

**City of Augusta Site Plan
Review – Major Development
Application for Secure
Forensic Rehab Facility at the
Augusta East Campus**



Prepared for:
State of Maine
Bureau of General Services
77 State House Station
Augusta, ME 04333-0077

Prepared by:
Stantec Consulting Services Inc.
482 Payne Road
Scarborough Court
Scarborough, ME 04074

August 2016

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City of Augusta
Development Review Application
 Bureau of Planning, Department of Development Services

Address of Proposed development: The East Campus (formerly AMHI)		
Zone(s): BP- Institutional/Business/Professional		
Project Name: Construction of a Secure Forensic Rehab Facility		
Existing Building (sq. ft.): 345,300 SF	Proposed Building (sq. ft.): 8,675 SF	
Existing Impervious (sq. ft.): 1,127,118 SF (Includes Building)	Proposed Impervious (sq. ft.): 11,765 SF (Includes Building)	
Structure Demolition: No	Blasting Proposed (cu. ft.): No	
Proposed Total Disturbed Area of the Site: Approximately 1.5 Acres Proposed disturbance of greater than one acre requires a Chapter 500, Stormwater Management Permit from the Maine Department of Environmental Protection (DEP).		
Owner's Name/Address: State of Maine, DAFS, 111 Sewall Street, 77 SHS, 4 th Floor, Augusta, ME 04333-0077 Phone #: 207-624-7341 Cell #: e-mail: Jill.Instasi@maine.gov	Applicant's Name/Address: Jill Instasi, State of Maine, DAFS, 111 Sewall Street, 77 SHS, 4 th Floor, Augusta, ME 04333-0077 Phone #: 207-624-7341 Cell #: e-mail: Jill.Instasi@maine.gov	Consultant's Name/Address: Dave Nadeau, Stantec Consulting Services, Inc., 482 Payne Road, Scarborough, ME 04074 Phone #: 207-887-3842 Cell #: e-mail: dave.nadeau@stantec.com
Tax Map #: 10 Lot #: 8	Lot Size (acres): 147.60 Frontage (Feet): ±3,500	Form for Evidence of Standing (deed, purchase and sale agreement, other): Book number, 2380, Page number 189
Signatures:		
Applicant: <u>Jill M. Instasi</u>		Date: <u>8/10/16</u>
Owner: <u>Jill M. Instasi</u>		Date: <u>8/10/16</u>
Agent: <u>[Signature]</u>		Date: <u>8/10/16</u>

For Staff Use

Fee Calculation: Major Development max fee is \$4,000; Minor Development max fee is \$1,000

Major Development: $\$2,000 + (\text{number of sq ft over } 25,000 \times \$0.15) =$

Minor Development: $\$250 + (\text{number of sq ft over } 5,000 \times \$0.15) =$

All Development: $\text{Number of Abutters} \times (\text{1oz First Class postage fee} + \$0.15) =$

Total Fee:

Checklist. The checklist below must be completed by the applicant. The required material or a written waiver request must be provided.

Information Required on Plan(s) See Augusta Land Use Ordinance for greater detail including Section 300-405B(1) Preliminary Plan Requirements and Section 300-305B Final Plan Requirements	Included	Waiver Requested
a. Name of Site Plan or Subdivision. 300-405B(1)(a)	Yes	
b. Owner(s) name and address. 300-405B(1)(b)	Yes	
c. Deed reference to subject parcel and immediate abutter identification. 300-405B(1)(c)	Yes	
d. Engineer's name, address, signature and seal. 300-405B(1)(d)	Yes	
e. Surveyor's name, address, signature and seal. 300-405B(1)(e)	N/A	
f. Scale, both in graphic and written form. 300-405B(1)(f)	Yes	
g. Date and revision box. 300-405B(1)(g)	Yes	
h. Zoning designation(s). 300-405B(1)(h)	Yes	
i. North Arrow (true, magnetic, dated or grid). 300-405B(1)(i)	Yes	
j. Preliminary site plan. 300-405B(1)(j)	Yes	
k. Ownership, location & present or proposed use of abutting properties. 300-405B(1)(k)	Yes	
l. Location map. 300-405B(1)(l)	Yes	
m. Streets, existing & proposed, with curve data. 300-405B(1)(m) & 300-406B(5)	Yes	
n. Drainage and erosion control. 300-405B(1)(n)	Yes	
o. Utilities, existing and proposed. 300-405B(1)(o)	Yes	
p. Topography, 2 foot contours. 300-405B(1)(p)	Yes	
q. Lot lines and dimensions. 300-405B(1)(q)	Yes	
r. Proposed use of the property. 300-405B(1)(r)	Yes	
s. Proposed public or common areas, if any. 300-405B(1)(s)	Yes	
t. Boundary survey and associated information. 300-405B(1)(t)	N/A	
u. Traffic controls, off-street parking and facilities. 300-405B(1)(u)	Yes	
v. Proposed fire protection plans or needs. 300-405B(1)(v)	Yes	
w. Landscaping and buffering. 300-405B(1)(w)	Yes	
x. Outdoor lighting plan. 300-405B(1)(x)	Yes	
y. Freshwater wetlands. 300-404B(15)	Yes	
z. River, stream or brook. 300-404B(16)	Yes	

Information Required in Written Project Narrative See Augusta Land Use Ordinance for greater detail Section 300-404B(1) Criteria for Reviewing the Preapplication and Section 300-603E Conditional Uses Site Plan Review Criteria	Included	Waiver Requested
1. Pollution – undue water or air pollution. 300-404B(1)	Yes	
2. Water – sufficient potable water. 300-404B(2)	Yes	
3. Municipal Water – adequate supply, if applicable. 300-404B(3)	Yes	
4. Soil Erosion – unreasonable soil erosion. 300-404B(4)	Yes	
5. Road congestion and safety. 300-404B(5) & 300-405B(1)(v)	Yes	
6. Major Developments, additional traffic movement. 300-404B(6)	Yes	
7. Sewage waste disposal – adequate provisions. 300-404B(7)	Yes	
8. Solid waste – adequate provisions. 300-404B(8)	Yes	
9. Aesthetic, cultural, and natural values. 300-404B(9)	Yes	
10. Conformity with City ordinances and plans. 300-404B(10)	Yes	

Additional Information Required in Written Narrative (continued) Where the items below duplicate the items above, identical responses are permitted and encouraged.	Included	Waiver Requested
11. Financial and technical capacity. 300-404B(11)	Yes	
12. Surface water, shorelands and outstanding rivers. 300-404B(12)	Yes	
13. Groundwater – negative impact. 300-404B(13)	Yes	
14. Flood areas. 300-404B(14)	Yes	
15. Freshwater wetlands – description of impact. 300-404B(15)	Yes	
16. River, stream or brook – description of impact. 300-404B(16)	Yes	
17. Stormwater – management plans. 300-404B(17)	Yes	
18. Access to direct sunlight. 300-404B(18)	Yes	
19. State permits – description of requirements. 300-404B(19)	Yes	
20. Spaghetti lots prohibited – 300-404B(20)	Yes	
21. Outdoor lighting – description of lighting plans. 300-404B(21)	Yes	
22. Neighborhood compatibility – description per ordinance. 300-603E(1)	Yes	
23. Compliance with plans and policies. 300-603E(2)	Yes	
24. Traffic pattern, flow and volume analysis. 300-603E(3)	Yes	
25. Public facilities – utilities including stormwater. 300-603E(4)	Yes	
26. Resource protection and the environment. 300-603E(5)	Yes	
27. Performance standards. 300-603E(6)	Yes	
28. Financial and technical ability. 300-603E(7)	Yes	

Application Materials

The application materials that are required for a complete application are listed below:

Paper Copies	Included	Waiver Requested
10 copies of the Application Packet	Yes	
- Application Form(s)	Yes	
- Project narratives	Yes	
- Purchase & sale agreement, or other document to show standing	Yes	
- Letter authorizing the agent to represent the applicant	Yes	
3 copies of any stormwater report	In Application	
2 copies of any traffic report	N/A	
10 reduced-sized complete plan sets on 11" x 17" paper	Yes	
4 full-sized complete plan sets on ARCH D or E size paper	Yes	
Payment in full of application fee (Note: an abutter notification fee will be assessed after the application is determined to be complete. The fee is \$0.15 plus the cost of first class postage for each abutter that will be notified as required by the ordinance.)	Invoice Owner	
Electronic Copy		
1 CD that includes each of the application documents in Adobe PDF format	Yes	

For Official Use:

\$ _____ Application Fee Paid. Received By (Initials): _____ Date: _____
 \$ _____ Abutter Notification Fee Paid. Received By (Initials): _____ Date: _____



STATE OF MAINE
DEPARTMENT OF ADMINISTRATIVE & FINANCIAL SERVICES
BUREAU OF GENERAL SERVICES
BURTON M. CROSS BUILDING
4TH FLOOR, 77 STATE HOUSE STATION
AUGUSTA, MAINE
04333-0077

PAUL R. LEPAGE
GOVERNOR

RICHARD W. ROSEN
COMMISSIONER

EDWARD A. DAHL
DIRECTOR

May 25, 2016

Dave Nadeau, PE
Stantec Consulting Services Inc.
482 Payne Road, Scarborough Court
Scarborough, ME 04074

Dear Mr. Nadeau,

The State of Maine, Bureau of General Services, hereby gives Stantec Consulting Services Inc. authorization to act as the Bureau's agent in submitting all required permits for the following project(s):

- Parking and Roadway Infrastructure Improvements at the East Campus in Augusta, Maine

Please contact me with any questions.

Sincerely,

A handwritten signature in blue ink that reads "Edward A. Dahl".

Edward A. Dahl
Director
Bureau of General Services

CITY OF AUGUSTA SITE PLAN REVIEW – MAJOR DEVELOPMENT APPLICATION FOR SECURE FORENSIC REHAB FACILITY AT THE AUGUSTA EAST CAMPUS

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1.0 | Development Description
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1.0 DEVELOPMENT DESCRIPTION

The State of Maine, being represented by the Department of Administrative and Financial Services, Bureau of General Services (applicant) is filing a Major Development application pursuant to the City of Augusta Land Use Requirements (Chapter 300, Part 4, 300-403) for proposed improvements at the Augusta East Campus (formerly AMHI).

1.1 PROJECT LOCATION / FACILITY DESCRIPTION

The East Campus is located on the east shore of the Kennebec River between Hospital Street (Route 9) to the east and Arsenal Street to the west. The Kennebec River runs along the edge of the campus, approximately 780 feet to the west. The campus is owned by the State of Maine (Book 2380, Page 189 in the Kennebec Registry of Deeds; refer to Appendix F) and the deeded property covers approximately 148 acres. Refer to the attached *Location Map*, Figure No. 1, based on the USGS Quadrangle for Augusta, Maine. The East Campus consists of approximately two dozen buildings connected by a series of sidewalks and roadways, as well as multiple parking lots. A majority of the buildings are utilized as State of Maine departmental offices, with the Riverview Psychiatric Recovery Center (RPRC) located along the southern edge of the campus. The East Campus property is zoned as BP- Institutional/Business/Professional by the City of Augusta.

1.2 PROJECT DESCRIPTION

The State of Maine Bureau of General Services (BGS), in cooperation with the State of Maine Department of Health and Human Services (DHHS) is proposing the construction of a new, freestanding Secure Forensic Rehab Facility on the grounds adjacent to the Riverview Psychiatric Recovery Center in Augusta, Maine. The project will house residents who have been found not guilty by reason of mental defect or insanity and, therefore, cannot be housed within either a state prison or a state psychiatric facility. These residents will be housed there to participate in their rehabilitation via counseling and other means by a considerable staff of behavioral health professionals. This is to be considered a secure facility and will be constructed utilizing methods and materials that eliminate the opportunity for escape, self-harm or injury to others. The design provides for ease of casual monitoring as well as the use of cameras, alarms and electronic locks.

The project includes: extension of / connection to existing utilities, site work including grading, paving and installation of drainage structures, slab-on-grade and suspended deck floor structures, wood frame walls and a prefabricated wood truss roof along with reinforced gypsum board interior wall finishes. It includes commercial-type kitchen equipment, laundry facilities, barrier-free toilet/shower rooms and resident rooms for (21) twenty-one residents. Staff offices, meeting rooms, an Occupational Therapy / Physical Therapy room and Large and Small

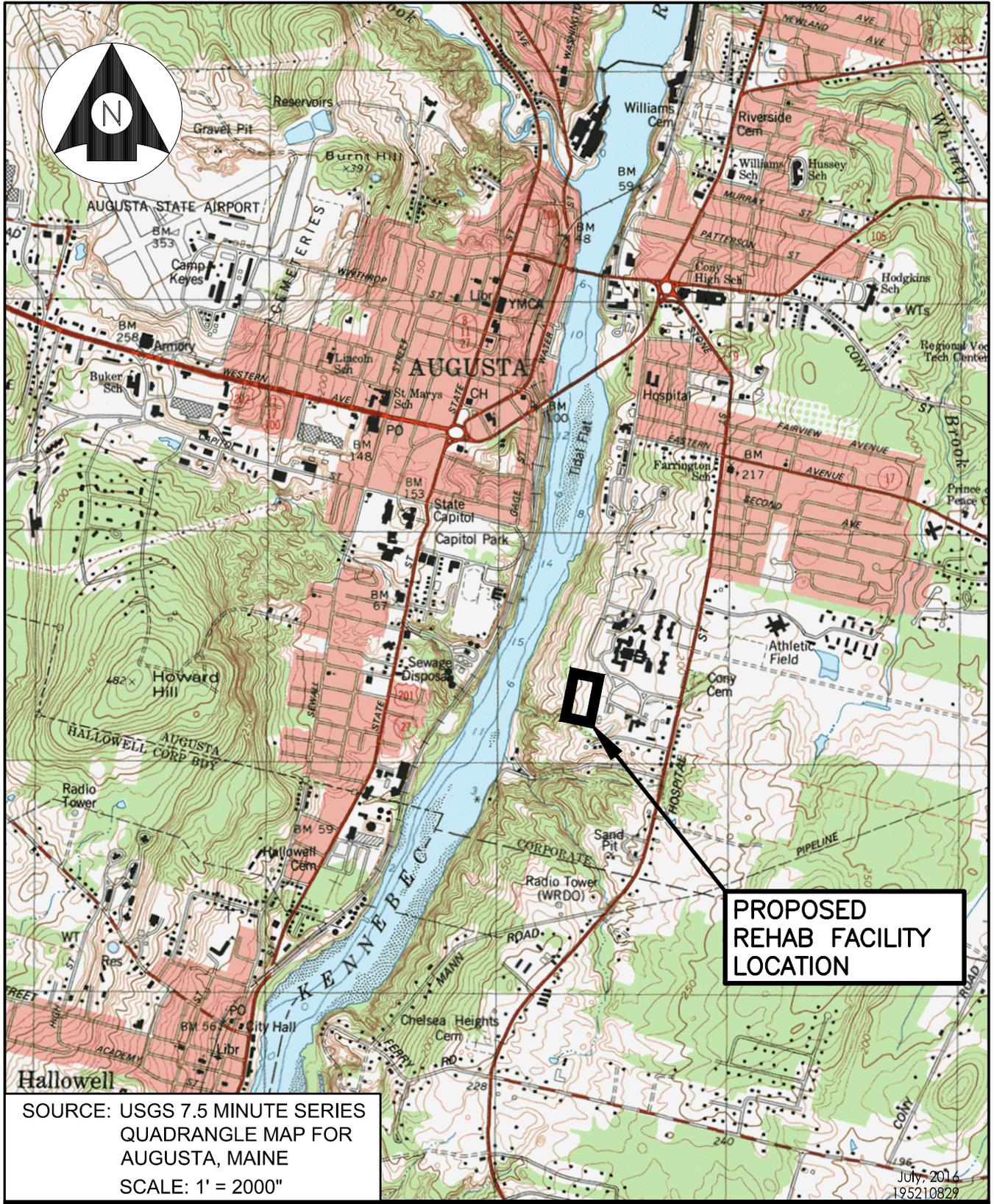


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1.0 | Development Description
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Common Rooms provide places for resident and staff interaction. The building has fire protection sprinklers and a generator to provide emergency power to limited, critical circuits during power outages.

The proposed facility will be constructed as a design/ build project. DHHS contracted with an architect, WBRC to prepare preliminary Bridging Documents that will be used by DHHS / BGS to issue a *Request for Proposal* for the proposed work. The Bridging Documents, including a project narrative, outline specifications, and drawings have been included herein as appropriate.



Client/Project
State of Maine
EAST CAMPUS
Augusta, Maine

Figure No.

1.0

Title

LOCATION MAP

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1.3 PROJECT SCHEDULE

The Secure Forensic Rehab Facility is scheduled to begin construction during the fall of 2016 with the intent of completing the exterior shell before the start of winter. Final site work stabilization will be completed in the spring / summer of 2017.

1.4 PROJECT DRAWINGS

Refer to the Project Drawing set accompanying this application for additional facility and project information. The applicable drawingst, prepared by WBRC Architects Engineers and dated May 2016 includes:

- GI001 Cover Sheet
- GI002 Symbols and Abbreviations
- CD101 Site Removals Plan
- CP101 Site Layout Plan
- CG101 Site Grading and Utility Plan
- AE201 Building Elevations
- AE202 Building Sections
- AE301 Perspective Views

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CITY OF AUGUSTA SITE PLAN REVIEW – MAJOR DEVELOPMENT APPLICATION FOR SECURE FORENSIC REHAB FACILITY AT THE AUGUSTA EAST CAMPUS

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2.0 DEVELOPMENT REVIEW APPLICATION CRITERIA

2.1 POLLUTION

The proposed development will have only minimal impacts to air and water resources on the site. The point sources for air emissions deriving from the development include the Natural Gas boiler (<155MBH) and the Natural Gas generator (100kw); however these sources will not produce significant emissions from the Rehab Facility. Air emissions from the building will not impact residences as the closest residential area is approximately 1,000 feet away from the proposed development site. The proposed building is also buffered by the Riverview Psychiatric Center and the Stone Building on the East Campus.

A potential source of odor from the proposed facility is the grease exhaust system from the kitchen. Any potential odor from the system is anticipated to be minimal and infrequent in nature, and similar to odors from the adjacent Riverview Psychiatric Recovery Center. The odor is not anticipated to be discernable off-site due to the distance to adjacent properties as stated above. The Rehab Facility will therefore not have an undesirable odorific effect on the surrounding community.

The building will discharge minimal water vapor emissions to the atmosphere due to combustion (NG boiler & NG generator). However, no impacts to local residences or buildings off-site are anticipated from the water vapor emissions due to the distance between the proposed facility and the nearest property line. The water vapor emissions from the Rehab Facility are not anticipated to cause a change to the local climate.

The proposed development will not cause or increase flooding, or cause an unreasonable flood hazard to any structure. The proposed Facility is located at approximately elevation 165 feet above mean sea level (AMSL), while the adjacent Kennebec River is at approximately elevation 0.5 feet AMSL. Additionally, the area is not located within any floodplains as shown on the Flood Insurance Rate Map included in Appendix E.

2.2 WATER

The Greater Augusta Utility District (GAUD) has the capacity to provide water for domestic use and fire protection. Currently there are two existing water mains that provide water to the campus, one to the south of the proposed development that serves the Riverview Hospital, and one to the north which serves the remainder of the south side of the campus. New domestic water service, sprinkler service and fire connection will be installed from the existing mains to the basement area of the proposed building. The water main materials and installation shall meet the requirements of GAUD. No new hydrants will be installed as part of the proposed development. It is anticipated that the facility will generate roughly 2625 gallons per day (125 GPD per bed x 21 beds), which includes residents, visitors and staff.



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A letter from the Greater Augusta Utility District, dated August 4, 2016, has been provided to demonstrate that a sufficient and healthful water supply exists and may be utilized by the Rehab Facility. A copy of this letter is included as Appendix C.

2.3 MUNICIPAL WATER

Refer to Section 2.2 above.

2.4 SOIL EROSION

The development occurs within areas of on-site soils mapped according to the Kennebec County Medium Intensity Soil Survey and National Resources Conservation Service (NRCS) Web Soil Survey as Hartland and Scio, both classified as Hydrologic Soils Group (HSG) type B soils according to TR-55.

The terrain of the site is generally sloping in the range of 3 to 10 percent from Hospital Street to the Kennebec River. There are no wetlands within the project site and no history of flooding.

The existing site soils are anticipated to be compatible with the proposed development.

A copy of the NRCS soils map, soils legend, TR-55-HSG, NRCS physical soil properties and soils series description is included as Appendix D.

A plan for Erosion and Sedimentation Control (ESC) has been developed to provide a strategy for controlling soil erosion and sedimentation during and after construction of the proposed project. Drawing CG101 accompanying this application includes locations of ESC measures to be implemented during construction activities. Additional reference is made to a draft technical specification for Erosion Control (31 30 00) included in Appendix D.

The following erosion and sediment control devices are planned for this site during the construction period. These devices shall be installed as indicated on the plans and as described in the technical specifications and the Maine Erosion and Sediment Control Handbook for Construction: Best Management Practices:

- 1) Temporary stabilization - Topsoil stock piles and disturbed portions of the site where construction activity ceases for at least 7 days will be stabilized with temporary seed and mulch no later than 15 days from the last construction activity in that area nor more than 30 days from the date of initial disturbance. Disturbed areas shall be stabilized prior to a projected storm event. Temporary seed shall be an annual: Rye (grain) applied at a rate of 120 pounds per acre. Prior to seeding, 2,000 pounds of ground agricultural limestone and 2,000 pounds of 10-10-10 fertilizer shall be applied to each acre to be stabilized. After seeding, each area shall be mulched with 4,000 pounds per acre of straw. The straw mulch is to be tacked into place by a disk with blades set nearly straight. Applying liquid calcium

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chloride and granular base material until bituminous base material can be applied will temporarily stabilize areas of the site, which are to be paved.

- 2) Permanent stabilization - Disturbed portions of the site where construction activity permanently ceases shall be stabilized with permanent seed no later than 15 days after the last construction activity. The permanent seed mix shall consist of 20 lbs/acre of Creeping Red Fescue, and 20 lbs/acre of Red Top, and 5 lbs of Flat Pea. Prior to seeding, 6,000 lbs of ground agricultural limestone and 800 lbs of 10-10-10 fertilizer shall be applied to each acre to be stabilized. After seeding, each area shall be mulched with 4,000 lbs per acre of mulched straw unless mulched hydroseeding is implemented. Straw mulch shall be taken into place by a disk with blades set nearly straight.
- 3) Winter Protection - Standard for the timely stabilization of ditches and channels -- The contractor will construct and stabilize all stone-lined ditches and channels on the site by November 15. The contractor will construct and stabilize all grass-lined ditches and channels on the site by September 1. If the contractor fails to stabilize a ditch or channel to be grass-lined by September 1, then the contractor shall stabilize the soil with mulch -- By November 15 the contractor will mulch the disturbed soil by spreading hay or straw at a rate of at least 150 pounds per 1000 square feet on the area so that no soil is visible through the mulch. Immediately after applying the mulch, the contractor will anchor the mulch with plastic netting to prevent wind from moving the mulch off the disturbed soil.
- 4) Siltation fence - will be installed down gradient of the disturbed areas to trap runoff-borne sediments until the site is revegetated. Installation details are provided in the plan set on the erosion control details sheets.
- 5) New surface swale with check dams and erosion control mesh will collect runoff from the disturbed areas and direct runoff to catch basins, culverts or level lip spreaders.
- 6) Straw or Hay mulch is intended to provide cover (or mulched hydroseed) for denuded or seeded areas until revegetation is established. Mulch placed on slopes exceeding 10 percent shall be covered with geotextile erosion-control fabric or netting and anchored with staples in accordance with the manufacturer recommendations.
- 7) Sediment traps - will be constructed around all catch basins. The sediment traps shall be left in place until the tributary area is paved or revegetated.
- 8) Sediment Removal BMPs - will be constructed at various locations around the construction site as the construction progresses. The actual location will depend on the sequence of construction. The Sediment Removal BMP shall be utilized for areas of heavy sediment loads caused primarily by dewatering activities.
- 9) Other(s) - Any tracked dirt on adjacent roads or R/O/W's will be swept as necessary to prevent dust from becoming a nuisance or safety hazard to oncoming motorists.

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2.5 ROAD CONGESTION AND SAFETY

The project will be occurring on the East Campus in a previously developed area and is not anticipated to impact traffic on public roads. No congestion or compromised safety of public roads is anticipated.

2.6 MAJOR DEVELOPMENTS, ADDITIONAL TRAFFIC MOVEMENT

After construction of the Rehab Facility, traffic on the East Campus will remain comparable to current conditions, as the development of this building is not anticipated to generate significant additional vehicle movement on the campus.

The existing parking lot (identified as Lot #4) located on the site where the building will be constructed will no longer be usable for parking by state agencies that are housed in other buildings on the campus. The loss of 81 spaces has been accounted for in a recently updated Parking Study that has been prepared for the entire campus. The study was prepared to review existing conditions, as well as look at anticipated growth on the campus as a result of campus-wide renovations to the various buildings over the next 3-5 years. A copy of the study, prepared by Stantec Consulting Services, is included in Appendix G for reference.

The study indicates that with the additional parking provided by expansion areas 1A, 3D, 7E and 7F (previously approved by the Planning Board on August 9, 2016), there will be adequate parking capacity to meet the demand on the campus through the short term. Additional parking capacity will likely be needed after 2018. Stantec has also been contracted by BGS to review and update the campus Traffic Movement Permit if needed due to the future renovations. Stantec has contacted Maine DOT and the City of Augusta to begin the initial phases of this work.

2.7 SEWAGE WASTE DISPOSAL

The Greater Augusta Utility District has the capacity to provide domestic municipal sewer service for the proposed development. Currently there is an existing sanitary sewer main that traverses within the main campus, adjacent to the north side of the proposed development. The new sewer service will be connected to an existing sewer manhole adjacent to Arsenal Street. A precast exterior grease trap will be installed for the kitchen service. All frames and covers for the sanitary sewer structures within the project site will be provided with cast iron covers with "sewer" imprinted" on the cover. It is anticipated that 2625 gallons per day (125 GPD per bed x 21 beds) will be generated at the new facility when operating per the State of Maine Subsurface Wastewater Disposal Rules.

A letter from the Greater Augusta Utility District has been provided to demonstrate that there is sufficient collection and treatment capacity for sewage disposal, and that GAUD agrees to

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accept the amount and nature of the wastewater flow from the Rehab Facility. A copy of this letter can be found in Appendix C.

2.8 SOILD WASTE

Construction debris and trash shall be maintained in a secure location or temporary stockpiles during construction and shall be properly removed and disposed of according to applicable state laws. Construction debris for this project will typically consist of reclaimed or removed asphalt pavement and aggregates, topsoil, temporary erosion control products and small trash and debris to be kept in temporary on-site waste receptacles provided by the contractor. All accumulated waste shall be removed by the contractor at regular intervals to avoid significant accumulation on-site. Suitable excavated materials and reclaimed pavement will be re-used in the work to minimize off-site removal of debris.

The proposed facility will generate additional volumes of solid waste during normal operations, including paper and cardboard packaging, food waste, recyclables, and hazardous medical wastes similar to the existing Riverview Psychiatric Recovery Center (RPRC). Based on estimates of hazardous medical wastes generated at public psychiatric facilities, it is anticipated that daily hazardous medical wastes for the 21 bed facility will be approximately 0.6 pounds. Based on estimates of 20 pounds per day per bed of non-hazardous waste, it is anticipated that daily waste will be approximately 420 pounds, for a total of 421 pounds per day for the facility.

Two new dumpsters will be constructed at the Rehab Facility for temporary on-site storage of the wastes. DHHS has a contract with an approved waste hauling company for removal and disposal of wastes generated at the RPRC. This contract will be amended to include the additional Rehab Facility.

2.9 AESTHETIC, CULTURAL, AND NATURAL VALUES

The project site is located on a 147 acre campus that is bounded by commercial and residential development to the north, east, and south. To the west of the campus is a forested strip of land, beyond which lies the Kennebec River. The addition of a new Secure Forensic Rehab Facility within a previously disturbed site (parking lot) on the campus, and adjacent to the Riverview Psychiatric Center, will blend in with the current land use type. The character of the area will remain essentially the same, and no impact to the overall visual quality and scenic character of the area is anticipated from the proposed, single-level building.

All exterior fixtures shall utilize LED technology, and shall be full-cutoff type in order to minimize light pollution into the night sky. Exterior lighting shall be provided at building entrances, walkways and parking areas.

The Maine Natural Areas Program (MNAP) was contacted to determine if the proposed project may impact any unusual natural areas. A response from the MNAP, dated July 28, 2016, stated

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that there are no rare botanical features documented within the project area. A copy of the letter is included in Appendix C.

2.10 CONFORMITY WITH CITY ORDINANCES AND PLANS

The proposed development as designed conforms to City Ordinances and plans.

2.11 FINANCIAL AND TECHNICAL CAPACITY

The Rehab Facility project will be funded by the State of Maine Department of Health and Human Services (DHHS). DHHS has issued a financial capacity letter expressing their intention of funding the project through state budget appropriations. A copy of the letter dated August 2, 2016 from DHHS is included in Appendix C.

The estimated project cost for the Secure Forensic Rehab Facility is approximately \$3,000,000, which includes engineering and construction costs. These costs are based on preliminary opinions of probable construction costs prepared by DHHS. The actual costs will be based on the result of a competitive bid process for design and construction. Should the bid results require a significant change in the proposed project, a revised project description will be forwarded to the Maine Department of Environmental Protection and, if required, an application for a project modification will be filed.

The East Campus is owned by the State of Maine, and managed by the Department of Administrative and Financial Services, Bureau of General Services (BGS). The Department of Health and Human Services (DHHS) will be responsible for the daily management of the Secure Forensic Rehab Facility.

DHHS has contracted WBRC Architects Engineers for the preparation of the preliminary bridging documents to be used by the State in preparing a Request for Proposal for the design/ build portion of the project. Stantec Consulting Services, Inc. has contracted with BGS to provide technical expertise for the permitting of the Rehab Facility described in this narrative. WBRC and Stantec's staff is technically proficient in the services for which they have been contracted. The resumes for key WBRC and Stantec personnel are available upon request.

2.12 SURFACE WATER, SHORELANDS, AND OUTSTANDING RIVERS

The location of the project is approximately 780 feet from the Kennebec River, and will not impact the water quality or the shoreline of the river.

2.13 GROUNDWATER

Liquid petroleum products and other materials with the potential to contaminate groundwater shall not be stored or handled in areas of the site draining to an infiltration area. An "infiltration



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area” is any area of the site that accumulates runoff that infiltrates into the soil. Dikes, berms, sumps, and other forms of secondary containment that prevent discharge to groundwater may be used to isolate portions of the site for the purposes of storage and handling of these materials. The appropriate pollutant removal Best Management Practices (BMPs) shall be consulted prior to on-site storage of these materials in order to prevent impacts to groundwater quality during construction.

The existing site has been previously developed as a paved parking lot. The new facility will be constructed partially on the existing parking lot, with approximately 0.28 acres of new impervious surface created. The new impervious will include disconnected features to allow as much surface runoff and infiltration over pervious surfaces as practicable. Additionally, runoff from the roof will drain to a dripline filter, which in turn discharges to a level spreader to convert the runoff to sheet flow that will drain across a 150 foot +/- meadow to provide further opportunities for infiltration.

No impacts to existing groundwater, either quantity or quality, are therefore anticipated.

2.14 FLOOD AREAS

The proposed Secure Forensic Rehab Facility at the East Campus will not cause or increase flooding, or cause an unreasonable flood hazard to any structure. The proposed Facility is located at approximately elevation 165 feet above mean sea level (AMSL), while the adjacent Kennebec River is at approximately elevation 0.5 feet AMSL. Additionally, the area is not located within any floodplains as shown on the Flood Insurance Rate Map included in Appendix E.

2.15 FRESHWATER WETLANDS

Based on a search of the National Wetlands Inventory (July 2016), there are no freshwater wetlands within the project area, so no impacts to wetlands are anticipated.

2.16 RIVER, STREAM, OR BROOK

The Kennebec River has been identified on plans submitted with this application and is approximately 780 feet west of the nearest point of the project.

2.17 STORMWATER

The following section has been included in the Site Location of Development Act permit application submitted to the Maine Department of Environmental Protection. The permit application is currently under review and any comments or revisions required by the DEP will be forwarded to the City for evaluation. Refer to Appendix B for the drawing referenced in this narrative.

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2.17.1 EXECUTIVE SUMMARY

The State of Maine (applicant) is filing a Minor Amendment application pursuant to the Site Location of Development Act, Title 38, M.R.S.A. Section 481-490 for proposed improvements at the Augusta East Campus.

This portion of the project includes the construction of a new, freestanding Secure Forensic Rehab Facility on the grounds of Riverview Psychiatric Center and is isolated and unaffected from activities and drainage impacts from the recently permitted parking improvement project.

This new Forensic Rehab building and related site improvements includes the expansion of the existing Riverview Psychiatric Center located near the southwest bounds of the campus. This project will be permitted jointly with the parking expansion project but will be documented separately for a more focused approach for each project location since they are independent and separated from each other within the campus and will be distinctly managed separately with regards to stormwater management, design and construction. This document is intended to be uniquely focused on the Forensic Rehab Facility as an expansion of the Riverview Psychiatric Center and included as a supplemental submission to the Site permit amendment which also includes the parking expansion project.

The Forensic Rehab Facility site includes separate new and redeveloped utilities, site work, grading, paving, new building, installation of drainage structures and stormwater management BMPs. Because of this projects location superimposed on existing developed areas, this portion of the project is considered as a redevelopment project according to Chapter 500, Section 4.C.(2).(d) and Section 3.DD.

The Rehab Facility will be developed where an existing parking lot (referred to as Lot 4 on the Proposed Pavement Figure in the permit application) and grass area is located behind the Riverview Psychiatric Center, along the southwest section of Arsenal Street. The proposed development area is part of the Riverview Psychiatric Center grounds. The existing stormwater management basins with associated level spreaders located within and adjacent to the project site will be relocated/replicated adjacent to the project to the south. This will be done as a “maintenance” item since the relocation of the basins will not create any additional permanent impacts or development, and will not affect or alter any runoff which is proposed or currently draining to the basins. Therefore, the reconstruction of the existing basins will be included on the drawings, but will not be added to the permitting for either project site.

This Rehab Facility project includes new developed or redeveloped impervious areas and will be designed per Chapter 500 Rules pursuant to the Maine Stormwater Law M.R.S.A § 420-D. The entire AMHI campus drains to the Kennebec River. This project is subject to meeting the requirements of the General Standards and is requesting a waiver of the Flooding standard per Section 4.F.3).(a) for direct discharge to a Major River Segment.

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A site specific stormwater management and erosion control plan has been prepared herein for the Rehab Facility project. Proposed BMPs have been designed to meet the stormwater general standards. The project will not result in any increased flooding potential or significant impacts due to these proposed improvements.

2.17.2 INTRODUCTION

This stormwater management plan has been prepared to mitigate the impacts associated with the development of the Forensic Rehab Facility as an expansion of the Riverview Psychiatric Center and included as a supplemental submission to the Site permit amendment which also includes the parking expansion project. The stormwater management controls and Best Management Practices (BMPS) outlined in this plan have been designed to suit the development objectives and to meet the applicable regulatory requirements of the Maine Stormwater Law and Chapter 500 Rules.

The construction activities and proposed impervious areas for this project are considered as “redevelopment” or “Maintenance”. Some areas where existing vegetated areas are revegetated to match existing conditions are not considered as developed areas and will not be included as impervious, developed or disturbed areas within this permit.

Since the East campus is a single large property, and drains entirely to a single resource (Kennebec River), the campus is considered as a single watershed for this study. Although the developed/redeveloped area for this project and the parking lot expansion area both occur within this watershed, but at different locations, the permitting documentation for each project is submitted separately, and will be reviewed jointly/concurrently under the same permit amendment.

Runoff from the Forensic Rehab Facility will be captured and conveyed to a new treatment BMP sized for the treatment of the associated redeveloped area. As previously stated, the existing stormwater management basins and level spreaders within the footprint of the project site will be relocated and reconfigured to replicate the current functions and features and continue to receive and manage the same drainage areas, rates and discharges as in the current conditions. This will be done as a “maintenance” activity to facilitate the addition of the new Forensic Rehab Facility and is not considered as part of the project for the purpose of evaluating stormwater related impacts.

A typical pre vs post development comparison is not performed for this project since a waiver is requested for the flooding standard in accordance with Section 4.F.3).(a) for direct discharge to a Major River Segment. Post development calculations will be performed as necessary to size the proposed drainage infrastructure and BMPs. As proposed, this project includes a new stone trench Roof Dripline Filtration BMP along the building edges to capture and treat associated stormwater from the impervious roof area. This will discharge to a new level spreader to convert the flow regime from concentrated to sheet flow.

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2.17.3 METHODOLOGY

We used the S. C. S. method for estimating runoff rates for the design storm intervals. This method accounts for soil types, existing land use, topography, vegetative cover and proposed land use for the redeveloped portions of the property. For this study, a derivative of the S. C. S. TR-20 computer modeling method was used within HydroCAD 10.00 software. We evaluated the post-development conditions, where necessary, for the proposed site in order to assess the magnitude of peak stormwater flows, drainage patterns, flow velocities, etc. for the site draining to proposed BMPs.

The post-development drainage subcatchment areas for the Forensic Rehab Facility are defined in our Stormwater Model (refer to section 2.17.10) for the purpose of evaluating drainage impacts, BMP sizing and capacity as shown on the HydroCAD diagrams and drainage plans attached in Appendix B. Complete stormwater calculations (HydroCAD) are provided for compliance with DEP Stormwater General Standards, and as required for Site Location of Development projects in accordance with Maine Stormwater Law. This project is evaluated as a redevelopment project for the purpose of meeting the General Standards according to Chapter 500, Section 4.C.(2).(d). This project is eligible for, and is requesting, a waiver of the Flooding Standards.

The various Redevelopment Land Uses for predevelopment and post-development conditions are assessed according to the Pollutant Impact Rankings as determined from Table 2 (refer to section 2.17.10). The changes in the cover types according to the various land uses and cover are used to determine the Ranked Impact Change Due to Redevelopment. Each land use for both pre-development and post-development conditions are ranked and given a pollutant ranking score. The pre-development and post-development scores are determined by calculating a weighted average of impact by multiplying the land area (in acres) of each type of existing land use by its pollutant ranking. The net change in pollutant ranking for the developed project will determine the percentage of re-developed area that must be treated for meeting the general standards.

The requirement for treatment is scaled based on the pollutant discharge that (if the stormwater was untreated) would result from the redevelopment project according to the pollutant ranking based on Table 2 and the ranked impact change due to redevelopment from existing to developed conditions. This value can be a negative number, as it is in this case, and will determine the percentage of redeveloped area that must be treated according to Table 3 (refer to section 2.17.10) .

Once the treatment level is determined, priority for treatment must be given to areas with the highest pollutant ranking, depending on size and impacts for each use, and practicality of implementing appropriate BMPs to meet the General Standards. The developed area of the redevelopment project must be treated to the level required based on the pollutant impact ranking in accordance with Table 3.

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A typical pre vs post development comparison is not performed for this project since a waiver is requested for the flooding standard. However, the post development conditions were evaluated in the HydroCAD model for evaluating the sizing and capacity of each BMP.

2.17.4 DOWNSTREAM WATERBODIES AND RESOURCES

The Kennebec River runs along the edge of the campus, approximately 725 feet to the west. The Kennebec River is defined as a Major River Segment per Chapter 500, 3.S. The entire East campus drains to the Kennebec River. This project is requesting a waiver of the Flooding standard per Section 4.F.3).(a) for direct discharge to a Major River Segment. The treated runoff from this project will discharge to a new level spreader to maintain the flow regime as sheet flow, and mimic existing conditions.

The existing stormwater management basins and associated level spreaders currently located within the Forensic Rehab Facility project site will be relocated/replicated adjacent to the project to the south. This will be done as a "maintenance" activity and will not create any additional impacts or development and will continue to maintain the existing peak flow rates and distribution to several level spreaders as in the present condition.

This project has been designed to avoid impacts to existing on-site wetlands and will create zero disturbance or impacts to wetlands.

2.17.5 REGULATORY REQUIREMENTS

Maine Department of Environmental Protection (DEP)

Site location of Development Act (SLODA)

This project is an amendment to a development of state or regional significance that may substantially affect the environment which has been previously permitted under SLODA. As an amendment this project must meet the standards for development pursuant to Site Law 38 M.R.S.A. § 484. This project must meet the stormwater management standards pursuant to the Stormwater Law 38 M.R.S.A. § 420-D and Erosion and Sedimentation Control Law 38 M.R.S.A. § 420-C.

Stormwater Law (DEP)

MDEP Chapter 500, Stormwater Management Rules describe the stormwater management requirements for new development and redevelopment projects. These rules describe performance standards in five major categories: Basic Standards; General Standards; Phosphorus Standards; Urban Impaired Stream Standards; and Flooding Standards. This project is not required to meet the Phosphorus Standards or Urban Impaired Stream Standards. The following sections describe how the project will address the applicable standards.

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Basic Standards

A project disturbing one acre or more must meet the Basic Standards. Basic standards address erosion and sedimentation control, inspection and maintenance, and housekeeping measures. The proposed development will result in more than one acre of disturbance. The Basic Standards are applicable and include various erosion and sedimentation controls and housekeeping requirements as outlined in Section 2.3 of this permit. Please refer to the attached plans, details, notes and narratives for detailed information regarding compliance with the Basic Standards.

General Standards

The General Standards require that stormwater runoff from at least 95% of a project's impervious area receive some form of treatment through a Department approved BMP. Additionally, runoff from at least 80% of the project's developed area must receive treatment, or as determined for a "redevelopment" project which will require the capture and treatment of a calculated percentage of project impervious and redeveloped area according to the Ranked Impact Change Due to Redevelopment, as stated above.

For this project we are providing stormwater management BMPs for treating 50% or more of the projects impervious or redeveloped areas according to the ranked impact change due to redevelopment requirements per Table 3. This project includes a proposed Roof Dripline Filtration BMP (RDF) draining to a 25 foot level spreader for maintaining runoff, as sheet flow, to a natural meadow/grass buffer prior to discharge to the river. The level spreader meets the Redistribution of stormwater discharges standard per Chapter 500, Section 4.H. Therefore the project meets the requirements of the stormwater General Standards and Flooding Standard.

Flooding Standards

This project is a modification or amendment pursuant to Site Law, but is eligible for a waiver from the flooding standard as follows per Chapter 500 section 4.F.3).(a):

(a) Discharge to a coastal wetland, a great pond, or a major river segment. A waiver is available for a project in the watershed of a coastal wetland, a great pond, or a major river segment provided the applicant demonstrates that the project conveys stormwater exclusively in sheet flow, in a manmade open channel, or in a piped system directly into one of these resources.

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This project is proposing to convey runoff directly to the Kennebec River via sheet flow through the implementation of a proposed level spreader meeting the redistribution of stormwater discharges standard. A waiver of this standard is requested.

2.17.6 STORMWATER EXISTING CONDITIONS

The Rehab Facility will be developed where an existing parking lot and grass area is located behind the Riverview Psychiatric Center, along the southwest section of Arsenal Street. The proposed development area is part of the Riverview Psychiatric Center grounds.

The present condition for the localized development site is consistent with the East campus environment which is currently developed with many buildings, walkways, parking areas, internal drives and lawn. The Kennebec River is located along the entire west boundary of the property and receives all of the runoff from the property.

The existing stormwater management basin with associated level spreaders located within the project site building footprint will be relocated/replicated adjacent to the project to the south. The existing runoff and drainage to this existing basin will be rerouted to the new location without any significant changes in rate, volume, quality, or character of the existing stormwater runoff. This will require a few modifications to the existing storm drains and culverts but will maintain the same flows to the basin. The second adjacent existing basin will consequently be shifted a bit to the south to allow for the repositioning of the relocated basin.

Relocation of the existing drainage basins will be completed prior to construction of the Rehab facility. This work will be done as a "maintenance" item since the relocation of these basins will not create any additional impacts or development, and will not affect or alter any runoff which is proposed or currently draining to these structures.

2.17.7 STORMWATER PROPOSED DEVELOPMENT CONDITIONS

The post-development site drainage patterns are similar to the existing site which generally drains as sheet flow across the existing grass meadow area to the river. The most significant differences are the changes in impervious area due to the proposed site redevelopment. Since much of this project is developed within the footprint of the existing developed and impervious parking areas, this portion of the project is considered as "Redevelopment". Much of the existing impervious areas will be removed and replaced with the new building and parking/circulation areas. After development the runoff will continue to drain to the river through the existing meadow as sheet flow.

Evaluating this project as "redevelopment" results in the Ranked Impact Change Due to Redevelopment calculated to be -0.186, requiring treatment of 50% of the developed area to meet general standards (refer to section 2.17.10).

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The proposed Roof Dripline Filter (RDF) BMP will capture all runoff, from impervious roof areas and discharge treated stormwater runoff to a new level spreader to be conveyed as sheet flow to the river. This also meets the requirement for waiver of the Flooding Standard. To meet the DEP requirements for the General Standards for redevelopment we need to capture and treat 0.25 acres of impervious or redeveloped area. The roof area for this project is draining to the RDF is 10,947 sf or 0.25 acres.

The Level Spreader (LS) is sized in accordance with the Maine Stormwater BMP Manual based on the ten year design storm flows.

The existing storm drain system which intercepts most of the runoff from the existing development in the vicinity of lot #7 (existing and proposed), and portions of the campus area buildings and lawns will be reconstructed as follows:

1. The existing culvert receiving runoff from upslope campus areas draining to the existing stormwater basin and level spreaders (pond 5P) will be removed and replaced with a new culvert inlet and storm drain to redirect this existing runoff to the relocated basin.
2. The existing stormwater basin which receives runoff from the existing culvert will be relocated to receive the redirected runoff from the new culvert and storm drain. The associated level spreaders will be replicated in the new positions similar to the existing condition.
3. The existing stormwater basin and associated level spreader adjacent to the relocated basin above receives runoff from the existing Riverview facilities will also be relocated to a new location slightly south to accommodate the developed site and relocated basin (Pond 5). The runoff to this basin will be unaffected by this shift and is completely independent from the proposed Rehab facility.

The Forensic rehab redevelopment project will add approximately 11,992 sf (0.27 ac) of additional impervious area. However, when evaluated for redevelopment and current use according to the pollutant impact ratings for existing and developed land use the developed impact rating for the project is less than the existing impact rating. To meet the redevelopment general standards according to the ranked treatment change due to development, the project must capture and treat 50% of the redeveloped/developed area which must be treated. The proposed BMPs meet this requirement (refer to section 2.17.10).

2.17.8 STORMWATER QUALITY BEST MANAGEMENT PRACTICES

This project requires a Site Location permit amendment for new development and is required to meet the stormwater quality General Standards. This project provides water quality treatment in accordance with section Chapter 500, Section 4.C.(2).(d). – Redevelopment project, and meets the design and sizing requirements described in the BMP Technical Design Manual



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(Volume III), Chapter 7.5 - Roof Dripline Filters. Refer to Section 2.17.10, herein for a summary of stormwater calculations and results.

The total "redevelopment" area for this project includes 0.50 acres (21,949 sf) consisting of various redevelopment land uses. The existing impact rating = 1.354 and the developed impact rating = 1.168. The Ranked Impact Change Due to Redevelopment was calculated to be -0.186 for the project to determine the applicable treatment level required for the redevelopment project. The developed area of the redevelopment project which must be treated based on the Ranked Treatment Level (table 3) = 50% (0.0 or less) for Site Law projects.

The proposed Roof Dripline Filter (RDF) captures, and will provide treatment for, 0.25 acres (10,950 sf) of impervious or redeveloped area. The required area to be treated is 0.25 acres. Refer to section 2.17.10 SUMMARY OF STORMWATER CALCULATIONS AND RESULTS herein for calculations.

The redeveloped areas were given priority for treatment of areas with the highest pollutant ranking to the maximum extent practicable according to pollutant impact level.

The roof areas being treated are considered as high priority for this site. The gravel drive to the rear entrance is a slightly higher pollutant ranking, but is not included in the proposed treatment areas, since this area will effectively be inherently treated by the proximity to a natural meadow buffer. The roof area was given highest priority since there is no opportunity for this to be effectively treated without the addition of new BMPs.

Stormwater runoff will be delivered to a 25 foot long level spreader (LS) for redistribution as sheet flow to ensure that runoff remains well-distributed as it passes through the existing meadow buffer prior to discharge to the Kennebec River. The calculated length of the level spreader is approximately 11 feet, but the LS is conservatively designed to be 25 feet in length. This meets the eligibility requirement for waiver of the Flooding Standard.

2.17.9 EROSION CONTROL AND BASIC STANDARDS

The erosion control measures proposed for project will prevent erosion and sedimentation and protect any adjacent resources. These standards include various erosion and sedimentation controls and housekeeping requirements as outlined in Section 2.3 of this permit. Please refer to the attached plans, details, notes and narratives for detailed information regarding compliance with the Basic Standards.

2.17.10 SUMMARY OF STORMWATER CALCULATIONS AND RESULTS

Stormwater runoff calculations were performed in order to determine size and capacity for the stormwater BMPs and to assess the impacts to the existing stormwater facilities. The locations of the existing stormwater ponds and proposed BMPs are as indicated on the site plans. The sizing criteria are consistent with the Maine BMP Technical Design Manual and Chapter 500 Rules. The

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proposed RDF and LS will meet the requirements of the General Standards and Flooding Standard. This RDF BMP will capture and treat a minimum of 50% of the impervious and redeveloped area generated for this project.

Refer to the attached *Forensic Facility Drainage Plan* Drawing SW-1 in Appendix B that is color coded to the areas identified in the calculations below.

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REDEVELOPMENT AREAS

“Redevelopment” means an activity, not including maintenance, undertaken to redevelop or otherwise improve property in which the newly developed area, is located within the same footprint as the existing developed area

Pollutant Impact Ranking

(AREA)^{PRIORITY LEVEL}	<u>EXISTING</u>	<u>DEVELOPED</u>
<p>AREA A (yellow)³ 4 → 2 Med. use parking → Other rooftops 4306 sf = 0.099 ac</p>	$0.099 \times 4 = \underline{\underline{0.396}}$	$0.099 \times 2 = \underline{\underline{0.198}}$
<p>AREA B (pink)² 2 → 2 Grass → Other roof/walkways 7433 sf = 0.171 ac</p>	$0.171 \times 2 = \underline{\underline{0.342}}$	$0.171 \times 2 = \underline{\underline{0.342}}$
<p>AREA C (blue)¹ 2 → 3 Grass → Other parking/driveways 6962 sf = 0.160 ac</p>	$0.160 \times 2 = \underline{\underline{0.320}}$	$0.160 \times 3 = \underline{\underline{0.480}}$
<p>AREA D (green)⁴ 4 → 2 Med. use parking → Grass 2403 sf = 0.055 ac</p>	$0.055 \times 4 = \underline{\underline{0.220}}$	$0.055 \times 2 = \underline{\underline{0.110}}$
<p>AREA E (violet)⁵ 4 → 2 Med. use parking → Other roof/walkways 845 sf = 0.019 ac</p>	$0.019 \times 4 = \underline{\underline{0.076}}$	$0.019 \times 2 = \underline{\underline{0.038}}$
<p>TOTAL REDEVELOPMENT AREA = 21,949 SF = <u>0.504 AC</u> EXISTING IMPACT RATING = <u>1.354</u> DEVELOPED IMPACT RATING = <u>1.168</u></p>		

1.168 – 1.354 = -0.186

Ranked Treatment level (table 3) = 50% (0.0 or less) for Site Law projects

✳ Minimum redeveloped/developed area to be treated = (0.5)(0.504) = 0.252 ac

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NON-REDEVELOPMENT AREAS

“Maintenance” means an activity undertaken to maintain operating condition, original line and grade, hydraulic capacity, and original purpose of the project. Paving an impervious gravel surface at original line, grade and hydraulic capacity is considered maintenance. Replacement of a building is not considered maintenance of the building.

“Disturbed area” means all land areas that are stripped, graded, grubbed, filled, bulldozed or excavated at any time during the site preparation or removal of vegetation for, or construction of, a project. “Disturbed area” does not include maintenance.

	<u>EXISTING</u>	<u>DEVELOPED</u>
<p>AREA F (gray)</p> <p style="padding-left: 40px;">(4) → (4)</p> <p>Med. use parking → Med. use parking</p> <p>11223 sf = 0.258 ac</p>	NA	maintenance
<p>AREA G (no color)</p> <p style="padding-left: 40px;">(2) → (2)</p> <p>Grass → Grass</p> <p>N0-development</p>	NA	revegetated to original

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PROPOSED TREATMENT AREAS

Proposed treatment

(AREA)^{PRIORITY LEVEL}
X,XXX Area Treated

AREA C (blue)¹
(this area is not treated or included in calculations)

However, the rear access driveway includes 4,510 sf (0.104 ac.) of impervious area draining to an adjacent natural meadow buffer, at least 100 feet long, and is effectively treated due to the proximity of the project, which drains as sheet flow through this area prior to discharge to the Kennebec River. See Note #1 below.

AREA B (pink)²
6,644 sf (0.153 ac.) impervious roof area treated with roof dripline filtration BMP

AREA A (yellow)³
4,306 sf (0.099 ac.) impervious roof area treated with roof dripline filtration BMP

AREA D (green)⁴
(not treated)

AREA E (violet)⁵
(not treated)

TOTAL AREA TREATED = 0.252 AC (REQUIRED = 0.252 AC)

Notes:

1. Refer to Chapter 500, Appendix F – Vegetated Buffers, section 1.(d).(v). Area C includes impervious area of less than one acre, where the flow path across the impervious area does not exceed 100 feet.

CITY OF AUGUSTA SITE PLAN REVIEW – MAJOR DEVELOPMENT APPLICATION FOR SECURE FORENSIC REHAB FACILITY AT THE AUGUSTA EAST CAMPUS

2.0 | Development Review Application Criteria
August 2016

**Table 2
Pollutant Impact Rankings of Various Redevelopment Land Uses**

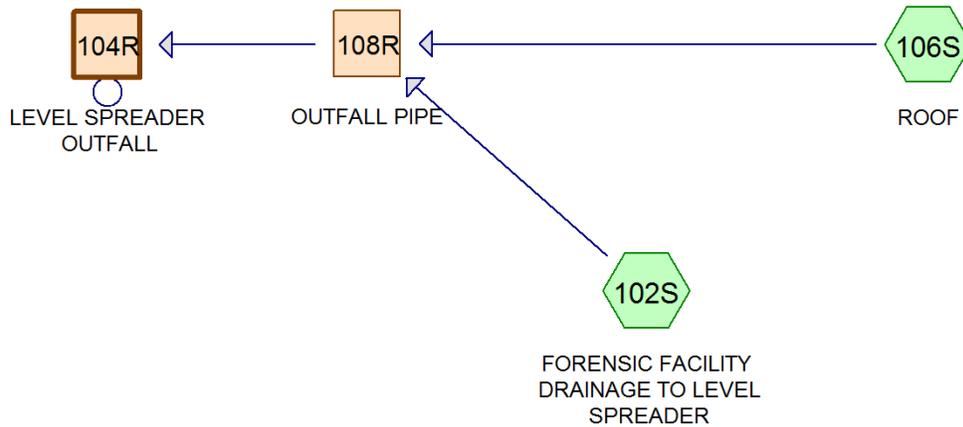
Land Use	Pollutant Ranking
Roads where idling may occur periodically due to traffic volume and intersections; High use parking lots	5
Other roads; Medium use parking lots	4
Other parking lots and driveways; Flat asphalt rooftops; Roofs on an industrial facility	3
Other rooftops; Bikeways; Grassed areas mowed more than twice per year; Walkways/foot traffic-only pavement	2
Non-grass landscaped areas; Stormwater treatment/storage systems (except buffers)	1
Forest; Meadow mowed no more than twice per year;	0

**Table 3
Treatment Levels for Redevelopment Projects**

Ranked Impact Change Due to Redevelopment	Percentage of Developed Area that Must be Treated
0.0 or less	0% (Stormwater projects) 50% (Site projects)
≥ 0.0 to ≤ 1.0	60%
> 1.0 to ≤ 2.0	70%
> 2.0 to ≤ 3.0	80%
> 3.0	Same treatment level as for new development

CITY OF AUGUSTA SITE PLAN REVIEW – MAJOR DEVELOPMENT APPLICATION FOR SECURE FORENSIC REHAB FACILITY AT THE AUGUSTA EAST CAMPUS

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AMHI_DEVELOPED

Prepared by Stantec Consulting Ltd.

HydroCAD® 10.00-13 s/n 01672 © 2014 HydroCAD Software Solutions LLC

Type III 24-hr 10 YEAR Rainfall=4.40"

Printed 8/9/2016

Page 1

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 102S: FORENSIC FACILITY Runoff Area=13,635 sf 79.21% Impervious Runoff Depth=3.30"
Tc=0.0 min CN=90 Runoff=1.44 cfs 0.086 af

Subcatchment 106S: ROOF Runoff Area=10,947 sf 100.00% Impervious Runoff Depth=4.16"
Tc=0.0 min CN=98 Runoff=1.32 cfs 0.087 af

Reach 104R: LEVEL SPREADER Avg. Flow Depth=0.14' Max Vel=0.75 fps Inflow=2.73 cfs 0.173 af
n=0.150 L=20.0' S=0.0800 '/' Capacity=75.57 cfs Outflow=2.69 cfs 0.173 af

Reach 108R: OUTFALL PIPE Avg. Flow Depth=0.57' Max Vel=5.05 fps Inflow=2.76 cfs 0.173 af
15.0" Round Pipe n=0.013 L=25.0' S=0.0100 '/' Capacity=6.46 cfs Outflow=2.73 cfs 0.173 af

Total Runoff Area = 0.564 ac Runoff Volume = 0.173 af Average Runoff Depth = 3.68"
11.53% Pervious = 0.065 ac 88.47% Impervious = 0.499 ac

CITY OF AUGUSTA SITE PLAN REVIEW – MAJOR DEVELOPMENT APPLICATION FOR SECURE FORENSIC REHAB FACILITY AT THE AUGUSTA EAST CAMPUS

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ROOF DRIPLINE FILTER (RDF)

ROOF DRIPLINE FILTER DESIGN AND SIZING WORKSHEET

ROOF DRIPLINE FILTER

TREATMENT BMP

Dripline Filter(s)

Total Drainage Area =	10,947 sf	
Total Developed Area =	10,947 sf	(100% impervious)
Non-linear Impervious Area =	10,947 sf	10,947 sf
Total Impervious Area =	<u>10,947 sf</u>	<u>10,947 sf</u>
TOTAL AREA TREATED		<u>10,947 sf</u>

Water Quality Volume (WQV) = 1" x imp area = 0.4" x non-imp area

$$\diamond WQV = (1/12) (10,947) + (0.4/12) (0) = \mathbf{912\ cf}$$

20 foot wide roof panel

Roof area per linear foot = 20' x 1' = 20 sf

Drip edge area per linear foot = 4 ft x 1 ft = 4 sf/lf

Runoff volume (WQV) per linear foot @ 1" depth = 20 sf x 1/12 ft = 1.67 cf/lf

Drip edge volume per linear foot

4 foot wide drip edge layer

40% void ratio

Depth = 1.67 cf/lf ÷ (4 sf x 0.40) = 1.04 ft

(12" reservoir course)

LEVEL SPREADER

LEVEL SPREADER DESIGN AND SIZING WORKSHEET

The peak stormwater flow rate to a level spreader due to runoff from a 10-year, 24-hour storm must be less than 0.25 cubic feet per second (0.25 cfs) per foot length of level spreader lip.

Subcatchment 106 (roof area to RDF & LS)	10,947 sf
Subcatchment 102 (site area to LS)	<u>10,947 sf</u>
Total Drainage Area	24,583 sf
Ten year runoff to LS	2.7 cfs



CITY OF AUGUSTA SITE PLAN REVIEW – MAJOR DEVELOPMENT APPLICATION FOR SECURE FORENSIC REHAB FACILITY AT THE AUGUSTA EAST CAMPUS

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Per Chapter 500 § 4.H.(2).(a), the required length of level spreader = $2.7 \text{ cfs} \div 0.25 \text{ cfs/ft} = 10.8 \text{ ft}$

Proposed Level Spreader = 25 ft > 10.8 ft **(OK)**

Existing drainage ponds and level spreaders

There is no change to the runoff and inflow to the existing basins to be relocated prior to the construction of the Forensic facility. The existing 25 foot level spreaders which currently exist will be relocated and replicated to the new location without receiving any new runoff. Therefore, the existing (relocated) drainage basins and level spreaders are not impacted by the proposed redevelopment and infrastructure changes.

2.17.11 CONCLUSION

The runoff water quality from the Forensic Rehab Facility redevelopment at the Riverview Psychiatric Center East Campus for the developed site will be controlled using LID design stormwater management techniques including the addition of new Roof Dripline Filter and level Lip Spreader BMPs for water quality treatment and discharge to the Kennebec River as sheet flow in accordance with the BMP manual and general standards.

The Infrastructure Improvements and development for the Forensic Rehab Facility has been designed in a manner that compliments its surroundings and meets the requirements of the City of Augusta and the Department of Environmental Protection stormwater regulations. A sustainable stormwater system has been designed to control peak flows and minimize downstream impacts while controlling water quality.

It is our conclusion that the proposed stormwater BMPs and site improvements will provide adequate control of stormwater runoff from the site without producing significant flooding or adverse impacts to the site or downstream reaches. We feel that the proposed drainage, erosion control measures and stormwater quality Best Management Practices and LID measures, if properly constructed and maintained, will not create flooding or significant adverse impacts due to runoff to adjacent properties or result in degradation of existing water quality.

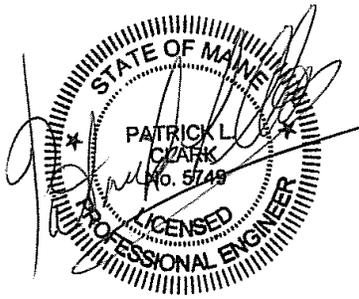
CITY OF AUGUSTA SITE PLAN REVIEW – MAJOR DEVELOPMENT APPLICATION FOR SECURE FORENSIC REHAB FACILITY AT THE AUGUSTA EAST CAMPUS

2.0 | Development Review Application Criteria
August 2016

Prepared by:



Patrick L. Clark, PE



CITY OF AUGUSTA SITE PLAN REVIEW – MAJOR DEVELOPMENT APPLICATION FOR SECURE FORENSIC REHAB FACILITY AT THE AUGUSTA EAST CAMPUS

2.0 | Development Review Application Criteria
August 2016

2.18 ACCESS TO DIRECT SUNLIGHT

The project will not impact access to direct sunlight on the East Campus or in the surrounding areas.

2.19 STATE PERMITS

A Site Location of Development Minor Amendment permit application has been filed with the Maine Department of Environmental Protection for this project (June 2016). The application is currently under review. All review comments, responses, and the final approval order will be forwarded to the City upon receipt.

2.20 SPAGHETTI LOTS PROHIBITED

The project does not include the development of any shore frontage lots.

2.21 OUTDOOR LIGHTING

All exterior fixtures shall utilize LED technology, and shall be full-cutoff type in order to minimize light pollution into the night sky. Exterior lighting shall be provided at building entrances, walkways and parking areas.

2.22 NEIGHBORHOOD COMPATIBILITY

There will be no physical impacts on the immediate neighborhoods around the East Campus property as a result of this project. The proposed development will be shielded from abutting properties by existing buildings and vegetation. Light fixtures and the building itself have been designed to imitate the existing site as much as practicable.

2.23 COMPLIANCE WITH PLANS AND POLICIES

The project will be in compliance with the 1988 Growth Management Plan, the 2007 Comprehensive Plan, and the State of Maine Capitol Area Rules and Regulations.

2.24 TRAFFIC PATTERN

The project will not alter the flow or volume of traffic on public roadways. Access for emergency services to the campus will remain the same.

2.25 PUBLIC FACILITIES

Please refer to sections 2.2 *Water*, 2.3 *Municipal Water*, 2.7 *Sewage Waste Disposal*, and 2.17 *Stormwater* for information on existing and proposed utilities.



CITY OF AUGUSTA SITE PLAN REVIEW – MAJOR DEVELOPMENT APPLICATION FOR SECURE FORENSIC REHAB FACILITY AT THE AUGUSTA EAST CAMPUS

2.0 | Development Review Application Criteria
August 2016

2.26 RESOURCE PROTECTION AND THE ENVIRONMENT

The project area does not include any shallow soils, wetlands, aquifers, steep slopes, or floodplains. The project conforms to applicable local, State, and Federal air and water quality standards. All sewage and industrial waste from the project will be treated and disposed of in a manner as to conform to local, State, and Federal standards. The project location is not within the Shoreland or Wetland Districts.

2.27 PERFORMANCE STANDARDS

- (a) The project complies with all applicable performance standards under Chapter 300 of the City ordinance.
- (b) Temporary noise generated during construction of the project will not exceed performance levels specified in Chapter 300. The project itself is not anticipated to result in an increase in permanent noise levels at the property line. The building will have a backup generator that will only run if the power to the building is lost. There will be two external heat pump units for the building, but the units will not significantly increase noise levels in the area surrounding the building. Any potential noise from the building will not impact residential areas as the closest residential area is 1,000-1,500 feet away from the proposed development area. The water heater and boiler will be located in the basement of the building and will not result in noise external to the building.
- (c) The project will not involve the generation of intense glare or heat.
- (d) The new exterior lighting will not cause excessive glare into residential areas. Refer to section 2.21.
- (e) The proposed location for the building is a parking lot, as well as an adjacent mowed grass area inclusive of a few trees. The proposed building will be surrounded by existing buildings, parking lots, the Riverview Psychiatric Center, and wooded expanses. Minimal plantings will be added to the surrounding area as part of this project. The building will be developed approximately 1,200 feet away from Hospital Street, which is the closest major public roadway.
- (f) No additional signs, other than traffic, parking and way-finding signage are proposed. Traffic and parking signs shall conform to the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD).

2.28 FINANCIAL AND TECHNICAL ABILITY

Please refer to section 2.11 *Financial and Technical Capacity* above.



3.0 CONDITIONAL USE APPLICATION CRITERIA

3.1 NEIGHBORHOOD COMPATIBILITY

Please see Section 2.22 *Neighborhood Compatibility*.

3.2 PLANS AND POLICIES

Please see Section 2.23 *Compliance with Plans and Policies*.

3.3 TRAFFIC PATTERN, FLOW, AND VOLUME

Please see Section 2.24 *Traffic Pattern*.

3.4 PUBLIC FACILITIES

Please see Section 2.25 *Public Facilities*.

3.5 RESOURCE PROTECTION AND THE ENVIRONMENT

Please see Section 2.26 *Resource Protection and the Environment*.

3.6 PERFORMANCE STANDARDS

Please see Section 2.27 *Performance Standards*.

3.7 FINANCIAL AND TECHNICAL ABILITY

Please see Section 2.11 *Financial and Technical Capacity*.

CITY OF AUGUSTA SITE PLAN REVIEW – MAJOR DEVELOPMENT APPLICATION FOR SECURE FORENSIC REHAB FACILITY AT THE AUGUSTA EAST CAMPUS

3.0 | Conditional Use Application Criteria
August 2016

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CITY OF AUGUSTA SITE PLAN REVIEW – MAJOR DEVELOPMENT APPLICATION FOR SECURE FORENSIC REHAB FACILITY AT THE AUGUSTA EAST CAMPUS

Appendix A | Funding Letter
August 2016

Appendix A FUNDING LETTER

CITY OF AUGUSTA SITE PLAN REVIEW – MAJOR DEVELOPMENT APPLICATION FOR SECURE FORENSIC REHAB FACILITY AT THE AUGUSTA EAST CAMPUS

3.0 | Conditional Use Application Criteria
August 2016

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Department of Health
and Human Services

*Maine People Living
Safe, Healthy and Productive Lives*

Paul R. LePage, Governor

Mary C. Mayhew, Commissioner

Department of Health and Human Services
Commissioner's Office
221 State Street
11 State House Station
Augusta, Maine 04333-0011
Tel.: (207) 287-3707; Fax (207) 287-3005
TTY Users: Dial 711 (Maine Relay)

August 2, 2016

Dear Maine Department of Environmental Protection,

Please accept this letter as confirmation that the Department of Health and Human Services has the financial capacity to undertake the Secure Forensic Rehabilitation Facility project. We have budget appropriations specifically designated for services to the population that will occupy this facility and our available funds line up to all cost estimates received to date.

Sincerely,

A handwritten signature in black ink, appearing to read 'Sam Adolphsen'.

Sam Adolphsen
Chief Operating Officer
Maine Department of Health and Human Services

CITY OF AUGUSTA SITE PLAN REVIEW – MAJOR DEVELOPMENT APPLICATION FOR SECURE FORENSIC REHAB FACILITY AT THE AUGUSTA EAST CAMPUS

Appendix B | Stormwater Drainage Plan
August 2016

Appendix B STORMWATER DRAINAGE PLAN

CITY OF AUGUSTA SITE PLAN REVIEW – MAJOR DEVELOPMENT APPLICATION FOR SECURE FORENSIC REHAB FACILITY AT THE AUGUSTA EAST CAMPUS

3.0 | Conditional Use Application Criteria
August 2016

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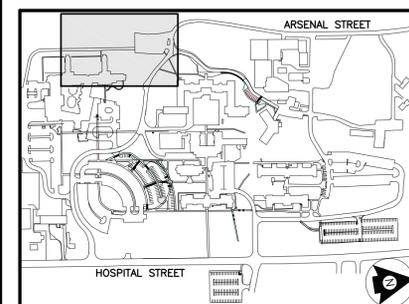
Notes

REDEVELOPMENT AREAS

AREA	EXISTING	DEVELOPED	POLLUTANT IMPACT RANKING	
			EXISTING	DEVELOPED
AREA A (YELLOW) MED. USE PARKING → OTHER ROOFTOPS 4304 SF = 0.099 AC	0.099 X 4 = 0.396	0.099 X 2 = 0.198		
AREA B (PINK) GRASS → OTHER ROOF/WALKWAYS 7433 SF = 0.171 AC	0.171 X 2 = 0.342	0.171 X 2 = 0.342		
AREA C (BLUE) GRASS → OTHER PARKING/DRIVEWAYS 6962 SF = 0.160 AC	0.160 X 2 = 0.320	0.160 X 3 = 0.480		
AREA D (GREEN) MED. USE PARKING → GRASS 2403 SF = 0.055 AC	0.055 X 4 = 0.220	0.055 X 2 = 0.110		
AREA E (VIOLET) MED. USE PARKING → OTHER ROOF/WALKWAYS 845 SF = 0.019 AC	0.019 X 4 = 0.076	0.019 X 2 = 0.038		
TOTAL REDEVELOPMENT AREA = 21,949 SF = 0.504 AC				
EXISTING IMPACT RATING = 1.354				
DEVELOPED IMPACT RATING = 1.168				
1.168 - 1.354 = -0.186				
RANKED TREATMENT LEVEL (TABLE 3) = 50% (0.0 OR LESS) FOR SITE LAW PROJECTS				
MINIMUM REDEVELOPED/DEVELOPED AREA TO BE TREATED = (0.5)(0.504) = 0.252 AC				

AREA	EXISTING	DEVELOPED	NON-REDEVELOPMENT AREAS	
			EXISTING	DEVELOPED
AREA F (GRAY) MED. USE PARKING → MED. USE PARKING 11223 SF = 0.258 AC	NA	MAINTENANCE		
AREA G (NO COLOR) GRASS → GRASS ND-DEVELOPMENT	NA	REVEGETATED TO ORIGINAL		

PROPOSED TREATMENT	EXISTING	DEVELOPED	PROPOSED TREATMENT AREAS	
			EXISTING	DEVELOPED
AREA B (PINK) 6,644 SF (0.153 AC.) IMPERVIOUS ROOF AREA TREATED WITH ROOF DRIPLINE FILTRATION BMP				
AREA A (YELLOW) 4,306 SF (0.099 AC.) IMPERVIOUS ROOF AREA TREATED WITH ROOF DRIPLINE FILTRATION BMP				
TOTAL AREA TREATED = 0.252 AC (REQUIRED = 0.252 AC)				



KEYPLAN
SCALE: 1" = 500'

Revision	By	Appd.	YY.MM.DD

File Name:	Dwn.	Chkd.	Dgn.	YY.MM.DD

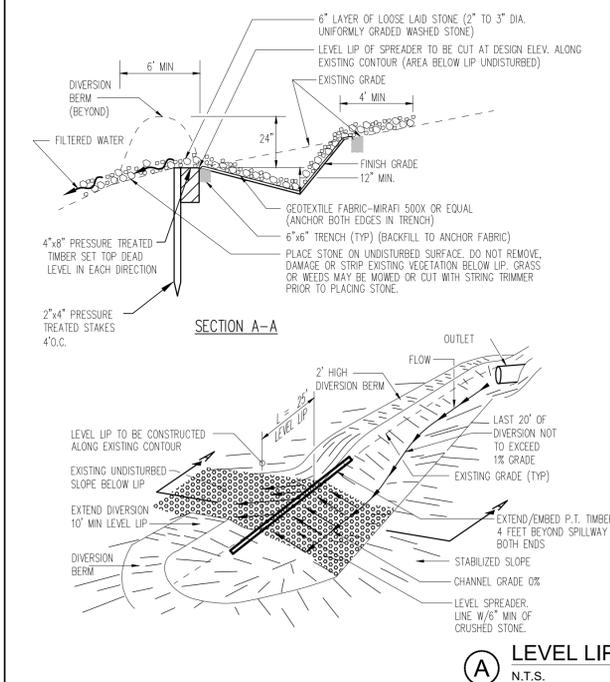
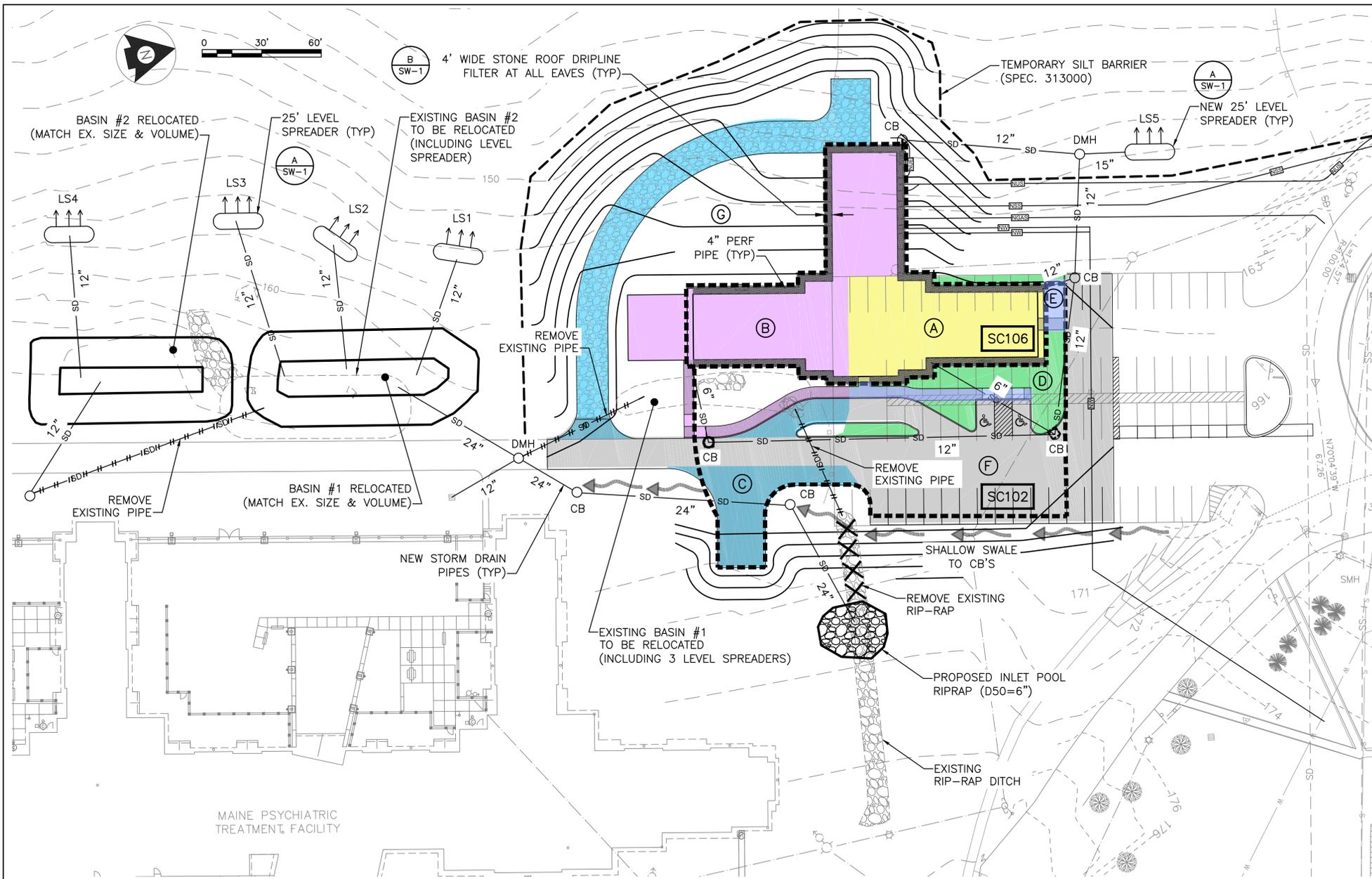
Permit-Seal	Issued

DEP SUBMISSION
NOT FOR CONSTRUCTION
08-12-2016

Client/Project
STATE OF MAINE
BUREAU OF GENERAL SERVICES
EAST CAMPUS
SECURE FORENSIC
REHAB FACILITY
Augusta, Maine

Title
DRAINAGE PLAN

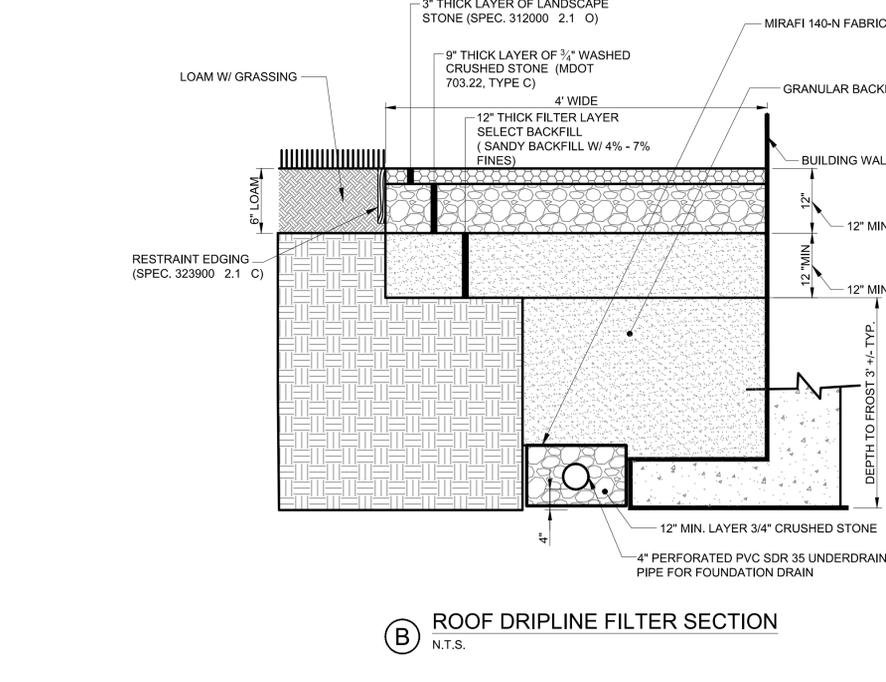
Project No.	Scale	
195210829	AS NOTED	
Drawing No.	Sheet	Revision
SW-1	1 of 1	A



MAINTENANCE
THE LEVEL SPREADER SHOULD BE CHECKED PERIODICALLY AND AFTER EVERY MAJOR STORM TO DETERMINE IF THE LIP HAS BEEN DAMAGED AND TO DETERMINE THAT THE DESIGN CONDITIONS HAVE NOT CHANGED. ANY DETRIMENTAL SEDIMENT ACCUMULATION SHOULD BE REMOVED. IF RILLING HAS TAKEN PLACE ON THE LIP, THEN THE DAMAGE SHOULD BE REPAIRED AND RE-VEGETATED. THE VEGETATION SHOULD BE MOWED OCCASIONALLY TO CONTROL WEEDS AND THE ENCROACHMENT OF WOODY VEGETATION. CLIPPINGS SHOULD BE REMOVED AND DISPOSED OF OUTSIDE THE SPREADER AND AWAY FROM THE OUTLET AREA. FERTILIZATION SHOULD BE DONE AS NECESSARY TO KEEP THE VEGETATION HEALTHY AND DENSE.

CONSTRUCTION SPECIFICATIONS
REFER TO MAINE EROSION AND SEDIMENT CONTROL BMPs MANUAL - 5/2016, SECTION G.4 FOR ADDITIONAL INFORMATION

- CONSTRUCT THE LEVEL SPREADER LIP ON A ZERO PERCENT GRADE AT SPECIFIED LOCATION TO INSURE UNIFORM SPREADING OF RUNOFF.
- LEVEL SPREADER SHALL BE CONSTRUCTED ON UNDISTURBED SOIL AND NOT ON FILL.
- AN EROSION STOP TRENCH (6"x6") SHALL BE PLACED ALONG THE LEVEL LIP AND PARALLEL TO THE LIP ALONG THE UPPER LIP. THE EROSION STOPS SHALL EXTEND THE ENTIRE LENGTH OF THE LEVEL LIP SPREADER.
- THE ENTIRE LEVEL LIP AREA SHALL BE PROTECTED BY PLACING GEOTEXTILE FABRIC AND STONE MAT ALONG THE LENGTH OF THE SPREADER.
- THE ENTRANCE CHANNEL TO THE LEVEL SPREADER SHALL NOT EXCEED A 1 PERCENT GRADE FOR AT LEAST 50 FEET BEFORE ENTERING INTO THE SPREADER.
- THE FLOW FROM THE LEVEL SPREADER SHALL OUTLET ONTO STABILIZED AREAS. WATER SHOULD NOT RE-CONCENTRATE IMMEDIATELY BELOW THE SPREADER.
- PERIODIC INSPECTION AND REQUIRED MAINTENANCE SHALL BE PERFORMED.



CITY OF AUGUSTA SITE PLAN REVIEW – MAJOR DEVELOPMENT APPLICATION FOR SECURE FORENSIC REHAB FACILITY AT THE AUGUSTA EAST CAMPUS

Appendix C | Agency Correspondence
August 2016

Appendix C AGENCY CORRESPONDENCE

CITY OF AUGUSTA SITE PLAN REVIEW – MAJOR DEVELOPMENT APPLICATION FOR SECURE FORENSIC REHAB FACILITY AT THE AUGUSTA EAST CAMPUS

3.0 | Conditional Use Application Criteria
August 2016

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Brian Tarbuck, General Manager
btarbuck@greateraugustautilitydistrict.org

Ken Knight, Board Chair
kknight@greateraugustautilitydistrict.org

Dave Bustin, Hallowell voting member, Clerk
dbustin@greateraugustautilitydistrict.org

Bob Corey, Treasurer
bcorey@greateraugustautilitydistrict.org



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Kirsten Hebert
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Dave Rollins, Augusta ex-officio member
drollins@greateraugustautilitydistrict.org

Charlotte Warren, Hallowell ex-officio member
cwarren@greateraugustautilitydistrict.org

August 4, 2016

Erica Kidd, M.S.
Stantec
482 Payne Road, Scarborough Court
Scarborough, ME 04074-8929

RE: State of Maine East Campus, Augusta, Maine – Proposed Rehab Facility

Dear Erica,

This letter is to convey to you that the District has sufficient capacity of safe drinking water within its system to adequately supply the proposed Forensic Rehab Facility with domestic water based on its proposed domestic demands of 2,625 GPD. The area water pressure is approximately 100 psig.

The District also has adequate capacity within its sanitary sewer collection system in the street to receive discharge based on the proposed domestic water usage of 2,625 GPD.

It will be the responsibility of the fire protection engineer to determine adequate capacity for any proposed fire suppression system.

All potable water supplied to the proposed facility will be metered through the existing 6" diameter water meter installed in what is known as the "South Pit". All water lines on-site supplied through this pit are private and controlled through BGS.

Based on the proposed daily water demand, the District will be assessing a Sewer Availability Fee calculated out as 2,625 GPD times \$10.00 per gallon for a total fee of \$26,250.00. This fee is assessed to all new sewer connections to provide funding assistance to help offset a portion of the cost of system upgrades due to additional capacity.

The District will require the submittal of building floor and plumbing plans as well as all site development plans for review and comment prior to bidding the project. Building plans should be submitted in PDF format. The District will require the submittal of final site development plans in AutoCAD format prior to signing any building permits.

Please contact me at 622-3701 ext. 4278 or e-mail at mmorey@gaud.ws should you have any questions or concerns.

Sincerely,

GREATER AUGUSTA UTILITY DISTRICT

Michael A. Morey
Engineering Services Supervisor



PAUL R. LePAGE
GOVERNOR

STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY
93 STATE HOUSE STATION
AUGUSTA, MAINE 04333

WALTER E. WHITCOMB
COMMISSIONER

July 28, 2016

Erica Kidd
Stantec
482 Payne Road, Scarborough Court
Scarborough, ME 04074

Via email: erica.kidd@stantec.com

Re: Rare and exemplary botanical features in proximity to: Project Secure Forensic Rehab Facility, East Side Campus, Augusta, Maine

Dear Ms. Kidd:

I have searched the Natural Areas Program's Biological and Conservation Data System files in response to your request received July 26, 2016 for information on the presence of rare or unique botanical features documented from the vicinity of the project in Augusta, Maine. Rare and unique botanical features include the habitat of rare, threatened, or endangered plant species and unique or exemplary natural communities. Our review involves examining maps, manual and computerized records, other sources of information such as scientific articles or published references, and the personal knowledge of staff or cooperating experts.

Our official response covers only botanical features. For authoritative information and official response for zoological features you must make a similar request to the Maine Department of Inland Fisheries and Wildlife, 284 State Street, Augusta, Maine 04333.

According to the information currently in our Biological and Conservation Data System files, there are no rare botanical features documented specifically within the project area. This lack of data may indicate minimal survey efforts rather than confirm the absence of rare botanical features. You may want to have the site inventoried by a qualified field biologist to ensure that no undocumented rare features are inadvertently harmed.

If a field survey of the project area is conducted, please refer to the enclosed supplemental information regarding rare and exemplary botanical features documented to occur in the vicinity of the project site. The list may include information on features that have been known to occur historically in the area as well as recently field-verified information. While historic records have not been documented in several years, they may persist in the area if suitable habitat exists. The enclosed list identifies features with potential to occur in the area, and it should be considered if you choose to conduct field surveys.

This finding is available and appropriate for preparation and review of environmental assessments, but it is not a substitute for on-site surveys. Comprehensive field surveys do not exist for all natural areas in Maine, and in the absence of a specific field investigation, the Maine Natural Areas Program cannot provide a definitive statement on the presence or absence of unusual natural features at this site.

MOLLY DOCHERTY, DIRECTOR
MAINE NATURAL AREAS PROGRAM



PHONE: (207) 287-8044
FAX: (207) 287-8040
WWW.MAINE.GOV/DACF/MNAP

The Natural Areas Program is continuously working to achieve a more comprehensive database of exemplary natural features in Maine. We would appreciate the contribution of any information obtained should you decide to do field work. The Natural Areas Program welcomes coordination with individuals or organizations proposing environmental alteration, or conducting environmental assessments. If, however, data provided by the Natural Areas Program are to be published in any form, the Program should be informed at the outset and credited as the source.

The Natural Areas Program has instituted a fee structure of \$75.00 an hour to recover the actual cost of processing your request for information. You will receive an invoice for \$150.00 for two hours of our services.

Thank you for using the Natural Areas Program in the environmental review process. Please do not hesitate to contact me if you have further questions about the Natural Areas Program or about rare or unique botanical features on this site.

Sincerely,

A handwritten signature in blue ink, appearing to read "Don Cameron", with a long, sweeping underline.

Don Cameron | Ecologist | Maine Natural Areas Program
207-287-8041 | don.s.cameron@maine.gov

Rare and Exemplary Botanical Features within 4 miles of Project: Secure Forensic Rehab Facility, East Side Campus, Augusta, Maine

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
American Ginseng						
	E	S3	G3G4	1907-07-28	18	Hardwood to mixed forest (forest, upland)
Awne d Flatsedge						
	SC	S2	G5	2012-09-28	11	Non-tidal rivershore (non-forested, seasonally wet)
Awne d Sedge						
	T	S1	G5	2015-07-26	4	Coastal non-tidal wetland (non-forested, wetland)
	T	S1	G5	2015-07-26	5	Coastal non-tidal wetland (non-forested, wetland)
	T	S1	G5	2007-08-13	2	Coastal non-tidal wetland (non-forested, wetland)
Broad Beech Fern						
	SC	S2	G5	1897-08-30	9	Hardwood to mixed forest (forest, upland)
Eaton's Bur-marigold						
	SC	S2	G2G3	2013-10-04	29	Tidal wetland (non-forested, wetland)
Estuary Bur-marigold						
	SC	S3	G4	2013-10-04	30	Tidal wetland (non-forested, wetland)
Freshwater Tidal Marsh						
	<null>	S2	G4?	2013-09-10	16	Tidal wetland (non-forested, wetland)
Meadow Sedge						
	T	S1	G5	2014-05-30	4	<null>
Mountain Honeysuckle						
	E	S2	G5	1975-pre	1	Dry barrens (partly forested, upland),Hardwood to mixed forest (forest, upland)
Narrow-leaf Arrowhead						
	SC	S2	G4G5	1999-08-21	3	<null>
Parker's Pipewort						

Rare and Exemplary Botanical Features within 4 miles of Project: Secure Forensic Rehab Facility, East Side Campus, Augusta, Maine

Common Name	State Status	State Rank	Global Rank	Date Last Observed	Occurrence Number	Habitat
Sandbar Willow	SC	S3	G3	2013-10-04	16	Tidal wetland (non-forested, wetland)
Showy Lady's-slipper	E	S1	G5	2012-09-28	4	Non-tidal rivershore (non-forested, seasonally wet)
Showy Orchis	SC	S3	G4	1874-07-04	36	Forested wetland, Open wetland, not coastal nor rivershore (non-forested, wetland)
Stiff Arrowhead	E	S1	G5	1941	15	Hardwood to mixed forest (forest, upland)
Water Stargrass	SC	S2	G5	2011-09-27	11	Tidal wetland (non-forested, wetland)
White Adder's-mouth	SC	S3	G5	1999-08-21	8	Open water (non-forested, wetland)
Wild Garlic	E	S1	G5	1878-06	15	Forested wetland
	SC	S2	G5	2002	18	Forested wetland, Hardwood to mixed forest (forest, upland)

STATE RARITY RANKS

- S1** Critically imperiled in Maine because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extirpation from the State of Maine.
- S2** Imperiled in Maine because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.
- S3** Rare in Maine (20-100 occurrences).
- S4** Apparently secure in Maine.
- S5** Demonstrably secure in Maine.
- SU** Under consideration for assigning rarity status; more information needed on threats or distribution.
- SNR** Not yet ranked.
- SNA** Rank not applicable.
- S#?** Current occurrence data suggests assigned rank, but lack of survey effort along with amount of potential habitat create uncertainty (e.g. S3?).

Note: **State Rarity Ranks** are determined by the Maine Natural Areas Program for rare plants and rare and exemplary natural communities and ecosystems. The Maine Department of Inland Fisheries and Wildlife determines State Rarity Ranks for animals.

GLOBAL RARITY RANKS

- G1** Critically imperiled globally because of extreme rarity (five or fewer occurrences or very few remaining individuals or acres) or because some aspect of its biology makes it especially vulnerable to extinction.
- G2** Globally imperiled because of rarity (6-20 occurrences or few remaining individuals or acres) or because of other factors making it vulnerable to further decline.
- G3** Globally rare (20-100 occurrences).
- G4** Apparently secure globally.
- G5** Demonstrably secure globally.
- GNR** Not yet ranked.

Note: **Global Ranks** are determined by NatureServe.

STATE LEGAL STATUS

Note: State legal status is according to 5 M.R.S.A. § 13076-13079, which mandates the Department of Conservation to produce and biennially update the official list of Maine's **Endangered and Threatened** plants. The list is derived by a technical advisory committee of botanists who use data in the Natural Areas Program's database to recommend status changes to the Department of Conservation.

- E** ENDANGERED; Rare and in danger of being lost from the state in the foreseeable future; or federally listed as Endangered.
- T** THREATENED; Rare and, with further decline, could become endangered; or federally listed as Threatened.

NON-LEGAL STATUS

- SC** SPECIAL CONCERN; Rare in Maine, based on available information, but not sufficiently rare to be considered Threatened or Endangered.
- PE** Potentially Extirpated; Species has not been documented in Maine in past 20 years or loss of last known occurrence has been documented.

ELEMENT OCCURRENCE RANKS - EO RANKS

Element Occurrence ranks are used to describe the quality of a rare plant population or natural community based on three factors:

- **Size**: Size of community or population relative to other known examples in Maine. Community or population's viability, capability to maintain itself.
- **Condition**: For communities, condition includes presence of representative species, maturity of species, and evidence of human-caused disturbance. For plants, factors include species vigor and evidence of human-caused disturbance.
- **Landscape context**: Land uses and/or condition of natural communities surrounding the observed area. Ability of the observed community or population to be protected from effects of adjacent land uses.

These three factors are combined into an overall ranking of the feature of **A**, **B**, **C**, or **D**, where **A** indicates an **excellent** example of the community or population and **D** indicates a **poor** example of the community or population. A rank of **E** indicates that the community or population is **extant** but there is not enough data to assign a quality rank. The Maine Natural Areas Program tracks all occurrences of rare (S1-S3) plants and natural communities as well as A and B ranked common (S4-S5) natural communities.

Note: **Element Occurrence Ranks** are determined by the Maine Natural Areas Program for rare plants and rare and exemplary natural communities and ecosystems. The Maine Department of Inland Fisheries and Wildlife determines Element Occurrence ranks for animals.

Visit our website for more information on rare, threatened, and endangered species!
<http://www.maine.gov/dacf/mnap>

CITY OF AUGUSTA SITE PLAN REVIEW – MAJOR DEVELOPMENT APPLICATION FOR SECURE FORENSIC REHAB FACILITY AT THE AUGUSTA EAST CAMPUS

Appendix D | NRCS Soils Map and Erosion Control Specification
August 2016

Appendix D NRCS SOILS MAP AND EROSION CONTROL SPECIFICATION

CITY OF AUGUSTA SITE PLAN REVIEW – MAJOR DEVELOPMENT APPLICATION FOR SECURE FORENSIC REHAB FACILITY AT THE AUGUSTA EAST CAMPUS

3.0 | Conditional Use Application Criteria
August 2016

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SECTION 313000 - SEDIMENTATION AND EROSION CONTROL MEASURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section includes the following:
 - 1. Establishment and maintenance of temporary and permanent drainage areas.
 - 2. Construction and maintenance of temporary and permanent embankments.
 - 3. Temporary and permanent vegetative stabilization.
 - 4. Establishment and maintenance of designated stockpile areas.
 - 5. Construction and maintenance of silt fences and hay bale barriers.
 - 6. All erosion and sediment control work required for the safe conduct of the work, whether or not specifically mentioned in these Specifications or indicated on the Drawings.
- B. Related Sections include the following:
 - 1. Division 32 Section "Turf and Grasses, Plants" for finish grading including preparing and placing planting soil mixes and testing of topsoil material.
 - 2. Division 31 Section "Earth Moving for Pavements and Structures" for soil materials, excavating, backfilling, and site grading.
 - 3. Division 31 Section "Earth Moving for Utilities" for soil materials, excavating, backfilling for utilities.

1.3 REFERENCES

- A. Quality, grades of materials and installation procedure: In conformance with applicable code and standards including:
 - 1. American Society for Testing and Materials (ASTM).
 - 2. State of Maine, Department of Transportation, Standard Specifications (MDOT) 12/2002.
 - 3. Maine Erosion and Sedimentation Control Handbook for Construction: Best Management Practices 3/2003.
- B. Land, Air and Water Pollution: Comply with Pollution Control Standards for the State of Maine applicable to the work to ensure that no pollution is caused by work of this Contract.
- C. Soil Erosion and Sediment Control: Implement soil erosion and sediment control in strict accordance with provisions of the Erosion and Sedimentation Control Handbook.
- D. MDEP Site Location of Development Act (SLODA): Implement soil erosion and sediment control in strict accordance with provisions of this permit.

1.4 DEFINITIONS

- A. Sediment: Soil and other debris that have eroded and have been transported by runoff water or wind.
- B. Dust: Earthy material and any substance reduced to fine powder.
- C. Solid Waste: Rubbish, debris, garbage, and other discarded solid materials, except hazardous waste as defined in paragraph entitled "Hazardous Waste," resulting from industrial, commercial, and agricultural operations and from community activities.
- D. Rubbish: Combustible and noncombustible wastes such as paper, boxes, glass, crockery, metal, lumber, cans, and bones.
- E. Debris: Combustible and noncombustible wastes such as ashes and waste materials resulting from construction or maintenance and repair work, leaves, and tree trimmings.
- F. Oily Waste: Petroleum products and bituminous materials.

1.5 SUBMITTALS

- A. Factory Test Reports and data sheets
 - 1. Erosion Control Mesh.
 - 2. Geotextile fabric(s).
 - 3. Silt Fence.
 - 4. Erosion Control Mix

1.6 ENVIRONMENTAL PROTECTION REQUIREMENTS

- A. Provide and maintain, during the life of the contract, environmental protection as defined. Plan for and provide environmental protective measures to control pollution that develops during normal construction practice. Plan for and provide environmental protective measures required to correct conditions that develop during the construction of permanent or temporary environmental features associated with the project. Comply with Federal, State, and local regulations pertaining to the environment, including but not limited to water, air, light, and noise pollution.
- B. Environmental Protection Plan: Five days after the award of contract, the Contractor shall meet with the contracting Officer to discuss the proposed environmental protection plan and to develop mutual understanding relative to the details of environmental protection, including measures for protecting natural resources, required reports, and other measures to be taken.
- C. Environmental Planning: Fourteen days after the meeting, the Contractor shall submit to the Architect/Engineer the proposed environmental plan for further discussion, review, and approval.
- D. Commencement of the Work: As directed by the Contracting Officer, following approval.
- E. Tree Protection: See section 015639 Temporary Tree and Plant Protection.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. All Products: As specified by Erosion and Sedimentation Control Handbook.
- B. All Fill Materials: In accordance with requirements of Section 312000, "Earth Moving for Structures and Pavements".
- C. Temporary Vegetative Stabilization: Temporary Seeding for graded or cleared areas, which are subject to erosion for a period of 14 days or more. Vegetation in accordance with Handbook.
- D. Permanent Vegetative Stabilization: Seeding for graded or cleared areas subject to erosion where a permanent, long-lived vegetation cover is needed. Vegetation in accordance with Handbook.
- E. Embankments:
 - 1. Vegetation: In accordance with Handbook; Section 329200, "Turf and Grasses".
 - 2. Erosion Control Mat: for slopes less steep than 2:1, short-term double net erosion control blanket, machine-produced mat of 100% agricultural straw with a functional longevity of up to 12 months.

Property	Test Method	Typical
Thickness	ASTM D6525	0.36 in (9.14 mm)
Resiliency	ECTC Guidelines	80.5%
Water Absorbency	ASTM D1117	514%
Mass/Unit Area	ASTM 6475	10.52 oz/yd ² (357.7 g/m ²)
Swell	ECTC Guidelines	15%
Smolder Resistance	ECTC Guidelines	Yes
Stiffness	ASTM D1388	6.06 oz-in
Light Penetration	ECTC Guidelines	9.8%
Tensile Strength –MD	ASTM D6818	169.2 lbs/ft (2.51 kN/m)
Elongation – MD	ASTM D6818	17.2%
Tensile Strength – TD	ASTM D6818	164.4 lbs/ft (2.44 kN/m)
Elongation – TD	ASTM D6818	33.1%

- 3. Acceptable products: North American Green S150 or approved equal.
- 4. Erosion Control Mat: for slopes 2:1 or steeper, extended-term double net erosion control blanket, machine-produced mat of 70% agricultural straw and 30% coconut fiber with a functional longevity of up to 24 months.

Property	Test Method	Typical
Thickness	ASTM D6525	0.39 in (9.91 mm)
Resiliency	ECTC Guidelines	75%
Water Absorbency	ASTM D1117	285%
Mass/Unit Area	ASTM 6475	11.44 oz/yd ² (388 g/m ²)
Swell	ECTC Guidelines	30%
Smolder Resistance	ECTC Guidelines	Yes
Stiffness	ASTM D1388	1.11 oz-in
Light Penetration	ECTC Guidelines	8.7%
Tensile Strength –MD	ASTM D6818	146.6 lbs/ft (2.17 kN/m)
Elongation – MD	ASTM D6818	26.9%
Tensile Strength – TD	ASTM D6818	147.6 lbs/fit (2.19 kN/m)

Elongation – TD	ASTM D6818	25.2%
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5. Acceptable products: North American Green SC150 or approved equal.

F. Hay Bale Barriers, Dams:

1. Barriers: Wire or nylon bound straw or hay bales.
2. Stakes: Steel rebar or 2 x 2 inch wood stakes.

G. Silt Fence:

1. Posts:
 - a. Wood: Minimum 2 inch hardwood stakes.
 - b. Steel: Type T or Type U.
2. Fabric: High strength polypropylene netting treated to ensure protection against sunlight degradation:

Mechanical Properties	Test Method	Unit	Silt Fence Property		Typical Values (English)
			MD	CD	
Grab Tensile Strength	ASTM D 4632	kN	0.55	0.55	125 X125 lbs
Grab Tensile Elongation	ASTM D 4632	%	15	15	15 %
Puncture Strength	ASTM D 4833	kN	266		60 lbs.
Apparent Opening Size (AOS) *	ASTM D 4751	mm	0.60		20 sieve
Permittivity	ASTM D 4491	sec ⁻¹	0.10		0.10 sec ⁻¹
Flow Rate	ASTM D 4491	l/min/m ²	405		8 gal/min/ft ²
UV Resistance (at 500 hours)	ASTM D 4355	% strength retained	70		70 %

* ASTM D 4751, AOS is a Maximum Opening Diameter Value

3. Mirafi Silt Fence.
 - a. Propex Geotex woven Silt Fence
 - b. Carthage Mills FX-11 Silt Fence
 - c. Approved equal.

H. Erosion Control Mix Berms

1. Erosion control mix can be manufactured on or off the project site. It must consist primarily of organic material, separated at the point of generation, and may include: shredded bark, stump grindings, or acceptable manufactured products. Wood and bark chips, ground construction debris or reprocessed wood products will not be acceptable as the organic component of the mix.
2. Composition. Erosion control mix shall contain a well-graded mixture of particle sizes and may contain rocks less than 4” in diameter. Erosion control mix must be free of refuse, physical contaminants, and material toxic to plant growth. The mix composition shall meet the following standards:
 - a. The organic matter content shall be between 50 and 100%, dry weight basis.
 - b. Particle size by weight shall be 100 % passing a 6”screen and a minimum of 70 %, maximum of 85%, passing a 0.75” screen.
 - c. The organic portion needs to be fibrous and elongated.

- d. Large portions of silts, clays or fine sands are not acceptable in the mix.
 - e. Soluble salts content shall be < 4.0 mm/cm.
 - f. The pH should fall between 5.0 and 8.0.
3. Installation
- a. The barrier must be placed along a relatively level contour. It may be necessary to cut tall grasses or woody vegetation to avoid creating voids and bridges that would enable fines to wash under the barrier through the grass blades or plant stems.
 - b. On slopes less than 5 % or at the bottom of steeper slopes (<2:1) up to 20 feet long, the barrier must be a minimum of 12” high, as measured on the uphill side of the barrier, and a minimum of two feet wide. On longer or steeper slopes, the barrier should be wider to accommodate the additional runoff.
 - c. Frozen ground, outcrops of bedrock and very rooted forested areas are locations where berms of erosion control mix are most practical and effective.
 - d. Other BMPs should be used at low points of concentrated runoff, below culvert outlet aprons, around catch basins and closed storm systems, and at the bottom of steep perimeter slopes that are more than 50 feet from top to bottom (i.e., a large up gradient contributing watershed).

I. Sediment Filtration Bag (Dirt Bag)

- 1. Sediment filtration bags shall be a commercially manufactured product consisting of a bag or tube made from geotextile material used for the purpose of filtering suspended sediment from water, typically used in dewatering operations where the product is attached to the end of the outlet pipe forcing the water through the geotextile material.
- 2. Size: as indicated or sized to match the desired use
- 3. Fabric: engineered woven textile with high tenacity polypropylene. The material shall be woven into a stable network such that it retains its relative position. The geotextile, shall be inert to biological degradation and resistant to naturally encountered chemicals possessing the following characteristics:

Mechanical Properties	Test Method	Unit	Minimum Average Roll Value	
			MD	CD
Wide Width Tensile Strength	ASTM D 4595	kN/m (lbs/in)	78.8 (450)	109.4 (625)
Wide Width Tensile Elongation	ASTM D 4595	%	20 (max.)	20 (max.)
Factory Seam Strength	ASTM D 4884	kN/m (lbs/in)	70 (400)	
CBR Puncture Strength	ASTM D 6241	N (lbs)	8900 (2000)	
Apparent Opening Size (AOS) *	ASTM D 4751	mm (U.S. Sieve)	0.43 (40)	
Water Flow Rate	ASTM D 4491	l/min/m ² (gal/min/ft ²)	813 (20)	
UV Resistance (at 500 hours)	ASTM D 4355	% strength retained	80	

* ASTM D 4751, AOS is a Maximum Opening Diameter Value

Filtration Properties	Test Method	Unit	Typical Value
Pore Size Distribution (050)	ASTM D 6767	micron	80
Pore Size Distribution (090)	ASTM D 6767	micron	195

Physical Properties	Test Method	Unit	Typical Value

Mass/Unit Area	ASTM D 5261	g/m ² (oz/yd ²)	585 (17.3)
Thickness	ASTM D 5199	mm (mils)	70 (1.8)

4. Acceptable products: Tencate Geotube GT500 or approved equal.

PART 3 - EXECUTION

3.1 PROTECTION OF NATURAL RESOURCES

- A. Preserve the natural resources within the project boundaries and outside the limits of permanent work. Restore to an equivalent or improved condition upon completion of work. Confine construction activities to within the limits of the work indicated or specified.
- B. Land Resources:
1. Protection of Vegetation: Except in areas to be cleared, do not remove, cut, deface, injure, or destroy trees or shrubs without the Architect/Engineer permission. Do not fasten or attach ropes, cables, or guys to existing nearby trees for anchorages unless authorized by the Architect/Engineer. Where such use of attach ropes, cables, or guys is authorized, the Contractor shall be responsible for any resultant damage. Protect existing trees, which are to remain, and which may be injured, bruised, defaced, or otherwise damaged by construction operations. Remove displaced rocks from uncleared areas. By approved excavation, remove trees with 30 percent or more of their root systems destroyed.
- C. Grading
1. Limit initial grading to that required to install required sediment and erosion controls.
 2. Extent: Remain just ahead of planned new construction.
 3. Plan to control runoff and contain erosion.
 4. Do not place fill before existing vegetation has been removed.
 5. Do not impair existing surface drainage, create potential hazards, cause hazardous erosion, or cause sediment to collect in drainage systems on adjacent properties, alleys, streets or highways by grading operations.
 6. Hay Bales:
 - a. Place at areas indicated in rows with ends tightly butted.
 - b. Embed each bale a minimum of 4 inches into soil.
 - c. Securely anchor in place with two stakes driven 1-1/2 to 2 feet into ground.
 7. Silt Fence:
 - a. Establish silt fence at areas indicated and as required for control.
 - b. Space posts as required to adequately support wire and cloth against flow and at a maximum of 6 feet oc. Embed posts into ground a minimum of 18 inches.
 - c. Fasten woven wire fence securely to posts with wire ties or staples.
 - d. Fasten filter cloth to wire mesh at top and mid-section with ties spaced every 24 inches; overlap edges minimum 6 inches and fold.
 - e. Embed filter cloth minimum 8 inches into ground.
- D. Borrow Pit Areas: Manage and control borrow pit areas to prevent sediment from entering nearby streams or lakes. Restore areas, including those outside the borrow pit, disturbed by borrow and haul

operations. Restoration includes grading, replacement of topsoil, and establishment of a permanent vegetative cover. Uniformly grade side slopes of borrow pit to not more than a slope of 1 part vertical to 2 parts horizontal. Uniformly grade the bottom of the borrow pits to provide a flat bottom and drain by outfall ditches or other suitable means. Stockpile topsoil removed during the borrow pit operation, and use as part of restoring the borrow pit area.

- E. Protection of Erodible Soils: Immediately finish the earthwork brought to a final grade, as indicated or specified. Immediately protect the side slopes and back slopes upon completion of rough grading. Plan and conduct earthwork to minimize the duration of exposure of unprotected soils.
- F. Mechanical Retardation and Control to Runoff: Mechanically retard and control the rate of runoff from the construction site. This includes construction of diversion ditches, benches, and berms to retard and divert runoff to protected drainage courses.
- G. Vegetation and Mulch: Provide temporary protection on sides and back slopes as soon as rough grading is completed or sufficient soil is exposed to require erosion protection. Protect slopes by accelerated growth of permanent vegetation, temporary vegetation, mulching, or netting. Stabilize slopes by hydroseeding, anchoring mulch in place, covering with anchored netting, sodding, or such combination of these and other methods necessary for effective erosion control.
 - 1. Seeding: Provide new seeding where ground is disturbed. Include topsoil or nutrient during the seeding operation necessary to reestablish a suitable stand of grass. The seeding operation shall be as specified in Section 329200, "Turf and Grasses".
- H. Stabilization
 - 1. Stabilize all cleared or graded areas. Stabilize with temporary or permanent vegetation, mulch, or paving as indicated on Drawings within 15 days of obtaining final grade or 30 days after obtaining temporary grade.
 - 2. For vegetating critical areas where erosion is imminent, place and repeatedly replace adequate mulch, fertilizer, and seed until a vigorous and adequate growth of turf has been established over greater than 80 percent of the area.
- I. Replacement: Remove trees and other landscape features scarred or damaged by equipment operations, and replace with equivalent, undamaged trees and landscape features. Obtain Architect/Engineer's approval before replacement.
- J. Temporary Construction: Remove traces of temporary construction facilities such as haul roads, work areas, structures, foundations of temporary structures, stockpiles of excess or waste materials, and other signs of construction. Grade temporary roads, parking areas, and similar temporarily used areas to conform with surrounding contours.
- K. Burnoff: Burnoff of the ground cover is not permitted.
- L. Dust Control: Keep dust down at all times, including during nonworking periods. Sprinkle or treat, with dust suppressants, the soil at the site, haul roads, and other areas disturbed by operations. Dry power brooming will not be permitted. Instead, use vacuuming, wet mopping, wet sweeping, or wet power brooming. Air blowing will be permitted only for cleaning nonparticulate debris such as steel reinforcing bars. Only wet cutting will be permitted for cutting concrete blocks, concrete, and bituminous concrete. Do not unnecessarily shaking bags of cement, concrete mortar, or plaster.

3.2 MAINTENANCE

- A. Vegetative Stabilization: Irrigate to prevent loss of stand of protective vegetation. Regularly inspect and overseed as necessary. Immediately reestablish damaged stands.
- B. Hay Bales: Inspect weekly and after every rain; adjust as needed, removing material when bulges develop.
- C. Silt Fence: Inspect weekly and after every rain; adjust as needed, removing material when bulges develop.
- D. Embankments, Landgrading: Inspect weekly and after every rain. Repair as required to maintain integrity or drainage areas.

3.3 REPAIRS, REMOVALS

- A. At completion of work, remove designated temporary controls and revise all permanent sediment controls to original condition.
- B. Repair all damages caused by soil erosion and construction activity at or before the end of every working day.
- C. Remove sediment fence when all disturbed areas have been stabilized and a catch of grass greater than 80 percent has been established.

END OF SECTION 313000

Soil Map—Kennebec County, Maine
(AMHI CAMPUS)



Map Scale: 1:2,430 if printed on B landscape (17" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

Legend

This report presents general information about the map units in the selected area. It shows map unit symbols and names for each map unit.

Report—Legend

Legend—Kennebec County, Maine	
Map unit symbol and name	Map unit acres
Ha—Hadley silt loam	306
HfC—Hartland very fine sandy loam, 8 to 15 percent slopes	6,956
HfD—Hartland very fine sandy loam, 15 to 25 percent slopes	3,707
SkB—Scio very fine sandy loam, 3 to 8 percent slopes	14,051
W—Water bodies	55,597

Data Source Information

Soil Survey Area: Kennebec County, Maine
 Survey Area Data: Version 14, Sep 14, 2015

Exhibit A-1, continued: Hydrologic soil groups for United States soils

SAPINERO	B	SAYTOWN	C	SCOTCH	D	SEITZ	C	SHAKER	C
SAPKIN	C	SAWYER	C	SCOTCO	A	SEJITA	D	SHAKESPEARE	C
SAPPHIRE	C	SAXBY	D	SCOTIA	B	SEKIL	B	SHAKOPEE	C
SAPPINGTON	B	SAXON	C	SCOTT	D	SEKIU	D	SHALAKE	C
SARA	D	SAY	B	SCOTT LAKE	B	SELAN	C	SHALAKO	D
SARAGOSA	B	SAYBROOK	B	SCOTTCAS	E	SELBIT	B	SHALBA	D
SARASVILLE	D	SAYDAB	C	SCOTTIES	F	SELDEN	C	SHALCAR	D
SARALEGUI	B	SAYERS	A	SCOTTSVILLE	C	SELEVIN	D	SHALCAR, DRAINED	C
SARANAC	C/D	SAYLES	D	SCOUT	F	SELFRIDGE	B	SHALCLEAV	D
SARANAC, GRAVELLY	C	SAYLESVILLE	C	SCRAEBLERS	F	SELIA	C	SHALET	D
SUBSTRATUM		SAYNER	A	SCRANTON	A/D	SELIGMAN	D	SHALONA	B
SARAPH	D	SAYPD	C	SCRAVO	B	SELKIRK	C	SHALPER	D
SARATON	C	SAZI	C	SCRIBA	C	SELLE	B	SHAM	D
SARAZAN	B	SCALA	B	SCRIBNER	C	SELLER	B/D	SHAMBO	B
SARBEN	B	SCALADE	D	SCRIVER	B	SELMA	B/D	SHAMEL	B
SARCILLO	D	SCALFAR	B	SCROGGIN	C	SELMAC	D	SHAMOCK	C
SARDINIA	C	SCALLEY	B	SCULLIN	C	SELON	B	SHANAHAN	B
SARDIS	C	SCAMMAN	D	SCUPPERNONG	D	SELTJ	B	SHANDEP	B/D
SARGEANT	D	SCANDARD	C	SEABROOK	C	SELWAY	B	SHANE	D
SARILDA	C	SCANTIC	D	SEAFIELD	F	SEMIAMMO	D	SHANGHAI	C
SARITA	A	SCAPONIA	B	SEAFORTH	B	SEMIAMMO, DRAINED	C	SHANGHAI, DRAINED	B
SARKAR	D	SCAR	B	SEAGATE	A/D	SEMINOLE	D	SHANKLER	A
SARNOSA	B	SCARBORD	D	SEAGOVILLE	D	SEMPER	C	SHAND	B
SARONA	B	SCARIBOU	B	SEALY	B	SEN	B	SHANTA	B
SARPY	A	SCARPER	C	SEAMAN	F	SENCHEIT	C	SHARATIN	B
SARTELL	D	SCATLAKE	D	SEAMAN, STRONGLY	C	SENECAVILLE	B	SHARESNOUT	C
SARUCHE	A	SCAVE	C	SALINE	C	SENSABAUGH	B	SHARKEY	D
SASABE	C	SCHAFFENAKER	A	SEAMAN, MODERATELY	C	SEQUATCHIE	B	SHARLAND	B
SASALAGUAN	C	SCHALLER	A	VET		SEQUIP	A	SHARON	B
SASCO	B	SCHAMBER	A	SEAQUEST	C	SEQUOIA	C	SHARONDALE	B
SASKA	B	SCHAMP	C	SEAP	F	SERDEN	A	SHARPS	C
SASVAMCO	B	SCHAPVILLE	C	SEAR	E	SERENE	C	SHARPSBURG	B
SASSAFRAS	B	SCHATTEL	C	SEARLA	B	SEROPO	A	SHARROTT	D
SASSER	B	SCHAUSON	B	SEARLES	C	SERPEN	C	SHARYANA	C
SATAGO	D	SCHAVANA	D	SEARSPORT	D	SERPENTANO	B	SHASER	B
SATANKA	C	SCHENCO	D	SEARSVILLE	D	SERPOD	C	SHASKIT	C
SATANTA	B	SCHERRARD	D	SEASTRAND	D	SERRANO	D	SHASTA	B
SATATTON	D	SCHLEY	B	SEATON	B	SERVILLETA	D	SHASTINA	B
SATELLITE	C	SCHMUTZ	B	SEATTLE	D	SESAME	C	SHATRUCE	C
SATILLA	D	SCHNEBLY	D	SEATTLE, DRAINED	C	SESPE	C	SHATTA	C
SATIN	C	SCHNEIDER	B	SEAVERTON	D	SESSONS	C	SHATTUCK	C
SATSDP	B	SCHNIPPER	C	SEAWILLOW	B	SESSUM	D	SHAUSON	B
SATT	C	SCHNOORSON	C	SEBAGO	D	SET	C	SHAYANO	B
SATTLEY	B	SCHNORBUSH	B	SEBASTIAN	D	SETH	C	SHAYASH	C
SATTRE	B	SCHODSON	C	SEBASTOPOL	C	SETTERS	D	SHAYER	B
SATURN	B	SCHODENS	A	SEBEVA	E/D	SETTLEMENT	D	SHAMA	A
SATUS	B	SCHOFIELD	C	SEBREE	D	SETTLEMAYER	C	SHAWANO	B
SAUCEL	D	SCHOMARIE	C	SEBPING	B/D	SETTLEMAYER,	D	SHAWMUT	B
SAUCIER	C	SCHOLLE	B	SEBUD	B	SALINE-ALKALI	B	SHAY	D
SAUDE	B	SCHOODIC	D	SECCA	C	SETTLEMAYER,	D	SHAYLA	D
SAUGATUCK	C	SCHODLCRAFT	B	SECESH	B	FLOODED		SHEAR	D
SAUGUS	B	SCHODLEY	D	SECOMSET	C	SETTLEMAYER, COOL	D	SHEAVILLE	C
SAUK	B	SCHODLEY, DRAINED	C	SECRET CREEK	B	SETTLEMAYER,	B	SHEBANG	D
SAULICH	D	SCHODLEY,	C	SECURITY	C	CHANNELED	C	SHEBEON	C
SAUM	B	PROTECTED		SED	C	SEVAL	C	SHEDADD	C
SAUNDERS	D	SCHODLHOUSE	D	SECALE	D	SEVENMILE	B	SHEDD	C
SAURIN	C	SCHODNER	D	SEGEFIELD	C	SEVERN	B	SHEDHORN	D
SAUTER	B	SCHRADER	D	SEGDWAY	E	SEVIER	D	SHEECAL	B
SAUVIE	D	SCHRAP	D	SEDILLO	F	SEVILLE	D	SHEEGE	D
SAUVIE, MODERATELY	C	SCHRIER	B	SEDMAR	D	SEVY	B	SHEEK	B
WEY		SCHROCK	B	SEDRONDOLLEY	C	SEWANEE	B	SHEEP CREEK	C
SAUVIE, PROTECTED	B	SCHROON	B	SEDWELL	C	SEWARD	B	SHEEPCAN	B
SAUVOLA	C	SCHUELKE	C	SEEDSKADEE	D	SEWELL	C	SHEEPHEAD	C
SAUZ	B	SCHULINE	A	SEELEZ	A	SEXTON	C/D	SHEEPSOCK	A
SAVAGE	C	SCHUMACHER	B	SEELOVERS	C	SEYMOUR	D	SHEEPSROT	B
SAVAGETON	D	SCHUSTER	B	SEELYVILLE	A/D	SEZNA	D	SHEETIRDN	C
SAVANNAH	C	SCHUYLER	B	SEELYVILLE,	D	SNAK	C	SHEFFIELD	D
SAVENAC	C	SCIG	B	SLOPING		SNABLISS	D	SHEFFIT	D
SAVO	C	SCIDYVILLE	C	SEEPRID	B	SHACK	B	SHEFFLEIN	B
SAVDIA	B	SCISM	C	SEES	C	SHADELAND	C	SHELBIANA	B
SAVONA	C	SCITICO	C	SEEWEE	B	SHADELEAF	C	SHELBURNE	C
SAVABE	D	SCITUATE	C	SEFFNER	C	SHADOW	B	SHELBY	B
SAWATCH	B/D	SCLOME	B	SEGIDAL	D	SHADYGROVE	C	SHELBYVILLE	B
SAWBUCK	B	SCOAP	B	SEFNO	C	SHAFFTON	B	SHELD	B
SAWCREEK	C	SCOBEY	C	SEGUIN	B	SHAFTER	D	SHELL	B
SAWDUST	B	SCOGGIN	D	SEGURA	D	SHAGEL	D	SHELLABARGER	B
SAWHILL	B/D	SCODN	D	SEHOME	C	SHAGNASTY	C	SHELLBLUFF	B
SAWTELL	C	SCODTENY	B	SEHORN	D	SHAKAMAK	C	SHELLCREEK	C
SAWTELPEAK	D	SCORUP	C	SEIS	C	SHAKAN	C	SHELLDRAKE	A

NOTES: TWO HYDROLOGIC SOIL GROUPS SUCH AS B/C INDICATES THE DRAINED/UNDRAINED SITUATION. MODIFIERS SHOWN, E.G., BEDROCK SUBSTRATUM, REFER TO A SPECIFIC SOIL SERIES PHASE FOUND IN SOIL MAP LEGEND.

Exhibit A-1, continued: Hydrologic soil groups for United States soils

HAGGA, SALINE-ALKALI	C	HANIPOE, BEDROCK SUBSTRATUM	C	HARSHA	R	HAWI	B	HEINDAL	B
HAGGERTY	B	HANIS	C	HARSHLOW	C	HAWICK	A	HEINSAW	C
HAGSTADT	C	HANKINS	C	HARSTINE	C	HAWKEYE	A	HEISETON	B
HAGUE	A	HANKS	B	HARSTON	B	HAWKINS	C	HEISETON, STONY	C
HAIG	C/D	HANKSVILLE	D	HART	D	HAWKSBILL	B	HEISETON,	C
HAIGHTS	B	HANKSVILLE,	C	HART CAMP	D	HAWKSNEST	C/D	SALINE-ALKALI	B
HAIKU	B	NONFLOODED	C	HARTER	C	HAWKSPRINGS	B	WEISLER	B
HAILMAN	B	HANLON	P	HARTFORD	A	HAWKSTONE	B	HEIST	B
HAIRE	C	HANLY	A	HARTIG	B	HAWLEY	B	HEITT	C
HAIRE, BEDROCK SUBSTRATUM	D	HANNA	B	HARTILL	C	HAWSLEY	A	HEIZER	D
HAKKER	C	HANNAHATCHEE	B	HARTLAND	B	HAXTUN	B	HELDT	C
HALACAN	D	HANNING	B	HARTLESS	B	HAYBOURNE	B	HELEMAND	B
HALAWA	B	HANO	C	HARTLETON	B	HAYCRIK	C	HELENA	C
HALBERT	D	HANDVER	C	HARTNIT	C	HAYDEN	B	HELENDALE	B
HALCOTT,	C/D	HANS	C	HARTSEBURG	R/D	HAYESTON	B	HELLGATE	B
HALDER	C	HANSKA	C	HARTSELLS	B	HAYESVILLE	B	HELLMAN	C
HALE	D	HANSON	B/D	HARTSHORN	C	HAYFIELD	C	HELM	D
HALE, DRAINED	C	HANTHO	B	HARTVILLE	C	HAYFORD	B	HELMER	C
HALEDON	C	HANTZ	D	HARTWELL	D	HAYHOOK	R	HELMER, GRAVELLY	D
HALEIWA	B	HANTZ, DRY	C	HARVARD	B	HAYMARKET	E	SUBSOIL	D
HALEY	B	HAP	E	HARVESTER	E	HAYMOND	B	HELMER, THIN	D
HALF MOON	B	HAPGOOD	B	HARVEY	B	HAYMOND	D	SURFACE	B
HALFADAY	A	HAPJACK	B	HARVY, BEDROCK SUBSTRATUM, DRY	C	HAYMONT	B	HELMER, SEVERELY	D
HALFWAY	D	HAPNEY	C	HARWOOD	C	HAYNESS	B	ERODED	B
HALL	B	HAPPLE	B	HASKILL	C	HAYNIE	B	HELMICK	D
HALLIMALE	B	HAPUR	D	HASKINS	C	HAYPRESS	A	HELTER	B
HALL	B	HARAMAN	D	HASSEE	D	HAYRACK	C	HELVETIA	C
HALL RANCH	C	HARAHILL	C	HASSE	D	HAYSPUR	D	HELY	B
HALLANDALE	B/D	HARANA	B	HASSELL	C	HAYSUM	B	HEMBRE	C
HALLANDALE, TIDAL	D	HARBORD	B	HASTINGS	B	HAYTER	B	HEMCROSS	B
HALLCREEK	A	HARCANY	B	HAT	C	HAYTI	D	HEMINGFORD	B
HALLECK	C	HARCO	B	HATBORO	D	HAYWIRE	C	HEMOSTEAD	B
HALLECK, GRAVELLY SUBSTRATUM	B	HARCOM	B/D	HATCH	C	HAYWOOD	B	MENCO	B/D
HALLETTVILLE	D	HARDEMAN	B	HATCH, GRAVELLY	D	HAZEL	C	HENDERSON	B
HALLISON	C	HARDESTY	B	HATCHERY	C	HAZELAIR	D	HENDON	C
HALLORAN	C	HARDNAT	B	HATCHET,	B	HAZEN	B	HENDRICKS	B
HALSEY	C/D	HARDING	R	OVERBLOWN, THICK SOLUM	R	HAZLEHURST	C	HENDY	C
HALSD	D	HARDISTER	D	HATCHET, GRAVELLY	C	HAZLETON	B	HENEFER	C
HANACER	A	HARDOL	B	HATCHET, OVERBLOWN	C	HAZTON	D	HENHOIT	B
HANAKUAPOKO	B	HARDSCRABBLE	S	HATCHET, COBBLY	C	HEADLEY	R	HENKIN	B
HANAR	A/D	HARDTRIGGER	D	HATCHIE	C	HEADQUARTERS	D	HENLEY	C
HANBLEN	C	HARDY	E	HATCHIE	C	HEAKE	B	HENLINE	C
HANBDNE	B	HARGILL	C	HATERMUS	D	HEALDTON	C	HENMEL	C
HANBRIGHT	D	HARGREAVE	B	HATERTON	D	HEALING	E	HENNEKE	D
HANBURG	B	HARJO	C	HATHAYAY	B	HEARNE	C	HENNEPIN	B
HANBY	C	HARKERS	C	HATHLEY	C	HEARNE, GRADED	D	HENNESSY	B
HANDEN	B	HARKEY	B	HATHMAKUP	C	HEATH	C	HENNEWAY	B
HAMEL	C	HARKNESS	C	HATPEAK	C	HEATHCOT	C	HENNEY	B
HAMERLY	C	HARLAN	B	HATTIE	C	HEATLY	A	HENNINGS	B
HAMILTON	S	HARLEM	C	HATTON	C	HEATON	A	HENNINGSSEN	C
HAMLET	B	HARLEM, CHANNELED	D	HATTON	C	HEBBRONVILLE	B	HENRIETTA	C
HANLIN	B	HARLESTON	C	HATVAI	C	HEBER	A	HENRIEVILLE	B/D
HANMACK	B	HARLINGEN	C	HATVAD	D	HEBERT	C	HENRY	D
HANMONTON	B	HARLOW	D	HATVAD	C	HEBO	D	HENSHAN	D
HANPSHIRE	C	HARMEHL	D	HAUG	B/D	HEERON	R	HENSLEY	D
HANPSON	C	HARMONY	C	HAUGAN	B	HEERTON	D	HENSON	B
HANRE	C/D	HARNEY	B	HAULINGS	D	HECHTMAN	D	HEPLER	C
HANRUB	B	HAROLD	B	HAUNCHEE	D	HECKER	B	HEPPSIE	D
HANSTAH	C	HARPER	D	HAUZ	C	HECKERSON	D	HERAKLE	D
HANA	A	HARPERSVILLE	D	HAVALA	B	HECLA	A	HERBERT	B
HANAGITA	D	HARPEETH	B	HAVANA	B	HECTOR	D	HERBSMAN	D
HANAKER	C	HARPOLE	B	HAVELOCK	B/D	HEDGE	D	HERD	C
HANALEI	C	HARPS	B	HAVEN	E	HEDGES	C	HEREFORD	B
HANAMAULU	B	HARPSTER	B/D	HAVERDAD	E	HEDOX	C	HERITO	C
HANCEVILLE	B	HARPT	B/D	HAVEPDAD,	C	HEDRICK	B	HERKIMER	B
HAND	B	HARQUA	B	MODERATELY SALINE	B/D	HEDSTROM	S	HERLONG	D
HANDPAH	D	HARRAH	B	HAYERHILL	C	HEDVILLE	D	HERM	C
HANDRAN	A	HARRIET	E	HAYERLY	C	HEECHEE	B	HERMANTOWN	C
HANDBORO	D	HARRIMAN	D	HAYERMOM	B	HEELY	B	HERMERING	B
HANDY	C	HARRIMAN, WET	B	HAYERSON	B	HEESER	B	HERMISTON	B
HANEY	B	HARRINGTON	C	HAYVILLAND	B	HEFED	B	HERMON	A
HANFORD	B	HARRIS	D	HAYVILLAH	B	HEFLIN	B	HERNANDEZ	B
HANGAARD	D	HARRISBURG	C	HAVINGDON	C	HEGLAR	R	HERNDON	B
HANGDO	B	HARRISON	E	HAYRE	B	HEGNE	D	HERO	B
HANGTOWN	B	HARRISVILLE	C	HAYRE, SALINE	C	HEIDEL	B	HEROD	D
HANIPOE	B	HARSDUN	D	HAYRE, MODERATELY	C	HEIDEN	D	HERRICK	B
		HARSAN	B	NET	C	HEIDTMAN	C	HERRSH	B
				HAYPELON	B	HEIGHTS	B/D	HERSHAL	D
				HAW	B	HEIL	D	HERTY	D

NOTES: TWO HYDROLOGIC SOIL GROUPS SUCH AS B/C INDICATES THE DRAINED/UNDRAINED SITUATION. MODIFIERS SHOWN, E.G., BEDROCK SUBSTRATUM, REFER TO A SPECIFIC SOIL SERIES PHASE FOUND IN SOIL MAP LEGEND.

Physical Soil Properties

This table shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In this table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In this table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, saturated hydraulic conductivity (K_{sat}), plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (oven-dry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3- or 1/10-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute linear extensibility, shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates in the table are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity (Ksat) is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at 1/3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. The amount and type of clay minerals in the soil influence volume change.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In this table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter. The content of organic matter in a soil can be maintained by returning crop residue to the soil.

Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in the table as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and Ksat. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind and/or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the "National Soil Survey Handbook."

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Reference:

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. (<http://soils.usda.gov>)

Report—Physical Soil Properties

Physical Soil Properties—Kennebec County, Maine														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	<i>In</i>	<i>Pct</i>	<i>Pct</i>	<i>Pct</i>	<i>g/cc</i>	<i>micro m/sec</i>	<i>In/In</i>	<i>Pct</i>	<i>Pct</i>					
BuB2—Buxton silt loam, 3 to 8 percent slopes, eroded														
Buxton	0-7	0-25- 50	50-53- 80	15-23- 30	0.90-1.05 -1.20	1.41-7.76-14.11	0.25-0.28-0.30	0.0- 1.5- 2.9	3.0- 5.5- 8.0	.32	.32	5	6	48
	7-15	0-20- 20	40-48- 73	20-33- 45	1.10-1.33 -1.55	0.42-2.33-4.23	0.14-0.21-0.28	3.0- 4.5- 5.9	0.5- 1.8- 3.0	.32	.32			
	15-36	0-20- 20	40-48- 73	20-33- 45	1.40-1.55 -1.70	0.00-0.71-1.41	0.07-0.17-0.27	3.0- 4.5- 5.9	0.0- 0.5- 1.0	.43	.43			
	36-65	0- 7- 20	40-48- 60	35-45- 55	1.40-1.60 -1.80	0.00-0.10-1.41	0.04-0.10-0.16	3.0- 4.5- 5.9	0.0- 0.3- 0.5	.37	.37			
Ha—Hadley silt loam														
Hadley	0-10	0-22- 50	50-71- 80	2- 8- 13	1.10-1.23 -1.35	4.23-9.17-14.11	0.20-0.30-0.40	0.0- 1.5- 2.9	2.0- 4.0- 6.0	.43	.43	5	5	56
	10-34	45-63- 85	0-29- 50	2- 8- 13	0.90-1.13 -1.35	4.23-9.17-14.11	0.20-0.33-0.45	0.0- 1.5- 2.9	1.0- 2.5- 4.0	.49	.49			
	34-65	0-22- 50	50-71- 80	2- 8- 13	1.00-1.20 -1.40	4.23-9.17-14.11	0.18-0.29-0.40	0.0- 1.5- 2.9	0.5- 1.8- 3.0	.55	.55			

Physical Soil Properties--Kennebec County, Maine														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	<i>In</i>	<i>Pct</i>	<i>Pct</i>	<i>Pct</i>	<i>g/cc</i>	<i>micro m/sec</i>	<i>In/In</i>	<i>Pct</i>	<i>Pct</i>					
HfC—Hartland very fine sandy loam, 8 to 15 percent slopes														
Hartland	0-7	45-62- 85	0-28- 50	2-10- 18	0.90-1.20 -1.50	4.23-9.17-14.11	0.22-0.27-0.30	0.0- 1.5- 2.9	2.0- 4.0- 6.0	.32	.32	5	3	86
	7-15	45-62- 85	0-28- 50	2-10- 18	1.10-1.30 -1.50	4.23-9.17-14.11	0.17-0.22-0.26	0.0- 1.5- 2.9	0.5- 1.0- 1.0	.43	.43			
	15-28	0-21- 50	50-69- 80	2-10- 18	1.45-1.55 -1.65	4.23-9.17-14.11	0.10-0.16-0.22	0.0- 1.5- 2.9	0.5- 1.0- 2.0	.55	.55			
	28-65	45-62- 85	0-29- 50	3- 9- 16	1.45-1.55 -1.65	4.23-9.17-14.11	0.09-0.18-0.26	0.0- 1.5- 2.9	0.5- 1.0- 2.0	.55	.55			
HfD—Hartland very fine sandy loam, 15 to 25 percent slopes														
Hartland	0-7	45-62- 85	0-28- 50	2-10- 18	0.90-1.20 -1.50	4.23-9.17-14.11	0.22-0.27-0.30	0.0- 1.5- 2.9	2.0- 4.0- 6.0	.32	.32	5	3	86
	7-15	45-62- 85	0-28- 50	2-10- 18	1.10-1.30 -1.50	4.23-9.17-14.11	0.17-0.22-0.26	0.0- 1.5- 2.9	0.5- 1.0- 1.0	.43	.43			
	15-28	0-21- 50	50-69- 80	2-10- 18	1.45-1.55 -1.65	4.23-9.17-14.11	0.10-0.16-0.22	0.0- 1.5- 2.9	0.5- 1.0- 2.0	.55	.55			
	28-65	45-62- 85	0-29- 50	3- 9- 16	1.45-1.55 -1.65	4.23-9.17-14.11	0.09-0.18-0.26	0.0- 1.5- 2.9	0.5- 1.0- 2.0	.55	.55			

Physical Soil Properties--Kennebec County, Maine														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	<i>In</i>	<i>Pct</i>	<i>Pct</i>	<i>Pct</i>	<i>g/cc</i>	<i>micro m/sec</i>	<i>In/In</i>	<i>Pct</i>	<i>Pct</i>					
SkB—Scio very fine sandy loam, 3 to 8 percent slopes														
Scio	0-10	45-62- 85	0-28- 50	2-10- 18	1.20-1.35 -1.50	4.23-9.17-14.11	0.16-0.19-0.22	0.0- 1.5- 2.9	2.0- 4.0- 6.0	.37	.37	5	3	86
	10-22	0-21- 50	50-69- 80	2-10- 18	1.20-1.35 -1.50	4.23-9.17-14.11	0.15-0.18-0.20	0.0- 1.5- 2.9	2.0- 4.0- 6.0	.43	.43			
	22-65	45-62- 85	0-28- 50	2-10- 18	1.45-1.55 -1.65	4.23-9.17-14.11	0.10-0.15-0.20	0.0- 1.5- 2.9	0.1- 0.3- 0.6	.55	.55			
W—Water bodies														
Water	—	—	—	—	—	—	—	—	—					

Data Source Information

Soil Survey Area: Kennebec County, Maine
 Survey Area Data: Version 14, Sep 14, 2015

LOCATION SCIO NY+MA ME NH PA RI

Established Series
Rev. JDV-WEH-DAS
03/2013

SCIO SERIES

The Scio series consists of very deep, moderately well drained soils formed in eolian, lacustrine, or alluvial sediments dominated by silt and very fine sand. They are on terraces, old alluvial fans, lake plains, outwash plains and lakebeds. Saturated hydraulic conductivity is moderately high or high to a depth of 100 centimeters and ranges from moderately low through very high below 100 centimeters. Slope ranges from 0 through 25 percent. Mean annual temperature is 9 degrees C., and mean annual precipitation is 940 millimeters.

TAXONOMIC CLASS: Coarse-silty, mixed, active, mesic Aquic Dystrudepts

TYPICAL PEDON: Scio silt loam, on a 2 percent slope in a pasture. (Colors are for moist soil.)

Ap -- 0 to 23 centimeters; dark grayish brown (10YR 4/2) silt loam; moderate fine granular structure; friable; many fine roots; moderately acid; limed; abrupt smooth boundary. (10 to 33 centimeters thick.)

Bw1 -- 23 to 48 centimeters; yellowish brown (10YR 5/6) silt loam; weak medium subangular blocky structure; friable; common fine roots; common medium and fine pores; strongly acid; clear wavy boundary.

Bw2 -- 48 to 79 centimeters; yellowish brown (10YR 5/4) silt loam; weak fine subangular blocky structure; friable; few fine roots; common medium and fine pores; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation and light brownish gray (10YR 6/2) areas of iron depletion in the matrix; strongly acid; clear smooth boundary. (Combined thickness of the Bw horizon is 38 to 135 centimeters.)

C -- 79 to 102 centimeters; brown (10YR 5/3) silt loam; very weak thick plate like divisions; friable; common medium and fine pores; many medium prominent yellowish brown (10YR 5/8) masses of iron accumulation and distinct gray (10YR 6/1) areas of iron depletion in the matrix; 3 percent rock fragments; strongly acid; abrupt smooth boundary. (20 to 102 centimeters thick.)

2Cg -- 102 to 183 centimeters; grayish brown (2.5Y 5/2) very gravelly loamy sand; single grain; loose; common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 35 percent gravel; moderately acid.

TYPE LOCATION: Wyoming County, New York; town of Pike, 2 miles north of village of Pike on west side of Campbell Road, 0.7 mile north of junction of Campbell Road and Safford Road. USGS Pike, NY topographic quadrangle; Latitude 42 degrees, 35 minutes, 17 seconds N. and Longitude 78 degrees, 09 minutes, 26 seconds W., NAD 1927.

RANGE IN CHARACTERISTICS: Solum thickness ranges from 50 through 168 centimeters. Depth

to material contrasting with solum texture is 100 centimeters or more. Depth to bedrock is greater than 1.5 meters. Depth to free carbonates is greater than 2 meters. Rock fragments, mainly gravel and cobbles, range from 0 through 5 percent above 100 centimeters and from 0 through 60 percent below 100 centimeters. Stones cover 0 through 10 percent of the surface in some areas.

Some pedons have an O horizon.

The Ap horizon has hue of 7.5YR or 10YR, value of 3 through 5, and chroma of 2 or 3. It is silt loam, very fine sandy loam, or fine sandy loam. Undisturbed pedons have an A horizon with colors similar to the Ap, but also include value of 2. They are 2 through 5 inches thick. Reaction ranges from extremely acid through strongly acid, unless limed.

The B horizon has hue of 7.5YR through 5Y, value of 4 through 6, and chroma of 3 through 6. Redox depletions and accumulations are within a depth of 24 inches (61 centimeters). It is silt loam or very fine sandy loam. Reaction ranges from extremely acid through strongly acid to a depth of 76 centimeters and very strongly through moderately acid below 76 centimeters. Some pedons have a BC horizon.

The C horizon has hue of 7.5YR through 5Y, value of 4 through 6, and chroma of 1 through 6. Texture is silt loam to fine sandy loam. It may contain strata of gravel and sand. It is massive or single grain, and may have plate-like divisions. Reaction ranges from very strongly acid through slightly alkaline.

The 2C horizon, if present, has hue of 7.5YR through 5Y, value of 3 through 6, and chroma of 1 through 4. It is silt loam, very fine sandy loam, or loamy very fine sand in the fine earth fraction. In addition, below a depth of 40 inches (100 centimeters) it can range from fine sandy loam through very gravelly sand. Reaction ranges from very strongly acid through slightly alkaline.

COMPETING SERIES: The [Dartmouth](#) series is the only other series in the same family. Dartmouth soils have a gravel content of 0 through 5 percent throughout, and have below a depth of 40 inches (100 centimeters) textures limited to silt, silt loam, very fine sandy loam, or loamy very fine sand and saturated hydraulic conductivity ranges from moderately low through moderately high.

GEOGRAPHIC SETTING: Scio soils are most commonly on terraces or old alluvial fans, but are also on lake plains, outwash plains, lakebeds, and lacustrine mantled uplands. The solum is formed entirely in eolian, lacustrine, or alluvial sediments which may extend to a depth of many centimeters or may be underlain by loamy, sandy, or gravelly material at depths greater than 40 inches (100 centimeters). Slope ranges from 0 through 25 percent. Mean annual temperature ranges from 8 through 10 degrees C., mean annual precipitation ranges from 710 through 1270 millimeters, and mean annual frost-free days ranges from 120 through 180 days. Elevation ranges from 31 through 457 meters above sea level.

GEOGRAPHICALLY ASSOCIATED SOILS: The Scio series is in a drainage sequence with the well drained [Unadilla](#) soils, the well drained and moderately well drained [Bridgehampton](#) soils, the poorly drained [Raynham](#) soils, and the very poorly drained [Birdsall](#) soils. [Pope](#), [Tioga](#), and [Hadley](#) soils, and their wetter associated soils are on adjacent floodplains. [Alton](#), [Chenango](#), [Copake](#), and [Howard](#) soils, and their wetter associated soils are on adjacent gravelly outwash terraces, kames, and outwash plains.

DRAINAGE AND SATURATED HYDRAULIC CONDUCTIVITY: Moderately well drained. The potential for surface runoff is very low to high. Saturated hydraulic conductivity is moderately high or high to a depth of 100 centimeters and ranges from moderately low through very high below 40 inches

100 centimeters.

USE AND VEGETATION: Most of the soil has been cleared and is used for growing hay, corn, vegetables, fruit, and small grain. Native vegetation is northern red oak, white ash, sugar maple, black cherry, eastern hemlock, and eastern white pine.

DISTRIBUTION AND EXTENT: Massachusetts, Maine, New Hampshire, New York, Pennsylvania, and Rhode Island. MLRAs 101, 139, 140, 143, 144A, 144B, 145, and 149B. The series is moderately extensive.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Amherst, Massachusetts.

SERIES ESTABLISHED: Allegany County, New York, 1946.

REMARKS: This revision reflects changes to the range in characteristics as well as general updating to metric units. Scio soils have been mapped in frigid areas in the past, but have a Mesic temperature regime. The series will not be used in MLRAs 143 and 144B, or the state of Maine, when older soil surveys in these MLRAs are updated.

Diagnostic horizons and features recognized in this pedon are:

- 1) Ochric epipedon - the zone from 0 to 23 centimeters (Ap horizon).
- 2) Cambic horizon - the zone from 23 to 79 centimeters (Bw horizons).
- 3) Aquic subgroup - Redox depletions with chroma of 2 or less are within 60 centimeters of the mineral soil surface (Bw2 horizon).
- 4) Particle-size control section - the zone from 23 through 100 centimeters (Bw1, Bw2, C horizons).
- 5) Lithologic discontinuity - at a depth of 102 centimeters.

ADDITIONAL DATA: Full characterization data for sample no.91MA023009. Pedon analyzed by the NSSL, Lincoln, NE.

National Cooperative Soil Survey
U.S.A.

CITY OF AUGUSTA SITE PLAN REVIEW – MAJOR DEVELOPMENT APPLICATION FOR SECURE FORENSIC REHAB FACILITY AT THE AUGUSTA EAST CAMPUS

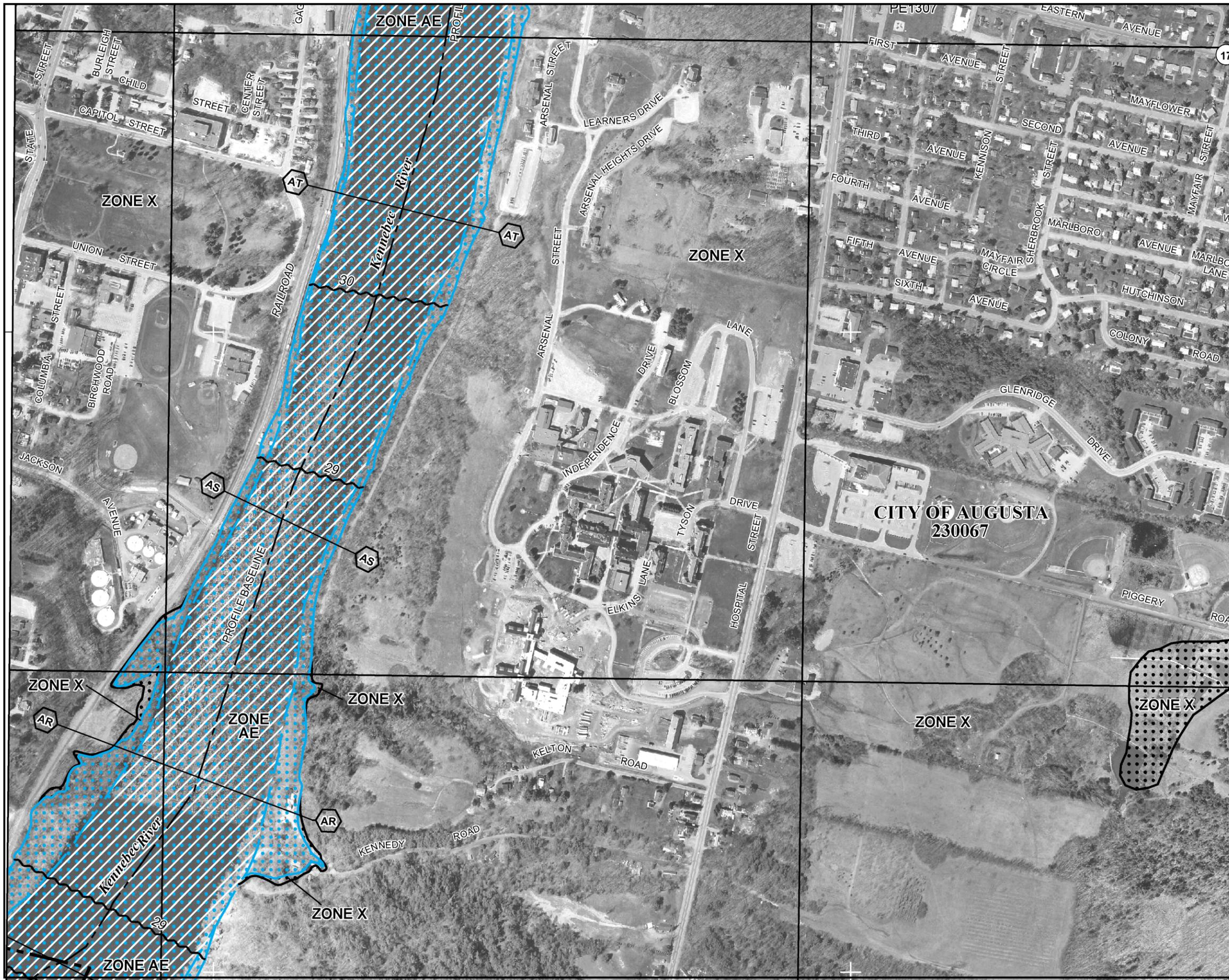
Appendix E | Flood Insurance Rate Map
August 2016

Appendix E FLOOD INSURANCE RATE MAP

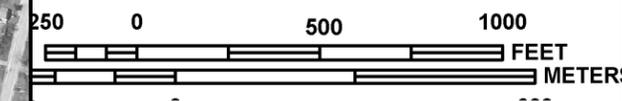
CITY OF AUGUSTA SITE PLAN REVIEW – MAJOR DEVELOPMENT APPLICATION FOR SECURE FORENSIC REHAB FACILITY AT THE AUGUSTA EAST CAMPUS

3.0 | Conditional Use Application Criteria
August 2016

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MAP SCALE 1" = 500'



NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0517D

FIRM
FLOOD INSURANCE RATE MAP
KENNEBEC COUNTY,
MAINE
(ALL JURISDICTIONS)

PANEL 517 OF 775
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
AUGUSTA, CITY OF	230067	0517	D
CHELSEA, TOWN OF	230234	0517	D
HALLOWELL, CITY OF	230069	0517	D

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.



MAP NUMBER
23011C0517D
EFFECTIVE DATE
JUNE 16, 2011

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

CITY OF AUGUSTA SITE PLAN REVIEW – MAJOR DEVELOPMENT APPLICATION FOR SECURE FORENSIC REHAB FACILITY AT THE AUGUSTA EAST CAMPUS

Appendix F | East Campus Deed
August 2016

Appendix FEAST CAMPUS DEED

CITY OF AUGUSTA SITE PLAN REVIEW – MAJOR DEVELOPMENT APPLICATION FOR SECURE FORENSIC REHAB FACILITY AT THE AUGUSTA EAST CAMPUS

3.0 | Conditional Use Application Criteria
August 2016

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AMENDATORY DEED

05664

Know all Men by these Presents:

WHEREAS, the Act of Congress, approved March 3, 1905, Public Law No. 235, entitled "An Act authorizing the Secretary of War to convey the Kennebec Arsenal property, situated in Augusta, Maine, to the State of Maine for public purposes", provided:

"That the Secretary of War be, and he is hereby, authorized and directed to convey, by deed duly and properly executed, to the State of Maine, for the use of a State institution, organized under the laws of the State of Maine and maintained by said State, known as the Maine Insane Hospital, at Augusta, Maine, the property situated in the corporate limits of said Augusta, belonging to the Government of the United States, formerly used as an arsenal and known as the Kennebec Arsenal property, the same comprising about forty acres, and bounded on the north by private property, on the east by the road to Pittston, on the south by the Insane Hospital grounds, and on the west by the Kennebec River: said conveyance to provide, however, that the estate thereby created shall continue so long only as the said property shall be used by said State as a part of and in connection with the Maine Insane Hospital for the appropriate uses of an Insane Hospital in conformity with the terms of this Act; and that at any time the said property may be taken possession of by the United States whenever the President in his discretion, shall decide that the said property is needed for the uses of the United States, or that the requirements of this Act are not strictly observed by the said State of Maine; and that there shall be no liability on the part of the United States at any time for the use or destruction of any building that may be placed on the said property by the State of Maine"; and

-2-

WHEREAS, Section 771(a) of the Act of Congress, approved December 15, 1980, Public Law 96-527, entitled "Department of Defense Appropriation Act 1981", provided "The Act entitled 'An Act authorizing the Secretary of War to convey the Kennebec Arsenal property, situated in Augusta, Maine, to the State of Maine for public purposes', approved March 3, 1905 (33 Stat. 1270), is amended by inserting 'or for other public purposes' after 'in conformity with the terms of this Act.'"; and

WHEREAS, Section 771(b) of the Act of Congress, approved December 15, 1980, Public Law 96-527, entitled "Department of Defense Appropriation Act 1981" provided "The Secretary of the Army shall issue such written instructions, deeds, or other instruments as may be necessary to bring the conveyance made to the State of Maine under the authority of the Act referred to in subsection (a) into conformity with the amendment made by such subsection."

Now, Therefore, In compliance with the foregoing Acts of Congress,
I, John O. Marsh, Jr. Secretary of the Army of the United States of America, do hereby give, grant, and convey unto the State of Maine, for the use of the said Maine Insane Hospital or for other public purposes, all that tract of land belonging to the United States, formerly used as an arsenal, and known as the Kennebec Arsenal property, containing about forty (40) acres, situated within the corporate limits of the city of Augusta, Maine, and bounded on the north by private property, on the east by the road to Pittston, on the south by the Insane Hospital grounds, and on the west by the Kennebec River;

To Have and to Hold the said premises unto and to the use of the State of Maine upon the following provisions, vis:

1. That the estate hereby created in the State of Maine shall continue so long only as the said property shall be used by said State as a part of and in connection with the Maine Insane Hospital for the appropriate uses of an Insane Hospital or for other public purposes in conformity with the terms of said Act, as amended by PL 96-527.

2. That at any time the said property may be taken possession of by the United States whenever the President in his discretion shall decide that the said property is needed for the uses of the United States, or that the requirements of said Act of Congress are not strictly observed by the said State of Maine.

3. That there shall be no liability on the part of the United States at any time for the use or destruction of any building that may be placed on said property by the State of Maine.

This deed is now given by The United States of America to the State of Maine pursuant to authority granted in and by Public Law 96-527, Sections 771, 94 Stat 3093 approved December 15, 1980 for the sole purpose of amending the conveyance made between the parties dated April 12, 1905, and recorded in the Kennebec County (Maine) Registry of Deeds, Book 462, Pages 361 and 362.

IN WITNESS WHEREOF, the UNITED STATES OF AMERICA has caused these presents to be signed, in its name and its behalf by the Secretary of the Army and the seal of the Department of the Army to be affixed.



(SEAL)

ATTEST:

Walter H. Daly
Andrea V. Anderson

UNITED STATES OF AMERICA

BY: John H. Marsh, Jr.
TITLE: THE SECRETARY OF THE ARMY

CITY OF AUGUSTA SITE PLAN REVIEW – MAJOR DEVELOPMENT APPLICATION FOR SECURE FORENSIC REHAB FACILITY AT THE AUGUSTA EAST CAMPUS

Appendix G | East Campus Parking Study
August 2016

Appendix G EAST CAMPUS PARKING STUDY

CITY OF AUGUSTA SITE PLAN REVIEW – MAJOR DEVELOPMENT APPLICATION FOR SECURE FORENSIC REHAB FACILITY AT THE AUGUSTA EAST CAMPUS

3.0 | Conditional Use Application Criteria
August 2016

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Parking Study

East Campus Parking Study
Augusta, Maine



Prepared for:
State of Maine
Bureau of General Services

Prepared by:
Stantec Consulting Ltd.

February 3, 2016
Revised August 11, 2016

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PARKING STUDY

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PARKING STUDY

Introduction
August 11, 2016

Executive Summary

A parking study was conducted for the State of Maine Bureau of General Services (BGS) for the East Campus in Augusta. The East Campus is a former state mental hospital which has been converted into state offices and a separate psychiatric center. Existing parking was observed and future parking demands were projected. While the focus of the report is on the state offices, demands for the psychiatric center were also observed. Principal findings are as follows.

Existing Conditions

- The campus, exclusive of the psychiatric center, provides 1133 parking spaces.
- Peak parking demand for the office campus occurs at 10 AM on a weekday when 596 spaces are in use. This represents 53 percent of the parking supply.
- At 11 AM on a weekday 87 percent of the 226 psychiatric center spaces are also in use.
- An estimated 758 employees were assigned to the office campus on the September 2015 day when the parking surveys were conducted.
- The observed peak parking rate for the office campus is 0.79 vehicles per employee.

Future Conditions

- BGS estimates that planned renovations to existing buildings on the campus will support 1157 employees by the year 2018.
- Other potential building renovation projects after 2018 would allow the campus population to grow to 1576 employees.
- A parking ratio of 0.87 spaces per employee is recommended for planning purposes. This will ensure a five percent parking surplus for each type of space under average conditions.
- Based on the above parking ratio, the campus supply should increase to 1008 spaces by 2018. Full campus "build out" would require 1373 spaces.
- The planned building program indicates that the current parking supply should be adequate through 2018. Full build out requires 240 more spaces than provided under existing conditions.

Given the need to increase the on-campus parking supply to meet the projected demand, further work is planned to site and design new parking facilities. This planning process will also consider opportunities to provide new parking in locations that are more proximate to existing buildings than some of the existing parking lots.



PARKING STUDY

Introduction
August 11, 2016

1.0 INTRODUCTION

The “East Campus” is a former state mental hospital located in Augusta, Maine that is now home to state offices and a psychiatric center. It is managed by the Bureau of General Services, which is seeking to quantify the adequacy of the on-campus parking supply under existing conditions and future scenarios. This study quantifies existing hourly parking demands by lot for the entire campus on a typical weekday. Based on the observed existing parking rates and planned increases in campus population, projections of future parking demands are provided. Anticipated future parking shortfalls are quantified to inform the planning process for new campus parking. This study also quantifies the condition of existing walkways that provide connectivity among campus buildings and parking lots.

2.0 EXISTING CONDITIONS

Information was obtained from the State of Maine Bureau of General Services (BGS) staff and through field surveys to establish existing parking and land use conditions at the site.

2.1 CAMPUS LAYOUT

The “East Campus”, located on the east bank of the Kennebec River in Augusta, Maine, is a former state mental hospital (Augusta Mental Health Institute) and now the home of a number of state offices and the Riverview Psychiatric Recovery Center (RPRC). The former mental hospital includes more than 20 separate buildings some of which have been adapted for office use and others which are vacant or only marginally occupied. Multiple surface parking lots of various sizes and conditions are distributed throughout the campus to support the existing office space. The larger lots are located on the campus perimeter resulting in extended walking distances between parking and building entrances. The topography of the site, sloping downhill east to west toward the river, also affects accessibility on the connecting walkways. The RPRC has its own dedicated parking however, several walkways link the hospital to a nearby state office parking lot and this lot may accommodate overflow demand from the hospital.

Vehicular access to the campus is by way of three access points. Arsenal Street runs parallel to the Kennebec River and enters the site from the north. Heading south from this entry point it generally defines the western perimeter of the developed portion of the campus before turning east to meet Route 9 at an unsignalized T-type intersection. Across the southern portion of the site Arsenal Street generally separates the RPRC from the state office campus. Route 9 (Hospital Street) forms the east boundary of the site. The third access point is the northern campus driveway, Tyson Drive, which enters Route 9 opposite Piggery Road at a signalized intersection. A parking lot in the southeast corner of this intersection functions as a rideshare lot and supports uses on the East Campus. The existing campus layout is shown in Figure 1.



PARKING STUDY

Existing Conditions
August 11, 2016

Figure 1 Existing Campus Layout



PARKING STUDY

Existing Conditions
August 11, 2016

2.2 EXISTING PARKING SUPPLY

Field surveys were conducted to quantify the existing parking supply on the campus. The number of marked parking spaces were counted and recorded for each paved lot. Stantec estimated the parking capacity of lots that were not paved or poorly marked. The parking inventory is summarized in Table 1. The lot numbers shown in the table are consistent with the numbering plan used by BGS, for the larger lots. Smaller lots have been identified by Stantec in Figure 2 with letters and numbers (the numbers are based on the proximity of each lot to a larger lot). Lots 5 and 6 are used exclusively by the RPRC and therefore excluded from the inventory for the state office campus.

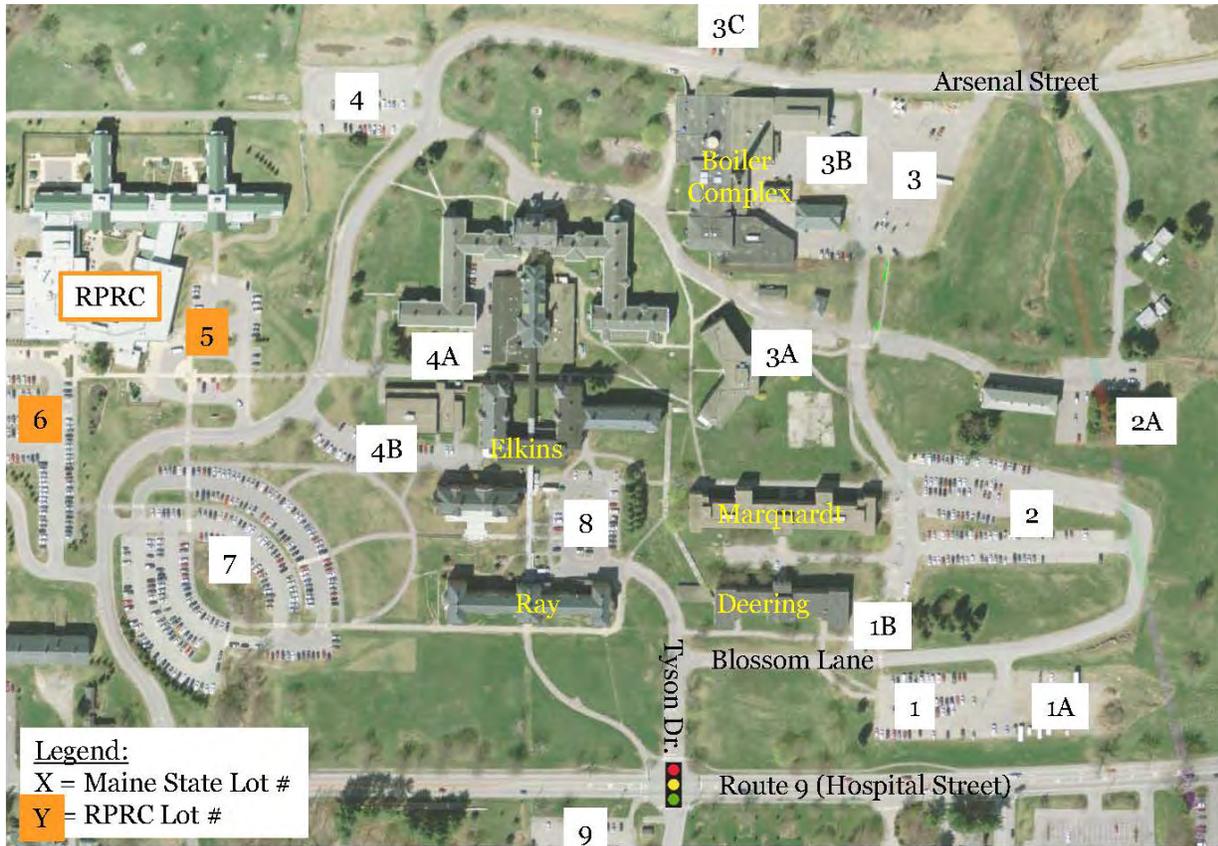
Most of the East Campus parking (84 percent) is unrestricted and used by employees. However, some spaces in several lots are posted with certain restrictions. The various types of restricted spaces include: time restricted spaces (generally for visitor use), handicap accessible, Go Maine (for rideshare participants), loading, and reserved (for state-owned vehicles). Table 1 also lists the types of spaces provided in each lot. A detailed inventory of spaces by type is included in the appendix.

Approximately six percent of the parking for the state office portion of the East Campus is time restricted. There are 34 spaces designated as handicap accessible on the state office campus, slightly more than three percent of the total supply.

PARKING STUDY

Existing Conditions
August 11, 2016

Figure 2 Parking Lot Locations



PARKING STUDY

Existing Conditions
August 11, 2016

Table 1 Total Parking Supply

Lot #	Lot Description	Type of Parking	Spaces
State of Maine Parking			
1	East of Blossom Lane, southern (paved) section	Unrestricted, Go Maine, Reserved	87
1A	East of Blossom Lane, northern (unpaved) section	Unrestricted, Reserved	80
1B	West of Blossom Lane, head-in parking	Time Restricted, Loading, Go Maine, Reserved	5
2	Blossom Lane, North of Marquardt Building	Unrestricted, Time Restricted, Go Maine, Reserved, Accessible	216
2A	Independence Drive – North, adjacent to Building 10, CETA, Nurses home	Unrestricted	48
3	Corner Lot North of Blossom Lane and East of Arsenal Street (unmarked)	Unrestricted	97
3A	Independence Drive head-in parking	Unrestricted	23
3B	Surrounding Paint Shop and Carpentry Buildings south of Lot 3	Unrestricted, Time Restricted, Go Maine, Reserved, Accessible	18
3C	Head-in parking west side of Arsenal Street south of Blossom Lane	Unrestricted	6
4	Arsenal Street South	Unrestricted	81
4A	Sleeper Lane, Adjacent to Building #9, Central Building	Unrestricted, Reserved	21
4B	Elkins Lane, Adjacent to Building #20, Gym	Unrestricted, Time Restricted, Reserved, Accessible	31
7	Arsenal Street North (main State lot, north of Arsenal Street and west of Hospital Street)	Unrestricted, Go Maine, Reserved	273
8	Tyson Drive, behind Building #30, Ray Building	Time Restricted, Go Maine, Reserved, Accessible	47
9	Piggery Road/Rideshare Lot	Unrestricted	100
	Subtotal – State Offices		1,133
Riverview Psychiatric (RPRC)			
5	Riverview Center North Lot	Unrestricted, Motorcycle, Reserved, Accessible	43
6	Riverview Center Main Lot (east and south of Riverview Center)	Unrestricted, Motorcycle, Accessible	183
	Subtotal – RPRC		226
	TOTAL – ALL LOTS		1,359

PARKING STUDY

Existing Conditions
August 11, 2016

As shown, there are 1,359 parking spaces on the entire campus. Approximately 1,133 spaces are dedicated to the state office complex. Lot 7 is the largest lot on the campus with 273 spaces total. Lot 2 is the second largest lot with 216 spaces. The only other lot serving the office complex with 100 or more spaces is the Piggery Road/Rideshare lot located on the east side of Route 9.

2.3 PARKING UTILIZATION

Parking utilization by time of day was monitored for each of the 17 parking areas identified in Figure 2. Conditions were monitored on a Tuesday which is a typical day on the campus. The parking survey occurred on Tuesday, September 22, 2015 from 9:00 AM through 4:00 PM. No special employee training was reportedly occurring on campus on that day. The results of the parking survey are summarized in Table 2. As shown, parking demands peak at 10:00 AM, but the demands from 9:00 AM through 12:00 PM are similar. The peak for the entire campus at 10:00 AM is 781 vehicles parked. For the state office complex the peak parking demand, 596 vehicles, also occurs at 10:00 AM representing only 53 percent of the available parking supply. At 10:00 AM there are 537 vacant parking spaces on the state office campus. Time restricted or visitor parking was generally adequate with demand below supply for the entire day.

Table 2 Parking Utilization – All Lots

Type	Supply	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM
State Offices Parking									
Unrestricted	951	440	475	463	450	417	415	398	311
10 Min Limit	2	1	2	1	1	0	1	1	2
15 Min Limit	5	0	0	0	0	0	0	0	0
30 Min Limit	8	0	0	1	1	2	0	0	0
1 Hour Limit	45	35	29	28	37	35	32	28	19
2 Hour Limit	8	8	5	8	7	8	8	6	9
Loading	2	1	1	0	0	0	0	1	0
Go Maine	20	15	16	16	15	13	17	17	11
Reserved	58	56	55	55	56	52	61 ¹	66 ¹	78 ¹
Accessible	34	11	10	12	13	14	13	14	6
Motorcycle	2	3	3	3	3	3	3	3	1
SUBTOTAL	1,133	570	596	587	583	544	550	534	437
RPRC Parking									
SUBTOTAL	226	187	189	197	193	197	196	196	120
Total – All Parking Areas									
TOTAL	1,359	754	781	779	770	734	738	721	547

¹ Includes State vehicles parked in spaces unreserved spaces, State vehicles are supposed to be parked in Reserved spaces.



PARKING STUDY

Existing Conditions
August 11, 2016

Peak parking demand by lot is illustrated in Table 3. As shown, even though the total supply of parking spaces available for the office campus is being used at only 53 percent, certain lots are operating much nearer to capacity. Lots closer to the campus core, Lots 1, 7, and 8, all operate at 75 percent of capacity or greater at peak times. The more remote lots, Lots 3, 4, and 9 experience very low utilization rates even at peak times. Overall, the RPRC campus is well utilized. Lots 5 and 6 operate at 47 percent and 98 percent of capacity, respectively, at peak.

Table 3 Peak Parking Demand – by Lot

Lot #	Lot Description	Spaces	Lot Peak Demand ¹	Peak %
<i>State of Maine Parking</i>				
1	East of Blossom Lane, southern (paved) section	87	65	75%
1A	East of Blossom Lane, northern (unpaved) section	80	2	3%
1B	West of Blossom Lane, head-in parking	5	2	40%
2	Blossom Lane, North of Marquardt Building	216	113	52%
2A	Independence Drive – North, adjacent to Building 10, CETA, Nurses home	48	0	0%
3	Corner Lot North of Blossom Lane and East of Arsenal Street (unmarked)	97	20	21%
3A	Independence Drive head-in parking	23	9	39%
3B	Surrounding Paint Shop and Carpentry Buildings south of Lot 3	18	7	39%
3C	Head-in parking west side of Arsenal Street south of Blossom Lane	6	5	83%
4	Arsenal Street South	81	23	28%
4A	Sleeper Lane, Adjacent to Building #9, Central Building	21	24	114%
4B	Elkins Lane, Adjacent to Building #20, Gym	31	27	90%
7	Arsenal Street North (main State lot, north of Arsenal Street and west of Hospital Street)	273	253	93%
8	Tyson Drive, behind Building #30, Ray Building	47	37	79%
9	Piggery Road/Rideshare Lot	100	40	40%
	Subtotal – State Offices	1,133	627	55%
<i>Riverview Psychiatric (RPRC)</i>				
5	Riverview Center North Lot	43	20	47%
6	Riverview Center Main Lot (east and south of Riverview Center)	183	179	98%
	Subtotal – RPRC	226	199	88%
	TOTAL – ALL LOTS	1,359		
1 Peak is shown for individual lots, so this may be slightly different from the 10:00 AM overall peak in some locations				



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2.4 LAND USE CONDITIONS

Existing land use conditions on the campus at the time of the parking survey were determined based on information provided by BGS. This information is documented in the Existing Land Use Conditions table included in the appendix and summarized in Table 4. As shown, at the time of the parking survey approximately 272,000 square feet of the existing 542,000 square feet of building floor area on the campus was in use. Similarly, it was reported that there were 758 workers (state employees) assigned to the campus on the day of the survey. This indicates an overall population density of 2.79 employees per 1000 square feet (KSF) of gross building floor area or 358 square feet of gross building floor area per employee. On the campus, population density varied greatly by building depending upon the effectiveness with which the original hospital buildings were adapted to office space in the past. Renovations made to the Ray building, for example, have been very effective supporting a density of 4.71 people per KSF. In contrast, Building 6D in the Boiler Complex buildings has not been renovated and presently hosts only two workers at a density of 0.25 employees per KSF.

Table 4 Existing Land Use Conditions – State Office Campus

Item	Quantity
Building Floor Area (Gross)	542,000 Square Feet
Occupied Floor Area (Gross)	272,000 Square Feet
Employees	758
Population Density	2.79 Employees per Occupied KSF or
	358 Square Feet per employee

Notes: Conditions as of September 22, 2015.

Does not include RPRC.

KSF-1000 Square Feet of Floor Area

2.5 PARKING RATES

The above observed parking demands and campus population data were used to calculate an existing parking rate for the state office campus. The parking rate is defined by the number of vehicles parked divided by the number of employees. As noted above, the maximum observed demand of 596 vehicles parked was observed at a time when there were 758 employees on campus. This would indicate a parking rate of 0.79 vehicles per employee for the state office campus under existing conditions. This figure is reasonably consistent with data published by the Institute of Transportation Engineers (ITE) in *Parking Generation, Fourth Edition*. For Land Use Code 710, Office Building, the ITE reports an average peak parking demand of 0.83 vehicles per employee based on a study of 58 sites. The range of rates observed is 0.52 to 1.35 vehicles per employee. The ITE database may include some urban sites where transit access is an attractive alternative to driving for some employees.



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Future Conditions
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The parking data were also used to calculate parking demands for various parking-type categories. The above figure represents the overall campus parking rate per employee. Comparing the peak visitor parking demand (time restricted spaces) to the campus population of 758 employees indicates a parking rate of 0.06 visitor vehicles per employee. Likewise, the parking rate for state vehicles (reserved spaces) peaked 0.10 vehicles per employee. When the individual parking demand peak for each parking type are considered, the parking rate increases from 0.79 spaces per employee to 0.83 spaces per employee as shown in Table 5. These parking rates are summarized in Table 5 and are applied in the next section of the report to project future parking demands on the campus.

Table 5 Observed Existing Parking Rates

Type of Parking	Peak Parking Demand (Vehicles per Employee)
Visitor Parking	0.06
State Vehicle Parking	0.10
All Other Parking Types	0.67
TOTAL	0.83

3.0 FUTURE CONDITIONS

Planned future land use conditions at the East Campus were examined in combination with the above parking rates to estimate future parking demands for the campus.

3.1 LAND USE CONDITIONS

Renovation and increased occupation of the existing buildings on the campus is slated to occur over time gradually increasing the campus population. Anticipated future land use conditions were identified by BGS. Several "design years" were considered in this analysis to reflect relatively certain near-term plans and more speculative long-term plans. Annual land use projections are provided for each of the next three years and long-term plans reflect activities that are not likely to occur until after 2018. Planned campus redevelopment activities are described below and in the Future Land Use Conditions table in the appendix.

When pursuing future renovation projects BGS seeks to achieve population densities of 150 to 200 square feet of "net" floor space per employee. Net floor area includes what might generally be considered "leasable" floor area and excludes from the gross floor area common areas, stairwells, rest rooms and utility vaults. Data published by the ITE in *Trip Generation, Ninth Edition*, for Land Use Code 710, Office Building, indicates an average ratio of net floor area to gross floor area of 0.88. Applying this ratio to a target density of 175 net square feet per employee indicates a population density of 5.0 employees per gross KSF. Whether or not BGS will be able to



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obtain this target density on all future projects will depend in part on the configuration of existing building floor plates and the budget available for renovations for each project.

3.1.1 2016 Projects

By September of 2016, renovations and improvements underway at the **Marquardt Building** and at the **Boiler Complex** are expected to be completed. With renovation of the Boiler Complex 48 employees will be able to work in this space compared to two employees under existing conditions. The now vacant third floor of the Marquardt Building will house an estimated 113 employees and another ten new employees (total) will be accommodated on the first two floors. (The resulting density in the Marquardt Building will reach 3.66 employees per KSF compared to 2.61 employees per KSF under existing conditions.) As a result of these renovations, 169 new employees are expected to be working on the campus.

3.1.2 2017 Projects

By September of 2017, the now vacant **Greenlaw Building** and the **Deering Building** are expected to be renovated. Between the two buildings, just over 81,000 square feet of floor area will be occupied and home to 140 new employees. For the Greenlaw Building conversion to lab use will occur with a density of 1.5 employees per KSF of floor space to house 68 employees within 45,065 square feet of building floor area. The Deering Building is not being used efficiently under existing conditions with only 108 employees located within approximately 36,000 square feet of floor space. The current density is only 3.0 employees per KSF. Under renovated conditions a 5.0 ratio is assumed increasing the occupancy by 72 employees to 180 employees.

3.1.3 2018 Projects

By September of 2018, the now vacant **CETA/Nurses Home** building will be renovated. Again, the target density is 5.0 employees per KSF such that the 18,000 square foot building could be occupied with 90 added employees.

3.1.4 Post-2018 Projects

A detailed schedule of projects after 2018 has not been developed; however, BGS expects to continue its program of renovating space on the campus to support greater employment after the above projects have been completed. Certain buildings are not suitable for cost-effective renovations and will likely be demolished. These include the Stone buildings (North and South), the Center building and Administration building. Several of the larger buildings on the campus that are presently occupied may be renovated to improve efficiency. These "Post-2018" projects are listed below.

- The nearly 48,000 square feet **Elkins** building which currently houses 52 employees at a ratio of 1.09 employees/KSF could support 238 employees at a ratio of 5.0 employees/KSF for a net increase of 186 employees.



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- The 30,100 square feet **Harlow** building which currently houses 86 employees at a ratio of 2.26 employees/KSF could support 191 employees at a ratio of 5.0 employees/KSF for a net increase of 105 employees.
- The 45,000 square feet **Tyson Pavillion** which currently houses 138 employees at a ratio of 3.07 employees/KSF could support 225 employees at a ratio of 5.0 employees/KSF for a net increase of 87 employees.
- The 18,600 square feet **Williams Pavillion** which currently houses 42 employees at a ratio of 3.01 employees/KSF could support 70 employees at a ratio of 5.0 employees/KSF for a net increase of 28 employees.
- The 48,191 square feet **Ray** building currently houses 227 employees at a very efficient ratio of 4.71 employees/KSF. As such, this may be a low priority project. However, the building could support 241 employees at a ratio of 5.0 employees/KSF for a net increase of 14 employees.

Combined, the five potential "Post-2018" projects could add 420 employees to the campus. A summary of the anticipated future campus changes and employment projections is provided in Table 6. As shown, over the next three years, the number of employees on the campus could increase by nearly 53 percent from 758 to 1157 employees. At full build out, sometime after 2018, the campus population could grow to 1576 employees.

Table 6 Future State Office Campus Build-Out

	Sept. 2015	Sept. 2016	Sept. 2017	Sept. 2018	After Sept. 2018
Employees	758	927	1067	1157	1576
Completed Building Projects	-	Marquardt Boiler Complex	Greenlaw Deering	CETA/ Nurses Home	Elkins Harlow Tyson Williams Ray

3.2 PARKING DEMAND AND SUPPLY

Anticipated future parking demands for the state office campus over time were developed by applying the observed existing peak parking ratio on the campus to the land use plan discussed above. As noted, the existing peak parking rate is 0.79 vehicles per employee or 0/83 per employee when individual parking types are looked at separately. Applying the higher rate, the calculated future parking demands by year are noted in Table 7. As shown, the existing 596 vehicle parking demand is expected to grow to 1,038 vehicles upon completion of the 2018 projects. Ultimately the campus parking demand could reach 1,334 vehicles.



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Table 7 Future Build-Out

	Sept. 2015	Sept. 2016	Sept. 2017	Sept. 2018	After Sept. 2018
Employees	758	927	1067	1157	1576
Parking Demand (vehicles)	596	729	963	1038	1334
Suggested Parking Supply (105 % of Demand)	662	810	932	1010	1377

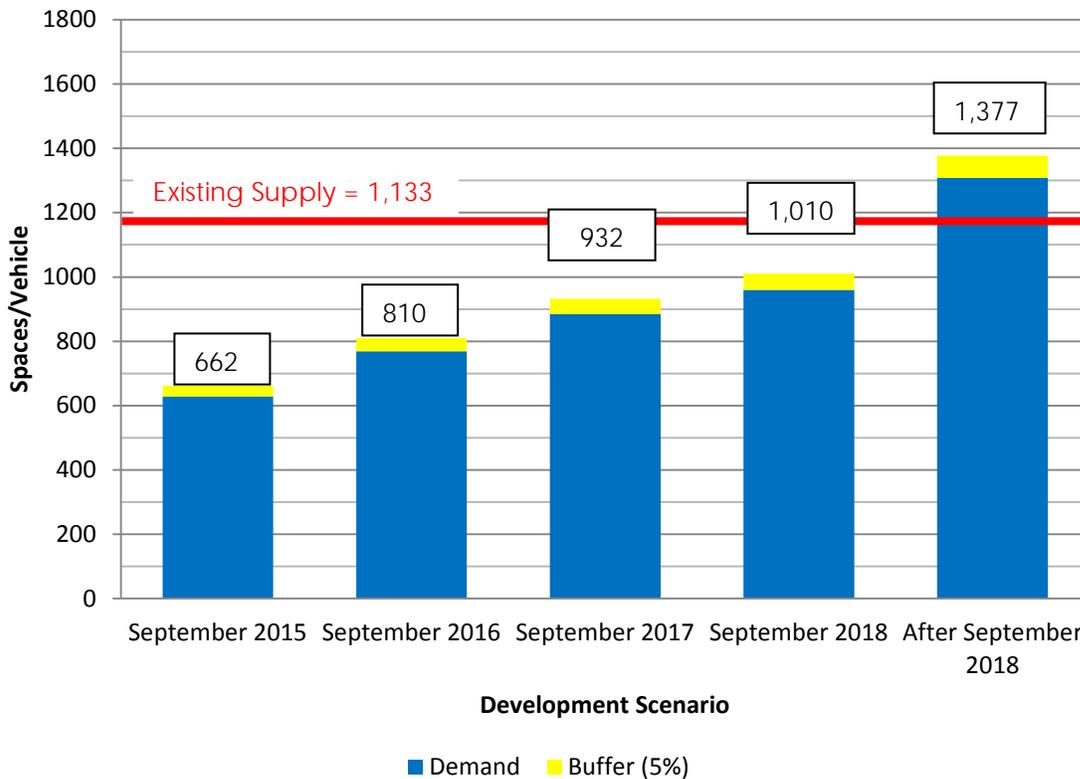
Parking should not be designed to operate at 100 percent of capacity under typical conditions as this offers a poor level of service to users. Search times to locate available spaces will be excessive. Search times to locate available spaces will be excessive. Also, the total supply will be inadequate during unusual spikes in demand. Parking facilities are hence designed to operate at only 85 to 95 percent of capacity. The lower figure typically applies to retail establishments or institutions where the duration of stay may be limited and turnover is high. Office buildings, where employees generally enter and exit the site only once per day, may be designed to operate at higher ratios. Accordingly, Table 7 also provides suggested parking supplies for each design year assuming "buffer" (spaces in excess of projected demand) of five percent is provided. As shown, a recommended 1,010 spaces should be provided to serve expected campus parking demands upon completion of all projects through 2018. The suggested parking supply for full build out is 1,377 spaces.

The existing 1,133 parking spaces on site would be adequate to support renovations through the 2018 design year projects. This would require the use of all lots on the campus, including those that are on the outskirts of the campus which are presently highly underutilized. After September of 2018, additional parking would need to be constructed as a result of the proposed renovations. Figure 3 shows a comparison of the existing parking supply to the recommended parking supply over time. From the figure it can be seen that full build out of the campus requires the addition of 244 spaces relative to existing conditions.

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PARKING ANALYSIS Findings
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Figure 3 Parking Supply



4.0 PARKING ANALYSIS FINDINGS

The existing parking supply of 1,133 parking spaces is adequate to support the additional vehicles on site that will be associated with the proposed renovations through September of 2018. After that point, additional renovations will require construction of more parking on site. Ongoing studies will help to determine the optimal locations to construct the additional 244 parking spaces required for full build-out.

5.0 NEW-TERM PROPOSAL

As of August 2016 plans have been developed to upgrade and repurpose some of the parking facilities on the campus. These changes, if permitted and implemented, will change the parking supply. Proposed actions include:

- Constructing new lots, Lots 7E and 7F, just east of existing Lot 7 increasing the parking supply by a net 98 spaces;



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EXISTING INFRASTRUCTURE CONDITIONS

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- Constructing a new lot near the boiler complex, Lot 3D, providing 11 new spaces;
- Decommissioning Lot 4 for a net loss of 81 spaces;
- Repurposing a portion of Lot 3 for the storage of equipment and utility vehicles resulting in a net loss of 28 spaces; and,
- Paving Lot 1 resulting in six new spaces in this lot.

The combined effect of these proposals would be a net increase in the on-campus parking supply for state use of six spaces.

The proposed parking lot upgrades will have no impact on the findings of the above analysis. The new parking supply for the state office campus with these changes will be 1139 spaces. This supply will be adequate to serve projected parking demands, estimated at only 960 vehicles, through the year 2018. In fact, a parking surplus of 179 spaces is expected in the year 2018. This surplus is more than adequate to accommodate spikes in parking demand when large conference rooms (holding up to 40 people) on the campus are used to host meetings among campus visitors who are assumed to all arrive by automobile.

6.0 EXISTING INFRASTRUCTURE CONDITIONS

6.1 WALKWAYS

Pedestrian connectivity within the campus was evaluated as part of this study. Walkways provided throughout the campus serve two primary functions. They connect buildings to parking lots and they allow for circulation among buildings. The condition of existing walkways was observed and documented for consideration in developing future campus parking plans.

6.1.1 Existing Pedestrian Facilities

A site visit was made on Thursday, October 1, 2015 to locate existing walkways and to determine the condition of each walkway. Condition ratings include "Good", "Fair" and "Poor" defined as follows:

- Good Condition-There are few cracks and little evidence of structural decay. Surfaces are generally smooth and graded to prevent ponding and icing.
- Fair Condition-There are some cracks and evidence of structural decay. Surfaces may be uneven in some locations with potential for ponding and icing.
- Poor Condition-Cracks are common as is evidence of structural decay. Surfaces are uneven and subject to ponding and icing.



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EXISTING INFRASTRUCTURE CONDITIONS

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Walkways within the campus are primarily bituminous, with some concrete and paver sections. There is also a tunnel connecting from the Deering building to the Tyson building. The walkway inventory is shown on Figure 4. Figure 4 is color coded to indicate the sidewalk condition and line types indicate sidewalk materials.

6.1.2 Connecting Walkways

From a connectivity perspective the critical links in the walkway network are those joining the three major parking lots on the campus, Lots #1, 2, and 7, with the largest office buildings on the campus (Williams Pavilion, Elkins, Tyson, Marquardt, Harlow, Ray and Deering). Relative to Lot #1 in the northeast corner of the campus, there are two connections to the nearest building, Deering. One of these connections is in poor condition. Also, parkers continuing past Deering to reach other buildings in the campus core will encounter another "poor" - rated sidewalk section to the south of the Deering building. Lot #2 in the northern section of the campus offers a direct connection to the Marquardt building and sidewalks in good condition for travel further south of this building to the campus core. The direct sidewalk connection from this lot to the Greenlaw building however is in poor condition. Lot #7 at the south end of the campus has generally "good condition" pedestrian connections to the larger occupied buildings on the campus although a section of sidewalk within the lot itself is in poor condition.

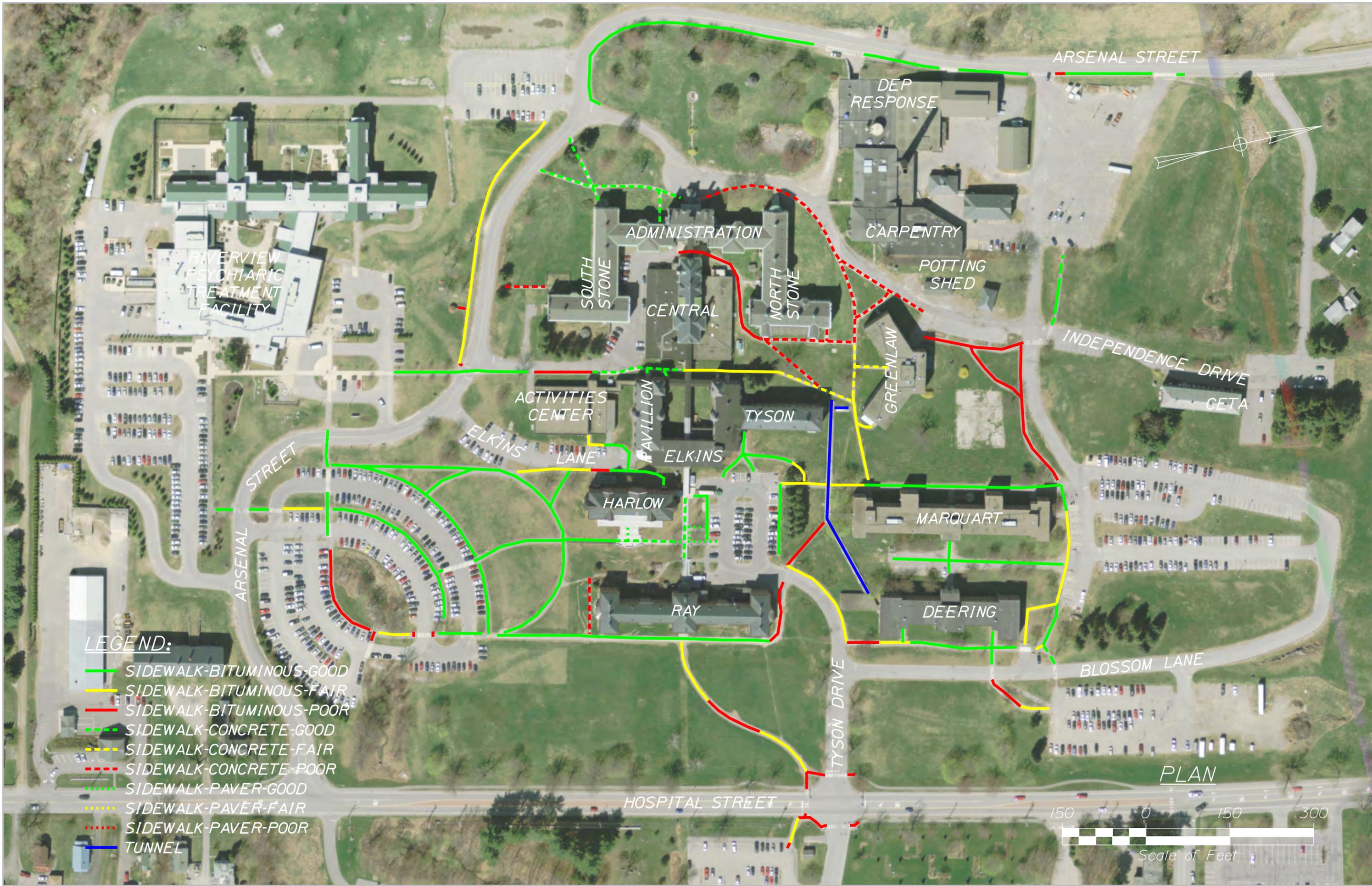
6.1.3 Circulating Walkways

As noted above, pedestrian travel among buildings is supported by a tunnel and numerous walkways. Segments connecting the Ray and Marquardt buildings are in poor condition. Walkways adjacent to vacant and/or underutilized buildings in the northwest corner of the campus are also in poor condition. Otherwise, circulation walkways are generally in good condition.

6.1.4 Recommendations

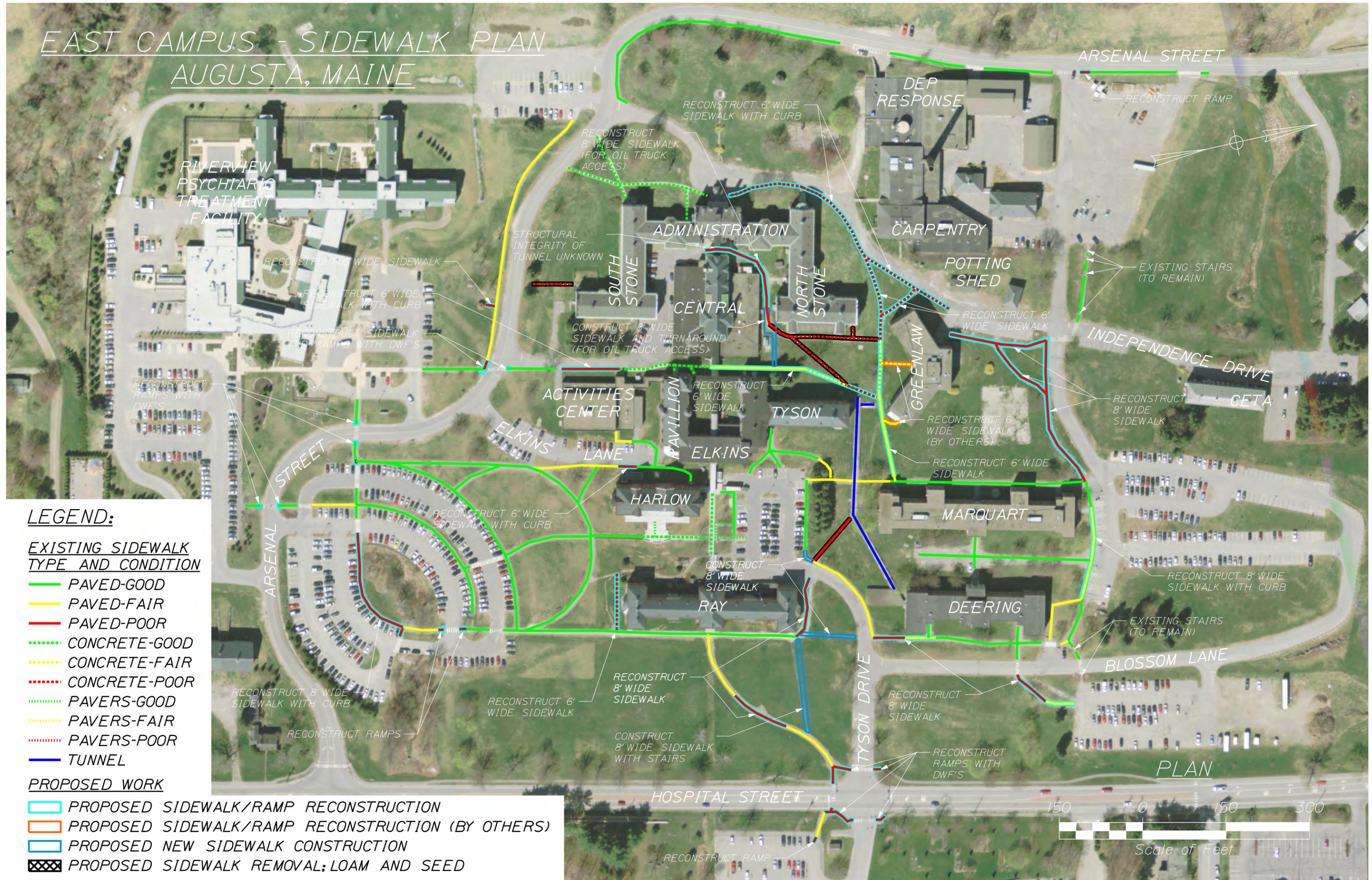
Based on the land use and parking demand forecasts provided above parking demands at the campus are expected to increase. In the near-term the increased parking demand will result in greater utilization of the existing parking lots. This will increase travel demands on the connecting walkways described above between parking lots and buildings. Also, as parking demands grow people may be forced to park at more remote locations thereby generating additional pedestrian traffic on the circulatory walkways among buildings. Consequently, existing connecting walkways and circulatory walkways in the campus core that are presently in poor condition should be reconstructed to support expected growth. Also, new walkways may be warranted to better connect some of the currently underutilized, remote lots to the campus core. In particular, a new walkway should be considered to provide a stronger connection from the Piggery Lot (Lot # 9) to the Deering building and buildings west of the Ray building. Similarly, walkways in the northwest corner of the campus connecting Lot # 3 to the Greenlaw and Marquardt buildings should be reconstructed. Suggested near-term walkway upgrades are identified in Figure 5.





EAST CAMPUS - SIDEWALK PLAN

AUGUSTA, MAINE



LEGEND:

EXISTING SIDEWALK TYPE AND CONDITION

- PAVED-GOOD
- PAVED-FAIR
- PAVED-POOR
- - - CONCRETE-GOOD
- - - CONCRETE-FAIR
- - - CONCRETE-POOR
- · · · · PAVERS-GOOD
- · · · · PAVERS-FAIR
- · · · · PAVERS-POOR
- TUNNEL

PROPOSED WORK

- PROPOSED SIDEWALK/RAMP RECONSTRUCTION
- PROPOSED SIDEWALK/RAMP RECONSTRUCTION (BY OTHERS)
- PROPOSED NEW SIDEWALK CONSTRUCTION
- PROPOSED SIDEWALK REMOVAL; LOAM AND SEED

PLAN



PARKING STUDY

EXISTING INFRASTRUCTURE CONDITIONS

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The campus planning effort will soon identify locations where new parking facilities may be constructed. As these locations are identified further consideration of new pedestrian connections and walkway upgrades will be required.

Independent of the parking planning efforts additional walkway improvements may be made as part of routine campus maintenance. Potential maintenance projects are also identified in Figure 5.

6.2 ROADWAYS AND PARKING LOTS

A pavement condition survey was conducted by Stantec staff on November 30, 2015. The survey was based on visual observations using Good-Fair-Poor (GFP) rating criteria, defined as follows:

- Good - Stable pavement structure, minor cracking may be evident but is generally hairline and hard to detect. Minor patching and possibly some minor deformation evident. Very good riding qualities. Rutting may be present but is less than ½". This includes areas of recent pavement rehabilitation / construction.
- Fair - Generally stable, but may have minor areas of structural weakness evident. Cracking is easier to detect, patched but not excessively. Deformation more pronounced and easily noticed. Ride qualities are good to acceptable. Rutting may be present but is less than ¾".
- Poor - Pavement is in extremely deteriorated condition. Areas of instability, marked evidence of structural deficiency, large crack patterns (alligatoring), heavy and numerous patches, deformation very noticeable. Riding qualities range from acceptable to poor. When rutting is present, rut depth is greater than ¾". Gravel areas have been included in this category.

The results of the survey are shown on Figure 6, *Roadway Pavement Conditions*, which is color coded to match the GFP rating criteria.

In general, the roadways around the perimeter of the campus (Arsenal Street, eastern section of Blossom Lane) are in better condition than the interior roads (Independence Drive, western section of Blossom Lane). This can likely be attributed in large part to the fact that the Poor condition roadways are significantly older than the Good/Fair condition roadways. The same reasoning applies with the individual parking lots. The newer lots or those that have been recently rehabilitated (#2, #4, #7, #8) are in much better condition than the other lots.

A summary of the individual pavement areas with representative distresses noted is shown in Table 8 below.



PARKING STUDY

EXISTING INFRASTRUCTURE CONDITIONS

August 11, 2016

Table 8 Pavement Condition Summary

Lot # / Roadway Section	Approx. Area (SF)	Conditions Noted	Estimated Rehabilitation Cost (2016 Dollars)
1	29,900	Poor: Significant Heaving and Settlement; Exposed Gravel and Loose Pavement; Cracking; Age Distress	\$169,000
1A	20,400	Poor: Gravel Parking Lot	\$171,000
1B	3,000	Poor: Cracking; Heaving	\$32,000
2	55,400	Good: Minor Joint Cracking	N/A
2A	17,700	Poor: Minor Heaving and Settlement; Significant Alligator Cracking; Age Distress	\$108,000
3	45,600	Poor: Significant Heaving and Settlement; Exposed Gravel and Loose Pavement; Cracking; Age Distress	\$250,000
3A	3,500	Fair: Alligator Cracking; Isolated Areas of Minor Settlement	\$25,000
3B-1	16,700	Fair: Cracking; Isolated Areas of Minor Settlement; Isolated Potholes	\$70,000
3B-2	10,700	Poor: Heaving; Cracking; Age Distress	\$71,000
3C	5,000	Poor: Gravel Parking Lot	\$62,000
4	26,100	Good	N/A
4A	18,600	Poor: Multiple Patches; Differing Ages of Pavement; Alligator Cracking; Age Distress; Potholes	\$113,000
4B-1	8,400	Good: Minor Isolated Settlement	N/A
4B-2	6,800	Fair: Cracking; Heaving and Settlement	\$36,000
7	81,300	Good	N/A
7 (Southwest Corner)	10,500	Fair: Joint Cracking; Isolated Areas of Settlement	\$48,000
8	19,300	Good: Isolated Joint Cracking	N/A
9	35,800	Poor: Cracking; Heaving; Areas of Loose Pavement	\$203,000
Tyson Lane (East)	11,100	Good:	N/A
Tyson Lane (West)	7,800	Fair-Poor: Exposed Gravel; Heaving; Cracking; Patches	\$39,000
Piggery Road	6,600	Good: New	N/A
Blossom Lane (East)	29,600	Fair: Minor Heaving; Cracking	\$110,000
Blossom Lane (West)	29,500	Fair: Alligator Cracking; Minor Isolated Settlement	\$110,000



PARKING STUDY

EXISTING INFRASTRUCTURE CONDITIONS

August 11, 2016

Lot # / Roadway Section	Approx. Area (SF)	Conditions Noted	Estimated Rehabilitation Cost (2016 Dollars)
Arsenal Street (East)	25,600	Good: Minor Edge / Joint Cracking	N/A
Arsenal Street (Central)	15,000	Fair: Significant Edge Cracking	\$63,000
Arsenal Street (West)	35,100	Good: Isolated Edge Cracking / Disintegration	N/A
Independence Drive (South)	27,400	Poor: Patches; Heaving; Alligator Cracking; Age Distress	\$156,000
Independence Drive (North)	20,000	Poor: Heaving and Settlement; Alligator Cracking; Age Distress; Exposed Base; Edge Disintegration	\$119,000
		SUBTOTAL ALL FAIR CONDITION AREAS	\$501,000
		SUBTOTAL ALL POOR CONDITION AREAS	\$1,454,000
		TOTAL ALL AREAS	\$1,955,000

6.2.1 Recommendations

As shown in Table 8, much of the existing paved infrastructure of the campus displays significant surficial deterioration, primarily due to a combination of age, lack of preventive maintenance (i.e. crack sealing, joint repair, patching, etc.) and in some cases structural deficiencies of the pavement structure itself. The degree of repair needed for each surveyed area is dependent on both surficial as well as subsurface conditions. As this survey is based primarily on visual observations of the pavement surface, a more detailed subsurface investigation is recommended prior to proceeding with final design of any future rehabilitation project. At a minimum, the subsurface investigation should include performing test pits and geotechnical analysis of the existing base and subbase gravels in areas identified with significant deterioration or where heaving/settlement has occurred. The results of the subsurface investigation may help to identify specific causes of the deterioration and provide recommendations on potential options for repair.

In order to aid BGS in implementing future pavement repair tasks, preliminary cost opinions have been prepared for repair of each of the individual surveyed areas. The cost opinions provided in Table 8 *Pavement Condition Summary* are for high-level planning purposes only, and may vary significantly based on the results of future subsurface analyses. The following assumptions have been made during preparation of the cost opinions:

- Pavements in Good Condition require only minimal repair such as crack sealing, and therefore no cost opinions have been prepared.



PARKING STUDY

EXISTING INFRASTRUCTURE CONDITIONS

August 11, 2016

- Pavements in Fair Condition: Assumes the subsurface pavement structure is generally adequate, with only surface deterioration in need of repair. Therefore a mill and overlay of the surface pavement is proposed. Assumes milling of approximately 3 inches of existing bituminous pavement, and placement of 3 inches of new bituminous pavement.
- Pavements in Poor Condition: Assumes the subsurface pavement structure needs rehabilitation, but not replacement, with surface irregularities that require regrading. Existing pavement surface and base gravels are proposed to be reclaimed in-place, with addition of supplemental stone to improve gradation. Area will be graded, compacted, and 5 inches of bituminous pavement placed. Assumes limited disturbance to shoulders, requiring topsoil, seed and mulch.
- Existing Gravel Lots: Assumes construction of a full depth pavement section comprised of 5 inches of bituminous pavement, 8 inches of aggregate base, and 17 inches of aggregate subbase.
- Assumes no new utilities or replacement of existing utilities.
- Assumes existing storm drainage is adequate. No additional Best Management Practices are required.

The proposed repair of parking lots and roadways on the campus should be prioritized by BGS based on available funding, and anticipated future levels of use. Areas of high usage should be prioritized over areas of infrequent use. If it has not already done so, BGS should also consider allocating additional resources for regularly scheduled pavement management and preventive maintenance tasks, including annual monitoring and crack sealing to extend the life of existing pavements. This is especially important in pavement areas that are currently in good condition, as it will allow BGS to allocate the bulk of its limited pavement management resources to improving the worst case areas without sacrificing necessities.

APPENDIX

PARKING STUDY

Appendix A Hourly Parking Utilization
August 11, 2016

Appendix A HOURLY PARKING UTILIZATION

East Campus Parking Study Augusta, ME

Lot #	Location/Description	Type	Supply	Occupancy										Comments	
				9/21/15 3:00 PM		22-Sep-15									
				Vehicles	%	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM		
1	East of Blossom Lane, southern (paved) section	Unrestricted	83	63		49	54	52	39	45	43	33	28	All unrestricted.	
		10 Min Limit													
		15 Min Limit													
		30 Min Limit													
		1 Hr Limit													
		2 Hr Limit													
		Go Maine	4	0		2	2	2	2	2	2	2	1		3 missing (pic#1)
		Reserved				9	9	9	9	9	9	9	9		
		Accessible Stalls													
		Subtotal	87	63	72%	60	65	63	50	56	54	44	38		
1A	East of Blossom Lane, northern (unpaved) section	Unrestricted	76	9		2	2	2	2	2	2	2	2	all Unrestricted *5 = pic #5; *6 = pic #6 total spaces estimated from aerial image	
		10 Min Limit													
		15 Min Limit													
		30 Min Limit													
		1 Hr Limit													
		2 Hr Limit													
		Go Maine													
		Reserved	4	0		0	0	0	0	0	0	0	0		1 sign missing (pic #2)
		Accessible Stalls													
		Subtotal	80	9	11%	2	2	2	2	2	2	2	2		
1B	West of Blossom Lane, head-in parking	Unrestricted													
		10 Min Limit													
		15 Min Limit													
		30 Min Limit	1	1		0	0	1	0	1	0	0	0		
		1 Hr Limit													
		2 Hr Limit													
		Loading	2	0		1	1	0	0	0	0	1	0		
		Go Maine	1	1		0	0	0	1	1	1	1	1		
		Reserved	1	1											
		Accessible Stalls													
Subtotal	5	3	60%	1	1	1	1	2	1	2	1				
2	Blossom Lane North of Marquardt Building	Unrestricted	182	90		80	102	97	102	67	84	88	66	Time restricted and HC spaces near building. *7 = pic #7; *8 = pic #8	
		10 Min Limit													
		15 Min Limit	5	0		0	0	0	0	0	0	0	0		
		30 Min Limit	4	0		0	0	0	1	1	0	0	0		
		1 Hr Limit	8	0		0	2	0	6	2	0	2	0		
		2 Hr Limit													
		Go Maine	3	0		2	2	2	2	2	2	2	2		
		Reserved	5	1		1	1	1	1	1	1	1	4		
		Accessible Stalls	9	2		1	0	0	1	1	1	1	0		
		Subtotal	216	93	43%	84	107	100	113	74	88	94	72		

East Campus Parking StudyAugusta, ME

Lot #	Location/Description	Type	Supply	Occupancy										Comments	
				9/21/15 3:00 PM		22-Sep-15									
				Vehicles	%	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM		
2A	Independence Drive- North adjacent to Building 10, CETA/Nurses home	Unrestricted	48			0	0	0	0	0	0	0	0	Building unused. Lot should be empty. May not need to survey. Just need inventory.	
		10 Min Limit												*11 = pic #11	
		15 Min Limit													
		30 Min Limit													
		1 Hr Limit													
		2 Hr Limit													
		Go Maine													
		Reserved													
		Accessible Stalls													
		Subtotal	48	0	0%	0									
3	Corner Lot North of Blossom Lane and East of Arsenal Street (unmarked)	Unrestricted	97	20		14	16	17	16	11	13	12	10	*12 = pic #12	
		10 Min Limit													
		15 Min Limit													
		30 Min Limit													
		1 Hr Limit													
		2 Hr Limit													
		Go Maine													
		Reserved				3	3	3	3	3	3	3	3	6	
		Accessible Stalls													
		Subtotal	97	20	21%	17	19	20	19	14	16	15	16		
3A	Independence Drive head-in parking, three areas	Unrestricted	23	8		7	9	9	9	9	9	9	8	*9 = pic #9; *10 = pic #10	
		10 Min Limit													
		15 Min Limit													
		30 Min Limit													
		1 Hr Limit													
		2 Hr Limit													
		Go Maine													
		Reserved													
		Accessible Stalls													
		Subtotal	23	8	35%	7	9	8							
3B	Surrounding Paint Shop and Carpentry Buildings south of Lot 3	Unrestricted	10	9		6	5	5	5	6	5	5	3	*13 = pic#13; *14 = pic #14	
		10 Min Limit													
		15 Min Limit													
		30 Min Limit	3	0		0	0	0	0	0	0	0	0		
		1 Hr Limit													
		2 Hr Limit													
		Go Maine	1			1	1	1	1	1	1	1	1	Missing sign	
		Reserved	2	0		0	0	0	0	0	0	0	0	3	
		Accessible Stalls	2	0		0	0	0	0	0	0	0	0	0	
		Subtotal	18	9	50%	7	6	6	6	7	6	6	7		

East Campus Parking Study Augusta, ME

Lot #	Location/Description	Type	Supply	Occupancy										Comments	
				9/21/15 3:00 PM		22-Sep-15									
				Vehicles	%	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM		
3C	Head in parking west side of Arsenal Street south of Blossom Lane	Unrestricted	6	0		5	5	5	5	5	5	1	1	All vehicles were state vehicles throughout the day	
		10 Min Limit													
		15 Min Limit													
		30 Min Limit													
		1 Hr Limit													
		2 Hr Limit													
		Go Maine													
		Reserved													
		Accessible Stalls													
		Subtotal	6	0	0%	5	1		1						
4	Arsenal Street South,	Unrestricted	81	21		6	8	8	8	8	8	9	10		
		10 Min Limit													
		15 Min Limit													
		30 Min Limit													
		1 Hr Limit													
		2 Hr Limit													
		Go Maine													
		Reserved				12	12	12	12	12	13	13	13		
		Accessible Stalls													
		Subtotal	81	21	26%	18	20	20	20	20	21	22	23		
4A	Sleeper Lane, Adjacent to Building #9, Central Building	Unrestricted	20			20	23	22	19	18	22	19	18		
		10 Min Limit													
		15 Min Limit													
		30 Min Limit													
		1 Hr Limit													
		2 Hr Limit													
		Go Maine													
		Reserved	1												
		Accessible Stalls													
		Motorcycle	0			1	1	1	1	1	1	1	1		
Subtotal	21	0	0%	21	24	23	20	19	23	20	19				
4B	Elkins Lane, Adjacent to Building #20, Gym	Unrestricted													
		10 Min Limit	1			1	1	0	0	0	0	0	1		
		15 Min Limit													
		30 Min Limit													
		1 Hr Limit	15	10		15	5	7	10	12	15	6	4		
		2 Hr Limit	8	8		8	5	8	7	8	8	6	9		
		Go Maine													
		Reserved	2	1		0	0	0	0	0	0	1			some parked without state plate
		Accessible Stalls	5	2		3	3	3	4	4	5	4	3		
		Subtotal	31	21	68%	27	14	18	21	24	28	17	17		

East Campus Parking Study Augusta, ME

Lot #	Location/Description	Type	Supply	Occupancy										Comments
				9/21/15 3:00 PM		22-Sep-15								
				Vehicles	%	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	
5	Riverview Center North Lot	Unrestricted	25			3	6	5	6	7	7	10	6	
		10 Min Limit												
		15 Min Limit												
		30 Min Limit												
		1 Hr Limit												
		2 Hr Limit												
		Motorcycle	1											
		Go Maine												
		Reserved	14			8	7	8	7	8	8	10	9	
		Accessible Stalls	3											
Subtotal	43	0	0%	11	13	13	13	15	15	20	15			
6	Riverview Center Main Lot (east and south of Riverview Center)	Unrestricted	172	88		164	164	170	166	167	164	158	89	Wednesday & Thursday additional people-nursing students
		10 Min Limit												
		15 Min Limit												
		30 Min Limit												
		1 Hr Limit												
		2 Hr Limit												
		Motorcycle	1											
		Go Maine												
		Reserved												
		Accessible Stalls	10	4		9	8	9	8	8	9	9	6	
Subtotal	183	92	50%	173	172	179	174	175	173	167	95			
7	Arsenal Street North (main State lot, north of Arsenal Street and west of Hospital Street)	Unrestricted	225			214	211	212	213	211	190	186	133	Reserved spaces for state vehicles located on outside perimeter.
		10 Min Limit												Watch for people parking here and walking over to Riverview.
		15 Min Limit												
		30 Min Limit												
		1 Hr Limit												
		2 Hr Limit												
		Go Maine	9			8	9	9	7	5	9	9	5	
		Reserved	39			29	27	26	27	25	32	36	39	
		MC				2	2	2	2	2	2	2	0	
		Accessible Stalls												
Subtotal	273	0	0%	253	249	249	249	243	233	233	177			
8	Tyson Drive, behind Building #30, Ray Building	Unrestricted												
		10 Min Limit	1	0		0	1	1	1	0	1	1	1	
		15 Min Limit												
		30 Min Limit												
		1 Hr Limit	22	12		20	22	21	21	21	17	20	15	*16 = pic #16; *17 = pic #17
		2 Hr Limit												
		Go Maine	2	1		2	2	2	2	2	2	2	1	
		Reserved	4			2	3	4	4	2	3	3	4	
		Accessible Stalls	18	4		7	7	9	8	9	7	9	3	
		Subtotal	47	17	36%	31	35	37	36	34	30	35	24	

East Campus Parking StudyAugusta, ME

Lot #	Location/Description	Type	Supply	Occupancy										Comments
				9/21/15 3:00 PM		22-Sep-15								
				Vehicles	%	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	
9	Piggery Road/Rideshare lot	Unrestricted	100	29		37	40	34	32	35	34	34	32	Watch for people parking here and walking to main campus *18 = pic#18; *19 = pic #19
		10 Min Limit												
		15 Min Limit												
		30 Min Limit												
		1 Hr Limit												
		2 Hr Limit												
		Go Maine												
		Reserved												
		Accessible Stalls												
		Subtotal	100	29	29%	37	40	34	32	35	34	34	34	
All Lots	Unrestricted	1148	337		607	645	638	622	591	586	566	406		
	10 Min Limit	2	0		1	2	1	1	0	1	1	2		
	15 Min Limit	5	0		0	0	0	0	0	0	0	0		
	30 Min Limit	8	1		0	0	1	1	2	0	0	0		
	1 Hr Limit	45	22		35	29	28	37	35	32	28	19		
	2 Hr Limit	8	8		8	5	8	7	8	8	6	9		
	Loading	2	0		1	1	0	0	0	0	1	0		
	Go Maine	20	2		15	16	16	15	13	17	17	11		
	Reserved	72	3		64	62	63	63	60	69	76	87		
	Accessible Stalls	47	12		20	18	21	21	22	22	23	12		
	Motorcycle	2	0		3	3	3	3	3	3	3	1		
	Subtotal	1359	385		754	781	779	770	734	738	721	547		
	All Maine Lots (Excludes Lot #5, Lot #6)	Unrestricted	951	249		440	475	463	450	417	415	398	311	
10 Min Limit		2	0		1	2	1	1	0	1	1	2		
15 Min Limit		5	0		0	0	0	0	0	0	0	0		
30 Min Limit		8	1		0	0	1	1	2	0	0	0		
1 Hr Limit		45	22		35	29	28	37	35	32	28	19		
2 Hr Limit		8	8		8	5	8	7	8	8	6	9		
Loading		2	0		1	1	0	0	0	0	1	0		
Go Maine		20	2		15	16	16	15	13	17	17	11		
Reserved		58	3		56	55	55	56	52	61	66	78		
Accessible Stalls		34	8		11	10	12	13	14	13	14	6		
Motorcycle		0	0		3	3	3	3	3	3	3	1		
Subtotal		1133	293		570	596	587	583	544	550	534	437		
RPRC Lots Only		Unrestricted	197	88		167	170	175	172	174	171	168	95	
	10 Min Limit	0	0		0	0	0	0	0	0	0	0		
	15 Min Limit	0	0		0	0	0	0	0	0	0	0		
	30 Min Limit	0	0		0	0	0	0	0	0	0	0		
	1 Hr Limit	0	0		0	0	0	0	0	0	0	0		
	2 Hr Limit	0	0		0	0	0	0	0	0	0	0		
	Loading	0	1		3	4	5	6	7	8	9	10		
	Go Maine	0	0		0	0	0	0	0	0	0	0		
	Reserved	14	0		8	7	8	7	8	8	10	9		
	Accessible Stalls	13	4		9	8	9	8	8	9	9	6		
	Motorcycle	2	0		0	0	0	0	0	0	0	0		
	Subtotal	226	93		187	189	197	193	197	196	196	120		

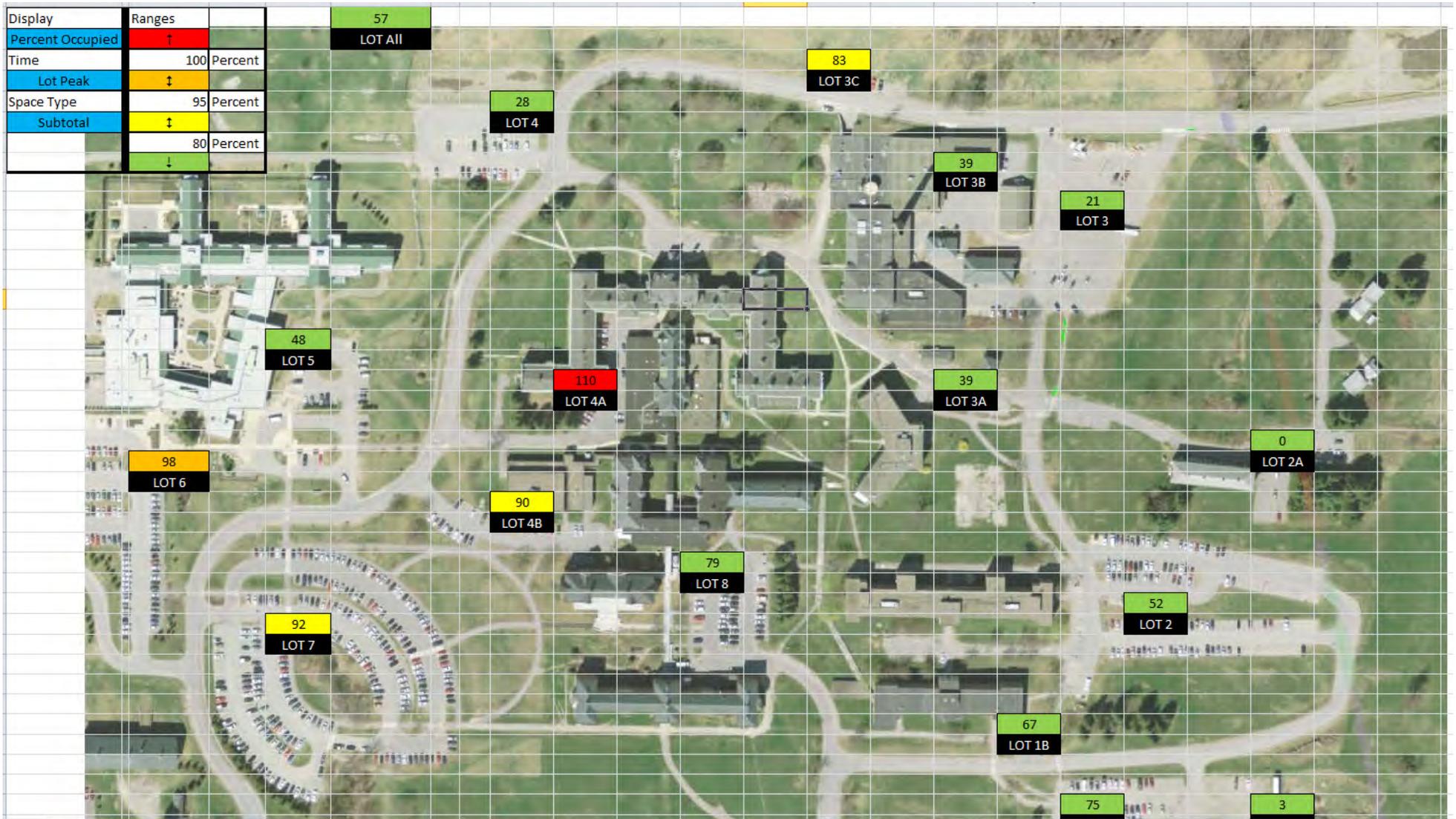


Table A1 – Peak Occupancy (Percent) By Lot

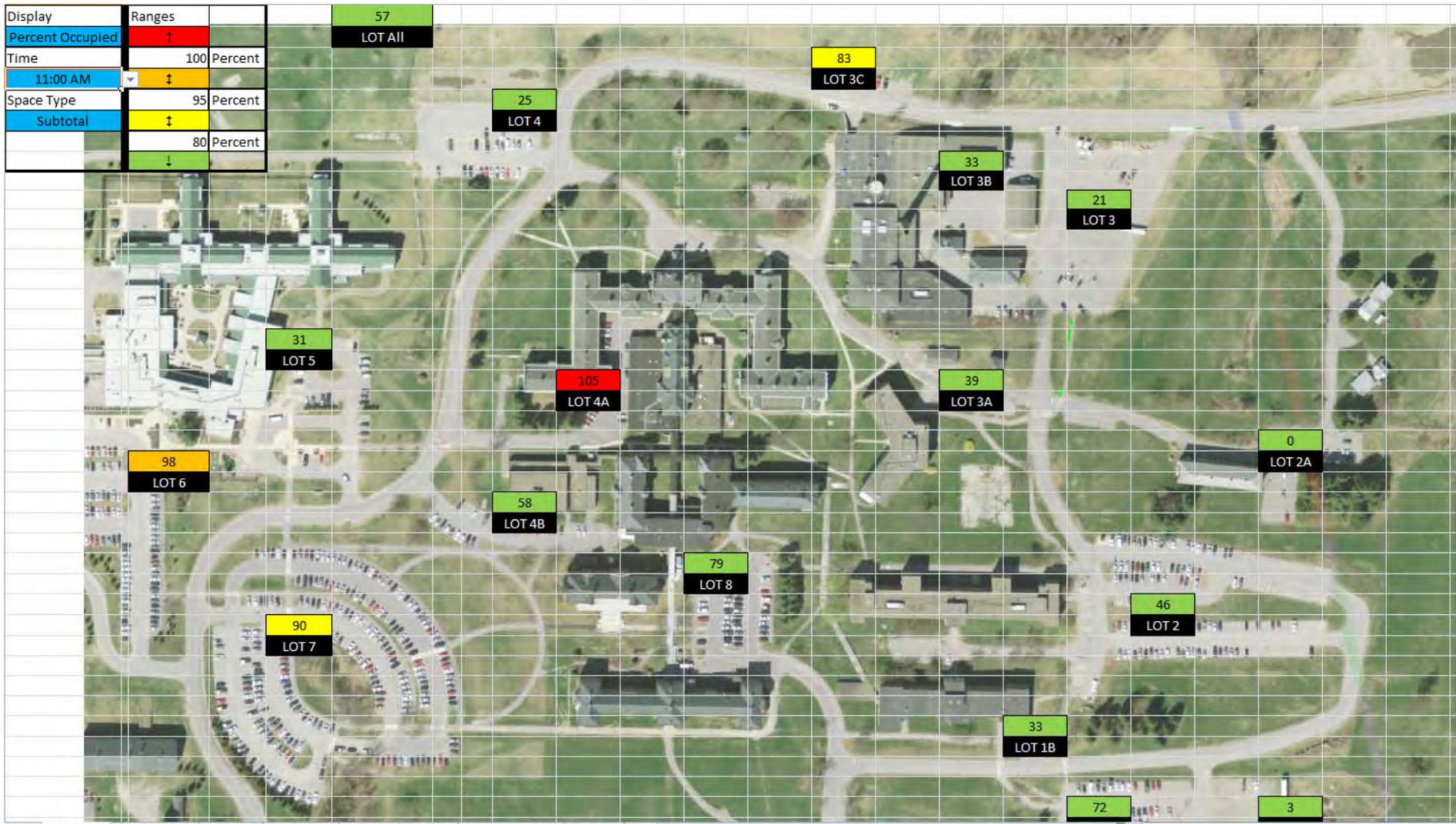


Table A2 – Occupancy (Percent) at 11 AM (Campus Peak)

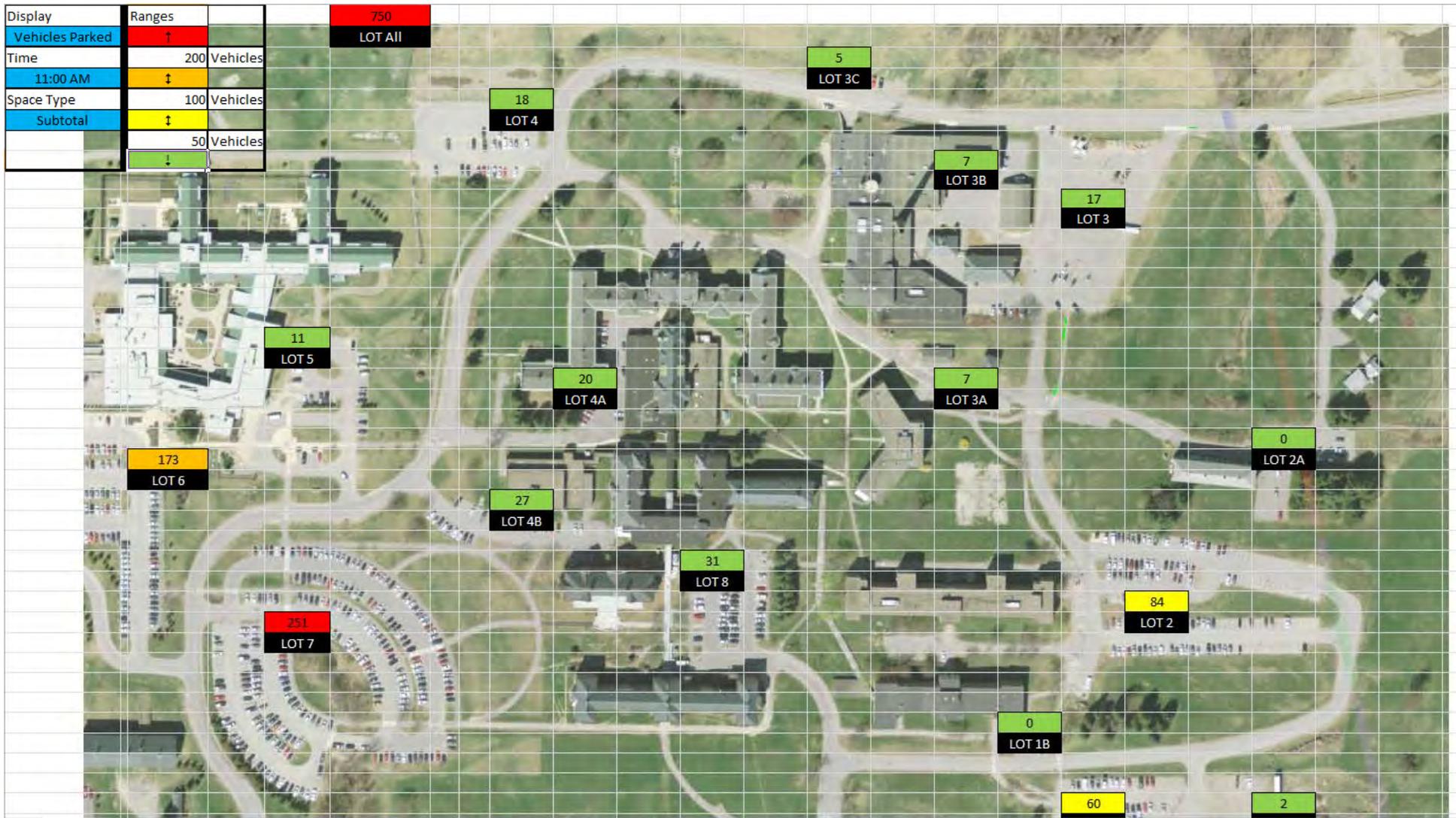


Table A3 – Occupancy (Vehicles) at 11 AM (Campus Peak)

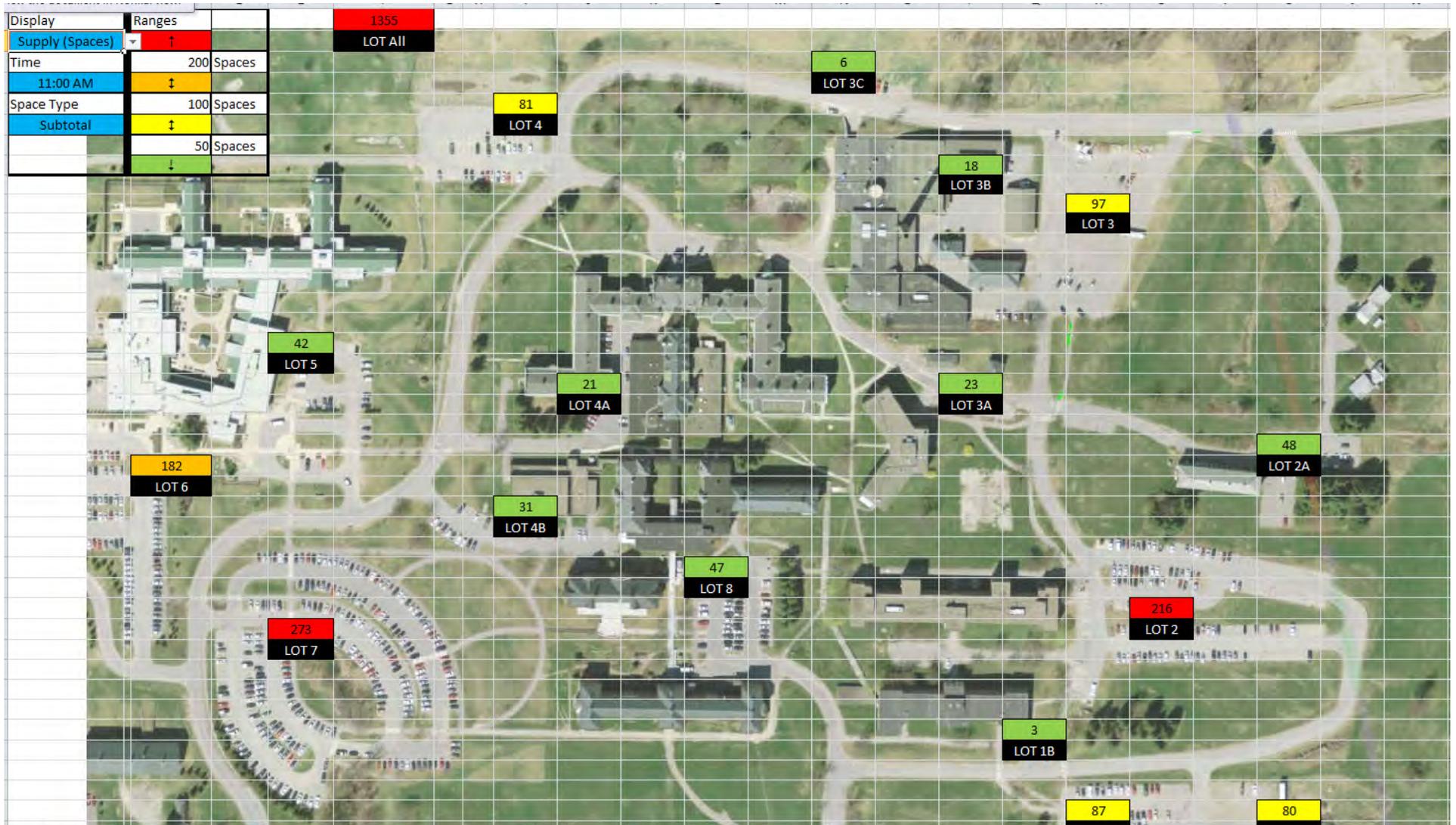


Table A4 – Parking Supply by Lot

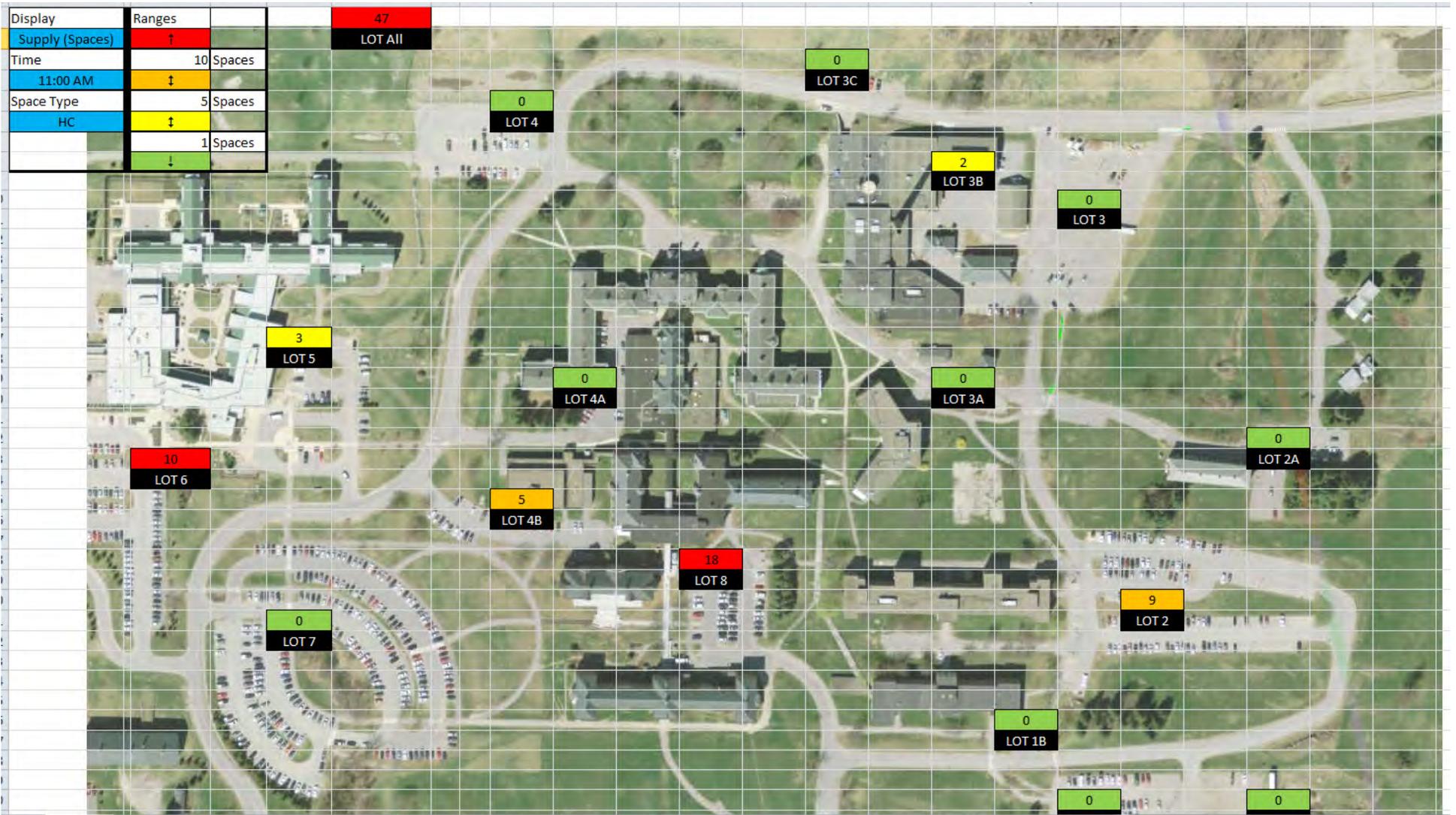


Table A5 – Accessible Parking Supply (Spaces)

PARKING STUDY

Appendix B Land Use Conditions
August 11, 2016

Appendix B LAND USE CONDITIONS

Building # and Building	Floor	Floor Space (SF)	September 2015			September 2016			September 2017			September 2018			After September 2018		
			Employees	Occupied Floor Space (SF)	Density (Employees/KSF)	Emp.	Occupied Floor Space (SF)	Density (Employees/KSF)	Emp.	Occupied Floor Space (SF)	Assumed Density (Emp/KSF)	Emp.	Occupied Floor Space (SF)	Assumed Density (Emp/KSF)	Emp.	Occupied Floor Space (SF)	Assumed Density (Emp/KSF)
01 Administration	All	26550	0	0		0	0	0	0	0	0	0	0	0	0		
06 Boiler Complex																	
6A DEP Response offices	All	8000	0	0		8	8000	1.00	8	8000	1.00	8	8000	1.00	8		
6B DEP Resp. warehouse	All	12000	0			4	12000	0.33	4	12000	0.33	4	12000	0.33	4		
6C Mechanical/Boiler	1	5684	0			12	5684	2.11	12	5684	2.11	12	5684	2.11	12		
	2	5684	0			16	5684	2.81	16	5684	2.81	16	5684	2.81	16		
6D Oil/Storage	All	8000	2	8000		8	8000	1.00	8	8000	1.00	8	8000	1.00	8		
		39367	2	8000	0.25	48	39368		48	39368		48	39368		48		
08 Carpenter Shop	All	9600	1			1	9600	0.10	1	9600	0.10	1	9600	0.10	1		
09 Center	All	69000	0	0		0	0	0.00	0	0	0.00	0	0	0.00	0	69000	
10 CETA/Nurses Home	All	18000	0	0		0	0	0.00	0	0	0.00	90	18000	5.0	90		
12 Deering	1	12003	32			32	12003	2.67	60	12003	5.0	60	12003	5.0	60		
	2	12003	32			32	12003	2.67	60	12003	5.0	60	12003	5.0	60		
	3	12003	44			44	12003	3.67	60	12003	5.0	60	12003	5.0	60		
		36009	108	36009	3.00	108	36009		180	36009		180	36009		180		
15 Elkins	1	15898	23			23	15898	1.45	23	15898	1.45	23	15898	1.45	79	15898	5.00
	2	15898	11			11	15898	0.69	11	15898	0.69	11	15898	0.69	79	15898	5.00
	3	15898	18			18	15898	1.13	18	15898	1.13	18	15898	1.13	79	15898	5.00
		47695	52	47695	1.09	52	47694		52	47694		52	47694		238	47694	
19 Greenlaw	All	45065	0	0		0	0	0.00	68	45065	1.5	68	45065	1.5	68		
20 Gymnasium/Wellness	All	11725	10	0		10	11725	0.85	10	11725	0.85	10	11725	0.85	10		
24 Harlow	1	9525	18			18	9525	1.89	18	9525	1.89	18	9525	1.89	48	9525	5.00
	2	9525	28			28	9525	2.94	28	9525	2.94	28	9525	2.94	48	9525	5.00
	3	9525	20			20	9525	2.10	20	9525	2.10	20	9525	2.10	48	9525	5.00
	4	9525	20			20	9525	2.10	20	9525	2.10	20	9525	2.10	48	9525	5.00
		38100	86	38100	2.26	86	38100		86	38100		86	38100		191	38100	
26 Marquardt	1	19570	43	17613	2.44	48	19570	2.45	48	19570	2.45	48	19570	2.45	48		
	2	19570	49	17613	2.78	54	19570	2.76	54	19570	2.76	54	19570	2.76	54		
	3	19570	0	0		113	19570	5.77	113	19570	5.77	113	19570	5.77	113		
		58710	92	35226	2.61	215	58710		215	58710		215	58710		215		
30 Ray	Baseme	12048	22			22	12047	1.83	22	12047	1.83	22	12047	1.83	60	12047	5.00
	1	12048	59			59	12048	4.90	59	12048	4.90	59	12048	4.90	60	12048	5.00
	2	12048	66			66	12048	5.48	66	12048	5.48	66	12048	5.48	60	12048	5.00
	3	12048	80			80	12048	6.64	80	12048	6.64	80	12048	6.64	60	12048	5.00
		48191	227	48191	4.71	227	48191		227	48191		227	48191		241	48191	
31 Stone North	All	87200	0	0		0	0	0.00	0	0	0.00	0	0	0.00	0	0	
32 Stone South	All	79156	0	0		0	0	0.00	0	0	0.00	0	0	0.00	0	0	
34 Tyson/Pavillion	1	15000	47			47	15000	3.13	47	15000	3.13	47	15000	3.13	75	15000	5.00
	2	15000	47			47	15000	3.13	47	15000	3.13	47	15000	3.13	75	15000	5.00
	3	15000	44			44	15000	2.93	44	15000	2.93	44	15000	2.93	75	15000	5.00
		45000	138	45000	3.07	138	45000		138	45000		138	45000		225	45000	
35 Williams Pavillion	Baseme	4650	0	0		0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
	1	4650	14	4650		14	4650	3.01	14	4650	3.01	14	4650	3.01	23	4650	5.00
	2	4650	14	4650		14	4650	3.01	14	4650	3.01	14	4650	3.01	23	4650	5.00
	3	4650	14	4650		14	4650	3.01	14	4650	3.01	14	4650	3.01	23	4650	5.00

Building # and Building	Floor	Floor Space (SF)	September 2015			September 2016			September 2017			September 2018			After September 2018		
			Employees	Occupied Floor Space (SF)	Density (Employees/KSF)	Emp.	Occupied Floor Space (SF)	Density (Employees/KSF)	Emp.	Occupied Floor Space (SF)	Assumed Density (Emp/KSF)	Emp.	Occupied Floor Space (SF)	Assumed Density (Emp/KSF)	Emp.	Occupied Floor Space (SF)	Assumed Density (Emp/KSF)
Riverview Psychiatric Center	All	18600 140000	42	13950	3.01	42	13950		42	13950		42	13950		70	13950	
TOTALS		682,213	758	272,171	2.79	927			1,067			1157			1,576		
Sources:																	
Sept 2015 floor areas																	
Sept 2015 employees																	
..\..\2_incoming\Data\Augusta Facilities Bldg Cond survey PMD.xlsx ..\..\2_incoming\Data\East Campus Parking Plan Analysis.xlsx																	
Observed Parking Rate	0.79	Vehicles per	2015			2016			2017			2018			2018+		
Parking Demand (Vehicles)			599			732			843			914			1,245		
Suggested Parking Supply (Spaces)																	
-5 Percent Buffer			629			769			885			959			1,308		
-10 Percent Buffer			659			806			927			1,005			1,370		

CITY OF AUGUSTA SITE PLAN REVIEW – MAJOR DEVELOPMENT APPLICATION FOR SECURE FORENSIC REHAB FACILITY AT THE AUGUSTA EAST CAMPUS

Appendix H | Bridging Documents and Project Drawings
August 2016

Appendix H BRIDGING DOCUMENTS AND PROJECT DRAWINGS

CITY OF AUGUSTA SITE PLAN REVIEW – MAJOR DEVELOPMENT APPLICATION FOR SECURE FORENSIC REHAB FACILITY AT THE AUGUSTA EAST CAMPUS

3.0 | Conditional Use Application Criteria
August 2016

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SECURE FORENSIC REHAB FACILITY

Bridging Documents

Narrative and Outline Specifications

**Department of Administrative and
Financial Services / Bureau of General
Services**

State of Maine, Augusta, Maine

Dated: May 27, 2016

Prepared by:



Project #: 4118.00

Secure Forensic Rehab Facility

Augusta, Maine

WBRC Project No. 4118.00

May 27, 2016

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Appendix A OUTLINE SPECIFICATIONS

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INTRODUCTION

The State of Maine Bureau of General Services, on behalf of the Department of Health and Human Services, is soliciting proposals for Design/Build services for construction of a new, freestanding Secure Forensic Rehab Facility on the grounds of Riverview Psychiatric Center in Augusta, Maine. The project will house residents who have been found not guilty by reason of mental defect or insanity and, therefore, cannot be housed within either a state prison or a state psychiatric facility. These residents will be housed there to participate in their rehabilitation via counseling and other means by a considerable staff of behavioral health professionals. This is to be considered a secure facility and will be constructed utilizing methods and materials that eliminate the opportunity for escape, self-harm or injury to others. The design provides for ease of casual monitoring as well as the use of cameras, alarms and electronic locks.

The project includes: extension of / connection to existing utilities, site work including grading, paving and installation of drainage structures, slab-on-grade and suspended deck floor structures, wood frame walls and a prefabricated wood truss roof along with reinforced gypsum board interior wall finishes. All floors are resilient VCT or LVT. It includes commercial-type kitchen equipment, laundry facilities, barrier-free toilet/shower rooms and resident rooms for (21) twenty-one residents. Staff offices, meeting rooms, an Occupational Therapy / Physical Therapy room and Large and Small Common Rooms provide places for resident and staff interaction. The building has fire protection sprinklers and a generator to provide emergency power to limited, critical circuits during power outages.

Bids shall include all activities, services and products required to complete this project. Refer to the RFQ for information and instructions to Design/Build teams.

PROJECT SCHEDULE

- Bridge Documents Complete: June 1st
- RFQ for D/B Contractor Advertised: June 13th, 20th
- RFQ Packages Due by July 13th
- RFQ Selections Made by: July 15th
- Distribute RFPs to top ranked teams by July 18th
- Proposal Presentations on August 8th
- Proposal selection by August 10th
- Contract Award by August 17th
- Work Completed by: May 2017

BUILDING SYSTEM SUMMARY

REFERENCED CODES, STANDARDS AND RELATED DOCUMENTS

- **International Building Code, 2009 Edition**
Occupancy Classification:
Section 308, Institutional Group I
308.2 Institutional Group I-1 includes buildings housing more than 16 persons on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment that provides personal care services. The occupants are capable of responding to an emergency situation without physical assistance from staff.
This group shall include, but not be limited to, the following:
 - Alcohol and drug centers
 - Assisted living facilities
 - Congregate care facilities
 - Convalescent facilities
 - Group homes
 - Halfway houses
 - Residential board and care facilities
 - Social rehabilitation facilities
- **NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 101, 2009 EDITION**
Chapter 32, New Residential Board and Care Occupancies
Section 32.3 Large Facilities (more than 16 residents)
Type V (111) Construction, Fully Protected by Automatic Sprinkler System
- **2010 ADA Standards for Accessible Design**
- **ASCE 7-05 Minimum Design Loads for Building and Other Structures**
- **AISC Steel Construction Manual (Thirteenth Edition)**
- **International Energy Conservation Code, 2009 Edition**
- **ASHRAE 62-2010, Ventilation for Acceptable Indoor Air Quality**
- **IAPMO 2009 Uniform Plumbing Code as adopted by the State of Maine**
- **NFPA 13 Installation of Sprinkler Systems**
- **NFPA 70 National Electrical Code**
- **NFPA 72 National Fire Alarm and Signaling Code**
- **NFPA 90A Standard for the Installation of Air-Conditioning and Ventilating Systems**
- **ASCE 7-05 Minimum Design Loads for Buildings and Other Structures**
- **ACI 318-08 Building Code Requirements for Reinforced Concrete**
- **AISC Steel Construction Manual (Thirteenth Edition)**
- **Truss Plate Institute Bracing of Wood Trusses**

CIVIL / SITE

ENVIRONMENTAL/SITE CONDITIONS

- A. The proposed development area consists of approximately 1.5+/- acres and is part of a larger Riverview Psychiatric Center Campus. This campus is located off Hospital Street (Rt. 9) in Augusta, Maine. The entire campus consists of 160 +/- acres and has a number of existing buildings varying in size, parking, drives, circulation areas, utilities and green space.
 1. The campus
 2. The project site is not located within the AE zone. The Kennebec River is the nearest water body identified on the FEMA flood map, it is approximately 780 feet west of the project site.
 3. It appears no wetlands are present within the proposed development site, since this area is mostly developed.

ENVIRONMENTAL PERMITTING (Local/State/Federal)

- A. Local Regulation (during the design phase, the requirements for these permits should be reviewed if an amendment is required for the overall permit for the campus):
 1. A revision or amendment to the current Land Development permit from the City of Augusta is required for the proposed development since the project consists of modifying the existing ground cover (pavement to building/lawn to pavement or gravel) and adding a new building on this campus. The proposed development is a portion of the entire campus.
 2. Proposed Site: City of Augusta, Tax Map 10, Lot 8 (147.60 acres)
 3. Access: Hospital Street/Route 9 (Collector Street)
 4. Zoning District: Capital-Commercial Zoning District, Institute/Business/Professional Sub-district (BP) (City of Augusta Code of Ordinances Section 300-314.2)
 5. Purpose. The BP District is an area for major health and government institutions and related business and professional offices with locations suitable for the growth of each.
 6. Site Capacity Analysis – Not required for properties within the Capital-Commerce District.
 7. Local zoning dimensional requirements
 - a. Minimum Building Setback: 25' from right-of-way (collector street), 10' from side & rear.
 - b. Impervious Surface Ratio: 0.95
 - c. Floor Area Ratio: 0.74
 - d. Maximum Building Height: 42 feet
 - e. Density: 2500 SF of land per dwelling unit
 8. Planning Board review and approval (possible public hearing)
 9. Parking Requirements (§300-513)
 - a. Correctional: 1 space/4 beds + 1 space/employee (largest shift)
 - b. Hospital: 1 space/beds + 1 space/employee (largest shift)

- c. Nursing Home: 1 space/4 beds + 2 spaces/3 employees + 1 space/staff doctor
- d. A maximum of up to 50% reduction in the number of required off-street parking spaces may be permitted by the Planning Board. Any reduction shall be made based on a parking demand study submitted by the applicant's certified professional engineer indicating that the proposed reduction will adequately meet the applicant's needs.
- e. The joint use of a parking lot by two or more uses may be approved where demand studies are provided that clearly demonstrate that there will be no conflict with times of occupancy and there is ample space to meet the needs of all uses.

10. Buffer Yards

- a. All nonresidential uses permitted in the BP zoning district and proposed to abut a Residential Zoning District line shall use Buffer Yard "A" along the boundary abutting the Residential Zoning District line.
- b. Parking lots serving six or more vehicles shall be buffered with a Buffer Yard "A" adjacent to other uses and rights-of-way with trees, shrubs, fencing and earth berming to avoid the impact of glare, headlights, parking lot lights, noise and dust and protect and enhance visual character.
- c. Large parking areas shall be subdivided into smaller parking cells of up to 70 vehicles contained within a planting buffer. No aisle within a planting cell may be longer than 300 feet.
- d. Planting strips between parking cells of up to 70 vehicles shall be located so as to demarcate the ends of parking rows, avoiding long rows of parked cars, and to channel pedestrian circulation. Planting strips should be a minimum of 10 feet in width to accommodate canopy and/or understory trees. Planting strips should be edged with a six-inch continuous vertical curb or wheel stop to prevent vehicles from overhanging into the planting area, and designed to allow efficient snow removal. Where feasible, planting strips shall be oriented at right angles to the main entrance of the principal building or use in order to maximize pedestrian safety and convenience.

B. State Regulations (during the design phase, the requirements for these permits should be review if an amendment is required for the overall permit for the campus):

1. Maine Department of Environmental Protection (MDEP)

- a. Site Location of Development Permit (SLODA)
 - 1) A revision or amendment to the current SLODA Permit (L-17173-26-T-A) from the MDEP is required for the proposed development since the project consists of modifying the existing ground cover (pavement to building/lawn to pavement or gravel) and adding a new building on this campus. The proposed development is a portion of the entire campus, which is part of the current SLODA permit.
- b. Natural Resource Protection Act (NRPA)
 - 1) No permit is anticipated from the MDEP at this time as a result of the proposed development.

2. Maine Department of Transportation (Maine DOT)

- a. A Maine DOT Traffic Movement Permit (TMP) is not anticipated at this time as a result of the proposed development.

- C. Federal Regulations (during the design phase, the requirements for these permits should be review if an amendment is required for the overall permit for the campus):
 - 1. Army Corps of Engineers (ACOE)
 - a. No permit is anticipated from the ACOE at this time as a result of the proposed development.
- D. Topographic Survey
 - 1. A topographic survey was not completed at this time. We would recommend that a survey be completed, within the project site area, as part of the design phase to verify existing condition information, utilities and site elevations.
- E. Geotechnical Properties
 - 1. A geotechnical investigation was completed at this time. We would recommend that an investigation be completed as part of the design phase to verify soil characteristic and assumptions made.
- F. Offsite Roadway Improvements
 - 1. No offsite roadway improvements are anticipated at this time as a result of the proposed development.

SITE DESIGN PARAMETERS

- A. Selective Demolition (02 41 19)
 - 1. Demolition and removal of selected site elements, including utility poles, existing vegetation, curbing and bituminous pavement.
 - 2. Existing site features and pavement designated for removal within the proposed development will be removed and disposed at State of Maine licensed facility that accepts the material.
 - 3. Existing farm gate will be removed and reset as a result of the proposed development of the new building and site improvements.
- B. Site Clearing (31 10 00)
 - 1. Currently the proposed development is not anticipated to require extensive tree removal.
 - 2. Trees and shrubs designated to be removed within the proposed building and site development will be cut by an experienced logger.
 - 3. The existing trees, stumps and grubblings will be disposed of offsite.
 - 4. Existing trees and vegetation will be preserved to the greatest extent possible for the proposed site and building improvements unless otherwise noted.
- C. Signage (10 14 53)
 - 1. Directional and temporary construction signage shall be provided as needed during construction phasing. Coordinate any lane or street closures, if needed, with the City of Augusta personnel having jurisdiction.
 - 2. ADA parking signage will be required as well as other internal directional signage.
 - 3. Any exterior permanent building and site signage will require a submission to the City of Augusta and shall meet any applicable ordinance requirements.

D. Facility Water Distribution System (22 11 13)

1. The Greater Augusta Utility District (GUAD) shall provide water for domestic use and fire protection. Currently there is an existing 12" water main that traverses within the main campus, adjacent to the proposed development.
2. New domestic water service, sprinkler service and fire connection will be installed from the existing 12" water main to the basement area of the proposed building. The actual sizes are to be determined however for now the plan is for the domestic and sprinkler services to be constructed of 4" and 8" DI Cl 52 pipe and fittings, respectively. The water main materials and installation shall meet the requirements of GUAD and at a depth of 6 ft of cover.
3. No new hydrants will be installed as part of the proposed development.
4. It is anticipated that the facility will generate roughly 2625 gallons per day (125 GPD per bed x 21 beds), which includes residents, visitors and staff.

E. Facility Sanitary Distribution System (22 13 13)

1. The Greater Augusta Utility District (GUAD) shall provide domestic municipal sewer system for the proposed development. Currently there is an existing 12" sewer main that traverses within the main campus, adjacent to the proposed development.
2. The new sewer service will be connected to an existing sewer manhole, which will be an 8" SDR 35 PVC pipe.
3. Precast manhole will be installed at the "angle" points of the new sewer service at various depths depending on the location of the structure.
4. Precast exterior grease trap will be installed from the kitchen service. Size of the pipe to be an 8" SDR 35 PVC pipe.
5. All frames and coves for the sanitary sewer structures within the project site will be provided with cast iron covers with "sewer" imprinted" on the cover.
6. It is anticipated that 2625 gallons per day (125 GPD per bed x 21 beds) will be generated at the new facility when operating per the State of Maine Subsurface Wastewater Disposal Rules.

F. Earth Moving for Pavement and Structures (31 20 00)

1. Subgrades shall be prepared for slabs-on-grade, walks, pavements, turf and grasses.
2. Excavate and backfill for buildings and structures.
3. Free draining materials (granular and structural fill) will be placed against foundations and under slabs in an effort to drain surface and ground water through the foundation drains.
4. Structural fill will be required to prepare a level building pad. Additional information will be provided once the geotechnical investigation is completed.
5. General fill will be required to blend the building into the surrounding site.
6. Subbase and/or Base granular courses will be provided for concrete and asphalt pavements. Additional information will be provided once the geotechnical investigation is completed.
7. Geotextile fabrics will be incorporated into some of the pavement sections and erosion control measures.

G. Earth Moving for Utilities (31 21 00)

1. Excavate and backfill trenches for utilities (storm drain, sanitary, water, electrical and gas) and precast structures (storm drain, sanitary and electrical). All trenches and

structures shall meet the requirements and guidelines of the Utility Companies having jurisdiction.

2. Metallic warning tape will be installed in all utility trenches to assist the utility companies in locating their respective utilities in the future for maintenance and repairs.
3. Construction dewatering may be required during utility installation. Additional information will be provided once the geotechnical investigation is completed.
4. Temporary excavation support and protection systems will be required. OSHA regulations shall be followed.

H. Sedimentation and Erosion Control Measures (31 30 00)

1. The following erosion and sediment control devices are planned for this site during the construction period. These devices shall be installed as indicated on the plans and as described in this report and the Maine Erosion and Sediment Control Handbook for Construction: Best Management Practices:
2. Temporary stabilization - Topsoil stock piles and disturbed portions of the site where construction activity ceases for at least 7 days will be stabilized with temporary seed and mulch no later than 15 days from the last construction activity in that area nor more than 30 days from the date of initial disturbance. Disturbed areas shall be stabilized prior to a projected storm event. Temporary seed shall be an annual: Rye (grain) applied at a rate of 120 pounds per acre. Prior to seeding, 2,000 pounds of ground agricultural limestone and 2,000 pounds of 10-10-10 fertilizer shall be applied to each acre to be stabilized. After seeding, each area shall be mulched with 4,000 pounds per acre of straw. The straw mulch is to be tacked into place by a disk with blades set nearly straight. Applying liquid calcium chloride and granular base material until bituminous base material can be applied will temporarily stabilize areas of the site, which are to be paved.
3. Permanent stabilization - Disturbed portions of the site where construction activity permanently ceases shall be stabilized with permanent seed no later than 15 days after the last construction activity. The permanent seed mix shall consist of 20 lbs/acre of Creeping Red Fescue, and 20 lbs/acre of Red Top, and 5 lbs of Flat Pea. Prior to seeding, 6,000 lbs of ground agricultural limestone and 800 lbs of 10-10-10 fertilizer shall be applied to each acre to be stabilized. After seeding, each area shall be mulched with 4,000 lbs per acre of mulched straw unless mulched hydroseeding is implemented. Straw mulch shall be taken into place by a disk with blades set nearly straight.
4. Winter Protection - Standard for the timely stabilization of ditches and channels -- The contractor will construct and stabilize all stone-lined ditches and channels on the site by November 15. The contractor will construct and stabilize all grass-lined ditches and channels on the site by September 1. If the contractor fails to stabilize a ditch or channel to be grass-lined by September 1, then the contractor shall stabilize the soil with mulch -- By November 15 the contractor will mulch the disturbed soil by spreading hay or straw at a rate of at least 150 pounds per 1000 square feet on the area so that no soil is visible through the mulch. Immediately after applying the mulch, the contractor will anchor the mulch with plastic netting to prevent wind from moving the mulch off the disturbed soil.
5. Siltation fence - will be installed down gradient of the disturbed areas to trap runoff-borne sediments until the site is revegetated. Installation details are provided in the plan set on the erosion control details sheets.

6. New surface swale with check dams and erosion control mesh will collect runoff from the disturbed areas and direct runoff to catch basins, culverts or level lip spreaders.
 7. Straw or Hay mulch is intended to provide cover (or mulched hydroseed) for denuded or seeded areas until revegetation is established. Mulch placed on slopes exceeding 10 percent shall be covered with geotextile erosion-control fabric or netting and anchored with staples in accordance with the manufacturer recommendations.
 8. Sediment traps - will be constructed around all catch basins. The sediment traps shall be left in place until the tributary area is paved or revegetated.
 9. Sediment Removal BMPs - will be constructed at various locations around the construction site as the construction progresses. The actual location will depend on the sequence of construction. The Sediment Removal BMP shall be utilized for areas of heavy sediment loads caused primarily by dewatering activities.
 10. Other(s) - Any tracked dirt on adjacent roads or R/O/W's will be swept as necessary to prevent dust from becoming a nuisance or safety hazard to oncoming motorists.
- I. Asphalt Paving (32 12 16)
1. Vehicle Circulation
 - a. "Full Depth" pavement will be installed throughout the project site for access drives and parking (staff, visitor and ADA). The pavement section will consist 1-1/2" surface course (9.5 mm superpave) on 2-1/2" binder course (19.5 mm superpave) on 6" compacted granular base on 15" compacted granular subbase. The pavement sections will be reassessed once the geotechnical report is completed and reviewed.
 - b. Pavement striping and pavement markings will be provided along the access drives, parking lots and other circulation areas requiring additional directional measures. The striping will be either white, yellow or blue (ADA).
 2. Pedestrian Circulation/Sidewalks
 - a. Asphalt pavement for all sidewalks installed within the project site, except for the plaza areas, which will be cast-in-place concrete. The pavement section will consist 1-1/2" surface course (9.5 mm superpave) on 1-1/2" binder course (12.5 mm superpave) on 12" compacted granular base. The pavement sections will be reassessed once the geotechnical report is completed and reviewed.
- J. Gravel Drive (31 20 00)
1. "Full Depth" gravel drive will be installed to the basement area of the proposed building for loading/unloading of stored items. The gravel section will consist of 6" compacted granular base on 12" compacted granular subbase.
- K. Site Concrete (32 13 13)
1. All pedestrian plaza areas will be constructed at 6" thick CIP concrete with one mat of #4 rebar at 12" O.C. E.W. (4,500 psi with salt guard) on 18" compacted granular base with 4" rigid insulation.
 2. Any mechanical or dumpster pads will be constructed at 12" thick CIP concrete with two mats of #4 rebar at 12" O.C. E.W. (4,500 psi with salt guard) on 18" compacted granular base with 4" rigid insulation
 3. Proper jointing (expansion, isolation and construction) and sealing (curing compound) of concrete surfaces will be provided.

- L. Fences and Gates (32 31 13)
 - 1. Temporary chain link fences, gates and screens will be provided as security fencing at various locations around the project site. Temporary construction signage, fencing and other notifications shall be incorporated into a traffic control plan during construction phasing. Coordinate all lane and street closures, if needed, with the City of Augusta authorities having jurisdiction.
 - 2. A 14' high decorative, vertical picket fence with triple razor wire on top will be provided at Outdoor Recreation Area.
 - 3. Chain link fencing and gates will be provided around the dumpster pads and mechanical equipment areas.

- M. Turf and Grasses (32 92 00)
 - 1. 6" loam, seed and mulch will be provided to all disturbed areas not receiving pavement, gravel and concrete. The contractor shall be responsible to monitor grass growth and provide three (3) mows prior to acceptance by the Owner. If grass growth is not archived than process is repeated.

- N. Storm Utility Drainage (33 41 00)
 - 1. A majority of the storm water is expected to sheet flow off of the new and existing developed areas and the proposed building footprint. This stormwater will be collected into piping and structures and directed to low lining areas within the project site.
 - 2. Plaza drains (yard drains) will be provided, as needed.
 - 3. Stormwater runoff from the project site and building development will be collected and directed to the existing storm drain system that meets the requirements of the MDEP Stormwater guidelines and the current SLODA permit.
 - 4. All catch basins and drainage manholes shall be precast concrete at various depths depending on the location of the structure.
 - 5. All frames and coves/grates for the storm drainage structures within the project site will be provided with cast iron covers with "drainage" imprinted" on the cover.
 - 6. Storm drain piping shall be HDPE pipe, unless otherwise noted. Sizing to be a minimum of 12" unless otherwise noted. Outlet ends shall be provided with "bolt down" grates for security measures and the ground adjacent to the ends will be provided with rip rap protection pads.
 - 7. Foundation drain and roof drain outlet pipes will be provided and directed to the new storm drainage system. Outlet pipes shall be SDR 35 PVC pipe, sizing to be determined during the design phase.

- O. Subdrainage (33 46 00)
 - 1. Foundation drains will be constructed along the proposed footing of the building to collect water and remove water near the building. Foundation drains shall be SDR 35 perforated PVC pipe. Clean outs will be provided at various locations to assist in maintenance of the drains.

STRUCTURAL

CONCRETE FOUNDATIONS

Cast in place foundation walls and spread footings. Minimum compressive strength of concrete to be 3500 psi at 28 days. Minimum depth of embedment for frost protection to be at least five feet below finish grade. Thickness of foundation walls at basement area to be 10 inches. All other walls to be 8 inches thick. 12" thick spread footings below foundation walls and steel columns in basement. Bearing capacity to be determined. Slab on grade to be 5" thick with #4 bars at 16" each way. Provide 1" deep saw cut control joints at 15 ft maximum spacing.

ROOF FRAMING

5/8" nominal wood sheathing on prefabricated wood trusses at 24" o.c. Brace trusses according to TPI recommendations.

FLOOR FRAMING ABOVE BASEMENT

3/4" nominal wood combination subfloor-underlayment on 12" nominal wood I-joists at 16" o.c. Two span condition with center steel girder line.

STRUCTURAL STEEL FRAMING

Structural steel wide flange beams at center girder line in basement and roof truss support at core area where trusses intersect. Hollow structural tube columns supporting steel beams.

LATERAL FORCE RESISTING SYSTEM

Wood shear walls.

ARCHITECTURAL

ROOF

Architectural asphalt shingles with ice and water shield in valleys and at eaves on plywood sheathing on prefabricated, raised heel, square cut, wood trusses at three wings, flush end trusses at the building center. Nominal bearing height is 8' at wings, 10' at a portion of the building center. Cold attic is to be vented with eave and ridge vents. Batt fiberglass insulation at raised heel depth of 24". Painted gypsum board on 1x strapping, 2' on center, at all ceiling surfaces.

Fascia and rake trim to be prefinished cement board trim, green in color to complement the shingle roof. Matching soffit surface to be prefinished, perforated cement board to provide venting to roof cavity. No gutters or downspouts to be included. Roof drainage to be accommodated by a wide, gravel strip, continuous at the building foundation line.

WALLS

Smooth, 8" exposure, prefinished cement board lap siding with matching 7.25" wide corner and window surround trim and 11.25" coping and base trim in two colors (body: red, trim and base: white) on 1 1/2" insulated Zip System "R" Sheathing with taped joints on 2" x 6" wood framed exterior walls with closed cell spray foam insulation in cavities.

WINDOWS & DOORS

All windows to be fixed, aluminum-clad wood windows, white exterior color, primed interior finish to receive semi-gloss finish paint on site. All exterior doors to be aluminum and glass in aluminum frames, white in color. Stainless steel kick plates shall be installed on all high-traffic doors where required.

All glazing at windows and exterior doors to be laminated, insulated glass to guard against patient damage from the interior. All windows to have anti-ligature, surface-mounted window blinds to prevent injury to occupants.

A flush, insulated steel, overhead garage door shall allow maintenance workers and staff access to the basement storage area without using the egress stair from the first floor. This door shall be locked from the inside, requiring staff card access from the stairwell for its use.

INTERIOR FINISHES

All walls in corridors and resident rooms are to have a wood-look, FRP wainscot below high-impact painted gypsum board to the ceiling. Ceilings to be painted, standard gypsum board.

All resident toilet/shower rooms and staff toilet rooms to have tile-look, FRP walls, floor to ceiling, over high-impact gypsum board. Ceilings to be moisture-resistant gypsum board, painted.

Walls in all other rooms to have painted, high-impact gypsum board to ceiling. Ceilings to be painted, standard gypsum board.

FLOORS

All floors to be one of two colors of wood-look, plank LVT for ease of maintenance. All wall base to be rubber in a single, coordinating color. Solid surface, barrier-free thresholds shall be installed at all Toilet and Shower Room doors. Service spaces to have VCT flooring for economy.

DOORS

All interior doors to be painted hollow metal doors in painted hollow metal frames. Where slot windows are required in doors (All cross-corridor doors, doors at Meeting, Security and Meds Rooms and in the Quiet Room) these shall be clear polycarbonate (Lexan) material to avoid breakage. Stainless steel kick plates shall be installed on all high-traffic doors where required. The Quiet Room door is to have a "cuff port" that will allow the passage of meals to those detained.

SIDELIGHTS

Sidelights at the Security Room are to be clear polycarbonate (Lexan) in painted hollow metal frames.

MILLWORK/CASEWORK

All storage casework in Kitchen/Dining, Laundry Alcoves, Security and Meds Rooms to be vertical grade, woodgrain plastic laminate with horizontal grade, patterned plastic laminate countertops and backsplashes with self-edge detail. All countertop corners to have a radius to avoid injury.

QUIET ROOM SAFETY PADDING

1 ½" padding on all walls and ceiling. Floor to be 7/16" OSB, with 1" nominal thickness padding. Padding to be uniform, smooth with non-slip surface and be fungus resistant. Padding to be seamless and easily cleaned with detergents.

HEATING, VENTILATION AND AIR CONDITIONING

- A. All new HVAC work shall be in accordance with applicable local and state building codes. HVAC scope shall include new heating, ventilation and air conditioning system for all portions of the building. Refer to mechanical floor plan for additional information of design intent.
- B. Boiler Plant shall consist of condensing hot water boiler with venting and combustion air kit and connections to exterior. Boiler shall be NG fired and provide space heating to terminal units, supplemental heating coils and domestic hot water storage tank.
- C. HVAC system serving residence rooms shall consist of vertical air handling units located in mechanical spaces as shown on drawings. Air handling units shall be tied to exterior pad mounted heat pump unit(s) as required to serve building loads. A supplemental hot water coil shall be provided at air handling unit discharge for use when heat pumps are not operational. Ductwork distribution shall be located on warm side of building insulation (not in attic) and connect to wall mounted supply and return grilles in each residence room. All grilles shall be provided with perforated faces and tamper-resistant screws. Provide manual balancing damper and cable mounted remote actuator located near top of duct drop.
- D. HVAC System for common areas shall consist of wall mounted indoor evaporators. All wall mounted indoor evaporators shall be tied to an exterior pad mounted heat pump unit(s).
- E. Hot water cabinet unit heaters shall be provided in vestibule and Resident Toilet Rooms and shall be wall recessed units with return and discharge grilles in face panel. Provide new shutoff valves and control valve at each heater.
- F. Exhaust grilles shall be provided in all toilet rooms. All toilet room exhaust shall be tied into a fixed plate heat exchanger with defrost protection. Provide hot water heating coil on discharge to maintain minimum discharge air temperature (adjustable). Energy Recovery Unit shall be located in lower level space. Exhaust air rates shall be 10 air changes per hour in all toilet room areas.
- G. A kitchen exhaust hood with fire suppression system is provided with appliances. Provide approved grease ductwork system with fire wrap blanket to exterior termination as required.
- H. Provide metal ductwork and exterior wall cap for clothes dryers.

PLUMBING

- A. All plumbing shall be in accordance with applicable local and state plumbing codes.
- B. Plumbing scope shall include all new piping and components as required for a new fully operational plumbing system.
- C. Domestic water piping (cold, hot and recirculation) shall be Type L copper with lead free solder. All domestic water piping shall be insulated with closed cell foam pipe insulation. Individual branch lines to fixtures may be PEX tubing. Provide clevis type pipe hangers on piping. Pipe hangers shall be sized to allow for insulation to be continuous through hangers.
- D. Provide additional ball valves at groups of 2 or more fixtures in row or at individual toilet room.
- E. Drainage, waste and vent (DWV) piping shall Schedule 40 PVC with solvent welded fittings. Provide clevis type pipe hangers on piping.
- F. Provide floor drains with trap primer connections at all air handling unit locations and all residence wing toilet rooms – locate between toilet and shower stall (in addition to shower drains). Provide trap primer, distribution block and PEX piping as required.
- G. Plumbing fixtures shall be provided with chrome plated supply fittings with shutoff valve at each fixture. Provide chrome plated drainage piping and P-traps at each fixture where required.
- H. At ADA lavatories provide floor mounted chair carrier and under counter pipe insulation kits at all locations.
- I. Plumbing fixtures shall be equal to manufacturer's literature sheet submitted in package.
- J. Domestic hot water heating system shall consist of hot water storage tank with hot water coil connected to boiler plant. Provide 2 mixing valves (140F for Kitchen, 120F for remainder of fixtures).
- K. A backflow prevention device, utility meter and pressure reducing valve (if required) shall be provided at water service to building. Backflow prevention device shall be double check valve.
- L. Provide roof drains and associated rain water piping. Piping shall be schedule 40 PVC with 1" thick fiberglass pipe insulation with ASJ.

FIRE PROTECTION

- A. Facility shall be provided with a sprinkler system in accordance of NFPA 13.
- B. Sprinkler Heads in all residence wings shall be ligature resistant institutional type.
- C. Sprinkler system shall be based on hydrant flow test to be conducted as part of this project prior to system design.

ELECTRICAL

- A. General:
 - 1. Electrical systems and installation shall comply with NFPA 70 (National Electric Code), NFPA 72 (National Fire Alarm and Signaling Code), NFPA 101 (Life Safety Code), NFPA 110 (Standard for Emergency and Standby Power Systems) and ASHRAE 90.1-2007, Energy Standards for Building Except Low-Rise Residential Buildings.
- B. Electrical Service:
 - 1. New electrical service for the facility shall be provided via pad mounted transformer with underground secondary service feeders extending into the Electrical Room on the basement level to feed a 3-phase, 4-wire 600A, 208-120 volt main distribution panel.
- C. Grounding and Bonding:
 - 1. Grounding electrodes shall be copper-clad steel, 3/4 inch diameter, and 10 feet long. Grounding conductors shall be stranded copper, sized to meet NFPA 70 requirements. Separate insulated equipment grounding conductors within each feeder and branch circuit raceway shall be provided, with each end terminated on a suitable lug, bus or bushing.
- D. Lighting Controls:
 - 1. A simple, but energy-efficient lighting control system shall be provided for the lighting systems. All residents' rooms shall be provided with a standard toggle switch with stainless steel faceplate and tamper-proof screws. Common spaces such as corridors, dining area and common rooms shall be controlled via ceiling mounted occupancy sensors. Dining Room and Common Room shall be provided with toggle switches to override fixtures off. Storage rooms, toilets, and other support spaces shall utilize dual-technology occupancy sensors. All occupancy sensors will be provided with adjustable time delays for automatically turning lights off when areas are unoccupied. Exterior lighting systems shall be provided with built-in photocell technology.
 - 2. Select fixtures throughout common areas will be wired as night lights to maintain a minimal level of illumination during nighttime hours.
- E. Electrical Distribution:

1. Power for all areas shall be provided from panelboards located within the basement electrical room. All new electrical panels shall be panelboard construction grade and provided with door-in-door fronts. Branch circuit breakers shall be bolt-on type. All feeders shall be installed in metallic conduit systems. Branch circuiting shall be in metallic conduit where exposed. Metal-clad (NEC Type MC) cabling where concealed in walls or above accessible ceilings will be allowed. All conductors shall be copper.
 2. All panelboards shall be Square D, Type NQOD.
- F. Electrical Metering Systems:
1. Building shall be provided with an ION7650 PowerLogic meter connected to the Main Distribution Panel.
 2. Building shall be provided with an PM800 PowerLogic meter connected to the generator transfer switch.
- G. Electrical Power Systems:
1. All equipment connections shall be coordinated to provide method of power disconnects as required by Code. Electrical devices for convenience outlets shall be coordinated with Owner for power requirements, configuration and locations. Motors shall be provided with starters and disconnects, or variable frequency drives as applicable, per manufacturers' recommendations. Power connections, disconnects, overcurrent protection, etc. shall be coordinated with equipment provided (i.e. HVAC equipment, etc.).
 2. Tamper-resistant receptacles shall be provided throughout the facility. Residents' rooms shall be provided with a single receptacle. GFI receptacles shall be provided in kitchens and other areas located within 6 feet of a water source. All receptacles shall have stainless steel faceplates with tamper-proof screws.
- H. Arc Flash:
1. An Arc Flash study for the whole building will be required to be conducted and all electrical equipment (panelboards, motor disconnects, etc.) shall be labeled.
- I. Emergency Power:
1. Building will be provided with 100 KW, pad mounted natural gas generator to provide standby power to the building's security, life safety and heating/ventilation systems. Two transfer switches shall be provided; one to serve life safety loads and the other to serve additional standby loads.
- J. Lightning Protection:
1. There is currently no lightning protection system planned for this project.
- K. Interior Lighting:
1. All interior lighting shall be designed in accordance with current IESNA standards recommended for specific space usage and task. Light fixtures shall utilize LED technologies with corresponding electronic drivers and shall be either Energy Star or Design Light Consortium (DLC) listed.
 2. Lighting throughout facility shall be ceiling recessed, vandal resistant type.

- L. Emergency Lighting and Exit Signage:
 - 1. Emergency lighting shall be achieved via generator with UL 924 devices to override any associated automatic controls. Exit signs shall be illuminated with LED lamps.
- M. Exterior Lighting:
 - 1. All exterior fixtures shall utilize LED technology, and shall be full-cutoff type as defined by IESNA, in order to minimize light pollution into the night sky. Control shall be as noted above. Exterior lighting shall be provided at building entrances, walkways and parking areas.
- N. Telecommunications Service:
 - 1. Two new underground telecommunication services shall be extended into the facility to create a redundant network into the building and on campus. This first service will extend from the intersection of Arsenal Street and Blossom into the basement IT room. The second service shall extend from an existing conduit and j-box out of the south side of RPC into the same basement IT room. Cables in exposed and non-accessible areas shall be run in conduit. All horizontal cabling shall be Category 5e cable, terminations and devices shall be provided and installed by the Office of Information Technology (OIT). Hardwired telephone and data drops shall be located in the security and offices spaces only. Wireless access points shall not be provided for the facility.
- O. Communication Room Equipment:
 - 1. All patch panels, racks, punch blocks, and other communication equipment shall be provided by OIT.
- P. Cable TV Services:
 - 1. Underground cable tv (CATV) services shall be provided into the facility. Service demarcation shall occur in basement IT room and, from there, be distributed to the Common Room and other shared spaces. Each resident room shall be provided with a coax cable jack in stainless steel plate with tamper-proof screws and RG-59 cable extending back to the IT room. All cable ends located in the IT room shall be terminated and provided with a 5 foot service loop for ease of connection to distribution switch in future.
- Q. Access Control:
 - 1. Access control system shall be provided for facility. System shall include proximity card readers and request to exit devices at all exterior doors and other resident care spaces.
- R. Video Surveillance:
 - 1. Video surveillance system shall be provided for facility. System shall include new IP camera, network video recorder, monitor and all associated switches, cables and accessories. Cameras shall be installed to monitor all building entrances, all common spaces and the Quiet Room. Security monitor shall be located in Security Office for 24-hour monitoring.
- S. Fire Alarm System:

1. Fire alarm system shall include manual & automatic detection consisting of smoke and heat detectors and manual pull stations. Notification to occupants shall be comprised of horn/strobe devices in all normally occupied areas with the exception of individual toilets. Residents' rooms and individual toilets will receive visual only (strobe) devices. Smoke detectors shall be provided in each resident room and carbon monoxide detectors shall be provided throughout the corridors, in the vicinity of the sleeping rooms. Fire alarm system shall monitor the sprinkler system for alarm and trouble conditions. It shall be interconnected to air handling equipment if required. The system shall be provided with battery backup and charger. Fire alarm system shall be in accordance with NFPA 72, 101, and the State Fire Marshal's office.

SECURE FORENSIC REHAB FACILITY

Augusta, ME

INDEX

GENERAL DRAWING G1001 G1002	COVER SHEET SYMBOLS AND ABBREVIATIONS
CIVIL DRAWINGS CD101 CP101 CG101	SITE REMOVALS PLAN SITE LAYOUT PLAN SITE GRADING AND UTILITY PLAN
ARCHITECTURAL DRAWINGS AE101 AE102 AE103 AE201 AE202 AE301	BASEMENT FLOOR PLAN FIRST FLOOR PLAN ROOF PLAN BUILDING ELEVATIONS BUILDING SECTIONS PERSPECTIVE VIEWS
PLUMBING DRAWINGS P101 P102	BASEMENT PLUMBING PLAN FIRST FLOOR PLUMBING PLAN
MECHANICAL DRAWINGS M101 M102	BASEMENT MECHANICAL PLAN FIRST FLOOR MECHANICAL PLAN
ELECTRICAL DRAWINGS E101 E102	BASEMENT FLOOR PLAN - ELECTRICAL PLAN FIRST FLOOR PLAN - ELECTRICAL PLAN

	Signature	Date
Owner:	_____	_____
Architect:	_____	_____
Contractor:	_____	_____

REV.	DESCRIPTION	DATE

SHEET No.
G1001

COMM No.
4118.00

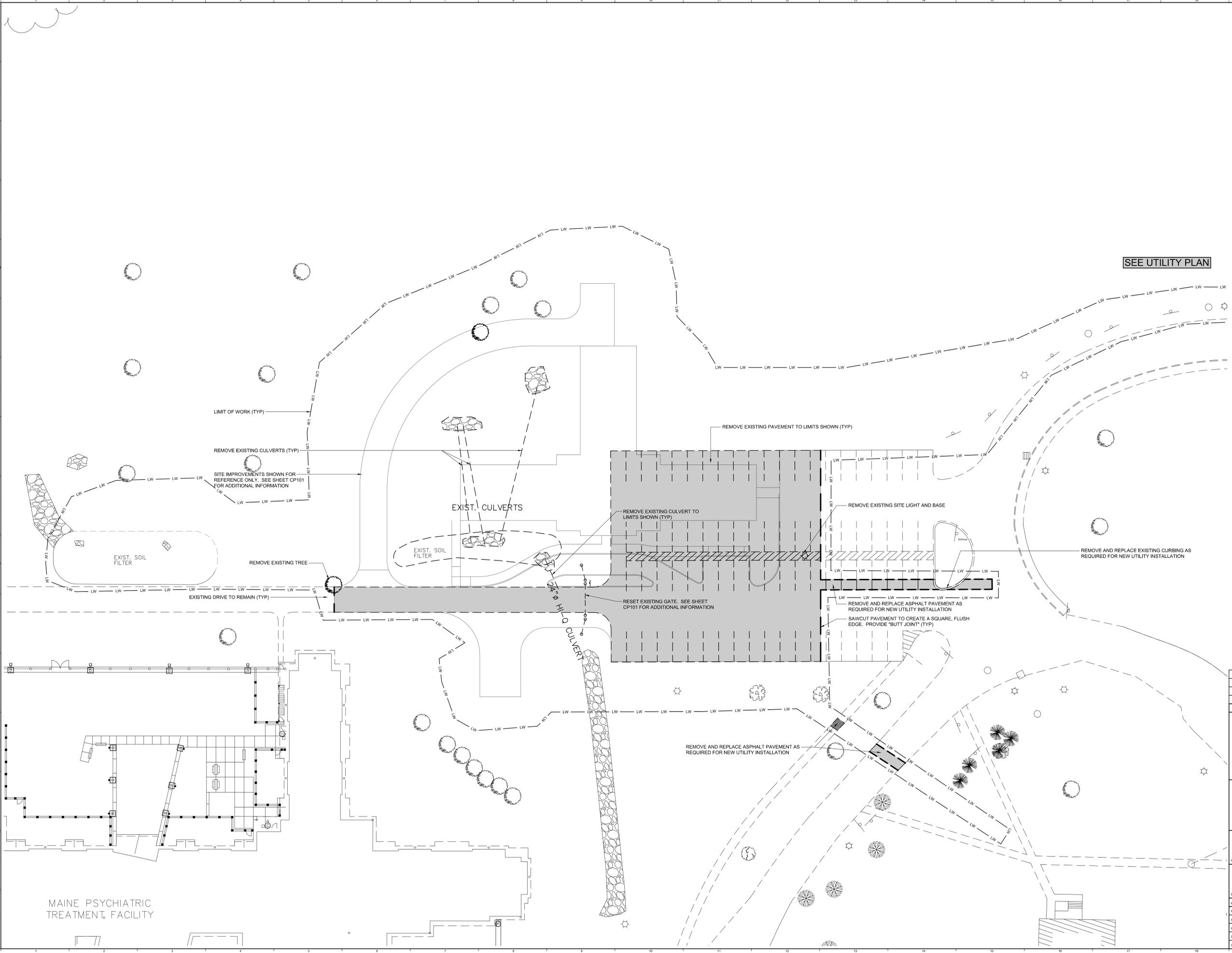


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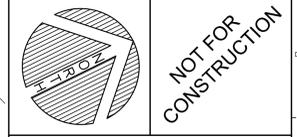
- REMOVALS NOTES:**
1. CLEARING LIMITS SHALL EXTEND ONLY TO SUCH A POINT NECESSARY TO COMPLETE EARTHWORK ACTIVITIES.
 2. THE UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. A TOPOGRAPHIC SURVEY WAS NOT CONDUCTED AS PART OF THIS PROJECT. THE SITE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO BEGINNING ANY SITE CLEARING, GRUBBING AND EARTHWORK ACTIVITIES.
 3. ALL SOIL AND EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO THE COMMENCEMENT OF ANY WORK. SEE CG101 FOR MORE INFORMATION. THE SITE CONTRACTOR IS RESPONSIBLE FOR INSPECTING AND MAINTAINING ALL SOIL AND EROSION CONTROL MEASURES.
 4. SOME TREE TRIMMING NOT SHOWN ON THIS PLAN MAY BE NECESSARY FOR CONSTRUCTION PURPOSES. THE SITE CONTRACTOR SHOULD EVALUATE AND SCHEDULE ACCORDINGLY.

SEE UTILITY PLAN



EXISTING	LEGEND	PROPOSED
	TREE REMOVALS	
	LIMITS OF WETLAND	
	UTILITY POLE	
	STREET LIGHTING	
	BUILDING LIGHTING	
	WATER SHUTOFF / GATE VALVE	
	TRANSFORMER PAD	
	DUMPSTER	
	MANHOLE	
	SEWER MANHOLE	
	CATCH BASIN	
	FIRE HYDRANT	
	SIGN	
	FENCING	
	PAVEMENT REMOVALS	
	LIMITS OF CONSTRUCTION	
	PROPERTY SETBACK	
	PROPERTY LINE	
	ABUTTING PROPERTY LINE	
	TREE LINE	

REV.	DESCRIPTION	DATE



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SECURE FORENSIC REHAB FACILITY
PROJECT: AUGUSTA, MAINE

SITE REMOVALS PLAN

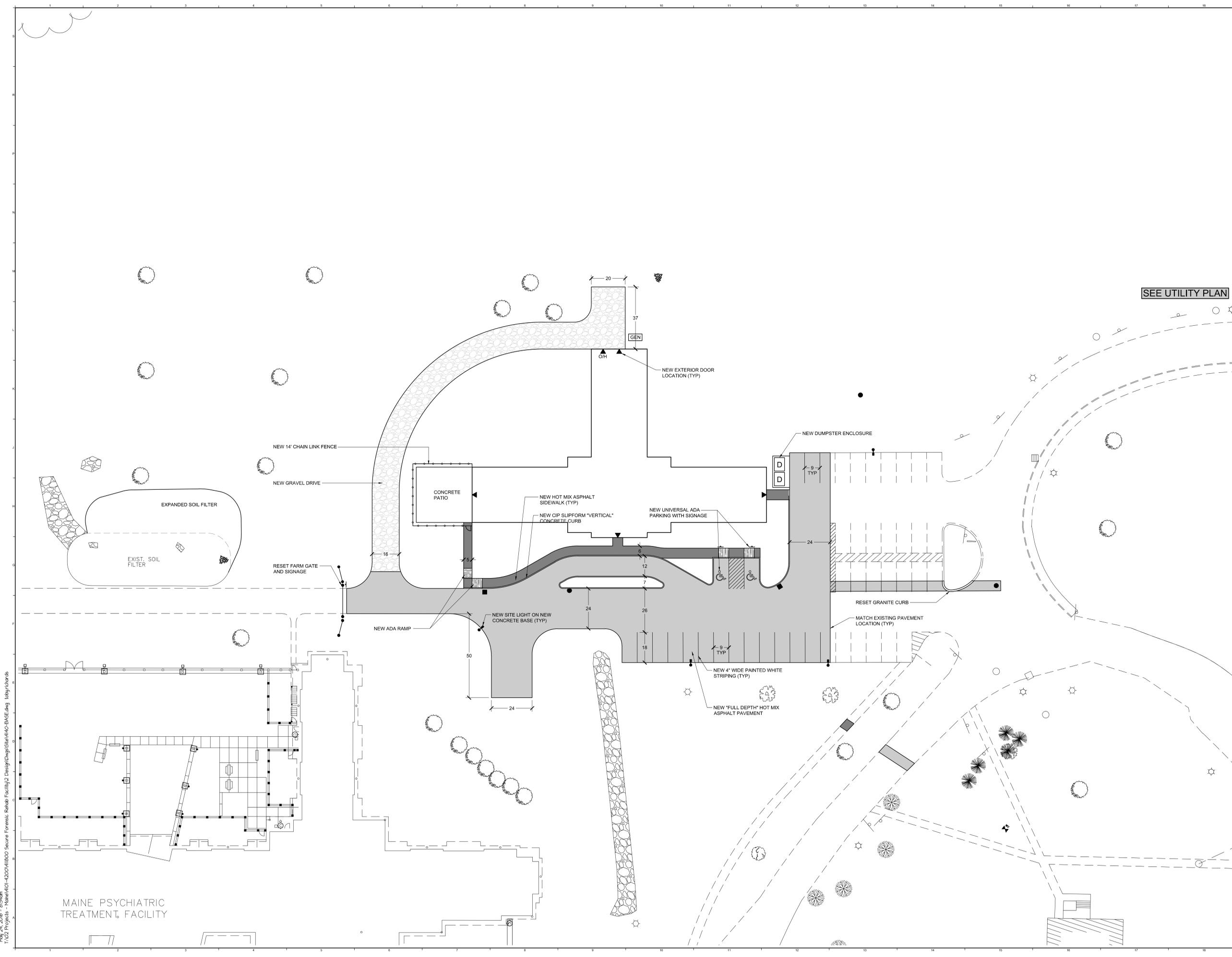
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PROJECT No.:	4118.00	SCALE: 1"=20'
PROJECT MANAGER:	ARB	SHEET No.:
DRAWN BY:	TAR	CD101
CHECKED BY:	ARB	

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MAINE PSYCHIATRIC TREATMENT FACILITY

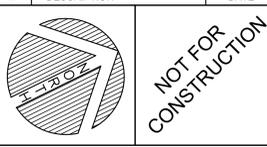
- LAYOUT NOTES:**
1. ALL CURB RADII SHALL BE 5' UNLESS OTHERWISE NOTED.
 2. COORDINATE ALL SIDEWALK LOCATIONS WITH ARCH. AND STRUCTURAL DRAWINGS TO VERIFY NEW EXTERIOR DOOR LOCATIONS. FIELD ADJUST AS REQUIRED.
 3. REFER TO ARCHITECTURAL / STRUCTURAL SHEETS FOR NEW FOUNDATION LAYOUT. COORDINATE LAYOUT WITH FOUNDATION CONTRACTOR.
 4. SEE SHEET CU101 FOR ADDITIONAL INFORMATION RELATED TO THE LAYOUT OF SITE LIGHTS AND UTILITY POLES AND THEIR RESPECTIVE CONDUIT AND WIRING. COORDINATE LAYOUT WITH THE ELECTRICAL CONTRACTOR.

SEE UTILITY PLAN



EXISTING	LEGEND	PROPOSED	
	LIMITS OF WETLAND		UTILITY POLE
	STREET LIGHTING		BUILDING LIGHTING
	WATER SHUTOFF / GATE VALVE		TRANSFORMER PAD
	DUMPSTER		MANHOLE
	SEWER MANHOLE		CATCH BASIN
	FIRE HYDRANT		SIGN
	FENCING		P.T. GUARD RAIL
	PAVEMENT		SIDEWALK
	VERT. SLIPFORM CONC. CURB		GRANITE CURB
	PRECAST CONC. WHEEL STOP		GEO BLOCK RETAINING WALL
	CIP CONCRETE RETAINING WALL		WOOD CHIP PLAY AREA
	COARSE AGGREGATE		CENTERLINE
	CONTROL PT.		PROPERTY SETBACK
	PROPERTY LINE		ABUTTING PROPERTY LINE
	TREE LINE		

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SECURE FORENSIC REHAB FACILITY

PROJECT: AUGUSTA, MAINE

SITE LAYOUT PLAN

SHEET TITLE: 4140-BASE.DWG

WBRC CAD FILE: 4118.00 GRAPHIC SCALE: 1"=20'

PROJECT No. 1"=20' SCALE: 1"=20'

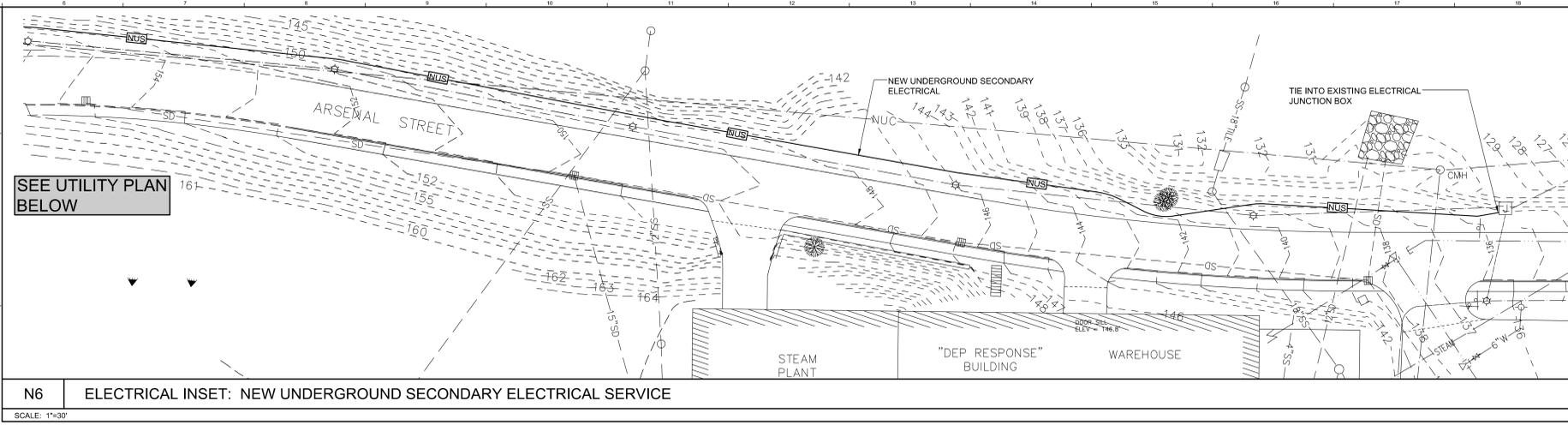
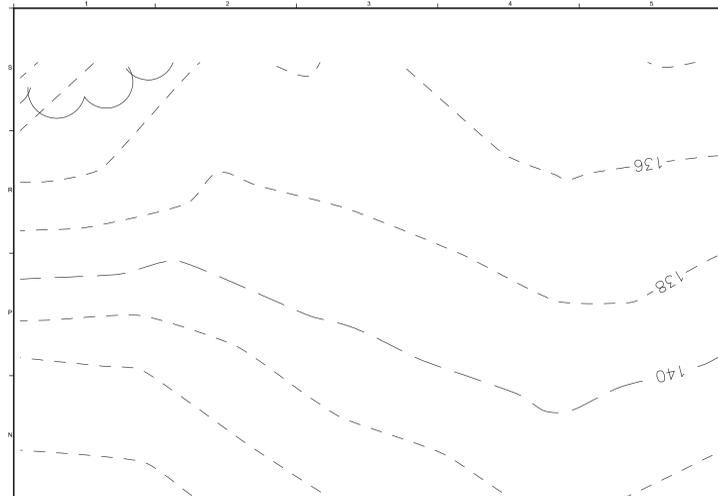
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DRAWN BY: TAR

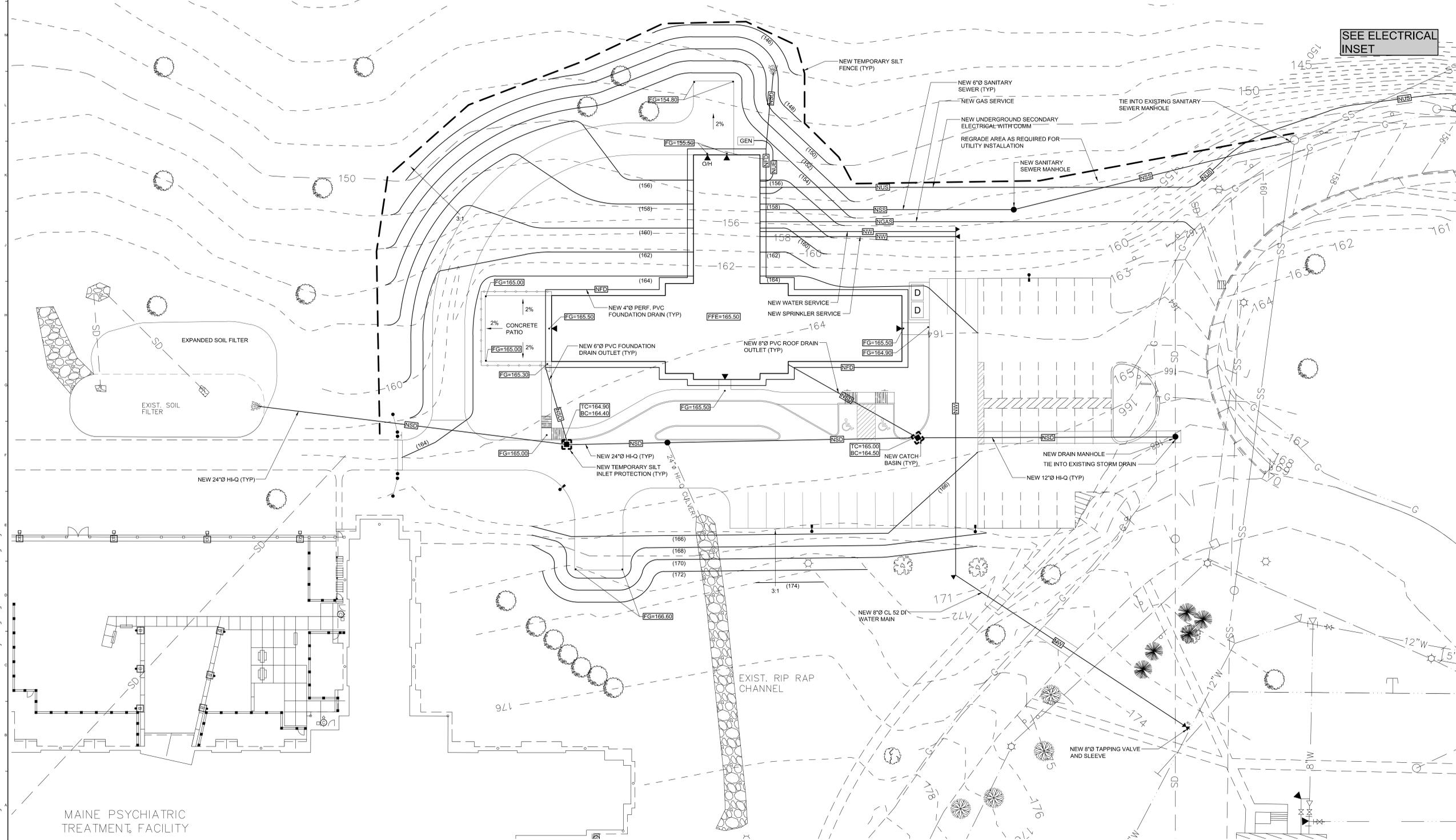
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MAINE PSYCHIATRIC TREATMENT FACILITY



N6 ELECTRICAL INSET: NEW UNDERGROUND SECONDARY ELECTRICAL SERVICE
SCALE: 1"=30'

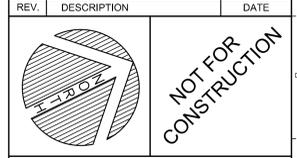


- GRADING NOTES:**
1. ALL DISTURBED AREAS NOT RECEIVING PAVEMENT, GRAVEL, OR CONCRETE SHALL BE PROVIDED WITH LOAM AND SEED PER THE CONTRACT DOCUMENTS.
 2. PROPOSED GRADING SHOWN ON THIS PLAN IS APPROXIMATE. A TOPOGRAPHIC SURVEY WAS NOT COMPLETED AS PART OF THIS PROJECT.
- UTILITY NOTES:**
1. ALL TRENCH EXCAVATION AND BACKFILL FOR ELECTRICAL SYSTEMS SHALL BE BY THE SITE CONTRACTOR. CONDUIT, PULL BOXES, RISER POLES, LIGHT BASES, ETC. SHALL BE SUPPLIED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. LIGHT BASES TO BE SET BY THE SITE CONTRACTOR.
 2. SITE CONTRACTOR TO FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO BEGINNING ANY PROPOSED WORK.
 3. PROVIDE 4" MIN. RIGID INSULATION BETWEEN WATER LINE AND SANITARY SEWER LINE. EXTEND 8' IN ALL DIRECTIONS WHERE THEY CROSS.
 4. DOMESTIC WATER DISTRIBUTION AND FIRE SUPPRESSION PIPING AND APPURTENANCES SHALL BE SUPPLIED AND INSTALLED BY SITE CONTRACTOR. ALL EXCAVATION AND BACKFILL REQUIRED FOR ANY PART OF THE WATER SUPPLY SYSTEM AND FIRE SUPPRESSION PIPING SHALL BE BY THE SITE CONTRACTOR. COORDINATE INSTALLATION OF PIPING WITH THE PLUMBING AND MECHANICAL CONTRACTORS. PIPING FOR NEW BUILDING SHALL BE SUPPLIED AND INSTALLED BY THE PLUMBING CONTRACTOR FROM THE BUILDING TO A COORDINATED POINT LOCATED 10' FROM THE BUILDING PENETRATION.

SEE ELECTRICAL INSET

EXISTING	LEGEND	PROPOSED
	LIMITS OF WETLAND	
	UTILITY POLE	
	STREET LIGHTING	
	BUILDING LIGHTING	
	WATER SHUT-OFF / GATE VALVE	
	TRANSFORMER PAD	
	DUMPSTER	
	MANHOLE	
	SEWER MANHOLE	
	CATCH BASIN	
	FIRE HYDRANT	
	SIGN	
	FENCING	
	P.T. GUARD RAIL	
	PAVEMENT	
	SIDEWALK	
	VERT. SURFORM CONC. CURB	
	GRANITE CURB	
	PRECAST CONC. WHEEL STOP	
	GEO BLOCK RETAINING WALL	
	CIP CONCRETE RETAINING WALL	
	WOOD CHIP PLAY AREA	
	COARSE AGGREGATE	
	CONTOURS	
	SEDIMENTATION CONTROL FENCE	
	FLOW PATH	
	TEMP. SILT INLET PROTECTION	
	BANK STABILIZATION MESH	
	GAS SERVICE / MAIN	
	WATER SERVICE / MAIN	
	STORM DRAIN	
	UNDERDRAIN	
	FOOTING DRAIN	
	CLEANOUT	
	SANITARY SEWER	
	UNDERGROUND ELECTRIC	
	UNDERGROUND SECONDARY	
	UNDERGROUND PRIMARY	
	AERIAL ELEC. / PRIMARY	
	PROPERTY SETBACK	
	PRIORITY LINE	
	ABUTTING PROPERTY LINE	
	TREE LINE	

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SECURE FORENSIC REHAB FACILITY

PROJECT: AUGUSTA, MAINE
SITE GRADING AND UTILITY PLAN

BHEET TITLE:	4140-BASE.DWG
WBRC CAD FILE:	4118.00
PROJECT No.:	4118.00
SCALE:	1"=20'
PROJECT MANAGER:	ARB
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MAINE PSYCHIATRIC TREATMENT FACILITY



L1 FRONT ELEVATION

1/8" = 1'-0"
G1003



F1 SIDE ELEVATION

1/8" = 1'-0"
G1003



A1 BACK ELEVATION

1/8" = 1'-0"
G1003

Roof
Asphalt shingles (Owens-Corning Tru Definition, Duration, "Chateau Green" or similar) with ice and water shield in valleys and at eaves on plywood sheathing on prefabricated, raised heel, square cut, wood trusses. Cold attic to be vented with eave and ridge vents. Batt fiberglass insulation at raised heel depth of 24". Gypsum board ceilings on 1x strapping at all ceiling surfaces.

Walls
Exterior siding: James Hardie "Hardie Plank" smooth material in the following colors and dimensions:
Rake and Fascia Trim: Mountain Sage
Soffit: Mountain Sage, 24", vented
Body Siding: Country Lane Red, 8" exposure
Body Trim: Country Lane Red, 7.25" wide

Base and Bay Siding: Arctic White, 8" exposure
Window surround trim: Arctic White, 7.25" wide
Base Trim: Arctic White, 11.25" wide
Base Cap: Arctic White, .75" x 2.5"

Windows & Doors
All windows to be fixed, aluminum-clad wood windows, white exterior color, primed interior finish. All exterior doors to be aluminum and glass in aluminum frames, white in color. All glazing at windows and doors to be laminated, insulated glass to guard against patient damage from the interior.

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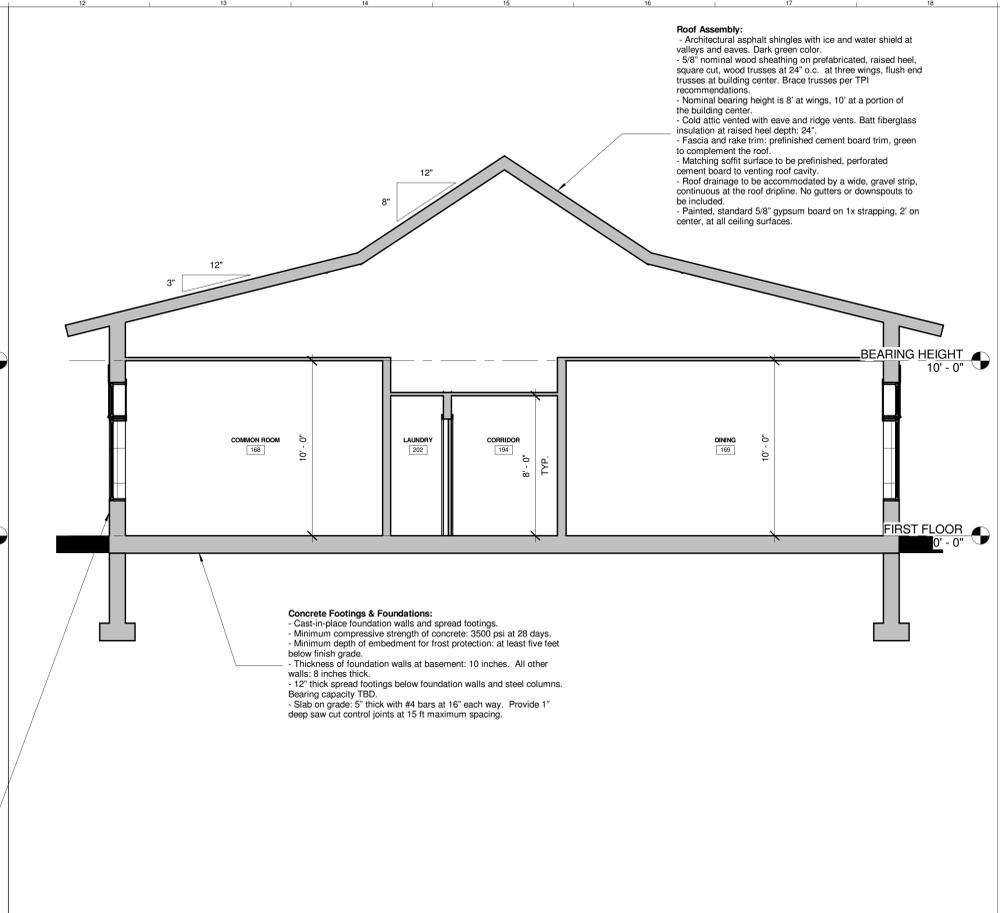
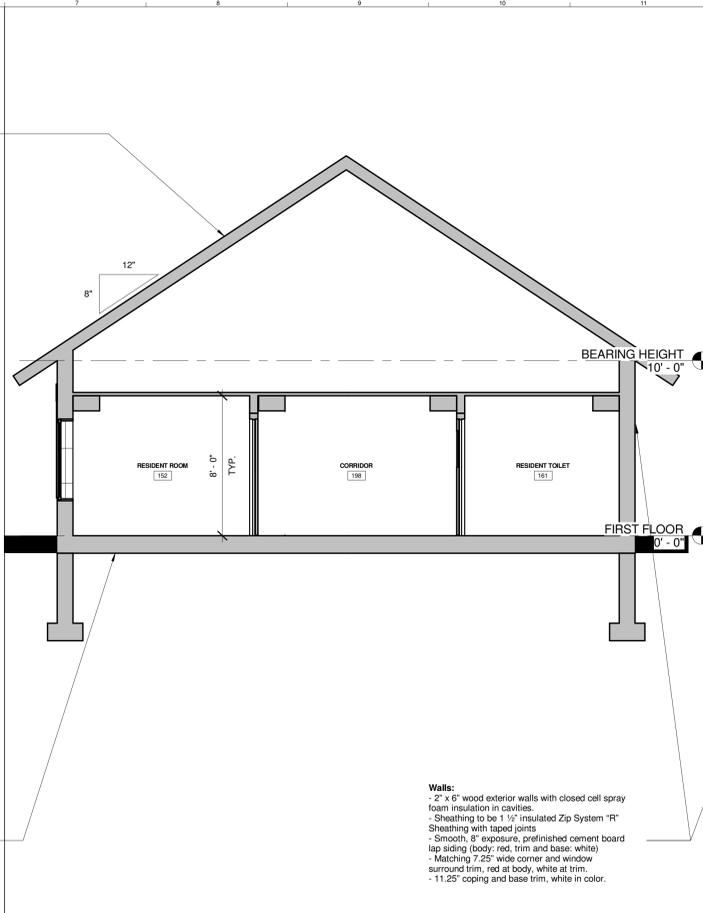
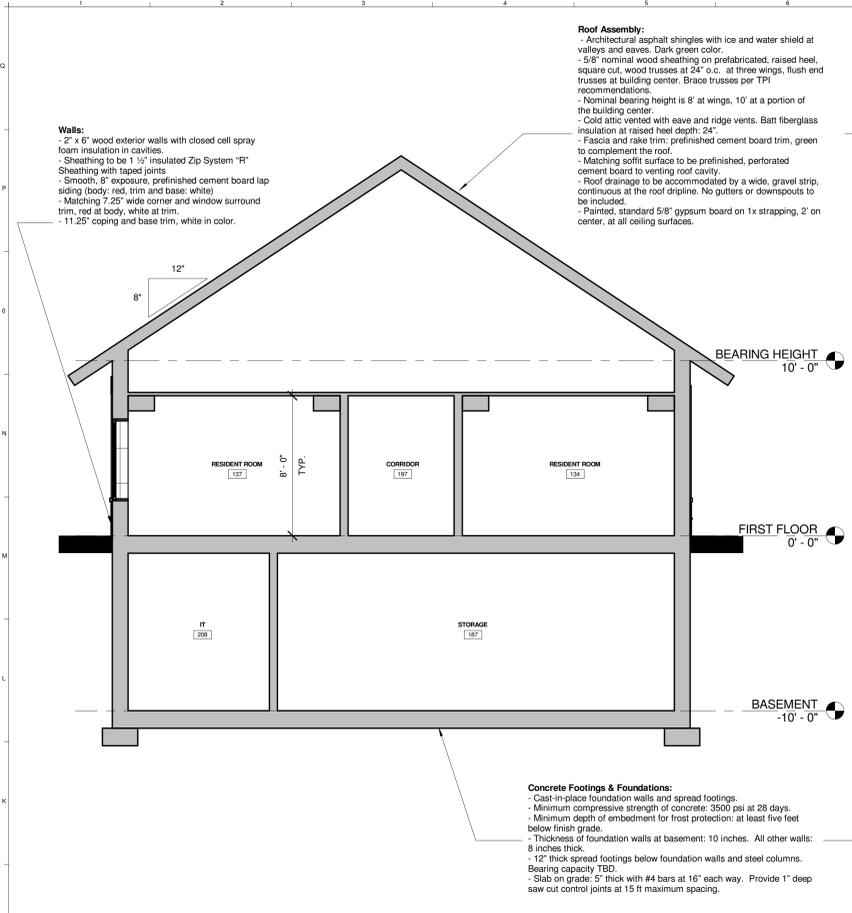
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SECURE FORENSIC REHAB FACILITY
Augusta, ME
PROJECT
BUILDING ELEVATIONS

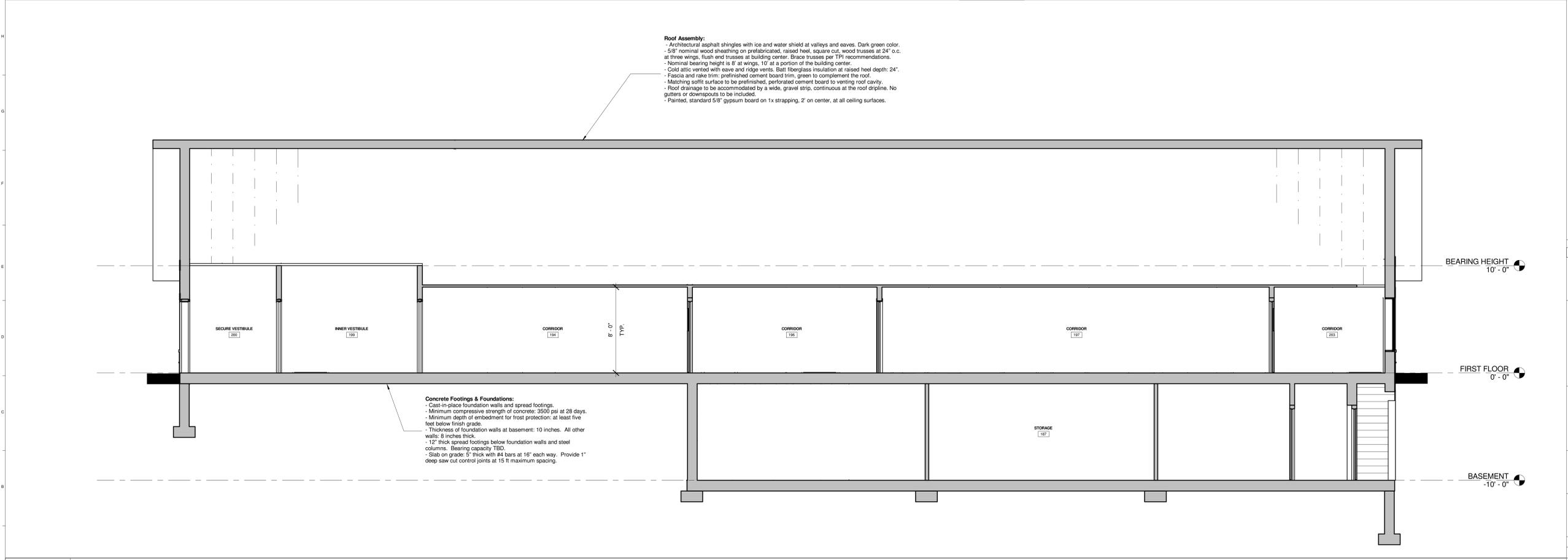
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SCALE 1/8" = 1'-0"
PROJECT MANAGER: Approver
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J1 SECTION AT BASEMENT
1/4" = 1'-0" GI003

J7 SECTION AT SLAB ON GRADE
1/4" = 1'-0" GI003

J12 SECTION AT PROJECTING "BAYS"
1/4" = 1'-0" GI003



A1 SECTION AT SLAB / BASEMENT
1/4" = 1'-0" GI003

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BUILDING SECTIONS

SHEET TITLE

WBRC CAD FILE: 202102-POHC-Mech-INT

PROJECT No: 4118.00 GRAPHIC SCALE: 1" = 1'-0"

SCALE: 1/4" = 1'-0"

PROJECT MANAGER: Approver

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SHEET No: **AE202**

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H1 BACK PERSPECTIVE



A1 FRONT PERSPECTIVE

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PERSPECTIVE VIEWS

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PROJECT No. 4118.00	GRAPHIC SCALE 1" = 1'
SCALE:	
PROJECT MANAGER: Approver	SHEET No. AE301
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