

# ABBHEY ROAD

## SITE DEVELOPMENT PLAN

2 NORTH MAIN STREET  
SHERBORN, MASSACHUSETTS

JUNE 9, 2015

PREPARED FOR:

FENIX PARTNERS ABBEY  
177 LAKE STREET  
SHERBORN, MA 01770

PREPARED BY:

ANDREWS SURVEY & ENGINEERING, INC.  
104 MENDON STREET  
P.O. BOX 312  
UXBRIDGE, MA 01569  
P: 508.278.3897  
F: 508.278.2289

LAND SURVEYING:

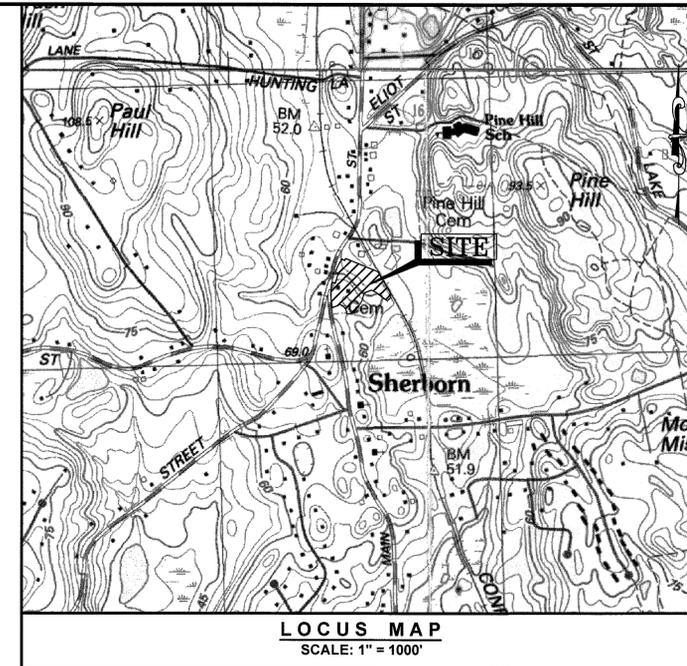
ANDREWS SURVEY & ENGINEERING, INC.  
104 MENDON STREET  
P.O. BOX 312  
UXBRIDGE, MA 01569  
P: 508.278.3897  
F: 508.278.2289

APPROVAL UNDER SITE PLAN REVIEW.  
SHERBORN PLANNING BOARD

BEING A MAJORITY

DATE OF APPROVAL:

DATE OF ENDORSEMENT:



**OWNERS OF RECORD:**  
MAP 11, PARCEL 26B  
FENIX PARTNERS ABBEY IV, LLC  
  
MAP 11, PARCEL 165  
TOWN OF SHERBORN  
  
MAP 11, PARCEL 166  
FENIX PARTNERS ABBEY I, LLC  
  
MAP 11, PARCEL 167  
FENIX PARTNERS ABBEY II, LLC  
  
MAP 11, PARCEL 167A  
FENIX PARTNERS ABBEY III, LLC  
  
**SHERBORN ASSESSORS INFORMATION:**  
MAP 11, PARCELS 26B, 165, 166, 167 & 167A

**SHERBORN ZONING INFORMATION:**  
ZONE: ELDERLY AND AFFORDABLE (EA)  
MINIMUM AREA: 6 ACRES  
MINIMUM FRONTAGE: 50'  
SETBACKS: FRONT 100', SIDE 60', REAR 60'

**DEED REFERENCE:**  
BK. 61525, PG. 345

**PLAN REFERENCE:**  
PLAN 194 OF 2013

DRAWING DATE	LATEST REVISION	SHEET NO.	SHEET TITLE
6/9/15		C-0.0	COVER SHEET
6/9/15		C-1.0	LEGEND, ABBREVIATIONS, & GENERAL NOTES
6/9/15		C-2.0	OVERALL PLAN
6/9/15		C-3.0	EXISTING CONDITIONS & DEMOLITION PLAN
6/9/15		C-4.0	LAYOUT & MATERIALS PLAN
6/9/15		C-5.0	GRADING & DRAINAGE PLAN
6/9/15		C-6.0	LANDSCAPING & LIGHTING PLAN
6/9/15		C-7.0	EARTHWORK PLAN
6/9/15		C-8.1 - C-8.4	CONSTRUCTION DETAILS

GOVERNMENT & UTILITY CONTACTS		
SHERBORN PLANNING DEPARTMENT 19 WASHINGTON STREET P: 508.651.7855 F: 508.651.7854 ATTN: GINO CARLUCCI, TOWN PLANNER	SHERBORN FIRE DEPARTMENT 22 NORTH MAIN STREET P: 508.653.3270 F: 508.653.0131 ATTN: TIMOTHY MORRISSEY, CHIEF	SHERBORN BOARD OF HEALTH 19 WASHINGTON STREET P: 508.651.7852 F: 508.651.7867 ATTN: ELLEN HARTNETT, ADMIN.
SHERBORN CONSERVATION COMM. 19 WASHINGTON STREET P: 508.651.7863 F: 508.655.7037 ATTN: BRIDGET R. GRAZIANO, AGENT	SHERBORN POLICE DEPARTMENT 17 WASHINGTON STREET P: 508.653.2424 ATTN: RICHARD R. THOMPSON III, CHIEF	MASSACHUSETTS ELECTRIC CO. 1.800.322.3223  VERIZON COMMUNICATIONS 1.800.870.9999
SHERBORN BUILDING DEPARTMENT 19 WASHINGTON STREET P: 508.651.7870 ATTN: WALTER AVALLONE, BUILDING COMM.	SHERBORN COMMUNITY MAINTENANCE AND DEVELOPMENT 7 BUTLER STREET P: 508.651.7878 ATTN: EDWARD WAGNER, DIRECTOR	

**ASE**  
Andrews Survey & Engineering, Inc.  
Land Surveying - Civil Engineering - Site Planning  
P.O. Box 312, 104 Mendon Street  
Uxbridge, Massachusetts 01569-0312  
P: 508-278-3897 F: 508-278-2289  
  
This drawing and the design are property of Andrews Survey & Engineering, Inc. and shall not be altered or reused in whole or part without the express written permission of Andrews Survey & Engineering, Inc.  
Copyright ©2014

**PROJECT:**  
ABBHEY ROAD  
PROPOSED SITE DEVELOPMENT  
2 NORTH MAIN STREET  
SHERBORN, MA 01770

**APPLICANT:**  
FENIX PARTNERS ABBEY  
177 LAKE STREET  
SHERBORN, MA 01770

REVISIONS		
NO.	DATE	DESCRIPTION

CAD FILE: ... \dwg\2013-047\_SP.dwg  
DRAWN BY: TRB, PBH  
CHECKED BY: PBH, BJA  
DATE: JUNE 9, 2015  
PROJECT NO.: 2013-047

PAUL B. HUTNIK  
No. 45872  
REGISTERED PROFESSIONAL ENGINEER

BYRON J. ANDREWS  
No. 47389  
REGISTERED PROFESSIONAL ENGINEER

P.E. P.L.S. 6/9/15

SHEET TITLE  
**COVER SHEET**

DRAWING NO.  
**C-0.0**  
PLAN NO. L-4554

**STORMWATER MANAGEMENT SYSTEM (SMS) OPERATION AND MAINTENANCE INSTRUCTIONS**

**PART 1 – STORMWATER MANAGEMENT SYSTEM DESCRIPTION**

**1A. OWNER:**  
FENIX PARTNERS ABBEY IV, LLC  
177 LAKE STREET  
SHERBORN, MA 01770

**1B. OPERATION:**  
STORMWATER CARRIES POLLUTANTS AND WILL BE TREATED BEFORE DISCHARGE TO OFF-SITE. THE SITE PLANS WHICH ACCOMPANY THESE INSTRUCTIONS SHOW THE COMPONENTS OF THE TREATMENT SYSTEM, DIRECTION OF FLOW AND NEARBY DISCHARGES.

STORMWATER ON PAVED AREAS IS COLLECTED IN CATCH BASINS (CB) WHICH HAVE A DEEP SUMP AND AN ELBOW PIPE OUTLET. THE SUMP COLLECTS SETTLEABLE COARSE SAND AND OTHER SOLIDS TO WHICH POLLUTANTS ADHERE. THESE SUMPS MUST BE CLEANED REGULARLY OR THE ACCUMULATED SEDIMENT WILL CLOG THE OUTLET PIPE. THE PIPE HAS AN INVERTED ELBOW WHICH DOES NOT ALLOW FLOATING OIL/GAS FROM LEAVING THE CB. THE ELBOW IS SUSCEPTIBLE TO CLOGGING AND MUST BE CHECKED IF A CLOGGING PROBLEM ARISES.

**PART 2 – RESPONSIBILITY FOR OPERATION AND MAINTENANCE**

**2A. PARTY RESPONSIBLE DURING CONSTRUCTION:**

CONTRACTOR TO BE DETERMINED.

**2B. PARTY RESPONSIBLE FOR POST-CONSTRUCTION:**

FENIX PARTNERS ABBEY IV, LLC  
177 LAKE STREET  
SHERBORN, MA 01770

**PART 3 – INSPECTION AND MAINTENANCE SCHEDULE**

**3A. CONSTRUCTION SCHEDULE**

SEE GENERAL NOTES (EROSION CONTROL)

**3B. POST-CONSTRUCTION SCHEDULE**

**PARKING LOT AND DRIVEWAYS**

INSPECT ALL CATCH BASINS (CB) AT LOCATIONS SHOWN ON SITE PLANS. LOOK FOR SETTLING OF PAVEMENT. REPAIR AS REQUIRED. LOOK AT LEVEL OF SAND, SILT IN BOTTOM. HAVE BOTTOM CLEANED IF SEDIMENT LEVEL REACHES 1/2 THE CATCH BASIN SUMP HEIGHT. VERIFY THAT ELBOW (OIL TRAP) ON PIPE OUTLET IS SECURELY IN PLACE. CLEAN ALL LEAVES, TRASH, AND PINE NEEDLES OUT OF CB GRATE.

LOOK FOR SIGNS OF CRACKING, POTHOLES. REPAIR AS REQUIRED.

LOOK FOR SIGNS OF EROSION AT EDGES OF PARKING LOT. INSPECT FOR BROKEN CURB. SEVERE EROSION MAY BE CAUSED BY PIPE BLOCKAGE AND RESULTING OVERFLOWS OUT OF CATCH BASINS. REMOVE DRAIN MANHOLE COVERS AND CB GRATES IN AREA AND LOOK FOR BLOCKAGES WHERE SURFACE EROSION IS EVIDENT.

**WALLS**

LOOK FOR EROSION AT TOP AND BOTTOM OF ALL RETAINING WALLS. LOOK AT WALL ENDS AND LOOK FOR DISLODGED WALL SEGMENTS. REPAIR AS REQUIRED.

**LANDSCAPING**

INSPECT FOR DISEASED/DYING TREES, SHRUBS, GROUND COVER, GRASS. REPLACE AS REQUIRED.

INSPECT MULCH BEDS. SUPPLEMENT AS REQUIRED TO PROVIDE THE SPECIFIED MINIMUM DEPTH (LOOSE MEASURE).

**STORMWATER**

SUBSURFACE INFILTRATION TO BE INSPECTED PER MANUAL SPECIFICATIONS.

**3B.2. NON-ROUTINE SCHEDULE**

**DEEP SUMP CATCH BASINS**

HAVE ALL CATCH BASINS CLEANED OUT COMPLETELY ANNUALLY.

**LAWNS**

INSPECT AFTER EACH SIGNIFICANT RAINFALL (1/2" OR MORE) FOR FIRST 6 MONTHS AFTER CONSTRUCTION TO ENSURE SURFACE VEGETATION IS HEALTHY. DISCHARGE DEVICES ARE NOT BLOCKED AND BANKS ARE NOT ERODING.

CHECK ALL COMPONENTS AFTER EACH MAJOR STORM (MORE THAN 2" RAINFALL IN 24 HOURS). CLEAN/REPAIR AS REQUIRED.

**SNOW REMOVAL**

ANY STOCKPILING OF SNOW SHALL BE CONDUCTED OUTSIDE THE BUFFER ZONE.

THE USE OF SALT AND/OR DE-ICING AGENTS ARE PROHIBITED DURING AND AFTER COMPLETION OF THIS PROJECT.

**SEDIMENT FOREBAY**

SEDIMENT FOREBAY SHALL BE INSPECTED MONTHLY AND CLEANED FOUR (4) TIMES PER YEAR. CLEANING SHALL INCLUDE MOWING OF THE FOREBAY. MOW AS FREQUENT AS NECESSARY TO KEEP THE GRASS HEIGHT NO MORE THAN SIX (6) INCHES, AND SET MOWER BLADES NO LOWER THAN THREE (3) INCHES. CHECK FOR SIGNS OF RILLING AND GULLING AND REPAIR AS NEEDED. AFTER SEDIMENT REMOVAL, REPLACE ANY VEGETATION DAMAGED BY THE CLEAN-OUT BY EITHER RESEEDING OR RESODDING. WHEN RESEEDING, INCORPORATE PRACTICES SUCH AS HYDROSEEDING WITH A TACKIFIER, BLANKET, OR SIMILAR, TO ENSURE NO SCOUR OCCURS IN THE FOREBAY WHILE THE SEEDS GERMINATE AND DEVELOP ROOTS.

**INFILTRATION BASIN**

SHALL BE INSPECTED TWO (2) TIMES PER YEAR AND AFTER EVERY TIME DRAINAGE DISCHARGES OVER THE OUTLET WEIR. INSPECTIONS SHALL ALSO OCCUR AFTER EVERY MAJOR STORM EVENT – EQUAL TO OR GREATER THAN A 2-YEAR, 24-HOUR STORM (GENERALLY 3.2 TO 4.7 INCHES IN A 24-HOUR PERIOD). INSPECTIONS SHALL INCLUDE SIGNS OF DIFFERENTIAL SETTLEMENT, CRACKING, EROSION, LEAKAGE IN THE EMBANKMENTS, TREE GROWTH ON THE EMBANKMENTS, CONDITION OF RIPRAP, SEDIMENT ACCUMULATION, AND HEALTH OF THE TURF.

AT LEAST TWICE PER YEAR, MOW THE BUFFER AREAS, SIDE SLOPES, AND BASIN BOTTOM. REMOVE GRASS CLIPPINGS AND ACCUMULATED ORGANIC MATTER TO PREVENT AN IMPERVIOUS ORGANIC MAT FROM FORMING. REMOVE TRASH AND DEBRIS AT THE SAME TIME. USE DEEP TILLING TO BREAK UP CLOGGED SURFACES, AND RE-VEGETATE IMMEDIATELY.

FOR THE FIRST 6 MONTHS AFTER CONSTRUCTION INSPECT LAWNS AFTER EACH SIGNIFICANT RAINFALL (1/2" OR MORE) TO ENSURE SURFACE VEGETATION IS HEALTHY. DISCHARGE DEVICES ARE NOT BLOCKED AND BANKS ARE NOT ERODING. CLEAN/REPAIR AS REQUIRED.

A MAINTENANCE LOG DETAILING THE DATE AND RESULT OF EACH INSPECTION SHALL BE KEPT BY THE RESPONSIBLE PARTY AND MADE AVAILABLE TO THE PLANNING BOARD, DPW, AND CONSERVATION COMMISSION UPON REQUEST. ROUTINE MAINTENANCE AS WELL AS FOLLOW-UP ACTIONS TAKEN AS A RESULT OF INSPECTIONS OR INCIDENTS SHALL BE DETAILED AND DATED IN THE LOG.

MATERIALS REMOVED FROM INFILTRATION BASIN MUST BE DISPOSED OF IN ACCORDANCE WITH 310 CMR 19 AND 310 CMR 30 AS APPLICABLE.

**RIP RAP (STONE) SLOPE PROTECTION**

INSPECT STONE SLOPE PROTECTION. CUT EMERGING YOUNG TREES GROWING IN STONES. INSPECT STONE AT PIPE OUTLETS. REMOVE DEBRIS. REPAIR AS REQUIRED.

**GENERAL NOTES**

**7.0 CURBING**

7.1 CURBING SHALL BE CAPE COD BERM (CCB).  
7.2 DIMENSIONS REFER TO FACE OF CURB UNLESS NOTED OTHERWISE.

**8.0 PARKING TRAFFIC CONTROL MARKINGS AND SIGNAGE**

8.1 INCLUDING, BUT NOT LIMITED TO, ALL CROSSWALKS, STOP LINES AND LEGENDS.

8.1.1 LEGENDS SHALL BE PERFORMED PERMANENT PLASTIC. PAVEMENT MARKINGS SHALL BE THERMO PLASTIC (ALKYD). THE MARKINGS, LEGENDS SHALL BE INSTALLED IN ACCORDANCE WITH THE RELEVANT PORTIONS OF MHD STANDARD SPECIFICATIONS. THE CONTRACTOR'S ATTENTION ALSO IS DIRECTED TO THE STANDARD SPECIFICATIONS FOR REQUIREMENTS REGARDING THE AMBIENT AIR TEMPERATURE AT THE TIME OF APPLICATION.

8.2 HANDICAP ACCESSIBLE PARKING SPACES SHALL CONFORM TO THE REQUIREMENTS OF THE ZONING BYLAWS AND THE AMERICANS WITH DISABILITIES ACT (A.D.A.) OF JANUARY, 1992 UNLESS OTHERWISE NOTED.

8.2.1 ACCESSIBLE PARKING SPACES DESIGNATED WITH A "HOV" SHALL BE SIGNED AS "VAN ACCESSIBLE" PER A.D.A. 4.1.2.5b.

8.2.2 ALL LIMITS OF PAVEMENT SHALL BE CURBED UNLESS NOTED OR DETAILED OTHERWISE.

8.2.3 ALL STANDARD PARKING SPACES SHALL BE 9 FT UNIFORM BY 18 FT LENGTH, WITH 24 FEET ASIDES, UNLESS NOTED OR DETAILED OTHERWISE.

8.2.4 PARKING AND TRAFFIC CONTROL PLANS ARE SCHEMATIC AND FOR LOCATION OF MARKINGS ONLY. SPECIFIC DETAILS FOR INSTALLATION OF PAVEMENT MARKING ARE PROVIDED AS PART OF THIS PLAN SET.

**9.0 PLANTING AND LANDSCAPING**

9.1 THE CONTRACTOR IS RESPONSIBLE FOR KEEPING THE SITE CLEAN OF MISCELLANEOUS DEBRIS THROUGHOUT THE CONSTRUCTION PERIOD. ALL WASTE MATERIAL IS TO BE DISPOSED OF TO AN OFF-SITE LOCATION.

9.1 THE CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS, AND SHALL OBTAIN ALL NECESSARY PERMITS FOR THIS PROJECT.

9.1 LAYOUT: ALL NOTES AND DIMENSIONS ARE TYPICAL UNLESS OTHERWISE NOTED. ALL DIMENSIONS ARE SQUARE (PARALLEL OR PERPENDICULAR) UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL NOTIFY THE OWNER/OWNER'S REPRESENTATIVE IMMEDIATELY IN THE EVENT OF ANY DISCREPANCIES FOUND IN THE CONTRACT DOCUMENTS AND/OR IN THE FIELD, OR OF CONDITIONS UNCOVERED IN THE WORK WHICH ARE NOT REFLECTED IN THE PLANS.

9.4 LOAM: LOAM MOVED DURING THE COURSE OF CONSTRUCTION SHALL BE RETAINED AND DISTRIBUTED WITHIN THE SITE IN ACCORDANCE WITH THE LANDSCAPE PLAN. STOCKPILED LOAM SHALL NOT BE MIXED WITH ANY SUBSOIL OR UNSUITABLE MATERIALS. ALL EXCESS LOAM SHALL REMAIN ON THE PROPERTY OF THE OWNER. NEW LOAM IF REQUIRED TO PROVIDE THE SPECIFIED DEPTH, SHALL BE A FERTILE, FRABLE, MEDIUM TEXTURED SANDY LOAM FREE OF MATERIAL TOXIC TO HEALTHY PLANT GROWTH. LOAM SHALL ALSO BE FREE OF ALL STUMPS, ROOTS, STONES AND OTHER EXTRANEIOUS MATTER AN INCH (1") OR GREATER IN DIAMETER. THE PH SHALL BE BETWEEN 5.5 AND 7.5 WHEN TESTED.

9.5 LAWN PREPARATION: REMOVE ALL DEBRIS AND OTHER INORGANIC MATERIALS ON THE PREPARED SUBGRADE, RESHAPE AND DRESS ANY DAMAGED OR ERODED AREA PRIOR TO SPREADING THE LOAM. STONY AND LOOSELY SUBGRADE IN ANY AREAS WHERE COMPACTION MAY HAVE OCCURRED. SPREAD STOCKPILED AND OFF-SITE LOAM ON ALL DISTURBED AREAS TO PRODUCE A DEPTH OF 4" FINE GRADE LOAMED AREAS TO PRODUCE A SMOOTH AND UNBROKEN FINISH GRADE TO THE REQUIRED DEPTH. APPLY A STARTER FERTILIZER (10-20-10) AT A RATE OF 20 LBS. PER 1000 SQUARE FEET AND LIME AT A RATE OF 40 LBS. PER 1000 SQUARE FEET. ONCE SPREAD, THE FERTILIZER AND LIME SHALL BE THOROUGHLY INCORPORATED INTO THE LOAM. THE LOAM SHALL BE ROLLED AND DEPRESSION SHALL BE TOP DRESSED AND RAKED TO CREATE A SMOOTH SURFACE.

9.6 SEEDING: SEEDING SHALL TAKE PLACE AS SOON AS POSSIBLE FOLLOWING COMPLETION OF GRADING. SEED SHALL BE PURE LIVE, FRESH SEED FROM COMMERCIAL SOURCES MEETING AND LABELED IN ACCORDANCE WITH STATE AND FEDERAL RULES AND REGULATIONS. THE SEED MIXTURE SHALL BE:

PROPORTION BY TYPE	WEIGHT	PUR.	GERM.
PALMER PERENNIAL RYEGRASS	20.0%	99%	90%
RANGER PERENNIAL RYEGRASS	20.0%	99%	90%
BARON KENTUCKY BLUEGRASS	30.0%	95%	85%
MERION KENTUCKY BLUEGRASS	30.0%	95%	85%
INERT MATERIALS 2.5% (MAXIMUM)			

SEEDED AREAS SHALL, AT A MINIMUM, INCLUDE ALL AREAS OF THE SITE THAT HAVE BEEN DISTURBED OR ARE BARREN UNLESS OTHERWISE NOTED ON THE PLANS. SEED SHALL BE APPLIED AT A RATE OF 7 LBS. PER 1000 SQUARE FEET.

MULCH AND/OR EROSION CONTROL FABRIC SHALL BE PLACED DURING MONTHS NOT SUITABLE FOR SEEDING, SODDING, OR PLANTING.

9.7 PROTECTION OF EXISTING PLANTINGS: MAXIMUM EFFORT SHOULD BE MADE TO SAVE TREE OR OTHER PLANT SPECIMENS WHICH ARE LARGE FOR THEIR SPECIES, RARE TO THE AREA, OR OF SPECIAL HORTICULTURAL OR LANDSCAPE VALUE. CONTACT OWNER/LANDSCAPE ARCHITECT BEFORE REMOVING ANY SPECIMEN OF THIS TYPE UNLESS OTHERWISE NOTED ON THE PLANS. NO MATERIAL OR TEMPORARY SOIL DEPOSITS SHALL BE PLACED WITHIN THE DRIP LINE OF SHRUBS OR TREES DESIGNATED ON THE LANDSCAPE PLAN TO BE RETAINED. PROTECTIVE BARRIERS ARE TO BE INSTALLED AROUND EACH PLANT AND/OR GROUP OF PLANTS THAT ARE TO REMAIN ON THE SITE. BARRIERS SHALL NOT BE SUPPORTED BY THE PLANTS THEY ARE PROTECTING, BUT SHALL BE SELF SUPPORTING. THEY SHALL BE OF MINIMUM OF FOUR FEET (4') HIGH AND CONSTRUCTED OF A DURABLE MATERIAL, SUCH AS SNOW OR SILT FENCE, THAT WILL LAST UNTIL CONSTRUCTION IS COMPLETED.

9.8 PRUNING: THE CONTRACTOR SHALL CAREFULLY PRUNE BRANCHES IN THE WAY OF CONSTRUCTION BY USING ONLY APPROVED METHODS AND TOOLS. THE USE OF AXES FOR TRIMMING OR SPURS FOR CLIMBING WILL NOT BE PERMITTED.

9.9 DISTURBED AREAS: ANY AREAS DISTURBED DURING THE COURSE OF CONSTRUCTION ARE TO BE RESTORED TO ORIGINAL (OR BETTER) CONDITION BY CONTRACTOR BEFORE COMPLETION OF THE PROJECT, AND ARE SUBJECT TO APPROVAL BY LANDSCAPE ARCHITECT AND OWNER. ALL GRASS AREAS DISTURBED DURING CONSTRUCTION SHALL BE YORK RAKED TO REMOVE STONES AND LOAMED AND SEEDED AS PER SPECIFICATIONS.

9.10 DRAINAGE SYSTEMS: CONTRACTOR IS RESPONSIBLE FOR GENERAL CLEAN-OUT OF ALL CATCH BASINS, MANHOLES, AND/OR OTHER DRAINAGE FEATURES ON THE SITE WHICH HAVE ACCUMULATED SEDIMENT AS A RESULT OF CONSTRUCTION ACTIVITIES.

**1.0 TOPOGRAPHIC AND PROPERTY LINE INFORMATION**

1.1. NOTICE TO CONTRACTOR: THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS IS BASED ON 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 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 AUTHORITY, AND "DIGSAFE" AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF UTILITIES. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION SHALL BE TAKEN BEFORE PROCEEDING WITH THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLAN.

1.2. PROPERTY LINE AND TOPOGRAPHY: EXISTING CONDITIONS AND TOPOGRAPHY DERIVED FROM AERIAL PHOTOGRAPHY AND FIELD VERIFIED BY ANDREWS SURVEY & ENGINEERING, INC. PROPERTY LINE INFORMATION PROVIDED BY ANDREWS SURVEY & ENGINEERING, INC. SEE PLAN HEREIN.

1.3. DATUM: NAVD88

1.4. BENCH MARKS: NAVD88 (SEE EXISTING CONDITIONS PLAN)

1.5. COORDINATE SYSTEM: ASSUMED

1.6. CONSTRUCTION STAKING CONTROL: THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING ALL CONTROL POINTS AND BENCH MARKS NECESSARY TO PERFORM THE WORK.

1.7. FLOODPLAIN: THE PROPERTY DOES NOT LIE IN A FLOOD HAZARD AREA OR 100-YEAR FLOODPLAIN ACCORDING TO THE MOST RECENT FLOOD INSURANCE RATE MAPS FOR SHERBORN.

1.8. PROPOSED WORK DOES NOT LIE WITHIN WHPSP ESTIMATED OR PRIORITY HABITATS OR WITHIN ANY POTENTIAL OR CERTIFIED WETLAND POOLS AS SHOWN ON MASSACHUSETTS NATURAL HERITAGE ATLAS 13TH EDITION, EFFECTIVE OCTOBER 1, 2008.

1.9. A COPY OF THESE APPROVED PLANS AND APPLICABLE SPECIFICATIONS AND DETAILS SHALL BE ON SITE DURING CONSTRUCTION.

1.10 ANY REVISIONS MADE TO THESE PLANS MUST BE REVIEWED AND APPROVED BY THE DEVELOPER'S ENGINEER AND THE CITY ENGINEER PRIOR TO ANY IMPLEMENTATION IN THE FIELD. THE CITY SHALL NOT BE RESPONSIBLE FOR ANY ERRORS AND/OR OMISSIONS ON THESE PLANS.

1.11 ANY STRUCTURE AND/OR OBSTRUCTION WHICH REQUIRES REMOVAL OR RELOCATION RELATING TO THIS PROJECT, SHALL BE DONE AT THE DEVELOPER'S EXPENSE.

**2.0 DEMOLITION, SEDIMENTATION AND EROSION CONTROL (STORMWATER POLLUTION PREVENTION PLAN)**

**2.1 GENERAL**

2.1.1. THE FIRST STAGE INVOLVES ACTIVITIES NEEDED TO ADDRESS STORMWATER MANAGEMENT, EXCAVATING MATERIAL DESIGNATED FOR OFF-SITE REMOVAL OR ON-SITE RELOCATION AND FENCING SELECTED AREAS. STAGE ONE WILL PREPARE SITE FOR CONVENTIONAL CONSTRUCTION.

2.1.2. THE SECOND STAGE WILL CONSIST OF ROUTINE CONSTRUCTION INVOLVING BUILDING, PAVING, LANDSCAPING AND UTILITIES.

2.1.3. THERE ARE GENERAL PHASES OF CONSTRUCTION, IN EACH PHASE OF CONSTRUCTION, IMPLEMENT STANDARD EROSION AND SEDIMENT CONTROL PRACTICES PRIOR TO INITIATING EARTH DISTURBING ACTIVITIES, AND MAINTAIN THESE PRACTICES THROUGHOUT THE COURSE OF CONSTRUCTION.

2.1.4. VEGETATION CLEARING, STUMP REMOVAL AND EARTH EXCAVATION/FILLING HAS BEEN COMPLETED UNDER PREVIOUS CONTRACT.

2.1.5. DURING DEMOLITION, EXCAVATIONS AS MUCH AS 10 FEET MAY BE REQUIRED FOR THE INSTALLATION OF FOUNDATIONS, RETAINING WALLS, UNDERPINNING METHODS, AND UTILITIES. EXCAVATIONS SHALL BE CUT TO A STABLE SLOPE OR BE TEMPORARILY BRACED, DEPENDING ON THE EXCAVATION DEPTHS AND THE ENCOUNTERED SURFACE CONDITIONS. THE CONTRACTOR SHALL SUBMIT EXCAVATION AND SLOPE STABILIZATION METHODS PRIOR TO THE START OF CONSTRUCTION TO THE ENGINEER FOR REVIEW.

2.1.6. BASED ON THE COMPOSITION OF SOILS ENCOUNTERED DURING THE EXPLORATION, SITE SOILS ARE GENERALLY CLASSIFIED AS TYPE B SOILS AS DEFINED BY OSHA 29 CFR 1926.652 APPENDIX A. TEMPORARY CONSTRUCTION SLOPES SHOULD BE DESIGNED IN STRICT COMPLIANCE WITH THE MOST RECENT GOVERNING REGULATIONS. STOCKPILES SHOULD BE PLACED WELL AWAY FROM THE EDGE OF THE EXCAVATION AND THEIR HEIGHT SHOULD BE CONTROLLED TO PREVENT SURCHARGE TO THE SIDES OF THE EXCAVATION. SURFACE DRAINAGE SHOULD BE CONTROLLED TO AVOID FLOW OF SURFACE WATER INTO THE EXCAVATIONS.

2.1.7. CONSTRUCTION SLOPES SHOULD BE REVIEWED FOR MASS MOVEMENT. IF POTENTIAL STABILITY PROBLEMS ARE OBSERVED, WORK SHOULD CEASE AND A GEOTECHNICAL ENGINEER SHOULD BE CONTACTED IMMEDIATELY. THE RESPONSIBILITY FOR EXCAVATION SAFETY AND STABILITY OF TEMPORARY CONSTRUCTION SLOPES SHOULD LIE SOLELY WITH THE CONTRACTOR.

2.1.8. SWEEP ON-SITE PAVED AREAS AND OFF-SITE STREETS AS NECESSARY TO PREVENT SILT AND DEBRIS ORIGINATING ON SITE FROM ENTERING CLOSED DRAINAGE SYSTEMS AND/OR ENVIRONMENTALLY SENSITIVE AREAS. WHEN NECESSARY, UTILIZE WATER SPRAYING, SURFACE ROUGHENING AND/OR APPLY POLYMERS, SPRAY-ON TACKIFIERS, CHLORIDES AND BARRIERS FOR DUST CONTROL.

**TYPICAL PRACTICES TO BE APPLIED TO THE SITE INCLUDE THE FOLLOWING:**

PRIOR TO EARTH DISTURBANCE IN ANY WORK AREA, INSTALL SILTATION BARRIERS (STRAW WATTLES) BETWEEN THE WORK AREA AND THE SURFACE WATER RESOURCE TO WHICH IT DRAINS.

INFILTRATION BASIN AND SEPTIC AREA MUST BE FLAGGED OR FENCED OFF TO PREVENT COMPACTION OF THE SOILS DURING CONSTRUCTION.

DISCHARGE WATER FROM DEWATERING OPERATIONS TO A TEMPORARY SEDIMENTATION BASIN ON SITE PRIOR TO DISCHARGING THE WATER TO THE STREET DRAINAGE SYSTEM.

PROVIDE TEMPORARY BERMS AND SWALES TO DIVERT SURFACE WATER AWAY FROM THE AREAS THAT WILL BE EXPOSED BY CONSTRUCTION ACTIVITY TO MINIMIZE THE AMOUNT OF SURFACE WATER COMING INTO CONTACT WITH EXPOSED SOILS. PROVIDE STABLE OUTLETS FOR THESE DEVICES, AND LINE OR VEGETATE THESE DIVERSIONS TO PROVIDE FOR THEIR STABILITY DURING CONSTRUCTION.

LIMIT THE EXTENT OF EXPOSED SOILS TO AREAS THAT CAN BE WORKED AND RESTABILIZED WITHIN THE CONSTRUCTION SEASON AND DURING THE SPECIFIC CONSTRUCTION PHASE.

WHEN EARTHWORK CONSTRUCTION ACTIVITY IN AN AREA IS COMPLETE, STABILIZE THE AREA WITH A SUITABLE SURFACE AS DESCRIBED BELOW.

IN ADDITION TO THESE PRACTICES, FOLLOW THE SPECIAL PRACTICES DESCRIBED BELOW, CONFORM WITH THE DIRECTIONS OF THE APPLICANT'S REPRESENTATIVE TO ADDRESS EROSION AND SEDIMENTATION CONDITIONS THAT MAY ARISE ON A CASE BY CASE BASIS DURING CONSTRUCTION.

THE FOLLOWING IS A DESCRIPTION OF MINIMUM CONSTRUCTION REQUIREMENTS AND DOES NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITIES WITH REGARD TO DETERMINING THE ADEQUACY OF MEANS AND METHODS OF CONSTRUCTION.

**2.2. MAINTENANCE**

2.2.1. SEEDED AREAS WILL BE FERTILIZED AND RESEEDED AS NECESSARY TO INSURE VEGETATION ESTABLISHMENT.

2.2.2. TEMPORARY SEDIMENTATION BASINS WILL BE CHECKED AFTER EACH SIGNIFICANT RAINFALL AND CLEANED AS NEEDED TO RETAIN STORAGE CAPACITY.

2.2.3. TEMPORARY DRAINAGE SWALES WILL BE CHECKED WEEKLY AND REPAIRED WHEN NECESSARY.

2.2.4. THE HAYBALE AND SILTATION FENCING BARRIERS AND OTHER EROSION AND SEDIMENT CONTROL MEASURES/DEVICES SHALL BE INSPECTED, CLEANED, REPLACED AND/OR REPAIRED AS NECESSARY, PERIODICALLY AND AFTER EACH SIGNIFICANT RAINFALL.

2.2.5. THE EROSION AND SEDIMENTATION CONTROL SYSTEM DEPICTED ON THESE PLANS ARE INTENDED TO BE MINIMUM REQUIREMENTS TO MEET ANTICIPATED SITE CONDITIONS. AS CONSTRUCTION PROGRESSES AND UNEXPECTED OR SEASONAL CONDITIONS DICTATE, FACILITIES WILL BE NECESSARY TO ENSURE COMPLETE SILTATION CONTROL ON THE SITE. DURING THE COURSE OF CONSTRUCTION, IT SHALL BE THE OBLIGATION AND RESPONSIBILITY OF THE PERMITTEE TO ADDRESS ANY NEW CONDITIONS THAT MAY BE CREATED BY HIS ACTIVITIES AND TO PROVIDE ADDITIONAL FACILITIES, OVER AND ABOVE THE MINIMUM REQUIREMENTS, AS S MAY BE NEEDED TO PROTECT ADJACENT PROPERTIES, SENSITIVE AREAS, NATURAL WATER COURSES AND/OR STORM DRAINAGE SYSTEMS.

2.2.6. IN CASE EROSION OR SEDIMENTATION OCCURS TO ADJACENT PROPERTIES, ALL CONSTRUCTION WORK WITHIN THE DEVELOPMENT THAT WILL FURTHER AGGRAVATE THE SITUATION, MUST CEASE AND THE OWNER/CONTRACTOR WILL IMMEDIATELY COMMENCE RESTORATION METHODS. RESTORATION ACTIVITY WILL CONTINUE UNTIL SUCH TIME AS THE AFFECTED PROPERTY OWNER IS SATISFIED.

2.2.7. SILTATION FENCING AND STRAW BALES SHALL SURROUND ALL STOCK PILES THAT ARE TO BE IN PLACE FOR MORE THAN ONE WEEK.

**2.3. GENERAL**

2.3.1. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH (USDA) NATURAL RESOURCES CONSERVATION SERVICE (NRCS, FORMERLY SCS) GUIDELINES AND ALL LOCAL, COUNTY AND MUNICIPAL REGULATIONS.

2.3.2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING ALL CONTROL POINTS AND BENCH MARKS NECESSARY FOR THE WORK.

2.3.3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN THE EROSION AND SEDIMENTATION CONTROLS DURING CONSTRUCTION, AND THESE CONTROLS SHALL REMAIN IN PLACE UNTIL ALL SITE WORK IS COMPLETE AND GROUND COVER IS ESTABLISHED.

2.3.4. ALL WORK SHALL BE IN ACCORDANCE WITH THE PERMITS AND APPROVALS ISSUED AND THE CONSTRUCTION SPECIFICATIONS.

2.3.5. STOCKPILES SHALL BE SURROUNDED ON THEIR PERIMETERS WITH STAKED HAYBALES AND/OR SILTATION FENCES TO PREVENT AND/OR CONTROL SILTATION AND EROSION.

2.3.6. TOPS OF STOCKPILES SHALL BE COVERED IN SUCH A MANNER THAT STORMWATER DOES NOT INFILTRATE THE MATERIALS AND THEREBY RENDER THE SAME UNSUITABLE FOR FILL USE.

2.3.7. 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. SEEDING SHALL BE PERFORMED BETWEEN THE MONTHS OF APRIL AND SEPTEMBER ONLY.

2.3.8. HAYBALE DIKES SHALL BE CONSTRUCTED AT ALL EXISTING & PROPOSED CATCH BASINS LOCATED IN FILL AREAS & SUBJECT TO STORMWATER RUN-OFF FROM PROPOSED FILL AREAS DURING CONSTRUCTION, OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE. NO SEDIMENTS SHALL ENTER THE ON-SITE OR OFF-SITE DRAINAGE SYSTEMS AT ANY TIME.

2.3.9. CULVERT/PIPE INLETS AND OUTFALLS SHALL BE PROTECTED BY HAYBALE FILTERS UNTIL DISTURBED AREAS ARE PERMANENTLY STABILIZED.

2.3.10. HAYBALES SHALL BE PERIODICALLY INSPECTED AND REPLACED AS REQUIRED.

2.3.11. ALL PROPOSED NON-RIPRAP SLOPES STEEPER THAN 3:1 SHALL BE STABILIZED WITH CURLEX BLANKETS AND PROTECTED FROM EROSION.

2.3.12. THE CONTRACTOR SHALL KEEP ON SITE AT ALL TIMES ADDITIONAL HAYBALES AND EXTRA SILTATION FENCING FOR INSTALLATION AT THE DIRECTION OF THE OWNER'S REPRESENTATIVE OR LOCAL OFFICIALS TO MITIGATE ANY EMERGENCY CONDITION.

2.3.13. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS TO CARRY OUT THE WORK INCLUDING BUT NOT LIMITED TO DEMOLITION.

2.3.14. DISPOSAL OF ALL DEMOLISHED MATERIALS IS THE RESPONSIBILITY OF THE CONTRACTOR AND MUST BE HAULED OFF-SITE IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL MUNICIPAL REQUIREMENTS.

2.3.15. 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, (I.E., THE GRADING LIMITS AROUND THE PERIMETER OF THE PROJECT AREA).

2.3.16. THE AREA OR AREAS OF ENTRANCE AND EXIT TO AND FROM THE SITE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAY MUST BE REMOVED IMMEDIATELY.

2.3.17. FOLLOWING THE ADDITION OF A BINDER COURSE, THE CONTRACTOR SHALL SWEEP ALL ON-SITE PAVEMENT, IF NECESSARY, UNTIL ALL SOIL CONSTRUCTION IS COMPLETED.

**3.0 STORM DRAINAGE**

3.1. UNLESS INDICATED OTHERWISE, STORM DRAIN PIPING (INDICATED BY LETTER "D") AND ALL ROOF DRAINS (RD) SHALL BE CORRUGATED POLYETHYLENE PIPE (CPP) PER AASHTO M234 AND M252 MANUFACTURED WITH HIGH DENSITY POLYETHYLENE PLASTIC. CPP SHALL BE ADS N-12 PIPE AS MANUFACTURED BY ADVANCED DRAINAGE SYSTEMS, INC. OR HANCOR H Q PIPE AS MANUFACTURED BY HANCOR, INC. OR APPROVED EQUAL.

3.2. STORM DRAIN MANHOLES (INDICATED BY LETTERS "DMH") SHALL BE PRECAST 4' OR 6' DIAMETER CONCRETE PER ASTM C478 (AS CALLED FOR ON DRAWINGS OR FIELD CONDITIONS REQUIRED) WITH RUBBER GASKET JOINTS CONFORMING TO ASTM C443. PIPE TO MANHOLE CONNECTIONS SHALL BE MORTARED PIPE OPENINGS.

3.3. CATCH BASINS (INDICATED BY LETTERS "CB") SHALL BE PRECAST 5' DIAMETER CONCRETE PER ASTM C478 WITH RUBBER GASKET JOINTS CONFORMING TO ASTM C443.

3.4. COORDINATES OF MANHOLES AND CATCH BASINS REFER TO CENTERS OF STRUCTURES.

3.5. ROOF DRAIN SYSTEM IS SHOWN FOR SCHEMATIC PURPOSES AND IS TO BE COORDINATED WITH THE ARCHITECT.

3.6. PROVIDE SIX INCH VERTICAL AND THREE FOOT HORIZONTAL CLEARANCE (OUTSIDE SURFACES) BETWEEN STORM DRAIN LINES AND OTHER UTILITY PIPE AND CONDUITS PROVIDED.

3.7. PROVIDE BEDDING AND BACKFILL IN TRENCHES PER DETAIL.

3.8. ALL DRAINAGE PIPES WITH TEN FEET OF THE BUILDING FOUNDATION ARE TO BE DUCTILE IRON. INSTALLATION OF ALL PIPING SHALL BE THE RESPONSIBILITY OF THE PLUMBING SUBCONTRACTOR.

3.9. DURING CONSTRUCTION, ALL EXISTING AND NEWLY INSTALLED DRAINAGE STRUCTURES



Andrews Survey & Engineering, Inc.  
Land Surveying - Civil Engineering - Site Planning

P.O. Box 312, 104 Mendon Street  
Uxbridge, Massachusetts 01569-0312  
P: 508-278-3897 F: 508-278-2289

This drawing and the design are property of Andrews Survey & Engineering, Inc. and shall not be altered or reused in whole or part without the express written permission of Andrews Survey & Engineering, Inc. Copyright ©2014

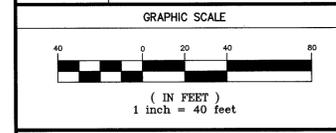
APPROVAL UNDER SITE PLAN REVIEW.  
SHERBORN PLANNING BOARD

BEING A MAJORITY DATE:

PROJECT:  
**ABBAY ROAD  
PROPOSED SITE DEVELOPMENT  
2 NORTH MAIN STREET  
SHERBORN, MA 01770**

APPLICANT:  
**FENIX PARTNERS ABBEY  
177 LAKE STREET  
SHERBORN, MA 01770**

REVISIONS		
NO.	DATE	DESCRIPTION
CAD FILE	... \dwg\2013-047_SP.dwg	
DRAWN BY	TRB, PBH	
CHECKED BY	PBH, BJA	
DATE	JUNE 9, 2015	
PROJECT NO.	2013-047	

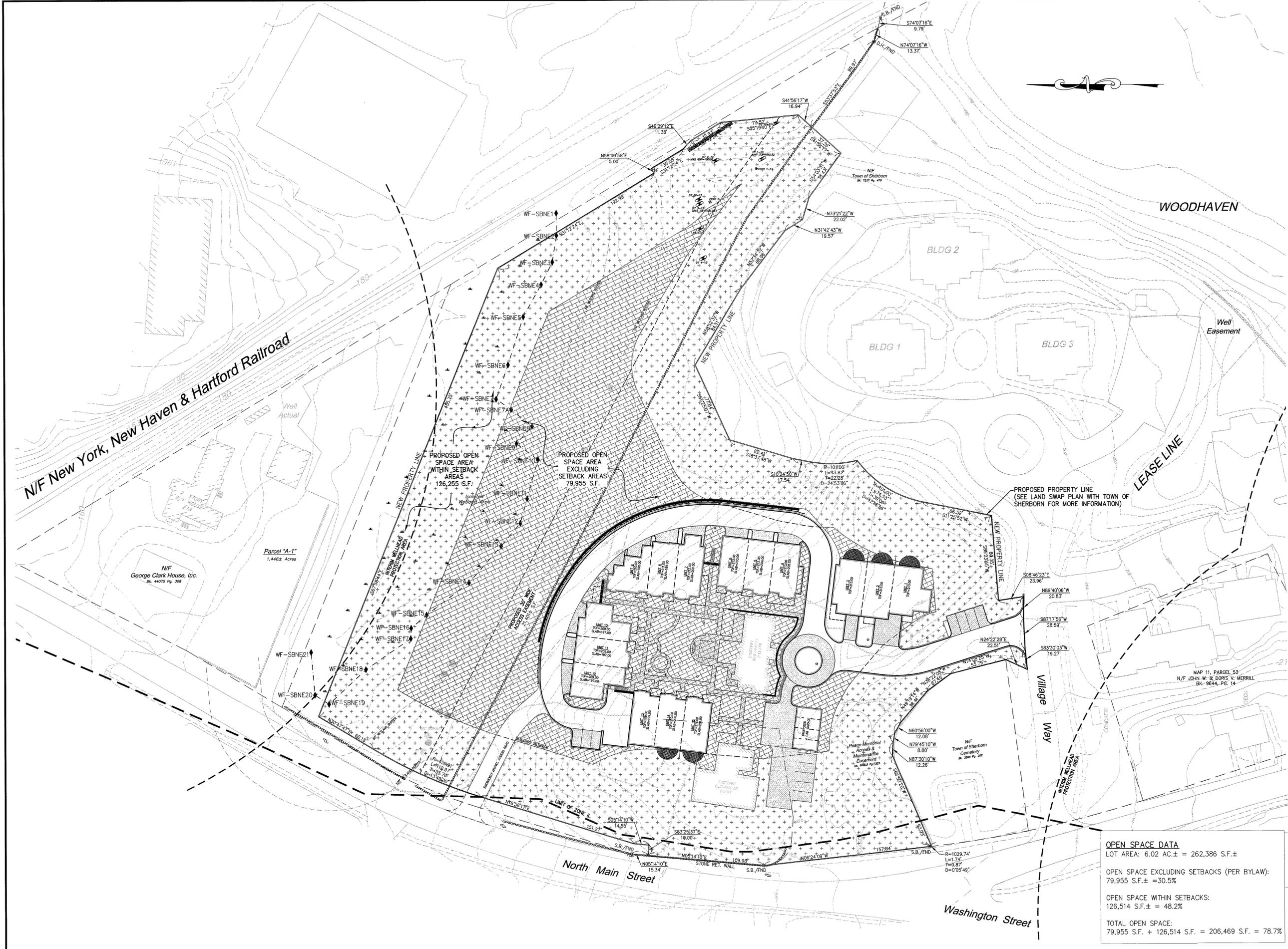
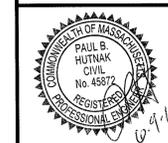


SHEET TITLE

**OVERALL PLAN**

DRAWING NO.  
**C-2.0**

PLAN NO. L-4554



**OPEN SPACE DATA**  
LOT AREA: 6.02 AC.± = 262,386 S.F.±

OPEN SPACE EXCLUDING SETBACKS (PER BYLAW):  
79,955 S.F.± = 30.5%

OPEN SPACE WITHIN SETBACKS:  
126,514 S.F.± = 48.2%

TOTAL OPEN SPACE:  
79,955 S.F. + 126,514 S.F. = 206,469 S.F. = 78.7%



Andrews Survey & Engineering, Inc.  
Land Surveying - Civil Engineering - Site Planning

P.O. Box 312, 104 Mendon Street  
Uxbridge, Massachusetts 01569-0312  
P: 508-278-3897 F: 508-278-2289

This drawing and the design are property of Andrews Survey & Engineering, Inc. and shall not be altered or reused in whole or part without the express written permission of Andrews Survey & Engineering, Inc. Copyright ©2014

APPROVAL UNDER SITE PLAN REVIEW.  
SHERBORN PLANNING BOARD

BEING A MAJORITY DATE:

PROJECT:  
**ABBAY ROAD  
PROPOSED SITE DEVELOPMENT  
2 NORTH MAIN STREET  
SHERBORN, MA 01770**

APPLICANT:  
**FENIX PARTNERS ABBAY  
177 LAKE STREET  
SHERBORN, MA 01770**

REVISIONS

NO.	DATE	DESCRIPTION

CAD FILE ... \dwg\2013-047\_SP.dwg

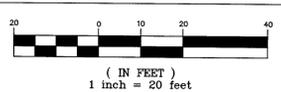
DRAWN BY TRB, PBH

CHECKED BY PBH, BJA

DATE JUNE 9, 2015

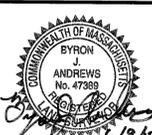
PROJECT NO. 2013-047

GRAPHIC SCALE



SHEET TITLE

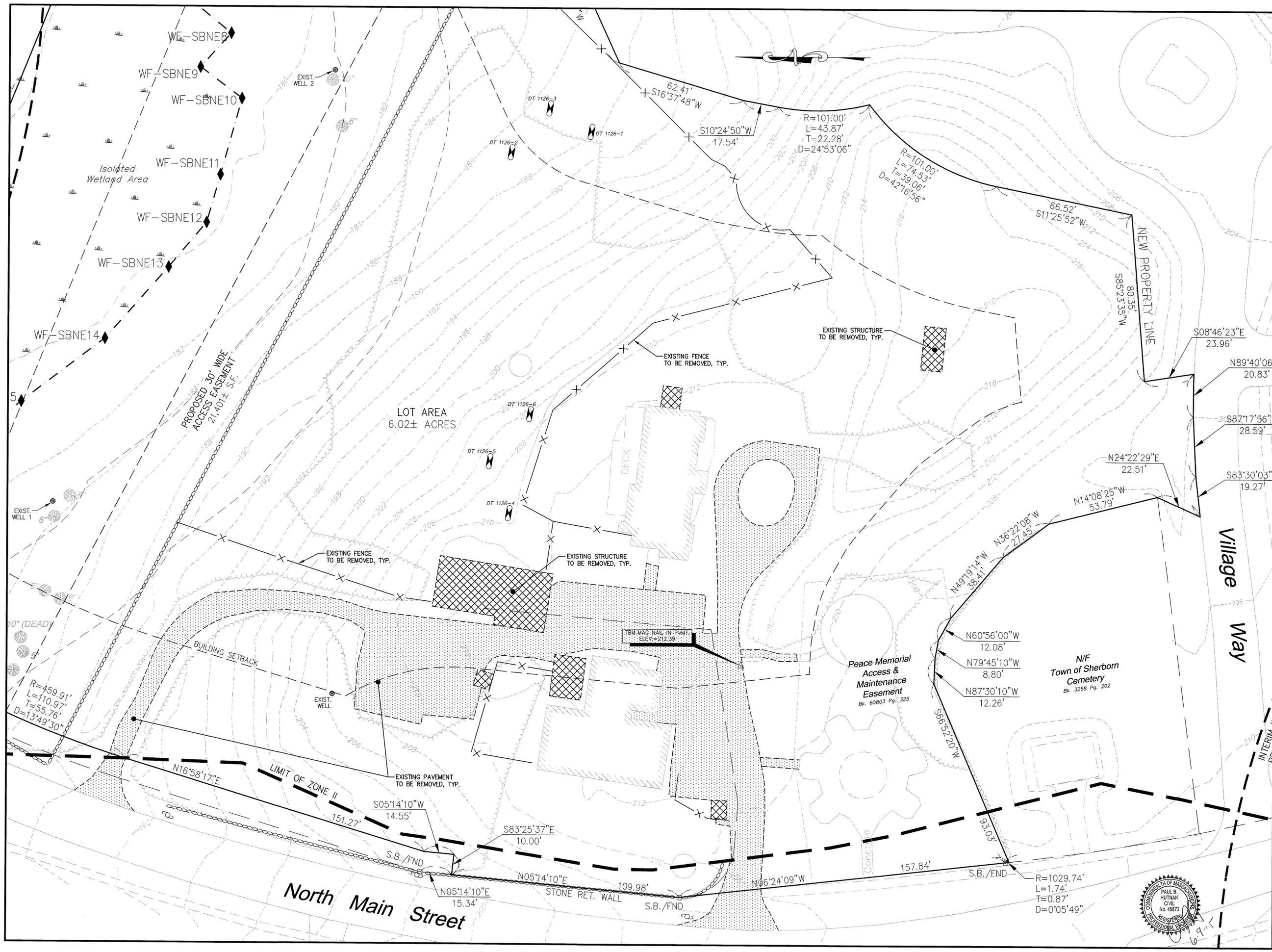
**EXISTING CONDITIONS  
& DEMOLITION PLAN**



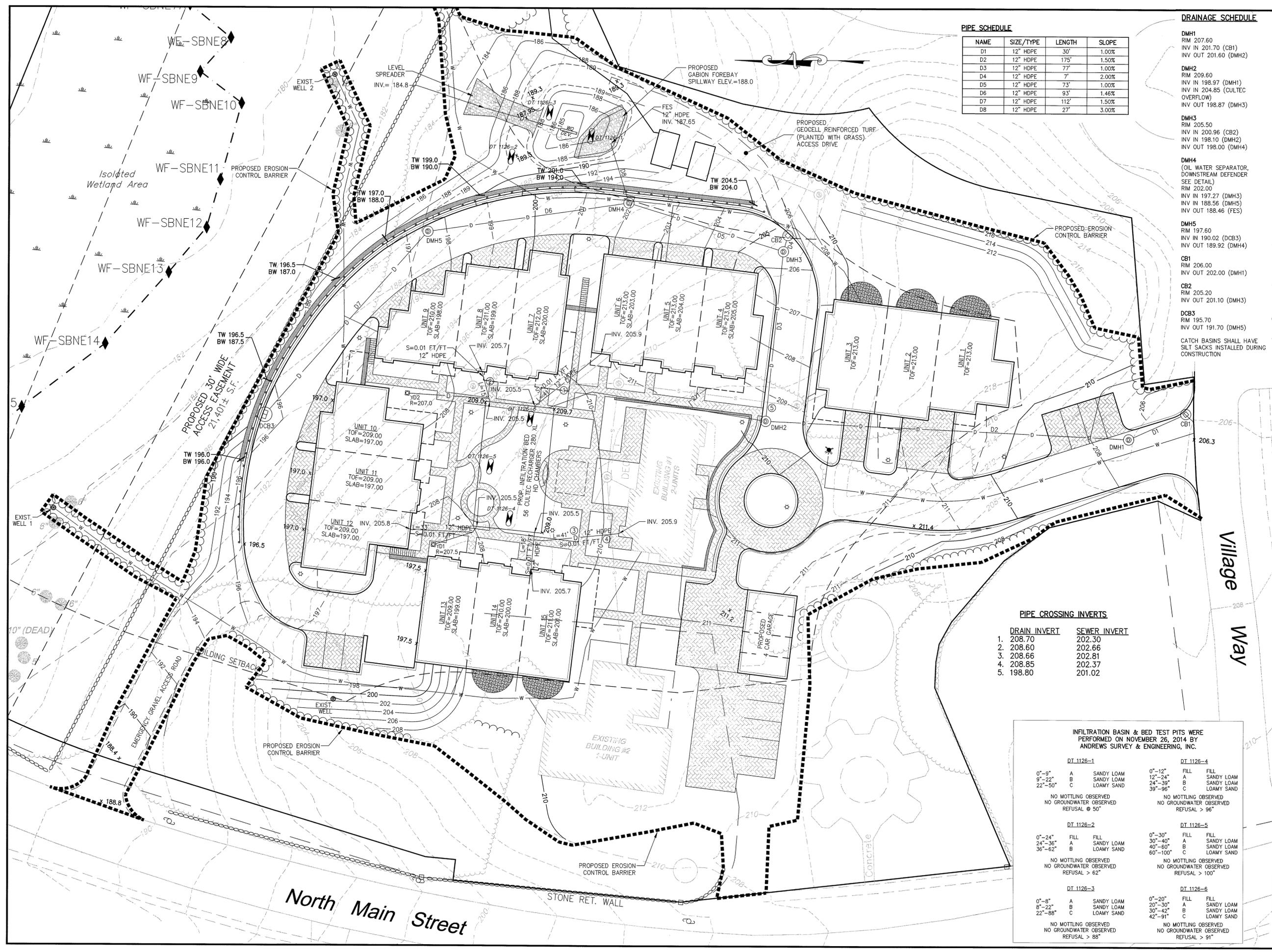
DRAWING NO.

**C-3.0**

PLAN NO. L-4554







**PIPE SCHEDULE**

NAME	SIZE/TYPE	LENGTH	SLOPE
D1	12" HDPE	30'	1.00%
D2	12" HDPE	175'	1.50%
D3	12" HDPE	77'	1.00%
D4	12" HDPE	7'	2.00%
D5	12" HDPE	73'	1.00%
D6	12" HDPE	93'	1.46%
D7	12" HDPE	112'	1.50%
D8	12" HDPE	27'	3.00%

**DRAINAGE SCHEDULE**

DMH1  
RIM 207.60  
INV IN 201.70 (CB1)  
INV OUT 201.60 (DMH2)

DMH2  
RIM 209.60  
INV IN 198.97 (DMH1)  
INV IN 204.85 (CULTEC OVERFLOW)  
INV OUT 198.87 (DMH3)

DMH3  
RIM 205.50  
INV IN 200.96 (CB2)  
INV IN 198.10 (DMH2)  
INV OUT 198.00 (DMH4)

DMH4  
(OIL WATER SEPARATOR, DOWNSTREAM DEFENDER SEE DETAIL)  
RIM 202.00  
INV IN 197.27 (DMH3)  
INV IN 188.56 (DMH5)  
INV OUT 188.46 (FES)

DMH5  
RIM 197.60  
INV IN 190.02 (DCB3)  
INV OUT 189.92 (DMH4)

CB1  
RIM 206.00  
INV OUT 202.00 (DMH1)

CB2  
RIM 205.20  
INV OUT 201.10 (DMH3)

DCB3  
RIM 195.70  
INV OUT 191.70 (DMH5)

CATCH BASINS SHALL HAVE SILT SACKS INSTALLED DURING CONSTRUCTION

**PIPE CROSSING INVERTS**

DRAIN INVERT	SEWER INVERT
1. 208.70	202.30
2. 208.60	202.66
3. 208.66	202.81
4. 208.85	202.37
5. 198.80	201.02

**INFILTRATION BASIN & BED TEST PITS WERE PERFORMED ON NOVEMBER 26, 2014 BY ANDREWS SURVEY & ENGINEERING, INC.**

DT 1126-1	DT 1126-4
0'-9" A SANDY LOAM	0'-12" FILL
9'-22" B SANDY LOAM	12'-24" A SANDY LOAM
22'-50" C LOAMY SAND	24'-39" B SANDY LOAM
	39'-96" C LOAMY SAND
NO MOTTLING OBSERVED	NO MOTTLING OBSERVED
NO GROUNDWATER OBSERVED	NO GROUNDWATER OBSERVED
REFUSAL @ 50"	REFUSAL > 96"
DT 1126-2	DT 1126-5
0'-24" FILL	0'-30" FILL
24'-36" A SANDY LOAM	30'-40" A SANDY LOAM
36'-62" B LOAMY SAND	40'-60" B SANDY LOAM
	60'-100" C LOAMY SAND
NO MOTTLING OBSERVED	NO MOTTLING OBSERVED
NO GROUNDWATER OBSERVED	NO GROUNDWATER OBSERVED
REFUSAL > 62"	REFUSAL > 100"
DT 1126-3	DT 1126-6
0'-8" A SANDY LOAM	0'-20" FILL
8'-22" B SANDY LOAM	20'-30" A SANDY LOAM
22'-88" C LOAMY SAND	30'-42" B SANDY LOAM
	42'-91" C LOAMY SAND
NO MOTTLING OBSERVED	NO MOTTLING OBSERVED
NO GROUNDWATER OBSERVED	NO GROUNDWATER OBSERVED
REFUSAL > 88"	REFUSAL > 91"

**ASE**  
Andrews Survey & Engineering, Inc.  
Land Surveying - Civil Engineering - Site Planning  
P.O. Box 312, 104 Mendon Street  
Uxbridge, Massachusetts 01569-0312  
P: 508-278-3897 F: 508-278-2289

This drawing and the design are property of Andrews Survey & Engineering, Inc. and shall not be altered or reused in whole or part without the express written permission of Andrews Survey & Engineering, Inc. Copyright ©2014

APPROVAL UNDER SITE PLAN REVIEW.  
SHERBORN PLANNING BOARD

BEING A MAJORITY DATE:

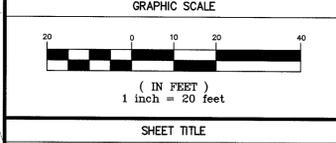
PROJECT: ABBEY ROAD PROPOSED SITE DEVELOPMENT 2 NORTH MAIN STREET SHERBORN, MA 01770

APPLICANT: FENIX PARTNERS ABBEY 177 LAKE STREET SHERBORN, MA 01770

**REVISIONS**

NO.	DATE	DESCRIPTION

CAD FILE: ...dwg\2013-047\_SP.dwg  
DRAWN BY: TRB, PBH  
CHECKED BY: PBH, BJA  
DATE: JUNE 9, 2015  
PROJECT NO.: 2013-047

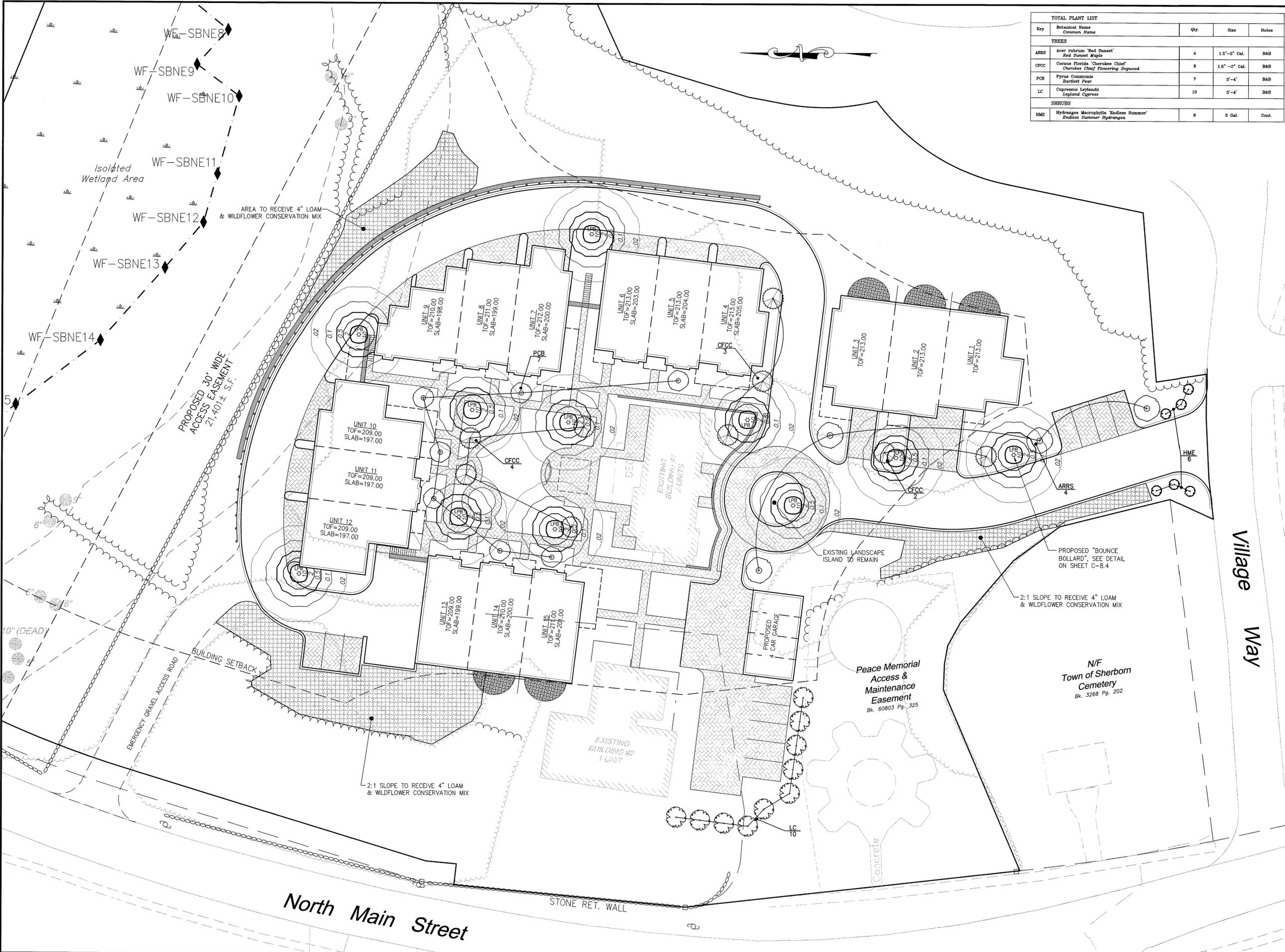


**SHEET TITLE**

**GRADING & DRAINAGE PLAN**

DRAWING NO. C-5.0

PLAN NO. L-4554



TOTAL PLANT LIST				
Key	Botanical Name Common Name	Qty.	Size	Notes
<b>TREES</b>				
ARRS	<i>Acer rubrum</i> 'Red Sunset' Red Sunset Maple	4	1.5"-2" Cal.	B&B
CFCC	<i>Cornus Florida</i> 'Cherokee Chief' Cherokee Chief Flowering Dogwood	9	1.5" -2" Cal.	B&B
PCB	<i>Pyrus Communis</i> Barlett Pear	7	3'-4'	B&B
LC	<i>Cypripedium lewisianum</i> Leyland Cypress	10	3'-4'	B&B
<b>SHRUBS</b>				
HME	<i>Hydrangea Macrophylla</i> 'Endless Summer' Endless Summer Hydrangeas	6	3 Gal.	Cont.

**ASE**  
 Andrews Survey & Engineering, Inc.  
 Land Surveying - Civil Engineering - Site Planning  
 P.O. Box 312, 104 Mendon Street  
 Uxbridge, Massachusetts 01569-0312  
 P: 508-278-3897 F: 508-278-2289

This drawing and the design are property of Andrews Survey & Engineering, Inc. and shall not be altered or reused in whole or part without the express written permission of Andrews Survey & Engineering, Inc. Copyright ©2014

APPROVAL UNDER SITE PLAN REVIEW.  
 SHERBORN PLANNING BOARD

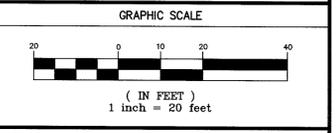
BEING A MAJORITY DATE:

**PROJECT:**  
 ABBEY ROAD  
 PROPOSED SITE DEVELOPMENT  
 2 NORTH MAIN STREET  
 SHERBORN, MA 01770

**APPLICANT:**  
 FENIX PARTNERS ABBEY  
 177 LAKE STREET  
 SHERBORN, MA 01770

REVISIONS		
NO.	DATE	DESCRIPTION

CAD FILE: ...\\dwg\2013-047\_SP.dwg  
 DRAWN BY: TRB, PBH  
 CHECKED BY: PBH, BJA  
 DATE: JUNE 9, 2015  
 PROJECT NO.: 2013-047



SHEET TITLE

**LANDSCAPING & LIGHTING PLAN**

**DRAWING NO.**  
 C-6.0

**PLAN NO.** L-4554





Andrews Survey & Engineering, Inc.  
Land Surveying - Civil Engineering - Site Planning

P.O. Box 312, 104 Mendon Street  
Uxbridge, Massachusetts 01569-0312  
P: 508-278-3897 F: 508-278-2289

This drawing and the design are property of Andrews Survey & Engineering, Inc. and shall not be altered or reused in whole or part without the express written permission of Andrews Survey & Engineering, Inc. Copyright ©2014

APPROVAL UNDER SITE PLAN REVIEW,  
SHERBORN PLANNING BOARD

BEING A MAJORITY DATE:

PROJECT:  
ABBAY ROAD  
PROPOSED SITE DEVELOPMENT  
2 NORTH MAIN STREET  
SHERBORN, MA 01770

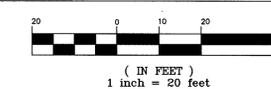
APPLICANT:  
FENIX PARTNERS ABBAY  
177 LAKE STREET  
SHERBORN, MA 01770

REVISIONS

NO.	DATE	DESCRIPTION

CAD FILE	...\\dwg\2013-047_SP.dwg
DRAWN BY	TRB, PBH
CHECKED BY	PBH, BJA
DATE	JUNE 9, 2015
PROJECT NO.	2013-047

GRAPHIC SCALE



SHEET TITLE

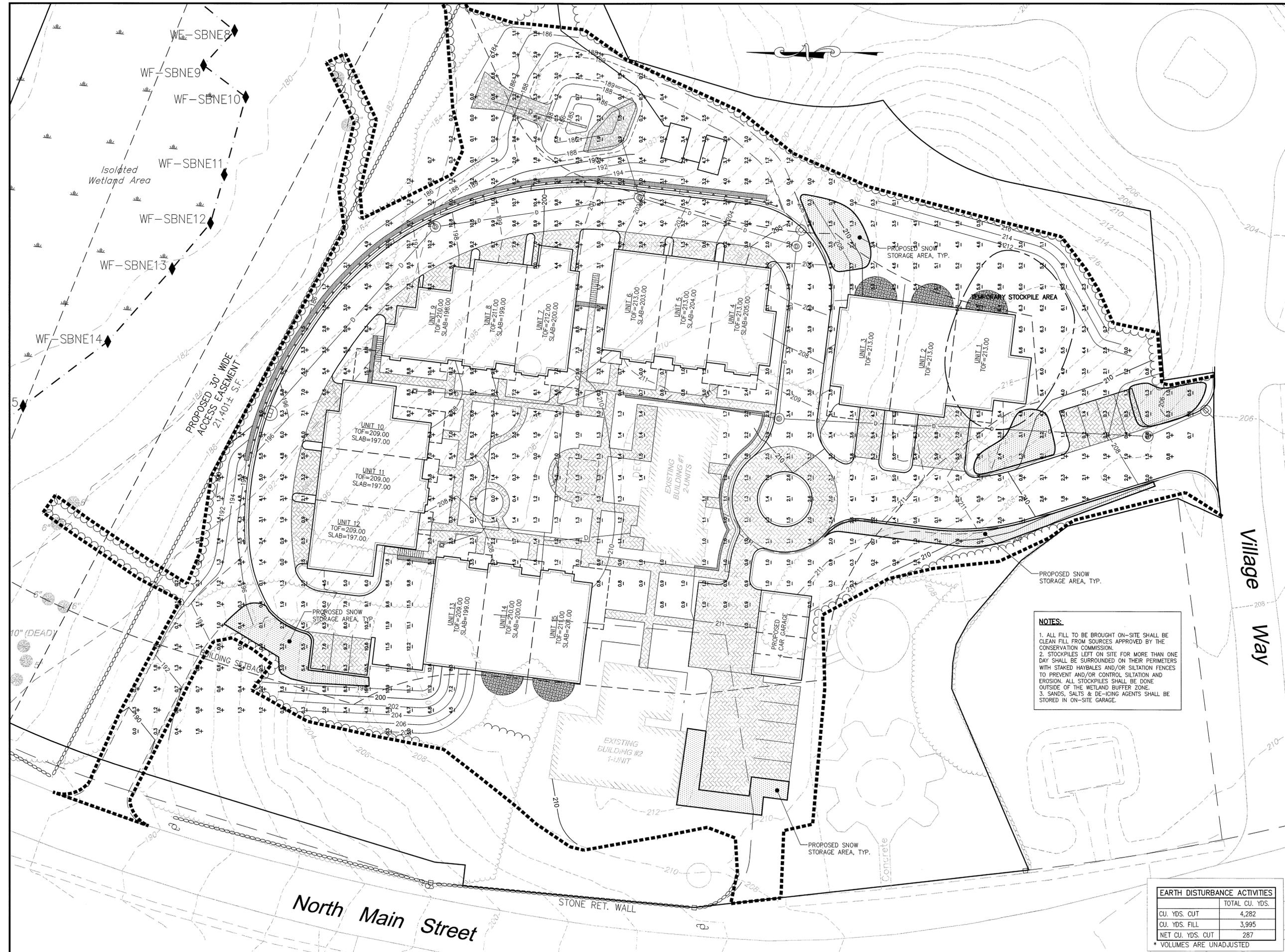
EARTHWORK PLAN



DRAWING NO.

C-7.0

PLAN NO. L-4554

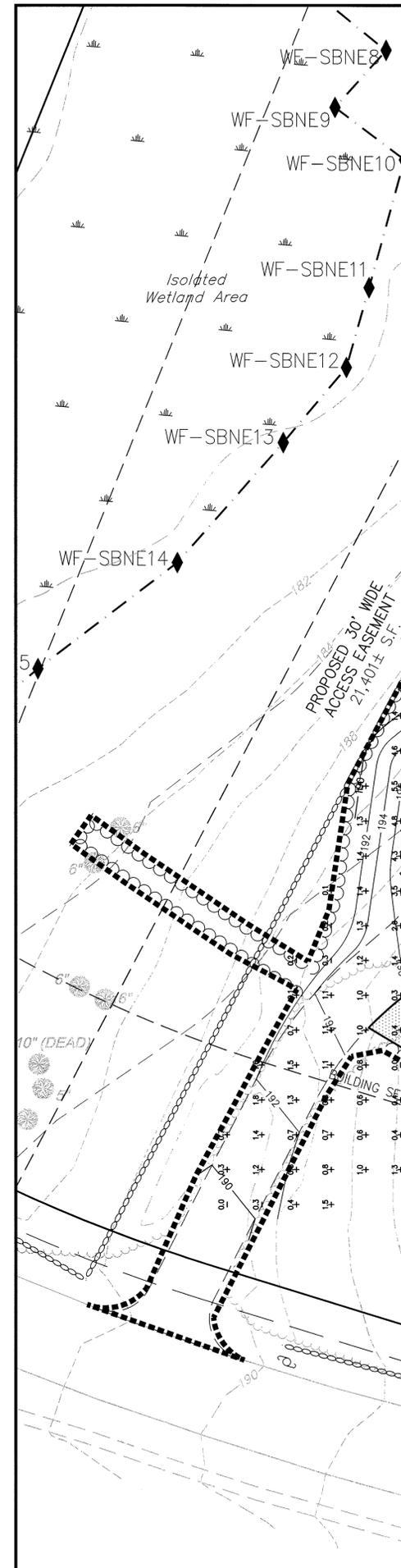


**NOTES:**

1. ALL FILL TO BE BROUGHT ON-SITE SHALL BE CLEAN FILL FROM SOURCES APPROVED BY THE CONSERVATION COMMISSION.
2. STOCKPILES LEFT ON SITE FOR MORE THAN ONE DAY SHALL BE SURROUNDED ON THEIR PERIMETERS WITH STAKED HAYBALES AND/OR SILTATION FENCES TO PREVENT AND/OR CONTROL SILTATION AND EROSION. ALL STOCKPILES SHALL BE DONE OUTSIDE OF THE WETLAND BUFFER ZONE.
3. SANDS, SALTS & DE-ICING AGENTS SHALL BE STORED IN ON-SITE GARAGE.

EARTH DISTURBANCE ACTIVITIES	
	TOTAL CU. YDS.
CU. YDS. CUT	4,282
CU. YDS. FILL	3,995
NET CU. YDS. CUT	287

\* VOLUMES ARE UNADJUSTED



PROPOSED 30' WIDE ACCESS EASEMENT 21,401 ± S.F.

10" (DEAD)

North Main Street

Village Way

STONE RET. WALL

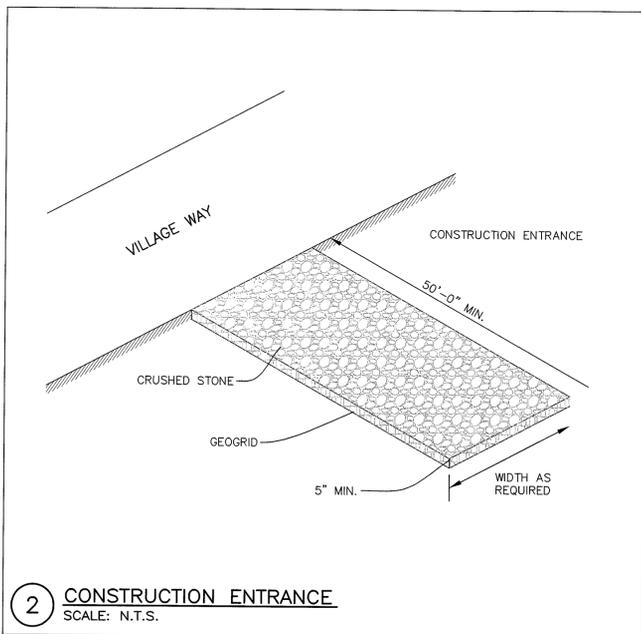
EXISTING BUILDING #2 1-UNIT

EXISTING BUILDING #1 2-UNITS

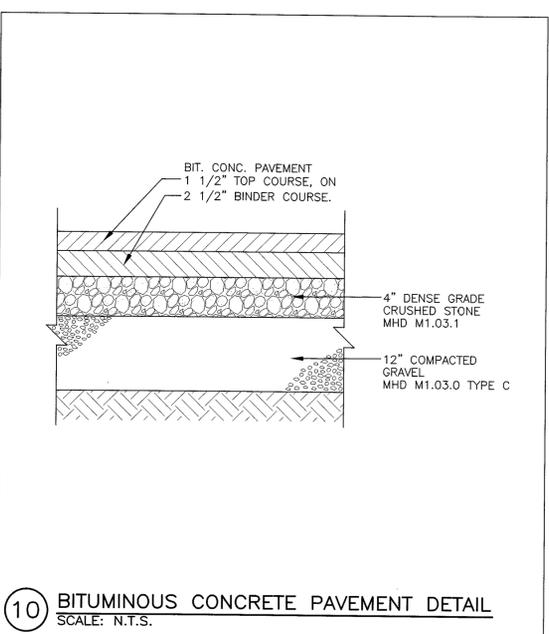
PROPOSED SNOW STORAGE AREA, TYP.

Concrete

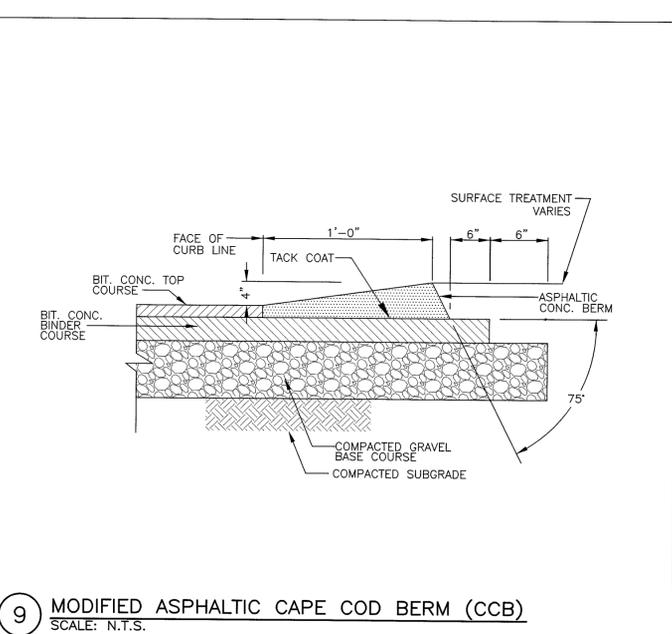
UNIT 10 TOF=209.00 SLAB=197.00  
UNIT 11 TOF=209.00 SLAB=197.00  
UNIT 12 TOF=209.00 SLAB=197.00  
UNIT 13 TOF=208.00 SLAB=198.00  
UNIT 14 TOF=210.00 SLAB=200.00  
UNIT 15 TOF=210.00 SLAB=204.00  
UNIT 9 TOF=210.00 SLAB=198.00  
UNIT 8 TOF=211.00 SLAB=199.00  
UNIT 7 TOF=212.00 SLAB=200.00  
UNIT 6 TOF=213.00 SLAB=203.00  
UNIT 5 TOF=213.00 SLAB=204.00  
UNIT 4 TOF=213.00 SLAB=205.00  
UNIT 3 TOF=213.00  
UNIT 2 TOF=213.00  
UNIT 1 TOF=213.00



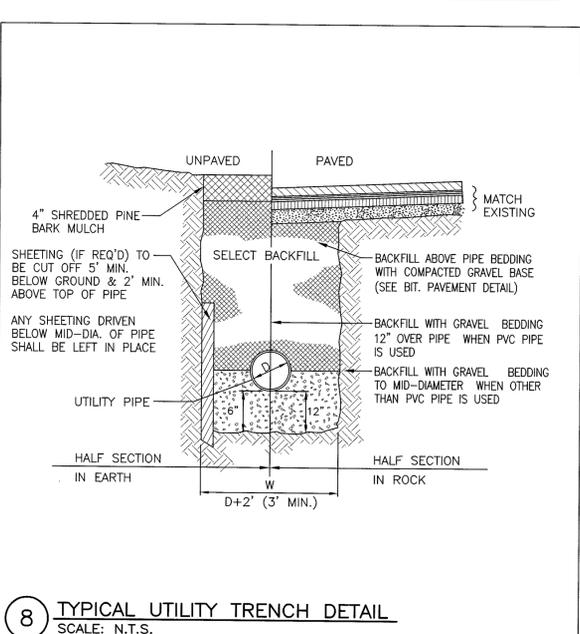
2 CONSTRUCTION ENTRANCE  
SCALE: N.T.S.



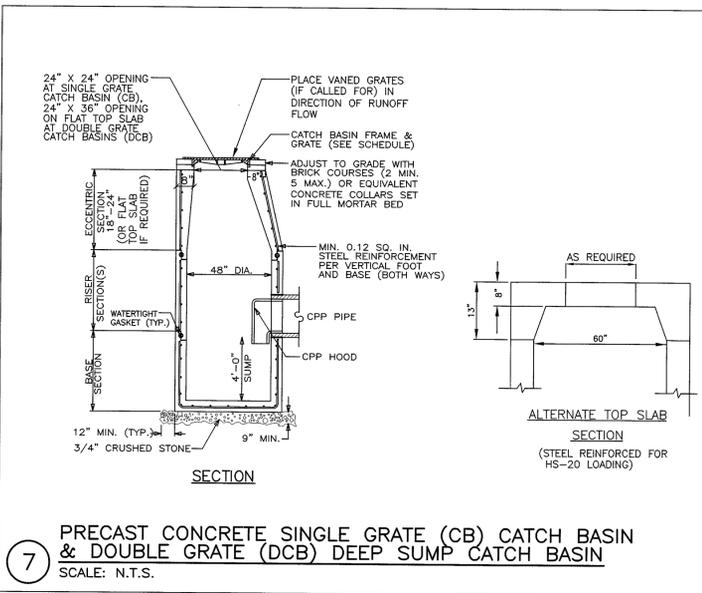
10 BITUMINOUS CONCRETE PAVEMENT DETAIL  
SCALE: N.T.S.



9 MODIFIED ASPHALTIC CAPE COD BERM (CCB)  
SCALE: N.T.S.

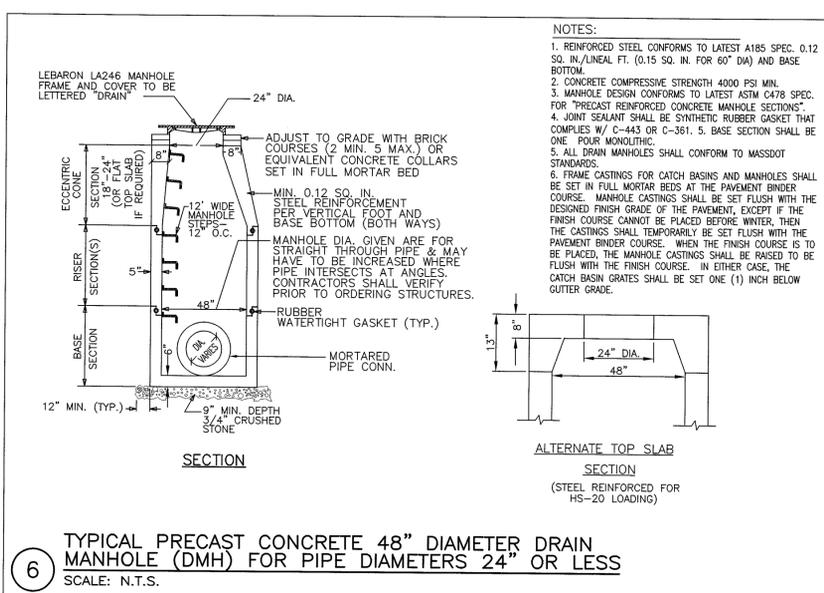


8 TYPICAL UTILITY TRENCH DETAIL  
SCALE: N.T.S.

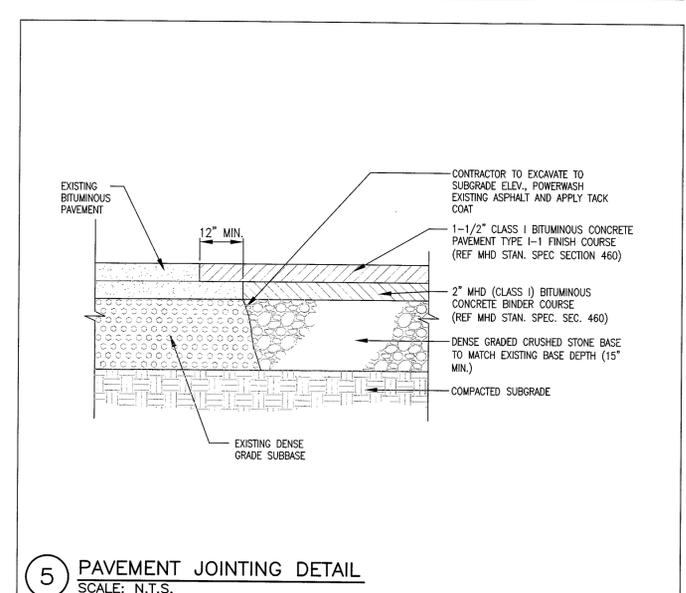


7 PRECAST CONCRETE SINGLE GRATE (CB) CATCH BASIN & DOUBLE GRATE (DCB) DEEP SUMP CATCH BASIN  
SCALE: N.T.S.

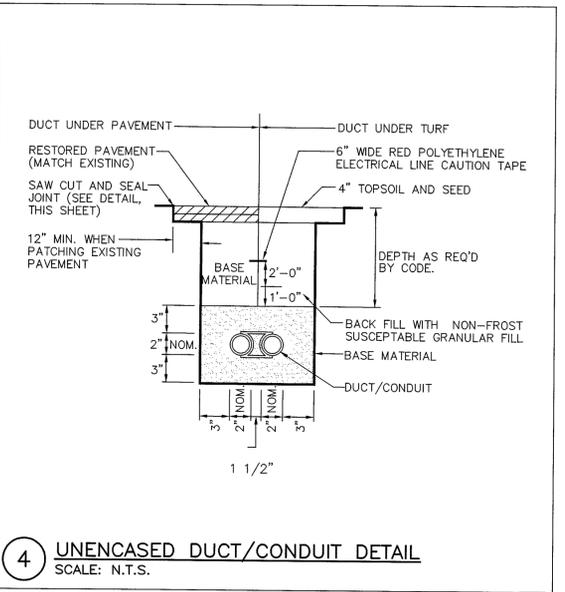
NOTES:  
1. USE 4-FLANGE LEBARON LF248-2 GRATES AT ALL CB STRUCTURES.  
2. SUBMIT SHOP DRAWINGS FOR APPROVAL.  
3. REINFORCED STEEL CONFORMS TO LATEST A185 SPEC. 0.12 SQ. IN./LINEAL FT. (0.15 SQ. IN. FOR 60\"/>



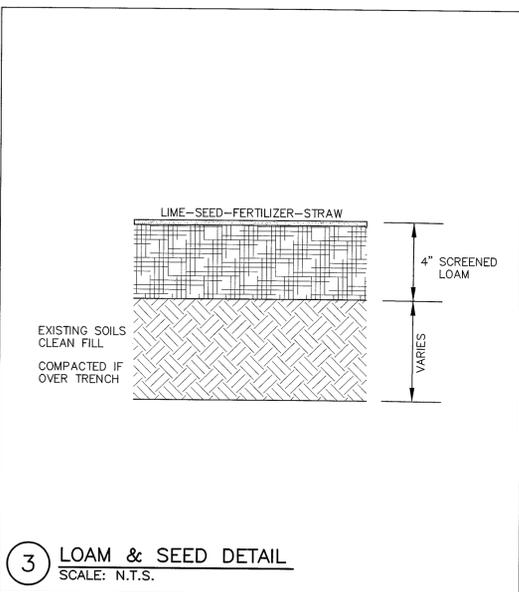
6 TYPICAL PRECAST CONCRETE 48\"/>



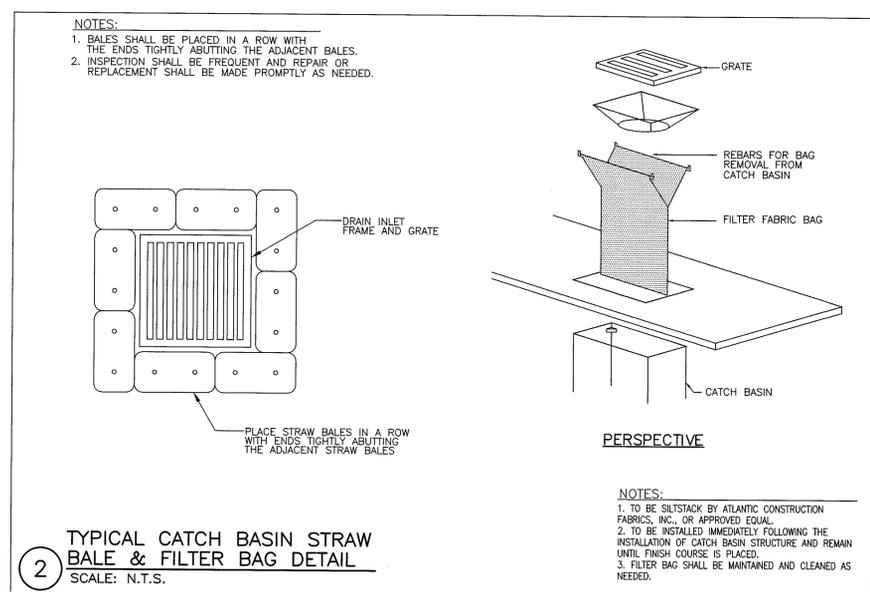
5 PAVEMENT JOINTING DETAIL  
SCALE: N.T.S.



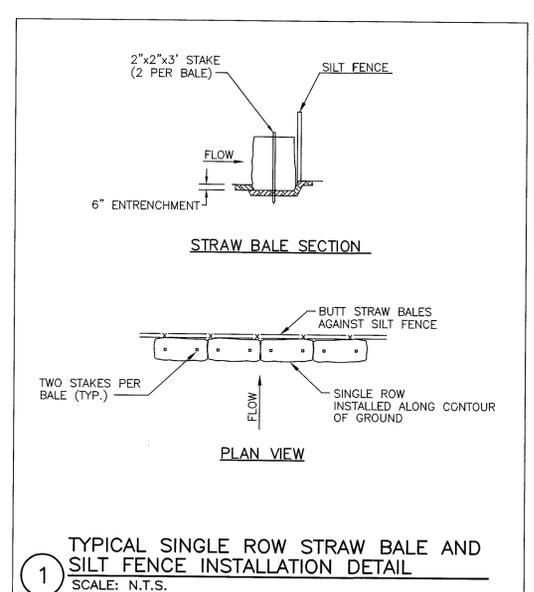
4 UNENCASED DUCT/CONDUIT DETAIL  
SCALE: N.T.S.



3 LOAM & SEED DETAIL  
SCALE: N.T.S.



2 TYPICAL CATCH BASIN STRAW BALE & FILTER BAG DETAIL  
SCALE: N.T.S.



1 TYPICAL SINGLE ROW STRAW BALE AND SILT FENCE INSTALLATION DETAIL  
SCALE: N.T.S.



Andrews Survey & Engineering, Inc.  
Land Surveying - Civil Engineering - Site Planning

P.O. Box 312, 104 Mendon Street  
Uxbridge, Massachusetts 01569-0312  
P: 508-278-3897 F: 508-278-2289

This drawing and the design are property of Andrews Survey & Engineering, Inc. and shall not be altered or reused in whole or part without the express written permission of Andrews Survey & Engineering, Inc.  
Copyright ©2014

APPROVAL UNDER SITE PLAN REVIEW:  
SHERBORN PLANNING BOARD

BEING A MAJORITY DATE:

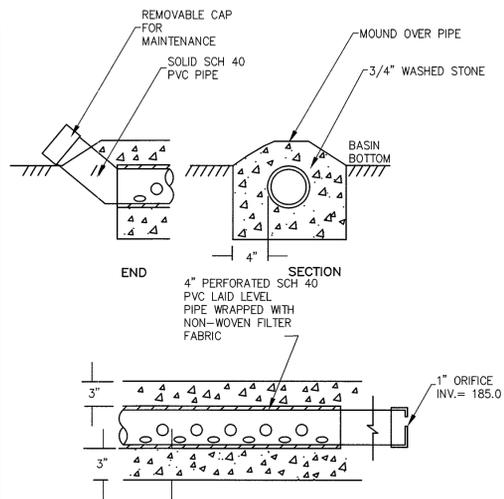
PROJECT: ABBEY ROAD ABBEY SITE DEVELOPMENT  
2 NORTH MAIN STREET SHERBORN, MA 01770  
APPLICANT: FENIX PARTNERS ABBEY  
177 LAKE STREET SHERBORN, MA 01770

REVISIONS		
NO.	DATE	DESCRIPTION

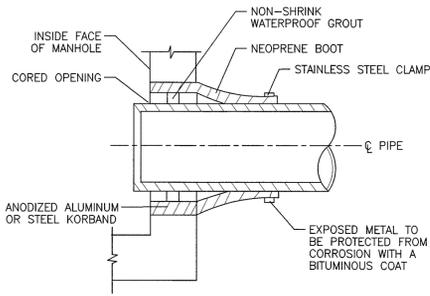
CAD FILE	...\\dwg\2013-047_SP.dwg
DRAWN BY	TRB, PBH
CHECKED BY	PBH, BJA
DATE	JUNE 9, 2015
PROJECT NO.	2013-047

SHEET TITLE  
**CONSTRUCTION DETAILS**  
SHEET 1 OF 4

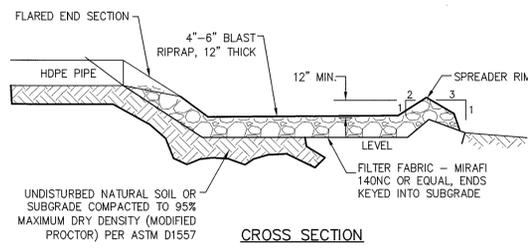
DRAWING NO. **C-8.1**  
PLAN NO. L-4554



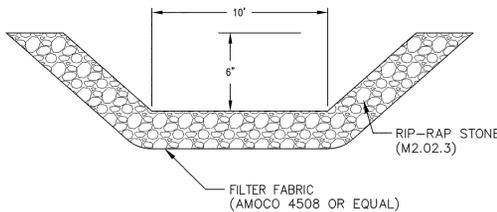
**9 WATER QUALITY DRAWDOWN DEVICE**  
SCALE: N.T.S.



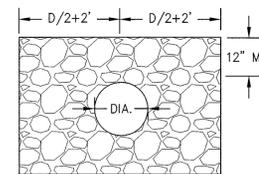
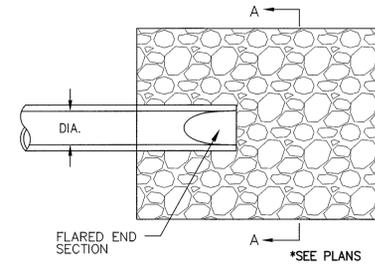
**8 SEWER PIPE CONNECTION**  
SCALE: N.T.S.



**7 LEVEL SPREADER**  
SCALE: N.T.S.



**6 STONE RIP-RAP EMERGENCY SPILLWAY**  
SCALE: N.T.S.

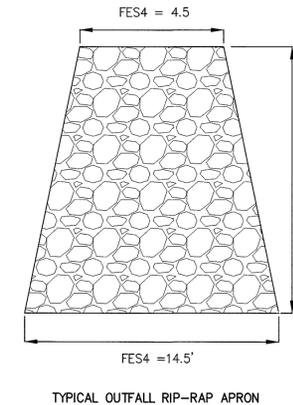


**SECTION A-A**  
NOT TO SCALE

**5 STONE RIP-RAP FOR PIPE ENDS**  
SCALE: N.T.S.

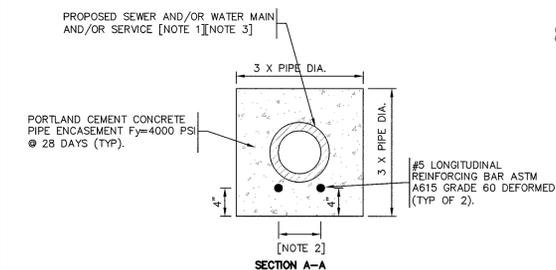
**NOTES:**

1. MINIMUM STONE DIAMETER: 6"
2. MINIMUM WEIGHT OF STONE: 50 LBS.
3. MAXIMUM WEIGHT OF STONE: 125 LBS.
4. PLACE ALL RIP-RAP OVER FILTER FABRIC, AMOCO 4508 OR APPROVED EQUAL.

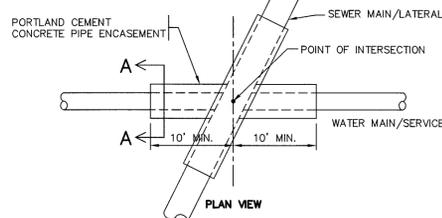


**TYPICAL OUTFALL RIP-RAP APRON**

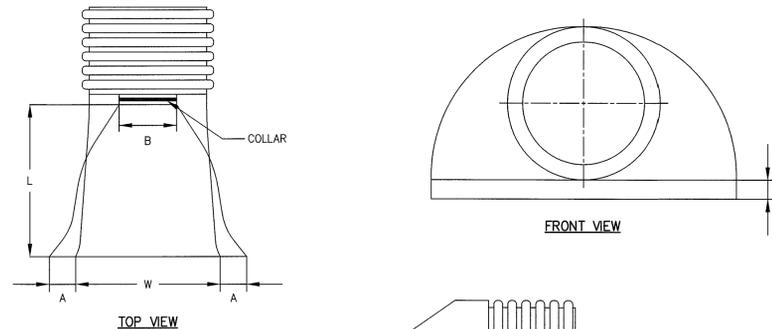
- NOTES:**
- [1] CONCRETE PIPE ENCASUREMENT TO EXTEND 10 FT ALONG SEWER LINE AND WATER LINE FROM POINT OF INTERSECTION.
  - [2] DISTANCE EQUAL TO PIPE DIAMETER.
  - [3] CONCRETE PIPE ENCASUREMENT REQUIRED WHENEVER PROPOSED SEWER MAIN/LATERAL IS WITHIN 10' OF PROPOSED WATER MAIN/SERVICE.



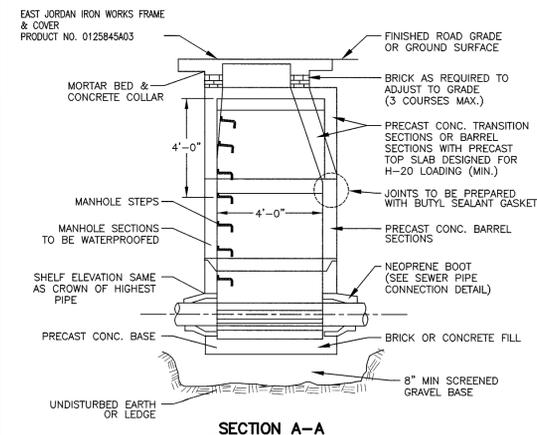
**4 PIPE ENCASUREMENT**  
SCALE: N.T.S.



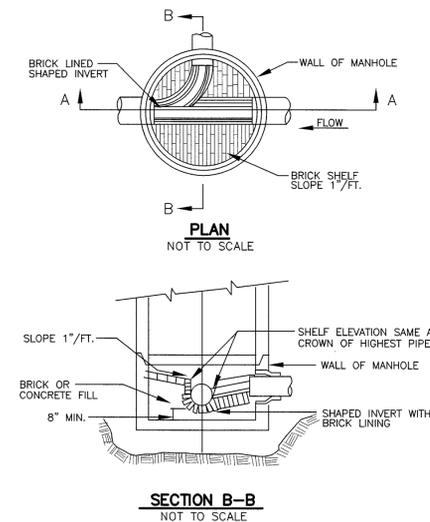
	PIPE DIAMETER (INCHES)					
DIAMETER (INCHES)	12	15	18	24	30	36
A (INCHES)	6.5	6.5	7.5	7.5	7.5	7.5
B (MAX) (INCHES)	10.0	10.0	15.0	18.0	22.0	25.0
H (INCHES)	6.5	6.5	6.5	6.5	8.6	8.6
L (INCHES)	25.0	25.0	32.0	36.0	58.0	58.0
W (INCHES)	29.0	29.0	35.0	45.0	63.0	63.0



**3 CORRUGATED POLYETHYLENE FLARED-END SECTION (FES)**  
SCALE: N.T.S.



**2 TYPICAL PRECAST CONCRETE 48" DIAMETER SEWER MANHOLE (SMH)**  
SCALE: N.T.S.



**SECTION B-B**  
NOT TO SCALE



**1 STORMWATER BASIN CROSS SECTION**  
SCALE: N.T.S.

**NOTE:**  
STORMWATER BASIN SHALL NOT BE USED AS TEMPORARY SEDIMENT BASINS DURING CONSTRUCTION.



**Andrews Survey & Engineering, Inc.**  
Land Surveying - Civil Engineering - Site Planning

P.O. Box 312, 104 Mendon Street  
Uxbridge, Massachusetts 01569-0312  
P: 508-278-3897 F: 508-278-2289

This drawing and the design are property of Andrews Survey & Engineering, Inc. and shall not be altered or reused in whole or part without the express written permission of Andrews Survey & Engineering, Inc. Copyright ©2014

APPROVAL UNDER SITE PLAN REVIEW.  
SHERBORN PLANNING BOARD

BEING A MAJORITY DATE:

**PROJECT:**  
ABBEY ROAD  
PROPOSED SITE DEVELOPMENT  
2 NORTH MAIN STREET  
SHERBORN, MA 01770

**APPLICANT:**  
FENIX PARTNERS ABBEY  
177 LAKE STREET  
SHERBORN, MA 01770

**REVISIONS**

NO.	DATE	DESCRIPTION

CAD FILE: ...\_dwg\2013-047\_SP.dwg

DRAWN BY: TRB, PBH

CHECKED BY: PBH, BJA

DATE: JUNE 9, 2015

PROJECT NO: 2013-047

**SHEET TITLE**

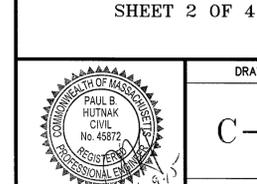
**CONSTRUCTION DETAILS**

**SHEET 2 OF 4**

**DRAWING NO.**

**C-8.2**

**PLAN NO. L-4554**





Andrews Survey & Engineering, Inc.  
Land Surveying - Civil Engineering - Site Planning

P.O. Box 312, 104 Mendon Street  
Uxbridge, Massachusetts 01569-0312  
P: 508-278-3897 F: 508-278-2289

This drawing and the design are property of Andrews Survey & Engineering, Inc. and shall not be altered or reused in whole or part without the express written permission of Andrews Survey & Engineering, Inc. Copyright ©2014

APPROVAL UNDER SITE PLAN REVIEW.  
SHERBORN PLANNING BOARD.

BEING A MAJORITY DATE:

PROJECT:  
ABBAY ROAD  
PROPOSED SITE DEVELOPMENT  
2 NORTH MAIN STREET  
SHERBORN, MA 01770

APPLICANT:  
FENIX PARTNERS ABBEY  
177 LAKE STREET  
SHERBORN, MA 01770

REVISIONS

NO.	DATE	DESCRIPTION

CAD FILE: ...\\dwg\2013-047\_SP.dwg  
DRAWN BY: TRB, PBH  
CHECKED BY: PBH, BJA  
DATE: JUNE 9, 2015  
PROJECT NO.: 2013-047

SHEET TITLE

CONSTRUCTION  
DETAILS

SHEET 3 OF 4



DRAWING NO.

C-8.3

PLAN NO. L-4554

CULTEC RECHARGER 280 SPECIFICATIONS

GENERAL  
CULTEC RECHARGER 280HD CHAMBERS ARE DESIGNED FOR UNDERGROUND STORMWATER MANAGEMENT. THE CHAMBERS MAY BE USED FOR RETENTION, RECHARGING, DETENTION OR CONTROLLING THE FLOW OF ON-SITE STORMWATER RUNOFF.

CHAMBER PARAMETERS  
1. THE CHAMBERS WILL BE MANUFACTURED BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)

- 2. THE CHAMBER WILL BE VACUUM THERMOFORMED OF BLACK HIGH MOLECULAR WEIGHT HIGH DENSITY POLYETHYLENE (HDPE).
- 3. THE CHAMBER WILL BE ARCHED IN SHAPE.
- 4. THE CHAMBER WILL BE OPEN BOTTOMED.
- 5. THE CHAMBER WILL BE JOINED USING AN INTERLOCKING OVERLAPPING RIB METHOD. CONNECTIONS MUST BE FULLY SHOULDERED OVERLAPPING RIBS, HAVING NO SEPARATE COUPLERS OR SEPARATE END WALLS.
- 6. THE NOMINAL CHAMBER DIMENSIONS OF THE CULTEC RECHARGER 280HD SHALL BE 26.5 INCHES (673 MM) TALL, 47 INCHES (1194 MM) WIDE AND 9 FEET 2.4 INCHES (2800 MM) LONG. THE INSTALLED LENGTH OF A JOINED RECHARGER 280HD SHALL BE 7 FEET (2.13 M).
- 7. MAXIMUM INLET OPENING ON THE CHAMBER ENDWALL IS 18 INCHES (457 MM).
- 8. THE CHAMBER WILL HAVE TWO SIDE PORTALS TO ACCEPT CULTEC HVLV FC-24 FEED CONNECTORS TO CREATE AN INTERNAL MANIFOLD. THE NOMINAL DIMENSIONS OF EACH SIDE PORTAL WILL BE 12 INCHES (305 MM) HIGH BY 12 INCHES (305 MM) WIDE. MAXIMUM ALLOWABLE PIPE SIZE IN THE SIDE PORTAL IS 10 INCHES (254 MM).
- 9. THE NOMINAL CHAMBER DIMENSIONS OF THE CULTEC HVLV FC-24 FEED CONNECTOR SHALL BE 12 INCHES (305 MM) TALL, 18 INCHES (457 MM) WIDE AND 24.2 INCHES (614 MM) LONG.
- 10. THE NOMINAL STORAGE VOLUME OF THE RECHARGER 280HD CHAMBER WILL BE 6.079 FT<sup>3</sup> (0.172 M<sup>3</sup>) WITHOUT STONE. THE NOMINAL STORAGE VOLUME OF A JOINED RECHARGER 280HD SHALL BE 42.503 FT<sup>3</sup> (1.205 M<sup>3</sup>) UNIT, WITHOUT STONE.
- 11. THE NOMINAL STORAGE VOLUME OF THE HVLV FC-24 FEED CONNECTOR WILL BE 0.913 FT<sup>3</sup> (0.026 M<sup>3</sup>) WITHOUT STONE.
- 12. THE RECHARGER 280HD CHAMBER WILL HAVE EIGHTY-TWO DISCHARGE HOLES BORED INTO THE SIDEWALLS OF THE UNIT'S CORE TO PROMOTE LATERAL CONVEYANCE OF WATER.
- 13. THE RECHARGER 280HD CHAMBER SHALL HAVE 15 CORRUGATIONS.
- 14. THE ENDWALL OF THE CHAMBER, WHEN PRESENT, WILL BE AN INTERNAL PART OF THE CONTINUOUSLY FORMED UNIT. SEPARATE END WALLS CANNOT BE USED WITH THE UNIT.
- 15. THE RECHARGER 280HD STAND ALONE UNIT MUST BE FORMED AS A WHOLE CHAMBER HAVING TWO FULLY FORMED INTEGRAL ENDWALLS AND HAVING NO SEPARATE END PLATES OR SEPARATE END WALLS.
- 16. THE RECHARGER 280HD STARTER UNIT MUST BE FORMED AS A WHOLE CHAMBER HAVING ONE FULLY FORMED INTEGRAL ENDWALL AND ONE PARTIALLY FORMED INTEGRAL ENDWALL WITH A LOWER TRANSFER OPENING OF 9 INCHES (229 MM) HIGH X 30 INCHES (762 MM) WIDE.
- 17. THE RECHARGER 280HD INTERMEDIATE UNIT MUST BE FORMED AS A WHOLE CHAMBER HAVING ONE FULLY OPEN ENDWALL AND ONE PARTIALLY FORMED INTEGRAL ENDWALL WITH A LOWER TRANSFER OPENING OF 9 INCHES (229 MM) HIGH X 30 INCHES (762 MM) WIDE.
- 18. THE RECHARGER 280HD END UNIT MUST BE FORMED AS A WHOLE CHAMBER HAVING ONE FULLY FORMED INTEGRAL ENDWALL AND ONE PARTIALLY FORMED INTEGRAL ENDWALL WITH A LOWER TRANSFER OPENING OF 9 INCHES (229 MM) HIGH X 30 INCHES (762 MM) WIDE.
- 19. THE HVLV FC-24 FEED CONNECTOR MUST BE FORMED AS A WHOLE CHAMBER HAVING TWO OPEN END WALLS AND HAVING NO SEPARATE END PLATES OR SEPARATE END WALLS. THE UNIT WILL FIT INTO THE SIDE PORTALS OF THE RECHARGER 280HD AND ACT AS CROSS FEED CONNECTIONS.
- 20. CHAMBERS MUST HAVE HORIZONTAL STEPPING FLEX REDUCTION STEPS BETWEEN THE RIBS.
- 21. THE CHAMBER WILL BE DESIGNED TO WITHSTAND ASHTO H-25 LOAD RATING WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS.
- 22. HEAVY DUTY UNITS ARE DESIGNATED BY A COLORED STRIPE FORMED INTO THE PART ALONG THE LENGTH OF THE CHAMBER.
- 23. THE CHAMBER WILL HAVE A RAISED INTEGRAL CAP AT THE TOP OF THE ARCH IN THE CENTER OF EACH UNIT TO BE USED AS AN OPTIONAL INSPECTION PORT OR CLEAN-OUT.
- 24. THE UNITS MAY BE TRIMMED TO CUSTOM LENGTHS BY CUTTING BACK TO ANY CORRUGATION.
- 25. THE CHAMBER SHALL BE MANUFACTURED IN ANY IN AN ISO 9001:2008 CERTIFIED FACILITY.

CULTEC HVLV FC-24 FEED CONNECTOR PRODUCT SPECIFICATIONS

GENERAL  
CULTEC HVLV FC-24 FEED CONNECTORS ARE DESIGNED TO CREATE AN INTERNAL MANIFOLD FOR CULTEC RECHARGER MODEL 280HD, 280HD AND 280HD STORMWATER CHAMBERS.

CHAMBER PARAMETERS  
1. THE CHAMBER WILL BE MANUFACTURED BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)

- 2. THE CHAMBER WILL BE VACUUM THERMOFORMED OF BLACK HIGH MOLECULAR WEIGHT HIGH DENSITY POLYETHYLENE (HDPE).
- 3. THE CHAMBER WILL BE ARCHED IN SHAPE.
- 4. THE CHAMBER WILL BE OPEN BOTTOMED.
- 5. THE NOMINAL CHAMBER DIMENSIONS OF THE CULTEC HVLV FC-24 FEED CONNECTOR SHALL BE 12 INCHES (305 MM) TALL, 18 INCHES (457 MM) WIDE AND 24.2 INCHES (614 MM) LONG.
- 6. THE NOMINAL STORAGE VOLUME OF THE HVLV FC-24 FEED CONNECTOR WILL BE 0.913 FT<sup>3</sup> (0.026 M<sup>3</sup>) WITHOUT STONE.
- 7. THE HVLV FC-24 FEED CONNECTOR CHAMBER SHALL HAVE 2 CORRUGATIONS.
- 8. THE HVLV FC-24 FEED CONNECTOR MUST BE FORMED AS A WHOLE CHAMBER HAVING TWO OPEN END WALLS AND HAVING NO SEPARATE END PLATES OR SEPARATE END WALLS. THE UNIT WILL FIT INTO THE SIDE PORTALS OF THE CULTEC RECHARGER STORMWATER CHAMBER AND ACT AS CROSS FEED CONNECTIONS CREATING AN INTERNAL MANIFOLD.
- 9. THE CHAMBER WILL BE DESIGNED TO WITHSTAND ASHTO H-25 LOAD RATING WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS.
- 10. THE CHAMBER SHALL BE MANUFACTURED IN AN ISO 9001:2008 CERTIFIED FACILITY.

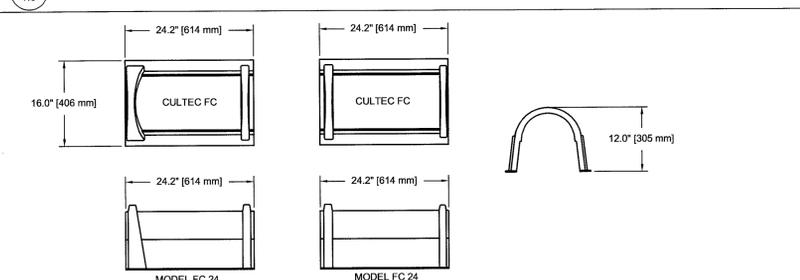
CULTEC NO. 20L™ POLYETHYLENE LINER

GENERAL  
CULTEC NO. 20L™ POLYETHYLENE LINER IS DESIGNED AS AN IMPROVED UNDERLAYMENT TO PREVENT SEEPAGE CAUSED BY WATER MOVEMENT WITHIN THE CULTEC CHAMBERS AND FEED CONNECTORS ALONG THE CULTEC MANIFOLD FEATURE.

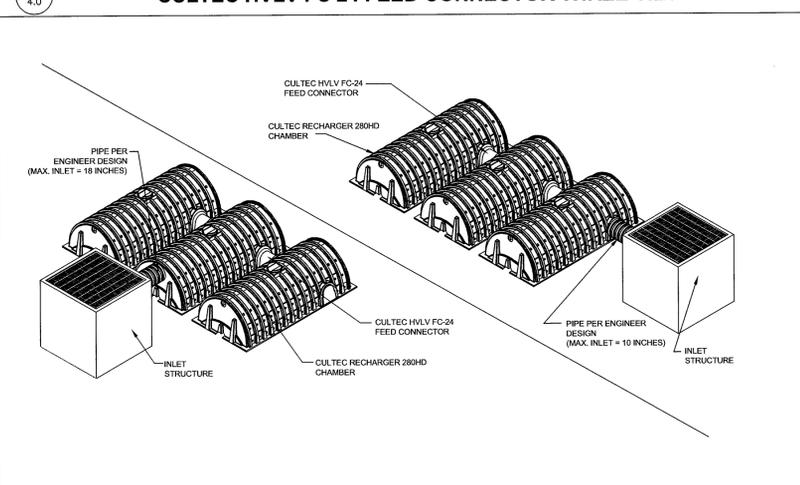
LINER PARAMETERS  
1. THE LINER WILL BE PROVIDED BY CULTEC, INC. OF BROOKFIELD, CT. (203-775-4416 OR 1-800-428-5832)

- 2. THE LINER WILL BE BLACK IN COLOR.
- 3. THE LINER WILL HAVE A MINIMUM THICKNESS OF 24 MILS (0.61 MM).
- 4. THE LINER WILL HAVE A TENSILE STRENGTH OF 13.5 MPa (1940 PSI) (40 C).
- 5. THE LINER WILL HAVE A TENSILE STRENGTH BREAK (Y) OF 2.0 CM OF 7.0 LBS (3.18 KG) PER ASTM D2835 TESTING METHOD.
- 6. THE LINER WILL HAVE AN ELONGATION AT BREAK OF 80% PER ASTM D2835 TESTING METHOD.
- 7. THE LINER WILL HAVE A TEAR RESISTANCE OF 11.0 LB (4.9 N) PER ASTM D2835 TESTING METHOD.
- 8. THE LINER WILL HAVE A PUNCTURE RESISTANCE OF 30.0 LB (13.6 N) PER ASTM D2835 TESTING METHOD.
- 9. THE LINER WILL HAVE A PUNCTURE RESISTANCE OF 30.0 LB (13.6 N) PER ASTM D2835 TESTING METHOD.
- 10. THE LINER WILL HAVE A VOLATILE LOSS OF <math>0.1\%</math> PER ASTM D2835 TESTING METHOD.
- 11. THE LINER WILL HAVE A DIMENSIONAL STABILITY OF <math>0.1\%</math> PER ASTM D2835 TESTING METHOD.
- 12. THE LINER WILL HAVE A MAXIMUM USE TEMPERATURE OF 190°F (85°C).
- 13. THE LINER WILL HAVE A MINIMUM USE TEMPERATURE OF -100°F (-73°C).
- 14. THE LINER WILL HAVE A PERMEATION RATE OF 0.001 GMS PER 100 CM<sup>2</sup> PER 24 HRS PER ASTM D2835 TESTING METHOD.
- 15. THE LINER WILL CONSIST OF A SLIDING LINER POLYETHYLENE.
- 16. THE LINER WILL NOT CONTAIN PLASTICIZERS.

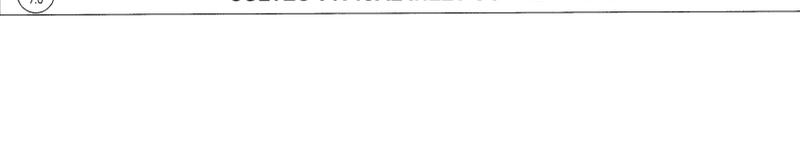
GENERAL NOTES



CULTEC HVLV FC 24 FEED CONNECTOR THREE VIEW



CULTEC TYPICAL INLET CONNECTIONS



R-280 7.0

R-280 8.0

R-280 9.0

R-280 1.0

R-280 2.0

R-280 3.0

R-280 4.0

R-280 5.0

R-280 6.0

R-280 7.0

R-280 8.0

R-280 9.0

R-280 1.0

R-280 2.0

R-280 3.0

R-280 4.0

R-280 5.0

R-280 6.0

R-280 7.0

R-280 8.0

R-280 9.0

R-280 1.0

R-280 2.0

R-280 3.0

R-280 4.0

R-280 5.0

R-280 6.0

R-280 7.0

R-280 8.0

R-280 9.0

R-280 1.0

R-280 2.0

R-280 3.0

R-280 4.0

R-280 5.0

R-280 6.0

R-280 7.0

R-280 8.0

R-280 9.0

R-280 1.0

R-280 2.0

R-280 3.0

R-280 4.0

R-280 5.0

R-280 6.0

R-280 7.0

R-280 8.0

R-280 9.0

R-280 1.0

R-280 2.0

R-280 3.0

R-280 4.0

R-280 5.0

R-280 6.0

R-280 7.0

R-280 8.0

R-280 9.0

R-280 1.0

R-280 2.0

R-280 3.0

R-280 4.0

R-280 5.0

R-280 6.0

R-280 7.0

R-280 8.0

R-280 9.0

R-280 1.0

R-280 2.0

R-280 3.0

R-280 4.0

R-280 5.0

R-280 6.0

R-280 7.0

R-280 8.0

R-280 9.0

R-280 1.0

R-280 2.0

R-280 3.0

R-280 4.0

R-280 5.0

R-280 6.0

R-280 7.0

R-280 8.0

R-280 9.0

R-280 1.0

R-280 2.0

R-280 3.0

R-280 4.0

R-280 5.0

R-280 6.0

R-280 7.0

R-280 8.0

R-280 9.0

R-280 1.0

R-280 2.0

R-280 3.0

R-280 4.0

R-280 5.0

R-280 6.0

R-280 7.0

R-280 8.0

R-280 9.0

R-280 1.0

R-280 2.0

R-280 3.0

R-280 4.0

R-280 5.0

R-280 6.0

R-280 7.0

R-280 8.0

R-280 9.0

R-280 1.0

R-280 2.0

R-280 3.0

R-280 4.0

R-280 5.0

R-280 6.0

R-280 7.0

R-280 8.0

R-280 9.0

R-280 1.0

R-280 2.0

R-280 3.0

R-280 4.0

R-280 5.0

R-280 6.0

R-280 7.0

R-280 8.0

R-280 9.0

R-280 1.0

R-280 2.0

R-280 3.0

R-280 4.0

R-280 5.0

R-280 6.0

R-280 7.0

R-280 8.0

R-280 9.0

R-280 1.0

R-280 2.0

R-280 3.0

R-280 4.0

R-280 5.0

R-280 6.0

R-280 7.0

R-280 8.0

R-280 9.0

R-280 1.0

R-280 2.0

R-280 3.0

R-280 4.0

R-280 5.0

R-280 6.0

R-280 7.0

R-280 8.0

R-280 9.0

R-280 1.0

R-280 2.0

R-280 3.0

R-280 4.0

R-280 5.0

R-280 6.0

R-280 7.0

R-280 8.0

R-280 9.0

R-280 1.0

R-280 2.0

R-280 3.0

R-280 4.0

R-280 5.0

R-280 6.0

R-280 7.0

R-280 8.0

R-280 9.0

R-280 1.0

R-280 2.0

R-280 3.0

R-280 4.0

R-280 5.0

R-280 6.0

R-280 7.0

R-280 8.0

R-280 9.0

R-280 1.0

R-280 2.0

R-280 3.0

R-280 4.0

R-280 5.0

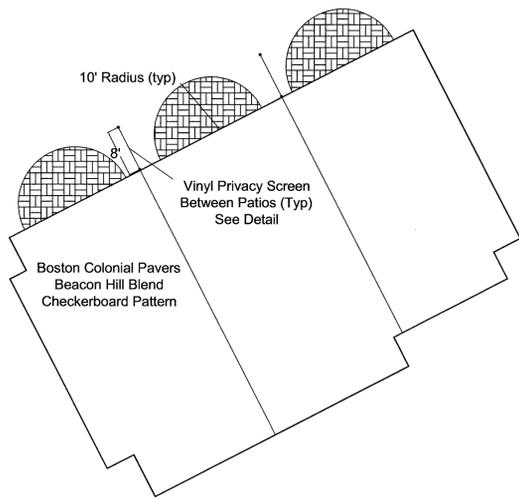
R-280 6.0

R-280 7.0

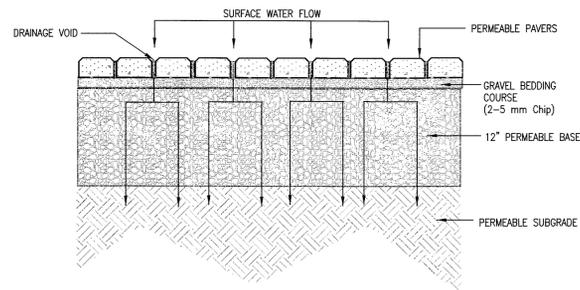
R-280 8.0

R-280 9.0

R-280 1.0

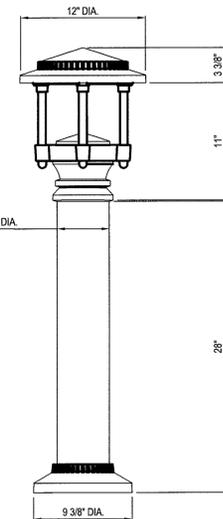


4 PATIO LAYOUT DETAIL  
SCALE: N.T.S.



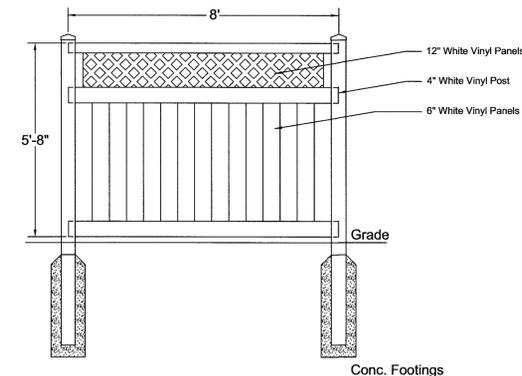
5 PERMEABLE PAVER DETAIL  
SCALE: N.T.S.

KIM LIGHTING

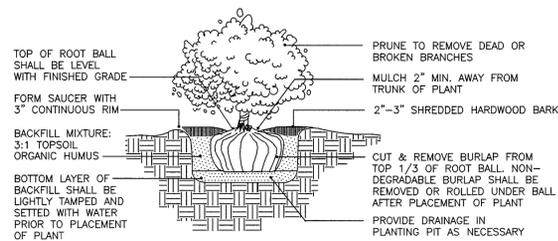


NOTES:  
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS  
2. BOUNCE BOLLARD SHALL HAVE A 60 WATT LED BULB. STYLE TO BE DETERMINED BY OWNER.

6 SITE AND ROADWAY LIGHTING "BOUNCE BOLLARD" DETAIL  
SCALE: N.T.S.

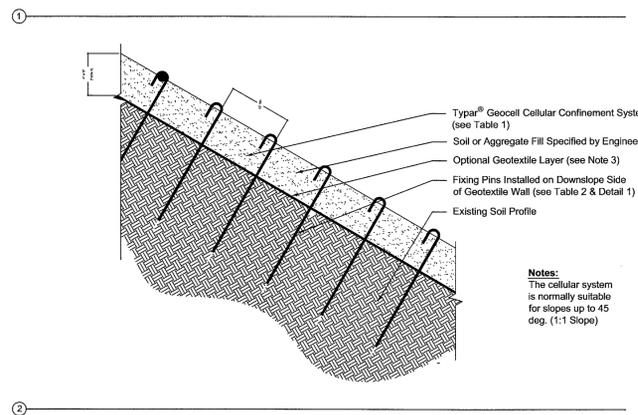
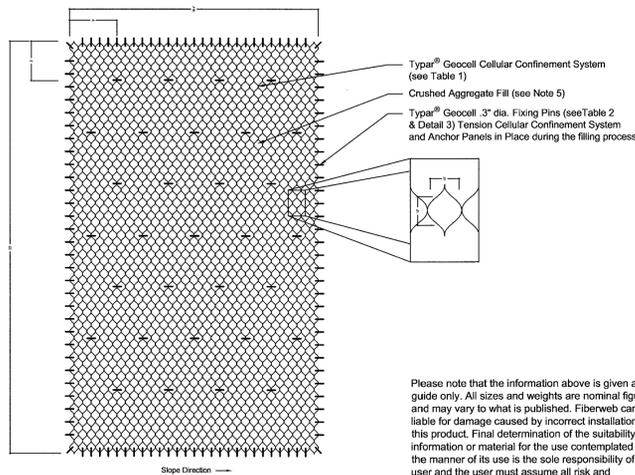


7 PRIVACY FENCING  
SCALE: N.T.S.



B&B SHRUB DETAIL

4 SHRUB DETAIL  
SCALE: N.T.S.

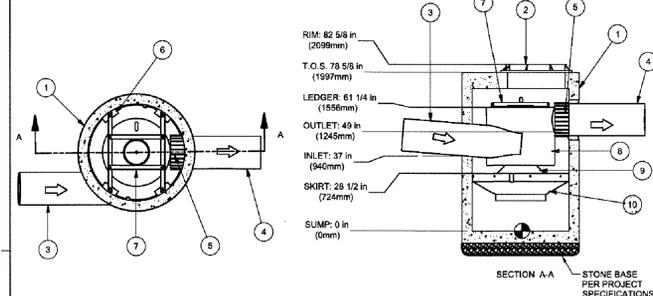


2 TYPAR® GEOCELL GS 250/100 & 250/150 FOR SLOPE STABILIZATION  
SCALE: N.T.S.

Fiberweb Geosynthetics  
1971 County Road B West, Suite 102, Roseville, MN 55113  
Toll-Free: 1-877-642-9929  
Tel: 1-651-330-2290  
Fax: 1-651-797-2219  
e-mail: geosyn@fiberweb.com  
website: www.fiberweb.com

NOTES:  
THE GEOCELL SYSTEM IS TO BE DESIGNED, INSTALLED AND MAINTAINED PER MANUFACTURERS SPECIFICATIONS.

NOT FOR CONSTRUCTION - CONTACT HYDRO INTERNATIONAL FOR SITE SPECIFIC DRAWINGS

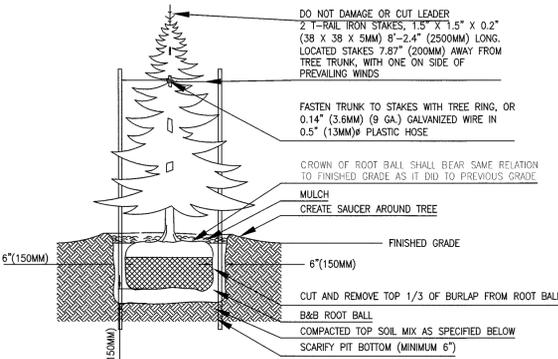


ITEM	DESCRIPTION	SIZE
1	PRECAST MAN-HOLE (BY HYDRO VIA PRECASTER)	48 in
2	FRAME AND COVER	30 in
3	INLET PIPE (BY OTHERS)*	12 in
4	OUTLET PIPE (BY OTHERS)*	12 in
5	PIPE COUPLING (BY OTHERS)	12 in
6	LEDGER ANGLE	
7	SUPPORT FRAME	
8	DIP PLATE	
9	CENTER SHAFT AND CONE	
10	BENCHING SKIRT	

CAPACITIES:  
1. Peak treatment flow: 3.0 cfs (86 l/s)  
2. Sediment storage capacity: 0.70 Cu. yd. (0.54 cu. m.)  
3. Oil storage capacity: 70 Gal. (268 liters)

ADDITIONAL DESIGN INFORMATION:  
1. The outlet pipe stub (not shown) is a roto-molded product with an I.D. of 12 in. that cannot be modified. To avoid the use of a reducer or expander on the outlet a 12 in. outlet pipe should be used if possible. The orientation of the outlet pipe can be adjusted to suit site conditions.  
2. Maximum pipe size is 12 in. The inlet pipe invert should be placed one inlet pipe diameter below the outlet pipe invert. The I.D. of the inlet pipe should be placed tangent to the I.D. of the manhole. The orientation of the inlet pipe can be adjusted to suit site conditions. Headloss at 3.0 cfs with a 12 in. inlet is (203 mm). Headloss will increase with smaller inlet pipes.  
3. Sediment shall be stored in a zone that is isolated from the main flow path and protected from re-entrainment by the benching skirt.  
4. Dimensions are general and intended for guidance only.

1 OIL WATER SEPARATOR (DOWNSTREAM DEFENDER)  
SCALE: N.T.S.



3 CONIFEROUS TREE DETAIL  
SCALE: N.T.S.

- SPECIFICATIONS:  
1. DO NOT DAMAGE MAIN ROOTS OR DESTROY ROOT BALL WHEN INSTALLING TREE STAKE.  
2. WATER THOROUGHLY AFTER INSTALLATION.  
3. REMOVE TREE RINGS AND STAKES TWO YEARS AFTER INSTALLATIONS  
4. PROVIDED DRAINAGE FOR PLANTING PIT IN IMPERMEABLE SOIL.  
5. TOPSOIL MIX, SEE SPEC.

**ASE**  
Andrews Survey & Engineering, Inc.  
Land Surveying - Civil Engineering - Site Planning  
P.O. Box 312, 104 Mendon Street  
Uxbridge, Massachusetts 01569-0312  
P: 508-278-3897 F: 508-278-2289

This drawing and the design are property of Andrews Survey & Engineering, Inc. and shall not be altered or reused in whole or part without the express written permission of Andrews Survey & Engineering, Inc. Copyright ©2014

APPROVAL UNDER SITE PLAN REVIEW.  
SHERBORN PLANNING BOARD

BEING A MAJORITY DATE:

PROJECT:  
ABBAY ROAD  
ABBAY SITE DEVELOPMENT  
2 NORTH MAIN STREET  
SHERBORN, MA 01770

APPLICANT:  
FENIX PARTNERS ABBAY  
177 LAKE STREET  
SHERBORN, MA 01770

REVISIONS

NO.	DATE	DESCRIPTION

CAD FILE: ...\\dwg\2013-047\_SP.dwg  
DRAWN BY: TRB, PBH  
CHECKED BY: PBH, BJA  
DATE: JUNE 9, 2015  
PROJECT NO.: 2013-047

SHEET TITLE

CONSTRUCTION DETAILS

SHEET 4 OF 4

DRAWING NO.  
C-8.4  
PLAN NO. L-4554