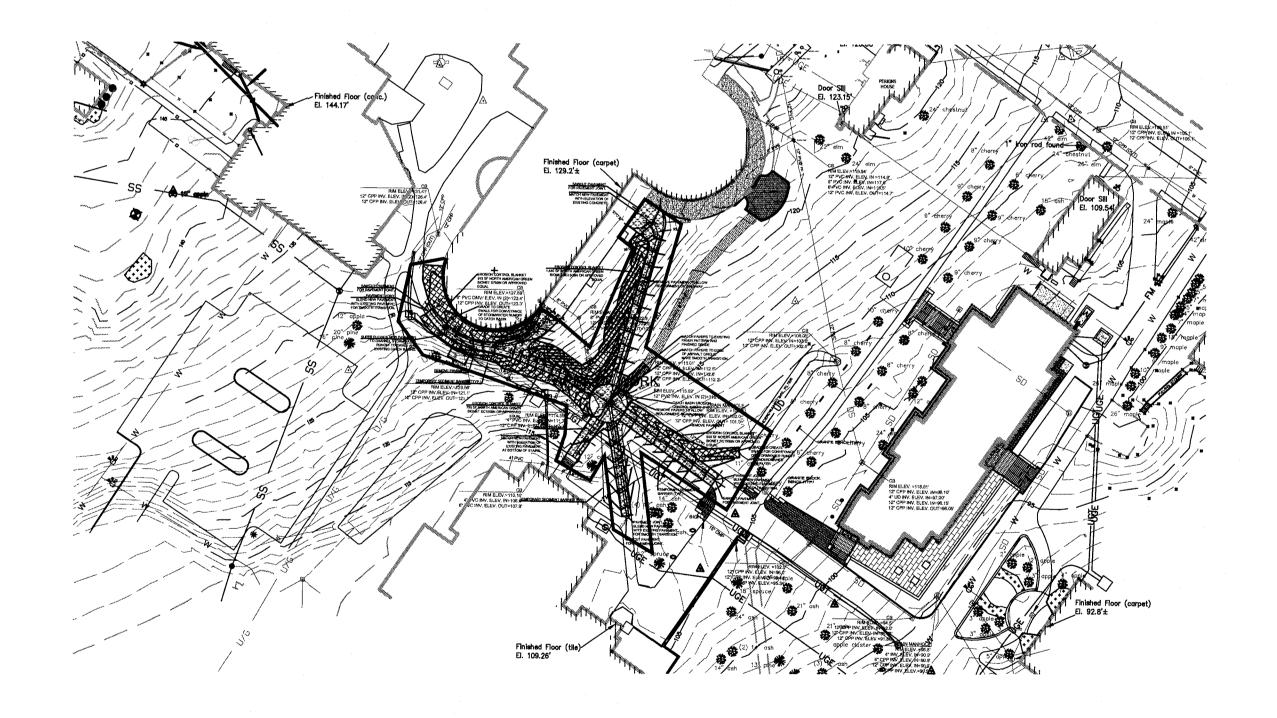
# Prainage and Sidewalk Improvements Aaine Maritime Academy

BGS NO. 3259 PEI NO. 20151

JUNE 28, 2021





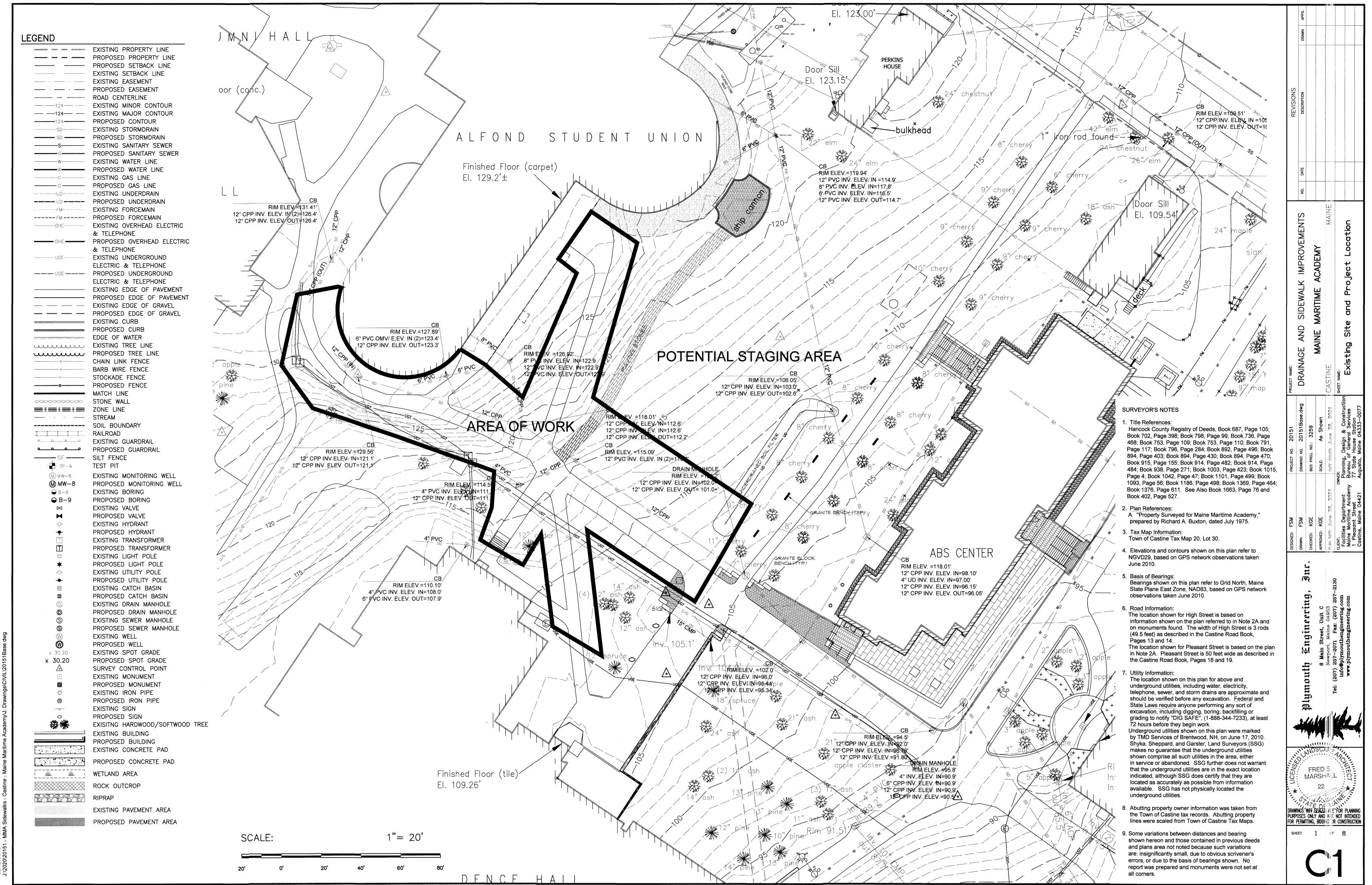
# Bureau of General Services Planning, Design & Construction

77 State House Station
Augusta, Maine 04333—0077
Email: Joseph.Ostwald@maine.gov

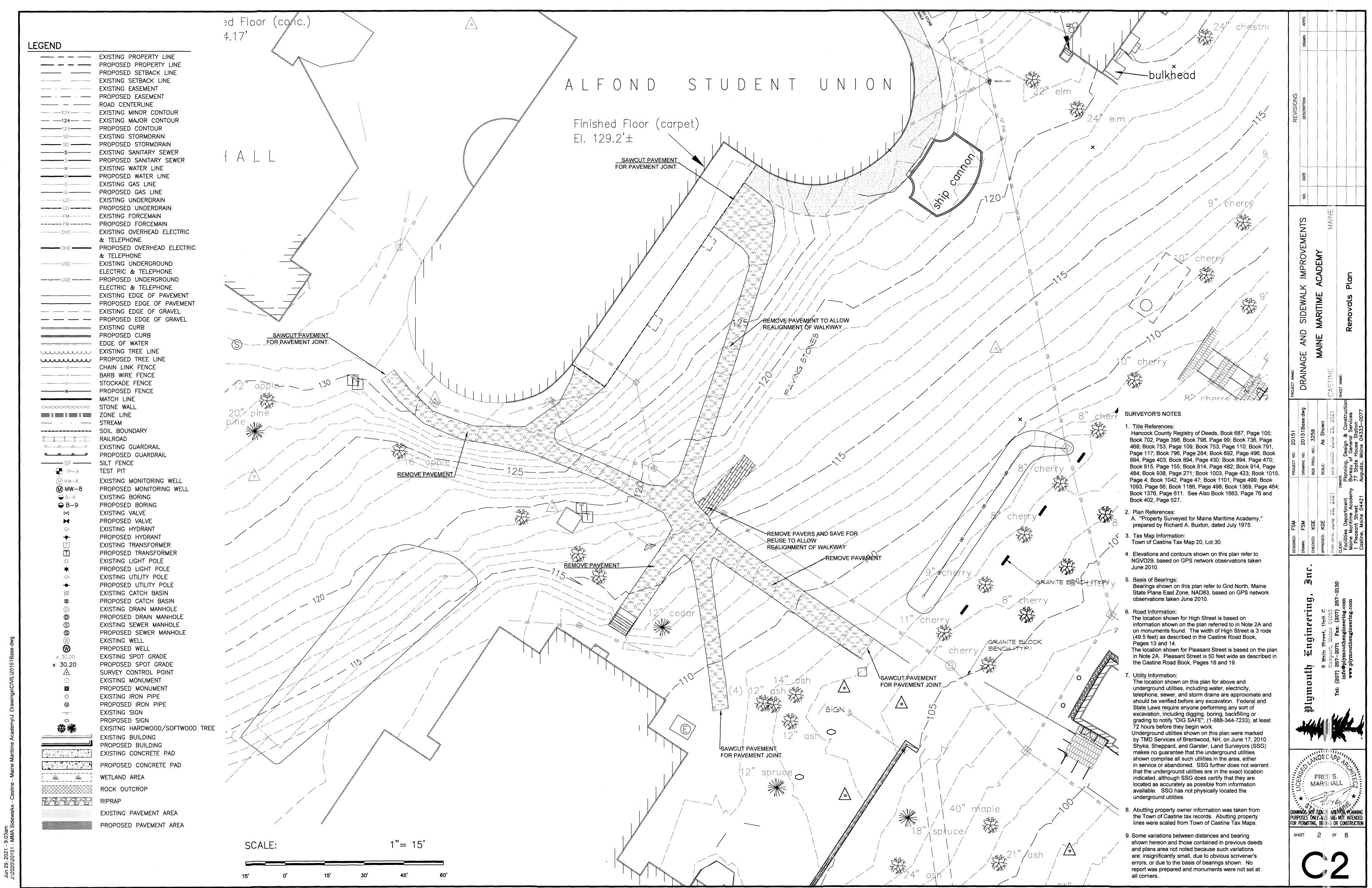
# Maine Maritime Academy Facilities Department

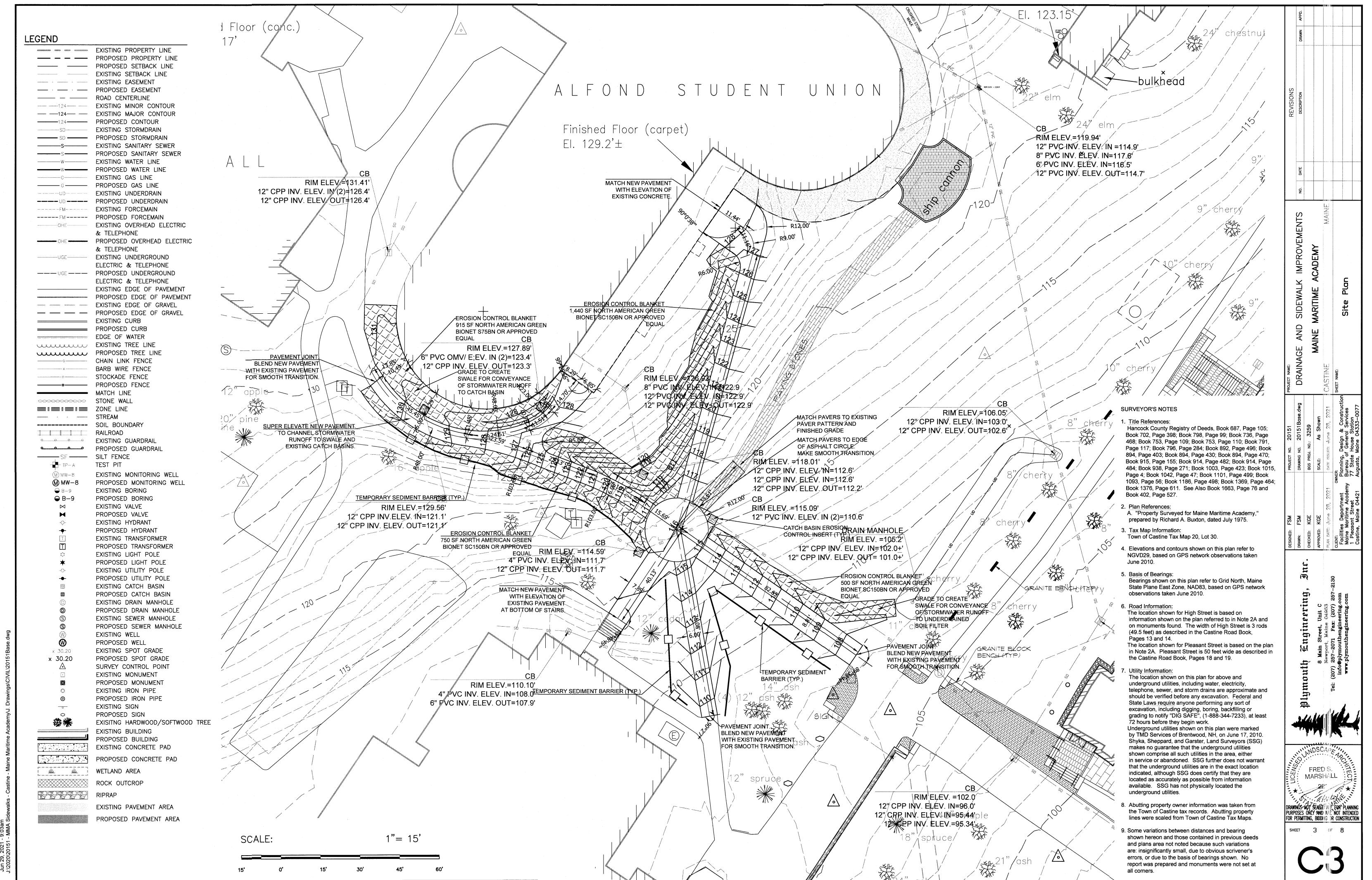
70 Pleasant Street Castine, Maine 04420 Email: Carl.Olson@mma.edu C6 — GRADING, EROGION & SEDIMENTATION CONTROL
TION C1 — EROSION & SEDIMENTATION CONTROL DETAILS
C8 — SITE CONSTRUCTION DETAILS AND NOTES

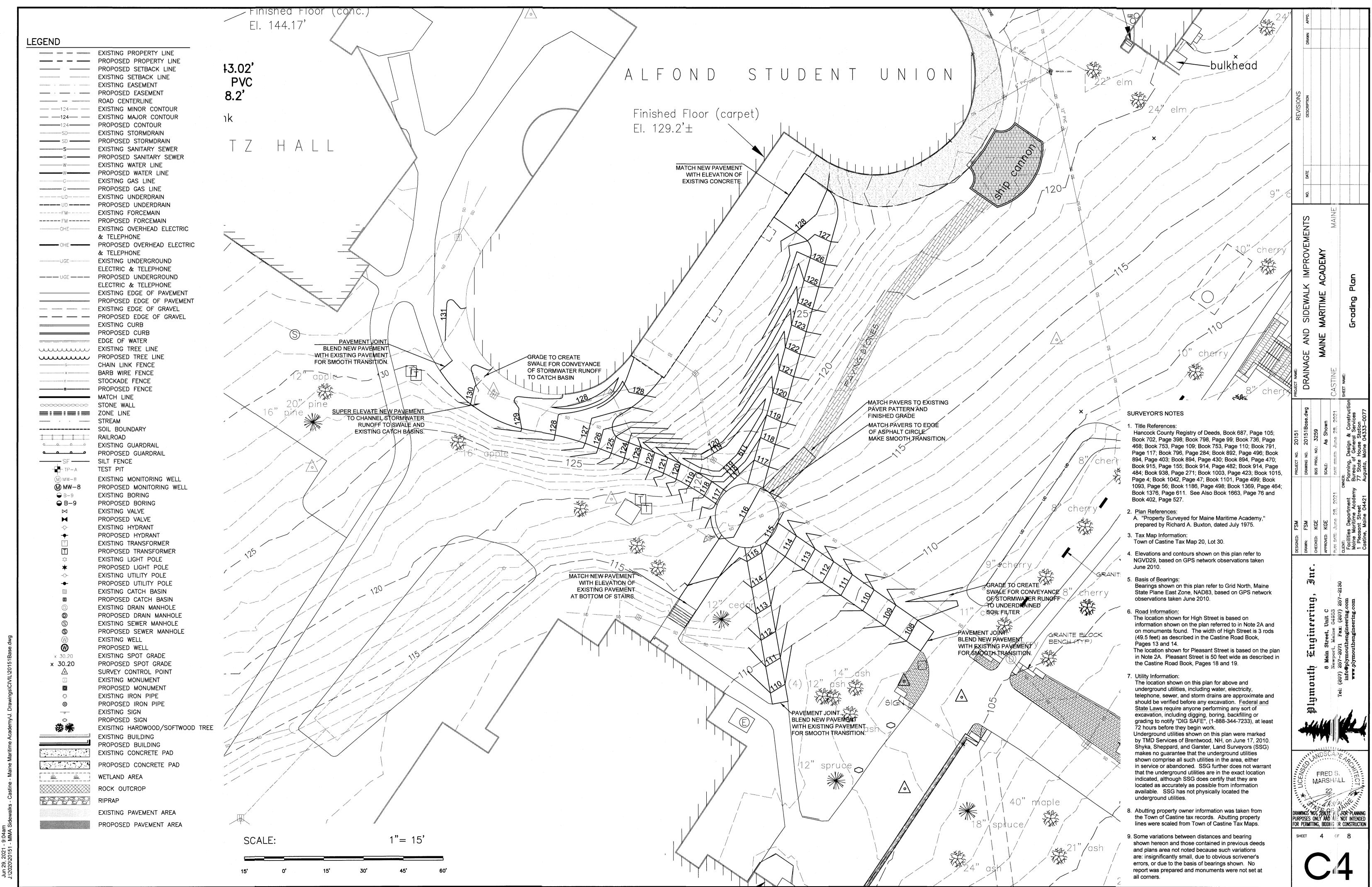
CI — EXISTING SITE AND PR
C2 — REMOVALS PLAN
C3 — SITE PLAN
C4 — GRADING PLAN

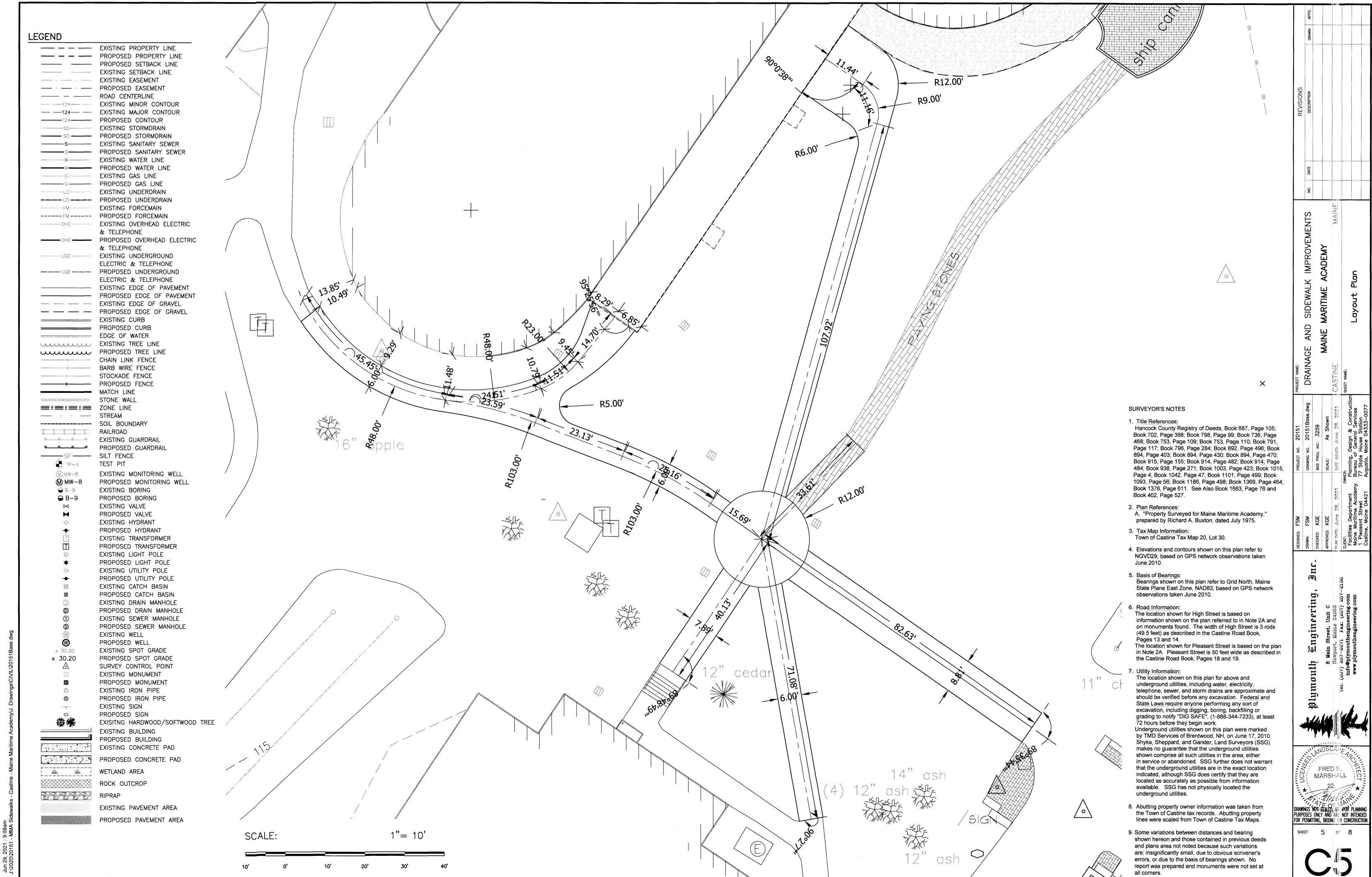


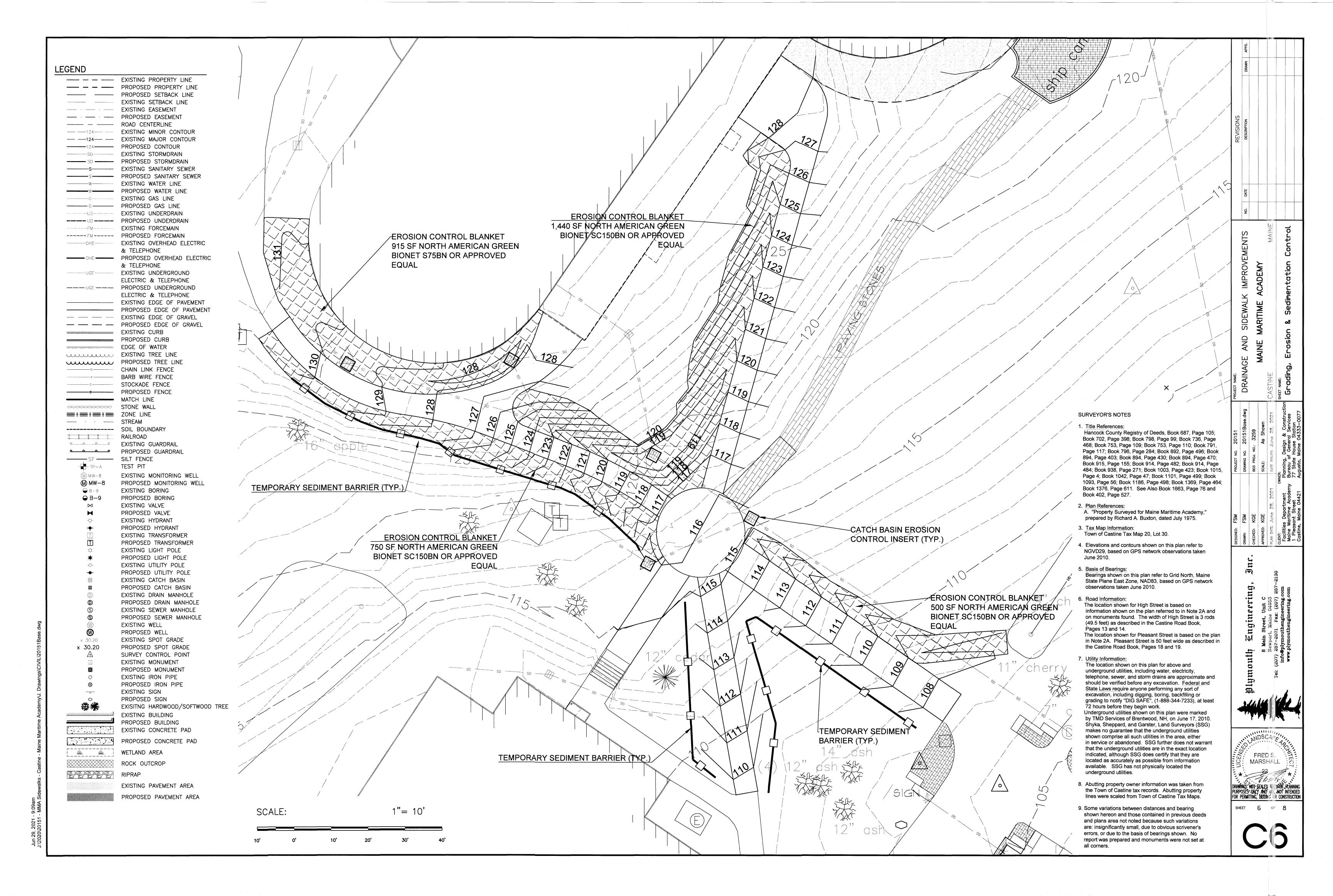
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# EROSION AND SEDIMENT CONTROL PLAN Pre-Construction Phase A person who conducts, or causes to be conducted, an activity that involves filling, displacing or exposing soil or other earthen materials shall take measures to prevent unreasonable erosion of soil or sediment beyond the project site or into a protected natural resource as defined in 38 MRSA \$ 480-B. Erosion control measures must be in place before the activity begins. Measures must remain in place and functional until the site is permanently stabilized. Adequate and timely temporary and permanent stabilization measures must be taken. The site must be maintained to prevent unreasonable erosion and sedimentation. Minimize disturbed areas and protect natural downgradient buffer areas to the extent practicable. BMP Construction Phase from the site

A. Sediment barriers. Prior to the beginning of any construction, properly install sediment barriers at the edge of any downgradient disturbed area and adjacent to any drainage channels within the proposed disturbed area. Maintain the sediment barriers until the disturbed area is permanently stabilized.

B. Construction entrance: Prior to any clearing or grubbing, a construction entrance shall be constructed at the intersection with the proposed access drive and the existing roadway to avoid tracking of mud, dust and debris

. Riprap: Since riprap is used where erosion potential is high, construction must be sequenced so that the riprap is put in place with the minimum delay. Disturbance of areas where riprap is to be placed should be undertaken only when final preparation and placement of the riprap can follow immediately behind the initial disturbance. Where riprap is used for outlet protection, the riprap should be placed before or in conjunction with the construction of the pipe or channel so that it is in place when the pipe or channel begins to operate. Maintain temporary riprap, such as temporary check dams until the disturbed area is permanently stabilized.

D. Temporary stabilization. Stabilize with temporary seeding, mulch, or other non-erodable cover any exposed soils that will remain unworked for more than 14 days except, stabilize areas within 100 feet of a wetland or waterbody within 7 days or prior to a predicted storm event, whichever comes first. If hay or straw mulch is used, the application rate must be 2 bales (70-90 pounds) per 1000 sf or 1.5 to 2 tons (90-100 bales) per acre to cover 75 to 90% of the ground surface. Hay mulch must be kept moist or anchored to prevent wind blowing. An erosion control blanket or mat shall be used at the base of grassed waterways, steep slopes (15% or greater) and on any disturbed soil within 100 feet of lakes, streams and wetlands. Grading shall be planned so as to minimize the length of time between initial soil exposure and final grading. On large projects this should be accomplished by phasing the operation and completing the first phase up to final grading and seeding before starting the second phase, and so on.

E. Vegetated waterway. Upon final grading, the disturbed areas shall be immediately seeded to permanent vegetation and mulched and will not be used as outlets until a dense, vigorous vegetative cover has been obtained. Once soil is exposed for waterway construction, it should be immediately shaped, graded and stabilized. Vegetated waterways need to be stabilized early during the growing season (prior to September 15). If final seeding of waterways is delayed past September 15, emergency provisions such as sod or riprap may be required to stabilize the channel. Waterways should be fully stabilized prior to directing runoff to them.

Permanent Stabilization Defined . Seeded areas. For seeded areas, permanent stabilization means an 90% cover of the disturbed area with

mature, healthy plants with no evidence of washing or rilling of the topsoil.

B. Sodded areas. For sodded areas, permanent stabilization means the complete binding of the sod roots into the underlying soil with no slumping of the sod or die-off.

C. Permanent mulch. For mulched areas, permanent mulching means total coverage of the exposed area with an approved mulch material. Erosion control mix may be used as mulch for permanent stabilization according to the approved application rates and limitations.

D. Riprap. For areas stabilized with riprap, permanent stabilization means that slopes stabilized with riprap have an appropriate backing of a well-graded gravel or approved geotextile to prevent soil movement from behind the riprap. Stone must be sized appropriately. It is recommended that angular stone be used.

E. Agricultural use. For construction projects on land used for agricultural purposes (E.G., pipelines across crop land), permanent stabilization may be accomplished by returning the disturbed land to agricultural use.

F. Paved areas. For paved areas, permanent stabilization means the placement of the compacted gravel subbase is completed.

G. Ditches, channels, and swales. For open channels, permanent stabilization means the channel is stabilized with mature vegetation at least three inches in height, with well-graded riprap, or with another non-erosive lining capable of withstanding the anticipated flow velocities and flow depths without reliance on check dams to slow flow. There must be no evidence of slumping of the lining, undercutting of the banks, or down—cutting of the

General Construction Phase The following erosion control measures shall be followed by the contractor throughout construction of this project:

A. All topsoil shall be collected, stockpiled, seeded with rye at 3 pounds/1,000 sf and mulched, and reused as required. Silt fencing shall be placed down gradient from the stockpiled loam. Stockpile to be located by designation of the owner and inspecting engineer.

B. The inspecting engineer at his/her discretion, may require additional erosion control measures and/or supplemental vegetative provisions to maintain stability of earthworks and finish graded areas. The contractor shall be responsible for providing and installing any supplemental measures as directed by the inspecting engineer. Failure to comply with the engineer's directions will result in discontinuation of construction activities.

. Erosion control mesh shall be applied in accordance with the plans over all finish seeded areas as specified on the design plans.

D. All graded or disturbed areas including slopes shall be protected during clearing and construction in accordance with the approved erosion and sediment control plan until they are adequately stabilized.

. All erosion, and sediment control practices and measures shall be constructed, applied and maintained in

accordance with the approved erosion and sediment control plan. . Areas to be filled shall be cleared, grubbed and stripped of topsoil to remove trees, vegetation, roots or other

objectionable materials. G. Areas shall be scarified to a minimum depth of 3 inches prior to placement of topsoil

H. All fills shall be compacted as required to reduce erosion, slippage, settlement, subsidence or other related problems. Fill intended to support buildings, structures and conduits, etc., shall be compacted in accordance with

. All fills shall be placed and compacted in layers not to exceed 8 inches in thickness.

Except for approved landfills or non-structural fills, fill material shall be free of brush, rubbish, rocks, logs, stumps, building debris and other objectionable materials that would interfere with or prevent construction of satisfactory lifts.

. Frozen material or soft, mucky or highly compressible materials shall not be incorporated into fill slopes or structural fills.

Fill shall not be placed on a frozen foundation.

Seeps or springs encountered during construction shall be handled appropriately.

. All graded areas shall be permanently stabilized immediately following finished grading.

. Remove any temporary control measures, such as silt fence, within 30 days after permanent stabilization is attained. Remove any accumulated sediments and stabilize.

Permanent vegetative cover should be established on disturbed areas where permanent, long lived vegetative cover is needed to stabilize the soil, to reduce damages from sediment and runoff, and to enhance the

A. Grade as feasible to permit the use of conventional equipment for seedbed preparation, seeding, mulch application and anchoring, and maintenance.

3. Apply limestone and fertilizer according to soil tests such as those offered by the University of Maine soil testing laboratory. Soil sample mailers are available from the local cooperative extension service office. If soil testing is not feasible on small or variable sites, or where timing is critical, fertilizer may be applied at the rate of 800 pounds per acre or 18.4 pounds per 1,000 square feet using 10-20-20 (n-p2o5-k2o) or equivalent. Apply ground limestone (equivalent to 50% calcium plus magnesium oxide) at a rate of 3 tons per acre (138 lb. Per 1,000 sq. Ft).

. Work lime and fertilizer into the soil as nearly as practical to a depth of 4 inches with a disc, spring tooth harrow or other suitable equipment. The final harrowing operation should be on the general contour. Continue tillage until a reasonably uniform, fine seedbed is prepared. All but clay or silty soils and coarse sands should be rolled to firm the seedbed wherever feasible.D. Remove from the surface all stones 2 inches or larger in any dimension. Remove all other debris, such as wire, cable, tree roots, concrete, clods, lumps or other unsuitable material.

Inspect seedbed just before seeding. If traffic has left the soil compacted; the area must be tilled and firmed is above

Permanent seeding should be made 45 days prior to the first killing frost or as a dormant seeding with mulch after the first killing frost and before snowfall. When crown vetch is seeded in later summer, at least 35% of the seed should be hard seed (unscarified). If seeding cannot be done within the seeding dates, mulch according to the temporary mulching BMP and overwinter stabilization and construction to protect the site and delay seeding until the next recommended seeding period.

G. Following seed bed preparation, swale areas, fill areas and back slopes shall be seeded at a rate of 3 lbs./1.000 s.F. With a mixture of 35% creeping red h. Fescue, 6% red top, 24% Kentucky bluegrass, 10% perennial ryegrass, 20% annual ryegrass and 5% white Dutch clover.

I. Areas which have been temporarily or permanently seeded shall be mulched immediately following seeding. J. Areas which cannot be seeded within the growing season shall be mulched for over—winter protection and the area should be seeded at the beginning of the growing season.

Winter Construction Phase If an area is not stabilized with temporary or permanent measures by November 15, then the site must be protected with additional stabilization measures.

A. Permanent stabilization consists of at least 90% vegetation, pavement/gravel base or riprap.

B. Do not expose slopes or leave slopes exposed over the winter or for any other extended time of work suspension unless fully protected with mulch.

C. Apply hay mulch at twice the standard rate (150 lbs. Per 1,000 sf). The mulch must be thick enough such that the ground surface will not be visible and must be anchored.

D. Use mulch and mulch netting or an erosion control mulch blanket or all slopes greater than 8 % or other areas exposed to direct wind.

E. Install an erosion control blanket in all drainageways (bottom and sides) with a slope greater than 3 %. F. See the vegetation measures for more information on seeding dates and types.

G. Winter excavation and earthwork shall be completed so that no more than 1 acre of the site is without stabilization at any one time.

H. An area within 100 feet of a protected natural resource must be protected with a double row of sediment

1. Temporary mulch must be applied within 7 days of soil exposure or prior to any storm event, but after every workday in areas within 100 feet from a protected natural resource.

J. Areas that have been brought to final grade must be permanently mulched that same day,

K. If snowfall is greater than 1 inch (fresh or cumulative), the snow shall be removed from the areas due to be seeded and mulched.

L. Loam shall be free of frozen clumps before it is applied.

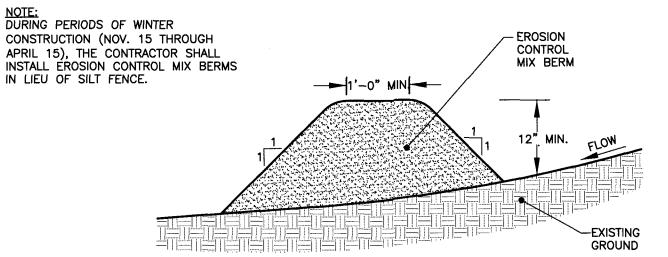
M. All vegetated ditch lines that have not been stabilized by November 1, or will be worked during the winter construction period, must be stabilized with an appropriate stone lining backed by an appropriate gravel bed or geotextile unless specifically released from this standard by the department.

A. Contractor shall inspect disturbed and impervious areas, and erosion and stormwater control measures, areas used for storage that are exposed to precipitation, and locations where vehicles enter or exit the parcel at least once a week and before and after a storm event, prior to completion of permanent stabilization. A person with knowledge of erosion and stormwater must conduct the inspection. This person must be identified in the inspection log. If best management practices (BMPs) need to be modified or if additional BMPs are necessary, implementation must be completed within 7 calendar days and prior to any storm event (rainfall). All measures must be maintained in effective operating condition until areas are permanently stabilized.

B. A log (report) must be kept summarizing the scope of the inspection, name(s) and qualifications of the personnel making the inspection, the date(s) of the inspection, and major observations relating to operation of erosion and sedimentation controls and pollution prevention measures. Major observations must include: BMPs that need to be maintained; location(s) of BMPs that failed to operate as designed or proved inadequate for a particular location; and location(s) where additional BMPs are needed that did not exist at the time of inspection. Follow-up to correct deficiencies or enhance controls must also be indicated in the log and dated, including what action was taken and when.

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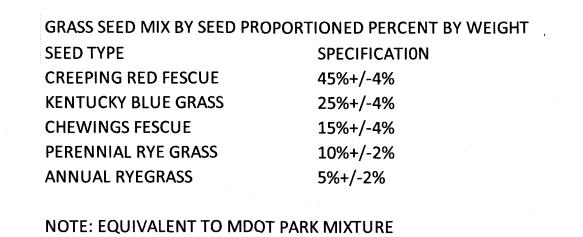
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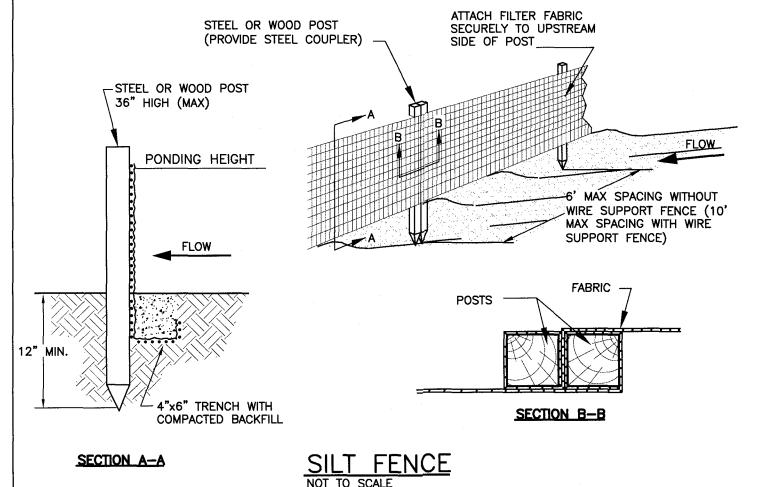
EROSION CONTROL MIX:
EROSION CONTROL MIX SHALL CONTAIN A WELL-GRADED MIXTURE OF PARTICLE SIZES & MAY CONTAIN ROCKS LESS THAN 4" IN DIAMETER. EROSION CONTROL MIX MUST BE FREE OF REFUSE, PHYSICAL CONTAMINANTS, AND MATERIAL TOXIC TO PLANT GROWTH. THE MIX COMPOSITION SHALL MEET THE FOLLOWING STANDARDS: - THE ORGANIC MATTER CONTENT SHALL BE BETWEEN 80% - 100% DRY WEIGHT BASIS - PARTICLE SIZE BY WEIGHT SHALL BE 100% PASSING A 6" SCREEN AND A MINIMUM OF 70%.

MAXIMUM OF 85% PASSING A 0.75" SCREEN - THE ORGANIC PORTION NEEDS TO BE FIBROUS AND ELONGATED - LARGE PORTIONS OF SILTS, CLAYS OR FINE SANDS ARE NOT ACCEPTABLE IN THE MIX. - SOLUBLE SALTS CONTENT SHALL BE < 4.0 mmhos/cm. - ph SHALL FALL BETWEEN 5.0 - 8.0.

### EROSION CONTROL MIX BERM



## GRASS SEED MIXTURE



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1. BURY THE TOP END OF THE MESH MATERIAL IN A 6" TRENCH AND BACKFILL AND TAMP TRENCHING SECURE END WITH STAPLES AT 6" SPACING, 4" DOWN FROM EXPOSED END. 2. FLOW DIRECTION JOINTS TO HAVE UPPER END OF LOWER STRIP BURIED WITH UPPER LAYERS OVERLAPPED 4" AND

STAPLED. OVERLAP B OVER A. 3. LATERAL JOINTS TO HAVE 4" OVERLAP OF STRIPS. STAPLE 18" ON CENTER.

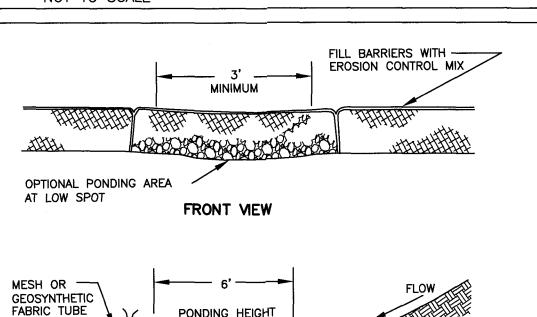
4. STAPLE OUTSIDE LATERAL EDGE 2' ON CENTER.

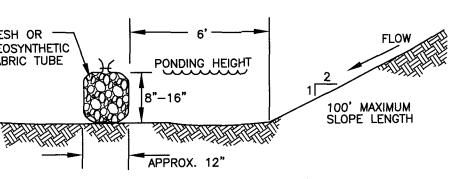
5. WIRE STAPLES TO BE MIN. OF #11 WIRE, 6" LONG & 1-1/2" WIDE.

USE NORTH AMERICAN GREEN DS 150 (OR APPROVED EQUAL) ON SLOPES BETWEEN 4:1-2:1. USE NORTH AMERICAN GREEN VMAX SC250 PERMANENT TURF REINFORCEMENT MAT (OR APPROVED EQUAL) ON SLOPES 2:1 AND

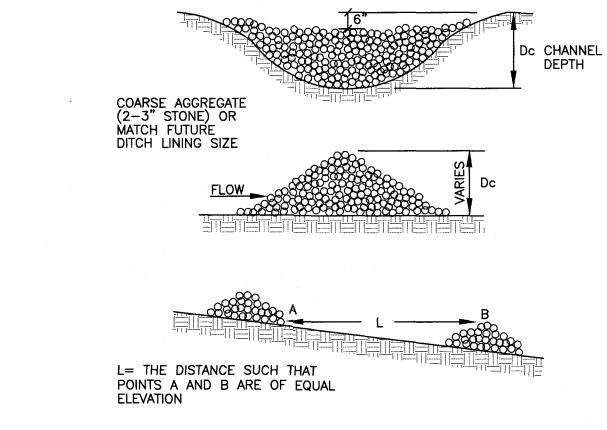
### EROSION CONTROL BLANKET

NOT TO SCALE

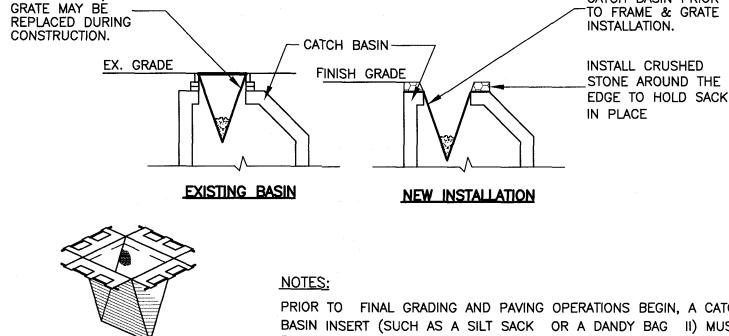




FILTER SOCK DETAIL NO SCALE



STONE CHECK DAM NOT TO SCALE

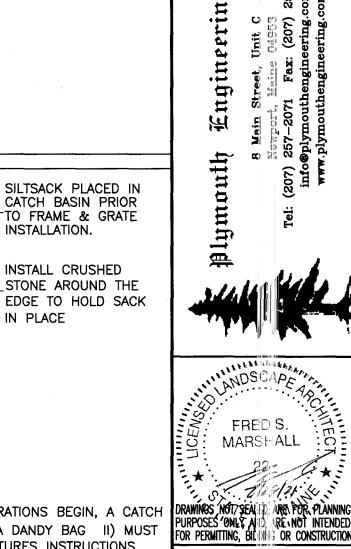


SILT SACK PROTECTION

IN EX. FRAME, EX.

PRIOR TO FINAL GRADING AND PAVING OPERATIONS BEGIN, A CATCH BASIN INSERT (SUCH AS A SILT SACK OR A DANDY BAG II) MUST BE INSTALLED IN EACH BASIN PER MANUFACTURES INSTRUCTIONS. HAY BALES SHOULD BE REMOVED ONCE INSERTS ARE INSTALLED.

CATCH BASIN EROSION CONTROL INSERT



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IMPROVEMENT

SIDEWALK

GE

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SHEET 7: OF 8

2. PRIOR TO STARTING CONSTRUCTION THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PLANS AND OTHER DOCUMENTS BY ALL OF THE PERMITTING AUTHORITIES

3. THE CONTRACTOR SHALL BE FAMILIAR WITH AND RESPONSIBLE FOR ANY/ALL CERTIFICATIONS, INSPECTIONS, ETC. REQUIRED BY ALL GOVERNING JURISDICTIONAL AGENCIES DURING AND AFTER CONSTRUCTION FOR SIGN-OFF AND CERTIFICATE OF OCCUPANCY ISSUANCE, INCLUDING BUT NOT LIMITED TO PROCUREMENT OF SERVICES, SCHEDULING OF FIELD OBSERVATIONS AND COORDINATION WITH REPRESENTATIVES OF THE APPROPRIATE PARTIES

4. ALL WORK SHALL BE PERFORMED IN ACCORANCE WITH THESE PLANS, SPECIFICATIONS, AND THE REQUIREMENTS AND STANDARDS OF

THE LOCAL GOVERNING AUTHORITY. 5. THESE PLANS ARE BASED ON INFORMATION PROVIDED TO PLYMOUTH ENGINEERING AT THE TIME OF PLAN PREPARATION. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND NOTIFY PLYMOUTH ENGINEERING IF ACTUAL SITE CONDITIONS DIFFER FROM THOSE SHOWN ON THE PLAN, OR IF THE PROPOSED WORK WOULD BE INIHIBITED BY ANY OTHER SITE FEATURES.

6. ALL DIMENSIONS SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING IF ANY DISCREPANCIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION. NO EXTRA COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR WORK HAVING TO BE REDONE DUE TO DIMENSIONS OR GRADES SHOWN INCORRECTLY ON THESE PLANS IF SUCH NOTIFICATION HAS NOT BEEN GIVEN.

7. CONTRACTOR IS TO EXERCISE EXTREME CARE WHEN PERFORMING ANY WORK ADJACENT TO PAVEMENT AND STRUCTURES TO REMAIN. CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING THE APPROPRIATE MEASURES AS NECESSARY TO ENSURE THE STRUCTURAL STABILITY OF SIDEWALKS AND PAVEMENT TO REMAIN AND TO PROVIDE A SAFE WORK

8. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING DAMAGE DONE TO ANY EXISTING ITEM DURING CONSTRUCTION SUCH AS BUT NOT LIMITED TO DRAINAGE, UTILITIES, PAVEMENT, CURBING, LANDSCAPING, LAWN, ETC. REPAIR SHALL BE EQUAL TO OR BETTER THAN EXISTING CONDITIONS. THE CONTRACTOR IS RESPONSIBLE TO DOCUMENT ALL EXISTING DAMAGE AND NOTIFY THE OWNER PRIOR TO CONSTRUCTION START. 9. CONTRACTOR IS RESPONSIBLE FOR ALL SHORING REQUIRED DURING EXCAVATION AHD ANY ADDITIONAL PROVISIONS TO ASSURE STABILITY OF CONTIGUOUS STRUCTURES, AS FIELD CONDITIONS DICTATE. 10. ANY GRADING SHALL RETURN THE FINISHED ELEVATION TO THE ORIGINAL ELEVATION. BLEND GRADES SMOOTHLY. 11. LAYDOWN AREAS, STOCKPILES, AND STORAGE AREAS WHEN NO

LONGER NEEDED FOR THE CONSTRUCTION SHALL BE RETURNED TO THEIR ORIGINAL OR BETTER CONDITION. 12. ALL CONCRETE SHALL HAVE THE MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS OF 4000 PSI UNLESS OTHERWISE NOTED ON THE PLANS

AND, DETAILS. 13. THE ENGINEER IS NOT RESPONSIBLE FOR CONSTRUCTION METHODS/MEANS FOR COMPLETION OF THE WORK DEPICTED ON THESE PLANS NOR ANY CONFLICTS/SCOPE REVISIONS WHICH RESULT FROM SAME. CONTRACTOR IS RESPONSIBLE FOR DETERMINING METHODS/MEANS FOR COMPLETION OF THE WORK PRIOR TO COMMENCEMENT OF CONSTRUCTION AND NOTIFICATION OF OWNER AND ENGINEERING WHEN A

CONFLICT IS IDENTIFIED. 14. ALL CONTRACTORS MUST CARRY STATUTORY WORKER'S COMPENSATION INSURANCE, EMPLOYER'S LIABILITY INSURANCE AND APPROPRIATE LIMITS OF COMMERCIAL LIABILITY INSURANCE (CGL). ALL CONTRACTORS MUST HAVE THEIR CGL POLICIES ENDORSED TO NAME PLYMOUTH ENGINEERING, INC., AND ITS SUBCONSULTANTS, AS ADDITIONAL INSURED AND TO PROVIDE CONTRACTURAL LIABILITY COVERAGE SUFFIFIENT TO INSTURE THE HOLD HARMLESS AND INDEMINITY OBLIGATIONS ASSUMED BY THE CONTRACTORS. IN ADDITION, ALL CONTRACTORS WILL, TO THE FULLEST EXTENT PERMITTED BY LAW. INDEMNIFY AND HOLD HARMLESS PLYMOUTH ENGINEERING, INC. AND ITS SUBCONSULTANTS AND AGAINST DAMAGES, LIABILITIES OR COSTS, INCLUDING REASONABLE ATTORNEYS' FEES AND DEFENSE COSTS, ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE PROJECT. INCLUDING ALL CLAIMS BY EMPLOYEES OF THE CONTRACTORS. 15. NEITHER THE PROFESSIONAL ACTIVITIES OF PLYMOUTH ENGINEERING, INC., NOR THE PRESENCE OF ITS EMPLOYEES AND SUBCONSUTANTS AT A CONSTRUCTION/PROJECT SITE SHALL RELIEVE THE GENERAL CONTRACTOR OF ITS OBLIGATIONS, DUTIES AND RESPONSIBILITIES INCLUDING, BUT NOT LIMITED TO, CONSTRUCTION MEANS, METHODS, SEQUENCE, TECHNIQUES OR PROCEDURES NECESSARY FOR PERFORMING, SUPERINTENDING, AND COORDINATING THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND ANY HEALTH OR SAFETY PRECAUTIONS REQUIRED BY ANY REGULATORY AGENCIES. PLYMOUTH ENGINEERING, INC. AND ITS PERSONNEL HAVE NO AUTHORITY TO EXERCISE ANY CONTROL OVER ANY CONSTRUCTION CONTRACTOR OR ITS EMPLOYEES IN

16. IF THE CONTRACTOR DEVIATES FROM THE PLANS AND SPECIFICATIONS, INCLUDING NOTES CONTAINED THEREON, WITHOUT FIRST OBTAINING PRIOR WRITTEN AUTHORIZATION FOR SUCH DEVIATIONS FROM THE OWNER AND ENGINEER, IT SHALL BE REPONSIBLE FOR THE PAYMENT OF ALL COSTS TO CORRECT ANY WORK DONE, ALL FINES OR PENALTIES ASSESSED WITH RESPECT THERETO, AND ALL COMPENSATORY OR PUNITIVE DAMAGES RESULTING THEREFROM. THE CONTRACTOR SHALL INDEMNIFY AND HOLD THE OWNER AND ENGINEER HARMLESS FORM ALL SUCH COSTS TO CORRECT ANY SUCH WORK AND FROM ALL SUCH FINES AND PENALTIES, COMPENSATION AND PUNITIVES COSTS OF ANY NATURE RESULTING THEREFROM.

CONNECTION WITH THEIR WORK OR ANY HEALTH OR SAFETY PROGRAMS

OR PROCEDURES. THE GENERAL CONTRACTOR SHALL BE SOLEY

RESPONSIBLE FOR JOBSITE SAFETY.

### DEMOLITION NOTES

1. PRIOR TO STARTING ANY DEMOLITION, THE CONTRACTOR IS RESPONSIBLE FOR/TO:

A. ENSURING COPIES OF ALL PERMITS AND APPROVALS ARE ACQUIRED AND COPIES ARE MAINTAINED ON SITE AND AVAILABLE FOR

B. USE AND COMPLY WITH THE REQUIREMENTS OF THE APPLICABLE UTILITY NOTIFICATION SYSTEM TO LOCATE ALL THE UNDERGROUND UTLITIES. ALL UTILITIES INCLUDE BUT ARE NOT LIMITED TO GAS. WATER. ELECTIC, SANITARY SEWER, STORM SEWER, TELEPHONE, CABLE, FIBER OPTIC CABLE, ETC.

C. PROTECT AND MAINTAIN IN OPERATION, ALL ACTIVE SYSTEMS THAT ARE NOT BEING REMOVED DURING ALL DEMOLITION ACTIVITIES. 2. REMOVE ONLY THE ITEMS NOTED ON THESE DRAWINGS OR AS DIRECTED BY THE OWNER OR OWNER'S REPRESENTATIVE. REPORT ANY DISCREPANCIES TO THE OWNER'S REPRESENTATIVE. 3. STOCKPILE MATERIAL ONLY IN LOCATIONS APPROVED BY THE OWNER.

4. ERECT CONSTRUCTION ZONE SAFETY FENCE AROUND PERIMETER OF THE WORK AREA PRIOR TO BEGIINNING DEMOLITION ACTIVITIES. 5. THE CONTRACTOR IS RESPONSIBLE FOR JOB SITE SAFETY AND SUPERVISION. CONTRACTOR IS TO PROCEED WITH THE DEMOLITION IN A SYSTEMATIC AND SAFE MANNER, FOLLOWING ALL OSHA REQUIREMENTS, TO ENSURE PUBLIC AND CONTRACTOR SAFETY.

6. EXPLOSIVES SHALL NOT BE USED WITHOUT WRITTEN CONSENT OF THE LANDLORD, TENANT, AND APPLICABLE REGULATORY ENTITIES. ALL THE REQUIRED PERMITS AND EXPLOSIVE CONTROL MEASURES THAT ARE REQUIRED BY THE FEDERAL, STATE, AND LOCAL GOVERNMENTS SHALL BE IN PLACE PRIOR TO STARTING AN EXPLOSIVE PROGRAM. THE CONTRACTOR IS ALSO RESPONSIBLE FOR ALL INSPECTION AND SEISMIC VIBRATION TESTING THAT IS REQUIRED TO MONITOR THE EFFECTS ON

ALL LOCAL STRUCTURES. 7. CONDUCT DEMOLITION ACTIVIES IN SUCH A MANNER TO ENSURE MINIMUM INTERFERENCE WITH BUILDING ACCESS POINTS, ROADS, STREETS, SIDEWALKS, DRIVEWAYS, WALKWAYS, AND OTHER ADJACENT FACILITIES. STREET CLOSURE PERMITS MUST BE RECEIVED FROM THE APPROPRIATE GOVERNMENTAL AUTHORITY.

8. DEMOLITION ACTIVITES AND EQUIPMENT SHALL NOT USE AREAS OUTSIDE THE DEFINED WORK AREA WITHOUT WRITTEN PERMISSION OF THE

3. USE DUST CONTROL MEASURES TO LIMIT AIRBORNE DUSTS AND DIRT RISING AND SCATTERING IN THE AIR IN ACCORDANCE WITH FEDERAL, STATE, AND/OR LOCAL STANDARDS. AFTER THE DEMOLITION IS COMPLETE, ADJACENT STRUCTURES AND IMPROVEMENTS SHALL BE CLEANED OF ALL DUST AND DEBRIS CAUSED BY THE DEMOLITION OPERATIONS. THE CONTRACTOR IS RESPONSIBLE FOR RETURNING ALL ADJACENT AREAS TO THEIR 'PRE-DEMOLITION' CONDITION. 10. THE CONTRACTOR IS RESPONSIBLE TO SAFEGUARD THE SITE AS NECESSARY TO PERFORM THE DEMOLITION IN SUCH A MANNER AS TO PREVENT THE ENTRY OF UNAUTHORIZED PERSONS AT ANY TIME. 11. THE REMOVALS PLAN IS INTENDED TO IDENTIFY THOSE EXISTING ITEMS/CONDITIONS WHICH ARE TO BE REMOVED. IT IS NOT INTENDED TO PROVIDE DIRECTION OTHER THAN THAT ALL METHODS AND MEANS ARE TO BE IN ACCORDANCE WITH STATE, FEDERAL, LOCAL, AND JURISDICTIONAL REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OSHA AND OTHER SAFETY PRECAUTIONS NECESSARY TO PROVIDE A SAFE WORK SITE. 12. DEMOLITION AND CONSTRUCTION DEBRIS SHALL NOT BE BURIED ON THE SUBJECT SITE. ALL DEMOLITION WASTES AND DEBRIS (SOLID

STATE, AND FEDERAL LAWS AND APPLICABLE CODES. 13. THE CONTRACTOR SHALL PROTECT EXISTING BITUMINOUS PAVEMENT, CURB, AND LANDSCAPING, ETC. NOT IDENTIFIED FOR DEMOLITION FROM 14. FEDERAL, STATE, AND MUNICIPAL LAWS AND REGULATIONS REQUIRE

WASTE) SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL MUNICIPAL,

ANYONE PERFORMING ANY SORT OF EXCAVATION, INCLUDING DIGGING, BORING, BACKFILLING, ROUGH GRADING, TO NOTIFIY DIG SAFE. IN ACCORDANCE WITH DIG SAFE'S PROTOCOL, AT 1-800-225-4977 AND ANY APPLICABLE UTILITY THAT IS NOT A PATICIPANT IN 'DIG-SAFE' AT :EAST 72 HOURS PRIOR TO COMMENCING WORK.

SITE NOTES

1. CONSTRUCTION DEBRIS SHALL NOT BE BURIED ON THE SUBJECT SITE AND ALL UNSUITABLE EXCAVATED MATERIAL AND DEBRIS (SOLID WASTE) SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL MUNICIPAL, STATE, AND FEDERAL LAWS AND APPLICABLE CODES.

2. THE CONTRACTOR IS RESPONSIBLE FOR ALL SHORING REQUIRED DURING EXCAVATION (TO BE PERFORMED IN ACCORDANCE WITH CURRENT OSHA STANDARDS) AND ANY ADDITIONAL PROVISIONS TO ASSURE STABILITY OF CONTIGUOUS STRUCTURES, AS FIELD CONDITIONS DICTATE. 3. THE CONTRACTOR IS TO EXERCISE EXTREME CARE WHEN PERFORMING ANY WORK ACTIVITIES ADJACENT TO PAVEMENT, STRUCTURES, ETC. TO REMAIN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING APPROPRIATE MEASURES AS NECESSARY TO ENSURE THE STRUCTURAL STABILITY OF SIDEWALKS AND PAVEMENT TO REMAIN, AND TO PROVIDE A SAFE WORK AREA.

4. SITE GRADING SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND REPLACING MATERIAL DEEMED UNSUITABLE WITH SUITABLE MATERIALS. ALL EXCAVATED OR FILLED MATERIAL SHALL BE COMPACTED. MATERIAL MOISTURE CONTENT AT TIME OF PLACEMENT SHALL BE SUBMITTED IN A REPORT VERIFIYING THAT ALL FILLED AREAS AND SUBGRADE AREAS WITHIN THE AREAS TO BE PAVED HAVE BEEN COMPACTED IN ACCORANCE WITH PLANS AND SPECIFICATIONS. SUBASE MATERIAL FOR SIDEWALKS, CURB, OR ASPHALT SHALL BE FREE OF ORGANICS AND OTHER UNSUITABLE MATERIALS. SHOULD SUBASE BE DEAMED UNSUITABLE BY OWNER OR OWNER'S REPRESENTATIVE, SUBASE IS TO BE REMOVED AND FILLED WITH APPROVED MATERIAL AND

5. CONDUCT CONSTRUCTION ACTIVIES IN SUCH A MANNER TO ENSURE MINIMUM INTERFERENCE WITH BUILDING ACCESS POINTS, ROADS, STREETS, SIDEWALKS, DRIVEWAYS, WALKWAYS, AND OTHER ADJACENT FACILITIES. 6. THE CONTRACTOR SHALL COMPLY TO THE FULLEST EXTENT WITH THE LATEST OSHA STANDARDS AND REGULATIONS, OR ANY OTHER AGENCY HAVING JURISDICTION FOR EXCAVATION AND TRENCHING PROCEDURES. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE 'MEANS AND METHODS' REQUIRED TO MEET THE INTENT AND PERFORMANCE CRITERIA OF OSHA AS WELL AS ANY OTHER ENTITY THAT HAS JURISDICTION FOR EXCAVATION AND/OR TRENCHING PROCEDURES

7. EXISTING PAVEMENT SHALL BE SAW OUT IN STRAIGHT LINES TO THE FULL DEPTH OF EXISTING PAVEMENT. ALL DEBRIS FROM REMOVAL OPERATIONS SHALL BE REMOVED FROM THE SITE AT THE TIME OF EXAVATION. STOCKPILING OF DEBRIS WILL NOT BE PERMITTED. 8.THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF EXISTING TOPOGRAPHIC INFORMATION AND UTILITY INVERT ELEVATIONS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. THE CONTRACTOR TO ENSURE 0.75% MINIMUM SLOPE AGAINST ALL ISLAND GUTTERS, CURBS; 1.0% MINIMUM ON ALL CONCRETE SURFACES, AND 1.5% ON ASPHALT SURFACES TO PREVENT PONDING. ANY DISCREPANCIES THAT MAY AFFECT PUBLIC SAFETY OR PROJECT COSTS MUST BE IDENTIFIED TO THE ENGINEER IN WRITING IMMEDIATELY. PROCEEDING WITH CONSTRUCTION WITHOUT NOTIFICATIONS IS DONE SO AT THE CONTRACTOR'S OWN RISK.

GRADING AND UTILITY NOTES

1. THE LOCATION OF ALL EXISTING AND PROPOSED SERVICES ARE APPROXIMATE AND MUST BE CONFIRMED INDEPENDENTLY WITH LOCAL UTILITY COMPANIES PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION OR EXCAVATION. ALL DISCREPANCIES SHALL BE REPORTED IMMEDIATELY IN WRITING TO THE PROJECT ENGINEER. CONSTRUCTION SHALL COMMENCE BEGINNIG AT THE LOWEST INVERT (POINT OF CONNECTION) AND PROGRESS UP GRADIENT. PROPOSED INTERFACE POINTS (CROSSINGS) WITH EXISTING UNDERGROUND INSTALLATIONS SHALL BE FIELD VERIFIED BY TEST PIT PRIOR TO COMMENCEMENT OF CONSTRUCTION. 2. ALL UTILITIES AND SERVICES INCLUDING BUT NOT LIMITED TO GAS, WATER, ELECTRIC, SANITARY AND STORM SEWER, TELEPHONE, CABLE, FIBER OPTIC CABLE, ETC. WITHIN THE LIMITS OF DISTURBANCE SHALL BE VERTICALLY AND HORIZONTALLY LOCATED. THE CONTRACTOR SHALL USE AND COMPLY WITH THE REQUIREMENTS OF THE APPLICABLE UTILITY NOTIFICATION SYSTEM TO LOCATE ALL THE UNDERGROUND UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRS OF DAMAGE TO ANY EXISTING UTILITIES DURING CONSTRUCTION AT NO COST TO THE OWNER. 3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW ALL OF THE DRAWINGS AND SPECIFICATIONS ASSOCIATED WITH THE PROJECT WORK SCOPE PRIOR TO THE INITIATION OF CONSTRUCTION. SHOULD THE CONTRACTOR FIND A CONFLICT WITH THE DOCUMENTS RELATIVE TO THE SPECIFICATIONS OR THE RELATIVE CODES, IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE PROJECT ENGINEER OF RECORD IN WRITING PRIOR TO THE START OF CONSTRUCTION, FAILURE BY THE CONTRACTOR TO NOTIFY THE PROJECT ENGINEER SHALL CONSTITUTE ACCEPTACE OF FULL RESPONSIBILITY BY THE CONTRACTOR TO COMPLETE THE SCOPE OF WORK AS DEFINED BY THE DRAWINGS AND IN FULL COMPLIANCE WITH LOCAL REGULATIONS AND LAWS. 4. THE CONTRACTOR IS RESPONSIBLE TO PROTECT AND MAINTAIN ALL ACTIVE SYSTEMS THAT ARE NOT BEING REMOVED/RELOCATED DURING SITE ACTIVITY.

5. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF SITE PLAN DOCUMENTS FOR EXACT BUILDING UTILITY CONNECTION LOCATIONS, DOOR ACCESSES, AND EXTERIOR GRADING. WHERE CONFLICTS EXIST WITH THESE SITE PLANS, THE ENGINEER IS TO BE NOTIFIED PRIOR TO CONSTRUCTION TO RESOLVE SAME.

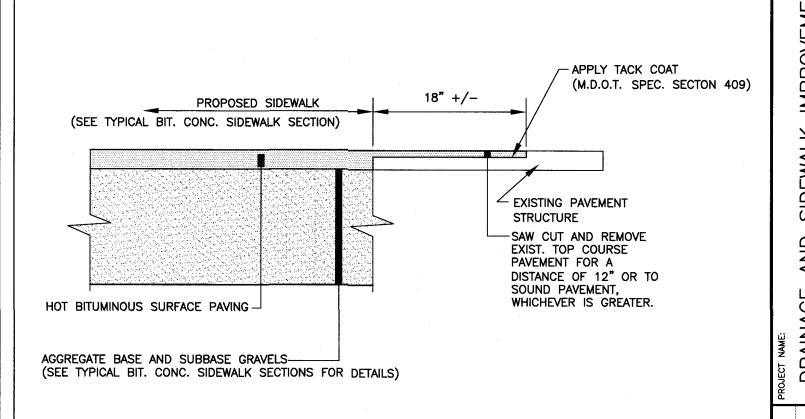
6. SITE GRADING SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND REPLACING SUITABLE MATERIALS AS SPECIFIED. ALL EXCAVATED OR FILLED MATERIAL SHALL BE COMPACTED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS. SUBASE MATERIAL FOR SIDEWALKS, CURB, OR ASPHALT SHALL BE FREE OF ORGANICS AND OTHER UNSUITABLE MATERIALS. SHOULD SUBBASE BE DEAMED UNSUITABLE BY OWNER'S REPRESENTATIVE, SUBASE IS TO BE REMOVED AND FILLED WITH APPROVED FILL MATERIAL. AND COMPACTED. 7. THE TOP OF EXISTING MANHOLES, INLET STRUCTURES, AND SANITARY CLEANOUT TOPS SHALL BE ADJUSTED, IF REQUIRED, TO MATCH PROPOSED GRADES IN ACCORDANCE WITH ALL APPLICABLE STANDARDS. 9. REFER TO SITE PLAN FOR ADDITIONAL NOTES.

10. IN CASE OF DISCREPANCIES BETWEEN PLANS OR RELATIVE TO OTHER PLANS, THE SITE PLAN WILL TAKE PRECEDANCE. IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY CONFLICTS.

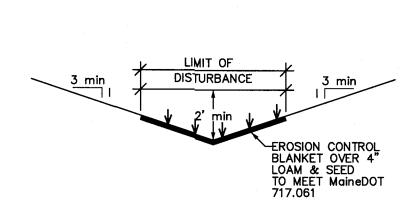
CROSS SLOPE 2% MAX/1.5% MIN 2" 9.5mm MDOT 703.09 Superpave Mix-50 Gyration Design/ LOAM & SEED C4" COMPACTED GRAVEL BASE (MDOT TYPE 'A') COMPACTED SUBGRADE

NOTE: BITUMINOUS PAVEMENT SHOULD BE COMPACTED TO 92 TO 97 PERCENT OF ITS THEORETICAL MAXIMUM DENSITY AS DETERMINED BY ASTM D-2041. TACK COAT IS RECOMMENDED. BASE AND SUBBASE MATERIALS SHOULD BE COMPACTED TO AT LEAST 95 PERCENT OF THEIR MAXIMUM DRY DENSITIES AS DETERMINED BY ASTM D-1557, SUBBASE FILL PLACED BELOW THE SUBBASE MATERIAL SHOULD BE COMPACTED TO AT LEAST 90 PERCENT OF ASTM D-1557.

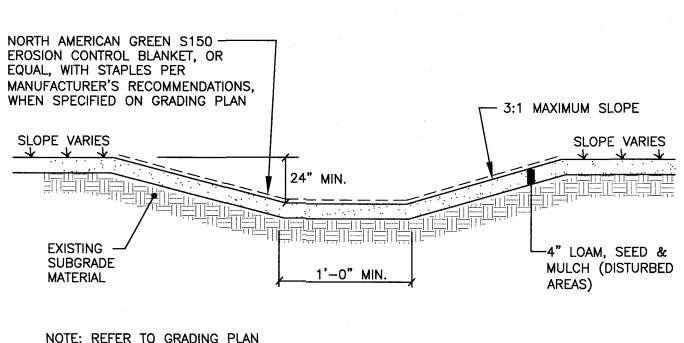
BIT. CONC. SIDEWALK DETAIL



TYPICAL SIDEWALK PAVEMENT JOINT



GRASSED SWALE-V DITCH



GRASSED SWALE-FLAT BOTTOM

FOR DITCH WIDTH AND SIDE

SLOPES

FREDS MARSHALL DRAWINGS 'NOT SEALED ARE' FOR PLANNING PURPOSES ONLY AND ARE NOT INTENDED FOR PERMITTING, BIDDING OR CONSTRUCTION 8 OF 8

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