# PROPOSED SITE DEVELOPMENT AT #474 MAIN STREET & 31 ASHUMET ROAD MASHPEE, MASSACHUSETTS

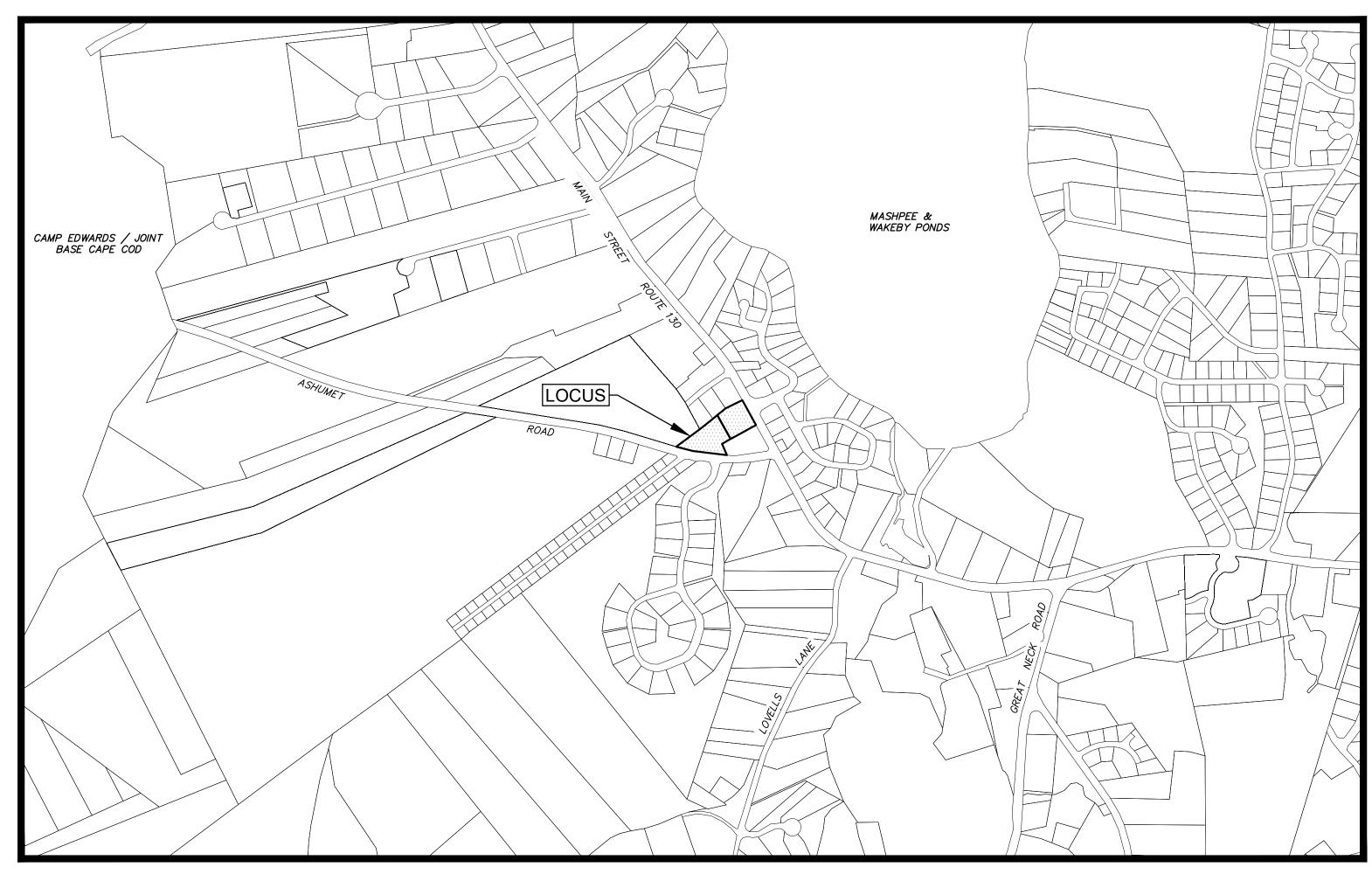
FEBRUARY 19, 2024

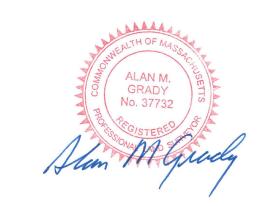
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- 1. LOCUS: #474 MAIN STREET
  PARCEL 27-001-000A
  &
  #31 ASHUMET ROAD
  PARCEL 27-001-000B
- 2. OWNER: JOAO L. JUNQUEIRA 53 MERCANTILE WAY, UNIT 6 MASHPEE, MA 02649

5. ZONING DISTRICT: C-3 & R-5

- 3. DEED REF: Deed Bk: 36014 Pg: 239
- 4. PLAN REF: Plan Bk: 629 Pg: 44 (LOTS 1 & 3)
- 6. LOCUS DOES NOT FALL WITHIN A SPECIAL FLOOD HAZARD ZONE AS SHOWN ON FEMA FLOOD INSURANCE RATE MAP No. 25001C-0538-J dated
- 7. LOCUS DOES NOT FALL WITHIN THE NATURAL HERITAGE and ENDANGERED SPECIES PROGRAM (NHESP) AREAS OF ESTIMATED HABITATS OF RARE WILDLIFE and PRIORITY HABITATS OF RARE SPECIES.
- 8. LOCUS DOES FALL WITHIN A ZONE II WELLHEAD PROTECTION AREA.
- 9. THE LOCATION OF UNDERGROUND UTILITIES AS REPRESENTED ON THESE PLANS IS BASED UPON PLANS AND INFORMATION PROVIDED BY THE RESPECTIVE UTILITY COMPANIES OR MUNICIPAL DEPARTMENTS SUPPLEMENTED BY FIELD IDENTIFICATION WHEREVER POSSIBLE. NO WARRANTY IS MADE AS TO THE ACCURACY OF THESE LOCATIONS OR THAT ALL UNDERGROUND UTILITIES ARE SHOWN. THE CONTRACTOR SHALL CONTACT DIG SAFE AT LEAST 72 HOURS PRIOR TO THE START OF CONSTRUCTION. DIG SAFE TELEPHONE NUMBER IS 1-800-322-4844.







CIVIL ENGINEER / LAND SURVEYOR:



49 HERRING POND ROAD
BUZZARDS BAY, MA 02532

(Tel) 508.833.0070

19 OLD SOUTH ROAD
NANTUCKET, MA 02554

(Tel) 508.8325.0044

(Tel) 508.833.0070 (Fax) 508.833.2282

www.brackeneng.com

OWNER/APPLICANT: JOAO L. JUNQUEIRA

53 MERCANTILE WAY, UNIT 6
MASHPEE, MA 02649

 $\frac{LOCUS MAP}{Scale : 1" = 500'}$ 

PERMIT SET - NOT FOR CONSTRUCTION

### **GENERAL CONSTRUCTION NOTES:**

COORDINATED WITH THE ENGINEER.

CONTAINMENT, AND TRENCH WORK.

CONTRACTOR IN ADVANCE OF THE WORK.

RESPONSIBILITY (INCLUDING COSTS) OF THE CONTRACTOR.

- 1. ALL SITE PREPARATION NECESSARY TO COMPLETE THIS PROJECT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- 2. ALL NECESSARY POLICE DETAIL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR SHALL COORDINATE WITH THE LOCAL POLICE DEPARTMENT.
- THE CONTRACTOR SHALL MAKE ALL NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN ALL NECESSARY CONSTRUCTION PERMITS, PAY ALL FEES INCLUDING POLICE DETAILS AND POST ALL BONDS, IF NECESSARY, ASSOCIATED WITH THE SAME, AND COORDINATE WITH THE OWNER
- ALL EXISTING CONDITIONS SHOWN SHALL BE CONSIDERED APPROXIMATE AND ARE BASED ON THE BEST INFORMATION AVAILABLE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THAT THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS DO NOT CONFLICT WITH ANY KNOW EXISTING OR OTHER PROPOSED IMPROVEMENTS. IF ANY CONFLICTS ARE DISCOVERED, THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE ENGINEER PRIOR TO INSTALLING ANY PORTION OF THE SITE WORK WHICH WOULD BE AFFECTED.
- THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOW ON THESE PLANS ARE BASED ON RECORDS OF VARIOUS UTILITY COMPANIES, AND WHEREVER POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY IN THE TOWN. AND "DIGSAFE" (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK IN PREVIOUSLY UNALTERED AREAS TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RESOLVE CONFLICTS BETWEEN THE PROPOSED UTILITIES AND FIELD LOCATED UTILITIES AND SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER IMMEDIATELY. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED. INCOMPLETELY OR INACCURATELY SHOW. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ACCURATE RECORDS OF THE LOCATION AND ELEVATION OF ALL WORK INSTALLED AND EXISTING UTILITIES FOUND DURING CONSTRUCTION FOR THE PREPARATION OF THE AS-BUILT PLAN.
- THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL EXISTING UTILITIES IN WORKING ORDER AND FREE FROM DAMAGE DURING THE ENTIRE DURATION OF THE PROJECT. ALL COST RELATED TO THE REPAIR OF UTILITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. EXCAVATION REQUIRED WITHIN THE PROXIMITY OF EXISTING UTILITY LINES SHALL BE DONE BY HAND. CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING UTILITY LINES OR STRUCTURES INCURRED DURING CONSTRUCTION OPERATIONS AT NO COST TO THE OWNER.
- THE CONTRACTOR SHALL UTILIZE ALL PRECAUTIONS AND MEASURES TO ENSURE THE SAFETY OF THE PUBLIC, ALL PERSONNEL, AND PROPERTY DURING CONSTRUCTION IN ACCORDANCE WITH OSHA STANDARDS, INCLUDING BARRICADES, SAFETY LIGHTING, CONES, POLICE DETAIL AND/OR FLAGMEN AS DETERMINED NECESSARY BY THE ENGINEER AND/OR TOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF POLICE DETAIL AND FOR COORDINATING WITH THE LOCAL OR STATE POLICE DEPARTMENT FOR ALL REQUIRED POLICE DETAIL.
- ALL TRENCHING WORK WITHIN A ROADWAY SHALL BE COORDINATED WITH THE PROPER LOCAL & STATE AGENCY. TRENCH SAFETY SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR INCLUDING ANY LOCAL AND /OR STATE PERMITS REQUIRED FOR THE TRENCHWORK. THIS WORK MAY BE REQUIRED TO TAKE PLACE OUTSIDE OF NORMAL HOURS OF OPERATION FOR THE FACILITY, THE CONTRACTOR SHALL PLAN ACCORDINGLY.
- ALL TRENCH WORK WITHIN EXISTING PAVEMENT SHALL BE SAWCUT PER THE APPLICABLE DETAILS. TRENCHWORK BACKFILL AND COMPACTION SHALL HAVE MAX 8-INCH LIFTS. CONTRACTOR SHALL BE REQUIRED TO REMOVE PATCH AND REPAVE AFTER ONE COMPLETE 12-MONTH CYCLE IF SETTLEMENT OCCURS DUE TO INADEQUATE COMPACTION AS DETERMINED BY THE ENGINEER WITHIN THE WARRANTY PERIOD.
- 11. ALL IMPORTED MATERIAL, IF REQUIRED, SHALL BE CLEAN. NO MATERIAL WILL BE ACCEPTED FROM AN EXISTING OR FORMER 21E SITE AS DEFINED BY THE MASSACHUSETTS CONTINGENCY PLAN 310 CMR 40.0000.

10. THE CONTRACTOR SHALL MAKE ALL CONNECTION ARRANGEMENTS WITH UTILITY COMPANIES, AS REQUIRED.

- 12. SITE LAYOUT SURVEY REQUIRED FOR CONSTRUCTION WILL BE PROVIDED BY THE CONTRACTOR AND SHALL BE CONDUCTED BY A MASSACHUSETTS REGISTERED PROFESSIONAL LAND SURVEYOR. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE SURVEYOR FOR ALL SITE SURVEY
- 13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING ALL CONTROL POINTS AND BENCHMARKS DURING CONSTRUCTION INCLUDING BENCHMARK LOCATIONS AND ELEVATIONS AT CRITICAL AREAS. THE LOCATION OF ALL CONTROL POINTS AND BENCHMARKS SHALL BE
- 14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL GRADE STAKES SET BY THE SURVEYOR. GRADE STAKES SHALL REMAIN UNTIL A FINAL INSPECTION OF THE ITEM HAS BEEN COMPLETED BY THE ENGINEER. ANY RE-STAKING OF PREVIOUSLY SURVEYED SITE FEATURES SHALL BE THE
- 15. UNLESS OTHERWISE SPECIFIED ON THE PLANS AND DETAILS/SPECIFICATIONS, ALL SITE CONSTRUCTION MATERIALS AND METHODOLOGIES ARE TO CONFORM TO THE MOST RECENT VERSION OF THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS (THE MASSACHUSETTS HIGHWAY DEPARTMENT 1988 STANDARD SPECIFICATION FOR HIGHWAYS AND BRIDGES, THE 2002 SUPPLEMENTAL SPECIFICATIONS AND THE 2006 SPECIAL PROVISIONS).
- 16. CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE LAWS AND REGULATIONS REGARDING NOISE, VIBRATION, DUST, SEDIMENTATION
- 17. SOLID WASTES SHALL BE COLLECTED AND STORED IN A SECURED DUMPSTER. THE DUMPSTER SHALL MEET ALL LOCAL AND STATE SOLID WASTE MANAGEMENT REGULATIONS.
- 18. THE CONTRACTOR SHALL RESTORE ALL SURFACES EQUAL TO THEIR ORIGINAL CONDITION AFTER CONSTRUCTION IS COMPLETE. AREAS NOT DISTURBED BY CONSTRUCTION SHALL BE LEFT NATURAL. THE CONTRACTOR SHALL TAKE CARE TO PREVENT DAMAGE TO SHRUBS, TREES, OTHER LANDSCAPING, AND/OR NATURAL FEATURES. WHEREAS THE PLANS DO NOT SHOW ALL LANDSCAPE FEATURES, EXISTING CONDITIONS MUST BE VERIFIED BY THE
- 19. ALL UNPAVED AREAS DISTURBED BY THE WORK SHALL HAVE A MINIMUM OF 4-INCHES OF LOAM INSTALLED AND BE SEEDED WITH GRASS SEED AS SHOWN ON THE PLAN AND/OR DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR WATERING ANY LOAM AND SEEDED AREAS UNTIL LAWN GROWTH IS ESTABLISHED AND APPROVED BY THE ENGINEER AND/OR OWNER.
- 20. ALL PROPOSED STRUCTURES SHALL BE DESIGNED BY THEIR MANUFACTURERS FOR AASHTO H-20 LOADING, PRECAST CONCRETE SHALL HAVE A MINIMUM 28-DAY STRENGTH OF 4000 PSI UNLESS OTHERWISE NOTED HEREIN.
- 21. ALL WHEELCHAIR RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATION AND CONSTRUCTION AND TRAFFIC STANDARD DETAILS (1998) DRAWING NUMBER 107.1.0 AND 107.2.0 RAMPS SHALL HAVE AN 8% MAX. SLOPE AND 2%
- 22. LEDGE OR BOULDER EXCAVATION IS NOT ANTICIPATED FOR THIS SITE. HOWEVER, THE CONTRACTOR SHALL PROVIDE A UNIT PRICE COST IN CUBIC YARD MEASURE FOR LEDGE AND/OR BOULDER REMOVAL. LEDGE AND/OR BOULDERS LESS THAN 1 CUBIC YARD IN SIZE BASED ON THE AVERAGE DIMENSIONS WILL NOT BE CONSIDERED PAYABLE ROCK. UNIT PRICE SHALL BE GIVEN FOR BOTH ON AND OFF SITE DISPOSAL. COST OF REPLACEMENT MATERIAL SHALL BE INCLUDED IF ADDITIONAL FILL MATERIAL IS REQUIRED.
- 23. THE CONTRACTOR SHALL REGULARLY INSPECT THE PERIMETER OF THE PROPERTY TO CLEAN UP AND REMOVE LOOSE CONSTRUCTION DEBRIS BEFORE IT LEAVES THE SITE. ALL DEMOLITION DEBRIS SHALL BE PROMPTLY REMOVED FROM THE SITE TO AN APPROVED DUMP SITE. ALL TRUCKS LEAVING THE
- 24. CONCRETE TRUCKS SHALL NOT BE WASHED ONSITE. ANY CEMENT OR CONCRETE DEBRIS LEFT IN THE DISTURBED AREA SHALL BE REMOVED BY HAND AT THE CONTRACTOR'S EXPENSE.
- 25. BURIAL OF ANY STUMPS, SOLID DEBRIS, AND/OR STONES/BOULDERS ONSITE IS PROHIBITED. NO ROAD SALT OR OTHER DE-ICING CHEMICALS SHALL BE USED ON THE ACCESS ROADWAY.
- 26. IF ANY DEVIATION OR ALTERATION OF THE WORK PROPOSED ON THESE DRAWINGS IS REQURIED, THE CONTRACTOR IS TO IMMEDIATELY CONTACT AND COORDINATE WITH THE ENGINEER AND OWNER.
- 27. AT THE END OF CONSTRUCTION, THE CONTRACTOR SHALL REMOVE ALL CONSTRUCTION DEBRIS AND SURPLUS MATERIALS FROM THE SITE. A THOROUGH INSPECTION OF ALL THE WORK PERIMETER IS TO BE MADE AND ALL DISCARDED MATERIALS, BLOWN OR WATER CARRIED DEBRIS, SHALL BE COLLECTED AND REMOVED FROM THE SITE.
- 28. THIS ENGINEERING FIRM MAKES NO DETERMINATION AND ASSUMES NO LIABILITY REGARDING THE STATUS OF THE PROPOSED SITE IMPROVEMENTS WITH REGARDS TO APPLICABLE FEMA STANDARDS, THE MASSACHUSETTS STATE BUILDING CODE, OR OTHER APPLICABLE STANDARDS, RULES, OR REGULATIONS REGARDING CONSTRUCTION IN THE FEMA DESIGNATED SPECIAL FLOOD HAZARD ZONE.
- 29. ALL PROPOSED PLAYGROUND EQUIPMENT AND DESIGN TO BE BY OTHERS.

### GENERAL GRADING & DRAINAGE NOTES:

- ALL CUT AND FILL SLOPES SHALL BE 3:1 OR FLATTER UNLESS OTHERWISE NOTED.
- 2. EXISTING GRADE CONTOUR INTERVALS SHOWN AT 1 FOOT.
- PROPOSED GRADE CONTOUR INTERVALS SHOWN AT 1 FOOT.
- 4. CONTRACTOR SHALL ADJUST AND/OR CUT EXISTING PAVEMENT AS NECESSARY TO ASSURE A SMOOTH FIT AND CONTINUOUS GRADE.
- 5. CONTRACTOR SHALL ASSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS FOR ALL NATURAL AND PAVED AREAS
- 6. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLAN AND SPECIFICATIONS FOR EARTHWORK AND COMPACTION REQUIREMENTS FOR ALL SLABS AND BUILDING FOUNDATIONS.
- PROPOSED ELEVATIONS ARE SHOWN TO FINISH PAVEMENT OR GRADE UNLESS NOTED OTHERWISE.
- ALL EARTHWORK AND SITE PREPARATION SHALL BE DONE IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS OF ANY SUBSURFACE INVESTIGATION OR GEOTECHNICAL REPORTS PREPARED FOR THIS SITE. CONTRACTOR RESPONSIBLE TO OBTAIN AND PAY FOR ANY GEOTECHNICAL REPORTS NECESSARY.
- 9. PARKING AREAS ARE NOT TO BE PAVED UNTIL THE ENTIRE PERMANENT DRAINAGE SYSTEM HAS BEEN INSTALLED AND ALL PIPE CONNECTIONS COMPLETE.
- 10. DRAINAGE PIPING SHALL BE HIGH DENSITY POLYETHYLENE PIPE AND CONFORM TO AASHTO M284 CORRUGATED POLYETHYLENE PIPE. PIPE SHALL BE INSTALLED AT THE LOCATIONS INDICATED ON THE PLAN. MINIMUM CLEARANCE BETWEEN PROPOSED DRAINAGE PIPING AND OTHER UTILITIES/STRUCTURES SHALL BE 18" VERTICALLY AND 4-FT HORIZONTALLY. CPP SHALL BE CAREFULLY BACKFILLED IN ACCORDANCE WITH THE LATEST MASSACHUSETTS HIGHWAY DEPARTMENT STAND SPECIFICATIONS. THE MINIMUM COVER FOR HDPE PIPES IS 1'-0" FOR H-20 TRAFFIC LOADS IF INSTALLED IN ACCORDANCE WITH AASHTO SECTION 30. THIS IS BASED ON EMPIRICAL CALCULATION OF LOAD RESPONSE, MANUFACTURE'S TESTING, AND FIELD EXPERIENCE WITH THE PIPE. AASHTO SPECIFICATIONS SECTION 18.4.1.5 DEFINES THE MINIMUM COVER AS "ID/8 BUT NOT LESS THAN 12 INCHES". THIS COVER IS MEASURED FROM THE PIPE TO THE TOP OF A RIGID (CONCRETE) PAVEMENT OR THE BOTTOM OF A FLEXIBLE (BITUMINOUS) PAVEMENT, BOTH AASHTO AND ASTM AS WELL AS MOST MANUFACTURES, REQUIRE ADDITIONAL (TEMPORARY) COVER FOR CONSTRUCTION LOADS GREATER THAN H-20. GENERALLY, AN ADDITIONAL 2' OF TEMPORARY COVER, MOUNDED OVER THE PIPE AND REMOVED FOR FINAL GRADING AND PAVING IS SUFFICIENT FOR LARGE CONSTRUCTION VEHICLE LOADS.
- 11. BACKFILL ADJACENT TO PIPES AND STRUCTURES SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE ADJOINING FILL

MATERIAL. BACKFILL SHALL BE PLACE IN HORIZONTAL LAYERS NOT TO EXCEED SIX INCHES IN THICKNESS AND COMPACTED TO A DENSITY OF 95% OF MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT WITHIN +/-2% OF OPTIMUM. ALL COMPACTION IS TO BE DETERMINED BY AASHTO METHOD T-99. TESTING OF BACKFILL MATERIAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

### **BASIC CONSTRUCTION SEQUENCE:**

THE FOLLOWING CONSTRUCTION SEQUENCE IS TO BE USED AS A GENERAL GUIDELINE. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER AND ENGINEER AND SUBMIT A PROPOSED CONSTRUCTION SEQUENCE FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

- 1. SURVEY AND STAKE THE PROPOSED LIMIT OF DISTURBANCE AND LIMIT OF SEDIMENTATION BARRIERS
- 2. PLACE SEDIMENTATION BARRIERS (STRAWBALES, SILT FENCE, ETC.) AS SHOWN ON THE PLANS AND STAKED OUT IN THE FIELD. IN NO CASE IS THE LIMIT OF WORK TO EXTEND BEYOND THE SEDIMENTATION BARRIERS/LIMIT OF DISTURBANCE AS SHOWN ON THE PROJECT PLANS.
- TEMPORARY CONSTRUCTION ENTRANCES TO BE INSTALLED IF NECESSARY. NO OTHER ENTRANCES SHALL BE USED TO GAIN ACCESS TO THE SITE BY ANY CONSTRUCTION OR DELIVERY VEHICLES.
- 4. BEGIN CLEARING THE SITE AND DEMOLITION AS REQUIRED.
- 5. SURVEY AND STAKE CENTERLINE OF THE PROPOSED DRAINAGE SYSTEMS, DRAINAGE LINES, AND SEPTIC COMPONENTS.
- 6. EXCAVATE AND ROUGH GRADE THE PROPOSED STORMWATER MANAGEMENT AREAS (SWMA) AND ANY ADDITIONAL TEMPORARY BASINS NECESSARY TO CONTROL SITE RUNOFF AND SEDIMENTS. PERMANENT SWMA SEEDING AND PLANTING SHALL BE COMPLETED AFTER THE CONTRIBUTING AREA TO THE BASIN HAS REACHED A MINIMUM OF 80% STABILIZATION AND IS NO LONGER REQUIRED TO BE USED AS A CONSTRUCTION SEDIMENTATION BASIN.
- 7. BEGIN CLEARING AND DEMOLITION IN AREAS OF BUILDING, PARKING LOTS, SEPTIC, PLAYGROUND, AND STORMWATER MANAGEMENT AREAS. TOPSOIL IS TO BE STRIPPED FROM THE AREA OF THE PROPOSED WORK AND SWMA AND STOCKPILED IN APPROVED LOCATIONS. TOPSOIL STOCKPILES ARE TO BE PROTECTED BY A SEDIMENT BARRIER.
- 8. INSTALL TEMPORARY CONVEYANCE DEVICES (SWALES, CHECK DAMS, PIPES, ETC.) AS NECESSARY TO CONVEY RUNOFF TO TREATMENT AREAS.
- 9. BEGIN ROUGH GRADING AREAS FOR PARKING, PLAYGROUND AND BUILDINGS. BRING ROUGH GRADING TO PROPER ELEVATIONS AS SOON AS PRACTICABLE. WORK SHALL PROGRESS DILIGENTLY TO MINIMIZE TIME SOILS ARE UN-STABILIZED.
- 10. BEGIN UTILITY AND SEPTIC CONSTRUCTION, CONTRACTOR SHALL BE FREE TO INSTALL UTILITIES IN ANY ORDER HE/SHE CHOOSES. ANY EROSION CONTROL DEVICE DISTURBED DURING THE UNDERGROUND UTILITY CONSTRUCTION SHALL BE IMMEDIATELY REPAIRED OR REPLACED IN KIND AND STABILIZED. MODIFY TEMPORARY CONVEYANCE DEVICES AS NECESSARY TO CONVEY RUNOFF TO TREATMENT AREAS.
- 11. INSTALL DRAINAGE PIPES, DRAINAGE MANHOLES AND UNDERGROUND DRAINAGE STRUCTURES. WORK SHALL BEGIN AT THE SWMA(S) AND PROGRESS UP-GRADIENT, PROTECT DISCHARGE OUTLETS WITH RIP-RAP APRONS. THE SWMA(S) AND DRAINAGE NETWORK ARE TO BE PROTECTED FROM SEDIMENTATION WITH SILT FENCE AND STRAWBALES UNTIL ALL UN-STABILIZED AREAS ARE STABILIZED WITH STONE SUB-BASE OR VEGETATION. INSTALL SEDIMENT BARRIERS AT ALL POINTS OF ENTRY INTO THE DRAINAGE NETWORK. PARTICULAR CARE SHALL BE TAKEN TO PROTECT THE UNDERGROUND SWMA(S) FROM SEDIMENT.
- 12. PERMANENTLY SEED ALL DISTURBED AREAS OUTSIDE OF THE AREA TO BE PAVED OR GRAVELED.
- 13. ONCE ALL UNDERGROUND UTILITIES HAVE BEEN CONSTRUCTED, PLACE COMPACTED GRAVEL FOUNDATION AND ROUGH GRADE THE PARKING AREAS IN ACCORDANCE WITH THE SITE PLANS AND IN ACCORDANCE WITH APPLICABLE STATE AND LOCAL REGULATIONS AS SOON AS POSSIBLE.
- 14. BEGIN PARKING CONSTRUCTION PER SITE PLANS AND IN ACCORDANCE WITH APPLICABLE STATE AND LOCAL REGULATIONS. PARKING AREAS ARE NOT TO BE PAVED UNTIL THE ENTIRE PERMANENT DRAINAGE SYSTEM HAS BEEN INSTALLED AND ALL PIPE CONNECTIONS COMPLETE.
- 15. FINISH PERMANENT STABILIZATION. SWEEP THE ROADWAY TO REMOVE ALL SEDIMENTS. REPAIR DRAINAGE OUTLETS AND SWMA(S) AS REQUIRED. THE CONTRACTOR SHALL CLEAN AND FLUSH THE DRAINAGE STRUCTURES AND PIPES AT THE END OF CONSTRUCTION AND ALL ACCUMULATED SEDIMENTS IN THE SWMA(S) SHALL BE REMOVED. CONTRACTOR SHALL INSPECT THE DRAINAGE NETWORK AND REPAIR ANY DAMAGE IMMEDIATELY.
- 16. COMPLETE ALL REMAINING PLANTING AND SEEDING.
- 17. REMOVAL OF ALL TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROL MEASURES FOLLOWING VEGETATIVE ESTABLISHMENT OF ALL DISTURBED AREAS SHALL BE APPROVED BY THE ENGINEER AND WHEN THE CONTRIBUTING AREA HAS REACHED A MINIMUM OF 80% STABILIZATION.

### **EROSION & SEDIMENT CONTROL NOTES:**

- 1. THE SITE CONSTRUCTION FOREMAN SHALL BE DESIGNATED AS THE ON-SITE PERSONNEL RESPONSIBLE FOR THE DAILY INSPECTION AND MAINTENANCE OF ALL SEDIMENT AND EROSION CONTROLS AND SHALL IMPLEMENT ALL NECESSARY MEASURES TO CONTROL EROSION AND PREVENT SEDIMENT FROM LEAVING THE SITE.
- THE CONTRACTOR SHALL INSTALL ALL EROSION AND SEDIMENT CONTROL (ESC) MEASURES AS SHOWN ON THE SIGNED PLANS IN CONSULTATION WITH THE TOWN, AND AS DETERMINED NECESSARY IN THE FIELD BY THE ENGINEER BEFORE ANY CONSTRUCTION ACTIVITIES ARE TO BEGIN. THESE MEASURES SHALL BE CHECKED, MAINTAINED, REPLACED AS NECESSARY DURING THE ENTIRE CONSTRUCTION PERIOD OF THE PROJECT, SUCH MEASURES SHALL REPRESENT THE LIMIT OF WORK. WORKERS SHALL BE INFORMED THAT NO CONSTRUCTION ACTIVITY IS TO OCCUR BEYOND THE LIMIT OF WORK AT ANY TIME THROUGH THE CONSTRUCTION PERIOD.
- 3. A MINIMUM SURPLUS OF 50 FEET OF EROSION CONTROL BARRIER (SILT FENCE, STRAWBALE AND/OR SILT SOCK) SHALL BE STOCKPILED ONSITE AT ALL TIMES. STOCKPILE EROSION & SEDIMENT CONTROL MEASURES IN A DRY AND ACCESSIBLE PLACE
- 4. THE CONTRACTOR SHALL PROTECT THE ADJACENT PROPERTIES FROM SEDIMENTATION DURING PROJECT CONSTRUCTION UNTIL ACCEPTANCE BY THE
- 5. IF WARRANTED, A CONSTRUCTION EXIT SHALL BE CONSTRUCTED AS SHOWN IN THE DETAILS TO SHED DIRT FROM CONSTRUCTION VEHICLE TIRES. THE CRUSHED STONE PAD WILL BE REPLACE/CLEANED AS NEEDED TO MAINTAIN ITS EFFECTIVENESS.
- THE LIMIT OF ALL CLEARING, GRADING AND DISTURBANCES SHALL BE KEPT TO A MINIMUM WITHIN THE PROPOSED AREA OF CONSTRUCTION. THE CONTRACTOR SHALL PHASE THE SITE WORK IN A MANNER TO MINIMIZE AREAS OF EXPOSED SOIL. IF TREES ARE TO BE CUT ON THE ENTIRE SITE, ONLY THOSE AREAS WHICH ARE ACTIVELY UNDER CONSTRUCTION SHALL BE GRUBBED. THE REQUIRED SEDIMENTATION CONTROL FACILITIES MUST BE PROPERTY ESTABLISHED, CLEARLY VISIBLE AND IN OPERATION PRIOR TO INITIATING ANY LAND CLEARING ACTIVITY AND/OR OTHER CONSTRUCTION
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO MONITOR LOCAL WEATHER REPORTS DURING CONSTRUCTION AND PRIOR TO SCHEDULING EARTHMOVING OR OTHER CONSTRUCTION ACTIVITIES WHICH WILL LEAVE LARGE DISTURBED AREAS UN-STABILIZED. IF INCLEMENT WEATHER IS PREDICTED, THE CONTRACTOR SHALL USE THEIR BEST PROFESSIONAL JUDGEMENT WHEN SCHEDULING CONSTRUCTION ACTIVITIES AND SHALL BE RESPONSIBLE FOR ENSURING THE NECESSARY EROSION CONTROL DEVICES ARE INSTALLED AND FUNCTIONING PROPERTY TO MINIMIZE EROSION FROM ANY IMPENDING
- ESC MEASURES SHALL BE INSPECTED AND MAINTAINED ON A WEEKLY BASIS AND AFTER EACH RAINFALL EVENT OF 0.50 INCH OR GREATER DURING CONSTRUCTION TO ENSURE THAT THE EROSION AND SEDIMENTATION CONTROL MEASURES ARE INTACT AND FUNCTIONING PROPERLY. IDENTIFIED DEFICIENCIES SHALL BE CORRECTED IMMEDIATELY NO LATER THAN 24 HOURS AFTER IDENTIFICATION.
- 9. SOIL STOCKPILES LEFT OVERNIGHT SHALL BE SURROUNDED ON THEIR PERIMETERS WITH SILT SOCK, SILT FENCE, STRAWBALES OR A COMBINATION OF SILT FENCE WITH STRAWBALE, AS DETERMINED NECESSARY.
- 10. DISTURBED AREAS AND SLOPES SHALL NOT BE LEFT UNATTENDED OR EXPOSED FOR EXCESSIVE PERIODS OF TIME SUCH AS THE INACTIVE WINTER SEASON. THE CONTRACTOR SHOULD PROVIDE APPROPRIATE STABILIZATION PRACTICES ON ALL DISTURBED AREAS AS SOON AS POSSIBLE BUT NOT MORE THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT AREA HAS TEMPORARILY OR PERMANENTLY CEASED. TEMPORARY AREAS HAVING A SLOPE GREATER THAN 3:1 SHALL BE REINFORCED WITH EROSION BLANKETS OR APPROVED EQUAL UNTIL THE SITE IS PROPERTY STABILIZED. TEMPORARY SWALES MAY ALSO BE REQUIRED IF DETERMINED NECESSARY IN THE FIELD BY THE ENGINEER.
- 11. THE CONTRACTOR SHALL INSTALL A SILT SACK OR APPROVED EQUIVALENT IN EACH EXISTING CATCH BASIN RECEIVING RUNOFF FROM THE SITE. UPON THE INSTALLATION OF EACH CATCH BASIN, THE CONTRACTOR SHALL INSTALL A SILT SACK OR APPROVED EQUIVALENT. THESE ARE TO BE INSPECTED AFTER EACH SIGNIFICANT STORM EVENT AND REMOVED AND EMPTIED AS NEEDED DURING THE ENTIRE CONSTRUCTION PERIOD.
- 12. SMALL, TEMPORARY, SEDIMENTATION BASINS MAY BE CONSTRUCTED ON AN AS-NEEDED BASIS DURING CONSTRUCTION TO AND IN THE CAPTURE OF SITE RUNOFF AND SEDIMENT. IT WILL BE THE RESPONSIBILITY OF THE SITE CONTRACTOR, IN CONSULTATION WITH THE ENGINEER, TO SIZE AND CREATE THESE BASINS IN APPROPRIATE LOCATIONS.
- 13. THE CONTRACTOR SHALL CONTAIN ALL SEDIMENT ONSITE. ALL EXITS FROM THE SITE WILL BE SWEPT AS NECESSARY INCLUDING ANY SEDIMENT TRACKING. PAVED AREAS SHALL BE SWEPT AS NEEDED TO REMOVE SEDIMENT AND POTENTIAL POLLUTANTS WHICH MAY ACCUMULATE DURING SITE
- 14. ACCUMULATED SEDIMENT SHALL BE REMOVED FROM ALL TEMPORARY PRACTICES AND DISPOSED OF IN A PRE-APPROVED LOCATION BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER.
- 15. THE CONTRACTOR SHALL PROVIDE ONSITE OR MAKE READILY AVAILABLE THE NECESSARY EQUIPMENT AND SITE PERSONNEL DURING CONSTRUCTION HOURS FOR THE DURATION OF THE PROJECT TO ENSURE ALL ESC DEVICES ARE PROPERLY MAINTAINED AND REPAIRED IN A TIMELY AND RESPONSIBLE MANNER. IF SITE WORK IS SUSPENDED DURING THE WINTER MONTHS, THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE PERSONNEL AND EQUIPMENT EITHER ONSITE OR MAKE READILY AVAILABLE TO ENSURE ALL ESC DEVICES ARE PROPERLY MAINTAINED AND REPAIRED IN A TIMELY AND RESPONSIBLE
- 16. PROPER MEASURES SHALL BE IMPLEMENTED BY THE CONTRACTOR IF DEWATERING IS NECESSARY DURING CONSTRUCTION. THESE MEASURES SHALL INCLUDE DEWATERING BAGS, TEMPORARY STRAWBALES, SILT FENCES, SILT SOCKS, AND/OR OTHER APPROVED DEVICES. THE DEWATERING SET UP SHALL BE APPROVED BY THE ENGINEER.
- 17. DUST SHALL BE CONTROLLED BY WATERING OR OTHER APPROVED METHODS AS NECESSARY, OR AS DIRECTED BY THE ENGINEER AT NO EXTRA COST TO THE OWNER.
- 18. THE CONTRACTOR IS RESPONSIBLE FOR THE INSPECTION AND MAINTENANCE DURING CONSTRUCTION OF ALL STORMWATER FACILITIES INSTALLED OR AFFECTED BY THE PROJECT. ANY SEDIMENT OR DEBRIS COLLECTED WITHIN THESE FACILITIES FROM THE PROJECT WORK SHALL BE REMOVED PRIOR TO THE OWNER'S ACCEPTANCE.

### STORMWATER FACILITY OPERATION & MAINTENANCE:

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER INSPECTION AND MAINTENANCE OF ALL STORMWATER MANAGEMENT FACILITIES UNTIL SUCH TIME THAT THE PARKING LOT, BUILDING, AND ASSOCIATED UTILITIES ARE ACCEPTED BY THE OWNER AND THE ENGINEER.
- 2. THE CONTRACTOR SHALL INSPECT AND RESTORE/CLEAN ALL FACILITIES (INLETS, MANHOLES, INFILTRATION BASINS, ETC.) OF SEDIMENT AND DEBRIS PRIOR TO THE OWNER'S ACCEPTANCE.

- 3. ALL SEDIMENT AND DEBRIS SHALL BE DISPOSED OF PROPERLY IN A PRE-APPROVED LOCATION.
- 4. THE CONTRACTOR SHOULD REFER TO THE OPERATION & MAINTENANCE PLAN FOR ADDITIONAL INFORMATION PERTAINING TO STORMWATER FACILITY OPERATION AND MAINTENANCE REQUIREMENTS AND SHALL MAINTAIN A WORKING COPY ON SITE AT ALL TIMES.
- 5. ALL STORMWATER FACILITIES SHALL BE INSPECTED BY THE CONTRACTOR AFTER EVERY MAJOR RAINFALL EVENT FOR THE ENTIRE DURATION OF THE CONSTRUCTION PROJECT AND THE FIRST 3 MONTHS AFTER CONSTRUCTION TO ENSURE PROPER STABILIZATION AND CONSTRUCTION.
- 6. SPECIFIC ANNUAL MAINTENANCE SHALL BE AS FOLLOWS:
- DRAINAGE STRUCTURES (INLETS & CATCH BASINS): ALL DRAINAGE STRUCTURES WILL BE INSPECTED ANNUALLY TO MONITOR FOR PROPER OPERATION, COLLECTION OF LITTER OR TRASH, AND STRUCTURAL DETERIORATION. PIPES AND STRUCTURES SHALL BE CLEANED OF SEDIMENT AS NECESSARY, AND REPAIRED WHEN REQUIRED.
- INFILTRATION/RAINGARDEN SYSTEM: THE SYSTEM WILL BE INSPECTED ANNUALLY TO ENSURE THAT DESIGN INFILTRATION RATES ARE BEING MET. IF SEDIMENT OR ORGANIC DEBRIS BUILD-UP HAS LIMITED THE INFILTRATION CAPABILITIES AND BUILT UP WITHIN THE CHAMBERS AND/OR RAINGARDEN THE SYSTEM SHALL BE CLEANED IN ACCORDANCE WITH THE MANUFACTURER'S AND/OR ENGINEER'S REQUIREMENTS.
- ROUTINE MAINTENANCE: OTHER ROUTINE MAINTENANCE WILL INCLUDE REMOVAL OF TRASH AND LITTER FROM THE SITE AND PERIMETER AREAS, AND ANNUAL STREET SWEEPING AFTER THE SPRING THAW TO AVOID EXCESSIVE ACCUMULATION OF SEDIMENT IN THE DRAINAGE SYSTEM. THE PIPES DRAINING THE PROJECT WILL BE INSPECTED ANNUALLY FOR PROPER FLOW.

NOTE: OPERATION AND MAINTENANCE CHECKLIST AVAILABLE UPON REQUEST

### WATER & SEWER INSTALLATION NOTES:

UTILITY TYPE	MINIMUM COVER OVER TOP OF PIPE	MINIMUM HORIZONTAL DISTANCE TO DRAIN STRUCTURE
WATER MAIN	5'	2'

- 1. SEWER AND WATER MAINS SHALL BE INSTALLED ACCORDING TO THE FOLLOWING GUIDELINES TO PREVENT FREEZING OF THE MAIN OR SEWER.
- 2. DEAD END WATER LINES SHALL BE INSULATED WHERE SOIL COVER OR HORIZONTAL SEPARATION TO PRECAST STRUCTURES IS LESS THAN THE DISTANCE SPECIFIED ABOVE AND/OR WHERE SHOWN ON PLANS.
- 3. INSULATION SHALL BE 2" THICK POLYURETHANE INSULATION WITH PVC JACKET PLACED AROUND PIPE OR DESIGNER APPROVED EQUAL.
- 4. WATER AND SEWER SEPARATION SHALL TYPICALLY BE 10-FEET MINIMUM HORIZONTAL AND 18-INCHES VERTICAL WITH SEWER MAINS BELOW THE WATER MAINS (SEE DETAIL). IF SITE CONDITIONS REQUIRE LESS, THEN THE UTILITIES SHALL BE INSTALLED AS SHOWN IN THE CONSTRUCTION DETAILS.

### **WATER SYSTEM NOTES:**

- 1. THE CONTRACTOR SHALL CONSTRUCT THE WATER LINE AND ITS APPURTENANCE IN ACCORDANCE WITH THE LOCAL WATER DEPARTMENT'S STANDARDS AND SPECIFICATIONS AND PAY FOR ALL ASSOCIATED FEES AS REQUIRED BY THE WATER DEPARTMENT.
- 2. THE CONTRACTOR SHALL SUPPLY TWO COPIES OF SWORN CERTIFICATES TO PROVE THAT ALL PIPES AND FITTINGS ARE INSPECTED AND TESTED AS REQUIRED BY THE STANDARD SPECIFICATIONS TO WHICH THE MATERIAL IS MANUFACTURED.
- 3. ALL NEWLY INSTALLED WATER SYSTEM COMPONENTS SHALL BE CLEARED OF ALL FOREIGN MATERIALS SUCH AS DIRT AND MISCELLANEOUS DEBRIS PRIOR TO SYSTEM TESTING AND SHALL BE WITNESSED BY THE LOCAL WATER DEPARTMENT. NOT TESTING IS ALLOWED WITHOUT REMOVAL OF ALL
- 4. THE CONTRACTOR SHALL BE RESPONSIBLE TO INSTALL AND REMOVE ALL NECESSARY BLOW-OFFS REQUIRED FOR THIS PROJECT AT NO EXTRA COST TO THE OWNER.

### WATER SYSTEM INSTALLATION INSPECTION NOTES:

- 1. THE CONTRACTOR SHALL SUPPLY TO THE ENGINEER TWO COPIES OF SWORN CERTIFICATES TO PROVE THAT ALL PIPE AND FITTINGS ARE INSPECTED AND TESTED AS REQUIRED BY THE STANDARD SPECIFICATIONS TO WHICH THE MATERIAL IS MANUFACTURED.
- 2. A PRESSURE TEST AND DISINFECTION TEST OF ALL WATER LINES SHALL BE CONDUCTED BY THE CONTRACTOR AND WITNESSED BY THE APPROVED INSPECTOR OF THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A MINIMUM OF 48-HOUR ADVANCE NOTICE TO THE LOCAL WATER DEPARTMENT PRIOR TO THE PRESSURE AND DISINFECTION TESTS. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ALL NECESSARY EQUIPMENT AND CHEMICALS TO PROPERLY CONDUCT THE TESTS.
- 3. THE CONTRACTOR SHALL BE RESPONSIBLE TO COLLECT ALL BACTERIOLOGICAL SAMPLES AND PAY FOR ALL RELATED LABORATORY FEES.
- 4. THE CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN UP-TO-DATE AS-BUILT DRAWINGS AND NOTES INDICATE THE HORIZONTAL AND VERTICAL LOCATION WITHIN TWO TIES OFF ALL SYSTEM COMPONENTS INSTALLED. THESE AS-BUILT DRAWINGS AND NOTES WILL BE UTILIZED BY THE ENGINEER FOR THE PREPARATION OF RECORD PLANS.

### **LEGEND**

——OHW—— EXISTING OVERHEAD WIRES EXISTING UNDERGROUND ELECTRIC EXISTING WATER LINES EXISTING DRAINAGE LINES EXISTING CONTOURS

EXISTING SPOT GRADE EXISTING HYDRANT

EXISTING WATER VALVE EXISTING SEWER MANHOLE

EXISTING DRAIN MANHOLE EXISTING CATCH BASIN

EXISTING UTILITY POLE EXISTING GUY WIRE

EXISTING ELECTRIC METER EXISTING LIGHT POLE

EXISTING LIGHT POST EXISTING TREES

Prepared By:



**BUZZARDS BAY, MA 02532** NANTUCKET, MA 02554 (tel) 508.833.0070 (tel) 508.325.0044 (fax) 508.833.2282 www.brackeneng.com

Sheet Title:

CONSTRUCTION NOTES

PROPOSED SITE DEVELOPEMENT IN MASPHEE, MASSACHUSETTS

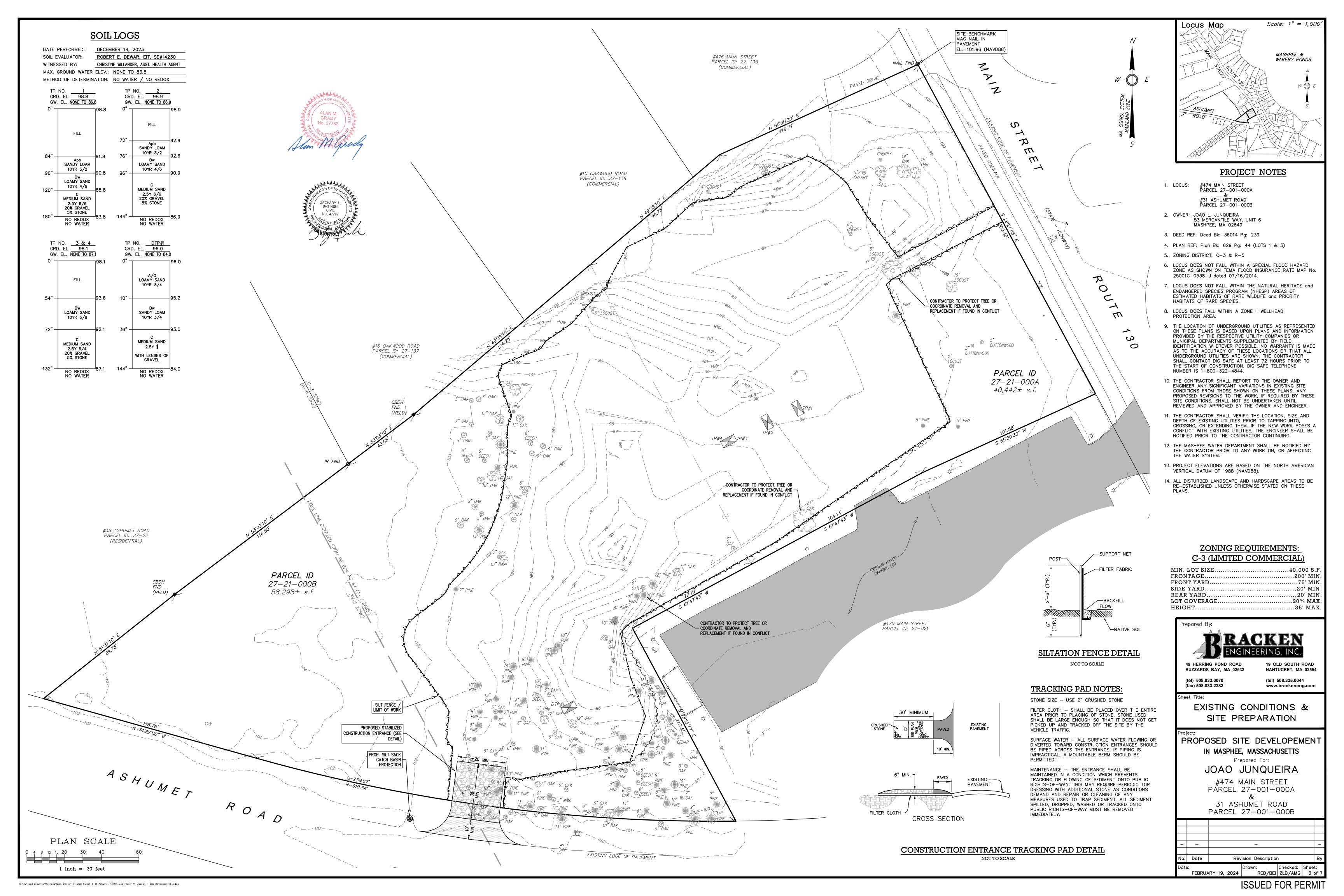
> Prepared For: JOAO JUNQUEIRA #474 MAIN STREET

PARCEL 27-001-000A 31 ASHUMET ROAD PARCEL 27-001-000B

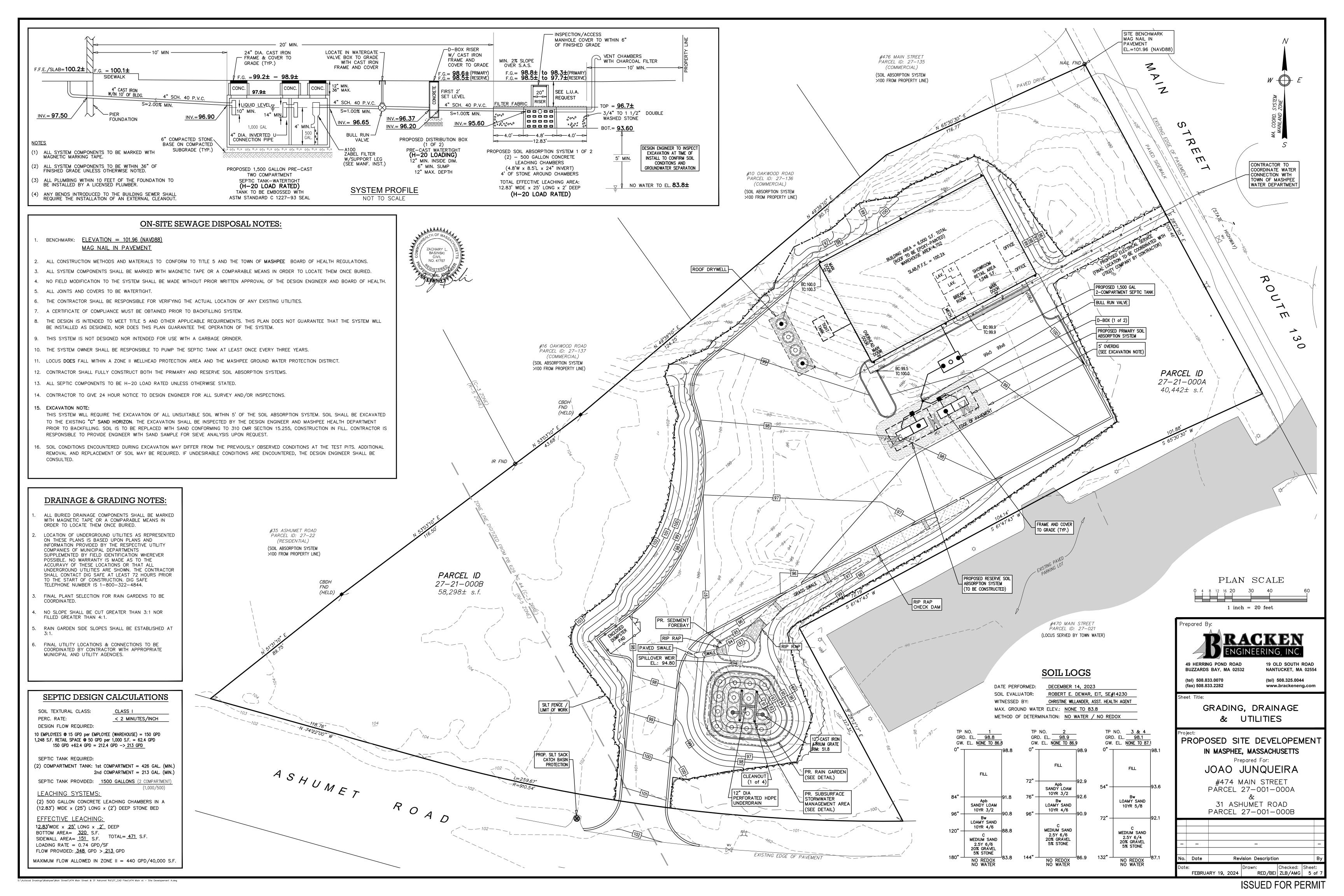
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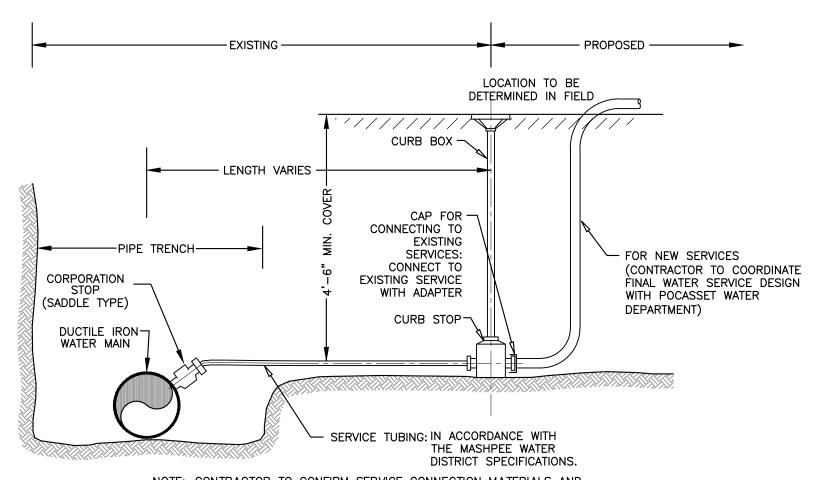
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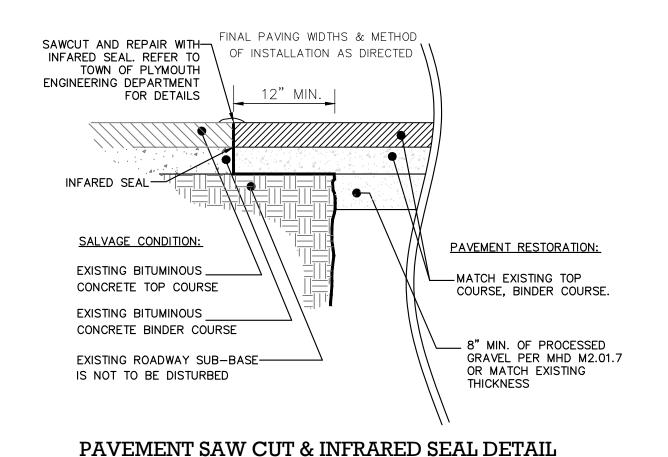


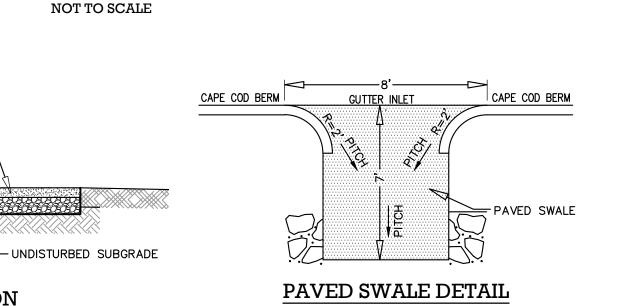


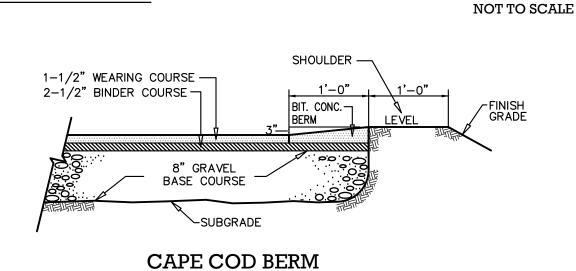


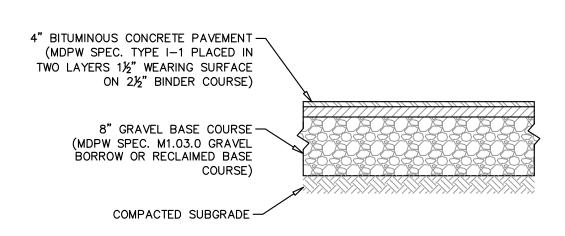


NOTE: CONTRACTOR TO CONFIRM SERVICE CONNECTION MATERIALS AND METHODS WITH MASHPEE WATER DISTRICT PRIOR TO CONSTRUCTION. TYPICAL WATER SERVICE CONNECTION NOT TO SCALE









NOT TO SCALE

2" PEA STONE GRAVEL OR

**GRAVEL SECTION** 

-4" LOAM & SEED

SHOULDER (TYP.)

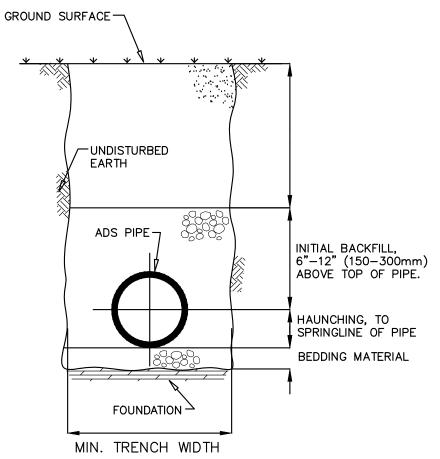
8" COMPACTED BASE -

1. SANDY LOAM and/or LOAMY SAND TOPSOIL MATERIAL SHALL BE EXCAVATED FROM ALL PAVED

- AREAS PRIOR TO SUB-BASE INSTALLATION. 2. SUB-GRADE (EXISTING MATERIAL) SHALL CONSIST OF INERT MATERIAL THAT IS HARD, DURABLE STONE and/or COARSE SAND, FREE FROM LOAM and CLAY TO A DEPTH NOT LESS THAN 4 FEET
- BELOW THE FINISH PAVEMENT SURFACE. 3. SUBGRADE FILL SHALL BE COMPACTED TO 95% COMPACTION UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- SEE SITE LAYOUT PLAN FOR PAVEMENT WIDTH and LOCATION. 5. SEE GRADING PLAN FOR PAVEMENT SLOPE and CROSS SLOPE.
- PRIOR TO INSTALLING THE WEARING COURSE, THE EXISTING BINDER COURSE SURFACE SHALL BE SWEPT COMPLETELY CLEAN BY A STREET SWEEPING MACHINE AND A TACK COAT SHALL BE INSTALLED TO A LEVEL APPROVED BY THE ENGINEER.

## PARKING AREA PAVEMENT SECTION

NOT TO SCALE



NOTES:
1. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH A FOUNDATION OF CLASS I OR II MATERIAL AS DEFINED IN ASTM D2321, "STANDARD PRACTICE FOR INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY—FLOW APPLICATIONS," LATEST EDITION; AS AN ALTERNATIVE AND AT THE DISCRETION OF
THE ENGINEER, THE TRENCH BOTTOM MAY BE

STABILIZED USING A WOVEN GEOTEXTILE FABRIC.

2. <u>BEDDING, HAUNCHING & INITITAL BACKFILL:</u> SUITABLE MATERIAL SHALL CONSIST OF CLEAN, HARD, PARTICLES OF GRAVEL MEETING THE FOLLOWING: SIEVE SIZES PASSING 85-95%

5-15% NO. 8 0-2% MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.

MINIMUM BEDDING THICKNESS SHALL BE 4" (100MM) FOR 4"-24" (100-600MM) AND 42"-48" (1050-1200MM) CORRUGATED POLYETHYLENE PIPE (CPEP); 6" (150MM) FOR 30"-36" (750-900MM)

# 4. MINIMUM TRENCH WIDTHS SHALL BE AS FOLLOWS: MIN. RECOMMENDED

TRENCH WIDTH, in (mm)

25 (630)

31 (790) 34 (860) 39 (990)

<u>in (mm)</u>

8 (200) 10 (250) 12 (300) 15 (375)

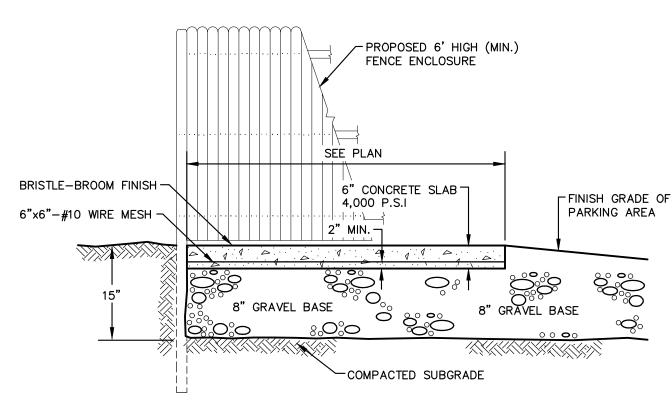
MINIMUM COVER: MINIMUM RECOMMENDED DEPTHS COVER FOR VARIOUS LIVE LOADING CONDITIONS ARE SUMMARIZED IN THE FOLLOWING TABLE. UNLESS OTHERWISE NOTED, ALL DIMENSIONS ARE TAKEN FROM THE TOP OF PIPE TO THE GROUND SURFACE.

SURFACE LIVE	MINIMUM RECOMMENDE
LOADING CONDITION	COVER, in (mm)
H25 (FLEXIBLE PAVEMENT)	12 (300)
H25 (RIGID PAVEMENT)	12 (300)
E80 RAILWAY	24 (610)
HEAVY CONSTRUCTION	48 (1220)

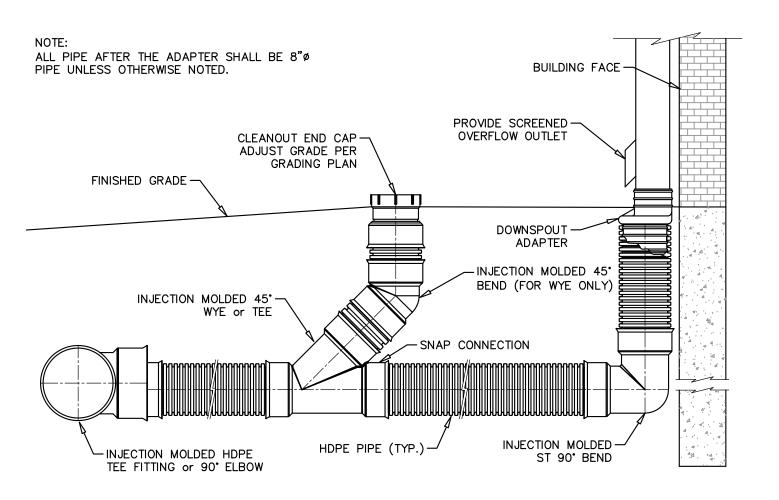
\*TOP OF PIPE TO BOTTOM OF BITUMINOUS

PAVEMENT SECTION

### TRENCH CROSS-SECTION & A.D.S. PIPE INSTALLATION DETAIL NOT TO SCALE



CONCRETE PAD and FENCE FOR TRASH CONTAINER NOT TO SCALE



TYPICAL ROOF DRAIN DETAIL

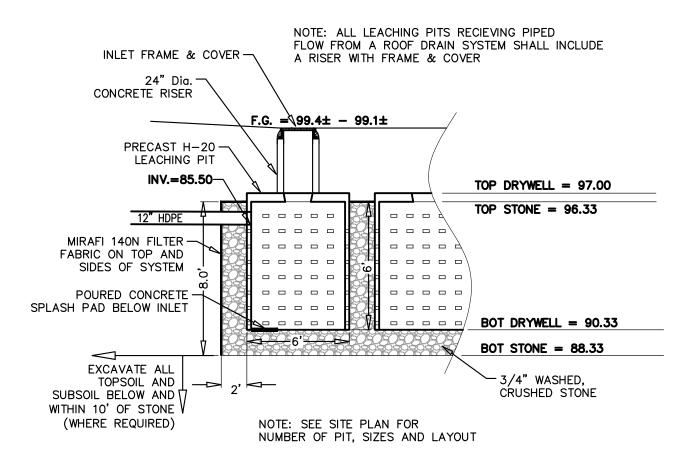
NOT TO SCALE

TABLE OF CONCRETE THRUST RESTRAINT MINIMUM BEARING AREAS IN SQU						
FEET AGAINST UNDISTURBED MATERIAL FOR FORCE MAIN FITTINGS						
	90° BENDS, TEES,		22 1/2° BENDS	11 1/4° BENDS		
	CAPS AND PLUGS	AND WIES		_		
3"-4"	5	4	2	2		
6"-12"	12	9	5	2		

1. ALL FORCE MAIN FITTINGS SHALL HAVE CONCRETE BACKING FOR THRUST RESTRAINT UNLESS OTHERWISE SPECIFIED. CONTRACTOR SHALL USE CARE TO AVOID PLACEMENT OF CONCRETE ON THE FITTING JOINTS. VOLUME AND ACTUAL PLACEMENT DETERMINED BY CHART. PLACE ALL CONCRETE ON UNDISTURBED SOIL OR ROCK. ENGINEER MAY REQUIRE THRUST RODS TO BE USED INSTEAD OF CONCRETE ANCHORS, AT NO ADDITIONAL COST DUE TO FIELD CONDITIONS.

REINFORCING (TIE) RODS TO BE #8 BARS. COAT EXPOSED BAR WITH ASPHALT. RESTRAINED JOINT RETAINER GLANDS SHALL BE USED WHERE DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST TO THE OWNER.

### CONCRETE THRUST RESTRAINT FOR FITTINGS



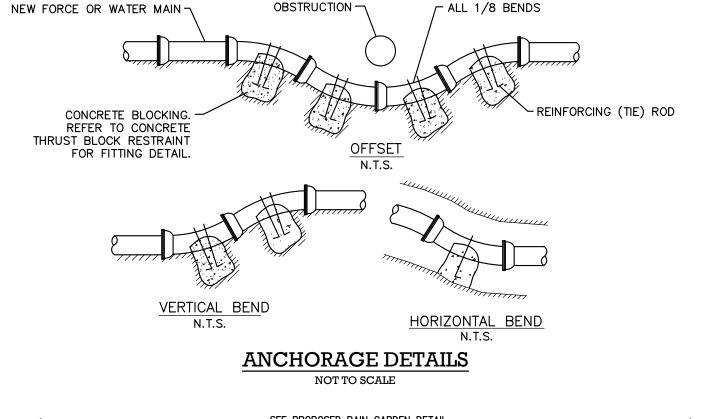
### STORMWATER MANAGEMENT AREA DETAIL

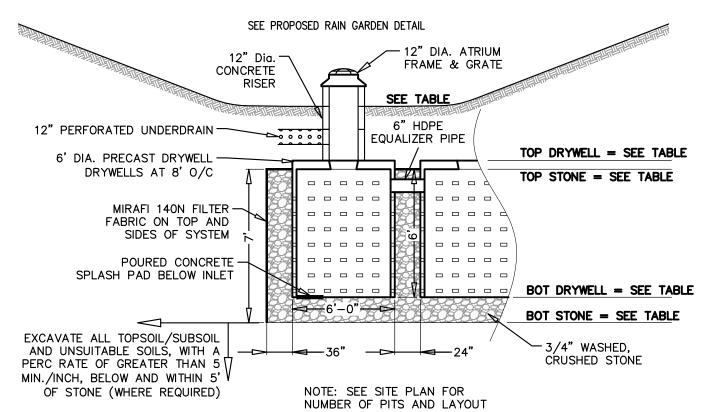
NOT TO SCALE

TOP FOREBAY =  $137.0 \pm (R.G. \#1)$  $136.0 \pm (R.G. \#2)$ 

RIP RAP-

MIRAFI 140N FILTER FABRIC -(OR APPROVED EQUAL)





ELEVATION SCHEDULE	INLET RIM ELEVATION	TOP OF DRYWELL	TOP OF STONE	12" INVERT IN	BOTTOM OF DRYWELL	BOTTOM OF STONE	
SWMA #1	93.80	87.00	86.33	87.60	81.00	79.00	

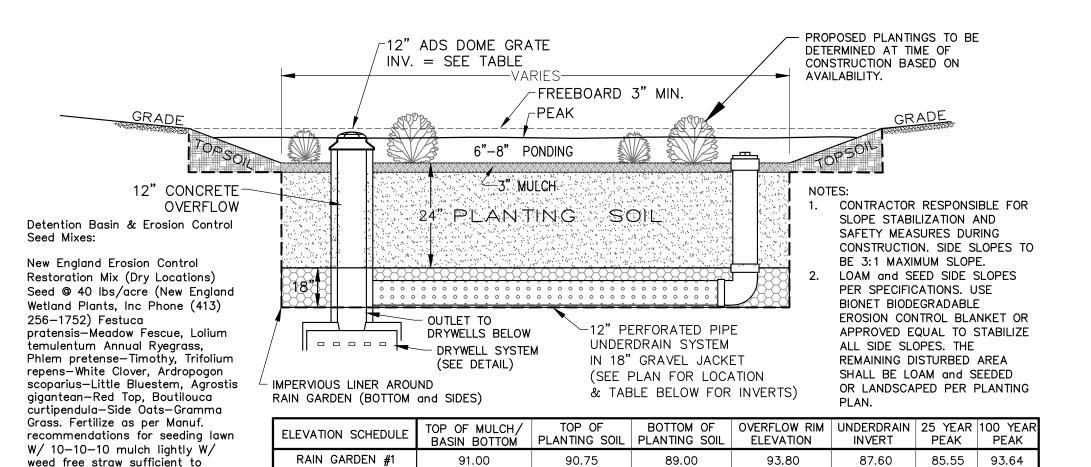


TOP CHECK DAM = 94.8100 YEAR STORM PEAK = 93.64 BOT = 93.0BOTTOM BASIN = 91.0L12" RIP-RAP RAIN GARDEN SUBSTRATE (SEE DETAIL) -IMPERVIOUS CLAY LINER 4" LOAM & SEED-∽IMPERVIOUS LINER ON SIDE SLOPES

1. CONTRACTOR RESPONSIBLE FOR SLOPE STABILIZATION AND SAFETY MEASURES DURING CONSTRUCTION. SIDE SLOPES TO BE 3:1 MAXIMUM SLOPE. LOAM and SEED SIDE SLOPES PER SPECIFICATIONS. USE BIONET BIODEGRADABLE EROSION CONTROL BLANKET OR APPROVED EQUAL TO STABILIZE ALL SIDE SLOPES. THE REMAINING DISTURBED AREA SHALL BE LOAM and SEEDED OR LANDSCAPED PER PLANTING PLAN.

### TYPICAL FOREBAY TO RAIN GARDEN DETAIL

NOT TO SCALE



- USE ENGINEERED SOIL MIX FOR BIORETENTION/RAIN GARDEN SYSTEMS
- \* THE SOIL MIX SHOULD BE A MIXTURE OF SAND, COMPOST AND SOIL. (40% SAND; 20-30% TOPSOIL; 30-40% COMPOST)
- \* THE SOIL MIX MUST BE UNIFORM, FREE OF STONES, STUMPS, ROOTS OR SIMILAR OBJECTS LARGER THAN 2 INCHES. CLAY CONTENT SHOULD NOT EXCEED 5%.

prevent erosion until seed takes.

- \* SOIL pH SHOULD GENERALLY BE BETWEEN 5.5-6.5.
- \* USE SOILS WITH 1.5% TO 3% ORGANIC CONTENT AND MAXIMUM 500 ppm SOLUBLE SALTS.
- \* THE SAND COMPONENT SHOULD BE GRAVELY SAND THAT MEETS ASTM
- \* THE TOPSOIL COMPONENT SHALL BE A LOAMY SAND TEXTURE.
- \* THE COMPOST COMPONENT MUST BE PROCESSED FROM YARD WASTE
  - RAIN GARDEN DETAIL NOT TO SCALE
- IN ACCORDANCE WITH MassDEP GUIDELINES (SEE HTTP: //WWW.MASS.GOV/DEP/RECYCLE/REDUCE/LEAFGUID.DOC). THE COMPÓST MUST NOT CÓNTAÍN BIOSOLÍDS.
- \* ON-SITE SOIL MIXING OR PLACEMENT IS NOT ALLOWED IF SOIL IS SATURATED OR SUBJECT TO WATER WITHIN 48 HOURS. COVER AND STORE SOIL TO PREVENT WETTING OR SATURATION.
- \* PLACE PLANTING SOILS IN 6" LIFTS AND COMPACT WITH MINIMAL PRESSURE UNTIL THE DESIRED ELEVATION IS REACHED.





**BUZZARDS BAY, MA 02532** (tel) 508.833.0070 (fax) 508.833.2282

(tel) 508.325.0044 www.brackeneng.com

CONSTRUCTION DETAILS

PROPOSED SITE DEVELOPEMENT IN MASPHEE, MASSACHUSETTS Prepared For:

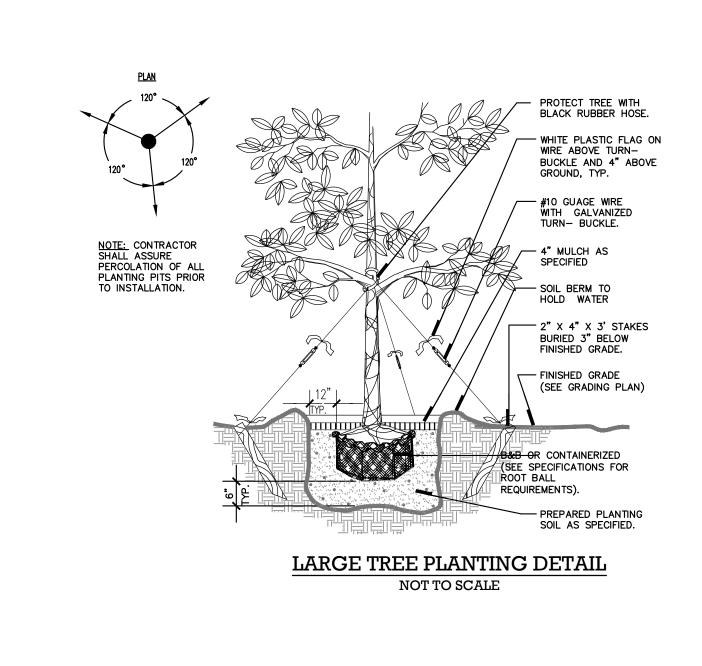
JOAO JUNQUEIRA #474 MAIN STREET PARCEL 27-001-000A

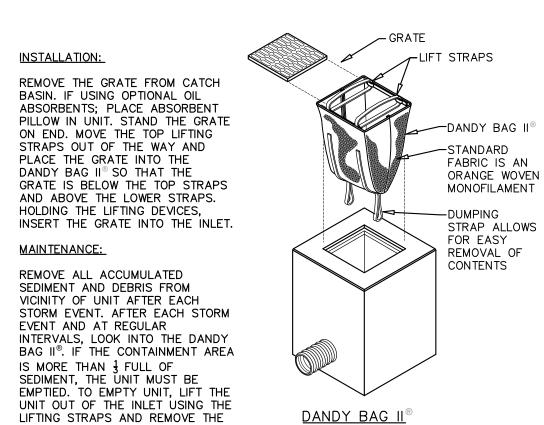
31 ASHUMET ROAD PARCEL 27-001-000B

Date Revision Description

> RED/BEI | ZLB/AMG | 6 of FEBRUARY 19, 2024 **ISSUED FOR PERMIT**

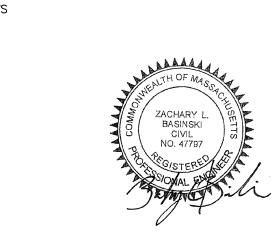
NANTUCKET, MA 02554





INSTALLATION AND MAINTENANCE

GUIDELINES

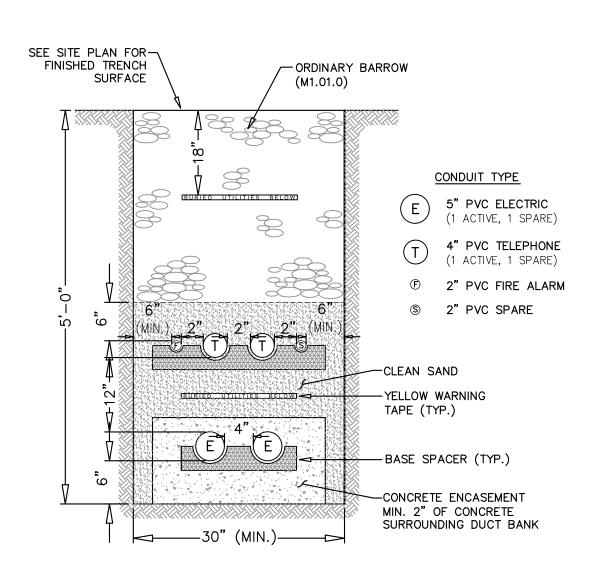


SILT SACK DETAIL NOT TO SCALE

GRATE. IF USING OPTIONAL OIL

WHEN NEAR SATURATION.

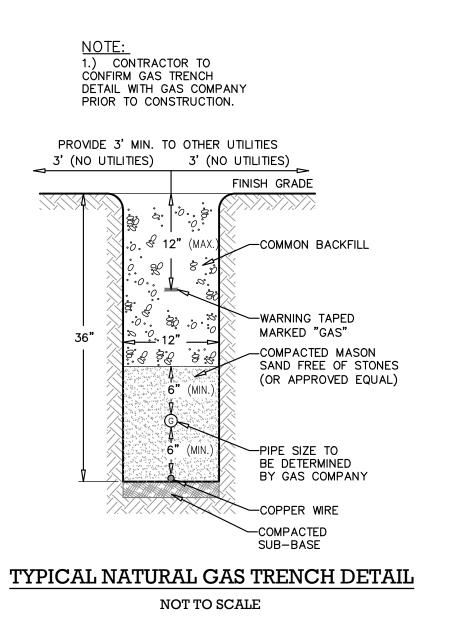
ABSORBENTS; REPLACE ABSORBENT

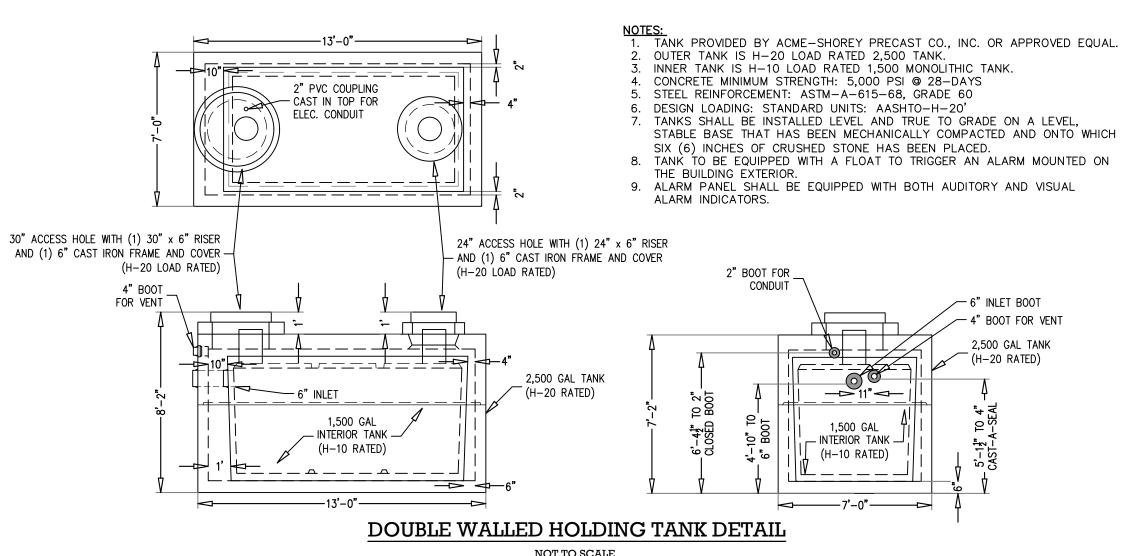


ALL TRENCH CONDUITS SHALL BE SCHEDULE 40 PVC, UNLESSUTHERWISE NOTED FINAL CONFIGURATION SUBJECT TO CHANGE BASED ON FINAL UTILITY COMPANY DESIGN.

NOT TO SCALE

COMMON TRENCH DETAIL ELECTRIC/TELEPHONE/FIRE ALARM/CABLE





Prepared By:

**BUZZARDS BAY, MA 02532** (tel) 508.833.0070 (fax) 508.833.2282

49 HERRING POND ROAD 19 OLD SOUTH ROAD NANTUCKET, MA 02554 (tel) 508.325.0044

www.brackeneng.com

CONSTRUCTION DETAILS

PROPOSED SITE DEVELOPEMENT IN MASPHEE, MASSACHUSETTS Prepared For:

JOAO JUNQUEIRA

#474 MAIN STREET PÄRCEL 27-001-000A 31 ASHUMET ROAD

PARCEL 27-001-000B

1 11/13/23 REVISED BASED ON INITIAL P.B. COMMENTS Date FEBRUARY 19, 2024 RED/BEI ZLB/AMG 7 of 7

**ISSUED FOR PERMIT**