

Drawing Name: P:\1801\18-067\Internat\Drawings\18-067 CIVIL N.dwg
Thu, 03 Jan 2019 - 11:36am

SITE PLAN

for
KAPPA DELTA
25 MADBURY DRIVE
DURHAM, NH
REVISED JANUARY 3, 2019

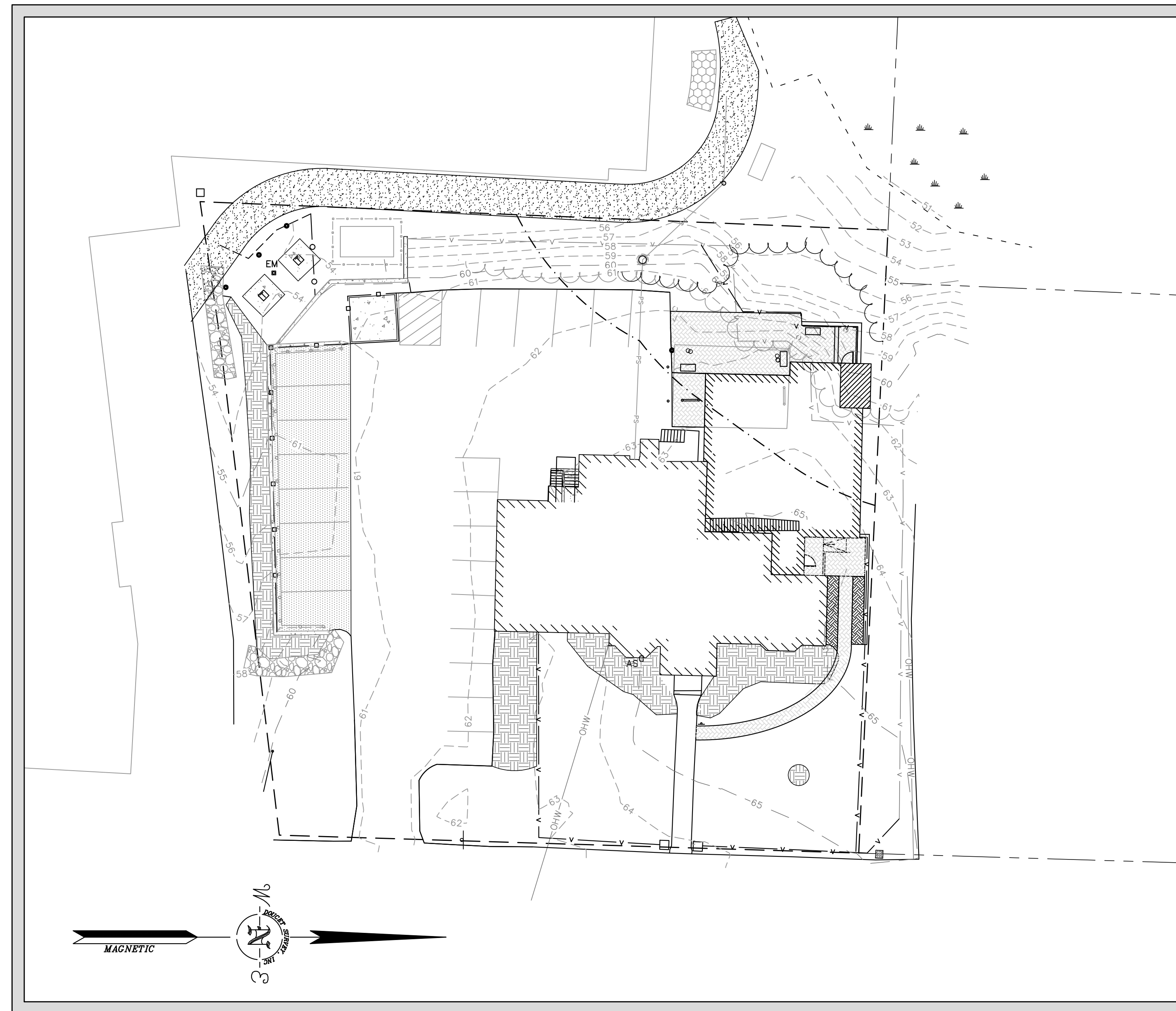
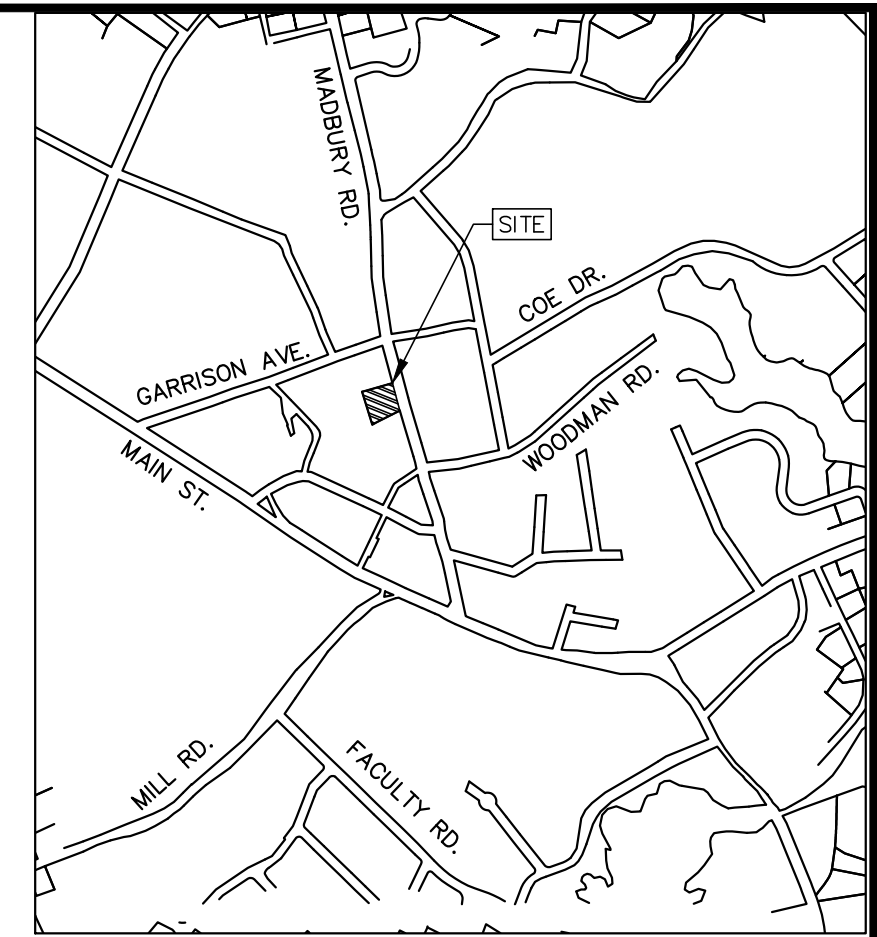


TABLE OF CONTENTS

TITLE	SHEET
TOPOGRAPHIC PLAN	1
PROPOSED SITE PLAN	C1
UTILITY & EROSION CONTROL PLAN	C2
CONSTRUCTION STAGING PLAN	C3
CONSTRUCTION DETAILS	D1-D3
LIGHTING PLAN	L1
LANDSCAPING PLAN	L2
ARCHITECTURAL PLANS	A1.1
ARCHITECTURAL PLANS	A3.1-A3.5
ARCHITECTURAL PLANS	A4.1-A4.3
ARCHITECTURAL PHASING PLANS	A2.1

OWNER

ALPHA SIGMA HOUSE CORP. OF
KAPPA DELTA SORORITY
C/O IN DEMAND REALTY
PO BOX 9
SOMERSWOTH, NH 03878
S.C.R.D. 1859, PAGE 0532

CIVIL ENGINEER

MJS ENGINEERING, P.C.
CIVIL • STRUCTURAL • ENVIRONMENTAL
5 RAILROAD ST., P.O. BOX 359
NEWMARKET, NH 03857
PHONE: (603) 659-4979, FAX: (603) 659-4627
E-MAIL: MJS@MJS-ENGINEERING.COM

SURVEYOR

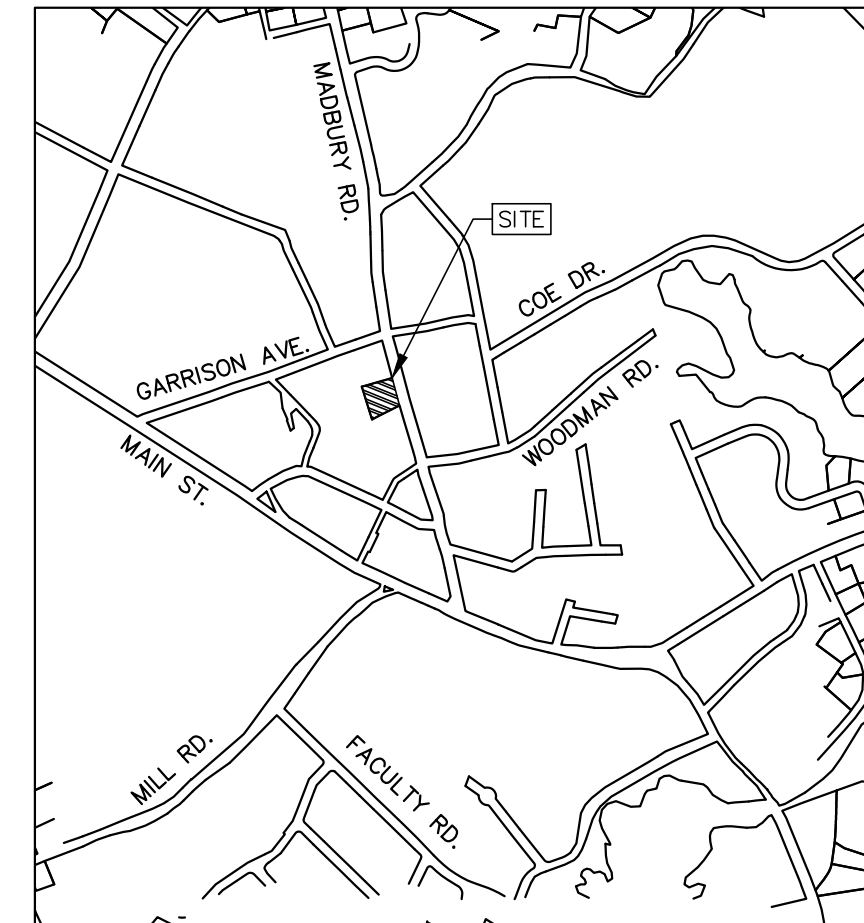
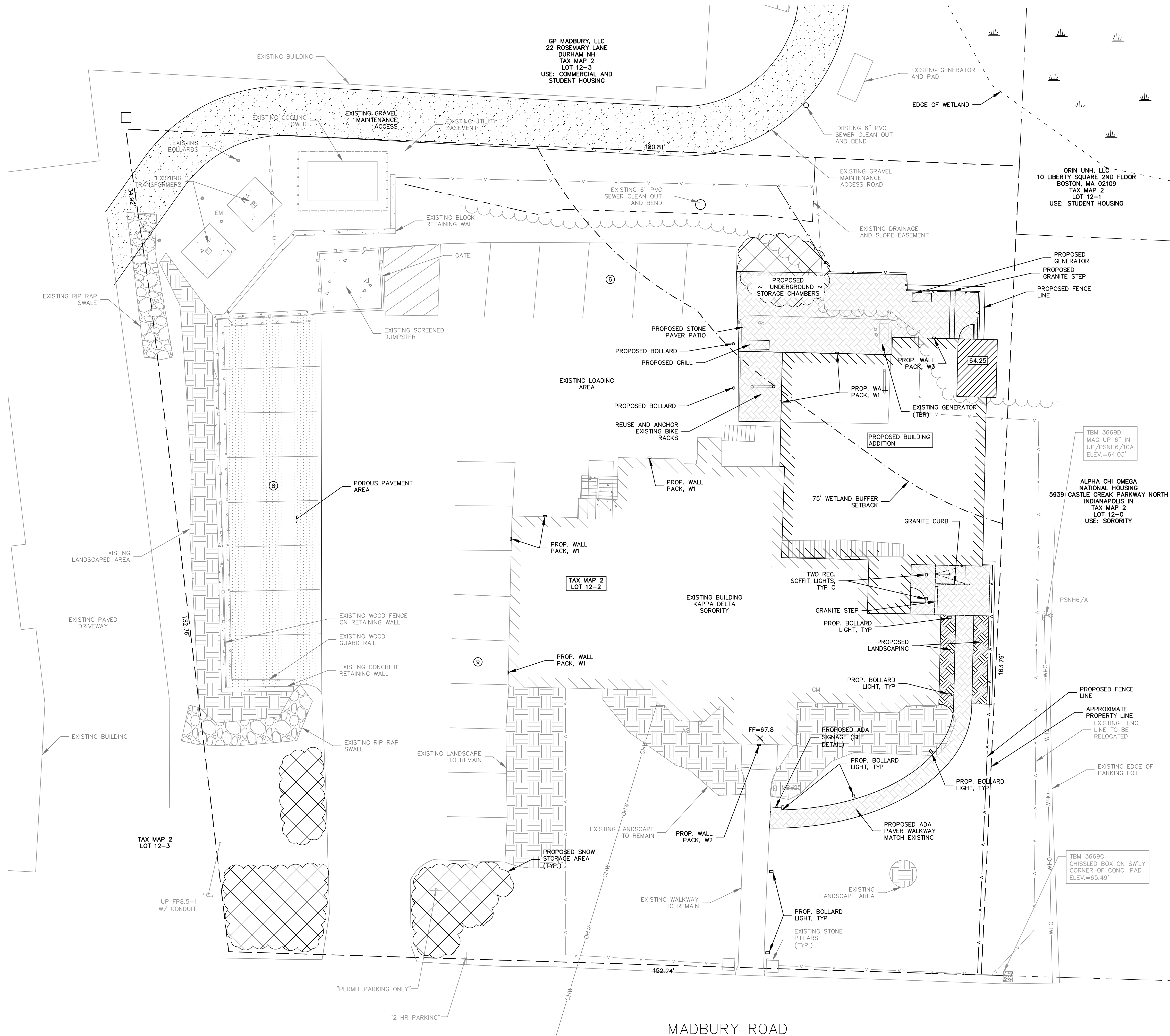
DOUCET SURVEY
Serving Your Professional Surveying & Mapping Needs
102 Kent Place, Newmarket, NH 03857
Voice (603) 659-6560, Data (603) 659-4118

ARCHITECT

AG ARCHITECTS
634 CENTRAL AVENUE
DOVER, NH 03820
PHONE: 603-743-3700

NO.	REVISIONS	DATE	INT.
3.	LANDSCAPING PLAN ADDED	1/3/19	MCS
2.	DESIGN REVISIONS UPDATED THRU 12/18/18	12/18/18	MCS
1.	DESIGN REVISIONS	11/29/18	MCS
0.	INITIAL SUBMISSION TO DURHAM PLANNING BOARD	11/19/18	EHK

Drawing Name: P:\1806\18-067\18-067.dwg
Thu, 03 Jan 2019 - 11:36am

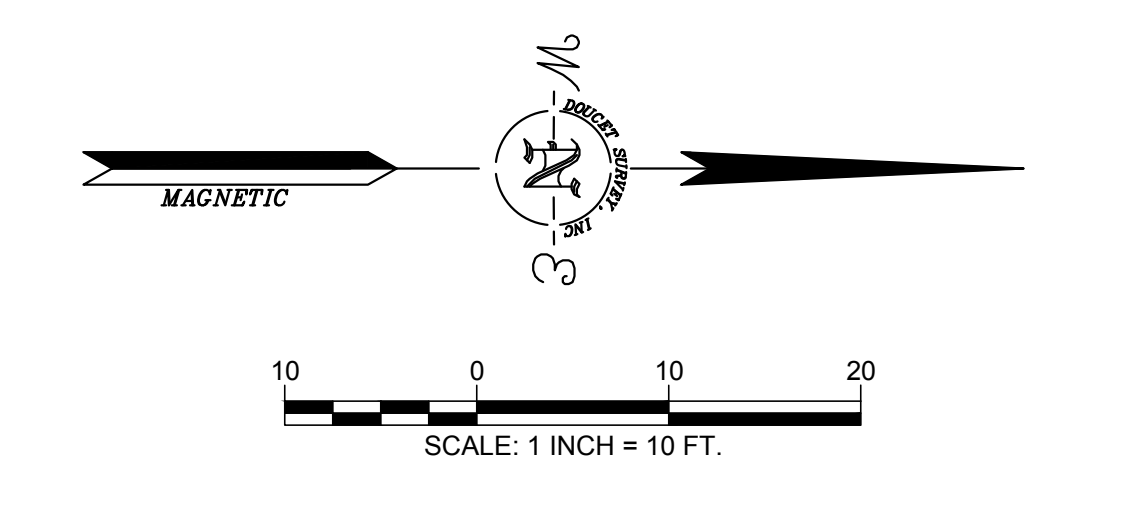


SITE DATA BLOCK:
 PLAN INTENT: THE PROPOSAL IS TO CONSTRUCT AN ADDITION TO THE EXISTING BUILDING ON THE SUBJECT PARCEL.
 ZONE: CB (CENTRAL BUSINESS)
 DIMENSIONAL REQUIREMENTS:
 MIN. LOT AREA 5,000 sq.ft.
 MIN. FRONTAGE 50 ft.
 MIN. FRONT/SIDE/REAR SETBACK N/A
 SETBACK REQUIREMENTS ARE OUTLINED IN THE "DEVELOPMENT STANDARD" SECTION OF THE DURHAM ZONING ORDINANCE.
 THE PROPERTY IS SUBJECT TO ANY AND ALL APPLICABLE ZONING REGULATIONS NOT OUTLINED ABOVE.
 THE WOOD APPLIES TO THIS PROPERTY.

- GENERAL NOTES:**
- OWNER OF RECORD:
ALPHA CHI OMEGA NATIONAL HOUSING
KAPPA DELTA SORORITY
C/O IN DEMAND REALTY
PO BOX 9
SOMERSWOTH, NH 03878
S.C.R.D. 1859, PAGE 0532
 - LOT AREA: 0.63 ACRES (27429± S.F.)
 - FIELD SURVEY PERFORMED BY C.A.N. & E.J.S. DURING 9/18 USING A TRIMBLE S7 TOTAL STATION WITH A TRIMBLE TSC3 DATA COLLECTOR AND A SOKKIA B21 AUTO LEVEL. TRAVERSE ADJUSTMENT BASED ON LEAST SQUARE ANALYSIS.
 - IMPERVIOUS SURFACE RATIO:
EXISTING = 49.2% (13,501 S.F.)
PROPOSED = 57.9% (15,888 S.F.)
DISCONNECTED IMPERVIOUS COVER = 0 S.F.
EFFECTIVE IMPERVIOUS AREA (EIA) = 15,888 S.F.
 - HORIZONTAL DATUM BASED ON MAGNETIC OBSERVATION.
 - VERTICAL DATUM IS BASED ON NAVD88 PER DISK UNH43 (ELEVATION=76.72').
 - PROPER FIELD PROCEDURES WERE FOLLOWED IN ORDER TO GENERATE CONTOURS AT 1' INTERVALS. ANY MODIFICATION OF THIS INTERVAL WILL DIMINISH THE INTEGRITY OF THE DATA, AND DUCGET SURVEY, INC. WILL NOT BE RESPONSIBLE FOR ANY SUCH ALTERATION PERFORMED BY THE USER.
 - UNDERGROUND UTILITIES SHOWN HEREON ARE BASED ON OBSERVABLE PHYSICAL EVIDENCE AND PAINT MARKS FOUND ON-SITE.
 - THE ACCURACY OF MEASURED UTILITY INVERTS AND PIPE SIZES/TYPES IS SUBJECT TO NUMEROUS FIELD CONDITIONS, INCLUDING: THE ABILITY TO MAKE VISUAL OBSERVATIONS, DIRECT ACCESS TO THE VARIOUS ELEMENTS, MANHOLE CONFIGURATION, ETC.
 - ALL ELECTRIC, GAS, TEL, WATER, SEWER AND DRAIN SERVICES ARE SHOWN IN SCHEMATIC FASHION, THEIR LOCATIONS ARE NOT PRECISE OR NECESSARILY ACCURATE. NO WORK WHATSOEVER SHALL BE UNDERTAKEN ON THIS SITE USING THIS PLAN TO LOCATE THE ABOVE SERVICES. CONSULT WITH THE PROPER AUTHORITIES CONCERNED WITH THE SUBJECT SERVICE LOCATIONS FOR INFORMATION REGARDING SUCH. CALL DIG-SAFE AT 1-888-DIG-SAFE.
 - THIS IS NOT A BOUNDARY SURVEY AND SHALL NOT BE USED AS SUCH. APPROXIMATE PROPERTY LINES SHOWN HEREON ARE BASED ENTIRELY ON THE REFERENCE PLAN.
 - THE FEMA FLOOD MAP FOR THIS AREA IS MAP 33017C0318E EFFECTIVE 9/30/2015 AND THIS PARCEL IS NOT WITHIN THE 100 YEAR FLOOD ZONE.

REFERENCE PLANS:

- "RE-SUBDIVISION OF LAND IN DURHAM" DATED AUGUST 24, 1980 BY JOHN W. DURGIN ASSOCIATES, INC. S.C.R.D. PLAN 21-86.



FINAL APPROVAL BY DURHAM PLANNING BOARD.
 CERTIFIED BY MICHAEL BEHRENDT, TOWN PLANNER
 CERTIFIED _____
 DATE _____

NO.	REVISIONS	DATE	INT.
4.	LIGHTING AND BIKE RACK REVISIONS	1/3/19	MCS
3.	STORMWATER DRAINAGE REVISION	12/18/18	MCS
2.	DESIGN REVISION FOR CONSERVATION COMMISSION	12/17/18	MCS
1.	DESIGN REVISION	11/29/18	EHK
0.	INITIAL SUBMISSION TO DURHAM PLANNING BOARD	11/19/18	EHK

SEAL
 MICHAEL BEHRENDT
 TOWN PLANNER
 18-067 CIVIL N.dwg

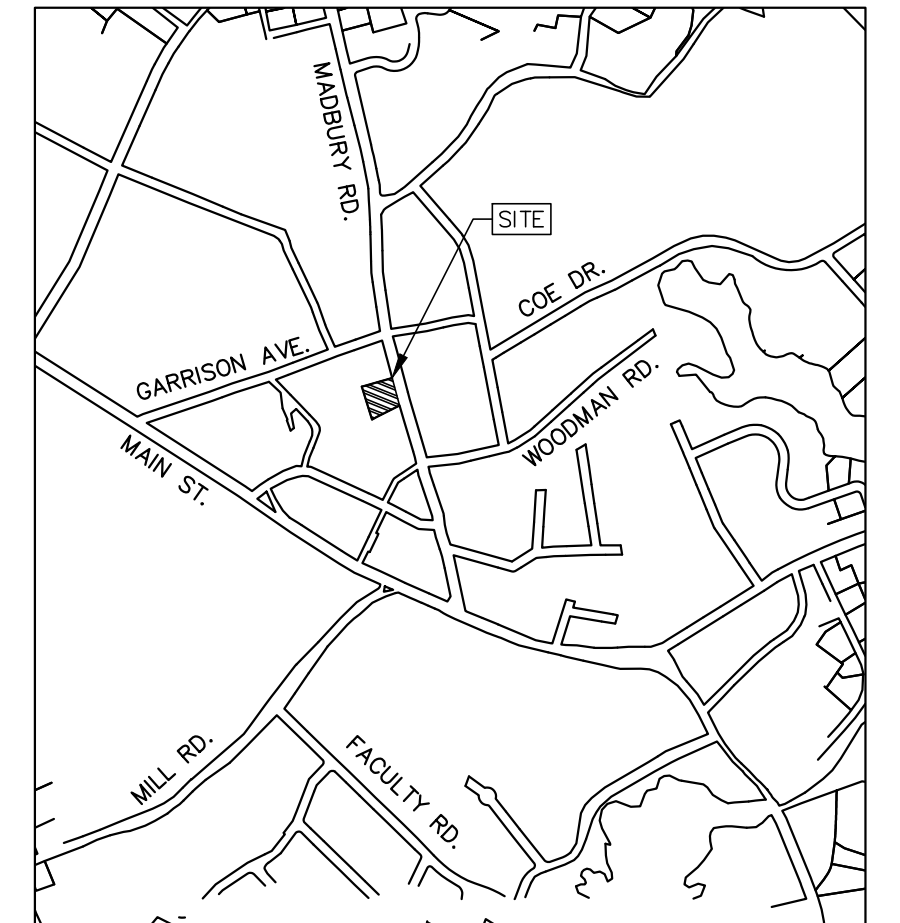
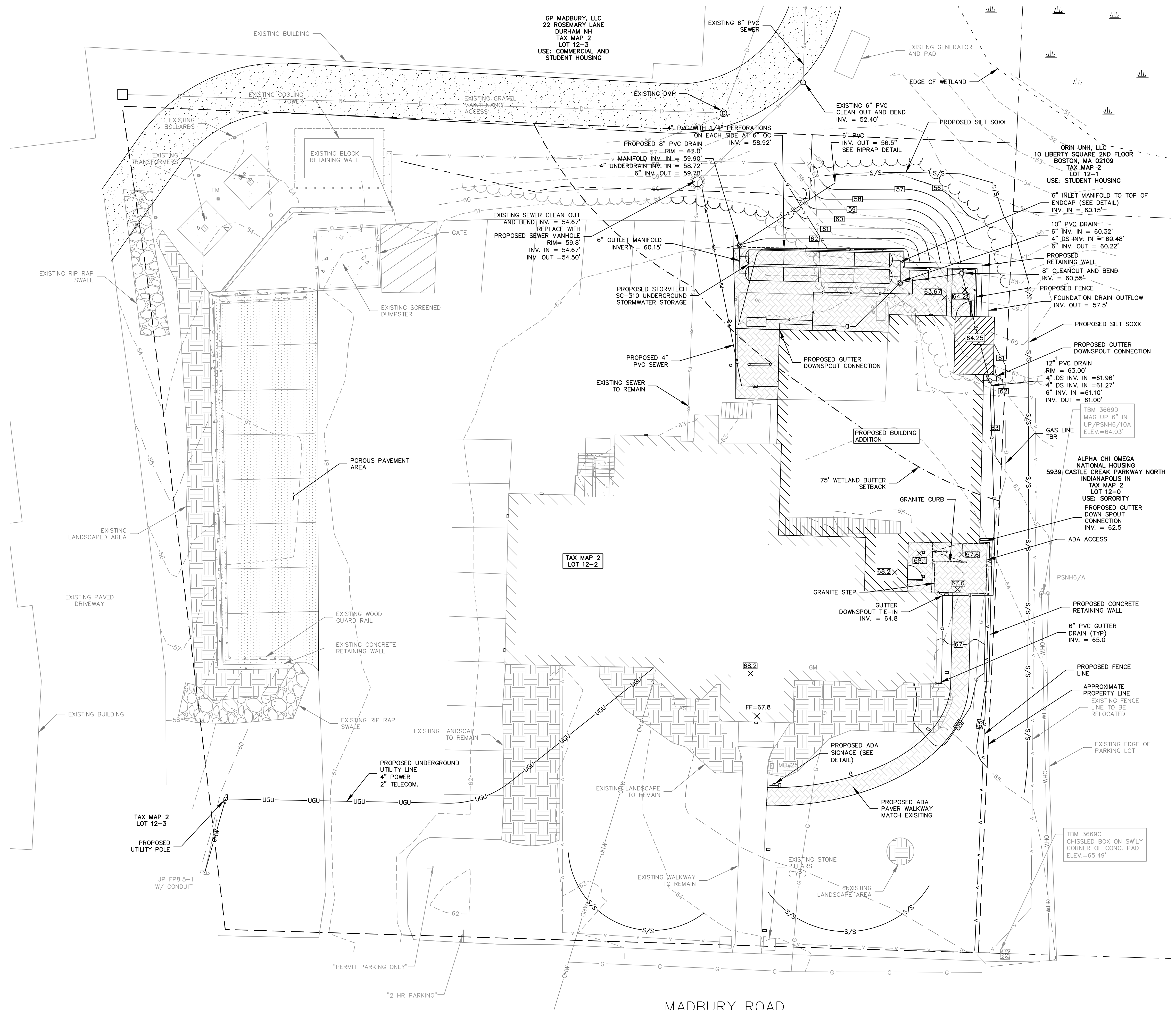
SITE PLAN
 prepared for
 KAPPA DELTA
 TAX MAP 2, LOT 12-2
 25 MADBURY ROAD
 DURHAM, NH

MJS ENGINEERING, P.C.
 CIVIL - STRUCTURAL - ENVIRONMENTAL
 5 Railroad St., P.O. Box 359
 Somersworth, NH 03878
 PHONE: (603) 659-4579, FAX: (603) 659-4627
 E-MAIL: MJS@MJS-ENGINEERING.COM

JOB: 18-067

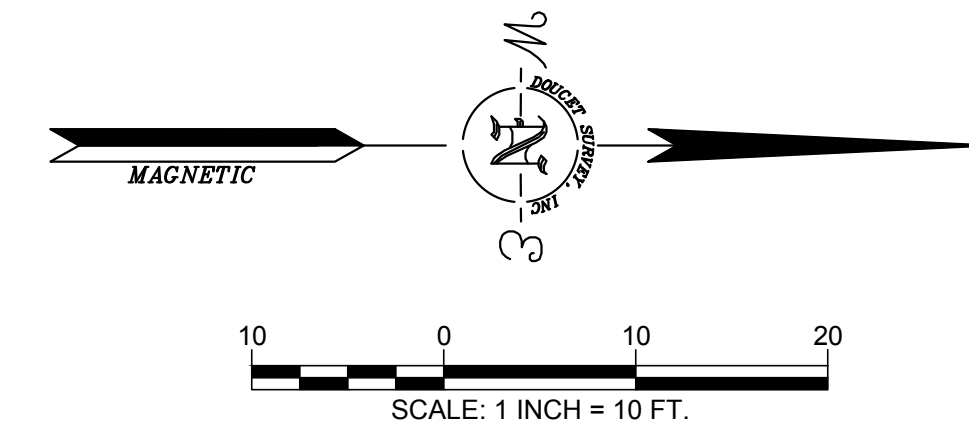
C1

Drawing Name: P:\18067\18-067\18-067.dwg
Thu, 03 Jan 2019 - 11:36am



- GRADING, DRAINAGE, UTILITY & EROSION CONTROL NOTES**
- ALL EROSION AND SEDIMENTATION CONTROL STRUCTURES SHALL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE VEGETATION IS ESTABLISHED AND THE GROUND SURFACE IS STABILIZED. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE MONITORED BY THE APPLICANT ON A PERIODIC BASIS DURING CONSTRUCTION AND ANY DEFICIENCIES SHALL BE CORRECTED AS SOON AS POSSIBLE.
 - REFER TO CONSTRUCTION AND SEQUENCING AND EROSION CONTROL NOTES ON SHEET D1.
 - ALL DRIVEWAY AND PARKING AREA WORK SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, AS PUBLISHED BY THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION.
 - ALL DISTURBED AREAS NOT PAVED OR OTHERWISE TREATED SHALL RECEIVE 4" OF LOAM. SEED AND MULCH AS SPECIFIED IN THE NOTES ON SHEET D1.
 - COMPACTION REQUIREMENTS:

LOCATION:	MINIMUM COMPACTION*
BELOW PAVED OR CONCRETE AREAS	95%
TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL	95%
BELOW LOAM AND SEED AREAS	90%
 - ADJUST ALL MANHOLES, CATCH BASINS ETC. WITHIN LIMITS OF WORK TO FINISHED GRADE.
 - EROSION CONTROL DEVICES SHALL BE INSPECTED AFTER EACH RAIN STORM OF 0.25 INCHES OR GREATER. DAMAGED EROSION CONTROL DEVICES SHALL BE REPAIRED/MODIFIED AS NECESSARY.
 - ALL TEMPORARY LOAM STOCKPILES SHALL RECEIVE TEMPORARY EROSION CONTROL MEASURES.



FINAL APPROVAL BY DURHAM PLANNING BOARD.
 CERTIFIED BY MICHAEL BEHRENDT, TOWN PLANNER
 CERTIFIED _____
 DATE _____

1/3/19	WCS	DATE	INT.
12/18/18	WCS	REVISIONS	
12/17/18	WCS	NO.	
11/29/18	WCS	NO.	
11/19/18	WCS	NO.	

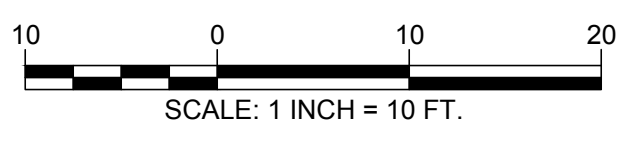
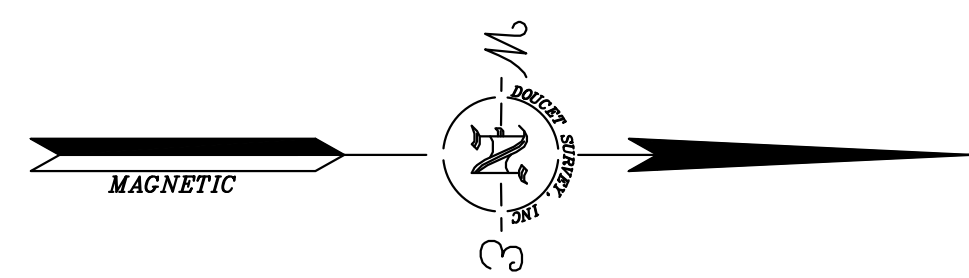
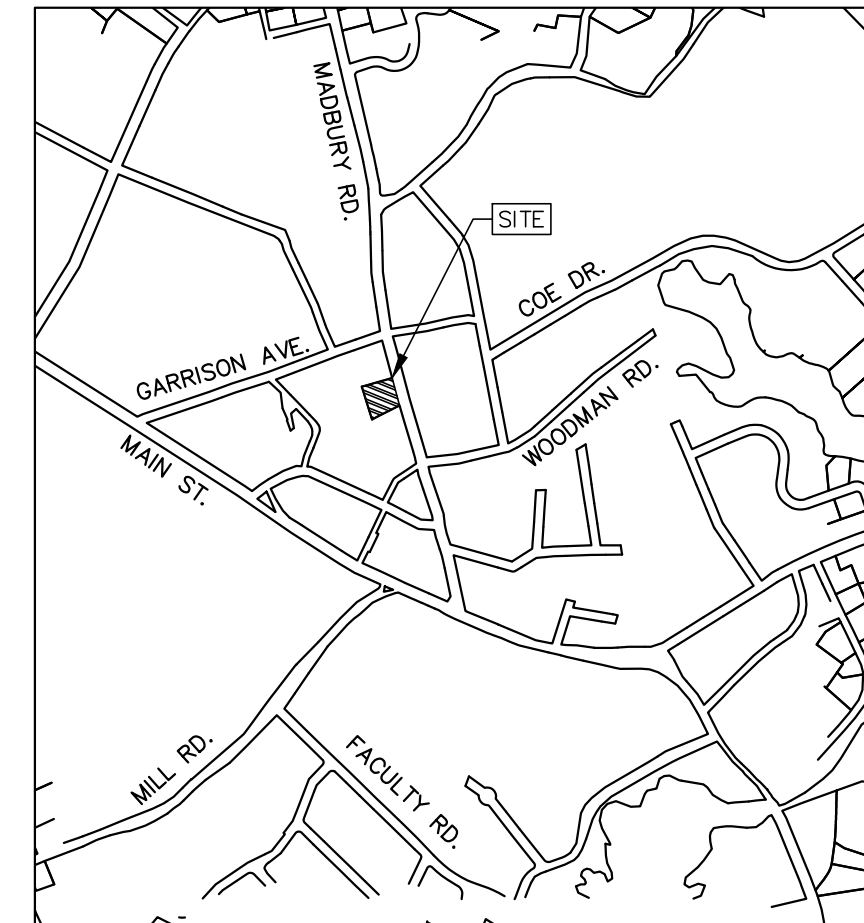
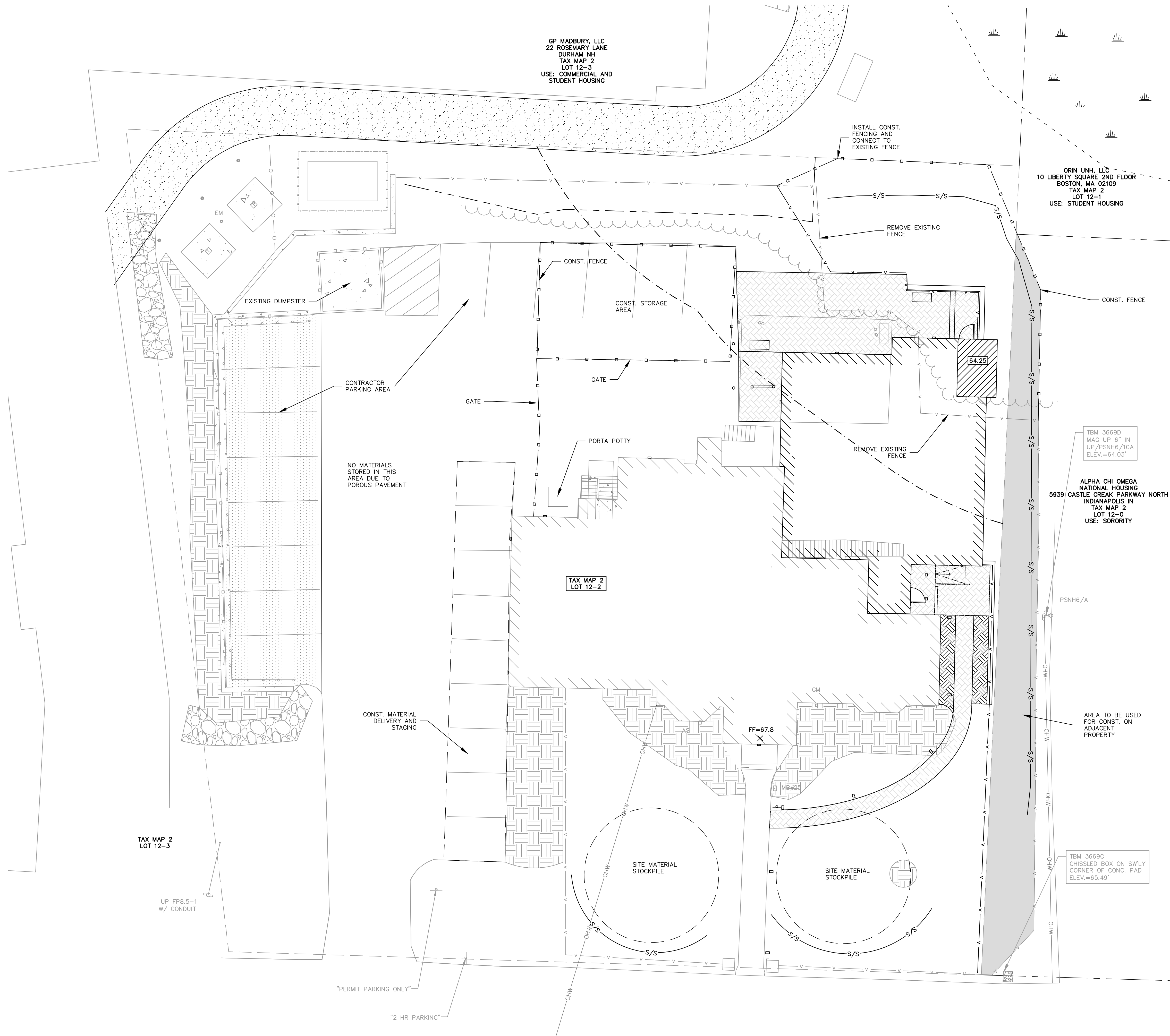
PROPOSED GRADING, DRAINAGE AND UTILITY PLAN
 prepared for
 KAPPA DELTA
 TAX MAP 2, LOT 12-2
 25 MADBURY ROAD
 DURHAM, NH

MJS ENGINEERING, P.C.
 CIVIL • STRUCTURAL • ENVIRONMENTAL
 5 Railroad St., P.O. Box 359
 Durham, NH 03824
 PHONE: (603) 659-4379, FAX: (603) 659-4627
 E-MAIL: MJS@MJS-ENGINEERING.COM

JOB: 18-067

C2

Drawing Name: F:\1806\18-067\Intern\Drawings\18-067 CIVIL N.dwg
Thu, 03 Jan 2019 - 11:36am



DATE: 11/19/18	DESIGNED BY: MJS	DRAWN BY: MGS	APPROVED BY: MJS	DWG FILE: 18-067 Civil N.dwg	NO.		
SCALE: 1" = 10'	<p style="text-align: center;">CONSTRUCTION STAGING PLAN</p> <p style="text-align: center;">prepared for KAPPA DELTA TAX MAP 2, LOT 12-2 25 MADBURY ROAD DURHAM, NH</p>						
JOB: 18-067							
C3							
							REVISIONS DATE INT.

Drawing Name: P:\18067\18-067\18-067.dwg
Thu, 03 Jan 2019 - 11:36am

CONSTRUCTION SEQUENCING AND EROSION CONTROL NOTES:

AREA OF DISTURBANCE/STABILIZATION

- A. THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL THE AREA OF UNSTABILIZED SOIL EXCEED 5 ACRES AT ANY ONE TIME BEFORE THE AREA IS STABILIZED.
- B. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
 - B.1. IN AREAS TO BE PAVED, BASE COURSE GRAVELS MEETING THE GRADATION REQUIREMENTS OF NHDOT STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION, 2006, ITEM NO. 304-1 OR 304-2 HAVE BEEN INSTALLED;
 - B.2. IN AREAS NOT TO BE PAVED
 - B.2.1. A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
 - B.2.2. A MINIMUM OF 3" OF NON-EROSIVE MATERIAL, SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED WITH FLOWING WATER;
 - B.2.3. EROSION CONTROL BLANKETS HAVE BEEN INSTALLED IN ACCORDANCE WITH ENV-WQ 1506.03.
- C. ALL DISTURBED AREAS SHALL BE TEMPORARILY STABILIZED WITHIN 45 DAYS AND PERMANENTLY STABILIZED NO LATER THAN 3 DAYS AFTER FINAL GRADING.

EROSION CONTROL PRACTICES

- A. INSTALLATION
 - A.1. INSTALL ALL EROSION CONTROLS AS SHOWN ON THE GRADING PLAN, TYPICAL DETAILS, AND IN CONFORMANCE WITH THE EROSION AND SEDIMENT CONTROL NOTES ON THIS PAGE. MANUFACTURER'S SPECIFICATIONS SHALL BE FOLLOWED.
- B. INSPECTION
 - B.1. INSPECT ALL EROSION CONTROLS WEEKLY AND AFTER EVERY RAIN EVENT OF 0.25 INCHES OR GREATER UNLESS OTHERWISE NOTED.
 - B.2. TEMPORARY STABILIZATION PRACTICES SHALL BE INSPECTED ONCE PER WEEK DURING CONSTRUCTION UNTIL EXPOSED SURFACES ARE STABILIZED.
 - B.3. ANY SIGNS OF RILL OR GULLY EROSION SHALL BE IMMEDIATELY REPAIRED.
- C. MAINTENANCE
 - C.1. MAINTAIN EROSION CONTROLS PER THE TYPICAL DETAILS AND IN CONFORMANCE WITH THE EROSION AND SEDIMENT CONTROL NOTES ON THIS PAGE.
- D. REMOVAL
 - D.1. ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED ONCE 85% VEGETATIVE COVER HAS BEEN ESTABLISHED.
 - D.2. AFTER REMOVAL, ALL DISTURBED AREAS SHALL BE REGRADED, FERTILIZED, AND RESEEDED. MONITOR TO ENSURE VEGETATIVE GROWTH IS ESTABLISHED AND REPAIR AS NEEDED UNTIL MINIMUM OF 85% VEGETATIVE COVER IS ESTABLISHED.

COLD WEATHER SITE STABILIZATION

- A. SHALL BE UTILIZED BETWEEN NOVEMBER 30TH AND MAY 1ST. THE AREA OF EXPOSED, UNSTABILIZED SOIL SHALL BE LIMITED TO 1 ACRE AND SHALL BE PROTECTED AGAINST EROSION BY THE FOLLOWING METHODS PRIOR TO ANY THAW OR SPRING MELT EVENT.
 - B. ALL PROPOSED VEGETATED AREAS HAVING A SLOPE OF LESS THAN 15% WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY NOVEMBER 30TH, OR WHICH ARE DISTURBED AFTER NOVEMBER 30TH, SHALL BE SEEDING AND COVERED WITH 3-4 TONS OF HAY OR STRAW MULCH PER ACRE SECURED WITH ANCHORED NETTING OR TACKIFIER, OR 2 INCHES OF EROSION CONTROL MIX MEETING THE FOLLOWING CRITERIA:
 - B.1. THE MIX SHALL HAVE A PARTICLE SIZE BETWEEN 25% AND 65%, DRY WEIGHT BASIS, AND BE FIBROUS AND ELONGATED SUCH AS FROM SHREDDED BARK, STUMP GRINDINGS, CORQUALENE MANUFACTURED PRODUCTS, WOOD AND BARK CHIPS, GROUND CONSTRUCTION DEBRIS, OR REPROCESSED WOOD PRODUCTS SHALL NOT BE USED AS THE ORGANIC MATERIAL;
 - B.2. THE MIX SHALL NOT CONTAIN SILTS, CLAYS, OR FINE SANDS;
 - B.3. THE MIX SHALL HAVE A PARTICLE SIZE BY WEIGHT OF 100% PASSING A 3-INCH SCREEN, 90% TO 100% PASSING A 1-INCH SCREEN, 70% TO 100% PASSING A 0.75-INCH SCREEN, AND 30% TO 75% PASSING A 0.25 INCH SCREEN;
 - B.4. THE MIX PH SHALL BE BETWEEN 5.0 AND 8.0;
- C. ALL PROPOSED VEGETATED AREAS HAVING A SLOPE GREATER THAN 15% WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY NOVEMBER 30TH, OR WHICH ARE DISTURBED AFTER NOVEMBER 30TH, SHALL BE SEEDING AND COVERED WITH A PROPERLY INSTALLED AND ANCHORED EROSION CONTROL BLANKET OR WITH A MINIMUM 4 INCH THICK NESS OF EROSION CONTROL MIX MEETING THE CRITERIA SPECIFIED ABOVE IN (B)(1-5);
 - D. INSTALLATION OF ANCHORED HAY MULCH OR EROSION CONTROL MIX, MEETING THE CRITERIA SPECIFIED IN (B)(1-5) SHALL NOT OCCUR OVER SNOW OF GREATER THAN 1-INCH IN DEPTH.
 - E. INSTALLATION OF EROSION CONTROL BLANKETS SHALL NOT OCCUR OVER SNOW OF GREATER THAN 1 INCH IN DEPTH OR ON FROZEN GROUND.
 - F. ALL PROPOSED STABILIZATION IN ACCORDANCE WITH (A) OR (B) SHALL BE COMPLETED WITHIN A DAY OF ESTABLISHING THE GRADE THAT IS FINAL OR THAT OTHERWISE WILL EXIST FOR MORE THAN 5 DAYS.
 - G. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY NOVEMBER 30TH, OR WHICH ARE DISTURBED AFTER NOVEMBER 30TH, SHALL BE STABILIZED WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.
 - H. AFTER NOVEMBER 15TH, INCOMPLETE ROAD OR PARKING SURFACES WHERE ACTIVE CONSTRUCTION OF THE ROAD OR PARKING AREA HAS STOPPED FOR THE WINTER SEASON SHALL BE PROTECTED WITH A MINIMUM 3-INCH LAYER OF BASE COURSE GRAVELS MEETING THE GRADATION REQUIREMENTS OF NHDOT STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION, 2006, ITEM NO. 304-1 OR 304-2.

TEMPORARY VEGETATION

- A. SITE PREPARATION
 - A.1. INSTALL EROSION AND SEDIMENT CONTROL MEASURES AS SPECIFIED ABOVE.
 - A.2. ENSURE RUNOFF IS DIVERTED FROM SEEDING AREA.
 - A.3. ON SLOPES OF 4:1 OR STEEPER, CREATE HORIZONTAL GROOVES PERPENDICULAR TO THE DIRECTION OF THE SLOPE TO CATCH SEED AND REDUCE RUNOFF.
- B. SEED BED PREPARATION
 - B.1. REMOVE STONES AND TRASH FROM AREA TO BE SEEDING.
 - B.2. COMPACTED SOIL SHALL BE LOOSENED TO A DEPTH OF 2 INCHES BEFORE APPLYING FERTILIZER, LIME, AND SEED.
 - B.3. LOW PHOSPHATE, SLOW RELEASE NITROGEN OR LIMESTONE SHALL BE USED. APPLY 10-0-10 LOW PHOSPHATE FERTILIZER AT A RATE OF 600 LBS PER ACRE. APPLY LIMESTONE (EQUIVALENT TO 50 PERCENT CALCIUM PLUS MAGNESIUM OXIDE) AT A RATE OF 3 TONS PER ACRE.
- C. SEEDING
 - C.1. SEED PER THE FOLLOWING RECOMMENDATIONS

SEASON	APPLICATION DATE	MIXTURE TYPE	QUANTITY (lb./Ac.)
EARLY SPRING	NO LATER THAN 5/15	OATS	80
LATE SPRING/ FALL	4/1 TO 6/1 & 8/15 TO 9/15	PERENNIAL RYE	30
EARLY SPRING/ FALL	4/1 TO 5/15 & 8/15 TO 9/15	ANNUAL RYE	40
FALL	8/15 TO 9/15	WINTER RYE	112

- C.2. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULPACKER TYPE SEEDER OR HYDROSEEDER (SLURRY INCLUDING SEED AND FERTILIZER). NORMAL SEEDING DEPTH IS FROM 1/4 TO 1/2 INCH. HYDROSEEDING THAT INCLUDES MULCH MAY BE LEFT ON SOIL SURFACE. SEEDING RATES MUST BE INCREASED 10% WHEN HYDROSEEDING.
- C.3. TEMPORARY SEEDING SHOULD TYPICALLY OCCUR PRIOR TO SEPTEMBER 15TH. AREAS SEEDING BETWEEN MAY 15TH AND AUGUST 15TH SHOULD BE COVERED WITH HAY OR STRAW MULCH. VEGETATED GROWTH COVERING AT LEAST 85% OF THE DISTURBED AREA SHOULD BE ACHIEVED PRIOR TO OCTOBER 15TH. IF THIS CONDITION IS NOT ACHIEVED, IMPLEMENT OTHER TEMPORARY STABILIZATION MEASURES FOR OVERWINTER PROTECTION.
- D. MAINTENANCE
 - D.1. TEMPORARY SEEDING SHOULD BE INSPECTED WEEKLY AND AFTER ANY RAINFALL EXCEEDING 1/2 INCH IN 24 HOURS ON ACTIVE CONSTRUCTION SITES. TEMPORARY SEEDING SHOULD ALSO BE INSPECTED JUST PRIOR TO SEPTEMBER 15, TO ASCERTAIN WHETHER ADDITIONAL SEEDING IS REQUIRED TO PROVIDE STABILIZATION OVER THE WINTER PERIOD.
 - D.2. BASED ON INSPECTION, AREAS SHOULD BE RESEEDING TO ACHIEVE FULL STABILIZATION OF EXPOSED SOILS. IF IT IS TOO LATE IN THE PLANTING SEASON TO APPLY ADDITIONAL SEED, THEN OTHER TEMPORARY STABILIZATION MEASURES SHOULD BE IMPLEMENTED.
 - D.3. AT A MINIMUM, 85% OF THE SOIL SURFACE SHOULD BE COVERED BY VEGETATION. IF ANY EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHOULD BE MADE AND AREAS SHOULD BE RESEEDING, WITH OTHER TEMPORARY MEASURES (E.G., MULCH) USED TO PROVIDE EROSION PROTECTION DURING THE PERIOD OF VEGETATION ESTABLISHMENT.

SOIL STOCKPILES

- A. GENERAL
 - A.1. PLACE IN THE LOCATIONS SHOWN ON THE PLAN. ADDITIONAL STOCKPILES MUST BE LOCATED 50 FEET FROM DITCHES AND CULVERT INLETS.
- B. PROTECTION OF STOCKPILES
 - B.1. PROTECT SOIL AND AGGREGATE STOCKPILES WITH TEMPORARY PERIMETER SEDIMENT BARRIER SUCH AS SILT FENCE OR SILT SOCK.
 - B.2. COVER ACTIVE STOCKPILES WITH ANCHORED PROTECTIVE COVERING PRIOR TO EXPECTED STORM EVENTS.
 - B.3. INACTIVE STOCKPILES SHALL BE COVERED WITH ANCHORED TARPS OR TEMPORARILY SEEDING AND MULCHED PER THE TEMPORARY VEGETATION AND MULCHING NOTES ON THIS PAGE.
 - B.4. STOCKPILES THAT ARE A SOURCE OF DUST SHALL BE COVERED.

DUST CONTROL

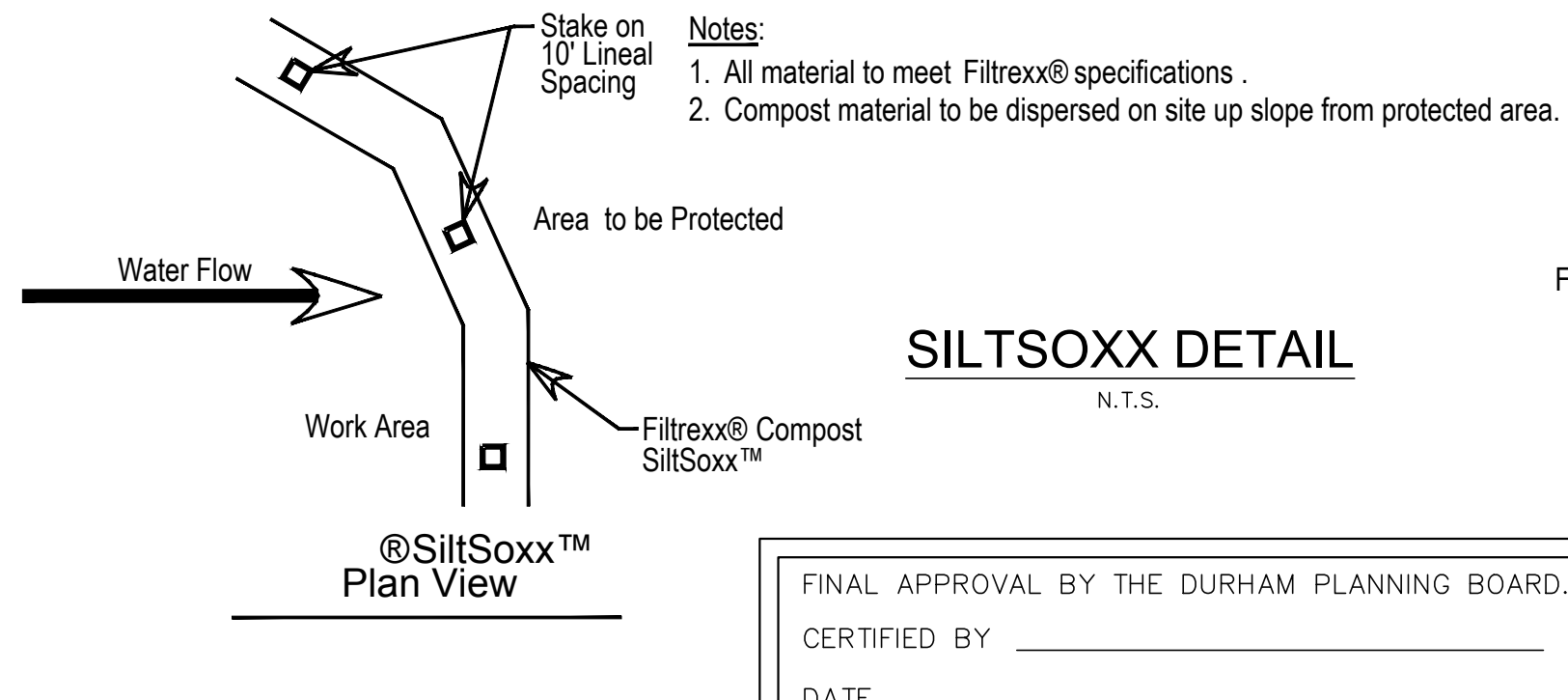
- A. DUST SHALL BE CONTROLLED ON SITE DURING CONSTRUCTION BY IMPLEMENTING THE FOLLOWING DUST CONTROL MEASURES
 - A.1. MULCHING AND VEGETATIVE COVER TO REDUCE DUST.
 - A.2. MECHANICAL SWEEPERS AND FINE WATER SPRAYS.
 - A.3. COVER SURFACES WITH CRUSHED STONE OR COARSE GRAVEL.

PERMANENT VEGETATION

- A. SITE PREPARATION
 - A.1. REFER TO SITE PREPARATION FOR TEMPORARY SEEDING.
- B. SEED BED PREPARATION
 - B.1. 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.
 - B.2. REMOVE FROM THE SURFACE ALL STONES 2 INCHES OR LARGER IN ANY DIMENSION, REMOVE ALL OTHER DEBRIS, SUCH AS WIRE, CABLE, TREE ROOTS, CONCRETE, CLOUDS, LUMPS, TRASH OR OTHER UNSUITABLE MATERIAL. INSPECT SEEDBED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT THE SOIL COMPACTED, THE AREA MUST BE TILLED AND FIRMED AS ABOVE.
 - B.4. WHERE THE SOIL HAS BEEN COMPACTED BY CONSTRUCTION OPERATIONS, LOOSEN SOIL TO A DEPTH OF 2 INCHES BEFORE APPLYING FERTILIZER, LIME AND SEED.
 - B.5. LOW PHOSPHATE, SLOW RELEASE NITROGEN OR LIMESTONE SHALL BE USED. APPLY 10-0-10 LOW PHOSPHATE FERTILIZER AT A RATE OF 600 LBS PER ACRE. APPLY LIMESTONE (EQUIVALENT TO 50 PERCENT CALCIUM PLUS MAGNESIUM OXIDE) AT A RATE OF 3 TONS PER ACRE.
- C. SEEDING
 - C.3. UNLESS OTHERWISE NOTED, GRASS SEED MIXTURE 'C' SHALL BE APPLIED AT THE SPECIFIED RATE AS NOTED IN THE 'SEED MIXTURES FOR PERMANENT VEGETATION' TABLE.
 - C.4. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULPACKER TYPE SEEDER OR HYDROSEEDER (SLURRY INCLUDING SEED AND FERTILIZER). NORMAL SEEDING DEPTH IS FROM 1/4 TO 1/2 INCH. HYDROSEEDING THAT INCLUDES MULCH MAY BE LEFT ON SOIL SURFACE. SEEDING OPERATIONS SHOULD BE ON THE CONTOUR.
 - C.5. WHERE FEASIBLE, EXCEPT WHERE EITHER A CULPACKER TYPE SEEDER OR HYDROSEEDER IS USED, THE SEEDBED SHOULD BE FIRMED FOLLOWING SEEDING OPERATIONS WITH A ROLLER, OR LIGHT DRAG.
 - C.6. WHEN HYDROSEEDING (HYDRAULIC APPLICATION), PREPARE THE SEEDBED AS SPECIFIED ABOVE OR BY HAND RAKING TO LOOSEN AND SMOOTH THE SOIL AND TO REMOVE SURFACE STONES LARGER THAN 2 INCHES IN DIAMETER.
 - C.7. SLOPES MUST BE NO STEEPER THAN 2 TO 1.
 - C.8. LIME AND FERTILIZER MAY BE APPLIED SIMULTANEOUSLY WITH THE SEED. THE USE OF FIBER MULCH ON CRITICAL AREAS IS NOT RECOMMENDED (UNLESS IT IS USED TO HOLD STRAW OR HAY). BETTER PROTECTION IS GAINED BY USING STRAW MULCH AND HOLDING IT WITH ADHESIVE MATERIALS OR 500 POUNDS PER ACRE OF WOOD FIBER MULCH.
 - C.9. SEEDING RATES MUST BE INCREASED 10% WHEN HYDROSEEDING.
- D. MAINTENANCE
 - D.1. PERMANENTLY SEEDING AREAS SHOULD BE INSPECTED MONTHLY.
 - D.2. MOW SEEDING AREAS AS NECESSARY.
 - D.3. BASED ON INSPECTION, AREAS SHOULD BE REPAIRED AND/OR RESEEDING TO ENSURE 85% OF THE SOIL SURFACE IS COVERED BY VEGETATION.

MULCHING & EROSION CONTROL MATTING

- A. GENERAL
 - A.1. APPLY PRIOR TO A STORM EVENT. CLOSELY MONITOR THE WEATHER TO HAVE ADEQUATE WARNING OF SIGNIFICANT STORMS.
 - A.2. MULCHING WITHIN A SPECIFIED TIME PERIOD FROM ORIGINAL SOIL EXPOSURE
 - A.2.1. WITHIN 100 FEET OF WETLANDS THE TIME PERIOD SHOULD BE NO GREATER THAN 7 DAYS.
 - A.2.2. IN OTHER AREAS IT SHALL BE NO GREATER THAN 14 DAYS.
- B. TEMPORARY MULCHING
 - B.1. HAY OR STRAW MULCHES
 - B.1.1. ORGANIC MULCHES INCLUDING HAY AND STRAW SHALL BE AIR-DRIED, FREE OF UNDESIRABLE SEEDS AND COARSE MATERIALS.
 - B.1.2. APPLICATION RATE SHALL BE 2 BALES/1,000 SF (70-90 POUNDS) OR 1.5-2.0 TONS/ACRE TO COVER 75-90% OF THE GROUND.
 - B.1.3. ANCHORING
 - B.1.3.1. NETTING: NETTING SHALL BE JUTE, WOOD FIBER, OR BIODEGRADABLE PLASTIC NETTING INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
 - B.1.3.2. TACKIFIER: APPLY POLYMER OR ORGANIC TACKIFIER TO ANCHOR HAY OR STRAW MULCH. APPLY PER MANUFACTURER'S SPECIFICATIONS. TYPICAL APPLICATION RATES ARE 40-60 LBS/ACRE FOR POLYMER MATERIAL AND 80-120 LBS/ACRE FOR ORGANIC LIQUID.
 - B.1.4. WINTER APPLICATION: APPLY TO A DEPTH OF 4 INCHES OR DOUBLE THE ABOVE LISTED APPLICATION RATE. NOTE THAT IF SEEDING IS NECESSARY, MULCH WILL NEED TO BE REMOVED AND THE AREA SEEDING AND MULCHED IN THE SPRING.
 - B.1.5. MAINTENANCE
 - B.1.5.1. INSPECT PERIODICALLY AND AFTER RAIN STORMS FOR RILLS OR DISPLACEMENT OF MULCH. REPAIR AS NECESSARY. CONTINUE INSPECTIONS UNTIL 85% VEGETATIVE COVER IS ESTABLISHED.
- B.2. EROSION CONTROL BLANKET OR MATTING
 - B.2.1. REFER TO PLANS FOR TYPICAL EROSION CONTROL MATTING DETAIL. INSTALL PER MANUFACTURER'S SPECIFICATIONS.
 - B.2.2. APPLICATION AND TIMING
 - B.2.2.1. DURING THE GROWING SEASON (APRIL 15 - SEPTEMBER 15) USE ON THE BASE OF GRASSED WATERWAYS, STEEP SLOPES (15% OR GREATER), ANY DISTURBED SOIL WITHOUT DRAINAGE OR LET OF LAKES, STREAMS, AND WETLANDS. DURING THE LATE FALL AND WINTER (SEPTEMBER 15 - APRIL 15) IN ADDITION TO THOSE LISTED ABOVE USE ON SIDE SLOPES OF GRASSED WATERWAYS AND MODERATE SLOPES (GREATER THAN 8%).
 - B.2.3. MAINTENANCE
 - B.2.3.1. INSPECT PERIODICALLY AND BEFORE AND AFTER STORM EVENTS TO ENSURE CONTACT WITH THE SOIL UNTIL 85% VEGETATIVE COVER IS ESTABLISHED. REPAIR AND RESTAPLE AS NECESSARY.
- C. PERMANENT MULCHING
 - C.1. WOOD CHIPS OR GROUND BARK
 - C.1.1. APPLY TO A THICKNESS OF 2 TO 6 INCHES. TYPICAL APPLICATION RATES ARE 10-20 TONS/ACRE OR 460-920 POUNDS/1,000 SF. REFER TO LANDSCAPE PLAN.
 - C.1.2. MAINTENANCE:
 - C.1.2.1. INSPECT ANNUALLY AND AFTER RAIN EVENTS OF 2.5 INCHES OR MORE IN A 24 HOUR PERIOD. REPAIR/REPLACE AS NECESSARY.
 - C.2. EROSION CONTROL MIX
 - C.2.1. COMPOSITION OF THE MIX SHALL BE AS FOLLOWS:
 - C.2.1.1. ORGANIC MATTER CONTENT SHALL BE BETWEEN 25-65% DRY WEIGHT BASIS.
 - C.2.1.2. PARTICLE SIZE BY WEIGHT SHOULD BE 100% PASSING THE 3" SCREEN, 90-100% PASSING THE 1" SCREEN, 70-100% PASSING THE 0.75 INCH SCREEN, AND 30-75% PASSING THE 0.25 INCH SCREEN.
 - C.2.1.3. THE ORGANIC PORTION SHALL BE ELONGATED AND FIBROUS. IT SHALL NOT CONTAIN WOOD AND BARK CHIPS, GROUND CONSTRUCTION DEBRIS, OR REPROCESSED WOOD PRODUCTS.
 - C.2.1.4. THE MIX SHALL NOT CONTAIN SILTS, CLAYS, OR FINE SANDS.
 - C.2.1.5. SOLUBLE SALTS CONTENT SHALL BE < 4.0MMHOS/CM AND A PH OF 5.0-8.0.
 - C.2.2. PLACEMENT OF BERM
 - C.2.2.1. PLACE BERM ALONG A LEVEL CONTOUR. BERM MUST BE A MINIMUM OF 12" HIGH ON THE UPHILL SIDE AND 2 FEET WIDE.
 - C.2.3. MAINTENANCE
 - C.2.3.1. INSPECT PERIODICALLY AND AUGMENT AS NEEDED TO MAINTAIN INITIAL THICKNESS. REPLACE IF NO LONGER FUNCTIONING AS INTENDED.



SILT SOXX DETAIL
N.T.S.

FINAL APPROVAL BY THE DURHAM PLANNING BOARD.
CERTIFIED BY _____
DATE _____

SEED MIXTURE SELECTION BASED ON SOIL TYPE

USE	SEEDING MIXTURE	SOIL DRAINAGE		
		DROUGHTY	WELL DRAINED	MODERATELY WELL DRAINED
STEEP CUTS AND FILLS, BORROW AND DISPOSAL AREAS	A	FAIR	GOOD	GOOD
	B	POOR	GOOD	FAIR
	C	POOR	GOOD	EXCELLENT
	D	FAIR	EXCELLENT	EXCELLENT
WATERWAYS, EMERGENCY SPILLWAYS, AND OTHER CHANNELS WITH FLOWING WATER	A	GOOD	GOOD	GOOD
	B	GOOD	EXCELLENT	EXCELLENT
	C	GOOD	GOOD	EXCELLENT
LIGHTLY USED PARKING LOTS, GOLF COURSES, UNUSED LANDS, AND LOW INTENSITY USE RECREATION SITES.	B	GOOD	GOOD	FAIR
	C	GOOD	EXCELLENT	EXCELLENT
	F	FAIR	EXCELLENT	EXCELLENT
PLAY AREAS AND ATHLETIC FIELDS. (TOPSOIL IS ESSENTIAL FOR GOOD TURF.)	E	FAIR	EXCELLENT	EXCELLENT
	F	FAIR	EXCELLENT	EXCELLENT

NOTE: POORLY DRAINED SOILS ARE NOT DESIRABLE FOR USE AS PLAYING AREAS AND ATHLETIC FIELDS.

SEED MIXTURES FOR PERMANENT VEGETATION

MIXTURE	SPECIES	POUNDS PER ACRE	POUNDS PER 1,000 SF
A	TALL FESCUE	20	0.45
	CREeping RED FESCUE	20	0.45
	REDTOP	2	0.05
	TOTAL	42	0.95
B	TALL FESCUE	15	0.35
	CREeping RED FESCUE	10	0.25
	CROWN VETCH	15	0.35
	TOTAL	40	1.00
C	TALL FESCUE	20	0.45
	CREeping RED FESCUE	20	0.45
	BIRDSFOOT TREFOIL	8	0.20
	TOTAL	48	1.10
D	TALL FESCUE	20	0.45
	FLATPEA	30	0.75
	TOTAL	50	1.20
E	CREeping RED FESCUE	50	1.15
	KENTUCKY BLUEGRASS	50	1.15
	TOTAL	100	2.30
F	TALL FESCUE	150	3.60

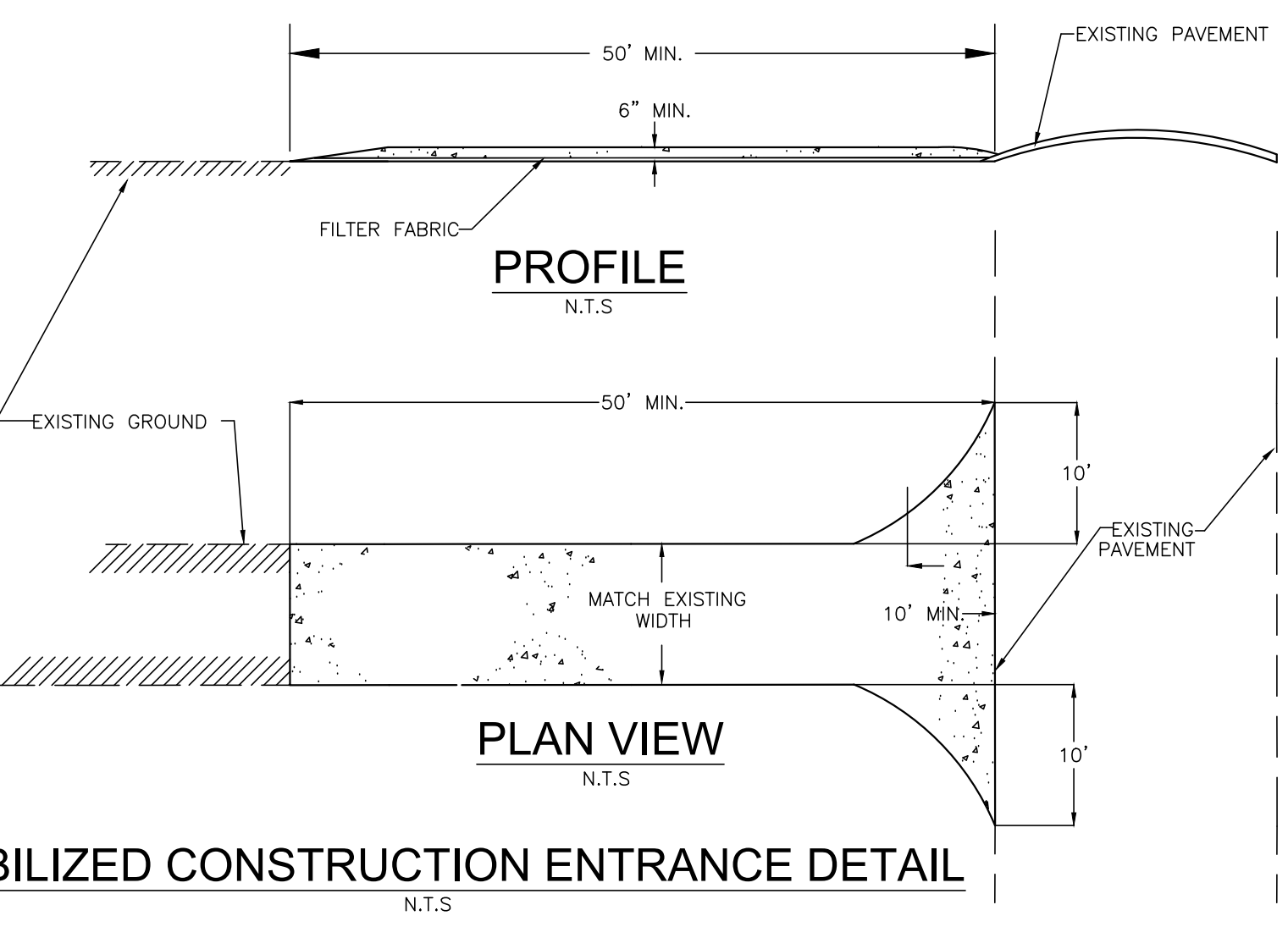
CONSTRUCTION SEQUENCING:

THE ESTIMATED START OF PHASE 1 CONSTRUCTION IS MARCH 1, 2019 AND THE ESTIMATED END OF CONSTRUCTION IS SEPTEMBER 31, 2020. PHASE 2 SCHEDULE IS PENDING. THE FOLLOWING CONSTRUCTION SEQUENCING SHALL BE FOLLOWED:

1. COMPLETE A PRE-CONSTRUCTION MEETING WITH ALL PARTIES AS REQUIRED BY CONDITIONS OF APPROVAL.
2. CONTACT DIG-SAFE, INDIVIDUAL UTILITIES, AND TOWN DEPARTMENTS TO GET ALL UTILITIES DISCONNECTED PRIOR TO START OF CONSTRUCTION. PROPERLY DISCONTINUE SERVICES OR TEMPORARILY CAP SERVICES IN ACCORDANCE WITH TOWN REQUIREMENTS.
3. CONTACT BUILDING DEMOLITION CONTRACTOR AND HAVE BUILDING CERTIFIED FROM ENVIRONMENTAL CONCERNS PRIOR TO DEMOLITION.
4. SEDIMENT AND EROSION CONTROLS SHALL BE INSTALLED PRIOR TO EARTH-MOVING OPERATIONS.
5. INSTALL TEMPORARY CONSTRUCTION SAFETY FENCE IN ACCORDANCE WITH PLANS, AND ABUTTERS.
6. INSTALL TEMPORARY CONSTRUCTION ENTRANCE OR USE TRACKOUT MAT OR PLATES AS REQUIRED DURING ALL EXCAVATION ACTIVITY ON THE SITE.
7. COMPLETE DEMOLITION OF BUILDING AS REQUIRED AND DISPOSE OF ALL DEMOLITION MATERIAL AT OFFSITE APPROVED DEMOLITION FACILITY. ALL DEMOLITION SHALL BE IN ACCORDANCE WITH THE BUILDING DEMOLITION PLAN.
8. CONSTRUCT AND STABILIZE ALL TEMPORARY EROSION CONTROLS INCLUDING CONSTRUCTION ENTRANCES, SWALES AND SEDIMENTATION BASINS IF REQUIRED. A TEMPORARY SEDIMENT BASIN MAY BE REQUIRED FOR CONSTRUCTION OF THE ADDITION PRIOR TO COMPLETING CONSTRUCTION OF THE UNDERGROUND TREATMENT SYSTEM.
9. GRADE ONLY WITHIN THE LIMITS AS SHOWN ON THE PLANS. TOTAL SITE DISTURBANCE DEPICTED ON THESE PLANS IS 5,300 SQUARE FEET.
10. THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION. ALL DISTURBED AREAS SHALL BE TEMPORARILY STABILIZED WITHIN 45 DAYS AND PERMANENTLY STABILIZED NO LATER THAN 3 DAYS AFTER FINAL GRADING. REFER TO SECTION 4.1.3 FOR STABILIZATION REQUIREMENTS.
11. STRIP TOP SOIL AND STOCKPILE FOR REUSE. STABILIZE IN ACCORDANCE WITH SECTION 4.3.
12. PERFORM CUTS AND FILLS AS NECESSARY.
13. EXCAVATE FOR FOUNDATIONS AND UTILITIES AND CONSTRUCT IN ACCORDANCE WITH SITE PLANS AND STRUCTURAL PLANS. COMPLETE ALL INSPECTIONS AND TESTING AS REQUIRED PRIOR TO BACKFILLING.
14. INSTALL DRAINAGE AND UTILITY STRUCTURES AND STABILIZE PRIOR TO RECEIVING RUNOFF. THIS WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE DETAILED CONSTRUCTION PLANS. THIS WORK SHALL OCCUR IN CONJUNCTION WITH FOUNDATION ADDITION, AND SIDEWALK CONSTRUCTION.
15. CONSTRUCT STORMTECH UNDERGROUND DRAINAGE SYSTEM IN ACCORDANCE WITH THE PLANS, SPECIFICATIONS AND MANUFACTURERS RECOMMENDATIONS. GRADES AND FILL MATERIAL IS SHOWN ON THE PLANS AND DETAILS.
16. COMPLETE GRADING AND INSTALL PERMANENT SEEDING AND PLANTINGS.
17. INSTALL REMAINING DRAINAGE AND UTILITY STRUCTURES AND STABILIZE PRIOR TO RECEIVING RUNOFF.
18. INSPECT, MAINTAIN, AND IF NECESSARY, REPAIR ALL EROSION AND SEDIMENT CONTROL MEASURES.
19. REMOVE ALL TEMPORARY EROSION CONTROL MEASURES AFTER SITE IS STABILIZED AND RESEED ANY AREAS DISTURBED BY REMOVAL. THE APPROXIMATE DATE FOR REMOVAL OF EROSION CONTROLS IS SEPTEMBER 1, 2020.

ADDITIONAL NOTES:

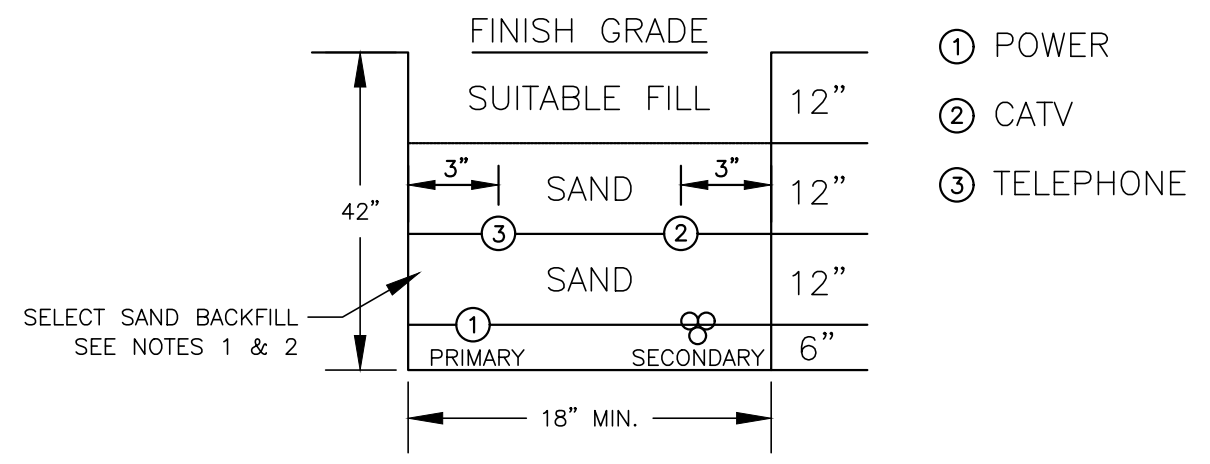
1. NO FUEL SHALL BE STORED ON SITE DURING CONSTRUCTION.
2. DURING CONSTRUCTION DUST SHALL BE PREVENTED FROM BECOMING A SAFETY OR HEALTH HAZARD BY THE IMPLEMENTATION OF ACCEPTED CONTROL METHODS SUCH AS WATERING.
3. ALL CONSTRUCTION MATERIALS THAT ARE SPILLED OR DEPOSITED ON THE PUBLIC ROADWAYS SHALL BE REMOVED BY THE CONTRACTOR.
4. DO NOT BEGIN CONSTRUCTION UNTIL ALL LOCAL, STATE, AND FEDERAL PERMITS HAVE BEEN APPLIED FOR AND RECEIVED. ALL INSPECTIONS/OBSERVATION SERVICES FOR THE INSTALLATION OF WATER, WASTEWATER, STORMWATER MANAGEMENT, POROUS PAVEMENT, AND OTHER INFRASTRUCTURE SHALL BE PERFORMED BY AUTHORIZED REPRESENTATIVES OF THE TOWN OF DURHAM AS STIPULATED BY THE DURHAM DEPARTMENT OF PUBLIC WORKS. THE DEVELOPER SHALL REIMBURSE THE TOWN FOR ALL ASSOCIATED INSPECTION/OBSERVATION COSTS.



STABILIZED CONSTRUCTION ENTRANCE DETAIL
N.T.S.

STABILIZED CONSTRUCTION ENTRANCE NOTES:

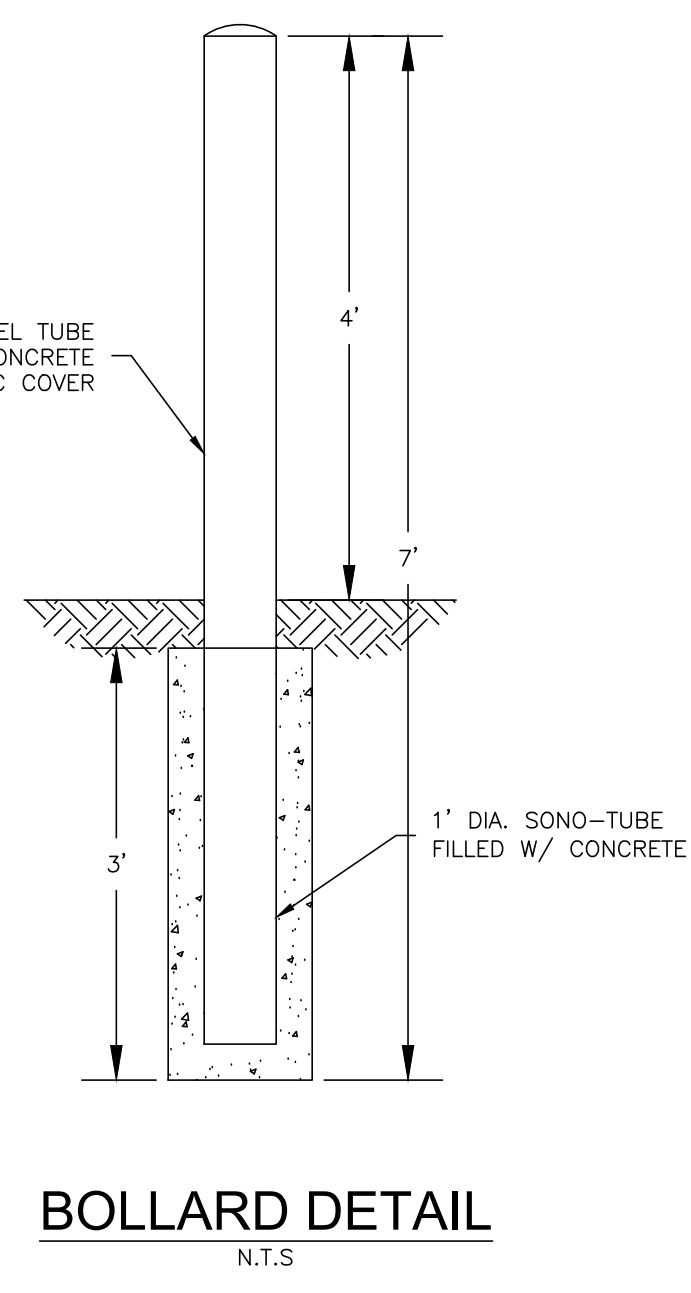
1. GRADE AND COMPACT ACCESS ROAD ENTRANCE AS NECESSARY. PLACE FILTER FABRIC (MIRAFI 140N OR EQUAL) AND PLACE 6" OF 1"-2" STONE TO MATCH SLOPE OF EXISTING ROAD.
2. PROVIDE NECESSARY SWALES OR DIVERSIONS TO MINIMIZE DIRECT FLOW OF WATER ONTO STONE AREA.
3. CONSTRUCTION ENTRANCE SHALL BE MAINTAINED AS NECESSARY TO REMOVE SILT FROM TIRES PRIOR TO ENTERING PUBLIC ROADS. A SMALL SWALE SHALL BE CONSTRUCTED ON THE DOWN GRADIENT SIDE TO TRAP ANY SILT WASHED FROM THE STONE ENTRANCE.



TELEPHONE, CABLE, & ELECTRIC TRENCH
N.T.S.

NOTES:

1. A-SELECT SAND BACKFILL SHALL CONSIST OF A FINE GRANULAR MATERIAL OF WHICH 100% SHALL PASS THROUGH A 1/4" SIEVE.
- B-EXCEPTION: NATURALLY OCCURRING SMOOTH ROUND PEBBLES NO GREATER THAN 3/8" IN DIAMETER ARE PERMITTED AS LONG AS THEIR TOTAL VOLUME PER CUBIC FOOT OF SAND DOES NOT EXCEED 1%.
- C-THE SAND SHALL BE COMPLETELY FREE OF FROZEN LUMPS, ROCKS, STONES, DEBRIS AND RUBBISH.
2. WHEN CONDUIT IS USED, THE SAME DEPTH IS REQUIRED. BACKFILL SHALL BE FREE OF FROZEN LUMPS, ROCKS, STONES, DEBRIS AND RUBBISH.
3. VOLTAGES OF 300V OR LESS TO GROUND DO NOT REQUIRE SEPARATION PROVIDED ALL PARTIES INVOLVED ARE IN AGREEMENT.
4. VOLTAGES OF 300V TO GROUND REQUIRE A 12" MINIMUM SEPARATION WHEN INSTALLED IN CONDUIT OR DIRECT BURIAL.
5. THESE ARE MINIMUM STANDARDS, THE LOCAL GOVERNING AUTHORITIES REGULATIONS SHALL GOVERN.



BOLLARD DETAIL
N.T.S.

CONSTRUCTION DETAILS
 prepared for
KAPPA DELTA
 TAX MAP 2, LOT 12-2
 25 MADBURY ROAD
 DURHAM, NH

MJS ENGINEERING, P.C.
 CIVIL - STRUCTURAL - ENVIRONMENTAL
 5 Railroad St., P.O. Box 359
 Durham, NH 03824
 PHONE: (603) 659-4376, FAX: (603) 659-4627
 E-MAIL: mjs@mjse-engineering.com

DATE: 11/19/18
 SCALE: 1" = 10'
 DESIGNED BY: MJS
 DRAWN BY: MGS
 APPROVED BY: MJS
 DWG FILE: 18-067 Civil N.dwg

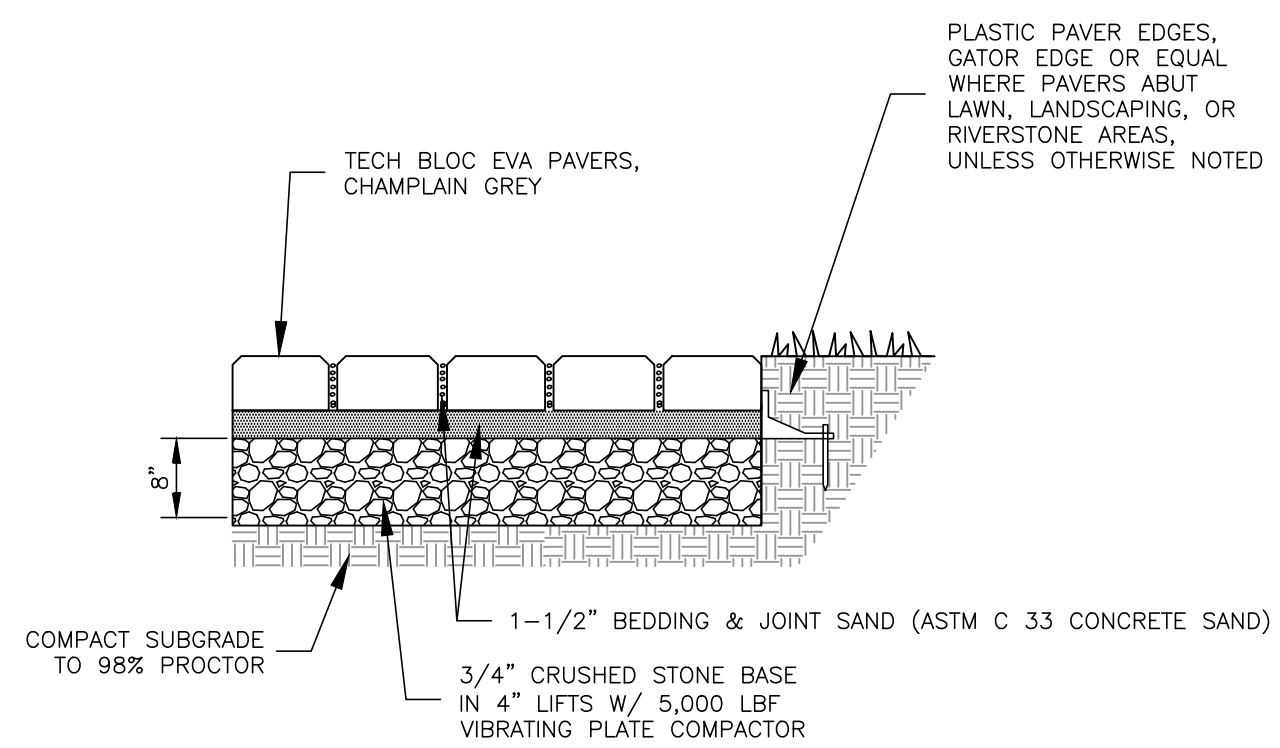
1. 1/2/19 WCS
 2. 12/28/18 WCS
 3. 12/18/18 EHK
 11/19/18 EHK
 NO.

REVISIONS
 DATE INT.

SEAL NEW HAMPSHIRE PROFESSIONAL ENGINEER
 MICHAEL J. SEBERT
 No. 0000

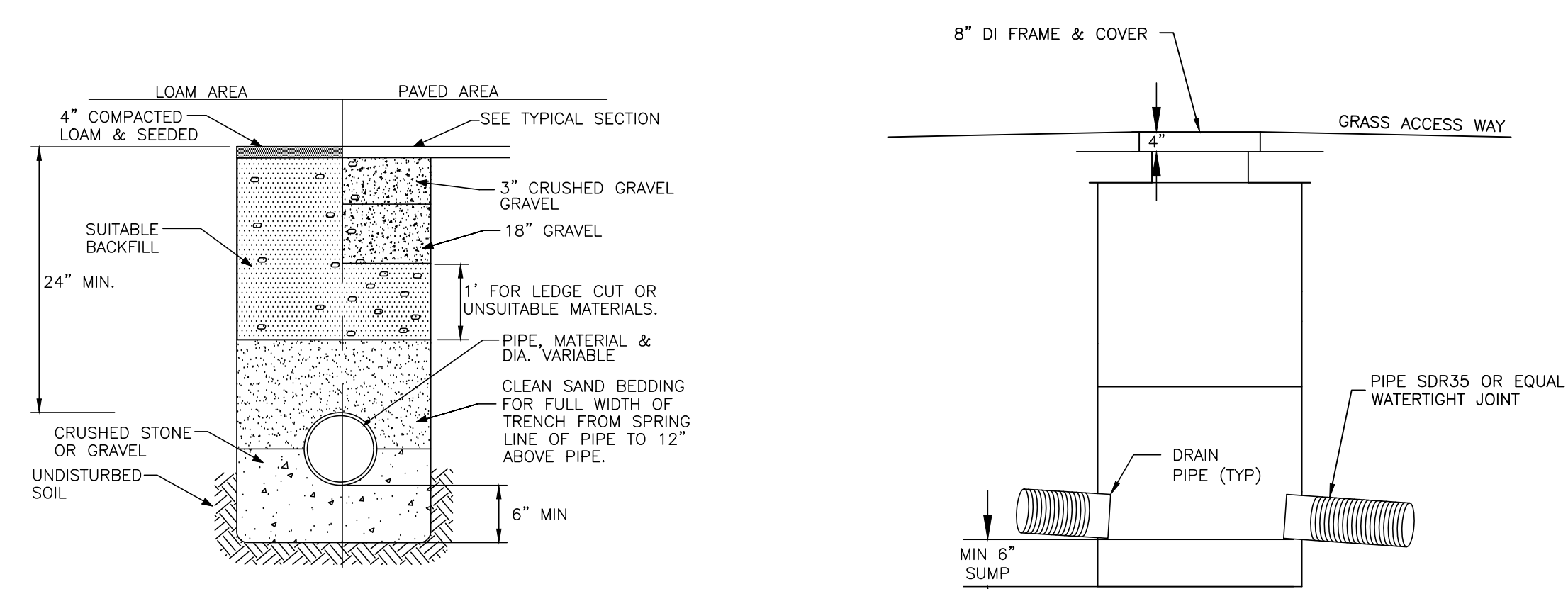
JOB: 18-067

D1

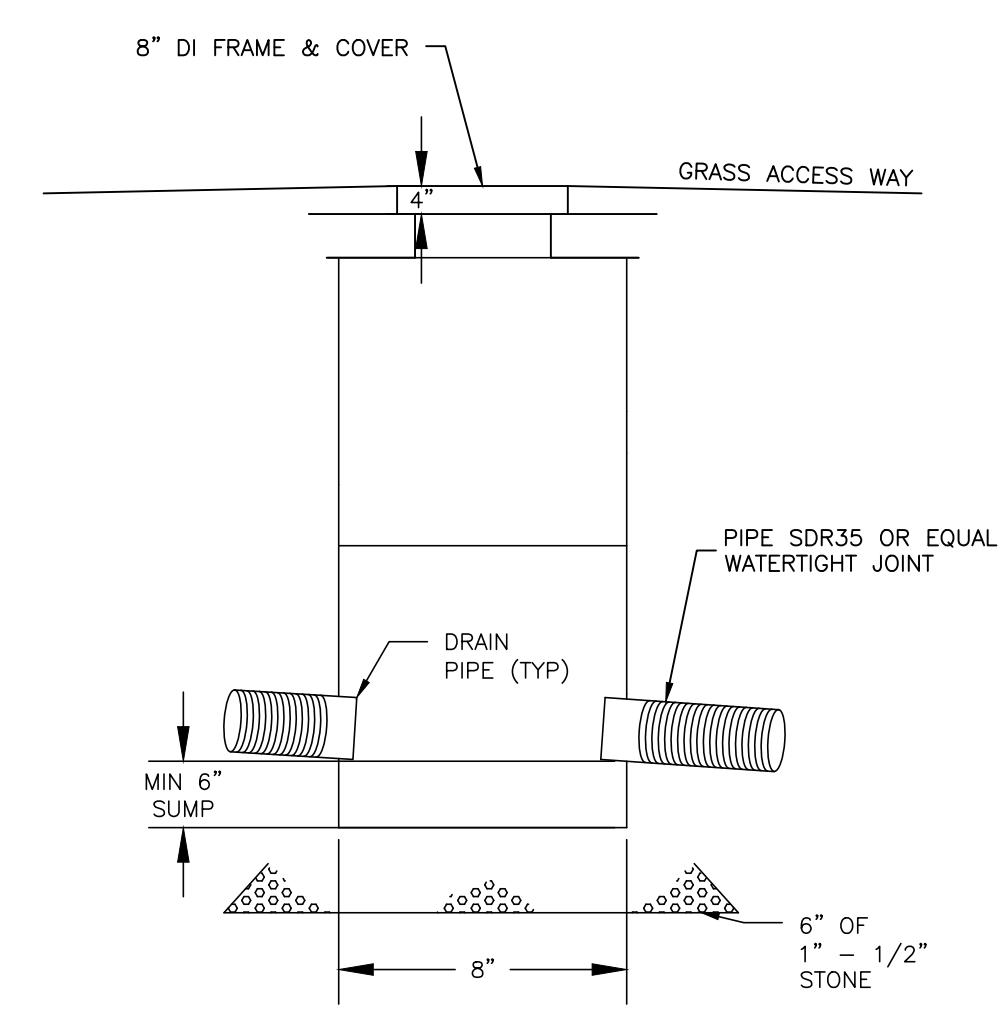


TYPICAL PAVER CROSS SECTION
N.T.S.

FINAL APPROVAL BY THE DURHAM PLANNING BOARD.
CERTIFIED BY _____
DATE _____



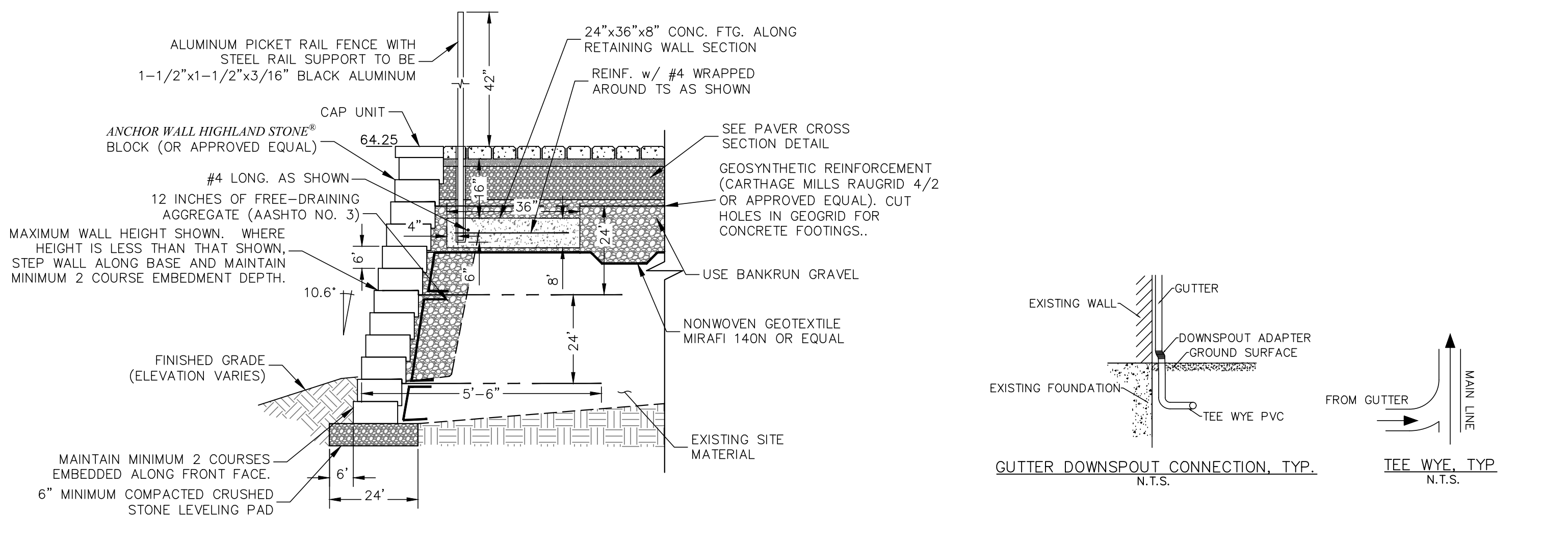
STANDARD DRAINAGE PIPE TRENCH
N.T.S.



NOTES:

- REFER TO SHEET C2 FOR INVERTS AND PIPE SIZES.
- THE DRAIN MANHOLE COVER SHALL HAVE THE WORD "DRAIN" CAST INTO THE TOP SURFACE.
- SITE CONTRACTOR SHALL BACK FILL AROUND DRAINAGE STRUCTURES IN 6 TO 8 INCH LIFTS, USING BANK RUN GRAVEL OR SAND, AND COMPACTED TO 95% MAXIMUM DRY DENSITY FOR EACH LIFT.
- WHEN FRAME/GRADE ARE LOCATED IN WALKWAY, FINISH GRADE USING SELECT MATERIALS SPECIFIED IN THE CONCRETE PAVER CROSS SECTION DETAIL.

TYP. INLINE DRAIN DETAIL
N.T.S.



PRECAST CONCRETE BLOCK RETAINING WALL & CONCRETE PAVER PATIO CROSS SECTION
N.T.S.

PRECAST CONCRETE RETAINING WALL & STAIR NOTES:

- RETAINING WALL AND STAIRS TO BE ANCHOR WALL HIGHLAND STONE PRECAST CONCRETE (GRANITE BLEND) CONSTRUCTED WITH STANDARD BLOCKS.
- RETAINING WALL AND STAIRS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
- CONCRETE FOOTINGS TO BE INSTALLED IN CONJUNCTION WITH PATIO SUBGRADE AND GEOGRID PLACEMENT.
- GEOGRID TO BE RAUGRID GEOGRID 4/2 OR APPROVED EQUAL DISTRIBUTED BY CARTHAGE MILLS.

STORMTECH CHAMBER SPECIFICATIONS

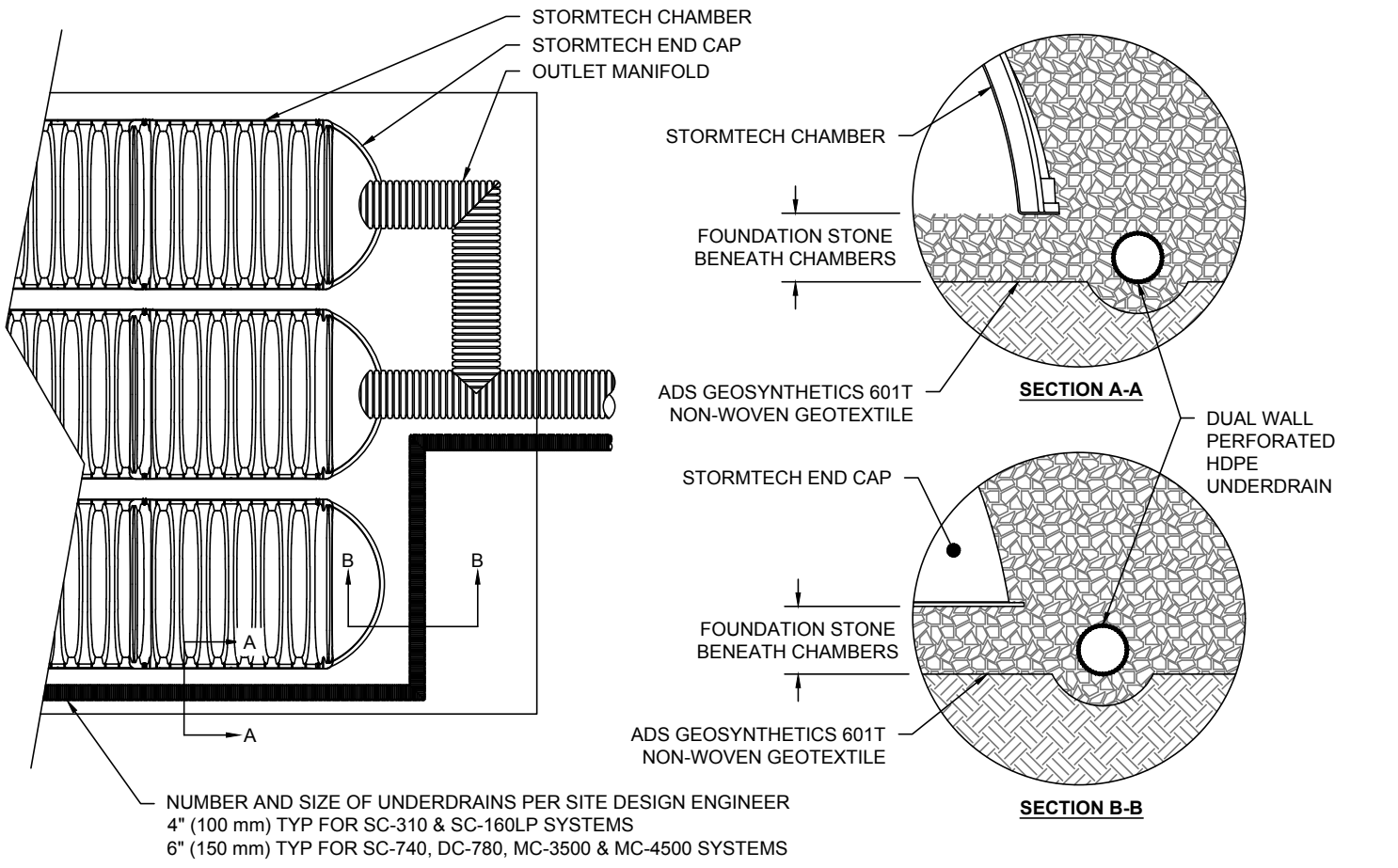
- CHAMBERS SHALL BE STORMTECH SC-740 OR SC-310.
- CHAMBERS SHALL BE MANUFACTURED FROM VIRGIN POLYPROPYLENE OR POLYETHYLENE RESINS.
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORT PANELS THAT WOULD IMPED FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LIFTED BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL MEET ASTM F2922 (POLYETHYLENE) OR ASTM F2418-16 (POLYPROPYLENE), "STANDARD SPECIFICATION FOR THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- CHAMBERS SHALL BE DESIGNED AND ALLOWABLE LOADS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. THE CHAMBER MANUFACTURER SHALL SUBMIT THE FOLLOWING UPON REQUEST TO THE SITE DESIGN ENGINEER FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE:
 - A STRUCTURAL EVALUATION SEALED BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY AASHTO FOR THERMOPLASTIC PIPE.
 - A STRUCTURAL EVALUATION SEALED BY A REGISTERED PROFESSIONAL ENGINEER THAT DEMONSTRATES THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LIFTED BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET. THE 50 YEAR CREEP MODULUS DATA SPECIFIED IN ASTM F2418 OR ASTM F2922 MUST BE USED AS PART OF THE AASHTO STRUCTURAL EVALUATION TO VERIFY LONG-TERM PERFORMANCE.
 - STRUCTURAL CROSS SECTION DETAIL ON WHICH THE STRUCTURAL EVALUATION IS BASED.
- CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE SC-310/SC-740 SYSTEM

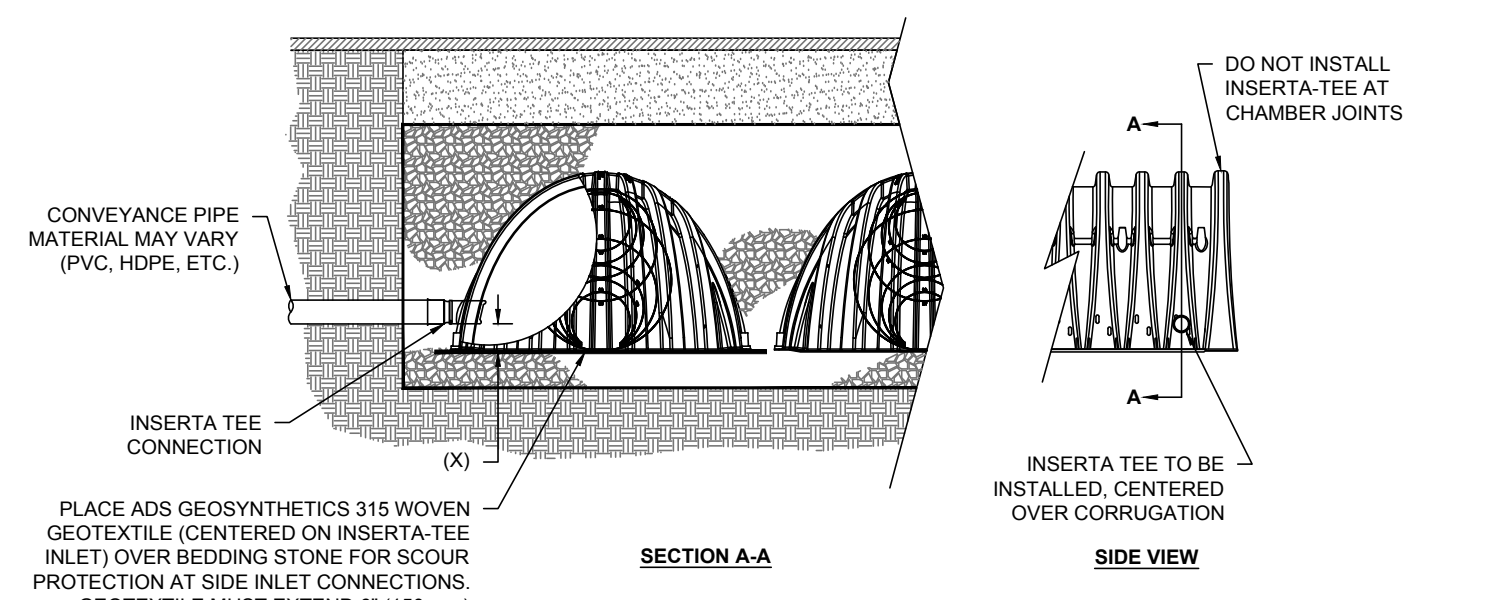
- STORMTECH SC-310 & SC-740 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- STORMTECH SC-310 & SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
- CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
 - STONESHOOTER LOCATED OFF OF THE CHAMBER BED.
 - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
 - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
- THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
- MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
- EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE 3/4" (20-50 mm).
- THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
- ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

- STORMTECH SC-310 & SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
 - THE USE OF CONSTRUCTION EQUIPMENT OVER SC-310 & SC-740 CHAMBERS IS LIMITED:
 - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
 - NO RUBBER TIRE LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
 - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
 - FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.
- USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.
- CONTACT STORMTECH AT 1-888-892-2894 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.



UNDERDRAIN DETAIL



CHAMBER	MAX DIAMETER OF INSERT TEE	HEIGHT FROM BASE OF CHAMBER (X)
SC-310	6" (150 mm)	4" (100 mm)
SC-740	10" (250 mm)	4" (100 mm)
DC-780	10" (250 mm)	4" (100 mm)
MC-3500	12" (300 mm)	6" (150 mm)
MC-4500	12" (300 mm)	6" (150 mm)

INSERT TEE FITTINGS AVAILABLE FOR SDR 26, SDR 35, SCH 40 IPS GASKETED & SOLVENT WELD, N-12, HP-STORM, C-800 OR DUCTILE IRON

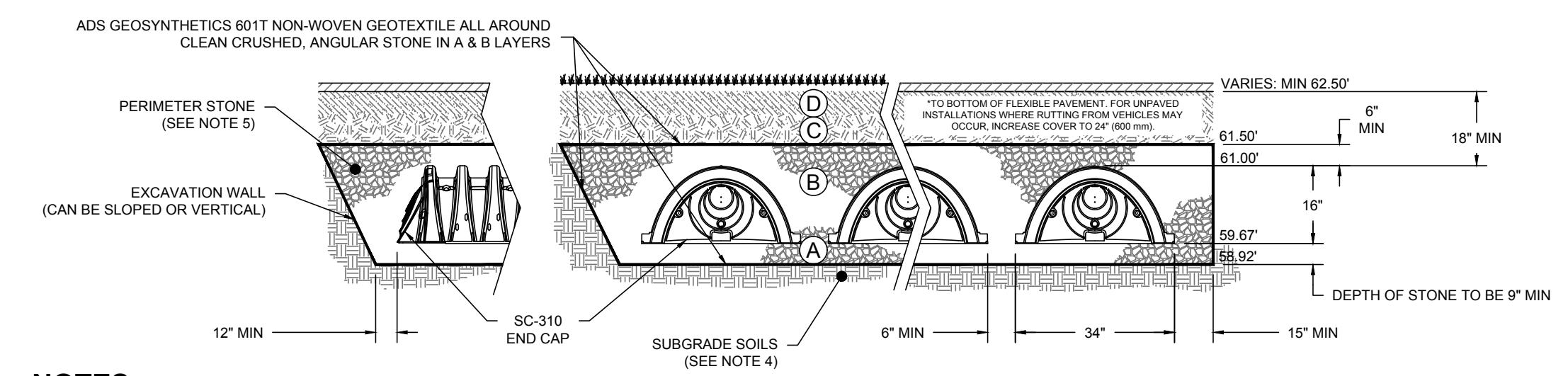
NOTE: PART NUMBERS WILL VARY BASED ON INLET PIPE MATERIALS. CONTACT STORMTECH FOR MORE INFORMATION.

ACCEPTABLE FILL MATERIALS: STORMTECH SC-310 CHAMBER SYSTEMS

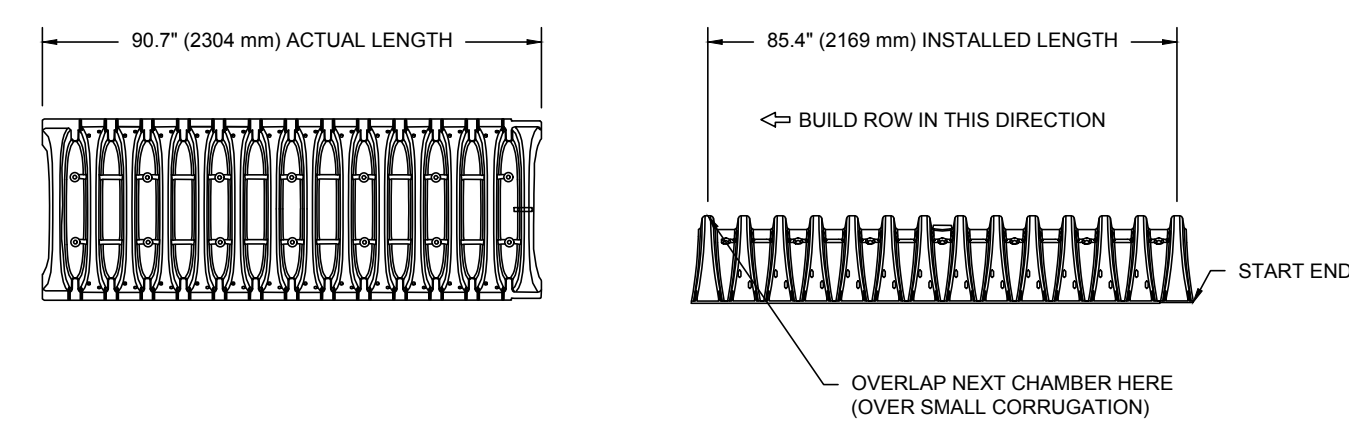
MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	AASHTO M145 ¹ A-1, A-2.4, A-3 OR AASHTO M43 ² 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN), DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	AASHTO M43 ² 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	AASHTO M43 ² 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ³

PLEASE NOTE:

- THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
- STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERSAGES WITH A VIBRATORY COMPACTOR.
- WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.



- NOTES:**
- SC-310 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS", OR ASTM F2922 "STANDARD SPECIFICATION FOR POLYETHYLENE (PE) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
 - SC-310 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
 - "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
 - THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
 - PERMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
 - ONCE LAYER 'C' IS PLACED, ANY SOIL MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



- STEP 1) INSPECT ISOLATOR ROW FOR SEDIMENT**
- INSPECTION PORTS (IF PRESENT)
 - REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
 - REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
 - USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
 - LOWER A CAMERA INTO ISOLATOR ROW FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
 - IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
 - ALL ISOLATOR ROWS
 - REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW
 - USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW THROUGH OUTLET PIPE
 - MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
 - FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
 - IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- STEP 2) CLEAN OUT ISOLATOR ROW USING THE JETVAC PROCESS**
- A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
 - APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
 - VACUUM STRUCTURE SUMP AS REQUIRED
- STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS. RECORD OBSERVATIONS AND ACTIONS.**
- STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.**

- NOTES**
- INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
 - CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

NO.	REVISIONS	DATE	INT.
1.	DESIGN REVISION	11/19/18	EHK
2.	DESIGN REVISION	12/18/18	MCS
3.	INITIAL SUBMISSION TO DURHAM PLANNING BOARD	11/19/18	EHK
4.	INITIAL SUBMISSION TO DURHAM PLANNING BOARD	11/19/18	EHK

DATE: 11/19/18
SCALE: 1" = 10'
DESIGNED BY: MJS
DRAWN BY: MCS
APPROVED BY: MJS
DWG FILE: 18-067 Civil N.dwg

SEALED
MICHAEL J. SEBERT
REGISTERED PROFESSIONAL ENGINEER
NO. 00000
STATE OF NORTH CAROLINA

CONSTRUCTION DETAILS

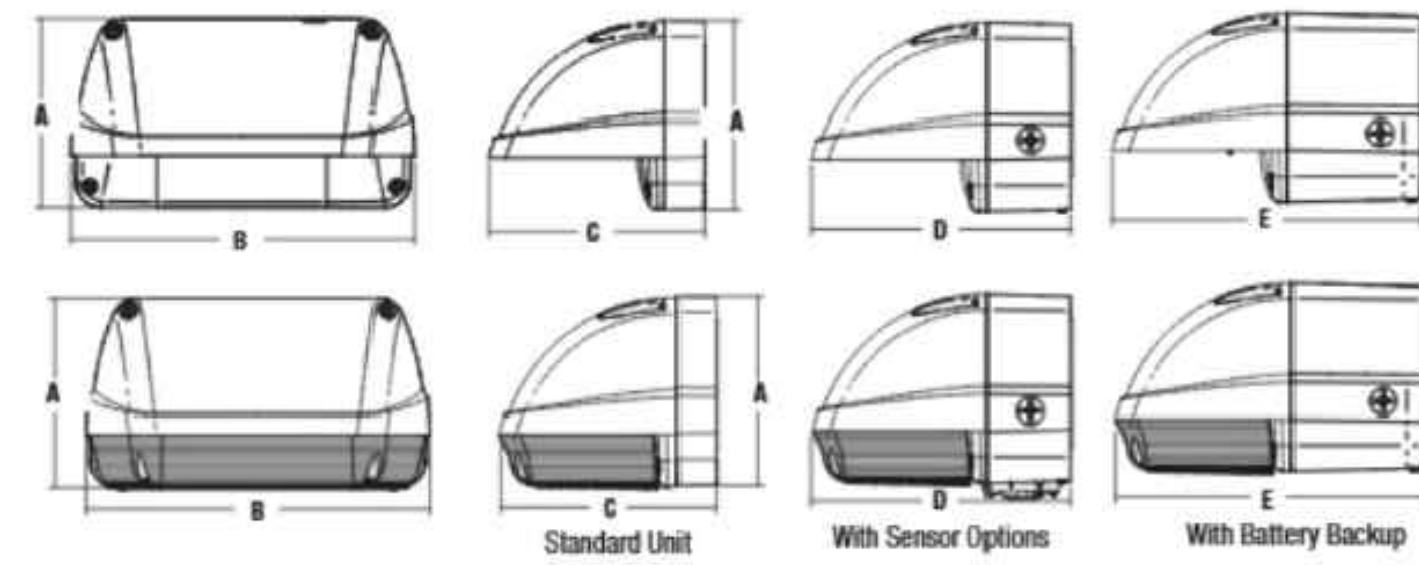
prepared for
KAPPA DELTA
TAXY MAP 2, LOT 12-2
25 MADBURY ROAD
DURHAM, NH

MJS ENGINEERING, P.C.
CIVIL - STRUCTURAL - ENVIRONMENTAL
5 RAILROAD ST., P.O. BOX 359
DURHAM, NC 27704
PHONE: (603) 659-4379, FAX: (603) 659-4627
E-MAIL: MJS@MJS-ENGINEERING.COM

JOB: 18-067
D3

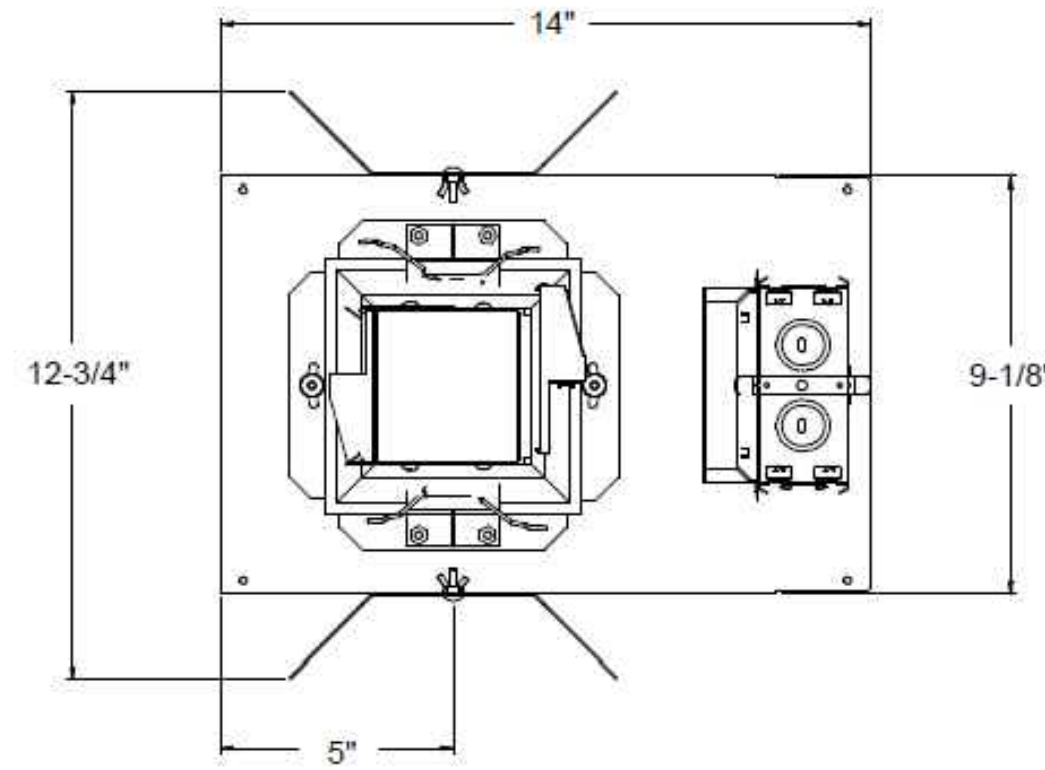
Drawing Name: P:\18067\18-067\18-067.dwg (User: mcs) Date: 12/18/18

A	B	C	D	E
5.54"	10.16"	6.33"	7.64"	9.10"
40.7 mm	258 mm	160.7 mm	194 mm	231 mm
	Base Model	PC Sensor	BBU Models	
WEIGHT	7.0 lbs.	7.5 lbs.	9.5 lbs.	
	3.2 kg	3.4 kg	4.3 kg	

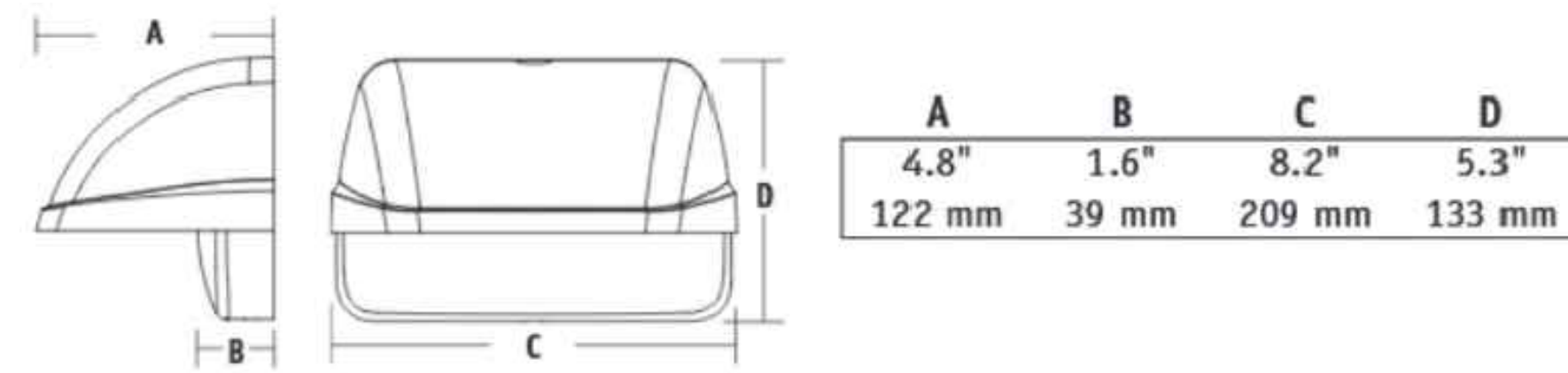
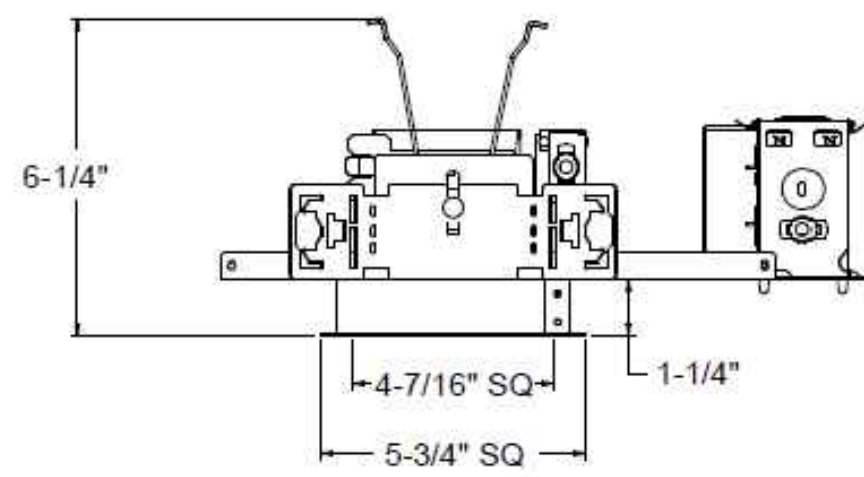


WALL PACK LIGHT DETAIL, W1
N.T.S.

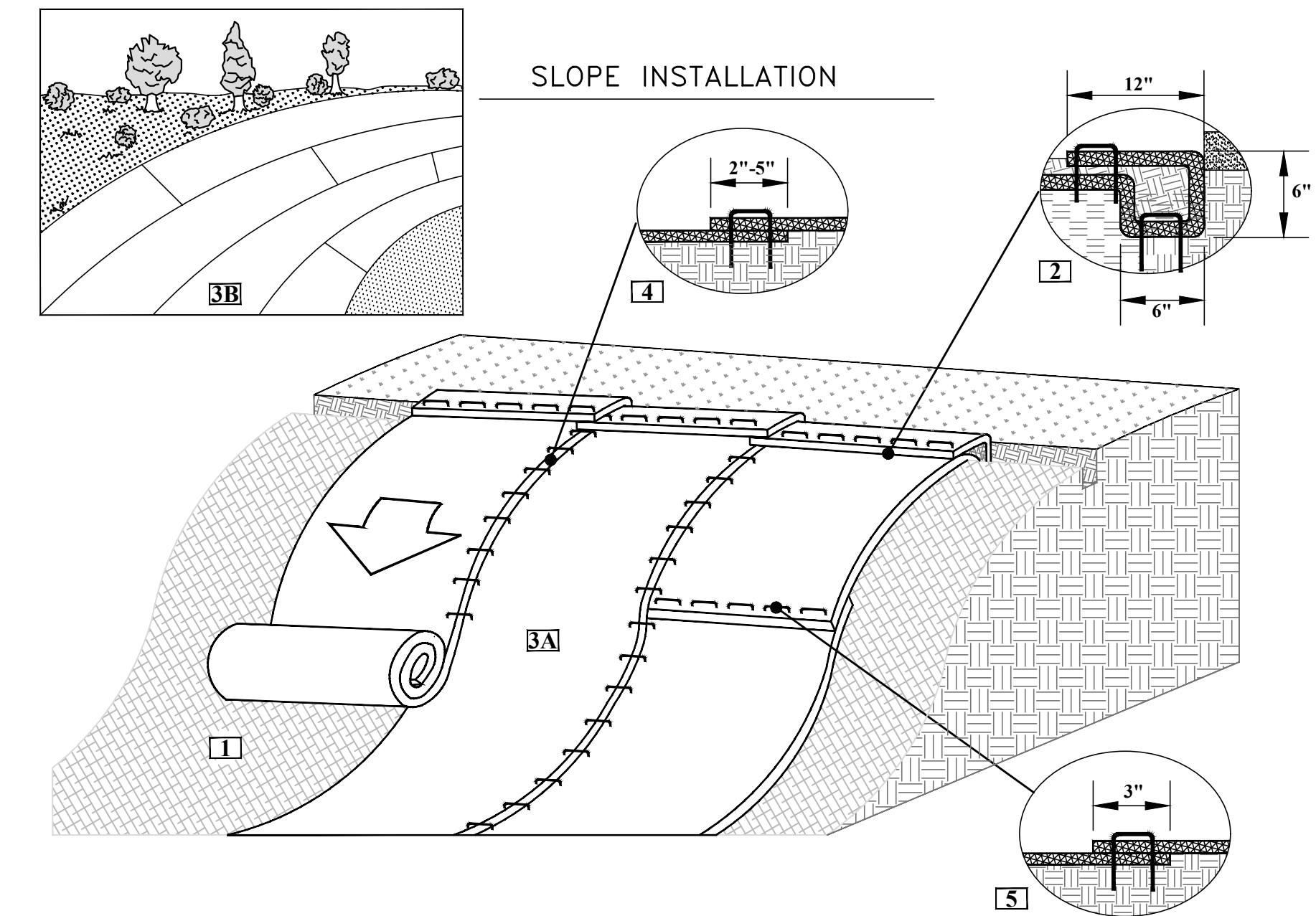
FINAL APPROVAL BY THE DURHAM PLANNING BOARD.
CERTIFIED BY _____
DATE _____



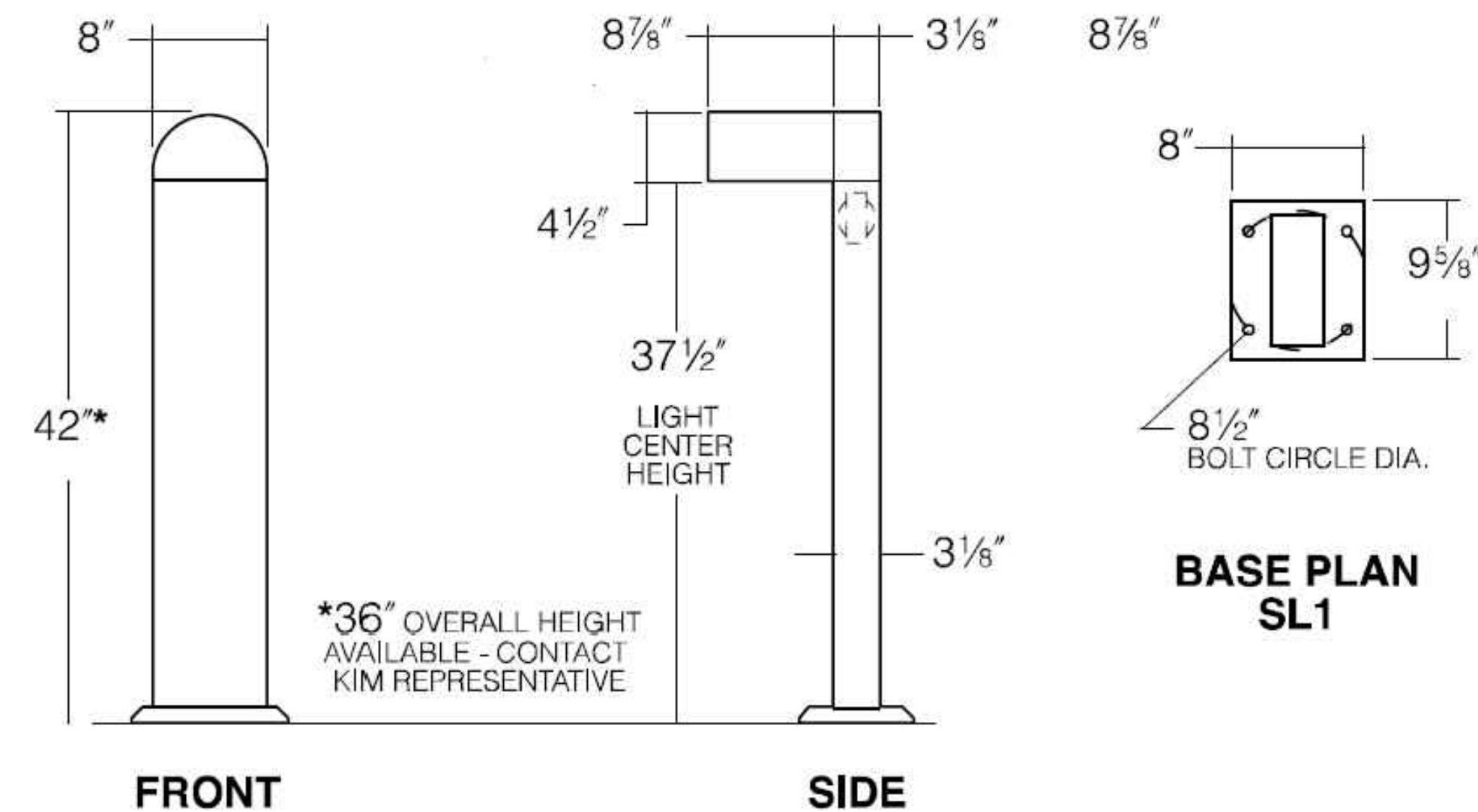
CEILING SOFFIT LIGHT DETAIL, TYP C
N.T.S.



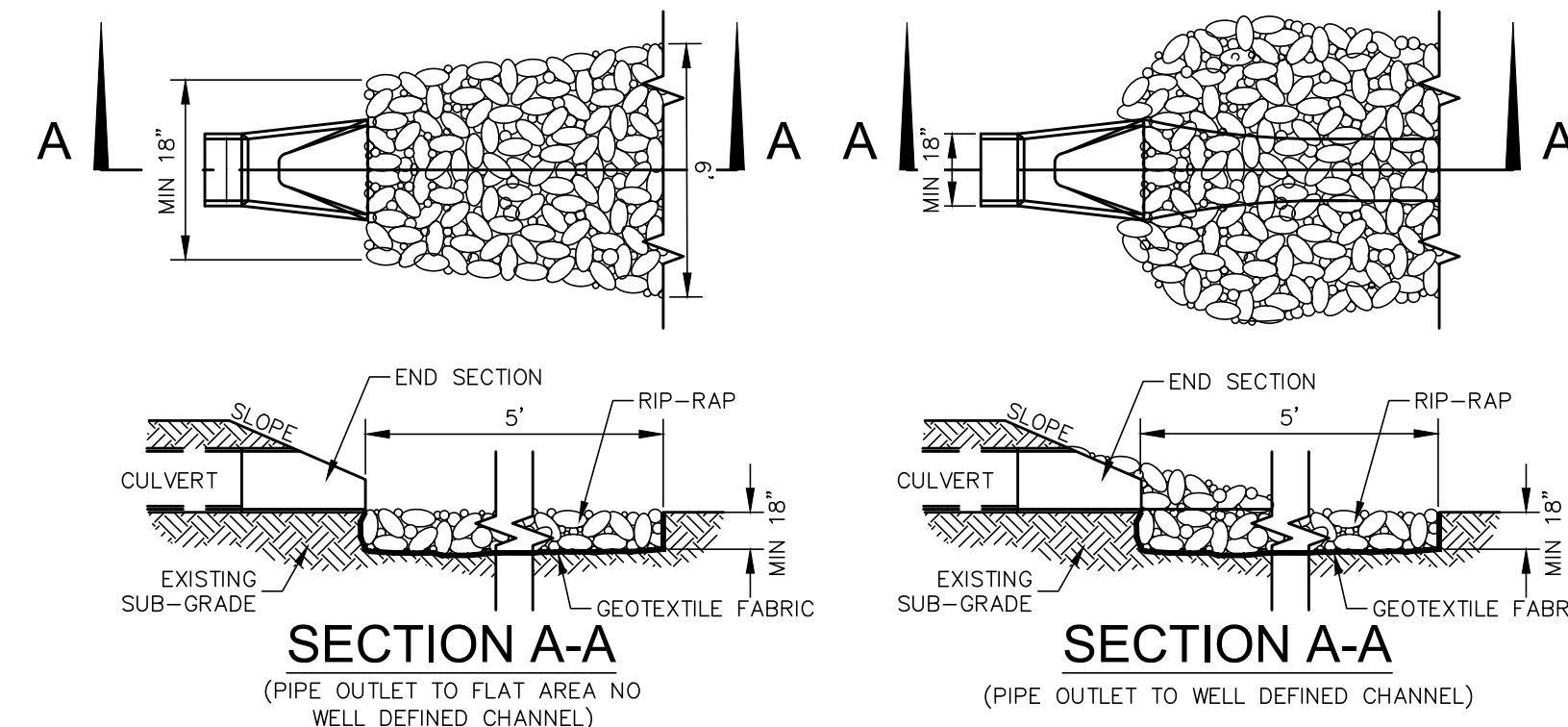
WALL PACK LIGHT DETAIL, W2 AND W3
N.T.S.



TYPICAL TURF REINFORCEMENT MATTING DETAIL
N.T.S.



BOLLARD LIGHT DETAIL, B1
N.T.S.

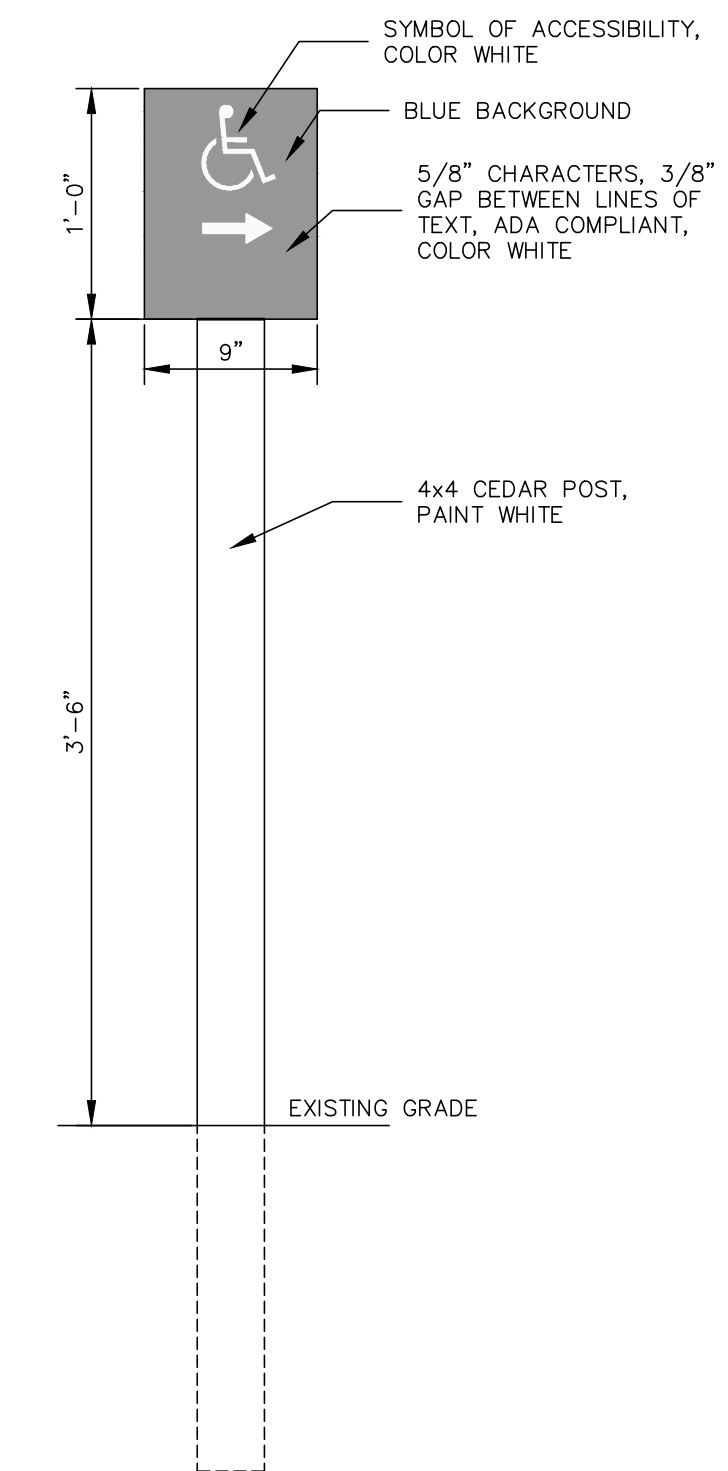


RIP-RAP GRADATION

% OF WEIGHT SMALLER THAN THE GIVEN SIZE	SIZE OF STONE (INCHES)
100	6 TO 8
85	5.2 TO 7.2
50	4 TO 6
15	1.2 TO 2

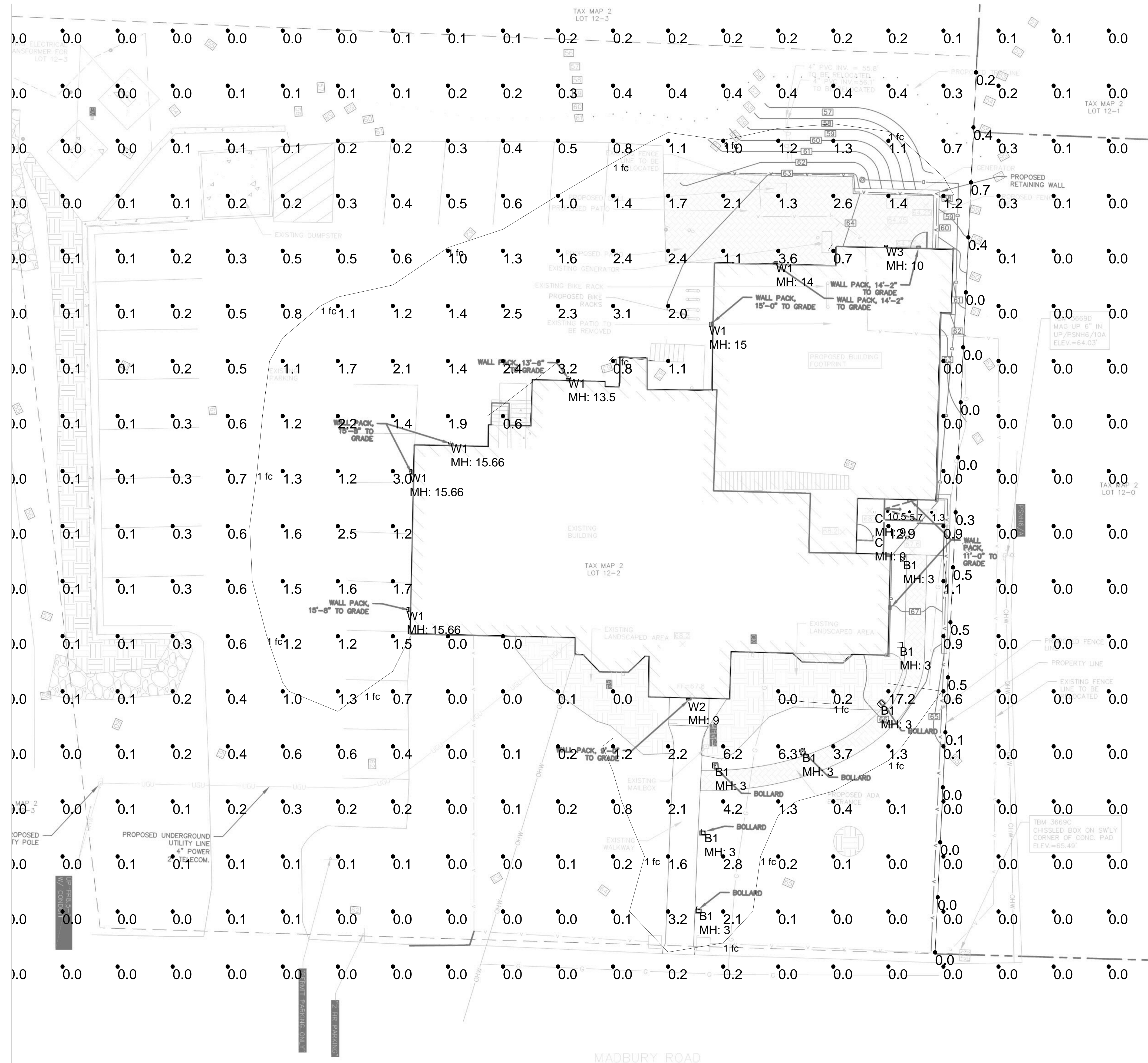
- CONSTRUCTION SPECIFICATIONS:**
- PREPARE THE SUB-GRADE FOR THE FILTER MATERIAL, GEOTEXTILE FABRIC, AND RIP-RAP TO THE GRADES SHOWN ON THE PLANS.
 - MINIMUM 6" SAND/GRAVEL BEDDING OR GEOTEXTILE FABRIC REQUIRED UNDER ALL ROCK RIP-RAP.
 - THE ROCK OR GRAVEL USED FOR FILTER OR RIP-RAP SHALL CONFORM TO THE SPECIFIED GRADATION.
 - GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF ROCK RIP-RAP. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR REPAIRS OR JOINING TWO (2) PIECES OF FABRIC SHALL BE A MINIMUM OF 12 INCHES.
 - STONE FOR THE RIP-RAP MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.
- MAINTENANCE NOTES:**
- OUTLETS SHALL BE INSPECTED AND CLEANED ANNUALLY AND AFTER ANY MAJOR STORM EVENT. ANY EROSION OR DAMAGE TO THE RIP-RAP SHALL BE REPAIRED IMMEDIATELY.
 - THE CHANNEL IMMEDIATELY DOWNSTREAM FROM THE OUTLET SHOULD BE CHECKED TO SEE THAT NO EROSION IS OCCURRING.
 - THE DOWNSTREAM CHANNEL SHOULD BE KEPT CLEAR OF OBSTRUCTIONS SUCH AS FALLEN TREES, DEBRIS, AND SEDIMENT THAT COULD CHANGE FLOW PATTERNS AND/OR TAILWATER DEPTHS ON THE PIPES. REPAIRS MUST BE CARRIED OUT IMMEDIATELY TO AVOID ADDITIONAL DAMAGE TO THE OUTLET PROTECTION APRON.

PIPE OUTLET PROTECTION DETAIL
NOT TO SCALE



ADA ENTRANCE SIGNAGE DETAIL
N.T.S.

DATE: 12/18/18	SCALE: 1" = 10'	DESIGNED BY: MJS	DRAWN BY: MCS	APPROVED BY: MJS	DWG FILE: 18-067 Civil N.dwg
<p>SEAL: MICHAEL J. SEBERT, P.E., No. 00800, State of North Carolina</p>					
<p>CONSTRUCTION DETAILS</p> <p>prepared for KAPPA DELTA TAX MAP 2, LOT 12-2 25 MADBURY ROAD DURHAM, NH</p>					
<p>MJS ENGINEERING, P.C. CIVIL • STRUCTURAL • ENVIRONMENTAL 5 Railroad St., P.O. Box 359 Durham, NC 27704 PHONE: (603) 659-4379, FAX: (603) 659-4627 E-MAIL: MJS@MJS-ENGINEERING.COM</p>					
<p>JOB: 18-067</p>					
<p>D4</p>					



- NOTES:
- 1) EXACT MOUNTING DETAILS TO BE DETERMINED AT JOBSITE BY OTHERS.
 - 2) CALCULATIONS MAY OR MAY NOT SHOW THE EFFECT OF SHADOWING CAUSED BY BUILDINGS AND OBJECTS WITHIN THE CALCULATED SPACE OR IN THE SITE AREA.
 - 3) READINGS SHOWN ARE INITIAL HORIZONTAL FOOTCANDLES ON A FLAT SITE WITHOUT REFLECTIONS OR OBSTRUCTIONS UNLESS OTHERWISE INDICATED.
 - 4) THIS CALCULATION IS BASED ON LIMITED INFORMATION SUPPLIED BY OTHERS TO SWANEY LIGHTING ASSOCIATES AND STANDARD ASSUMPTIONS OF THE SPACE AND/OR SITE.
 - 5) CONFORMANCE TO CODES AND OTHER LOCAL REQUIREMENTS AS DETERMINED BY THE AHJ ARE THE RESPONSIBILITY OF THE OWNER AND/OR THE OWNER'S REPRESENTATIVE.
 - 6) THIS LAYOUT DRAWING MUST BE COORDINATED WITH THE SITE LOCATION FOR CORRECT FIXTURE ORIENTATION.
 - 7) DOCUMENTS PRINTED OR PLOTTED FROM ELECTRONIC FILES MAY APPEAR AT OTHER THAN THE DESIRED OR ASSUMED GRAPHIC SCALES. IT IS THE RESPONSIBILITY OF THE RECIPIENT TO VERIFY THAT THE PRINTED OR PLOTTED-TO-SCALE DRAWING IS PRINTED TO SCALE.

Calculation Summary

Label	Avg	Max	Min	Avg/Min	Max/Min
property line	0.21	0.7	0.0	N.A.	N.A.
RAMP	5.83	10.5	1.3	4.5	8.1
SITE	0.53	17.2	0.0	N.A.	N.A.

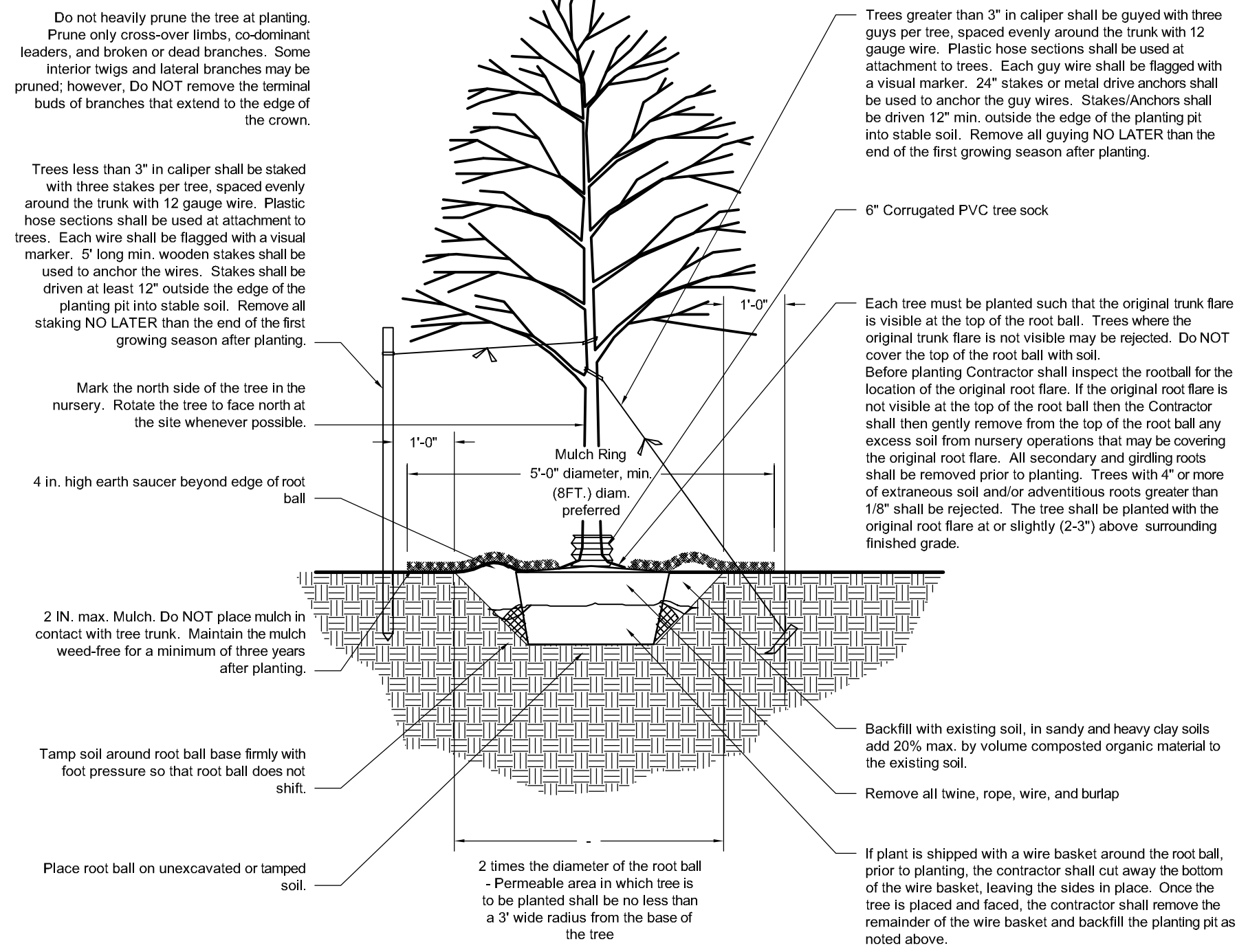
Luminaire Schedule (note fixture catalogue numbers are not complete)

Type	Qty	Lum. Lumens	LLF	Lum. Watts	Description
B1	7	1679	0.900	20.4	SL1-18L3K
C	2	1080	0.900	12.7	LF4SLSL-4SLSL11L30K8
W1	6	2588	0.900	28.6	LNC2-12L-3K-070-4
W2	1	1680	0.900	22.2	LNC-9LU-3K-4
W3	1	849	0.900	13	LNC-5LU-3K-4-X

PLAN VIEW

TITLE: KAPPA DELTA
 SITE LIGHTING LAYOUT
 DATE: 12/20/2018
 GENERATED BY: SWANEY LIGHTING, SCARBOROUGH ME - 207-883-7100 - swaneylighting.com
 SCALE: NOT TO SCALE
 Page 1 of 1

NOTICE: THIS DRAWING IS THE EXCLUSIVE PROPERTY OF SWANEY LIGHTING ASSOCIATES. IT IS NOT TO BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM. THIS DRAWING IS TO BE USED FOR THE PURPOSE INDICATED. THIS DRAWING IS TO BE USED AS A GUIDE ONLY AND DOES NOT CONSTITUTE A CONTRACT. SWANEY LIGHTING ASSOCIATES ASSUMES NO LIABILITY FOR ANY ERRORS OR OMISSIONS. THE USER OF THIS DRAWING SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND CONDITIONS AT THE JOB SITE. SWANEY LIGHTING ASSOCIATES ASSUMES NO LIABILITY FOR ANY DAMAGE TO PROPERTY OR PERSONS ARISING FROM THE USE OF THIS DRAWING. ANY VARIATION IN FIXTURE PERFORMANCE FROM THE PERFORMANCE SHOWN IN THESE FILES IS NOT THE RESPONSIBILITY OF THE MANUFACTURER. ITS USE FOR ANY OTHER PURPOSE IS NOT AUTHORIZED BY SWANEY LIGHTING ASSOCIATES.



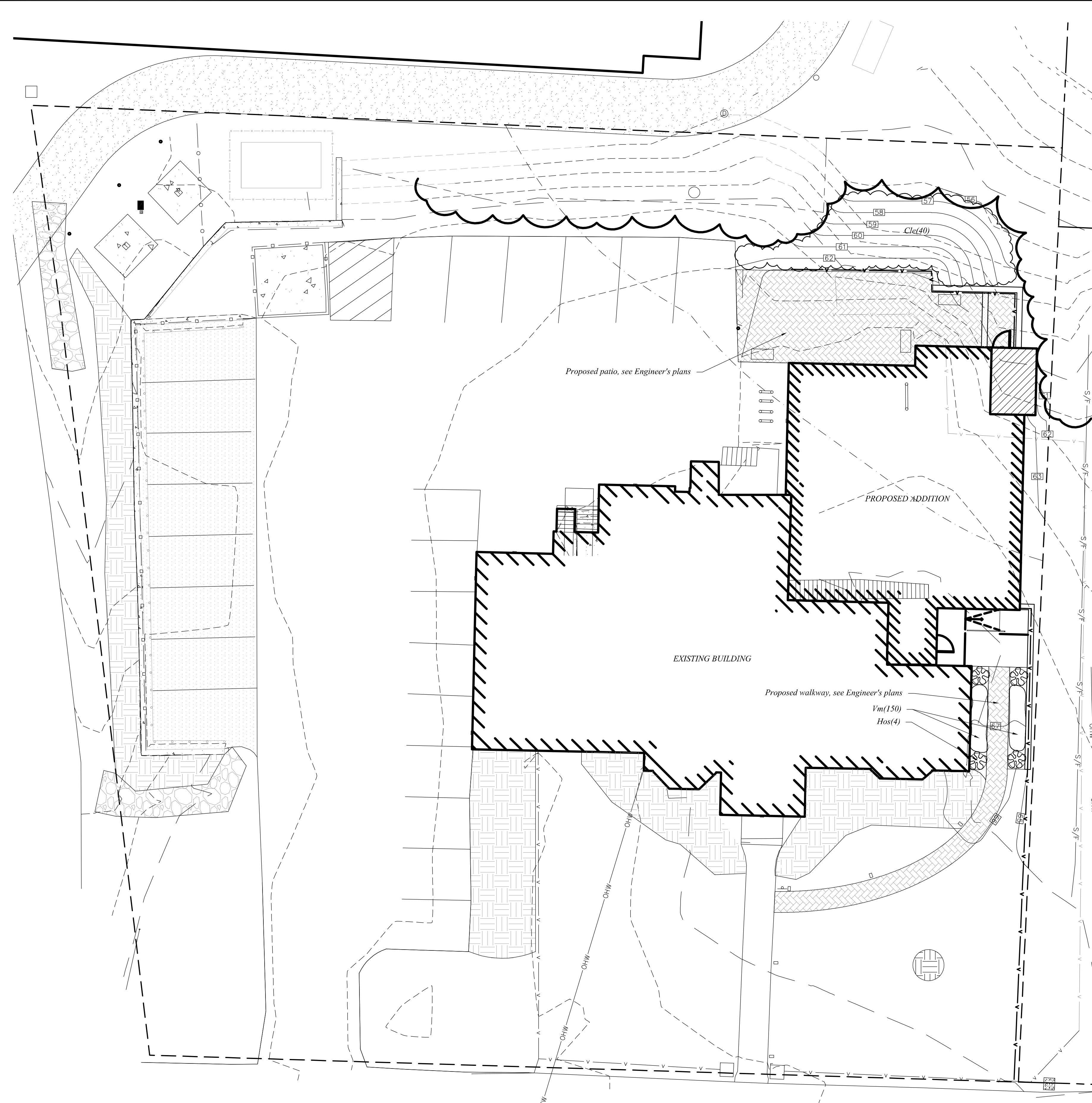
Tree Planting Detail, Typ.

Landscape Notes

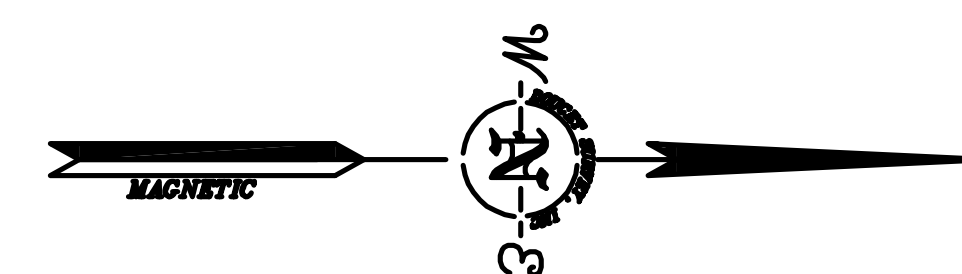
- Design is based on drawings by MJS Engineering dated December 2018 and may require adjustment due to actual field conditions.
- The contractor shall follow best management practices during construction and shall take all means necessary to stabilize and protect the site from erosion.
- Erosion Control shall be in place prior to construction.
- Erosion Control to consist of Hay Bales and Erosion Control Fabric shall be staked in place between the work and Water bodies, Wetlands and/or drainage ways prior to any construction.
- The Contractor shall verify layout and grades and inform the Landscape Architect or Client's Representative of any discrepancies or changes in layout and/or grade relationships prior to construction.
- It is the contractor's responsibility to verify drawings provided are to the correct scale prior to any bid, estimate or installation. A graphic scale bar shall be provided on each sheet for this purpose. If it is determined that the scale of the drawing is incorrect, the landscape architect will provide a set of drawings at the correct scale, at the request of the contractor.
- Trees to Remain within the construction zone shall be protected from damage for the duration of the project by snow fence or other suitable means of protection to be approved by Landscape Architect or Client's Representative. Snow fence shall be located at the drip line at a minimum and shall include any and all surface roots. Do not fill or mulch on the trunk flare. Do not disturb roots. In order to protect the integrity of the roots, trunk and bark of the tree(s) no vehicles or construction equipment shall drive or park in or on the area within the drip line(s) of the tree(s). Do not store any refuse or construction materials or portalets within the tree protection area.
- Location, support, protection, and restoration of all existing utilities and appurtenances shall be the responsibility of the Contractor.
- The Contractor shall verify exact location and elevation of all utilities with the respective utility owners prior to construction. Call DIGSAFE at 1-888-344-7233.
- The Contractor shall procure any required permits prior to construction.
- Prior to any landscape construction activities Contractor shall test all existing loam and loam from off-site intended to be used for lawns and plant beds using a thorough sampling throughout the supply. Soil testing shall indicate levels of pH, nitrates, macro and micro nutrients, texture, soluble salts, and organic matter. Contractor shall provide Landscape Architect with test results and recommendations from the testing facility along with soil amendment plans as necessary for the proposed plantings to thrive. All loam to be used on site shall be amended as approved by the Landscape Architect prior to placement.
- Contractor shall notify landscape architect or owner's representative immediately if at any point during demolition or construction a site condition is discovered which may negatively impact the completed project. This includes, but is not limited to, unforeseen drainage problems, unknown subsurface conditions, and discrepancies between the plan and the site. If a contractor is aware of a potential issue, and does not bring it to the attention of the landscape architect or owner's representative immediately, they may be responsible for the labor and materials associated with correcting the problem.
- The Contractor shall furnish and plant all plants shown on the drawings and listed thereon. All plants shall be nursery-grown under climatic conditions similar to those in the locality of the project. Plants shall conform to the botanical names and standards of size, culture, and quality for the highest grades and standards as adopted by the American Association of Nurserymen, Inc. in the American Standard of Nursery Stock, American Standards Institute, Inc. 230 Southern Building, Washington, D.C. 20005.
- A complete list of plants, including a schedule of sizes, quantities, and other requirements is shown on the drawings. In the event that quantity discrepancies or material omissions occur in the plant materials list, the planting plans shall govern.
- All plants shall be legibly tagged with proper botanical name.
- The Contractor shall guarantee all plants for not less than one year from time of acceptance.
- Owner or Owner's Representative will inspect plants upon delivery for conformity to Specification requirements. Such approval shall not affect the right of inspection and rejection during or after the progress of the work. The Owner reserves the right to inspect and/or select all trees at the place of growth and reserves the right to approve a representative sample of each type of shrub, herbaceous perennial, annual, and ground cover at the place of growth. Such sample will serve as a minimum standard for all plants of the same species used in this work.
- No substitutions of plants may be made without prior approval of the Owner or the Owner's Representative for any reason.
- All landscaping shall be provided with either of the following:
 - An underground sprinkling system
 - An outside hose attachment within 150 feet
- If an automatic irrigation system is installed, all irrigation valve boxes shall be located within planting bed areas.
- The contractor is responsible for all plant material from the time their work commences until final acceptance. This includes but is not limited to maintaining all plants in good condition, the security of the plant material once delivered to the site, and watering of plants. Plants shall be appropriately watered prior to, during and after planting. It is the contractor's responsibility to provide water from off site, should it not be available on site.
- All disturbed areas will be dressed with 6" of topsoil and planted as noted on the plans or seeded except plant beds. Plant beds shall be prepared to a depth of 12" with 75% loam and 25% compost.
- Trees, ground cover, and shrub beds shall be mulched to a depth of 2" with one-year-old, well-composted, shredded native bark not longer than 4" in length and 1/2" in width, free of woodchips and sawdust. Mulch for ferns and herbaceous perennials shall be no longer than 1" in length. Trees in lawn areas shall be mulched in a 5' diameter min. saucer. Color of mulch shall be black.
- Drip strip shall extend to 6" beyond roof overhang and shall be edged with 3/16" thick metal edger.
- In no case shall mulch touch the stem of a plant nor shall mulch ever be more than 3" thick total (including previously applied mulch) over the root ball of any plant.
- Secondary lateral branches of deciduous trees overhanging vehicular and pedestrian travel ways shall be pruned up to a height of 6' to allow clear and safe passage of vehicles and pedestrians under tree canopy.
- Snow shall be stored a minimum of 5' from trunks and ends of trees.
- Landscape Architect is not responsible for the means and methods of the contractor.

Plant List

Symbol	Botanical Name	Common Name	Quantity	Size	Comments
SHRUBS					
Cle	<i>Clethra alnifolia</i> 'Ruby Spice'	Ruby Spice Summersweet	40	5 gal	
PERENNIALS, GROUNDCOVERS, VINES and ANNUALS					
Hos	<i>Hosta</i> 'Sum and Substance'	Sum and Substance Hosta	4	1 gal	
Vm	<i>Vinca minor</i> 'Bowles'	Bowles Periwinkle	3	50/plugs/flat	



woodburn & company
LANDSCAPE ARCHITECTURE
103 Kent Place Newmarket, New Hampshire Phone: 603.659.5949



FINAL APPROVAL BY DURHAM PLANNING BOARD.
CERTIFIED BY MICHAEL BEHRENDT, TOWN PLANNER
CERTIFIED _____
DATE _____

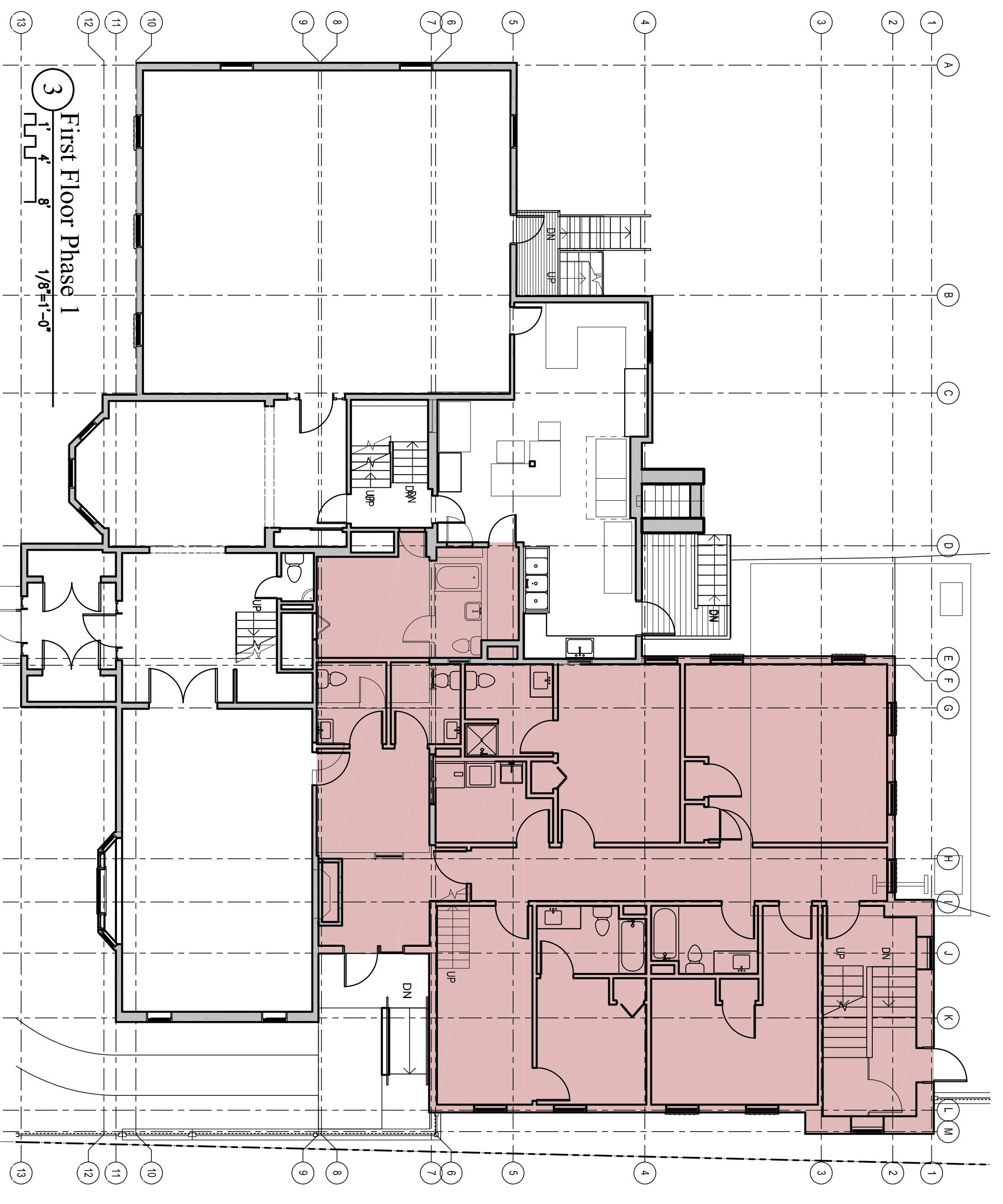
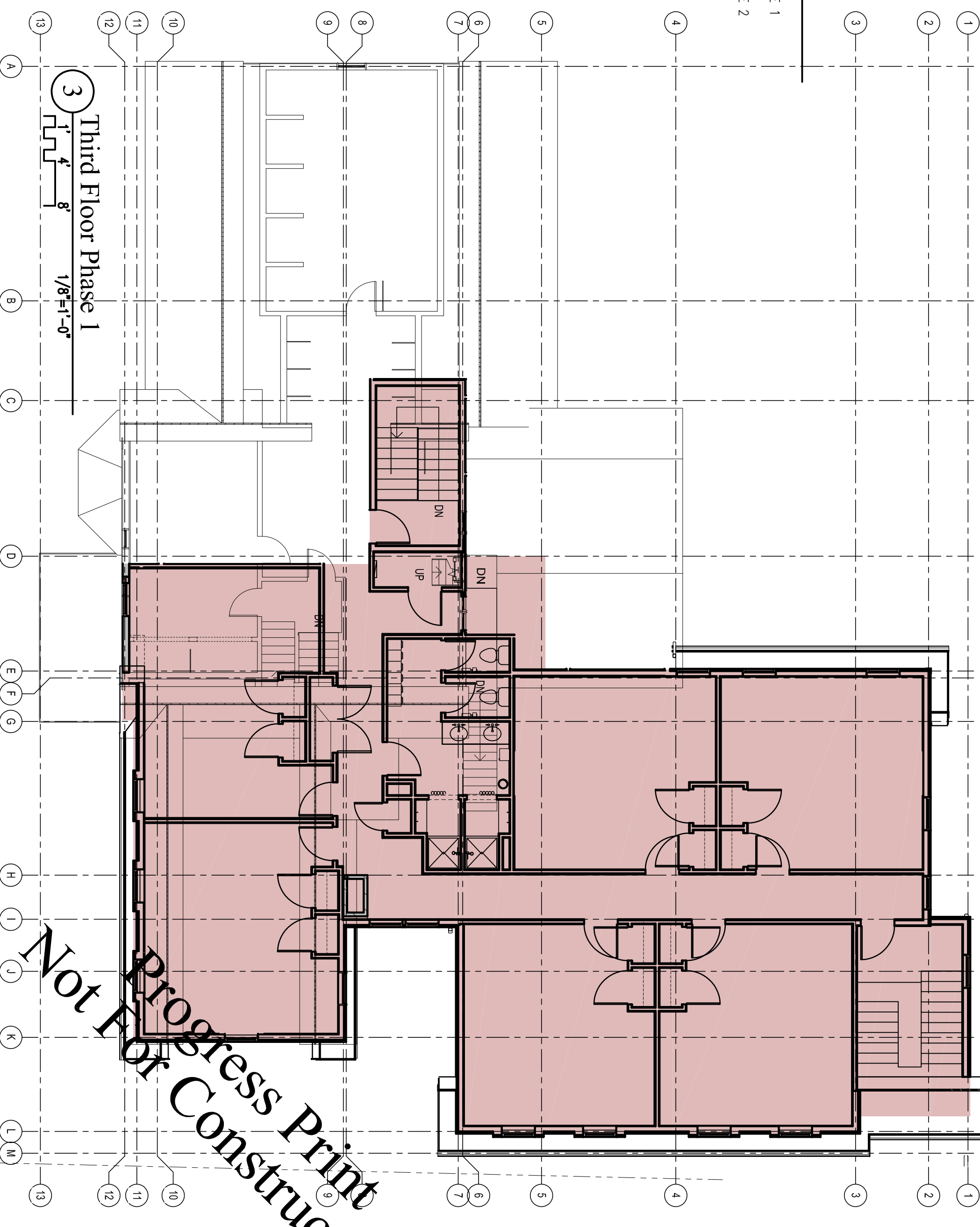
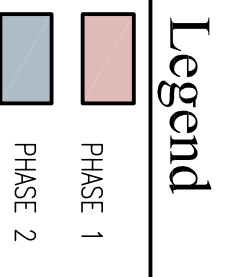
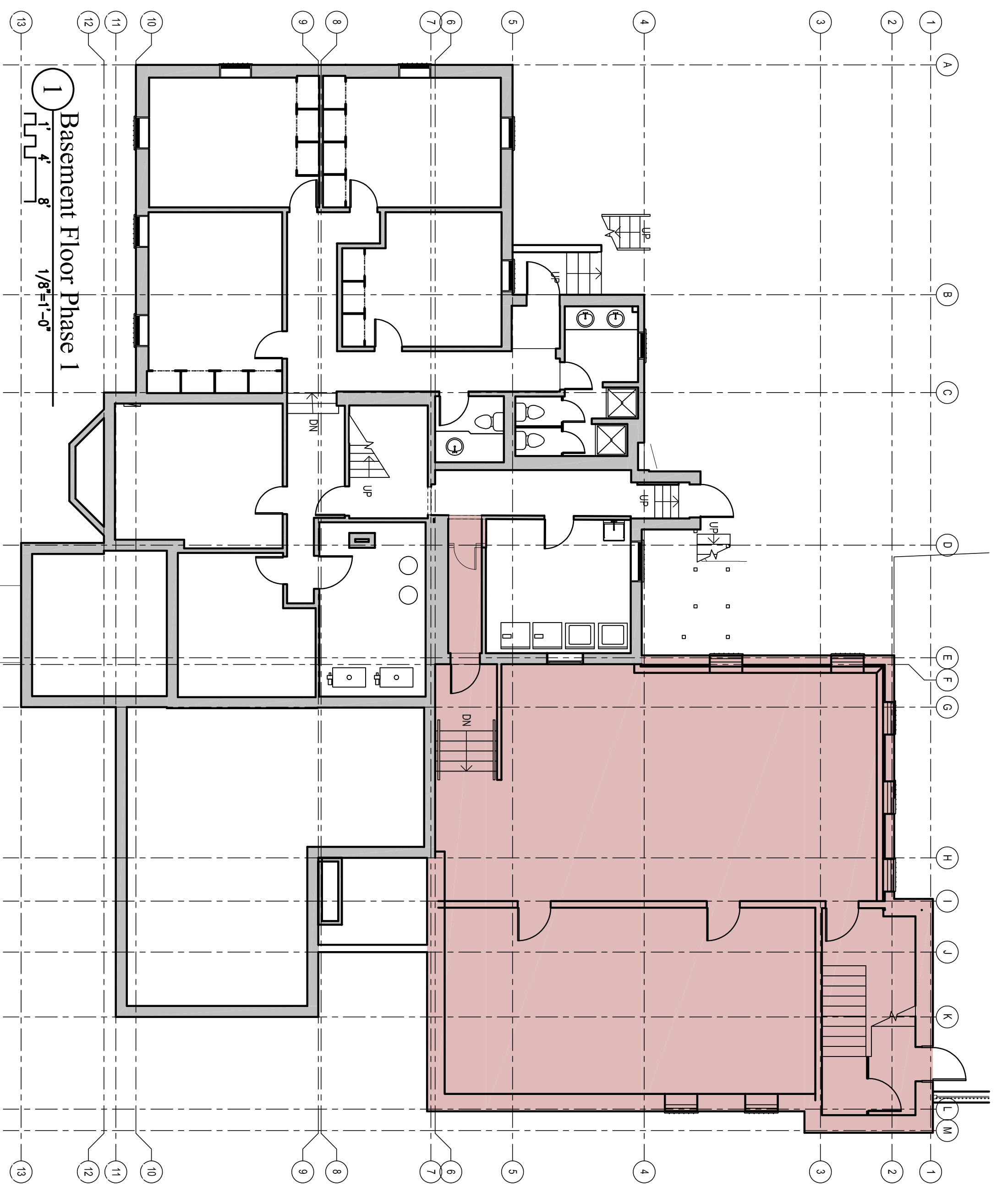
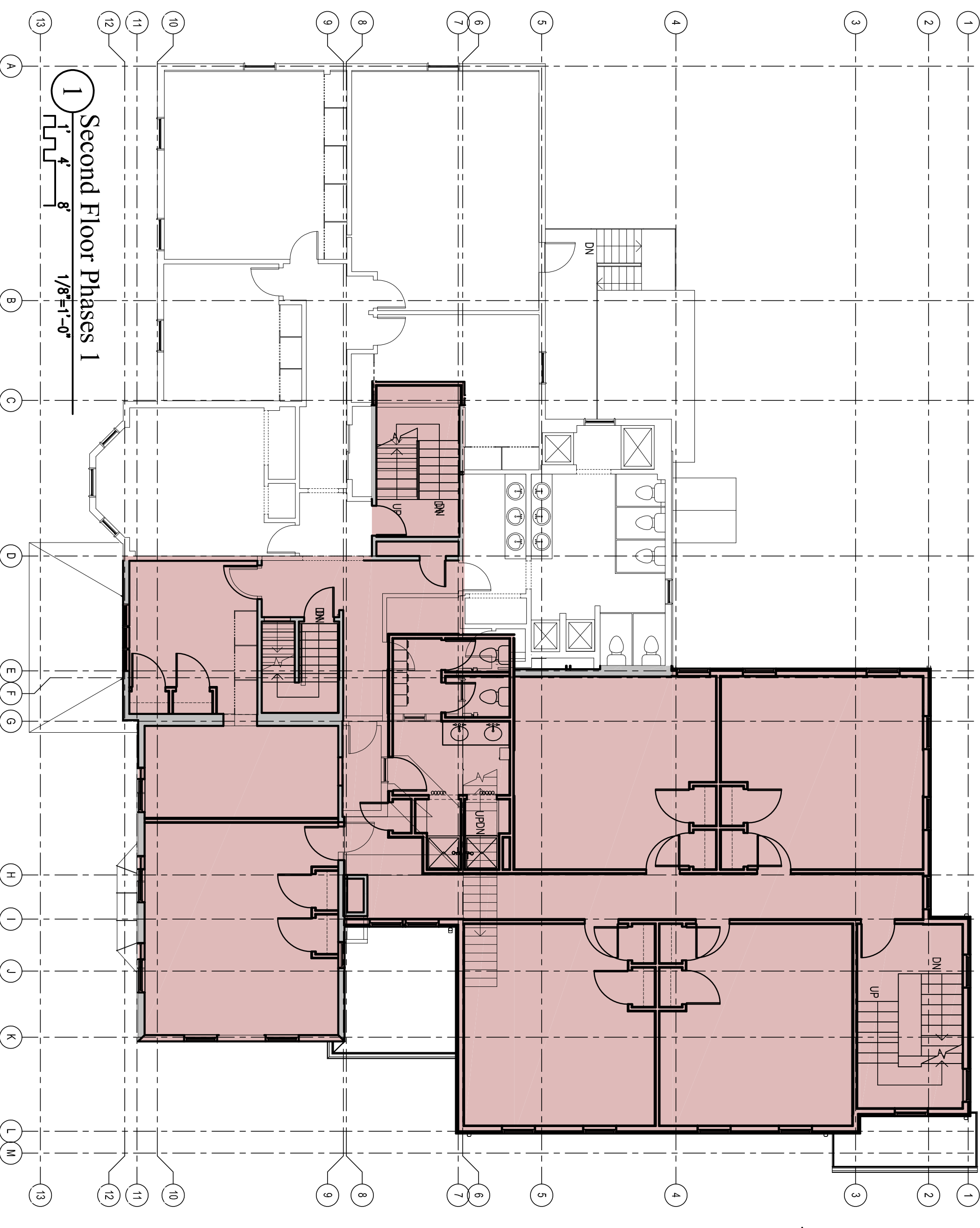
NO.	REVISIONS	DATE
2.	DESIGN REVISION FOR CONSERVATION COMMISSION	12/17/18 MCS
1.	DESIGN REVISION	11/29/18 MCS
0.	INITIAL SUBMISSION TO DURHAM PLANNING BOARD	11/19/18 EJK

LANDSCAPE PLAN
DATE: 1/2/19
SCALE: 1" = 10'
DESIGNED BY: VM
DRAWN BY: VM
APPROVED BY: RW
DWG FILE:

LANDSCAPE PLAN
prepared for
KAPPA DELTA
TAX MAP 2, LOT 12-2
25 MADBURY ROAD
DURHAM, NH

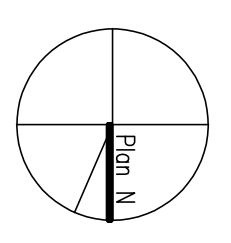
MJS ENGINEERING, P.C.
CIVIL • STRUCTURAL • ENVIRONMENTAL
5 RAILROAD ST., P.O. Box 359
Durham, NH 03824-0359
Phone: (603) 459-0875, Fax: (603) 459-4627
E-MAIL: MJS@MJS-ENGINEERING.COM

JOB: 18-067
L2



Progress Print
 Not For Construction

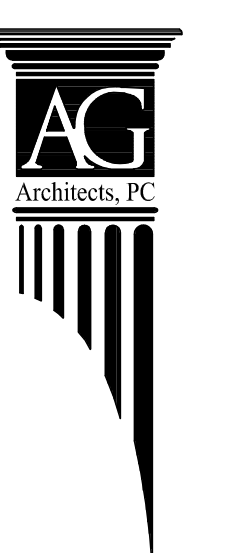
Revisions:	AG Architects, PC Consultant:
Date:	18 December 2018
Scale:	1/8" = 1'-0"
Drawn By:	JG
Checked By:	AG
Sheet:	5 of 17
File:	18728.LA201-01
Sheet Title:	Phasing Plan
Sheet Number:	A2.1b



Kappa Delta Expansion

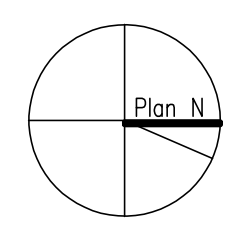
Durham, New Hampshire

AG Architects, PC
 634 Central Avenue, Dover, NH 03820
 E-Mail aga@agarchitects.com
www.agarchitects.com
 Phone: 603-743-3700
 Fax: 603-743-3777

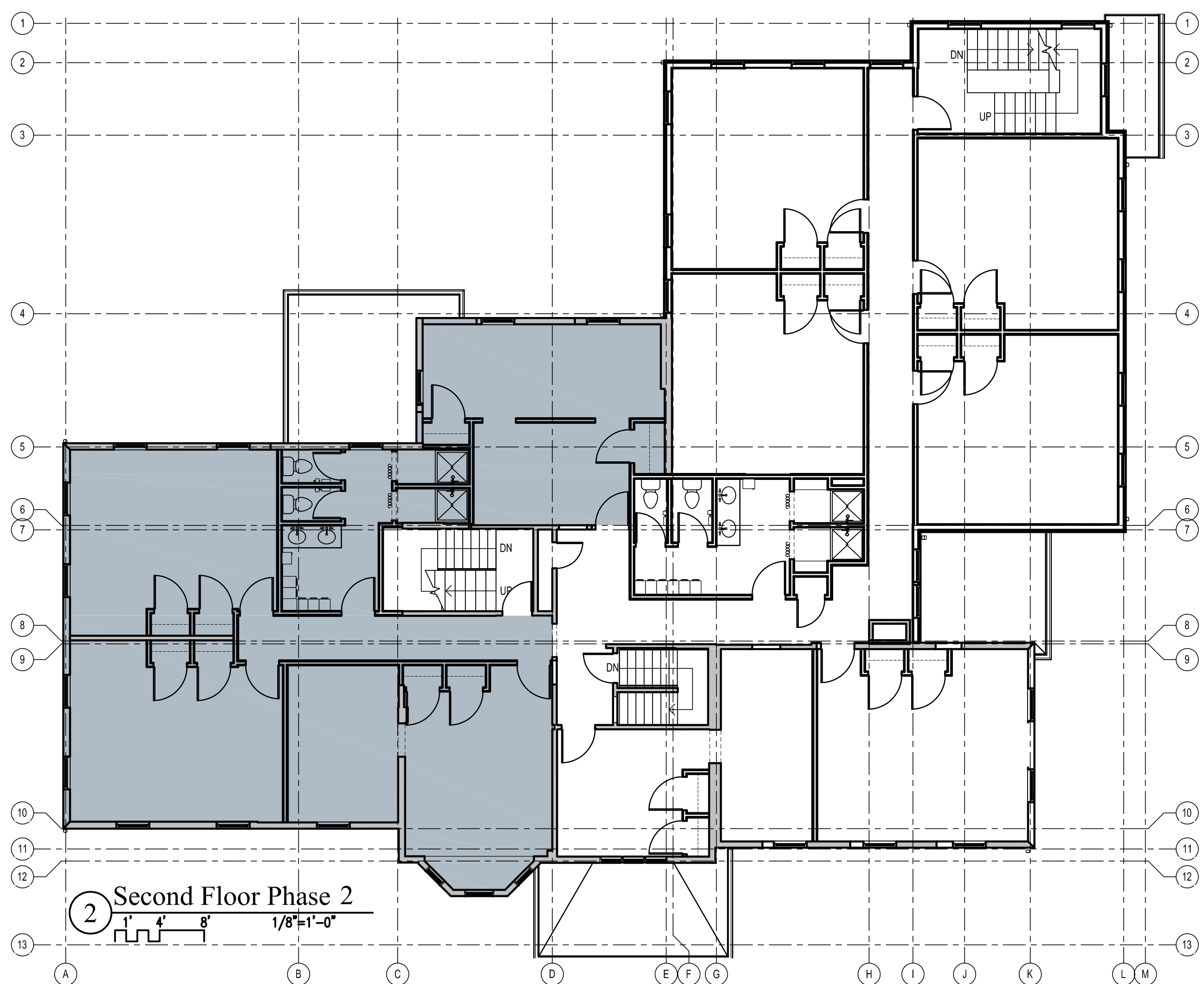


Kappa Delta Expansion

Durham, New Hampshire



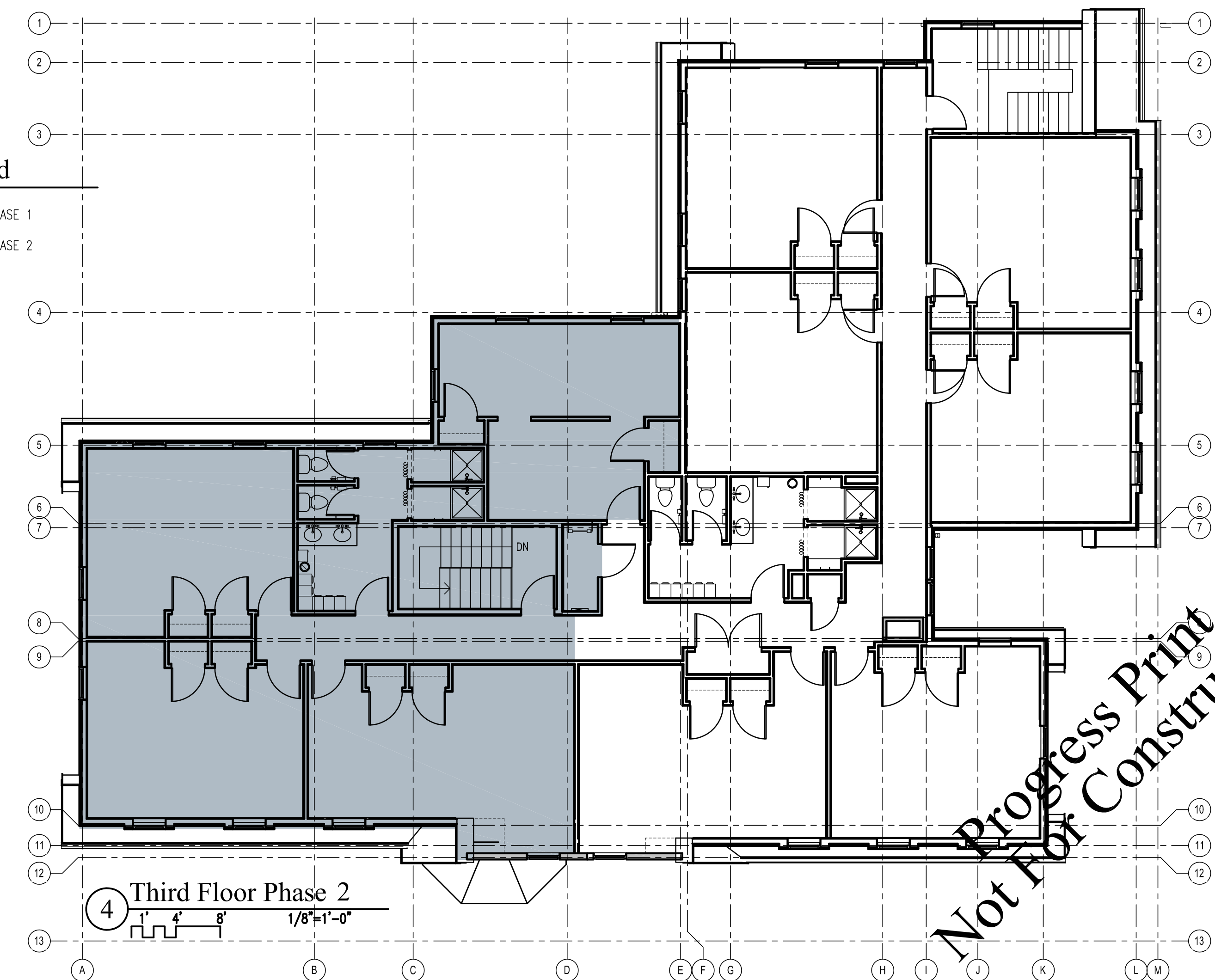
© AG Architects, PC	
Consultant:	
Revisions:	
Date:	18 December 2018
Scale:	1/8" = 1'-0"
Drawn By:	JG
Checked By:	AG
Sheet:	6 of 17
File:	18738.1-A201-01
Sheet Title:	
Phasing Plan	
Sheet Number:	



Legend

PHASE 1

 PHASE 2



Progress Print
 Not For Construction

A2.1c



REFERENCE TO DRAWING A4.1 AND
 A4.2 FOR COMPLETE BUILDINGS
 WITH PHASES 1 AND 2

THIRD FLOOR
 67'-0"

SECOND FLOOR
 77'-0"

FIRST FLOOR
 68'-2 3/4"
 67'-9 3/8"

LOWER BASEMENT
 59'-3 3/4"

ADDITION BASEMENT
 58'-8 3/4"



THIRD FLOOR
 67'-0"

SECOND FLOOR
 77'-0"

FIRST FLOOR
 68'-2 3/4"
 67'-9 3/8"

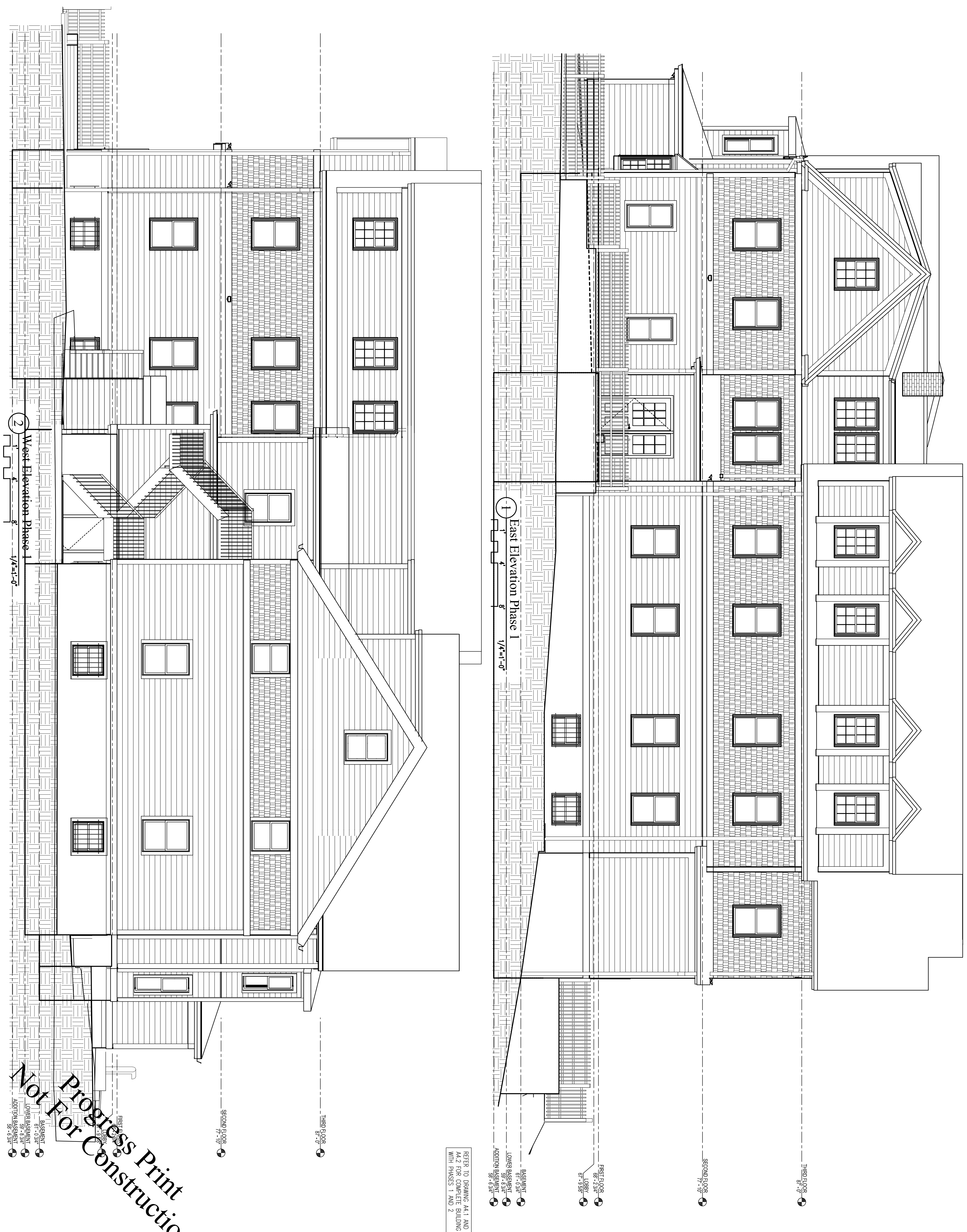
LOWER BASEMENT
 59'-3 3/4"

ADDITION BASEMENT
 58'-8 3/4"

2 West Elevation Phase 1
 1/4"=1'-0"

Progress Print
 Not For Construction

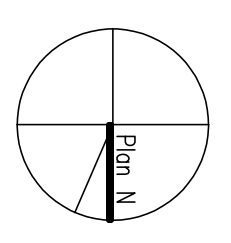
<p>AG Architects, PC 634 Central Avenue, Dover, NH 03820 E-Mail: aga@agarchitects.com www.agarchitects.com Phone: 603-743-3700 Fax: 603-743-3777</p>		
<h1 style="text-align: center;">Kappa Delta Expansion</h1> <h2 style="text-align: center;">Durham, New Hampshire</h2>		
<p> Date: 18 December 2018 Scale: 1/4" = 1'-0" Drawn By: JG Checked By: AG Sheet: 14 of 17 File: 18728.LA401-01 </p>	<p> Sheet Title: Exterior Elevations Phase 1 </p>	<p> Sheet Number: A4.1a </p>



REFER TO DRAWING A4.1 AND A4.2 FOR COMPLETE BUILDINGS WITH PHASES 1 AND 2

Progress Print
Not For Construction

Revisions:	Consultant:
Date:	18 December 2018
Scale:	1/4" = 1'-0"
Drawn By:	JG
Checked By:	AG
Sheet:	15 of 17
File:	187281.A4D0-01
Sheet Title:	Exterior Elevations Phase 1
Sheet Number:	A4.2a



Kappa Delta Expansion

Durham, New Hampshire

AG Architects, PC
 634 Central Avenue, Dover, NH 03820
 E-Mail: aga@agarchitects.com
www.agarchitects.com
 Phone: 603-743-3700
 Fax: 603-743-3777

