB
→	→	FLOW ARROW
<b>SANITARY SEWER</b>		
S	S	SANITARY SEWER PIPE
FM	FM	FORCED MAIN PIPE
⊕	⊕	MANHOLE
→	→	FLOW ARROW
<b>DOMESTIC WATER</b>		
DW	DW	DOMESTIC WATER PIPE
RAW	RAW	WATER SUPPLY PIPE
<b>FIRE PROTECTION WATER</b>		
FP	FP	FIRE PROTECTION PIPE
⊕	⊕	FIRE PROTECTION HYD.
<b>FIRE TRAINING WATER</b>		
FTW	FTW	FIRE TRAINING PIPE
⊕	⊕	FIRE TRAINING HYD.
<b>PAVING/SITE FEATURES</b>		
[Pattern]		ASPHALT
[Pattern]		CONCRETE
[Pattern]		GRAVEL
[Pattern]		RAILROAD PROP
#		SEE SECTION 4.2 FOR DESCRIPTION



- LEGEND**
- ① EXISTING DORMITORY
  - ⑦ NEW ADMIN/CLASSROOM/DINING BUILDING
  - ③⑨ ARSON INVESTIGATION
  - ④⑩ ARRIVAL MONUMENT

**WASHINGTON STATE PATROL  
FIRE TRAINING ACADEMY**



**5.3.1 Phase Three ARFF Upgrades & Marine Transportation**

Predesign: 2017 - 2019  
Design: 2019 - 2021  
Construction: 2021 - 2023

Critical upgrades to the existing ARFF and Maritime facilities along with expanded transportation training opportunities are recommended in Phase III. Addressing the need to focus on training facilities that cannot be duplicated in our local communities, these upgrades incorporate large scale specialized components not provided elsewhere in our region. Opportunities to partner with other agencies and private industry are expanded with these improvements. The overall projected cost of Phase III is \$15.9 million. Phase III improvements include:

**ARFF Upgrades**

- Pave ARFF Training Areas
- New Training Props/Fuel Delivery/Surface Water Collection
- Airport Lighting Signage and Markers
- Vehicle Wash/Decontamination System
- Vehicle Exhaust System
- Training Water Treatment Upgrades
- Mock Hanger
- Remote Classroom
- Existing Building Improvements - Including Furnishings Fixtures and Equipment

**Marine Upgrades**

- Addition to Marine Prop
- Shallow Water Control Pond (three feet deep)
- Deep Water Training Area ( eight feet deep)
- Marina/Dock Prop

**Transportation Upgrades**

- Rail Crossing
- Rail Car Accident
- Cargo Container Area

**LEGEND**

- ④ ARFF & SUPPORT BUILDINGS
- ⑤ EXISTING SURFACE WATER STRUCTURE
- ⑱ EXISTING SHIP TRAINER
- ⑲ NEW MOAT & MARINA PROP IN NEW WATER/DOCK
- ⑳ CONTAINER PROP
- ㉑ RUNNING FUEL SPILL PROP
- ㉒ NEW 3 SIDED MANUFACTURE PROP-STORAGE/SUPPORT
- ㉓ EXISTING TRAINING FUEL FARM

# WASHINGTON STATE PATROL

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## FIRE TRAINING ACADEMY

### Phase Three – ARFF and Marine Upgrades

#### General

Phase 3 includes construction of a new Mock Hanger (25), paving of the ARFF area and approach roads shown in Exhibits 3A and 3B. It also includes construction of a new Rail Prop (21), Container Prop (20), Moat and Marina Prop (19), Shallow Water Control Pond and paving in the Marine area shown in Exhibit 3C.

#### Circulation and Parking

New paving for the ARFF area and Boundary Road; paving limits shown in Exhibit 3A and 3B.

New paving on Road "A", Road "B" and Marine Loop Road; paving limits shown in Exhibit 3C.

#### Site Drainage

A majority of the new site drainage in Phase 3 is generated from or in contact with fire training activities. All storm drainage for this phase is conveyed to the treatment ponds (Exhibit 3C).

The surface water run-off generated by fire training activities and rainfall in Road "A" is conveyed to a storm drainage manhole at the intersection of Road "A" and Road "B" (constructed in Phase 1). This catch basin discharges to the Oil Water Separator. Additional storm conveyance is added southeast of the existing Fuel Farm (Exhibit 3B). This is conveyed to a new catch basin Marine Loop Road and ultimately discharges to the existing Oil Water Separator. Two new stubs are provided beyond new pavement limits for future development.

Expansion of ARFF Pond #1 and ARFF Pond #2 is required to serve new storm drainage run-off associated with ARFF improvements (Exhibit 3B).

#### Sanitary Sewer

There are no new building sewer connections in Phase 3.

Sanitary sewer main in Road "B" is extended from the stub, provided in Phase 1, to a new manhole at the intersection with Marine Loop. This extension is capped beyond the new pavement limits in Road "B" providing service to future buildings in Phases 5 and 6 (Exhibit 3C).

Sanitary sewer main in Marine Loop Road is extended from the new manhole at the intersection with Road "B" to a new manhole at the intersection with Industrial Loop Road. This extension is capped beyond the new pavement limits in Marine Loop Road in order to provide service to future buildings in Phases 5 and 6 (Exhibit 3C).

#### Domestic Water

There are no new building domestic water connections in Phase 3.

Domestic water main extended from existing stub in Road "A". The new domestic water main is conveyed around the corner at the intersection of Road "A" and Marine Loop Road and stubbed beyond new pavement limits at the intersection of Marine Loop Road and Industrial Loop Road providing service to future buildings in Phase 6 (Exhibit 3C).

#### Fire Protection Water

New fire protection hydrant is required to serve the new Mock Hanger. This hydrant is supplied by a new fire protection water loop between the existing fire protection line in Boundary Road, west of the Admin/Classroom/Dining Building (View 1 of Exhibit 3A), and the existing fire protection line adjacent to existing ARFF support building (View 2 of Exhibit 3A).



## WASHINGTON STATE PATROL

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### FIRE TRAINING ACADEMY

New fire protection hydrants are required to serve the Marina area. These hydrants are supplied by a new fire protection extension in Marine Loop Road. This new extension connects to an existing fire protection line at the intersection of Marine Loop Road and Road "A". A new stub is required off this line beyond new pavement at the intersection of Marine Loop Road and Industrial Loop Road (Exhibit 3C).

Additional fire protection hydrants in the Marina area are supplied by a new fire protection line extension in Road "B". This new extension connects to an existing fire protection stub at the intersection of Road "A" and Road "B" provided in Phase 1 (Exhibit 3C). A new stub is required off this line beyond new pavement at the intersection of Marine Loop Road and Road "B" (Exhibit 3C).

#### Fire Training Water

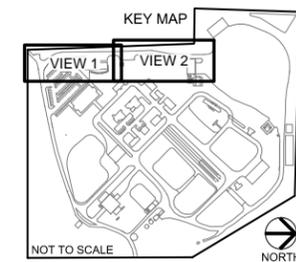
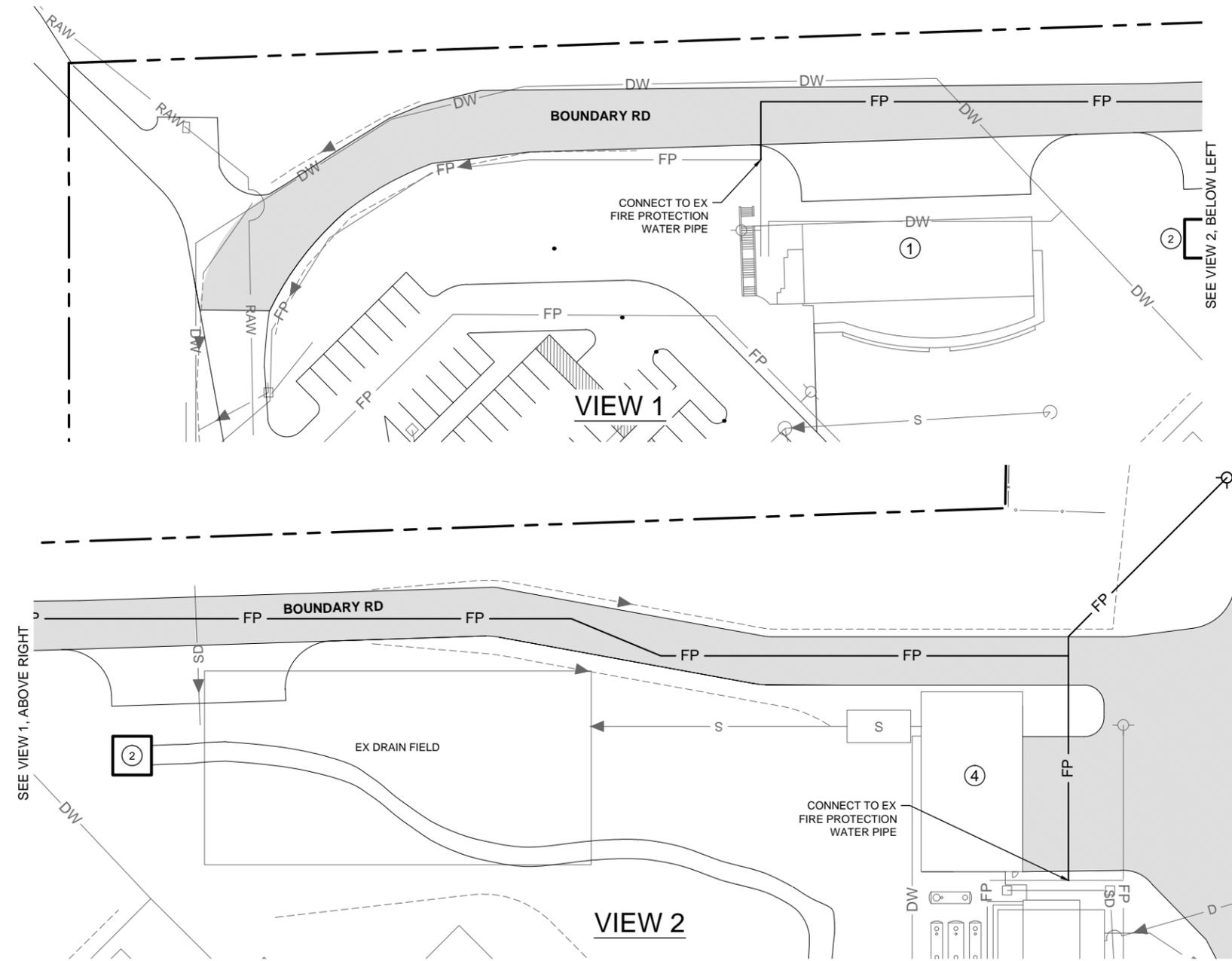
An existing fire training loop is being relocated to accommodate the new Shallow Water Control Pond. This new fire training loop connects to an existing fire training line in Road "A", northwest of Road "B" intersection. The fire protection water is conveyed around the east side of the Shallow Water Control Pond into Marine Loop Road. It then connects into an existing fire training line in Marine Loop Road, behind the existing ship prop. A new stub is required off this line beyond new pavement limits at the intersection of Marine Loop Road and Industrial Loop Road (Exhibit 3C).

New fire training hydrants are required to serve the Marina area. The existing and relocated fire training lines serve a majority of the hydrants. An extension of the fire training water line is needed in Road "B". This new extension connects to a stub at the intersection of Road "A" and Road "B" and is stubbed beyond new pavement limits from Road "A" and is stubbed beyond the new pavement limits at the intersection of Marine Loop Road and Road "B" (Exhibit 3C).



**WASHINGTON STATE PATROL  
FIRE TRAINING ACADEMY**

5.3.2 Exhibit 3A



**LEGEND**

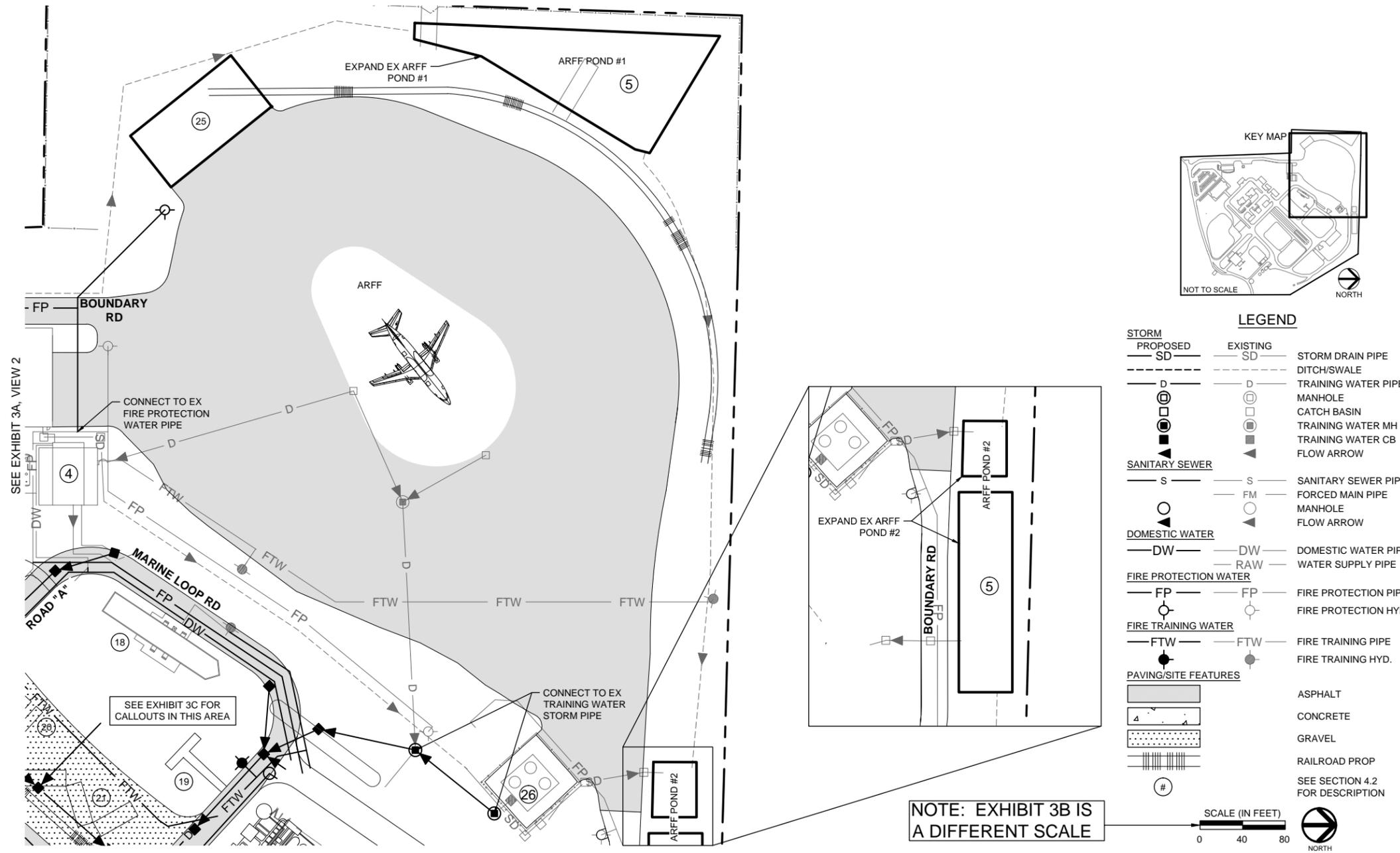
<b>STORM</b>	<b>PROPOSED</b>	<b>EXISTING</b>	
	SD	SD	STORM DRAIN PIPE
	- - -	- - -	DITCH/SWALE
	D	D	TRAINING WATER PIPE
	⊙	⊙	MANHOLE
	⊠	⊠	CATCH BASIN
	⊙	⊙	TRAINING WATER MH
	▣	▣	TRAINING WATER CB
	→	→	FLOW ARROW
<b>SANITARY SEWER</b>			
	S	S	SANITARY SEWER PIPE
	FM	FM	FORCED MAIN PIPE
	⊙	⊙	MANHOLE
	→	→	FLOW ARROW
<b>DOMESTIC WATER</b>			
	DW	DW	DOMESTIC WATER PIPE
	RAW	RAW	WATER SUPPLY PIPE
<b>FIRE PROTECTION WATER</b>			
	FP	FP	FIRE PROTECTION PIPE
	⊙	⊙	FIRE PROTECTION HYD.
<b>FIRE TRAINING WATER</b>			
	FTW	FTW	FIRE TRAINING PIPE
	⊙	⊙	FIRE TRAINING HYD.
<b>PAVING/SITE FEATURES</b>			
	[Pattern]		ASPHALT
	[Pattern]		CONCRETE
	[Pattern]		GRAVEL
	[Pattern]		RAILROAD PROP
	#		SEE SECTION 4.2 FOR DESCRIPTION

SCALE (IN FEET)  
0 25 50  
NORTH

- LEGEND
- ① EXISTING DORMITORY
  - ④ ARFF & SUPPORT BUILDINGS

**WASHINGTON STATE PATROL  
FIRE TRAINING ACADEMY**

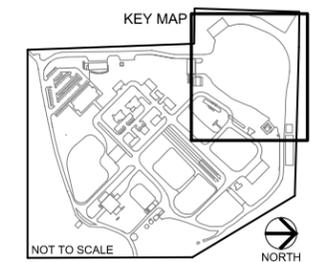
5.3.3 Exhibit 3B



SEE EXHIBIT 3A, VIEW 2

SEE EXHIBIT 3C FOR CALLOUTS IN THIS AREA

NOTE: EXHIBIT 3B IS A DIFFERENT SCALE



**LEGEND**

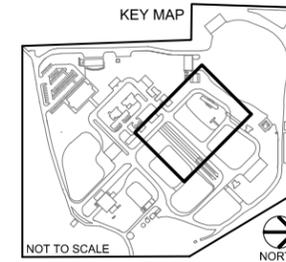
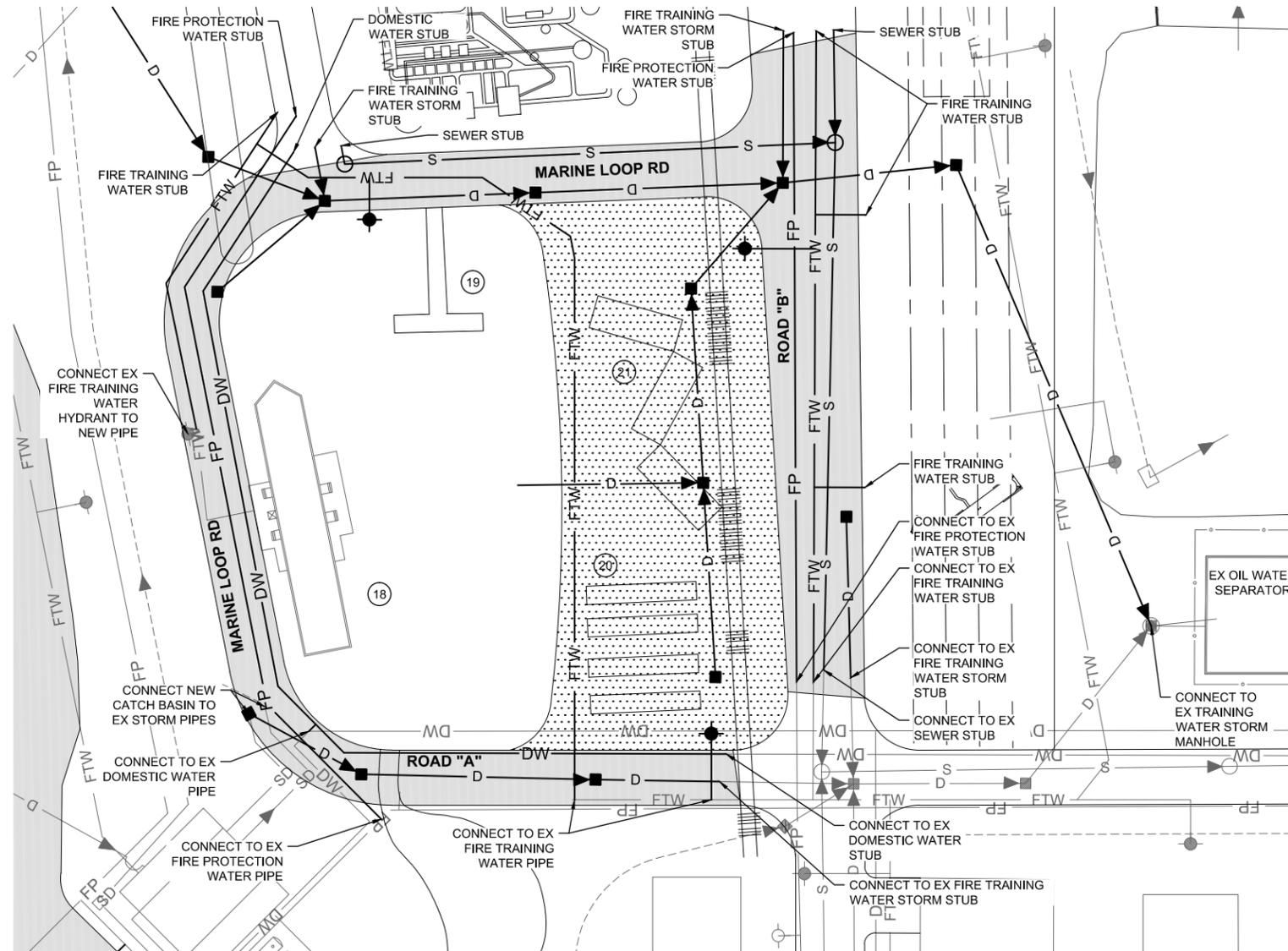
<b>STORM</b>	<b>EXISTING</b>	
PROPOSED SD	SD	STORM DRAIN PIPE
---	---	DITCH/SWALE
D	D	TRAINING WATER PIPE
⊕	⊕	MANHOLE
⊞	⊞	CATCH BASIN
⊞	⊞	TRAINING WATER MH
▲	▲	TRAINING WATER CB
→	→	FLOW ARROW
<b>SANITARY SEWER</b>		
S	S	SANITARY SEWER PIPE
FM	FM	FORCED MAIN PIPE
⊕	⊕	MANHOLE
→	→	FLOW ARROW
<b>DOMESTIC WATER</b>		
DW	DW	DOMESTIC WATER PIPE
RAW	RAW	WATER SUPPLY PIPE
<b>FIRE PROTECTION WATER</b>		
FP	FP	FIRE PROTECTION PIPE
⊕	⊕	FIRE PROTECTION HYD.
<b>FIRE TRAINING WATER</b>		
FTW	FTW	FIRE TRAINING PIPE
⊕	⊕	FIRE TRAINING HYD.
<b>PAVING/SITE FEATURES</b>		
[Hatched Box]		ASPHALT
[Dotted Box]		CONCRETE
[Stippled Box]		GRAVEL
[Vertical Lines Box]		RAILROAD PROP
#		SEE SECTION 4.2 FOR DESCRIPTION

- LEGEND**
- ④ ARFF & SUPPORT BUILDINGS
  - ⑤ EXISTING SURFACE WATER STRUCTURE
  - ⑱ EXISTING SHIP TRAINER
  - ⑲ NEW MOAT & MARINA PROP IN NEW WATER/DOCK
  - ⑳ CONTAINER PROP
  - ㉑ RUNNING FUEL SPILL PROP
  - ㉒ NEW 3 SIDED MANUFACTURE PROP STORAGE/SUPPORT
  - ㉓ EXISTING TRAINING FUEL FARM



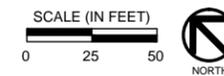
**WASHINGTON STATE PATROL  
FIRE TRAINING ACADEMY**

5.3.4 Exhibit 3C



**LEGEND**

<b>STORM</b>		
PROPOSED SD	EXISTING SD	STORM DRAIN PIPE
---	---	DITCH/SWALE
---	---	TRAINING WATER PIPE
⊙	⊙	MANHOLE
⊙	⊙	CATCH BASIN
⊙	⊙	TRAINING WATER MH
⊙	⊙	TRAINING WATER CB
→	→	FLOW ARROW
<b>SANITARY SEWER</b>		
S	S	SANITARY SEWER PIPE
FM	FM	FORCED MAIN PIPE
⊙	⊙	MANHOLE
→	→	FLOW ARROW
<b>DOMESTIC WATER</b>		
DW	DW	DOMESTIC WATER PIPE
RAW	RAW	WATER SUPPLY PIPE
<b>FIRE PROTECTION WATER</b>		
FP	FP	FIRE PROTECTION PIPE
⊙	⊙	FIRE PROTECTION HYD.
<b>FIRE TRAINING WATER</b>		
FTW	FTW	FIRE TRAINING PIPE
⊙	⊙	FIRE TRAINING HYD.
<b>PAVING/SITE FEATURES</b>		
[Pattern]		ASPHALT
[Pattern]		CONCRETE
[Pattern]		GRAVEL
[Pattern]		RAILROAD PROP
#		SEE SECTION 4.2 FOR DESCRIPTION



- LEGEND**
- ④ ARFF & SUPPORT BUILDINGS
  - ⑤ EXISTING SURFACE WATER STRUCTURE
  - ⑬ EXISTING SHIP TRAINER
  - ⑰ NEW MOAT & MARINA PROP IN NEW WATER/DOCK
  - ⑳ CONTAINER PROP
  - ㉑ RUNNING FUEL SPILL PROP
  - ㉒ NEW 3 SIDED MANUFACTURE PROP-STORAGE/SUPPORT
  - ㉓ EXISTING TRAINING FUEL FARM



5.4.1 Phase Four Hazardous Materials & Cityscape Buildings

Predesign: 2019 - 2021  
Design: 2021 - 2023  
Construction: 2023 - 2025

The existing Hazardous Materials building presents an opportunity for expansion and improvement of training in this critical area of emergency response. Building on the bones of the existing building and incorporating modern technology to improve the capabilities of providing realistic scenario based training are the focus of this phase. Incorporating classroom space with facilities to refill SCBA equipment will increase the number of exercises per day in this area of the campus. The plan also includes adding trench rescue and confined spaces props. The overall projected cost of Phase IV is \$4.4 million. Phase IV improvements include:

Hazardous Materials Upgrades

- Equipment for Haz Mat Building
- Loading Dock Prop
- Warehouse Prop
- Acid Bath
- Bottle Storage Rack Prop
- Extend Rail Line
- Expand Confined Spaces Props
- Remote Classroom
- Existing Building Improvements - Including Furnishings Fixtures and Equipment
- Sitework

LEGEND

- ③② EXISTING HAZARDOUS MATERIALS BUILDING
- ③③ NEW TRENCH/CONFINED SPACES
- ③⑤ NEW RAIL CROSSING
- ③⑥ EXTEND EXISTING RAIL LINE
- ③⑧ COVERED OUTDOOR CLASSROOM WITH TOILET & SCBA SUPPORT

# WASHINGTON STATE PATROL

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## FIRE TRAINING ACADEMY

### Phase Four – Hazardous Materials Upgrades

#### General

Phase 4 includes construction of a new Covered Outdoor Classroom with Toilet & SCBA Support (38) and loading dock adjacent to the existing Hazardous Materials building. It also includes extension of the existing Rail Line across Road "C" (35) (36) and new pavement for the driveway approach to the Hazardous Materials building. All of these improvements are shown in Exhibit 4.

#### Circulation and Parking

New paving on Road "A" and new driveway entrance for the Hazardous Materials building; paving limits shown in Exhibit 4.

#### Site Drainage

The surface water run-off created from the new driveway approach is collected in a new catch basin and conveyed to a new catch basin that taps into an existing storm drainage line. The existing storm drainage line discharges into the existing Detention/Infiltration pond, which was modified for enhanced capacity in previous phases.

#### Sanitary Sewer

The gravity sanitary sewer main running adjacent to Road "A" conflicts with Hazardous Materials building expansion. This line will be relocated into Road "A" extending from an existing stub at the intersection of Road "C" and Road "A". A new manhole is required at the connection to the existing sewer main at the intersection of Road "A" and Boundary Road.

The Covered Outdoor Classroom with Toilet & SCBA Support is adjacent to the Hazardous Materials building and the sanitary sewer connection is assumed to be made internally.

#### Domestic Water

New Covered Outdoor Classroom with Toilet & SCBA Support is adjacent to the Hazardous Materials building and the domestic water connection is assumed to be made internally.

#### Fire Protection Water

New fire protection hydrant is required to serve the Hazardous Materials building expansion. This hydrant is supplied by a new fire protection line extension. This extension connects to an existing fire protection line at the intersection of Boundary Road and Road "A".

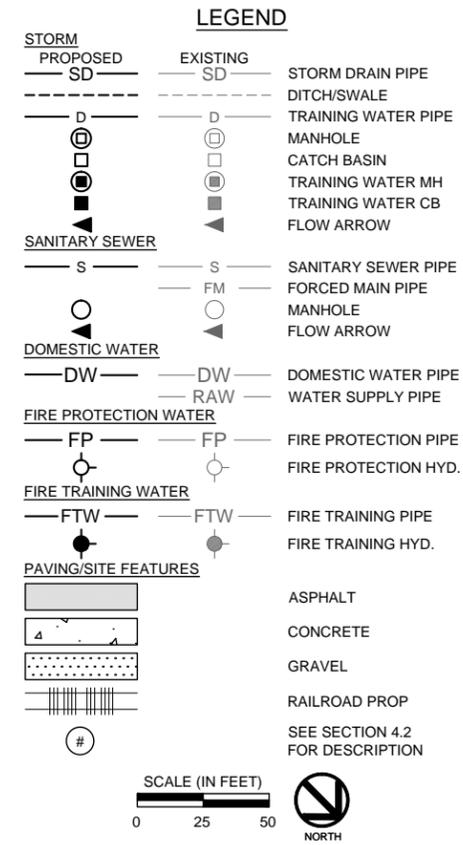
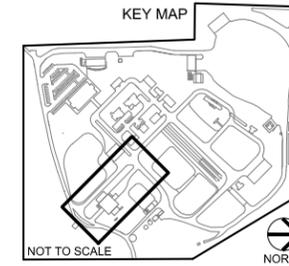
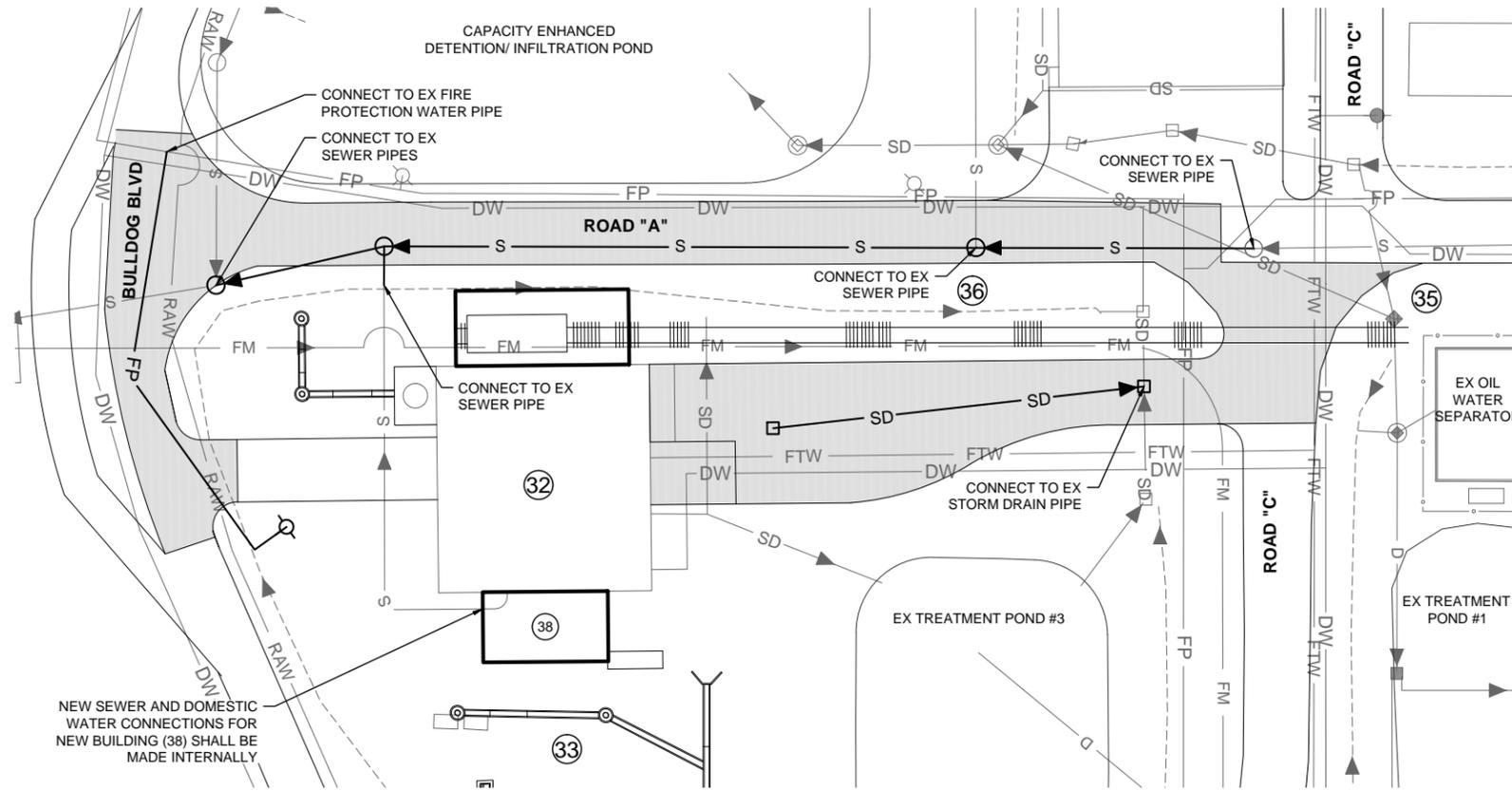
#### Fire Training Water

No fire training water improvements are needed in Phase 4.



**WASHINGTON STATE PATROL  
FIRE TRAINING ACADEMY**

5.4.2 Exhibit 4



- LEGEND**
- ⊕ EXISTING HAZARDOUS MATERIALS BUILDING
  - ⊕ NEW TRENCH/CONFINED SPACES
  - ⊕ NEW RAIL CROSSING
  - ⊕ EXTEND EXISTING RAIL LINE
  - ⊕ COVERED OUTDOOR CLASSROOM WITH TOILET & SCBA SUPPORT

**WASHINGTON STATE PATROL  
FIRE TRAINING ACADEMY**



**5.5.1 Phase Five Highway/Transportation**

Pre-design: 2021 - 2023  
 Design: 2023 - 2025  
 Construction: 2025 - 2027

Our increasingly congested roadways present an extremely challenging environment for emergency first responders. Designed with the intent to provide multiple realistic scenarios related to vehicular incident response situations, this phase of work incorporates challenges discussed at length in the Stakeholder workshops and develop facilities which can be used by multiple State agencies including WSDOT. The overall projected cost of Phase V is \$9.5 million. Phase V improvements include:

- Five Lane Highway
- Tanker Spill
- Extrication
- Remote Classroom
- Overpass
- Rail Line Rural Accident
- Sitework
- Utilities
- Swiftwater

**LEGEND**

- ② SWIFT WATER
- ③ WILDLAND INTERFACE
- ⑲ OVERTURNED TANKER PROP
- ⑳ NEW TRANSPORTATION/HIGHWAY
- ㉑ NEW HIGHWAY OVERPASS
- ⑳ NEW VEHICLE EXTRICATION
- ㉓ COVERED OUTDOOR CLASSROOM WITH TOILET & SCBA SUPPORT

# WASHINGTON STATE PATROL

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## FIRE TRAINING ACADEMY

### Phase Five – Highway and Transportation

#### General

Phase 5 includes construction of a new Transportation Highway (28), Overturned Tanker Prop (27), Vehicle Extrication (30), Highway Overpass (29), Rail Line Rural Accident Prop (22), Covered Outdoor Classroom with Toilet & SCBA Support (38) and new roadway paving. These improvements are shown in Exhibits 5A and 5B.

#### Circulation and Parking

New paving for Road “C”, Boundary Road, Industrial Loop Road and Road “B”; paving limits shown in Exhibit 5A and 5B.

New parking off of Boundary Road (View 2 of Exhibit 5B).

#### Site Drainage

Site drainage in Phase 5 consists of surface water run-off in the Highway and Transportation area (Exhibit 5B) and collection of an existing drainage ditch/swale behind the Covered Outdoor Classroom (Exhibit 5A), which will likely result in the need for increased capacity of systems.

The surface water run-off is collected in new catch basins located in Road “B” and conveyed in new storm drainage lines to an existing stub provided by Phase 3 improvements. This stub conveys the stormwater to the Oil Water Separator. The new stormwater extension will be stubbed outside Phase 5 paving limits (Exhibit 5B).

Stormwater run-off from an existing ditch behind the Covered Outdoor Classroom is collected in a new catch basin and conveyed via a new storm line to Treatment Pond #2 (Exhibit 5A).

Expand existing Treatment Pond #1 to accommodate additional storm drainage volume (Exhibit 5A).

#### Sanitary Sewer

New sanitary sewer connection is required for the new Covered Outdoor Classroom. This sanitary sewer lateral connects to a new stub in Road “B” provided by Phase 3 improvements via new sanitary sewer main and a new manhole constructed in Road “B”. This sewage is conveyed to the MBR facility (Exhibit 5B).

#### Domestic Water

New domestic water connection is required for the new Covered Outdoor Classroom. This connection will be made, via a new lateral, to a new domestic water main extension. The extension connects to an existing domestic water main between Treatment Pond #1 and #2, is conveyed north to Industrial Loop Road and is stubbed beyond new pavement limits at the intersection of Industrial Loop Road and Road “B” (Exhibit 5B).

#### Fire Protection Water

New fire protection hydrant is required to serve the new Covered Outdoor Classroom. This hydrant is supplied by a new fire protection line extension in Road “B”. This extension connects to an existing fire protection stub, provided in Phase 3, at the intersection of Road “B” and Marine Loop Road. The fire protection water is conveyed northwest along Road “B” and stubbed beyond pavement limits at the intersection Road “B” and Industrial Loop Road (Exhibit 5B).

#### Fire Training Water

New fire training hydrants are required to serve the Overturned Tanker Prop, new Transportation Highway, New Vehicle Extrication, new Rail Prop and the new Covered Outdoor Classroom.



## WASHINGTON STATE PATROL

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### FIRE TRAINING ACADEMY

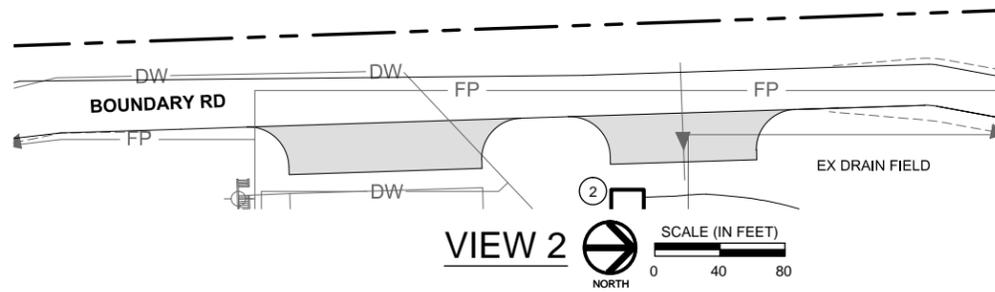
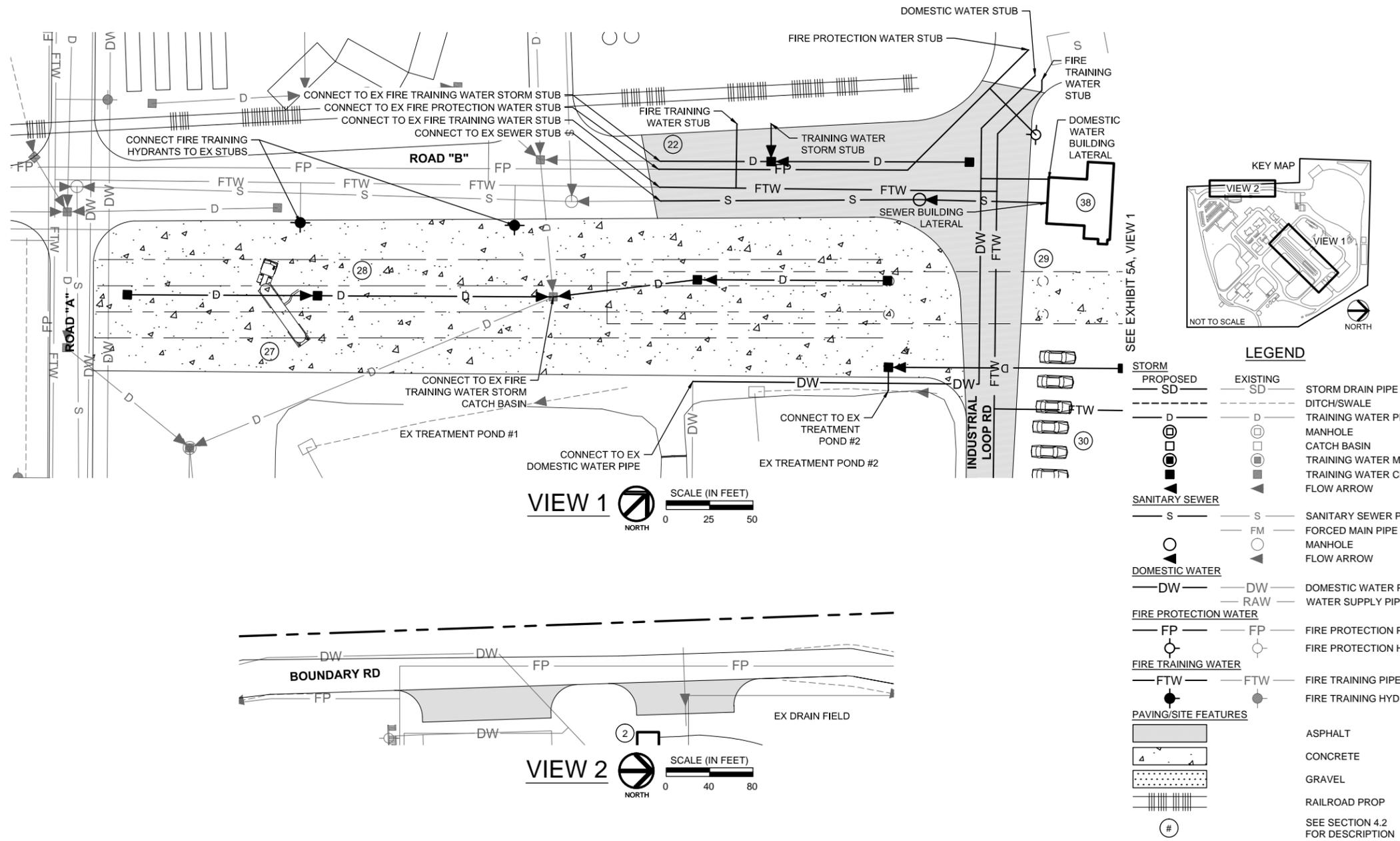
The Overturned Tanker Prop and new Transportation Highway are served by a new fire training water line extension from existing stubs adjacent to Road "B" provided in Phase 3 (Exhibit 5A and 5B).

New Vehicle Extrication and Rail Prop are served by new fire training hydrants connecting to new fire protection water loop in Road "B". The new fire training loop connects an existing stub provided by Phase 3 improvements at the intersection with Marine Loop Road to an existing fire training line northwest of Treatment Pond #2. A new fire training water stub is required off this line beyond new pavement at the intersection of Marine Loop Road and Road "B" (Exhibit 5B). Another new fire training water stub is required off this line serving the on-ramp for the highway overpass prop (Exhibit 5A).



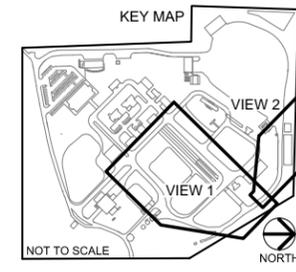
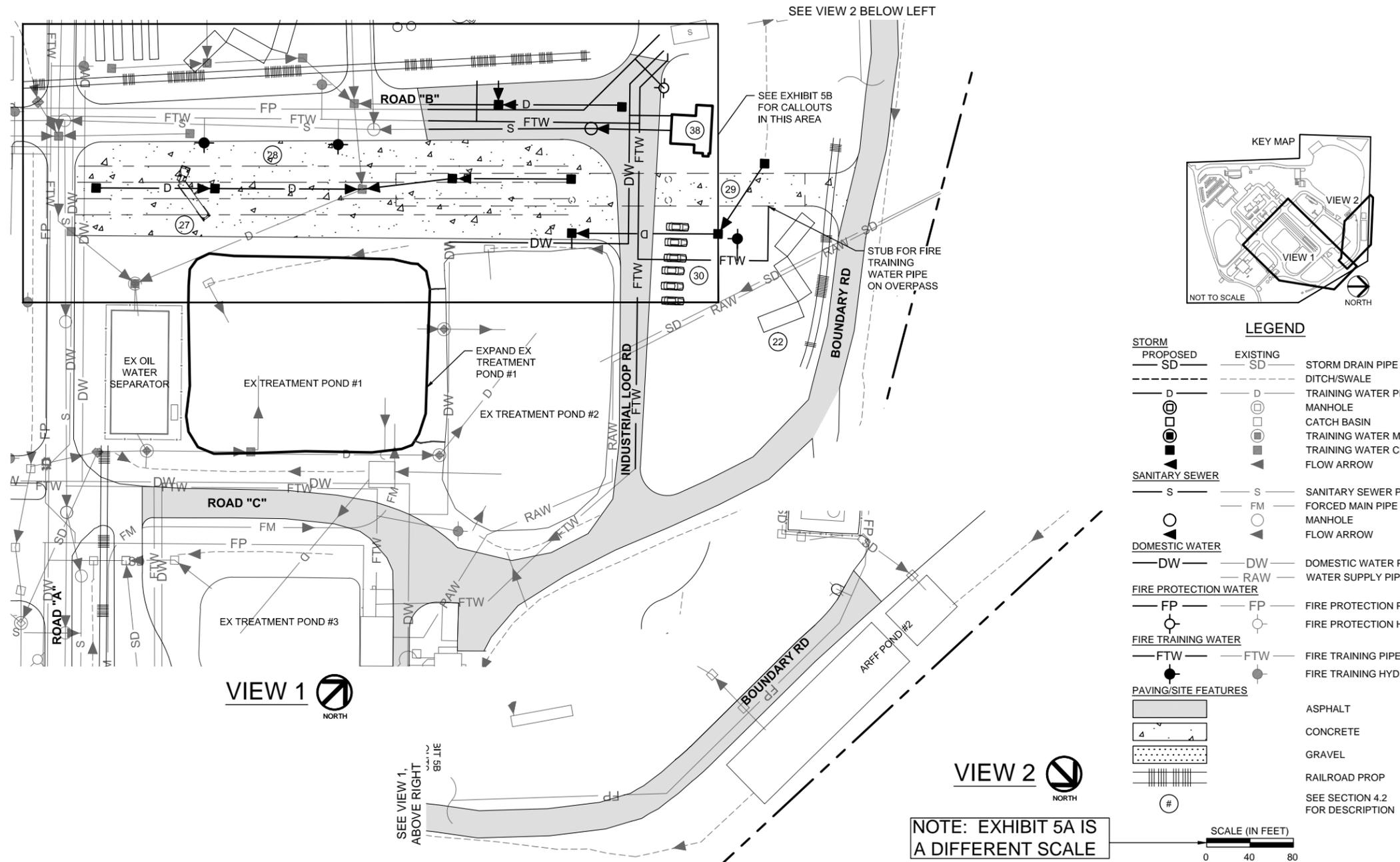
**WASHINGTON STATE PATROL  
FIRE TRAINING ACADEMY**

5.5.2 Exhibit 5A



- LEGEND
- ② SWIFT WATER
  - ②7 OVERTURNED TANKER PROP
  - ②8 NEW TRANSPORTATION/HIGHWAY
  - ②9 NEW HIGHWAY OVERPASS
  - ③0 NEW VEHICLE EXTRICATION
  - ③8 COVERED OUTDOOR CLASSROOM WITH TOILET & SCBA SUPPORT





**LEGEND**

<b>STORM</b>	<b>EXISTING</b>	STORM DRAIN PIPE
<b>PROPOSED</b>	<b>SD</b>	DITCH/SWALE
<b>SD</b>	<b>D</b>	TRAINING WATER PIPE
	<b>⊙</b>	MANHOLE
	<b>□</b>	CATCH BASIN
	<b>■</b>	TRAINING WATER MH
	<b>▣</b>	TRAINING WATER CB
	<b>→</b>	FLOW ARROW
<b>SANITARY SEWER</b>	<b>S</b>	SANITARY SEWER PIPE
	<b>FM</b>	FORCED MAIN PIPE
	<b>⊙</b>	MANHOLE
	<b>→</b>	FLOW ARROW
<b>DOMESTIC WATER</b>	<b>DW</b>	DOMESTIC WATER PIPE
	<b>RAW</b>	WATER SUPPLY PIPE
<b>FIRE PROTECTION WATER</b>	<b>FP</b>	FIRE PROTECTION PIPE
	<b>⊙</b>	FIRE PROTECTION HYD.
<b>FIRE TRAINING WATER</b>	<b>FTW</b>	FIRE TRAINING PIPE
	<b>●</b>	FIRE TRAINING HYD.
<b>PAVING/SITE FEATURES</b>		ASPHALT
		CONCRETE
		GRAVEL
		RAILROAD PROP
		SEE SECTION 4.2 FOR DESCRIPTION

- LEGEND
- ②7 OVERTURNED TANKER PROP
  - ②8 NEW TRANSPORTATION/HIGHWAY
  - ②9 NEW HIGHWAY OVERPASS
  - ③0 NEW VEHICLE EXTRICATION
  - ③8 COVERED OUTDOOR CLASSROOM WITH TOILET & SCBA SUPPORT

**WASHINGTON STATE PATROL  
FIRE TRAINING ACADEMY**



**5.6.1 Phase Six Industry and Manufacturing**

Pre-design: 2023 - 2025  
 Design: 2025 - 2027  
 Construction: 2027 - 2029

The sixth and final phase of the Master Plan creates facilities mimicking industry and manufacturing facilities in our region. Placed adjacent transportation and marine facilities, this area creates the opportunity for training related to situations common to industrial fire brigades. The overall projected cost of Phase VI is \$13 million. Phase VI improvements include:

- Refinery Prop
- Tank Farm Prop
- Rail Line Extension
- Manufacturing Structure
  - Large Scale Manufacturing Structure
  - Storage
- Sitework
- Treatment Pond Expansion
- Utilities

**LEGEND**

- ② NEW RAIL PROP
- ③ NEW INDUSTRIAL
- ④ NEW TANK FARM PROP
- ⑤ NEW 3 SIDED MANUFACTURE PROP- STORAGE/SUPPORT
- ⑧ COVERED OUTDOOR CLASSROOM WITH TOILET & SCBA SUPPORT

# WASHINGTON STATE PATROL

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## FIRE TRAINING ACADEMY

### Phase Six– Industry and Manufacturing

#### General

Phase 6 includes construction of a new Manufacturing Building (25), Covered Outdoor Classroom (38), Tank Farm (24), Refinery Prop (23) and Rail Line Extension (22) shown in Exhibit 6.

#### Circulation and Paving

New paving for Industrial Loop Road; paving limits shown on Exhibit 6A.

#### Site Drainage

A portion of the new site drainage in Phase 6 results from fire training activities Industry and Manufacturing area and on Industrial Loop Road. In the Industry and Manufacturing area the surface water run-off generated by fire training activities and rainfall events is collected and conveyed to an existing stub in Road "B" (stub provided in Phase 5) and ultimately conveyed to the Treatment Pond/Reclaimed Water System (Exhibit 6).

In Industrial Loop Road the surface water run-off generated by fire training activities and rainfall events is collected and conveyed to an existing stub in Marine Loop Road (stub provided in Phase 3) and ultimately conveyed to the Treatment Pond/Reclaimed Water System (Exhibit 6).

Expand existing ditch/swale north of manufacturing building. This ditch/swale connects to a catch basin provided in Phase 5 and ultimately is conveyed to Treatment Pond #2 (Exhibit 6).

#### Sanitary Sewer

New sanitary sewer connection is required for the new Covered Outdoor Classroom. This sanitary sewer lateral connects to a new stub at the intersection of Marine Loop Road and Industrial Loop Road provided by Phase 3 improvements via new sanitary sewer main and a new manhole constructed in Road Industrial Loop Road. Ultimately this sewage is conveyed to the MBR facility.

#### Domestic Water

New domestic water connection is required for the new Covered Outdoor Classroom. This connection will be made, via new laterals, to a new domestic water loop in Industrial Loop Road. This new loop connects to an existing stub at the intersection of Industrial Loop Road and Marine Loop Road, provided in Phase 3, and an existing stub at the intersection of Industrial Loop Road and Road "B", provided in phase 5 (Exhibit 6).

#### Fire Protection Water

New fire protection hydrants are required to serve the new Manufacturing Building and Covered Outdoor Classroom. These hydrants are served by a new fire protection water loop in Industrial Loop Road. This loop connects an existing stub, provided in Phase 3, at the intersection with Marine Loop Road to an existing stub, provided in Phase 5, at the intersection with Road "B".

#### Fire Training Water

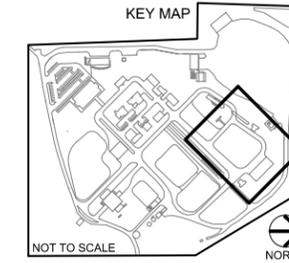
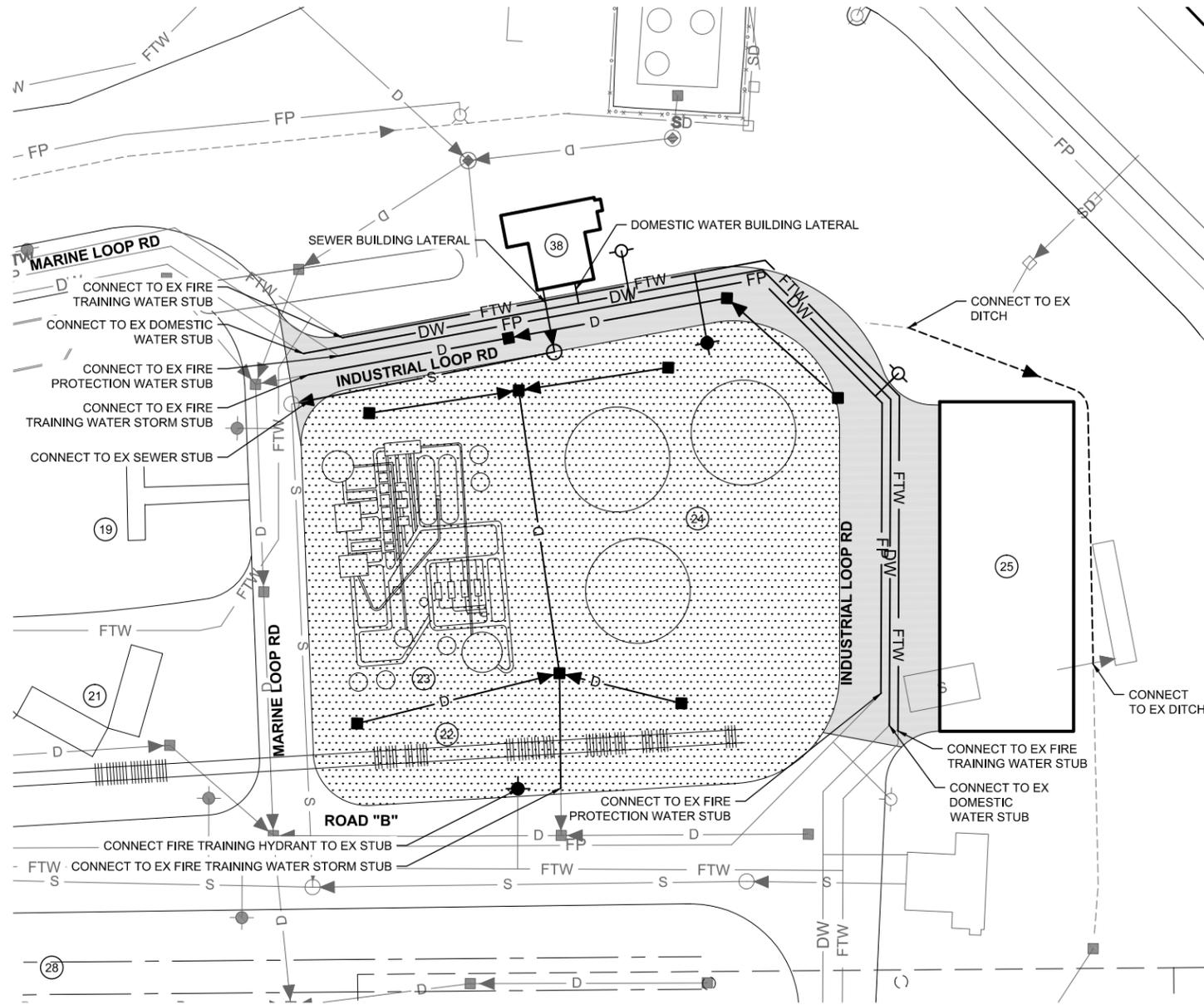
New fire training hydrant is required to serve the new Tank Farm. This hydrant is served by a new fire training water loop in Industrial Loop Road. This loop connects an existing stub, provided in Phase 3, at the intersection with Marine Loop Road to an existing stub, provided in Phase 5, at the intersection with Road "B" (Exhibit 6).

New fire training hydrant required to serve the new Refinery Prop. This hydrant is served by a stub, provided in Phase 5, adjacent to Road "B" (Exhibit 6).



**WASHINGTON STATE PATROL  
FIRE TRAINING ACADEMY**

5.6.2 Exhibit 6



**LEGEND**

<b>STORM</b>	<b>EXISTING</b>	
<b>PROPOSED</b>	<b>SD</b>	STORM DRAIN PIPE
— SD —	— SD —	DITCH/SWALE
— D —	— D —	TRAINING WATER PIPE
⊙	⊙	MANHOLE
□	□	CATCH BASIN
⊙	⊙	TRAINING WATER MH
■	■	TRAINING WATER CB
▶	▶	FLOW ARROW
<b>SANITARY SEWER</b>		
— S —	— S —	SANITARY SEWER PIPE
— FM —	— FM —	FORCED MAIN PIPE
⊙	⊙	MANHOLE
▶	▶	FLOW ARROW
<b>DOMESTIC WATER</b>		
— DW —	— DW —	DOMESTIC WATER PIPE
— RAW —	— RAW —	WATER SUPPLY PIPE
<b>FIRE PROTECTION WATER</b>		
— FP —	— FP —	FIRE PROTECTION PIPE
⊙	⊙	FIRE PROTECTION HYD.
<b>FIRE TRAINING WATER</b>		
— FTW —	— FTW —	FIRE TRAINING PIPE
●	●	FIRE TRAINING HYD.
<b>PAVING/SITE FEATURES</b>		
■		ASPHALT
⊙		CONCRETE
⊙		GRAVEL
▨		RAILROAD PROP
#		SEE SECTION 4.2 FOR DESCRIPTION

SCALE (IN FEET)  
0 25 50

NORTH

- LEGEND**
- ② NEW RAIL PROP
  - ③ NEW INDUSTRIAL
  - ④ NEW TANK FARM PROP
  - ⑤ NEW 3 SIDED MANUFACTURE PROP-STORAGE/SUPPORT
  - ⑧ COVERED OUTDOOR CLASSROOM WITH TOILET & SCBA SUPPORT

# WASHINGTON STATE PATROL

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## FIRE TRAINING ACADEMY

### 5.7 Electrical Distribution

#### Power

The existing primary electrical service for the campus has the capacity to accommodate the anticipated electrical loads discussed in this report and as calculated in the “Electrical Load Calculations”. Modifications to the primary and secondary power systems will be required as the phased master plan is implemented. Power distribution modifications and additions are anticipated as the phases of the master plan are implemented, primarily to the secondary (480 Volt) campus distribution system. Modifications would be similar to the existing pad mounted transformer and distribution installations and would include extension of underground feeders from the existing service switchboard in the pump house during each phase, and extension of new feeders from the existing AARF power distribution system during Phase 3. However, due to the size of the site and the length of many secondary feeders, a new pad-mounted transformer and connection to the campus primary power system is anticipated in Phase 2 to serve buildings at the upper portion of the campus. Also during Phase 2, the existing outdoor panelboards and transformer near the portable buildings will be removed.

#### Emergency/Standby Power

The existing standby generator system – rated 525 kW / 656 kVA within the Pump House and configured to provide standby power to all buildings and loads served by switchboard MDS (includes all buildings except the ARFF facility) – is 30 years old and nearing the end of its economic and useful life. We recommend replacement as part of Phase 2, when the most significant new loads will be added to the campus power distribution system.

The existing AARF facility, served by a dedicated pad-mounted transformer, does not currently have emergency/standby engine generator backup but is desired by the Owner. During Phase 3, we recommend addition of a diesel engine generator configured to provide standby power for the AARF facility.

### 5.8 Communication Systems

#### Telecommunications

The underground telecommunications infrastructure will connect to the existing service provider pedestal and to all other buildings requiring network connectivity. The underground telecommunications infrastructure will be provided in segments to accommodate the phased master plan. New ductbanks and utility vaults will be sized to support the current phase and with enough capacity to support future phases in order to minimize or eliminate network interruptions. Distribution of new outside plant copper and optical fiber cabling will be provided to new buildings. Connections to the Washington State Patrol network via microwave communication system is currently planned and will provide a more robust external link.



# WASHINGTON STATE PATROL

## FIRE TRAINING ACADEMY

- 5.9 Electrical Load Calculations  
It is recommended that electrical upgrades be made with phasing requests.

### Washington State Patrol Fire Training Academy Master Plan 2013

#### Electrical Load Calculations

##### Phase 1

<i>Building / Load</i>	<i>Area (sf)</i>	<i>Load (VA/SF)</i>	<i>Load (kVA)</i>
New Classroom - Rehab Building	2250	16	36.0
New Burn Structure - Commercial Building			60.0
New Burn Structure - Residential Building			30.0
New Maintenance & Storage Building	6250	10	62.5
New Burn Structure - Apartment Building			30.0
New Pallet Storage Building	1700	8	13.6
Subtotal - New Load			232.1

##### Phase 2

<i>Building / Load</i>	<i>Area (sf)</i>	<i>Load (VA/SF)</i>	<i>Load (kVA)</i>
New Admin/Classroom/Dining Building	38063	16	609.0
New Arson Investigation Building	4200	16	67.2
Subtotal - New Load			676.2

##### Phase 3

<i>Building / Load</i>	<i>Area (sf)</i>	<i>Load (VA/SF)</i>	<i>Load (kVA)</i>
New Hangar Prop / Storage	7200	10	72.0
New Swift Water Feature			180.0
New Transportation Prop			60.0
Subtotal - New Load			312.0

##### Phase 4

<i>Building / Load</i>	<i>Area (sf)</i>	<i>Load (VA/SF)</i>	<i>Load (kVA)</i>
New Classroom / SCBA	1750	12	21.0
Subtotal - New Load			21.0

##### Phase 5

<i>Building / Load</i>	<i>Area (sf)</i>	<i>Load (VA/SF)</i>	<i>Load (kVA)</i>
New Transportation Prop			60.0
Subtotal - New Load			60.0

##### Phase 6

<i>Building / Load</i>	<i>Area (sf)</i>	<i>Load (VA/SF)</i>	<i>Load (kVA)</i>
New Classroom / SCBA	1200	12	14.4
New Manufacturing Bldg Prop / Storage	7200	10	72.0
New Industrial Prop			150.0
New Tank Farm Prop			150.0
Subtotal - New Load			386.4

<b>Total New Load</b>	<b>1687.7 kVA</b>
<b>Existing Calculated Load</b>	<b>577.0 kVA</b>
<b>Total Calculated Load (After Phase 6)</b>	<b>2264.7 kVA</b>



**WASHINGTON STATE PATROL**

**FIRE TRAINING ACADEMY**

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**6.0 APPENDIX**



TOVANI HART



## Memorandum

DATE: July 19, 2013

TO: Todd Tovani, Tovani-Hart

FROM: James McHendry, Huitt Zollars

SUBJECT: Washington State Patrol Fire Training Academy; Permitting Analysis

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### INTRODUCTION

As part of the 2013 Master Plan Update, a review of permit status and an outline of currently identified permits/studies to move the project forward has been completed. This document provides a brief explanation of the permit status, an outline summary of permits required, and a listing with preliminary budgets of currently identified studies required to move the project forward.

### PURPOSE

The purpose of this document is to provide the Washington State Patrol with an understanding of the required permits, special studies and to provide a planning level budget for the currently identified studies.

### ANALYSIS

The Fire Training Academy (FTA) is located in a forested area on the north side of Interstate 90; consisting of approximately 48 acres the site is located on Grouse Ridge approximately 10 miles east of City of North Bend within Sections 21 and 28, Township 23 N, Range 9 E in King County.

The FTA was previously developed as a fire training center under the approval and conditions of a King County Unclassified Use Permit (UU). A Shoreline Substantial Development Permit (SSDP) was also previously required; the SSDP was required to build the river crossing, it is assumed no work will be done to the river crossing or within 200 feet of a water of the State; therefore, it is assumed no SSDP will be required with the current project.

**The site is zoned *Forest (F)*, under the new King County zoning regulations a *Fire Facility* is not an allowed use on lands zoned *F*. Therefore, the County, per information distributed by King Co. subsequent to the pre-application meeting, has determined the FTA to be an existing non-conforming use. Future development at the site would be considered an expansion of a non-conforming use.**

**King County has provisions for expansions of non-conforming uses:**

*21A.32.065 Nonconformance - expansions of nonconforming uses, structures, or site improvements. A nonconforming use, structure, or site improvement may be expanded as follows:*

*A. The department may review and approve, pursuant to the code compliance process of K.C.C. 21A.42.030, an expansion of a nonconformance only if:*

*1. The expansion conforms to all other provisions of this title, except that the extent of the project-wide nonconformance in each of the following may be increased up to **ten percent**:*

- a. building square footage,*
- b. impervious surface,*
- c. parking, or*
- d. building height; and*

*2. No subsequent expansion of the same nonconformance shall be approved under this subsection if the cumulative amount of such expansion exceeds the percentage prescribed in subsection A.1;*

**A review of the new master plan indicates that the building square footage, impervious surface area, and parking re-development requested by the applicant would be increased by greater than 10%; thus, this requested expansion is not consistent with this code section, however:**

*B. A special use permit shall be required for expansions of a nonconformance within a development authorized by an existing special use or unclassified use permit if the expansions are not consistent with subsection A. of this section;*

**King County Code (KCC) 21A.32.065.B requires a Special Use Permit be required for expansions of a nonconformance within a development previously authorized by an Unclassified Use Permit (if the expansions are not consistent with subsection A of the KCC 21A.32.065<sup>1</sup>). The current updated master plan includes projects, previously contained within the existing Master Plan, but which exceed 10% increase in building square footage, impervious surface area, and parking – thus requiring the WA State Patrol to obtain a Special Use Permit from King County.**

*C. A conditional use permit shall be required for expansions of a nonconformance:*

- 1. Within a development authorized by an existing planned unit development approval; or*
- 2. Not consistent with the provisions of subsections A. and B. of this section; and*

***This section of the KCC does not appear to be applicable to the project as proposed phased projects are expansions of existing facilities previously approved under the County's Unclassified Use Permit process – not a PUD.***

The Special Use Permit would be granted by the County to locate the FTA, subject to conditions placed on the proposed use to ensure compatibility with adjacent land uses. The Special Use Permit for the site is a sort of umbrella permit, obtaining this permit from the County will require the State to demonstrate the ability to comply

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<sup>1</sup> A. The department may review and approve, pursuant to the code compliance process of K.C.C. 21A.42.030, an expansion of a nonconformance only if: (1). The expansion conforms to all other provisions of this title, except that the extent of the project-wide nonconformance in each of the following may be increased up to ten percent: a. building square footage, b. impervious surface, c. parking, or d. building height; and (2). No subsequent expansion

with utility and service purveyors (i.e. water, sewer, etc.) conditions of service approval. The special use permit process is intended to assure a proposal is reasonably compatible with adjacent and nearby properties. The special use permit process, facilitated by the King County DDES, requires a public hearing before a Hearing Examiner and ordinance adoption by the King County Council

***Criteria for King County SUP***

KCC 21A.44.050 indicates A Special Use Permit is granted by the county only if the applicant demonstrates:

- I. The characteristics of the special use will not be unreasonably incompatible with the types of uses permitted in surrounding areas;
- II. The special use will not materially endanger the health, safety and welfare of the community;
- III. The special use is such that pedestrian and vehicular traffic associated with the use will not be hazardous or conflict with existing and anticipated traffic in the neighborhood;
- IV. The special use will be supported by adequate public facilities or services and will not adversely affect public services to the surrounding area or conditions can be established to mitigate adverse impacts;
- V. The location, size and height of buildings, structures, walls and fences, and screening vegetation for the special use shall not hinder or discourage the appropriate development or use of neighboring properties; and
- VI. The special use is not in conflict with the policies of the King County Comprehensive Plan or the basic purposes of this title.

***Filing and Application***

A SUP application must be filed in person at the DDES Permit Center. An appointment with Permit Center staff is required to file (call 206-296-6797 to schedule). DDES staff has twenty-eight (28) days from the date of filing to determine whether or not the application is complete.

***Notice of Application***

Fourteen (14) days after DDES staff determines that the application is complete, a public notice is issued:

- I. DDES sends out a notice of application to property owners within a 500-foot radius of the site (if the area is rural or lightly populated, the notice must be mailed to at least 20 different property owners; or, in other appropriate causes, the division may determine it is necessary to notify additional property owners).
- II. A notice of the application will be published by DDES in the official county newspaper and another newspaper of general circulation.
- III. The applicant is required to install a notice board, in a conspicuous place on the property throughout the permit process so that it is visible to people passing by the property. Additional notice boards may be required as determined by DDES. Cost of the board is the applicant's responsibility. DDES sends written instructions regarding the specific requirements for the notice board.

- IV. Notice of the application is also provided to anyone who writes to the department requesting the SUP request.

### **SEPA**

The Fire Service Training Center is subject to the procedural and substantive requirements of SEPA (per WAC 197-11 and K.C.C. 20.44). Prior to the public hearing on the SUP, a SEPA threshold determination will be made (which is appealable to the Hearing Examiner);

- I. When an agency (such as the WA State Patrol) initiates a proposal, it is the lead agency for that proposal. If two or more agencies share in the implementation of a proposal (such as King County), the agencies shall by agreement determine which agency will be the lead agency.
- II. If a project may have a probable significant adverse impact, a Determination of Significance (DS) is issued, and an Environmental Impact Statement (EIS) is required.
- III. If the project will not have a probable significant adverse impact, a Determination of Non-Significance (DNS) is issued.
- IV. During the threshold determination process, DDES staff may identify measures that can be taken to reduce impacts to the environment. If the proposal is then clarified, changed, or conditioned to include these measures, the responsible official may issue a Mitigated Determination of Non-Significance (MDNS). Mitigation measures become conditions of the permit and are implemented during construction and/or before final approval.

If the DDES determination of non-significance (DNS) or mitigated determination of non-significance (MDNS) is appealed, the SEPA appeal hearing is combined (heard at the same time) with the SUP hearing.

### ***How SEPA Threshold Determinations are Made***

A threshold determination is based on the environmental checklist that has been completed for the project, together with other documents, reports, or maps submitted by the applicant. In addition, the DDES Planner will review other information available through the County, such as critical areas and any EISs prepared for neighboring properties.

Early in the review process, the DDES Planner will decide which elements of the proposal pose potential significant adverse impacts and determine which agencies have the appropriate technical expertise to comment on these issues. King County agencies that are frequently contacted for comment include the DNRP Water and Land Resources Division (water quality, flooding, and drainage issues), the Health Department (public health and safety issues), and the Roads Division (traffic-level of service and traffic safety). If appropriate, other agencies will also be contacted. Such agencies commonly include the Puget Sound Air Pollution Control Agency (PSAPCA), the Washington State Departments of Fish and Wildlife, and Ecology, and any affected Native American Tribes.

The DDES Planner may request additional information and studies from the applicant. Commonly requested studies include wildlife use and habitat, stream characteristics, wetland delineation and mitigation, water quality, and noise. When there is enough information to warrant evaluating a proposal's environmental impacts, a threshold determination is made.

### ***Public Hearing***

A public hearing will be held by the King County Hearing Examiner at which all evidence supporting or opposing the proposal will be heard. DDES will issue a written report and recommendation 14 days prior to the scheduled hearing date. If a SEPA appeal is filed, the SEPA appeal hearing will be heard at the same time as the SUP hearing.

If other applications, such as a Shoreline Substantial Development Permit, are required in conjunction with the SUP, they may be scheduled for the same hearing. The Hearing Examiner will render a written recommendation to the King County Council for final action. This recommendation is appealable to the King County Council.

### ***Appeal***

Affected parties may appeal the Hearing Examiner's recommendation on the SUP to the King County Council. **The Examiner's report will include information on the method of appeal available and the time limit within which an appeal must be filed.** In a conversation with the King County Hearing Examiner's Office, it was relayed to us that a response to an appeal is generally given by the Hearing Examiner within 90 days, but if there are legitimate reasons, they may take up to 120 days upon the request of one of the parties involved in the appeal.

### ***Final Approval***

SUP approval or denial is final once King County Council takes action in form of passing an ordinance and the process for ordinance adoption is completed. An appeal of the Council's decision may be filed with the King County Superior Court.

### ***SUP Submittal Requirements***

Unless told otherwise by KC DDES, the following listed items are required to be submitted at the time of application:

- I. Permit Application(s)
- II. Legal Description
- III. Assessor's Maps
- IV. SUP Development Plans, which includes
  - a. Existing Zoning
  - b. Acreage
  - c. Sewage disposal and sewer district
  - d. Source of water
  - e. Fire district
  - f. School district
  - g. Legal description
  - h. Written statement of general purpose of the project
  - i. Explanation of all features pertaining to uses and other pertinent matters not readily identifiable in map form
  - j. Vicinity maps
- V. Reduced Site Plan

- VI. Water Availability Certificate
  - a. Preliminary approval for the creation of a new water system in accordance with the provisions of the applicable coordinated water system plan for connection with a private well from the Seattle-King County Department of Health;
  - b. The Certificate of Water Availability for the site must be given to the appropriate existing water purveyor to complete and the returned with the application.
  
- VII. Sewer Availability Certificate
  - a. Preliminary approval for individual or community on-site sewage disposal systems from the Seattle King County Department of Public Health must be submitted with this application.
  
- VIII. SEPA Checklist – this will require studies be prepared regarding impacts of the proposed development, which include:
  - a. GeoTechnical Report
  - b. Air Quality Analysis
  - c. Surface and Groundwater Analysis
  - d. Habitat Report
  - e. Hazardous Materials Analysis
  - f. Noise Analysis
  - g. Historical and Archeological Report (*data from previous EIS was limited to the area of the proposed access road, while useful data can be extracted from the 1981 EIS document, additional analysis will likely be required*)
  - h. Transportation Memo
  
- IX. Level One Drainage Analysis
- X. Conceptual Drainage Plan
- XI. Fire District
- XII. Proof of Legal Lot Status
- XIII. Certificate/Affidavit of Critical Areas Compliance
- XIV. Transportation Certificate Concurrency (KCC 14.70)
- XV. Applicant Status Form
- XVI. Copies of variance decisions required per KCC 21A
- XVII. List of other pending permits
- XVIII. Fees
- XIX. Other special studies as requested by KC DDES

## Other Permits

### *State*

- I. Hydraulic Project Approval (WDFW): ***A Hydraulic Project Approval is required when any construction activity in or near state waters is proposed, it is assumed that the project will not impact a water of the State, therefore no HPA permit is assumed to be required.*** Previous FTA development efforts required an HPA permit to develop the bridge crossing. State waters include all marine waters and fresh waters of the state. The purpose of a hydraulics project approval permit, issued by Washington State Department of Fish and Wildlife (WDFW), is to see that construction activities that affect the bed or flow of state waters is done in a manner that prevents damage to the state's fish and shellfish and their habitat.
- II. Forest Practices Approval (DNR): **A forest practice permit is required whenever more than 5,000 board feet of merchantable timber is harvested from an area or property.** Forest practices fall into four classifications (see forest practices for detailed information). Class I and II forest practices on properties located outside of the Urban Growth Area and Class III and IV-Special forest practices are permitted through the Washington State Department of Natural Resources (DNR) and do not require a clearing permit from King County DDES.
- III. Water Right Permit (DOE)<sup>2</sup>:
  - a. Surface water certificate, S1-23750C, was granted in the early 1980's to cover use of water for the facility in the amount of 0.06 cubic feet per second (cfs) and 12 acre-feet per year
  - b. The site's current water resources are allowed under an existing water rights permit granted in November 1986. This permit allows the removal of 0.06 cfs maximum (26.93 gpm), not to exceed 12 acre feet per year (3.91 million gallons); this was a surface water right. The April 30, 1999 Domestic Water System, Well Test Report documented that the current sources and water system had not met standards in the past; the report goes on to say, some additions to the treatment process are underway to correct the deficiencies.
  - c. In 1997 the Washington State Patrol submitted a ground water application, G1-27781, for domestic use and fire training process water. Ecology advised WSP it would be difficult to approve a new ground water right in the area because ground water appropriations that would capture water destined to contribute to the base flow of the Snoqualmie River would be subject to the same restrictions as the regulated surface waters subject to instream flows in the Snohomish River Drainage Basin.

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<sup>2</sup> All information regarding the water rights at the FTA site contained within this memo was extracted from a WA DOE staff report prepared in response to an application to change existing water rights at the project site. This information was forwarded to Huitt-Zollars by Jerry Liszak, Technical Unit Supervisor in the DOE's Water Resources Program.

- d. However, the WSP indicated they would be willing to relinquish a portion of their surface water right equivalent to the amount approved in the ground water right in exchange as a water budget neutral trade. Accordingly, ground water right Permit G1-27781P was issued for 27 gpm and 9.6 acre-feet per year. The remaining 2.4 acre-feet was retained by surface water right S1-23750C and used specifically for fire training.
- e. Domestic use and a portion of the fire training process water is supplied by a well and the remaining fire training process water has been supplied from a spring, a stream, and surface water collection and retention at the site. The potable domestic water system feeds two 100,000 gallon concrete storage tanks. The fire training process water is stored in three ponds on site with a total combined capacity of four million gallons. Water from the training activities is collected and piped through an oil/water separator and then to sedimentation pond #1 from which water flows to ponds #2 and #3. In this way much of the process is recycled. There is a stormwater retention pond on the site as well.
- f. The fire training facility is operating under existing ground water permit G1-27781P for 27 gpm and 9.6 acre-feet per year and surface water Certificate S1-23750C for 2.4 acre-feet per year. The WSP submitted the current application to exchange the remainder of their surface water certificate to a ground water right. ***If approved, the new ground water right will be combined with the existing ground water permit and the source will be from the same well. The full quantity of the combined water rights for the well will total 27 gpm and 12 acre-feet per year.***
- g. The 2003 Municipal Water Law (SSESSHB 1338) clarified municipal water rights and supersedes earlier statements relating to Municipal Water Law which amended the Water Code (Chapter 90.03 RCW). Ecology developed Municipal Water Law Policy 2030 to clarify its approach in interpreting and implementing the law. This interpretation includes non-community water systems with an average of 25 or more non-residential people living for more than 60 days per year as a municipal water system. Accordingly the WSP Fire Training Academy water rights are now municipal rights.
- h. The WSP submitted meter data which indicates the facility may be exceeding the annual quantities authorized by their existing water rights. They believe it will be easier to control the operations from the ground water source alone and keep a tighter rein on use. They will be looking at conservation efficiencies to try and live within the allocated quantity. If they find they cannot live within the allocated quantity, then they will submit a new application with a mitigation proposal to justify approval of such a request.

	Existing Permit	Ground Water Withdrawal Allowed	Surface Withdrawal Allowed
Existing Permit	G1-27781P	9.6 acre-feet per year and 27 gpm	NA
Existing Permit	Certificate S1-23750C	NA	2.4 acre-feet per year
<b>TOTAL</b>			<b>27 GPM 12 Acre Feet Per Year</b>
Proposed Permit	Application in Process: Assumed to be Permit No. CS1-23750ALCWRIS	27 gpm and 12 acre-feet per year	NA
<b>TOTAL</b>		<b>27 GPM - 12 Acre Feet Per Year</b>	NA

Assuming the WA State Patrol’s current water rights change application that is pending with the Department of Ecology is approved per the DOE’s recommendation, there will be no net gain or loss in the amount of water accessible to the WA State Patrol for their operations. In a discussion with Jerry Liszak, Technical Unit Supervisor with the DOE (11/13/12), he indicated the application would likely be approved before the last week in November, but their approval can be appealed by the Muckleshoot Tribe.

- IV. Reclaimed Water Use Permit ST0045506: Until 2009, domestic sewage was treated in a large on-site system and disposed in a drainfield at the south end of the site. In 2009, the FTA constructed a 40-person dormitory along with the MBR and UV disinfection facility to treat domestic waste to Class A reclaimed water standards. At that time FTA disconnected the large on-site sewage system and drainfield.
- a. The FTA previously replaced their large on-site septic tank and drain field with a membrane bioreactor and ultraviolet disinfection system. This system treats domestic wastewater to Class A reclaimed water standards.
  - b. The facility uses reclaimed water to supplement water used for fire training exercises. The reclaimed water is comingled with stormwater and is either evaporated during fire training exercises or treated and returned to the holding pond for future use.
  - c. During large storm events, the comingled stormwater, reclaimed water, and treated fire-fighting water flows through a series of ponds before infiltrating to ground and/or discharging to an unnamed creek tributary to the South Fork Snoqualmie River. This discharge is covered under an NPDES permit (WA003183-6) and is subject to additional restrictions.
  - d. **The facility produces up to 23,610 gallons per day of reclaimed water using membrane bioreactor (MBR) technology with biological nutrient removal for nitrogen. WSP owns the reclaimed water treatment facility, and RCW 90.46.120 gives the owner exclusive right to any reclaimed water generated. Use and distribution of reclaimed water is exempt from the water right permit requirements of RCW 90.03.250 and 90.44.060.**

- V. NPDES permit (WA003183-6): The discharge of pollutants into the state's surface waters is regulated through National Pollutant Discharge Elimination System (NPDES) permits. Ecology issued the NPDES permit under authority delegated by the EPA; an NPDES permit will be required to facilitate fire training activities at the site.

**WA STATE PATROL FTA MASTER PLAN REQUIRED STUDIES AND ANALYSIS WITH PLANNING LEVEL BUDGET**

STUDY/ANALYSIS	DESCRIPTION	BUDGET RANGE
Water Use/Demand Study: Water Availability Certificate – <i>to be submitted with the SUP application</i>	Water Availability Certificate – <i>to be submitted with the SUP application</i> Water Rights Permits and Supporting Documentation demonstrating that the Water Rights will meet water demands of Master Plan. Water Rights issues are currently being resolved by WSP. A Water Use/Demand study will be support Water Rights and Master Planning needs.	\$30,000 to \$50,000
Sewer Capacity/Sewer Availability Certificate– <i>to be submitted with the SUP application</i>	Sewer Capacity/Sewer Availability Certificate requirements will need to be met with Permits and Capacity documentation used in the design and development of the on-site MBR. Informal discussions with on-site staff have indicated ample capacity to accommodate future phases of the Master Plan. System has not been evaluated as part of this report.	\$2,500 to \$5,000
Level One Drainage Analysis– – <i>to be submitted with the SUP application</i>	The level of downstream analysis required depends on specific site and downstream conditions; upon review of the Level 1 analysis, DDES may require a Level 2/3 analysis. The analysis is to be a qualitative survey of each downstream system and is the first step in identifying flooding or erosion problems. The Level 1 analysis also identifies water quality problems. Each Level 1 analysis is composed of four tasks: (1) defines study area, (2) review available info, (3) field inspection, (4) describe drainage system and its existing and predicted drainage and water quality problems.	\$8,000 to \$15,000
Conceptual Drainage Plan– – <i>to be submitted with the SUP application</i>	Conceptual drainage plan (stamped and signed by PE) must show the location and type of the following: (1) existing and proposed flow control facilities, (2) existing and proposed water quality facilities, (3) existing and proposed conveyance systems.	\$25,000 to \$30,000
<b>Other special studies as requested by KC DDES– <i>to be submitted with the SUP application</i></b>	<b>In reviewing the application for completeness, the County will have the opportunity to request further information/analysis to support the WA State Patrol’s Master Plan</b>	
GeoTechnical Report – <i>information from this analysis to be incorporated into the SEPA Checklist</i>	GeoTech report, should at minimum, provide a general description of the site, types of soils, indications or history of unstable soils, approximate quantities of fill/grade, potential for erosion and control methods during construction and operation of the facility.	\$40,000 to \$60,000

STUDY/ANALYSIS	DESCRIPTION	BUDGET RANGE
Air Quality Analysis - <i>information from this analysis to be incorporated into the SEPA Checklist</i>	The purpose of the air quality evaluation is to assess the impact of emissions resulting from proposed operations at the FTA. The evaluation will be included as an appendix to the SEPA checklist and can be used in preparing documentation for Air Operating Permits.	\$12,000 to \$20,000
Habitat Report - <i>information from this analysis to be incorporated into the SEPA Checklist</i>	Prepare a critical habitats and critical species assessment for the site, this documentation will be used to complete the SEPA checklist elements that requires information include vegetation, wetlands and critical areas, and animals. Any information on flagged wetlands contained within the analysis will be good for 5 years. Assuming all work is on site and not wetlands or sensitive areas are present.	\$3,500-to \$5,000
Hazardous Materials Memo - <i>information from this analysis to be incorporated into the SEPA Checklist</i>	Report should document environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of proposal. Special emergency services that might be required should be discussed along with proposed measures to reduce or control environmental health hazards, if any. Assume no on-site explorations are required, record search only.	\$10,000 to \$15,000
Noise Analysis - <i>information from this analysis to be incorporated into the SEPA Checklist</i>	Report should discuss what types of noise exist in the area which may affect the project, what types of noise will be created by or associated with the project (construction and operation), and discuss measures to reduce or control noise impacts.	\$15,000 to \$20,000
Historical and Archeological Report - <i>information from this analysis to be incorporated into the SEPA Checklist</i>	An archaeological survey will be prepared. Places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site will need to be identified and documented if present. Landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site shall be described, along with proposed measures to reduce or control impacts, if any. The report will be submitted to the Dept. of Archaeology and Historic Preservation and attached to the SEPA checklist as an appendix. Assumes no on-site excavations or test plots are required, record search only.	\$15,000 to \$20,000
Transportation Memo - <i>information from this analysis to be incorporated into the SEPA Checklist</i>	A transportation memo should be prepared discussing any new roads and street improvements, trips per day (vehicle trips to or from the project site during a given 24-hour weekday), provide information regarding peak hour trips generated by the project.	\$15,000 to \$25,000

**Other Permits that likely Required Following an Approval of the Master Plan:**

Scope, Schedule, and Budget are dependent upon final phasing and development plans.

- Grading Permit
- Building Permit
- Stormwater Pollution Prevention Plan – For both operations and construction; will be required as part of future Grading Permit; anticipated budget range of \$100,000 to \$200,000.

**WASHINGTON STATE PATROL**

**FIRE TRAINING ACADEMY**

WSP FIRE TRAINING ACADEMY  
 MASTERPLAN COST ESTIMATE  
 6/19/2012

**SUMMARY**

Tovanit Hart Architects  
 Matson Associates Cost Consultants

DESCRIPTION	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	TOTAL
Construction Funding Dates	2015 to 2017	2017 to 2019	2019 to 2021	2021 to 2023	2023 to 2025	2025 to 2027	
Pre-Design Dates	2011	2013	2015	2017	2019	2021	
Design Dates	2015	2015	2017	2019	2021	2023	
<b>CONSTRUCTION COSTS</b>							
<i>GSF</i>	33,300	58,763	11,700	1,750	1,200	10,200	116,913
Building Costs	\$5,857,500	\$9,135,120	\$1,558,500	\$0	\$0	\$3,560,000	\$20,111,120
Sitework Improvements	\$700,894	\$876,703	\$1,529,968	\$167,770	\$962,606	\$379,199	\$4,617,140
Utilities including electrical	\$1,365,520	\$1,297,550	\$1,313,100	\$192,100	\$763,950	\$802,400	\$5,734,620
Cityscape Upgrades	\$0	\$1,352,000	\$0	\$0	\$0	\$0	\$1,352,000
Marine Upgrades	\$0	\$0	\$2,503,600	\$0	\$0	\$0	\$2,503,600
Transportation Upgrades (FIO)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Hazardous Materials Upgrades	\$0	\$0	\$0	\$1,356,250	\$0	\$0	\$1,356,250
Highway Transportation	\$0	\$0	\$0	\$0	\$1,937,000	\$0	\$1,937,000
<b>TOTAL RAW COST</b>	<b>\$7,923,914</b>	<b>\$12,661,373</b>	<b>\$6,905,168</b>	<b>\$1,716,120</b>	<b>\$3,663,556</b>	<b>\$4,741,599</b>	<b>\$37,611,730</b>
General Contractors Mark-ups @ 18%	\$1,426,305	\$2,279,047	\$1,242,930	\$308,902	\$659,440	\$853,488	\$6,770,111
Design Contingency @ 15%	\$1,402,533	\$2,241,063	\$1,222,215	\$303,753	\$648,449	\$839,263	\$6,657,276
<b>TOTAL COST AT TODAY'S BID</b>	<b>\$10,752,751</b>	<b>\$17,181,483</b>	<b>\$9,370,313</b>	<b>\$2,328,775</b>	<b>\$4,971,445</b>	<b>\$6,434,350</b>	<b>\$51,039,118</b>
Escalate to construction mid-point at 3%/yr	\$1,085,194	\$2,736,565	\$2,153,990	\$709,748	\$1,910,198	\$3,014,710	\$11,610,405
Change Orders @ 5%	\$537,638	\$859,074	\$468,516	\$116,439	\$248,572	\$321,717	\$2,551,956
Sales Tax	\$1,064,300	\$1,786,833	\$1,031,382	\$271,327	\$613,199	\$840,287	\$5,607,327
<b>TOTAL ESCALATED CONSTRUCTION COSTS</b>	<b>\$13,439,883</b>	<b>\$22,563,955</b>	<b>\$13,024,201</b>	<b>\$3,426,288</b>	<b>\$7,743,414</b>	<b>\$10,611,064</b>	<b>\$70,808,805</b>
<b>PROJECT COSTS</b>							
Furniture, Fixtures, Equipment Allowance	\$302,397	\$3,384,593	\$651,210	\$342,629	\$387,171	\$530,553	\$5,598,553
Sales Tax on FF&E	\$26,006	\$291,075	\$56,004	\$29,466	\$33,297	\$45,628	\$481,476
A/E/Fees @ 11.5%	\$1,545,587	\$2,594,855	\$1,497,783	\$394,023	\$890,493	\$1,220,272	\$8,143,013
Project Management @ 5%	\$671,994	\$1,128,198	\$651,210	\$171,314	\$387,171	\$530,553	\$3,540,440
Mitigation - NIC	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>TOTAL PROJECT COSTS</b>	<b>\$2,545,984</b>	<b>\$7,398,721</b>	<b>\$2,856,207</b>	<b>\$937,433</b>	<b>\$1,698,131</b>	<b>\$2,327,006</b>	<b>\$17,763,482</b>
<b>TOTAL CONSTRUCTION + PROJECT COSTS</b>	<b>\$15,985,867</b>	<b>\$29,962,675</b>	<b>\$15,880,408</b>	<b>\$4,363,721</b>	<b>\$9,441,545</b>	<b>\$12,938,070</b>	<b>\$88,572,287</b>



# WASHINGTON STATE PATROL

## FIRE TRAINING ACADEMY

### 6.2.1 Cost Details

WSP FIRE TRAINING ACADEMY  
June 19, 2012

Tovanit Hart Architects  
Matson Associates Cost Consultants

#### CONSTRUCTION COSTS DETAIL

DESCRIPTION	QUANITIY	UNIT	COST	SUB	TOTAL
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#### PHASE ONE

##### Burn Building Replacement

Buildings:					5,857,500
15 Single Family Residential Burn Structure	2,400	GSF	180.00	432,000	
12 Multi-Family Residential Burn Structure	3,200	GSF	180.00	576,000	
9 Commercial High Rise Burn Structure	17,500	GSF	180.00	3,150,000	
8 Classroom Rehab Building	2,250	GSF	190.00	427,500	
13 Maintenance and Storage Building	6,250	GSF	160.00	1,000,000	
16 New Pallet Storage Building	1,700	GSF	160.00	272,000	
Sitework					700,894
Site prep, demo, new, earthwork	1	LS		180,000	
ACP Parking/Paving	1	LS		309,765	
Permeable Ballast	1	LS		161,129	
Misc feature required by civil	1	LS		50,000	
Utilities					1,365,520
Strom drainage system	1	LS		579,800	
Domestic water system	1	LS		37,300	
Fire protection system	1	LS		70,400	
Training water system	1	LS		58,200	
Sanitary sewer system	1	LS		121,400	
Site Electrical					
UG Feeder - single family burn structure	1	LS		65,000	
UG Feeder - multi family burn structure	1	LS		44,200	
UG Feeder - Commerical burn struture	1	LS		59,800	
UG Feeder - Class rehab family	1	LS		71,500	
UG Feeder - Maintenance building	1	LS		36,400	
UG Feeder - Other building	1	LS		61,100	
Site lighting	1	LS		10,000	
Site Comm - Infracture, vaults & duct ban	1	LS		150,420	

<b>Total Raw cost</b>				7,923,914	7,923,914
Gen Contractors Mark-ups (Gen Conditions & OH&P)		18%			1,426,305
Design Contingency		15%			1,402,533
<b>TOTAL COST AT TODAY'S BID</b>					<b>10,752,751</b>



**WASHINGTON STATE PATROL**  
**FIRE TRAINING ACADEMY**

WSP FIRE TRAINING ACADEMY  
 June 19, 2012

Tovanit Hart Architects  
 Matson Associates Cost Consultants

CONSTRUCTION COSTS DETAIL					
DESCRIPTION	QUANTITY	UNIT	COST	SUB	TOTAL
<b>PHASE TWO</b>					
<b>Combined Administrative/Educational Building</b>					<b>9,135,120</b>
#7 Multi-Services Building	38063	GSF	240.00	9,135,120	
Administration	3770	NSF		included above	
Dining	4880	NSF		included above	
Education	10850	NSF		included above	
Hotel - Single Occupant Room	10950	NSF		included above	
Sitework:					<b>876,703</b>
#11 Car Fire in Parking Lot	1	LS		144,000	
Entry Signage - allow	1	LS		10,000	
Site prep, demo, new, earthwork	1	LS		207,500	
Demo covered structure	1	EA	800	800	
Demo 1 story wd framed office bldgs	7	EA	3000	21,000	
Demo office trailers		NIC		-	
Demo maintenance shop	1	EA	10000	10,000	
Asphalt paving - parking (5,474 SY)	1	LS		164,221	
Asphalt paving - other (1,581 SY)	1	LS		63,245	
Concrete sidewalk (1,999 SY)	1	LS		99,937	
Misc feature required by civil	1	LS		50,000	
Fence (Chain Link Fence)		NIC		-	
Entrance Gates - allow	2	EA	3,000.00	6,000	
Landscaping at around the bldg #7 - allow	1	LS		50,000	
Landscaping at parking lot - allow	1	LS		50,000	
Utilities:					<b>1,297,550</b>
Civil/Mechanical:					
Storm drainage system	1	LS		290,800	
Erosion control	1	LS		40,000	
Domestic water system	1	LS		2,000	
Fire protection system	1	LS		130,400	
Sanitary sewer system	1	LS		7,000	
Electrical:					
UG Feeder ext'n - Admin/education buildi	1	LS		15,000	
UG Feeder - other building	1	LS		71,500	
UG Feeder - Refeed existing dorm	1	LS		13,000	
Selective demo/rework - (E) outdoor elec Eqpt	1	LS		15,000	
Parking lighting	1	LS		45,000	
Replace standby generator - pumphouse	1	LS		600,000	
Site Comm - Infracture, vaults & duct ban	1	LS		67,850	
<b>Cityscape Upgrades</b>					<b>1,352,000</b>
Single Family Residential Arson Investigation	2,100	GSF	220.00	462,000	
Multi-Story Arson Investigation	4,200	GSF	200.00	840,000	
#10 Existing Burn Tower USAR Modifications	14,400	GSF	3.47	50,000	
Sitework				included in above utilities & sitework	
Utilities				included in above utilities & sitework	
<b>Total Raw cost</b>				<b>12,661,373</b>	<b>12,661,373</b>
Gen Contractors Mark-ups (Gen Conditions & OH&P)			18%		2,279,047
Design Contingency			15%		2,241,063
<b>TOTAL COST AT TODAY'S BID</b>					<b>17,181,483</b>



# WASHINGTON STATE PATROL

## FIRE TRAINING ACADEMY

WSP FIRE TRAINING ACADEMY  
June 19, 2012

Tovanit Hart Architects  
Matson Associates Cost Consultants

### CONSTRUCTION COSTS DETAIL

DESCRIPTION	QUANTITY	UNIT	COST	SUB	TOTAL
<b>PHASE THREE</b>					
<b>ARFF Upgrades</b>					<b>1,558,500.0</b>
Fuel Delivery System		See FF&E		-	
Airport Lighting Signage and markers		See FF&E		-	
Advanced Simulator ARFF HRET		See FF&E		-	
Vehicle Exhaust System	3	EA	8,000.00	24,000	
Mock Hanger, Storage, Toilets	7,200	GSF	160.00	1,152,000	3 sided
Existing Building Improvements	4,500	GSF	85.00	382,500	
Sitework:					<b>1,529,968.0</b>
Site prep, demo, new, earthwork	1	LS		280,000	
Asphalt paving (29,111 SY)	1	LS		1,219,968	
Misc feature required by civil	1	LS		30,000	
Utilities:					<b>1,313,100.0</b>
Storm drainage system	1	LS		409,500	
Erosion control	1	LS		50,000	
Domestic water system	1	LS		60,000	
Fire protection system	1	LS		174,400	
Training water system	1	LS		133,200	
Sanitary sewer system	1	LS		111,000	
Site Electrical:					
UG Feeder - ARFF Storage building	1	LS		22,100	
UG Feeder - ARFF Classroom building	1	LS		11,050	
New standby generator - ARFF Facility	1	LS		225,000	
ARFF outdoor lighting	1	LS		15,000	
UG Feeder rework - Ship Trainer	1	LS		10,000	
UG Feeder - Rail Trainer	1	LS		58,500	
Site Comm - Infrastructure, vaults & duct ban	1	LS		33,350	
<b>Marine Upgrades</b>					<b>2,503,600.0</b>
Shallow Water Control Pond (three feet deep)	2900	XWA	60.00	174,000.00	
Deep Water Training Area (eight feet deep)	4000	XWA	60.00	240,000.00	
Marina and Dock Prop	720	SF	55.00	39,600.00	
Swift water feature/River	1	LS		500,000	
#48 Support Buildings	1	LS		100,000	
#18 Exist Ship Trainer	1	LS		1,200,000	
#19 Marina Prop upgrades	1	LS		250,000	
<b>Transportation Upgrades</b>					-
Rail Crossing		FIO			
Rail Car Accident Area		FIO			
Cargo Container Area		FIO			
<b>Total Raw cost</b>				<b>6,905,168</b>	<b>6,905,168</b>
Gen Contractors Mark-ups (Gen Conditions & OH&P)		18%			1,242,930
Design Contingency		15%			1,222,215
<b>TOTAL COST AT TODAY'S BID</b>					<b>\$ 9,370,313</b>



# WASHINGTON STATE PATROL

## FIRE TRAINING ACADEMY

WSP FIRE TRAINING ACADEMY  
June 19, 2012

Tovani Hart Architects  
Matson Associates Cost Consultants

CONSTRUCTION COSTS DETAIL					
DESCRIPTION	QUANTITY	UNIT	COST	SUB	TOTAL
<b>PHASE FOUR</b>					
<b>Hazardous Materials Upgrades</b>					<b>1,356,250</b>
#32 <i>Equipment for Haz mat Building includes:</i>					750,000
Loading Dock Prop		included			
Warehouse Props		included			
Acid Bath		included			
Bottle/Storage Rack Prop		included			
Extend Rail Line -Create Crossing		FIO			
#33 Expand Confined Spaces Prop	1	LS			150,000
Remote Classroom	1,750	GSF	175.00		306,250
Existing Building Improvements - Incl FFE	1	LS	150,000		150,000
Sitework					<b>167,770</b>
Site prep, demo, new, earthwork	1	LS			19,500
Asphalt paving (1,457 SY)	1	LS			58,270
Misc feature required by civil	1	LS			10,000
Arrival Monument	1	LS			80,000
Utilities					<b>192,100</b>
Civil/Mechanical:					
Storm drainage system	1	LS			20,000
Erosion control	1	LS			10,000
Domestic water system		none			-
Fire protection system	1	LS			33,200
Training water system		none			-
Sanitary sewer system		none			-
Site Electrical:					
UG Feeder - HazMat building (Existing)		none			-
UG Feeder - HazMat classroom building	1	LS			22,750
UG Feeder - Confined space trainer	1	LS			13,000
Site Comm - Infracture, vaults & duct ban	1	LS			93,150
<b>Total Raw cost</b>					<b>1,716,120</b>
Gen Contractors Mark-ups (Gen Conditions & OH&P)			18%		308,902
Design Contingency			15%		303,753
<b>TOTAL COST AT TODAY'S BID</b>					<b>\$ 2,328,775</b>



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# WASHINGTON STATE PATROL

## FIRE TRAINING ACADEMY

WSP FIRE TRAINING ACADEMY  
June 19, 2012

Tovanit Hart Architects  
Matson Associates Cost Consultants

CONSTRUCTION COSTS DETAIL					
DESCRIPTION	QUANTITY	UNIT	COST	SUB	TOTAL
<b>PHASE FIVE</b>					
<b>Highway and Transportation</b>					<b>1,937,000</b>
Tanker Spill		FIO			
Remote Classroom	1200	GSF	175.00		210,000
#29 Overpass	450	LF	2,000.00		900,000
Rail Line Rural Accident		FIO			
#3 Wildland Interface					500,000
#21 Running Fuel Spill Prop					233,000
#27 Overtaken tanker prop					94,000
Site work					<b>962,606</b>
Site prep, demo, new, earthwork	1	LS			197,500
All other asphalt paving (6,835 SY)	1	LS			273,404
5 Lane Highway Prop	1	LS	441,702		441,702
Misc feature required by civil	1	LS			50,000
Utilities					<b>763,950</b>
Civil/Mechanical:					
Strom drainage system	1	LS			303,200
Erosion control	1	LS			80,000
Domestic water system	1	LS			29,600
Fire protection system	1	LS			34,200
Training water system	1	LS			103,400
Sanitary sewer system	1	LS			38,400
Site Electrical					
UG Feeder - Highway & transportation tra	1	LS			42,250
UG Feeder - Highway & trans classroom	1	LS			45,500
Site Comm - Infracture, vaults & duct ban	1	LS			87,400
<b>Total Raw cost</b>					<b>3,663,556</b>
Gen Contractors Mark-ups (Gen Conditions & OH&P)			18%		659,440
Design Contingency			15%		648,449
<b>TOTAL COST AT TODAY'S BID</b>					<b>\$ 4,971,445</b>



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# WASHINGTON STATE PATROL

## FIRE TRAINING ACADEMY

WSP FIRE TRAINING ACADEMY  
June 19, 2012

Tovanit Hart Architects  
Matson Associates Cost Consultants

CONSTRUCTION COSTS DETAIL					
DESCRIPTION	QUANTITY	UNIT	COST	SUB	TOTAL
<b>PHASE SIX</b>					
<b>Industry and Manufacturing</b>					<b>3,560,000</b>
Refinery Prop/new industrial	1	LS		1,000,000	
#24 Tank Farm prop	1	LS		1,000,000	
Rail Line Extension		FIO			
Remote Classroom	1,200	GSF	175.00	210,000	
#23 Manufacturing Structure/storage	9,000	GSF	150.00	1,350,000	
Sitework:					<b>379,199</b>
Site prep, demo, new, earthwork	1	LS		140,000	
Asphalt paving (2,827 SY)	1	LS		113,087	
Permeable Ballast (1,852 cy)	1	LS		111,112	
Misc feature required by civil	1	LS		15,000	
Utilities:					<b>802,400</b>
Storm drainage system	1	LS		205,300	
Erosion control	1	LS		25,000	
Domestic water system	1	LS		44,100	
Fire protection system	1	LS		64,400	
Training water system	1	LS		66,600	
Sanitary sewer system	1	LS		28,800	
Site Electrical					
UG Feeder - Manufacturing structure	1	LS		45,000	
UG Feeder - Industry & Manuf. Classroom	1	LS		58,500	
UG Feeder - Refinery prop	1	LS		117,000	
UG Feeder - Tank farm prop	1	LS		104,000	
Site Comm - Infracture, vaults & duct ban	1	LS		43,700	
<b>Total Raw cost</b>				<b>4,741,599</b>	<b>4,741,599</b>
Gen Contractors Mark-ups (Gen Conditions & OH&P)			18%		853,488
Design Contingency			15%		839,263
<b>TOTAL COST AT TODAY'S BID</b>					<b>\$ 6,434,350</b>



TOVANI HART



# WASHINGTON STATE PATROL

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## FIRE TRAINING ACADEMY

### 6.3 Documents Referenced

The following list of documents, included by reference, were used in the preparation of this plan.

#### Reports:

Fire Service Training Center Draft Environmental Impact Statement  
*Sept. 1981 - Dames & Moore*

Fire Service Training Center Final Environmental Impact Statement  
*Nov. 1981 - Dames & Moore*

Predesign Study/Master Plan for the Regional Aircraft Rescue and Fire Fighting Training Facility  
*February, 1995 - David Evans and Associates, Inc.*

Washington State Fire Training Academy Total Facility Assessment  
*February, 1995 - Bouillon Christofferson & Schairer (Partial Report Only)*

Fire Training Academy Phase II Critical Road Repairs; Roadway Damage Inventory and Report  
*March, 1997 - CTS Engineers*

Aircraft Rescue & Fire Fighting Facility Technical Information Report  
*April, 1997 - Symonds Consulting Engineers*

WSP Fire Training Academy Master Plan  
*July, 1998 - 3E Design Group*

WSP Fire Training Academy Technical Information Report  
*July, 1998 - Reid Middleton*

Fire Training Academy Domestic Water System Well Test Report  
*April, 1999 - Symonds Consulting Engineers*

Fire Training Academy Project Request Report  
*July, 2006 - Washington State Patrol*

WSP Fire Training Center Kitchen & Dining Center Predesign  
*July, 2008 - Ambia*

Office of The State Fire Marshal Fire Training Academy Business Plan  
*December, 2005 - Office of The State Fire Marshal*

Operational and Treatment Recommendations for the Fire Training Academy  
*May, 2010 - Parametrix*

ARFF Advisory Circular  
*September, 2010 - ARFF Training Facility*

WSP Burn Building Predesign  
*March, 2012 - Rice Fergus Miller*



# WASHINGTON STATE PATROL

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## FIRE TRAINING ACADEMY

Drawings/Construction Projects:

Fire Service Training Center, North Bend Washington  
*October, 1982 - Wright, Gildow, Harment, Teegarden Architects/Planners*

Fire Service Training Center - Marine Facility, Phase I  
*December, 1984 - Wright Forssen Associates*

Fire Training Academy Fuel Distribution System Replacement  
*November, 1994 - Wood/Harbinger, Inc.*

FTA Maintenance Shop Facility  
*August, 1995 - Lawhead Architects*

Burn Pad Site Improvements  
*May, 1996 - CTS Engineers*

Fire Training Academy Critical Road Repairs and Remaining Damages  
*September, 1997 - CTS Engineers*

Hazmat Training Buildings  
*October, 1998 - Thomas Cook Architects*

Regional Aircraft Rescue Fire Fighting Training Facility  
*October, 1999 - 3E Design Group*

FTA Water System Improvements  
*June, 2000 - Reid Middleton*

Fire Training Academy Dormitory  
*August, 2008 - WJA*

FTA Wastewater Treatment Facility  
*September, 2008 - BHC Consultants*





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