DEFINITIVE SUBDIVISION PLAN

203 POND STREET

HOPKINTON, MASSACHUSETTS

OPEN SPACE AND LANDSCAPE PRESERVATION DEVELOPMENT

OWNER/APPLICANT:

John Coolidge & Anne Richards 203 Pond Street Hopkinton, MA 01748

CIVIL ENGINEER AND ENVIRONMENTAL SCIENTIST:

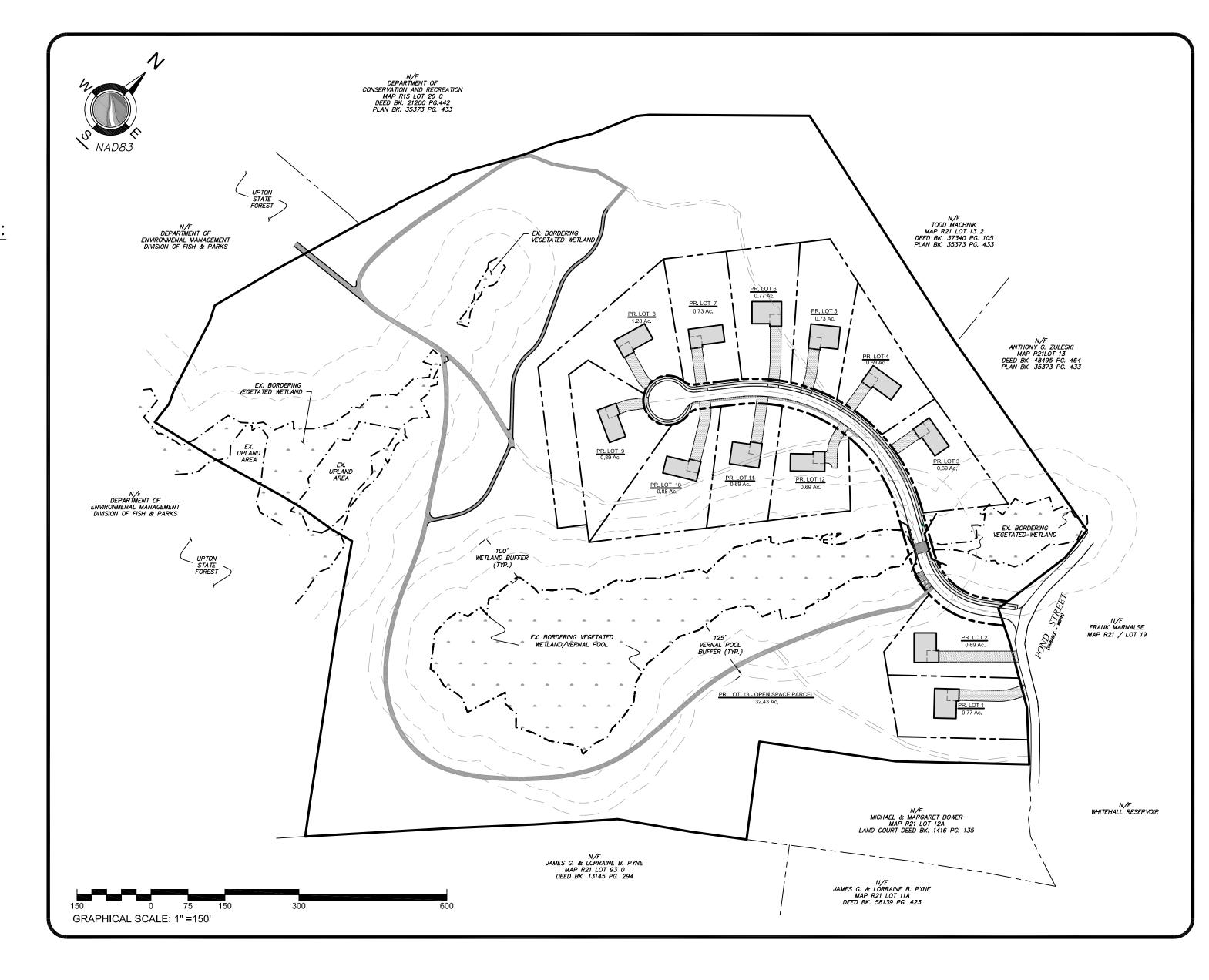


115 Main Street, Suite 2B P.O. Box 73 North Easton, MA 02356 tel: (508) 682-0229 fax: (508) 682-3105 web: www.tunisondias.com

LAND SURVEYOR:

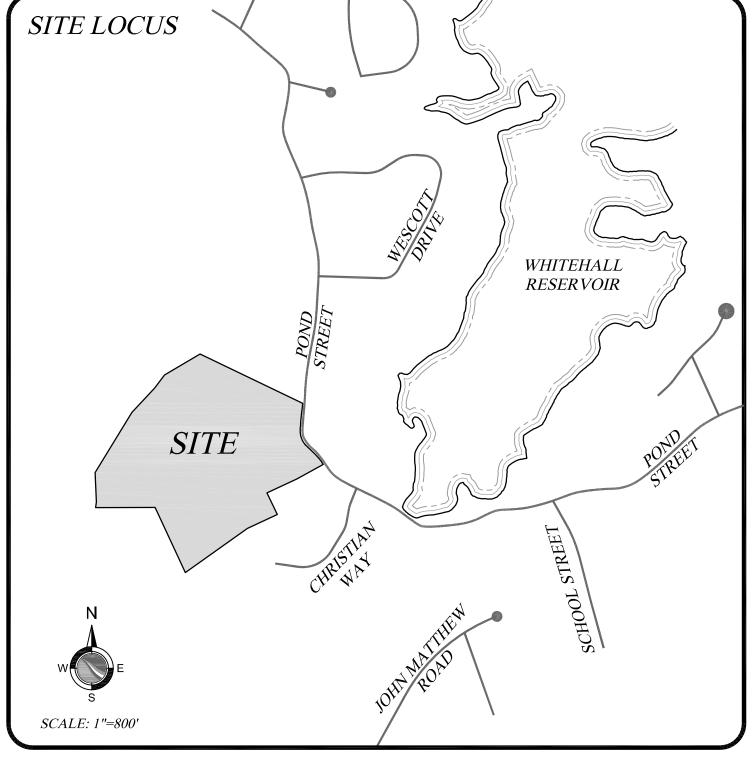


Green Seal Environmental, Inc. 114 State Road, Building B Sagamore Beach, MA 02562 Tel: (508) 888-6034 Fax: (508) 888-1506 www.gseenv.com



SHEET INDEX

SHEET	NAME	REVISED
	NOTES	09/17/14
C-1	EXISTING CONDITIONS PLAN	09/17/14
C-2	PROPOSED SUBDIVISION PLAN	09/17/14
<i>C-2A</i>	PROPOSED SUBDIVISION PLAN	09/17/14
<i>C-2B</i>	PROPOSED EASEMENTS PLAN	09/17/14
<i>C-3</i>	PROPOSED LA YOUT PLAN	09/17/14
C-4	PROPOSED GRADING AND DRAINAGE PLAN	09/17/14
C-5	PROPOSED UTILITY PLAN	09/17/14
C-6	PROPOSED ROADWAY PROFILE	09/17/14
C-7	PROPOSED EROSION CONTROL PLAN	09/17/14
C-8	PROPOSED TRAIL PLAN	09/17/14
C-9	TEST PIT LOGS	09/17/14
C-10	PROPOSED ROADWAY CROSS SECTIONS	09/17/14
<i>C-11</i>	PROPOSED ROADWAY CROSS SECTIONS	09/17/14
<i>C-12</i>	PROPOSED CROSS SECTIONS	09/17/14
S-1	PROPOSED SCREENING PLAN	08/05/14
D-1 - D-4	DETAILS	09/17/14



REVISED: SEPTEMBER 17, 2014 ISSUED FOR REVIEW: JUNE 30, 2014 NOT FOR CONSTRUCTION

1. THIS PLAN SET HAS BEEN PREPARED UNDER THE REQUIREMENTS OF A SPECIAL PERMIT ISSUED UNDER ARTICLE XVII, OPEN SPACE AND LANDSCAPE PRESERVATION DEVELOPMENT, BY THE TOWN OF HOPKINTON PLANNING BOARD ON MARCH 18, 2013 WITH WAIVERS PROVIDED.

2. PROPERTY BOUNDARY DETERMINATION AND EXISTING CONDITIONS TOPOGRAPHIC INFORMATION TAKEN FROM PLAN ENTITLED "EXISTING CONDITIONS PLAN, PREPARED BY GREEN SEAL ENVIRONMENTAL, INC, DATED JULY 29, 2013

3. WETLAND BOUNDARIES SHOWN TAKEN FROM PLAN ENTITLED "ABBREVIATED NOTICE OF WETLAND RESOURCE AREA DELINEATION", PREPARED BY THIS OFFICE, LAST REVISED JUNE 8, 2011.

4. SELECT TREELINE AND TRAIL SHOWN APPROXIMATELY BASED ON BEST AVAILABLE INFORMATION AND FIELD OBSERVATIONS PERFORMED BY TUNISON DIAS, INC IN JUNE 2014.

5. REQUIREMENTS RELATED TO PROPOSED LOT DEVELOPMENT INCLUDING PROPOSED HOUSE, DRIVEWAY, SEPTIC, AND SERVICE UTILITIES ARE SHOWN SCHEMATICALLY AND ARE SUBJECT TO ADDITIONAL PERMITTING BY THE TOWN OF HOPKINTON BUILDING DEPARTMENT, BOARD OF HEALTH, AND OTHER DEPARTMENTS AS AND/OR UTILITY COMPANIES SHALL BE PERFORMED PRIOR TO APPLICABLE AND AS SUCH MAY REQUIRE MINOR MODIFICATIONS UPON APPLICATION FOR INDIVIDUAL PERMITS.

6. ALL PROPOSED LOT DEVELOPMENT SHALL BE IN ACCORD WITH THE INTENT SHOWN ON THIS PLAN SET.

LAYOUT NOTES

1. STREET TREES SHALL BE LOCATED AS GENERAL DEPICTED ON SHEET C-3 OF THE PLAN SET AND SHALL BE IN CONFORMITY WITH ALL TOWN OF HOPKINTON REQUIREMENTS RELATIVE TO SIZE, SPECIES, PLANTING, AND CARE.

2. PROPOSED STREET TREES SHALL BE 2" DBH RED MAPLE (ACER RUBRUM) OR APPROVED EQUAL.

3. ALL DISTURBED AREAS NOT OTHERWISE DESIGNATED FOR SPECIFIC SURFACE TREATMENT SHALL RECEIVE SIX INCHES OF LOAM, AND BE SEEDED, WATERED, FERTILIZED AND MAINTAINED UNTIL A HEALTHY VEGETATIVE COVER IS ESTABLISHED.

4. THE CONTRACTOR SHALL ADJUST AND/OR CUT EXISTING PAVEMENT AS NECESSARY TO ENSURE A SMOOTH FIT AND CONTINUOUS GRADE BETWEEN EXISTING AND PROPOSED PAVEMENT.

5. ALL SIDEWALKS SHALL HAVE A MINIMUM CROSS SLOPE OF 1 % AND A MAXIMUM CROSS SLOPE OF 2%.

6. ALL CURB DIMENSIONS AND RADII REFERENCE FACE OF CURB UNLESS OTHERWISE NOTED.

GRADING AND DRAINAGE NOTES

1. ALL CUT OR FILL SLOPES SHALL BE 3:1 OR FLATTER UNLESS OTHERWISE NOTED.

2. ALL FILL SHALL BE COMPACTED IN 12-INCH LIFTS. COMPACTION SHALL ACHIEVE 95% MAXIMUM DRY DENSITY IN AREAS UNDER PAVEMENT, BUILDINGS, SIDEWALKS AND ANY AREA SUBJECT TO VEHICULAR TRAFFIC AND SHALL ACHIEVE 90 % MAXIMUM DRY DENSITY ELSEWHERE UNLESS OTHERWISE

3. STORM DRAIN PIPE SHALL BE 12" MIN. REINFORCED CONCRETE UNLESS OTHERWISE NOTED.

LF 110 OR APPROVED EQUAL.

4. ALL JOINTS BETWEEN STORM DRAINS AND STRUCTURES SHALL BE GROUTED TO ENSURE A WATER-TIGHT CONNECTION. 5. ALL STORM DRAIN MANHOLE COVERS SHALL BE INSTALLED FLUSH WITH THE FINISHED SURFACE ELEVATION.

6. DRAIN MANHOLE FRAME AND COVERS SHALL BE LEBARON NO.

7. CATCH BASIN GRATES SHALL BE LEBARON NO. LF 278 OR APPROVED EQUAL WITH GRANITE VERTICAL CURB INLET.

8. ALL PROPOSED CATCH BASINS SHALL HAVE 4-FOOT DEEP SUMPS.

9. ALL PROPOSED CATCH BASINS SHALL BE FITTED WITH AN OIL/GREASE HOOD UNLESS SPECIFIED TO RECEIVE A WATER QUALITY INSERT.

10. ALL GRAVITY DRAINAGE PIPE SYSTEMS ARE TO BE CONSTRUCTED BEGINNING AT THE LOWEST POINT IN THE SYSTEM AND PROCEEDING TO THE HIGHEST POINT. ALL PIPE SHALL BE INSTALLED WITH BELL END UP-GRADIENT.

11. THE CONTRACTOR SHALL ASSURE POSITIVE DRAINAGE AWAY FROM ALL BUILDINGS.

12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING ALL DRAINAGE STRUCTURES ON SITE PRIOR TO COMPLETION OF PROJECT. THIS INCLUDES FLUSHING ALL DRAIN PIPES AND CLEANING ALL MANHOLES AND CATCH BASIN SUMPS OF ALL SEDIMENT AND DEBRIS.

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THESE PLANS, AND THE APPLICABLE LOCAL AND STATE STANDARDS AND REGULATIONS. WHERE CONFLICT OCCURS, THE MORE STRINGENT SHALL APPLY. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING A COPY OF THE MOST CURRENT STANDARDS FROM THE TOWN FOR USE ON THIS PROJECT.

2. PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR SHALL MAKE CERTAIN 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 APPROVED BY ALL OF THE PERMITTING AUTHORITIES.

3. BARRICADING, TRAFFIC CONTROL, AND PROJECT SIGNS SHALL CONFORM TO ALL STATE AND LOCAL REGULATIONS.

4. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND PAYING FOR ALL PERMITS AND/OR CONNECTION FEES REQUIRED FOR THE PERFORMANCE OF THE WORK, INCLUDING WITHOUT LIMITATION DEMOLITION PERMITS.

5. ALL NECESSARY INSPECTIONS AND OR CERTIFICATIONS REQUIRED BY CODE, THE MUNICIPALITY, PERMITTING AUTHORITIES THE ANNOUNCED BUILDING POSSESSION AND THE FINAL CONNECTION OF SERVICE.

6. ALL WORK AND MATERIALS SHALL COMPLY WITH MUNICIPAL REQUIREMENTS INCLUDING THOSE OF THE MUNICIPAL DEPARTMENT OF PUBLIC WORKS.

7. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES OR OTHER STRUCTURES INTERFERING WITH THE PROPOSED CONSTRUCTION AND ANY NECESSARY REMEDIAL ACTION NECESSITATED THEREBY BEFORE PROCEEDING WITH THE

8. THE CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING AND MAINTAINING CONTROL POINTS AND BENCH MARKS REQUIRED FOR THE PERFORMANCE OF THE WORK.

9. THE CONTRACTOR IS RESPONSIBLE FOR DISPOSAL OF ALL REFUSE. WASTE MATERIALS. DEMOLITION MATERIALS AND EXCESS EXCAVATION SPOILS. DISPOSAL SHALL TAKE PLACE OFF-SITE AND IN ACCORDANCE WITH ALL FEDERAL, STATE AND MUNICIPAL REQUIREMENTS.

10. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATIONS/AND OR ELEVATIONS OF EXISTING UTILITIES AND STRUCTURES SHOWN ON THESE PLANS ARE BASED ON THE RECORDS OF VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE LOCATIONS AND ELEVATIONS OF OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR MUST ALSO CONTACT THE APPROPRIATE UTILITY COMPANY(IES) AND "DIGSAFE" AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION.

11. THE CONTRACTOR SHALL VERIFY THE SUITABILITY OF ALL EXISTING AND PROPOSED SITE CONDITIONS INCLUDING GRADES AND DIMENSIONS BEFORE COMMENCEMENT OF CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES.

12. THE LIMIT OF WORK LINE FOR THE AREA TO BE CLEARED AND GRUBBED SHALL BE THE SAME AS THE LIMIT OF WORK LINE NECESSARY FOR GRADING PURPOSES. (IE., THE GRADING LIMITS AROUND THE PERIMETER OF THE PROJECT AREA).

13. THE CONTRACTOR IS RESPONSIBLE FOR RELOCATING ANY EXISTING UTILITY(IES) WHICH CONFLICT WITH THE PROPOSED CONSTRUCTION.

14. THE CONTRACTOR SHALL PROTECT AND/OR CAP OFF ALL EXISTING ON-SITE UTILITY SERVICES NOT INCORPORATED FOR RE-USE IN THE PROPOSED SITE IMPROVEMENTS. CAPPING SHALL BE PERFORMED AT THE SITE PROPERTY LINE OR WHERE REQUIRED BY THE MUNICIPALITY OR THE APPROPRIATE UTILITY COMPANY

15. EXISTING STRUCTURES WITHIN THE LIMITS OF WORK ARE TO BE REMOVED OR RELOCATED AS NECESSARY.

16. THE CONSTRUCTION ENTRANCE(S) AND EXIT(S) SHALL BE CLEARED OF ALL VEGETATION, ROOTS, BOULDERS AND OTHER MATERIAL DETERMINED TO BE OBJECTIONABLE BY THE ENGINEER OR OTHER DESIGNATED OWNER'S REPRESENTATIVE.

17. THE CONTRACTOR IS RESPONSIBLE FOR THE EXCAVATION OF ANY TEST HOLES REQUIRED TO VERIFY THE LOCATION OF ANY EXISTING UTILITY OR STRUCTURE PRIOR TO CONSTRUCTION. FOR THE INSTALLATION OF ALL PROPOSED FEATURES SHOWN ON OR IMPLIED BY THESE PLANS, THE CONTRACTOR SHALL VERIFY THAT BASED ON THE FIELD-DETERMINED LOCATIONS OF EXISTING UTILITIES THAT THERE ARE NO CONFLICTS BETWEEN THE EXISTING UTILITIES AND STRUCTURES AND THE PROPOSED

18. THE CONTRACTOR IS RESPONSIBLE FOR CHECKING ALL CONCRETE STRUCTURES FOR BUOYANCY PRIOR TO FABRICATION. THE CONTRACTOR SHALL TAKE MEASURES TO GUARANTEE STRUCTURES DO NOT FLOAT WHEN FULLY SUBMERGED DUE TO GROUNDWATER OR OTHER INUNDATION.

19. SUBSTITUTIONS OF PRODUCTS IN PLACE OF THOSE SPECIFIED WILL NOT BE ALLOWED WITHOUT WRITTEN AUTHORIZATION FROM THE ENGINEER. THE COST OF ALL INVESTIGATION AND ANALYSIS TO DETERMINE THE SUITABILITY OF THE SUBSTITUTION SHALL BE BORNE BY THE CONTRACTOR.

20. GENERAL CONTRACTOR IS TO CHECK THAT THE STRUCTURES ARE BIG ENOUGH FOR THE EQUIPMENT THAT WILL GO INSIDE THEM. IF ALL EQUIPMENT SHOWN ON THE PLANS DOES NOT FIT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING A

BIGGER STRUCTURE.

1. PROPOSED UTILITIES ARE SHOWN IN THESE PLANS IN SCHEMATIC ONLY. EXACT LOCATIONS SHALL BE DETERMINED TO ALLOW FOR THE MOST ECONOMICAL INSTALLATION.

UTILITY NOTES

2. THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH THE SPECIFICATIONS THE MUNICIPALITY AND ALL APPROPRIATE UTILITY COMPANIES AND PERMITTING AUTHORITIES WITH REGARD TO MATERIALS, INSTALLATION, TESTING AND INSPECTION OF ALL PROPOSED UTILITIES.

3. THE CONTRACTOR IS RESPONSIBLE FOR THE COST OF ALL TESTING. INSPECTION AND CONNECTION FEES ASSOCIATED WITH THE INSTALLATION OF THE PROPOSED UTILITIES.

4. THE CONTRACTOR IS RESPONSIBLE FOR SCHEDULING ANY REQUIRED UTILITY INSPECTIONS AND OR TESTING WITH THE APPROPRIATE UTILITY COMPANY(IES).

5. CONTRACTOR SHALL VERIFY ALL EXISTING INVERTS AND RIM ELEVATIONS PRIOR TO CONSTRUCTION AS NECESSARY.

6. THE CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES TO DETERMINE EXACT POINT OF SERVICE CONNECTION AT EXISTING UTILITY.

7. EXACT LOCATION OF UTILITY STUBS FOR BUILDING CONNECTIONS SHALL BE VERIFIED WITH THE ARCHITECTURAL, STRUCTURAL AND MECHANICAL/ELECTRICAL/PLUMBING DRAWINGS.

8. ALL JOINTS BETWEEN WATER MAINS AND FITTINGS SHALL BE MECHANICAL JOINTS WITH APPROPRIATE THRUST BLOCKING. 9. WATER MAINS SHALL BE INSTALLED WITH A MINIMUM OF 5

FEET OF COVER AND A MAXIMUM OF 8 FEET OF COVER UNLESS OTHERWISE NOTED. 10. WATER MAINS AND SERVICES SHALL BE INSTALLED NO

CLOSER THAN 10 FEET (HORIZONTAL SEPARATION) TO ANY

SANITARY SEWER OR STORM DRAIN LINE.

11. IN THE EVENT OF A VERTICAL CONFLICT BETWEEN WATER LINES AND SANITARY SEWER OR STORM DRAIN LINES (WHETHER EXISTING OR PROPOSED). THE SANITARY SEWER OR STORM DRAIN LINE SHALL BE DUCTILE IRON PIPE WITH MECHANICAL FITTINGS TO A DISTANCE OF 10 FEET TO EITHER SIDE OF THE CROSSING, THE WATER MAIN SHALL HAVE MECHANICAL JOINTS ONLY (NO PUSH-ON JOINTS) WITHIN 10 FEET OF THE CROSSING, AND THE WATER MAIN SHALL BE INSTALLED 18 INCHES ABOVE (VERTICAL CLEARANCE) THE CONFLICTING LINE AT THE

12. WHERE 18 INCHES OF VERTICAL CLEARANCE OR 10 FEET OF HORIZONTAL SEPARATION IS NOT POSSIBLE BETWEEN A WATER LINE AND A SANITARY SEWER OR STORM DRAIN LINE, THE WATER LINE SHALL BE ENCASED IN CONCRETE TO MEET THE REQUIREMENTS OF ANSI A21.10 OR A21.22 (AWWA C-151, CLASS 50).

13. ALL PROPOSED WATER LINES 3 INCHES IN DIAMETER OR LARGER SHALL BE CLASS 52 CEMENT-LINED DUCTILE IRON. 14. ALL PROPOSED WATER LINES SMALLER THAN 3 INCHES IN

DIAMETER SHALL BE TYPE-K COPPER. 15. ALL PROPOSED HYDRANTS SHALL MEET THE MUNICIPAL SPECIFICATION.

16. ALL WATER VALVES SHALL BE RESILIENT SEAT, MODIFIED WEDGE DISK GATE VALVES AND CONFORM TO AWWA-C509. WATER VALVE OPERATING DIRECTION (OPEN-LEFT OR OPEN-RIGHT) SHALL MEET THE MUNICIPAL SPECIFICATION.

17. ALL CONCRETE USED IN THE INSTALLATION OF UTILITIES, INCLUDING WITHOUT LIMITATION THRUST BLOCKS AND ENCASEMENT, SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3000 PSI.

18. PROPOSED TELEPHONE, ELECTRIC AND COMMUNICATIONS SYSTEMS LOCATIONS ARE APPROXIMATE ONLY. LOCATIONS AND INSTALLATION OF THESE FEATURES SHALL BE COORDINATED BY THE CONTRACTOR WITH THE APPROPRIATE UTILITY COMPANY.

19. ALL UNDERGROUND STRUCTURES AND ASSOCIATED CASTINGS, LIDS AND/OR COVERS SHALL BE RATED BY THEIR MANUFACTURER AS CAPABLE OF SUSTAINING H-20 LOADING CONDITIONS. ALL MEANS, METHODS AND MATERIALS SPECIFIED BY THE MANUFACTURER TO ENSURE H-20 LOADING SUPPORT SHALL BE EMPLOYED BY THE CONTRACTOR.

20. IF MUNICIPAL, PERMITTING AUTHORITY OR UTILITY COMPANY SPECIFICATIONS AND/OR REQUIREMENTS DIFFER FROM THE REQUIREMENTS OF THESE PLANS IN ANY REGARD, THE MORE STRINGENT REQUIREMENT SHALL APPLY.

LANDSCAPING NOTES

1. ALL PLANTS SHALL BE HEALTHY AND VIGOROUS, AND FREE OF PESTS AND DISEASE.

2. ALL PLANTS SHALL BE CONTAINER-GROWN OR BALLED AND BURLAPPED.

3. ALL TREES SHALL HAVE STRAIGHT TRUNKS AND FULL HEADS AS APPROPRIATE TO THE SPECIES.

OWNER'S DESIGNATED REPRESENTATIVE BEFORE, DURING AND FOR A PERIOD OF 1 YEAR AFTER INSTALLATION.

4. ALL PLANTS ARE SUBJECT TO THE APPROVAL OF THE

5. ALL TREES MUST BE STAKED AND GUYED AS SHOWN IN THESE DRAWINGS.

6. PRIOR TO THE INSTALLATION OF LANDSCAPING, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF ALL UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ALL DAMAGE TO UTILITIES, STRUCTURES AND OTHER SITE FEATURES THAT OCCURS AS A RESULT OF LANDSCAPING

7. THE CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE OF ALL LANDSCAPING, INCLUDING WITHOUT LIMITATION WATERING, FERTILIZING AND PEST CONTROL, UNTIL ACCEPTANCE OF THE LANDSCAPING BY THE OWNER.

8. THE CONTRACTOR SHALL GUARANTEE ALL LANDSCAPING MATERIALS FOR A PERIOD OF ONE YEAR FOLLOWING ACCEPTANCE BE THE OWNER.

9. ANY PLANT THAT DIES, BROWNS OR DEFOLIATES PRIOR TO THE EXPIRATION OF THE GUARANTEE PERIOD SHALL BE PROMPTLY REMOVED FROM THE SITE AND REPLACED WITH A PLANT OF THE SAME SPECIES AND SIZE AS THE ORIGINAL.

10. THE STANDARDS OF "AMERICAN STANDARD FOR NURSERY STOCK" OF THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION SHALL CONSTITUTE THE MINIMUM QUALITY REQUIREMENT FOR ALL PLANTS AND PLANTING MATERIALS.

1. THIS PROJECT IS SUBJECT TO THE REQUIREMENTS OF THE ENVIRONMENTAL PROTECTION AGENCY'S (EPA) NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) 2012 PHASE II CONSTRUCTION GENERAL PERMIT (CGP). A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) HAS BEEN PREPARED TO ACCOMPANY THESE PLANS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN AND ADHERE TO THE SWPPP AND CONDITIONS OF THE CGP AS REQUIRED.

2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SECURE A NPDES STORMWATER NOTICE OF INTENT (NOI) IN ACCORD WITH THE REQUIREMENTS OF THE CGP REFERENCED ABOVE PRIOR TO BEGINNING ANY EARTH DISTURBANCE ACTIVITY.

3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SECURE A NPDES STORMWATER NOTICE OF TERMINATION (NOT) IN ACCORD WITH THE REQUIREMENTS OF THE CGP UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES.

4. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH MASSACHUSETTS (DEP) EROSION AND SEDIMENTATION CONTROL GUIDELINES, AUGUST 1983, THE U.S.D.A. S.C.S. EROSION AND SEDIMENT CONTROL IN SITE DEVELOPMENT, MASSACHUSETTS CONSERVATION GUIDE, SEPTEMBER 1983 AND ALL LOCAL MUNICIPAL REGULATIONS. CONTRACTOR IS RESPONSIBLE FOR OBTAINING THESE DOCUMENTS.

5. PROPOSED LIMIT OF CLEARING AND LOCATION OF EROSION CONTROLS ARE SHOWN APPROXIMATELY AND ARE INTENDED ONLY TO CONVEY INTENT. FINAL LIMIT OF CLEARING AND EROSION CONTROL LOCATIONS SHALL BE DETERMINED BASED ON INDIVIDUAL PLOT PLANS. IN NO EVENT SHALL ENCROACHMENT ON ANY RESOURCE AREA OR BUFFER ZONE BE GREATER THAN WHAT IS PRESENTED HERE.

6. THE CONTRACTOR SHALL MAKE EVERY REASONABLE EFFORT TO ENSURE THAT NO SEDIMENT OR UNCLEAN STORMWATER RUNOFF OR OTHER DISCHARGE IS DIRECTED TO ANY RESOURCE AREA AND/OR BEYOND THE LIMITS OF THE PROJECT. ANY SEDIMENT DISCHARGED TO THESE AREAS SHALL BE REMOVED WITHIN 24 HOURS IN ITS ENTIRETY BY APPROPRIATE MEANS. THE PROJECT STORMWATER CONSULTANT SHALL BE NOTIFIED IMMEDIATELY OF ANY SEDIMENT OR UNCLEAN DISCHARGE PASSING TO THESE AREAS.

7. ADDITIONAL CONTROLS SHALL BE INSTALLED ON AN AS NEEDED BASIS BASED ON FIELD CONDITIONS AND RUNOFF PATTERNS. EVERY EFFORT SHALL BE MADE TO ANTICIPATE SEDIMENTATION, DISCHARGE, RUNOFF, AND DEWATERING CONCERNS WHEN MAKING THIS DETERMINATION. DISTURBED AND CRITICAL AREAS SHALL BE MONITORED FROM GROUND-BREAK TO FINAL STABILIZATION TO MONITOR THE NEED FOR ADDITIONAL EROSION CONTROLS

8. CONTRACTOR SHALL BE RESPONSIBLE FOR MONITORING DISTURBED AND CRITICAL AREAS DAILY DURING CONSTRUCTION ACTIVITY. ANY CONCERNS SHALL BE REPORTED TO THE STORMWATER CONSULTANT IMMEDIATELY.

9. REFER TO SWPPP FOR ADDITIONAL GUIDANCE.

GENERAL INSTALLATION AND MAINTENANCE OF CONTROLS

- EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO THE COMMENCEMENT OF ANY SITEWORK OR EARTHWORK OPERATIONS, SHALL BE MAINTAINED DURING CONSTRUCTION, AND SHALL REMAIN IN PLACE UNTIL ALL SITEWORK IS COMPLETE AND GROUNDCOVER IS ESTABLISHED.
- 2. CONTRACTOR TO CUT TREES AND UNDERGROWTH AS NEEDED TO PERFORM THE WORK SHOWN ON THE PLANS AND INSTALL THE REQUIRED CONTROLS. CONTRACTOR SHALL TAKE EXTENSIVE CARE TO PROTECT CRITICAL AREAS DURING PREPARATION FOR AND INSTALLATION OF EROSION CONTROLS.
- EROSION CONTROLS SHALL BE REPAIRED OR REPLACED AS INSPECTION DEEMS NECESSARY OR AS DIRECTED BY THE STORMWATER CONSULTANT, ACCUMULATED SILT AT ANY EROSION CONTROL DEVICE SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 6", AND SHALL BE DISTRIBUTED ON-SITE IN A MANNER NOT CONTRIBUTING TO ADDITIONAL SILTATION.
- THE CONTRACTOR IS RESPONSIBLE FOR REESTABLISHING ANY EROSION CONTROL DEVICE WHICH HE DISTURBS. EACH CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DEFICIENCIES IN THE ESTABLISHED EROSION CONTROL MEASURES WHICH MAY LEAD TO UNAUTHORIZED DISCHARGE OR STORM WATER POLLUTION, SEDIMENTATION OR OTHER POLLUTANTS. UNAUTHORIZED POLLUTANTS INCLUDE, BUT ARE NOT LIMITED TO, EXCESS CONCRETE DUMPING OR CONCRETE RESIDUE, POINT DISCHARGES, SOLVENTS, GREASES, FUEL AND LUBE OIL, PESTICIDES, AND SOLID WASTE MATERIALS.
- 5. THE CONTRACTOR SHALL KEEP ON SITE AT ALL TIMES ADDITIONAL HAYBALES, STAKES, AND SILTATION FENCING FOR INSTALLATION AT THE DIRECTION OF THE STORMWATER CONSULTANT OR THE CONSERVATION COMMISSION TO MITIGATE ANY EMERGENCY CONDITION.
- 6. REMOVAL OF EROSION CONTROLS NECESSARY TO ADVANCE THE CONSTRUCTION PROCESS SHALL NOT OCCUR UNTIL THE IMMEDIATE AREA HAS BEEN STABILIZED AND CONSENT OF THE STORMWATER CONSULTANT HAS BEEN GIVEN.
- 7. CONTRACTOR IS RESPONSIBLE FOR REMOVING SILT FENCE AND HAYBALE STAKES, AND DISPERSING THE HAYBALES AFTER WORK IS COMPLETE AND THE SITE IS STABILIZED

ROOFTOP DRAINAGE SYSTEMS

- PRIOR TO EXCAVATION FOR ANY ROOFTOP DRAINAGE SYSTEM, APPROPRIATE BARRIER CONTROLS SHOULD BE INSTALLED UP-GRADIENT OF THE EXCAVATION TO PREVENT SEDIMENT FROM UNNECESSARILY BEING TRANSFERRED INTO THE BASE OF THE EXCAVATION.
- 2. ANY OUTSIDE SEDIMENT INADVERTENTLY INTRODUCED TO THE EXCAVATED HOLE SHOULD BE REMOVED BY HAND.
- 3. CONTRACTOR SHOULD TAKE CARE TO ENSURE THAT MINIMAL COMPACTION, MECHANICAL OR OTHERWISE. OCCURS WITHIN THE EXCAVATED AREA.
- 4. CONTROLS SHALL REMAIN UNTIL BACKFILLING OCCURS.

STABILIZED CONSTRUCTION ENTRANCE

- 1. CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT SEDIMENT AND OTHER DEBRIS ARE NOT TRACKED OUTSIDE OF THE PROJECT AREA AS SHOWN, EITHER FROM CONSTRUCTION VEHICLE OR OTHERWISE.
- 2. A STABILIZED CONSTRUCTION ENTRANCE SHOULD BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO ADJACENT PROPERTIES.
- 3. THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE INSPECTED WEEKLY AND AFTER HEAVY RAINS OR HEAVY
- 4. ONCE MUD AND SOIL PARTICLES CLOG THE VOIDS IN THE GRAVEL AND THE EFFECTIVENESS OF THE GRAVEL PAD IS NO LONGER SATISFACTORY, THE PAD MUST BE TOPDRESSED WITH NEW STONE. REPLACEMENT OF THE ENTIRE PAD MAY BE NECESSARY WHEN THE PAD BECOMES COMPLETELY CLOGGED.
- 5. ANY SEDIMENT OR DEBRIS TRACKED OUTSIDE OF THE PROJECT AREA SHALL BE CLEANED WITHIN 24 HOURS BY APPROPRIATE MEANS IN ITS ENTIRETY.

DUST CONTROL

1. DUST FROM THE SITE SHALL BE CONTROLLED BY SPRAYING POTABLE WATER AT A RATE OF 300 GALLONS PER ACRE OR LESS NO MORE THAN THREE TIMES PER DAY. MECHANICAL DUST SUPPRESSION SHALL BE IMPLEMENTED AS NEEDED ONCE LAND DISTURBANCE ACTIVITIES HAVE BEEN INITIATED.

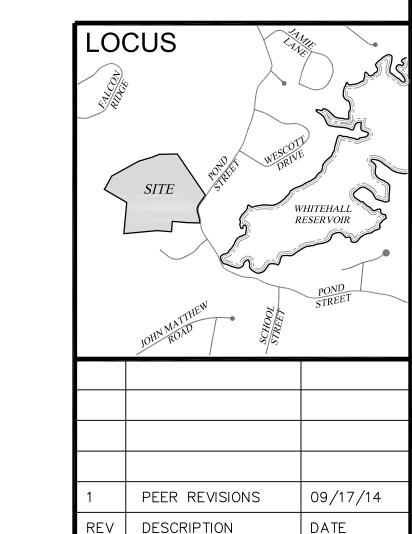
- STOCKPILING IS ALLOWABLE AS NEEDED EITHER ON A PER LOT BASIS OR IN A GENERAL AREA AS APPROPRIATE TO ACCOMMODATE THE PROJECT SCHEDULE.
- 2. STOCKPILES SHALL NOT BE STORED OR LOCATED WITHIN ANY RESOURCE AREA BUFFER ZONE.
- 2. STOCKPILING AREAS SHALL BE LOCATED IN SUCH A MANNER THAT WILL MINIMIZE THE NECESSITY TO RELOCATE THE STOCKPILES IN THEIR ENTIRETY WHENEVER POSSIBLE.
- 3. STOCKPILE AREAS SHALL NOT BE LOCATED IN THE PATH OF A DRAINAGE WAY OR OTHER OVERLAND STORMWATER CONVEYANCE. TEMPORARY CONVEYANCES SUCH AS CHANNELS AND SWALES SHALL BE UTILIZED AS NECESSARY TO PROTECT STOCKPILE AREAS FROM WASHOUT.
- 4. WHENEVER POSSIBLE, STOCKPILES SHALL MAINTAIN A MINIMUM 3:1 SIDE SLOPE.
- 5. STOCKPILES SHALL BE SPRAYED WITH WATER AS NECESSARY TO PROVIDE DUST CONTROL.
- 6. STOCKPILES SHALL BE SURROUNDED ON THEIR PERIMETERS WITH STAKED HAYBALES AND/OR SILTATION FENCES TO PREVENT AND/OR CONTROL SILTATION AND EROSION.

SEEDING AND STABILIZATION

ALLOW.

- 1. ALL SLOPE OF 2:1 OR GREATER SHALL BE STABILIZED WITH JUTE MESH AS SOON AS CONDITIONS
- 2. ALL DISTURBED OR EXPOSED AREAS SUBJECT TO EROSION SHALL BE STABILIZED WITH MULCH OR SEEDED FOR TEMPORARY VEGETATIVE COVER. NO AREA SUBJECT TO EROSION SHALL BE LEFT DISTURBED AND UNSTABILIZED FOR PERIODS LONGER THAN IS ABSOLUTELY NECESSARY TO CARRY OUT THAT PORTION OF THE CONSTRUCTION WORK
- 3. STABILIZATION MEASURES SHALL BE IMPLEMENTED IMMEDIATELY IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED AND COMPLETED WITHIN 14 DAYS OF ACTIVITIES CEASING. ACTIVITIES SHALL BE CONSIDERED TEMPORARILY CEASED IN AREAS WHERE CLEARING, GRADING, OR EXCAVATING ACTIVITIES WILL NOT BE RESUMED FOR A PERIOD OF 14 DAYS OR
- 4. ALL DISTURBED AREAS THAT ARE NOT TO BE PAVED SHALL BE LOAMED AND SEEDED.
- 5. UPON COMPLETION OF FINE GRADING, ALL AREAS NOT OTHERWISE PERMANENTLY STABILIZED SHALL BE SEEDED AND MAINTAINED UNTIL A UNIFORM COVERAGE OF 70% MINIMUM DENSITY, AS DETERMINED BY THE STORMWATER CONSULTANT IS ACHIEVED.
- 6. GENERAL SEEDING PROCEDURES:
 - A) UNIFORM VEGETATIVE COVER SHALL BE ESTABLISHED. VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A MINIMUM OF 70% DENSITY IS ACHIEVED.
- B) USE OF INVASIVE SPECIES SHALL BE PROHIBITED.
- C) PLANTING SHOULD PREFERABLY BE DONE APRIL 1ST THROUGH JUNE 30TH AND SEPTEMBER 1ST THROUGH SEPTEMBER 31ST. IRRIGATION MAY BE REQUIRED IF PLANTING IS DONE IN THE MONTHS OF JULY AND AUGUST. IF PLANTING IS DONE BETWEEN OCTOBER 1ST AND MARCH 31ST, MULCHING SHOULD BE APPLIED IMMEDIATELY AFTER PLANTING. IRRIGATION MAY BE NECESSARY IF SEEDING IS DONE DURING THE SUMMER MONTHS.
- THE SEEDBED SHOULD BE FIRM WITH A FAIRLY FINE SURFACE. PERFORM ALL CULTURAL OPERATIONS ACROSS OR AT RIGHT ANGLES TO THE SLOPE. A MINIMUM OF 2 TO 4-INCHES OF TILLED TOPSOIL IS REQUIRED. THE TOPSOIL MUST HAVE A SANDY LOAM TO SILT LOAM TEXTURE WITH 15% TO 20% ORGANIC CONTENT.
- E) APPLY UNIFORMLY 2 TONS OF GROUND LIMESTONE PER ACRE (100 LBS. PER 1,000 SQ.FT.) OR PER RESULTS OF SOIL TESTING. APPLY 10-10-10 FERTILIZER UNIFORMLY AT THE RATE OF 400 LBS. PER ACRE (14 LBS. PER 1,000 SQ.FT.) OR AS INDICATED BY SOIL TESTING. FORTY PERCENT OF THE NITROGEN SHOULD BE IN ORGANIC FORM. WORK IN LIME AND FERTILIZER TO A DEPTH OF 4-INCHES USING SUITABLE EQUIPMENT.
- F) TEMPORARY SEEDING SHALL BE WINTER RYE OR APPROVED EQUAL APPLIED AT A RATE OF 4 LBS PER 1,000 SQ. FT. APPLY THE SEED UNIFORMLY BY HAND. APPLICATION RATE SHALL BE INCREASED BY 25% IF HYDROSEEDING IS TO BE USED.
- PERMANENT SEEDING SHALL BE LOCAL FESCUES AND RYE SEED OR APPROVED EQUAL APPLIED AT A RATE OF 4 LBS PER 1,000 SQ. FT. APPLY THE SEED UNIFORMLY BY HAND. APPLICATION RATE SHALL BE INCREASED BY 25% IF HYDROSEEDING IS TO BE USED.
- H) USE AN EFFECTIVE MULCH, SUCH AS HAY OR SMALL GRAIN STRAW THAT IS EITHER TACKED AND/OR TIED WITH NETTING TO PROTECT THE SEEDBED AND ENCOURAGE PLANT GROWTH APPLIED AT A RATE OF 70 TO 90 LBS PER 1,000 SF. FT.

PROFESSIONAL ENGINEER FOR TUNISON DIAS, INC.



P.O. Box 73

tel (508)682-0229

115 Main Street, Suite 2B

N. Easton, Massachusetts 02356

fax (508)682-3105 www.tunisondias.com PROJECT NUMBER: 1103-001

SCALE: 1"=50' DESIGNED BY: SH/ED | CHECKED BY: ED

PREPARED BY TUNISON DIAS, INC ON BEHALF OF:

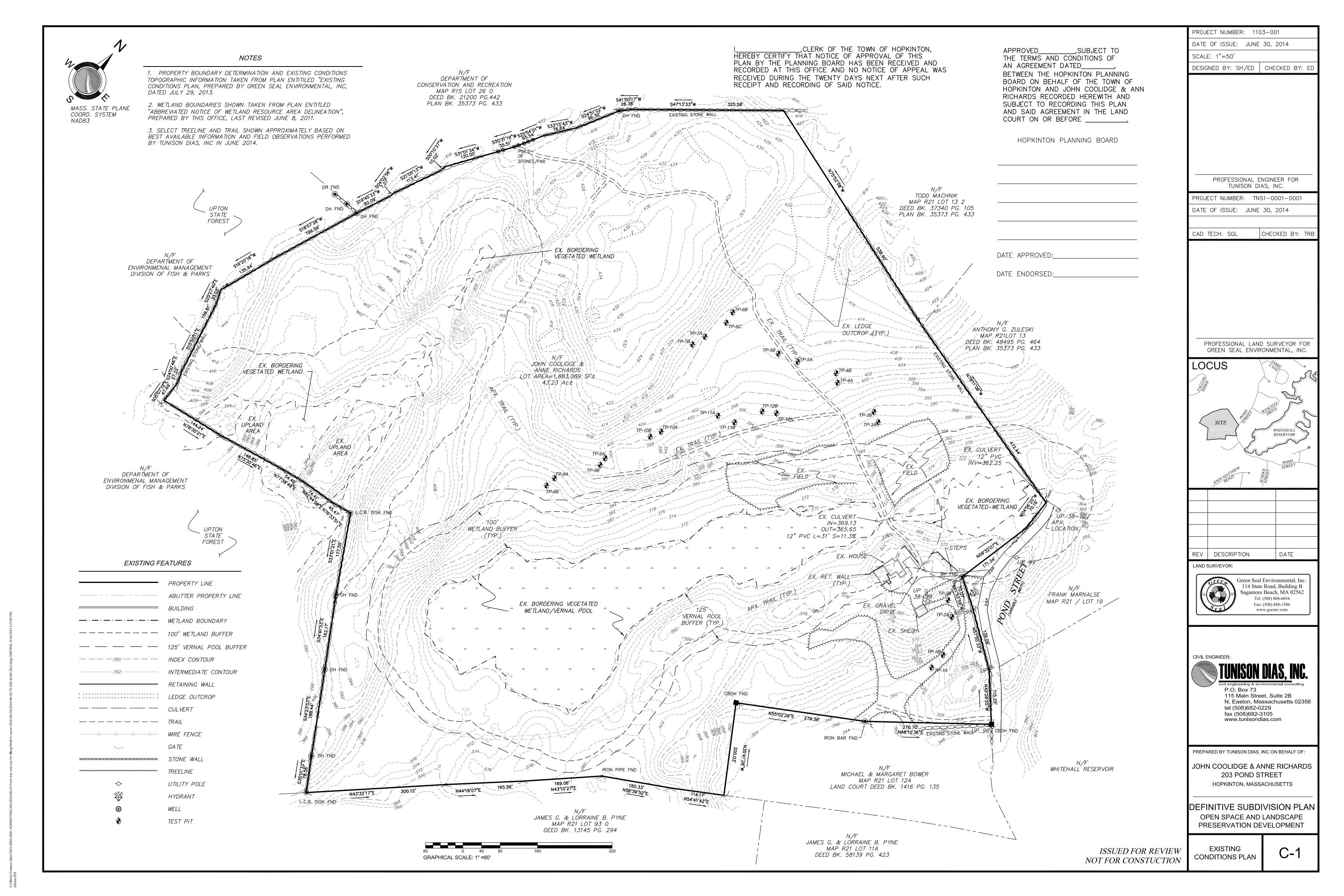
DATE OF ISSUE: JUNE 30, 2014

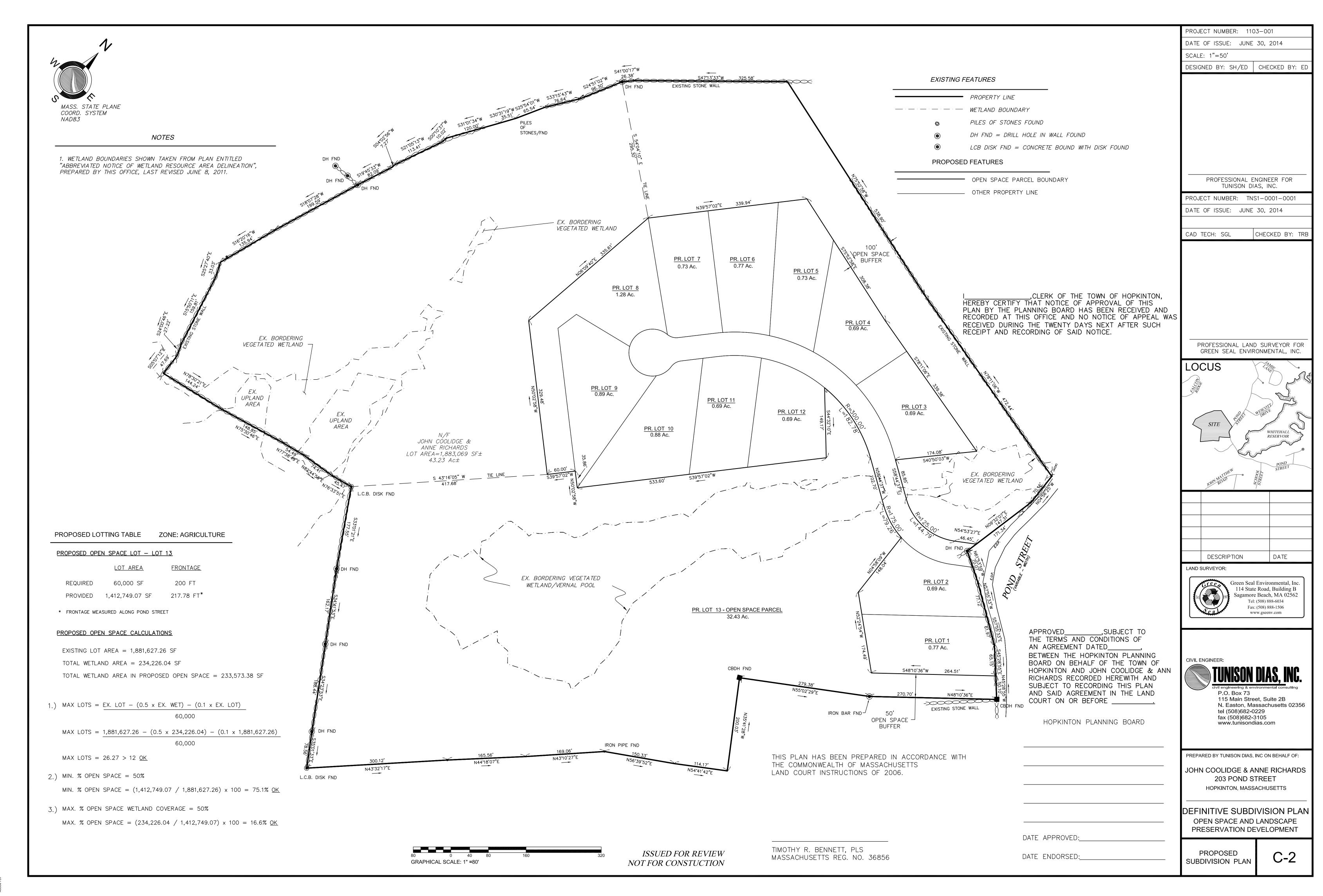
JOHN COOLIDGE & ANNE RICHARDS 203 POND STREET

HOPKINTON, MASSACHUSETTS

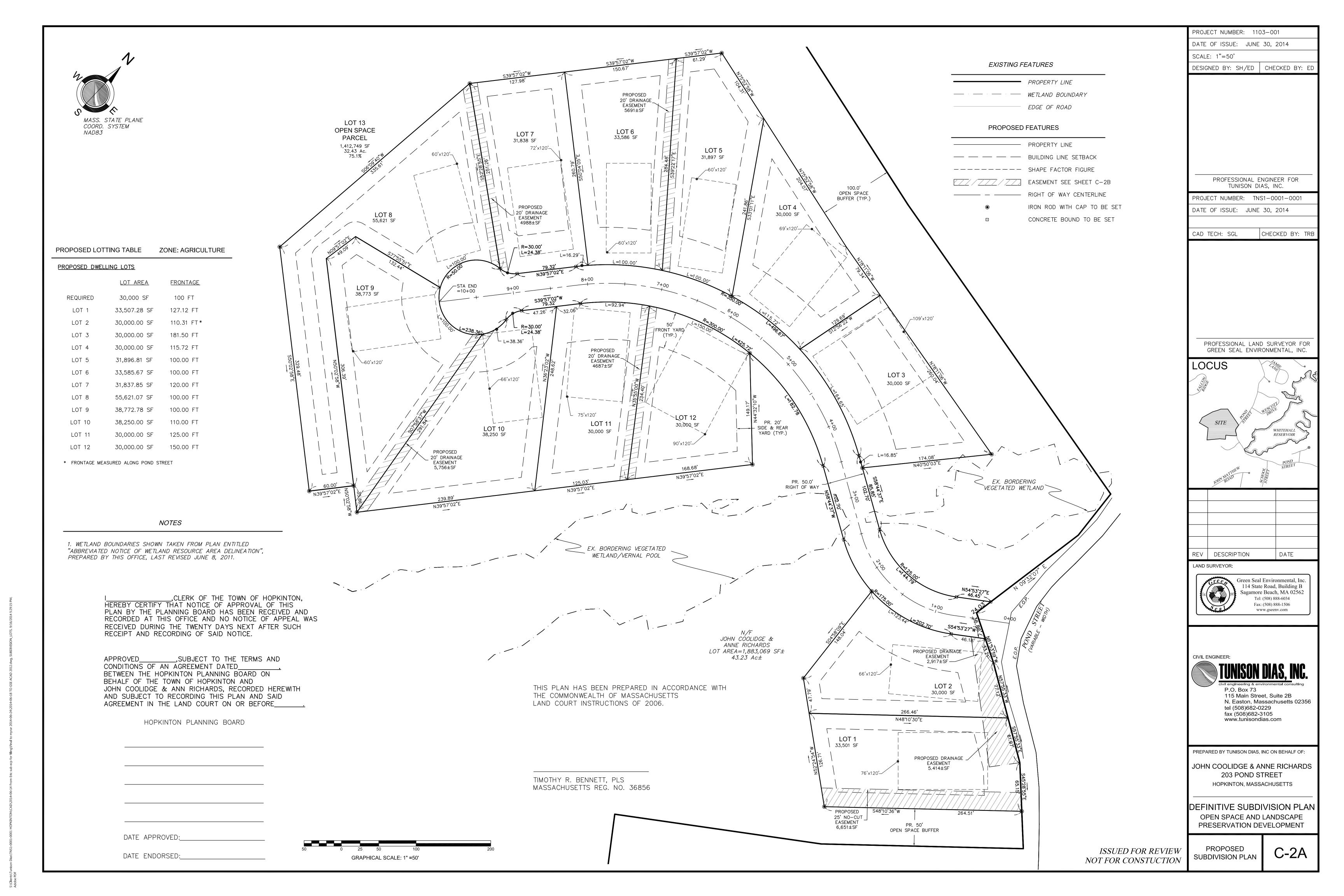
DEFINITIVE SUBDIVISION PLAN OPEN SPACE AND LANDSCAPE PRESERVATION DEVELOPMENT

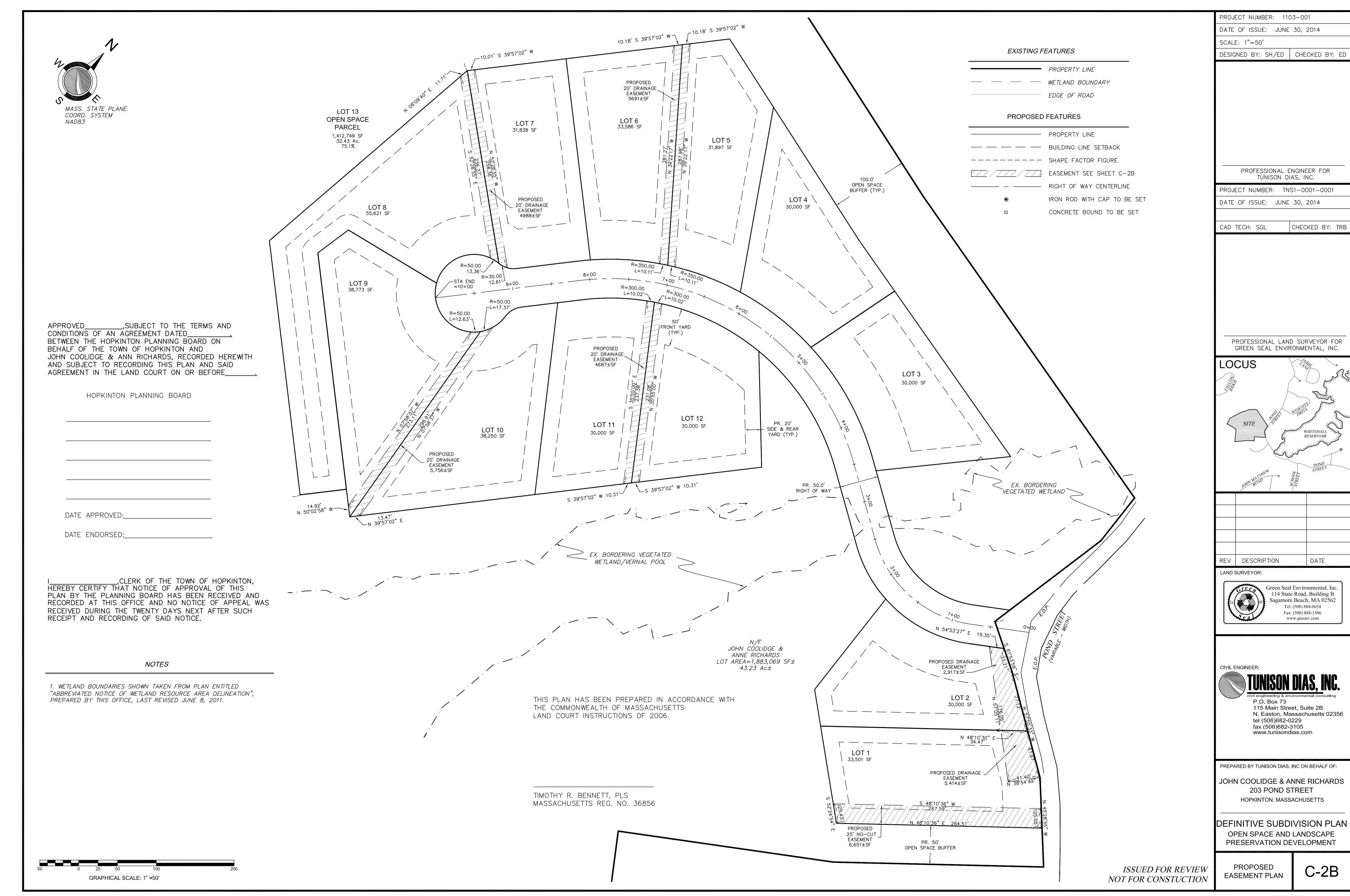
NOTES



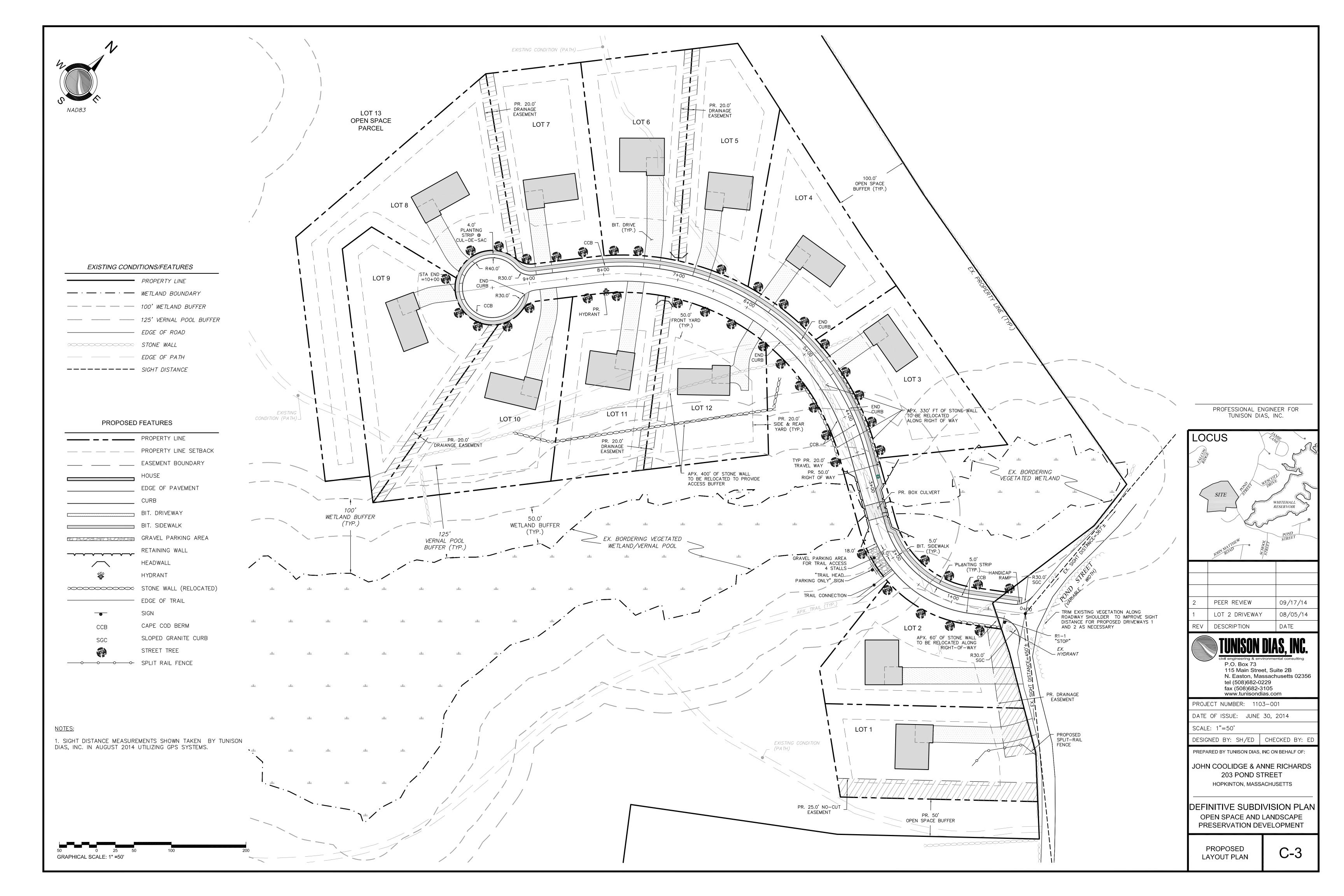


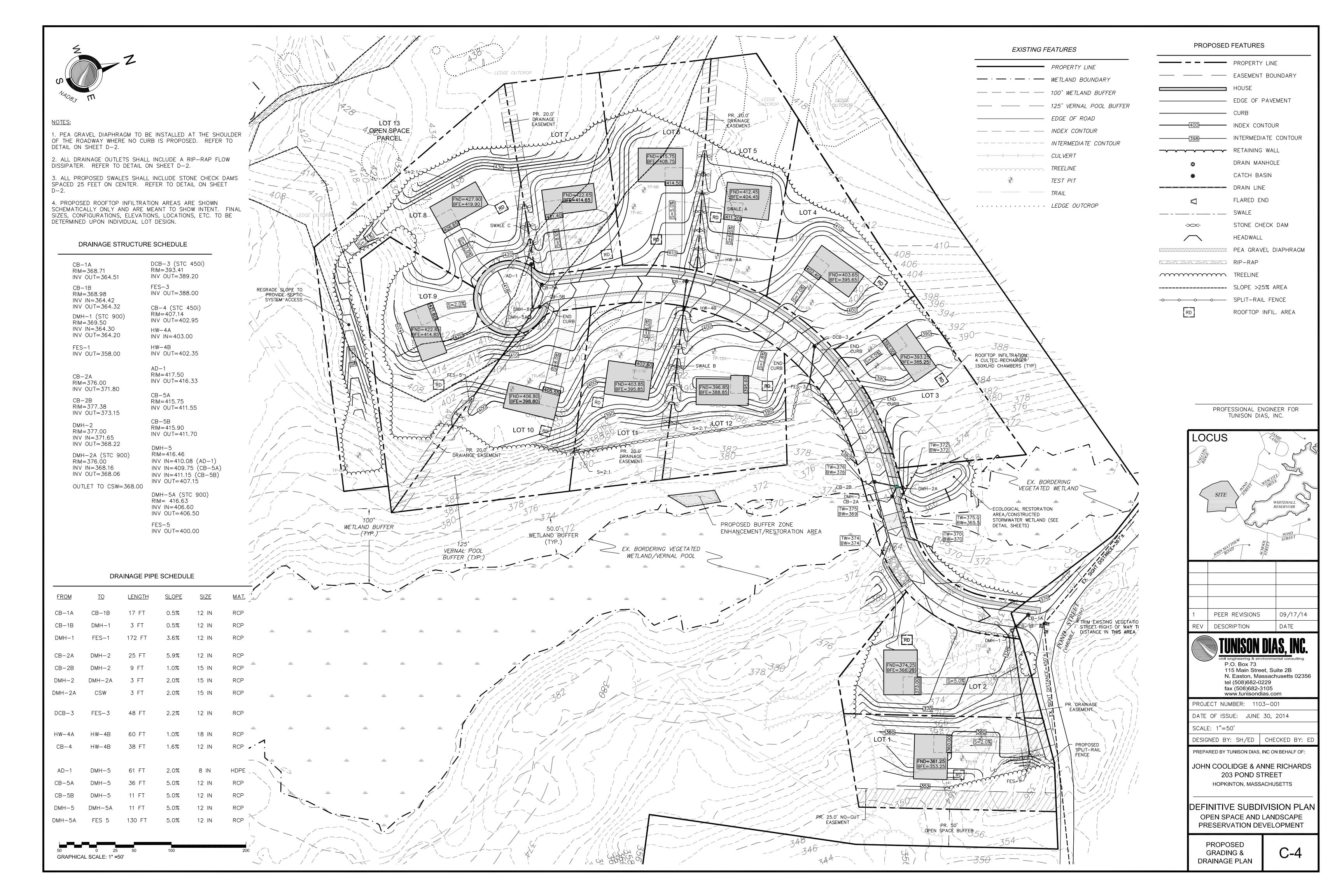
S:\Clients\Tunison Dias\T

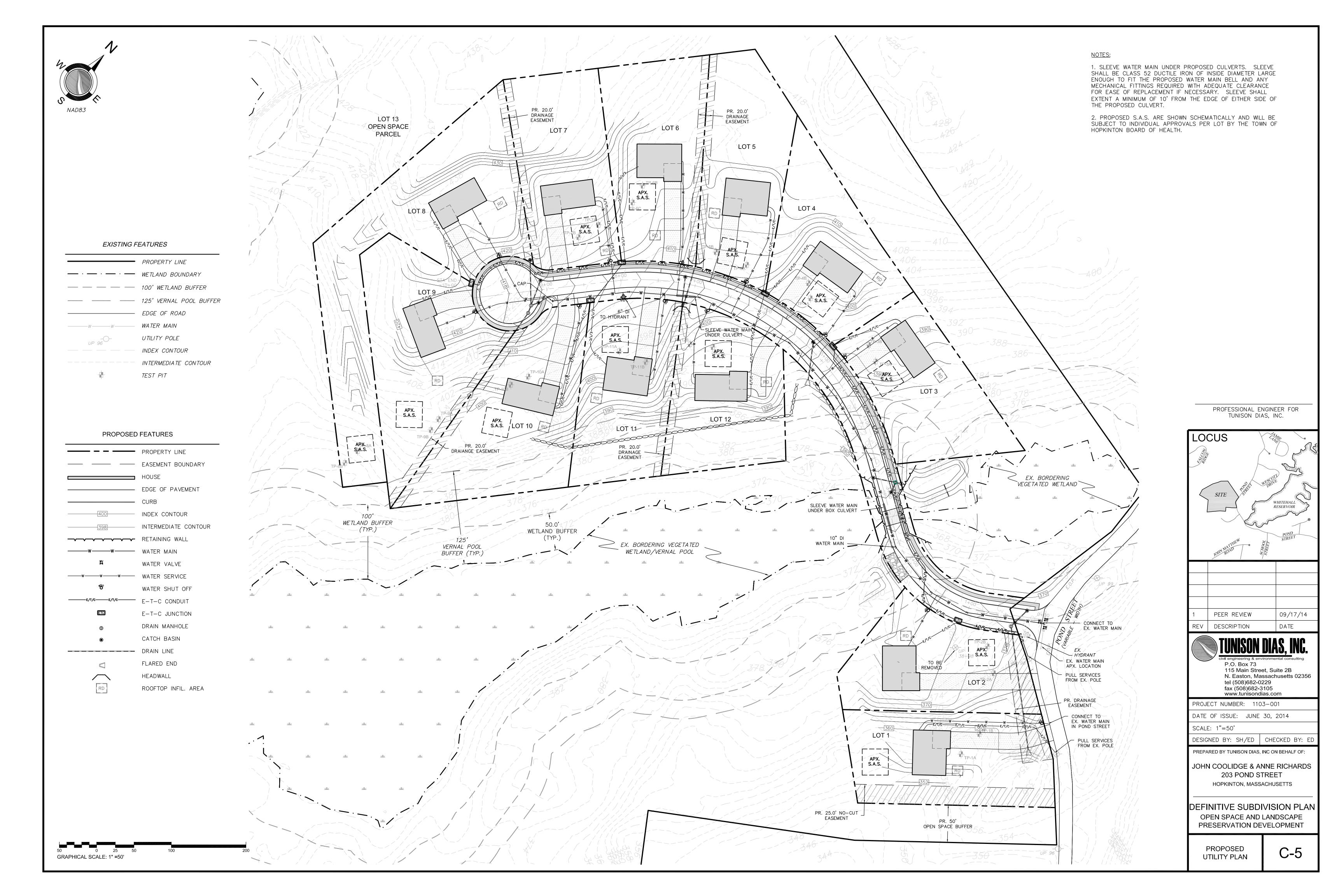


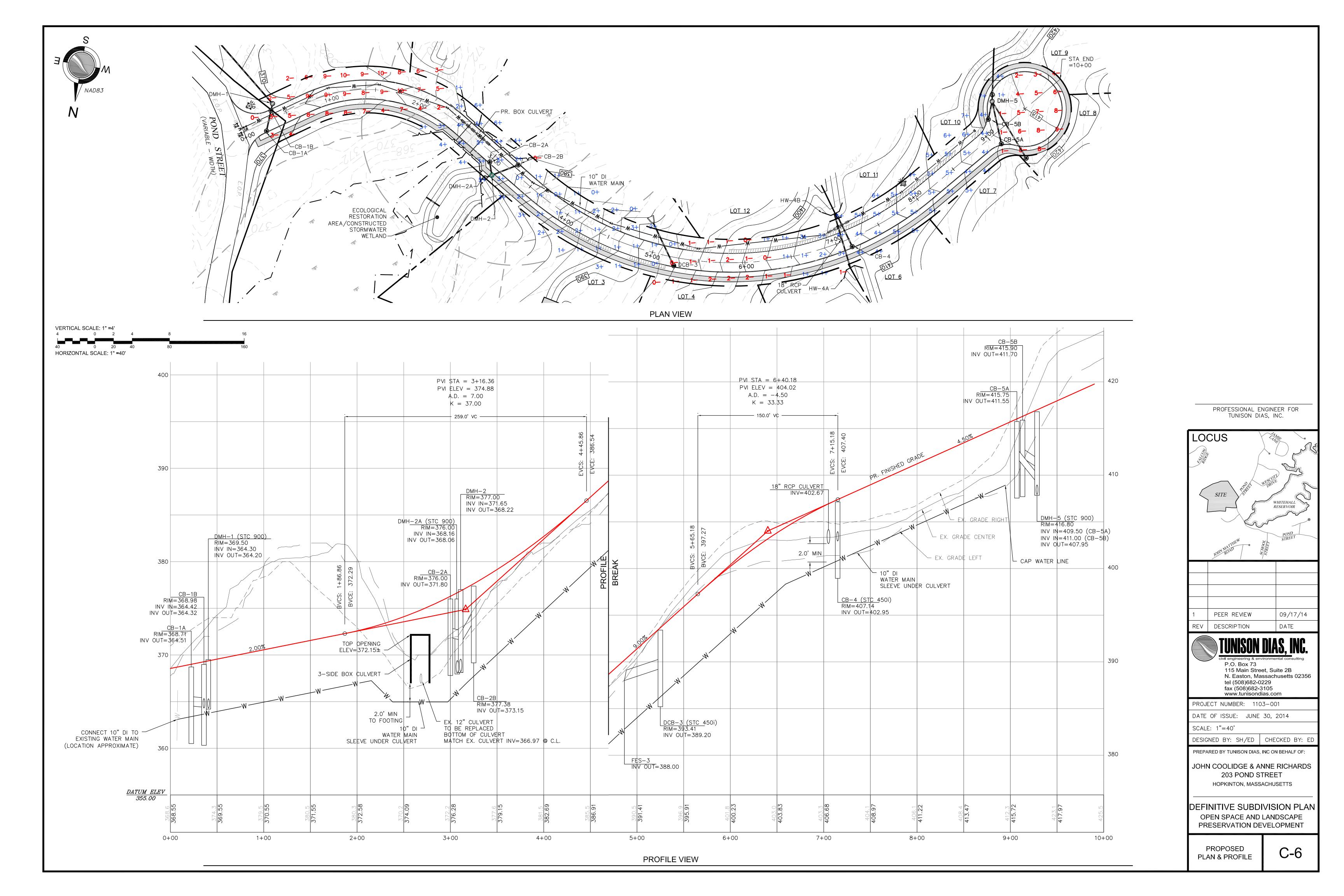


S:\Clients\Tunison Dias\ Adobe PDF

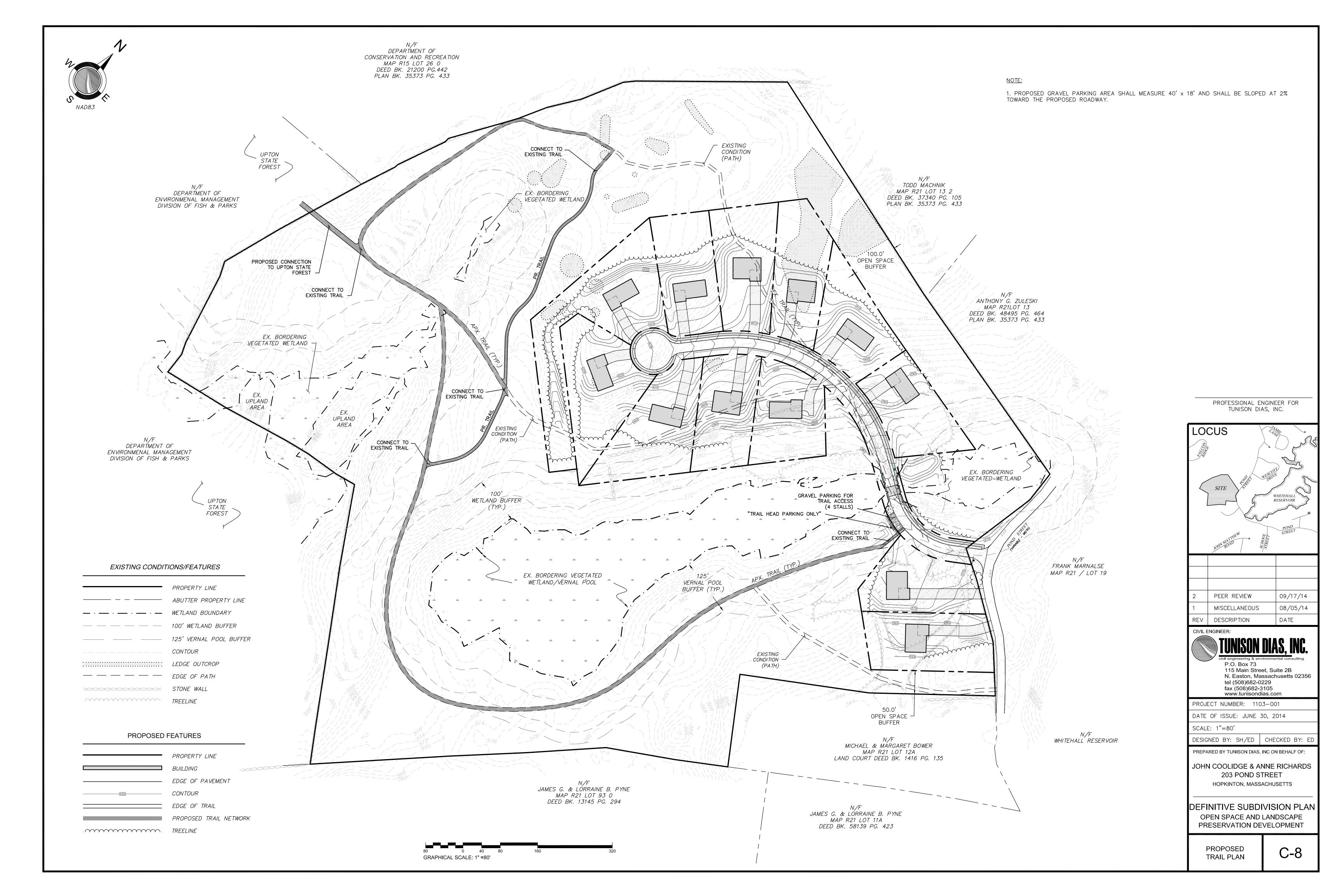


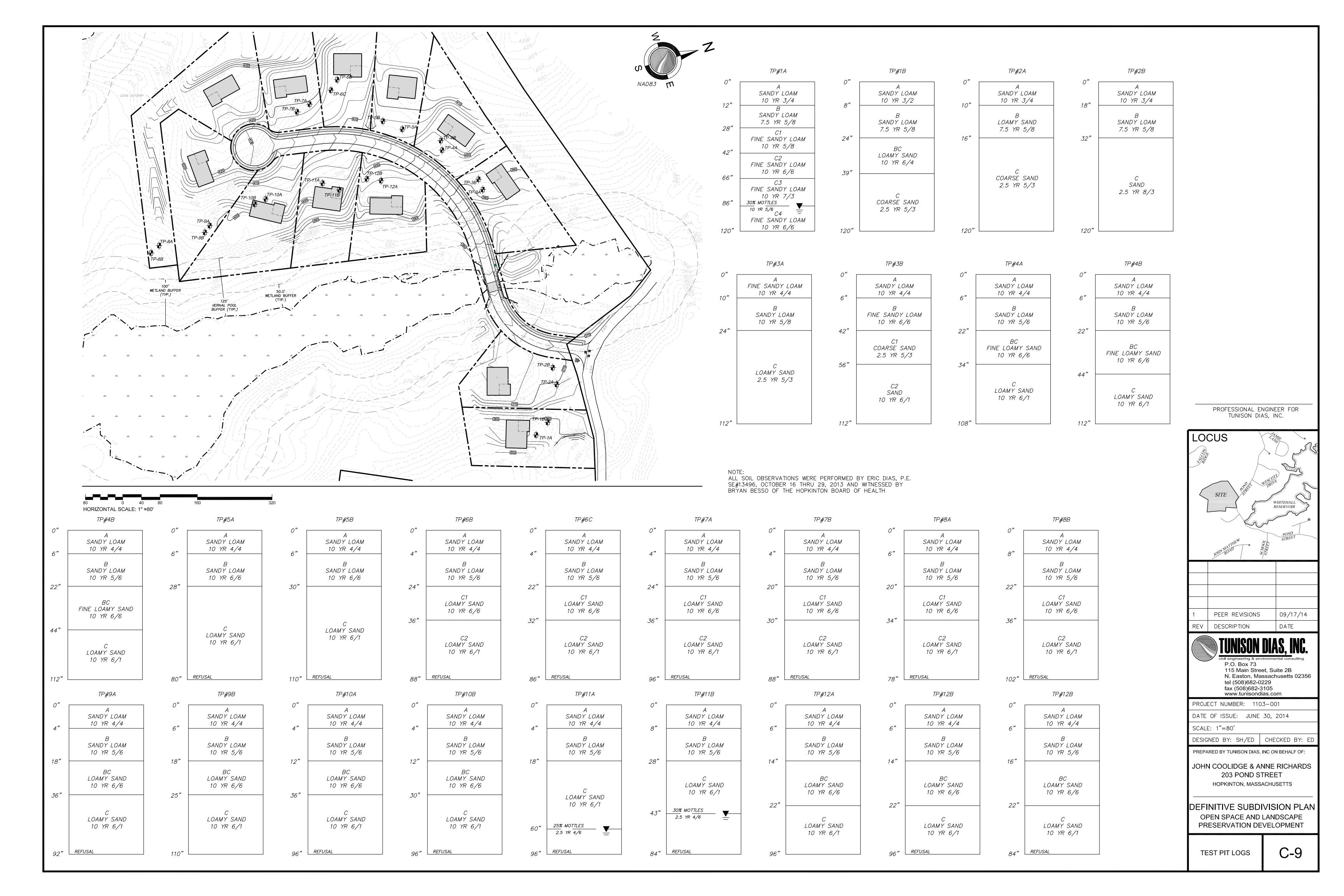


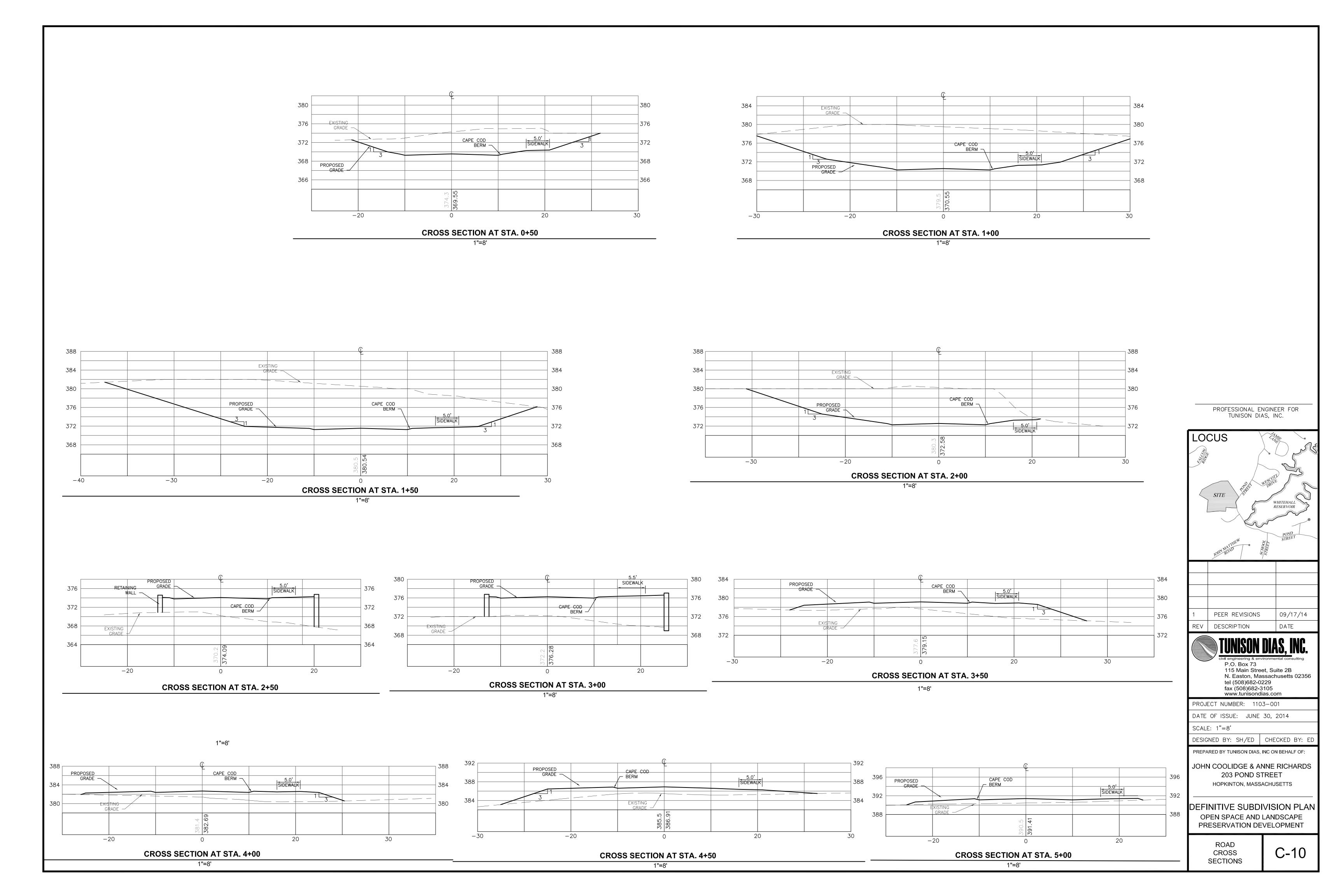


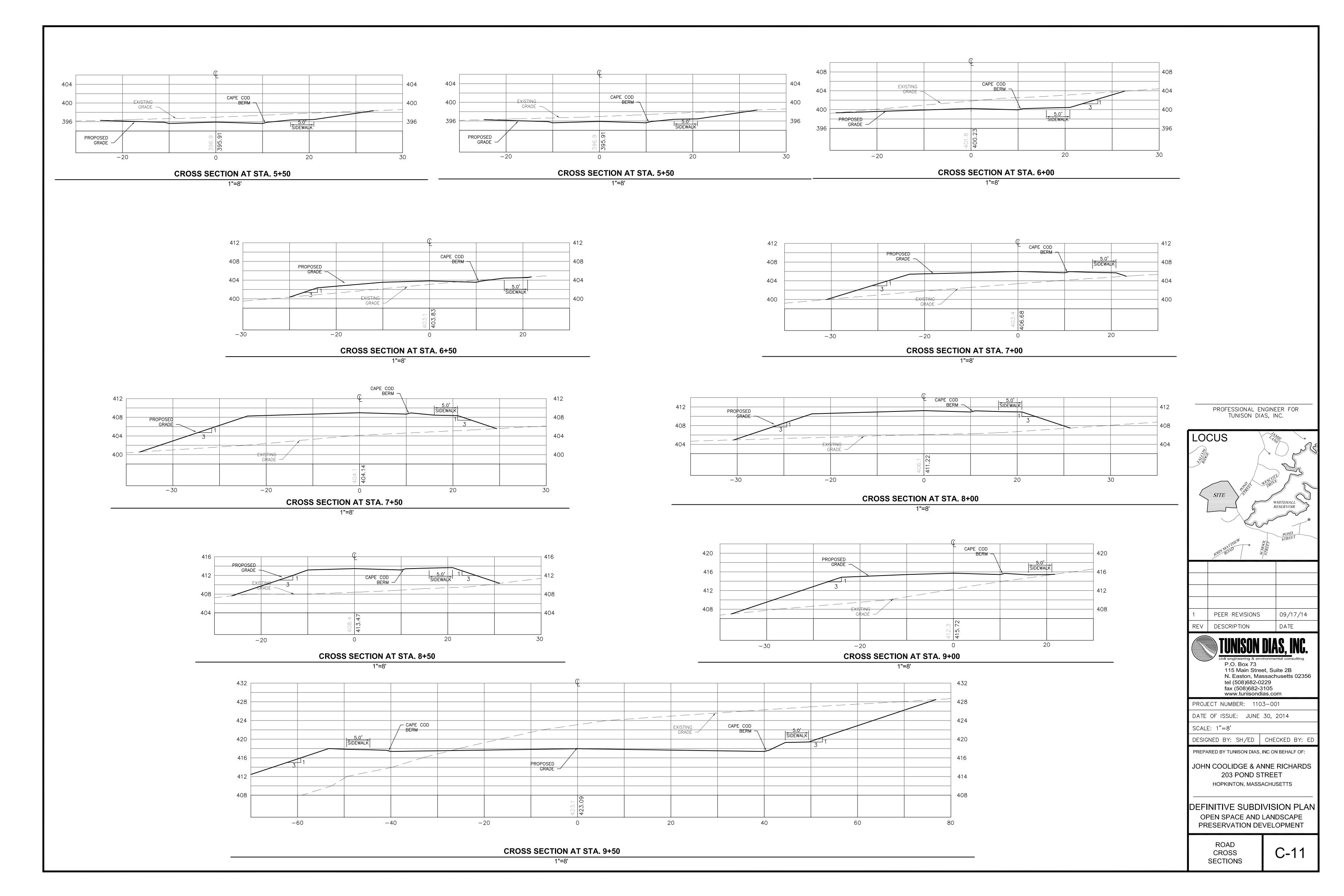


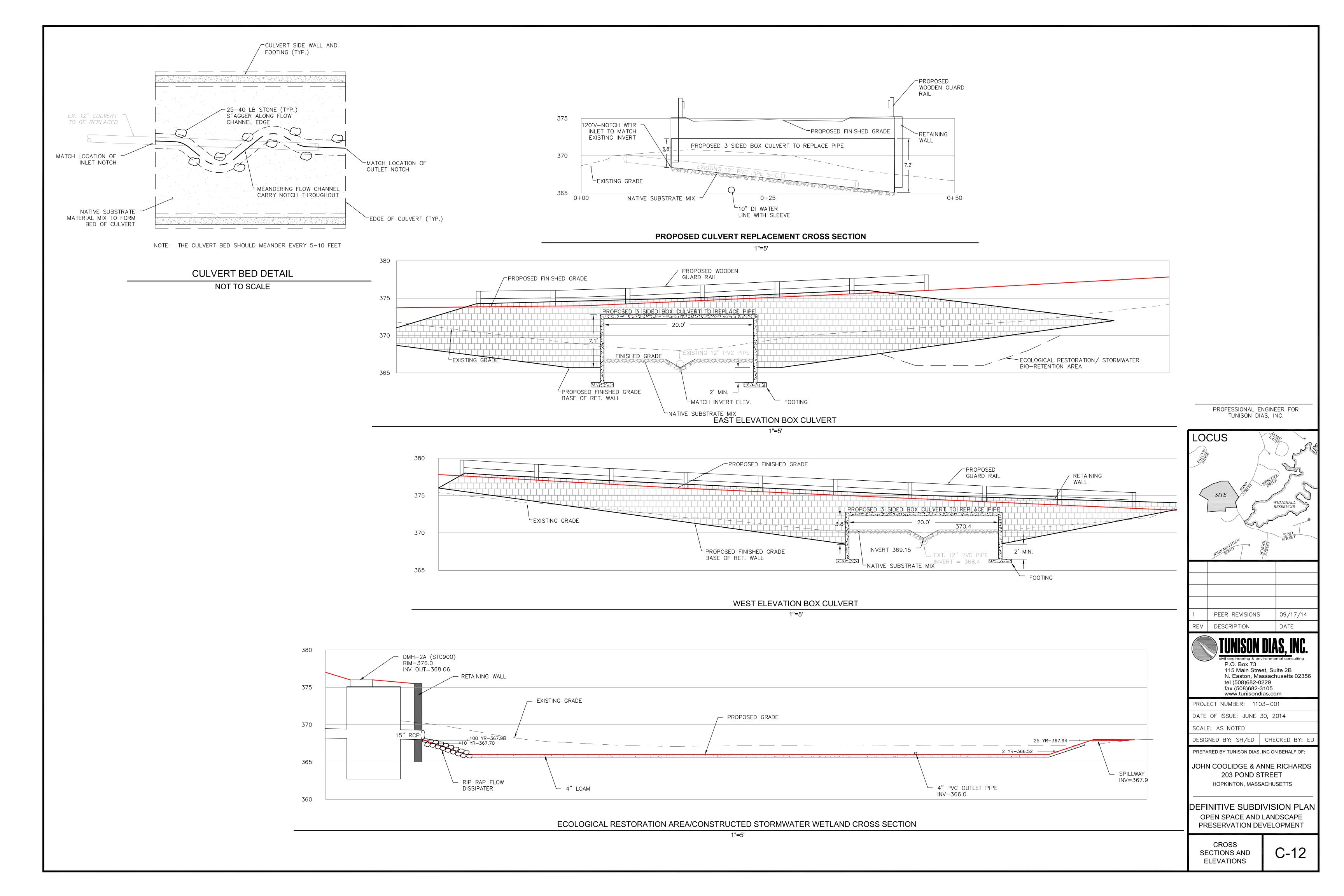
GENERAL EROSION CONTROL SEQUENCING GENERAL EROSION CONTROL NOTES THE FOLLOWING PROVIDES A GENERAL PROTOCOL FOR MINIMUM EROSION 1. THE SITEWORK CONTRACTOR SHALL MAKE EVERY EFFORT TO LIMIT DISTURBANCE CONTROL SEQUENCING AND REQUIREMENTS RELATIVE TO THE PROPOSED RELATIVE TO ANY PROPOSED WORK ASSOCIATED WITH THE PROPOSED CULVERT ROADWAY CONSTRUCTION. THE DETAILS PROVIDED ARE A MINIMUM GUIDE REPLACEMENT AND/OR UTILITY INSTALLATION IN THAT AREA. ONLY. ADDITIONAL CONTROLS MAY BE IMPLEMENTED OR SEQUENCING ADJUSTED AS APPROPRIATE IN KEEPING WITH THE INTENT OF THE PROTOCOL 2 ALL EXCAVATIONS SHOULD BE PERFORMED AND BACKFILLED APPROPRIATELY IN AS EXPEDITIOUSLY A MANNER AS POSSIBLE. IT IS THE RESPONSIBILITY OF THE SITEWORK CONTRACTOR TO ANTICIPATE INCLEMENT WEATHER CONDITIONS AND ANY OTHER FACTORS 1. INSTALL PERIMETER CONTROLS EAST OF THE PROPOSED CULVERT THAT MAY INFLUENCE EROSION AND SEDIMENTATION CONTROL RELATIVE TO THIS WORK REPLACEMENT. AND TO RESPOND ACCORDINGLY. INSTALL JUTE MESH ON munique de la company de la co SLOPES 2:1 OR GREATER 2. INSTALL STABILIZED CONSTRUCTION ENTRANCE. 3 IF DEWATERING IS REQUIRED AT ANY TIME DURING CONSTRUCTION RELATED TO THE IMMEDIATELY FOLLOWING PROPOSED CULVERT REPLACEMENT, ROADWAY, OR ECOLOGICAL RESTORATION/ ROUGH GRADE 3. CLEAR AND PREPARE STOCKPILE AND STAGING AREA ON PROPOSED LOT CONSTRUCTED STORMWATER WETLAND IT SHALL BE PERFORMED BY MECHANICAL MEANS 2 AS APPROPRIATE. AND ALL DISCHARGES SHALL BE UP GRADIENT OF THE WORK AREA. DISCHARGES SHALL BE NO LESS THAN 50' FROM THE PROPOSED WORK AREA. EFFLUENT SHALL BE ALLOWED 4. INSTALL PRELIMINARY BARRIER CONTROLS FOR WATER MAIN INSTALLATION TO FLOW TOWARD THE WETLAND AREA NORTH OF THE PROPOSED CULVERT REPLACEMENT AT PROPOSED CULVERT REPLACEMENT. AREA PROVIDED THAT PROPER FILTRATION IS PROVIDED TO REMOVE ANY SUSPENDED SEDIMENTS TO THE MAXIMUM EXTENT POSSIBLE PRIOR TO REACHING THE WETLAND AREA. 5. INSTALL INLET PROTECTION AT EXISTING CULVERT UNDER POND STREET THIS MAY BE ACHIEVED BY USE OF FILTERING CONTROLS, TEMPORARY DEWATERING BASINS, AND/OR OTHER MEANS AS APPROPRIATE. BARRIER CONTROLS SHALL ALSO BE 6. EXCAVATE, INSTALL, AND BACKFILL WATER MAIN SECTION UNDER ADDED TO THE EDGE OF THE WETLAND AREA ULTIMATELY RECEIVING FLOW FROM ANY PROPOSED CULVERT REPLACEMENT. DEWATERING PRACTICE. ANY ACCUMULATED SEDIMENT RESULTING FROM DEWATERING FILTRATION SHALL BE REMOVED PRIOR TO REUSE OF THE PRACTICE. 7. INSTALL STAGE 1 BARRIER CONTROLS AT AND ADJACENT TO PROPOSED CULVERT REPLACEMENT AREA. 4. THE USE OF ANY CATIONIC TREATMENT CHEMICAL (FLOCCULANTS, POLYMERS, ETC.) IS STRICTLY PROHIBITED UNLESS ALLOWED IN ACCORDANCE WITH THE REQUIREMENTS OF THE 8. INSTALL COCONUT MATTING TO STABILIZE WETLAND AREA NORTH OR 2012 NPDES PHASE II CONSTRUCTION GENERAL PERMIT. PROPOSED CULVERT REPLACEMENT; 100' LENGTH MINIMUM. STOCKPILE/STAGING 5. EROSION CONTROLS SHWON RELATIVE TO LOT CONSTRUCTION DEPICT MINIMUM 9. INSTALL HAYBALE CHECK DAMS OVER COCONUT MATTING; 25' ON CENTER REQWUIRMENTS ONLY. FULL REQUIRMENTS FOR EACH LOT SHALL BE DETERMINED ON A LOT BY LOT BASIS. 10. EXCAVATE, INSTALL, AND BACKFILL PROPOSED CULVERT FOOTINGS AND 6. SEE SHEET D-4 FOR ADDITIONAL NOTES AND EROSION CONTROL DETIALS. SIDEWALLS. 11. TEMPORARILY DAM PONDED WETLAND AREA SOUTH OF PROPOSED CROSSING AS APPROPRIATE TO PREVENT FLOW TO DISTURBED AREA WHILE PROPOSED CULVERT BED IS BEING PREPARED. 12. EXCAVATE EXISTING CULVERT AND PREPARE CULVERT BED. STABILIZE WITH COCONUT MATTING AND SEED IMMEDIATELY FOLLOWING FINISHED 13. INSTALL BARRIER CONTROLS ACROSS INLET TO CULVERT BED TO PROVIDE FILTRATION AND REGULATE FLOW. 14. REMOVE TEMPORARY DAM SOUTH OF PROPOSED CULVERT REPLACEMENT ONCE CULVERT BED IS STABILIZED. 15. CONSTRUCT RETAINING WALLS AT PROPOSED CULVERT REPLACEMENT AND TOP CULVERT. 16. BRING PROPOSED ROADWAY TO SUBGRADE, INSTALL UTILITIES, AND BACKFILL AS APPROPRIATE IN PROPOSED CULVERT REPLACEMENT AREA. PROFESSIONAL ENGINEER FOR 17. INSTALL REMAINDER OF STAGE I BARRIER CONTROLS. TUNISON DIAS, INC. 18. CLEAR AND PREPARE STOCKPILE AND STAGING AREA ON PROPOSED mm, LOTS 4 AND 5 AS APPROPRIATE. PERIMETER CONTROL FOR LOT CONSTRUCTION 19. CLEAR AND GRUB FOR REMAINDER OF ROADWAY CONSTRUCTION. MIIMUM REQUIRMENT 20. INSTALL ROADWAY UTILITIES AND BRING PROPOSED ROADWAY TO PERIMETER CONTROL FOR LOT SUBGRADE. EX. BORDERING MIIMUM REQUIRMENT 21. INSTALL INLET AND OUTLET PROTECTION AT ALL STRUCTURAL VEGETATED WETLAND STORMWATER CONVEYANCES AS SOON AS CONDITIONS PRESENT THAT MAY DIRECT STORMWATER RUNOFF TO THEM. INLETS SHOULD REMAIN INACTIVE WHEREVER POSSIBLE TO MINIMIZE SEDIMENT TRANSPORT SITE WHITEHALL RESER VOIR 22. RECONFIGURE BARRIER CONTROLS AT PROPOSED ECOLOGICAL WETLAND BUFFER RESTORATION / CONSTRUCTED STORMWATER WETLAND DOWN-GRADIENT ENHANCEMENT/RESTORATION AREA - (TYP.) WETLAND BUFFER OF PROPOSED WORK. (TYP.) BARRIER TO BE INSTALLED PRIOR 23. INSTALL RUNOFF DIVERSION CONVEYANCES UP-GRADIENT OF PROPOSED TO WORK IN THIS AREAS AND EX. BORDERING VEGETATED VERNAL POOL ECOLOGICAL RESTORATION/ CONSTRUCTED STORMWATER WETLAND TO SHALL REMAIN UNTIL AREA IS WETLAND/VERNAL POOL LIMIT FLOW TO DISTURBED AREA. FULLY STABILIZED 24. REFRESH/PLACE ADDITIONAL COCONUT MATTING IN WETLAND AREA ADJACENT TO PROPOSED ECOLOGICAL RESTORATION/ CONSTRUCTED STORMWATER WETLAND AS REQUIRED TO PROVIDE ADDITIONAL STABILIZATION. 25. BEGIN CONSTRUCTION OF PROPOSED ECOLOGICAL RESTORATION/ CONSTRUCTED STORMWATER WETLAND FROM DOWN- TO UP-GRADIENT PEER REVIEW 09/17/14 26. INSTALL UP-GRADIENT BARRIER CONTROLS AT PROPOSED ECOLOGICAL REV | DESCRIPTION RESTORATION / CONSTRUCTED STORMWATER WETLAND UPON COMPLETION OF FINISHED GRADING. 27. SEED PROPOSED ECOLOGICAL RESTORATION/ CONSTRUCTED STORMWATER WETLAND AND PERFORM PLANTINGS BY HAND. P.O. Box 73 28. ONCE 100% STABILIZED, REMOVE UP-GRADIENT BARRIER CONTROLS AND 115 Main Street, Suite 2B ALLOW STORMWATER RUNOFF TO ENTER THE PROPOSED ECOLOGICAL PROPOSED N. Easton, Massachusetts 02356 RESTORATION / CONSTRUCTED STORMWATER WETLAND AS INTENDED. **ECOLOGICAL** tel (508)682-0229 **RESTORATION** fax (508)682-3105 29. PLACE BINDER COURSE OF ROADWAY PAVEMENT, FINALIZE SIDEWALKS, CONSTRUCTED INSTALL PERIMETER www.tunisondias.com STORMWATER CONTROLS TO PROJECT NUMBER: 1103-001 WETLAND PROTECT KETTLE HOLE 30. SEED AND STABILIZE ALL DISTURBED AREAS. FROM SEDIMENT DATE OF ISSUE: JUNE 30, 2014 ACCUMULATION. 31. REMOVE EROSION CONTROLS ONCE FULL STABILIZATION RELATIVE TO SAID ANY SEDIMENT CONTROL IS ACHIEVED. SCALE: 1"=50' ACCUMULATED SHALL BE REMOVED BY HAND DESIGNED BY: SH/ED | CHECKED BY: ED EROSION CONTROL PRACTICE FEATURES UPON FINAL STABILIZATION. PREPARED BY TUNISON DIAS, INC ON BEHALF OF: JOHN COOLIDGE & ANNE RICHARDS 203 POND STREET HOPKINTON, MASSACHUSETTS PERIMETER CONTROL FOR LOT CONSTRUCTION MIIMUM REQUIRMENT — — — STOCKPILE/STAGING AREA DEFINITIVE SUBDIVISION PLAN CONSTRUCTION ENTRANCE OPEN SPACE AND LANDSCAPE PRESERVATION DEVELOPMENT FLOW DIVERSION **CULVERT REPLACEMENT AREA INSET** - - - TEMPORARY DAM SCALE: 1"=30' **EROSION CONTROL** C-7 PLAN GRAPHICAL SCALE: 1" =50'

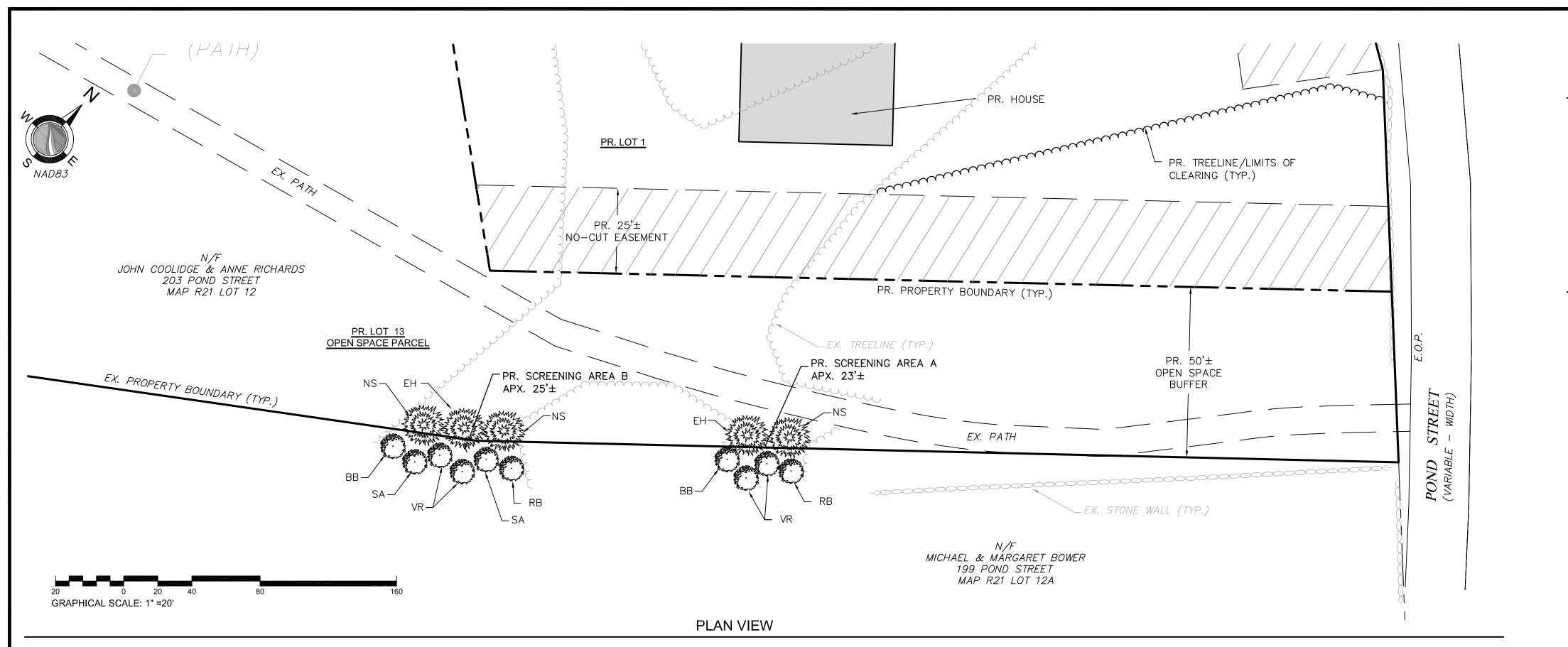












EXISTING FEATURES

PROPERTY LINE

— – – — – ABUTTER PROPERTY LINE

— EDGE OF PAVEMENT

->>>>>> STONE WALL

— — EDGE OF PATH

PROPOSED FEATURES

PROPERTY LINE

--- EASEMENT LINE

HOUSE

VEGE. SIDE TREELINE

TREE

SHRUB

PROPOSED PLANT SCHEDULE FOR SCREENING

ABB.	SPECIES	# OF PLANTS	PLANT ON-CENTER	SIZE
EH	EASTERN HEMLOCK (TSUGA CANADENSIS,) 2	12 FT	3" D.B.H.
NS	NORWAY SPRUCE (PICEA ABIES)	3	12 FT	3" D.B.H.
ВВ	BLACKBERRY (RUBUS FRUITICOUS)	2	6 FT	2' TALL
RB	RASPBERRY (RUBUS IDAEUS)	2	6 FT	2' TALL
VR	VIRGINIA ROSE (ROSA VIRGINIANA)	4	6 FT	3' TALL
SA	SOUTHERN ARROWWOOD (VIBURNUM DENTATUM)	2	6 FT	3' TALL

NOTES:

1. THIS PLAN IS INTENDED TO SHOW PROPOSED VEGETATIVE SCREENING ALONG TWO SECTIONS (TOTALING APPROXIMATELY 48 FEET IN LENGTH) OF THE BOUNDARY BETWEEN THE SUBJECT PROPERTY (203 POND STREET) AND THE ABUTTING PROPERTY (199 POND STREET) WHICH CURRENTLY DOES NOT CONTAIN SUCH SCREENING.

2. FINAL SCREENING, INCLUDING SPECIES, LOCATIONS, SIZE OF PLANTINGS, ETC., ARE SUBJECT TO APPROVAL BY THE TOWN OF HOPKINTON PLANNING BOARD.

3. THIS PLAN IS INTENDED TO BE A SUPPLEMENT TO THE PLAN SET ENTITLED "DEFINITIVE SUBDIVISION PLAN, 203 POND STREET, HOPKINTON, MASSACHUSETTS, OPEN SPACE AND LANDSCAPE PRESERVATION DEVELOPMENT", PREPARED BY THIS OFFICE, DATED JUNE 30, 2014. THIS PLAN SHALL BE SUBJECT TO ALL SPECIFICATIONS AND REQUIREMENTS OF ABOVE REFERENCED PLAN SET.

4. THIS PLAN SHALL BE INCLUDED IN ANY SUBSEQUENT REVISIONS TO THE ABOVE REFERENCED PLAN SET.

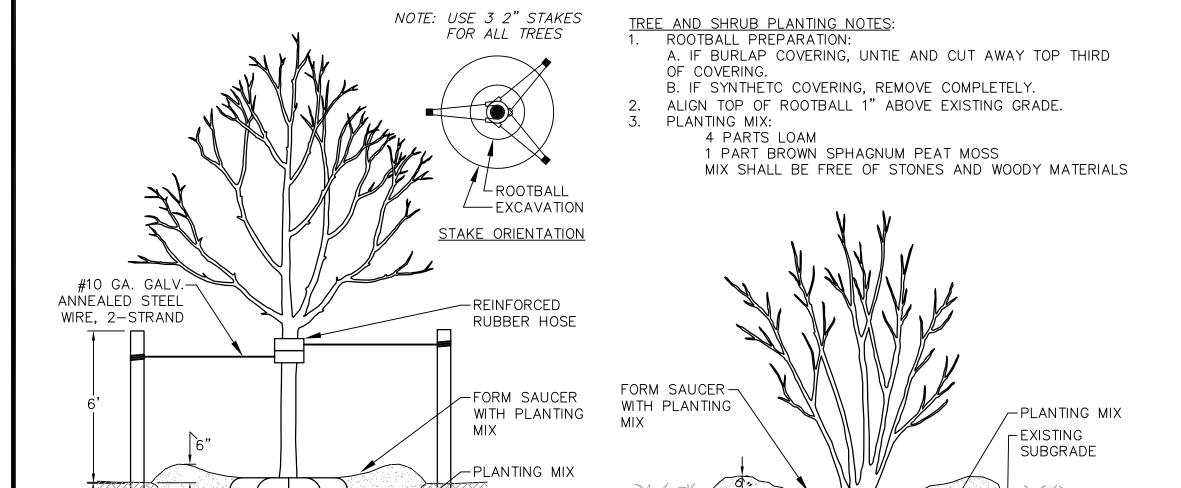
5. PHOTOS PROVIDED BY OTHERS. PHOTO LOCATIONS SHOWN APPROXIMATELY.



PHOTO #1: EXISTING VIEW OF PR. SCREENING AREA A FROM SUBJECT PROPERTY



PHOTO #2: EXISTING VIEW OF PR. SCREENING AREA A FROM SUBJECT PROPERTY



3 x ROOTBAL DIAMETER—

SHRUB PLANTING

-EXISTING SUBGRADE

PEDESTAL

TREE AND SHRUB PLANTING

NOT TO SCALE

-2.5 x ROOTBAL DIAMETER-

TREE PLANTING

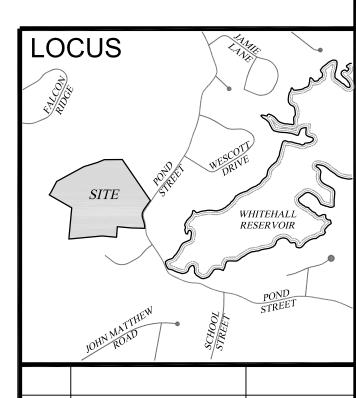
PHOTO #3: EXISTING VIEW OF PR. SCREENING AREA B FROM SUBJECT PROPERTY



PHOTO #4: EXISTING VIEW OF PR. SCREENING AREA B FROM SUBJECT PROPERTY

EXISTING SITE PHOTOS

PROFESSIONAL ENGINEER FOR TUNISON DIAS, INC.



2	ABUTTER COMMENTS	08/05/201
1	ABUTTER COMMENTS	07/25/201
REV	DESCRIPTION	DATE

CIVIL ENGINEER:



P.O. Box 73 115 Main Street, Suite 2B N. Easton, Massachusetts 02356 tel (508)682-0229 fax (508)682-3105

www.tunisondias.com

PROJECT NUMBER: 1103-001 DATE OF ISSUE: JULY 7, 2014

SCALE: 1"=20'

DESIGNED BY: SH/ED | CHECKED BY: ED

PREPARED BY TUNISON DIAS, INC ON BEHALF OF:

JOHN COOLIDGE & ANNE RICHARDS

203 POND STREET HOPKINTON, MASSACHUSETTS

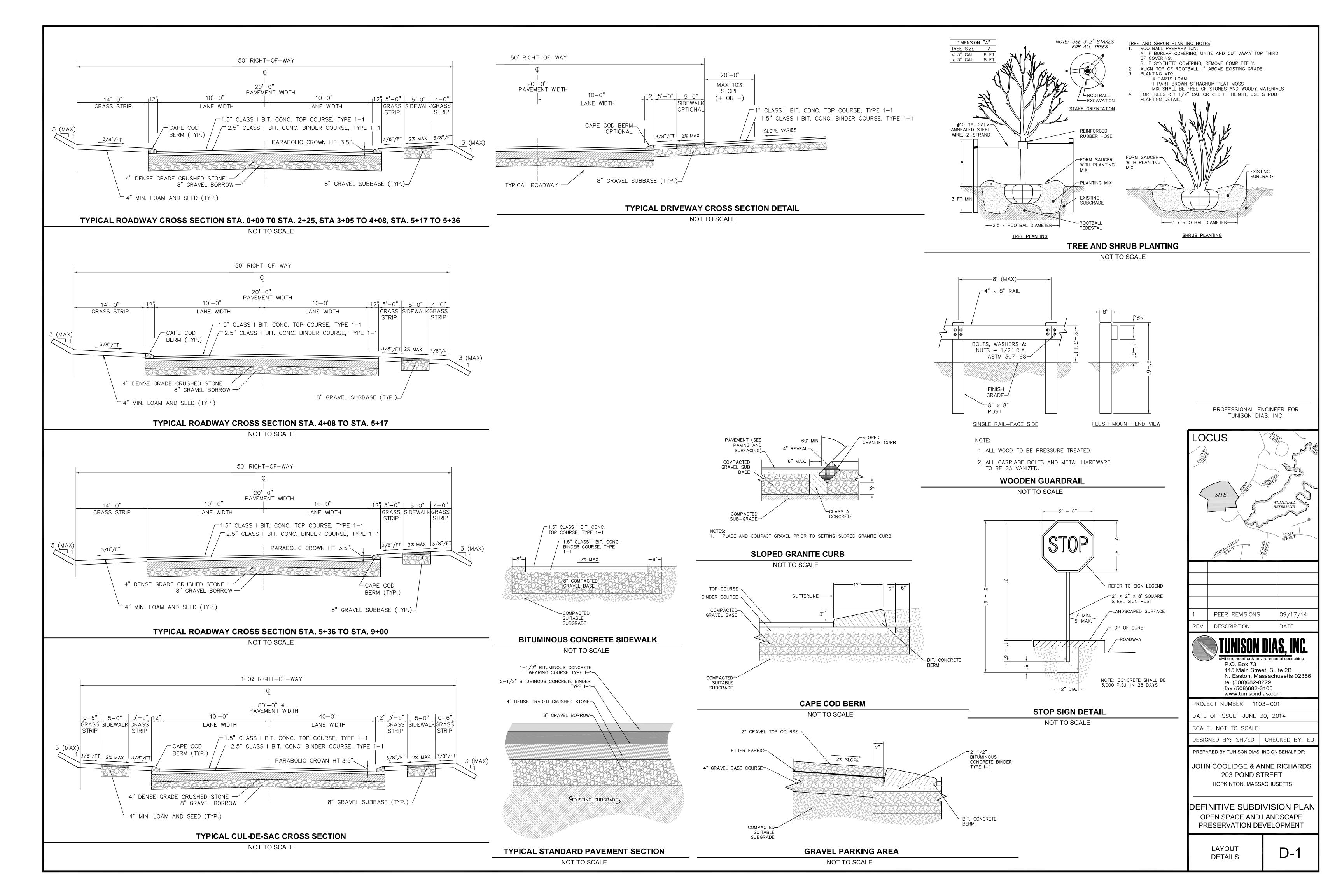
DEFINITIVE SUBDIVISION PLAN OPEN SPACE AND LANDSCAPE PRESERVATION DEVELOPMENT

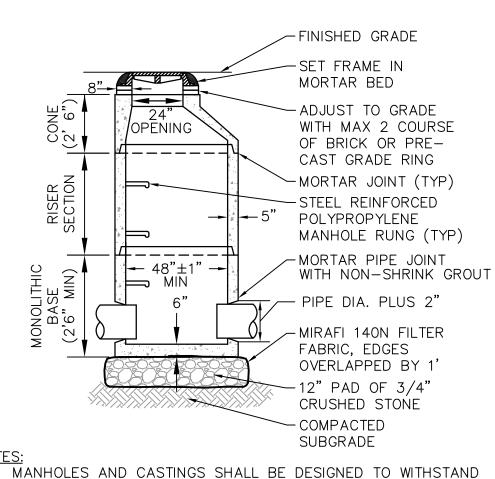
S-1

PROPOSED

SCREENING PLAN

ISSUED FOR REVIEW NOT FOR CONSTUCTION

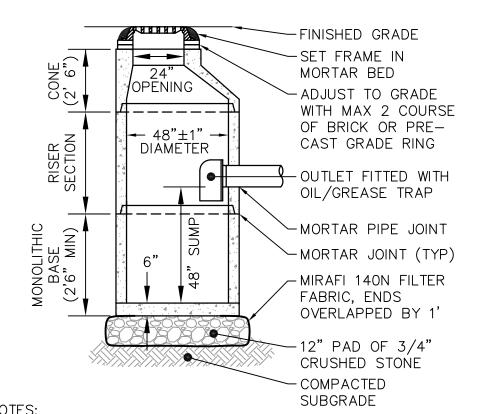




LETTERS.

- H-20 LOADING CONDITIONS.
- PRECAST H-20 SLAB TOP MAY BE USED IN PLACE OF CONE SECTION IF WARRANTED BY FIELD CONDITIONS. FRAME AND COVER SHALL BE LEBARON LK-110 OR APPROVED EQUAL AND SHALL HAVE THE WORD "DRAIN" CAST IN 3" HIGH

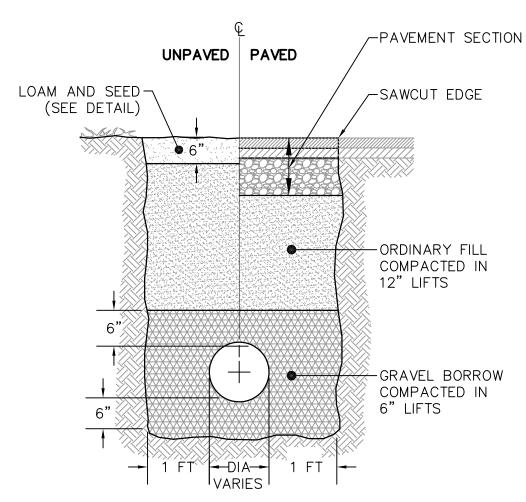
PRECAST CONCRETE DRAIN MANHOLE



CATCH BASINS AND CASTINGS SHALL BE DESIGNED TO WITHSTAND H-20 LOADING CONDITIONS.

- PRECAST H-20 SLAB TOP MAY BE USED IN PLACE OF CONE SECTION IF WARRANTED BY FIELD CONDITIONS.
- 3. FRAME AND COVER SHALL BE LEBARON LK-120 OR APPROVED EQUAL.

PRECAST CONCRETE CATCH BASIN NOT TO SCALE

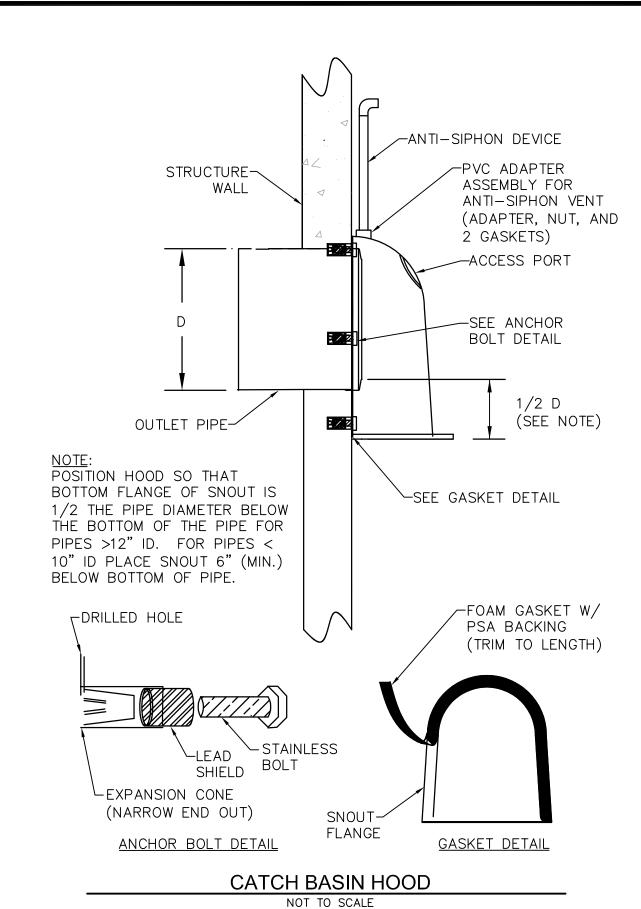


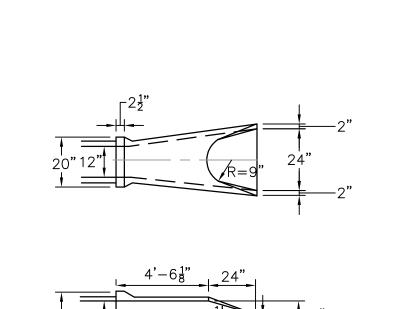
- 1. GRAVEL BORROW SHALL BE 3-INCH MINUS, FREELY DRAINING, WELL-GRADED GRAVEL OR AS OTHERWISE DEFINED IN THE TECHNICAL SPECIFICATIONS.
- ORDINARY FILL SHALL 6-INCH MINUS GRAVEL OR AS OTHERWISE DEFINED IN THE TECHNICAL SPECIFICATIONS.

NOT TO SCALE

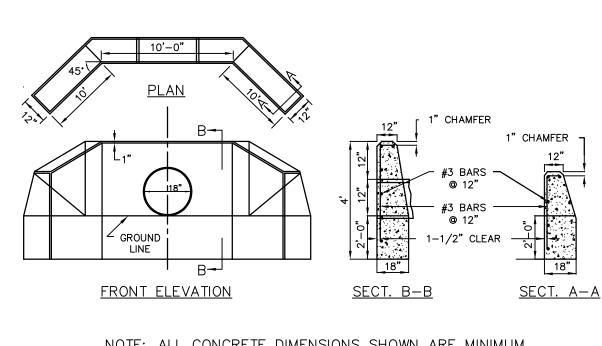
3. ALL BACKFILL MATERIALS SHALL BE FREE OF STICKS, ROOTS,

CLAY, AND SILT. DRAIN TRENCH



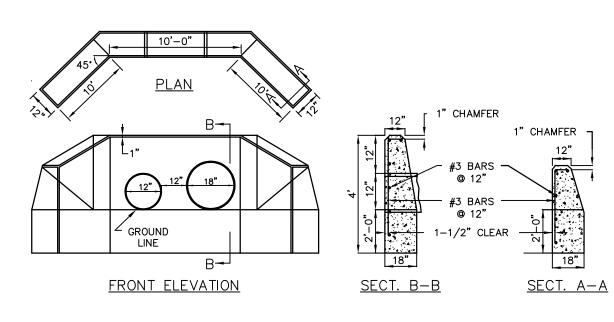


FLARED END SECTION



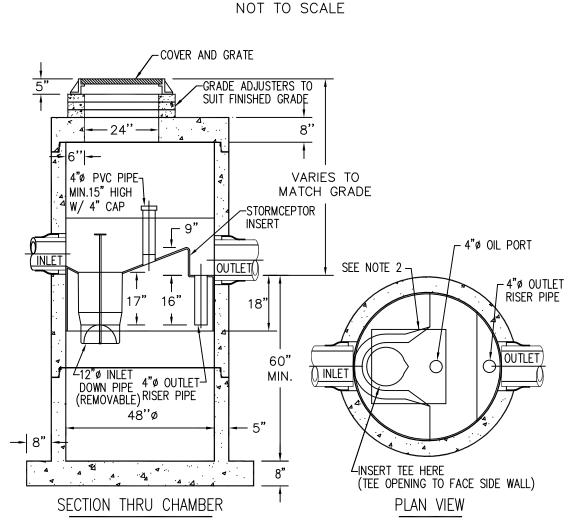
NOTE: ALL CONCRETE DIMENSIONS SHOWN ARE MINIMUM.





HEADWALL 4B DETAIL

NOTE: ALL CONCRETE DIMENSIONS SHOWN ARE MINIMUM.



1. THE USE OF FLEXIBLE CONNECTION IS RECOMMENDED AT THE INLET AND OUTLET WHERE APPLICABLE.

2. THE COVER SHOULD BE POSITIONED OVER THE OUTLET DROP PIPE AND THE OIL PORT.

5:1 MAX

FILTER FABRIC

STORMCEPTER STC-450i AND STC-450 WATER QUALITY UNIT

1/////////2"-4" DROP /

PEA GRAVEL DIAPHRAGM

NOT TO SCALE

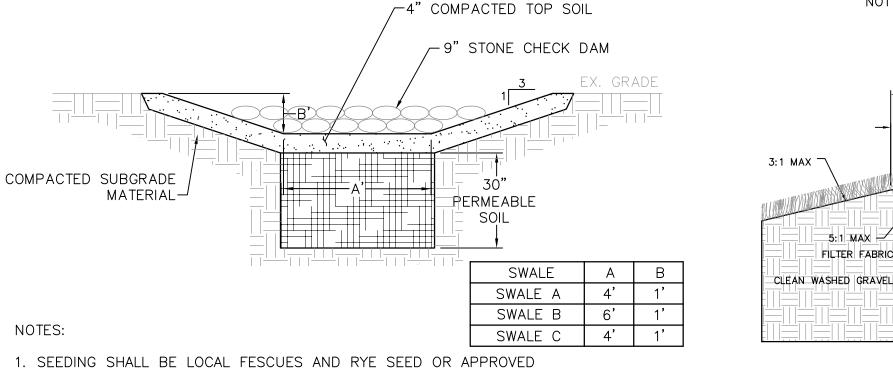
2 MIN

| WITH 1 1

SIDE SLOPES

PAVEMENT SECTION

PAVEMENT SUBGRADE

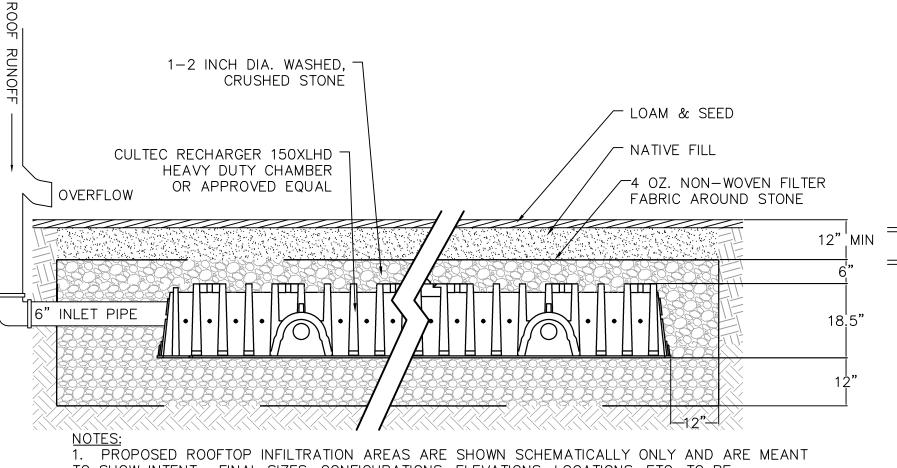


1. SEEDING SHALL BE LOCAL FESCUES AND RYE SEED OR APPROVED EQUAL APPLIED AT A RATE OF 4 LBS PER 1,000 SQ. FT. APPLY THE SEED UNIFORMLY BY HAND. APPLICATION RATE SHALL BE INCREASED BY 25% IF HYDROSEEDING IS TO BE USED.

- 2. CHECK DAM STONE SHALL BE 3"-6"
- 3. CHECK DAMS SHALL BE LOCATED 25' ON CENTER.

WATER QUALITY SWALE

NOT TO SCALE



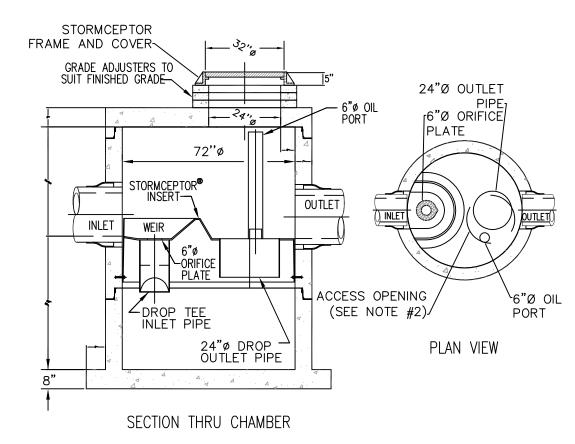
TO SHOW INTENT. FINAL SIZES, CONFIGURATIONS, ELEVATIONS, LOCATIONS, ETC. TO BE DETERMINED UPON INDIVIDUAL LOT DESIGN.

2. A 40 MIL IMPERVIOUS BARRIER SHALL BE PROVIDED A MINIMUM OF 5' FROM THE EDGE OF THE PROPOSED ROOF TOP INFILTRATION SYSTEM WHERE EVER A MINIMUM OF 25 ' OF SEPARATION BETWEEN THE ROOFTOP SYSTEM AND THE SOIL ABSORPTION SYSTEM FOR ANY SEPTIC SYSTEM CAN NOT BE PROVIDED.

3. ROOF DRAIN INFILTRATION SYSTEM SHALL BE EQUIPED WITH A DOWNSPOUT OVERFLOW.

ROOFTOP DRAINAGE TYPICAL CROSS SECTION

NOT TO SCALE

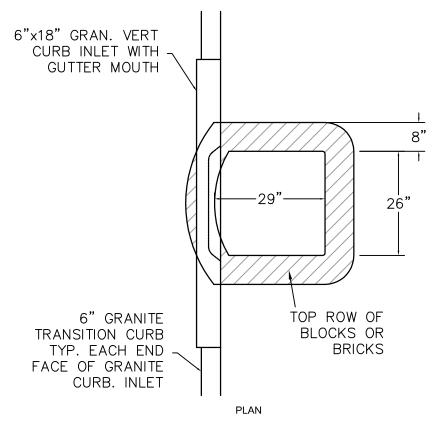


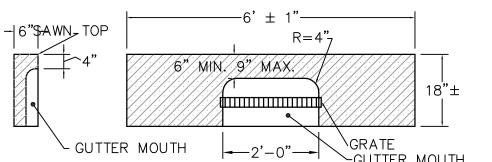
1. THE USE OF FLEXIBLE CONNECTION IS RECOMMENDED AT THE

INLET AND OUTLET WHERE APPLICABLE.

2. THE COVER SHOULD BE POSITIONED OVER THE OUTLET DROP PIPE AND THE OIL PORT.

STORMCEPTER STC-900 WATER QUALITY UNIT





GRANITE VERTICAL CURB INLET

NOT TO SCALE

PROFESSIONAL ENGINEER FOR TUNISON DIAS, INC.

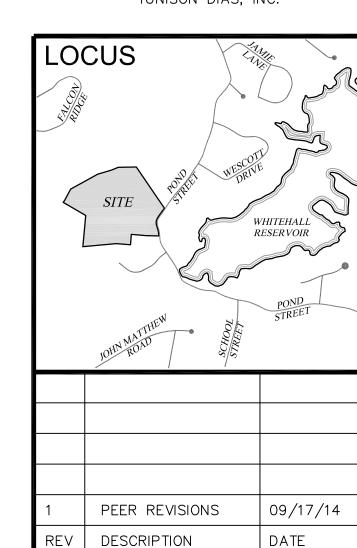
-FLARED END SECTION

FLOW DISSIPATER

NOT TO SCALE

-50-125 LB STONE RIP-RAP

-6" GRAVEL BASE



P.O. Box 73

115 Main Street, Suite 2B N. Easton, Massachusetts 02356 tel (508)682-0229 fax (508)682-3105 www.tunisondias.com

PROJECT NUMBER: 1103-001 DATE OF ISSUE: JUNE 30, 2014

SCALE: NOT TO SCALE

DESIGNED BY: SH/ED | CHECKED BY: ED

PREPARED BY TUNISON DIAS, INC ON BEHALF OF:

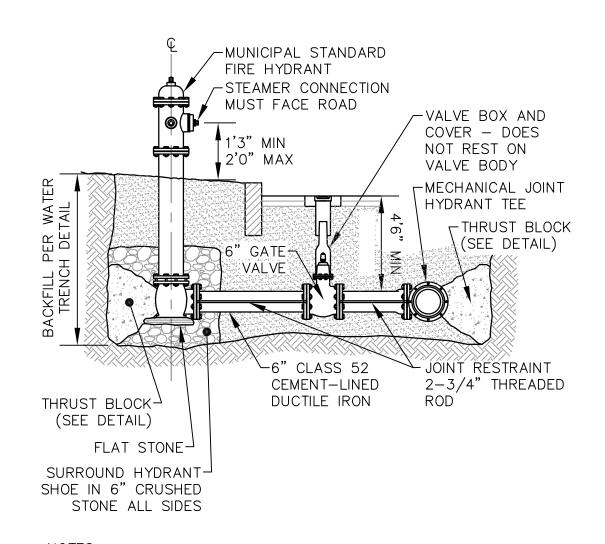
JOHN COOLIDGE & ANNE RICHARDS 203 POND STREET HOPKINTON, MASSACHUSETTS

DEFINITIVE SUBDIVISION PLAN OPEN SPACE AND LANDSCAPE

PRESERVATION DEVELOPMENT

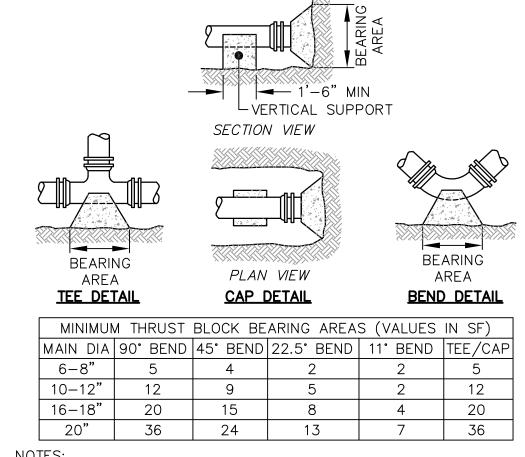
DRAINAGE DETAILS





CONTRACTOR SHALL ENSURE THAT THE HYDRANY SHOE THRUST BLOCK DOES NOT BLOCK THE HYDRANT DRAIN.
 ALL HYDRANTS, VALES AND CONNECTIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE MUNICIPALITY.

FIRE HYDRANT CONNECTION NOT TO SCALE



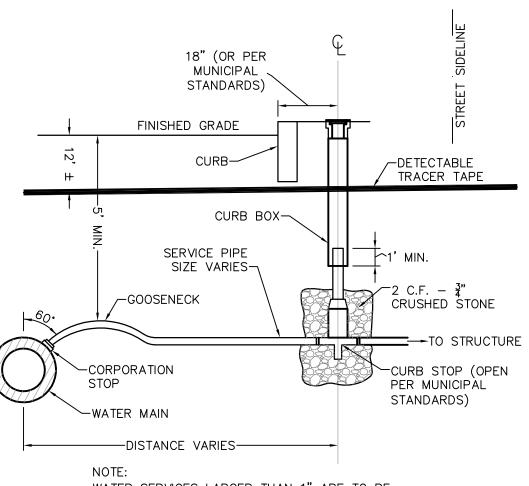
1. THRUST BLOCK TABLE ASSUMES BLOCK BEARS AGAINST UNDISTURBED TILL. FOR OTHER SOILS ADJUST TABLE VALUE WITH MULTIPLIER BELOW:

ELOW:
SOFT CLAY 4
SAND 2
GRAVEL 1.33
SHALE 0.65

2. CONTRACTOR SHALL USE CAUTION TO ENSURE THAT CONCRETE IS NOT PLACED ON MECHANICAL JOINTS.

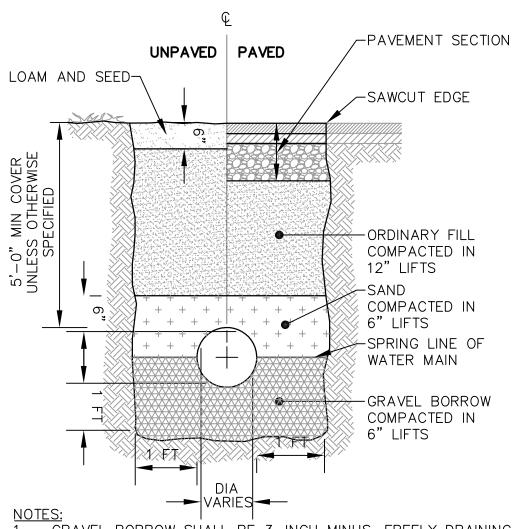
THRUST BLOCKS

NOT TO SCALE



NOTE:
WATER SERVICES LARGER THAN 1" ARE TO BE
RESTRAINED TO WATER MAIN W/ APPROVED SADDLE.

TYPICAL WATER SERVICE CONNECTION

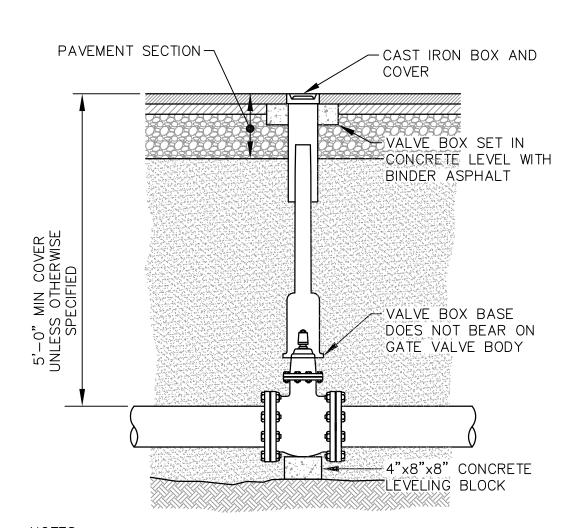


1. GRAVEL BORROW SHALL BE 3—INCH MINUS, FREELY DRAINING, WELL—GRADED GRAVEL OR AS OTHERWISE DEFINED IN THE TECHNICAL SPECIFICATIONS.

2. ORDINARY FILL SHALL 6—INCH MINUS GRAVEL OR AS OTHERWISE DEFINED IN THE TECHNICAL SPECIFICATIONS.

3. ALL BACKFILL MATERIALS SHALL BE FREE OF STICKS, ROOTS, CLAY, AND SILT.

WATER TRENCH NOT TO SCALE



NOTES:

1. VALVE BOX COVER SHALL HAVE THE WORD "WATER" CAST IN 1" LETTERS.

2. VALVE BOX AND COVER SHALL BE RATED BY THE

MANUFACTURER FOR H-20 LOADING CONDITIONS.

3. VALVE MANUFACTURER, MODEL AND OPENING DIRECTION AS PER

NOT TO SCALE

MUNICIPAL REQUIREMENTS.

GATE VALVE

SEE TYPICAL PAVEMENT SECTION UNDER PAVED COUNTRY AREA COUNTRY AREA (TYPICAL OVER EACH CONDUIT)

SUITABLE BACK FILL MATERIAL

OR ROCK

E ELECTRIC CONDUIT

(T) TELCO CONDUIT

C CABLE CONDUIT

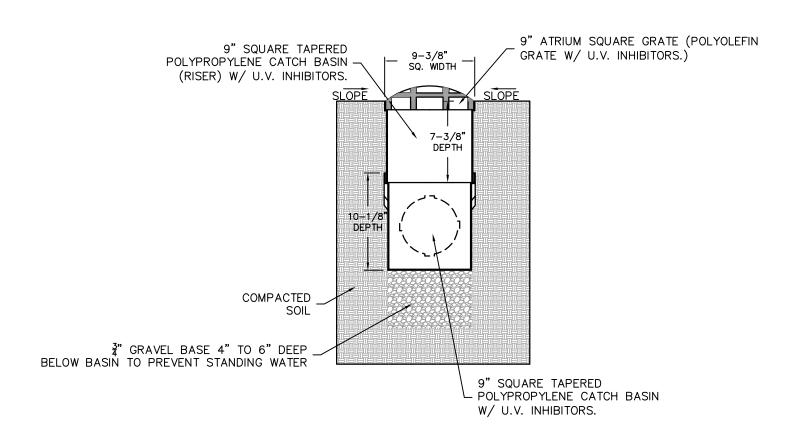
SCHEDULE 80 PVC CONDUIT REQUIRED UNDER ROAD AND DRIVEWAY SURFACES.

ALL UTILITY INSTALLATION REQUIREMENTS, SEPARATIONS, AND CONDUIT SIZES
TO BE VERIFIED WITH EACH UTILITY COMPANY PRIOR TO INSTALLATION OF ANY UNDERGROUND UTILITY CONDUIT.

SEE SITE ELECTRICAL PLAN FOR SPECIFIC DETAILS

BURIED CONDUIT DETAIL

NOT TO SCALE



NOTES:

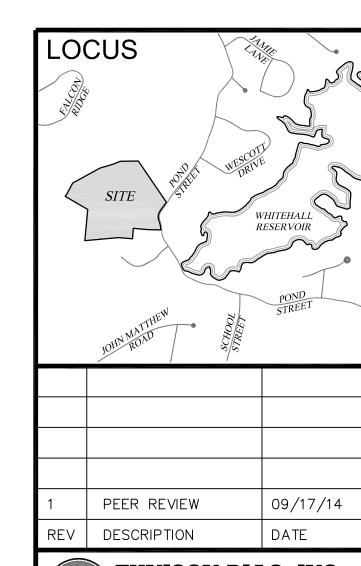
1. AREA DRAIN TO BE NDS 9" SQUARE CATCH BASIN OR APPROVED EQUAL.

2. GRATE TO BE ATTACHED TO CATCH BASIN WITH SCREW PROVIDED AT TIME OF INSTALLATION.

AREA DRAIN

NOT TO SCALE

PROFESSIONAL ENGINEER FOR TUNISON DIAS, INC.





P.O. Box 73 115 Main Street, Suite 2B N. Easton, Massachusetts 02356 tel (508)682-0229 fax (508)682-3105 www.tunisondias.com

PROJECT NUMBER: 1103-001

DATE OF ISSUE: JUNE 30, 2014

SCALE: NOT TO SCALE

SCALE: NOT TO SCA

DESIGNED BY: SH/ED | CHECKED BY: ED

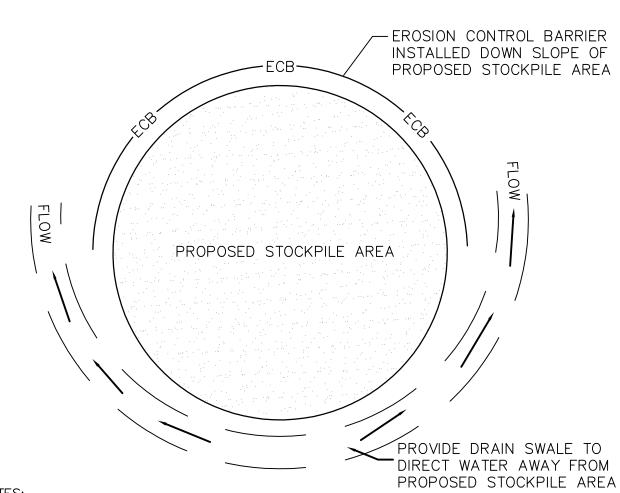
PREPARED BY TUNISON DIAS, INC ON BEHALF OF:

JOHN COOLIDGE & ANNE RICHARDS

203 POND STREET HOPKINTON, MASSACHUSETTS

DEFINITIVE SUBDIVISION PLAN
OPEN SPACE AND LANDSCAPE
PRESERVATION DEVELOPMENT

UTILITY DETAILS D-3

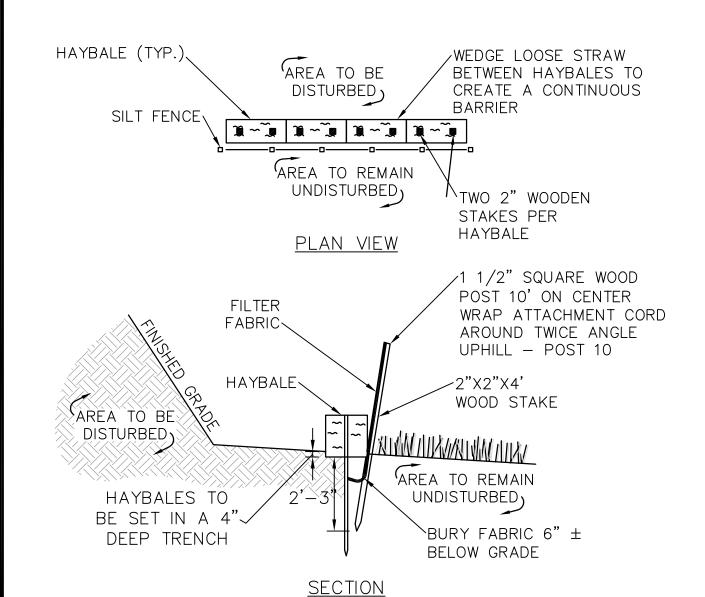


1. SOIL AND FILL STOCKPILES EXPECTED TO REMAIN IN PLACE FOR LESS THAN 90 DAYS SHALL BE COVERED WITH HAY AND MULCH (AT 100LBS/1,000 SF), OR WITH AN ANCHORED TARP WITHIN 7 DAYS OR PRIOR TO ANY RAINFALL.

2. SOIL AND FILL STOCKPILES EXPECTED TO REMAIN IN PLACE FOR 90 DAYS OR MORE SHALL BE SEEDED WITH WINTER RYE (FOR FALL SEEDING AT 1LB/1,000 SF) OR OATS (FOR SUMMER SEEDING AT 2LB/1,000 SF) AND THEN COVERED WITH HAY MULCH (AT 100LB/1,000 SF) OR AN ANCHORED TARP WITHIN 7 DAYS OR PRIOR TO ANY RAINFALL.

STOCK PILE PROTECTION DETAIL

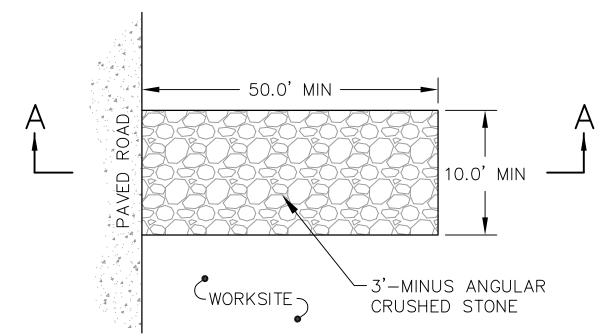
NOT TO SCALE



DEPTH TO BE 2' UNLESS POST IS TO BE SET IN PEAT THEN 3' OR DEPTH POSSIBLE BY PUSHING BY HAND SHALL BE REQUIRED.

SILT FENCE AND HAYBALE DETAIL

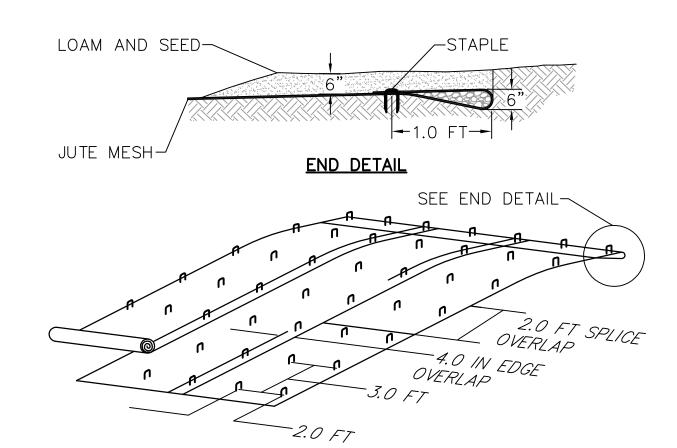
SECTION A-A



PLAN VIEW

STABILIZED CONSTRUCTION ENTRANCE DETAIL

NOT TO SCALE



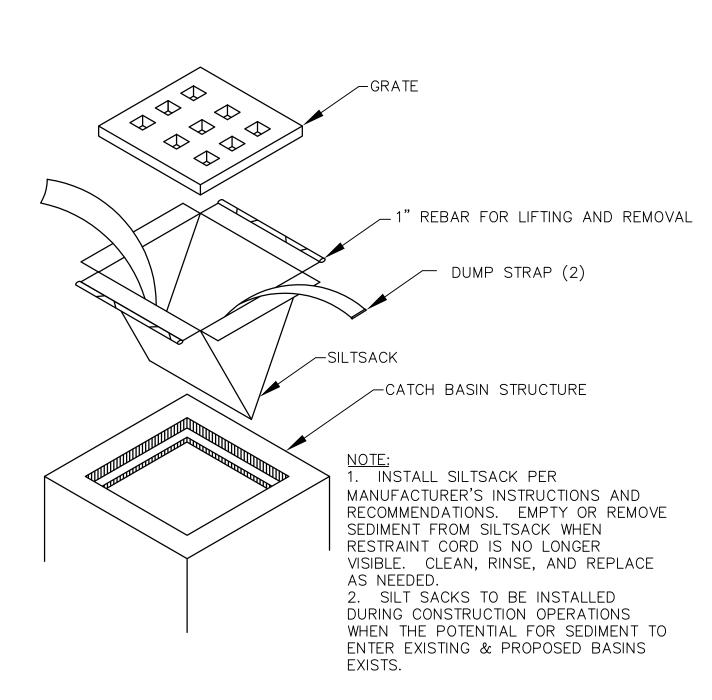
NOTEC

- INSTALL JUTE MESH FROM UPHILL TOWARDS DOWNHILL AND PARALLEL TO THE DIRECTION OF SURFACE WATER FLOW.
 GROUND SURFACE SHALL BE FREE OF ROCKS, CLODS,
- STICKS AND GRASS PRIOR TO INSTALLATION OF MESH.

 3. MESH SHALL BE SPREAD LOOSLY OVER THE GROUND SURFACE AND SHALL NOT BE STRETCHED UNDER ANY
- CIRCUMSTANCE.
 4. JUTE SPECIFICATION:
- A. MESH SHALL HAVE A MAXIMUM OPENING OF 1"
 B. MESH SHALL BE LENO-WOVEN AND 100% BIODEGRADABLE
 NATURAL FIBER.
- C. UNIT YARN WEIGHT SHALL BE AT LEAST 0.9 LB/SQUARE
- 5. STAPLES SHALL BE #14 GUAGE OR HEAVIER, U—SHAPED WITH A MINIMUM DEPTH OF 12".

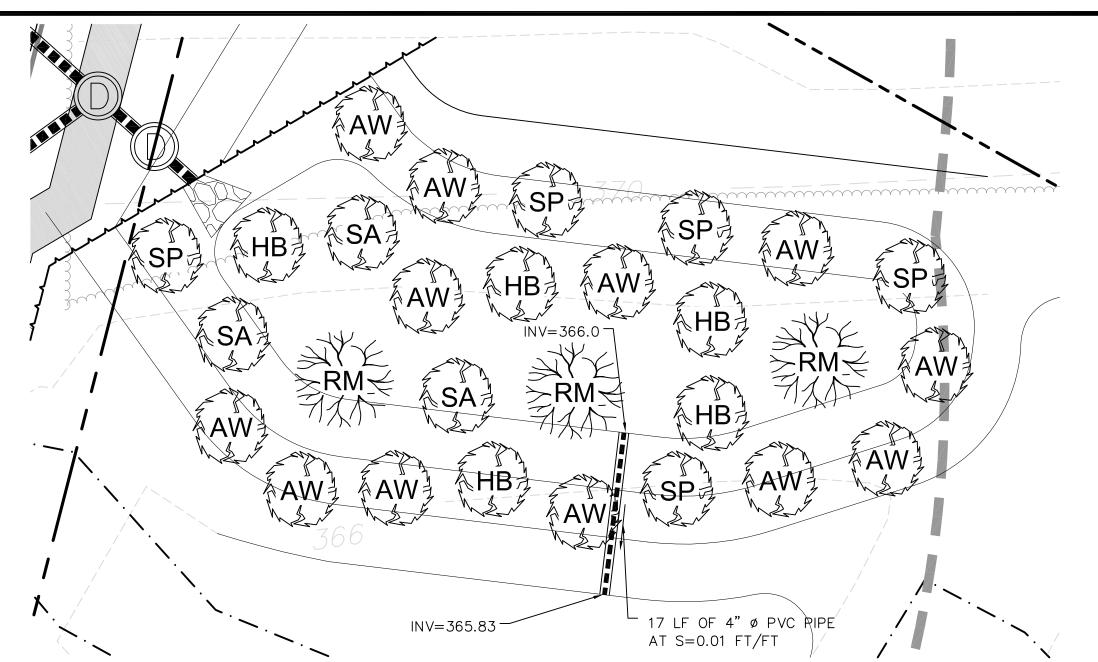
JUTE MESH INSTALLATION

NOT TO SCALE



SILT SACK INLET DETAIL

NOT TO SCALE



ECOLOGICAL RESTORATION AREA/CONSTRUCTED STORMWATER WETLAND PLANTING SCHEMATIC

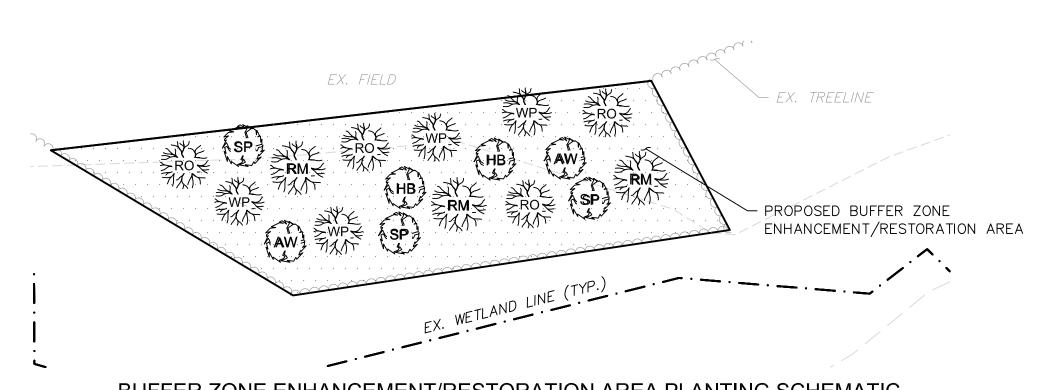
1"=10'

ECOLOGICAL RESTORATION AREA/CONSTRUCTED STORMWATER WETLAND PLANTING SCHEDULE

SYMBOL	SPECIES	# OF PLANTS	PLANT ON-CENTER	PLANT HEIGHT	SIZE
SPA	SWEET PEPPERBUSH (CLETHRA ALNIFOLIA)	7	8-10 FT	12-18 IN	1 GAL.
AW	ARROWWOOD (VIBURNUM DENTATUM)	7	8-10 FT	12-18 IN	1 GAL.
HB	HIGHBUSH BLUEBERRY (VACCINIUM CORYMBOSUM)	6	8-10 FT	12-18 IN	1 GAL.
ASA T	SWAMP AZALEA (RHODODENDRON VISCOSUM)	6	8-10 FT	12-18 IN	1 GAL.
STATE OF THE PROPERTY OF THE P	RED MAPLE (ACER RUBRUM)	3	10-15 FT	12-18 IN	1.5 GAL.

SEED MIX AND APPLICATION

PLANTED AREAS SHALL BE SEEDED WITH NEW ENGLAND WETMIX (50%) WITH NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DETENTION BASINS AND MOIST SITES (50%) AT AN APPLICATION RATE OF 660 SF/LB.



BUFFER ZONE ENHANCEMENT/RESTORATION AREA PLANTING SCHEMATIC

1"=10'

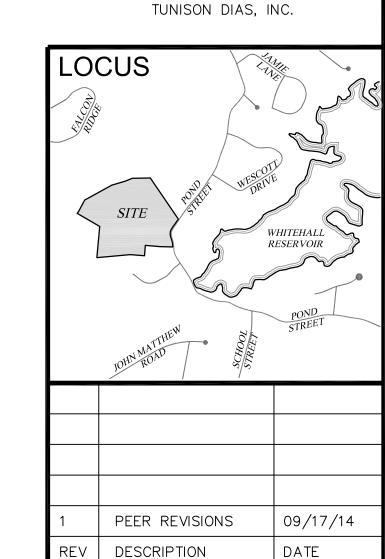
BUFFER ZONE ENHANCEMENT/RESTORATION AREA PLANTING SCHEDULE

SYMBOL	SPECIES	# OF PLANTS	PLANT ON-CENTER	PLANT HEIGHT	<u>SIZE</u>
SP	SWEET PEPPERBUSH (CLETHRA ALNIFOLIA)	3	8-10 FT	12-18 IN	1 GAL.
AW	ARROWWOOD (VIBURNUM DENTATUM)	2	8-10 FT	12-18 IN	1 GAL.
HB	HIGHBUSH BLUEBERRY (VACCINIUM CORYMBOSUM)	2	8-10 FT	12-18 IN	1 GAL.
RMX FIME	RED MAPLE <i>(ACER RUBRUM)</i>	3	10-15 FT	12-18 IN	1.5 GAL.
≥RO¥ >NA	RED OAK <i>(QUERCUS RUBRA)</i>	4	10-15 FT	12-18 IN	1.5 GAL.
NP N	WHITE PINE (PINUS STROBUS)	4	10-15 FT	12-18 IN	1.5 GAL.

SEED MIX AND APPLICATION

PLANTED AREAS SHALL BE SEEDED WITH NEW ENGLAND CONSERVATION/WILDLIFE MIX AT AN APPLICATION RATE OF 660 SF/LB.

PROFESSIONAL ENGINEER FOR



<u>TUNISON DIAS, I</u>NC.

P.O. Box 73 115 Main Street, Suite 2B N. Easton, Massachusetts 02356 tel (508)682-0229 fax (508)682-3105 www.tunisondias.com

PROJECT NUMBER: 1103-001

DATE OF ISSUE: JUNE 30, 2014

SCALE: AS NOTED

DESIGNED BY: SH/ED CHECKED BY: ED

PREPARED BY TUNISON DIAS, INC ON BEHALF OF:

JOHN COOLIDGE & ANNE RICHARDS

203 POND STREET HOPKINTON, MASSACHUSETTS

DEFINITIVE SUBDIVISION PLAN
OPEN SPACE AND LANDSCAPE

PRESERVATION DEVELOPMENT

EROSION CONTROL DETAILS

D-4