SITE DEVELOPMENT PLANS

FOR:

CAPITAL GROUP PROPERTIES

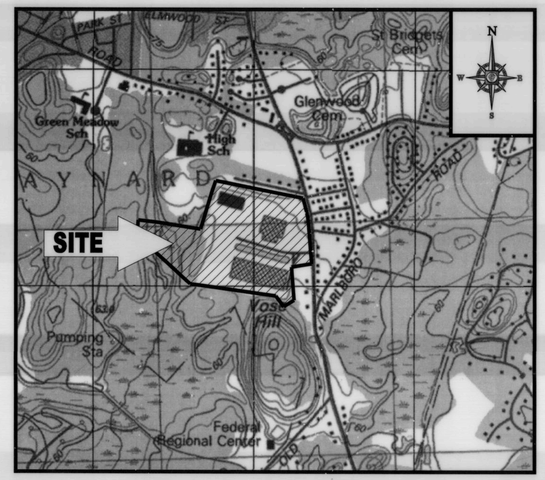
PROPOSED

MAYNARD CROSSING

LOCATION OF SITE:

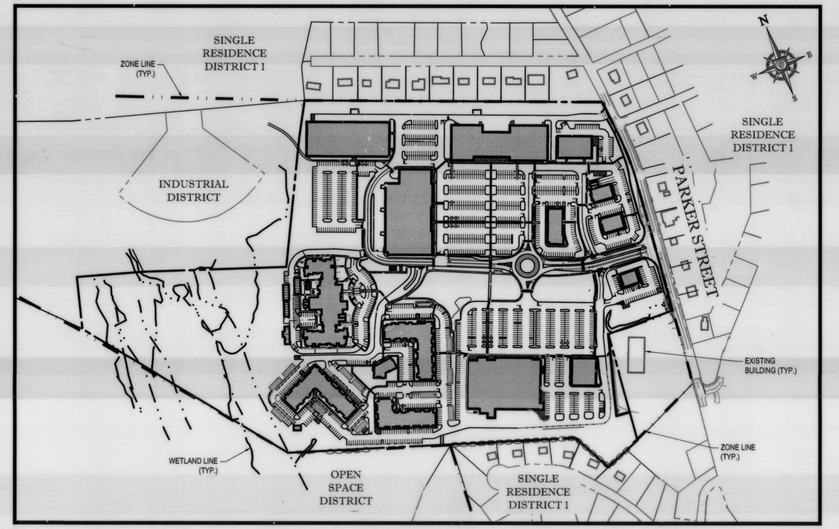
129 PARKER STREET (ROUTE 27), TOWN OF MAYNARD
MIDDLESEX COUNTY, MASSACHUSETTS

MAP #25, LOTS #152 & 152-1
PARCEL ID# 025.0-0000-0152.0
PARCEL ID# 025.0-0000-0152-1.0



LOCATION MAP

SCALE: 1"=1000'
PLAN REFERENCE: MAYNARD MASSACHUSETTS USGS QUADRANGLE



AREA PLAN

SCALE: 1"=300'

SHEET TITLE	*SHEET NUMBER*
COVER SHEET	1 OF 35
GENERAL NOTES SHEET	2 OF 35
DEMOLITION PLAN "A"	3 OF 35
DEMOLITION PLAN "B"	4 OF 35
DEMOL'TION PLAN "C"	5 OF 35
DEMOLITION PLAN "D"	6 OF 35
OVERALL SITE PLAN	7 OF 35
SITE PLAN "A"	8 OF 35
SITE PLAN "B"	9 OF 35
SITE PLAN "C"	10 OF 35
SITE PLAN "D"	11 OF 35
GRADING & DRAINAGE PLAN "A"	12 OF 35
GRADING & DRAINAGE PLAN "B"	13 OF 35
GRADING & DRAINAGE PLAN "C"	14 OF 35
GRADING & DRAINAGE PLAN "D"	15 OF 35
DRAINAGE STRUCTURE TABLE	16 OF 35
UTILITY PLAN "A"	17 OF 35
UTILITY PLAN "B"	18 OF 35
UTILITY PLAN "C"	19 OF 35
UTILITY PLAN "D"	20 OF 35
SOIL EROSION & SEDIMENT CONTROL PLAN "A"	21 OF 35
SOIL EROSION & SEDIMENT CONTROL PLAN "B"	22 OF 35
SOIL EROSION & SEDIMENT CONTROL PLAN "C"	23 OF 35
SOIL EROSION & SEDIMENT CONTROL PLAN "D"	24 OF 35
SOIL EROSION CONTROL NOTES & DETAILS SHEET	25 OF 35
CONSTRUCTION DETAIL SHEETS	27-35 OF 35
ABUTTERS PLAN	A-1 OF 1
FIRE TRUCK EXHIBIT PLAN 'A'	F-1 OF 3
FIRE TRUCK EXHIBIT PLAN 'B'	F-2 OF 3
FIRE TRUCK EXHIBIT PLAN 'C'	F-3 OF 3
INTERNAL LANDSCAPE PLAN	IL-1 OF 1
LANDSCAPE PLANS (BY OTHERS)	L1.00-L1.15
LIGHTING PLANS (BY OTHERS)	3 SHEETS
PROPOSED SEWAGE PUMP STATION PLANS (BY OTHERS)	PS-1-PS-2
EXISTING CONDITIONS PLAN (BY OTHERS)	EC1.01-EC1.05

SHEET INDEX

PREPARED BY

BOHLER ENGINEERING

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE	DATE 9/26/17
SIGNATURE	DATE 9/26/17
SIGNATURE	DATE 9/27/17
SIGNATURE	DATE 9/27/17

BOHLER ENGINEERING

SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING • LANDSCAPE ARCHITECTURE
SUSTAINABLE DESIGN • TRANSPORTATION SERVICES
PERMITTING SERVICES • TECHNOLOGY SOLUTIONS

- UPSTATE NEW YORK
- LEHIGH VALLEY, PA
- WESTERN MASS
- BOSTON, MA
- NEW YORK METRO
- NEW JERSEY
- PHILADELPHIA, PA
- RALEIGH, NC
- CHARLOTTE, NC
- ATLANTA, GA
- TAMPA, FL
- SOUTH FLORIDA
- DALLAS, TX
- REHOBOTH BEACH, DE
- BALTIMORE, MD
- WASHINGTON, DC/MD
- NORTHERN VIRGINIA
- CENTRAL VIRGINIA

THE INFORMATION CONTAINED IN THIS DRAWING COMPRISES CONFIDENTIAL AND PROPRIETARY INFORMATION FROM BOHLER ENGINEERING. ONLY APPROVED, SIGNED AND SEALED DRAWINGS SHALL BE UTILIZED FOR CONSTRUCTION PURPOSES. ANY UNAUTHORIZED USE OF THESE DRAWINGS SHALL BE AT THE SOLE RISK OF THE USER.

REVISIONS

REV	DATE	COMMENT	BY
1	03/21/17	REMOVE CARRIAGE BLDG. (SHEETS 8-12 ONLY)	CFD
2	06/02/17	REV. PER TOWN COMMENTS	CFD
3	06/15/17	DRAINAGE REVISIONS (SHEETS 13-16 ONLY)	GJZ
4	06/28/17	DRAINAGE REVISIONS (FULL SET)	AWP
5	07/26/17	REV. PER TOWN COMMENTS	AWP
6	08/10/17	PEER REVIEW COMMENTS	CFD
7	09/18/17	CONSTRUCTION DOCUMENTS	AWP
8			
9			
10			
11			
12			
13			
14			
15			

APPROVED FOR CONSTRUCTION

PROJECT No.:	W161189
DRAWN BY:	AWP/CFD
CHECKED BY:	NEM/JAK
DATE:	02/15/2017
SCALE:	AS NOTED
CAD I.D.:	W161189SS7

PROJECT:
SITE DEVELOPMENT PLANS
FOR
CAPITAL GROUP PROPERTIES
MAYNARD CROSSING
LOCATION OF SITE
MAP #25 & LOTS #152 & 152-1
129 PARKER STREET (ROUTE 27)
TOWN OF MAYNARD
MIDDLESEX COUNTY
MASSACHUSETTS

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REGISTERED PROFESSIONAL ENGINEER
MASSACHUSETTS LICENSE NO. 41530
CONNECTICUT LICENSE NO. 30177
RHODE ISLAND LICENSE NO. 9616
MAINE LICENSE NO. 12553

SHEET TITLE:
COVER SHEET

SHEET NUMBER:
1
OF 35

REV 7 - 09/18/2017

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GENERAL NOTES

CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH THE NOTES AND SPECIFICATIONS CONTAINED HEREIN. CONTRACTOR IS RESPONSIBLE TO ENSURE THAT ALL SUBCONTRACTORS FULLY AND COMPLETELY CONFORM TO AND COMPLY WITH THESE REQUIREMENTS.

1. THE FOLLOWING DOCUMENTS ARE INCORPORATED BY REFERENCE AS PART OF THIS SITE PLAN:
   - "EXISTING CONDITIONS PLAN", PREPARED BY WATERMAN DESIGN ASSOCIATES, INC., DATED 01/05/17.
   - "TRAFFIC IMPACT AND ACCESS STUDY." PREPARED BY GREEN INTERNATIONAL AFFILIATES, INC., DATED 01/2017.
   - MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION: "WPA FORM 4B: ORDER OF RESOURCE AREA DELINEATION," SIGNED 06/26/2014.
   - "PHASE I: ENVIRONMENTAL SITE ASSESSMENT," PREPARED BY STONEHILL ENVIRONMENTAL, INC., DATED 03/01/2011.
   - "PRELIMINARY GEOTECHNICAL STUDY LIQUEFACTION AND SEISMIC REVIEW" MEMORANDUM REPORT, PREPARED BY KMM GEOTECHNICAL CONSULTANTS, LLC, DATED 09/20/2014.
   - "GEOTECHNICAL ENGINEERING REPORT," PREPARED BY MCARDLE GANNON ASSOCIATES, INC., DATED 07/2009.
   - "PROPOSED SEWAGE PUMP STATION SITE PLAN", PREPARED BY ONSITE ENGINEERING, DATED 02/10/17.
   - "WETLAND REPLICATION PLAN", PREPARED BY GODDARD CONSULTING, LLC, DATED 4/11/17 AND REVISED 6/6/17
   - "BUFFER ZONE MITIGATION PLAN", PREPARED BY GODDARD CONSULTING, LLC, DATED 5/24/17
   - "NESTING HABITAT MANAGEMENT PLAN", PREPARED BY GODDARD CONSULTING, LLC, DATED 6/20/17

   PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR MUST VERIFY THAT HE/SHE HAS THE LATEST EDITION OF THE DOCUMENTS REFERENCED ABOVE. THIS IS CONTRACTOR'S RESPONSIBILITY.
2. ALL ACCESSIBLE (A/K/A ADA) PARKING SPACES MUST BE CONSTRUCTED TO MEET, AT A MINIMUM, THE MORE STRINGENT OF THE REQUIREMENTS OF THE "AMERICANS WITH DISABILITIES ACT" (ADA) CODE (42 U.S.C. § 12101 et seq. AND 42 U.S.C. § 4151 et seq.) OR THE REQUIREMENTS OF THE JURISDICTION WHERE THE PROJECT IS TO BE CONSTRUCTED, AND ANY AND ALL AMENDMENTS TO BOTH WHICH ARE IN EFFECT WHEN THESE PLANS ARE COMPLETED.
3. PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED THE COMMENTS TO ALL PLANS AND OTHER DOCUMENTS REVIEWED AND APPROVED BY THE PERMITTING AUTHORITIES AND CONFIRMED THAT ALL NECESSARY OR REQUIRED PERMITS HAVE BEEN OBTAINED. CONTRACTOR MUST HAVE COPIES OF ALL PERMITS AND APPROVALS ON SITE AT ALL TIMES.
4. THE OWNER/CONTRACTOR MUST BE FAMILIAR WITH AND RESPONSIBLE FOR THE PROCUREMENT OF ANY AND ALL CERTIFICATIONS REQUIRED FOR THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
5. ALL WORK MUST BE PERFORMED IN ACCORDANCE WITH THESE PLANS, SPECIFICATIONS AND CONDITIONS OF APPROVAL, AND ALL APPLICABLE REQUIREMENTS, RULES, REGULATIONS, STATUTORY REQUIREMENTS, CODES, LAWS AND STANDARDS OF ALL GOVERNMENTAL ENTITIES WITH JURISDICTION OVER THIS PROJECT.
6. THE GEOTECHNICAL REPORT AND RECOMMENDATIONS SET FORTH HEREIN ARE A PART OF THE REQUIRED CONSTRUCTION DOCUMENTS AND, IN CASE OF CONFLICT, DISCREPANCY OR AMBIGUITY, THE MORE STRINGENT REQUIREMENTS AND/OR RECOMMENDATIONS CONTAINED IN THE PLANS AND THE GEOTECHNICAL REPORT AND RECOMMENDATIONS SHALL TAKE PRECEDENCE UNLESS SPECIFICALLY NOTED OTHERWISE ON THE PLANS. THE CONTRACTOR MUST NOTIFY THE ENGINEER, IN WRITING, OF ANY SUCH CONFLICT, DISCREPANCY OR AMBIGUITY BETWEEN THE GEOTECHNICAL REPORTS AND PLANS AND SPECIFICATIONS PRIOR TO PROCEEDING WITH ANY FURTHER WORK.
7. THESE PLANS ARE BASED ON INFORMATION PROVIDED TO BOHLER ENGINEERING BY THE OWNER AND OTHERS PRIOR TO THE TIME OF PLAN PREPARATION. CONTRACTOR MUST FIELD VERIFY EXISTING CONDITIONS AND NOTIFY BOHLER ENGINEERING, IN WRITING, IMMEDIATELY IF ACTUAL SITE CONDITIONS DIFFER FROM THOSE SHOWN ON THE PLAN, OR IF THE PROPOSED WORK CONFLICTS WITH ANY OTHER SITE FEATURES.
8. ALL DIMENSIONS SHOWN ON THE PLANS MUST BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR MUST NOTIFY ENGINEER, IN WRITING, IF ANY CONFLICTS, DISCREPANCIES, OR AMBIGUITIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION. NO EXTRA COMPENSATION WILL BE PAID TO THE CONTRACTOR FOR WORK WHICH HAS TO BE REDONE OR REPAIRED DUE TO DIMENSIONS OR GRADES SHOWN INCORRECTLY ON THESE PLANS PRIOR TO CONTRACTOR GIVING ENGINEER WRITTEN NOTIFICATION OF SAME AND ENGINEER, THEREAFTER, PROVIDING CONTRACTOR WITH WRITTEN AUTHORIZATION TO PROCEED WITH SUCH ADDITIONAL WORK.
9. CONTRACTOR MUST REFER TO THE ARCHITECTURAL/BUILDING PLANS "OF RECORD" FOR EXACT LOCATIONS AND DIMENSIONS OF ENTRY/EXIT POINTS, ELEVATIONS, PRECISE BUILDING DIMENSIONS, AND EXACT BUILDING UTILITY LOCATIONS.
10. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR MUST COORDINATE THE BUILDING LAYOUT BY CAREFUL REVIEW OF THE ENTIRE SITE PLAN AND THE LATEST ARCHITECTURAL PLANS (INCLUDING, BUT NOT LIMITED TO, STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING AND FIRE SUPPRESSION PLAN, WHERE APPLICABLE). CONTRACTOR MUST IMMEDIATELY NOTIFY OWNER, ARCHITECT AND SITE ENGINEER, IN WRITING, OF ANY CONFLICTS, DISCREPANCIES OR AMBIGUITIES WHICH EXIST.
11. DEBRIS MUST NOT BE BURIED ON THE SUBJECT SITE AND ALL UNSUITABLE EXCAVATED MATERIAL AND DEBRIS (SOLID WASTE) MUST BE DISPOSED OF IN ACCORDANCE WITH THE REQUIREMENTS OF ANY AND ALL GOVERNMENTAL AUTHORITIES WHICH HAVE JURISDICTION OVER THIS PROJECT OR OVER CONTRACTOR.
12. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING WHEN SHORING IS REQUIRED AND FOR INSTALLING ALL SHORING REQUIRED DURING EXCAVATION (TO BE PERFORMED IN ACCORDANCE WITH CURRENT OSHA STANDARDS) AND ANY ADDITIONAL PRECAUTIONS TO BE TAKEN TO ASSURE THE STABILITY OF ADJACENT, NEARBY AND CONTIGUOUS STRUCTURES AND PROPERTIES.
13. THE CONTRACTOR IS TO EXERCISE EXTREME CARE WHEN PERFORMING ANY WORK ACTIVITIES ADJACENT TO PAVEMENT, STRUCTURES, ETC. WHICH ARE TO REMAIN EITHER FOR AN INITIAL PHASE OF THE PROJECT OR AS PART OF THE FINAL CONDITION. CONTRACTOR IS RESPONSIBLE FOR TAKING ALL APPROPRIATE MEASURES REQUIRED TO ENSURE THE STRUCTURAL STABILITY OF SIDEWALKS AND PAVEMENT, UTILITIES, BUILDINGS, AND INFRASTRUCTURE WHICH ARE TO REMAIN, AND TO PROVIDE A SAFE WORK AREA FOR THIRD PARTIES, PEDESTRIANS AND ANYONE INVOLVED WITH THE PROJECT.
14. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE DONE TO ANY NEW OR EXISTING CONSTRUCTION OR PROPERTY DURING THE COURSE OF CONSTRUCTION, INCLUDING BUT NOT LIMITED TO DRAINAGE, UTILITIES, PAVEMENT, STRIPING, CURB, ETC. AND SHALL BEAR ALL COSTS ASSOCIATED WITH SAME TO INCLUDE, BUT NOT BE LIMITED TO, REDESIGN, RE-SURVEY, RE-PERMITTING AND CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR AND MUST REPLACE ALL SIGNAL INTERCONNECTION CABLE, WIRING CONDUITS, AND ANY UNDERGROUND ACCESSORY EQUIPMENT DAMAGED DURING CONSTRUCTION AND MUST BEAR ALL COSTS ASSOCIATED WITH SAME. THE REPAIR OF ANY SUCH NEW OR EXISTING CONSTRUCTION OR PROPERTY MUST RESTORE SUCH CONSTRUCTION OR PROPERTY TO A CONDITION EQUIVALENT TO OR BETTER THAN THE CONDITIONS PRIOR TO COMMENCEMENT OF THE CONSTRUCTION, AND IN CONFORMANCE WITH APPLICABLE CODES, LAWS RULES, REGULATIONS, STATUTORY REQUIREMENTS AND STATUTES. CONTRACTOR MUST BEAR ALL COSTS ASSOCIATED WITH SAME. CONTRACTOR IS RESPONSIBLE TO DOCUMENT ALL EXISTING DAMAGE AND TO NOTIFY THE OWNER AND THE CONSTRUCTION MANAGER PRIOR TO THE START OF CONSTRUCTION.
15. ALL CONCRETE MUST BE AIR ENTRAINED AND HAVE THE MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS UNLESS OTHERWISE NOTED ON THE PLANS, DETAILS AND/OR GEOTECHNICAL REPORT.
16. THE ENGINEER IS NOT RESPONSIBLE FOR CONSTRUCTION METHODS, MEANS, TECHNIQUES OR PROCEDURES, GENERALLY OR FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES OR PROCEDURES FOR COMPLETION OF THE WORK DEPICTED BOTH ON THESE PLANS, AND FOR ANY CONFLICTS/SCOPE REVISIONS WHICH RESULT FROM SAME. CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE METHODS/MEANS FOR COMPLETION OF THE WORK PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
17. THE ENGINEER OF RECORD IS NOT RESPONSIBLE FOR JOB SITE SAFETY. THE ENGINEER OF RECORD HAS NOT BEEN RETAINED TO PERFORM OR BE RESPONSIBLE FOR JOB SITE SAFETY, SAME BEING WHOLLY OUTSIDE OF ENGINEER'S SERVICES AS RELATED TO THE PROJECT. THE ENGINEER OF RECORD IS NOT RESPONSIBLE TO IDENTIFY OR REPORT ANY JOB SITE SAFETY ISSUES, AT ANY TIME.
18. ALL CONTRACTORS MUST CARRY THE SPECIFIED STATUTORY WORKER'S COMPENSATION INSURANCE, EMPLOYER'S LIABILITY INSURANCE AND LIMITS OF COMMERCIAL GENERAL LIABILITY INSURANCE (CGL). ALL CONTRACTORS MUST HAVE THEIR CGL POLICIES ENDORSED TO NAME BOHLER ENGINEERING, AND ITS PAST, PRESENT AND FUTURE OWNERS, OFFICERS, DIRECTORS, PARTNERS, SHAREHOLDERS, MEMBERS, PRINCIPALS, COMMISSIONERS, AGENTS, SERVANTS, EMPLOYEES, AFFILIATES, SUBSIDIARIES, AND RELATED ENTITIES, AND ITS SUBCONTRACTORS AND SUBCONSULTANTS AS ADDITIONAL NAMED INSURED AND TO PROVIDE CONTRACTUAL LIABILITY COVERAGE SUFFICIENT TO INSURE THIS HOLD HARMLESS AND INDEMNITY OBLIGATIONS ASSUMED BY THE CONTRACTORS. ALL CONTRACTORS MUST FURNISH BOHLER ENGINEERING WITH CERTIFICATIONS OF INSURANCE AS EVIDENCE OF THE REQUIRED INSURANCE PRIOR TO COMMENCING WORK AND UPON RENEWAL OF EACH POLICY DURING THE ENTIRE PERIOD OF CONSTRUCTION AND FOR ONE YEAR AFTER THE COMPLETION OF CONSTRUCTION. IN ADDITION, ALL CONTRACTORS WILL, TO THE FULLEST EXTENT PERMITTED UNDER THE LAW, INDEMNIFY, DEFEND AND HOLD HARMLESS BOHLER ENGINEERING AND ITS PAST, PRESENT AND FUTURE OWNERS, OFFICERS, DIRECTORS, PARTNERS, SHAREHOLDERS, MEMBERS, PRINCIPALS, COMMISSIONERS, AGENTS, SERVANTS, EMPLOYEES, AFFILIATES, SUBSIDIARIES, AND RELATED ENTITIES, AND ITS SUBCONTRACTORS AND SUBCONSULTANTS FROM AND AGAINST ANY DAMAGES, INJURIES, CLAIMS, ACTIONS, PENALTIES, EXPENSES, PUNITIVE DAMAGES, TORT DAMAGES, STATUTORY CLAIMS, STATUTORY CAUSES OF ACTION, LOSSES, CAUSES OF ACTION, LIABILITIES OR COSTS, INCLUDING, BUT NOT LIMITED TO, REASONABLE ATTORNEYS' FEES AND DEFENSE COSTS, ARISING OUT OF OR IN ANY WAY CONNECTED WITH OR TO THE PROJECT, INCLUDING ALL CLAIMS BY EMPLOYEES OF THE CONTRACTORS, ALL CLAIMS BY THIRD PARTIES AND ALL CLAIMS RELATED TO THE PROJECT. CONTRACTOR MUST NOTIFY ENGINEER, IN WRITING, AT LEAST THIRTY (30) DAYS PRIOR TO ANY TERMINATION, SUSPENSION OR CHANGE OF ITS INSURANCE HEREUNDER.
19. BOHLER ENGINEERING WILL REVIEW OR TAKE OTHER APPROPRIATE ACTION ON THE CONTRACTOR SUBMITTALS, SUCH AS SHOP DRAWINGS, PRODUCT DATA, SAMPLES, AND OTHER DATA, WHICH THE CONTRACTOR IS REQUIRED TO SUBMIT, BUT ONLY FOR THE LIMITED PURPOSE OF CHECKING FOR CONFORMANCE WITH THE DESIGN INTENT AND THE INFORMATION SHOWN IN THE CONSTRUCTION CONTRACT DOCUMENTS. CONSTRUCTION MEANS AND/OR METHODS AND/OR TECHNIQUES OR PROCEDURES, COORDINATION OF THE WORK WITH OTHER TRADES, AND CONSTRUCTION SAFETY PRECAUTIONS ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND BOHLER HAS NO RESPONSIBILITY OR LIABILITY FOR SAME HEREUNDER. BOHLER ENGINEERING'S SHOP DRAWING REVIEW WILL BE CONDUCTED WITH REASONABLE PROMPTNESS WHILE ALLOWING SUFFICIENT TIME TO PERMIT ADEQUATE REVIEW. REVIEW OF A SPECIFIC ITEM MUST NOT INDICATE THAT BOHLER ENGINEERING HAS REVIEWED THE ENTIRE ASSEMBLY OF WHICH THE ITEM IS A COMPONENT. BOHLER ENGINEERING WILL NOT BE RESPONSIBLE FOR ANY DEVIATIONS FROM THE CONSTRUCTION DOCUMENTS NOT PROMPTLY AND IMMEDIATELY BROUGHT TO ITS ATTENTION, IN WRITING, BY THE CONTRACTOR. BOHLER ENGINEERING WILL NOT BE REQUIRED TO REVIEW PARTIAL SUBMISSIONS OR THOSE FOR WHICH SUBMISSIONS OF CORRELATED ITEMS HAVE NOT BEEN RECEIVED.
20. NEITHER THE PROFESSIONAL ACTIVITIES OF BOHLER ENGINEERING, NOR THE PRESENCE OF BOHLER ENGINEERING AND/OR ITS PAST, PRESENT AND FUTURE OWNERS, OFFICERS, DIRECTORS, PARTNERS, SHAREHOLDERS, MEMBERS, PRINCIPALS, COMMISSIONERS, AGENTS, SERVANTS, EMPLOYEES, AFFILIATES, SUBSIDIARIES, AND RELATED ENTITIES, AND ITS SUBCONTRACTORS AND SUBCONSULTANTS AT A CONSTRUCTION/PROJECT SITE, SHALL RELIEVE THE GENERAL CONTRACTOR OF ITS OBLIGATIONS, DUTIES AND RESPONSIBILITIES INCLUDING, BUT NOT LIMITED TO, CONSTRUCTION MEANS, METHODS, SEQUENCE, TECHNIQUES OR PROCEDURES NECESSARY FOR PERFORMING, OVERSEEING, SUPERINTENDING AND COORDINATING THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND COMPLIANCE WITH ANY HEALTH OR SAFETY PRECAUTIONS REQUIRED BY ANY REGULATORY AGENCIES WITH JURISDICTION OVER THE PROJECT AND/OR PROPERTY. BOHLER ENGINEERING AND ITS PERSONNEL HAVE NO AUTHORITY TO EXERCISE ANY CONTROL OVER ANY CONSTRUCTION CONTRACTOR OR ITS EMPLOYEES IN CONNECTION WITH THEIR WORK OR ANY HEALTH OR SAFETY PROGRAMS OR PROCEDURES. THE GENERAL CONTRACTOR IS SOLELY RESPONSIBLE FOR JOB SITE SAFETY. BOHLER ENGINEERING SHALL BE INDEMNIFIED BY THE GENERAL CONTRACTOR AND MUST BE NAMED AN ADDITIONAL INSURED UNDER THE GENERAL CONTRACTOR'S POLICIES OF GENERAL LIABILITY INSURANCE AS DESCRIBED ABOVE IN NOTE 19 FOR JOB SITE SAFETY.
21. IF THE CONTRACTOR DEVIATES FROM THE PLANS AND SPECIFICATIONS, INCLUDING THE NOTES CONTAINED HEREIN, WITHOUT FIRST OBTAINING THE PRIOR WRITTEN AUTHORIZATION OF THE ENGINEER FOR SUCH DEVIATIONS, THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE PAYMENT OF ALL COSTS INCURRED IN CORRECTING ANY WORK DONE WHICH DEVIATES FROM THE PLANS, ALL FINES AND/OR PENALTIES ASSESSED WITH RESPECT THERETO AND ALL COMPENSATORY OR PUNITIVE DAMAGES RESULTING THEREFROM AND, FURTHER, SHALL DEFEND, INDEMNIFY AND HOLD HARMLESS THE ENGINEER, TO THE FULLEST EXTENT PERMITTED UNDER THE LAW, IN ACCORDANCE WITH PARAGRAPH 19 HEREIN, FOR AND FROM ALL FEES, ATTORNEYS' FEES, DAMAGES, COSTS, JUDGMENTS, PENALTIES AND THE LIKE RELATED TO SAME.
22. CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE AND PROTECTION OF TRAFFIC PLAN FOR ALL WORK THAT AFFECTS PUBLIC TRAVEL EITHER IN THE R.O.W. OR ON SITE. THE COST FOR THIS ITEM MUST BE INCLUDED IN THE CONTRACTOR'S PRICE.
23. ALL SIGNING AND PAVEMENT STRIPING MUST CONFORM TO MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES OR LOCALLY APPROVED SUPPLEMENT.
24. ENGINEER IS NOT RESPONSIBLE FOR ANY INJURY OR DAMAGES RESULTING FROM CONTRACTOR'S FAILURE TO BUILD OR CONSTRUCT IN STRICT ACCORDANCE WITH THE APPROVED PLANS. IF CONTRACTOR AND/OR OWNER FAIL TO BUILD OR CONSTRUCT IN STRICT ACCORDANCE WITH APPROVED PLANS, THEY AGREE TO JOINTLY AND SEVERALLY INDEMNIFY AND HOLD ENGINEER HARMLESS FOR ALL INJURIES AND DAMAGES THAT ENGINEER SUFFERS AND COSTS THAT ENGINEER INCURS.
25. OWNER MUST MAINTAIN AND PRESERVE ALL PHYSICAL SITE FEATURES AND DESIGN FEATURES DEPICTED ON THE PLANS AND RELATED DOCUMENTS, IN STRICT ACCORDANCE WITH THE APPROVED PLAN(S) AND DESIGN AND, FURTHER ENGINEER IS NOT RESPONSIBLE FOR ANY FAILURE TO SO MAINTAIN OR PRESERVE SITE AND/OR DESIGN FEATURES. IF OWNER FAILS TO MAINTAIN AND/OR PRESERVE ALL PHYSICAL SITE FEATURES AND/OR DESIGN FEATURES DEPICTED ON THE PLANS AND RELATED DOCUMENTS, OWNER AGREES TO INDEMNIFY AND HOLD ENGINEER HARMLESS FOR ALL INJURIES AND DAMAGES THAT ENGINEER SUFFERS AND COSTS THAT ENGINEER INCURS AS A RESULT OF SAID FAILURE.
26. ALL DIMENSIONS MUST BE TO FACE OF CURB, EDGE OF PAVEMENT, OR EDGE OF BUILDING, UNLESS NOTED OTHERWISE.
27. ALL CONSTRUCTION AND MATERIALS MUST COMPLY WITH AND CONFORM TO APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS, LAWS, ORDINANCES, RULES AND CODES, AND ALL APPLICABLE OSHA REQUIREMENTS.
28. CONTRACTOR AND OWNER MUST INSTALL ALL ELEMENTS AND COMPONENTS IN STRICT COMPLIANCE WITH AND ACCORDANCE WITH MANUFACTURER'S STANDARDS AND RECOMMENDED INSTALLATION CRITERIA AND SPECIFICATIONS. IF CONTRACTOR AND/OR OWNER FAIL TO DO SO, THEY AGREE TO JOINTLY AND SEVERALLY INDEMNIFY AND HOLD ENGINEER HARMLESS FOR ALL INJURIES AND DAMAGES THAT ENGINEER SUFFERS AND COSTS THAT ENGINEER INCURS AS A RESULT OF SAID FAILURE.
29. CONTRACTOR IS RESPONSIBLE TO MAINTAIN ON-SITE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IN COMPLIANCE WITH EPA REQUIREMENTS FOR SITES WHERE ONE (1) ACRE OR MORE (UNLESS THE LOCAL JURISDICTION REQUIRES FEWER) IS DISTURBED BY CONSTRUCTION ACTIVITIES. CONTRACTOR IS RESPONSIBLE TO ENSURE THAT ALL ACTIVITIES, INCLUDING THOSE OF SUBCONTRACTORS, ARE IN COMPLIANCE WITH THE SWPPP, INCLUDING BUT NOT LIMITED TO LOGGING ACTIVITIES (MINIMUM ONCE PER WEEK AND AFTER RAINFALL EVENTS) AND CORRECTIVE MEASURES, AS APPROPRIATE.
30. AS CONTAINED IN THESE DRAWINGS AND ASSOCIATED APPLICATION DOCUMENTS PREPARED BY THE SIGNATORY PROFESSIONAL ENGINEER, THE USE OF THE WORDS CERTIFY OR CERTIFICATION CONSTITUTES AN EXPRESSION OF "PROFESSIONAL OPINION" REGARDING THE INFORMATION WHICH IS THE SUBJECT OF THE UNDERSIGNED PROFESSIONAL'S KNOWLEDGE OR BELIEF AND IN ACCORDANCE WITH COMMON ACCEPTED PROCEDURE CONSISTENT WITH THE APPLICABLE STANDARDS OF PRACTICE, AND DOES NOT CONSTITUTE A WARRANTY OR GUARANTEE, EITHER EXPRESSED OR IMPLIED.

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GENERAL GRADING & UTILITY PLAN NOTES

1. LOCATIONS OF ALL EXISTING AND PROPOSED SERVICES ARE APPROXIMATE AND MUST BE INDEPENDENTLY CONFIRMED WITH LOCAL UTILITY COMPANIES PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION OR EXCAVATION. SANITARY SEWER AND ALL OTHER UTILITY SERVICE CONNECTION POINTS MUST BE INDEPENDENTLY CONFIRMED BY THE CONTRACTOR IN THE FIELD PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. ALL DISCREPANCIES MUST IMMEDIATELY BE REPORTED, IN WRITING, TO THE ENGINEER. CONSTRUCTION MUST COMMENCE BEGINNING AT THE LOWEST INVERT (POINT OF CONNECTION) AND PROGRESS UP GRADIENT. PROPOSED INTERFACE POINTS (CROSSINGS) WITH EXISTING UNDERGROUND UTILITIES SHALL BE FIELD VERIFIED BY TEST PIT PRIOR TO COMMENCEMENT OF CONSTRUCTION.
2. CONTRACTOR MUST VERTICALLY AND HORIZONTALLY LOCATE ALL UTILITIES AND SERVICES INCLUDING, BUT NOT LIMITED TO, GAS, WATER, ELECTRIC, SANITARY AND STORM SEWER, TELEPHONE, CABLE, FIBER OPTIC CABLE, ETC. WITHIN THE LIMITS OF DISTURBANCE OR WORK SPACE, WHICHEVER IS GREATER. THE CONTRACTOR MUST USE, REFER TO, AND COMPLY WITH THE REQUIREMENTS OF THE APPLICABLE UTILITY NOTIFICATION SYSTEM TO LOCATE ALL THE UNDERGROUND UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ALL DAMAGE TO ANY EXISTING UTILITIES DURING CONSTRUCTION, AT NO COST TO THE OWNER. CONTRACTOR SHALL BEAR ALL COSTS ASSOCIATED WITH DAMAGE TO ANY EXISTING UTILITIES DURING CONSTRUCTION.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW ALL CONSTRUCTION CONTRACT DOCUMENTS INCLUDING, BUT NOT LIMITED TO, ALL OF THE DRAWINGS AND SPECIFICATIONS ASSOCIATED WITH THE PROJECT WORK SCOPE PRIOR TO THE INITIATION AND COMMENCEMENT OF CONSTRUCTION. SHOULD THE CONTRACTOR FIND A CONFLICT AND/OR DISCREPANCY BETWEEN THE DOCUMENTS RELATIVE TO THE SPECIFICATIONS OR THE RELATIVE OR APPLICABLE CODES, REGULATIONS, LAWS, RULES, STATUTES AND/OR ORDINANCES, IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO NOTIFY THE PROJECT ENGINEER OF RECORD, IN WRITING, OF SAID CONFLICT AND/OR DISCREPANCY PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR'S FAILURE TO NOTIFY THE PROJECT ENGINEER SHALL CONSTITUTE CONTRACTOR'S FULL AND COMPLETE ACCEPTANCE OF ALL RESPONSIBILITY TO COMPLETE THE SCOPE OF WORK AS DEFINED BY THE DRAWINGS AND IN FULL COMPLIANCE WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS, LAWS, STATUTES, ORDINANCES AND CODES AND, FURTHER, CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH SAME.
4. THE CONTRACTOR MUST LOCATE AND CLEARLY AND UNAMBIGUOUSLY DEFINE VERTICALLY AND HORIZONTALLY ALL ACTIVE AND INACTIVE UTILITY AND/OR SERVICE SYSTEMS THAT ARE TO BE REMOVED. THE CONTRACTOR IS RESPONSIBLE TO PROTECT AND MAINTAIN ALL ACTIVE AND INACTIVE SYSTEMS THAT ARE NOT BEING REMOVED/RELOCATED DURING SITE ACTIVITY.
5. THE CONTRACTOR MUST FAMILIARIZE ITSELF WITH THE APPLICABLE UTILITY SERVICE PROVIDER REQUIREMENTS AND IS RESPONSIBLE FOR ALL COORDINATION REGARDING UTILITY DEMOLITION AS IDENTIFIED OR REQUIRED FOR THE PROJECT. THE CONTRACTOR MUST PROVIDE THE OWNER WITH WRITTEN NOTIFICATION THAT THE EXISTING UTILITIES AND SERVICES HAVE BEEN TERMINATED AND ABANDONED IN ACCORDANCE WITH THE JURISDICTION AND UTILITY COMPANY REQUIREMENTS AND ALL OTHER APPLICABLE REQUIREMENTS, RULES, STATUTES, LAWS, ORDINANCES AND CODES.
6. THE CONTRACTOR MUST INSTALL ALL STORM SEWER AND SANITARY SEWER COMPONENTS WHICH FUNCTION BY GRAVITY PRIOR TO THE INSTALLATION OF ALL OTHER UTILITIES.
7. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF SITE PLAN DOCUMENTS AND ARCHITECTURAL DESIGN FOR EXACT BUILDING UTILITY CONNECTION LOCATIONS, GREASE TRAP REQUIREMENTS/DETAILS, DOOR ACCESS, AND EXTERIOR GRADING. THE ARCHITECT WILL DETERMINE THE UTILITY SERVICE SIZES. THE CONTRACTOR MUST COORDINATE INSTALLATION OF UTILITIES/SERVICES WITH THE INDIVIDUAL COMPANIES, TO AVOID CONFLICTS AND TO ENSURE THAT PROPER DEPTHS ARE ACHIEVED. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT INSTALLATION OF ALL IMPROVEMENTS COMPLIES WITH ALL UTILITY REQUIREMENTS WITH JURISDICTION AND/OR CONTROL OF THE SITE, AND ALL OTHER APPLICABLE REQUIREMENTS, RULES, STATUTES, LAWS, ORDINANCES AND CODES AND, FURTHER, IS RESPONSIBLE FOR COORDINATING THE UTILITY TIE-INS/CONNECTIONS PRIOR TO CONNECTING TO THE EXISTING UTILITY/SERVICE. WHERE A CONFLICT(S) EXISTS BETWEEN THESE SITE PLANS AND THE ARCHITECTURAL PLANS, OR WHERE ARCHITECTURAL PLAN UTILITY CONNECTION POINTS DIFFER, THE CONTRACTOR MUST IMMEDIATELY NOTIFY THE ENGINEER, IN WRITING, AND PRIOR TO CONSTRUCTION, RESOLVE SAME.
8. WATER SERVICE MATERIALS, BURIAL DEPTH, AND COVER REQUIREMENTS MUST BE SPECIFIED BY THE LOCAL UTILITY COMPANY. CONTRACTOR'S PRICE FOR WATER SERVICE MUST INCLUDE ALL FEES, COSTS AND APPURTENANCES REQUIRED BY THE UTILITY TO PROVIDE FULL AND COMPLETE WORKING SERVICE. CONTRACTOR MUST CONTACT THE APPLICABLE MUNICIPALITY TO CONFIRM THE PROPER WATER METER AND VAULT, PRIOR TO COMMENCING CONSTRUCTION.
9. ALL NEW UTILITIES/SERVICES, INCLUDING ELECTRIC, TELEPHONE, CABLE TV, ETC. ARE TO BE INSTALLED UNDERGROUND. ALL NEW UTILITIES/SERVICES MUST BE INSTALLED IN ACCORDANCE WITH THE UTILITY/SERVICE PROVIDER INSTALLATION SPECIFICATIONS AND STANDARDS.
10. SITE GRADING MUST BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND THE RECOMMENDATIONS SET FORTH IN THE GEOTECHNICAL REPORT REFERENCED IN THIS PLAN SET. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING AND REPLACING UNSUITABLE MATERIALS WITH SUITABLE MATERIALS AS SPECIFIED IN THE GEOTECHNICAL REPORT. ALL EXCAVATED OR FILLED AREAS MUST BE COMPACTED AS OUTLINED IN THE GEOTECHNICAL REPORT. MOISTURE CONTENT AT TIME OF PLACEMENT MUST BE SUBMITTED IN A COMPACTION REPORT PREPARED BY A QUALIFIED GEOTECHNICAL ENGINEER, REGISTERED WITH THE STATE WHERE THE WORK IS PERFORMED, VERIFYING THAT ALL FILLED AREAS AND SUBGRADE AREAS WITHIN THE BUILDING PAD AREA AND AREAS TO BE PAVED HAVE BEEN COMPACTED IN ACCORDANCE WITH THESE PLANS, SPECIFICATIONS AND THE RECOMMENDATIONS SET FORTH IN THE GEOTECHNICAL REPORT AND ALL APPLICABLE REQUIREMENTS, RULES, STATUTES, LAWS, ORDINANCES AND CODES. SUBBASE MATERIAL FOR SIDEWALKS, CURB, OR ASPHALT MUST BE FREE OF ORGANICS AND OTHER UNSUITABLE MATERIALS. SHOULD SUBBASE BE DEEMED UNSUITABLE BY OWNER/DEVELOPER, OR OWNER/DEVELOPER'S REPRESENTATIVE, SUBBASE IS TO BE REMOVED AND FILLED WITH APPROVED FILL MATERIAL COMPACTED AS DIRECTED BY THE GEOTECHNICAL REPORT. EARTHWORK ACTIVITIES INCLUDING, BUT NOT LIMITED TO, EXCAVATION, BACKFILL, AND COMPACTING MUST COMPLY WITH THE RECOMMENDATIONS IN THE GEOTECHNICAL REPORT AND ALL APPLICABLE REQUIREMENTS, RULES, STATUTES, LAWS, ORDINANCES AND CODES. EARTHWORK ACTIVITIES MUST COMPLY WITH THE STANDARD STATE DOT SPECIFICATIONS FOR ROADWAY CONSTRUCTION (LATEST EDITION) AND ANY AMENDMENTS OR REVISIONS THERETO.
11. ALL FILL, COMPACTION, AND BACKFILL MATERIALS REQUIRED FOR UTILITY INSTALLATION MUST BE AS PER THE RECOMMENDATIONS PROVIDED IN THE GEOTECHNICAL REPORT AND MUST BE COORDINATED WITH THE APPLICABLE UTILITY COMPANY SPECIFICATIONS. WHEN THE PROJECT DOES NOT HAVE GEOTECHNICAL RECOMMENDATIONS, FILL AND COMPACTION MUST, AT A MINIMUM, COMPLY WITH THE STATE DOT REQUIREMENTS AND SPECIFICATIONS AND CONSULTANT SHALL HAVE NO LIABILITY OR RESPONSIBILITY FOR OR AS RELATED TO FILL, COMPACTION AND BACKFILL. FURTHER, CONTRACTOR IS FULLY RESPONSIBLE FOR EARTHWORK BALANCE.
12. THE CONTRACTOR MUST COMPLY, TO THE FULLEST EXTENT, WITH THE LATEST OSHA STANDARDS AND REGULATIONS, AND/OR ANY OTHER AGENCY WITH JURISDICTION FOR EXCAVATION AND TRENCHING PROCEDURES. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE "MEANS AND METHODS" REQUIRED TO MEET THE INTENT AND PERFORMANCE CRITERIA OF OSHA, AS WELL AS ANY OTHER ENTITY THAT HAS JURISDICTION FOR EXCAVATION AND/OR TRENCHING PROCEDURES AND CONSULTANT SHALL HAVE NO RESPONSIBILITY FOR OR AS RELATED FOR OR AS RELATED TO EXCAVATION AND TRENCHING PROCEDURES.
13. PAVEMENT MUST BE SAW CUT IN STRAIGHT LINES, AND EXCEPT FOR EDGE OF BUTT JOINTS, MUST EXTEND TO THE FULL DEPTH OF THE EXISTING PAVEMENT. ALL DEBRIS FROM REMOVAL OPERATIONS MUST BE REMOVED FROM THE SITE AT THE TIME OF EXCAVATION. STOCKPILING OF DEBRIS WILL NOT BE PERMITTED.
14. THE TOPS OF EXISTING MANHOLES, INLET STRUCTURES, AND SANITARY CLEANOUT TOPS MUST BE ADJUSTED, AS NECESSARY, TO MATCH PROPOSED GRADES IN ACCORDANCE WITH ALL APPLICABLE STANDARDS, REQUIREMENTS, RULES, STATUTES, LAWS, ORDINANCES AND CODES.
15. DURING THE INSTALLATION OF SANITARY SEWER, STORM SEWER, AND ALL UTILITIES, THE CONTRACTOR MUST MAINTAIN A CONTEMPORANEOUS AND THOROUGH RECORD OF CONSTRUCTION TO IDENTIFY THE AS-INSTALLED LOCATIONS OF ALL UNDERGROUND INFRASTRUCTURE. THE CONTRACTOR MUST CAREFULLY NOTE ANY INSTALLATIONS THAT DEVIATE FROM THE INFORMATION CONTAINED IN THE UTILITY PLAN. THIS RECORD MUST BE KEPT ON A CLEAN COPY OF THE DRAINAGE OR UTILITY PLAN, WHICH CONTRACTOR MUST PROMPTLY PROVIDE TO THE OWNER AT THE COMPLETION OF WORK.
16. WHEN THE SITE IMPROVEMENT PLANS INVOLVE MULTIPLE BUILDINGS, SOME OF WHICH MAY BE BUILT AT A LATER DATE, THE CONTRACTOR MUST EXTEND ALL LINES, INCLUDING BUT NOT LIMITED TO STORM SEWER, SANITARY SEWER, UTILITIES, AND IRRIGATION LINE, TO A POINT AT LEAST FIVE (5) FEET BEYOND THE PAVED AREAS FOR WHICH THE CONTRACTOR IS RESPONSIBLE. CONTRACTOR MUST CAP ENDS AS APPROPRIATE, MARK LOCATIONS WITH A 2X4, AND MUST NOTE THE LOCATION OF ALL OF THE ABOVE ON A CLEAN COPY OF THE DRAINAGE OR UTILITY PLAN, WHICH CONTRACTOR MUST PROMPTLY PROVIDE TO THE OWNER UPON COMPLETION OF THE WORK.
17. THE CONTRACTOR IS FULLY RESPONSIBLE FOR VERIFICATION OF EXISTING TOPOGRAPHIC INFORMATION AND UTILITY INVERT ELEVATIONS PRIOR TO COMMENCING ANY CONSTRUCTION. CONTRACTOR MUST CONFIRM AND ENSURE 0.75% MINIMUM SLOPE AGAINST ALL ISLANDS, GUTTERS, AND CURBS; 1.0% ON ALL CONCRETE SURFACES; AND 1.5% MINIMUM ON ASPHALT (EXCEPT WHERE ADA REQUIREMENTS OR EXISTING TOPOGRAPHY LIMIT GRADES), TO PREVENT PONDING. CONTRACTOR MUST IMMEDIATELY IDENTIFY, IN WRITING TO THE ENGINEER, ANY DISCREPANCIES THAT MAY OR COULD AFFECT THE PUBLIC SAFETY, HEALTH OR GENERAL WELFARE, OR PROJECT COST. IF CONTRACTOR PROCEEDS WITH CONSTRUCTION WITHOUT PROVIDING PROPER NOTIFICATION, MUST BE AT THE CONTRACTOR'S OWN RISK AND, FURTHER, CONTRACTOR SHALL INDEMNIFY, DEFEND AND HOLD HARMLESS THE DESIGN ENGINEER FOR ANY DAMAGES, COSTS, INJURIES, ATTORNEY'S FEES AND THE LIKE WHICH RESULT FROM SAME.
18. PROPOSED TOP OF CURB ELEVATIONS ARE GENERALLY 6" ABOVE EXISTING LOCAL ASPHALT GRADE UNLESS OTHERWISE NOTED. FIELD ADJUST TO CREATE A MINIMUM OF .075% GUTTER GRADE ALONG CURB FACE. IT IS CONTRACTOR'S OBLIGATION TO ENSURE THAT DESIGN ENGINEER APPROVES FINAL CURBING CUT SHEETS PRIOR TO INSTALLATION OF SAME.
19. REFER TO THIS SHEET FOR ADDITIONAL NOTES.
20. IN THE EVENT OF DISCREPANCIES AND/OR CONFLICTS BETWEEN PLANS OR RELATIVE TO OTHER PLANS, THE SITE PLAN WILL TAKE PRECEDENCE AND CONTROL. CONTRACTOR MUST IMMEDIATELY NOTIFY THE DESIGN ENGINEER, IN WRITING, OF ANY DISCREPANCIES AND/OR CONFLICTS.
21. CONTRACTOR IS REQUIRED TO SECURE ALL NECESSARY AND/OR REQUIRED PERMITS AND APPROVALS FOR ALL OFF SITE MATERIAL SOURCES AND DISPOSAL FACILITIES. CONTRACTOR MUST SUPPLY A COPY OF APPROVALS TO ENGINEER AND OWNER PRIOR TO INITIATING ANY WORK.
22. WHERE RETAINING WALLS (WHETHER OR NOT THEY MEET THE JURISDICTIONAL DEFINITION) ARE IDENTIFIED ON PLANS, ELEVATIONS IDENTIFIED ARE FOR THE EXPOSED PORTION OF THE WALL. WALL FOOTINGS/FOUNDATION ELEVATIONS ARE NOT IDENTIFIED HEREIN AND ARE TO BE SET/DETERMINED BY THE CONTRACTOR BASED ON FINAL STRUCTURAL DESIGN SHOP DRAWINGS PREPARED BY THE APPROPRIATE PROFESSIONAL LICENSED IN THE STATE WHERE THE CONSTRUCTION OCCURS.
23. STORM DRAINAGE PIPE:UNLESS INDICATED OTHERWISE, ALL STORM SEWER PIPE MUST BE REINFORCED CONCRETE PIPE (RCP) CLASS III WITH SILT TIGHT JOINTS. WHEN HIGH-DENSITY POLYETHYLENE PIPE (HDPE) IS CALLED FOR ON THE PLANS, IT MUST CONFORM TO AASHTO M294 AND TYPE S (SMOOTH INTERIOR WITH ANGULAR CORRUGATIONS) WITH GASKET FOR SILT TIGHT JOINT. PVC PIPE FOR ROOF DRAIN CONNECTION MUST BE SDR 26 OR SCHEDULE 40 UNLESS INDICATED OTHERWISE.
24. UNLESS INDICATED OTHERWISE ON THE DRAWINGS, SANITARY SEWER PIPE SHALL BE AS FOLLOWS:
    - FOR PIPES LESS THAN 12 FT. DEEP: POLYVINYL CHLORIDE (PVC) SDR 35 PER ASTM D3034
    - FOR PIPES MORE THAN 12 FT. DEEP: POLYVINYL CHLORIDE (PVC) SDR 26 PER ASTM D3034
    - FOR PIPE WITHIN 10 FT. OF BUILDING, PIPE MATERIAL SHALL COMPLY WITH APPLICABLE BUILDING AND PLUMBING CODES. CONTRACTOR TO VERIFY WITH LOCAL OFFICIALS.
25. STORM AND SANITARY SEWER PIPE LENGTHS INDICATED ARE NOMINAL AND MEASURED CENTER OF INLET AND/OR MANHOLES STRUCTURE TO CENTER OF STRUCTURE.
26. STORMWATER ROOF DRAIN LOCATIONS ARE BASED ON PRELIMINARY ARCHITECTURAL PLANS. CONTRACTOR IS RESPONSIBLE TO AND FOR VERIFYING LOCATIONS OF SAME BASED ON FINAL ARCHITECTURAL PLANS.
27. SEWERS CROSSING STREAMS AND/OR LOCATION WITHIN 10 FEET OF THE STREAM EMBANKMENT, OR WHERE SITE CONDITIONS SO INDICATE, MUST BE CONSTRUCTED OF STEEL, REINFORCED CONCRETE, DUCTILE IRON OR OTHER SUITABLE MATERIAL.
28. SEWERS CONVEYING SANITARY FLOW COMBINED SANITARY AND STORMWATER FLOW OR INDUSTRIAL FLOW MUST BE SEPARATED FROM WATER MAINS BY A DISTANCE OF AT LEAST 10 FEET HORIZONTALLY. IF SUCH LATERAL SEPARATION IS NOT POSSIBLE, THE PIPES MUST BE IN SEPARATE TRENCHES WITH THE SEWER AT LEAST 18 INCHES BELOW THE BOTTOM OF THE WATER MAIN, OR SUCH OTHER SEPARATION AS APPROVED BY THE GOVERNMENT AGENCY WITH JURISDICTION OVER SAME.
29. WHERE APPROPRIATE SEPARATION FROM A WATER MAIN IS NOT POSSIBLE, THE SEWER MUST BE ENCASED IN CONCRETE, OR CONSTRUCTED OF DUCTILE IRON PIPE USING MECHANICAL OR SLIP-ON JOINTS FOR A DISTANCE OF AT LEAST 10 FEET ON EITHER SIDE OF THE CROSSING. IN ADDITION, ONE FULL LENGTH OF SEWER PIPE SHOULD BE LOCATED SO BOTH JOINTS WILL BE AS FAR FROM THE WATER LINE AS POSSIBLE. WHERE A WATER MAIN CROSSES UNDER A SEWER, ADEQUATE STRUCTURAL SUPPORT FOR THE SEWER MUST BE PROVIDED.
30. WATER MAIN PIPING MUST BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS AND SPECIFICATIONS OF THE LOCAL WATER PURVEYOR. IN THE ABSENCE OF SUCH REQUIREMENTS, WATER MAIN PIPING MUST BE CEMENT-LINED DUCTILE IRON (DIP) MINIMUM CLASS 52 THICKNESS. ALL PIPE AND APPURTENANCES MUST COMPLY WITH THE APPLICABLE AWWA STANDARDS IN EFFECT AT THE TIME OF APPLICATION.
31. CONTRACTOR MUST ENSURE THAT ALL UTILITY TRENCHES LOCATED IN EXISTING PAVED ROADWAYS INCLUDING SEWER, WATER AND STORM SYSTEMS, MUST BE REPAIRED IN ACCORDANCE WITH REFERENCED MUNICIPAL, COUNTY AND/OR DOT DETAILS AS APPLICABLE. CONTRACTOR MUST COORDINATE INSPECTION AND APPROVAL OF COMPLETED WORK WITH THE AGENCY WITH JURISDICTION OVER SAME.
32. WHERE BASEMENTS ARE TO BE PROVIDED FOR PROPOSED DWELLING UNITS, THE DEVELOPER SHALL, BY BORING OR BY TEST PIT, DETERMINE THE DEPTH TO GROUNDWATER AT THE LOCATION OF THE PROPOSED DWELLINGS. WHERE GROUNDWATER IS ENCOUNTERED IN THE BASEMENT AREA, BASEMENTS WILL NOT BE INSTALLED UNLESS SPECIAL CONSTRUCTION METHODS ARE UTILIZED, TO BE REVIEWED AND APPROVED BY THE MUNICIPAL CONSTRUCTION CODE OFFICIAL. IF AND WHERE SUMP PUMPS ARE INSTALLED, ALL DISCHARGES MUST BE CONNECTED TO THE STORM SEWER. A CLEANOUT MUST BE PROVIDED PRIOR TO THE CONNECTION TO THE STORM DRAIN IN ORDER THAT BLOCKAGES CAN BE ADDRESSED.
33. LOCATION OF PROPOSED UTILITY POLE RELOCATION IS AT THE SOLE DISCRETION OF UTILITY COMPANY.
34. CONSULTANT IS NEITHER LIABLE NOR RESPONSIBLE FOR ANY SUBSURFACE CONDITIONS AND FURTHER, SHALL HAVE NO LIABILITY FOR ANY HAZARDOUS MATERIALS, HAZARDOUS SUBSTANCES, OR POLLUTANTS ON, ABOUT OR UNDER THE PROPERTY.

GENERAL DEMOLITION NOTES

1. THIS PLAN REFERENCES DOCUMENTS AND INFORMATION BY:

   EXISTING CONDITIONS PLAN
   129 PARKER STREET
   MAYNARD, MA
   PREPARED BY: WATERMAN DESIGN ASSOCIATES, INC.
   WESTBOROUGH, MA
   01/05/17
   JOB#: 0991.00
2. CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970, (29 U.S.C. 651 et seq.), AS AMENDED AND ANY MODIFICATIONS, AMENDMENTS OR REVISIONS TO SAME.
3. BOHLER ENGINEERING HAS NO CONTRACTUAL, LEGAL, OR OTHER RESPONSIBILITY FOR JOB SITE SAFETY OR JOB SITE SUPERVISION, OR ANYTHING RELATED TO SAME.
4. THE DEMOLITION PLAN IS INTENDED TO PROVIDE GENERAL INFORMATION, ONLY, REGARDING ITEMS TO BE DEMOLISHED AND/OR REMOVED. THE CONTRACTOR MUST ALSO REVIEW THE OTHER SITE PLAN DRAWINGS AND INCLUDE IN DEMOLITION ACTIVITIES ALL INCIDENTAL WORK NECESSARY FOR THE CONSTRUCTION OF THE NEW SITE IMPROVEMENTS.
5. CONTRACTOR MUST RAISE ANY QUESTIONS CONCERNING THE ACCURACY OR INTENT OF THESE PLANS OR SPECIFICATIONS, CONCERNS REGARDING THE APPLICABLE SAFETY STANDARDS, OR THE SAFETY OF THE CONTRACTOR OR THIRD PARTIES IN PERFORMING THE WORK ON THIS PROJECT, WITH BOHLER ENGINEERING, IN WRITING, AND RESPONDED TO BY BOHLER, IN WRITING, PRIOR TO THE INITIATION OF ANY SITE ACTIVITY AND ANY DEMOLITION ACTIVITY. ALL DEMOLITION ACTIVITIES MUST BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THESE PLANS AND SPECIFICATIONS AND ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS, RULES, REQUIREMENTS, STATUTES, ORDINANCES AND CODES.
6. PRIOR TO STARTING ANY DEMOLITION, CONTRACTOR IS RESPONSIBLE FOR/TO:

   A. OBTAINING ALL REQUIRED PERMITS AND MAINTAINING THE SAME ON SITE FOR REVIEW BY THE ENGINEER AND OTHER PUBLIC AGENCIES WITH JURISDICTION THROUGHOUT THE DURATION OF THE PROJECT, SITE WORK, AND DEMOLITION WORK.

   B. NOTIFYING, AT A MINIMUM, THE MUNICIPAL ENGINEER, DESIGN ENGINEER, AND LOCAL SOIL CONSERVATION DISTRICT, 72 HOURS PRIOR TO THE START OF WORK.

   C. INSTALLING THE REQUIRED SOIL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO SITE DISTURBANCE.

   D. IN ACCORDANCE WITH STATE LAW, THE CONTRACTOR MUST CALL THE STATE ONE-CALL DAMAGE PROTECTION SYSTEM FOR UTILITY MARKOUT, IN ADVANCE OF ANY EXCAVATION.

   E. LOCATING AND PROTECTING ALL UTILITIES AND SERVICES, INCLUDING BUT NOT LIMITED TO GAS, WATER, ELECTRIC, SANITARY AND STORM SEWER, TELEPHONE, CABLE, FIBER OPTIC CABLE, ETC. WITHIN AND ADJACENT TO THE LIMITS OF PROJECT ACTIVITIES. THE CONTRACTOR MUST USE AND COMPLY WITH THE REQUIREMENTS OF THE APPLICABLE UTILITY NOTIFICATION SYSTEM TO LOCATE ALL THE UNDERGROUND UTILITIES.

   F. PROTECTING AND MAINTAINING IN OPERATION, ALL ACTIVE UTILITIES AND SYSTEMS THAT ARE NOT BEING REMOVED DURING ALL DEMOLITION ACTIVITIES.

   G. ARRANGING FOR AND COORDINATING WITH THE APPLICABLE UTILITY SERVICE PROVIDER(S) FOR THE TEMPORARY OR PERMANENT TERMINATION OF SERVICE REQUIRED BY THE PROJECT PLANS AND SPECIFICATIONS. THE CONTRACTOR MUST PROVIDE THE UTILITY ENGINEER AND OWNER WRITTEN NOTIFICATION THAT THE EXISTING UTILITIES AND SERVICES HAVE BEEN TERMINATED AND ABANDONED IN ACCORDANCE WITH JURISDICTIONAL AND UTILITY COMPANY REQUIREMENTS.

   H. COORDINATION WITH UTILITY COMPANIES REGARDING WORKING "OFF-PEAK" HOURS OR ON WEEKENDS AS MAY BE REQUIRED TO MINIMIZE THE IMPACT ON THE AFFECTED PARTIES. WORK REQUIRED TO BE DONE "OFF-PEAK" IS TO BE DONE AT NO ADDITIONAL COST TO THE OWNER.

   I. IN THE EVENT THE CONTRACTOR DISCOVERS ANY HAZARDOUS MATERIAL, THE REMOVAL OF WHICH IS NOT ADDRESSED IN THE PROJECT PLANS AND SPECIFICATIONS, THE CONTRACTOR MUST IMMEDIATELY CEASE ALL WORK AND IMMEDIATELY NOTIFY THE OWNER AND ENGINEER OF THE DISCOVERY OF SUCH MATERIALS.
7. THE FIRM OR ENGINEER OF RECORD IS NOT RESPONSIBLE FOR JOB SITE SAFETY OR SUPERVISION. CONTRACTOR MUST PROCEED WITH THE DEMOLITION IN A SYSTEMATIC AND SAFE MANNER, FOLLOWING ALL THE OSHA REQUIREMENTS, TO ENSURE PUBLIC AND CONTRACTOR SAFETY.
8. THE CONTRACTOR MUST PROVIDE ALL "MEANS AND METHODS" NECESSARY TO PREVENT MOVEMENT, SETTLEMENT, OR COLLAPSE OF EXISTING STRUCTURES, AND ANY OTHER IMPROVEMENTS THAT ARE REMAINING ON OR OFF SITE. THE CONTRACTOR IS RESPONSIBLE FOR ALL REPAIRS OF DAMAGE TO ALL ITEMS THAT ARE TO REMAIN. CONTRACTOR MUST USE NEW MATERIAL FOR ALL REPAIRS. CONTRACTOR'S REPAIR MUST INCLUDE THE RESTORATION OF ANY ITEMS REPAIRED TO THE PRE-DEMOLITION CONDITION, OR BETTER. CONTRACTOR SHALL PERFORM ALL REPAIRS AT THE CONTRACTOR'S SOLE EXPENSE.
9. THE CONTRACTOR MUST NOT PERFORM ANY EARTH MOVEMENT ACTIVITIES, DEMOLITION OR REMOVAL OF FOUNDATION WALLS, FOOTINGS, OR OTHER MATERIALS WITHIN THE LIMITS OF DISTURBANCE UNLESS SAME IS IN STRICT ACCORDANCE AND CONFORMANCE WITH THE PROJECT PLANS AND SPECIFICATIONS, AND/OR UNDER THE WRITTEN DIRECTION OF THE OWNER'S STRUCTURAL OR GEOTECHNICAL ENGINEER.
10. CONTRACTOR MUST BACKFILL ALL EXCAVATION RESULTING FROM, OR INCIDENTAL TO, DEMOLITION ACTIVITIES. BACKFILL MUST BE ACCOMPLISHED WITH APPROVED BACKFILL MATERIALS, AND MUST BE SUFFICIENTLY COMPACTED TO SUPPORT NEW IMPROVEMENTS AND PERFORMED IN COMPLIANCE WITH THE RECOMMENDATIONS AND GUIDANCE IN THE GEOTECHNICAL REPORT. BACKFILLING MUST OCCUR IMMEDIATELY AFTER DEMOLITION ACTIVITIES, AND MUST BE DONE SO AS TO PREVENT WATER ENTERING THE EXCAVATION. FINISHED SURFACES MUST BE GRADED TO PROMOTE POSITIVE DRAINAGE.
11. EXPLOSIVES MUST NOT BE USED WITHOUT PRIOR WRITTEN CONSENT OF BOTH THE OWNER AND ALL APPLICABLE GOVERNMENTAL AUTHORITIES. ALL THE REQUIRED PERMITS AND EXPLOSIVE CONTROL MEASURES THAT ARE REQUIRED BY THE FEDERAL, STATE, AND LOCAL GOVERNMENTS MUST BE IN PLACE PRIOR TO CONTRACTOR STARTING AN EXPLOSIVE PROGRAM AND/OR ANY DEMOLITION. THE CONTRACTOR IS ALSO RESPONSIBLE FOR ALL INSPECTION AND SEISMIC VIBRATION TESTING THAT IS REQUIRED TO MONITOR THE EFFECTS ON ALL LOCAL STRUCTURES.
12. CONTRACTOR MUST PROVIDE TRAFFIC CONTROL AND GENERALLY ACCEPTED SAFE PRACTICES IN CONFORMANCE WITH THE CURRENT FHWA "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD), AND THE FEDERAL, STATE, AND LOCAL REGULATIONS WHEN DEMOLITION RELATED ACTIVITIES IMPACT ROADWAYS AND/OR ROADWAY RIGHT-OF-WAY.
13. CONTRACTOR MUST CONDUCT DEMOLITION ACTIVITIES IN SUCH A MANNER TO ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, SIDEWALKS, WALKWAYS, AND OTHER ADJACENT FACILITIES. STREET CLOSURE PERMITS MUST BE RECEIVED FROM THE APPROPRIATE GOVERNMENTAL AUTHORITY PRIOR TO THE COMMENCEMENT OF ANY ROAD OPENING OR DEMOLITION ACTIVITIES IN OR ADJACENT TO THE RIGHT-OF-WAY.
14. DEMOLITION ACTIVITIES AND EQUIPMENT MUST NOT USE AREAS OUTSIDE THE DEFINED PROJECT LIMIT LINE, WITHOUT WRITTEN PERMISSION OF THE OWNER AND ALL GOVERNMENTAL AGENCIES WITH JURISDICTION.
15. THE CONTRACTOR MUST USE DUST CONTROL MEASURES TO LIMIT AIRBORNE DUST AND DIRT RISING AND SCATTERING IN THE AIR IN ACCORDANCE WITH FEDERAL, STATE, AND/OR LOCAL STANDARDS. AFTER THE DEMOLITION IS COMPLETE, CONTRACTOR MUST CLEAN ALL ADJACENT STRUCTURES AND IMPROVEMENTS TO REMOVE ALL DUST AND DEBRIS CAUSED BY THE DEMOLITION OPERATIONS. THE CONTRACTOR IS RESPONSIBLE FOR RETURNING ALL ADJACENT AREAS TO THEIR "PRE-DEMOLITION" CONDITION.
16. CONTRACTOR IS RESPONSIBLE TO SAFEGUARD THE SITE AS NECESSARY TO PERFORM THE DEMOLITION IN SUCH A MANNER AS TO PREVENT THE ENTRY OF UNAUTHORIZED PERSONS AT ANY TIME.
17. CONTRACTOR IS RESPONSIBLE FOR SITE JOB SAFETY, WHICH MUST INCLUDE, BUT NOT BE LIMITED TO, THE INSTALLATION AND MAINTENANCE OF BARRIERS, FENCING AND OTHER APPROPRIATE SAFETY ITEMS NECESSARY TO PROTECT THE PUBLIC FROM AREAS OF CONSTRUCTION AND CONSTRUCTION ACTIVITY.
18. THIS DEMOLITION PLAN IS INTENDED TO IDENTIFY THOSE EXISTING ITEMS/CONDITIONS WHICH ARE TO BE REMOVED. IT IS NOT INTENDED TO PROVIDE DIRECTION AS TO THE MEANS, METHODS, SEQUENCING, TECHNIQUES AND PROCEDURES TO BE USED TO ACCOMPLISH THAT WORK. ALL MEANS, METHODS, SEQUENCING, TECHNIQUES AND PROCEDURES TO BE USED MUST BE IN STRICT ACCORDANCE WITH ALL STATE, FEDERAL, LOCAL, AND JURISDICTIONAL REQUIREMENTS. THE CONTRACTOR MUST COMPLY WITH ALL OSHA AND OTHER SAFETY PRECAUTIONS NECESSARY TO PROVIDE A SAFE WORK SITE.
19. DEBRIS MUST NOT BE BURIED ON THE SUBJECT SITE. ALL DEMOLITION WASTES AND DEBRIS (SOLID WASTE) MUST BE DISPOSED OF IN ACCORDANCE WITH ALL MUNICIPAL, COUNTY, STATE AND FEDERAL LAWS AND APPLICABLE CODES. THE CONTRACTOR MUST MAINTAIN RECORDS TO DEMONSTRATE PROPER DISPOSAL ACTIVITIES, TO BE PROMPTLY PROVIDED TO THE OWNER UPON REQUEST.
20. CONTRACTOR MUST MAINTAIN A RECORD SET OF PLANS UPON WHICH IS INDICATED THE LOCATION OF EXISTING UTILITIES THAT ARE CAPPED, ABANDONED IN PLACE, OR RELOCATED DUE TO DEMOLITION ACTIVITIES. THIS RECORD DOCUMENT MUST BE PREPARED IN A NEAT AND WORKMAN-LIKE MANNER, AND TURNED OVER TO THE OWNER/DEVELOPER UPON COMPLETION OF THE WORK.
21. EXISTING PIPES THAT ARE ENCOUNTERED ON SITE BUT NOT REMOVED SHALL BE CAPPED IN PLACE. COORDINATE WITH DEVELOPER.
22. EXISTING UTILITY STRUCTURES ENCOUNTERED ON SITE BUT NOT REMOVED SHALL HAVE THE FRAME AND COVER / GRATE REMOVED AND STRUCTURE SHALL BE INFILLED WITH CONCRETE OR 3/4" CRUSHED STONE. AREA SHALL BE ADJUSTED TO GRADE AND LOAM AND SEEDED FOR STABILIZATION. EXISTING STRUCTURES SHALL NOT BE LEFT IN AREAS OF PAVEMENT OR BUILDING. COORDINATE WITH DEVELOPER.

ADA INSTRUCTIONS TO CONTRACTOR:

CONTRACTORS MUST EXERCISE APPROPRIATE CARE AND PRECISION IN CONSTRUCTION OF ADA (ACCESSIBLE) ACCESSIBLE COMPONENTS AND ACCESS ROUTES FOR THE SITE. THESE COMPONENTS, AS CONSTRUCTED, MUST COMPLY WITH ALL APPLICABLE STATE AND LOCAL ACCESSIBILITY LAWS AND REGULATIONS AND THE CURRENT ADA AND/OR STATE ARCHITECTURAL ACCESS BOARD STANDARDS AND REGULATIONS' BARRIER FREE ACCESS AND ANY MODIFICATIONS, REVISIONS OR UPDATES TO SAME. FINISHED SURFACES ALONG THE ACCESSIBLE ROUTE OF TRAVEL FROM PARKING SPACE, PUBLIC TRANSPORTATION, PEDESTRIAN ACCESS, INTER-BUILDING ACCESS, TO POINTS OF ACCESSIBLE BUILDING ENTRANCE/EXIT, MUST COMPLY WITH THESE ADA AND/OR ARCHITECTURAL ACCESS BOARD CODE REQUIREMENTS. THESE INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:

- PARKING SPACES AND PARKING AISLES - SLOPE SHALL NOT EXCEED 1:50 (2.0%) IN ANY DIRECTION.
- CURB RAMPS - SLOPE MUST NOT EXCEED 1:12 (8.3%) FOR A MAXIMUM OF SIX (6) FEET.
- LANDINGS - MUST BE PROVIDED AT EACH END OF RAMPS, MUST PROVIDE POSITIVE DRAINAGE, AND MUST NOT EXCEED 1:50 (2.0%) IN ANY DIRECTION.
- PATH OF TRAVEL ALONG ACCESSIBLE ROUTE - MUST PROVIDE A 36-INCH OR GREATER UNOBSTRUCTED WIDTH OF TRAVEL (CAR OVERHANGS AND/OR HANDRAILS CANNOT REDUCE THIS MINIMUM WIDTH). THE SLOPE MUST BE NO GREATER THAN 1:20 (5.0%) IN THE DIRECTION OF TRAVEL, AND MUST NOT EXCEED 1:50 (2.0%) IN CROSS SLOPE. WHERE PATH OF TRAVEL WILL BE GREATER THAN 1:20 (5.0%), ADA RAMP MUST BE ADHERED TO. A MAXIMUM SLOPE OF 1:12 (8.3%), FOR A MAXIMUM RISE OF 2.5 FEET, MUST BE PROVIDED. THE RAMP MUST HAVE ADA HAND RAILS AND "LEVEL" LANDINGS ON EACH END THAT ARE CROSS SLOPED NO MORE THAN 1:50 IN ANY DIRECTION (2.0%) FOR POSITIVE DRAINAGE.
- DOORWAYS - MUST HAVE A "LEVEL" LANDING AREA ON THE EXTERIOR SIDE OF THE DOOR THAT IS SLOPED AWAY FROM THE DOOR NO MORE THAN 1:50 (2.0%) FOR POSITIVE DRAINAGE. THIS LANDING AREA MUST BE NO LESS THAN 60 INCHES (5 FEET) LONG, EXCEPT WHERE OTHERWISE PERMITTED BY ADA STANDARDS FOR ALTERNATIVE DOORWAY OPENING CONDITIONS. (SEE ICC/ANSI A117.1-2003 AND OTHER REFERENCED INCORPORATED BY CODE.)
- WHEN THE PROPOSED CONSTRUCTION INVOLVES RECONSTRUCTION, MODIFICATION, REVISION OR EXTENSION OF OR TO ADA COMPONENTS FROM EXISTING DOORWAYS OR SURFACES, CONTRACTOR MUST VERIFY EXISTING ELEVATIONS SHOWN ON THE PLAN. NOTE THAT TABLE 405.2 OF THE DEPARTMENT OF JUSTICE'S ADA STANDARDS FOR ACCESSIBLE DESIGN ALLOWS FOR STEEPER RAMP SLOPES, IN RARE CIRCUMSTANCES. THE CONTRACTOR MUST IMMEDIATELY NOTIFY THE DESIGN ENGINEER OF ANY DISCREPANCIES AND/OR FIELD CONDITIONS THAT DIFFER IN ANY WAY OR ANY RESPECT FROM WHAT IS SHOWN ON THE PLANS, IN WRITING, BEFORE COMMENCEMENT OF WORK. CONSTRUCTED IMPROVEMENTS MUST FALL WITHIN THE MAXIMUM AND MINIMUM LIMITATIONS IMPOSED BY THE BARRIER FREE REGULATIONS AND THE ADA REQUIREMENTS.
- THE CONTRACTOR MUST VERIFY THE SLOPES OF CONTRACTOR'S FORMS PRIOR TO POURING CONCRETE. IF ANY NON-CONFORMANCE IS OBSERVED OR EXISTS, CONTRACTOR MUST IMMEDIATELY NOTIFY THE ENGINEER PRIOR TO POURING CONCRETE. CONTRACTOR IS RESPONSIBLE FOR ALL COSTS TO REMOVE, REPAIR AND REPLACE NON-CONFORMING CONCRETE.

IT IS STRONGLY RECOMMENDED THAT THE CONTRACTOR REVIEW THE INTENDED CONSTRUCTION WITH THE LOCAL BUILDING CODE PRIOR TO COMMENCEMENT OF CONSTRUCTION.

TYPICAL ABBREVIATIONS

KEY	DESCRIPTION	KEY	DESCRIPTION
BC	BOTTOM CURB	PROP.	PROPOSED
TC	TOP CURB	TBR/R	TO BE REMOVED AND REPLACED
VGC	VERTICAL GRANITE CURB	ECC	EXTRUDED CONCRETE CURB
BOC	BACK OF CURB	TBR	TO BE REMOVED
BW	BOTTOM OF WALL GRADE	TPF	TREE PROTECTION FENCE
TW	TOP OF WALL	BLDG.	BUILDING
EXIST.	EXISTING	SF	SQUARE FEET
BM.	BENCHMARK	SMH	SEWER MANHOLE
EOP	EDGE OF PAVEMENT	DMH	DRAIN MANHOLE
℄	CENTERLINE	STM.	STORM
FF	FINISHED FLOOR	SAN.	SANITARY
V.I.F.	VERIFY IN FIELD	CONC.	CONCRETE
GC	GENERAL CONTRACTOR	ARCH.	ARCHITECTURAL
HP	HIGH POINT	DEP.	DEPRESSED
LP	LOW POINT	R	RADIUS
TYP.	TYPICAL	MIN.	MINIMUM
INT.	INTERSECTION	MAX.	MAXIMUM
PC.	POINT OF CURVATURE	No. / #	NUMBER
PT.	POINT OF TANGENCY	W.	WIDE
PI.	POINT OF INTERSECTION	DEC.	DECORATIVE
PVI.	POINT OF VERTICAL INTERSECTION	ELEV.	ELEVATION
STA.	STATION	UNG.	UNDERGROUND
GRT	GRATE	R.O.W.	RIGHT OF WAY
INV.	INVERT	LF	LINEAR FOOT
DIP	DUCTILE IRON PIPE	LOD	LIMIT OF DISTURBANCE
PVC	POLYVINYL CHLORIDE PIPE	LOW	LIMIT OF WORK
HDPE	HIGH DENSITY POLYETHYLENE PIPE	L.S.A.	LANDSCAPED AREA
RCP	REINFORCED CONCRETE PIPE	±	PLUS OR MINUS
S	SLOPE	°	DEGREE
ME	MEET EXISTING	Ø / DIA.	DIAMETER

TYPICAL LEGEND

EXISTING		PROPOSED
	PROPERTY LINE	
	SETBACK	
	EASEMENT	
	CURB	
	STORM MANHOLE	
	SEWER MANHOLE	
	CATCH BASIN	
	WETLAND FLAG	
	WETLAND LINE	
× 54.83	SPOT ELEVATION	53.52
× TC 54.58 G 53.78	TOP & BOTTOM OF CURB	
53	CONTOUR	
	FLOW ARROW	
	PAINTED ARROW	
	RIDGE LINE	
G	GAS LINE	G
T	TELEPHONE LINE	T
E	ELECTRIC LINE	E
W	WATER LINE	W
OH	OVERHEAD WIRE	OH
	STORM PIPE	
	SANITARY LINE	S
	PARKING COUNT	4
	SIGN	
	LIGHT POLE	
	GUIDE RAIL	
	UTILITY POLE	
	BENCH	
	BIKE RACK	

REFER TO SITE PLAN FOR ZONING ANALYSIS TABLE AND LAND USE/ ZONING INFORMATION & NOTES

REFER TO SOIL EROSION CONTROL NOTES & DETAILS SHEET FOR TYPICAL EROSION NOTES AND DETAILS

TOWN OF MAYNARD PLANNING BOARD APPROVAL

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APPROVED FOR CONSTRUCTION

PROJECT No.:	W161189
DRAWN BY:	AWP/CFD
CHECKED BY:	NEM/JAK
DATE:	02/15/2017
SCALE:	AS NOTED
CAD I.D.:	W161189SS7

PROJECT: SITE DEVELOPMENT PLANS —FOR— CAPITAL GROUP PROPERTIES

MAYNARD CROSSING

LOCATION OF SITE
MAP #25 & LOTS #152 & 152-1
129 PARKER STREET (ROUTE 27)
TOWN OF MAYNARD
MIDDLESEX COUNTY
MASSACHUSETTS

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MAINE LICENSE NO. 12553
COMMONWEALTH OF MASSACHUSETTS · JOHN A. KUCICH · CIVIL · No. 41530 · REGISTERED PROFESSIONAL ENGINEER

SHEET TITLE: GENERAL NOTES SHEET

SHEET NUMBER: 2 OF 35

REV 7 - 09/18/2017

CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL UTILITY SHUTOFFS

CONTRACTOR TO REMOVE ALL EXISTING FEATURES WITHIN THE LIMIT OF WORK UNLESS OTHERWISE NOTED

REFER TO SOIL EROSION AND SEDIMENT CONTROL PLANS FOR ADDITIONAL INFORMATION

REFER TO GENERAL NOTES SHEET FOR DEMOLITION NOTES

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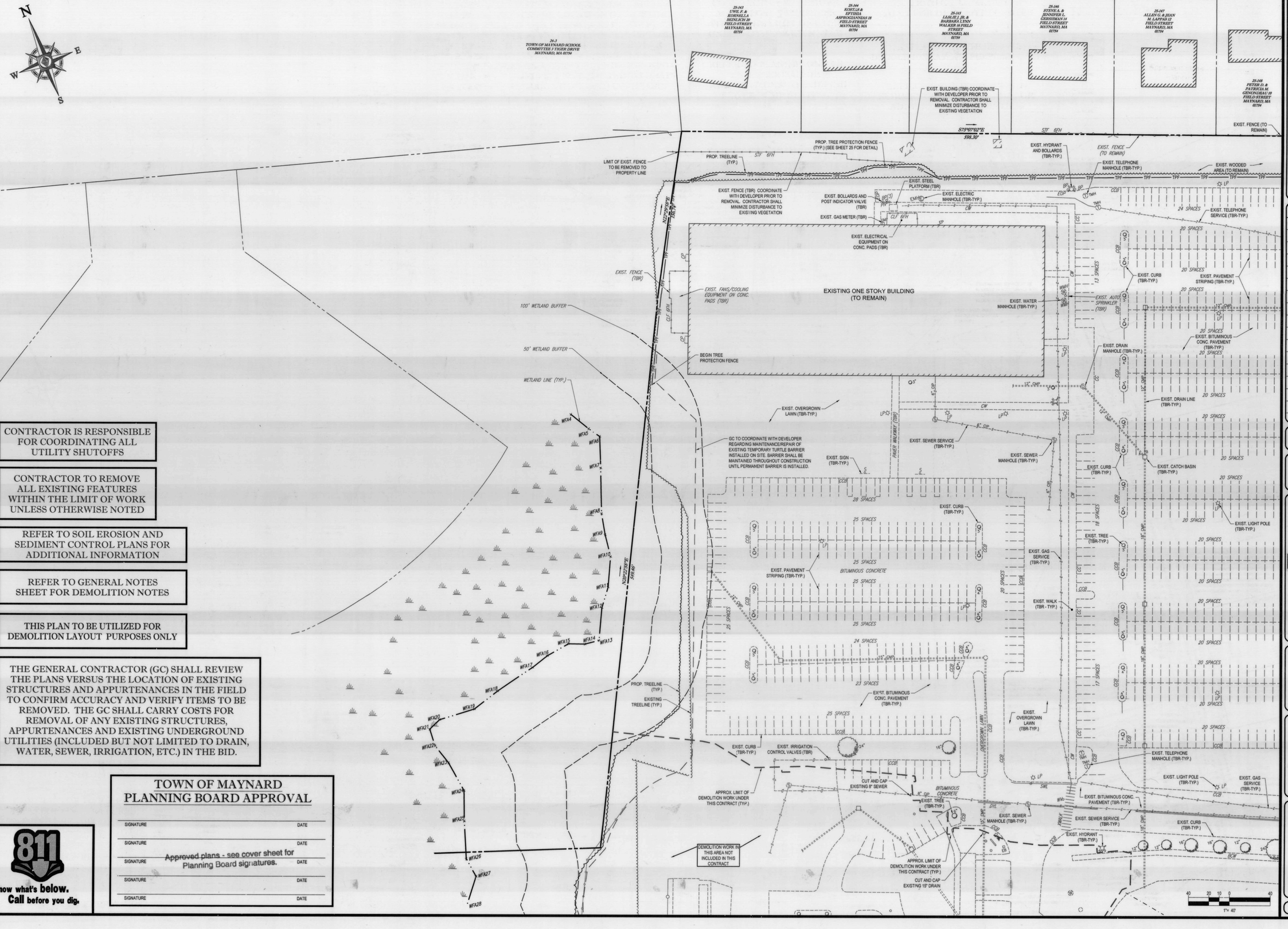

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CAPITAL GROUP PROPERTIES
MAYNARD CROSSING

LOCATION OF SITE
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TOWN OF MAYNARD
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MAINE LICENSE NO. 13553

SHEET TITLE:
DEMOLITION PLAN "A"

SHEET NUMBER:
3
OF 35

REV 7 - 09/18/2017

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CONNECTICUT LICENSE NO. PEN.0030177
RHODE ISLAND LICENSE NO. 9816
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SHEET TITLE:
DEMOLITION PLAN "B"

SHEET NUMBER:
4
OF 35

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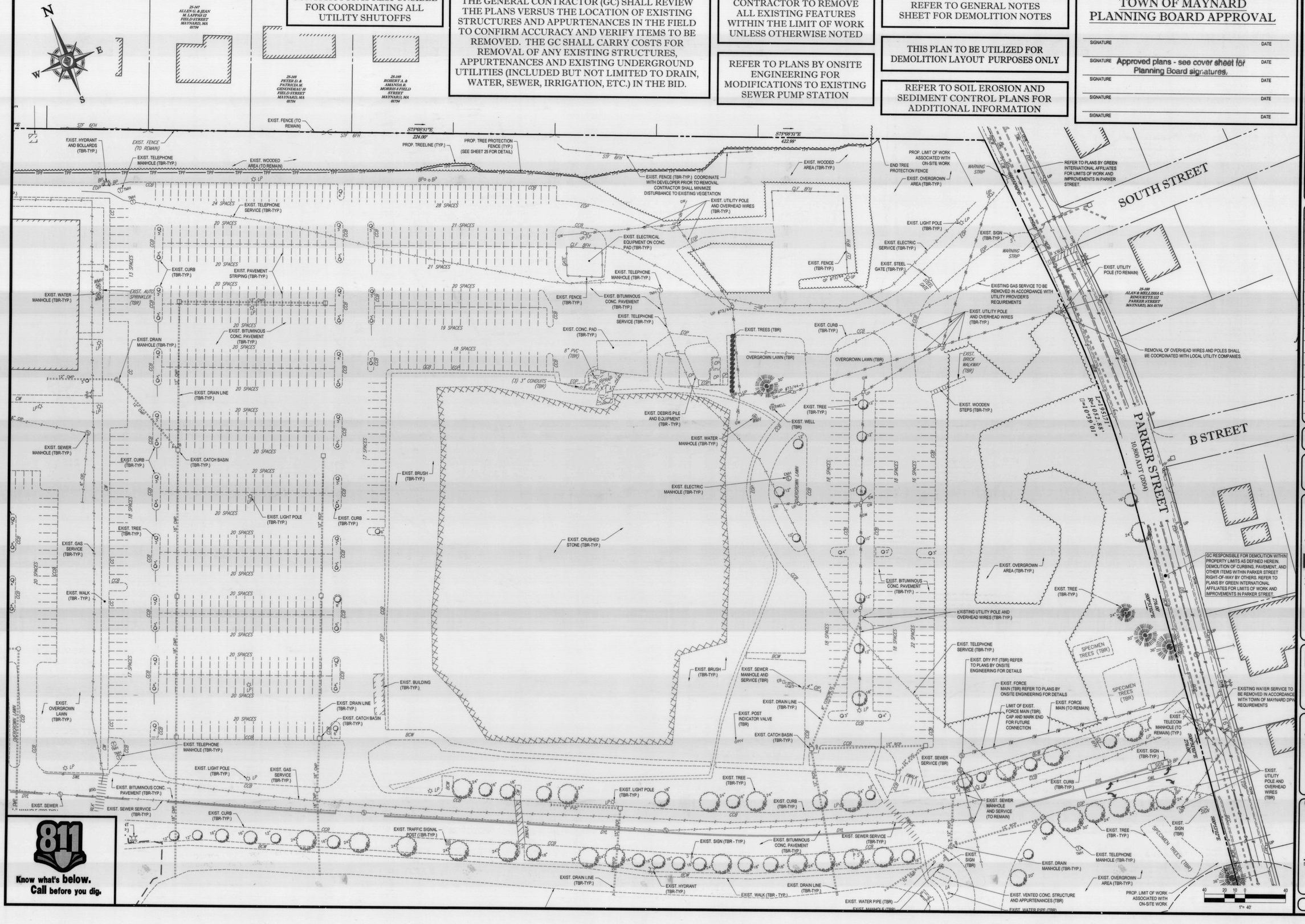

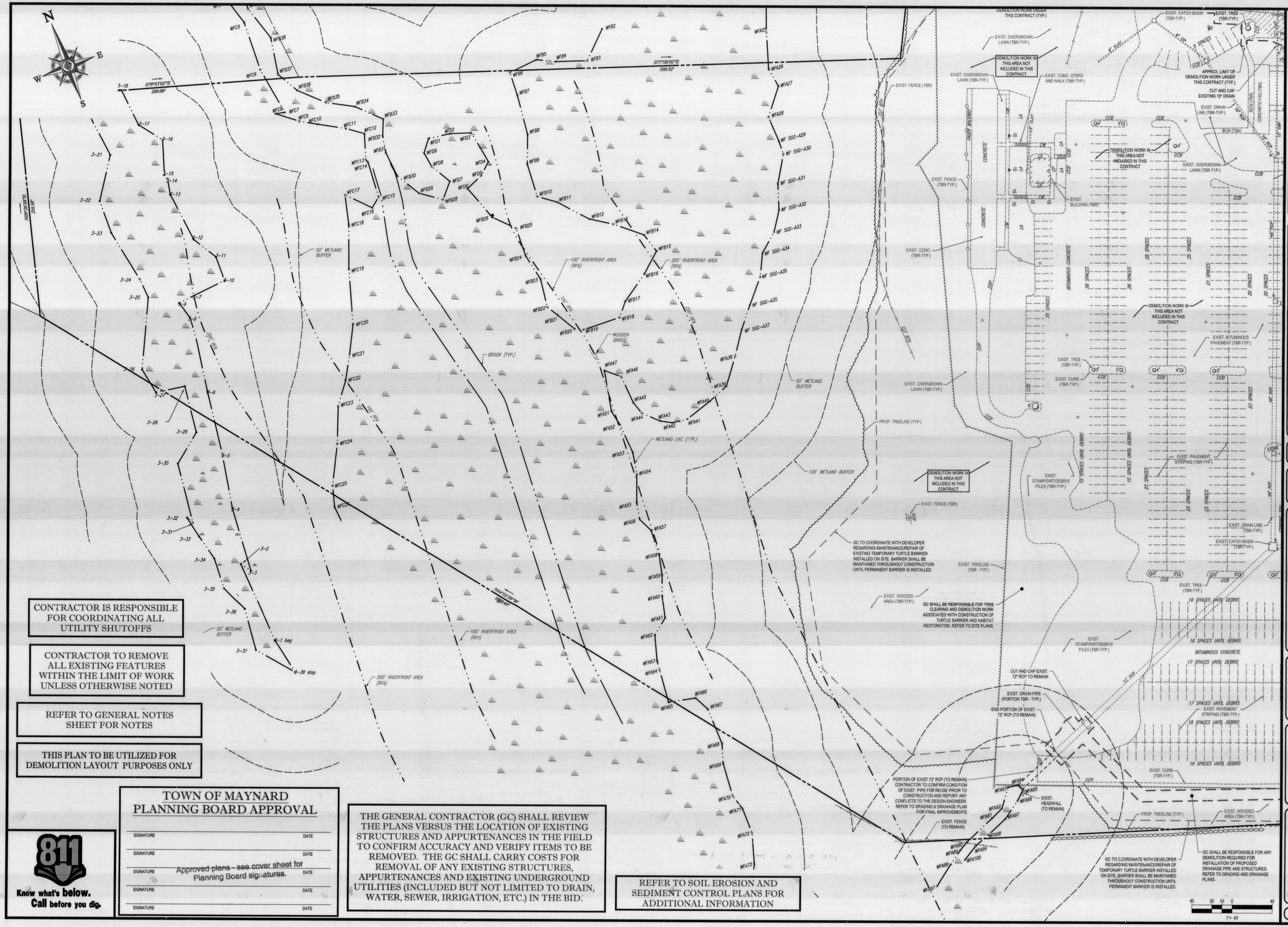

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RHODE ISLAND LICENSE NO. 9616
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SHEET TITLE:
DEMOLITION PLAN "C"

SHEET NUMBER:
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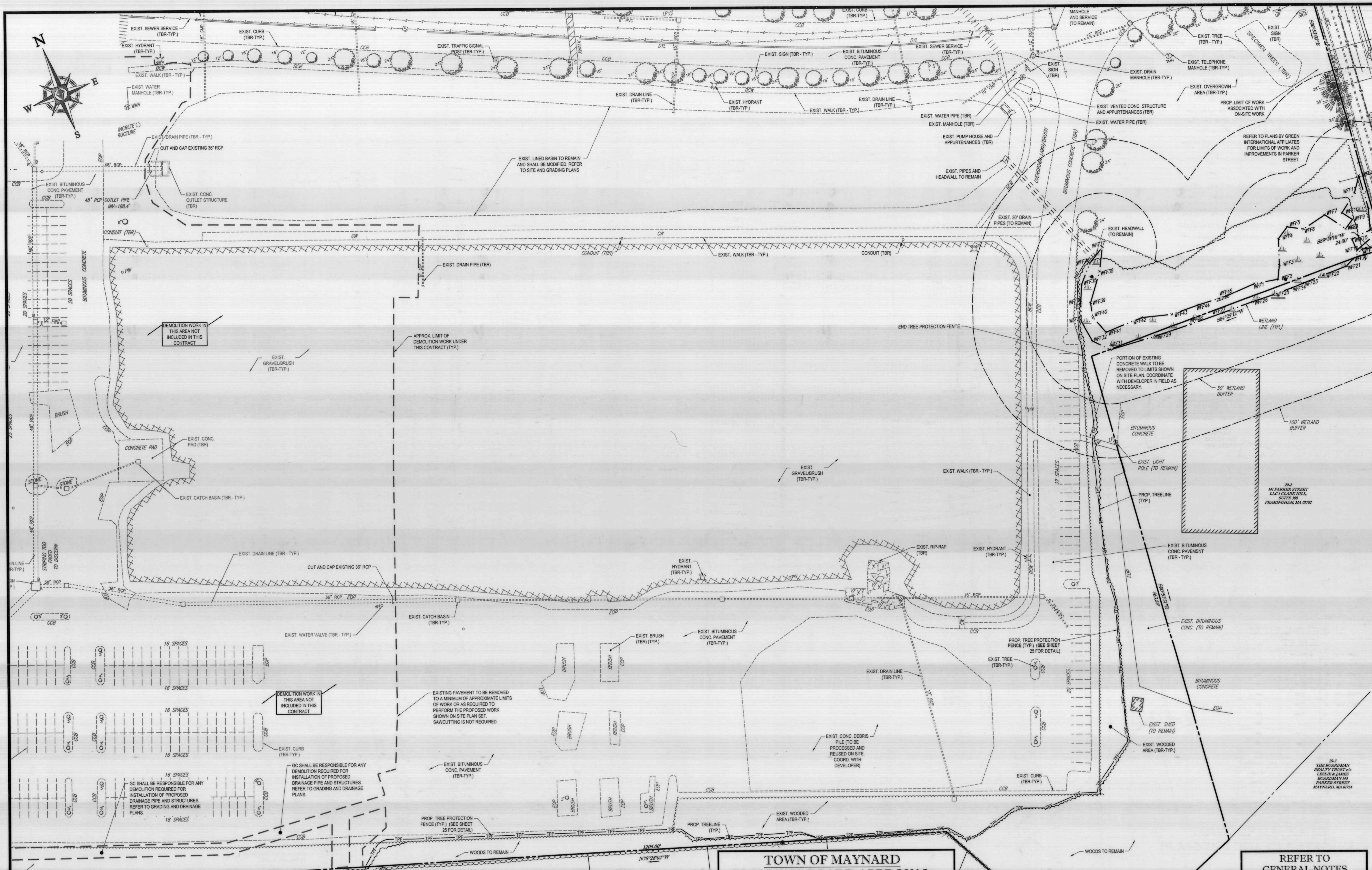

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1" = 40'

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UPSTATE NEW YORK · NEW ENGLAND · BOSTON, MA · NEW YORK METRO · NEW YORK, NY · NEW JERSEY · PHILADELPHIA, PA · LEHIGH VALLEY, PA · SOUTHEASTERN, PA · REHOBOTH BEACH, DE · BALTIMORE, MD · SOUTHERN MARYLAND · NORTHERN VIRGINIA · CENTRAL VIRGINIA · RALEIGH, NC · CHARLOTTE, NC · ATLANTA, GA · TAMPA, FL · SOUTH FLORIDA · DALLAS, TX

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REVISIONS

REV	DATE	COMMENT	BY
1	03/21/17	REMOVE CARRIAGE BLDG. (SHEETS 8-12 ONLY)	CFD
2	06/02/17	REV. PER TOWN COMMENTS	CFD
3	06/15/17	DRAINAGE REVISIONS (SHEETS 13-16 ONLY)	GJZ
4	06/28/17	DRAINAGE REVISIONS (FULL SET)	AWP
5	07/26/17	REV. PER TOWN COMMENTS	AWP
6	08/10/17	PEER REVIEW COMMENTS	CFD
7	09/18/17	CONSTRUCTION DOCUMENTS	AWP
8			
9			
10			
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13			
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APPROVED FOR CONSTRUCTION

PROJECT No.: W161189
DRAWN BY: AWP/CFD
CHECKED BY: NEM/JAK
DATE: 02/15/2017
SCALE: AS NOTED
CAD I.D.: W161189SS7

PROJECT:
SITE DEVELOPMENT PLANS
FOR
CAPITAL GROUP PROPERTIES

MAYNARD CROSSING

LOCATION OF SITE
MAP #25 & LOTS #152 & 152-1
129 PARKER STREET (ROUTE 27)
TOWN OF MAYNARD
MIDDLESEX COUNTY
MASSACHUSETTS

BOHLER ENGINEERING
352 TURNPIKE ROAD
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900
Fax: (508) 480-9080
www.BohlerEngineering.com

J.A. KUCICH
JOHN A. KUCICH CIVIL No. 41530
PROFESSIONAL ENGINEER

SHEET TITLE:
DEMOLITION PLAN "D"

SHEET NUMBER:
6
OF 35

REV 7 - 09/18/2017

LAND USE / ZONING INFORMATION & NOTES

1. APPLICANT:
   CAPITAL GRCUP PROPERTIES
   259 TURNPIKE ROAD, SUITE 100
   SOUTHBOROUGH, MA, 01772
2. OWNER:
   MAYNARD CROSSINGS JV, LLC
   259 TURNPIKE ROAD, SUITE 100
   SOUTHBOROUGH, MA, 01772
   CONTACT: DANIEL RUIZ
   508-229-1308
   PERMITTING@CGPLLC.NET
3. PARCEL:
   MAP #25 & LOT #152 & 152-1
   PARCEL ID# 025.0-0000-0152.0
   PARCEL ID# 025.0-0000-0152-1.0
   129 PARKER STREET
   TOWN OF MAYNARD
   MIDDLESEX COUNTY, MASSACHUSETTS

ZONING ANALYSIS TABLE

ZONING DISTRICT	INDUSTRIAL DISTRICT (I) NEIGHBORHOOD BUSINESS OVERLAY (NBOD) WATER SUPPLY PROTECTION DISTRICT - ZONE II		
ZONE CRITERIA	REQUIRED	EXISTING	PROPOSED
MINIMUM LOT AREA	40,000 SF	2,537,370 SF (58.25 AC.)	2,523,431 SF (57.93 AC.)
MINIMUM LOT FRONTAGE	150 FT	929.3 FT	NO CHANGE
MAX. BUILDING COVERAGE	35%	13.8%	16.3%
MIN. FRONT SETBACK	50 FT / 300 FT / 1,000 FT (1)	889 FT	87.1 FT / 422 FT / 1,289 FT
MIN. SIDE SETBACK	30 FT / 100 FT (2) / 300 (1)	89.9 FT (E)	59.3 FT / 89.9 FT (E) (5) / 659 FT
MIN. REAR SETBACK	30 FT / 100 FT (2)	20.3 FT (E)	20.3 FT (E) (6) / NA
MAX. BUILDING HEIGHT	40 FT / 50 FT OR 4 STORIES (3)	<40 FT	SEE TABLE (1)
MIN. OPEN SPACE	30%	53.7%	40.2%
MAX. IMPERVIOUS SURACE	70%	46.3%	59.8%
PARKING SPACES	1766	2193 (4)	1708
PARKING CRITERIA (9'x18.5')	APARTMENT UNITS: 180 UNITS @ 2 SPACES / UNIT = 360 SPACES CONTINUING CARE HOUSING UNIT: (143 UNITS @ 1 SPACE PER 2 UNITS) + (1 SPACE / EMPLOYEE OF THE LARGEST SHIFT * 16) = 88 SPACES COMMERCIAL, BUSINESS, SALES/RETAIL SPACE: 279,622 SF @ 1 SPACE PER 225 SF = 1,243 SPACES MEDICAL OFFICE, CLINIC, DENTIST SPACE: 15,000 SF @ 1 SPACE PER 200 SF = 75 SPACES TOTAL PARKING SPACES = 360 SPACES + 88 SPACES + 1,243 SPACES + 75 SPACES = 1,766 SPACES		
ACCESSIBLE PARKING SPACES	28	-	55
ACCESSIBLE PARKING CRITERIA (STANDARD SPACE- 8'x18.5' W/ 5' ACCESS AISLE) (VAN ACCESSIBLE SPACE-8'x18.5' W/ 8' ACCESS AISLE)	TOTAL PARKING OVER 1000 = 20 ACCESSIBLE SPACES FOR THE FIRST 1000 SPACES PLUS ONE ACCESSIBLE SPACE FOR EVERY ADDITIONAL 100 SPACES = (20/1000)*1000 + (1/100)765 = 28 TOTAL ACCESSIBLE SPACES REQUIRED VAN ACCESSIBLE SPACES= 1 / 6 SPACES		

E: EXISTING NON-CONFORMITY
NA: NOT APPLICABLE
(1) NO STRUCTURE GREATER THAN 40 FEET SHALL BE CLOSER THAN 300 FEET TO ANY RESIDENTIAL ZONE OR 1,000 FEET FROM A STATE NUMBERED HIGHWAY
(2) INCREASE BY 70 FEET WHEN ABUTTING RESIDENTIAL DISTRICT OF WHICH 45 FEET SHALL BE LANDSCAPE OPEN SPACE
(3) FOR CONTINUING CARE RETIREMENT COMMUNITY
(4) BASED UPON RECORD SURVEY AND AERIAL MAPPING
(5) MIN. SIDE YARD SETBACK FOR PROPOSED BUILDINGS ARE 100.5 FT
(6) MIN. REAR YARD SETBACK FOR PROPOSED BUILDINGS ARE 71.4 FT

BUILDING HEIGHT TABLE

	REQUIRED	PROPOSED
R1	40 FT	28 FT (ONE STORY)
R2	40 FT	18 FT (ONE STORY)
R3	40 FT	27 FT (ONE STORY)
R4	40 FT	28 FT (ONE STORY)
R5	40 FT	22 FT (ONE STORY)
R6	40 FT	24 FT (ONE STORY)
R7	40 FT	25 FT (ONE STORY)
R8	40 FT	22 FT (ONE STORY)
R9	40 FT	22 FT (ONE STORY)
R10	40 FT	30 FT (ONE STORY)
CONTINUING CARE	50 FT (4 STORIES)	47.7 FT (4 STORIES)
APT #1	40 FT	39 FT (3 STORIES)
APT #2	50 FT (4 STORIES)	49.9 FT (4 STORIES)
APT #3	40 FT	39 FT (3 STORIES)
CLUBHOUSE	40 FT	17.5 FT

TOWN OF MAYNARD PLANNING BOARD APPROVAL

SIGNATURE _____ DATE _____
SIGNATURE _____ DATE _____
SIGNATURE Approved plans - see cover sheet for Planning Board signatures. DATE _____
SIGNATURE _____ DATE _____
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REFER TO GENERAL NOTES SHEET FOR NOTES

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100 50 25 0 100
1"= 100'

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SHEET TITLE:
OVERALL SITE PLAN

SHEET NUMBER: 7 OF 35

REV 7 - 09/18/2017

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N

W E

S

SINGLE RESIDENCE DISTRICT 1

INDUSTRIAL DISTRICT

ZONE LINE (TYP.)

24-3
TOWN OF MAYNARD SCHOOL COMMITTEE 1 TIGER DRIVE MAYNARD, MA 01754

25-143
UWE F. & KUNHILLA BIENLICH 20 FIELD STREET MAYNARD, MA 01754

25-144
KOSTAS & EFTHIA ASPROGIANNIAS 18 FIELD STREET MAYNARD, MA 01754

25-145
LESLIE J. JR. & BARBARA LYNN WALKER 16 FIELD STREET MAYNARD, MA 01754

25-146
STEVEN A. & JENNIFER L. GERSHMAN 14 FIELD STREET MAYNARD, MA 01754

25-147
ALLEN G. & JEAN M. LAPPAS 12 FIELD STREET MAYNARD, MA 01754

25-148
PETER D. & PATRICIA M. GIENNOUSAKI 10 FIELD STREET MAYNARD, MA 01754

PROP. RETAINING WALL (CONTRACTOR IS RESPONSIBLE FOR OBTAINING WALL DESIGN IF REQUIRED). RETAINING WALL TO BE INSTALLED AROUND TRANSFORMER IF FINAL LOCATION FALLS WITHIN 45' LANDSCAPE BUFFER. DESIGN AND LAYOUT OF WALL SHALL CONFORM TO UTILITY COMPANY SPECIFICATIONS FOR MATERIAL AND SEPARATION REQUIREMENTS.

PROP. 8-FT. HIGH VINYL FENCE TO BE 5 FT. OFF PROPERTY LINE. CONTRACTOR TO COORDINATE WITH DEVELOPER TO ENSURE MINIMAL DISTURBANCE TO EXIST. VEGETATION

APPROX. LOCATION OF TRANSFORMER WITH PROTECTIVE BOLLARDS IN ACCORDANCE WITH UTILITY COMPANY REQUIREMENTS. REFER TO UTILITY PLANS.

S75°07'09"E
599.00'

END OF 8-FT. HIGH VINYL FENCE.

PROP. BOLLARD (TYP. OF 4)

END CURB

PROP. WHITE VINYL PVC FENCE

PROP. SNOW STORAGE AREA

45' LANDSCAPE BUFFER

PROP. BOLLARD (TYP.)

PROP. ECC (TYP.)

PROP. STANDARD PAVEMENT (TYP.)

PROP. BOLLARD, COORDINATE WITH ARCHITECTURAL BUILDING PLANS (TYP.)

PROP. 8' WIDE WALKING PATH CONNECTION. PATH TO BE CONSTRUCTED OF RECLAIMED PAVEMENT

PROP. CONNECTION TO BE COORDINATED WITH DEVELOPER AND TOWN OF MAYNARD

PROP. TRASH AREA ON CONC. PAD. COORDINATE FINAL SIZE AND LOCATION WITH DEVELOPER PRIOR TO CONSTRUCTION.

END OF PROP. ECC

100' SIDE YARD SETBACK ABUTTING RESIDENTIAL

END PROP. VGC

EXIST. R2 BUILDING 51,537 SF #15 DIGITAL WAY

REFER TO ARCHITECTURAL PLANS FOR BUILDING SURROUND SURFACE TREATMENT, SIDEWALKS, AND DETAILS (TYP. OF ALL BUILDINGS)

END CONCRETE SIDEWALK. BEGIN PROP. WALKING PATH

END PROP. VGC BEGIN PROP. ECC

PROP. PEDESTRIAN CROSSING SIGNS

PROP. ACCESSIBLE SIGN (TYP.), ONE (1) WITH VAN

PROP. MAILBOX LOCATION ON CONCRETE PAD. CONTRACTOR TO CONFIRM NUMBER OF UNITS WITH OWNER PRIOR TO ORDERING MATERIALS. FINAL LOCATION AND CONFIGURATION TO BE COORDINATED WITH LOCAL POSTMASTER.

PROP. ACCESSIBLE SIGN ONE (1) WITH "VAN" (TYP.)

PROP. TRANSITION CURB (TYP. ALL RAMPS)

PROP. VGC (TYP.)

PROP. L.S.A. (TYP.)

PROP. PEDESTRIAN CROSSING SIGN (TYP. OF 2)

PROP. ECC (TYP.)

PROP. HEAVY DUTY PAVEMENT (TYP.)

PROP. SNOW STORAGE AREA (TYP.)

PROP. STOP SIGNS WITH "DO NOT ENTER" SIGNS MOUNTED ON BACK (TYP. OF 2)

PROP. "NO RIGHT TURN" SIGN

PROP. PAVEMENT MARKING (TYP.)

PROP. L.S.A. (TYP.)

END PROP. VGC BEGIN PROP. ECC

SWSL4" (TYP.)

PROP. TRANSITION CURB (TYP. ALL RAMPS)

PROP. VGC (TYP.)

PROP. TRANS. CURB (TYP.)

PROP. SNOW STORAGE AREA

300' SIDE YARD SETBACK ABUTTING RESIDENTIAL

5' CURB BREAK

PROP. "STOP" SIGN AND BAR (TYP.)

PROP. TRANS. CURB (TYP.)

PROP. ECC (TYP.)

PROP. RAIN GARDEN

PROP. 5' CONCRETE SIDEWALK (TYP.)

PROP. SNOW STORAGE AREA (TYP.)

PROP. STANDARD PAVEMENT (TYP.)

PROP. HEAVY DUTY PAVEMENT (TYP.)

REFER TO ARCHITECTURAL PLANS FOR BUILDING SURROUND SURFACE TREATMENT, SIDEWALKS, AND DETAILS (TYP. OF ALL BUILDINGS)

1000' STATE HIGHWAY SETBACK

PROP. R1 BUILDING 67,802 SF #13 DIGITAL WAY

PROP. CROSSWALK (TYP.)

PROP. TRANS. CURB (TYP. AT RAMPS)

PROP. STOP SIGNS WITH "DO NOT ENTER" SIGNS MOUNTED ON BACK

PROP. W1-1R AND W13-1P SIGNS

PROP. SITE LIGHT (TYP.)

PROP. BASIN

PROP. ACCESSIBLE RAMP (TYP.)

APPROX. LIMIT OF WORK

LIMIT OF PAVEMENT AND CURBS

PROP. VERTICAL GRANITE CURB (TYP.)

PROP. CONCRETE SIDEWALK (TYP.)

PROP. ACCESSIBLE PARKING SIGN (TYP. OF 2) (ONE WITH "VAN")

PROP. BIKE RACK (TYP.)

PROP. SNOW STORAGE AREA (TYP.)

AREA OF WORK UNDER SEPARATE FUTURE CONTRACT

PROP. 10' WIDE GATE IN TURTLE BARRIER (UNDER THIS CONTRACT)

BEGIN PROP. TIMBER GUIDE RAIL

S77°26'02"E
598.92'

10' LANDSCAPE BUFFER

30' REAR YARD SETBACK

30' REAR YARD SETBACK

15' LANDSCAPE BUFFER

N09°23'58"E
99.46'

100' WETLAND BUFFER

50' WETLAND BUFFER

WETLAND LINE (TYP.)

BEGIN PROP. TURTLE BARRIER FENCE

PROP. ECC (TYP.)

PROP. TURTLE BARRIER FENCE (TYP.) (UNDER THIS CONTRACT)

PROP. MONITORING WELL. GC TO COORDINATE INSTALLATION WITH DEVELOPER, STANTEC, AND THE TOWN OF MAYNARD

24-11
TOWN OF MAYNARD SCHOOL COMMITTEE 1 TIGER STREET MAYNARD, MA 01754

WFA4 WFA5 WFA6 WFA7 WFA8 WFA9 WFA10 WFA11 WFA12 WFA13 WFA14 WFA15 WFA16 WFA17 WFA18 WFA19 WFA20 WFA21 WFA22 WFA23 WFA24 WFA25 WFA26 WFA27 WFA28

PAVEMENT STRIPING LEGEND

SWSL4" = 4" SINGLE WHITE SOLID LINE
DYSL4" = 4" DOUBLE YELLOW SOLID LINE
SYSL4" = 4" SINGLE YELLOW SOLID LINE

PAVEMENT LEGEND

HEAVY DUTY ASPHALT PAVEMENT

STANDARD DUTY PAVEMENT

REFER TO GENERAL NOTES SHEET FOR NOTES

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TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE DATE

SIGNATURE DATE

Approved plans - see cover sheet for Planning Board signatures.

SIGNATURE DATE

SIGNATURE DATE

SIGNATURE DATE

811
Know what's below.
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0 20 10 0 40
1"= 40'

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J.A. KUCH

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PROFESSIONAL ENGINEER
No. 45510
REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS
RHODE ISLAND LICENSE NO. 9616
MAINE LICENSE NO. 13563

SHEET TITLE:
SITE PLAN "A"

SHEET NUMBER:
8
OF 35

REV 7 - 09/18/2017

PAVEMENT STRIPING LEGEND

SWSL/4" = 4" SINGLE WHITE SOLID LINE
SWDL/4" = 4" SINGLE WHITE DASHED LINE
DYSL/4" = 4" DOUBLE YELLOW SOLID LINE
SYSL/4" = 4" SINGLE YELLOW SOLID LINE

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PAVEMENT LEGEND

HEAVY DUTY ASPHALT PAVEMENT
STANDARD DUTY PAVEMENT

TOWN OF MAYNARD PLANNING BOARD APPROVAL

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J.A. KUCICH — JOHN A. KUCICH, CIVIL — PROFESSIONAL ENGINEER — MASSACHUSETTS NO. 41330 — CONNECTICUT NO. 29177 — RHODE ISLAND NO. 13316 — MAINE NO. 13553

SHEET TITLE:
SITE PLAN "B"

SHEET NUMBER:
9
OF 35

REV 7 - 09/18/2017

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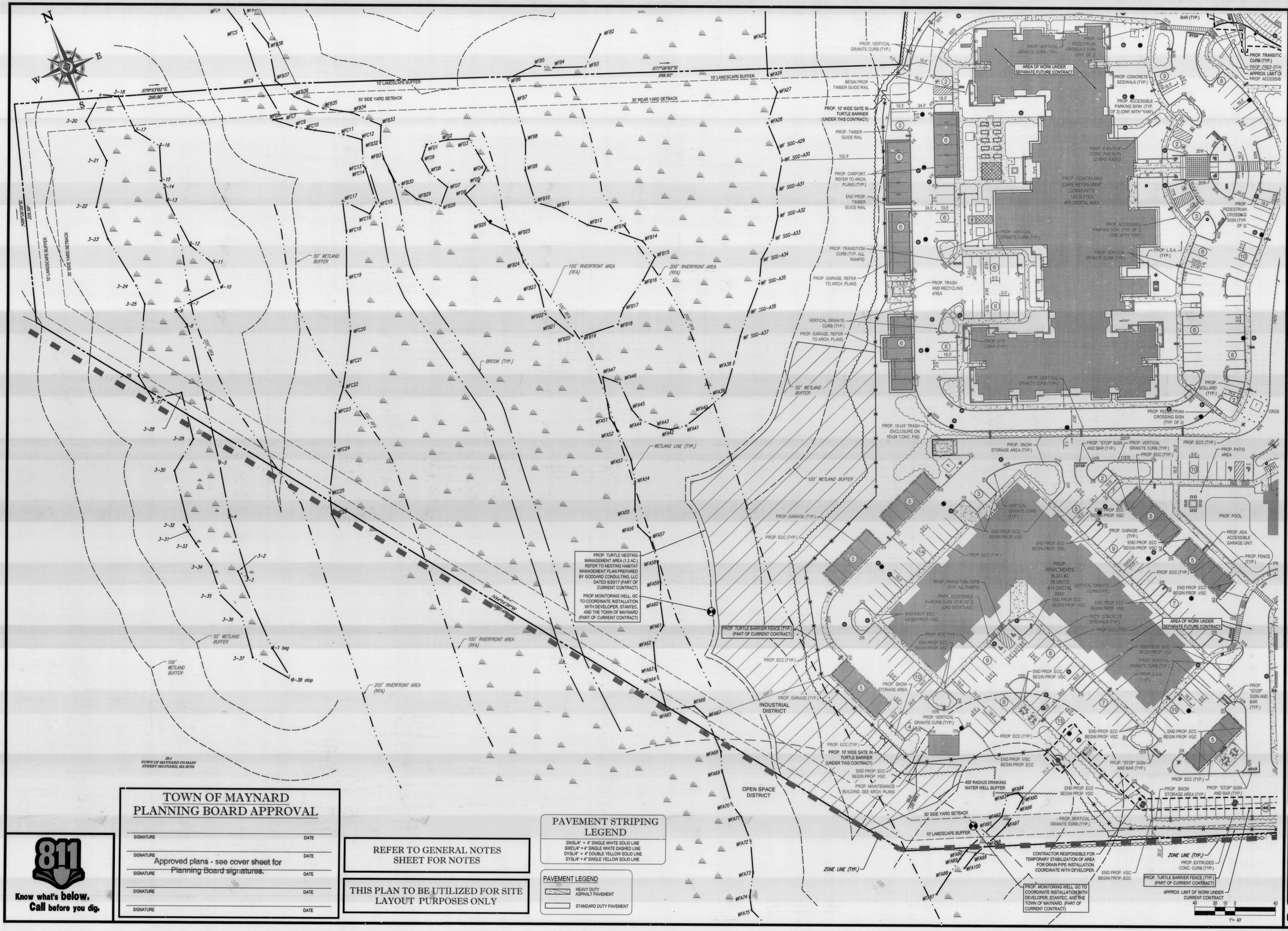

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3	06/15/17	DRAINAGE REVISIONS (SHEETS 13-16 ONLY)	GJZ
4	06/28/17	DRAINAGE REVISIONS (FULL SET)	AWP
5	07/26/17	REV. PER TOWN COMMENTS	AWP
6	08/10/17	PEER REVIEW COMMENTS	CFD
7	09/18/17	CONSTRUCTION DOCUMENTS	AWP
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APPROVED FOR CONSTRUCTION

PROJECT No.:	W161189
DRAWN BY:	AWP/CFD
CHECKED BY:	NIEMIJAK
DATE:	02/15/2017
SCALE:	AS NOTED
CAD I.D.:	W161189SS7

PROJECT:

SITE DEVELOPMENT PLANS

FOR

CAPITAL GROUP PROPERTIES

MAYNARD CROSSING

LOCATION OF SITE
MAP #25 & LOTS #152 & 152-1
129 PARKER STREET (ROUTE 27)
TOWN OF MAYNARD
MIDDLESEX COUNTY
MASSACHUSETTS

BOHLER ENGINEERING
352 TURNPIKE ROAD
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900
Fax: (508) 480-9080
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J.A. KUCICH — JOHN A. KUCICH, CIVIL — REGISTERED PROFESSIONAL ENGINEER — No. 43340 — CIVIL — COMMONWEALTH OF MASSACHUSETTS — CONNECTICUT — RHODE ISLAND — MAINE

SHEET TITLE:

SITE PLAN "C"

SHEET NUMBER:

10 OF 35

REV 7 - 09/18/2017

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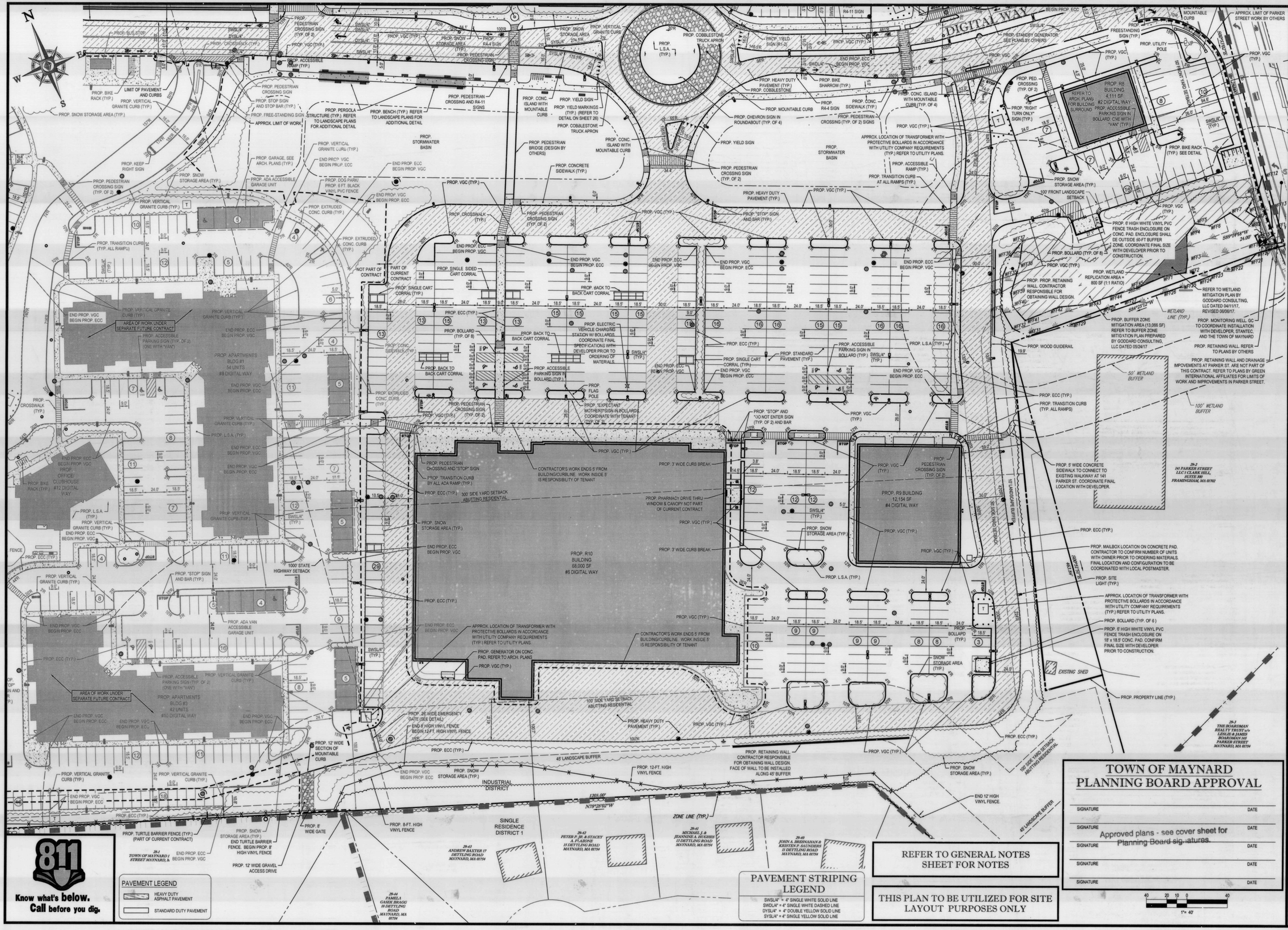

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PAVEMENT LEGEND
- HEAVY DUTY ASPHALT PAVEMENT
- STANDARD DUTY PAVEMENT

PAVEMENT STRIPING LEGEND
SWSL#4" = 4" SINGLE WHITE SOLID LINE
SWDL#4" = 4" SINGLE WHITE DASHED LINE
DYSL#4" = 4" DOUBLE YELLOW SOLID LINE
SYSL#4" = 4" SINGLE YELLOW SOLID LINE

REFER TO GENERAL NOTES SHEET FOR NOTES

THIS PLAN TO BE UTILIZED FOR SITE LAYOUT PURPOSES ONLY

TOWN OF MAYNARD PLANNING BOARD APPROVAL

SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE

Approved plans - see cover sheet for Planning Board signatures.

1"= 40'

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APPROVED FOR CONSTRUCTION

PROJECT No.:	W161189
DRAWN BY:	AWP/CFD
CHECKED BY:	NEM/JAK
DATE:	02/15/2017
SCALE:	AS NOTED
CAD I.D.:	W161189SS7

PROJECT:
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FOR
CAPITAL GROUP PROPERTIES
MAYNARD CROSSING
LOCATION OF SITE
MAP #25 & LOTS #152 & 152-1
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J.A. KUCICH — JOHN A KUCICH CIVIL — PROFESSIONAL ENGINEER — COMMONWEALTH OF MASSACHUSETTS — REGISTERED — RHODE ISLAND — MAINE

SHEET TITLE:
SITE PLAN "D"

SHEET NUMBER: 11 OF 35

REV 7 - 09/18/2017

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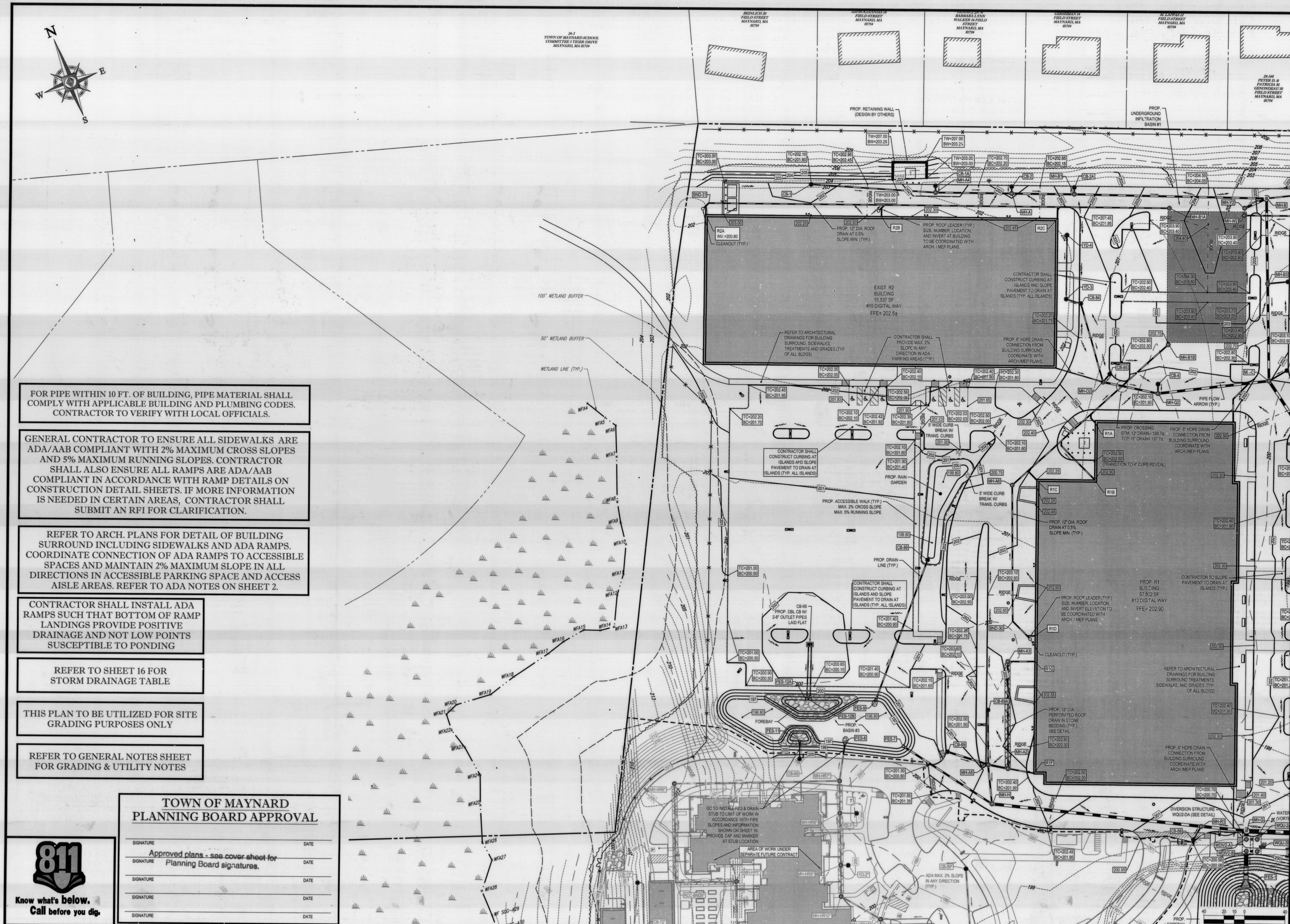

FOR PIPE WITHIN 10 FT. OF BUILDING, PIPE MATERIAL SHALL COMPLY WITH APPLICABLE BUILDING AND PLUMBING CODES. CONTRACTOR TO VERIFY WITH LOCAL OFFICIALS.

GENERAL CONTRACTOR TO ENSURE ALL SIDEWALKS ARE ADA/AAB COMPLIANT WITH 2% MAXIMUM CROSS SLOPES AND 5% MAXIMUM RUNNING SLOPES. CONTRACTOR SHALL ALSO ENSURE ALL RAMPS ARE ADA/AAB COMPLIANT IN ACCORDANCE WITH RAMP DETAILS ON CONSTRUCTION DETAIL SHEETS. IF MORE INFORMATION IS NEEDED IN CERTAIN AREAS, CONTRACTOR SHALL SUBMIT AN RFI FOR CLARIFICATION.

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CONTRACTOR SHALL INSTALL ADA RAMPS SUCH THAT BOTTOM OF RAMP LANDINGS PROVIDE POSITIVE DRAINAGE AND NOT LOW POINTS SUSCEPTIBLE TO PONDING

REFER TO SHEET 16 FOR STORM DRAINAGE TABLE

THIS PLAN TO BE UTILIZED FOR SITE GRADING PURPOSES ONLY

REFER TO GENERAL NOTES SHEET FOR GRADING & UTILITY NOTES

TOWN OF MAYNARD PLANNING BOARD APPROVAL

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PROJECT No.: W161189
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DATE: 02/15/2017
SCALE: AS NOTED
CAD I.D.: W161189SS7

PROJECT:

SITE DEVELOPMENT PLANS

FOR

CAPITAL GROUP PROPERTIES

MAYNARD CROSSING

LOCATION OF SITE

MAP #25 & LOTS #152 & 152-1
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J.A. KUCICH
PROFESSIONAL ENGINEER
JOHN A. KUCICH CIVIL No. 41530

SHEET TITLE:

GRADING & DRAINAGE PLAN "A"

SHEET NUMBER:

12
OF 35

REV 7 - 09/18/2017

CONTRACTOR SHALL INSTALL ADA RAMPS SUCH THAT BOTTOM OF RAMP LANDINGS PROVIDE POSITIVE DRAINAGE AND NOT LOW POINTS SUSCEPTIBLE TO PONDING

GENERAL CONTRACTOR TO ENSURE ALL SIDEWALKS ARE ADA/AAB COMPLIANT WITH 2% MAXIMUM CROSS SLOPES AND 5% MAXIMUM RUNNING SLOPES. CONTRACTOR SHALL ALSO ENSURE ALL RAMPS ARE ADA/AAB COMPLIANT IN ACCORDANCE WITH RAMP DETAILS ON CONSTRUCTION DETAIL SHEETS. IF MORE INFORMATION IS NEEDED IN CERTAIN AREAS, CONTRACTOR SHALL SUBMIT AN RFI FOR CLARIFICATION.

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THIS PLAN TO BE UTILIZED FOR SITE GRADING PURPOSES ONLY

REFER TO GENERAL NOTES SHEET FOR GRADING & UTILITY NOTES

REFER TO SHEET 16 FOR STORM DRAINAGE TABLE

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TRANSPORTATION SERVICES
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APPROVED FOR CONSTRUCTION

PROJECT No.: W161189
DRAWN BY: AWP/CFD
CHECKED BY: NIEM/JAK
DATE: 02/15/2017
SCALE: AS NOTED
CAD I.D.: W161189SS7

PROJECT:
SITE DEVELOPMENT PLANS
FOR
CAPITAL GROUP PROPERTIES
MAYNARD CROSSING
LOCATION OF SITE
MAP #25 & LOTS #152 & 152-1
129 PARKER STREET (ROUTE 27)
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J.A. KUCICH
JOHN A. KUCICH
CIVIL
PROFESSIONAL ENGINEER
MASSACHUSETTS LICENSE NO. 49170
CONNECTICUT LICENSE NO. PEN.0027177
RHODE ISLAND LICENSE NO. 9616
MAINE LICENSE NO. 20103553

SHEET TITLE:
GRADING & DRAINAGE PLAN "B"

SHEET NUMBER:
13
OF 35

REV 7 - 09/18/2017

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1"= 40'

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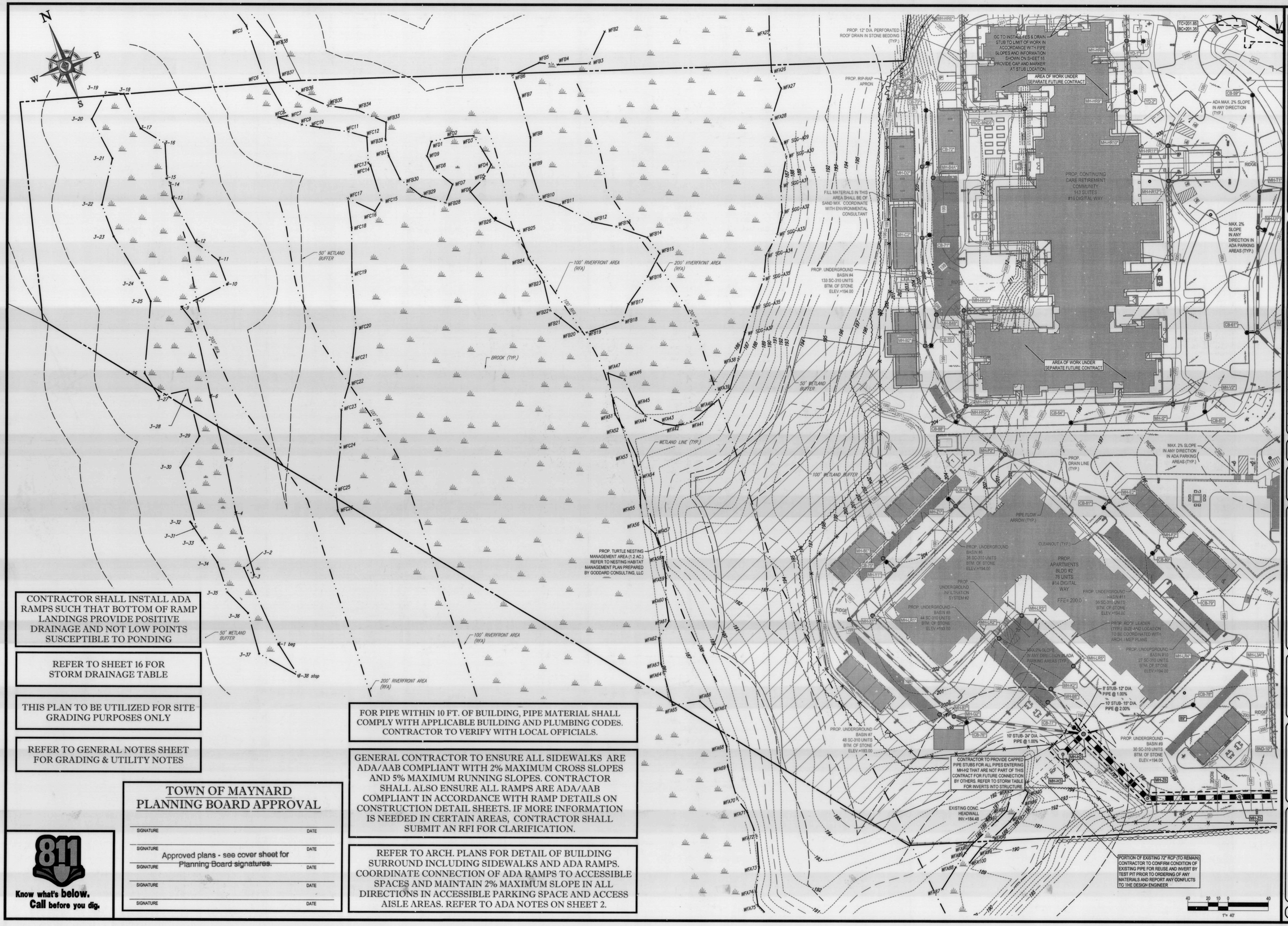

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REFER TO SHEET 16 FOR STORM DRAINAGE TABLE

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REFER TO GENERAL NOTES SHEET FOR GRADING & UTILITY NOTES

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TOWN OF MAYNARD PLANNING BOARD APPROVAL

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SIGNATURE	DATE

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APPROVED FOR CONSTRUCTION

PROJECT No.:	W161189
DRAWN BY:	AWP/CFD
CHECKED BY:	NEM/JAK
DATE:	02/15/2017
SCALE:	AS NOTED
CAD I.D.:	W161189S7

PROJECT:
SITE DEVELOPMENT PLANS
FOR
CAPITAL GROUP PROPERTIES
MAYNARD CROSSING
LOCATION OF SITE
MAP #25 & LOTS #152 & 152-1
129 PARKER STREET (ROUTE 27)
TOWN OF MAYNARD
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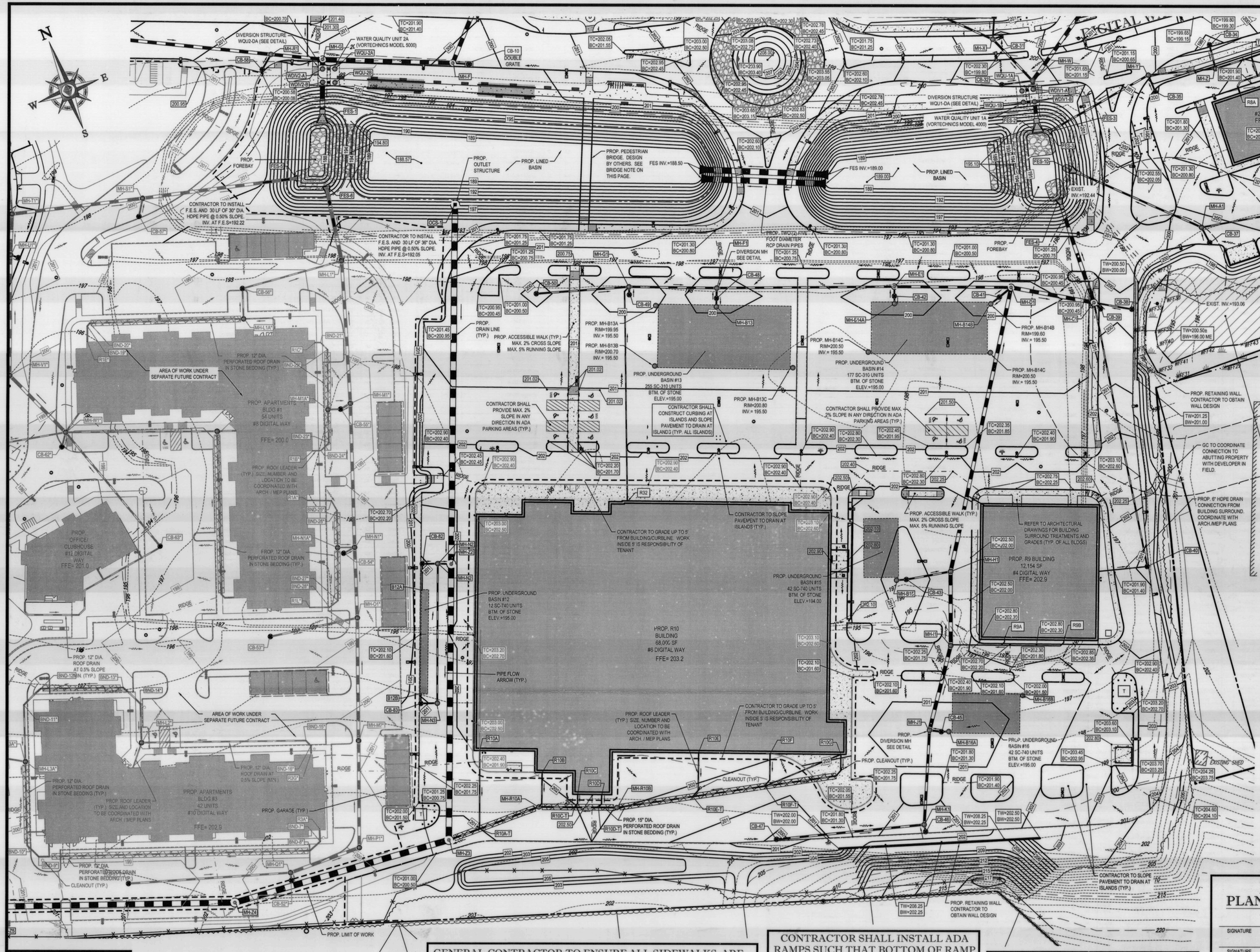
J.A. KUCH — JOHN A. KUCH — P.E. — CIVIL — No. 41530 — REGISTERED PROFESSIONAL ENGINEER — MASSACHUSETTS, U.S.A.

SHEET TITLE:
GRADING & DRAINAGE PLAN "C"

SHEET NUMBER:
14
OF 35

REV 7 - 09/18/2017



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28-1
TOWN OF MAYNARD 195 MAIN
STREET MAYNARD, MA 01754

FOR PIPE WITHIN 10 FT. OF BUILDING, PIPE MATERIAL SHALL COMPLY WITH APPLICABLE BUILDING AND PLUMBING CODES. CONTRACTOR TO VERIFY WITH LOCAL OFFICIALS.

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REFER TO SHEET 16 FOR STORM DRAINAGE TABLE FOR ADDITIONAL INFORMATION

THIS PLAN TO BE UTILIZED FOR SITE GRADING PURPOSES ONLY

REFER TO GENERAL NOTES SHEET FOR GRADING & UTILITY NOTES

BRIDGE NOTE:
DESIGN SHALL INCLUDE TREATMENT AT PROPOSED PILE LOCATIONS AS NEEDED TO ENSURE BASIN LINING IS PROPERLY MAINTAINED AND BASIN RETAINS WATER AS DESIGNED. COORDINATE FINAL DESIGN WITH DEVELOPER

BASIN NOTE:
EXISTING BASIN LINER TO BE REMOVED AND REPLACED AS NECESSARY TO ACCOMODATE PROPOSED STORMWATER MODIFICATIONS. PROPER PENETRATIONS SHALL BE MADE FOR PIPE INSTALLATION SO BASIN IS WATER-TIGHT AND RETAINS WATER AS DESIGNED.

REFER TO ARCH. PLANS FOR DETAIL OF BUILDING SURROUND INCLUDING SIDEWALKS AND ADA RAMPS. COORDINATE CONNECTION OF ADA RAMPS TO ACCESSIBLE SPACES AND MAINTAIN 2% MAXIMUM SLOPE IN ALL DIRECTIONS IN ACCESSIBLE PARKING SPACE AND ACCESS AISLE AREAS. REFER TO ADA NOTES ON SHEET 2.

TOWN OF MAYNARD PLANNING BOARD APPROVAL

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J.A. KUCICH — JOHN A. KUCICH, CIVIL — PROFESSIONAL ENGINEER — No. 45610 — MASSACHUSETTS, CONNECTICUT, RHODE ISLAND, MAINE, NEW HAMPSHIRE

SHEET TITLE:
GRADING & DRAINAGE PLAN "D"

SHEET NUMBER: 15 OF 35

REV 7 - 09/18/2017

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DRAINAGE TABLE

STR.	RIM/ GRT	INV. IN	INV. OUT	OUT. PIPE SIZE	PIPE LENGTH	OUT. PIPE SLOPE
B4*			194.50(CB-71*)	8"	4'	0.00%
B5*			194.50(CB-88*)	8"	9'	0.00%
B6*			194.50(CB-74*)	8"	4'	0.00%
B9*			194.50(CB-78*)	8"	11'	0.00%
B10*			194.50(CB-79*)	8"	9'	0.00%
B11A*			194.50(CB-80*)	8"	7'	0.00%
B11B*			194.50(BND-6*)	8"	3'	0.00%
B12A			195.50(CB-82)	8"	23'	0.00%
B12B			195.50(CB-83)	8"	9'	0.00%
BND-1*		194.50(CB-73*)	194.50(BND-2*)	8"	3'	0.00%
BND-2*		194.50(BND-1*)	194.50(TEE-1*)	8"	51'	0.00%
BND-3*		193.50(BND-4*)	193.50(MH-B7*)	8"	17'	0.00%
BND-4*		193.50(CB-76*)	193.50(BND-3*)	8"	11'	0.00%
BND-5*		194.50(BND-6*)	194.50(CB-81*)	8"	18'	0.00%
BND-6*		194.50(B11B*)	194.50(BND-5*)	8"	3'	0.00%
BND-7*		195.76(R3A*)	195.76(BND-8*)	12"	12'	0.51%
BND-8*		195.70(BND-7*)	195.70(BND-9*)	12"	235'	0.00%
BND-9*		195.70(BND-8*)	195.70(BND-10*)	12"	14'	0.00%
BND-10*		195.70(BND-9*)	195.70(MH-L3A*)	12"	73'	0.00%
BND-11*		195.70(BND-12*)	195.70(MH-L3A*)	12"	49'	0.00%
BND-12*		195.70(BND-13*)	195.70(BND-11*)	12"	21'	0.00%
BND-13*		195.70(BND-14*)	195.70(BND-12*)	12"	71'	0.00%
BND-14*		195.81(MH-L2*)	195.81(BND-13*)	12"	21'	0.52%
BND-15*		196.68(BND-16*)	196.68(MH-L2*)	12"	143'	0.49%
BND-16*		196.71(R3G*)	196.71(BND-15*)	12"	6'	0.49%
BND-17*		196.05(R1H*)	196.05(BND-18*)	12"	5'	1.11%
BND-18*		196.00(BND-17*)	196.00(MH-W3*)	12"	142'	0.00%
BND-19*		196.53(R1E*)	196.53(BND-20*)	12"	3'	0.91%
BND-20*		196.50(BND-19*)	196.50(MH-L1A*)	12"	134'	0.00%
BND-21*		196.58(R1C*)	196.58(BND-22*)	8"	9'	0.93%
BND-22*		196.50(BND-21*)	195.50(MH-M1A*)	12"	52'	0.00%
BND-23*		196.50(BND-24*)	195.50(MH-M1A*)	12"	29'	0.00%
BND-24*		196.60(R1B*)	196.60(BND-23*)	8"	10'	1.03%
BND-25*		196.60(R1A*)	196.60(BND-26*)	8"	10'	1.03%
BND-26*		196.50(BND-25*)	196.50(MH-N1A*)	12"	33'	0.00%
BND-27*		196.50(BND-28*)	196.50(MH-N1A*)	12"	46'	0.00%
BND-28*		196.59(R1L*)	196.59(BND-27*)	8"	9'	0.97%
BND-29		197.00(R6B-T)	197.00(MH-S)	12"	16'	0.00%
BND-30		200.24(R1D)	200.24(MH-A6)	12"	135'	0.50%
BND-31		200.32(R2A)	200.32(MH-B1A)	12"	455'	0.40%
BND-32		199.75(BND-34)	199.75(MH-W2)	12"	250'	0.40%
BND-33		196.18(R32)	196.18(MH-G1)	8"	6'	1.07%
BND-34		199.79(BND-35)	199.79(BND-32)	12"	8'	0.51%
BND-35		200.50(R3E)	200.50(BND-34)	12"	178'	0.40%
CB-1	201.60		199.10(MH-A4)	12"	123'	0.50%
CB-1A	201.60		198.63(MH-A4)	12"	7'	1.96%
CB-2	201.70		198.24(MH-A)	12"	7'	1.96%
CB-2A	201.50		198.50(MH-B1)	12"	7'	1.96%
CB-3	201.65		197.05(MH-B)	12"	71'	0.99%
CB-4	202.14		197.00(MH-Q2)	12"	9'	1.09%
CB-5	201.80		198.00(MH-C)	12"	20'	1.08%
CB-6	199.00		195.50(MH-D)	18"	11'	2.00%
CB-7	199.15		195.38(MH-D)	18"	137'	0.50%
CB-8	199.00		195.50(MH-E)	12"	11'	2.00%
CB-9	199.00		195.22(MH-E)	18"	144'	0.50%
CB-10	199.50		195.50(MH-F)	12"	14'	0.98%
CB-11	201.20		197.16(MH-J)	15"	165'	0.50%

DRAINAGE TABLE

STR.	RIM/ GRT	INV. IN	INV. OUT	OUT. PIPE SIZE	PIPE LENGTH	OUT. PIPE SLOPE
CB-12	201.60		198.00(MH-J)	12"	9'	2.01%
CB-13	201.80		197.50(MH-K)	18"	15'	2.03%
CB-14	201.00		197.00(MH-K)	12"	123'	1.00%
CB-15	201.50		196.17(MH-L)	12"	9'	1.98%
CB-16	201.00		197.00(MH-M)	12"	25'	2.02%
CB-17	199.80		195.80(MH-N)	12"	36'	2.00%
CB-18	199.80		195.80(MH-N)	12"	43'	2.01%
CB-19	201.00		197.00(MH-O)	12"	130'	1.00%
CB-20	201.10		197.10(MH-P)	12"	32'	1.02%
CB-21	201.00		198.34(MH-S3)	12"	106'	1.00%
CB-22	200.40		197.05(MH-S)	12"	10'	1.02%
CB-22A	200.40		197.00(MH-S4)	12"	15'	1.01%
CB-22B	200.40		197.15(MH-S3)	12"	14'	0.49%
CB-23	200.70		196.70(MH-R)	12"	12'	2.02%
CB-24	200.60		196.60(MH-Q)	12"	7'	2.02%
CB-25	200.60		195.33(MH-U)	12"	133'	0.50%
CB-26	199.20		194.99(MH-T3)	12"	24'	2.02%
CB-27	199.40		195.40(MH-T)	12"	15'	1.98%
CB-28	199.40		195.40(MH-T)	12"	15'	2.01%
CB-29	200.80		196.27(MH-S2)	12"	54'	0.50%
CB-30	202.05		200.50(MH-X)	12"	20'	26.40%
CB-31	199.50		195.44(MH-X)	12"	8'	2.00%
CB-32	199.50		195.50(MH-W)	12"	27'	1.00%
CB-33	200.50		194.86(TEE-2)	12"	33'	0.51%
CB-34	198.75		194.75(MH-Z)	12"	21'	1.03%
CB-35	199.80		195.80(MH-Y)	12"	16'	1.99%
CB-36	199.70		196.00(MH-A1)	12"	168'	1.00%
CB-37	199.20		195.70(MH-A1)	12"	15'	1.98%
CB-38	199.50		196.50(MH-C1)	12"	33'	2.00%
CB-39	199.50		196.50(MH-C1)	12"	8'	2.02%
CB-40	200.75		197.75(MH-C1)	12"	234'	1.00%
CB-41	199.40		195.50(MH-B14B) 196.65(MH-D1)	12" 15"	10' 13'	0.00% 0.99%
CB-42	199.40		196.65(MH-E1) 195.50(MH-B14A)	12" 12"	8' 7'	0.98% 0.00%
CB-43	200.30		196.80(MH-H1) 194.50(MH-B15)	15" 12"	39' 9'	2.00% 0.00%
CB-45	200.00		195.75(MH-J1) 195.50(MH-B16A)	15" 12"	11' 6'	0.95% 0.00%
CB-46	200.40		196.39(MH-K1)	12"	7'	2.05%
CB-47	199.90		196.73(MH-K1)	18"	129'	0.50%
CB-48	199.40		195.10(MH-F1) 195.50(MH-B13)	15" 12"	9' 7'	1.13% 0.00%
CB-49	199.40		196.65(MH-G1)	15"	7'	2.04%
CB-50	199.85		196.43(MH-G1)	15"	81'	0.50%
CB-51*	198.00		196.03(MH-Q1*)	15"	141'	0.50%
CB-52*	199.00		195.43(MH-Q1*)	15"	7'	2.08%
CB-53*	198.00		195.04(MH-O1*)	15"	77'	1.04%
CB-54*	198.00		194.25(MH-N1*)	12"	11'	1.03%
CB-55*	198.00	194.50(MH-M1A*)	194.50(MH-M1*)	15"	10'	2.05%
CB-56*	198.40	194.50(MH-L1A*)	194.50()	12"	90'	1.26%
CB-57*	199.70		196.00(MH-S1*)	12"	16'	0.99%
CB-58	200.05		196.00(MH-R1)	12"	15'	0.99%
CB-59*	198.00		195.10(MH-T1*)	12"	96'	1.02%
CB-60*	198.00		194.38(MH-U1*)	12"	7'	0.99%
CB-61*	198.00		194.94(MH-V1*)	12"	10'	1.06%
CB-62*	198.10		195.31(MH-W1*)	12"	13'	0.99%
CB-63*	198.00		195.16(MH-W1*)	15"	129'	0.50%
CB-64*	199.50		195.71(MH-I2*)	12"	103'	0.50%
CB-66	199.35		196.83(FES-12A)	8"	55'	0.00%
CB-66 (1)	199.35		196.83(FES-12B)	8"	55'	0.00%
CB-68	198.91		196.83(FES-11)	8"	18'	0.00%

DRAINAGE TABLE

STR.	RIM/ GRT	INV. IN	INV. OUT	OUT. PIPE SIZE	PIPE LENGTH	OUT. PIPE SLOPE
CB-69	201.80		197.40(MH-A5)	18"	42'	2.02%
CB-69A	201.00		197.50(MH-A5)	12"	54'	1.00%
CB-70*	198.45		195.95(MH-B2*) 194.50(MH-B4B*)	12" 8"	6' 31'	0.98% 0.00%
CB-71*	198.45	194.50(B4*)	195.95(MH-C2*)	12"	8'	1.01%
CB-72*	198.45	194.50(TEE-1*)	195.95(MH-D2*)	12"	7'	1.99%
CB-73*	198.60		195.95(MH-D2*) 194.50(BND-1*)	12" 8"	56' 4'	2.49% 0.00%
CB-74*	198.00	194.50(B6*)	195.50(MH-Z1*)	12"	10'	0.98%
CB-75*	198.00		195.50(MH-Y1*) 194.50(MH-B6*)	12" 8"	11' 5'	1.00% 0.00%
CB-76*	197.00		194.50(MH-G2*) 193.50(BND-4*)	12" 8"	14' 4'	1.00% 0.00%
CB-77*	197.00		194.50(MH-H2) 193.50(MH-B8*)	12" 8"	11' 36'	1.05% 0.00%
CB-78*	198.00	194.50(B9*)	195.50(MH-H2)	12"	113'	1.00%
CB-79*	198.20	194.50(B10*)	195.70(MH-F2*)	12"	59'	1.00%
CB-80*	198.20	194.50(B11A*)	195.70(MH-F2*)	12"	8'	1.08%
CB-81*	198.20	194.50(BND-5*)	195.70(MH-E2*)	12"	9'	1.05%
CB-82	200.75	195.50(B12A)	198.25(MH-N2)	12"	13'	2.02%
CB-83	200.85	195.50(B12B)	198.25(MH-N3)	12"	14'	0.98%
CB-84	201.00	197.20(YD-3)	196.69(MH-O2)	12"	81'	0.51%
CB-85	201.00		196.89(MH-O2)	12"	10'	1.06%
CB-86	198.75		194.93(MH-U)	12"	27'	1.00%
CB-87*	198.60		195.15(MH-V2*)	12"	12'	1.00%
CB-88*	198.80	194.50(B5*)	196.30(MH-HR2*)	12"	6'	0.95%
CB-89	200.50		197.50(FES-9)	12"	149'	0.45%
CB-90	202.24		198.00(MH-B3)	12"	20'	1.00%
CB-91	201.10		195.07(MH-T3)	12"	57'	1.00%
CB-92	201.01		196.28(MH-S5)	12"	28'	1.01%
FES-1		191.70(WDIV2-B)				
FES-2		192.00(WDIV1-B)				
FES-3		192.91(MH-Y)				
FES-4		192.40(MH-C1)				
FES-5		192.22(MH-S1*)				
FES-6		192.05(MH-L1*)				
FES-7			198.50(MH-H)	18"	105'	2.50%
FES-8		197.00(MH-HR7*)				
FES-9		196.83(CB-89)				
FES-10		193.07(MH-A1)				
FES-11		196.83(CB-68)				
FES-12A		196.83(CB-66)				
FES-12B		196.83(CB-66 (1))				
MH-A	201.90	198.11(CB-2) 198.11(MH-A4)	198.11(MH-B1)	18"	62'	0.50%
MH-A1	199.50	195.40(CB-37) 194.32(CB-36)	194.32(FES-10)	15"	124'	1.00%
MH-A2	201.65	196.55(MH-A3) 196.55(R1F)	196.55(MH-A5)	18"	20'	1.01%
MH-A3	202.10	197.60(R1G)	197.60(MH-A2)	12"	106'	0.99%
MH-A4	201.80	198.49(CB-1) 198.50(CB-1A)	198.49(MH-A)	15"	75'	0.51%
MH-A5	201.20	196.96(CB-69A) 196.55(CB-69) 196.35(MH-A2)	196.11(MH-H)	15"	36'	0.99%
MH-A6	201.75	199.57(BND-30)	199.57(MH-B1B)	12"	207'	0.52%
MH-B	203.00	196.35(CB-3) 196.35(MH-Y2) 196.85(MH-B1)	196.09(MH-B3)	24"	84'	0.50%
MH-B1	201.65	198.37(CB-2A) 197.80(MH-A)	197.80(MH-B)	18"	190'	0.50%
MH-B1A	203.60	198.50(BND-31)				
MH-B1B	202.45	198.50(MH-A6)				
MH-B2*	198.65	195.89(CB-70*) 193.29(MH-C2*)	193.29(MH-HR2*)	18"	77'	0.50%
MH-B3	202.65	195.67(MH-B) 197.80(CB-90)	195.67(MH-C)	24"	97'	0.50%
MH-B4A*	198.54		194.50(TEE-1*)	8"	14'	0.00%
MH-B4B*	198.50	194.50(CB-70*)				
MH-B6*	198.10	194.50(CB-75*)				
MH-B7*	197.40	193.50(BND-3*)				
MH-B8*	198.10	193.50(CB-77*)				
MH-B13	199.85	195.50(CB-48)				

DRAINAGE TABLE

STR.	RIM/ GRT	INV. IN	INV. OUT	OUT. PIPE SIZE	PIPE LENGTH	OUT. PIPE SLOPE
MH-B14A	199.60	195.50(CB-42)				
MH-B14B	199.60	195.50(CB-41)				
MH-B15	200.65	194.50(CB-43)				
MH-B16A	200.10	195.50(CB-45)				
MH-B16B	201.30	195.50()				
MH-C	202.05	197.78(CB-5) 195.19(MH-B3) 195.19(MH-Q2)	195.19(MH-D)	30"	241'	0.50%
MH-C1	201.00	193.35(MH-D1) 195.40(CB-40) 196.34(CB-39) 195.83(CB-38)	193.35(FES-4)	36"	96'	0.99%
MH-C2*	198.65	193.83(MH-D2*) 195.87(CB-71*)	193.83(MH-B2*)	18"	108'	0.50%
MH-D	199.30	194.70(CB-7) 195.28(CB-6) 193.99(MH-C)	193.99(MH-E)	42"	137'	0.50%
MH-D1	199.90	193.78(MH-H1) 194.37(MH-E1) 196.52(CB-41)	193.78(MH-C1)	36"	73'	0.59%
MH-D2*	198.65	194.55(CB-73*) 195.82(CB-72*)	194.18(MH-C2*)	18"	71'	0.49%
MH-E	199.30	193.31(MH-D) 195.28(CB-8) 194.50(CB-9)	193.31(MH-F)	42"	119'	0.50%
MH-E1	199.85	194.88(MH-F1) 196.57(CB-42)	194.88(MH-D1)	24"	101'	0.50%
MH-E2*	198.40	194.35(MH-F2*) 195.61(CB-81*)	193.85(MH-P2*)	18"	113'	0.75%
MH-F	199.75	192.71(MH-E) 195.36(CB-10)	192.71(MH-G)	42"	113'	0.52%
MH-F1	199.70	195.00(CB-48) 195.65(MH-G1)	195.65(MH-E1)	18"	154'	0.50%
MH-F2*	198.40	195.11(CB-79*) 195.61(CB-80*)	194.80(MH-E2*)	12"	66'	0.68%
MH-G	200.75	192.12(MH-F) 192.69(MH-R1)	192.12(WDIV2-A)	48"	8'	0.59%
MH-G1	199.70	196.51(CB-49) 196.03(CB-50) 196.12(BND-33)	196.03(MH-F1)	18"	76'	0.50%
MH-G2*	197.20	191.07(MH-X1*) 194.36(CB-76*)	191.07(MH-H2)	24"	130'	1.00%
MH-H	201.30	195.75(MH-A5) 195.87(FES-7)	195.75(MH-R1)	30"	208'	0.50%
MH-H1	201.35	194.95(MH-I1) 196.02(CB-43)	194.95(MH-D1)	36"	253'	0.46%
MH-H2	197.32	194.37(CB-78*) 191.90(MH-K2*) 194.38(CB-77*) 185.03(MH-Z6) 189.77(MH-G2*)	185.03(MH-H3)	60"	29'	0.82%
MH-H3	196.33	184.79(MH-H2)				
MH-HR1*	198.93	195.00(MH-HR3*)	195.00(MH-HR2*)	15"	13'	2.00%
MH-HR2*	198.95	192.90(MH-B2*) 196.24(CB-88*) 194.75(MH-HR1*)	193.20(MH-P2*)	18"	60'	0.50%
MH-HR3*	198.71	195.00()	195.00(MH-HR1*)	12"	95'	0.00%
MH-HR4*	199.90	197.00(RCC-BND2*)	197.00(RCC-BND3*)	12"	77'	0.00%
MH-HR5*	200.30	197.00(RCC-BND4*)	197.00(RCC-BND5*)	12"	60'	0.00%
MH-HR6*	200.35	197.00()	197.00(MH-HR7*)	12"	163'	0.00%
MH-HR7*	199.90	197.00(MH-HR8*) 197.00(MH-HR6*)	197.00(FES-8)	12"	39'	0.00%
MH-HR8*	200.50	197.00(MH-HR9*) 197.35(YD-1*)	197.00(MH-HR7*)	12"	32'	0.00%
MH-HR9*	200.00	197.60(YD-2*) 197.00(MH-HR10*)	197.00(MH-HR8*)	12"	51'	0.00%
MH-HR10*	200.80	197.00(MH-HR11*)	197.00(MH-HR9*)	12"	31'	0.00%
MH-HR11*	200.19	197.00(MH-HR12*)	197.00(MH-HR10*)	12"	45'	0.00%
MH-HR12*	199.90	197.00(RCC-9*)	197.00(MH-HR11*)	12"	35'	0.00%
MH-I1	201.80	195.27(MH-J1)	195.27(MH-H1)	36"	64'	0.50%
MH-I2*	199.25	195.20(CB-64*)	195.20(MH-V2*)	12"	33'	0.51%
MH-J	201.85	197.82(CB-12) 196.33(CB-11)	196.23(MH-K)	24"	93'	0.51%
MH-J1	200.15	195.65(CB-45) 195.65(MH-K1)	195.65(MH-I1)	36"	75'	0.50%
MH-K	202.15	197.20(CB-13) 195.77(CB-14) 195.75(MH-J)	195.75(MH-L3)	24"	36'	0.50%
MH-K1	200.55	196.09(CB-47) 196.25(CB-46)	196.06(MH-J1)	24"	82'	0.50%
MH-K2*	198.50		193.00(MH-H2)	15"	55'	1.98%
MH-L	201.80	196.00(CB-15) 195.32(MH-L3)	195.32(MH-M)	24"	107'	0.51%
MH-L1*	199.90	192.37(MH-M1*)	192.37(FES-6)	36"	66'	0.48%
MH-L1A*	199.80	196.50(BND-20*)	195.03(CB-56*)	12"	26'	2.01%
MH-L2*	198.53	195.98(BND-15*)	195.98(BND-14*)	12"	34'	0.50%
MH-L3	202.40	195.57(MH-K) 197.00(R4A-T)	195.57(MH-L)	24"	51'	0.49%
MH-L3A*	199.35	195.70(BND-11*) 195.70(BND-10*)	195.70(MH-LR4*)	12"	69'	0.51%
MH-LR1*	199.07					
MH-LR2*	198.80					
MH-LR3*	199.65					
MH-LR4*	199.80	195.35(MH-L3A*)				
MH-LR5*	198.85					
MH-M	201.35	196.50(CB-16) 194.78(MH-L)	194.78(MH-N)	24"	57'	0.51%
MH-M1*	198.20	194.30(CB-55*) 192.99(MH-N1*)	192.99(MH-L1*)	30"	124'	0.50%
MH-M1A*	198.15	195.50(BND-23*) 195.50(BND-22*)	194.61(CB-55*)	12"	11'	0.98%

DRAINAGE TABLE

STR.	RIM/ GRT	INV. IN	INV. OUT	OUT. PIPE SIZE	PIPE LENGTH	OUT. PIPE SLOPE
MH-M2*	200.65	194.54(MH-P1*)	194.54(MH-O1*)	30"	107'	0.51%
MH-N	200.30	194.49(MH-M) 195.09(CB-17) 194.93(CB-18)	194.49(MH-O)	30"	99'	0.50%
MH-N1*	198.40	194.14(CB-54*) 193.64(MH-O1*) 196.20(MH-N1A*)	193.64(MH-M1*)	30"	125'	0.52%
MH-N1A*	198.10	196.50(BND-26*) 196.50(BND-27*)	196.50(MH-N1*)	8"	15'	2.05%
MH-N2	201.15	196.79(MH-N3) 197.98(CB-82)	196.69(MH-Z2)	12"	12'	2.50%
MH-N3	201.20	198.11(CB-83)	198.01(MH-N2)	12"	122'	1.00%
MH-O	201.95	195.70(CB-19) 193.99(MH-N)	193.99(MH-P)	30"	82'	0.50%
MH-O1*	198.80	194.24(CB-53*) 193.99(MH-M2*)	193.99(MH-N1*)	30"	61'	0.57%
MH-O2	201.25	196.28(CB-84) 196.78(CB-85)	196.03(MH-Q2)	18"	55'	0.51%
MH-P	201.55	194.63(MH-Q) 193.58(MH-O) 196.78(CB-20)	193.58(MH-T3)	30"	123'	0.49%
MH-P1*	200.15	195.00(MH-Q1*)	195.00(MH-M2*)	30"	93'	0.50%
MH-P2*	199.90	192.90(MH-HR2*) 193.00(MH-E2*)	192.90(MH-Z1*)	24"	71'	0.50%
MH-Q	200.85	196.45(CB-24) 195.63(MH-R)	195.63(MH-P)	18"	100'	1.00%
MH-Q1*	199.25	195.29(CB-52*) 195.32(CB-51*)	195.32(MH-P1*)	30"	63'	0.51%
MH-Q2	201.25	195.75(MH-O2) 196.90(CB-4)	195.74(MH-C)	24"	110'	0.50%
MH-R	201.00	196.46(CB-23) 196.45(MH-S4)	196.45(MH-Q)	18"	82'	1.00%
MH-R1	200.45	194.71(MH-H) 195.85(CB-58)	192.92(MH-G)	30"	45'	0.51%
MH-R10A	201.70	197.00(R10C-T) 196.00(R10B)	197.00(R10A-T)	15"	55'	0.00%
MH-R10B	202.05	197.00(R10E-T)	197.00(R10D-T)	15"	16'	0.00%
MH-S	200.60	196.95(CB-22) 196.95(MH-S3) 197.00(BND-29)	196.95(MH-S4)	18"	20'	0.49%
MH-S1*	200.05	195.84(CB-57*) 192.89(MH-T1*)	192.89(FES-5)	30"	135'	0.50%
MH-S2	201.02	196.00(CB-29) 197.00(R5D-T)	196.00(MH-S5)	12"	32'	0.50%
MH-S3	200.60	197.28(CB-21) 197.08(CB-22B)	197.08(MH-S)	18"	26'	0.50%
MH-S4	200.65	196.85(MH-S) 196.85(CB-22A)	196.85(MH-R)	18"	81'	0.49%
MH-S5	201.18	196.00(CB-92) 195.84(MH-S2)	195.84(MH-X)	18"	111'	0.50%
MH-T	199.60	192.90(MH-T3) 195.10(CB-28) 195.10(CB-27)	192.90(MH-V)	36"	32'	0.50%
MH-T1*	198.90	193.46(MH-U1*) 194.12(CB-59*)	193.46(MH-S1*)	30"	114'	0.50%
MH-T3	199.75	192.97(MH-P) 194.50(CB-26) 194.50(CB-91)	192.97(MH-T)	36"	13'	0.52%
MH-U	200.70	194.66(CB-25) 194.66(CB-86)	194.66(MH-V)	15"	94'	1.00%
MH-U1*	198.15	193.65(MH-V1*) 194.31(CB-60*)	193.65(MH-T1*)	30"	36'	0.53%
MH-V	200.35	193.72(MH-U) 192.74(MH-T)	192.74(MH-W)	36"	74'	0.53%
MH-V1*	198.60	194.17(MH-W1*) 194.83(CB-61*)	194.17(MH-U1*)	30"	105'	0.50%
MH-V2*	198.90	195.03(MH-I2*) 195.03(CB-87*)	195.03(MH-W1*)	12"	101'	0.50%
MH-W	199.75	192.35(MH-V) 194.77(MH-X) 195.23(CB-32)	192.35(WDIV1-A)	36"	7'	1.51%
MH-W1*	198.70	195.18(CB-62*) 194.52(CB-63*) 194.52(MH-V2*) 194.70(MH-W3*)	194.52(MH-V1*)	30"	69'	0.50%
MH-W2	203.50	198.75(BND-32)				
MH-W3*	199.80	196.00(BND-18*)	196.00(MH-W1*)	12"	132'	0.99%
MH-X	199.60	195.29(MH-S5) 195.29(CB-30) 195.29(CB-31)	195.29(MH-W)	18"	50'	1.04%
MH-X1*	199.25	191.77(MH-Y1*)	191.77(MH-G2*)	24"	142'	0.49%
MH-Y	200.30	195.48(CB-35) 193.91(MH-Z)	193.91(FES-3)	15"	100'	1.00%
MH-Y1*	198.20	192.10(MH-Z1*) 195.39(CB-75*)	192.10(MH-X1*)	24"	67'	0.49%
MH-Y2	203.45		196.60(MH-B)	24"	24'	1.05%
MH-Z	200.65	194.53(TEE-2) 194.53(CB-34)	194.50(MH-Y)	12"	58'	1.01%
MH-Z1*	198.20	192.54(MH-P2*) 195.40(CB-74*)	192.54(MH-Y1*)	24"	88'	0.50%
MH-Z2	201.50	187.51(OCS-1) 196.40(MH-N2)	187.51(MH-Z3)	60"	240'	0.30%
MH-Z3	200.60	186.79(MH-Z2) 197.00(R10A-T)	186.79(MH-Z4)	60"	193'	0.30%
MH-Z4	200.25	186.21(MH-Z3)	186.21(MH-Z5)	60"	213'	0.30%
MH-Z5	200.65	185.57(MH-Z4)	185.57(MH-Z6)	60"	91'	0.30%
MH-Z6	199.00	185.30(MH-Z5)	185.30(MH-H2)	60"	90'	0.30%
OCS-1**	195.15		188.45(MH-Z2)	60"	313'	0.30%
R1A*			196.81(BND-25*)	8"	21'	1.00%
R1B*			196.67(BND-24*)	8"	7'	0.97%
R1C*			196.63(BND-21*)	8"	5'	1.02%
R1D			200.40(BND-30)	12"	27'	0.60%
R1E*			196.66(BND-19*)	12"	13'	0.97%
R1F			196.80(MH-A2)	12"	26'	0.95%
R1G			197.90(MH-A3)	12"	27'	1.11%

DRAINAGE TABLE

STR.	RIM/ GRT	INV. IN	INV. OUT	OUT. PIPE SIZE	PIPE LENGTH	OUT. PIPE SLOPE
R1H*			196.13(BND-17*)	12"	8'	1.04%
R1L*			196.76(BND-28*)	8"	17'	0.98%
R2A			200.38(BND-31)	12"	12'	0.49%
R3A*			195.81(BND-7*)	12"	11'	0.45%
R3E			200.56(BND-35)	12"	12'	0.50%
R3G*			196.74(BND-16*)	12"	7'	0.46%
R4A			197.15(R4A-T)	6"	12'	1.21%
R4A-T		197.00(R4B) 197.00(R4A)	197.00(MH-L3)	12"	44'	0.00%
R4B			197.00(R4A-T)	12"	91'	0.00%
R5A			197.00(R5B-T)	12"	72'	0.00%
R5B			197.15(R5B-T)	6"	13'	1.19%
R5B-T		197.00(R5A) 197.00(R5B)	197.00(R5C-T)	12"	44'	0.00%
R5C			197.15(R5C-T)	6"	13'	1.19%
R5C-T		197.00(R5B-T) 197.00(R5C)	197.00(R5D-T)	12"	27'	0.00%
R5D			197.15(R5D-T)	6"	13'	1.19%
R5D-T		197.00(R5C-T) 197.00(R5D)	197.00(MH-S2)	12"	14'	0.00%
R6A			197.00(R6B-T)	12"	43'	0.00%
R6B			197.10(R6B-T)	6"	10'	0.99%
R6B-T		197.00(R6A) 197.00(R6B)	197.00(BND-29)	12"	37'	0.00%
R10A			196.68(R10A-T)	8"	68'	1.00%
R10A-T		197.00(MH-R10A) 196.00(R10A)	197.00(MH-Z3)	15"	28'	0.00%
R10B			196.30(MH-R10A)	8"	30'	1.01%
R10C			196.62(R10C-T)	8"	12'	1.02%
R10C-T		197.00(R10D-T) 196.50(R10C)	197.00(MH-R10A)	15"	31'	0.00%
R10D			196.62(R10D-T)	8"	12'	1.03%
R10D-T		197.00(MH-R10B) 196.50(R10D)	197.00(R10C-T)	15"	21'	0.00%
R10E			197.38(R10E-T)	8"	38'	0.99%
R10E-T		197.00(R10F-T) 197.00(R10E)	197.00(MH-R10B)	12"	67'	0.00%
R10F			197.29(R10F-T)	8"	29'	1.01%
R10F-T		197.00(R10G) 197.00(R10F)	197.00(R10E-T)	12"	63'	0.00%
R10G			197.71(R10F-T)	8"	71'	1.00%
R32			198.00(BND-33)	8"	183'	0.99%
RCC-9*			197.00(MH-HR12*)	12"	82'	0.00%
RCC-BND1*		197.00(RCC20*)	197.00(RCC-BND2*)	12"	43'	0.00%
RCC-BND2*		197.00(RCC-BND1*)	197.00(MH-HR4*)	12"	38'	0.00%
RCC-BND3*		197.00(MH-HR4*)	197.00(RCC-BND4*)	12"	36'	0.00%
RCC-BND4*		197.00(RCC-BND3*)	197.00(MH-HR5*)	12"	67'	0.00%
RCC-BND5*		197.00(MH-HR5*)				
RCC-BND6*						
RCC20*			197.00(RCC-BND1*)	12"	18'	0.00%
TEE-1*		194.50(BND-2*) 194.50(MH-B4A*)	194.50(CB-72*)	8"	5'	0.00%
TEE-2		194.69(TEE-3) 194.69(CB-33)	194.69(MH-Z)	12"	33'	0.49%
TEE-3			194.87(TEE-2)	12"	17'	1.03%
WDIV1-A**	200.25	192.25(MH-W)	192.25(WQU-1A)	24"	10'	0.51%
WDIV1-B**	200.10	192.15(WQU-1B)	192.14(FES-2)	36"	27'	0.52%
WDIV2-A**	201.00	192.07(MH-G)	192.07(WQU-2A)	24"	11'	0.92%
WDIV2-B**	200.10	191.87(WQU-2B)	191.87(FES-1)	48"	34'	0.49%
WQU-1A**	200.20	192.20(WDIV1-A)				
WQU-1B**	200.10		192.20(WDIV1-B)	24"	10'	0.51%
WQU-2A**	201.00	191.97(WDIV2-A)				
WQU-2B**	200.10		191.97(WDIV2-B)	24"	11'	0.92%
YD-1*	199.80		197.51(MH-HR8*)	8"	16'	0.98%
YD-2*	199.80		197.67(MH-HR9*)	8"	7'	0.97%
YD-3	201.30	197.35(YD-4)	197.35(CB-84)	8"	15'	1.00%
YD-4	201.30		197.98(YD-3)	8"	63'	1.00%

NOTES:
PIPE LENGTHS ARE MEASURED CENTER TO CENTER
PIPE MATERIAL IS TO BE HDPE UNLESS SPECIFIED OTHERWISE. REFER TO GENERAL NOTES ON SHEET 2 FOR MORE INFORMATION.

* DENOTES DRAINAGE STRUCTURES ASSOCIATED WITH THE LECESSE AND HAWTHORNE DEVELOPMENTS THAT ARE NOT INCLUDED WITH THE CURRENT CONTRACT.

WQU-1A/1B IS A VORTECHNICS MODEL 4000
WQU-2A/2B IS A VORTECHNICS MODEL 5000

WDIV1-A/B IS THE DIVERSION STRUCTURE FOR WQU-1A
WDIV2-A/B IS THE DIVERSION STRUCTURE FOR WQU-2A
**REFER TO DETAIL SHEET 30 FOR MORE INFORMATION

TOWN OF MAYNARD PLANNING BOARD APPROVAL

SIGNATURE ______ DATE ______

SIGNATURE ______ DATE ______

SIGNATURE ______ DATE ______ Approved plans - see cover sheet for Planning Board signatures.

SIGNATURE ______ DATE ______

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SITE CIVIL AND CONSULTING ENGINEERING
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REVISIONS

REV	DATE	COMMENT	BY
1	03/21/17	REMOVE CARRIAGE BLDG. (SHEETS 8-12 ONLY)	CFD
2	06/02/17	REV. PER TOWN COMMENTS	CFD
3	06/15/17	DRAINAGE REVISIONS (SHEETS 13-16 ONLY)	GJZ
4	06/28/17	DRAINAGE REVISIONS (FULL SET)	AWP
5	07/26/17	REV. PER TOWN COMMENTS	AWP
6	08/10/17	PEER REVIEW COMMENTS	CFD
7	09/18/17	CONSTRUCTION DOCUMENTS	AWP
8			
9			
10			
11			
12			
13			
14			
15			

APPROVED FOR CONSTRUCTION

PROJECT No.:	W161189
DRAWN BY:	AWP/CFD
CHECKED BY:	NEM/JAK
DATE:	02/15/2017
SCALE:	AS NOTED
CAD I.D.:	W161189SS7

PROJECT:
SITE DEVELOPMENT PLANS
FOR
CAPITAL GROUP PROPERTIES

MAYNARD CROSSING

LOCATION OF SITE
MAP #25 & LOTS #152 & 152-1
129 PARKER STREET (ROUTE 27)
TOWN OF MAYNARD
MIDDLESEX COUNTY
MASSACHUSETTS

BOHLER ENGINEERING
352 TURNPIKE ROAD
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900
Fax: (508) 480-9080
www.BohlerEngineering.com

J.A. KUCICH
PROFESSIONAL ENGINEER
JOHN A. KUCICH CIVIL No. 41530
MASSACHUSETTS LICENSE No. 41530
CONNECTICUT LICENSE No. 177
RHODE ISLAND LICENSE No. 9616
MAINE LICENSE No. 12553

SHEET TITLE:
DRAINAGE STRUCTURE TABLE

SHEET NUMBER:
16
OF 35

THIS PLAN TO BE UTILIZED FOR SITE UTILITY PURPOSES ONLY

REFER TO GENERAL NOTES SHEET FOR GRADING & UTILITY NOTES

GC SHALL COORDINATE LOCATION OF ALL UTILITY SERVICE PENETRATIONS WITH ARCH./MEP PLANS UPON FINAL TENANT FIT OUT

FINAL NUMBER AND LOCATION OF TRANSFORMERS SHALL BE COORDINATED WITH UTILITY COMPANY. TRANSFORMERS SHALL BE LOCATED WITH PROPER OFFSETS AND SETBACK DISTANCES AND SHALL BE INSTALLED WITH BOLLARD PROTECTION IN ACCORDANCE WITH UTILITY COMPANY REQUIREMENTS

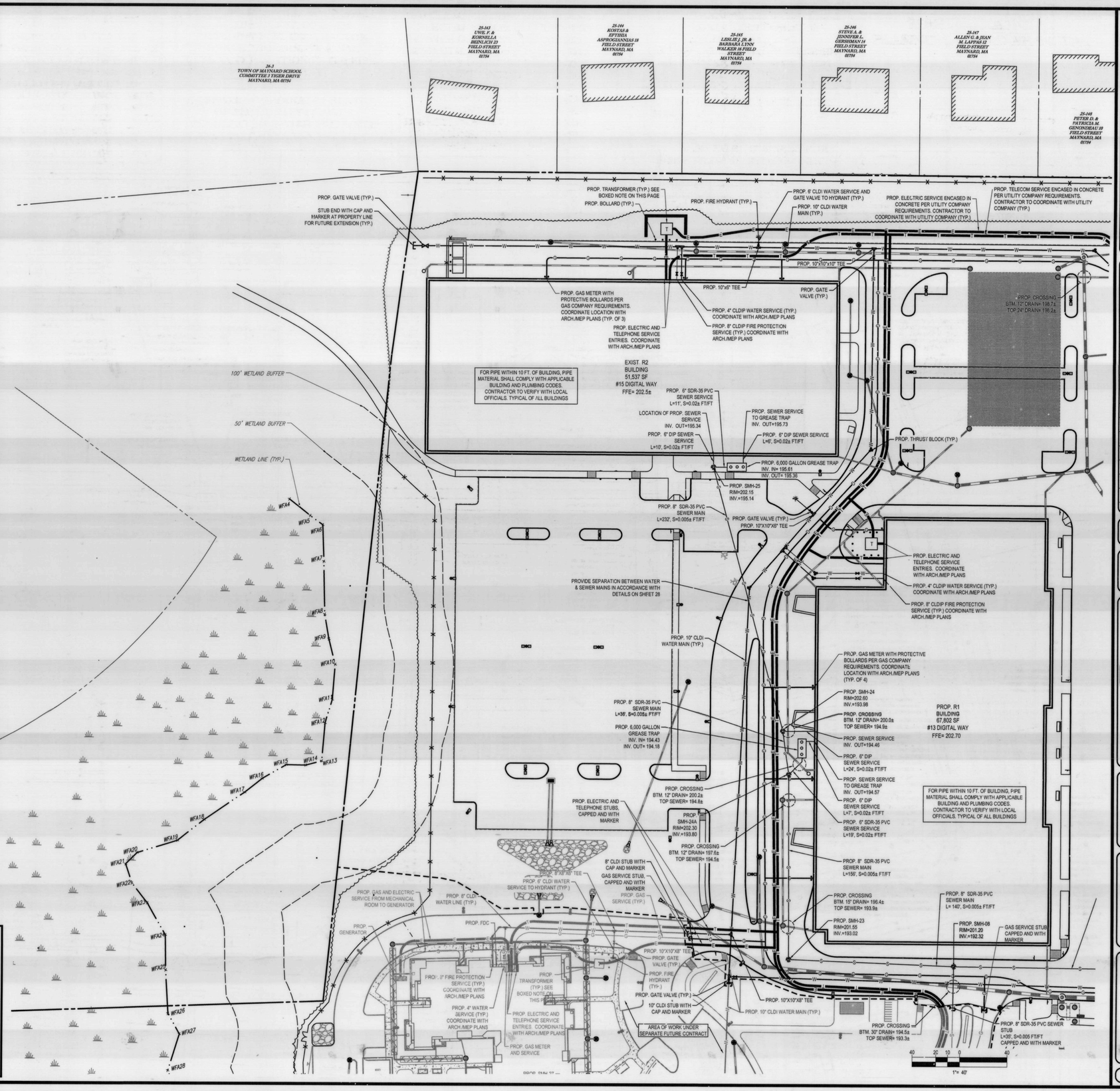
ALL GREASE TRAPS SHALL BE VENTED PER BUILDING/PLUMBING CODE. VENTS SHALL BE CAST IRON

A HYDRANT SHALL BE LOCATED WITHIN 100-FT. OF EACH BUILDING FDC. CONTRACTOR SHALL COORDINATE FINAL HYDRANT LOCATIONS WITH FIRE DEPARTMENT

GC TO COORDINATE WITH DPW PRIOR TO CONSTRUCTION TO SEE IF EXISTING WATER MAIN CAN BE RE-UTILIZED TO SERVICE THE PROJECT.

CONTRACTOR SHALL COORDINATE ELECTRIC, TELEPHONE, AND GAS SERVICE DESIGNS WITH DEVELOPER AND UTILITY COMPANIES. UTILITY COMPANY DESIGNS SHALL CONFIRM SIZE AND QUANTITY OF CONDUITS, PIPE SIZING, CONCRETE ENCASEMENT, AND CONDUIT JUNCTION POINTS / CHANGES IN DIRECTION AND VAULT / HANDHOLE LOCATIONS, QUANTITY AND SIZING REQUIREMENTS, ETC.

GREASE TRAP SIZES AS SHOWN ARE APPROXIMATE. FINAL SIZE REQUIREMENTS TO BE COORDINATED WITH DEVELOPER PRIOR TO CONSTRUCTION BASED ON TENANT REQUIREMENTS.



TOWN OF MAYNARD PLANNING BOARD APPROVAL

SIGNATURE		DATE
SIGNATURE		DATE
SIGNATURE	Approved plans - see cover sheet for Planning Board signatures.	DATE
SIGNATURE		DATE
SIGNATURE		DATE

811 Know what's below. Call before you dig.

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4	06/28/17	DRAINAGE REVISIONS (FULL SET)	AWP
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7	09/18/17	CONSTRUCTION DOCUMENTS	AWP
8			
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14			
15			

APPROVED FOR CONSTRUCTION

PROJECT No.:	W161189
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J.A. KUCICH — JOHN A. KUCICH — CIVIL — No. 45530 — REGISTERED PROFESSIONAL ENGINEER — MASSACHUSETTS — CONNECTICUT — RHODE ISLAND — MAINE

SHEET TITLE:
UTILITY PLAN "A"

SHEET NUMBER:
17 OF 35

REV 7 - 09/18/2017

GC TO COORDINATE WITH DPW PRIOR TO CONSTRUCTION TO SEE IF EXISTING WATER MAIN CAN BE RE-UTILIZED TO SERVICE THE PROJECT.

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A HYDRANT SHALL BE LOCATED WITHIN 100-FT. OF EACH BUILDING FDC. CONTRACTOR SHALL COORDINATE FINAL HYDRANT LOCATIONS WITH FIRE DEPARTMENT

GC SHALL COORDINATE LOCATION OF ALL UTILITY SERVICE PENETRATIONS WITH ARCH./MEP PLANS UPON FINAL TENANT FIT OUT

CONTRACTOR SHALL COORDINATE ELECTRIC, TELEPHONE, AND GAS SERVICE DESIGNS WITH DEVELOPER AND UTILITY COMPANIES. UTILITY COMPANY DESIGNS SHALL CONFIRM SIZE AND QUANTITY OF CONDUITS, PIPE SIZING, CONCRETE ENCASEMENT, AND CONDUIT JUNCTION POINTS / CHANGES IN DIRECTION AND VAULT / HANDHOLE LOCATIONS, QUANTITY AND SIZING REQUIREMENTS, ETC.

GREASE TRAP SIZES AS SHOWN ARE APPROXIMATE. FINAL SIZE REQUIREMENTS TO BE COORDINATED WITH DEVELOPER PRIOR TO CONSTRUCTION BASED ON TENANT REQUIREMENTS.

REFER TO GENERAL NOTES SHEET FOR GRADING & UTILITY NOTES

THIS PLAN TO BE UTILIZED FOR SITE UTILITY PURPOSES ONLY

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE DATE

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SIGNATURE DATE

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PROP. 6" CLDI WATER SERVICE AND GATE VALVE TO HYDRANT (TYP.)
PROP. 10" CLDI WATER MAIN (TYP.)
PROP. ELECTRIC SERVICE ENCASED IN CONCRETE PER UTILITY COMPANY REQUIREMENTS. CONTRACTOR TO COORDINATE WITH UTILITY COMPANY (TYP.)
PROP. TELECOM SERVICE ENCASED IN CONCRETE PER UTILITY COMPANY REQUIREMENTS. CONTRACTOR TO COORDINATE WITH UTILITY COMPANY (TYP.)
PROP. TRANSFORMER (TYP.) SEE BOXED NOTE ON THIS PAGE
PROP. BOLLARD (TYP.)
PROP. 6" CLDI WATER SERVICE TO HYDRANT
PROP. 10"X10"X6" TEE
PROP. 10"X10"X10" TEE
PROP. HANDHOLE IN ACCORDANCE WITH UTILITY PROVIDER REQUIREMENTS (TYPICAL OF ALL JUNCTIONS)
PROP. 10"X10"X10" TEE
PROP. 10"X10"X6" TAPPING SLEEVE AND GATE VALVE IF DUCTILE IRON PIPE IS NOT PRESENT THEN GC SHALL COORDINATE WITH DPW FOR CONNECTION METHODS
APPROXIMATE LOCATION OF 16-INCH WATER MAIN PER RECORD PLANS.
CONTRACTOR TO CONFIRM LOCATION OF EXIST. WATER MAIN PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER IN WRITING OF ANY CONFLICTS
SOUTH STREET
CONNECT TO EXISTING GAS MAIN AND COORDINATE WITH UTILITY COMPANY
APPROXIMATE LOCATION OF 16-INCH WATER MAIN PER RECORD PLANS.
CONTRACTOR TO COORDINATE ALL CONNECTION POINTS TO EXIST. ELECTRIC INFRASTRUCTURE AND REQUIRED EQUIPMENT WITH UTILITY COMPANY PRIOR TO CONSTRUCTION
25-100
ALAN & MELISSA G. RINGUETTE III
7 PARKER STREET
MAYNARD, MA 01754
REFER TO PLANS BY GREEN INTERNATIONAL AFFILIATES FOR LIMITS OF WORK AND IMPROVEMENTS IN PARKER STREET.
PROP. GATE VALVE (TYP.)
SERVICE (TYP.) CH./MEP PLANS
ROTECTION DINATE WITH
P. SEWER SERVICE REASE TRAP OUT=195.73
PROP. 6" DIP SEWER SERVICE L=6', S=0.02± FT/FT
PROP. 6,000 GALLON GREASE TRAP INV. IN= 195.61 INV. OUT= 195.39
VALVE (TYP.) "X10"X6" TEE
PROP. THRUST BLOCK (TYP.)
PROP. CROSSING BTM. 12" DRAIN= 196.4± TOP SEWER= 193.9±
PROP. SMH-23 RIM=201.55 INV.=193.02
PROP. ELECTRIC AND TELEPHONE SERVICE ENTRIES. COORDINATE WITH ARCH./MEP PLANS
PROP. 4" CLDIP WATER SERVICE (TYP.) COORDINATE WITH ARCH./MEP PLANS
PROP. 8" CLDIP FIRE PROTECTION SERVICE (TYP.) COORDINATE WITH ARCH./MEP PLANS
PROP. GAS METER WITH PROTECTIVE BOLLARDS PER GAS COMPANY REQUIREMENTS. COORDINATE LOCATION WITH ARCH./MEP PLANS (TYP. OF 4)
PROP. SMH-24 RIM=202.60 INV.=193.98
PROP. CROSSING BTM. 12" DRAIN= 200.0± TOP SEWER= 194.9±
PROP. SEWER SERVICE INV. OUT=194.46
PROP. 6" DIP SEWER SERVICE L=24', S=0.02± FT/FT
PROP. SEWER SERVICE TO GREASE TRAP INV. OUT=194.57
PROP. 6" DIP SEWER SERVICE L=7', S=0.02± FT/FT
PROP. 6" SDR-35 PVC SEWER SERVICE L=19', S=0.02± FT/FT
PROP. 8" SDR-35 PVC SEWER MAIN L=156', S=0.005± FT/FT
PROP. CROSSING BTM. 15" DRAIN= 196.4± TOP SEWER= 193.9±
PROP. SMH-23 RIM=201.55 INV.=193.02
PROP. R1 BUILDING 67,802 SF #13 DIGITAL WAY FFE= 202.70
FOR PIPE WITHIN 10 FT. OF BUILDING, PIPE MATERIAL SHALL COMPLY WITH APPLICABLE BUILDING AND PLUMBING CODES. CONTRACTOR TO VERIFY WITH LOCAL OFFICIALS. TYPICAL OF ALL BUILDINGS
PROP. 8" SDR-35 PVC SEWER MAIN L= 140', S=0.005± FT/FT
PROP. SMH-08 RIM=201.20 INV.=192.32
GAS SERVICE STUB CAPPED AND WITH MARKER
PROP. 8" SDR-35 PVC SEWER STUB L=35', S=0.005 FT/FT CAPPED AND WITH MARKER
PROP. 8" SDR-35 PVC SEWER MAIN L=269', S=0.005± FT/FT
PROP. CROSSING BTM. 42" DRAIN= 192.6± TOP SEWER= 192.0±
PROP. SMH-07 RIM=200.50 INV.=190.98
PROP. 8" SDR-35 PVC SEWER MAIN (TYP.) L=308', S=0.005± FT/FT
PROP. 10" CLDI WATER MAIN (TYP.)
PROP. CROSSING BTM. DRAIN= 196.7± TOP SEWER= 190.3±
PROP. GAS METER WITH PROTECTIVE BOLLARDS PER GAS COMPANY REQUIREMENTS. COORDINATE LOCATION WITH ARCH./MEP PLANS (TYP. OF 3)
PROP. 6" SEWER SERVICE L= 72', S=0.020 FT/FT
PROP. 6" DIP SEWER SERVICE INV. OUT=194.90
PROP. 6" DIP, L=12 @ 2%, TO GREASE TRAP INV. OUT=194.95
PROP. R5 BUILDING 10,015 SF #5 DIGITAL WAY FFE= 202.60
PROP. ELECTRIC AND TELEPHONE SERVICE ENTRIES. COORDINATE WITH ARCH./MEP PLANS
PROP. 4" CLDIP WATER SERVICE (TYP.) COORDINATE WITH ARCH./MEP PLANS
PROP. 8" CLDIP FIRE PROTECTION SERVICE (TYP.) COORDINATE WITH ARCH./MEP PLANS
PROP. GATE VALVE (TYP.)
PROP. CROSSING BTM. DRAIN= 193.5± TOP SEWER= 190.4±
PROP. 6" SDR-35 PVC SEWER L= 16', S=0.020 FT/FT
C.O.
PROP. 4,500 GALLON GREASE TRAP INV. IN= 194.71 INV. OUT= 194.46
PROP. SMH-02 RIM=201.35 INV. IN=189.50 (NORTH) INV. IN=189.50 (EAST) INV. IN=193.50 (WEST) INV. OUT= 189.5
PROP. 8" SDR-35 PVC SEWER L=180', S=0.005± FT/FT
PROP. CROSSING BTM. DRAIN= 195.0± TOP SEWER= 189.7±
PROP. 6" CLDI WATER SERVICE TO HYDRANT
PROP. 8" SDR-35 PVC SEWER L=171', S=0.005± FT/FT
PROP. CROSSING BTM. DRAIN= 195.1± TOP SEWER= 189.8±
PROP. CROSSINGS BTM. DRAIN= 192.4± TOP SEWERS= 189.5±
PROP. 10"X10"X6" TEE
PROP. SMH-01 RIM=201.15 INV.=188.60
PROP. 10"X10"X10" TEE
PROP. 10"X10"X6" TEE
PROP. 10" CLDI WATER MAIN
PROP. 6" CLDI WATER SERVICE TO HYDRANT (TYP.)
PROP. 6" CLDIP FIRE PROTECTION SERVICE (TYP.) COORDINATE WITH ARCH./MEP PLAZE
PROP. GAS METER WITH PROTECTIVE BOLLARDS PER GAS COMPANY REQUIREMENTS. COORDINATE LOCATION WITH ARCH./MEP PLANS
CONTRACTOR TO CONFIRM LOCATION OF EXIST. WATER MAIN PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER IN WRITING OF ANY CONFLICTS
PROP. 4" CLDIP WATER SERVICE (TYP.) COORDINATE WITH ARCH./MEP PLANS
PROP. 6" DIP SEWER SERVICE L=16', S=0.02 FT/FT INV. OUT=195.45
PROP. 8" SDR-35 PVC SEWER L=228', S=0.005± FT/FT
PROP. 6" SDR-35 PVC SEWER L=12', S=0.02 FT/FT
PROP. 4,000 GAL. GREASE TRAP INV. IN= 195.09 INV. OUT= 194.84
PROP. 6" SDR-35 PVC SEWER L=54', S=0.02 FT/FT INV. OUT=195.00
FFE= 202.0 PROP. R6 BUILDING 5,343 SF #7 DIGITAL WAY
PROP. 10" CLDI WATER MAIN
PROP. 10"X10"X6" TEE
PROP. 6" CLDI WATER SERVICE TO HYDRANT (TYP.)
PROP. 6,000 GALLON GREASE TRAP INV. IN= 194.73, INV. OUT= 194.48
PROP. THRUST BLOCK (TYP.)
PROP. 6" CLDI WATER SERVICE TO HYDRANT (TYP.)
PROP. 8" SDR-35 PVC SEWER MAIN L=174', S=0.005± FT/FT
PROP. SMH-04 RIM=201.85 INV. IN=190.65 (WEST) INV. IN= 194.38 (NORTH) INV. IN= 194.38 (EAST) INV. OUT= 190.65
PROP. 6" DIP SEWER SERVICE L=31', S=0.02± FT/FT
PROP. 6" SDR-35 PVC SEWER L=5', S=0.02± FT/FT
PROP. SEWER SERVICE INV. OUT=195.00
PROP. SEWER SERVICE TO GREASE TRAP INV. OUT=195.25
PROP. 6" DIP SEWER SERVICE L=26', S=0.02± FT/FT
PROP. ELECTRIC AND TELEPHONE SERVICE ENTRIES. COORDINATE WITH ARCH./MEP PLANS
PROP. GAS METER WITH PROTECTIVE BOLLARDS PER GAS COMPANY REQUIREMENTS. COORDINATE LOCATION WITH ARCH./MEP PLANS
PROP. R4 BUILDING 13,751 SF #9 DIGITAL WAY FFE= 202.9
PROP. 4" CLDIP WATER SERVICE (TYP.) COORDINATE WITH ARCH./MEP PLANS
PROP. 6" CLDIP FIRE PROTECTION SERVICE (TYP.) COORDINATE WITH ARCH./MEP PLANS
PROP. CROSSING BTM. DRAIN= 194.7± TOP SEWER= 191.9±
PROP. 8" SDR-35 PVC SEWER MAIN L=174', S=0.005± FT/FT
PROP. SMH-05 RIM=202.30 INV.=191.52
PROP. 6" SEWER SERVICE TO GREASE TRAP INV. OUT=193.38
PROP. 6" SEWER SERVICE L=32', S=0.02± FT/FT
PROP. SEWER SERVICE INV. OUT=193.17
PROP. 6" SEWER SERVICE L=36', S=0.02± FT/FT
PROP. 9,000 GALLON GREASE TRAP INV. IN= 192.74 INV. OUT= 192.49
PROP. 6" SDR 35 PVC SEWER, L=5', S=0.02± FT/FT
PROP. SMH-06 RIM=202.20 INV.=192.39
PROP. GATE VALVE (TYP.)
PROP. FIRE HYDRANT (TYP.)
PROP. 10"X10"X6" TEE
PROP. 6" CLDI WATER SERVICE TO HYDRANT
PROP. 10" CLDI WATER MAIN
PROP. 10"X10"X6" TEE
PROP. 10"X10"X10" TEE
PROP. 10"X10"X6" TEE
PROP. 10" CLDI WATER MAIN
PROP. 10"X10"X10" TEE
PROP. UTILITY POLE WITH OVERHEAD WIRE (TYP.)
PROP. ELECTRIC AND TELEPHONE SERVICE ENTRIES. COORDINATE WITH ARCH./MEP PLANS
PROP. GAS METER WITH
PROP. R7 BUILDING 5,087 SF #3 DIGITAL WAY FFE= 202.0
PROP. 4" CLDIP (TYP.) COORD. WITH ARCH./MEP PLANS
PROP. 8" SDR-35 PVC SEWER MAIN, L=118', S=0.005± FT/FT
PROP. 10" CLDI WATER MAIN
PROP. 6" CLDIP COORD. WITH ARCH./MEP PLANS
PROP. 8" SDR-35 PVC SEWER L=36', S=0.005 FT/FT
PROP. 6" CLDI WATER SERVICE TO HYDRANT (TYP.)
PRIOR TO ORDERING OF MATERIALS, CONTRACTOR SHALL VERIFY DEPTH AND LOCATION OF EXISTING FORCE MAIN PRIOR TO CONSTRUCTION AND NOTIFY DESIGN ENGINEER IN WRITING OF ANY CONFLICTS.
APPROX. LOCATION OF EXIST. SEWER FORCE MAIN.
PROP. 10"X10"X10" TEE
PROP. PUMP STATION MODIFICATIONS AND EQUIPMENT. REFER TO PLANS BY ONSITE ENGINEERING FOR DETAILS
PROP. 10"X10"X6" TEE
PROP. 10"X10"X10" TEE
CONNECT TO EXIST. SEWER MANHOLE ADJUST RIM TO ELEV= 201.50 PROP. INV. IN=188.41 EX. INV. OUT=188.40
PROP. RR
PROP. GAS METER WITH
PROP. 4,500 GALLON GREASE TRAP INV. IN= 195.32, INV. OUT=195.07
PROP. SMH-03 RIM=201.10 INV. IN=194.85 (SOUTH) INV. IN=193.92 (NORTH) INV. IN=194.85 (EAST) INV. OUT=190.10
PROP. 8" DIP INV. OUT=195.60, L= 14', S=0.02 FT/FT
PROP. 6" DIP INV. OUT=195.20, L=15', S=0.02 FT/FT
PROP. TRANSFORMER (TYP.) SEE BOXED NOTE ON THIS PAGE
PROP. 10"X10"X10" TAPPING SLEEVE AND GATE VALVE. IF DUCTILE IRON PIPE IS NOT PRESENT THEN GC SHALL COORDINATE WITH DPW FOR CONNECTION METHODS
CONNECT TO EXISTING GAS MAIN. COORD. WITH UTILITY COMPANY.
CONTRACTOR TO COORDINATE CONNECTION WITH UTILITY COMPANY PRIOR TO CONSTRUCTION
APPROX. LOCATION OF EXISTING 16-INCH WATER MAIN PER RECORD PLANS
PARKER STREET 10,900 ADT (2004)
B STREET
PROP. 10" CLDI WATER MAIN (TYP.)
1"= 40'

811 Know what's below. Call before you dig.

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APPROVED FOR CONSTRUCTION

PROJECT No.:	W161189
DRAWN BY:	AWP/CFD
CHECKED BY:	NEM/JAK
DATE:	02/15/2017
SCALE:	AS NOTED
CAD I.D.:	W161189SS7

PROJECT:
SITE DEVELOPMENT PLANS
FOR
CAPITAL GROUP PROPERTIES
MAYNARD CROSSING
LOCATION OF SITE
MAP #25 & LOTS #152 & 152-1
129 PARKER STREET (ROUTE 27)
TOWN OF MAYNARD
MIDDLESEX COUNTY
MASSACHUSETTS

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352 TURNPIKE ROAD
SOUTHBOROUGH, MA 01772
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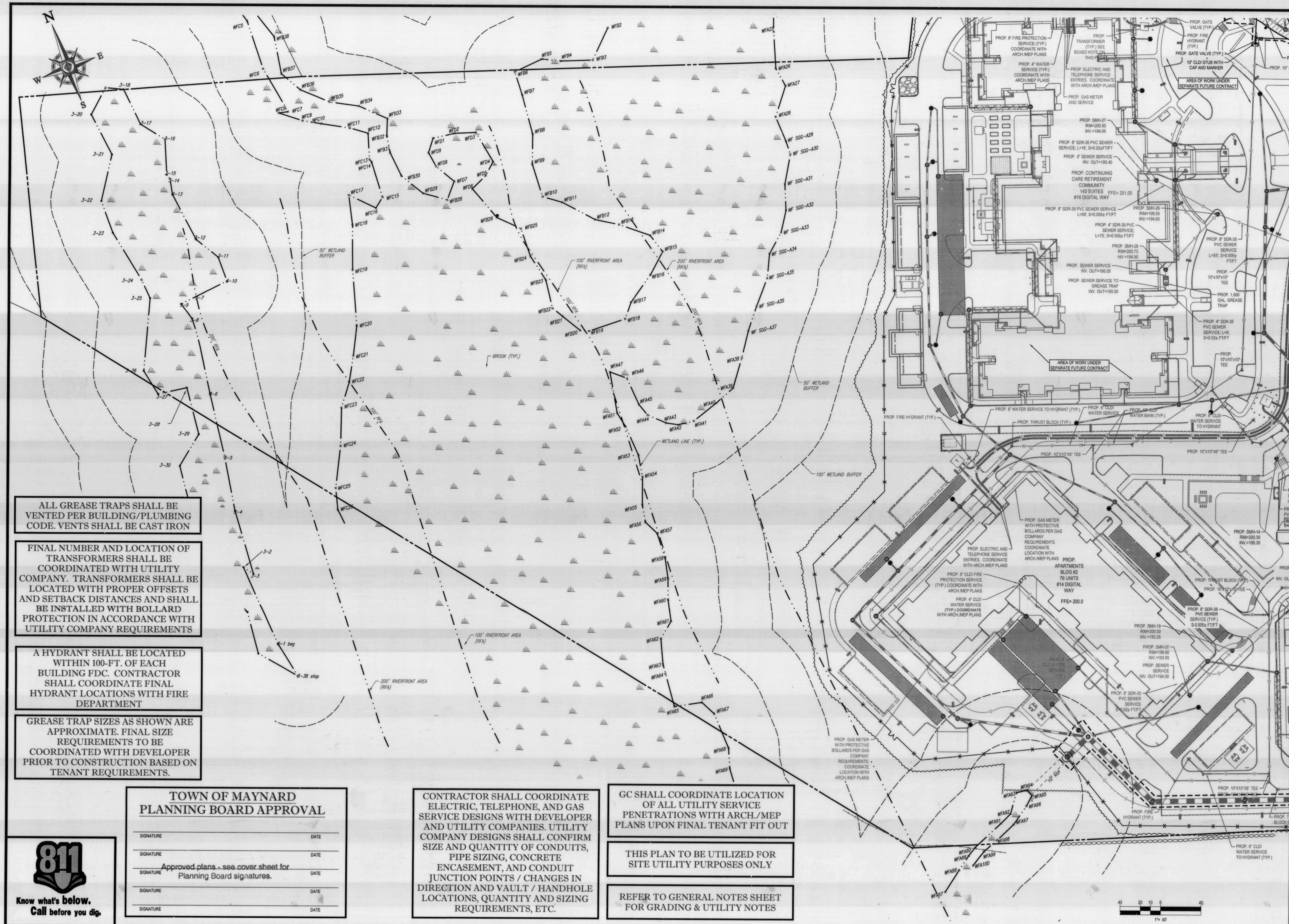
J.A. KRUCICH — JOHN A. KRUCICH — CIVIL — No. 41530 — REGISTERED PROFESSIONAL ENGINEER — MASSACHUSETTS, VERMONT, NEW HAMPSHIRE, CONNECTICUT, NEW YORK, RHODE ISLAND, MAINE, PENNSYLVANIA

SHEET TITLE:
UTILITY PLAN "B"

SHEET NUMBER:
18 OF 35

REV 7 - 09/18/2017



ALL GREASE TRAPS SHALL BE VENTED PER BUILDING/PLUMBING CODE. VENTS SHALL BE CAST IRON

FINAL NUMBER AND LOCATION OF TRANSFORMERS SHALL BE COORDINATED WITH UTILITY COMPANY. TRANSFORMERS SHALL BE LOCATED WITH PROPER OFFSETS AND SETBACK DISTANCES AND SHALL BE INSTALLED WITH BOLLARD PROTECTION IN ACCORDANCE WITH UTILITY COMPANY REQUIREMENTS

A HYDRANT SHALL BE LOCATED WITHIN 100-FT. OF EACH BUILDING FDC. CONTRACTOR SHALL COORDINATE FINAL HYDRANT LOCATIONS WITH FIRE DEPARTMENT

GREASE TRAP SIZES AS SHOWN ARE APPROXIMATE. FINAL SIZE REQUIREMENTS TO BE COORDINATED WITH DEVELOPER PRIOR TO CONSTRUCTION BASED ON TENANT REQUIREMENTS.

811
Know what's below.
Call before you dig.

TOWN OF MAYNARD PLANNING BOARD APPROVAL

SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE
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Approved plans - see cover sheet for Planning Board signatures.

CONTRACTOR SHALL COORDINATE ELECTRIC, TELEPHONE, AND GAS SERVICE DESIGNS WITH DEVELOPER AND UTILITY COMPANIES. UTILITY COMPANY DESIGNS SHALL CONFIRM SIZE AND QUANTITY OF CONDUITS, PIPE SIZING, CONCRETE ENCASEMENT, AND CONDUIT JUNCTION POINTS / CHANGES IN DIRECTION AND VAULT / HANDHOLE LOCATIONS, QUANTITY AND SIZING REQUIREMENTS, ETC.

GC SHALL COORDINATE LOCATION OF ALL UTILITY SERVICE PENETRATIONS WITH ARCH./MEP PLANS UPON FINAL TENANT FIT OUT

THIS PLAN TO BE UTILIZED FOR SITE UTILITY PURPOSES ONLY

REFER TO GENERAL NOTES SHEET FOR GRADING & UTILITY NOTES

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PROJECT No.:	W161189
DRAWN BY:	AWP/CFD
CHECKED BY:	NEM/JAK
DATE:	02/15/2017
SCALE:	AS NOTED
CAD I.D.:	W161189SS7

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FOR
CAPITAL GROUP PROPERTIES

MAYNARD CROSSING

LOCATION OF SITE
MAP #25 & LOTS #152 & 152-1
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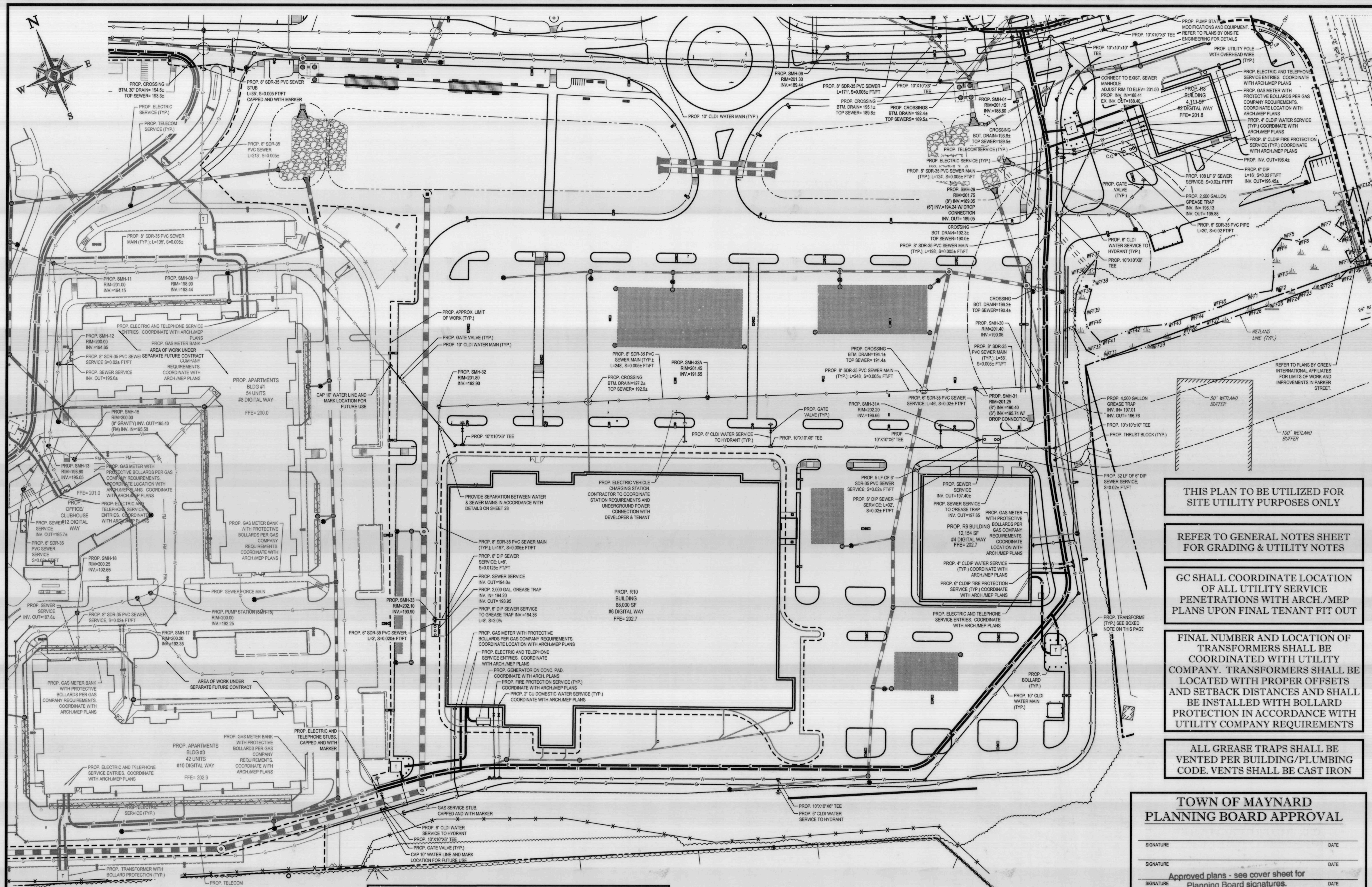
MASSACHUSETTS LICENSE No. 41530
CONNECTICUT LICENSE No. 27177
RHODE ISLAND LICENSE No. 9616
MAINE LICENSE No. 12553

SHEET TITLE:
UTILITY PLAN "C"

SHEET NUMBER:

REV 7 - 09/18/2017



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TOWN OF MAYNARD PLANNING BOARD APPROVAL

SIGNATURE	DATE

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Know what's below. Call before you dig.

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CONTRACTOR SHALL COORDINATE ELECTRIC, TELEPHONE, AND GAS SERVICE DESIGNS WITH DEVELOPER AND UTILITY COMPANIES. UTILITY COMPANY DESIGNS SHALL CONFIRM SIZE AND QUANTITY OF CONDUITS, PIPE SIZING, CONCRETE ENCASEMENT, AND CONDUIT JUNCTION POINTS / CHANGES IN DIRECTION AND VAULT / HANDHOLE LOCATIONS, QUANTITY AND SIZING REQUIREMENTS, ETC.

GC TO COORDINATE WITH DPW PRIOR TO CONSTRUCTION TO SEE IF EXISTING WATER MAIN CAN BE RE-UTILIZED TO SERVICE THE PROJECT.

A HYDRANT SHALL BE LOCATED WITHIN 100-FT. OF EACH BUILDING FDC. CONTRACTOR SHALL COORDINATE FINAL HYDRANT LOCATIONS WITH FIRE DEPARTMENT

1" = 40'

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PROJECT No.:	W161189
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www.BohlerEngineering.com

J.A. KUCICH
PROFESSIONAL ENGINEER

SHEET TITLE:

UTILITY PLAN "D"

SHEET NUMBER:

20

OF 35

REV 7 - 09/18/2017

N
W
E
S

24-3
TOWN OF MAYNARD SCHOOL COMMITTEE 3 TIGER DRIVE MAYNARD, MA 01754

BEINLICH 20 FIELD STREET MAYNARD, MA 01754

ASPINGUANGUZO 20 FIELD STREET MAYNARD, MA 01754

BARBARA LYNN WALKER 16 FIELD STREET MAYNARD, MA 01754

GIBSHMAN 18 FIELD STREET MAYNARD, MA 01754

30 LAPPAS 12 FIELD STREET MAYNARD, MA 01754

25-148
PETER IJ. & PATRICIA M. GINNINGBAU 10 FIELD STREET MAYNARD, MA 01754

PROP. TREELINE (TYP.)

PROP. TREE PROTECTION FENCE (TYP.) (SEE SHEET 25 FOR DETAIL)

PROP. INLET PROTECTION (TYP.)

100' WETLAND BUFFER

50' WETLAND BUFFER

WETLAND LINE (TYP.)

END OF PROP. SILT FENCE AND STRAW WATTLES

CONTRACTOR TO PROVIDE DIVERSION SWALES AS NECESSARY TO DIRECT RUNOFF TO SEDIMENT TRAPS

EXIST. R2 BUILDING 51,537 SF #15 DIGITAL WAY

PROP. UNDERGROUND BASIN (TYP.)

PROP. SILT FENCE AND STRAW WATTLES (TYP.)

STRAW WATTLES AND SILT FENCE ARE TO BE INSTALLED ALONG LIMITS OF WORK AND ARE SHOWN OFFSET FOR CLARITY PURPOSES

PROP. DIVERSION SWALE (TYP.)

PROP. INLET PROTECTION (TYP.)

PROP. DIVERSION SWALE (TYP.)

PROP. R1 BUILDING 67,802 SF #13 DIGITAL WAY

PROP. SOIL STOCKPILE. SIZE AND LOCATION MAY VARY DEPENDING UPON NATURE OF CONSTRUCTION ACTIVITIES

CONTRACTOR TO PROVIDE DIVERSION SWALES AS NECESSARY TO DIRECT RUNOFF TO SEDIMENT TRAPS

PROP. TEMPORARY SEDIMENT BASIN. ALL SEDIMENT IS TO BE REMOVED PRIOR TO CONVERSION TO FINAL INFILTRATION BASIN. NO HEAVY EQUIPMENT SHALL BE ALLOWED WITHIN THE BASIN TO MINIMIZE SOIL COMPACTION.

STRAW WATTLES AND SILT FENCE ARE TO BE INSTALLED ALONG LIMITS OF WORK AND ARE SHOWN OFFSET FOR CLARITY PURPOSES

GC SHALL INSTALL PERIMETER EROSION CONTROLS CONSISTING OF STAKED STRAW WATTLES AND SILT FENCE BETWEEN PROJECT LIMITS AS NEEDED TO CONTROL SEDIMENT RUNOFF

APPROX. LIMIT OF WORK (TYP.)

CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE TEMPORARY TURTLE BARRIER UNTIL PERMANENT BARRIER IS INSTALLED.

AREA OF WORK UNDER SEPARATE FUTURE CONTRACT

PROP. SILT FENCE

PROP. INLET PROTECTION (TYP.)

WFA4 WFA5 WFA6 WFA7 WFA8 WFA9 WFA10 WFA11 WFA12 WFA13 WFA14 WFA15 WFA16 WFA17 WFA18 WFA19 WFA20 WFA21 WFA22 WFA23 WFA24 WFA25 WFA26 WFA27 WFA28 WF SOC-A29 WF SOC-A30

24-13
TOWN OF MAYNARD SCHOOL COMMITTEE 3 TIGER STREET MAYNARD, MA 01754

1" = 40'

ALL EXISTING STORMWATER INLETS SHALL BE PROTECTED UNTIL SUCH TIME THEY ARE REMOVED OR UNTIL DRAINAGE AREAS THAT ARE TRIBUTARY TO SAID INLET ARE FULLY STABILIZED

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THIS PLAN TO BE UTILIZED FOR SITE SOIL AND EROSION CONTROL PURPOSES ONLY

REFER TO SOIL EROSION CONTROL NOTES & DETAIL SHEET FOR EROSION NOTES AND DETAILS

TOWN OF MAYNARD PLANNING BOARD APPROVAL

SIGNATURE		DATE
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SIGNATURE	Approved plans - see cover sheet for Planning Board signatures.	DATE
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SIGNATURE		DATE

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◆ ATLANTA, GA
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REVISIONS

REV	DATE	COMMENT	BY
1	03/21/17	REMOVE CARRIAGE BLDG (SHEETS 8-12 ONLY)	CFD
2	06/02/17	REV. PER TOWN COMMENTS	CFD
3	06/15/17	DRAINAGE REVISIONS (SHEETS 13-16 ONLY)	GJZ
4	06/28/17	DRAINAGE REVISIONS (FULL SET)	AWP
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7	09/18/17	CONSTRUCTION DOCUMENTS	AWP
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APPROVED FOR CONSTRUCTION

PROJECT No.:	W16118S
DRAWN BY:	AWP/CFD
CHECKED BY:	NEM/JAK
DATE:	02/15/2017
SCALE:	AS NOTED
CAD I.D.:	W16118SS7

PROJECT:
SITE DEVELOPMENT PLANS
FOR
CAPITAL GROUP PROPERTIES
MAYNARD CROSSING

LOCATION OF SITE
MAP #25 & LOTS #152 & 152-1
129 PARKER STREET (ROUTE 27)
TOWN OF MAYNARD
MIDDLESEX COUNTY
MASSACHUSETTS

BOHLER ENGINEERING
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CIVIL
No. 41530
REGISTERED PROFESSIONAL ENGINEER
MASSACHUSETTS LICENSE NO. 41530
CONNECTICUT
RHODE ISLAND LICENSE NO. 9618
MAINE LICENSE NO. 13563

SHEET TITLE:
SOIL EROSION & SEDIMENT CONTROL PLAN "A"

SHEET NUMBER:
21 OF 35

REV 7 - 09/18/2017

THIS PLAN TO BE UTILIZED FOR SITE SOIL AND EROSION CONTROL PURPOSES ONLY

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TOWN OF MAYNARD PLANNING BOARD APPROVAL

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25-147 ALLEN G. & JEAN M. LAPPAS 12 FIELD STREET MAYNARD, MA 01754

25-148 PETER D. & PATRICIA M. GIENNOMIDAU 10 FIELD STREET MAYNARD, MA 01754

25-149 ROBERT A. & AMANDA R. MORRIS 8 FIELD STREET MAYNARD, MA 01754

21-109 ALAN & MELLISSA G. RINGUETTE 112 PARKER STREET MAYNARD, MA 01754

PROP. TREELINE (TYP.)

PROP. TREE PROTECTION FENCE (TYP.) (SEE SHEET 25 FOR DETAIL)

PROP. CONSTRUCTION ENTRANCE

PROP. INLET PROTECTION (TYP.)

PROP. UNDERGROUND BASIN (TYP.)

PROP. R3 BUILDING 55,922 SF #11 DIGITAL WAY

PROP. R4 BUILDING 13,751 SF #9 DIGITAL WAY

SOUTH STREET

REFER TO PLANS BY GREEN INTERNATIONAL AFFILIATES FOR LIMITS OF WORK AND IMPROVEMENTS IN PARKER STREET.

PROP. DIVERSION SWALE (TYP.)

PROP. R1 BUILDING 67,802 SF #13 DIGITAL WAY

PROP. SOIL STOCKPILE. SIZE AND LOCATION MAY VARY DEPENDING UPON NATURE OF CONSTRUCTION ACTIVITIES

CONTRACTOR TO PROVIDE DIVERSION SWALES AS NECESSARY TO DIRECT RUNOFF TO SEDIMENT TRAPS

PROP. TEMPORARY SEDIMENT BASIN. ALL SEDIMENT IS TO BE REMOVED PRIOR TO CONVERSION TO FINAL INFILTRATION BASIN. NO HEAVY EQUIPMENT SHALL BE ALLOWED WITHIN THE BASIN TO MINIMIZE SOIL COMPACTION.

PROP. TEMPORARY SEDIMENT TRAP (TYP.) LOCATION MAY VARY DEPENDING UPON CONSTRUCTION ACTIVITIES BUT SHALL BE OUTSIDE 100-FT. BUFFER ZONE

EXISTING 12'X64' CONSTRUCTION TRAILER

PROP. R5 BUILDING 10,015 SF #5 DIGITAL WAY

PROP. R6 BUILDING 5,333 SF #7 DIGITAL WAY

PROP. R7 BUILDING 5,987 SF #3 DIGITAL WAY

PROP. R8 BUILDING 4,111 SF #2 DIGITAL WAY

PARKER STREET 10,800 ADT (2004)

B STREET

40 20 10 0 40

1"= 40'

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PROJECT No.:	W161189
DRAWN BY:	AWP/CFD
CHECKED BY:	NEM/JAK
DATE:	02/15/2017
SCALE:	AS NOTED
CAD I.D.:	W161189SS7

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FOR
CAPITAL GROUP PROPERTIES
MAYNARD CROSSING

LOCATION OF SITE
MAP #25 & LOTS #152 & 152-1
129 PARKER STREET (ROUTE 27)
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J.A. KUCH
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PROFESSIONAL ENGINEER
No. 41510
MASSACHUSETTS

SHEET TITLE:
SOIL EROSION & SEDIMENT CONTROL PLAN "B"

SHEET NUMBER:
22
OF 35

REV 7 - 09/18/2017

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CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE TEMPORARY TURTLE BARRIER UNTIL PERMANENT BARRIER IS INSTALLED.

AREA OF WORK UNDER SEPARATE FUTURE CONTRACT

PROP. CONTINUING CARE RETIREMENT COMMUNITY 143 SUITES #19 DIGITAL WAY

PROP. SEDIMENT TRAP (TYP.) LOCATION MAY VARY DEPENDING UPON CONSTRUCTION ACTIVITIES BUT SHALL BE OUTSIDE 100-FT. BUFFER ZONE AND 200 FT. RIVERFRONT AREA

CONTRACTOR TO PROVIDE DIVERSION SWALES AS NECESSARY TO DIRECT RUNOFF TO SEDIMENT TRAPS

PROP. DIVERSION SWALE (TYP.)

PROP. INLET PROTECTION (TYP.)

PROP. SILT FENCE AND STRAW WATTLES (TYP.)

PROP. DIVERSION SWALE (TYP.)

100' WETLAND BUFFER

50' WETLAND BUFFER

WETLAND LINE (TYP.)

100' RIVERFRONT AREA (RFA)

200' RIVERFRONT AREA (RFA)

BROOK (TYP.)

PROP. TEMPORARY SEDIMENT TRAP (TYP.) LOCATION MAY VARY DEPENDING UPON CONSTRUCTION ACTIVITIES BUT SHALL BE OUTSIDE 100-FT. BUFFER ZONE AND 200 FT. RIVER-FRONT AREA

PROP. APARTMENTS BLDG #2 76 UNITS #14 DIGITAL WAY

UNDERGROUND INFILTRATION BASIN (TYP.)

CONTRACTOR TO PROVIDE DIVERSION SWALES AS NECESSARY TO DIRECT RUNOFF TO SEDIMENT TRAPS

CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE TEMPORARY TURTLE BARRIER UNTIL PERMANENT BARRIER IS INSTALLED.

STRAW WATTLES AND SILT FENCE TO BE INSTALLED ALONG LIMITS OF WORK AND SHOWN OFFSET FOR CLARITY PURPOSES

CONTRACTOR TO INSTALL EROSION AND SEDIMENT CONTROLS AS NEEDED FOR DRAIN INSTALLATION

40 20 10 0 40
1"= 40'

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SOUTHEASTERN, PA; REHOBOTH BEACH, DE; RALEIGH, NC
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PROJECT No.:	W161189
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PROJECT:
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SHEET TITLE:
SOIL EROSION & SEDIMENT CONTROL PLAN "C"

SHEET NUMBER:
23
OF 35

REV 7 - 09/18/2017

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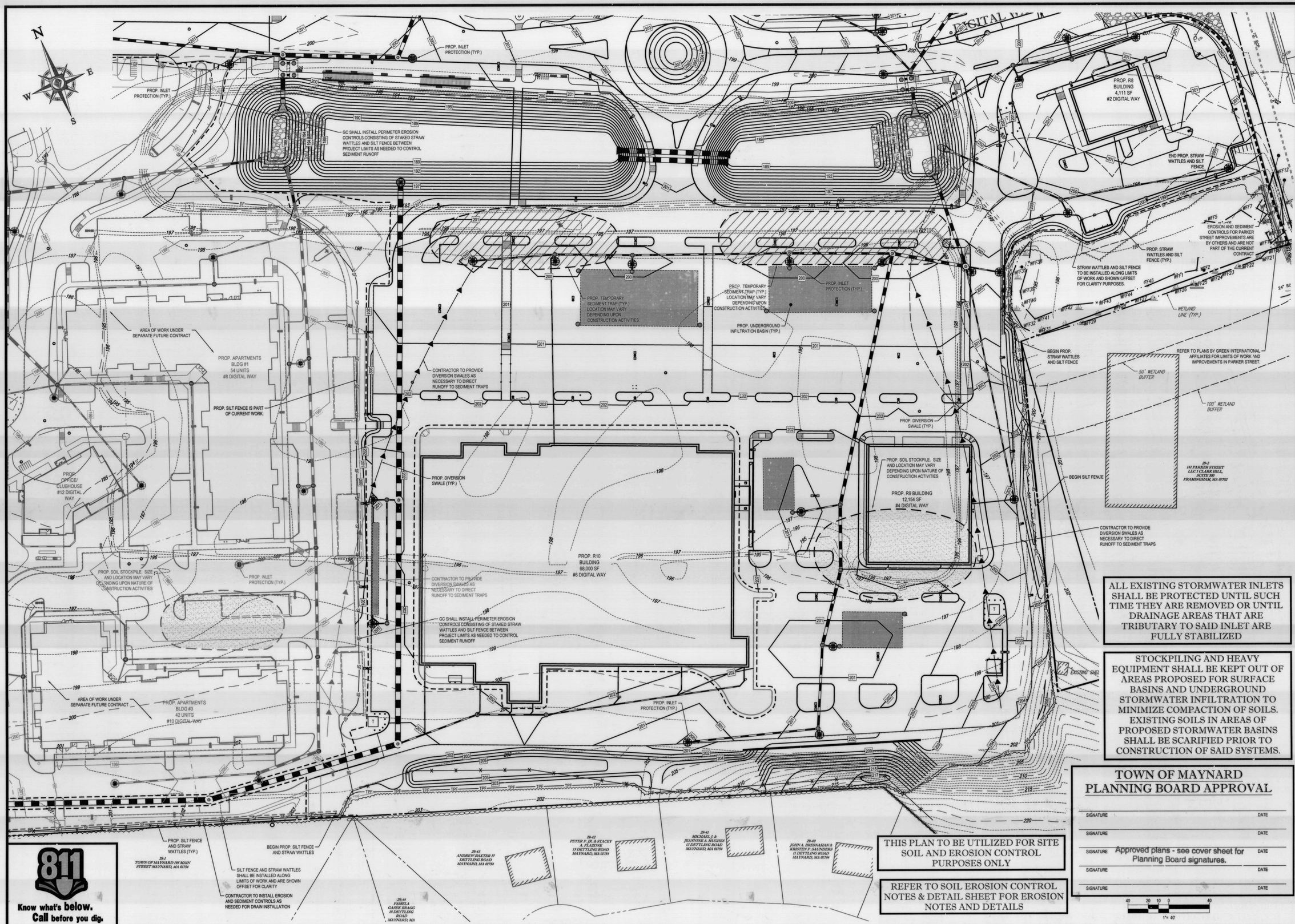

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1"= 40'

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NEW ENGLAND · SOUTHEASTERN, PA · CHARLOTTE, NC
NEW YORK METRO · NEW JERSEY SHORE · TAMPA, FL
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PROJECT No.:	W161189
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PROJECT:
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LOCATION OF SITE
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CONN. REG. NO. PEN.0030177
RHODE ISLAND REG. NO. 9616
MAINE REG. NO. PE13553

SHEET TITLE:
SOIL EROSION & SEDIMENT CONTROL PLAN "D"

SHEET NUMBER:
24
OF 35

REV 7 - 09/18/2017

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EROSION & SEDIMENT CONTROL NOTES

1. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE DONE AS SET FORTH IN THE MOST CURRENT STATE SEDIMENT AND EROSION CONTROL MANUAL.
2. THOSE AREAS UNDERGOING ACTUAL CONSTRUCTION WILL BE LEFT IN AN UNTREATED OR UNVEGETATED CONDITION FOR A MINIMUM TIME. AREAS SHALL BE PERMANENTLY STABILIZED WITHIN 15 DAYS OF FINAL GRADING AND TEMPORARILY STABILIZED WITHIN 30 DAYS OF INITIAL DISTURBANCE OF THE SOIL. IF THE DISTURBANCE IS WITHIN 100 FEET OF A STREAM OR POND, THE AREA SHALL BE STABILIZED WITHIN 7 DAYS OR PRIOR TO ANY STORM EVENT (THIS WOULD INCLUDE WETLANDS).
3. SEDIMENT BARRIERS (SILT FENCE, STRAW BARRIERS, ETC.) SHOULD BE INSTALLED PRIOR TO ANY SOIL DISTURBANCE OF THE CONTRIBUTING DRAINAGE AREA ABOVE THEM. MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL AREAS WITH SLOPES GREATER THAN 15% AFTER OCTOBER 1ST THE SAME APPLIES FOR ALL SLOPES GREATER THAN 8%.
4. INSTALL SILTATION BARRIER AT TOE OF SLOPE TO FILTER SILT FROM RUNOFF. SEE SILTATION BARRIER DETAILS FOR PROPER INSTALLATION. SILTATION BARRIER WILL REMAIN IN PLACE PER NOTE #5.
5. ALL EROSION CONTROL STRUCTURES WILL BE INSPECTED, REPLACED AND/OR REPAIRED EVERY 7 DAYS AND IMMEDIATELY FOLLOWING ANY SIGNIFICANT RAINFALL OR SNOW MELT OR WHEN NO LONGER SERVICEABLE DUE TO SEDIMENT ACCUMULATION OR DECOMPOSITION. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE HALF THE HEIGHT OF THE BARRIER. SEDIMENT CONTROL DEVICES SHALL REMAIN IN PLACE AND BE MAINTAINED BY THE CONTRACTOR UNTIL AREAS UPSLOPE ARE STABILIZED BY TURF.
6. NO SLOPES, EITHER PERMANENT OR TEMPORARY, SHALL BE STEEPER THAN TWO TO ONE (2:1).
7. IF FINAL SEEDING OF THE DISTURBED AREAS IS NOT COMPLETED 45 DAYS PRIOR TO THE FIRST KILLING FROST, USE TEMPORARY MULCH (DORMANT SEEDING MAY BE ATTEMPTED AS WELL) TO PROTECT THE SITE AND DELAY SEEDING UNTIL THE NEXT RECOMMENDED SEEDING PERIOD.
8. TEMPORARY SEEDING OF DISTURBED AREAS THAT HAVE NOT BEEN FINAL GRADED SHALL BE COMPLETED 45 DAYS PRIOR TO THE FIRST KILLING FROST TO PROTECT FROM SPRING RUNOFF PROBLEMS.
9. DURING THE CONSTRUCTION PHASE, INTERCEPTED SEDIMENT WILL BE RETURNED TO THE SITE AND REGRADED ONTO OPEN AREAS.
10. REVEGETATION MEASURES WILL COMMENCE UPON COMPLETION OF CONSTRUCTION EXCEPT AS NOTED ABOVE. ALL DISTURBED AREAS NOT OTHERWISE STABILIZED WILL BE GRADED, SMOOTHED, AND PREPARED FOR FINAL SEEDING AS FOLLOWS:

10.1. SIX INCHES OF LOAM WILL BE SPREAD OVER DISTURBED AREAS AND SMOOTHED TO A UNIFORM SURFACE.

10.2. APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE TIMING IS CRITICAL, FERTILIZER MAY BE APPLIED AT THE RATE OF 800 LB PER ACRE OR 18.4 LB PER 1,000 SF USING 10-20-20 OR EQUIVALENT. APPLY GROUND LIMESTONE (EQUIVALENT TO 50% CALCIUM PLUS MAGNESIUM OXIDE) AT A RATE OF 3 TONS PER ACRE (138 LB PER1,000 SF).

10.3. FOLLOWING SEED BED PREPARATION, DITCHES AND BACK SLOPES WILL BE SEEDED TO A MIXTURE OF 47% CREEPING RED FESCUE, 5% REDTOP, AND 48% TALL FESCUE. THE LAWN AREAS WILL BE SEEDED TO A PREMIUM TURF MIXTURE OF 44% KENTUCKY BLUE-GRASS, 44% CREEPING RED FESCUE, AND 12% PERENNIAL RYEGRASS: SEEDING RATE IS 1.03 LBS PER 1,000 SF LAWN QUALITY SOD MAY BE SUBSTITUTED FOR SEED.

10.4. STRAW MULCH AT THE RATE OF 70-90 LBS PER 1,000 SF. A HYDRO-APPLICATION OF WOOD OR PAPER FIBER SHALL BE APPLIED FOLLOWING SEEDING. A SUITABLE BINDER SUCH AS CURASOL OR RMB PLUS WILL BE USED ON STRAW MULCH FOR WIND CONTROL.

11. ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED ONCE THE SITE IS STABILIZED.
12. WETLANDS WILL BE PROTECTED W/strawBALES AND/OR SILT FENCE INSTALLED AT THE EDGE OF THE WETLAND OR THE BOUNDARY OF WETLAND DISTURBANCE.
13. ALL AREAS WITHIN 100 FEET OF A FLAGGED WETLAND OR STREAM SHALL HAVE AN EXPOSURE WINDOW OF NOT MORE THAN 7 DAYS.
14. ALL AREAS WITHIN 100 FEET OF A FLAGGED WETLAND OR STREAM SHALL FOLLOW APPROPRIATE EROSION CONTROL MEASURES PRIOR TO EACH STORM IF NOT BEING ACTIVELY WORKED,

MULCH

LOCATION	MULCH	RATE (1000 SF)
PROTECT AREA	STRAW	100 POUNDS
WINDY AREA	SHREDDED OR CHOPPED CORNSTALKS STRAW (ANCHORED)*	185-275 POUNDS 100 POUNDS
MODERATE TO HIGH VELOCITY AREAS OR STEEP SLOPES GREATER THAN 3:1	JUTE MESH OR EXCELSIOR MAT	AS REQUIRED
GREATER THAN 3:1	(REFER TO GEOTECHNICAL REPORT FOR FINAL DESIGN REQUIREMENT)	

* A HYDRO-APPLICATION OF WOOD, OR PAPER FIBER MAY BE APPLIED FOLLOWING SEEDING. A SUITABLE BINDER SUCH AS CURASOL OR RMB PLUS SHALL BE USED ON STRAW MULCH FOR WIND CONTROL.

MULCH ANCHORING
ANCHOR MULCH WITH PEG AND TWINE (1 SQ. YD/BLOCK); MULCH NETTING (AS PER MANUFACTURER); WOOD CELLULOSE FIBER (750 LBS/ACRE); CHEMICAL TACK (AS PER MANUFACTURER'S SPECIFICATIONS); USE OF A SERRATED STRAIGHT DISK. WETTING FOR SMALL AREAS AND ROAD DITCHES MAY BE PERMITTED.

EROSION CONTROL NOTES DURING WINTER CONSTRUCTION

1. WINTER CONSTRUCTION PERIOD: NOVEMBER 1 THROUGH APRIL 15.
2. WINTER EXCAVATION AND EARTHWORK SHALL BE DONE SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME.
3. EXPOSED AREA SHOULD BE LIMITED TO THAT WHICH CAN BE MULCHED IN ONE DAY PRIOR TO ANY SNOW EVENT.
4. CONTINUATION OF EARTHWORK OPERATION ON ADDITIONAL AREAS SHALL NOT BEGIN UNTIL THE EXPOSED SOIL SURFACE ON THE AREA BEING WORKED HAS BEEN STABILIZED SUCH THAT NO LARGER AREA OF THE SITE IS WITHOUT EROSION CONTROL PROTECTION AS LISTED IN ITEM 2 ABOVE.
5. AN AREA SHALL BE CONSIDERED TO HAVE BEEN STABILIZED WHEN EXPOSED SURFACES HAVE BEEN EITHER MULCHED WITH STRAW AT A RATE OF 100 LB. PER 1,000 SQUARE FEET (WITH OR WITHOUT SEEDING) OR DORMANT SEEDED, MULCHED AND ADEQUATELY ANCHORED BY AN APPROVED ANCHORING TECHNIQUE.
6. BETWEEN THE DATES OF OCTOBER 15 AND APRIL 1ST, LOAM OR SEED WILL NOT BE REQUIRED. DURING PERIODS OF ABOVE FREEZING TEMPERATURES THE SLOPES SHALL BE FINE GRADED AND EITHER PROTECTED WITH MULCH OR TEMPORARILY SEEDED AND MULCHED UNTIL SUCH TIME AS THE FINAL TREATMENT CAN BE APPLIED. IF THE DATE IS AFTER NOVEMBER 1ST AND IF THE EXPOSED AREA HAS BEEN LOAMED, FINAL GRADED AND IS SMOOTH, THEN THE AREA MAY BE DORMANT SEEDED AT A RATE OF 200 - 300% HIGHER THAN SPECIFIED FOR PERMANENT SEED AND THEN MULCHED. IF CONSTRUCTION CONTINUES DURING FREEZING WEATHER, ALL EXPOSED AREAS SHALL BE CONTINUOUSLY GRADED BEFORE FREEZING AND THE SURFACE TEMPORARILY PROTECTED FROM EROSION BY THE APPLICATION OF MULCH. SLOPES SHALL NOT BE LEFT UNEXPOSED OVER THE WINTER OR ANY OTHER EXTENDED TIME OF WORK SUSPENSION UNLESS TREATED IN THE ABOVE MANNER. UNTIL SUCH TIME AS WEATHER CONDITIONS ALLOW DITCHES TO BE FINISHED WITH THE PERMANENT SURFACE TREATMENT, EROSION SHALL BE CONTROLLED BY THE INSTALLATION OF BALES OF STRAW OR STONE CHECK DAMS IN ACCORDANCE WITH THE STANDARD DETAILS.
7. MULCHING REQUIREMENTS:

7.1. BETWEEN THE DATES OF NOVEMBER 1ST AND APRIL 15TH ALL MULCH SHALL BE ANCHORED BY EITHER PEG LINE, MULCH NETTING OR WOOD CELLULOSE FIBER.

7.2. MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL DRAINAGE WAYS WITH A SLOPE GREATER THAN 3% FOR SLOPE EXPOSED TO DIRECT WINDS AND FOR ALL OTHER SLOPES GREATER THAN 8%.

7.3. MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL AREAS WITH SLOPES GREATER THAN 15% AFTER OCTOBER 1ST THE SAME APPLIES FOR ALL SLOPES GREATER THAN 8%.

8. AFTER NOVEMBER 1ST THE CONTRACTOR SHALL APPLY DORMANT SEEDING OR MULCH AND ANCHORING ON ALL BARE EARTH AT THE END OF EACH WORKING DAY.
9. DURING THE WINTER CONSTRUCTION PERIOD ALL SNOW SHALL BE REMOVED FROM AREAS OF SEEDING AND MULCHING PRIOR TO PLACEMENT.
10. STOCKPILING OF MATERIALS (DIRT, WOOD, CONSTRUCTION MATERIALS, ETC.) MUST REMAIN COVERED AT ALL TIMES TO MINIMIZE ANY DUST PROBLEMS THAT MAY OCCUR WITH ADJACENT PROPERTIES AND TO PROVIDE MAXIMUM PROTECTION AGAINST EROSION RUNOFF.
11. EXISTING CATCH BASIN STRUCTURES SHALL BE PROTECTED UNTIL SUCH TIME AS THEY ARE REMOVED.

TOWN OF MAYNARD PLANNING BOARD APPROVAL

SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE

Approved plans - see cover sheet for Planning Board signatures.

CONSTRUCTION SEQUENCE

THE FOLLOWING CONSTRUCTION SEQUENCE IS RECOMMENDED:

-INSTALLATION OF STABILIZED CONSTRUCTION ENTRANCE/EXIT (AS SHOWN)

-INSTALLATION OF EROSION CONTROL BARRIER (STRAW WATTLES AND SILT FENCE) (AS SHOWN)

-INSTALLATION OF INLET PROTECTION IN STREET (AS SHOWN)

-DEMOLITION OF EXISTING SITE PAVEMENT AND AMENITIES (SEE DEMOLITION PLAN)

-CLEARING AND GRUBBING

-INSTALLATION OF TEMPORARY SWALES AND SEDIMENT BASINS

-EARTHWORK AND EXCAVATION/FILLING AS NECESSARY

-CONSTRUCTION OF UTILITIES

-STABILIZE PERMANENT LAWN AREAS AND SLOPES WITH TEMPORARY SEEDING

-INSTALLATION OF INLET PROTECTION OF ON-SITE UTILITIES AS THEY ARE INSTALLED (AS SHOWN)

-CONSTRUCTION OF BUILDINGS

-CONSTRUCTION OF ALL CURBING AND LANDSCAPE ISLANDS AS INDICATED ON THE PLANS

-SPREAD TOPSOIL ON SLOPED AREAS AND SEED AND MULCH

-FINAL GRADING OF ALL SLOPED AREAS

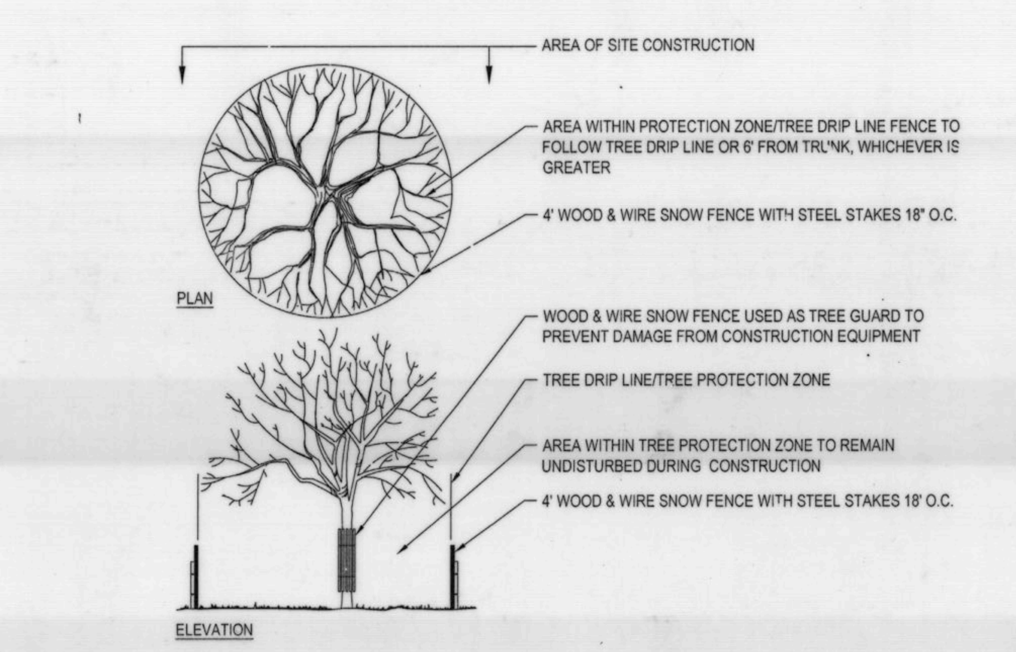
-PLACE 6" TOPSOIL ON SLOPES AFTER FINAL GRADING COMPLETED. FERTILIZE, SEED, AND MULCH SEED MIXTURE TO BE INSTALLED AS REQUIRED.

-REMOVAL OF THE TEMPORARY SEDIMENT BASINS

-PAVE PARKING LOT

-LANDSCAPING PER LANDSCAPING PLAN

-REMOVE EROSION CONTROLS AS DISTURBED AREAS BECOME STABILIZED TO 70% STABILIZATION OR GREATER AND UPON APPROVAL OF THE TOWN OF MAYNARD CONSERVATION COMMISSION.



TREE PROTECTION DURING CONSTRUCTION

N.T.S.

MAINTENANCE REQUIREMENTS FOR TEMPORARY SEDIMENT TRAP (TST):

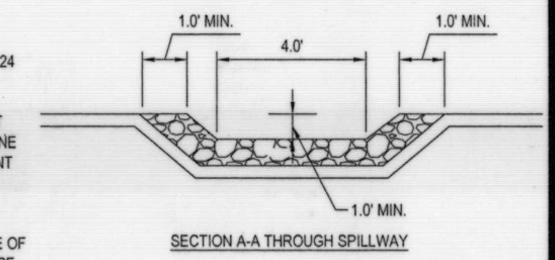
1) INSPECT THE TEMPORARY SEDIMENT TRAP AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE END OF A STORM WITH A RAINFALL AMOUNT OF 0.5 INCH OR GREATER.

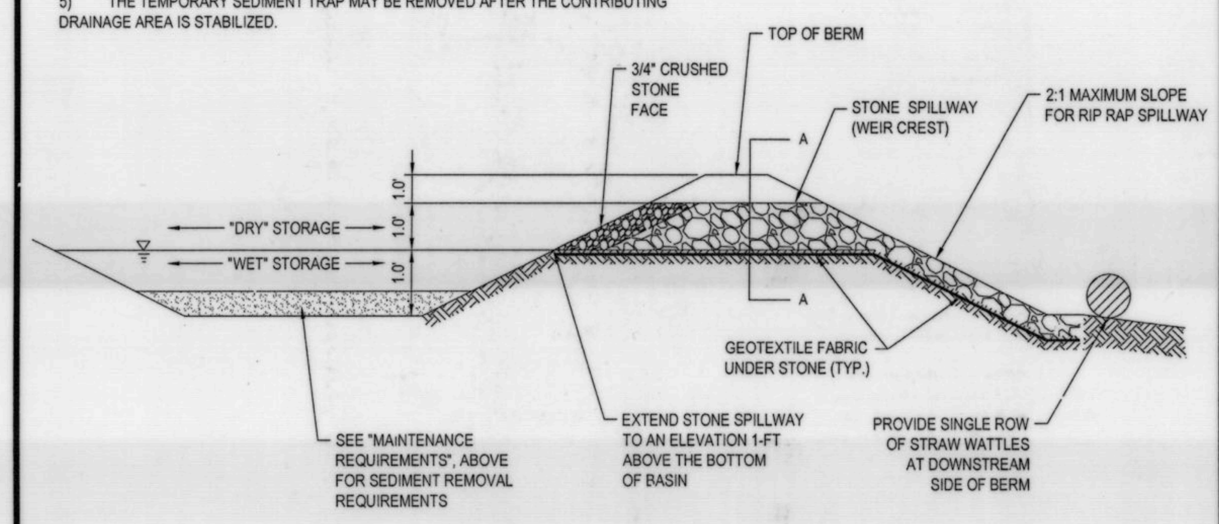
2) CHECK THE OUTLET TO ENSURE THAT IT IS STRUCTURALLY SOUND AND HAS NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT. THE HEIGHT OF THE STONE OUTLET SHOULD MAINTAINED AT LEAST 1 FOOT BELOW THE CREST OF THE EMBANKMENT BERM.

3) ALSO CHECK FOR SEDIMENT ACCUMULATION AND FILTRATION PERFORMANCE. WHEN SEDIMENTS HAVE ACCUMULATED TO ONE HALF THE MINIMUM REQUIRED VOLUME OF THE WET STORAGE, DEWATER THE TRAP AS NEEDED, REMOVE SEDIMENTS AND RESTORE THE TRAP TO ITS ORIGINAL DIMENSIONS.

4) DISPOSE OF THE SEDIMENT REMOVED FROM THE BASIN IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE AND CAUSE SEDIMENTATION PROBLEMS.

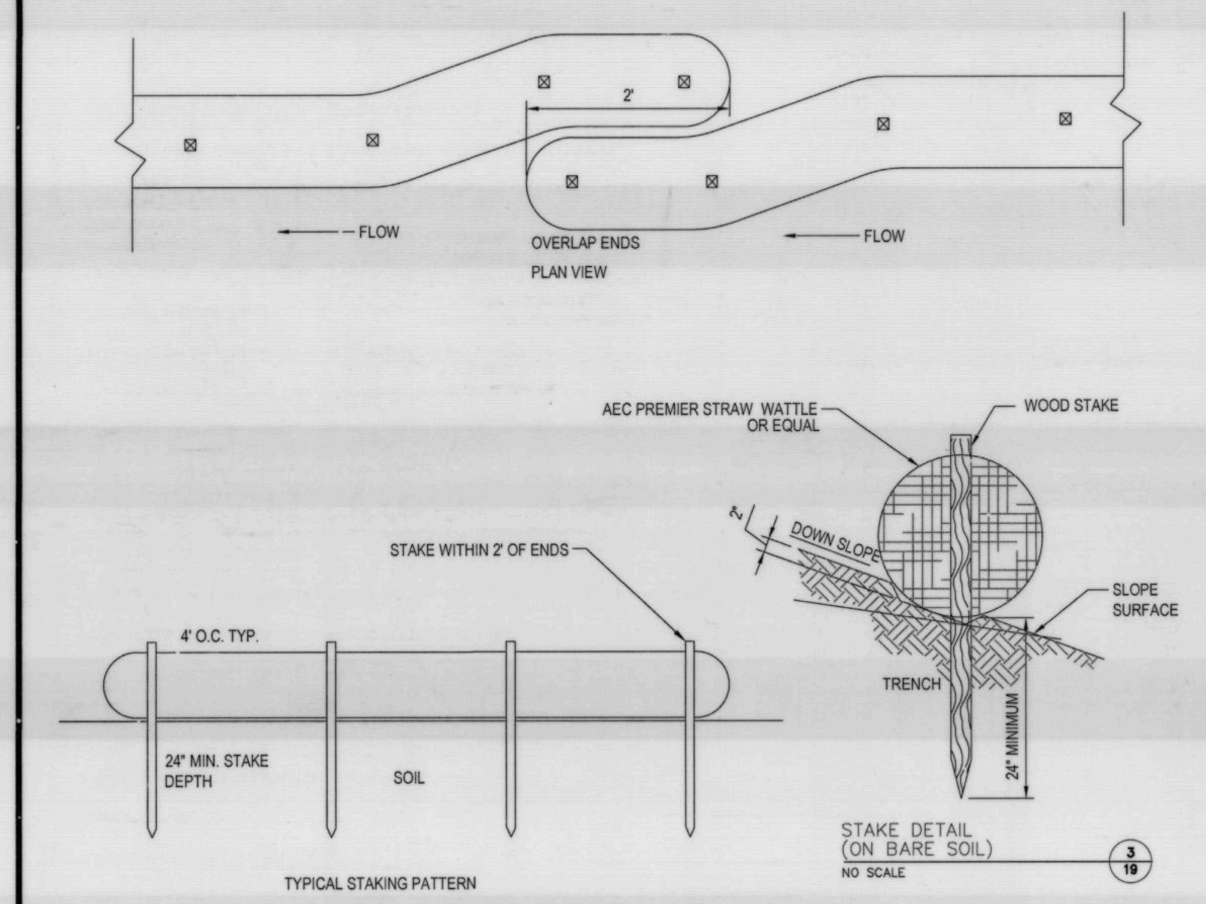
5) THE TEMPORARY SEDIMENT TRAP MAY BE REMOVED AFTER THE CONTRIBUTING DRAINAGE AREA IS STABILIZED.





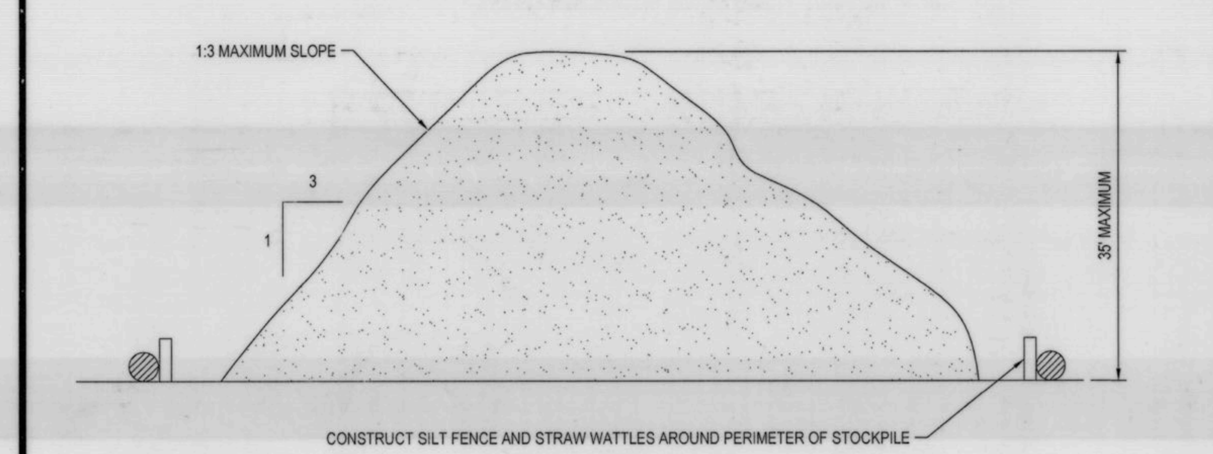
TEMPORARY SEDIMENT TRAP DETAIL

N.T.S.



STRAW WATTLES

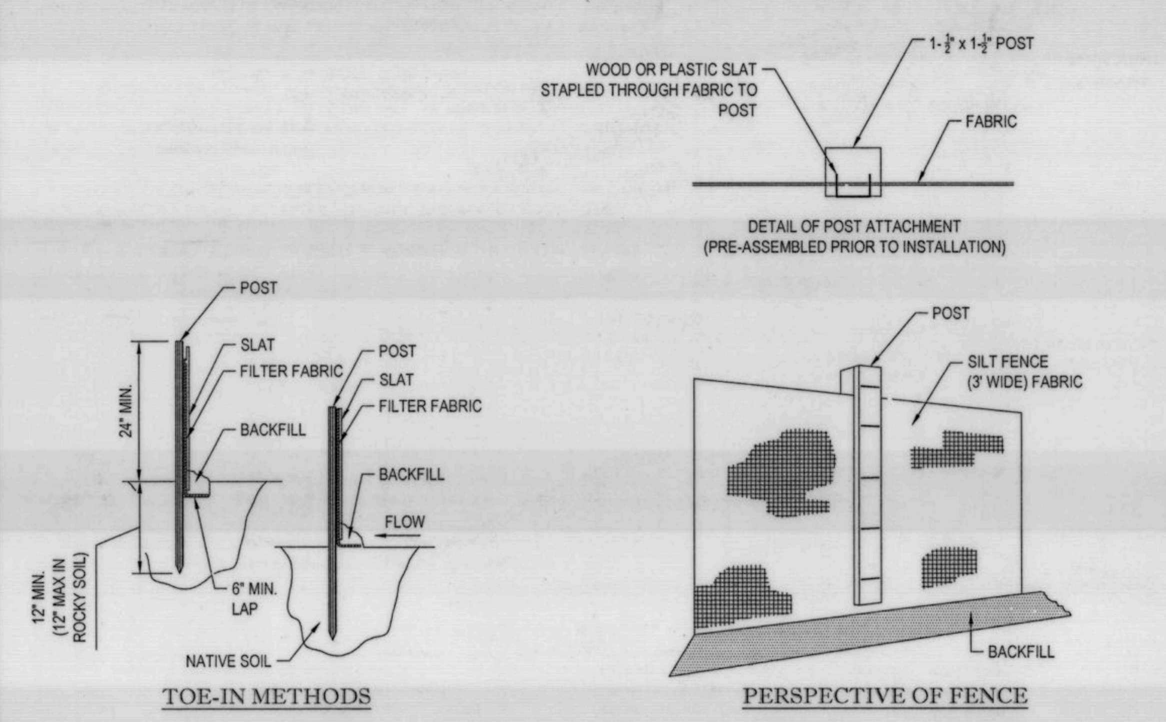
N.T.S.



TEMPORARY STOCKPILE DETAIL

N.T.S.

INSTALLATION:
1. EXCAVATE A 6"x 6" TRENCH ALONG THE LINE OF EROSION CONTROL OF THE SITE.
2. UNROLL SILTATION FENCE AND POSITION THE POSTS AGAINST THE BACK (DOWNSTREAM) WALL OF THE TRENCH (NET SIDE AWAY FROM FLOW DIRECTION).
3. DRIVE THE POST INTO THE GROUND UNTIL THE NETTING IS LAYING ACROSS THE TRENCH BOTTOM.
4. LAY THE TOE-IN FLAP OF THE FABRIC ONTO THE UNDISTURBED BOTTOM OF THE TRENCH, BACKFILL THE TRENCH AND TAMP THE SOIL. TOE-IN CAN ALSO BE ACCOMPLISHED BY LAYING FABRIC FLAP ON UNDISTURBED GROUND AND PILING & TAMP- ING FILL AT THE BASE.



TYP. SILTATION FENCE DETAIL

N.T.S.

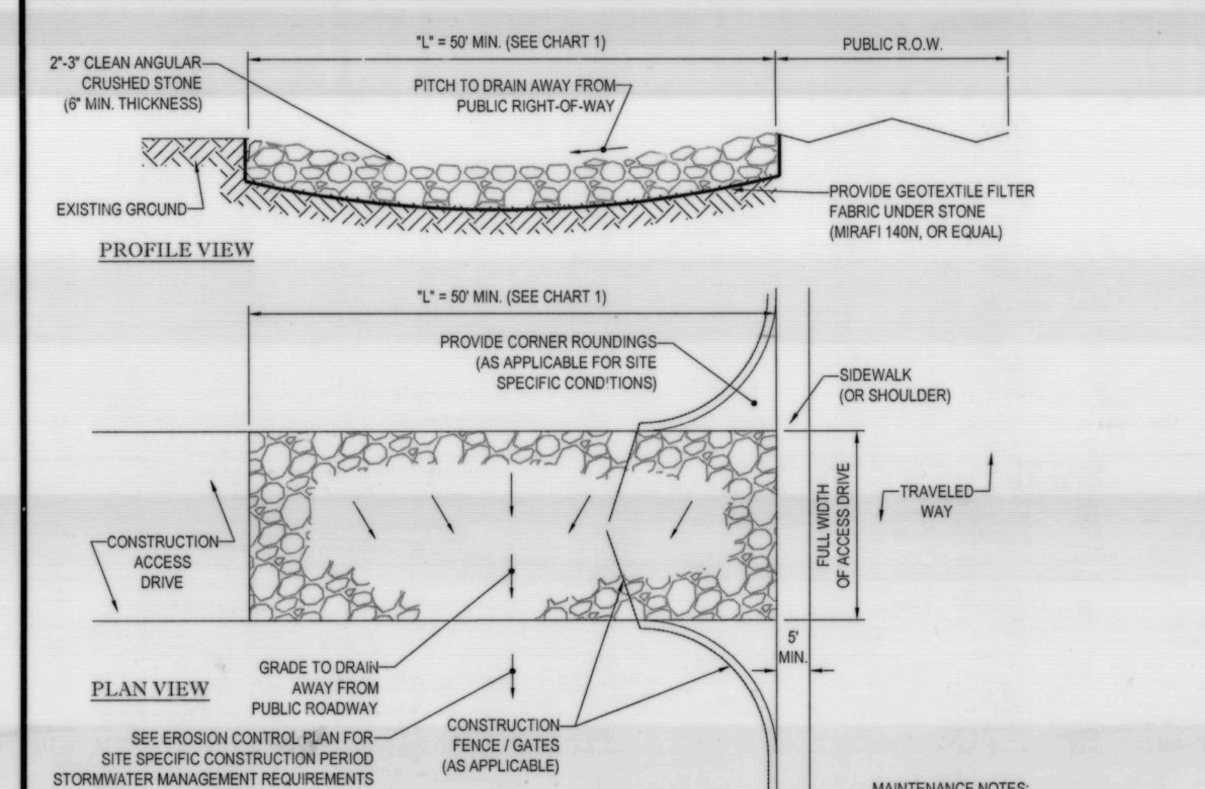


CHART 1

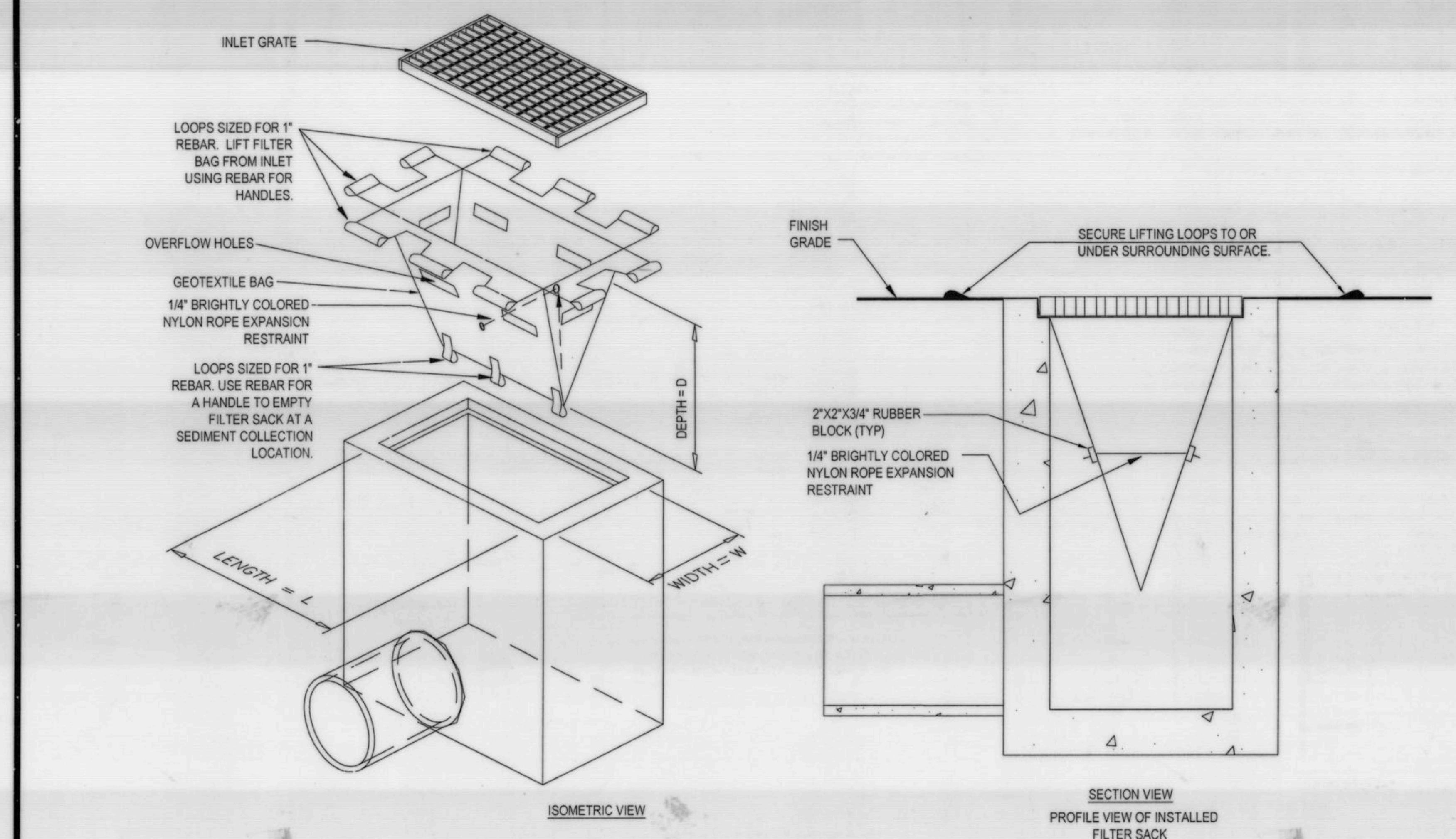
PERCENT SLOPE OF ROADWAY	LENGTH OF STONE REQUIRED	
	COARSE GRAINED SOILS	FINE GRAINED SOILS
0 TO 2%	50 FT	100 FT
2% TO 5%	100 FT	200FT
>5%	ENTIRE ENTRANCE STABILIZED WITH FABC BASE COURSE (1)	

(1) AS PRESCRIBED BY LOCAL ORDINANCE OR OTHER GOVERNING AUTHORITY.

MAINTENANCE NOTES:
1. INSPECT STABILIZED CONSTRUCTION ENTRANCE / ANTI-TRACKING PAD AND SEDIMENT DISPOSAL AREA WEEKLY OR AFTER EVERY MAJOR RAIN STORM EVENT.
2. WASH WATER (IF USED) SHALL BE DIRECTED TOWARD A SEDIMENT TRAP, SUFFICIENTLY SIZED FOR SPECIFIC SITE CONDITIONS.
3. EXCESSIVELY MUD-CLOGGED STONE SHALL BE REMOVED AND REPLACED, AS NEEDED.

STABILIZED CONSTRUCTION EXIT

N.T.S.



LOW TO MODERATE FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE		
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	300 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4833	120 LBS
MULLEN BURST	ASTM D-3786	800 PSI
TRAPEZOID TEAR	ASTM D-4533	120 LBS
UV RESISTANCE	ASTM D-4355	80 %
APPARENT OPENING SIZE	ASTM D-4751	40 US SIEVE
FLOW RATE	ASTM D-4491	40 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	0.55 SEC -1

MODERATE TO HIGH FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE		
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	265 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4833	135 LBS
MULLEN BURST	ASTM D-3786	420 PSI
TRAPEZOID TEAR	ASTM D-4533	45 LBS
UV RESISTANCE	ASTM D-4355	90 %
APPARENT OPENING SIZE	ASTM D-4751	20 US SIEVE
FLOW RATE	ASTM D-4491	200 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	1.5 SEC -1

1. REMOVE TRAPPED SEDIMENT WHEN BRIGHTLY COLORED EXPANSION RESTRAINT CAN NO LONGER BE SEEN.
2. GEOTEXTILE SHALL BE A WOVEN POLYPROPYLENE FABRIC THAT MEETS OR EXCEEDS REQUIREMENTS IN THE SPECIFICATIONS TABLE.
3. PLACE AN OIL ADSORBENT PAD OR PILLOW OVER INLET GRATE WHEN OIL SPILLS ARE A CONCERN.
4. INSPECT PER REGULATORY REQUIREMENTS.
5. THE WIDTH, "W", OF THE FILTER SACK SHALL MATCH THE INSIDE WIDTH OF THE GRATED INLET BOX.
6. THE DEPTH, "D", OF THE FILTER SACK SHALL BE BETWEEN 18 INCHES AND 36 INCHES
7. THE LENGTH, "L", OF THE FILTER SACK SHALL MATCH THE INSIDE LENGTH OF THE GRATED INLET BOX.

DO NOT USE IN PAVED AREAS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

TO BE USED IN EXISTING RIGHT OF WAY

FILTER SACKS (GRATED INLETS)

N.T.S.

BOHLER ENGINEERING

SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING · PROGRAM MANAGEMENT · LANDSCAPE ARCHITECTURE
SUSTAINABLE DESIGN · PERMITTING SERVICES · TRANSPORTATION SERVICES

REVISIONS

REV	DATE	COMMENT	BY
1	03/21/17	REMOVE CARRIAGE BLDG. (SHEETS 8-12 ONLY)	CFD
2	06/02/17	REV. PER TOWN COMMENTS	CFD
3	06/15/17	DRAINAGE REVISIONS (SHEETS 13-16 ONLY)	GJZ
4	06/28/17	DRAINAGE REVISIONS (FULL SET)	AWP
5	07/26/17	REV. PER TOWN COMMENTS	AWP
6	08/10/17	PEER REVIEW COMMENTS	CFD
7	09/18/17	CONSTRUCTION DOCUMENTS	AWP
8			
9			
10			
11			
12			
13			
14			
15			

APPROVED FOR CONSTRUCTION

PROJECT No.:	W161189
DRAWN BY:	AWP/CFD
CHECKED BY:	NEM/JAK
DATE:	02/15/2017
SCALE:	AS NOTED
CAD I.D.:	W161189SS7

PROJECT: SITE DEVELOPMENT PLANS FOR CAPITAL GROUP PROPERTIES

MAYNARD CROSSING

LOCATION OF SITE
MAP #25 & LOTS #152 & 152-1
129 PARKER STREET (ROUTE 27)
TOWN OF MAYNARD
MIDDLESEX COUNTY
MASSACHUSETTS

BOHLER ENGINEERING
352 TURNPIKE ROAD
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900
Fax: (508) 480-9080
www.BohlerEngineering.com

J.A. KUCICH
PROFESSIONAL ENGINEER
JOHN A. KUCICH CIVIL No. 41530

SHEET TITLE: SOIL EROSION CONTROL NOTES & DETAILS SHEET

SHEET NUMBER: 25 OF 35

REV 7 - 09/18/2017

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TYPICAL PAVEMENT SECTION

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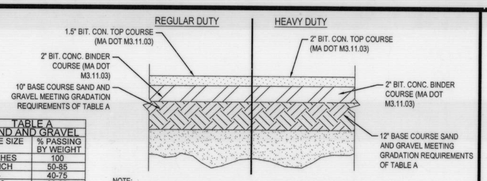


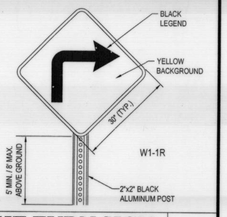
TABLE A
SAND AND GRAVEL

SIEVE SIZE	% PASSING BY WEIGHT
4 INCHES	100
1/2 INCH	50-85
NO. 4	40-75
NO. 10	30-60
NO. 40	10-35
NO. 100	5-20
NO. 200	0-10

NOTE:
PAVEMENT BASE AND SUBBASE COURSES TO CONFORM TO ALL MASSDOT SPECIFICATIONS. GC TO REFER TO GEOTECHNICAL REPORT PREPARED BY McARDLE GANNON ASSOCIATES, INC., DATED JULY 2009 FOR PAVEMENT SPECIFICATIONS. IF THERE ARE ANY DISCREPANCIES BETWEEN THIS DETAIL AND THE REPORT, THE REPORT SHALL GOVERN.

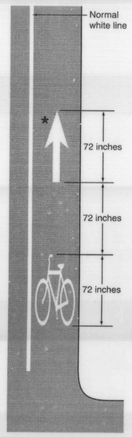
RIGHT TURN SIGN DETAIL (W1-1R)

N.T.S.



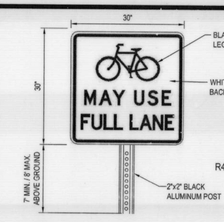
BIKE MARKING DETAIL

N.T.S.



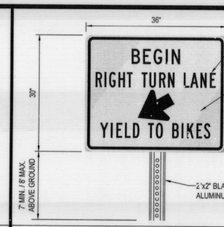
BIKE LANE SIGN DETAIL (R4-11)

N.T.S.



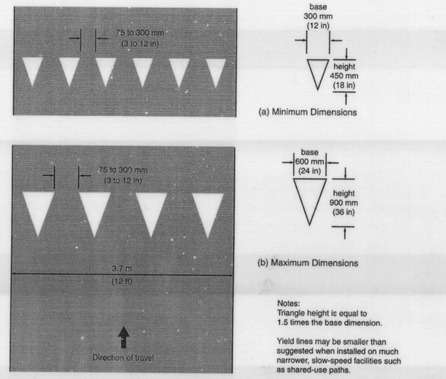
YIELD TO BIKE SIGN DETAIL (R4-4)

N.T.S.



YIELD ARROW MARKING DETAIL

N.T.S.

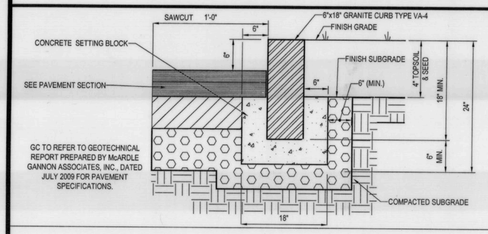


Notes:
Triangle height is equal to 1.5 times the base dimension.

Yield lines may be smaller than suggested when installed on much narrower, slow-speed facilities such as shared-use paths.

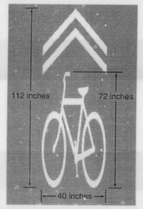
VERTICAL GRANITE CURB DETAIL

N.T.S.



BIKE SHARROW DETAIL

N.T.S.



ACCESSIBLE PARKING SIGN DETAIL

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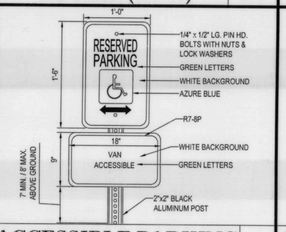
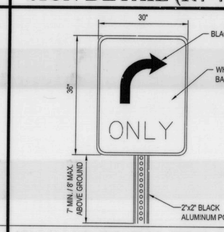


'RIGHT TURN ONLY' SIGN DETAIL (R3-5R)

N.T.S.



ACCESSIBLE STALL MARKINGS & PARKING LOT STRIPING DETAIL

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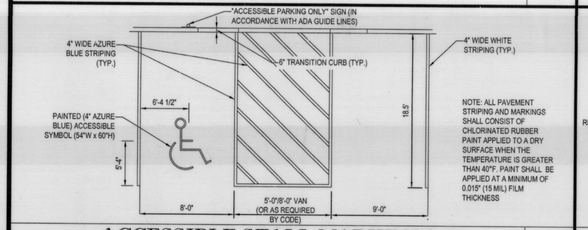

'YIELD' SIGN DETAIL (R1-2)

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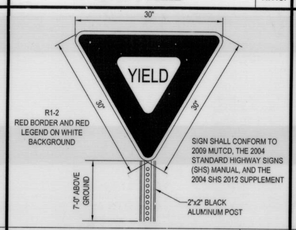

CHEVRON SIGN DETAIL (R6-4)

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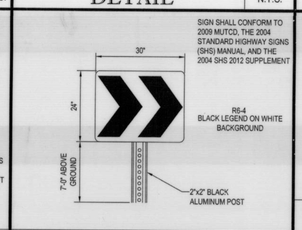

EXTRUDED CONCRETE CURB

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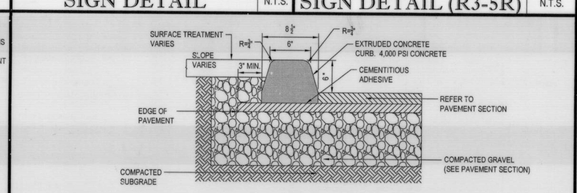
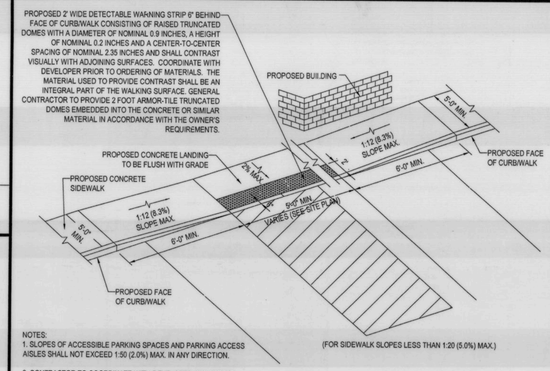


SLOPED WALK DETAIL

N.T.S.



PROPOSED 2' WIDE DETECTABLE WARNING STRIP 6" BEHIND FACE OF CURB/WALK CONSISTING OF RAISED TRUNCATED DOMES WITH A DIAMETER OF NOMINAL 0.9 INCHES, A HEIGHT OF NOMINAL 0.2 INCHES AND A CENTER-TO-CENTER SPACING OF NOMINAL 2.35 INCHES AND SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES. COORDINATE WITH DEVELOPER PRIOR TO ORDERING OF MATERIALS. THE MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE. GENERAL CONTRACTOR TO PROVIDE 2 FOOT ARMOR-TILE TRUNCATED DOMES EMBEDDED INTO THE CONCRETE OR SIMILAR MATERIAL IN ACCORDANCE WITH THE OWNER'S REQUIREMENTS.

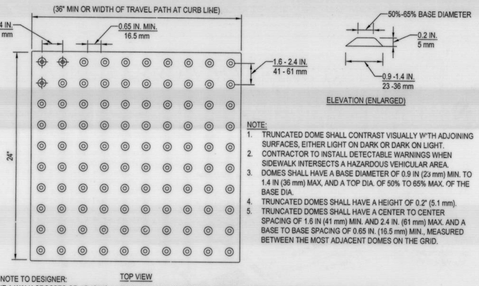
NOTES:
1. SLOPES OF ACCESSIBLE PARKING SPACES AND PARKING ACCESS AISLES SHALL NOT EXCEED 1:50 (2.0%) MAX. IN ANY DIRECTION.

(FOR SIDEWALK SLOPES LESS THAN 1:20 (5.0%) MAX.)

2. CONTRACTOR TO COORDINATE WITH DEVELOPER REGARDING LOCATIONS THAT REQUIRE INSTALLATION OF DETECTABLE WARNINGS

TRUNCATED DOME PATTERN

N.T.S.



NOTE:
1. TRUNCATED DOME SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT ON DARK OR DARK ON LIGHT.
2. CONTRACTOR TO INSTALL DETECTABLE WARNINGS WHEN SIDEWALK INTERSECTS A HAZARDOUS VEHICULAR AREA.
3. DOMES SHALL HAVE A BASE DIAMETER OF 0.9 IN (23 mm) MIN. TO 1.4 IN (36 mm) MAX, AND A TOP DIA. OF 50% TO 65% MAX. OF THE BASE DIA.
4. TRUNCATED DOMES SHALL HAVE A HEIGHT OF 0.2" (5.1 mm).
5. TRUNCATED DOMES SHALL HAVE A CENTER TO CENTER SPACING OF 1.6 IN (41 mm) MIN. AND 2.4 IN. (61 mm) MAX. AND A BASE TO BASE SPACING OF 0.65 IN. (16.5 mm) MIN., MEASURED BETWEEN THE MOST ADJACENT DOMES ON THE GRID.

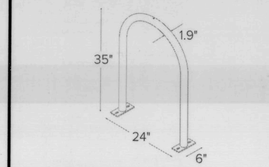
NOTE TO DESIGNER:
IF A WALK CROSSES OR ADJOINS A VEHICULAR WAY WHERE THE WALKING SURFACE AND PAVEMENT ARE NOT SEPARATED BY CURBS, RAILING OR OTHER ELEMENTS, THE BOUNDARY BETWEEN THE AREA SHALL BE DEFINED BY A CONTINUOUS DETECTABLE WARNING WHICH IS MIN. 36" WIDE (ADA ACCESSIBLE GUIDELINES PRINTED 11-4-06) AND MIN. 24" DEPTH.

"EXIT" SIGN DETAIL

N.T.S.

BIKE RACK DETAIL

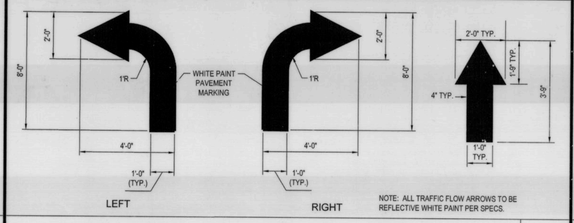
N.T.S.



NOTES:
1. BIKE RACK TO BE DERO HOOP RACK OR APPROVED EQUAL.
2. COORDINATE FINAL FINISH WITH DEVELOPER PRIOR TO ORDERING OF MATERIALS.

PAVEMENT MARKING DETAIL

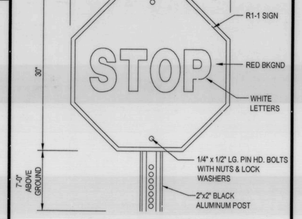
N.T.S.



NOTE: ALL TRAFFIC FLOW ARROWS TO BE REFLECTIVE WHITE PAINT PER SPECS.

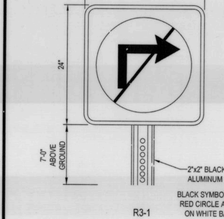
'STOP' SIGN (R1-1)

N.T.S.



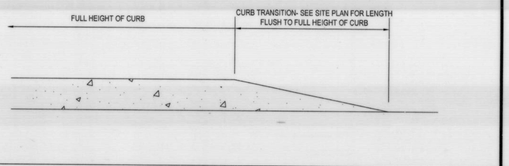
'NO RIGHT TURN' SIGN (R3-1)

N.T.S.



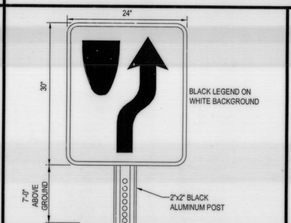
TRANSITION CURB DETAIL

N.T.S.



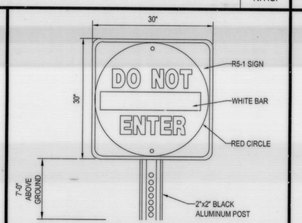
'KEEP RIGHT' SIGN (R4-7)

N.T.S.



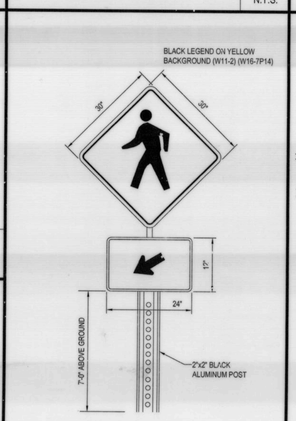
'DO NOT ENTER' SIGN (R5-1)

N.T.S.



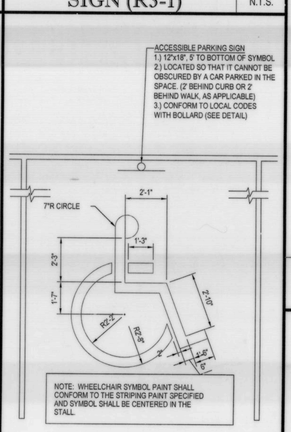
PEDESTRIAN CROSSING SIGN (W-11-2 & W16-7P14)

N.T.S.



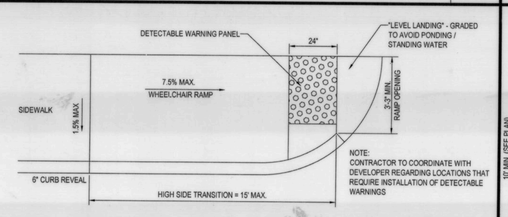
ACCESSIBLE PARKING STALL PAINTING DETAIL

N.T.S.



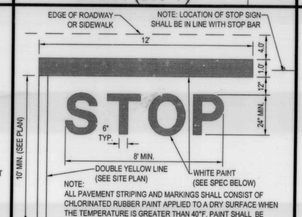
TYPICAL WHEELCHAIR RAMP

N.T.S.



'STOP' BAR DETAIL

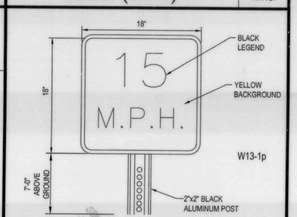
N.T.S.



NOTE: ALL PAVEMENT STRIPING AND MARKINGS SHALL CONSIST OF CHLORINATED RUBBER PAINT APPLIED TO A DRY SURFACE WHEN THE TEMPERATURE IS GREATER THAN 40°F. PAINT SHALL BE APPLIED AT A MINIMUM OF 0.015" (15 MIL) FILM THICKNESS

ADVISORY SPEED SIGN DETAIL (W13-1p)

N.T.S.



TOWN OF MAYNARD PLANNING BOARD APPROVAL

SIGNATURE DATE

SIGNATURE DATE

SIGNATURE Approved plans - see cover sheet for Planning Board signatures. DATE

SIGNATURE DATE

SIGNATURE DATE

BOHLER ENGINEERING
SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
SUSTAINABLE DESIGN
LANDSCAPE ARCHITECTURE
PERMITTING SERVICES
TRANSPORTATION SERVICES
PROGRAM MANAGEMENT
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NEW JERSEY
NEW ENGLAND
RALEIGH, NC
ATLANTA, GA
TAMPA, FL
SOUTH FLORIDA
REHOBOTH BEACH, DE
CHARLOTTE, NC
SOUTHERN MARYLAND
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REVISIONS

REV	DATE	COMMENT	BY
1	03/21/17	REMOVE CARRIAGE BLDG. (SHEETS 8-12 ONLY)	CFD
2	06/02/17	REV. PER TOWN COMMENTS	CFD
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7	09/18/17	CONSTRUCTION DOCUMENTS	AWP
8			
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14			
15			

APPROVED FOR CONSTRUCTION

PROJECT No.:	W161189
DRAWN BY:	AWP/CFD
CHECKED BY:	NEM/JAK
DATE:	02/15/2017
SCALE:	AS NOTED
CAD I.D.:	W161189SS7_DETAILS

PROJECT:
SITE DEVELOPMENT PLANS
FOR
CAPITAL GROUP PROPERTIES
MAYNARD CROSSING
LOCATION OF SITE
MAP #25 & LOTS #152 & 152-1
129 PARKER STREET (ROUTE 27)
TOWN OF MAYNARD
MIDDLESEX COUNTY
MASSACHUSETTS

BOHLER ENGINEERING
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J.A. KUCICH
PROFESSIONAL ENGINEER
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CONNECTICUT LICENSE NO. 27177
RHODE ISLAND LICENSE NO. 9816
MAINE LICENSE NO. 20553

SHEET TITLE:
CONSTRUCTION DETAIL SHEET

SHEET NUMBER:
26
OF 35

REV 7 - 09/18/2017

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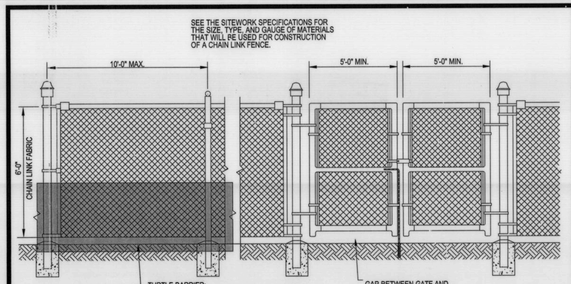
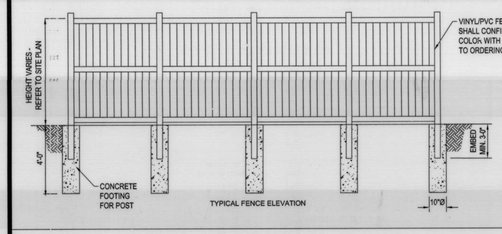


TURTLE BARRIER FENCE DETAIL

N.T.S.



VINYL FENCE DETAIL

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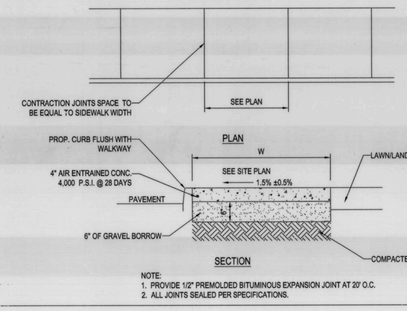

ON-SITE SIDEWALK DETAIL

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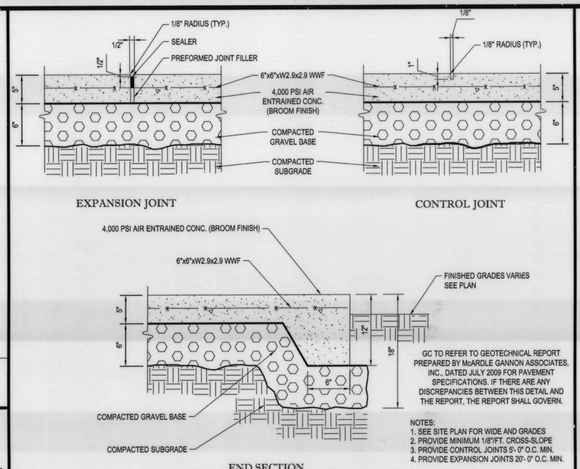
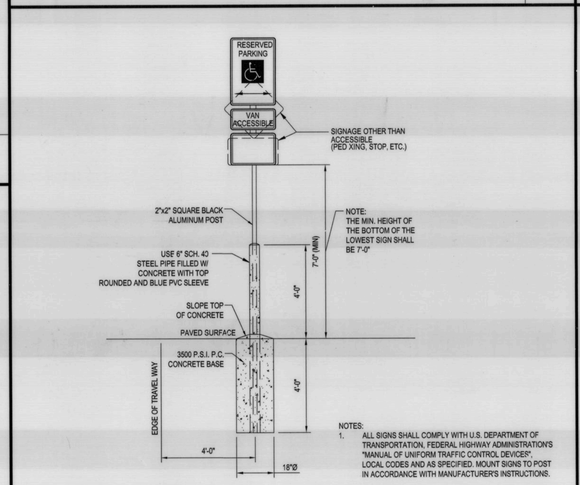


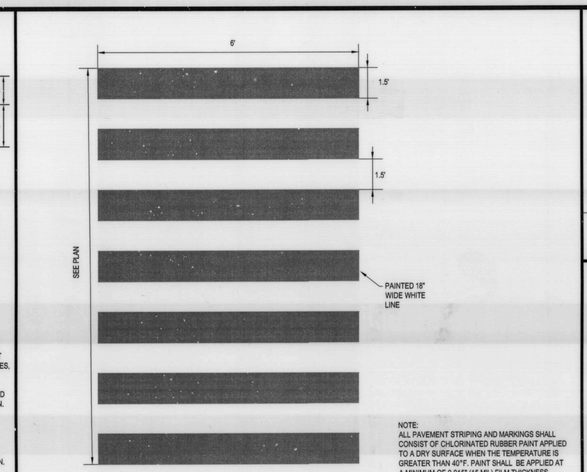
CONCRETE SIDEWALK DETAILS

N.T.S.



SIGN BOLLARD DETAIL

N.T.S.



CROSSWALK DETAIL

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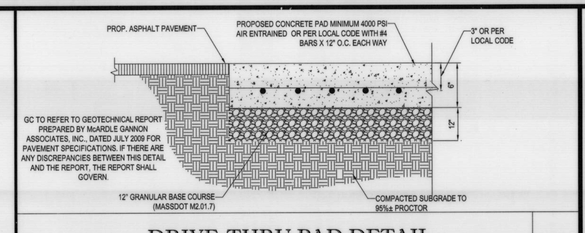

DRIVE-THRU PAD DETAIL

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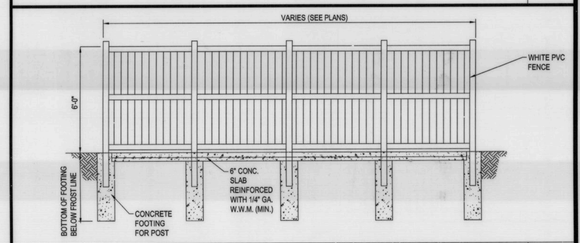

PVC FENCE TRASH ENCLOSURE

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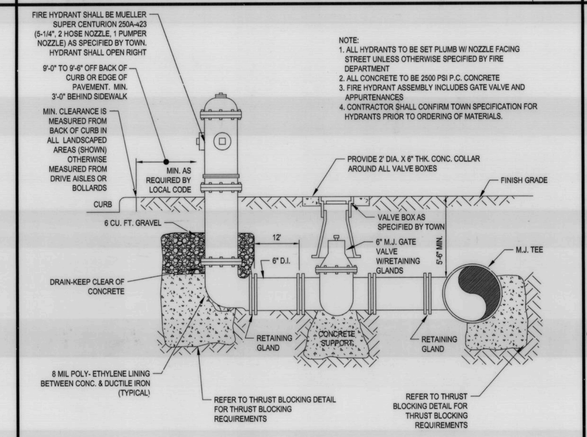
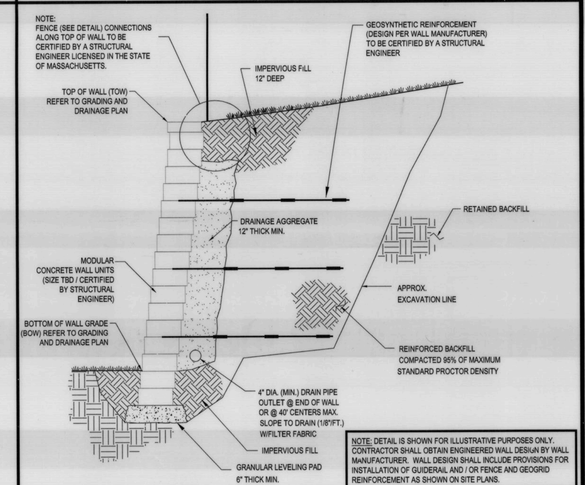


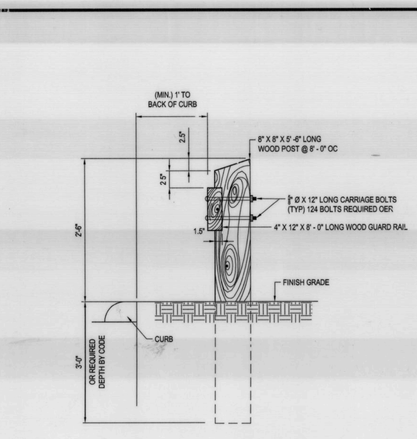
FIRE HYDRANT ASSEMBLY

N.T.S.



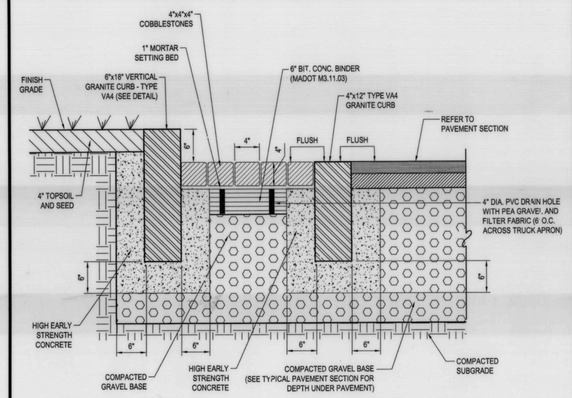
SEGMENTAL BLOCK RETAINING WALL

N.T.S.



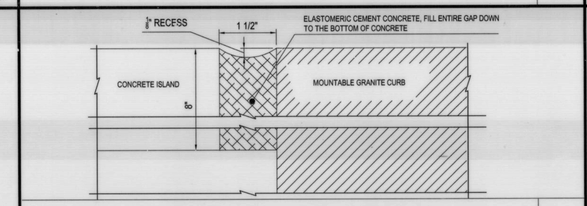
WOOD GUIDERAIL

N.T.S.



FLUSH GRANITE CURB & COBBLE STONE TRUCK APRON PAVING DETAIL

N.T.S.



EXPANSION JOINT DETAIL

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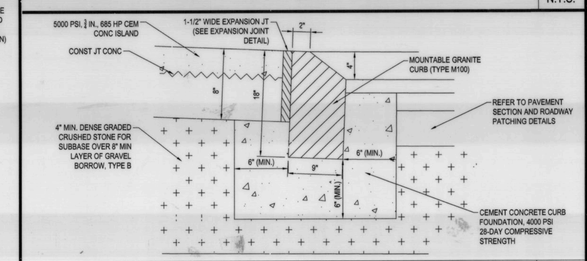
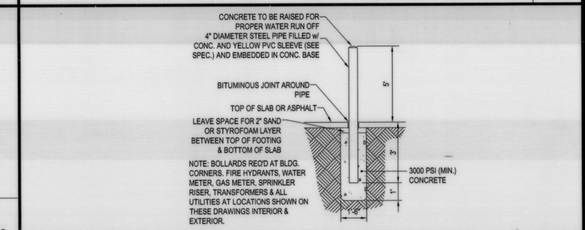


MOUNTABLE GRANITE CURB WITH CONCRETE ISLAND

N.T.S.



BOLLARD DETAIL

N.T.S.

TOWN OF MAYNARD PLANNING BOARD APPROVAL

SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE

Approved plans - see cover sheet for Planning Board signatures.

BOHLER ENGINEERING
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PROGRAM MANAGEMENT TRANSPORTATION SERVICES
SUSTAINABLE DESIGN PERMITTING SERVICES
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◆ WORCESTER, MASSACHUSETTS ◆ HARRISBURG, PA ◆ AUSTIN, TX
◆ NEW YORK, NY ◆ SOUTHERN MARYLAND ◆ SOUTH FLORIDA
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APPROVED FOR CONSTRUCTION

PROJECT No.:	W161189
DRAWN BY:	AWP/CFD
CHECKED BY:	NEM/JAK
DATE:	02/15/2017
SCALE:	AS NOTED
CAD I.D.:	W161189SS7_DETAILS

PROJECT:
SITE DEVELOPMENT PLANS
FOR
CAPITAL GROUP PROPERTIES
MAYNARD CROSSING

LOCATION OF SITE
MAP #25 & LOTS #152 & 152-1
129 PARKER STREET (ROUTE 27)
TOWN OF MAYNARD
MIDDLESEX COUNTY
MASSACHUSETTS

BOHLER ENGINEERING
352 TURNPIKE ROAD
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Fax: (508) 480-9080
www.BohlerEngineering.com

JOHN A. KUCICH, CIVIL, No. 41530, PROFESSIONAL ENGINEER, MASSACHUSETTS, CONNECTICUT, RHODE ISLAND, MAINE

SHEET TITLE:
CONSTRUCTION DETAIL SHEET

SHEET NUMBER: 27 OF 35

REV 7 - 09/18/2017

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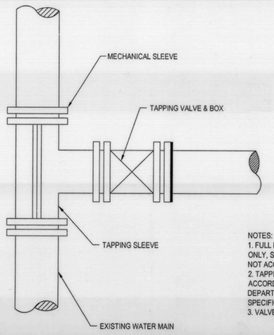
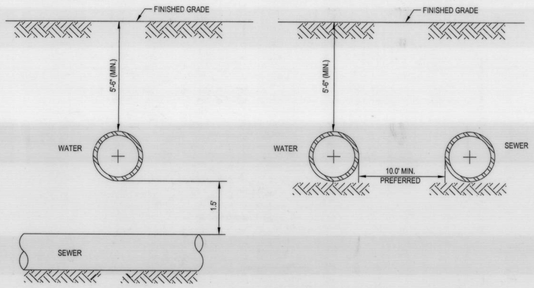


NOTES:
1. FULL BODY MECHANICAL TAPPING SLEEVE ONLY, STAINLESS STEEL TAPPING SLEEVES ARE NOT ACCEPTABLE.
2. TAPPING SLEEVE AND VALVE SHALL BE IN ACCORDANCE WITH THE TOWN OF MAYNARD DEPARTMENT OF PUBLIC WORKS MATERIALS SPECIFICATIONS.
3. VALVE SHALL OPEN RIGHT.

TAPPING SLEEVE & GATE VALVE DETAIL

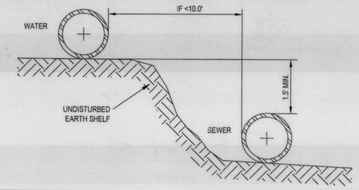
N.T.S.



NOTE:
10' HORIZONTAL SEPARATION AND 1.5' VERTICAL SEPARATION SHALL BE PROVIDED BETWEEN WATER AND SEWER AS DEPICTED IN THIS DETAIL OR SEWER SHALL BE ENCASED IN CONCRETE (SEE "CONCRETE ENCASEMENT DETAIL AT UTILITY CROSSING" DETAIL THIS SHEET) IN SECTIONS WHERE SEPARATIONS SHALL NOT BE ACHIEVED.

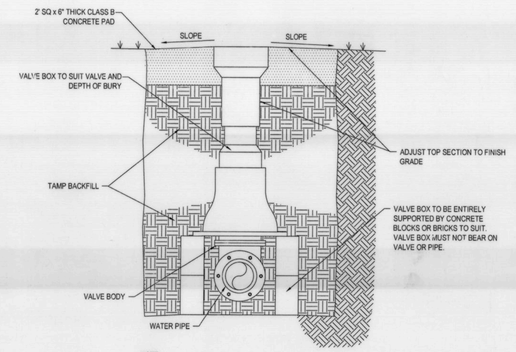
WATER/SEWER CROSSING DETAIL

N.T.S.



WATER/SEWER SEPARATION DETAIL

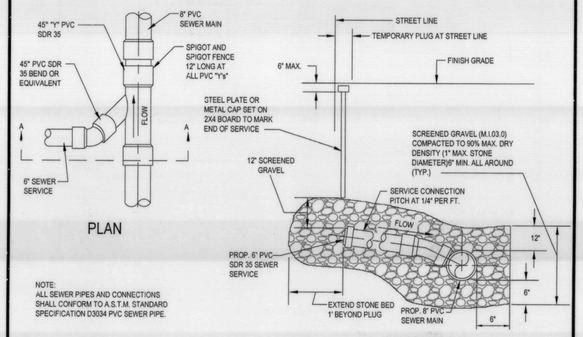
N.T.S.



NOTE:
GATE VALVE SHALL BE IN ACCORDANCE WITH THE TOWN OF MAYNARD DEPARTMENT OF PUBLIC WORKS MATERIALS SPECIFICATIONS.

GATE VALVE

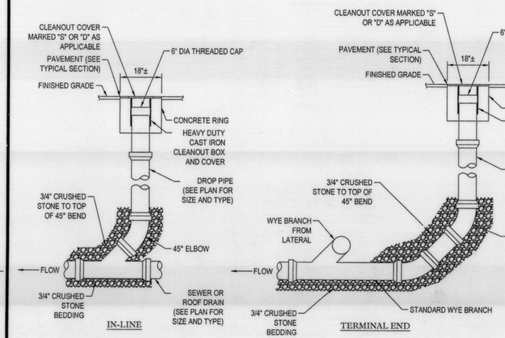
N.T.S.



NOTE:
ALL SEWER PIPES AND CONNECTIONS SHALL CONFORM TO A.S.T.M. STANDARD SPECIFICATION D3034 PVC SEWER PIPE.

GRAVITY SEWER SERVICE CONNECTION

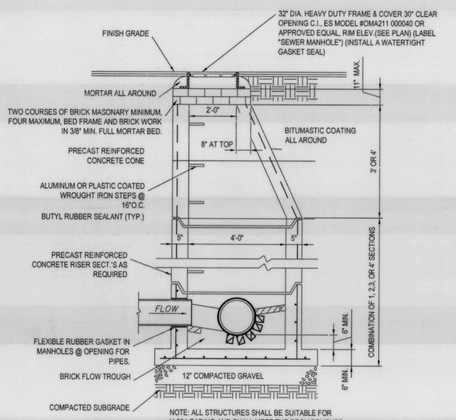
N.T.S.



NOTES:
1. CLEANOUTS TO BE INSTALLED WHERE INDICATED ON THE PLANS.
2. CLEANOUT PIPE TO BE SAME SIZE AND MATERIAL AS SEWER/DRAIN LINE UP TO 8".
3. BACKFILL TO TOP OF 45° WITH 3/4" CRUSHED STONE.

SEWER/ROOF DRAIN CLEANOUT

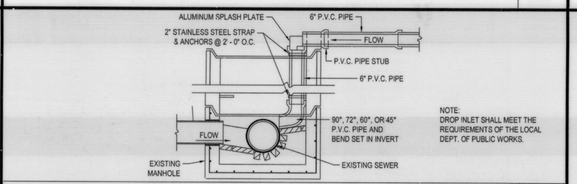
N.T.S.



NOTE: ALL STRUCTURES SHALL BE SUITABLE FOR H-20 LOADING AND SHALL MEET THE REQUIREMENTS OF ASTM C478.

TYP. PRECAST CONCRETE SANITARY MANHOLE

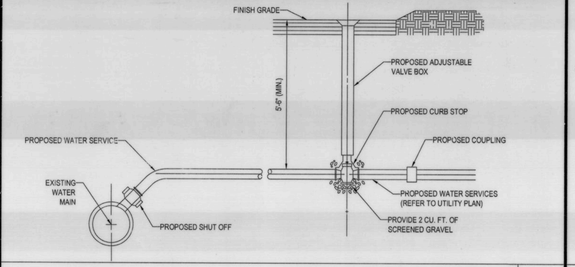
N.T.S.



NOTE:
DROP INLET SHALL MEET THE REQUIREMENTS OF THE LOCAL DEPT. OF PUBLIC WORKS.

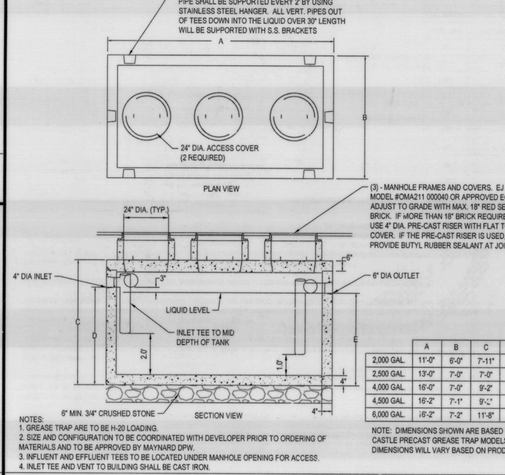
SEWER DROP INLET

N.T.S.



WATER SERVICE CONNECTION DETAIL

N.T.S.



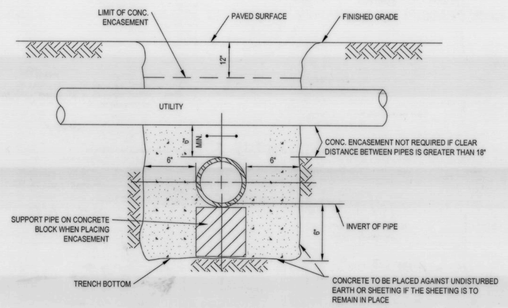
	A	B	C	D	E
2,000 GAL.	11'-0"	6'-0"	7'-11"	6'-7"	6'-4"
2,500 GAL.	13'-0"	7'-0"	7'-0"	6'-0"	4'-10"
4,000 GAL.	16'-0"	7'-0"	9'-2"	6'-3"	6'-1"
4,500 GAL.	16'-2"	7'-1"	9'-1"	7'-0"	6'-10"
6,000 GAL.	16'-2"	7'-2"	11'-8"	-	-

NOTES:
1. GREASE TRAP ARE TO BE H-20 LOADING.
2. SIZE AND CONFIGURATION TO BE COORDINATED WITH DEVELOPER PRIOR TO ORDERING OF MATERIALS AND TO BE APPROVED BY MAYNARD DPW.
3. INFLUENT AND EFFLUENT TEES TO BE LOCATED UNDER MANHOLE OPENING FOR ACCESS.
4. INLET TEE AND VENT TO BUILDING SHALL BE CAST IRON.

NOTE: DIMENSIONS SHOWN ARE BASED UPON OLD CASTLE PRECAST GREASE TRAP MODELS. FINAL DIMENSIONS WILL VARY BASED ON PRODUCT TYPE.

GREASE TRAP DETAIL

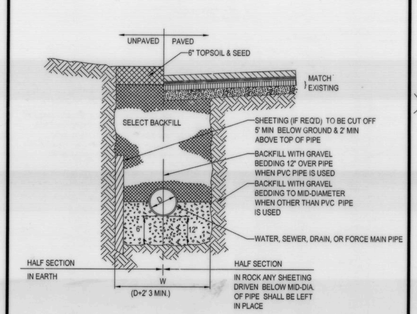
N.T.S.



NOTES:
- PIPE MUST BE BRACED VERTICALLY & HORIZONTALLY TO PREVENT FLOATATION DURING PLACEMENT OF CONCRETE
- ALL CONCRETE ENCASEMENT SHALL BE KEPT 12" BELOW THE BOTTOM OF ASPHALT PAVEMENT
- CONCRETE ENCASEMENT SHALL EXTEND 1.5' IN EITHER DIRECTION OF CROSSING EXCEPT FOR WATER/SEWER CROSSINGS, WHICH SHALL EXTEND 10' IN EITHER DIRECTION OF CROSSING.

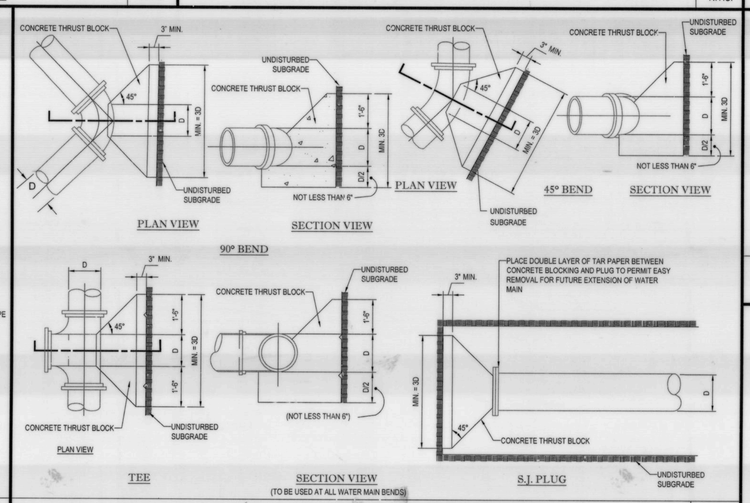
CONCRETE ENCASEMENT DETAIL AT UTILITY CROSSING

N.T.S.



TYPICAL UTILITY TRENCH

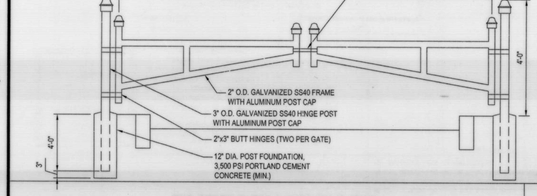
N.T.S.



THRUST BLOCK DETAILS

N.T.S.

NOTE:
1) DOUBLE GATE TO BE CENTERED ON 24' WIDE DRIVE AISLE AS SHOWN ON PLAN.
2) DESIGN AS SHOWN OR APPROVED EQUAL. FINAL DESIGN TO BE COORDINATED WITH DEVELOPER AND TOWN OF MAYNARD FIRE DEPARTMENT



EMERGENCY GATE

N.T.S.

TOWN OF MAYNARD PLANNING BOARD APPROVAL

SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE

Approved plans - see cover sheet for Planning Board signatures.

BOHLER ENGINEERING
SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
SUSTAINABLE DESIGN
PROGRAM MANAGEMENT
PERMITTING SERVICES
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EDISON/PISCATAWAY, NJ
NEW ENGLAND
BOSTON, MA
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REVISIONS

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7	09/18/17	CONSTRUCTION DOCUMENTS	AWP
8			
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10			
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14			
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APPROVED FOR CONSTRUCTION

PROJECT No.:	W161189
DRAWN BY:	AWP/CFD
CHECKED BY:	NEM/JAK
DATE:	02/15/2017
SCALE:	AS NOTED
CAD I.D.:	W161189SS7_DETAILS

PROJECT:
SITE DEVELOPMENT PLANS
FOR
CAPITAL GROUP PROPERTIES
MAYNARD CROSSING
LOCATION OF SITE
MAP #25 & LOTS #152 & 152-1
129 PARKER STREET (ROUTE 27)
TOWN OF MAYNARD
MIDDLESEX COUNTY
MASSACHUSETTS

BOHLER ENGINEERING
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JOHN A. KRUCH
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REGISTERED PROFESSIONAL ENGINEER
MASSACHUSETTS LICENSE NO. 41530
CONNECTICUT LICENSE NO. PEN.0027717
RHODE ISLAND LICENSE NO. 9616
MAINE LICENSE NO. 13553

SHEET TITLE:
CONSTRUCTION DETAIL SHEET

SHEET NUMBER:
28
OF 35

REV 7 - 09/18/2017

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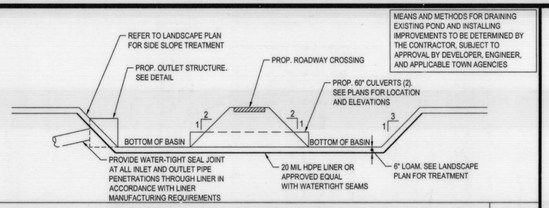
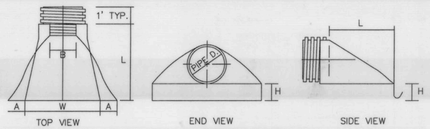


LINED BASIN DETAIL

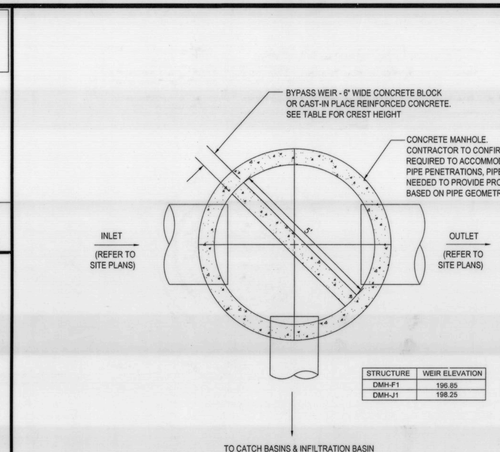
N.T.S.



PIPE DIAMETER	DIMENSION (inches)						
	PART NO.	A(1±)	B MAX	H(1±)	L(1/2±)	W(2±)
12" and 15"	1210 NP	6.5	10	6.5	25	29
18"	1810 NP	7.5	15	6.5	32	35
24"	2410 NP	7.5	18	6.5	36	45
30"	3015 NP	7.5	22	8.6	58	63
36"	3615 NP	10.5	NA	7.0	58	63

ADS END SECTION DIMENSIONS

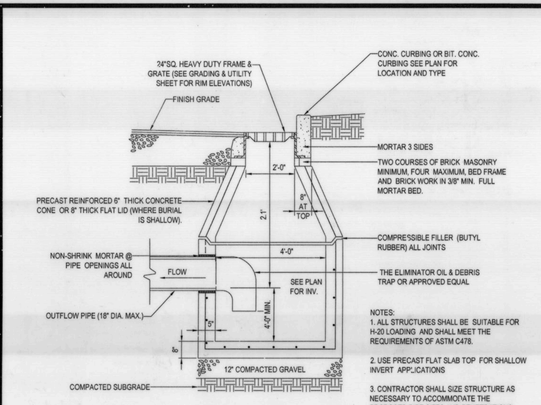
N.T.S.



STRUCTURE	WEIR ELEVATION
DMH-F1	196.85
DMH-J1	198.25

INFILTRATION BASIN DIVERSION MANHOLE

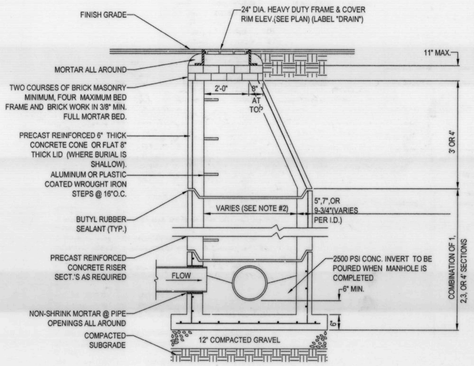
N.T.S.



NOTES:
1. ALL STRUCTURES SHALL BE SUITABLE FOR H-20 LOADING AND SHALL MEET THE REQUIREMENTS OF ASTM C478.
2. USE PRECAST FLAT SLAB TOP FOR SHALLOW INVERT APPLICATIONS
3. CONTRACTOR SHALL SIZE STRUCTURE AS NECESSARY TO ACCOMMODATE THE PROPOSED PIPE SIZES AND PENETRATIONS USING GEOMETRY SHOWN ON GRADING AND DRAINAGE PLANS

PRECAST CONCRETE DEEP SUMP CATCH BASIN DETAIL

N.T.S.

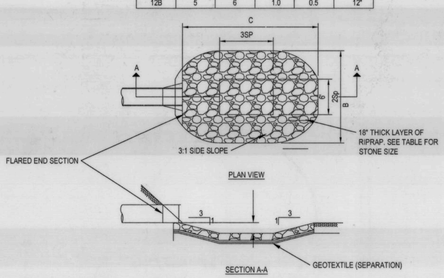


NOTE:
1. ALL STRUCTURES SHALL BE SUITABLE FOR H-20 LOADING AND SHALL MEET THE REQUIREMENTS OF ASTM C478.
2. CONTRACTOR SHALL SIZE STRUCTURE AS NECESSARY TO ACCOMMODATE THE PROPOSED PIPE SIZES AND PENETRATIONS USING GEOMETRY SHOWN ON GRADING AND DRAINAGE PLANS

TYP. PRECAST CONCRETE MANHOLE STORM DRAIN

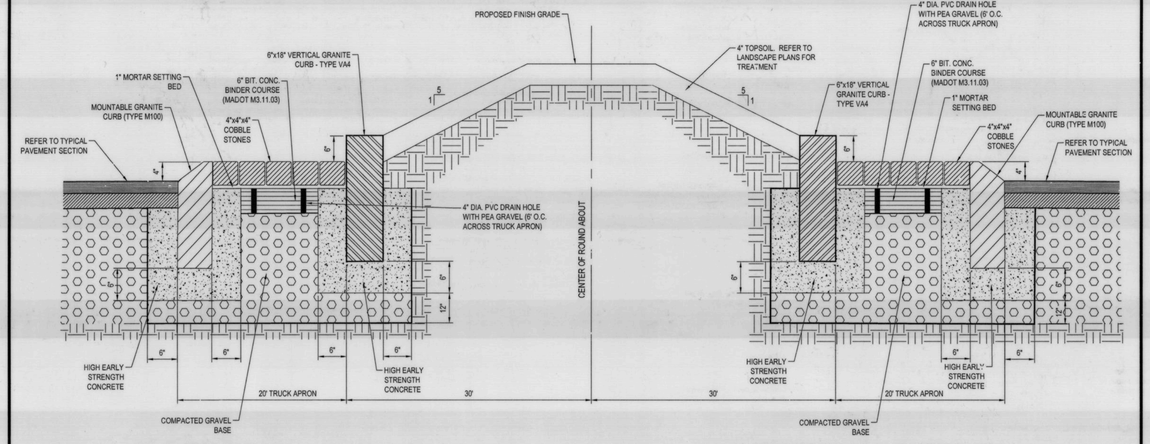
N.T.S.

SCOUR HOLE DIMENSIONS					AVG. STONE SIZE
FES #	B	C	Sp	F	
1	20	24	4.0	2.0	24"
2	15	18	3.0	1.5	18"
3	6	8	1.25	0.625	15"
4	15	18	3.0	1.5	18"
5	13	15	2.5	1.25	15"
6	15	18	3.0	1.5	18"
7	N/A- INLET				
8	5	6	1.0	0.5	12"
9	5	6	1.0	0.5	12"
10	6	8	1.25	0.625	15"
11	5	6	1.0	0.5	12"
12A	5	6	1.0	0.5	12"
12B	5	6	1.0	0.5	12"



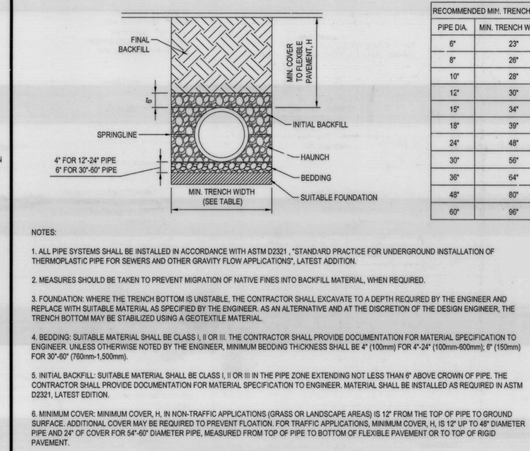
RIP-RAP APRON

N.T.S.



ROUND ABOUT CROSS SECTION

N.T.S.



RECOMMENDED MIN. TRENCH WIDTH	
PIPE DIA.	MIN. TRENCH WIDTH
6"	23"
8"	26"
10"	28"
12"	30"
15"	34"
18"	39"
24"	48"
30"	56"
36"	64"
48"	80"
60"	96"

NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION.

2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.

3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.

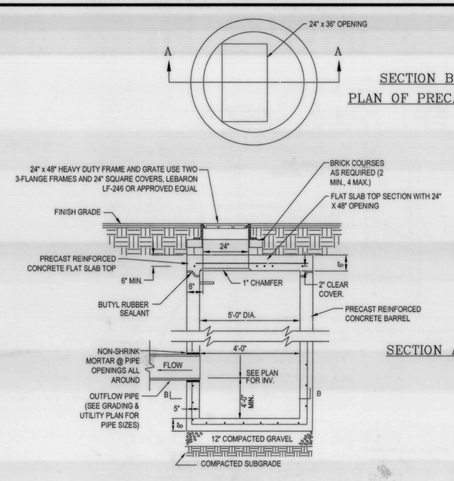
4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (760mm-1,500mm).

5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.

6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 54"-60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

HDPE STORM DRAINAGE TRENCH

N.T.S.



PRECAST DOUBLE CATCH BASIN

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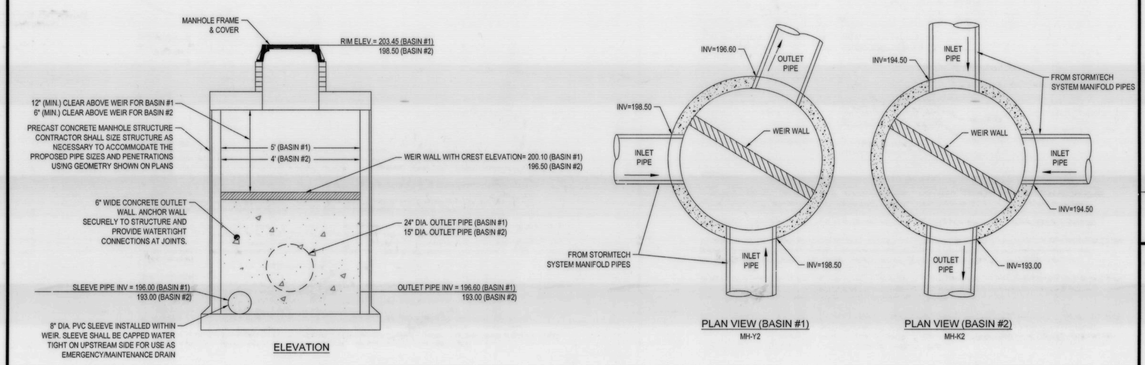
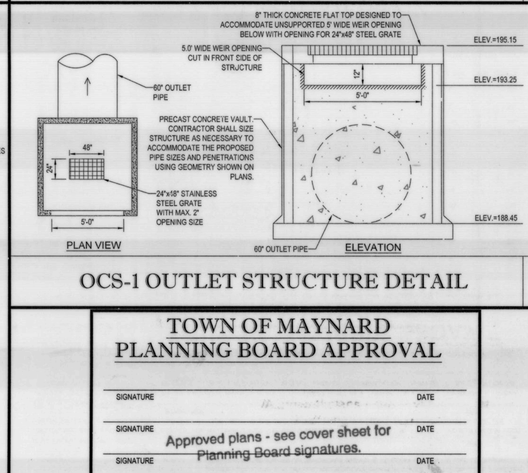


UNDERGROUND INFILTRATION BASIN OUTLET STRUCTURES (BASINS #1 & #2)

N.T.S.



OCS-1 OUTLET STRUCTURE DETAIL

N.T.S.

TOWN OF MAYNARD PLANNING BOARD APPROVAL

SIGNATURE	DATE
SIGNATURE	DATE
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Approved plans - see cover sheet for Planning Board signatures.

BOHLER ENGINEERING

SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING — PROGRAM MANAGEMENT — LANDSCAPE ARCHITECTURE
SUSTAINABLE DESIGN — PERMITTING SERVICES — TRANSPORTATION SERVICES

SOUTHEASTERN, PA — CHARLOTTE, NC
REDGROTH BEACH, DE — ATLANTA, GA
NEW JERSEY METRO — RALEIGH, NC
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J.A. KUCICH — JOHN A. KUCICH — CIVIL — PROFESSIONAL ENGINEER — MASSACHUSETTS LICENSE NO. 47030 — CONNECTICUT LICENSE NO. 27177 — RHODE ISLAND LICENSE NO. 9616 — MAINE LICENSE NO. 20093

SHEET TITLE:
CONSTRUCTION DETAIL SHEET

SHEET NUMBER:
29
OF 35

REV 7 - 09/18/2017

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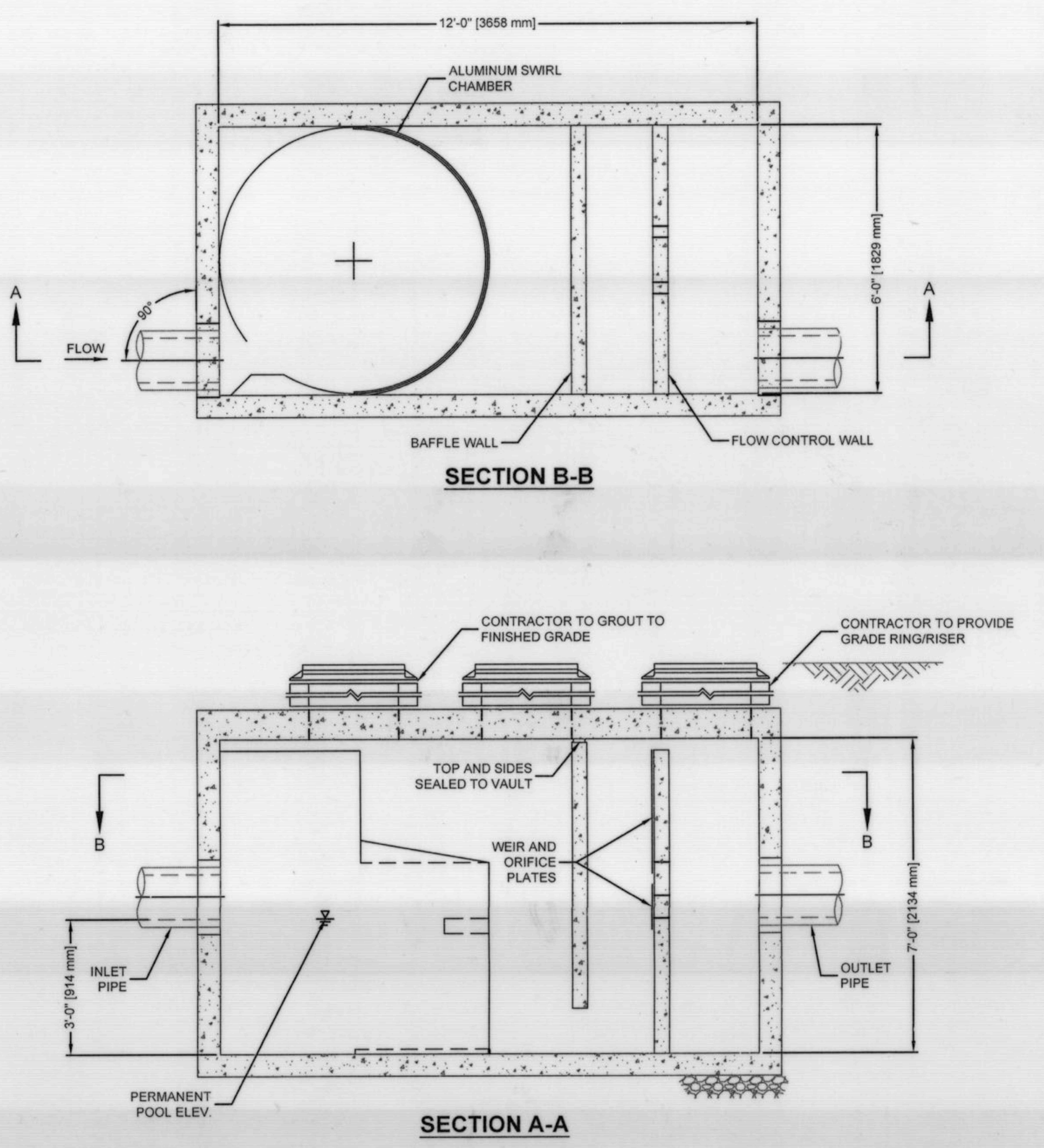
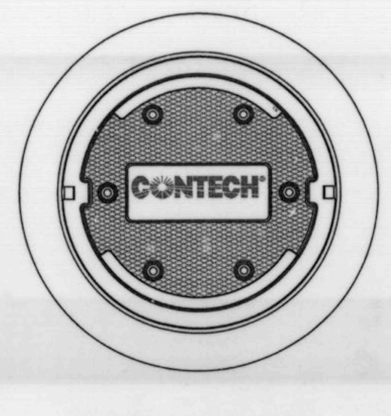


VORTECHS 4000 DESIGN NOTES

VORTECHS 4000 RATED TREATMENT CAPACITY IS 6 CFS, OR PER LOCAL REGULATIONS. IF THE SITE CONDITIONS EXCEED RATED TREATMENT CAPACITY, AN UPSTREAM BYPASS STRUCTURE IS REQUIRED.

THE STANDARD INLET/OUTLET CONFIGURATION IS SHOWN. FOR OTHER CONFIGURATION OPTIONS, PLEASE CONTACT YOUR CONTECH REPRESENTATIVE. www.ContechES.com



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

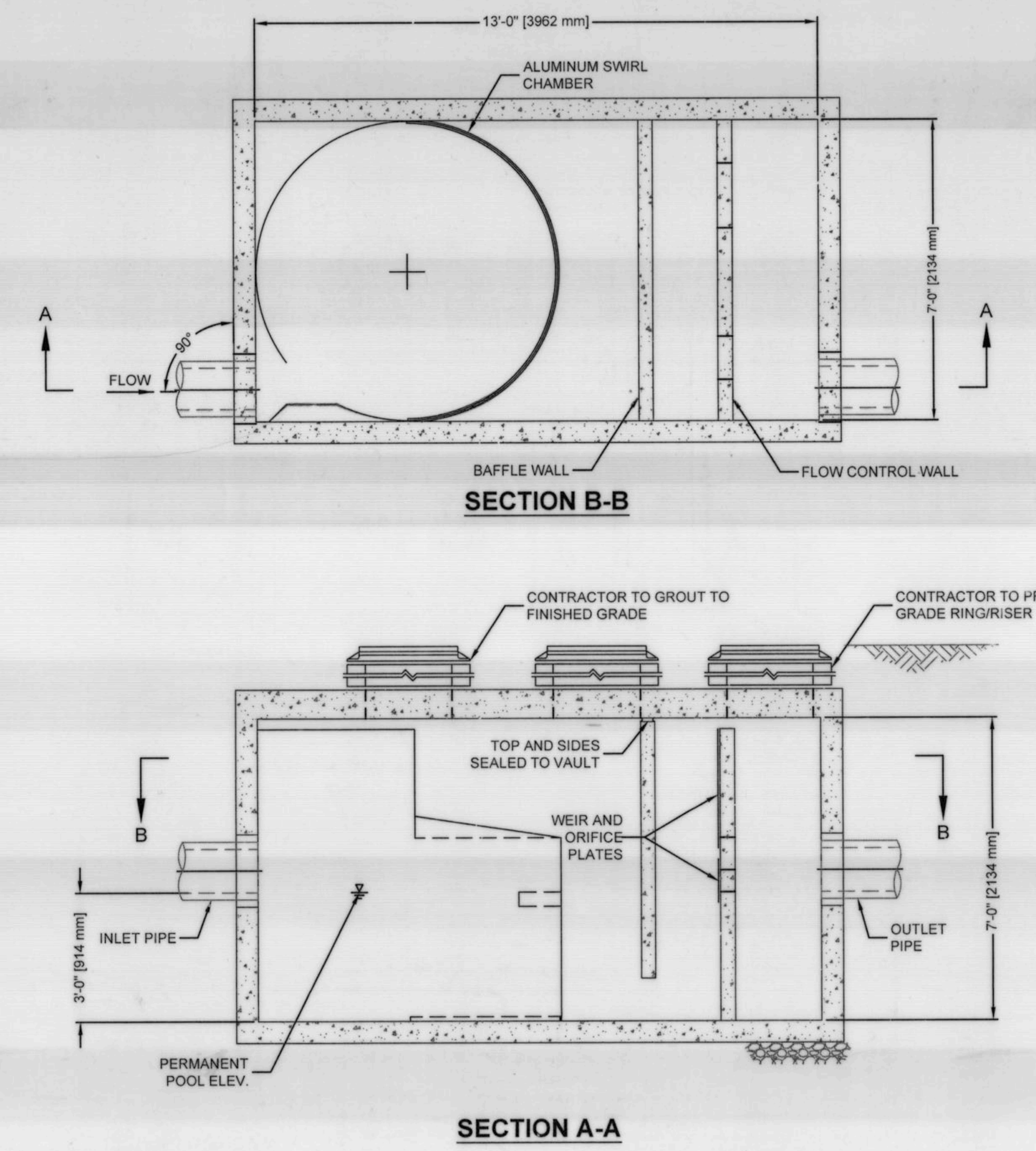
GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH REPRESENTATIVE. www.ContechES.com
4. VORTECHS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE SHALL MEET AASHTO HS20 AND CASTINGS SHALL MEET AASHTO M306 LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
6. INLET PIPE(S) MUST BE PERPEDICULAR TO THE VAULT AND AT THE CORNER TO INTRODUCE THE FLOW TANGENTIALLY TO THE SWIRL CHAMBER. DUAL INLETS NOT TO HAVE OPPOSING TANGENTIAL FLOW DIRECTIONS.
7. OUTLET PIPE(S) MUST BE DOWN STREAM OF THE FLOW CONTROL BAFFLE AND MAY BE LOCATED ON THE SIDE OR END OF THE VAULT. THE FLOW CONTROL WALL MAY BE TURNED TO ACCOMODATE OUTLET PIPE KNOCKOUTS ON THE SIDE OF THE VAULT.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE VORTECHS STRUCTURE (LIFTING CLUTCHES PROVIDED).
C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

Vortechs
CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

VORTECHNICS MODEL 4000 (WQU1-A)

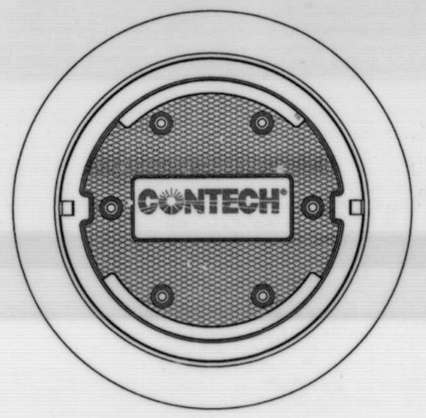
N.T.S.



VORTECHS 5000 DESIGN NOTES

VORTECHS 5000 RATED TREATMENT CAPACITY IS 8.5 CFS, OR PER LOCAL REGULATIONS. IF THE SITE CONDITIONS EXCEED RATED TREATMENT CAPACITY, AN UPSTREAM BYPASS STRUCTURE IS REQUIRED.

THE STANDARD INLET/OUTLET CONFIGURATION IS SHOWN. FOR OTHER CONFIGURATION OPTIONS, PLEASE CONTACT YOUR CONTECH REPRESENTATIVE. www.ContechES.com



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

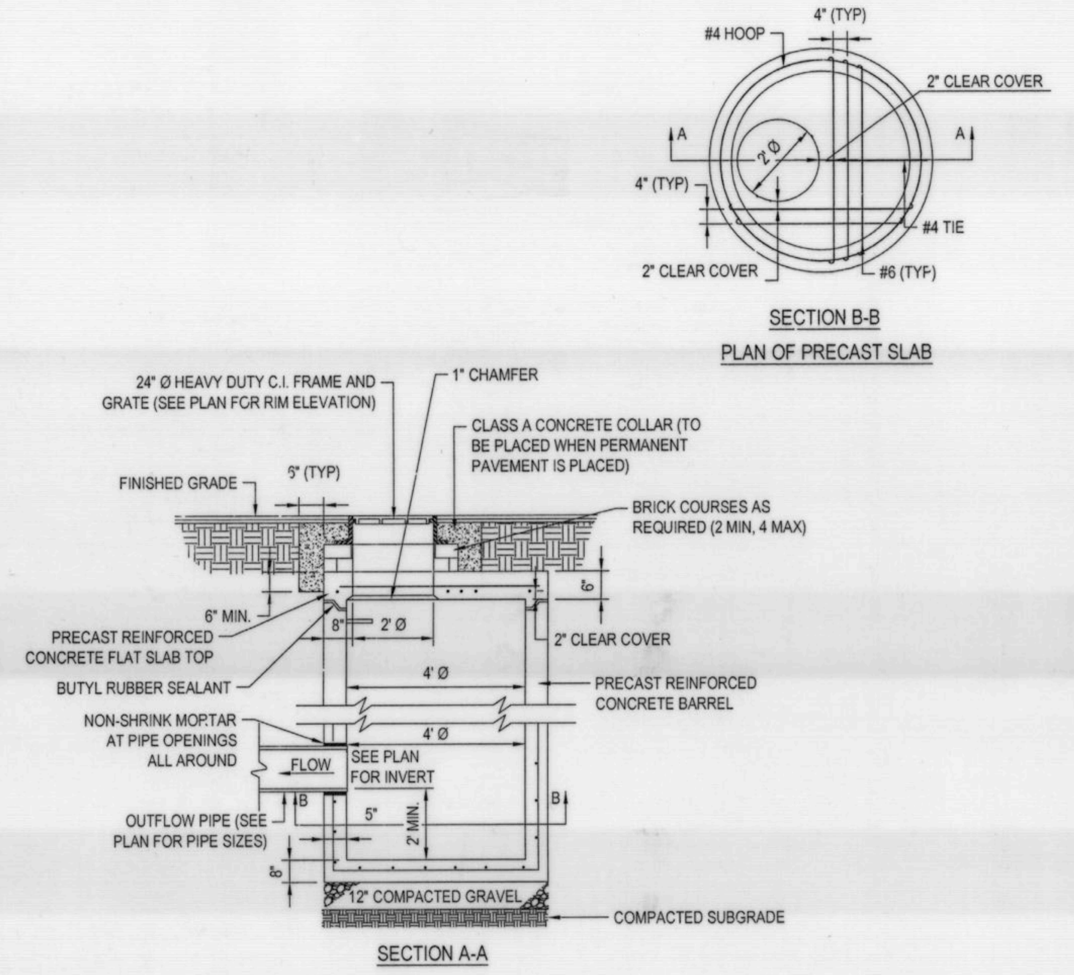
GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH REPRESENTATIVE. www.ContechES.com
4. VORTECHS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE SHALL MEET AASHTO HS20 AND CASTINGS SHALL MEET AASHTO M306 LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
6. INLET PIPE(S) MUST BE PERPEDICULAR TO THE VAULT AND AT THE CORNER TO INTRODUCE THE FLOW TANGENTIALLY TO THE SWIRL CHAMBER. DUAL INLETS NOT TO HAVE OPPOSING TANGENTIAL FLOW DIRECTIONS.
7. OUTLET PIPE(S) MUST BE DOWN STREAM OF THE FLOW CONTROL BAFFLE AND MAY BE LOCATED ON THE SIDE OR END OF THE VAULT. THE FLOW CONTROL WALL MAY BE TURNED TO ACCOMODATE OUTLET PIPE KNOCKOUTS ON THE SIDE OF THE VAULT.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE VORTECHS STRUCTURE (LIFTING CLUTCHES PROVIDED).
C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

Vortechs
CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

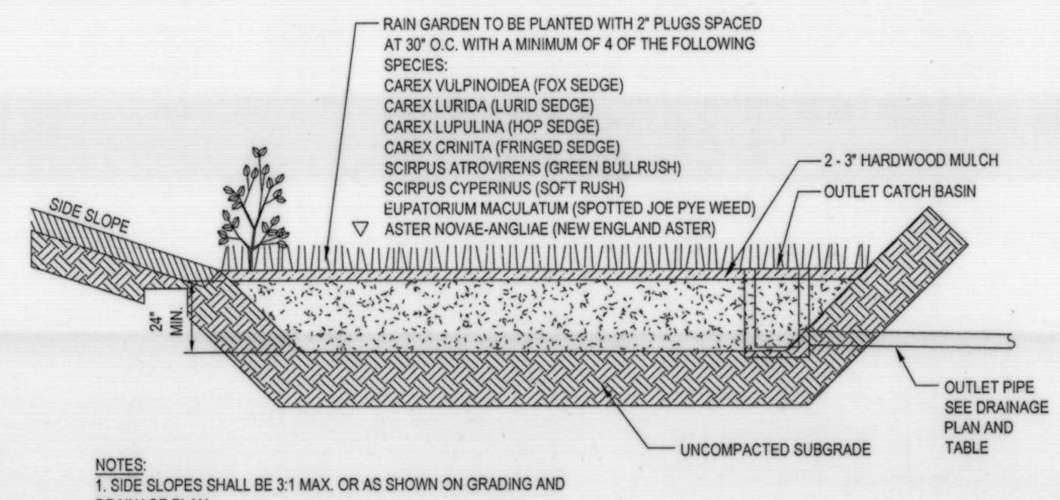
VORTECHNICS MODEL 5000 (WQU2-A)

N.T.S.



PRECAST FLAT SLAB TOP FOR CATCH BASIN

N.T.S.



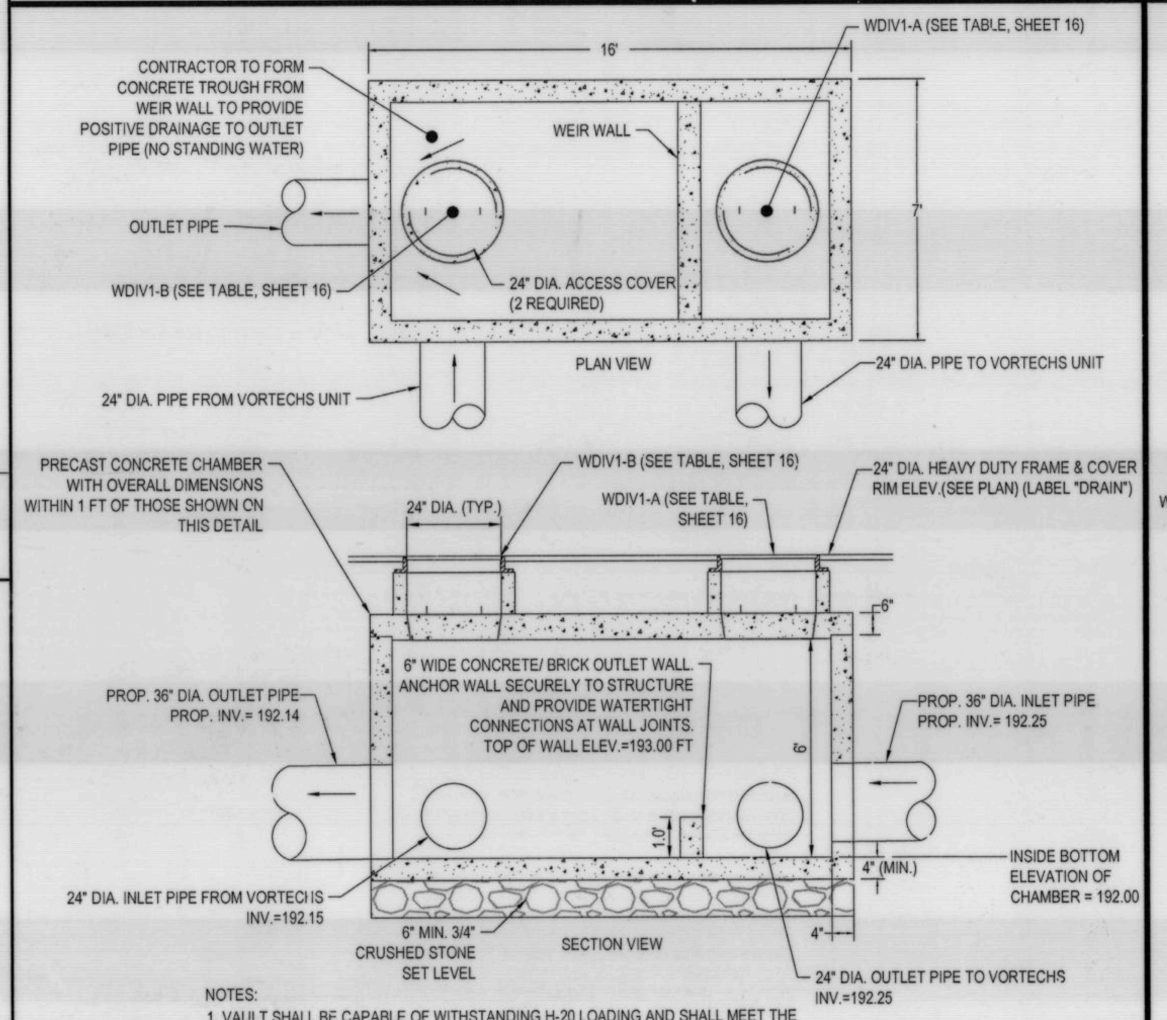
NOTES:
1. SIDE SLOPES SHALL BE 3:1 MAX. OR AS SHOWN ON GRADING AND DRAINAGE PLAN.
2. PLANTING SOIL MIX SHALL CONSIST OF A MIXTURE OF SAND, COMPOST AND SOIL CONSISTING OF 40% SAND, 20-30% TOP SOIL, 30-40% COMPOST.
3. PLANTING SOIL MIX SHALL BE UNIFORM AND FREE FROM STONES, ROOTS, STUMPS OR ANY FOREIGN OBJECTS LARGER THAN 1" MAX. SIZE.
4. CLAY CONTENT SHALL NOT EXCEED 5%.
5. SOIL pH SHALL RANGE BETWEEN 5.5 - 6.5.
6. USE SOILS WITH 1.5% TO 3% ORGANIC CONTENT AND MAXIMUM 500 PPM SOLUBLE SALTS.
7. SAND SHALL BE GRAVELLY SAND THAT MEETS ASTM 4D 422.

SIEVE SIZE	PERCENT PASSING
2 INCH	100
3/4"	70-100
1/4"	50-80
U.S. NO. 40	15-40
U.S. NO. 200	0-3

8. TOPSOIL SHALL BE A SANDY LOAM, LOAMY SAND OR LOAM TEXTURE.
9. COMPOST SHALL BE PROCESSED FROM YARD WASTE IN ACCORDANCE WITH GUIDELINES ISSUES FROM MADEP AND SHALL NOT CONTAIN BIOSOLIDS.

RAIN GARDEN DETAIL

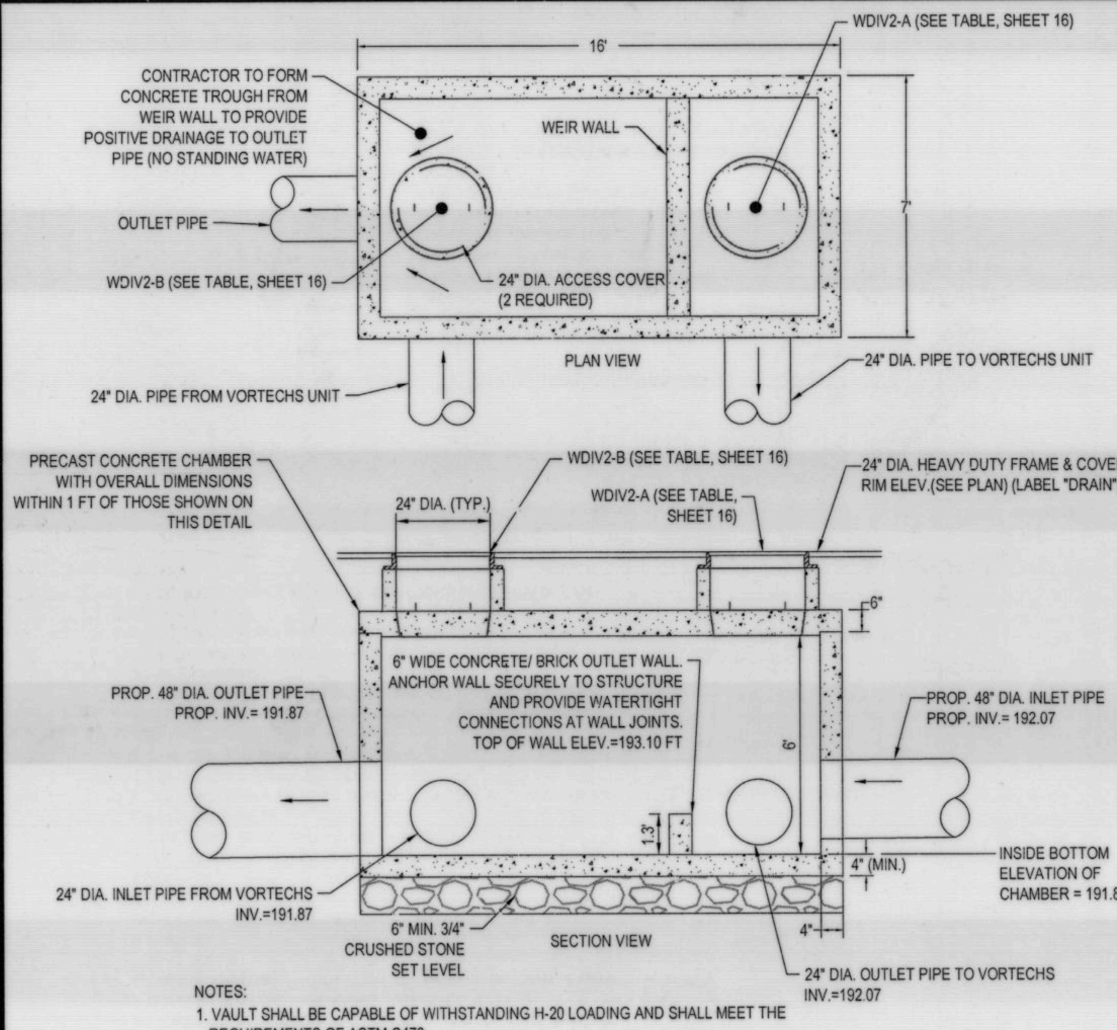
N.T.S.



NOTES:
1. VAULT SHALL BE CAPABLE OF WITHSTANDING H-20 LOADING AND SHALL MEET THE REQUIREMENTS OF ASTM C478.

DIVERSION STRUCTURE (WDIV1-A)

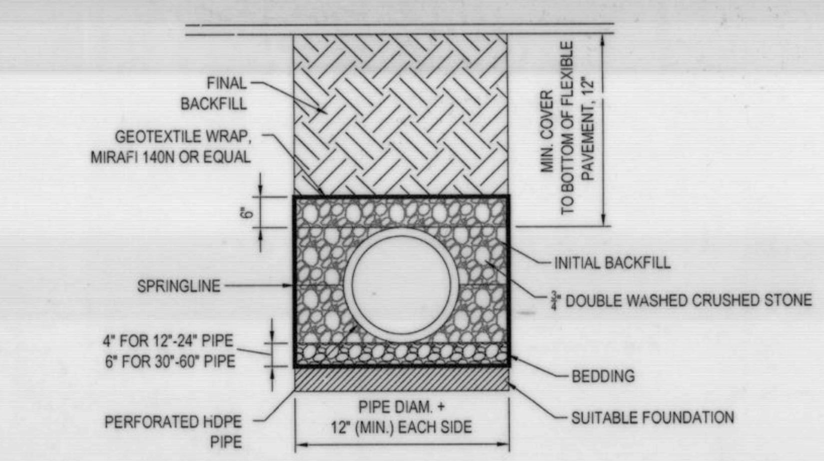
N.T.S.



NOTES:
1. VAULT SHALL BE CAPABLE OF WITHSTANDING H-20 LOADING AND SHALL MEET THE REQUIREMENTS OF ASTM C478.

DIVERSION STRUCTURE (WDIV2-A)

N.T.S.



NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321 , "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION.

2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.

3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.

4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (760mm-1,500mm).

5. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 54"-60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

PERFORATED ROOF DRAINAGE TRENCH

N.T.S.

TOWN OF MAYNARD PLANNING BOARD APPROVAL

SIGNATURE — DATE
SIGNATURE — DATE
Approved plans - see cover sheet for Planning Board signatures.
SIGNATURE — DATE
SIGNATURE — DATE
SIGNATURE — DATE

BOHLER ENGINEERING

REVISIONS

REV	DATE	COMMENT	BY
1	03/21/17	REMOVE CARRIAGE BLDG. (SHEETS 8-12 ONLY)	CFD
2	06/02/17	REV. PER TOWN COMMENTS	CFD
3	06/15/17	DRAINAGE REVISIONS (SHEETS 13-16 ONLY)	GJZ
4	06/28/17	DRAINAGE REVISIONS (FULL SET)	AWP
5	07/26/17	REV. PER TOWN COMMENTS	AWP
6	08/10/17	PEER REVIEW COMMENTS	CFD
7	09/18/17	CONSTRUCTION DOCUMENTS	AWP
8			
9			
10			
11			
12			
13			
14			
15			

APPROVED FOR CONSTRUCTION

PROJECT No.:	W161189
DRAWN BY:	AWP/CFD
CHECKED BY:	NEM/JAK
DATE:	02/15/2017
SCALE:	AS NOTED
CAD I.D.:	W161189SS7_DETAILS

PROJECT:
SITE DEVELOPMENT PLANS
—FOR—
CAPITAL GROUP PROPERTIES

MAYNARD CROSSING

LOCATION OF SITE
MAP #25 & LOTS #152 & 152-1
129 PARKER STREET (ROUTE 27)
TOWN OF MAYNARD
MIDDLESEX COUNTY
MASSACHUSETTS

BOHLER ENGINEERING
352 TURNPIKE ROAD
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900
Fax: (508) 480-9080
www.BohlerEngineering.com

J.A. KUCICH
PROFESSIONAL ENGINEER
JOHN A. KUCICH CIVIL No. 41530

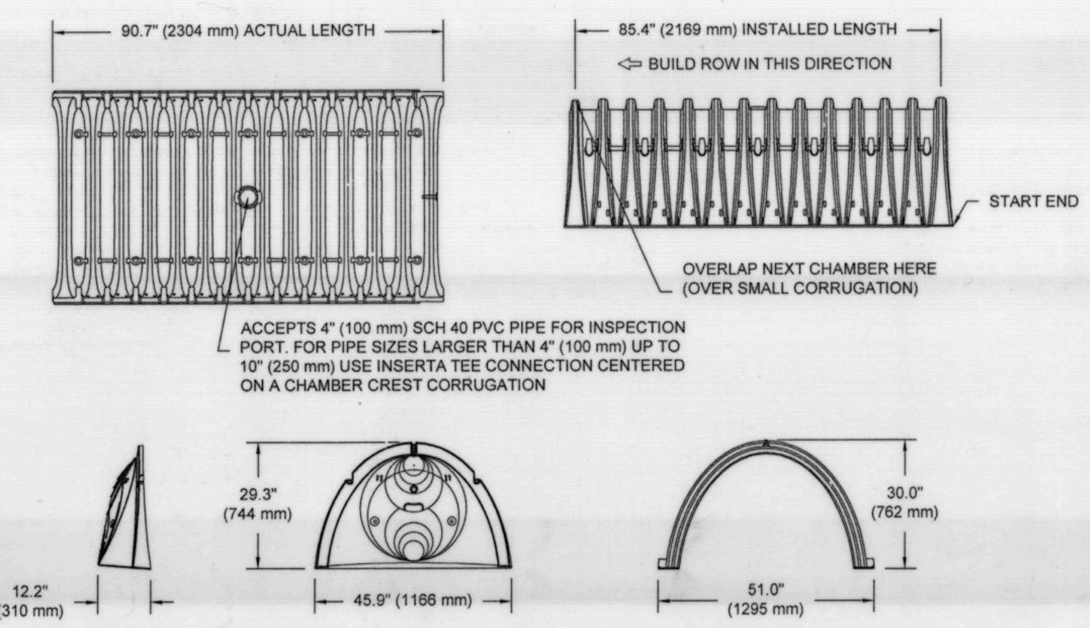
SHEET TITLE:
CONSTRUCTION DETAIL SHEET

SHEET NUMBER:
30
OF 35

REV 7 - 09/18/2017

SC-740 TECHNICAL SPECIFICATION

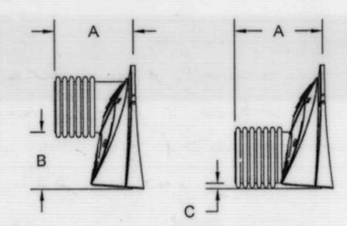
NTS



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	51.0" X 30.0" X 85.4"	(1295 mm X 762 mm X 2169 mm)
CHAMBER STORAGE	45.9 CUBIC FEET	(1.30 m³)
MINIMUM INSTALLED STORAGE*	74.9 CUBIC FEET	(2.12 m³)
WEIGHT	75.0 lbs.	(33.6 kg)

*ASSUMES 6" (152 mm) STONE ABOVE, BELOW, AND BETWEEN CHAMBERS



PRE-FAB STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
PRE-FAB STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
PRE-CORED END CAPS END WITH "PC"

PART #	STUB	A	B	C
SC740EPE06T / SC740EPE06TPC	6" (150 mm)	10.9" (277 mm)	18.5" (470 mm)	---
SC740EPE06B / SC740EPE06BPC			---	0.5" (13 mm)
SC740EPE08T /SC740EPE08TPC	8" (200 mm)	12.2" (310 mm)	16.5" (419 mm)	---
SC740EPE08B / SC740EPE08BPC			---	0.6" (15 mm)
SC740EPE10T / SC740EPE10TPC	10" (250 mm)	13.4" (340 mm)	14.5" (368 mm)	---
SC740EPE10B / SC740EPE10BPC			---	0.7" (18 mm)
SC740EPE12T / SC740EPE12TPC	12" (300 mm)	14.7" (373 mm)	12.5" (318 mm)	---
SC740EPE12B / SC740EPE12BPC			---	1.2" (30 mm)
SC740EPE15T / SC740EPE15TPC	15" (375 mm)	18.4" (467 mm)	9.0" (229 mm)	---
SC740EPE15B / SC740EPE15BPC			---	1.3" (33 mm)
SC740EPE18T / SC740EPE18TPC	18" (450 mm)	19.7" (500 mm)	5.0" (127 mm)	---
SC740EPE18B / SC740EPE18BPC			---	1.6" (41 mm)
SC740EPE24B*	24" (600 mm)	18.5" (470 mm)	---	0.1" (3 mm)

ALL STUBS, EXCEPT FOR THE SC740EPE24B ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

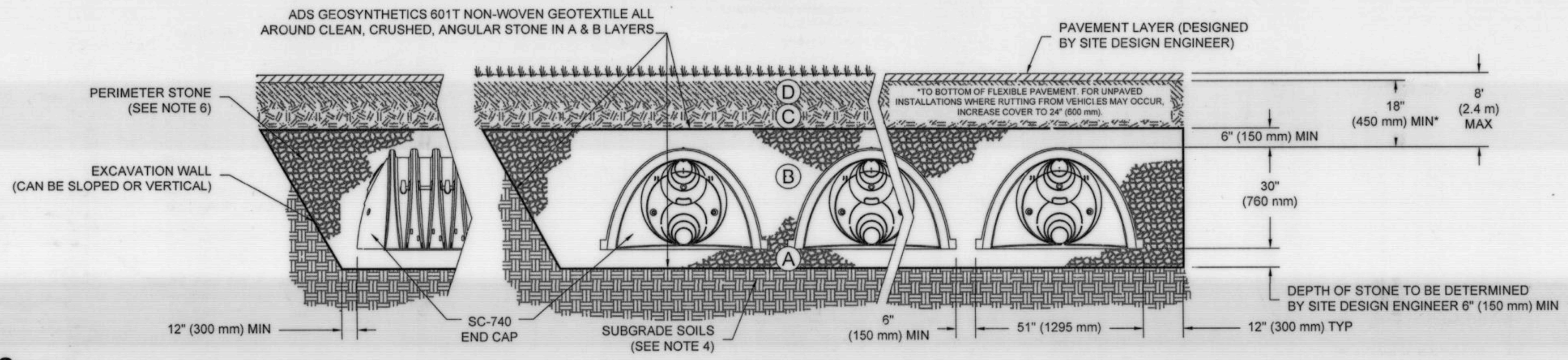
* FOR THE SC740EPE24B THE 24" (600 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 1.75" (44 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

NOTE: ALL DIMENSIONS ARE NOMINAL

ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

MATERIAL LOCATION		DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. [2,3]

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



NOTES:

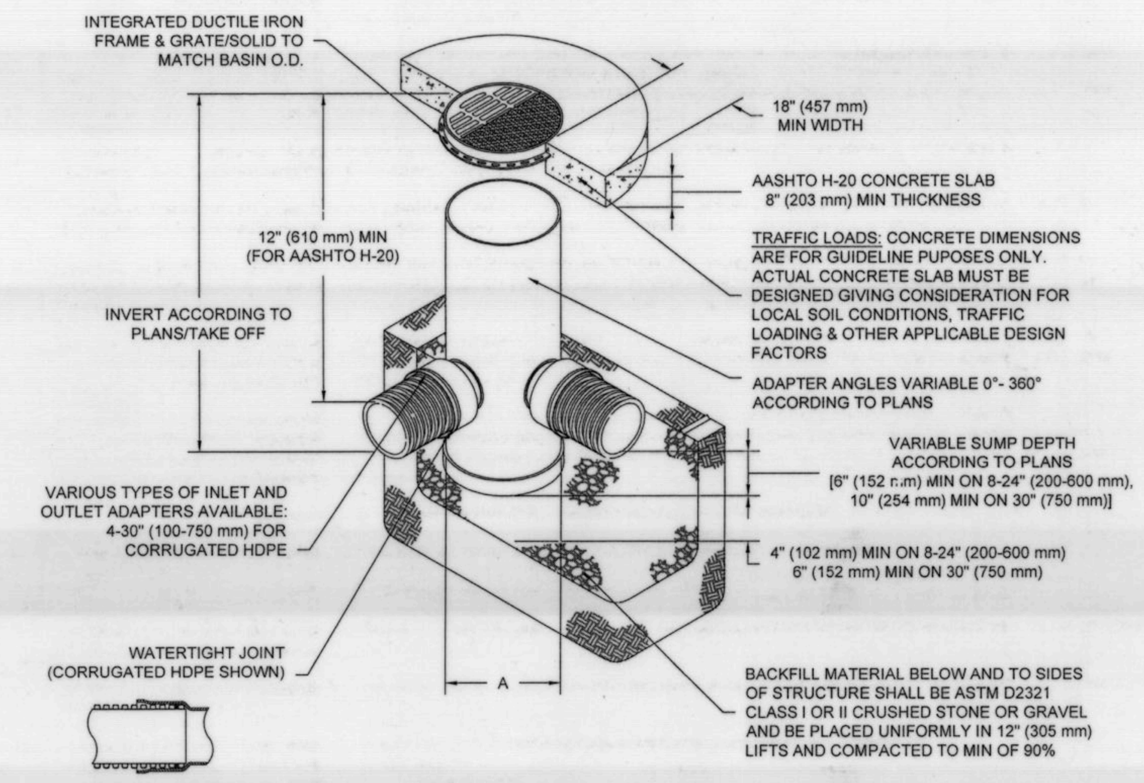
1. SC-740 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS", OR ASTM F2922 "STANDARD SPECIFICATION FOR POLYETHYLENE (PE) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
4. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
5. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
6. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.

STORMTECH SC-740 DETAILS

N.T.S.

NYLOPLAST DRAIN BASIN

NTS



NOTES

1. 8-30" (200-750 mm) GRATES/SOLID COVERS SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
2. 12-30" (300-750 mm) FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
3. DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS
4. DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS & HANCOR DUAL WALL) & SDR 35 PVC
5. FOR COMPLETE DESIGN AND PRODUCT INFORMATION: **WWW.NYLOPLAST-US.COM**
6. TO ORDER CALL: **800-821-6710**

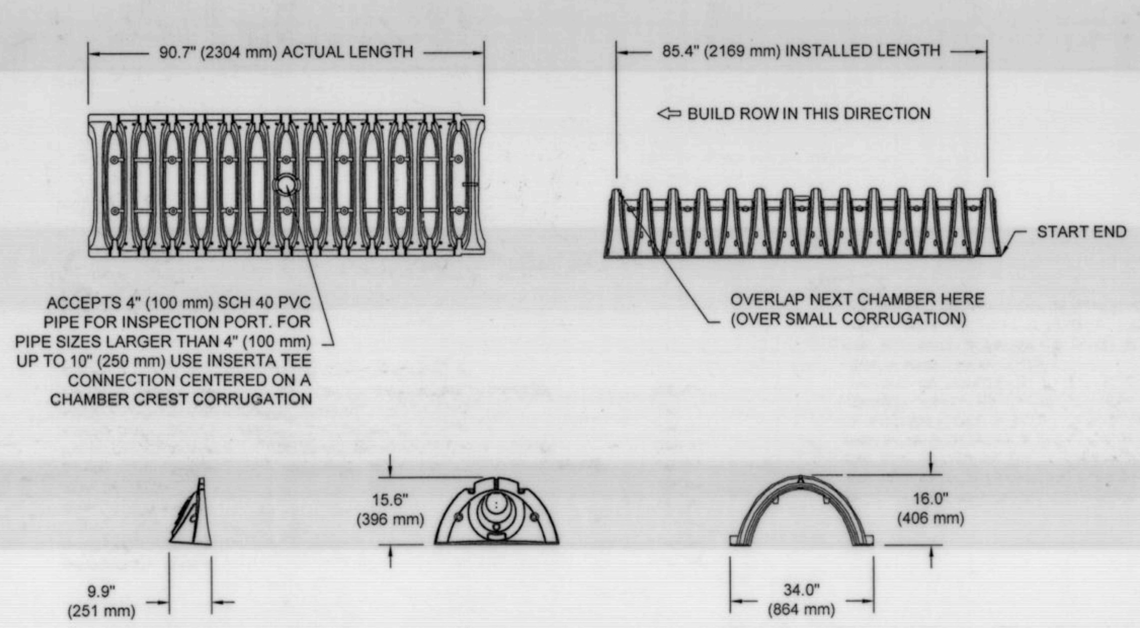
A	PART #	GRATE/SOLID COVER OPTIONS	
8" (200 mm)	2808AG	STANDARD LIGHT DUTY	SOLID LIGHT DUTY
10" (250 mm)	2810AG	STANDARD LIGHT DUTY	SOLID LIGHT DUTY
12" (300 mm)	2812AG	STANDARD AASHTO H-20	SOLID AASHTO H-20
15" (375 mm)	2815AG	STANDARD AASHTO H-20	SOLID AASHTO H-20
18" (450 mm)	2818AG	STANDARD AASHTO H-20	SOLID AASHTO H-20
24" (600 mm)	2824AG	STANDARD AASHTO H-20	SOLID AASHTO H-20
30" (750 mm)	2830AG	STANDARD AASHTO H-20	SOLID AASHTO H-20

YARD DRAIN DETAIL

N.T.S.

SC-310 TECHNICAL SPECIFICATION

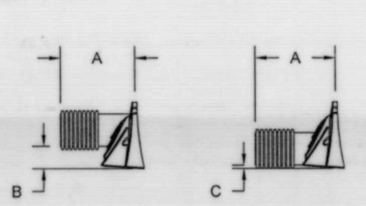
NTS



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	34.0" X 16.0" X 85.4"	(864 mm X 406 mm X 2169 mm)
CHAMBER STORAGE	14.7 CUBIC FEET	(0.42 m³)
MINIMUM INSTALLED STORAGE*	31.0 CUBIC FEET	(0.88 m³)
WEIGHT	35.0 lbs.	(16.8 kg)

*ASSUMES 6" (152 mm) ABOVE, BELOW, AND BETWEEN CHAMBERS



PRE-FAB STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
PRE-FAB STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
PRE CORED END CAPS END WITH "PC"

PART #	STUB	A	B	C
SC310EPE06T / SC310EPE06TPC	6" (150 mm)	9.6" (244 mm)	5.8" (147 mm)	---
SC310EPE06B / SC310EPE06BPC			---	0.5" (13 mm)
SC310EPE08T / SC310EPE08TPC	8" (200 mm)	11.9" (302 mm)	3.5" (89 mm)	---
SC310EPE08B / SC310EPE08BPC			---	0.6" (15 mm)
SC310EPE10T / SC310EPE10TPC	10" (250 mm)	12.7" (323 mm)	1.4" (36 mm)	---
SC310EPE10B / SC310EPE10BPC			---	0.7" (18 mm)
SC310EPE12B	12" (300 mm)	13.5" (343 mm)	---	0.9" (23 mm)

ALL STUBS, EXCEPT FOR THE SC310EPE12B ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

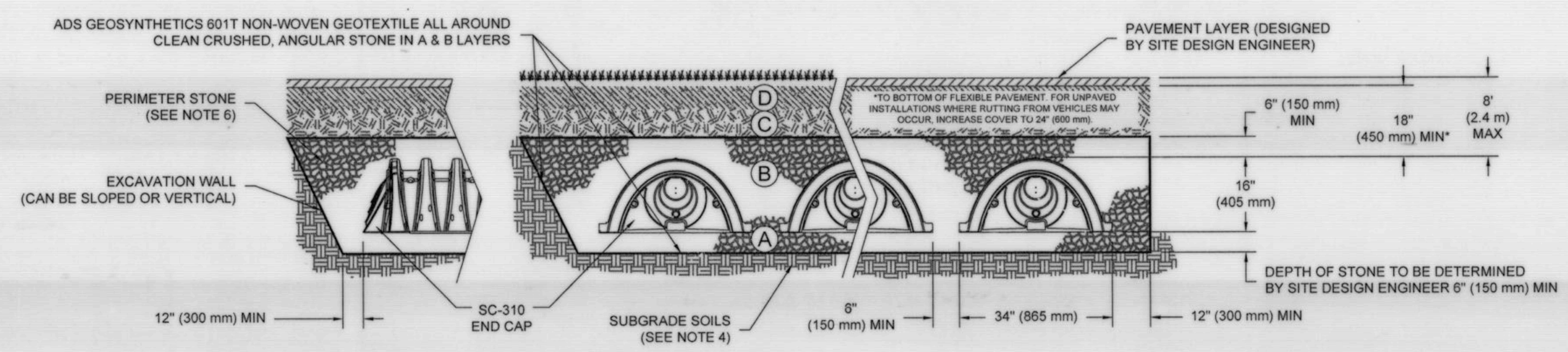
* FOR THE SC310EPE12B THE 12" (300 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 0.25" (6 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

NOTE: ALL DIMENSIONS ARE NOMINAL

ACCEPTABLE FILL MATERIALS: STORMTECH SC-310 CHAMBER SYSTEMS

MATERIAL LOCATION		DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. [2,3]

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

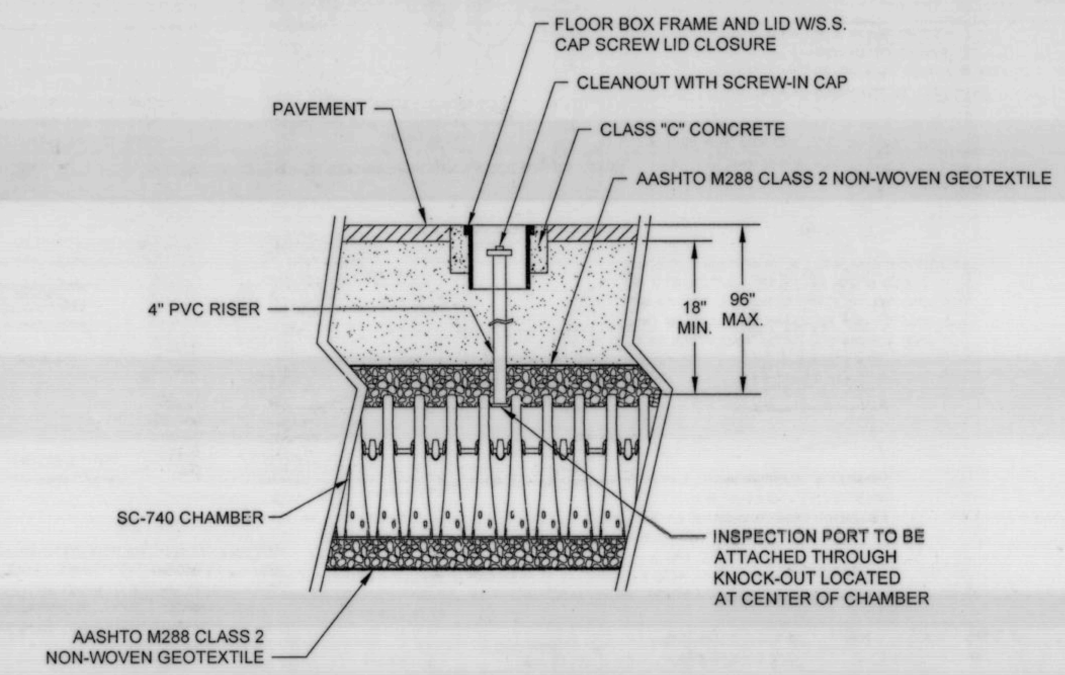


NOTES:

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

STORMTECH SC-310 DETAILS

N.T.S



STORMTECH SC-310 / SC-740 CHAMBER SYSTEM
INSPECTION PORT DETAIL
NOT TO SCALE

STORMTECH INSPECTION PORT DETAIL

N.T.S.

TOWN OF MAYNARD PLANNING BOARD APPROVAL

SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE

Approved plans - see cover sheet for Planning Board signatures.

BOHLER ENGINEERING
SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
SUSTAINABLE DESIGN

REVISIONS

REV	DATE	COMMENT	BY
1	03/21/17	REMOVE CARRIAGE BLDG. (SHEETS 8-12 ONLY)	CFD
2	06/02/17	REV. PER TOWN COMMENTS	CFD
3	06/15/17	DRAINAGE REVISIONS (SHEETS 13-16 ONLY)	GJZ
4	06/28/17	DRAINAGE REVISIONS (FULL SET)	AWP
5	07/26/17	REV. PER TOWN COMMENTS	AWP
6	08/10/17	PEER REVIEW COMMENTS	CFD
7	09/18/17	CONSTRUCTION DOCUMENTS	AWP
8			
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14			
15			

APPROVED FOR CONSTRUCTION

PROJECT No.:	W161189
DRAWN BY:	AWP/CFD
CHECKED BY:	NEM/JAK
DATE:	02/15/2017
SCALE:	AS NOTED
CAD I.D.:	W161189SS7_DETAILS

PROJECT: SITE DEVELOPMENT PLANS FOR CAPITAL GROUP PROPERTIES

MAYNARD CROSSING

LOCATION OF SITE
MAP #25 & LOTS #152 & 152-1
129 PARKER STREET (ROUTE 27)
TOWN OF MAYNARD
MIDDLESEX COUNTY
MASSACHUSETTS

BOHLER ENGINEERING
352 TURNPIKE ROAD
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900
Fax: (508) 480-9080
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J.A. KUCICH
PROFESSIONAL ENGINEER
JOHN A. KUCICH CIVIL No. 41530

SHEET TITLE: CONSTRUCTION DETAIL SHEET

SHEET NUMBER: 31 OF 35

REV 7 - 09/18/2017

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PROPOSED LAYOUT - BASIN 1

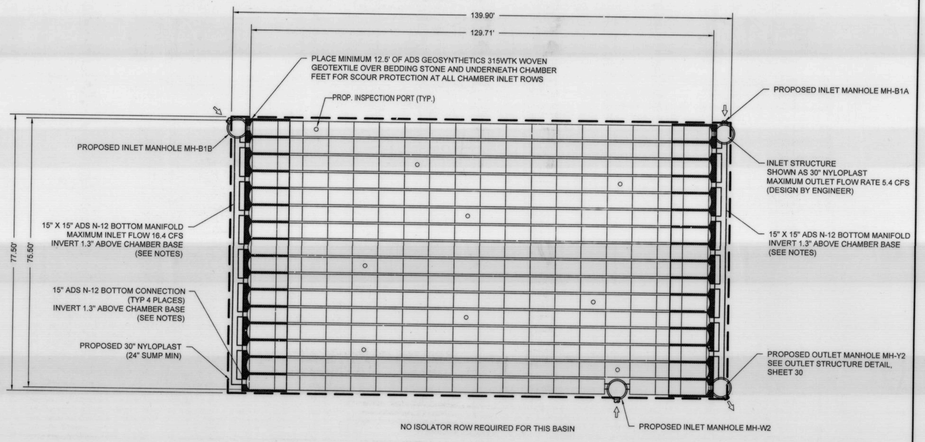
(267) STORMTECH SC-740 CHAMBERS
(34) STORMTECH SC-740 END CAPS
INSTALLED WITH 6" COVER STONE, 6" BASE STONE, 40% STONE VOID
AREA OF SYSTEM: 10,842 FT²
PERIMETER OF SYSTEM: 434 FT

PROPOSED ELEVATIONS - BASIN 1

MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	209.00
MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	203.00
MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	202.50
MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	202.50
MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):	202.50
TOP OF STONE:	201.50
TOP OF CHAMBER:	201.00
15" X 15" BOTTOM MANIFOLD INVERT:	198.61
15" BOTTOM CONNECTION INVERT:	198.61
BOTTOM OF CHAMBER:	198.50
BOTTOM OF STONE:	198.00

NOTES

- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- THIS PLAN REFLECTS THE CHAMBER SYSTEM DESIGN BY THE SITE DESIGN ENGINEER USING STORMTECH COMPONENTS. THE SUITABILITY OF THE CHAMBER SYSTEM TO MEET ANY FUNCTIONAL REQUIREMENTS ARE THE RESPONSIBILITY OF THE SITE DESIGN ENGINEER. STORMTECH'S SCOPE OF WORK IS LIMITED TO THE ASSEMBLED PRODUCT DIMENSIONS AND SPECIFICATIONS FOR INSTALLATION.



INFILTRATION BASIN #1

N.T.S.

PROPOSED LAYOUT - BASIN 2

(70) STORMTECH SC-740 CHAMBERS
(14) STORMTECH SC-740 END CAPS
INSTALLED WITH 6" COVER STONE, 6" BASE STONE, 40% STONE VOID
AREA OF SYSTEM: 2,383 FT²
PERIMETER OF SYSTEM: 211 FT

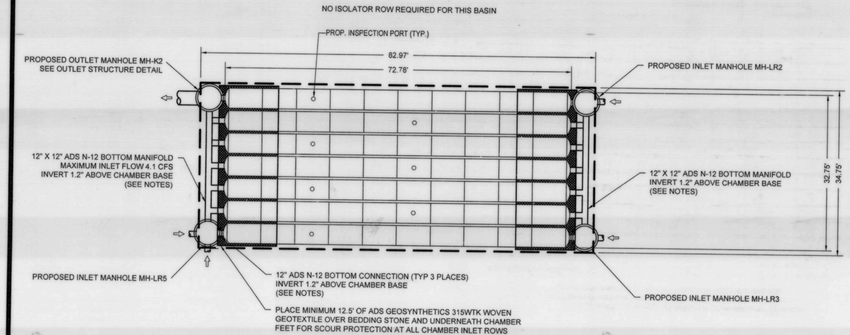
PROPOSED ELEVATIONS - BASIN 2

MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	205.00
MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	199.00
MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	198.50
MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	198.50
MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):	198.50
TOP OF STONE:	197.50
TOP OF CHAMBER:	197.00
12" BOTTOM MANIFOLD INVERT:	194.60
BOTTOM OF CHAMBER:	194.50
BOTTOM OF STONE:	194.00

NOTES

- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- THE SITE DESIGN ENGINEER MUST REVIEW THE PROXIMITY OF THE CHAMBERS TO THE BUILDING/STRUCTURE. NO FOUNDATION LOADS SHALL BE TRANSMITTED TO THE CHAMBERS. THE SITE DESIGN ENGINEER MUST CONSIDER EFFECTS OF POSSIBLE SATURATED SOILS ON BEARING CAPACITY OF SOILS AND SEEPAGE INTO BASEMENTS.
- THIS PLAN REFLECTS THE CHAMBER SYSTEM DESIGN BY THE SITE DESIGN ENGINEER USING STORMTECH COMPONENTS. THE SUITABILITY OF THE CHAMBER SYSTEM TO MEET ANY FUNCTIONAL REQUIREMENTS ARE THE RESPONSIBILITY OF THE SITE DESIGN ENGINEER. STORMTECH'S SCOPE OF WORK IS LIMITED TO THE ASSEMBLED PRODUCT DIMENSIONS AND SPECIFICATIONS FOR INSTALLATION.

NOTE:
BASIN #2 IS NOT PART OF CURRENT CONTRACT WITH CAPITAL GROUP AND IS PROVIDED FOR INFORMATION ONLY



INFILTRATION BASIN #2

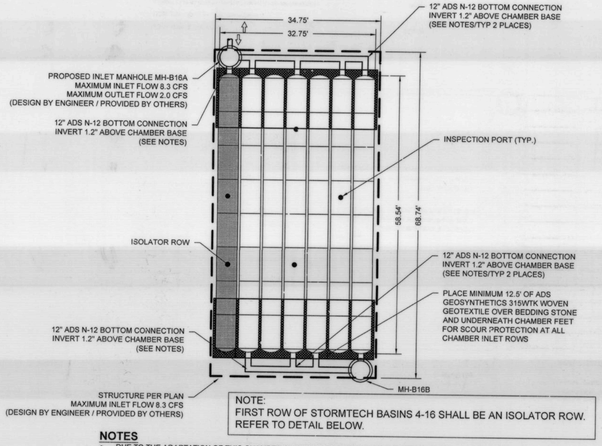
N.T.S.

PROPOSED LAYOUT - BASIN #16

42	STORMTECH SC-740 CHAMBERS
12	STORMTECH SC-740 END CAPS
6	STONE ABOVE (in)
6	STONE BELOW (in)
40	% STONE VOID
3,745	INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED)
1,848	SYSTEM AREA (ft²)
183	SYSTEM PERIMETER (ft)

PROPOSED ELEVATIONS - BASIN #16

MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	206.00
MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	200.00
MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	199.50
MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	199.50
MINIMUM ALLOWABLE GRADE (TOP OF RIGID PAVEMENT):	199.50
TOP OF STONE:	198.50
TOP OF SC-740 CHAMBER:	198.00
12" BOTTOM MANIFOLD INVERT:	195.60
BOTTOM OF SC-740 CHAMBER:	195.50
BOTTOM OF STONE:	195.00



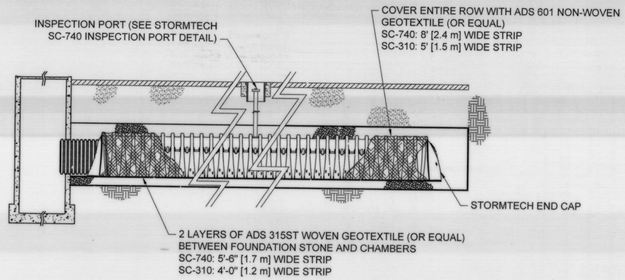
NOTE:
FIRST ROW OF STORMTECH BASINS 4-16 SHALL BE AN ISOLATOR ROW. REFER TO DETAIL BELOW.

NOTES

- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.

INFILTRATION BASIN #16

N.T.S.



NOTE:
FIRST ROW OF STORMTECH BASINS 4-16 SHALL BE AN ISOLATOR ROW

STORMTECH ISOLATOR ROW DETAIL

N.T.S.

STORMWATER CHAMBER SPECIFICATIONS

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

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

1. STORMTECH SC-310 & SC-740 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH SC-310 & SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/SC-780 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONESHOOTER LOCATED OFF THE CHAMBER BED.
   - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
   - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE 3/4-2" (20-50 mm).
8. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
9. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

1. STORMTECH SC-310 & SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
2. THE USE OF CONSTRUCTION EQUIPMENT OVER SC-310 & SC-740 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

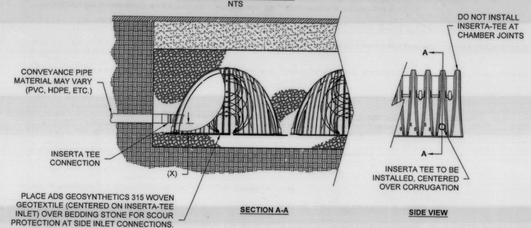
CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

STORMTECH NOTES

N.T.S.

INSERTA TEE DETAIL

NTS



CHAMBER	MAX DIAMETER OF INSERTA TEE	HEIGHT FROM BASE OF CHAMBER (X)
SC-310	6" (150 mm)	4" (100 mm)
SC-740	10" (250 mm)	4" (100 mm)
DC-780	10" (250 mm)	4" (100 mm)
MC-3500	12" (300 mm)	6" (150 nnn)
MC-4500	12" (300 mm)	8" (200 mm)
INSERTA TEE FITTINGS AVAILABLE FOR SDR 26, SDR 35, SCH 40 IPS GASKETED & SOLVENT WELD, N-12, HP STORM, C-900 OR DUCTILE IRON		

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

STORMTECH INSERT-A-TEE DETAIL

N.T.S.

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE _____ DATE _____
SIGNATURE _____ DATE _____
SIGNATURE Approved plans - see cover sheet for Planning Board signatures. DATE _____
SIGNATURE _____ DATE _____
SIGNATURE _____ DATE _____

BOHLER ENGINEERING
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REVISIONS

REV	DATE	COMMENT	BY
1	03/21/17	REMOVE CARRIAGE BLDG. (SHEETS 8-12 ONLY)	CFD
2	06/02/17	REV. PER TOWN COMMENTS	CFD
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8			
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APPROVED FOR CONSTRUCTION

PROJECT No.:	W161189
DRAWN BY:	AWP/CFD
CHECKED BY:	NEM/JAK
DATE:	02/15/2017
SCALE:	AS NOTED
CAD I.D.:	W161189SS7_DETAILS

PROJECT:
SITE DEVELOPMENT PLANS
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MAYNARD CROSSING
LOCATION OF SITE
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129 PARKER STREET (ROUTE 27)
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JOHN A. KUCICH
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PROFESSIONAL ENGINEER
MASS. REG. NO. 45530
CONNECTICUT LICENSED PROFESSIONAL ENGINEER
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MAINE LICENSED PROFESSIONAL ENGINEER

SHEET TITLE:
CONSTRUCTION DETAIL SHEET

SHEET NUMBER:
32
OF 35

REV 7 - 09/18/2017

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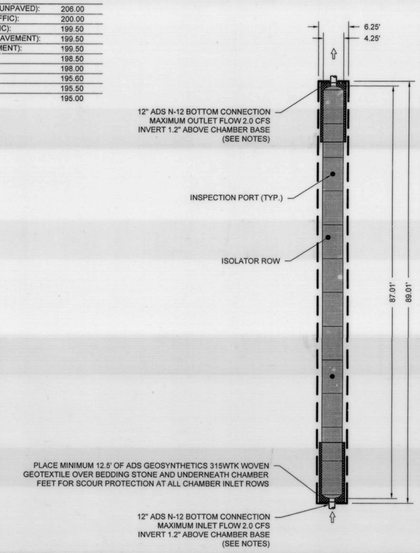
PROPOSED LAYOUT - BASIN #12

12	STORMTECH SC-740 CHAMBERS
2	STORMTECH SC-740 END CAPS
6	STONE ABOVE (in)
6	STONE BELOW (in)
40	% STONE VOID
1,109	**INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED)**
556	SYSTEM AREA (ft²)
190	SYSTEM PERIMETER (ft)

PROPOSED ELEVATIONS - BASIN #12

MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	206.00
MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	200.00
MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	199.50
MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	199.50
MINIMUM ALLOWABLE GRADE (TOP OF RIGID PAVEMENT):	199.50
TOP OF STONE:	198.50
TOP OF SC-740 CHAMBER:	198.00
12" BOTTOM CONNECTION INVERT:	195.60
BOTTOM OF SC-740 CHAMBER:	195.50
BOTTOM OF STONE:	195.00

NOTES
- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH SHEET #7 FOR MANIFOLD SIZING GUIDANCE.
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.



INFILTRATION BASIN #12 — N.T.S.

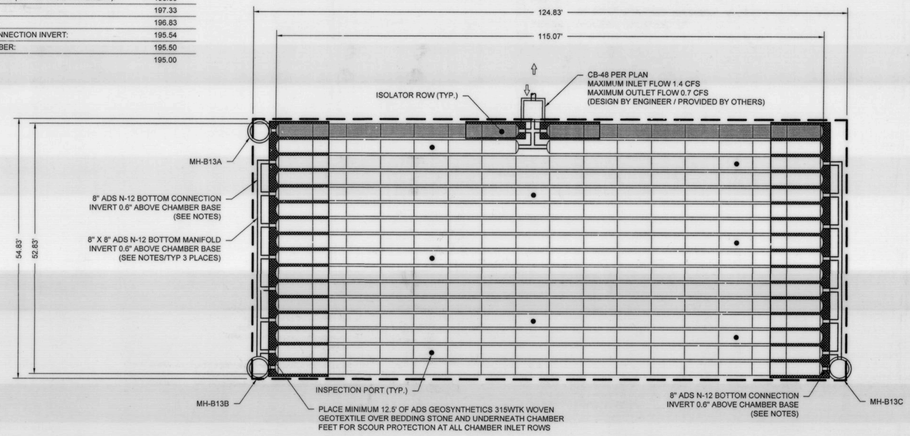
PROPOSED LAYOUT - BASIN #13

255	STORMTECH SC-310 CHAMBERS
34	STORMTECH SC-310 END CAPS
6	STONE ABOVE (in)
6	STONE BELOW (in)
40	% STONE VOID
8,646	**INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED)**
6,844	SYSTEM AREA (ft²)
359	SYSTEM PERIMETER (ft)

PROPOSED ELEVATIONS - BASIN #13

MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	204.83
MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	198.83
MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	198.33
MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	198.33
MINIMUM ALLOWABLE GRADE (TOP OF RIGID PAVEMENT):	198.33
TOP OF STONE:	197.33
TOP OF SC-310 CHAMBER:	196.83
8" BOTTOM MANIFOLD/CONNECTION INVERT:	195.54
BOTTOM OF SC-310 CHAMBER:	195.50
BOTTOM OF STONE:	195.00

NOTES
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.



INFILTRATION BASIN #13 — N.T.S.

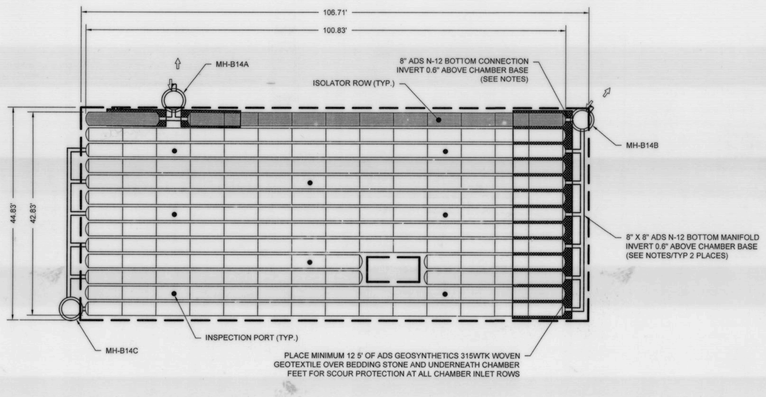
PROPOSED LAYOUT - BASIN #14

177	STORMTECH SC-310 CHAMBERS
32	STORMTECH SC-310 END CAPS
6	STONE ABOVE (in)
6	STONE BELOW (in)
40	% STONE VOID
5,979	**INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED)**
4,727	SYSTEM AREA (ft²)
303	SYSTEM PERIMETER (ft)

PROPOSED ELEVATIONS - BASIN #14

MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	204.83
MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	198.83
MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	198.33
MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	198.33
MINIMUM ALLOWABLE GRADE (TOP OF RIGID PAVEMENT):	198.33
TOP OF STONE:	197.33
TOP OF SC-310 CHAMBER:	196.83
8" BOTTOM MANIFOLD INVERT:	195.54
BOTTOM OF SC-310 CHAMBER:	195.50
BOTTOM OF STONE:	195.00

NOTES
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.



INFILTRATION BASIN #14 — N.T.S.

PROPOSED LAYOUT - BASIN #15

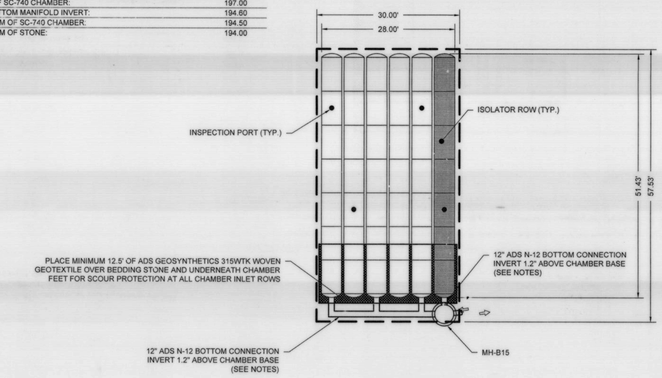
42	STORMTECH SC-740 CHAMBERS
12	STORMTECH SC-740 END CAPS
6	STONE ABOVE (in)
6	STONE BELOW (in)
40	% STONE VOID
3,573	**INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED)**
1,725	SYSTEM AREA (ft²)
175	SYSTEM PERIMETER (ft)

PROPOSED ELEVATIONS - BASIN #15

MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	205.00
MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	199.00
MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	198.50
MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	198.50
MINIMUM ALLOWABLE GRADE (TOP OF RIGID PAVEMENT):	198.50
TOP OF STONE:	197.50
TOP OF SC-740 CHAMBER:	197.00
12" BOTTOM MANIFOLD INVERT:	194.60
BOTTOM OF SC-740 CHAMBER:	194.50
BOTTOM OF STONE:	194.00

NOTES
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.

NOTE:
FIRST ROW OF STORMTECH BASINS 4-16 SHALL BE AN ISOLATOR ROW.
REFER TO DETAIL ON SHEET 37



INFILTRATION BASIN #15 — N.T.S.

TOWN OF MAYNARD PLANNING BOARD APPROVAL

SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE

Approved plans - see cover sheet for Planning Board signatures.

BOHLER ENGINEERING
SITE/CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
SUSTAINABLE DESIGN
PERMITTING SERVICES
LANDSCAPE ARCHITECTURE
TRANSPORTATION SERVICES
◆ WESTBOROUGH, MA
◆ NEW ENGLAND
◆ BOSTON, MA
◆ PROVIDENCE, RI/TRI
◆ NEW YORK, NY
◆ WESTCHESTER, NY
◆ PHILADELPHIA, PA
◆ SOUTHEASTERN, PA
◆ REHOBOTH BEACH, DE
◆ WASHINGTON, DC
◆ SOUTHERN MARYLAND
◆ RICHMOND, VA
◆ CENTRAL VIRGINIA
◆ CHARLOTTE, NC
◆ ATLANTA, GA
◆ TAMPA, FL
◆ SOUTH FLORIDA
◆ DALLAS, TX

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REVISIONS

REV	DATE	COMMENT	BY
1	03/21/17	REMOVE CARRIAGE BLDG (SHEETS 8-12 ONLY)	CFD
2	06/02/17	REV. PER TOWN COMMENTS	CFD
3	06/15/17	DRAINAGE REVISIONS (SHEETS 13-16 ONLY)	GJZ
4	06/28/17	DRAINAGE REVISIONS (FULL SET)	AWP
5	07/26/17	REV. PER TOWN COMMENTS	AWP
6	08/10/17	PEER REVIEW COMMENTS	CFD
7	09/18/17	CONSTRUCTION DOCUMENTS	AWP
8			
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10			
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14			
15			

APPROVED FOR CONSTRUCTION

PROJECT No.:	W161189
DRAWN BY:	AWP/CFD
CHECKED BY:	NEM/JAK
DATE:	02/15/2017
SCALE:	AS NOTED
CAD I.D.:	W161189SS7_DETAILS

PROJECT:
SITE DEVELOPMENT PLANS
FOR
CAPITAL GROUP PROPERTIES
MAYNARD CROSSING

LOCATION OF SITE
MAP #25 & LOTS #152 & 152-1
129 PARKER STREET (ROUTE 27)
TOWN OF MAYNARD
MIDDLESEX COUNTY
MASSACHUSETTS

BOHLER ENGINEERING
352 TURNPIKE ROAD
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900
Fax: (508) 480-9080
www.BohlerEngineering.com

J.A. JAKUBICH — JOHN A. JAKUBICH — No. 41530 — REGISTERED PROFESSIONAL ENGINEER

SHEET TITLE:
CONSTRUCTION DETAIL SHEET

SHEET NUMBER:
33
OF 35

REV 7 - 09/18/2017

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PROPOSED LAYOUT - BASIN #4

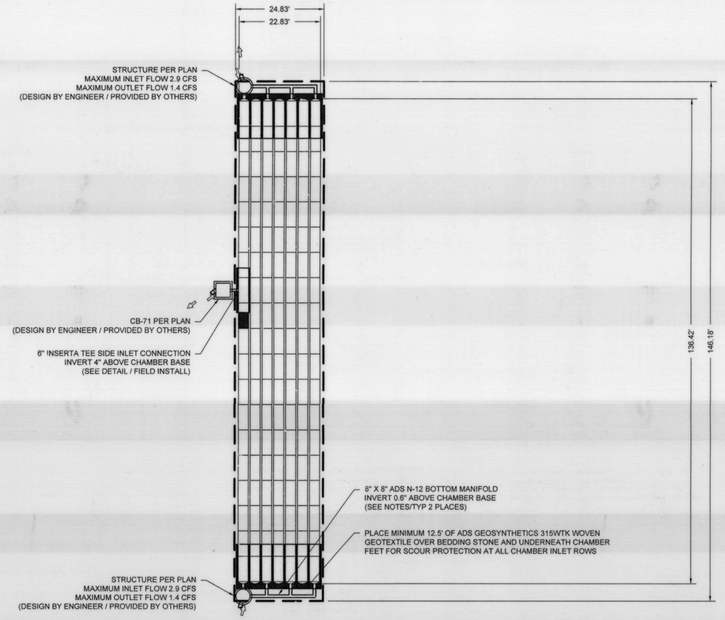
133	STORMTECH SC-310 CHAMBERS
14	STORMTECH SC-310 END CAPS
6	STONE ABOVE (in)
6	STONE BELOW (in)
40	% STONE VOID
4,566	**INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED)**
3,630	SYSTEM AREA (ft²)
342	SYSTEM PERIMETER (ft)

PROPOSED ELEVATIONS - BASIN #4

MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	203.83
MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	197.83
MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	197.33
MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	197.33
MINIMUM ALLOWABLE GRADE (TOP OF RIGID PAVEMENT):	197.33
TOP OF STONE:	196.33
TOP OF SC-310 CHAMBER:	195.83
INSERTA TEE SIDE INLET CONNECTION INVERT:	194.83
8" BOTTOM MANIFOLD INVERT:	194.54
BOTTOM OF SC-310 CHAMBER:	194.50
BOTTOM OF STONE:	194.00

NOTES

- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH SHEET #7 FOR MANIFOLD SIZING GUIDANCE.
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- THE SITE DESIGN ENGINEER MUST REVIEW THE PROXIMITY OF THE CHAMBERS TO THE BUILDING/STRUCTURE. NO FOUNDATION LOADS SHALL BE TRANSMITTED TO THE CHAMBERS. THE SITE DESIGN ENGINEER MUST CONSIDER EFFECTS OF POSSIBLE SATURATED SOILS ON BEARING CAPACITY OF SOILS AND SEEPAGE INTO BASEMENTS.



BASIN #4 — N.T.S.

PROPOSED LAYOUT - BASIN #5

8	STORMTECH SC-310 CHAMBERS
4	STORMTECH SC-310 END CAPS
6	STONE ABOVE (in)
6	STONE BELOW (in)
40	% STONE VOID
323	**INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED)**
270	SYSTEM AREA (ft²)
82	SYSTEM PERIMETER (ft)

PROPOSED ELEVATIONS - BASIN #5

MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	202.83
MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	196.83
MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	196.33
MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	196.33
MINIMUM ALLOWABLE GRADE (TOP OF RIGID PAVEMENT):	196.33
TOP OF STONE:	195.33
TOP OF SC-310 CHAMBER:	194.83
8" BOTTOM MANIFOLD INVERT:	193.54
BOTTOM OF SC-310 CHAMBER:	193.50
BOTTOM OF STONE:	193.00

NOTES

- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH SHEET #7 FOR MANIFOLD SIZING GUIDANCE.
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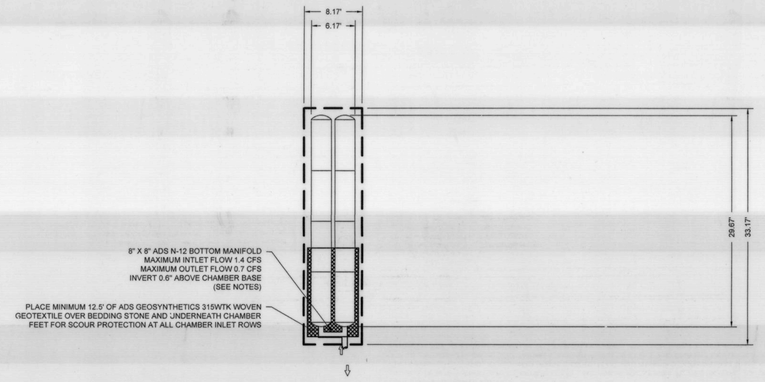
NOTE:
FIRST ROW OF STORMTECH BASINS 4-16 SHALL BE AN ISOLATOR ROW.
REFER TO DETAIL ON SHEET 37



BASIN #5 — N.T.S.

PROPOSED LAYOUT - BASIN #6

37	STORMTECH SC-310 CHAMBERS
4	STORMTECH SC-310 END CAPS
6	STONE ABOVE (in)
6	STONE BELOW (in)
40	% STONE VOID
1,412	**INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED)**
1,162	SYSTEM AREA (ft²)
300	SYSTEM PERIMETER (ft)

PROPOSED ELEVATIONS - BASIN #6

MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	203.83
MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	197.83
MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	197.33
MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	197.33
MINIMUM ALLOWABLE GRADE (TOP OF RIGID PAVEMENT):	197.33
TOP OF STONE:	196.33
TOP OF SC-310 CHAMBER:	195.83
INSERTA TEE SIDE INLET CONNECTION INVERT:	194.83
8" BOTTOM MANIFOLD INVERT:	194.54
BOTTOM OF SC-310 CHAMBER:	194.50
BOTTOM OF STONE:	194.00

NOTES

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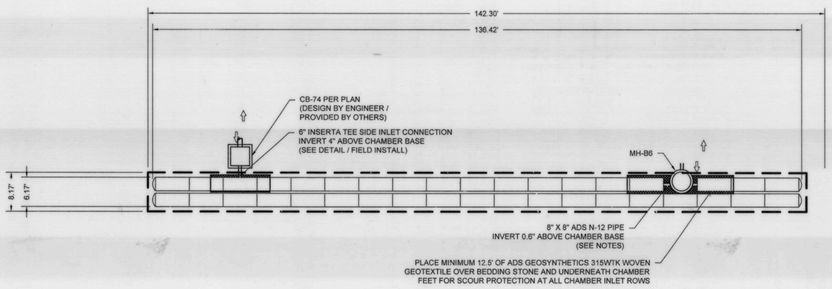

BASIN #6 — N.T.S.

PROPOSED LAYOUT - BASIN #7

48	STORMTECH SC-310 CHAMBERS
6	STORMTECH SC-310 END CAPS
6	STONE ABOVE (in)
6	STONE BELOW (in)
40	% STONE VOID
1,722	**INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED)**
1,390	SYSTEM AREA (ft²)
264	SYSTEM PERIMETER (ft)

PROPOSED ELEVATIONS - BASIN #7

MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	203.83
MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	197.83
MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	197.33
MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	197.33
MINIMUM ALLOWABLE GRADE (TOP OF RIGID PAVEMENT):	197.33
TOP OF STONE:	196.33
TOP OF SC-310 CHAMBER:	195.83
8" BOTTOM MANIFOLD INVERT:	194.54
BOTTOM OF SC-310 CHAMBER:	194.50
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NOTES

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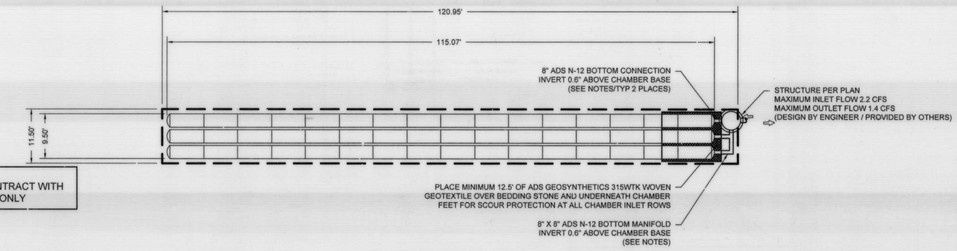

BASIN #7 — N.T.S.

TOWN OF MAYNARD PLANNING BOARD APPROVAL

SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE

Approved plans - see cover sheet for Planning Board signatures.

BOHLER ENGINEERING
SITE/CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
SUSTAINABLE DESIGN
PROGRAM MANAGEMENT
PERMITTING SERVICES
LANDSCAPE ARCHITECTURE
TRANSPORTATION SERVICES
NEW ENGLAND: BOSTON, MA; WORCESTER, MA; PROVIDENCE, RI; SOUTHEASTERN, PA; RENO, NV; NEW YORK, NY; PHILADELPHIA, PA; SOUTHERN MARYLAND; CENTRAL VIRGINIA; CHARLOTTE, NC; ATLANTA, GA; TAMPA, FL; SOUTH FLORIDA; DALLAS, TX

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REVISIONS

REV	DATE	COMMENT	BY
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5	07/26/17	REV. PER TOWN COMMENTS	AWP
6	08/10/17	PEER REVIEW COMMENTS	CFD
7	09/10/17	CONSTRUCTION DOCUMENTS	AWP
8			
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APPROVED FOR CONSTRUCTION

PROJECT No.:	W161189
DRAWN BY:	AWP/CFD
CHECKED BY:	NEM/JAK
DATE:	02/15/2017
SCALE:	AS NOTED
CAD I.D.:	W161189SS7_DETAILS

PROJECT:

SITE DEVELOPMENT PLANS

FOR

CAPITAL GROUP PROPERTIES

MAYNARD CROSSING

LOCATION OF SITE

MAP #25 & LOTS #152 & 152-1
129 PARKER STREET (ROUTE 27)
TOWN OF MAYNARD
MIDDLESEX COUNTY
MASSACHUSETTS

BOHLER ENGINEERING
352 TURNPIKE ROAD
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900
Fax: (508) 480-9080
www.BohlerEngineering.com

J.A. KUCICH — JOHN A. KUCICH, CDT — PROFESSIONAL ENGINEER — No. 41530

SHEET TITLE:

CONSTRUCTION DETAIL SHEET

SHEET NUMBER: 34 OF 35

REV 7 - 09/18/2017

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PROPOSED LAYOUT - BASIN #8

44	STORMTECH SC-310 CHAMBERS
8	STORMTECH SC-310 END CAPS
6	STONE ABOVE (in)
6	STONE BELOW (in)
40	% STONE VOID
1,543	**INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED)**
1,236	SYSTEM AREA (ft²)
196	SYSTEM PERIMETER (ft)

PROPOSED ELEVATIONS - BASIN #8

MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	202.83
MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	196.83
MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	196.33
MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	196.33
MINIMUM ALLOWABLE GRADE (TOP OF RIGID PAVEMENT):	196.33
TOP OF STONE:	195.33
TOP OF SC-310 CHAMBER:	194.83
8" BOTTOM MANIFOLD INVERT:	193.54
BOTTOM OF SC-310 CHAMBER:	193.50
BOTTOM OF STONE:	193.00

NOTES
- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH SHEET #7 FOR MANIFOLD SIZING GUIDANCE.
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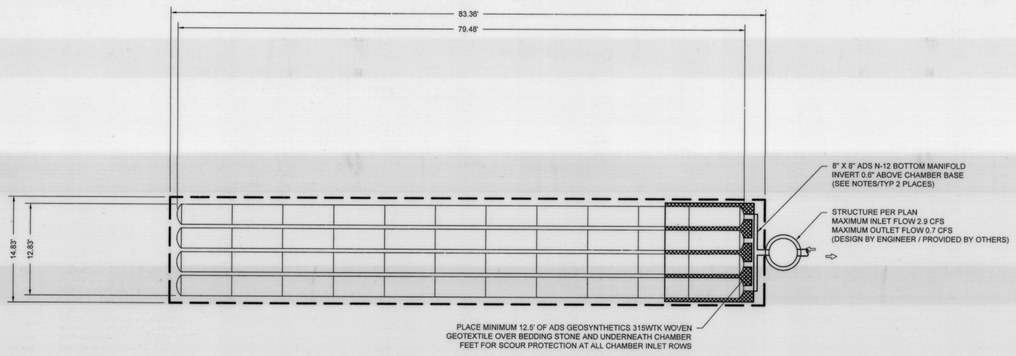

BASIN #8 — N.T.S.

PROPOSED LAYOUT - BASIN #9

29	STORMTECH SC-310 CHAMBERS
6	STORMTECH SC-310 'END CAPS
6	STONE ABOVE (in)
6	STONE BELOW (in)
40	% STONE VOID
1,094	**INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED)**
897	SYSTEM AREA (ft²)
236	SYSTEM PERIMETER (ft)

PROPOSED ELEVATIONS - BASIN #9

MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	203.83
MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	197.83
MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	197.33
MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	197.33
MINIMUM ALLOWABLE GRADE (TOP OF RIGID PAVEMENT):	197.33
TOP OF STONE:	196.33
TOP OF SC-310 CHAMBER:	195.83
8" BOTTOM MANIFOLD INVERT:	194.54
BOTTOM OF SC-310 CHAMBER:	194.50
BOTTOM OF STONE:	194.00

NOTES
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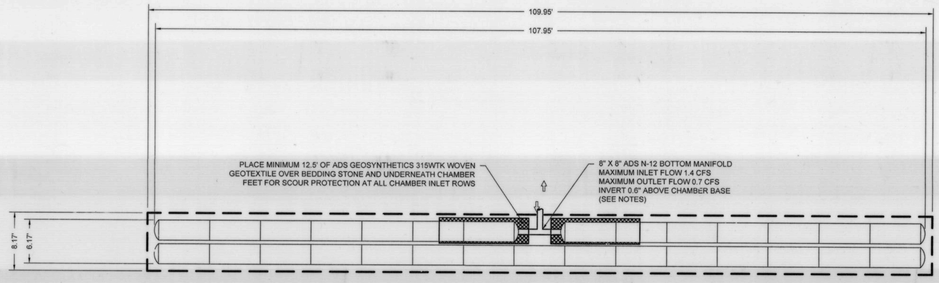
NOTE:
FIRST ROW OF STORMTECH BASINS 4-16 SHALL BE AN ISOLATOR ROW.
REFER TO DETAIL ON SHEET 37



BASIN #9 — N.T.S.

PROPOSED LAYOUT - BASIN #10

26	STORMTECH SC-310 CHAMBERS
8	STORMTECH SC-310 END CAPS
6	STONE ABOVE (in)
6	STONE BELOW (in)
40	% STONE VOID
952	**INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED)**
773	SYSTEM AREA (ft²)
157	SYSTEM PERIMETER (ft)

PROPOSED ELEVATIONS - BASIN #10

MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	203.83
MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	197.83
MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	197.33
MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	197.33
MINIMUM ALLOWABLE GRADE (TOP OF RIGID PAVEMENT):	197.33
TOP OF STONE:	196.33
TOP OF SC-310 CHAMBER:	195.83
8" BOTTOM MANIFOLD INVERT:	194.54
BOTTOM OF SC-310 CHAMBER:	194.50
BOTTOM OF STONE:	194.00

NOTES
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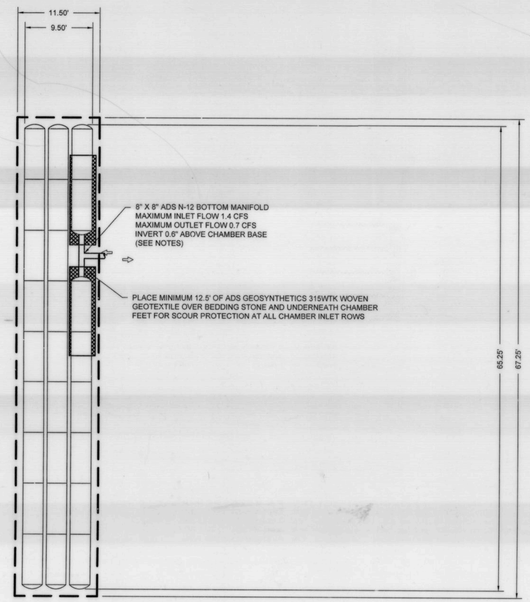

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BASIN #10 — N.T.S.

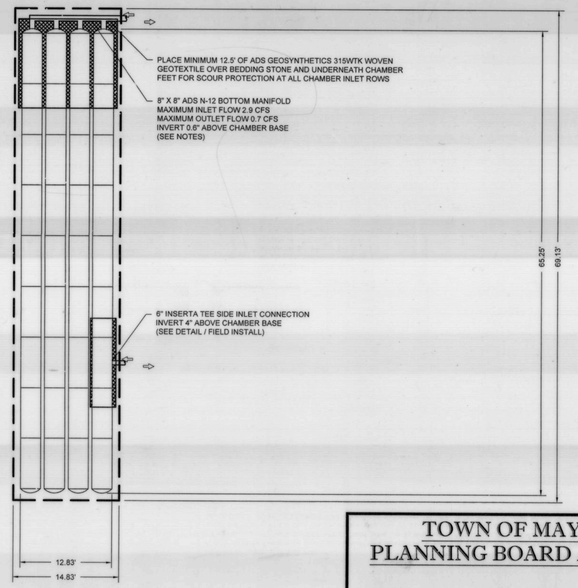
PROPOSED LAYOUT - BASIN #11

36	STORMTECH SC-310 CHAMBERS
8	STORMTECH SC-310 END CAPS
6	STONE ABOVE (in)
6	STONE BELOW (in)
40	% STONE VOID
1,275	**INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED)**
1,025	SYSTEM AREA (ft²)
167	SYSTEM PERIMETER (ft)

PROPOSED ELEVATIONS - BASIN #11

MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	203.83
MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	197.83
MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	197.33
MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	197.33
MINIMUM ALLOWABLE GRADE (TOP OF RIGID PAVEMENT):	197.33
TOP OF STONE:	196.33
TOP OF SC-310 CHAMBER:	195.83
INSERTA TEE SIDE INLET CONNECTION INVERT:	194.83
8" BOTTOM MANIFOLD INVERT:	194.54
BOTTOM OF SC-310 CHAMBER:	194.50
BOTTOM OF STONE:	194.00

NOTES
- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH SHEET #7 FOR MANIFOLD SIZING GUIDANCE.
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.



BASIN #11 — N.T.S.

TOWN OF MAYNARD PLANNING BOARD APPROVAL

SIGNATURE ____ DATE ____

SIGNATURE ____ DATE ____

SIGNATURE Approved plans - see cover sheet for Planning Board signatures. DATE ____

SIGNATURE ____ DATE ____

SIGNATURE ____ DATE ____

BOHLER ENGINEERING
SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
SUSTAINABLE DESIGN
PROGRAM MANAGEMENT
PERMITTING SERVICES
LANDSCAPE ARCHITECTURE
TRANSPORTATION SERVICES
NEW YORK
NEW ENGLAND
BOSTON, MA
PROVIDENCE, RI
NEW YORK, NY
NEW JERSEY
EASTON, PA
EXTON/MALVERN, PA
PHILADELPHIA, PA
ALLENTOWN, PA
HARRISBURG, PA
POCONO, PA
ROCHESTER, NY
CHARLOTTE, NC
RALEIGH, NC
ATLANTA, GA
TAMPA, FL
SOUTH FLORIDA
DALLAS, TX
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REVISIONS

REV	DATE	COMMENT	BY
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2	06/02/17	REV. PER TOWN COMMENTS	CFD
3	06/15/17	DRAINAGE REVISIONS (SHEETS 13-16 ONLY)	GJZ
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7	09/18/17	CONSTRUCTION DOCUMENTS	AWP
8			
9			
10			
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13			
14			
15			

APPROVED FOR CONSTRUCTION

PROJECT No.: W161189
DRAWN BY: AWP/CFD
CHECKED BY: NEM/JAK
DATE: 02/15/2017
SCALE: AS NOTED
CAD I.D.: W161189SS7_DETAILS

PROJECT:
SITE DEVELOPMENT PLANS
FOR
CAPITAL GROUP PROPERTIES
MAYNARD CROSSING

LOCATION OF SITE
MAP #25 & LOTS #152 & 152-1
129 PARKER STREET (ROUTE 27)
TOWN OF MAYNARD
MIDDLESEX COUNTY
MASSACHUSETTS

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J.A. KUCH
JOHN A. KUCH
CIVIL
No. 41530
REGISTERED PROFESSIONAL ENGINEER
MASSACHUSETTS, VERMONT, NEW HAMPSHIRE, MAINE
CONNECTICUT, NEW YORK, RHODE ISLAND

SHEET TITLE:
CONSTRUCTION DETAIL SHEET

SHEET NUMBER:
35
OF 35

REV 7 - 09/18/2017

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N E S W

300' RADIUS FROM PROPERTY LINE (TYP.)

300' RADIUS FROM PROPERTY LINE (TYP.)

300'

FIELD STREET

FIELD STREET

NORTH STREET

SOUTH STREET

B STREET

PARKER STREET

DIGITAL WAY

DETTLING ROAD

BRIGHAM STREET

VOSE HILL ROAD

US MILITARY RESERVATION

25-142 MCNULTY DEBORAH A- BARRY 19 FIELD STREET MAYNARD, MA 01754

25-141 ALPHEN CHRISTOPHER K JR & LISA 17 FIELD STREET MAYNARD, MA 01754

25-140 HENRICH DONNA F 15 FIELD STREET MAYNARD, MA 01754

25-139 GREENWAY GEORGE R. JR & THELMA 11 FIELD STREET MAYNARD, MA 01754

25-138 SARBAGALLO MARY T & EDWARD R 9 FIELD STREET MAYNARD, MA 01754

25-137 BIRD ROBERT J & REDCUBE MARY ELLEN 25 FIELD STREET MAYNARD, MA 01754

25-154 GARVER JOANNE L 23 FIELD STREET MAYNARD, MA 01754

25-136 FORD KATHERINE R 21 FIELD STREET MAYNARD, MA 01754

25-135 LAWTON PAUL J & COURTNEY 3 FIELD STREET MAYNARD, MA 01754

25-133 BARTH-ASSELEY & AGUIAR ZACHARY 113 PARKER STREET MAYNARD, MA 01754

25-134 WRIGHT GREGORY P & LAURIE J 118 PARKER STREET MAYNARD, MA 01754

25-124 CAMPBELL JOAN B & CAMPBELL JOANN & RINGAMAN KARE 112 PARKER STREET MAYNARD, MA 01754

25-122 NELSON GEOFFREY C & JESSICA S 3 NORTH STREET MAYNARD, MA 01754

25-123 KUTLOW MICHAEL 1 NORTH STREET MAYNARD, MA 01754

25-124 NOKE THEODORE J & MARCHAND KERRA-LYNN 4 NORTH STREET MAYNARD, MA 01754

25-125 CIFUENTES DARLENEE C 6 NORTH STREET MAYNARD, MA 01754

25-109 HENDERSON DERREK & ELIZABETH 4 SOUTH STREET MAYNARD, MA 01754

25-108 USHER KEVIN J & RITA E 8 SOUTH STREET MAYNARD, MA 01754

25-113 CATTANO ANDREW & ELIZABETH 2 NORTH STREET MAYNARD, MA 01754

25-112 ROBERT G. MOLLOY 110 PARKER STREET MAYNARD, MA 01754

25-110 KESSLER JENNIFER KESSLER KIMBERLY BRAGG 2 SOUTH STREET MAYNARD, MA 01754

25-111 SETH & PATRICIA FRIEDMAN 120 PARKER STREET MAYNARD, MA 01754

25-102 DUBE PETER & MARIANN 3 SOUTH STREET MAYNARD, MA 01754

25-101 YOUNG STEVEN M & AMY R 1 SOUTH STREET MAYNARD, MA 01754

25-100 ALAN & MELLISSA G. RINGUETTE 112 PARKER STREET MAYNARD, MA 01754

25-98 BOOTHROYD WILLIAM F & LINDA S 6 B STREET MAYNARD, MA 01754

25-99 RICHARD V. & BETTY JUNE MANION 6 SILVER HILL ROAD MAYNARD, MA 01754

25-103 UHL F. & KORNELIA BIENLICH 20 FIELD STREET MAYNARD, MA 01754

25-144 KOSTAS & EFTHIA ASZROGIANNIAS 18 FIELD STREET MAYNARD, MA 01754

25-145 LESLIE J. JR. & BARBARA LYNN WALKER 16 FIELD STREET MAYNARD, MA 01754

25-146 STEVE A. & JENNIFER L. GERSHMAN 14 FIELD STREET MAYNARD, MA 01754

25-147 ALLEN G. & JEAN M. LAPPAS 12 FIELD STREET MAYNARD, MA 01754

25-148 PETER D. & PATRICIA M. GENNINGMU 10 FIELD STREET MAYNARD, MA 01754

25-149 ROBERT A. & AMANDA R. MORRIS 8 FIELD STREET MAYNARD, MA 01754

25-150 JOHN J. & VIVIAN L. KULIK 6 FIELD STREET MAYNARD, MA 01754

25-164 PAUL J. & KAREN L. GRIMSY 4 FIELD STREET MAYNARD, MA 01754

25-163 PETER J. & MICHELLE M. BOOTH 2 FIELD STREET MAYNARD, MA 01754

25-151 MARIE-ANN GUNNERSO 119 PARKER STREET MAYNARD, MA 01754

29-3 TOWN OF MAYNARD SCHOOL COMMITTEE 3 TIGER DRIVE MAYNARD, MA 01754

24-11 TOWN OF MAYNARD DEPARTMENT 195 MAIN STREET MAYNARD, MA 01754

24-13 TOWN OF MAYNARD SCHOOL COMMITTEE 3 TIGER STREET MAYNARD, MA 01754

29-1 TOWN OF MAYNARD 195 MAIN STREET MAYNARD MA 01754

29-1 TOWN OF MAYNARD 195 MAIN STREET MAYNARD, MA 01754

PROP. R2 BUILDING 51,537 SF

PROP. R3 BUILDING 55,922 SF

PROP. R4 BUILDING 13,751 SF

PROP. R1 BUILDING 61,802 SF

PROP. R5 BUILDING 10,015 FF

PROP. R6 BUILDING 1,343 SF

PROP. R7 BUILDING 5,987 SF

PROP. R8 BUILDING 4,111 SF

PROP. CONTINUING CARE RETIREMENT COMMUNITY 143 SUITES

PROP. APARTMENTS BLDG #1 54 UNITS

PROP. APARTMENTS BLDG #2 76 UNITS

PROP. OFFICE/ CLUBHOUSE

PROP. APARTMENTS BLDG #3 42 UNITS

PROP. R10 BUILDING 68,000 SF

PROP. R9 BUILDING 12,154 SF

29-43 ANDREW BAXTE 17 DETTLING ROAD MAYNARD, MA 01754

29-42 PETER P. JR. & STACEY A. PLAZONE 15 DETTLING ROAD MAYNARD, MA 01754

29-41 MICHAEL J. & JEANNINE A. HUGHES 13 DETTLING ROAD MAYNARD, MA 01754

29-40 JOHN A. BRENNAHAN & KRISTEN P. SAUNDERS 11 DETTLING ROAD MAYNARD, MA 01754

29-39 FANG & SU HUI LU 9 DETTLING ROAD MAYNARD, MA 01754

29-38 ROMEL BAVEGAS 7 DETTLING ROAD MAYNARD, MA 01754

29-37 CROSSLAND ADAM A & PATRICIA S 5 DETTLING ROAD MAYNARD, MA 01754

29-36 DANILKIN ALEKSEY 3 DETTLING ROAD MAYNAR MA 01754

29-35 BROWN ROBERT G & DAVIS HOPE K 1 DETTLING ROAD MAYNARD, MA 01754

29-4 SHELDON CHRISTOPHER & JESSICA 1 VOSE HILL RD MAYNARD, MA 01754

29-44 PAMELA GASEK BRAGG 16 DETTLING ROAD MAYNARD, MA 01754

29-45 BANK OF NEW YORK 1 WALL ST NEW YORK, NY 10286

29-46 LEES BRIAN E 16 CUTTING DR MAYNARD, MA 01754

29-68 YOUNG MICHAEL & OLGA 12 DETTLING RD MAYNARD, MA 01754

29-69 JALENAK WAYNE A & MARY L 13 CUTTING DR MAYNARD, MA 01754

29-67 UMBRELL STEPHEN J & KAREN M 10 DETTLING RD MAYNARD, MA 01754

29-66 STAVOLONE DANIEL P & LEWANDOWSKI SUZIE G 8 DETTLING RD MAYNARD, MA 01754

29-65 TRYBA PETER A & RACHEL A 6 DETTLING RD MAYNARD, MA 01754

29-47 SOUSA PROPERTIES LLC 12 BRIGHAM ST HUDSON, MA 01749

29-70 LUPERCHIO STEVEN A 18 CUTTING DR MAYNARD, MA 01754

29-71 GAVIN DAVID D & STEPHANIE W 9 CUTTING DR MAYNARD, MA 01754

29-72 DECASTRO MARC A & WANDA J 7 CUTTING DR MAYNARD, MA 01754

29-73 RAO DAVENDRA & PRERNAI 5 CUTTING DR MAYNARD, MA 01754

29-64 MADHWAPATHY SURESH 4 DETTLING RD MAYNARD, MA 01754

29-21 MAYNARD CHURCH OF THE NAZARENE 83 OLD MARLBORO RD MAYNARD, MA 01754

29-22 CAPONE CAROL J & ROBERT S 85 OLD MARLBORO RD MAYNARD, MA 01754

29-23 ZAMMUTO GREGORY & MEGAN 88 OLD MARLBORO RD MAYNARD, MA 01754

29-24 DOUGHTY SCOTT & ARLENE 140 PARKER STREET MAYNARD, MA 01754

29-2 141 PARKER STREET LLC 1 CLARK HILL SUITE 300 FRAMINGHAM, MA 01702

29-3 THE BOARDMAN REALTY TRUST c/o LESLIE & JAMES BOARDMAN 144 PARKER STREET MAYNARD, MA 01754

29-3A CONDON BRIAN & JENNIFER A 147 PARKER STREET MAYNARD, MA 01754

29-31 JOHN J. CAPARELLA, II & ELIZABETH DARRAH 126 PARKER STREET MAYNARD, MA 01754

29-30 KULIK STEPHEN J & FAY 1 B STREET MAYNARD, MA 01754

29-17A GANGLOFF C. RAYMOND & HEATHER A 3 B STREET MAYNARD, MA 01754

29-17 KILPATRICK RICHARD & JOANN 5 B STREET MAYNARD, MA 01754

29-29 FRITZ & JOSETTE VERNET 128 PARKER STREET MAYNARD, MA 01754

29-28 NGOUANG & LECK LIM 130 PARKER STREET MAYNARD, MA 01754

29-27 SCACCIOTTI [illegible] & MARY L. SCACCIOTTI 132 PARKER STREET MAYNARD, MA 01754

100 50 25 0 100

1"= 100'

TOWN OF MAYNARD PLANNING BOARD APPROVAL

SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE

Approved plans - see cover sheet for Planning Board signatures.

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BOHLER ENGINEERING

SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING PROGRAM MANAGEMENT LANDSCAPE ARCHITECTURE
SUSTAINABLE DESIGN TRANSPORTATION SERVICES

- UPSTATE NEW YORK
- BOSTON, MA
- NEW YORK METRO
- NEW JERSEY
- PHILADELPHIA, PA
- RALEIGH, NC
- SOUTHEASTERN, PA
- CHARLOTTE, NC
- ORLANDO, FL
- TAMPA, FL
- BALTIMORE, MD
- WASHINGTON, DC
- NORTHERN VIRGINIA
- CENTRAL VIRGINIA
- DALLAS, TX

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REVISIONS

REV	DATE	COMMENT	BY
1	03/21/17	REMOVE CARRIAGE BLDG. (SHEETS 8-12 ONLY)	CFD
2	06/02/17	REV. PER TOWN COMMENTS	CFD
3	06/15/17	DRAINAGE REVISIONS (SHEETS 13-16 ONLY)	GJZ
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7	09/18/17	CONSTRUCTION DOCUMENTS	AWP
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APPROVED FOR CONSTRUCTION

PROJECT No.:	W161189
DRAWN BY:	AWP/CFD
CHECKED BY:	NEM/JAK
DATE:	02/15/2017
SCALE:	AS NOTED
CAD I.D.:	W161189SS7

PROJECT:

SITE DEVELOPMENT PLANS

—FOR—

CAPITAL GROUP PROPERTIES

MAYNARD CROSSING

LOCATION OF SITE
MAP #25 & LOTS #152 & 152-1
129 PARKER STREET (ROUTE 27)
TOWN OF MAYNARD
MIDDLESEX COUNTY
MASSACHUSETTS

BOHLER ENGINEERING
352 TURNPIKE ROAD
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900
Fax: (508) 480-9080
www.BohlerEngineering.com

J.A. KUCICH

COMMONWEALTH OF MASSACHUSETTS — JOHN A. KUCICH — CIVIL — PROFESSIONAL ENGINEER

MASSACHUSETTS LICENSE NO. 46530
CONNECTICUT LICENSE NO. PEN.0026177
RHODE ISLAND LICENSE NO. 9816
MAINE LICENSE NO. 12553

SHEET TITLE:

ABUTTERS PLAN

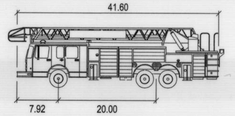
SHEET NUMBER:

A-1

OF 1

REV 7 - 09/18/2017

TRUCK TURN INFORMATION SHOWN FOR INFORMATION PURPOSES ONLY AND IS BASED ON THE RESULTS OF MODELING A VEHICLE TURN SIMULATION IN AUTOTURN VEHICLE SIMULATION SOFTWARE



Fire Truck - Maynard feet

Width	: 8.33
Track	: 6.91
Lock to Lock Time	: 6.0
Steering Angle	: 39.9

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE DATE

SIGNATURE DATE

Approved plans - see cover sheet for Planning Board signatures.

SIGNATURE DATE

SIGNATURE DATE

SIGNATURE DATE

SOUTH STREET

PARKER STREET
10,900 ADT (2004)

DIGITAL WAY

B STR

40 20 10 0 40
1"= 40'

BOHLER ENGINEERING

SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING LANDSCAPE ARCHITECTURE
PROGRAM MANAGEMENT TRANSPORTATION SERVICES
SUSTAINABLE DESIGN

- UPSTATE NEW YORK
- ROCKLAND
- NEW YORK METRO
- NEW JERSEY
- PHILADELPHIA, PA
- LEHIGH VALLEY, PA
- SOUTHEASTERN, PA
- WILMINGTON, DE
- BALTIMORE, MD
- WASHINGTON, DC AND NORTHERN VIRGINIA
- RALEIGH, NC
- CHARLOTTE, NC
- ATLANTA, GA
- TAMPA, FL
- ORLANDO, FLORIDA
- DALLAS, TX
- CENTRAL VIRGINIA

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PROFESSIONAL ENGINEER
MASSACHUSETTS LICENSE NO. 41530
CONNECTICUT LICENSE NO. PEC.0026177
RHODE ISLAND LICENSE NO. 9816
MAINE LICENSE NO. 12553

SHEET TITLE:

FIRE TRUCK EXHIBIT PLAN "A"

SHEET NUMBER:

F-1
OF 3

REV 7 - 09/18/2017

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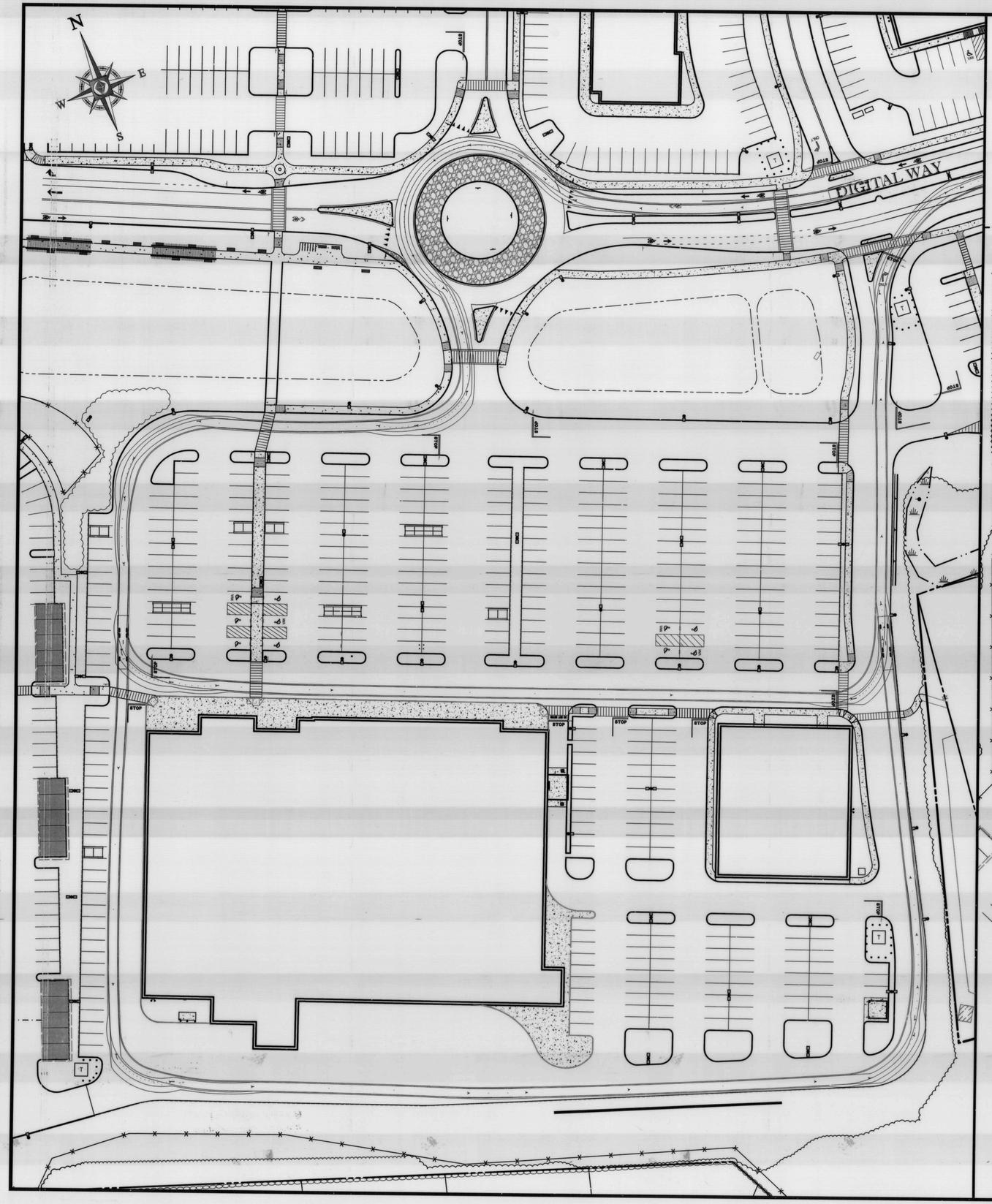

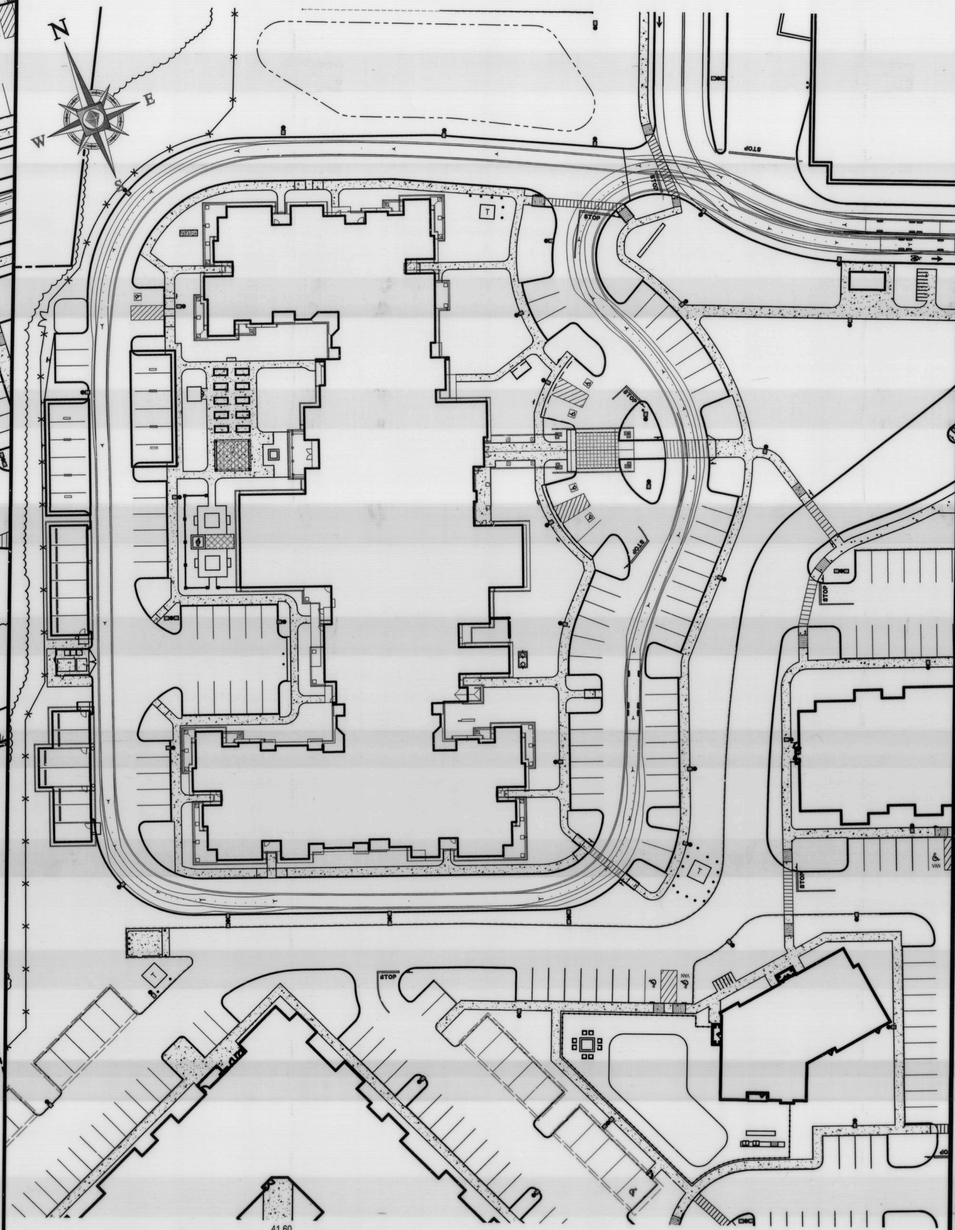

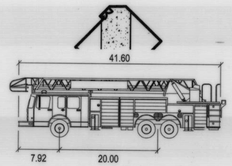

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TOWN OF MAYNARD PLANNING BOARD APPROVAL

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SIGNATURE DATE

SIGNATURE DATE

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SIGNATURE DATE

SIGNATURE DATE

40 20 10 0 40
1"= 40'

BOHLER ENGINEERING

SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING LANDSCAPE ARCHITECTURE
INSTITUTIONAL PROGRAM MANAGEMENT TRANSPORTATION SERVICES

- UPSTATE NEW YORK
- NEW ENGLAND
- LEHIGH VALLEY, PA
- SOUTHEASTERN, PA
- NEW YORK METRO
- NEW YORK, NY
- PHILADELPHIA, PA
- CHARLOTTE, NC
- RICHMOND, VA
- BALTIMORE, MD
- SOUTHERN MARYLAND
- ATLANTA, GA
- SOUTH FLORIDA
- CENTRAL VIRGINIA
- DALLAS, TX

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RHODE ISLAND REG. NO. 9616
MAINE REG. NO. 12553

SHEET TITLE:

FIRE TRUCK EXHIBIT PLAN "B"

SHEET NUMBER:

F-2
OF 3

REV 7 - 09/18/2017

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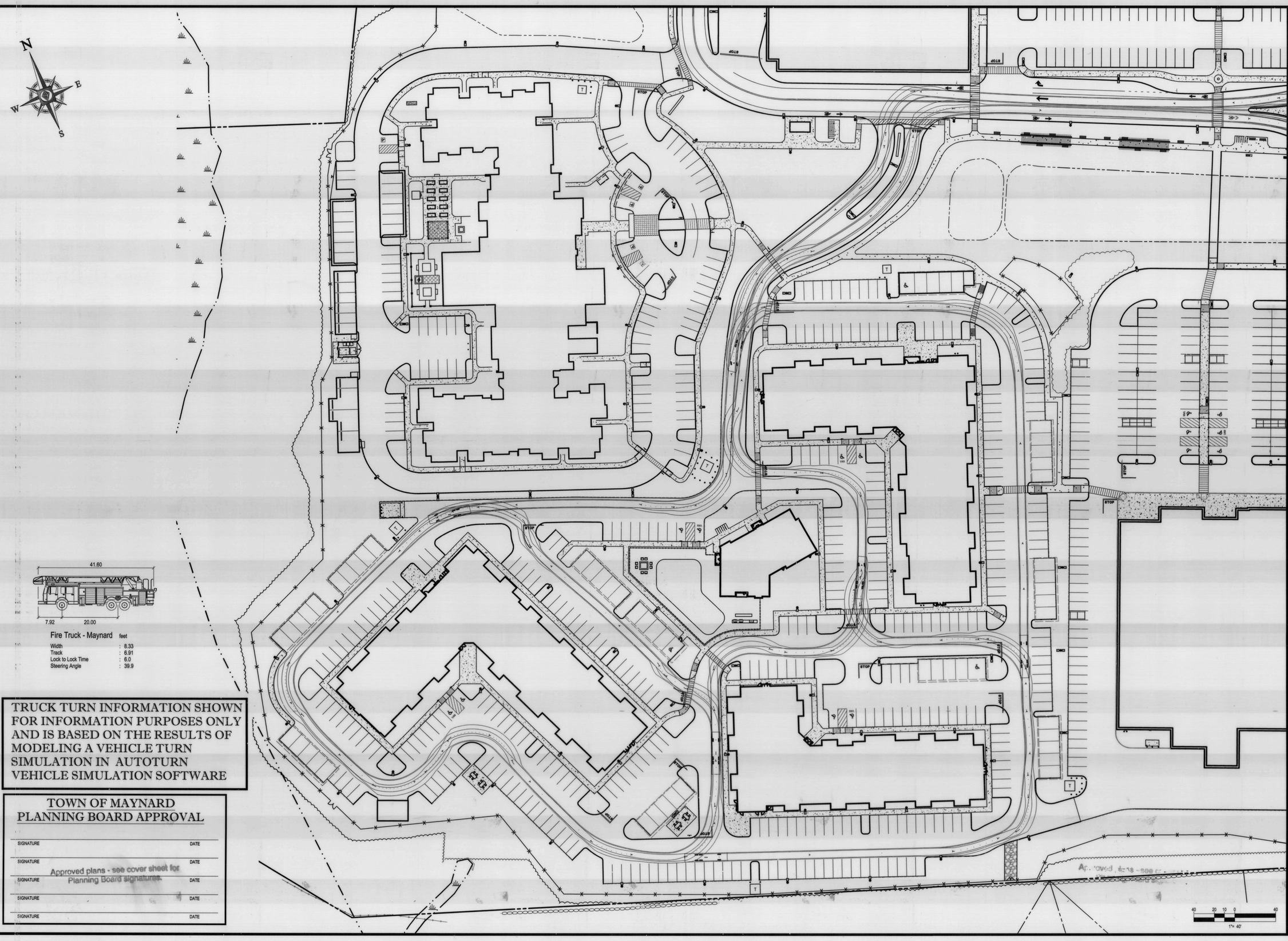

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REVISIONS

REV	DATE	COMMENT	BY
1	03/21/17	REMOVE CARRIAGE BLDG (SHEETS 8-12 ONLY)	CFD
2	06/02/17	REV. PER TOWN COMMENTS	CFD
3	06/15/17	DRAINAGE REVISIONS (SHEETS 13-16 ONLY)	GJZ
4	06/28/17	DRAINAGE REVISIONS (FULL SET)	AWP
5	07/26/17	REV. PER TOWN COMMENTS	AWP
6	08/10/17	PEER REVIEW COMMENTS	CFD
7	09/18/17	CONSTRUCTION DOCUMENTS	AWP
8			
9			
10			
11			
12			
13			
14			
15			

APPROVED FOR CONSTRUCTION

PROJECT No.:	W161189
DRAWN BY:	AWP/CFD
CHECKED BY:	NEM/JAK
DATE:	02/15/2017
SCALE:	AS NOTED
CAD I.D.:	W161189SS7

PROJECT:
SITE DEVELOPMENT PLANS
FOR
CAPITAL GROUP PROPERTIES
MAYNARD CROSSING

LOCATION OF SITE
MAP #25 & LOTS #152 & 152-1
129 PARKER STREET (ROUTE 27)
TOWN OF MAYNARD
MIDDLESEX COUNTY
MASSACHUSETTS

BOHLER ENGINEERING
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CONNECTICUT LICENSE NO. PEN.0027177
RHODE ISLAND LICENSE NO. 9616
MAINE LICENSE NO. 12553

SHEET TITLE:
FIRE TRUCK EXHIBIT PLAN "C"

SHEET NUMBER:
F-3
OF 3

REV 7 - 09/18/2017

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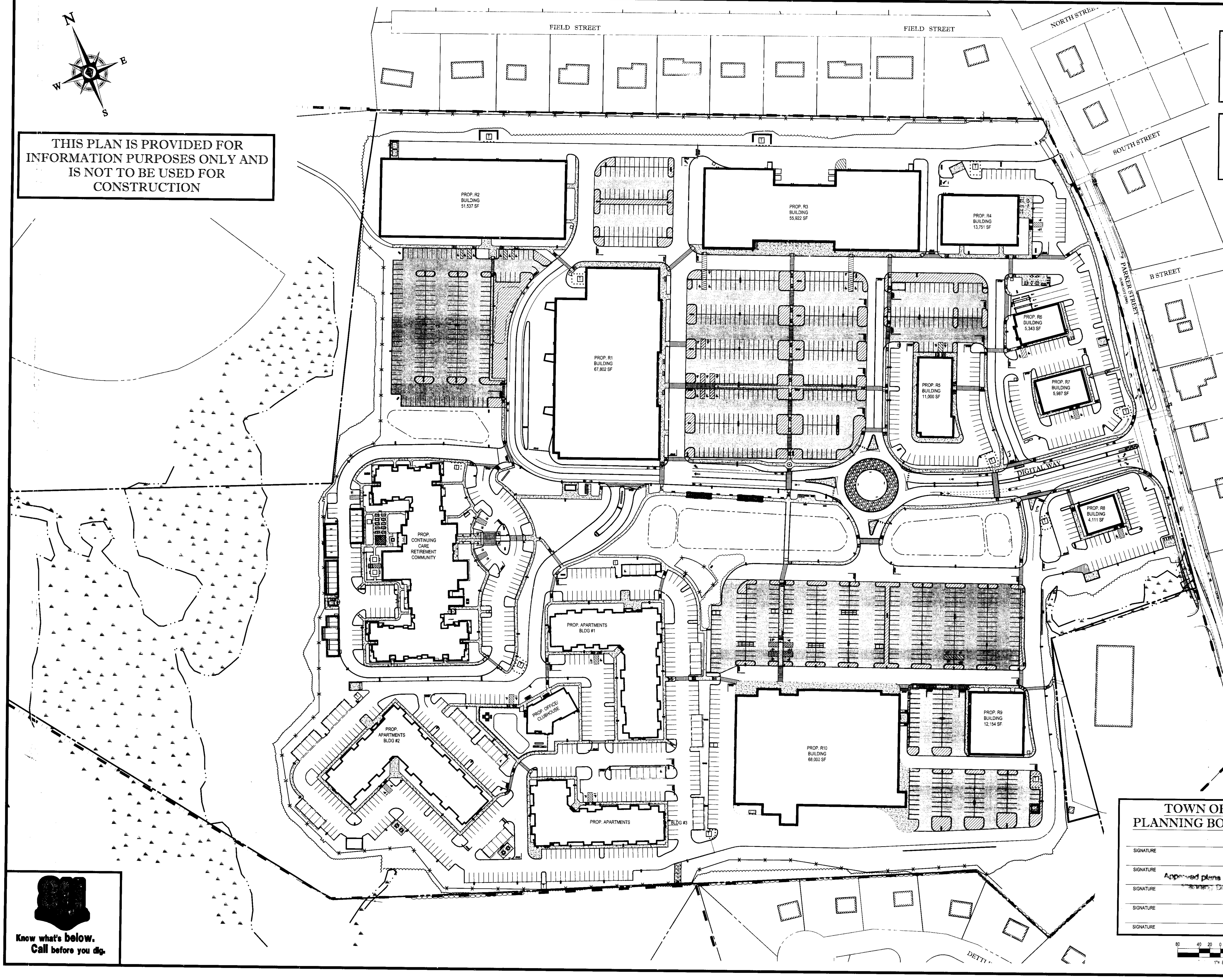

THIS PLAN IS PROVIDED FOR INFORMATION PURPOSES ONLY AND IS NOT TO BE USED FOR CONSTRUCTION

TOTAL AREA CALCULATIONS

TOTAL PAVEMENT AREA = 315,014 SF

TOTAL INTERNAL LANDSCAPE AREA = 49,822 SF

INTERNAL LANDSCAPE PERCENTAGE = 15.8%

KEY

PAVEMENT AREA

INTERNAL LANDSCAPING

TOWN OF MAYNARD PLANNING BOARD APPROVAL

SIGNATURE ____________ DATE

SIGNATURE ____________ DATE

SIGNATURE ____________ DATE

SIGNATURE ____________ DATE

SIGNATURE ____________ DATE

Approved plans - see cover sheet Planning Board signatures

SCALE: 1" = 80'

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REVISIONS

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8			
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APPROVED FOR CONSTRUCTION

PROJECT No.:	W161189
DRAWN BY:	AWP/CFD
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CONNECTICUT LICENSE No. 25177
RHODE ISLAND LICENSE No. 9616
MAINE LICENSE No. 12553

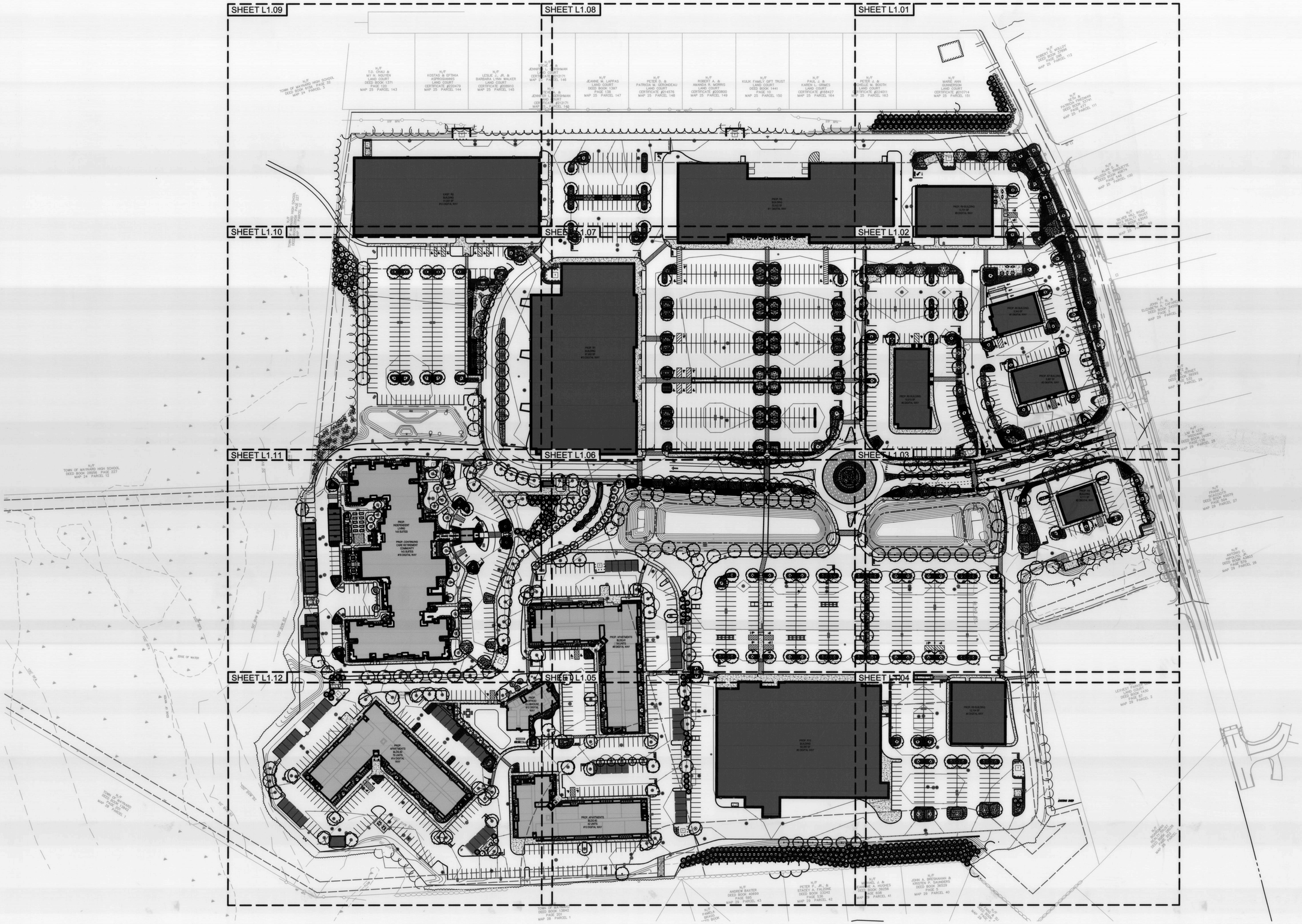
SHEET TITLE:

INTERNAL LANDSCAPE PLAN

SHEET NUMBER:

IL-1
OF 1

REV 7 - 09/18/2017



CONDITIONALLY APPROVED
TOWN OF MAYNARD
PLANNING BOARD

SIGNATURE _____ DATE 9/26/17
SIGNATURE _____ DATE 9/29/17
SIGNATURE _____ DATE 9/27/17
SIGNATURE _____ DATE 9/27/17

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REV.	DATE	DESCRIPTION	INIT.
D	8/15/17	PEER REVIEW COMMENTS	
C	7/27/17	TOWN COMMENTS	
B	6/8/17	TOWN COMMENTS	
A		INITIAL ISSUE	

MASSACHUSETTS
JAMES T. ALMONTE
No. 938
REGISTERED LANDSCAPE ARCHITECT
8/15/17

PREPARED BY:

WATERMAN DESIGN ASSOCIATES, INC.
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508.366.6552
508.366.6506 (fax)
watermandesign.com wda@wdassoc.com

OWNER:
MAYNARD CROSSINGS JV, LLC
259 Turnpike Road, Suite 100
Southborough, MA 01772

PREPARED FOR:
MAYNARD CROSSINGS JV, LLC
259 Turnpike Road, Suite 100
Southborough, MA 01772

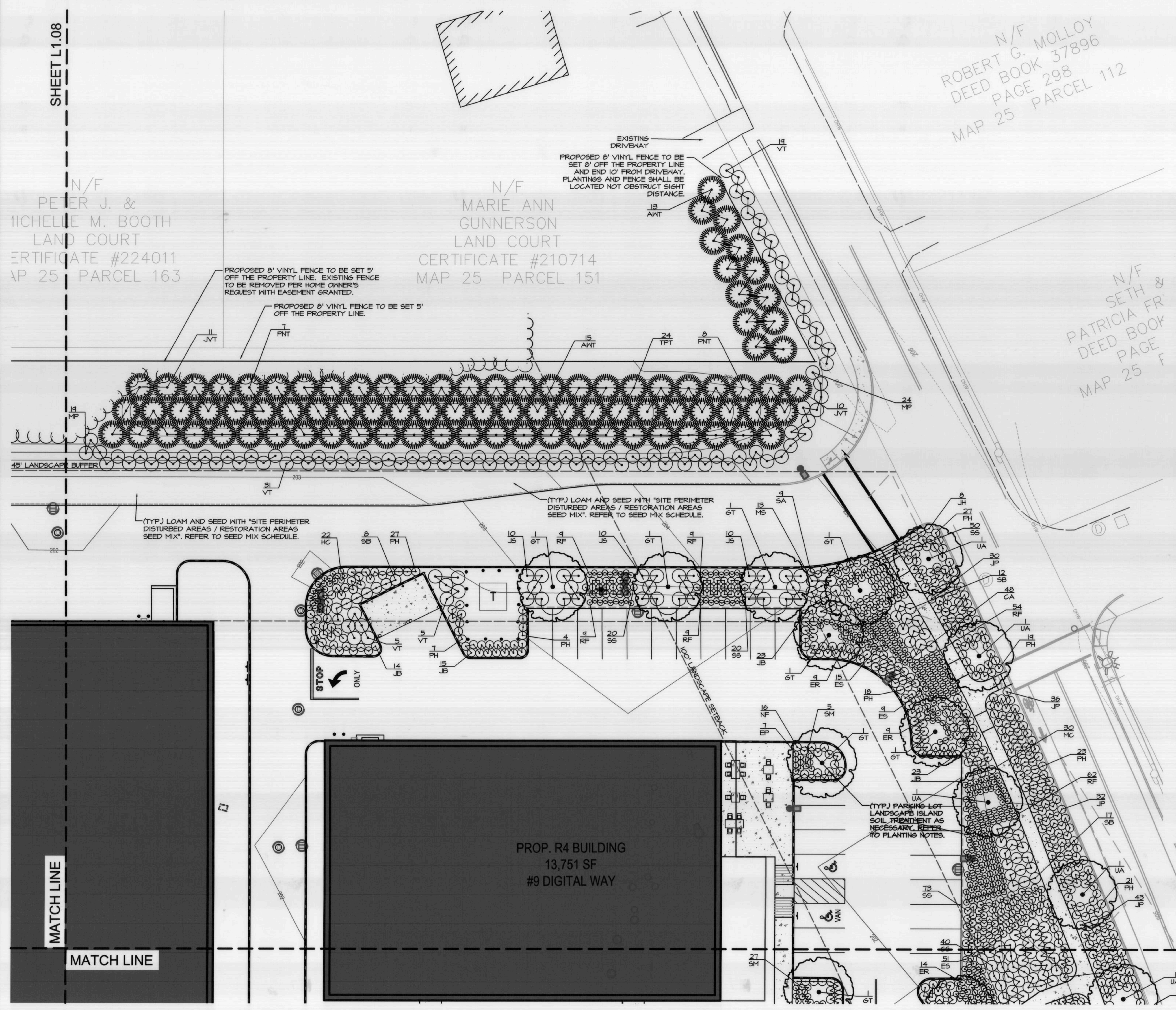
TITLE:
OVERALL LANDSCAPE PLAN
MAYNARD CROSSING
129 Parker Street
Maynard, MA
(Middlesex County)
FOR CONSTRUCTION

0 80 160 240

DATE: 02/15/17	SCALE: 1" = 80'
JOB NO.: 0991.05	DWN. BY: ECV
FILE NO.: 0991400	CHK'D. BY: JTA
DRAWING NO.: 0991401C	SHEET: L1.00

PLANTING NOTES:

1. ALL PLANT MATERIAL SHALL CONFORM TO THE MINIMUM GUIDELINES AS OUTLINED BY THE AMERICAN STANDARD FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC.
2. THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO REJECT ANY PLANT MATERIAL AT THE SITE. MATERIAL SHALL BE IMMEDIATELY REMOVED FROM THE PROPERTY BY THE LANDSCAPE CONTRACTOR AND REPLACED WITH IN-KIND MATERIAL APPROVED BY LANDSCAPE ARCHITECT AT NO ADDITIONAL COST TO THE OWNER.
3. ANY PROPOSED SUBSTITUTION OF PLANT MATERIAL SHALL BE EQUAL IN OVERALL HEIGHT, LEAF, FORM, BRANCHING HABIT, FRUIT, FLOWER, COLOR, AND CULTURE. ALL PROPOSED SUBSTITUTIONS SHALL BE APPROVED BY LANDSCAPE ARCHITECT PRIOR TO PURCHASING.
4. INCLUDE IN BID A WARRANTY TO REPLACE DEAD OR DYING PLANTS FOR A PERIOD OF ONE FULL YEAR, OR TWO GROWING SEASONS, AFTER THE DATE OF WRITTEN NOTIFICATION OF ACCEPTANCE BY THE OWNER. ANY REPLACEMENTS SHALL BE AT NO ADDITIONAL COST TO OWNER.
5. ALL NEW TREES PROPOSED ADJACENT TO SIDEWALKS SHALL ACHIEVE A MINIMUM BRANCHING STANDARD OF 6 FEET 8 INCHES AT TIME OF PLANTING.
6. ALL TREE PLANTINGS TO MAINTAIN A 10 FOOT HORIZONTAL SEPARATION FROM EXISTING AND PROPOSED GAS, ELECTRIC, SEWER AND WATER LINES.
7. ALL PLANTING BEDS ARE TO BE CROWNED WITH TOPSOIL ABOVE ADJACENT AREAS.
8. MULCH ALL LANDSCAPE ISLANDS WITHIN PARKING AREAS AND PLANT BEDS WITH CLEAN, SHREDDED PINE BARK MULCH TO A MINIMUM OF 3 INCH DEPTH IN PLACE UNLESS OTHERWISE NOTED. PROVIDE A CONTINUOUS MULCH BED AROUND ALL SHRUB, PERENNIAL AND ANNUAL PLANTINGS AS INDICATED ON THE PLANS. PROVIDE A MULCHED BED WITH A DIAMETER OF 6 FEET AROUND ALL TREE PLANTINGS LOCATED WITHIN LAWN AREAS. PRIOR TO SPREADING MULCH, APPLY A WEED PREVENTER SUCH AS "TREFLAN" OR APPROVED EQUAL. FOLLOW MANUFACTURER'S INSTRUCTIONS.
9. LAWN AREAS ARE TO BE LOAMED (6 INCH DEPTH MIN.) AND SEEDED UNLESS OTHERWISE NOTED.
10. PROVIDE A CONTINUOUS LOAM PLANT BED (12 INCH DEPTH) AROUND ALL PERENNIALS, ORNAMENTAL GRASSES, AND GROUNDCOVERS. REFER TO PLANS AND DETAILS.
11. PARKING LOT LANDSCAPE ISLANDS CONTAINING PROPOSED TREES THAT ARE LOCATED IN AREAS PREVIOUSLY PAVED SHALL BE FILLED ENTIRELY WITH LOAM TO A CONSISTENT DEPTH EQUAL TO THE DEPTH OF A TYPICAL PLANTING HOLE FOR PROPOSED SHRUBS. REFER TO PLANS AND DETAILS.
12. PRIOR TO COMMENCEMENT OF PLANT INSTALLATION, THE LANDSCAPE CONTRACTOR SHALL COMPLETE AN ON-SITE EVALUATION OF SITE CONDITIONS, INCLUDING SOIL COMPACTION, COMPOSITION AND DRAINAGE CHARACTERISTICS. IT IS THE SOLE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR TO MITIGATE SITE CONDITIONS AS NECESSARY TO ENSURE VIGOROUS PLANT GROWTH AND GENERAL HEALTH. IN ADDITION, THE LANDSCAPE CONTRACTOR SHALL DE-COMPACT SITE SOILS WITHIN A CIRCULAR AREA WITH A MINIMUM DIAMETER OF 20 FEET AROUND ALL NEW TREE PLANTINGS TO THE MINIMUM DEPTH REQUIRED TO ALLOW FOR PROPER ROOT GROWTH AND INFILTRATION OF WATER.
13. PRIOR TO COMMENCEMENT OF PLANT INSTALLATION, THE LANDSCAPE CONTRACTOR SHALL COMPLETE AN ON-SITE EVALUATION TO IDENTIFY PORTIONS OF THE SITE WITHIN THE LIMIT OF WORK THAT CONTAIN INVASIVE PLANT SPECIES INCLUDED ON THE LATEST VERSION OF THE MASSACHUSETTS PROHIBITED PLANT LIST PUBLISHED BY THE COMMONWEALTH OF MASSACHUSETTS DEPARTMENT OF ENERGY AND ENVIRONMENTAL AFFAIRS. THE LANDSCAPE CONTRACTOR SHALL REMOVE ENTIRELY AND PROPERLY DISPOSE OF ANY INVASIVE PLANTS IDENTIFIED IN COMPLIANCE WITH STATE AND LOCAL REQUIREMENTS. FURTHERMORE, THE LANDSCAPE CONTRACTOR SHALL CONTINUE TO EVALUATE SAID PORTIONS OF THE SITE WITHIN THE LIMIT OF WORK TO IDENTIFY AND ERADICATE INVASIVE SPECIES THROUGHOUT THE ESTABLISHMENT PERIOD.



PLANT SCHEDULE						
QTY	KEY	BOTANICAL	COMMON	SIZE	CONDITION	SPACING
DECIDUOUS TREES						
35	AR	Acer rubrum 'October Glory'	October Glory Red Maple	2.5"-3" Cal.	B&B	As Shown
2	FA	Fagus grandifolia	American Beech	2.5"-3" Cal.	B&B	As Shown
43	GB	Ginkgo biloba 'Autumn Gold'	Maidenhair Tree	2.5"-3" Cal.	B&B	As Shown
56	GT	Gleditsia triancanthos 'Shademaster'	Shademaster Honey Locust	2.5"-3" Cal.	B&B	As Shown
53	LS	Liquidamber styraciflua 'Happidaze'	Happidaze Sweetgum (Fruitless)	2.5"-3" Cal.	B&B	As Shown
5	LT	Liriodendron tulipifera	Tulip Poplar	2.5"-3" Cal.	B&B	As Shown
12	PS	Prunus sargentii 'Columnaris'	Upright Sargent Cherry	2.5"-3" Cal.	B&B	As Shown
45	PC	Pyrus calleryana 'Cleveland Select'	Cleveland Select Flowering Pear	2.5"-3" Cal.	B&B	As Shown
7	NS	Nyssa sylvatica	Black Tupelo	2.5"-3" Cal.	B&B	As Shown
26	PB	Platanus x acerifolia 'Morton Circle'	EXCLAMATION! London Planetree	2.5"-3" Cal.	B&B	As Shown
53	QA	Quercus alba	White Oak	2.5"-3" Cal.	B&B	As Shown
28	QU	Quercus palustris	Pin Oak	2.5"-3" Cal.	B&B	As Shown
0	QP	Quercus palustris 'Green Pillar'	Upright Pin Oak	2.5"-3" Cal.	B&B	As Shown
6	QR	Quercus rubra	Red Oak	2.5"-3" Cal.	B&B	As Shown
38	TC	Tilia cordata 'Glenleven'	Glenleven Littleleaf Linden	2.5"-3" Cal.	B&B	As Shown
19	UA	Ulmus americana 'Princeton'	Princeton American Elm	2.5"-3" Cal.	B&B	As Shown
56	ZS	Zelkova serrata 'Green Vase'	Green Vase Japanese Zelkova	2.5"-3" Cal.	B&B	As Shown
EVERGREEN TREES						
10	AW	Abies concolor	White Fir	6'-8' Ht.	B&B	As Shown
78	AWT	Abies concolor (Lot Line Buffer)	White Fir (Lot Line Buffer)	10'-12' Ht.	B&B	As Shown
13	JV	Juniperus virginiana	Eastern Red Cedar	6'-8' Ht.	Container	As Shown
62	JVT	Juniperus virginiana (Lot Line Buffer)	Eastern Red Cedar (Lot Line Buffer)	10'-12' Ht.	B&B	As Shown
86	PNT	Picea abies (Lot Line Buffer)	Norway Spruce (Lot Line Buffer)	10'-12' Ht.	B&B	As Shown
10	PK	Picea omorika	Serbian Spruce	6'-8' Ht.	B&B	As Shown
21	PP	Picea pungens	Blue Spruce	6'-8' Ht.	B&B	As Shown
6	PI	Pinus strobus	Eastern White Pine	6'-8' Ht.	B&B	As Shown
9	TT	Thuja occidentalis 'Techney'	Techney American Arborvitae	6'-8' Ht.	B&B	As Shown
26	TP	Thuja plicata	Giant Arborvitae	6'-8' Ht.	B&B	As Shown
68	TPT	Thuja plicata (Lot Line Buffer)	Giant Arborvitae (Lot Line Buffer)	10'-12' Ht.	B&B	As Shown
UNDERSTORY FLOWERING TREES						
44	AC	Amelanchier canadensis	Shadblow Serviceberry	7'-8'	B&B	As Shown
10	MJ	Magnolia 'Jane'	Jane Hybrid Magnolia	7'-8'	B&B	As Shown
12	MF	Malus 'Prairifire'	Prairifire Crabapple	2.5"-3" Cal.	B&B	As Shown
DECIDUOUS / EVERGREEN SHRUBS						
82	AD	Azalea 'Delaware Valley White'	Delaware Valley White Azalea	30"-36" Ht.	Container	As Shown
70	BM	Buxus microphylla 'Green Velvet'	Green Velvet Boxwood	30"-36" Ht.	B&B	As Shown
47	CL	Clethra alnifolia 'Hummingbird'	Hummingbird Summersweet	30"-36" Ht.	Container	As Shown
21	CP	Comptonia peregrina	Sweet Fern	24"-30" Sp.	Container	As Shown
17	CR	Cornus racemosa	Gray Dogwood	30"-36" Ht.	Container	As Shown
248	CS	Cornus stolonifera 'Farrow'	Arctic Fire Red Twig Dogwood	30"-36" Ht.	Container	As Shown
26	FG	Fothergilla gardenii	Dwarf fothergilla	30"-36" Ht.	Container	As Shown
8	HQ	Hydrangea quercifolia 'Pee-Wee'	Dwarf Oakleaf Hydrangea	30"-36" Ht.	Container	As Shown
3	IC	Ilex crenata 'Sky Pencil'	Sky Pencil Upright Japanese Holly	30"-36" Ht.	Container	As Shown
180	IG	Ilex glabra 'Compacta'	Dwarf Inkberry Holly	30"-36" Ht.	Container	As Shown
14	IM	Ilex meservae 'Blue Boy'	Blue Boy Meserve Holly	30"-36" Ht.	Container	As Shown
13	IF	Ilex meservae 'Blue Girl'	Blue Girl Meserve Holly	30"-36" Ht.	Container	As Shown
105	IV	Ilex verticillata 'Red Sprite'	Dwarf Winterberry Holly	30"-36" Ht.	Container	As Shown
63	IT	Itea virginica 'Henry's Garnet'	Henry's Garnet Virginia Sweetspire	30"-36" Ht.	Container	As Shown
31	GY	Gaylussacia baccata	Black Huckleberry	30"-36" Ht.	Container	As Shown
369	JC	Juniperus chinensis 'Sargentii'	Sargent Chinese Juniper	24"-30" Sp.	Container	As Shown
64	JH	Juniperus horizontalis 'Bar Harbor'	Bar Harbor Creeping Juniper	24"-30" Sp.	Container	As Shown
466	JP	Juniperus chinensis 'Pfitzeriana Compacta'	Compact Pfitzer Juniper	30"-36" Ht.	Container	As Shown
250	JS	Juniperus chinensis 'Sea Green'	Sea Green Juniper	30"-36" Ht.	Container	As Shown
570	JB	Juniperus conferta 'Blue Pacific'	Blue Pacific Juniper	24"-30" Sp.	Container	As Shown
66	JG	Juniperus virginiana 'Grey Owl'	Grey Owl Juniper	30"-36" Ht.	Container	As Shown
10	JU	Juniperus communis	Common Juniper	24"-30" Sp.	Container	As Shown
49	MP	Myrica pensylvanica	Northern Bayberry	30"-36" Ht.	Container	As Shown
4	PD	Philadelphus x virginalis 'Dwarf Snowflake'	Dwarf Snowflake Mockorange	30"-36" Ht.	Container	As Shown
66	PF	Potentilla fruticosa 'Abbotswood'	Abbotswood Cinquefoil	24"-30" Sp.	Container	As Shown
13	PM	Photinia melanocarpa	Black Chokeberry	30"-36" Ht.	Container	As Shown
27	PO	Physocarpus opulifolius 'Diablo'	Diablo Ninebark	30"-36" Ht.	Container	As Shown
2	PW	Picea glauca 'Conica'	Dwarf Alberta Spruce	36"-42" Ht.	B&B	As Shown
613	RA	Rhus aromatica 'Grow Low'	Dwarf Fragrant Sumac	24"-30" Sp.	Container	As Shown
206	RK	Rosa x 'Radtkopink'	Pink Double Knockout Rose	30"-36" Ht.	Container	As Shown
64	RR	Rosa x 'Radtkored'	Red Double Knockout Rose	30"-36" Ht.	Container	As Shown
11	RT	Rhus typhina	Staghorn Sumac	36"-48" Ht.	Container	As Shown
55	SB	Spiraea bumalda 'Anthony Waterer'	Anthony Waterer Spirea	30"-36" Ht.	Container	As Shown
6	SP	Syringa pubescens 'Miss Kim'	Miss Kim Lilac	30"-36" Ht.	Container	As Shown
38	TC	Taxus cuspidata 'Capitata'	Japanese Upright Yew	36"-42" Ht.	Container	As Shown
93	TH	Taxus x media 'Hicksii'	Hicksii Uprigh Yew	36"-42" Ht.	Container	As Shown
12	VC	Vaccinium corymbosum	Highbush Blueberry	30"-36" Ht.	B&B	As Shown
10	VD	Viburnum dentatum	Arrowwood Viburnum	30"-36" Ht.	B&B	As Shown
15	VM	Viburnum acerifolium	Maple Leaf Viburnum	30"-36" Ht.	B&B	As Shown
87	VT	Viburnum trilobum	American Cranberry Bush	30"-36" Ht.	B&B	As Shown
GROUNDCOVERS / PERENNIALS / ORNAMENTAL GRASSES						
112	AS	Astilbe 'Rheinland'	Rheinland Pink Astilbe	#1	Container	As Shown
285	AU	Arctostaphylos uva-ursi	Bearberry	#1	Container	24" o/c
1,414	CA	Calamagrostis x acutiflora 'Karl Foerster'	Feather Reed Grass	#1	Container	As Shown
125	CM	Carex marowii 'Ice Dance'	Ice Dance Sedge	#1	Container	As Shown
518	EP	Echinacea purpurea 'Kim's Knee High'	Kim's Knee High Coneflower	#1	Container	As Shown
228	ES	Echinacea 'White Swan'	Swan White Coneflower	#1	Container	As Shown
318	ER	Eragrostis Spectabilis	Purple Lovegrass	#1	Container	As Shown
855	HC	Hemerocallis 'Elegant Candy'	Elegant Candy Daylily	#1	Container	As Shown
710	HE	Hemerocallis 'Stella D'Oro'	Stella D'Oro Daylily	#1	Container	As Shown
26	HF	Hemerocallis 'Fulva'	Orange Daylily	#1	Container	As Shown
249	HP	Hemerocallis 'Purple D'Oro'	Purple D'Oro Daylily	#1	Container	As Shown
98	HB	Hosta 'Big Daddy'	Big Daddy Hosta	#1	Container	As Shown
3	HW	Heuchera 'Bronze Wave'	Bronze Wave Coral Bells	#1	Container	As Shown
337	IB	Iberis sempervirens	Candytuft	#1	Container	18" o/c
169	MC	Muhlenbergia capillaris	Pink Hair Grass	#1	Container	As Shown
45	MS	Miscanthus sinensis 'Strictus'	Porcupine Grass	#1	Container	As Shown
48	ND	Narcissus	Daffodil	#1	Container	18" o/c
658	NF	Nepeta faassenii 'Blue Wonder'	Blue Wonder Catmint	#1	Container	As Shown
269	PV	Panicum virgatum 'Heavy Metal'	Heavy Metal Switch Grass	#1	Container	As Shown
232	PU	Panicum virgatum 'Shenandoah'	Heavy Metal Switch Grass	#1	Container	As Shown
2,048	PH	Pennisetum alopecuroides 'Hameln'	Hameln Fountain Grass	#1	Container	As Shown
58	PL	Pennisetum alopecuroides 'Little Bunny'	Little Bunny Fountain Grass	#1	Container	As Shown
490	PA	Perovskia atriplicifolia 'Little Spire'	Little Spire Russian Sage	#1	Container	As Shown
123	PG	Polygonatum oderatum 'Variegatum'	Variegated Solomon's Seal	#1	Container	As Shown
746	RF	Rudbeckia fulgida 'Goldsturm'	Black Eyed Susan	#1	Container	As Shown
1,630	SS	Schizachyrium scoparium 'Prairie Blues'	Prairie Blues Little Blue Stem	#1	Container	As Shown
189	SM	Salvia nemorosa 'Ostfreisland'	East Freisland Meadow Sage	#1	Container	As Shown
655	SA	Sedum spectabile 'Autumn Joy'	Autumn Joy Sedum	#1	Container	As Shown

SEED MIX SCHEDULE
SITE PERIMETER DISTURBED AREAS / RESTORATION AREAS SEED MIX*
All site perimeter disturbed areas and restoration areas shall be seeded with "NEW ENGLAND CONSERVATION / WILDLIFE MIX" unless otherwise noted. Refer to Sheet L1.14 for seed mix specifications.
STORMWATER BASINS SEED MIX*
Bottom and sides of Stormwater Basins shall be seeded with "NEW ENGLAND EROSION CONTROL / RESTORATION MIX (for Detention Basins and Moist Sites)" to limits shown unless otherwise noted. Refer to Sheet L1.14 for seed mix specifications.
LAWN AREAS SEED MIX
All lawn areas shall be seeded with "LAWN SEED MIX" unless otherwise noted. Refer to Sheet L1.14 for seed mix specifications.

* Seed mix described available from New England Wetland Plants, Inc., Amherst, MA. Application rates and planting preferences shall be per manufacturer's instructions.

PARKING LOT TREE REQUIREMENTS
PER MAYNARD PROTECTIVE ZONING BYLAW SECTION SECTION 6.1.15 (3)

	PARKING SPACES PROVIDED	TREES REQUIRED (2 PER 10 PARKING SPACES)	TREES PROVIDED
RETAIL	1,213	243	286*
APARTMENTS	395 (INCLUDING GARAGE SPACES)	79	81**
CONTINUING CARE RETIREMENT COMMUNITY	100 (INCLUDING GARAGE SPACES)	20	21***

* EXCLUDES PERIMETER BUFFER TREES; COLUMNAR TREES AT ENTRANCE SIGNS, IN MEDIAN AND AT ROUNDABOUT; EVERGREEN TREES BEHIND BUILDING R-1; AND TREES ON PARKER STREET SIDE OF FRONTAGE SIDEWALK.

** EXCLUDES PERIMETER BUFFER TREES; COLUMNAR TREES AT ENTRANCE; TREES TO BUFFER RETAIL DEVELOPMENT; AND UNDERSTORY FLOWERING TREES AT BUILDINGS. INCLUDES TREE ALLEE ALONG ENTRANCE DRIVE.

*** EXCLUDES TREES AT ENTRY SIGN; TREES ALONG APARTMENT COMPLEX AREA; AND UNDERSTORY FLOWERING TREES AT BUILDING.

CONDITIONALLY APPROVED
TOWN OF MAYNARD
PLANNING BOARD

SIGNATURE DATE

SIGNATURE DATE

Approved plans - see cover sheet for Planning Board signatures.

SIGNATURE DATE

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B	6/8/17	TOWN COMMENTS	
A		INITIAL ISSUE	

BASIS OF BEARINGS: MASSACHUSETTS STATE PLANE COORDINATE SYSTEM

MASSACHUSETTS JAMES T. ALMONTE NO. 1198 REGISTERED LANDSCAPE ARCHITECT 8/15/17

PREPARED BY:
WATERMAN DESIGN ASSOCIATES, INC.
31 East Main Street
Westborough, MA 01581
508.366.6552
508.366.6506 (fax)
watermandesign.com wda@wdassoc.com

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259 Turnpike Road, Suite 100
Southborough, MA 01772

PREPARED FOR:
MAYNARD CROSSINGS JV, LLC
259 Turnpike Road, Suite 100
Southborough, MA 01772

TITLE:
LANDSCAPE PLAN
MAYNARD CROSSING
129 Parker Street
Maynard, MA
(Middlesex County)
FOR CONSTRUCTION

0 20 40 60

DATE:	02/15/17	SCALE:	1" = 20'
JOB NO.:	0991.05	DWN. BY:	ECV
FILE NO.:	0991400	CHK'D. BY:	JTA
DRAWING NO.:	0991402D	SHEET:	L1.01

MATCH LINE

SHEET L1.07

SHEET L1.01

PROP. R6 BUILDING
5,343 SF
#7 DIGITAL WAY

PROP. R7 BUILDING
5,987 SF
#3 DIGITAL WAY

PROP. R5 BUILDING
10,015 SF
#5 DIGITAL WAY

(TYP.) PARKING LOT LANDSCAPE ISLAND SOIL TREATMENT AS NECESSARY. REFER TO PLANTING NOTES.

N/F
JOHN J., III, &
ELIZABETH A. CAFAREL
DEED BOOK 34559
PAGE 2
MAP 29 PARCEL

MATCH LINE

MATCH LINE

SHEET L1.03

CONDITIONALLY APPROVED
TOWN OF MAYNARD
PLANNING BOARD

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REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS

COMMONWEALTH OF MASSACHUSETTS
JAMES T. ALMONTE
No. 3059
REGISTERED LANDSCAPE ARCHITECT
8/15/17

PREPARED BY:

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TITLE:

LANDSCAPE PLAN

MAYNARD CROSSING

129 Parker Street
Maynard, MA
(Middlesex County)

FOR CONSTRUCTION

0 20 40 60

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FILE NO.: 0991400	CHK'D. BY: JTA
DRAWING NO.: 0991403D	SHEET: L1.02

MATCH LINE

SHEET L1.06

SHEET L1.02

(TYP.) LIMIT OF STORMWATER BASINS SEED MIX

(TYP.) SEED WITH "STORMWATER BASINS SEED MIX" TO LIMITS SHOWN. REFER TO SEED MIX SCHEDULE.

(TYP.) SEED WITH "STORMWATER BASINS SEED MIX" TO LIMITS SHOWN. REFER TO SEED MIX SCHEDULE.

(TYP.) PARKING LOT LANDSCAPE ISLAND SOIL TREATMENT AS NECESSARY. REFER TO PLANTING NOTES.

(TYP.) LOAM AND SEED WITH "SITE PERIMETER DISTURBED AREAS / RESTORATION AREAS SEED MIX". REFER TO SEED MIX SCHEDULE.

(TYP.) PARKING LOT LANDSCAPE ISLAND SOIL TREATMENT AS NECESSARY. REFER TO PLANTING NOTES.

PROP. R8 BUILDING 4,111 SF #2 DIGITAL WAY

100' LANDSCAPE SETBACK

(TYP.) LOAM AND SEED WITH "SITE PERIMETER DISTURBED AREAS / RESTORATION AREAS SEED MIX". REFER TO SEED MIX SCHEDULE.

(TYP.) LOAM AND SEED WITH "SITE PERIMETER DISTURBED AREAS / RESTORATION AREAS SEED MIX". REFER TO SEED MIX SCHEDULE.

(TYP.) LOAM AND SEED WITH "SITE PERIMETER DISTURBED AREAS / RESTORATION AREAS SEED MIX". REFER TO SEED MIX SCHEDULE.

MATCH LINE

SHEET L1.04

CONDITIONALLY APPROVED
TOWN OF MAYNARD
PLANNING BOARD

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MASSACHUSETTS
JAMES T. ALMONTE
No. 49
REGISTERED LANDSCAPE ARCHITECT
8/15/17

PREPARED BY:

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Southborough, MA 01772

PREPARED FOR:

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Southborough, MA 01772

TITLE:

LANDSCAPE PLAN

MAYNARD CROSSING

129 Parker Street
Maynard, MA
(Middlesex County)

FOR CONSTRUCTION

0 20 40 60

DATE: 02/15/17	SCALE: 1" = 20'
JOB NO.: 0991.05	DWN. BY: ECV
FILE NO.: 0991400	CHK'D. BY: JTA
DRAWING NO.: 0991404D	SHEET: L1.03

MATCH LINE

SHEET L1.05

SHEET L1.03

PROP. R9 BUILDING
12,154 SF
#4 DIGITAL WAY

(TYP.) LOAM AND SEED WITH "SITE PERIMETER DISTURBED AREAS / RESTORATION AREAS SEED MIX". REFER TO SEED MIX SCHEDULE.

(TYP.) PARKING LOT LANDSCAPE ISLAND SOIL TREATMENT AS NECESSARY. REFER TO PLANTING NOTES.

(TYP.) LOAM AND SEED WITH "SITE PERIMETER DISTURBED AREAS / RESTORATION AREAS SEED MIX". REFER TO SEED MIX SCHEDULE.

45' LANDSCAPE BUFFER

12' HEIGHT FENCE. REFER TO CIVIL ENGINEER'S DRAWINGS.

12' HEIGHT FENCE. REFER TO CIVIL ENGINEER'S DRAWINGS.

END 12' HEIGHT FENCE. REFER TO CIVIL ENGINEER'S DRAWINGS.

N/F
LEXVEST PARKER LLC
LAND COURT
DEED BOOK 1430
PAGE 87
MAP 29 PARCEL 2

N/F
BOARDMAN
REALTY TRUST
DEED BOOK 28038
PAGE 253
MAP 29 PARCEL 3

N/F
MICHAEL J. &
JEANNE A. HUGHES
DEED BOOK 39256
PAGE 608
MAP 29 PARCEL 41

N/F
JOHN A. BRESNAHAN &
KRISTEN P. SAUNDERS
DEED BOOK 36529
PAGE 5
MAP 29 PARCEL 40

CONDITIONALLY APPROVED
TOWN OF MAYNARD
PLANNING BOARD

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REGISTERED LAND SURVEYOR
COMMONWEALTH OF MASSACHUSETTS

COMMONWEALTH OF MASSACHUSETTS
JAMES T. ALMOND
No. 49
REGISTERED LANDSCAPE ARCHITECT
8/15/17

PREPARED BY:

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508.366.6506 (fax)
watermandesign.com wda@wdassoc.com

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259 Turnpike Road, Suite 100
Southborough, MA 01772

PREPARED FOR:

MAYNARD CROSSINGS JV, LLC
259 Turnpike Road, Suite 100
Southborough, MA 01772

TITLE:

LANDSCAPE PLAN

MAYNARD CROSSING
129 Parker Street
Maynard, MA
(Middlesex County)

FOR CONSTRUCTION

0 20 40 60

DATE: 02/15/17	SCALE: 1" = 20'
JOB NO.: 0991.05	DWN. BY: ECV
FILE NO.: 0991400	CHK'D. BY: JTA
DRAWING NO.: 0991405D	SHEET: L1.04

MATCH LINE

SHEET L1.12

SHEET L1.06

SHEET L1.04

STOP

PROP. APARTMENTS
BLDG #3
42 UNITS
#10 DIGITAL WAY

PROP. R10
BUILDING
68,000 SF
#6 DIGITAL WAY

(TYP.) LOAM AND SEED WITH "LAWN AREAS SEED MIX". REFER TO SEED MIX SCHEDULE.

(TYP.) KEEP PLANTINGS 18" FROM FACE OF BUILDING WHEN POSSIBLE

(TYP.) LOAM AND SEED WITH "LAWN AREAS SEED MIX". REFER TO SEED MIX SCHEDULE.

(TYP.) PARKING LOT LANDSCAPE ISLAND SOIL TREATMENT AS NECESSARY. REFER TO PLANTING NOTES.

(TYP.) LOAM AND SEED WITH "LAWN AREAS SEED MIX". REFER TO SEED MIX SCHEDULE.

(TYP.) LOAM AND SEED WITH "LAWN AREAS SEED MIX". REFER TO SEED MIX SCHEDULE.

(TYP.) LOAM AND SEED WITH "LAWN AREAS SEED MIX". REFER TO SEED MIX SCHEDULE.

(TYP.) PARKING LOT LANDSCAPE ISLAND SOIL TREATMENT AS NECESSARY. REFER TO PLANTING NOTES.

(TYP.) LOAM AND SEED WITH "SITE PERIMETER DISTURBED AREAS / RESTORATION AREAS SEED MIX". REFER TO SEED MIX SCHEDULE.

(TYP.) KEEP PLANTINGS 18" FROM FACE OF BUILDING WHEN POSSIBLE

(TYP.) LOAM AND SEED WITH "LAWN AREAS SEED MIX". REFER TO SEED MIX SCHEDULE.

(TYP.) LOAM AND SEED WITH "LAWN AREAS SEED MIX". REFER TO SEED MIX SCHEDULE.

(TYP.) LOAM AND SEED WITH "SITE PERIMETER DISTURBED AREAS / RESTORATION AREAS SEED MIX". REFER TO SEED MIX SCHEDULE.

END 8' HEIGHT FENCE AND BEGIN 12' HEIGHT FENCE HERE. REFER TO CIVIL ENGINEER'S DRAWINGS.

12' HEIGHT FENCE. REFER TO CIVIL ENGINEER'S DRAWINGS.

8' HEIGHT FENCE. REFER TO CIVIL ENGINEER'S DRAWINGS.

48' LANDSCAPE BUFFER

10' LANDSCAPE BUFFER

N/F
ANDREW BAXTER
DEED BOOK 40699
PAGE 595
MAP 29 PARCEL 43

N/F
PETER P., JR., &
STACEY A. FALZONE
DEED BOOK 23242
PAGE 536
MAP 29 PARCEL 42

N/F

MATCH LINE

CONDITIONALLY APPROVED
TOWN OF MAYNARD
PLANNING BOARD

SIGNATURE DATE

SIGNATURE DATE

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A	X	INITIAL ISSUE	

MASSACHUSETTS
JAMES T. ALMONTE
REGISTERED LANDSCAPE ARCHITECT
8/9/17

PREPARED BY:

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31 East Main Street
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watermandesign.com wda@wdassoc.com

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MAYNARD CROSSING
129 Parker Street
Maynard, MA
(Middlesex County)
FOR CONSTRUCTION

0 20 40 60

DATE: 02/15/17	SCALE: 1" = 20'
JOB NO.: 0991.05	DWN. BY: ECV
FILE NO.: 0991400	CHK'D. BY: JTA
DRAWING NO.: 0991406D	SHEET: L1.05

MATCH LINE

SHEET L1.11

SHEET L1.07

SHEET L1.03

SHEET L1.05

(TYP.) LOAM AND SEED "LAWN AREAS SEED MIX". REFER TO SEED MIX SCHEDULE.

(TYP.) LOAM AND SEED WITH "LAWN AREAS SEED MIX". REFER TO SEED MIX SCHEDULE.

(TYP.) LOAM AND SEED WITH "SITE PERIMETER DISTURBED AREAS / RESTORATION AREAS SEED MIX". REFER TO SEED MIX SCHEDULE.

(TYP.) SEED WITH "STORMWATER BASINS SEED MIX" TO LIMITS SHOWN. REFER TO SEED MIX SCHEDULE.

(TYP.) LIMIT OF STORMWATER BASINS SEED MIX

BENCHES (TYP.)

12'x50' WOOD PERGOLA STRUCTURE (BY OTHERS)

(TYP.) PARKING LOT LANDSCAPE ISLAND SOIL TREATMENT AS NECESSARY. REFER TO PLANTING NOTES.

STOP

PROP. APARTMENTS
BLDG #1
54 UNITS
#8 DIGITAL WAY

CONDITIONALLY APPROVED
TOWN OF MAYNARD
PLANNING BOARD

SIGNATURE DATE

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DRAWING NO.: 0991407D	SHEET: L1.06

MATCH LINE

SHEET L1.10

SHEET L1.08

SHEET L1.02

PROP. R1
BUILDING
67,802 SF
#13 DIGITAL WAY

(TYP.) PARKING LOT LANDSCAPE ISLAND SOIL TREATMENT AS NECESSARY. REFER TO PLANTING NOTES.

MATCH LINE

MATCH LINE

SHEET L1.06

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REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS

COMMONWEALTH OF MASSACHUSETTS
JAMES T. ALMONTE
No. 1199
REGISTERED LANDSCAPE ARCHITECT
8/15/17

PREPARED BY:

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MAYNARD CROSSING
129 Parker Street
Maynard, MA
(Middlesex County)
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FILE NO.:	0991400	CHK'D. BY:	JTA
DRAWING NO.:	0991408D	SHEET:	L1.07

SHEET L1.09

SHEET L1.01

N/F
EVE A. &
R L. GERSHMAN
ND COURT
ICATE #212171
5 PARCEL 146

N/F
STEVE A. &
ER L. GERSHMAN
AND COURT
TIFICATE #212171
25 PARCEL 146

N/F
JEANNE M. LAPPAS
LAND COURT
DEED BOOK 1397
PAGE 138
MAP 25 PARCEL 147

N/F
PETER D. &
PATRICIA M. GERONDEAU
LAND COURT
CERTIFICATE #214576
MAP 25 PARCEL 148

N/F
ROBERT A. &
AMANDA R. MORRIS
LAND COURT
CERTIFICATE #200800
MAP 25 PARCEL 149

N/F
KULIK FAMILY GIFT TRUST
LAND COURT
DEED BOOK 1441
PAGE 10
MAP 25 PARCEL 150

N/F
PAUL J. &
KAREN L. GRIMES
LAND COURT
CERTIFICATE #168427
MAP 25 PARCEL 164

PET
MICHELL
LAN
CERTIFIC
MAP 25

EXISTING VEGETATION TO REMAIN ALONG NORTH PROPERTY LINE. ADDITIONAL EVERGREEN PLANTINGS TO BE PROVIDED IN BARE SPOTS AND FINAL LOCATION TO BE FIELD LOCATED BY THE PROJECT LANDSCAPE ARCHITECT IN ORDER TO MAXIMIZE BUFFER. ELECTIVE CLEARING AND/OR PRUNING MAY BE REQUIRED AND SHALL BE DETERMINED BY THE LANDSCAPE ARCHITECT PRIOR TO PLANTING.

PROPOSED 6' VINYL FENCE TO BE SET 5' OFF THE PROPERTY LINE. EXISTING FENCE TO BE REMOVED PER HOME OWNER'S REQUEST WITH EASEMENT GRANTED.

6FH STF 6FH

STF 6FH

208 207 206 205 204

T

45' LANDSCAPE BUFFER

45' LANDSCAPE

(TYP.) LOAM AND SEED WITH "SITE PERIMETER DISTURBED AREAS / RESTORATION AREAS SEED MIX". REFER TO SEED MIX SCHEDULE.

(TYP.) LOAM AND SEED WITH "SITE PERIMETER DISTURBED AREAS / RESTORATION AREAS SEED MIX". REFER TO SEED MIX SCHEDULE.

(TYP.) LOAM AND SEED WITH "SITE PERIMETER DISTURBED AREAS / RESTORATION AREAS SEED MIX". REFER TO SEED MIX SCHEDULE.

DO NOT ENTER

STOP

ONLY

(TYP.) PARKING LOT LANDSCAPE ISLAND SOIL TREATMENT AS NECESSARY. REFER TO PLANTING NOTES.

MATCH LINE

MATCH LINE

PROP. R3
BUILDING
55,922 SF
#11 DIGITAL WAY

SHEET L1.07

CONDITIONALLY APPROVED
TOWN OF MAYNARD
PLANNING BOARD

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PAUL G. SHERMAN PAUL G. SHERMAN

MASSACHUSETTS JAMES T. ALMONTE REGISTERED LANDSCAPE ARCHITECT 8/9/17

PREPARED BY:

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OWNER:

MAYNARD CROSSINGS JV, LLC
259 Turnpike Road, Suite 100
Southborough, MA 01772

PREPARED FOR:

MAYNARD CROSSINGS JV, LLC
259 Turnpike Road, Suite 100
Southborough, MA 01772

TITLE:

LANDSCAPE PLAN

MAYNARD CROSSING

129 Parker Street
Maynard, MA
(Middlesex County)
FOR CONSTRUCTION

0 20 40 60

DATE: 02/15/17	SCALE: 1" = 20'
JOB NO.: 0991.05	DWN. BY: ECV
FILE NO.: 0991400	CHK'D. BY: JTA
DRAWING NO.: 0991409D	SHEET: L1.08

N/F
TOWN OF MAYNARD HIGH SCHOOL
DEED BOOK 6156 PAGE 32
MAP 24 PARCEL 3

N/F
T.D. CHAU &
MY N. NGUYEN
LAND COURT
DEED BOOK 1371
PAGE 120
MAP 25 PARCEL 143

N/F
KOSTAS & EFTIHIA
ASPROGIANNIS
LAND COURT
CERTIFICATE #220479
MAP 25 PARCEL 144

N/F
LESLIE J., JR. &
BARBARA LYNN WALKER
LAND COURT
CERTIFICATE #208910
MAP 25 PARCEL 145

N/F
STEVE A
JENNIFER L. G
LAND CO
CERTIFICATE
MAP 25 PAR

N/
STEVE
JENNIFER L.
LAND C
CERTIFICATI
MAP 25 P,

SHEET L1.08

EXISTING VEGETATION TO REMAIN ALONG NORTH PROPERTY LINE. ADDITIONAL EVERGREEN PLANTINGS TO BE PROVIDED IN BARE SPOTS AND FINAL LOCATION TO BE FIELD LOCATED BY THE PROJECT LANDSCAPE ARCHITECT IN ORDER TO MAXIMIZE BUFFER. ELECTIVE CLEARING AND/OR PRUNING MAY BE REQUIRED AND SHALL BE DETERMINED BY THE LANDSCAPE ARCHITECT PRIOR TO PLANTING.

PROPOSED 8' VINYL FENCE TO BE SET 5' OFF THE PROPERTY LINE. EXISTING FENCE TO BE REMOVED PER HOME OWNER'S REQUEST WITH EASEMENT GRANTED.

STF 6FH

45' LANDSCAPE BUFFER

(TYP.) LOAM AND SEED WITH "SITE PERIMETER DISTURBED AREAS / RESTORATION AREAS SEED MIX". REFER TO SEED MIX SCHEDULE.

(TYP.) LOAM AND SEED WITH "SITE PERIMETER DISTURBED AREAS / RESTORATION AREAS SEED MIX". REFER TO SEED MIX SCHEDULE.

EXIST. R2
BUILDING
51,537 SF
#15 DIGITAL WAY

CLF 6FH

MATCH LINE

N/F
OF MAYNARD HIGH SCHOOL
BOOK 28956 PAGE 227
MAP 24 PARCEL 12

MATCH LINE

SHEET L1.10

CONDITIONALLY APPROVED
TOWN OF MAYNARD
PLANNING BOARD

SIGNATURE DATE

SIGNATURE DATE

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A	X	INITIAL ISSUE	

JAMES T. ALMON No. 1758 REGISTERED LANDSCAPE ARCHITECT 8/1/17

PREPARED BY:
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DRAWING NO.: 0991410D	SHEET: L1.09

MATCH LINE

SHEET L1.09

SHEET L1.07

TOWN OF MA DEED BOOK MAP 2

(TYP.) LOAM AND SEED WITH "SITE PERIMETER DISTURBED AREAS / RESTORATION AREAS SEED MIX". REFER TO SEED MIX SCHEDULE.

(TYP.) PARKING LOT LANDSCAPE ISLAND SOIL TREATMENT AS NECESSARY. REFER TO PLANTING NOTES.

(TYP.) RAIN GARDEN SLOPES AND BASIN TO BE PLANTED PER RAIN GARDEN DETAIL. REFER TO ENGINEER'S DRAWINGS

(TYP.) LOAM AND SEED WITH "SITE PERIMETER DISTURBED AREAS / RESTORATION AREAS SEED MIX". REFER TO SEED MIX SCHEDULE.

(TYP.) LOAM AND SEED WITH "SITE PERIMETER DISTURBED AREAS / RESTORATION AREAS SEED MIX". REFER TO SEED MIX SCHEDULE.

(TYP.) LIMIT OF STORMWATER BASINS SEED MIX

(TYP.) SEED WITH "STORMWATER BASINS SEED MIX" TO LIMITS SHOWN. REFER TO SEED MIX SCHEDULE.

(TYP.) LIMIT OF STORMWATER BASINS SEED MIX

(TYP.) LOAM AND SEED WITH "SITE PERIMETER DISTURBED AREAS / RESTORATION AREAS SEED MIX". REFER TO SEED MIX SCHEDULE.

(TYP.) LOAM AND SEED WITH "LAWN AREAS SEED MIX". REFER TO SEED MIX SCHEDULE.

STOP

MATCH LINE

SHEET L1.11

CONDITIONALLY APPROVED
TOWN OF MAYNARD
PLANNING BOARD

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MASSACHUSETTS JAMES T. ALMONTE REGISTERED LANDSCAPE ARCHITECT 8/9/17

PREPARED BY:

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Southborough, MA 01772

PREPARED FOR:

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Southborough, MA 01772

TITLE:

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MAYNARD CROSSING

129 Parker Street
Maynard, MA
(Middlesex County)

FOR CONSTRUCTION

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DATE: 02/15/17	SCALE: 1" = 20'
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DRAWING NO.: 0991411D	SHEET: L1.10

MATCH LINE

SHEET L1.10

SHEET L1.06

PROP. INDEPENDENT LIVING 143 SUITES

PROP. CONTINUING CARE RETIREMENT COMMUNITY 143 SUITES #16 DIGITAL WAY

(TYP.) LOAM AND SEED WITH "LAWN AREAS SEED MIX". REFER TO SEED MIX SCHEDULE.

(TYP.) LOAM AND SEED WITH "LAWN AREAS SEED MIX", REFER TO SEED MIX SCHEDULE.

(TYP.) LOAM AND SEED WITH "LAWN AREAS SEED MIX". REFER TO SEED MIX SCHEDULE.

(TYP.) LOAM AND SEED WITH "LAWN AREAS SEED MIX", REFER TO SEED MIX SCHEDULE.

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(TYP.) LOAM AND SEED WITH "LAWN AREAS SEED MIX". REFER TO SEED MIX SCHEDULE.

(TYP.) PARKING LOT LANDSCAPE ISLAND SOIL TREATMENT AS NECESSARY. REFER TO PLANTING NOTES.

SEASONAL COLOR

STOP

8" SIP

50' BVW BZ

100' BVW BZ

WF A24

WF A25

WF A26

WF A27

WF A28

WF SGG-A29

WF SGG-A30

WF SGG-A31

WF SGG-A32

WF SGG-A33

SGG-A34

SGG-A35

MATCH LINE

SHEET L1.12

MATCH LINE

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TOWN OF MAYNARD
PLANNING BOARD

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MASSACHUSETTS JAMES T. ALLOTTA REGISTERED LANDSCAPE ARCHITECT 7/31/17

PREPARED BY:

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PREPARED FOR:

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TITLE:

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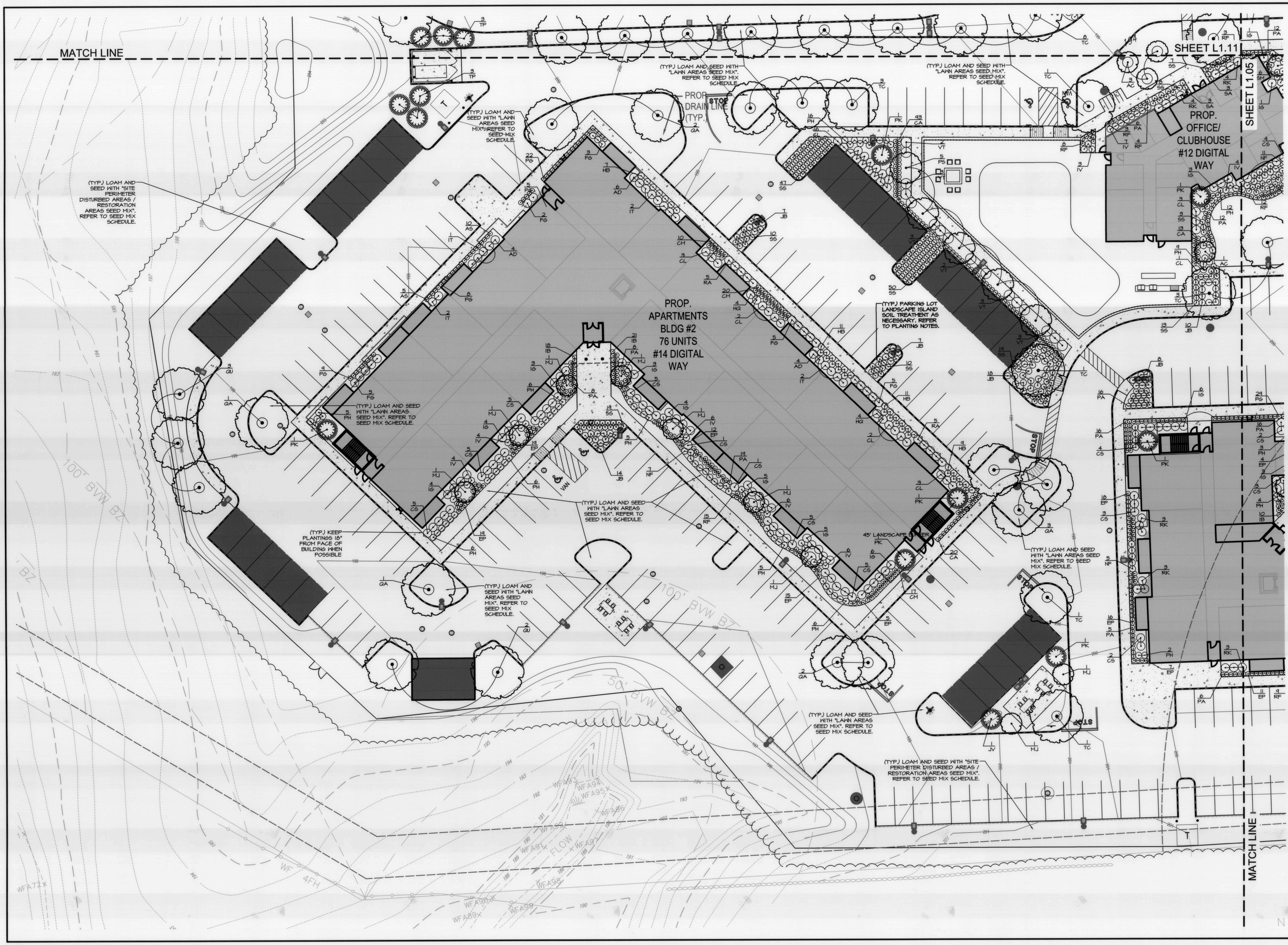
129 Parker Street
Maynard, MA
(Middlesex County)

FOR CONSTRUCTION

0 20 40 60

DATE: 02/15/17	SCALE: 1" = 20'
JOB NO.: 0991.05	DWN. BY: ECV
FILE NO.: 0991400	CHK'D. BY: JTA
DRAWING NO.: 0991412D	SHEET: L1.11



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TOWN OF MAYNARD
PLANNING BOARD

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Maynard, MA
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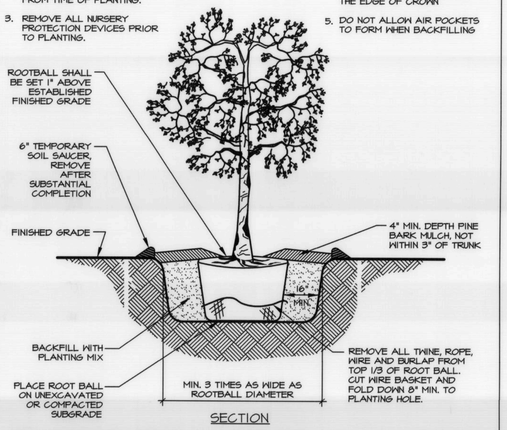
FILE NO.:	0991400	CHK'D. BY:	JTA
DRAWING NO.:	0991413D	SHEET:	L1.12

NOTES:
1. TREE SHALL BE SET PLUMB.
2. STAKING ONLY UPON APPROVAL OF PROJECT LANDSCAPE ARCHITECT. STAKES ARE TO BE REMOVED NO LATER THAN ONE YEAR FROM TIME OF PLANTING.
3. REMOVE ALL NURSERY PROTECTION DEVICES PRIOR TO PLANTING.
4. DO NOT HEAVILY PRUNE TREE AT TIME OF PLANTING. PRUNE ONLY CROSSOVER LIMBS, CO-DOMINANT LEADERS AND BROKEN OR DEAD BRANCHES. DO NOT REMOVE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF CROWN
5. DO NOT ALLOW AIR POCKETS TO FORM WHEN BACKFILLING

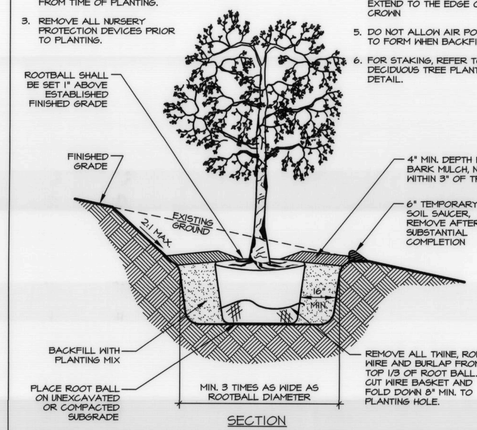


DECIDUOUS TREE PLANTING

N.T.S.

WDA, INC.

NOTES:
1. TREE SHALL BE SET PLUMB.
2. STAKING ONLY UPON APPROVAL OF PROJECT LANDSCAPE ARCHITECT. STAKES ARE TO BE REMOVED NO LATER THAN ONE YEAR FROM TIME OF PLANTING.
3. REMOVE ALL NURSERY PROTECTION DEVICES PRIOR TO PLANTING.
4. DO NOT HEAVILY PRUNE TREE AT TIME OF PLANTING. PRUNE ONLY CROSSOVER LIMBS, CO-DOMINANT LEADERS AND BROKEN OR DEAD BRANCHES. DO NOT REMOVE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF CROWN
5. DO NOT ALLOW AIR POCKETS TO FORM WHEN BACKFILLING
6. FOR STAKING, REFER TO DECIDUOUS TREE PLANTING DETAIL.

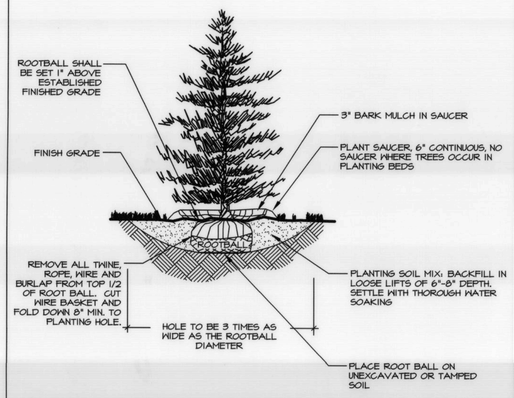


TREE PLANTING ON SLOPE

N.T.S. 02900-06

WDA, INC.

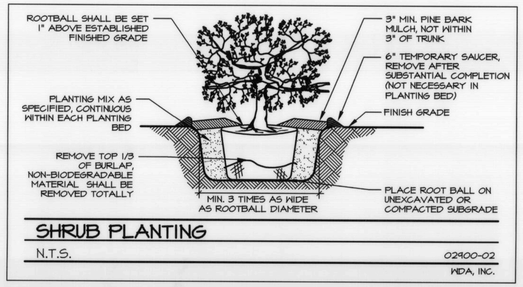
NOTES:
1. TREE SHALL BE SET PLUMB.
2. STAKING ONLY UPON APPROVAL OF PROJECT LANDSCAPE ARCHITECT. STAKES ARE TO BE REMOVED NO LATER THAN ONE YEAR FROM TIME OF PLANTING.
3. DO NOT ALLOW AIR POCKETS TO FORM WHEN BACKFILLING



EVERGREEN TREE PLANTING

N.T.S. 02900-03

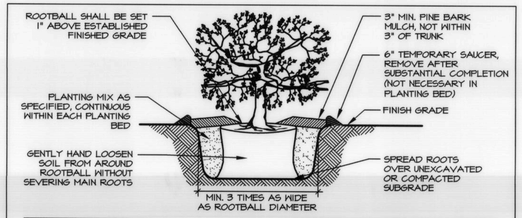
WDA, INC.



SHRUB PLANTING

N.T.S. 02900-02

WDA, INC.



SHRUB PLANTING (CONTAINER)

N.T.S. 02900-07

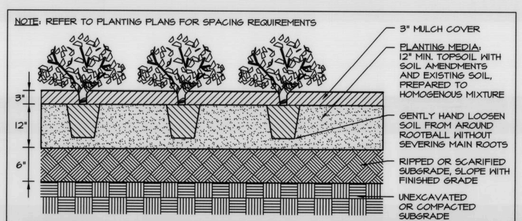
WDA, INC.

PERENNIAL PLANTING

N.T.S. 02900-09

WDA, INC.

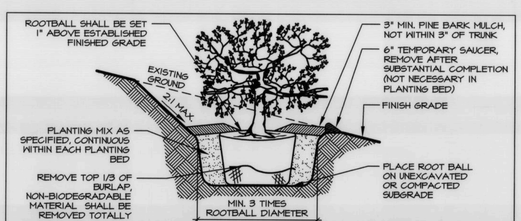
NOTE: REFER TO PLANTING PLANS FOR SPACING REQUIREMENTS



GROUNDCOVER PLANTING

N.T.S. 02900-11

WDA, INC.

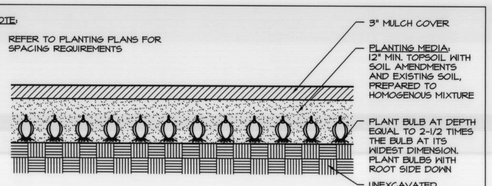


SHRUB PLANTING ON SLOPE

N.T.S. 02900-08

WDA, INC.

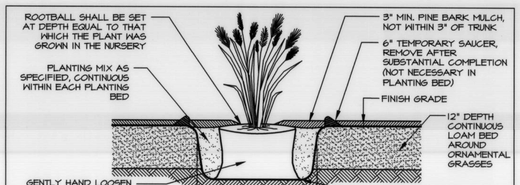
NOTE:
1. REFER TO PLANTING PLANS FOR SPACING REQUIREMENTS



BULB PLANTING

N.T.S. 02900-12

WDA, INC.

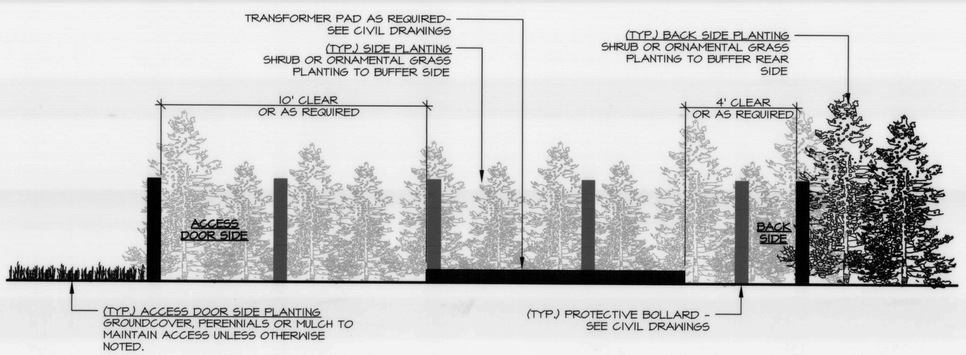


ORNAMENTAL GRASS PLANTING

N.T.S. 02900-10

WDA, INC.

NOTES:
1. SECTION SHOWN IS SCHEMATIC FOR GENERAL DESIGN APPROACH TO VEGETATIVE SCREENING.
2. PLANT BED WIDTHS AROUND INDIVIDUAL TRANSFORMERS VARY BY LOCATION. PLANTINGS PROVIDED ARE BASED ON AVAILABLE AREA AND OTHER SITE CONSIDERATIONS.
3. FINAL LOCATIONS AND DIMENSIONS OF TRANSFORMER AREAS TO BE DETERMINED BY UTILITY COMPANIES.
4. MINIMUM (1) ONE SIDE, ADJACENT TO ACCESS DOOR, TO REMAIN OPEN FOR ACCESS.



TYPICAL TRANSFORMER AREA SCREENING

N.T.S.

WDA, INC.

CONDITIONALLY APPROVED
TOWN OF MAYNARD
PLANNING BOARD

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COMMONWEALTH OF MASSACHUSETTS JAMES T. ALBERTI REGISTERED LANDSCAPE ARCHITECT 31917

PREPARED BY:

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PREPARED FOR:

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259 Turnpike Road, Suite 100
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TITLE:

LANDSCAPE DETAILS
MAYNARD CROSSING
129 Parker Street
Maynard, MA
(Middlesex County)
FOR CONSTRUCTION

0 20 40 60

DATE: 02/15/17	SCALE: AS SHOWN
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FILE NO.: 0991500	CHK'D. BY: JTA
DRAWING NO.: 0991501D	SHEET: L1.13

SECTION 32 92 00
TURF AND GRASSES

PART 1 GENERAL

1.01 GENERAL REQUIREMENTS
A. Include GENERAL CONDITIONS and SUPPLEMENTARY CONDITIONS as part of this Section.
B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.
C. Coordinate work with trades affecting, or affected by, work of this Section. Cooperate with such trades to assure the steady progress of all work under the Contract.

1.02 WORK INCLUDED
A. Refer to the Drawings for the extent and details of this work.
B. The work of this Section consists of all seeding and sodding and related work as shown on the Drawings or required herein and includes, but is not limited to the following:

1. Providing all topsoil required for work of this Section.
2. Screening stripped and stockpiled topsoil.
3. Providing additional new topsoil from off-site sources as required to complete work for this Section.
4. Providing all soil amendments, fertilizers, erosion controls and mulches as required for work in this Section.
5. Scarification of subsoil in preparation for loaming.
6. Spreading and fine grading topsoil for all lawn areas.
7. Seeding and sodding required for work in this Section.
8. Maintenance and guarantee.

1.03 RELATED WORK
A. Examine Contract Documents for requirements that affect work of this Section. Other Specification Sections that directly relate to work of this Section include, but are not limited to:

1. SECTION 32 90 00 - PLANTING

1.04 REFERENCES
A. Comply with applicable requirements of the following standards. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern.

1. American Society for Testing and Materials (ASTM):

C 136	Sieve Analysis of Fine and Coarse Aggregates
D 422	Particle-Size Analysis of Soils
E 11	Wire-Cloth Sieves for Testing Purposes

1.05 SUBMITTALS
A. Samples: The following samples shall be submitted:

Material	Quantity (lb.)
Fertilizer	10
Lime	10
Peat moss	10
Seed, each mix	1
Loam borrow	10

B. Manufacturer's Product Data: Manufacturer's product data shall be submitted for the following materials:

Aluminum sulfate
Fertilizer

C. Certificates: Labels from the manufacturer's container certifying that the product meets the specified requirements shall be submitted for the following materials:

Commercial fertilizer
New England Conservation / Wildlife Mix
New England Erosion Control / Restoration Mix (for Detention Basins and Moist Sites)
Lawn Grass seed
Seed mix for sod
Ground limestone

1.06 OWNER'S INSPECTION AND TESTING
A. Work will be subject to inspection at all times by the Landscape Architect. The Owner reserves the right to engage an independent testing laboratory to analyze and test materials used in the construction of the work. Where directed by the Landscape Architect, the testing laboratory will make material analyses and will report to the Landscape Architect whether materials conform to the requirements of this specification.

1. Cost of tests and material analyses made by the testing laboratory will be borne by the Owner when they indicate compliance with the specification, and by the Contractor when they indicate non-compliance.
2. Testing equipment will be provided by and tests performed by the testing laboratory. Upon request by the Landscape Architect, the Contractor shall provide such auxiliary personnel and services needed to accomplish the testing work.
3. Gradation of granular materials shall be determined in accordance with ASTM C 136. Sieves for determining material gradation shall be as described in ASTM E-11.

1.07 CONTRACTOR'S INSPECTION AND TESTING
A. The Contractor shall engage an independent testing agency, experienced in the testing of agricultural soils and acceptable to the Landscape Architect, to perform the topsoil/planting soil tests and analyses specified herein. All costs associated with testing shall be the Contractor's responsibility.

1. Particle size analysis shall include the following gradient of mineral content:

USDA Designation	Size in mm
Gravel	+ 2 mm
Very coarse sand	1-2 mm
Coarse sand	0.5-1 mm
Medium sand	0.25-0.5 mm
Fine sand	0.1-0.25 mm
Very fine sand	0.05-0.1 mm
Silt	0.002-0.05 mm
Clay	< 0.002 mm

2. Chemical analysis shall include the following:
a. pH and buffer pH
b. percentage of organic content by oven-dried weight
c. Nutrient levels by parts per million, including phosphorus, potassium, magnesium, manganese, iron, zinc, and calcium. Nutrient test shall include testing laboratory recommendations for supplemental additions to the soil, if necessary, based on the requirements for ornamental horticultural plants. Recommendations shall include rates at which additives are to be applied.
d. Soluble salt by electrical conductivity of a 1:2 soil/water sample.

1.08 DELIVERY, STORAGE, AND HANDLING
A. Digging Sod:

1. Sod shall not be dug at the nursery or approved source until ready to transport sod to the site of the work or acceptable storage location.
2. Before stripping, sod shall be mowed at a uniform height of 2 in.
3. Cut sod to specified thickness and to standard width and length desired.

B. Transportation of Sod:

1. Sod transported to the Project in open vehicles shall be covered with tarpaulins or other suitable covers securely fastened to the body of the vehicle to prevent injury. Closed vehicles shall be adequately ventilated to prevent overheating of the sod.
2. Evidence of inadequate protection following the digging, carelessness while in transit, or improper handling shall be cause for rejection.
3. Sod shall be kept moist, fresh, and protected at all times. Such protection shall encompass the entire period during which the sod is in transit, being handled, or are in temporary storage.
4. Upon arrival at the temporary storage location or the site of the work, sod material shall be inspected for proper shipping procedures. Should the sod be dried out, the Landscape Architect will reject the sod. When sod has been rejected, the Contractor shall at once remove it from the area of the work and replace it with acceptable material.
5. Unless otherwise authorized by the Landscape Architect, the Contractor shall notify the Landscape Architect at least two working days in advance of the anticipated delivery date of sod material. Certificate of Inspection when required shall accompany each shipment.

C. Handling and Storage of Sod:

1. Sod material shall be handled with extreme care to avoid breaking or tearing strips.
2. Sod shall not be stored for longer than 30 hours prior to installation. Sod shall be stored in a compact group and shall be kept moist. Sod shall be prevented from freezing.
3. Sod that has been damaged by poor handling or improper storage will be rejected by the Landscape Architect.

D. Deliver seed in original sealed containers, labeled with analysis of seed mixture, percentage of pure seed, year of production, net weight, date of packaging, location of packaging, and name of seed grower. Damaged packages will not be accepted.

E. Seed shall be stored under cool and dry conditions so that the endophytic seed in the mixture is capable of maintaining a high level of endophytes

F. Deliver fertilizer in sealed waterproof bags, printed with manufacturer's name, weight, and guaranteed analysis.

1.09 PLANTING SEASON
A. Planting season shall be as follows:

Material	Planting Season: Spring	Planting Season: Fall
Lawn Seeding and Sodding	3/15 to 6/15	8/1 to 8/15
New England Conservation / Wildlife Mix	See Section 3.05 below	
New England Erosion Control / Restoration Mix (for Detention Basins and Moist Sites)	See Section 3.05 below	

B. Planting shall only be performed when weather and soil conditions are suitable for planting the material specified in accordance with locally accepted practice.

C. Planting season may be extended with the written permission of the Landscape Architect.

1.10 ACCEPTANCE
A. Acceptance:

1. The Landscape Architect will inspect all work for Substantial Completion upon written request of the Contractor. The request shall be received at least ten calendar days before the anticipated date of inspection.
2. Acceptance of material by the Landscape Architect will be for general conformance to specified requirements, and shall not relieve the Contractor of responsibility for full conformance to the Contract Documents.
3. Upon completion and reinspection of all repairs or renewals necessary in the judgement of the Landscape Architect, the Landscape Architect will recommend to the Owner that the work of this Section be accepted.

B. Sod and seed areas will be accepted when in compliance with all the following conditions:

1. Roots are thoroughly knit to the soil;
2. Absence of visible joints (sodded areas);
3. All areas show a uniform stand of specified grass in healthy condition;
4. At least 60 days have elapsed since the completion of work under this Section.

PART 2 - PRODUCTS

2.01 GENERAL
A. Organic products shall be used whenever feasible during installation, establishment and continued maintenance for such needs as pesticides, herbicides and fertilizing.

2.02 NEW ENGLAND CONSERVATION / WILDLIFE MIX
A. Seed mixture: The New England Conservation / Wildlife Mix provides a permanent cover of grasses, wildflowers, and legumes. For both good erosion control and wildlife habitat value:

Conservation / Wildlife Seed Mix:

Elymus virginicus, Virginia Wild Rye; *Schizachyrium scoparium*, Little Bluestem; *Festuca rubra*, Creeping Red Fescue; *Andropogon gerardii*, Big Bluestem; *Chamaecrista fasciculata*, Partridge Pea; *Panicum clandestinum*, Deer Tongue; *Panicum virgatum*, Switchgrass; *Sorghastrum nutans*, Indian Grass; *Heliopsis helianthoides*, Ox Eye Sunflower; *Symphyotrichum novae-angliae*, New England Aster; *Verbena hastate*, Blue Vervain; *Agrostis perennans*, Upland Bentgrass; *Asclepias syriaca*, Common Milkweed; *Aster umbellatus*, Flat Topped/Umbrella Aster; *Eupatorium purpureum*, Purple Joe Pye Weed; *Solidago juncea*, Early Goldenrod; *Zizia aurea*, Golden Alexanders; *Eupatorium maculatum*, Spotted Joe Pye Weed.

New England Conservation / Wildlife Mix shall be as provided by New England Wetland Plants, Inc., 820 West Street, Amherst, MA 01002; (413) 548.8000; www.newp.com or approved equal.

2.03 NEW ENGLAND EROSION CONTROL / RESTORATION MIX
(for Detention Basins and Moist Sites)
A. Seed mixture: The New England Erosion Control / Restoration Mix (for Detention Basins and Moist Sites) contains a selection of native grasses and wildflowers to colonize generally moist, recently disturbed sites where quick growth of vegetation is desired to stabilize the soil surface:

Erosion Control / Restoration Seed Mix (for Detention Basins and Moist Sites):

Panicum virgatum, Switchgrass; *Festuca rubra*, Creeping Red Fescue; *Elymus virginicus*, Virginia Wild Rye; *Carex vulpinoidea*, Fox Sedge; *Agrostis stolonifera*, Creeping Bentgrass; *Elymus villosus*, Silky Wild Rye; *Bidens cernua*, Nodding Bur-Marigold; *Juncus effusus*, Soft Rush; *Solidago graminifolia*, Grass-leaved Goldenrod; *Onoclea sensibilis*, Sensitive Fern; *Eupatorium maculatum*, Joe-Pye Weed; *Eupatorium perfoliatum*, Boneset; *Aster umbellatus*, Flat-top Aster; *Aster novi-belgii*, New York Aster; *Verbena hastata*, Blue Vervain.

New England Erosion Control / Restoration Mix (for Detention Basins and Moist Sites) shall be as provided by New England Wetland Plants, Inc., 820 West Street, Amherst, MA 01002; (413) 548.8000; www.newp.com or approved equal.

2.04 LAWN SEED MIX
A. Seed mixture: Standard grade seed of the most recent season's crop. Seed shall be dry and free of mold. Seed shall be inoculated with endophytes. Seed mixture shall be as follows:

Lawn Seed Mix

Name of Seed	% by Weight in Mixture	Minimum % Purity	Minimum % Germination
Rebel II, Rebel Jr., or Tribute Tall Fescue	80	95	90
Palmer II Perennial Ryegrass	10	98	90
Nassau, Georgetown, Ram I or Baron Kentucky Bluegrass	10	98	90

2.05 SOD
A. Certified Turfgrass Sod: Superior sod grown from certified, high quality seed of known origin or from plantings of certified grass seedlings or stolons. It shall be inspected by the certification agency of the state in which it is grown to assure satisfactory genetic identity and purity, overall high quality and freedom from noxious weeds as well as excessive quantities of other crop and weedy plants at time of harvest. All seed or original plant material in mixture must be certified. Turfgrass sod shall meet the published state standards for certification.

1. Sod shall be "High Fescue Sod Blend" produced by Winding Brook Turf Farm, Inc., Wethersfield, CT, or approved equal.

B. Sod shall be nursery grown on cultivated mineral agricultural soils. Sod shall have been mowed regularly and carefully, and otherwise maintained from planting to harvest.

C. Thickness of Cut: Sod shall be machine cut at a uniform soil thickness of 5/8 in., plus or minus 1/4 in., at the time of cutting. Measurement for thickness shall exclude top growth and thatch.

D. Strip Size: Individual pieces of sod shall be cut to the supplier's standard width and length. Maximum allowable deviation from standard widths and lengths shall be plus or minus 1/2 in. on width, and plus or minus 5% on length. Broken strips and torn and uneven ends will not be acceptable.

E. Strength of Sod Strips: Standard size sections of sod shall be strong enough to support their own weight and retain their size and shape if suspended vertically when grasped in the upper 10% of the section.

F. Moisture Content: Sod shall not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.

G. Time Limitations: Sod shall be harvested, delivered, and transplanted within a 36 hour period unless a suitable preservation method is approved prior to delivery. Sod not transplanted within this period shall be inspected and approved by the Landscape Architect prior to its installation.

H. Thatch: Sod shall be relatively free of thatch. A maximum of 1/2 in. (uncompressed) thatch will be permitted.

I. Diseases, Nematodes, and Insects: Sod shall be free of diseases, nematodes, and soil-borne insects. State Nursery and Plant Materials Laws require that all sod be inspected and approved for sale. The inspection and approval must be made by the State Agricultural Department, Office of the State Entomologist.

J. Weeds: Sod shall be free of objectionable grassy and broad leaf weeds. Turfgrass sod shall be considered free of such weeds if less than five such plants are found per 100 sq. ft. of area.

1. Turfgrass sod shall not be acceptable if it contains any of the following weeds: common bermudagrass (wiregrass), quackgrass, johnsongrass, poison ivy, nutsedge, nimblewill, Canada thistle, bindweed, bentgrass, wild garlic, ground ivy, perennial sorrel and bromegrass.

2.06 PLANTING SOIL
A. Existing Topsoil

1. Existing topsoil from on-site source(s) may be used for planting soil, to the extent available, if it meets the requirements of this Section for planting soil, or if approved by the Landscape Architect.

B. Planting Soil

1. Planting soil shall be composed of a natural, fertile, friable soil typical of cultivated topsoils of the locality, suitable for the germination of seeds and support of vegetative growth, with additives, if required, to achieve particle distribution and organic content specifications . Topsoil shall be taken from a well-drained, arable site, free of subsoil, large stones, earth clods, sticks, stumps, clay lumps, roots, other objectionable, extraneous matter or debris nor contain toxic substances. Planting soil shall have a pH value between 5.5 and 7.0 and organic matter content of 5 to 10% of total dry weight.

2. Planting soil shall conform to the following particle size distribution, with a maximum 3/8" largest dimension, as determined by pipette method in compliance with ASTM F-1632 (see paragraph 1.06 for particle sizes):

Approximate Particle Distribution	
Sand	40 - 60%
Silt	30 - 40%
Clay	5 - 20%

3. Minimum planting soil nutrient levels shall be: Nitrogen @ 5% average of organic matter, Phosphorus @ .02 to .05% average of total soil content, Potassium @ 1.2% average of total soil content.

4. The Contractor shall provide the Landscape Architect with planting soil test results, as specified in Paragraph 1.05, before the start of planting operations. If planting soil does not fall within the required particle distribution, organic content, or pH range, it shall be adjusted to meet the specifications through the addition of sand, compost, limestone, or aluminum sulfate to bring it within the specified limits.

2.07 COMPOST
A. Compost shall be derived from organic wastes such as food and agricultural residues, animal manures, mixed solid waste and biosolids (treated sewage sludge) that meet all State Environmental Agency requirements. The product shall be well composted, free of viable weed seeds and contain material of a generally humus nature capable of sustaining growth of vegetation, with no materials toxic to plant growth.

1. Compost shall have the following properties:

Parameters	Range
pH	5.5 - 8.0
Moisture Content	35% - 55%
Soluble Salts	£ 4.0 mmhos (dS)
C:N ratio	15 - 30:1
Particle Size	< 1"
Organic Matter Content	> 50%
Bulk Density	< 1000 lbs./cubic yard
Foreign Matter	< 1% (dry weight)

2. Compost generator shall also provide minimum available nitrogen and other macro and micro nutrients to determine fertilizer requirements.
3. Compost shall be "AllGro", distributed by AllGro, 4 Liberty Lane West, Hampton, NH 03842; "Agresoil", distributed by Agresource, 100 Main Street, Amesbury, MA 01913; or approved equal.
4. Guidelines for quantity of compost required to achieve suitable soil organic content in soil mixes for ornamental horticultural planting shall be as recommended by the compost manufacturer.

2.08 LIMESTONE
A. Ground limestone shall be an agricultural limestone containing a minimum of 85% total carbonates, by weight. Ground limestone shall be graded within the following limits:

Sieve Size	% Passing by Weight
No. 10	100
No. 20	90
No. 100	60

2.09 WATER
A. Water shall be suitable for irrigation and free from ingredients harmful to seeded or sodded areas.

2.10 ALUMINUM SULFATE
A. Aluminum sulfate shall be unadulterated and shall be delivered in containers with the name of the material and manufacturer, and net weight of contents.

2.11 COMMERCIAL FERTILIZER
A. Starter fertilizer shall be HD Scotts Starter Fertilizer or approved equal.

B. Fertilizer shall conform to the following:

1. When applied as a topsoil amendment, fertilizer shall have an analysis that will deliver appropriate amounts of nitrogen, phosphorus, and potassium as required to remedy deficiencies revealed by testing the topsoil.
2. When used as a top dressing for the maintenance of sod, fertilizer shall conform to the following:

Constituent	% Present by Weight
Nitrogen (N)	10
Phosphorous (P	8
Potassium (K)	4

a. 50% of nitrogen shall be derived from natural organic source of ureaform.
b. Available phosphorus shall be derived from superphosphate, bone meal, or tankage.
c. Potassium shall be derived from muriate of potash containing 60% potash.

C. Fertilizer shall be delivered in manufacturer's standard container printed with manufacturer's name, material weight, and guaranteed analysis.

D. Fertilizers with N-P-K analysis other than that stated above may be used provided that the application rate per square foot of nitrogen, phosphorus, and potassium is equal to that specified.

2.12 SUPERPHOSPHATE
A. Superphosphate shall be composed of finely ground phosphate rock as commonly used for agricultural purposes, and containing not less than 20% available phosphoric acid. The superphosphate shall be delivered to the site in the original unopened containers, each bearing the manufacturer's guaranteed analysis. Any superphosphate which becomes caked or otherwise damaged making it unsuitable for use, will be rejected.

2.13 HYDROSEED MIX
A. All work will be carried out by an approved spraying machine specifically used for this work. Amounts of fertilizer used shall reflect recommendations outlined in the Soil Analysis. The Contractor shall submit to the Landscape Architect for approval, prior to the start of work, a certified statement as to number of pounds of fertilizer, amounts and types of grass seed, and processed fiber, per one hundred (100) gallons of water.

B. Cellulose fiber mulch shall be composed of virgin wood, contain a green color additive, be weed free, and non-polluting, containing no germination or growth - inhibiting factors, similar to Hydro Mulch, manufactured by Conwed Corporation, St. Paul, Minnesota 55113.

PART 3 EXECUTION

3.01 PREPARATION OF SUBGRADE
A. Subgrade shall be examined to ensure that rough grading and all other subsurface work in lawn areas and other areas to be seeded or sodded is done prior to start of seeding or sodding.

B. Existing subgrade shall be loosened or scarified to a minimum depth of 3 in. prior to spreading topsoil. Subgrade shall be brought to true and uniform grade, and shall be cleared of stones greater than 3 in., sticks, and other extraneous material.

3.02 SPREADING OF TOPSOIL
A. Topsoil shall not be spread until it is possible to follow immediately or within 24 hours with seeding or sodding operations. If topsoil is spread prior to this time it shall be cultivated to loosen soil prior to seeding or sodding.

B. Topsoil shall not be placed when subgrade or topsoil material are frozen, excessively wet, or excessively dry.

C. Topsoil shall be spread in a uniform layer, to a thickness which will compact to the depth required to bring final lawn and grass surfaces to required elevation. Unless otherwise indicated minimum depth of topsoil for seeded areas shall be 6 in., and for sodded areas shall be 4 in.

D. Surfaces shall be graded and smoothed, eliminating all sharp breaks by rounding, scraping off bumps and ridges, and filling in holes and cuts.

3.03 APPLICATION OF FERTILIZER AND CONDITIONERS
A. Fertilizer and conditioners shall be applied at the following rates:

1. Compost - as required by test results of topsoil.
2. Peat moss - as required by test results of topsoil.
3. Limestone - as required by test results of topsoil.
4. Fertilizer - as required by test results of topsoil.

B. Mixing with topsoil:

1. Fertilizer and conditioners shall be spread over the entire lawn areas at the application rates indicated above.
2. Materials shall be uniformly and thoroughly mixed into the top 4 in. of topsoil by discing, rototilling, or other approved method.

3.04 FINISH GRADING
A. Final surface of topsoil immediately before seeding shall be within ± 1/2 in. of required elevation, with no ruts, mounds, ridges, or other faults, and no pockets or low spots in which water can collect. Stones, roots, and other debris greater than 1 in. in any dimension, which are visible at the surface, shall be removed and the resulting holes filled with topsoil, leaving a uniform planar surface.

B. Finish grade surface with a drag or rake. Round out all breaks in grade, smooth down all lumps and ridges, fill in all holes and crevices. Rolling with a light roller is acceptable, if the surface is scarified afterward.

C. In the event of settlement, the Contractor shall readjust the work to required finished grade.

3.05 NEW ENGLAND EROSION CONTROL / RESTORATION MIX
(for Detention Basins and Moist Sites)
A. New England Erosion Control / Restoration Mix (for Detention Basins and Moist Sites): Always apply on clean bare soil. The mix may be applied by mechanical spreader. Lightly rake, or roll to ensure proper soil-seed contact. Best results are obtained with a Spring or early Fall seeding. Summer and Fall can be successful with a light mulching of weed-free straw to conserve moisture. If conditions are drier than usual, watering may be required. Late Fall and Winter dormant seeding require a slight increase in the seeding rate. Fertilization is not required unless the soils are particularly infertile. Preparation of a clean weed free soil surface is necessary for optimal results.

B. Application Rate: Erosion Control / Restoration seed shall be broadcast by means of an approved mechanical spreader, to give a uniform application at the following rates:

Seed	Application Rate
Erosion Control / Restoration Seed Mix (for Detention Basins and Moist Sites)	35 lbs. / acre (1,250 s.f. / lb)

C. Following seeding and raking, the entire area shall be rolled with a hand roller having a weight of 60 to 90 lb./ft. of width, and a minimum diameter of 2 ft. Entire area shall then be watered by use of lawn sprinklers, or other approved means. Initial watering shall continue until the equivalent of a 2 in. depth of water has been applied to entire seeded surface, at a rate which will not dislodge the seed. Watering shall be repeated thereafter as frequently as required to prevent drying of the surface. Watering methods and apparatus which may cause erosion of the surface shall not be permitted.

D. Rope off entire seeded area to prevent vehicles and pedestrians from entering area.

3.06 NEW ENGLAND CONSERVATION / WILDLIFE MIX
A. New England Conservation / Wildlife Mix: Always apply on clean bare soil. The mix shall be applied per manufacturer's instructions. Fertilization is not required unless the soils are particularly infertile. Preparation of a clean weed free soil surface is necessary for optimal results.

B. Application Rate: Conservation / Wildlife seed shall be broadcast by means of an approved mechanical spreader, to give a uniform application at the following rates:

Seed	Application Rate
Conservation / Wildlife Seed Mix	25 lbs. / acre (1,750 s.f. / lb)

C. Following seeding and raking, the entire area shall be rolled with a hand roller having a weight of 60 to 90 lb./ft. of width, and a minimum diameter of 2 ft. Entire area shall then be watered by use of lawn sprinklers, or other approved means. Initial watering shall continue until the equivalent of a 2 in. depth of water has been applied to entire seeded surface, at a rate which will not dislodge the seed. Watering shall be repeated thereafter as frequently as required to prevent drying of the surface. Watering methods and apparatus which may cause erosion of the surface shall not be permitted.

D. Rope off entire seeded area to prevent vehicles and pedestrians from entering area.

3.07 LAWN SEED APPLICATION
A. Lawn Seed shall be applied in two applications; first shall be by mechanical spreader; second shall be by hydroseeding method as specified below.

B. First Application: Lawn seed shall be broadcast by means of an approved mechanical spreader, to give a uniform application at the following rates:

Seed	Application Rate
Lawn Seed Mix	218 lbs. / acre (200 s.f. / lb.)

1. Seed shall be applied in two equal applications for uniform coverage; direction of travel of spreader for second pass shall be perpendicular to that of the first pass. Seeding shall not be done when it is raining or snowing, or when wind velocity exceeds 5 mph.
2. Following seeding the area shall be lightly raked to mingle seed with top 1/8 to 1/4 in. of soil. Area shall then be fine graded. Stones and other debris greater than 1 in. in any dimension which are visible on surface shall be removed.

C. Second Application: Seed shall be spread by the hydroseeding method, utilizing power equipment commonly used for that purpose.

1. Seed, lime, fertilizer, and mulch shall be mixed and applied to achieve application quantities specified herein for the conventional seeding method, with mulch applied at the rate of 1,200 lb./acre. Other provisions specified above for conventional seeding shall apply also to hydroseeding.
2. Mulch shall be applied in two stages with 5% to 10% of the quantity applied with seed and the balance applied separately.
3 Seed shall not be placed in water until immediately before application.
4. Centrifugal pumps shall not be used to apply seed mix without fiber mulch. Hand broadcast or use gear pump.
5. Gelscape shall be incorporated at the rate of 15 lb. per acre.

D. Following seeding and raking, entire area shall be rolled with a hand roller having a weight of 60 to 90 lb./ft. of width, and a minimum diameter of 2 ft. Entire area shall then be watered by use of lawn sprinklers, or other approved means. Initial watering shall continue until the equivalent of a 2 in. depth of water has been applied to entire seeded surface, at a rate which will not dislodge the seed. Watering shall be repeated thereafter as frequently as required to prevent drying of the surface. Lawn areas shall attain an average height of 1/4 in. Watering methods and apparatus which may cause erosion of the surface shall not be permitted.

E. Rope off entire seeded area to prevent vehicles and pedestrians from entering area.

3.08 SODDING
A. Edges of the sodded areas shall be smooth, and all sodded areas shall conform to the design cross sections and grade. At edges adjacent to curbs, paved areas, etc., top surface of earth in sod shall be 1/2 in. below adjacent hard surface.

B. Sod shall be placed and all sodding operations completed within 72 hours following stripping from sod source bed.

C. On slopes steeper than 2 to 1, sod shall be fastened in place with suitable wood pins or other approved methods, spaced at not less than 1 pin per square foot.

D. Surface of completed sodded area shall be smooth. Sod shall be laid edge-to-edge, with tight-butted, staggered joints. Sod shall be carefully placed to insure that it is neither stretched or overlapped. Immediately after laying sod shall be pressed firmly into contact with sod bed by tamping or rolling, to eliminate air pockets. Following compaction, topsoil shall be used to fill all cracks, and excess soil shall be worked into grass with rakes or other suitable equipment. Sod shall not be smothered with excess fill soil.

E. Immediately after sodding operations have been completed, entire surface shall be compacted with a cultipacker roller or other approved equipment weighing 100 to 160 lb./ft. of roller.

F. Completed sod shall immediately be watered sufficiently to uniformly wet the soil to at least 1 in. below the bottom of sod bed.

3.09 CONTRACTOR MAINTENANCE
A. Except as otherwise specified below, maintenance for lawn areas (seed or sod) shall include all operations required to produce an established lawn, including but not limited to:

Fertilizing
Mowing
Replanting
Watering
Weeding

B. Maintenance of seeded lawn areas shall begin upon completion of seeding and shall continue until acceptance of the building, or until mowing as specified below is completed, or until average height of grass is 1-1/2 in., whichever occurs later.

1. Watering

a. Week No. 1: Provide all watering necessary to keep seed bed moist at all times. Perform watering daily or as necessary to maintain moist soil to a depth of 4 in.
b. Week No. 2 and until acceptance of the building, or until mowing as specified below is completed, or until average height of grass is 1-1/2 in., whichever occurs later: Water as necessary to maintain adequate moisture in the upper 4 in. of soil to promote seed germination.

2. Mowing

a. Not more than 40% of the grass leaf shall be removed during the first or subsequent mowings.
b. Bluegrass and other cool season grasses shall be maintained between 1-1/2 in. and 2-1/2 in.
c. All clippings shall be removed.

C. Maintenance of sodded lawn areas shall begin upon completion of sodding and shall continue for 45 days thereafter, unless sodding is not completed until after September 15, in which case maintenance shall continue until the June 15 following.

1. Watering

a. Week No. 1: Provide all watering necessary for rooting of sod. Soil on sod pads shall be kept moist at all times. Perform watering daily or as necessary to maintain moist soil to a depth of 4 in. Watering shall be done during the heat of the day to prevent wilting.
b. Week No. 2 and Subsequent Weeks: Water as necessary to maintain adequate moisture in the upper 4 in. of soil to promote deep root growth.

2 Mowing

a. Mowing shall not be attempted until the sod is firmly rooted and securely in place. Not more than 40% of the grass leaf shall be removed during the first or subsequent mowings.
b. Bluegrass and other cool season grasses shall be maintained between 1-1/2 in. and 2-1/2 in.
c. All clippings shall be removed.

d. After 2 mowings, the Contractor shall top dress the sod with an application of fertilizer at the rate of 1 pound of actual nitrogen per 1000 square feet.

D. After grass has sprouted, seeded lawn areas which fail to show a uniform stand of grass shall be replanted as often as necessary to establish an acceptable stand of grass.

1. Scattered bare spots, shall not exceed 15 sq. in. each.

E. Weeds and growth other than varieties of grass named in grass seed formula shall be removed. Removal may be accomplished by use of suitable herbicides or by physical removal, in which case top growth and roots shall both be removed, and bare spots exceeding specified limits shall be reseeded.

F. If lawn or grass is established in the fall and maintenance is required to continue into spring months, lawn and grass shall receive an application of lime and fertilizer in the spring. Lime and fertilizer shall be spread in a uniform layer over the entire lawn surface, at the following rates.

Material	Application Rate
Lime	100 lb./1000 sq. ft.
Fertilizer	20 lb./1000 sq. ft.

G. Remove rope barricades only after second cutting of lawns.

3.10 INSPECTION AND ACCEPTANCE
A. The Landscape Architect shall inspect the lawns upon written request by the Contractor. The request shall be received at least ten (10) days before the anticipated date of inspection.

B. Final acceptance will not be granted until lawn areas are in satisfactory condition.

C. If the grass is in satisfactory condition, the Contractor's care and maintenance will end. If the grass stand is unsatisfactory, the Contractor's maintenance responsibility shall continue, including a normal program of mowing, irrigation, reseeding, fertilization and repair until an acceptable stand of grass is achieved.

3.11 CLEAN UP

A. Absolutely no debris may be left on the site. Excavated material shall be removed as directed. Repair any damage to site or structures to restore them to their original condition, as directed by the Landscape Architect, at no cost to the Owner.

END OF SECTION

CONDITIONALLY APPROVED
TOWN OF MAYNARD
PLANNING BOARD

Approved plans - see cover sheet for Planning Board signatures.

SIGNATURE DATE
SIGNATURE DATE
SIGNATURE DATE
SIGNATURE DATE
SIGNATURE DATE

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REV.	DATE	DESCRIPTION	INIT.
D	8/15/17	PEER REVIEW COMMENTS	
C	7/27/17	TOWN COMMENTS	
B	6/8/17	TOWN COMMENTS	
A		INITIAL ISSUE	

COMMONWEALTH OF MASSACHUSETTS — JAMES T. ALMONTE — No. 1196 — REGISTERED LANDSCAPE ARCHITECT — 8/15/17

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TITLE:
LANDSCAPE DETAILS
MAYNARD CROSSING
129 Parker Street
Maynard, MA
(Middlesex County)
FOR CONSTRUCTION

0 20 40 60

DATE:	02/15/17	SCALE:	AS SHOWN
JOB NO.:	0991.05	DWN. BY:	RMI
FILE NO.:	0991500	CHK'D. BY:	JTA
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SECTION 32 90 00
PLANTING

PART 1 GENERAL

1.01 GENERAL REQUIREMENTS

A. Include GENERAL CONDITIONS and SUPPLEMENTARY CONDITIONS as part of this Section.

B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.

C. Coordinate work with trades affecting, or affected by, work of this Section. Cooperate with such trades to assure the steady progress of al work under the Contract.

1.02 WORK INCLUDED

A. Perform all work required to complete the work of the Section, as indicated. Such work includes, but is not limited to, the following:

1. Planting of trees, shrubs, ornamental grasses, perennials and groundcover.
2. Maintenance and guarantee

1.03 RELATED WORK

A. Examine Contract Documents for requirements that affect work of this Section. Other Specification Sections that directly relate to work of this Section include, but are not limited to:

1. SECTION 32 92 00 - TURF AND GRASSES

1.04 QUALITY ASSURANCE

A. All plant materials shall be true to name according to "Standardized Plant Names", published by the American Joint Committee on Horticulture Nomenclature, 1942 edition. Each plant or bundle shall be tagged with the name and size of plants in accordance with the standards of the American Association of Nurserymen (AAN). In all cases, botanical names shall take precedence over common names.

B. Quality and size shall conform to the current edition of "Horticultural Standards" for number one grade nursery stock as adopted by the AAN.

C. All plants and plant materials shall comply with all Federal, State and local laws and regulations requiring inspection for plant disease and insect control.

D. Comply with applicable requirements of the following standards. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern.

1. American National Standards Institute, Inc. (ANSI):

Z60.1	American Standard for Nursery Stock (Sponsor: American Association of Nurserymen, Inc.)

2. American Society for Testing and Materials (ASTM):

C 136	Sieve Analysis of Fine and Coarse Aggregates
D 422	Particle-Size Analysis of Soils
E 11	Wire-Cloth Sieves for Testing Purposes
F 405	Corrugated Polyethylene (PE) Tubing and Fittings

3. "Hortus Third", A Concise Dictionary of Plants Cultivated in the United States and Canada, Cornell University, L.H. Bailey Hortorium, MacMillian Publishing Co., New York, NY.

1.05 SUBMITTALS

A. Submit a complete list of all materials proposed for use in this work, demonstrating complete conformance with the requirements specified. Submissions must include:

1. List of plant nurseries to the Landscape Architect for approval of stock selection and quality.

B. Samples: The following samples shall be submitted:

Material	Sample Size or Quantity
Mulch	1 cu. ft.
Compost	1 cu. ft.
Planting soil	1 cu. ft.
Soil separator	1 cu. ft.
Loam borrow	1 cu. ft.
Tree stake	36 in. length

C. Manufacturer's Product Data: Manufacturer's product data shall be submitted for the following materials:

Aluminum sulfate
Antidessicant
Fertilizer
Fungicide
Herbicide
Insecticide
Compost
Soil separator

D. Certificates: Labels from the manufacturer's container certifying that the product meets the specified requirements shall be submitted for the following materials:

Commercial fertilizer
Limestone

E. Test Reports: Test reports from an approved testing agency indicating compliance with the specifications shall be submitted for topsoil, peat moss, planting soil mixture, and any other materials designated by the Landscape Architect.

1.06 OWNER'S INSPECTION AND TESTING

A. Work will be subject to inspection at all times by the Landscape Architect. The Owner reserves the right to engage an independent testing laboratory to analyze and test materials used in the construction of the work. Where directed by the Landscape Architect, the testing laboratory will make material analyses and will report to the Landscape Architect whether materials conform to the requirements of this specification.

1. Cost of tests and material analyses made by the testing laboratory will be borne by the Owner when they indicate compliance with the specification, and by the Contractor when they indicate non-compliance.
2. Testing equipment will be provided by and tests performed by the testing laboratory. Upon request by the Landscape Architect, the Contractor shall provide such auxiliary personnel and services needed to accomplish the testing work.
3. Gradation of granular materials shall be determined in accordance with ASTM C 136. Sieves for determining material gradation shall be as described in ASTM E 11.

1.07 CONTRACTOR'S INSPECTION AND TESTING

A. The Contractor shall engage an independent testing agency, experienced in the testing of agricultural soils and acceptable to the Landscape Architect, to perform the topsoil/planting soil tests and analyses specified herein. All costs associated with testing shall be the Contractor's responsibility.

1. Particle size analyis shall include the following gradient of mineral content:

USDA Designation	Size in mm
Gravel	+ 2 mm
Very coarse sand	1-2 mm
Coarse sand	0.5-1 mm
Medium sand	0.25-0.5 mm
Fine sand	0.1-0.25 mm
Very fine sand	0.05-0.1 mm
Silt	0.002-0.05 mm
Clay	< 0.002 mm

2. Chemical analysis shall include the following:

a. pH and buffer pH
b. percentage of organic content by oven-dried weight
c. Nutrient levels by parts per million, including phosphorus, potassium, magnesium, manganese, iron, zinc, and calcium. Nutrient test shall include testing laboratory recommendations for supplemental additions to the soil, if necessary, based on the requirements for ornamental horticultural plants. Recommendations shall include rates at which additives are to be applied.
d. Soluble salt by electrical conductivity of a 1:2 soil/water sample.

1.08 SOURCE QUALITY CONTROL

A. Identification of plant materials shall be as named in "Hortus Third".

B. Selection of Plant Materials: Submit to the Landscape Architect the names and locations of nurseries proposed as sources of acceptable plant material. Inspect all nursery materials to determine that the materials meet the requirements of this section. Proposed materials shall be flagged at the nurseries by the Contractor prior to viewing by the Landscape Architect.

1. Schedule with the Landscape Architect a time for viewing plant material at the nursery. Trips to nurseries (if necessary) shall be efficiently arranged to allow Landscape Architect to maximize viewing time. A minimum of six weeks shall be allowed for this viewing prior to time that plants are to be dug.
2. If long distance travel is required for the Landscape Architect to perform nursery visits, any and all costs associated with such visits (air travel, vehicle rental, fuel, room and board, etc.) shall be borne by the Contractor.
3. Landscape Architect may choose to attach seal to each plant, or representative samples.
4. Where requested by the Landscape Architect, photographs of plant material or representative samples of plants shall be submitted.
5. Viewing and/or sealing of plant materials by the Landscape Architect at the nursery does not preclude the Landscape Architect's right to reject material at the site of planting.

1.09 AVAILABILITY OF PLANT MATERIAL

A. Before changes or substitutions can be made due to unavailability of plant material, submit satisfactory evidence that the Contractor has advertised for a one month period in a trade journal such as the "Landscape Materials Information Service", (Tel. And Fax: 914-887-4401), with no response, or has undertaken other methods of locating plant material acceptable to the Landscape Architect.

1.10 PRODUCT HANDLING

A. Digging Plant Material: Plants shall not be dug at the nursery or approved source until the Contractor is ready to transport them from their original locations to the site of the work or acceptable storage location.

B. Transportation of Plant Material: Plants transported to the project in open vehicles shall be covered with tarpaulins or other suitable covers securely fastened to the body of the vehicle to prevent injury to the plants. Closed vehicles shall be adequately ventilated to prevent overheating of the plants. Plants shall not remain in darkened enclosed trailer for more than 48 hours cumulative.

1. Plants shall be kept moist, fresh, and protected at all times. Such protection shall encompass the entire period during which the plants are in transit, being handled, or are in temporary storage.
2. Unless otherwise authorized by the Landscape Architect, notify the Landscape Architect at least three working days in advance of the anticipated delivery date of any plant material. A legible copy of the bill of lading, showing the quantities, kinds, and sizes of materials included for each shipment shall be furnished to the Landscape Architect.

C. Delivery and Storage: Unless specific authorization is obtained from the Landscape Architect, plants shall not remain on the site of work longer than three days prior to being planted.

1. Deliver all items to the job site in their original containers with all labels intact and legible at time of Landscape Architect's inspection.
2. Immediately remove from the site all plants which are not true to name, and all materials which do not comply with the specified requirements.
3. Use all means necessary to protect plant materials before, during, and after installation and to protect the work and materials of all other trades.
4. Replacements: in the event of damage, immediately make all repairs and replacements necessary to the approval of the Landscape Architect and at no additional cost to the Owner.
5. Plants that are not planted immediately shall be protected as follows:

a. Earth balls shall be kept appropriately moist and their solidity carefully preserved.
b. Plants shall not be allowed to dry out or freeze.

6. Both the duration and method of storage of plant materials shall be subject to the approval of the Landscape Architect.

D. Handling of Plant Materials: Exercise care in handling plant materials to avoid damage or stress.

1.11 REJECTION OF MATERIALS

A. Evidence of inadequate protection following digging, carelessness while in transit, or improper handling or storage, shall be cause for rejection.

B. Upon arrival at the temporary storage location or the site of the work, plants shall be inspected for proper shipping procedures. Should the roots be dried out, large branches be broken, balls of earth broken or loosened, or areas of bark be torn, the Landscape Architect will reject the injured plant.

C. When a plant has been rejected, remove it from the area of the work within 3 days and replace it with one of the required size and quality.

1.12 PLANTING SEASON

A. Planting: Planting may commence as soon as the ground has thawed at the nursery and at the site of planting, and weather conditions make it practicable to work both at the nursery and at the site.

1. Planting shall not occur any later than the following:

Material	End of Spring Planting Period
Deciduous Trees and Shrubs	July 15
Evergreen Trees and Shrubs	June 30
Vines, Perennials and Ground Cover	June 30

B. Regardless of the dates specified above, planting shall only be performed when weather and soil conditions are suitable for planting the material specified in accordance with locally accepted practice.

C. Planting season may be extended only with the written permission of the Landscape Architect. Plant material guarantee shall be honored regardless of extended planting season.

1.13 JOB CONDITIONS

A. Utilities: Determine location of underground utilities and perform work in a manner which will avoid possible damage. Hand excavate as required. Maintain grade stakes set by others until removal is mutually agreed upon by all parties concerned.
B. Excavation: When conditions detrimental to plant growth are encountered, such as rubble fill, adverse drainage conditions, or obstructions, notify Landscape Architect before planting.

1.14 MAINTENANCE

A. Contractor shall maintain plant material until the completion of guarantee period and Final Acceptance of work, as described in Part 3 of this Section.

PART 2 PRODUCTS

2.01 GENERAL

A. Organic products shall be used whenever feasible during installation, establishment and continued maintenance for such needs as pesticides, herbicides and fertilizing.

B. Planting Soil

1. Existing topsoil from on-site source(s) may be used for planting soil, to the extent available, if it meets the requirements of this Section for planting soil, or if approved by the Landscape Architect.
2. Deliver no topsoil in frozen or muddy condition.
3. Planting soil shall be composed of a natural, fertile, friable soil typical of cultivated topsoils of the locality, suitable for the germination of seeds and support of vegetative growth, with additives, if required, to achieve particle distribution and organic content specifications . Topsoil shall be taken from a well-drained, arable site, free of subsoil, large stones, earth clods, sticks, stumps, clay lumps, roots, other objectionable, extraneous matter or debris nor contain toxic substances. Planting soil shall have a pH value between 5.5 and 7.0 and organic matter content of 5 to 10% of total dry weight. Most perennials prefer a slightly acidic soil 6.0 - 6.5.
4. Planting soil shall have the following mechanical analysis (see paragraph 1.07 for particle sizes):

Approximate Particle Distribution

Gravel	Less than 10%
Coarse to medium sand	55 - 65%
Fine to very fine sand	15 - 25%
Silt	10- 20%
Clay	15 - 20%

5. Minimum planting soil nutrient levels shall be: Nitrogen @ 5% average of organic matter, Phosphorus @ .02 to .05% average of total soil content, Potassium @ 1.2% average of total soil content.
6. The Contractor shall provide the Landscape Architect with planting soil test results, as specified, before the start of planting operations. If planting soil does not fall within the required particle distribution, organic content, or pH range, it shall be adjusted to meet the specifications through the addition of sand, compost, limestone, or aluminum sulfate to bring it within the specified limits.
7. Planting soil for ericaceous shrubs shall have a pH value range of 4.5 to 5.0.

B. Superphosphate - finely ground phosphate rock with eighteen percent (18%) minimum available phosphoric acid.

C. Bone Meal - commercial raw bone meal, finely ground, 1% nitrogen and 18% phosphorus acid (min.).

D. Manure - well rotted, unleached, cattle manure, reasonably free of wood shavings, sawdust or other litter and no chemicals or other ingredients harmful to plants. Dehydrated manure (Bovung or equal) is acceptable.

E. Fertilizer - All plants will be fertilized with a controlled release 16-8-16 analysis fertilizer contained in polyethylene perforated bags with micropore holes. The bag shall contain 4 ounces minimum of water soluble fertilizer to be effective for 8 years. Pills, spikes, tablets and injections are not considered controlled release packets.

1. Deliver as specified in standard containers, showing weight, analysis and manufacturer. Store in a weather-proof place.

F. Peat - domestic or imported, of partially decomposed vegetable matter of natural occurrence, brown, clean, low in content of mineral and woody material; mildly acid, granulated or shredded, free from weedy grasses, sedges or rushes.

G. Lime - ground, dolomite limestone, 95% passing 100 mesh screen.

D. Antidessicant - shall be an emulsion specifically manufactured for plant protection which provides a protective film over plant surfaces which is permeable enough to permit transpiration. Antidessicant shall be delivered in manufacturer's sealed containers and shall contain manufacturer's printed instructions for use.

E. Planting mixture - topsoil thoroughly incorporated with well rotted manure or equivalent dehydrated manure or bone meal and peat proportioned 1 c.y. to 7 c.y. topsoil.

F. Mulch - aged pine bark consisting of the outer bark of pine trees with minimum hardwood bark. Bark shall be thoroughly mixed and aged in stock piles a minimum of 6 months, partially decomposed, dark brown in color, and generally free of chunks of wood thicker than 1/4". Aged pine bark containing an excess of fine particles will not be acceptable.

G. Water - The Contractor will furnish hose and connections required for watering all plant materials until completion of the project. Water shall be suitable for irrigation and shall be free from ingredients harmful to plant life.

H. Tree Staking - Hardwood Stake - for tree guying - 30" long (min.). For tree staking - 8' long (min.). Install as detailed on the Drawings

I. Wire - pliable No. 12 to 14 gauge galvanized soft steel wire with rubber hose or Chain Lock brand plastic tree tie or approved equivalent.

J. Wrapping material - first quality, heavy, waterproof crepe paper manufactured for this purpose; not less than 4" wide.

2.02 PLANT MATERIALS

A. Furnish and install all plants as per Drawings in quantities, sizes, and conditions listed on plant materials list. If there is any discrepancy between quantities listed and shrubs shown, notify the Landscape Architect. Contractor shall be responsible for quantity of shrubs graphically shown on plans.

B. All plants shall be nursery grown unless authorized to be collected.

C. All plant materials shall be labeled. Labels shall be durable and legible, stating the correct plant name and size in weather-resistant ink or embossed process. Labels shall be securely attached to all plants prior to delivery to the site, being careful not to restrict growth

D. Plants shall be in accordance with USDA Standard for Nursery Stock, latest edition, hardy under climatic conditions similar to locality of project, typical of species or variety, normal habit of growth, sound, healthy, vigorous, well-branched, densely foliated when in leaf, free of disease, insect pests, eggs, or larvae, with well developed root systems.

E. Plants shall have outstanding form; symmetrical, heavily branched with an even branch distribution, densely foliated and/or budded, and a strong, straight, distinct leader where this is characteristic of species. Plants shall possess a normal balance between height and spread. The Landscape Architect will be the final arbiter of acceptability of plant form.

F. Plants shall be free of physical damage such as scrapes, broken or split branches, scars, bark abrasions, sunscalds, fresh limb cuts, disfiguring knots, or other defects. These defects shall not interrupt more than 25% of the circumference of the plant cambium.

G. Plants shall not be pruned before delivery.

H. If plants of specified kind or size are not available within a reasonable distance, substitutions may be made upon request, if approved by Landscape Architect.

I. Plant Dimensions - conform to USDA Standard for Nursery Stock, latest edition, as specified. Exceptions as follows:

1. Plants larger than specified may be used if approved by Landscape Architect at no increase in contract price. Increase spread of roots or earth ball in proportion to size of plant.
2. Undersize plants (10% max.) in any one variety or grade may be used if approved by the Landscape Architect. Provide sufficient plants above size to make average equal to or above specified grade. Undersize plants shall be larger than average size of next smaller grade.
3. Where a size or caliper range is stated, at least 50% of the material shall be closer in size to the top of the range stated.

J. Balled and burlapped (B & B) plants - dig with firm natural earth roots. Made balls are unacceptable. In no case shall ball size be less than 11 in. in diameter for each inch of caliper.

K. Container grown plants - grown in container long enough for root system to have developed sufficiently to hold its soil together firm and whole. Plants loose in container will not be acceptable.

L. Protect B & B plants not planted immediately upon delivery with soil, wet moss, or other acceptable material. Prevent voids among roots with careful filling. Bind no plants with wire or rope so as to damage bark or break branches.

M. Plants are subject to inspection and approval at place of growth for conformity to specifications as to quality, size, and variety. The expenses incurred by the Landscape Architect for such inspections shall be born by the Contractor. Landscape Architect reserves right of inspection upon delivery at the site or during progress of work or right of rejection due to damage suffered in handling or transportation. Remove defective plants immediately from site. Plants to be accompanied by State Nursery inspection certification, if required.

PART 3 EXECUTION

3.01 INSPECTION

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to the proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected.

3.02 DRAINAGE OF SOILS

A. Test drainage of five plant beds and pits chosen by the Landscape Architect shall be done by filling with water twice in succession. The time at which water is put into the pit or bed for a second filling shall be noted. Landscape Architect shall then be notified of the time it takes for pit or bed to drain completely. Planting operations shall not proceed until Landscape Architect has reviewed test drainage results.

B. Notify the Landscape Architect in writing of all soil or drainage conditions that he considers detrimental to growth of plant material. Submit proposal and cost estimate for correction of the conditions for Landscape Architect's approval before starting work.

3.03 LAYOUT OF PLANTING AREAS

A. Individual trees shall be located in the field as indicated on the Drawings for Landscape Architect's approval prior to planting. Contractor shall provide one foreman, one loader with operator and two laborers to work with Landscape Architect in the field to determine the final location and orientation of each tree prior to planting. It is anticipated that this process may take several days to complete. Contractor shall plan to have this layout crew available to work with Landscape Architect at a slow and deliberate pace in order to achieve the desired results.

B. Individual shrub locations and outlines of shrub and ground cover areas to be planted shall be staked by the Contractor in ample time to allow inspection by the Landscape Architect.

C. Individual vines, perennials and groundcovers to be planted shall be laid out in plant beds by the Contractor in ample time to allow inspection by the Landscape Architect.

D. Digging shall not begin until locations are approved by the Landscape Architect.

E. Location of trees shall be staked using color coded stakes. A different stake color shall be used for each tree species.

3.04 PREPARATION OF SUBGRADE

A. Subgrade of planting areas shall be loosened or scarified to a minimum depth of 3 in. prior to spreading planting soil. Subgrade shall be brought to true and uniform grade and shall be cleared of stones greater than 2 in., sticks, and other extraneous material.

3.05 PLANT PIT EXCAVATION

A. Planting pits for trees and shrubs shall be excavated to the depth and dimension indicated on the Drawings.

B. Excavation shall not begin until locations are approved by the Landscape Architect.

3.06 SPREADING OF PLANTING SOIL

A. Planting soil shall be spread and placed to required depths.

B. Surfaces shall be graded and smoothed, eliminating all sharp breaks by rounding, scraping off bumps and ridges, and filling in holes and cuts.

3.07 DECIDUOUS AND CONIFEROUS TREE AND SHRUB PLANTING

A. Walls of plant pits shall be dug so that they are vertical and scarified.

B. Plants shall be set as indicated on Drawings. Plants shall have same relationship to finished grade as in the nursery.

C. Plants shall be turned to the desired orientation when required by Landscape Architect.

D. Containerized plants shall be removed from container taking care not to damage roots. The side of the root ball shall be scarified to prevent root-bound condition and plant positioned in planting pit.

E. Planting shall be positioned in center of planting pit, set plumb, and rigidly braced in position until all planting soil has been tamped solidly around the ball.

F. Pits shall be backfilled with planting soil. Soil shall be worked carefully into voids and pockets, tamping lightly every 6 in.

1. When pit is two-thirds full, plants shall be watered thoroughly, and water left to soak in before proceeding.
2. At this time, ropes or strings on top of ball shall be cut and shall be pulled back. Burlap or cloth wrapping shall be left intact around ball except that portions of wrap that are exposed at top of ball shall be turned under and buried. Non-biodegradable ball wrapping and support wire shall be totally removed from ball and planting pit.
3. Wire baskets shall be completely cut away from sides of root ball, and removed from pit. Bottom of basket may remain.
4. Remove nursery plant identification tags.

G. Backfilling and tamping shall then be finished and a saucer formed around plant pits as indicated on the Drawings.

H. Saucer shall be filled with water and water left to soak in. Saucer shall then be filled with water again.

3.08 VINES, PERENNIALS AND GROUND COVER PLANTING

A. Set out and space plants as indicated on the Drawings .

B. Perennials: Dig at least 18" deep, but 12" is adequate. Work 4-6" compost into the top layers of soil by digging or tilling.

C Vines: Check root ball after removing plant from its container. Encircling roots need to be gently loosened from the tight mat of root-bound plants. If roots are very dense at bottom of pot, slice off the bottom 1". If roots are seriously disturbed when planting, cut back some foliage to reduce the water stress that will occur. Plant at the same soil level as the plant was in its container.

D. Work soil around roots to eliminate air pockets and leave a slight saucer indentation around plants to hold water.

E. Water thoroughly after planting, taking care not to cover plant crowns with wet soil.

F. Protect plants from hot sun and wind; remove protection if plants show evidence of recovery from transplanting shock.

3.09 APPLICATION OF FERTILIZER

A. Fertilizer shall be applied when planting pits are backfilled two-thirds full. Fertilizer application shall be of the type, rate, and timing recommended by fertilizer manufacturer.

3.10 STAKING AND GUYING

A. Each tree shall be staked or guyed immediately following planting as detailed on the Drawings or as directed by the Landscape Architect. Plants shall stand plumb after staking or guying. Staking or guying shall ot be used as a means to straighten trees.

3.11 MULCHING

A. Cover all tree and shrub pits immediately after planting with 3" (min.) layer of specified mulch. Limit of mulch for trees shall be area of pit; for shrubs in beds, entire area of shrub bed.

3.12 PRUNING

A. Each tree and shrub shall be pruned in accordance with AAN standards to preserve the natural character of the plant. Pruning shall be done after delivery of plants and after plants have been inspected and approved by the Landscape Architect. Pruning procedures shall be reviewed with Landscape Architect before proceeding. Prune with clean, sharp tools.

3.13 MAINTENANCE OF PLANTING

A. Maintenance shall begin immediately after each plant is planted and shall continue through guarantee period and for a minimum of ninety (90) days following Final Acceptance.

B. Maintenance shall consist of keeping the plants in a healthy growing condition and shall include but is not limited to pruning, watering, weeding, cultivating, re-mulching, repairing and replacing of tree stakes, tightening and repairing of guys, repairing and replacing of tree wrap material, removal of dead material, resetting plants to proper grades or upright position, and maintaining the planting saucer.

1. Plants shall be inspected for watering needs at least twice each week and watered as necessary to promote plant growth and vitality.
2. Stakes shall be kept plumb and neat in appearance. Guys, wires and anchoring cables shall be tightened and repaired weekly.
3. Planting beds and individual plant pits shall be kept free of weeds, grass and other undesired vegetative growth, and mulch shall be replaced as required to maintain the specified layer of mulch. Beds and individual pits shall be neat in appearance and maintained to the designed layout.
4. Plants that die during the maintenance period shall be removed and replaced at once, unless designated otherwise by the Landscape Architect.
5. Spraying for both insect pests and diseases shall be included during the maintenance period as required and as directed.

C. During the ninety (90) day maintenance period, any decline in the condition of plantings shall require the Contractor to take immediate action to identify potential problems and undertake corrective measures. If requested by the Landscape Architect, the Contractor shall engage professional arborists and/or horticulturalists to inspect plant materials and to identify problems and recommend corrective procedures.

3.14 ACCEPTANCE STANDARDS FOR PLANTING

A. Following the completion of all planting, the Contractor shall request, from the Landscape Architect in writing, a formal inspection of the completed work. If plant materials and workmanship for the site are acceptable, written notice will be given to the Contractor stating that the work has received acceptance and that the ninety (90) day maintenance and the one (1) year guarantee period has commenced from the date of acceptance.

B. If a number of plants are sickly or dead at the time of inspection, or if, in the Landscape Architect's opinion, workmanship is unacceptable, written notice will be given by the Landscape Architect to the Contractor in the form of a punch list, which itemizes necessary planting replacements and/or other deficiencies to be remedied. The Contractor's responsibility for maintenance of all the plants shall be extended until replacements are made or other deficiencies are corrected. All dead and unsatisfactory plants shall be removed promptly from the project. Replacements shall conform in all respects to the Specifications for new plants and shall be planted in the same manner.

3.15 GUARANTEE

A. Plants shall be guaranteed for a period of one (1) full year, or two growing seasons, after the date of written notification of acceptance by the Owner, and shall be alive and in satisfactory growth at the end of the guarantee period

1. When the work is accepted in parts, the guarantee periods shall extend from each of the partial acceptances to the terminal date of the last guarantee period. Thus, all guarantee periods terminate at one time.

B. Plants shall be healthy, free of pests and disease, and in flourishing condition at the end of the guarantee period. Plants shall be free of dead and dying branches and branch tips, and shall bear foliage of normal density, size, and color.

C. At the end of the guarantee period, a final inspection will be held to determine whether any additional plant material replacements are required. Each plant shall show at least 75% healthy growth and shall have the natural character of its species as determined by the Landscape Architect. Plants found to be unacceptable shall be removed promptly from the site and shall be replaced as soon as weather conditions permit within the specified planting season, without cost to the Owner, until each individual plant lives through one (1) full year.

1. Replacements shall precisely match adjacent specimens of the same species, unless other wise specified by the Landscape Architect. Replacements shall be subject to all requirements stated in this Specification.
2. Make all necessary repairs due to plant replacements. Such repairs shall be done at no extra cost to the Owner.
3. The guarantee of all replacement plants shall extend for an additional one (1) year period from the date of their acceptance after replacement. In the event that a replacement plant is not acceptable during or at the end of the said extended guarantee period, the Owner may elect one more replacement or credit for each item.

D. All replacement plants shall have a one (1) year guarantee from time of planting.

E. At the end of the guarantee period, and no less than five days prior to final inspection, staking & guying materials and tree wrap & ties shall be removed from the plant materials and disposed of off-site.

3.16 FINAL INSPECTION AND FINAL ACCEPTANCE

A. At the end of the guarantee period, the Landscape Architect will, upon written notice of the end of the guarantee period, inspect the work of this Section for Final Acceptance. Requests shall be received at least ten calendar days before the anticipated date for Final Inspection.

B. Upon completion and reinspection of full repairs and/or replacements necessary in the judgment of the Landscape Architect at that time, the Landscape Architect will recommend to the Owner that Final Acceptance of the Work of this Section be given.

END OF SECTION

CONDITIONALLY APPROVED
TOWN OF MAYNARD
PLANNING BOARD

Approved plans - see cover sheet for Planning Board signatures.

SIGNATURE DATE

SIGNATURE DATE

SIGNATURE DATE

SIGNATURE DATE

SIGNATURE DATE

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REV.	DATE	DESCRIPTION	INIT.
D	8/15/17	PEER REVIEW COMMENTS	
C	7/27/17	TOWN COMMENTS	
B	6/8/17	TOWN COMMENTS	
A		INITIAL ISSUE	

MASSACHUSETTS
JAMES T. ALMONTE
NO. 1198
REGISTERED LANDSCAPE ARCHITECT
8/15/17

PREPARED BY:

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TITLE:

LANDSCAPE DETAILS

MAYNARD CROSSING
129 Parker Street
Maynard, MA
(Middlesex County)
FOR CONSTRUCTION

0 20 40 60

DATE:	02/15/17	SCALE:	AS SHOWN
JOB NO.:	0991.05	DWN. BY:	RMI
		CHK'D. BY:	JTA
FILE NO.:	0991500	SHEET:	L1.15
DRAWING NO.:	0991501D		

TOWN OF MAYNARD, MASSACHUSETTS

PROPOSED INTERSECTION IMPROVEMENTS

AT

VARIOUS LOCATIONS

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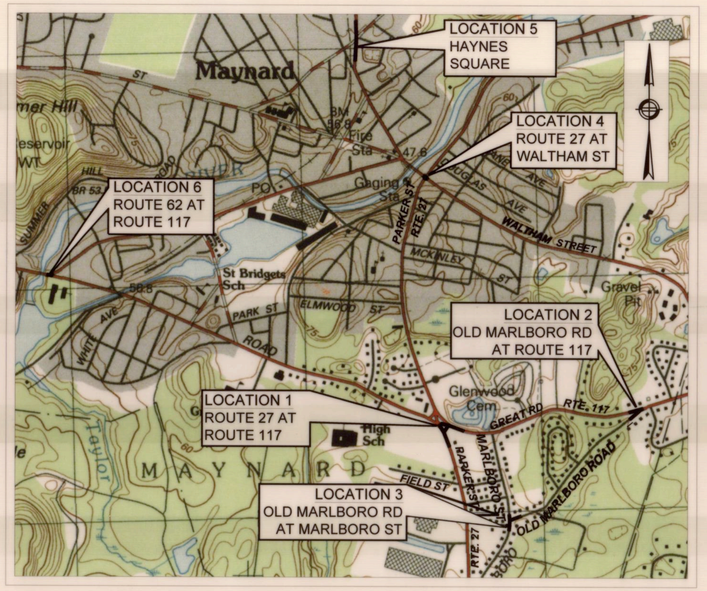

LOCATION PLAN

1000 0 1000 2000

SCALE IN FEET

THE MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES DATED 1988, AS AMENDED, THE SUPPLEMENTAL SPECIFICATIONS DATED JULY 1, 2015, THE 2016 CONSTRUCTION STANDARD DETAILS, THE 1996 CONSTRUCTION AND TRAFFIC STANDARD DETAILS (AS RELATES TO TRAFFIC STANDARD DETAILS ONLY), THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS WITH MASSACHUSETTS AMENDMENTS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS, THE 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS AND HIGHWAY LIGHTING AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, WILL GOVERN.

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE	DATE 9.26.17
SIGNATURE	DATE 9/26/17
SIGNATURE	DATE
SIGNATURE	DATE 9/27/17
SIGNATURE	DATE 9/27/17

COMMONWEALTH OF MASSACHUSETTS
JASON S. SOBEL
CIVIL
No. 47550
REGISTERED PROFESSIONAL ENGINEER
8/14/2017

NO.	DATE	REVISIONS

PROJECT: INTERSECTION IMPROVEMENTS AT VARIOUS LOCATIONS

DESIGN SUBMISSION: FINAL DESIGN

DRAWING TITLE: TITLE SHEET

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

SCALE: AS NOTED	DESIGNED BY: DT	SHEET NO.
DATE: 8/14/17	DRAWN BY: SM	01 OF 23
PROJECT NO. 15104.035	CHECKED BY: DT	

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ABBREVIATIONS

GENERAL

AADT	ANNUAL AVERAGE DAILY TRAFFIC
ABAN	ABANDON
ADJ	ADJUST
APPROX.	APPROXIMATE
A.C.	ASPHALT CONCRETE
ACCM PIPE	ASPHALT COATED CORRUGATED METAL PIPE
BIT.	BITUMINOUS
BC	BOTTOM OF CURB
BD.	BOUND
BL	BASELINE
BLDG	BUILDING
BM	BENCHMARK
BO	BY OTHERS
BOS	BOTTOM OF SLOPE
BR.	BRIDGE
CB	CATCH BASIN
CBCI	CATCH BASIN WITH CURB INLET
CC	CEMENT CONCRETE
CCM	CEMENT CONCRETE MASONRY
CEM	CEMENT
CI	CURB INLET
CIP	CAST IRON PIPE
CLF	CHAIN LINK FENCE
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CSP	CORRUGATED STEEL PIPE
CO.	COUNTY
CONC	CONCRETE
CONT	CONTINUOUS
CONST	CONSTRUCTION
CR GR	CROWN GRADE
DHV	DESIGN HOURLY VOLUME
DI	DROP INLET
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DW	STEADY DON'T WALK - PORTLAND ORANGE
DWY	DRIVEWAY
ELEV (or EL.)	ELEVATION
EMB	EMBANKMENT
EOP	EDGE OF PAVEMENT
EXIST (or EX)	EXISTING
EXC	EXCAVATION
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
FDN.	FOUNDATION
FLDSTN	FIELDSTONE
GAR	GARAGE
GD	GROUND
GG	GAS GATE
GI	GUTTER INLET
GIP	GALVANIZED IRON PIPE
GRAN	GRANITE
GRAV	GRAVEL
GRD	GUARD
HDW	HEADWALL
HMA	HOT MIX ASPHALT
HOR	HORIZONTAL
HYD	HYDRANT
INV	INVERT
JCT	JUNCTION
L	LENGTH OF CURVE
LB	LEACH BASIN
LP	LIGHT POLE
LT	LEFT
MAX	MAXIMUM
MB	MAILBOX
MH	MANHOLE
MHB	MASSACHUSETTS HIGHWAY BOUND
MIN	MINIMUM
NIC	NOT IN CONTRACT
NO.	NUMBER
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
P.G.L.	PROFILE GRADE LINE
PI	POINT OF INTERSECTION
POC	POINT ON CURVE
POT	POINT ON TANGENT
PRC	POINT OF REVERSE CURVATURE
PROJ	PROJECT
PROP	PROPOSED
PSB	PLANTABLE SOIL BORROW
PT	POINT OF TANGENCY
PVC	POINT OF VERTICAL CURVATURE

ABBREVIATIONS (cont.)

GENERAL

R	RADIUS OF CURVATURE
R&D	REMOVE AND DISPOSE
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
RDWY	ROADWAY
REM	REMOVE
RET	RETAIN
RET WALL	RETAINING WALL
ROW	RIGHT OF WAY
RR	RAILROAD
R&R	REMOVE AND RESET
R&S	REMOVE AND STACK
RT	RIGHT
SB	STONE BOUND
SHLD	SHOULDER
SMH	SEWER MANHOLE
ST	STREET
STA	STATION
SSD	STOPPING SIGHT DISTANCE
SHLO	STATE HIGHWAY LAYOUT LINE
SW	SIDEWALK
T	TANGENT DISTANCE OF CURVE/TRUCK %
TAN	TANGENT
TEMP	TEMPORARY
TC	TOP OF CURB
TOS	TOP OF SLOPE
TYP	TYPICAL
UP	UTILITY POLE
VAR	VARIES
VERT	VERTICAL
VC	VERTICAL CURVE
WCR	WHEEL CHAIR RAMP
WG	WATER GATE
WIP	WROUGHT IRON PIPE
WM	WATER METER/WATER MAIN
X-SECT	CROSS SECTION

TRAFFIC SIGNAL

CAB.	CABINET
CCVE	CLOSED CIRCUIT VIDEO EQUIPMENT
DW	STEADY DON'T WALK
FDW	FLASHING DON'T WALK
FR	FLASHING CIRCULAR RED
FRL	FLASHING RED LEFT ARROW
FRR	FLASHING RED RIGHT ARROW
FY	FLASHING CIRCULAR AMBER
FYL	FLASHING AMBER LEFT ARROW
FYR	FLASHING AMBER RIGHT ARROW
G	STEADY CIRCULAR GREEN
GL	STEADY GREEN LEFT ARROW
GR	STEADY GREEN RIGHT ARROW
GSL	STEADY GREEN SLASH LEFT ARROW
GSR	STEADY GREEN SLASH RIGHT ARROW
GV	STEADY GREEN VERTICAL ARROW
OL	OVERLAP
PED	PEDESTRIAN
PTZ	PAN, TILE, ZOOM
R	STEADY CIRCULAR RED
RL	STEADY RED LEFT ARROW
RR	STEADY RED RIGHT ARROW
TR SIG	TRAFFIC SIGNAL
TSC	TRAFFIC SIGNAL CONDUIT
W	STEADY WALK
Y	STEADY CIRCULAR AMBER
YL	STEADY AMBER LEFT ARROW

GENERAL SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
JB	JB	JERSEY BARRIER ON BRIDGE OR JERSEY BARRIER
CB	CB	CATCH BASIN
		CATCH BASIN CURB INLET
FP	FP	FLAG POLE
GP	GP	GAS PUMP
MB	MB	MAIL BOX
		POST SQUARE
		POST CIRCULAR
WELL	WELL	WELL
EHH	EHH	ELECTRIC HANDHOLE
		FENCE GATE POST
GG	GG	GAS GATE
BHL #	BHL #	BORING HOLE
MW #	MW #	MONITORING WELL
TP #	TP #	TEST PIT
		HYDRANT
		LIGHT POLE
CO.BD.		COUNTY BOUND
		GPS POINT
Ⓒ	Ⓒ	CABLE MANHOLE
Ⓓ	Ⓓ	DRAINAGE MANHOLE
Ⓔ	Ⓔ	ELECTRIC MANHOLE
Ⓖ	Ⓖ	GAS MANHOLE
Ⓜ	Ⓜ	MISC MANHOLE
Ⓢ	Ⓢ	SEWER MANHOLE
Ⓣ	Ⓣ	TELEPHONE MANHOLE
Ⓦ	Ⓦ	WATER MANHOLE
MHB	MHB	MASSACHUSETTS HIGHWAY BOUND
MON		MONUMENT
SB		STONE BOUND
TB		TOWN OR CITY BOUND
△		TRAVERSE OR TRIANGULATION STATION
TPL or GUY	TPL or GUY	TROLLEY POLE OR GUY POLE
HTP		TRANSMISSION POLE
UFB	UFB	UTILITY POLE W/ FIREBOX
UPDL	UPDL	UTILITY POLE WITH DOUBLE LIGHT
ULT	ULT	UTILITY POLE W / 1 LIGHT
UPL	UPL	UTILITY POLE
		BUSH
SIZE & TYPE		TREE
		STUMP
		SWAMP / MARSH
WG	WG	WATER GATE
PM	PM	PARKING METER
		SIGN AND POST
		SIGN AND POST (2 POSTS)
		OVERHEAD CABLE/WIRE
		CURBING
100 99		CONTOURS
		UNDERGROUND DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND ELECTRIC DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND GAS MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND SEWER MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND TELEPHONE DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND WATER MAIN (DOUBLE LINE 24 INCH AND OVER)
		BALANCE STONE WALL
		GUARD RAIL - STEEL POSTS
		GUARD RAIL - WOOD POSTS
x	x	CHAIN LINK OR METAL FENCE
		WOOD FENCE
		HAY BALES/SILT FENCE
		TREE LINE OR LIMIT OF CLEARING AND GRUBBING
		SAWCUT LINE
		TOP OR BOTTOM OF SLOPE
		LIMIT OF EDGE OF PAVEMENT OR COLD PLANE AND OVERLAY
		BANK OF RIVER OR STREAM
		BORDER OF WETLAND
		100 FT WETLAND BUFFER
		200 FT RIVERFRONT BUFFER
		STATE HIGHWAY LAYOUT
		TOWN OR CITY LAYOUT
		COUNTY LAYOUT
		RAILROAD SIDELINE
		TOWN OR CITY BOUNDARY LINE
		PROPERTY LINE OR APPROXIMATE PROPERTY LINE
		EASEMENT

TRAFFIC SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
1	1	CONTROLLER PHASE ACTUATED
		TRAFFIC SIGNAL HEAD (SIZE AS NOTED)
		WIRE LOOP DETECTOR (6' x 6' TYP UNLESS OTHERWISE SPECIFIED)
		VIDEO DETECTION CAMERA
		VEHICLE VIDEO DETECTION ZONE
		BICYCLE VIDEO DETECTION ZONE
		MICROWAVE DETECTOR
		PEDESTRIAN PUSH BUTTON, SIGN (DIRECTIONAL ARROW AS SHOWN) AND SADDLE
		EMERGENCY PREEMPTION CONFIRMATION STROBE LIGHT
		VEHICULAR SIGNAL HEAD
		VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED
		FLASHING BEACON
		PEDESTRIAN SIGNAL HEAD, (TYPE AS NOTED OR AS SPECIFIED)
RRSG	RRSG	RAILROAD SIGNAL
OR		SIGNAL POST AND BASE (ALPHA-NUMERIC DESIGNATION NOTED)
	20'	MAST ARM, SHAFT AND BASE (ARM LENGTH AS NOTED)
		HIGH MAST POLE OR TOWER
	20'	MAST ARM WITH LUMINAIRE
		OPTICAL PRE-EMPTION DETECTOR
		CONTROL CABINET, GROUND MOUNTED
		CONTROL CABINET, POLE MOUNTED
		FLASHING BEACON CONTROL AND METER PEDESTAL
		LOAD CENTER ASSEMBLY
		PULL BOX 12"x12" (OR AS NOTED)
		ELECTRIC HANDHOLE 12"x24" (OR AS NOTED)
		TRAFFIC SIGNAL CONDUIT

PAVEMENT MARKINGS SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		PAVEMENT ARROW - WHITE
ONLY	ONLY	LEGEND "ONLY" - WHITE
	SL	STOP LINE
	CW	CROSSWALK
	SWL	SOLID WHITE LINE
	SYL	SOLID YELLOW LINE
	BWL	BROKEN WHITE LINE
	BYL	BROKEN YELLOW LINE
	DWL	DOTTED WHITE LINE (2' LINE & 6' GAP)
	DYL	DOTTED YELLOW LINE (2' LINE & 6' GAP)
	DWLEx	DOTTED WHITE LINE EXTENSION (2' LINE & 6' GAP)
	DYLEx	DOTTED YELLOW LINE EXTENSION (2' LINE & 6' GAP)
	DBWL	DOUBLE WHITE LINE
	DBYL	DOUBLE YELLOW LINE

TOWN OF MAYNARD PLANNING BOARD APPROVAL

SIGNATURE DATE

SIGNATURE DATE

SIGNATURE DATE

Approved plans - see cover sheet for Planning Board signatures.

SIGNATURE DATE

SIGNATURE DATE

PROJECT: INTERSECTION IMPROVEMENTS AT VARIOUS LOCATIONS

DESIGN SUBMISSION: FINAL DESIGN

DRAWING TITLE: PLAN SYMBOLS

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers
Westford, Massachusetts
(978) 923-0400
GreenIntl.com

SCALE: NTS	DESIGNED BY: DT	SHEET NO.
DATE: 8/14/17	DRAWN BY: SM	02 OF 23
PROJECT NO. 15104.035	CHECKED BY: DT	

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GENERAL NOTES

1. THE WORK UNDER THIS PROJECT INCLUDES BUT IS NOT LIMITED TO FULL DEPTH BOX WIDENING, PLACEMENT OF PAVEMENT MARKINGS, PROTECTION OF EXISTING UTILITIES TO REMAIN, GRADING, INSTALLATION AND MAINTENANCE OF EROSION CONTROLS, INSTALLATION OF TRAFFIC SIGNS, INSTALLATION OF TRAFFIC SIGNALS, AND TRAFFIC MAINTENANCE DURING CONSTRUCTION.
2. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ALL CONFLICTS BETWEEN THE EXISTING UTILITIES AND PROPOSED WORK. THE ENGINEER RESERVES THE RIGHT TO MODIFY THE DESIGN TO REALIGN PIPING AND STRUCTURE LOCATIONS AND INVERTS TO SUIT ACTUAL FIELD CONDITIONS ENCOUNTERED.
3. ALL EXISTING STREET NAME, REGULATORY, GUIDE, AND WARNING SIGNS, INCLUDING POSTS, WITHIN THE LIMITS OF WORK ARE TO BE RETAINED UNLESS OTHERWISE NOTED.
4. THE CONTRACTOR SHALL RETAIN AND PROTECT ALL CURBS, FENCES, WALLS, TREES, SHRUBS, POSTS, LANDSCAPE FEATURES, AND OTHER MISCELLANEOUS ITEMS WITHIN ABUTTING PROPERTIES UNLESS OTHERWISE NOTED. WHEN RETAINING THOSE ITEMS IS NOT PRACTICAL IN THE OPINION OF THE ENGINEER, THE CONTRACTOR SHALL REMOVE, STOCKPILE, PROTECT AND RESET THE ITEMS. THE CONTRACTOR SHALL REPLACE ITEMS DAMAGED DURING REMOVAL, STOCKPILING, OR RESETTING DUE TO NEGLIGENCE, CARELESSNESS, OR MISHANDLING WITH EQUIVALENT NEW ITEMS AT NO COST TO THE DEVELOPER.
5. THE CONTRACTOR SHALL PROVIDE ALL SAFETY CONTROL (SIGNS, REFLECTORIZED DRUMS, ETC) FOR CONSTRUCTION OPERATIONS IN ACCORDANCE WITH THE TRAFFIC MANAGEMENT PLANS INCLUDED HEREIN AND THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. PROVIDING SAFETY CONTROLS SHALL BE INCLUDED IN THE COST OF ITEM 852. SAFETY SIGNING FOR TRAFFIC MANAGEMENT, ITEM 859. REFLECTORIZED DRUM, AND ITEM 999.001 POLICE DETAIL.
5. ALL LANDSCAPED AREAS BETWEEN THE PROPOSED EDGE OF PAVEMENT AND SLOPE LIMITS, INCLUDING BUT NOT LIMITED TO LAWNS, BARK MULCH, PLANTING BEDS, ETC., SHALL BE REPLACED IN KIND UNLESS OTHERWISE NOTED.
6. THE CONTRACTOR SHALL INSTALL ALL EROSION CONTROL MEASURES PRIOR TO THE START OF WORK.
7. MAILBOXES SHALL BE SET IN ACCORDANCE WITH MASSDOT STANDARD DETAIL E 504.1.0., EXCEPT THE MAILBOX DOOR SHALL FACE TOWARDS THE STREET.
8. ALL TREES SHALL BE RETAINED AND PROTECTED. THE COSTS FOR PROTECTION SHALL BE INCIDENTAL TO THE CONTRACT.
9. ALL UTILITIES AND THEIR APPURTENANCES SHALL BE RETAINED AND PROTECTED UNLESS OTHERWISE NOTED.

PLAN NOTES

1. THE BASE MAP IS COMPILED FROM AN ACTUAL-ON-THE-GROUND TOPOGRAPHIC SURVEY PERFORMED BY GREEN INTERNATIONAL AFFILIATES, INC. MAY - AUGUST, 2014
2. THIS DRAWING WAS PREPARED SOLELY FOR AND IS INTENDED FOR THE WORK ASSOCIATED WITH THIS PROJECT. THE USE OR REUSE OF THESE DRAWINGS FOR OTHER PURPOSES OR BY PARTIES NOT DIRECTLY CONTRACTED TO THIS PROJECT IS PROHIBITED WITHOUT PRIOR WRITTEN PERMISSION.
3. HORIZONTAL DATUM IN MASSACHUSETTS STATE PLANE (2001) U.S. SURVEY FEET. VERTICAL DATUM IS NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

UTILITY NOTES

1. THE CONTRACTOR IS HEREBY MADE AWARE THAT EXISTING UTILITIES, INCLUDING BUT NOT LIMITED TO EXISTING WATER AND DRAIN PIPES; DRAINAGE AND SEWER STRUCTURES; GAS LINES, COMMUNICATION LINES AND UTILITY POLES, MAY NEED TO BE PROTECTED AND/OR SHORED UP DURING THE CONSTRUCTION OF THE PROPOSED IMPROVEMENTS UNDER THIS PROJECT. THE COST OF THE WORK REQUIRED FOR THE PROTECTION, MAINTENANCE AND SUPPORT OF THESE OR OTHER EXISTING ABOVEGROUND OR UNDERGROUND UTILITIES IN THE VICINITY OF THE PROPOSED WORK SHALL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED INCIDENTAL TO THE WORK UNDER THIS CONTRACT.
2. THIS PLAN WAS PREPARED IN CONFORMANCE WITH AMERICAN SOCIETY OF CIVIL ENGINEERS STANDARD CI/ASCE 38-02 "STANDARD GUIDELINE FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA", QL"C". REFER TO UTILITY QUALITY LEVEL INFORMATION INDEX. ACCURACY OF UTILITY LOCATIONS IS NOT GUARANTEED.
3. BELOW GROUND STRUCTURES, UNLESS DIMENSIONED, ARE SYMBOLIC ONLY.
4. PRIOR TO THE START OF ANY WORK ON THE SITE, THE CONTRACTOR SHALL VERIFY THE ACTUAL LOCATION OF ALL UTILITIES, SHOWN OR NOT SHOWN ON THIS PLAN. CONTACT DIG-SAFE AT 1-888-344-7233 (1-888-DIG-SAFE) AT LEAST 72 HOURS PRIOR TO THE START OF EXCAVATION.
5. ANY EXISTING DRAIN PIPES UNDER THE EXISTING ROADWAY, THAT ARE NOT CALLED OUT TO BE RETAINED SHALL BE REMOVED. IF THE EXISTING PIPE EXTENDS OUTSIDE THE PROPOSED ROADWAY LIMIT, IT SHALL BE CUT AND CAPPED AT NO ADDITIONAL COST. NO EXTRA PAYMENT FOR REMOVAL OF EXISTING DRAIN PIPES THAT NEED TO BE REMOVED AS A RESULT OF A DIRECT CONFLICT WITH THE PROPOSED WORK, INCLUDING BUT NOT LIMITED TO NEW DRAINAGE, SUBDRAIN, ROADWAY EXCAVATION, ETC. EXCAVATION AND REMOVAL OF DRAINAGE PIPES THAT ARE NOT IN DIRECT CONFLICT WITH PROPOSED IMPROVEMENTS WILL BE PAID FOR UNDER UNCLASSIFIED EXCAVATION.

UTILITY QUALITY LEVEL INFORMATION INDEX (SEE ASCE/CI 38-02):

UTILITY QUALITY LEVEL A:
PRECISE HORIZONTAL AND VERTICAL LOCATION OF UTILITIES OBTAINED BY THE ACTUAL EXPOSURE (OR VERIFICATION OF PREVIOUSLY EXPOSED AND SURVEYED UTILITIES) AND SUBSEQUENT MEASUREMENT OF SUBSURFACE UTILITIES, USUALLY AT A SPECIFIC POINT. MINIMALLY INTRUSIVE EXCAVATION EQUIPMENT IS TYPICALLY USED TO MINIMIZE THE POTENTIAL FOR UTILITY DAMAGE. A PRECISE HORIZONTAL AND VERTICAL LOCATION, AS WELL AS OTHER UTILITY ATTRIBUTES, IS SHOWN ON PLAN DOCUMENTS. ACCURACY IS TYPICALLY SET TO 15-MM VERTICAL AND TO APPLICABLE HORIZONTAL SURVEY AND MAPPING ACCURACY AS DEFINED OR EXPECTED BY THE PROJECT OWNER. INFORMATION IS ONLY VALID WITHIN THE VISIBLE LIMITS OF THE TEST HOLE.

UTILITY QUALITY LEVEL B:
INFORMATION OBTAINED THROUGH THE APPLICATION OF APPROPRIATE SURFACE GEOPHYSICAL METHODS TO DETERMINE THE EXISTENCE AND APPROXIMATE HORIZONTAL POSITION OF SUBSURFACE UTILITIES. QUALITY LEVEL B DATA SHOULD BE REPRODUCIBLE BY SURFACE GEOPHYSICS AT ANY POINT OF THEIR DEPICTION. THIS INFORMATION IS SURVEYED TO APPLICABLE TOLERANCES DEFINED BY THE PROJECT AND REDUCED ONTO PLAN DOCUMENTS.

UTILITY QUALITY LEVEL C:
INFORMATION OBTAINED BY SURVEYING AND PLOTTING VISIBLE ABOVE-GROUND UTILITY FEATURES AND BY USING PROFESSIONAL JUDGMENT IN CORRELATING THIS INFORMATION TO QUALITY LEVEL D INFORMATION.

UTILITY QUALITY LEVEL D:
INFORMATION DERIVED FROM EXISTING RECORDS OR ORAL RECOLLECTIONS.

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE — Approved plans - see cover sheet for Planning Board signatures.	DATE
SIGNATURE	DATE
SIGNATURE	DATE

PROJECT: INTERSECTION IMPROVEMENTS AT VARIOUS LOCATIONS

DESIGN SUBMISSION: FINAL DESIGN

DRAWING TITLE: GENERAL NOTES

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

SCALE: NTS	DESIGNED BY: DT	SHEET NO.
DATE: 8/14/17	DRAWN BY: SM	03 OF 23
PROJECT NO. 15104.035	CHECKED BY: DT	

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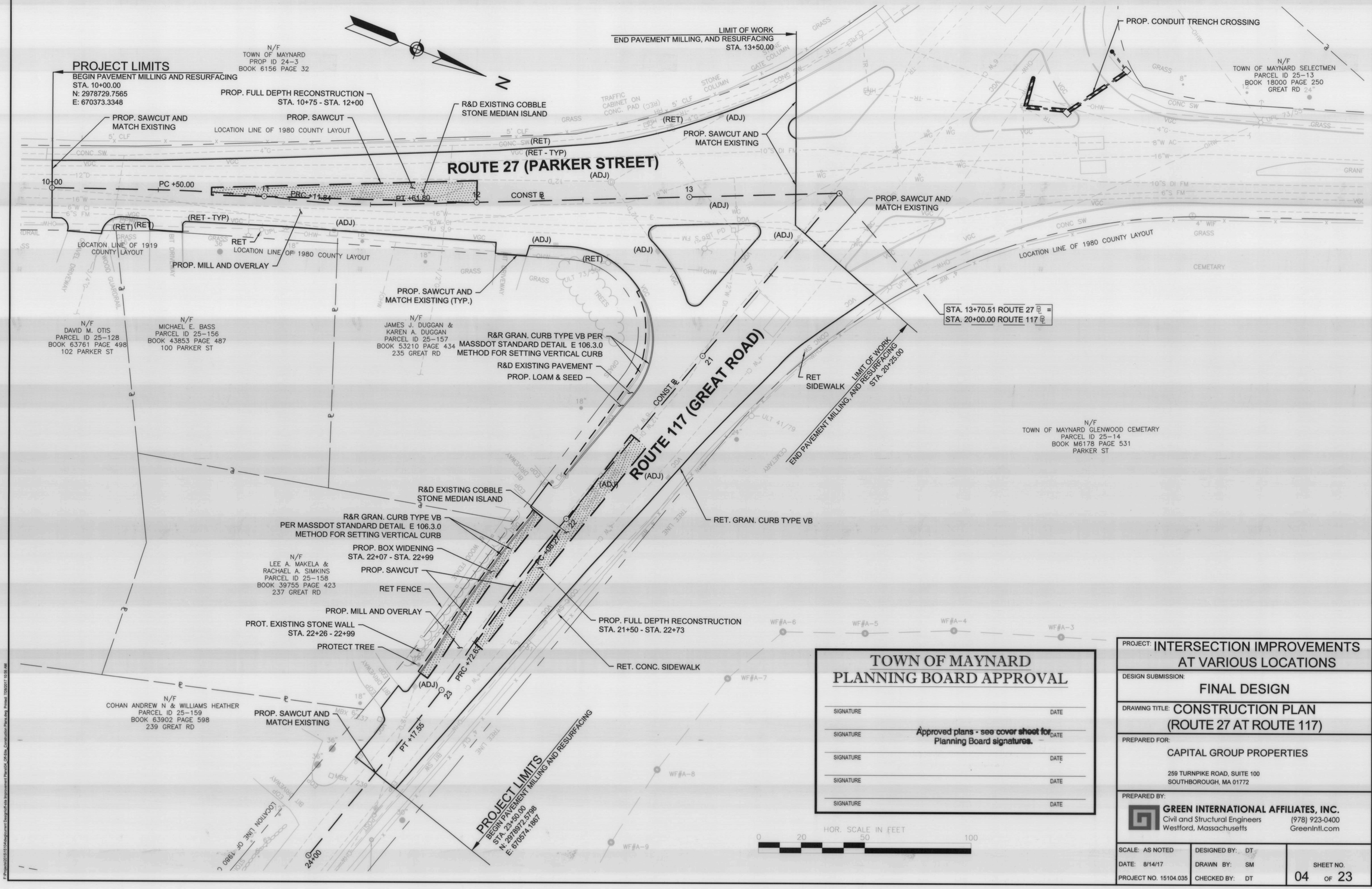

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE

Approved plans - see cover sheet for Planning Board signatures.

PROJECT: INTERSECTION IMPROVEMENTS AT VARIOUS LOCATIONS

DESIGN SUBMISSION: FINAL DESIGN

DRAWING TITLE: CONSTRUCTION PLAN (ROUTE 27 AT ROUTE 117)

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers
Westford, Massachusetts
(978) 923-0400
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SCALE: AS NOTED	DESIGNED BY: DT	SHEET NO.
DATE: 8/14/17	DRAWN BY: SM	04 OF 23
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N

N/F
MONTE C JR & CATHRYN M BASBAS
PARCEL ID 26-4
BOOK 15237 PAGE 065
316 GREAT RD

N/F
PAUL V. BOOTHROYD &
YU-HSIA T. BOOTHROYD
PARCEL ID 26-5
BOOK 25026 PAGE 001
314 GREAT RD

N/F
AARON S. THOMPSON
PARCEL ID 26-6A
BOOK 44429 PAGE 159
318 GREAT RD

SARAH LANE

N/F
DAVID W ROUILLE
& CATHERINE J ROUILLE
PARCEL ID 26-6K
BOOK 48408 PAGE 114
1 SARAH LN

PROJECT LIMITS
BEGIN PAVEMENT MILLING AND RESURFACING
STA. 30+50.00
N: 2979199.5426
E: 672876.0436

PROJECT LIMITS
END PAVEMENT MILLING, AND RESURFACING
STA. 32+60.00
N: 2979263.6136
E: 673075.8504

PROP. SAWCUT AND MATCH EXISTING (TYP.)

PROP. SAWCUT AND MATCH EXISTING

PROP. SAWCUT AND MATCH EXISTING

LOCATION LINE OF 1920 COUNTY LAYOUT

1920 BA

ROUTE 117 (GREAT ROAD)

CONST ℄ 32 PT +09.32

30+00 31 40+00 33 33+35

(ADJ)

STA. 31+06.13 ROUTE 117 ℄ =
STA. 40+00.00 OLD MARLBOR ROAD ℄

N/F
RAYMOND OST & CATHY RAYMOND
PARCEL ID 26-39A
BOOK 35587 PAGE 225
285 GREAT RD

PROP. BOX WIDENING
STA. 40+40 - STA. 31+42

PROP. MILL AND OVERLAY

PROP. SAWCUT

R&D EXISTING PAVEMENT

R&R MAILBOX

PROP. LOAM & SEED

PROP. LOAM & SEED

R&D EXISTING PAVEMENT

R&R MAILBOX

MB

PC +43.88

CONST ℄

LOCATION LINE OF 1960 COUNTY LAYOUT

PROP. SLOPE LIMIT (TYP.)

N/F
ANTHONY M TAURISANO &
LORRAINE S TAURISANO
PARCEL ID 26-25
BOOK 14034 PAGE 221
2 OLD MARLBORO RD

N/F
GARY J. NAZZARO
& SHIRLEY A. NAZZARO
PARCEL ID 26-24
BOOK 24408 PAGE 376
319 GREAT RD

TURNER ROAD

N/F
LUCIANO CENCE
& DEBRA CENCE
PARCEL ID 26-14
BOOK 18923 PAGE 396
321 GREAT RD

PCC +97.11

PROP. SAWCUT AND MATCH EXISTING

PROP. BOX WIDENING
STA. 40+81 - STA. 41+05

PROP. SAWCUT

PROP. LOAM & SEED

R&R MAILBOX

R&D EXISTING PAVEMENT

N/F
ANITA L. HELIN & GEORGE E. RYAN JR
PARCEL ID 26-26
BOOK 64236 PAGE 165
4 OLD MARLBORO RD

OLD MARLBORO ROAD

42+20.23 42

PROJECT LIMITS
BEGIN PAVEMENT MILLING AND RESURFACING
STA. 41+40.00
N: 2979091.9479
E: 672907.1755

N/F
JAMES H. BOOTHROYD
PARCEL ID 26-27
BOOK 60943 PAGE 223
6 OLD MARLBORO RD

HOR. SCALE IN FEET
0 20 50 100

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE DATE

SIGNATURE DATE

Approved plans - see cover sheet for Planning Board signatures.

SIGNATURE DATE

SIGNATURE DATE

SIGNATURE DATE

PROJECT: INTERSECTION IMPROVEMENTS AT VARIOUS LOCATIONS

DESIGN SUBMISSION: FINAL DESIGN

DRAWING TITLE: CONSTRUCTION PLAN (OLD MARLBORO RD AT ROUTE 117)

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

SCALE: AS NOTED	DESIGNED BY: DT	SHEET NO.
DATE: 8/14/17	DRAWN BY: SM	05 OF 23
PROJECT NO. 15104.035	CHECKED BY: DT	

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TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE	DATE
SIGNATURE	DATE
Approved plans - see cover sheet for Planning Board signatures.	
SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE

N/F
COMEAU MATTHEW ADAMS STEPHANIE
PARCEL ID 25-105
BOOK 51226 PAGE 151
31 MARLBORO ST

N/F
ALBERT A. FAVA
PARCEL ID 25-95
BOOK 64413 PAGE 463
33 MARLBORO ST

N/F
JOHN M. FAVA
PARCEL ID 25-44
BOOK 52626 PAGE 448
30 MARLBORO ST

N/F
RICHARD J DECAPUA &
KARI-ANN DECAPUA
PARCEL ID 25-94
BOOK 49182 PAGE 339
37 MARLBORO ST

N/F
JENNY L. MEYVAERT
PARCEL ID 25-45
BOOK 46392 PAGE 236
34 MARLBORO ST

N/F
THE CHAPELL FAMILY TRUST,
HARRY F CHAPELL & CAROLYN M CHAPELL TRUSTEES
PARCEL ID 25-46
BOOK 20319 PAGE 272
41 OLD MARLBORO RD

N/F
KRISTEN PATTEN & JUSTIN MCKINNON
PARCEL ID 29-16
BOOK 54395 PAGE 220
43 OLD MARLBORO RD

N/F
MARC P CRYAN
& MEGHAN E CRYAN
PARCEL ID 29-15
BOOK 50468 PAGE 475
44 OLD MARLBORO RD

N/F
MONICA M. COAKLEY
PARCEL ID 25-93
BOOK 28240 PAGE 126
42 OLD MARLBORO RD

N/F
TOWN OF MAYNARD DPW
PARCEL ID 29-11
BOOK 11843 PAGE 171
OLD MARLBORO RD

N/F
JAMES M. CONDON JR
& BETTE ANN CONDON
PARCEL ID 25-92
BOOK 25647 PAGE 594
40 OLD MARLBORO RD

MARLBORO STREET

B STREET

OLD MARLBORO ROAD

PROJECT LIMITS
BEGIN PAVEMENT MILLING AND RESURFACING
STA. 69+70.00
N: 2977639.379
E: 671150.8379

PROJECT LIMITS
END PAVEMENT MILLING AND RESURFACING
STA. 72+30.00
N: 2977765.459
E: 671215.6866

PROJECT LIMITS
BEGIN PAVEMENT MILLING AND RESURFACING
STA. 70+00.00
N: 2977537.4749
E: 671204.7190

PROJECT LIMITS
END PAVEMENT MILLING, AND RESURFACING
STA. 51+40.00
N: 2977761.9706
E: 671351.8418

PROP. SAWCUT AND MATCH EXISTING

PROP. SAWCUT AND MATCH EXISTING

MATCH EXISTING WALK

72+43.52 CONST ℄

72 (ADJ)

50+00 (ADJ)

STA. 71+72.03 MARLBORO ST ℄ =
STA. 50+00.00 OLD MARLBORO RD AT B ST ℄

PT +33.18 CONST ℄

PT +39.30

PROP. MILL AND OVERLAY

PC +94.01 71 CONST ℄ (ADJ)

60+00 (ADJ)

MB

PROP. CEM. CONC. WALK

R&R MAILBOX

PC +79.72 51 CONST ℄

MATCH EXISTING WALK

PROP. SAWCUT AND MATCH EXISTING

PROP. SAWCUT (RET)

PROP. SLOPE LIMIT (TYP.)

51+81.81

PROP. SAWCUT AND MATCH EXISTING

70+00

PROP. LOAM & SEED R&D EXISTING PAVEMENT

STA. 70+84.26 MARLBORO ST ℄ =
STA. 60+00.00 B STREET ℄

PROP. SAWCUT AND MATCH EXISTING (TYP.)

LOCATION LINE OF 1960 COUNTY LAYOUT

LOCATION LINE OF 1960 COUNTY LAYOUT

LOCATION LINE OF 1960 COUNTY LAYOUT

LOCATION LINE OF 1960 COUNTY LAYOUT

HOR. SCALE IN FEET
0 20 50 100

PROJECT:	INTERSECTION IMPROVEMENTS AT VARIOUS LOCATIONS
DESIGN SUBMISSION:	FINAL DESIGN
DRAWING TITLE:	CONSTRUCTION PLAN (OLD MARLBORO RD AT MARLBORO ST)
PREPARED FOR:	CAPITAL GROUP PROPERTIES 259 TURNPIKE ROAD, SUITE 100 SOUTHBOROUGH, MA 01772
PREPARED BY:	GREEN INTERNATIONAL AFFILIATES, INC. Civil and Structural Engineers (978) 923-0400 Westford, Massachusetts GreenIntl.com

SCALE: AS NOTED	DESIGNED BY: DT	SHEET NO.
DATE: 8/14/17	DRAWN BY: SM	06 OF 23
PROJECT NO. 15104.035	CHECKED BY: DT	

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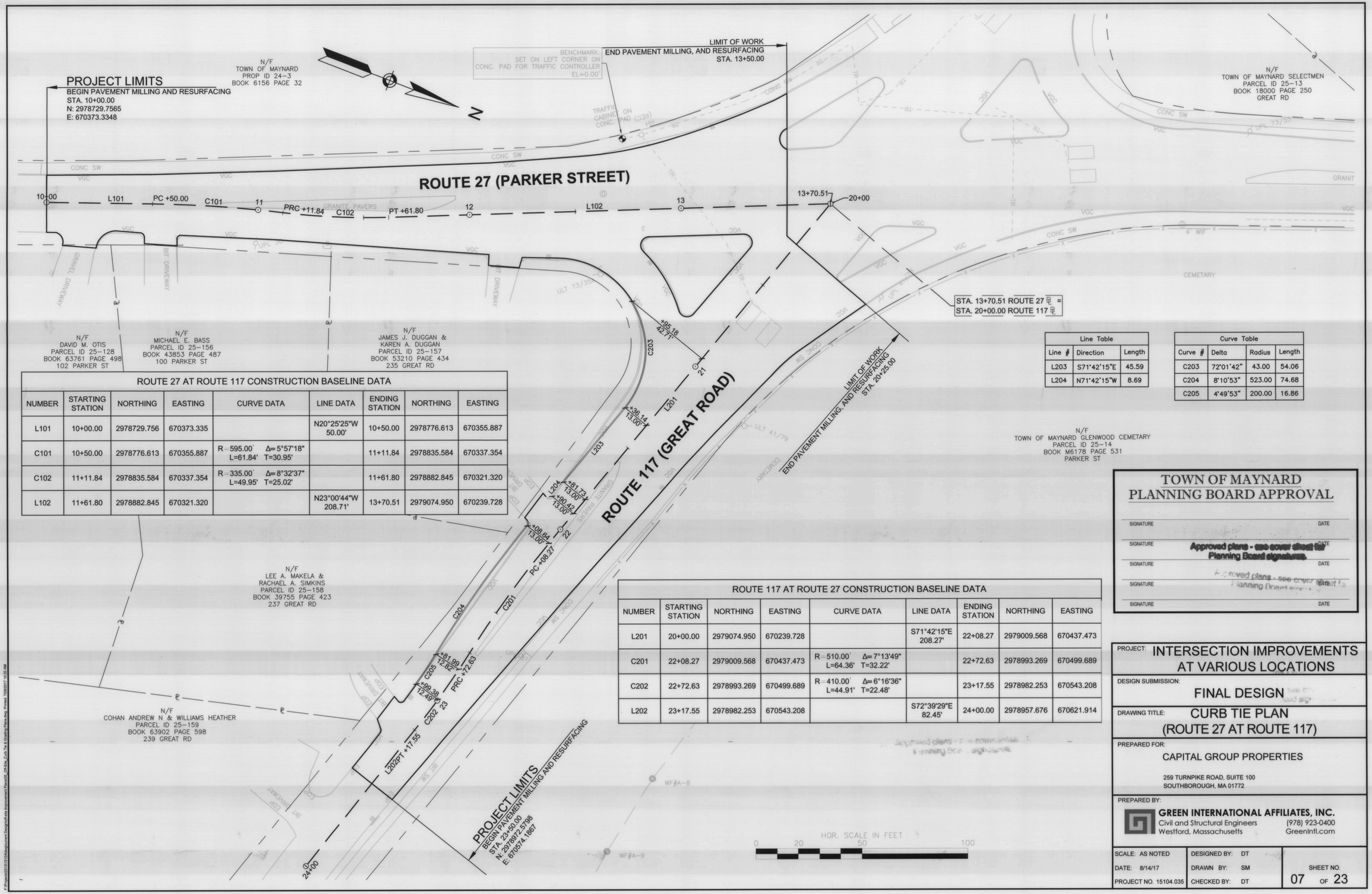


ROUTE 27 AT ROUTE 117 CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L101	10+00.00	2978729.756	670373.335		N20°25'25"W 50.00'	10+50.00	2978776.613	670355.887
C101	10+50.00	2978776.613	670355.887	R=595.00' Δ=5°57'18" L=61.84' T=30.95'		11+11.84	2978835.584	670337.354
C102	11+11.84	2978835.584	670337.354	R=335.00' Δ=8°32'37" L=49.95' T=25.02'		11+61.80	2978882.845	670321.320
L102	11+61.80	2978882.845	670321.320		N23°00'44"W 208.71'	13+70.51	2979074.950	670239.728

Line Table		
Line #	Direction	Length
L203	S71°42'15"E	45.59
L204	N71°42'15"W	8.69

Curve Table			
Curve #	Delta	Radius	Length
C203	72°01'42"	43.00	54.06
C204	8°10'53"	523.00	74.68
C205	4°49'53"	200.00	16.86

ROUTE 117 AT ROUTE 27 CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L201	20+00.00	2979074.950	670239.728		S71°42'15"E 208.27'	22+08.27	2979009.568	670437.473
C201	22+08.27	2979009.568	670437.473	R=510.00' Δ=7°13'49" L=64.36' T=32.22'		22+72.63	2978993.269	670499.689
C202	22+72.63	2978993.269	670499.689	R=410.00' Δ=6°16'36" L=44.91' T=22.48'		23+17.55	2978982.253	670543.208
L202	23+17.55	2978982.253	670543.208		S72°39'29"E 82.45'	24+00.00	2978957.676	670621.914

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE DATE

SIGNATURE DATE

SIGNATURE DATE

Approved plans - see cover sheet for Planning Board signatures.

SIGNATURE DATE

SIGNATURE DATE

SIGNATURE DATE

PROJECT: INTERSECTION IMPROVEMENTS AT VARIOUS LOCATIONS

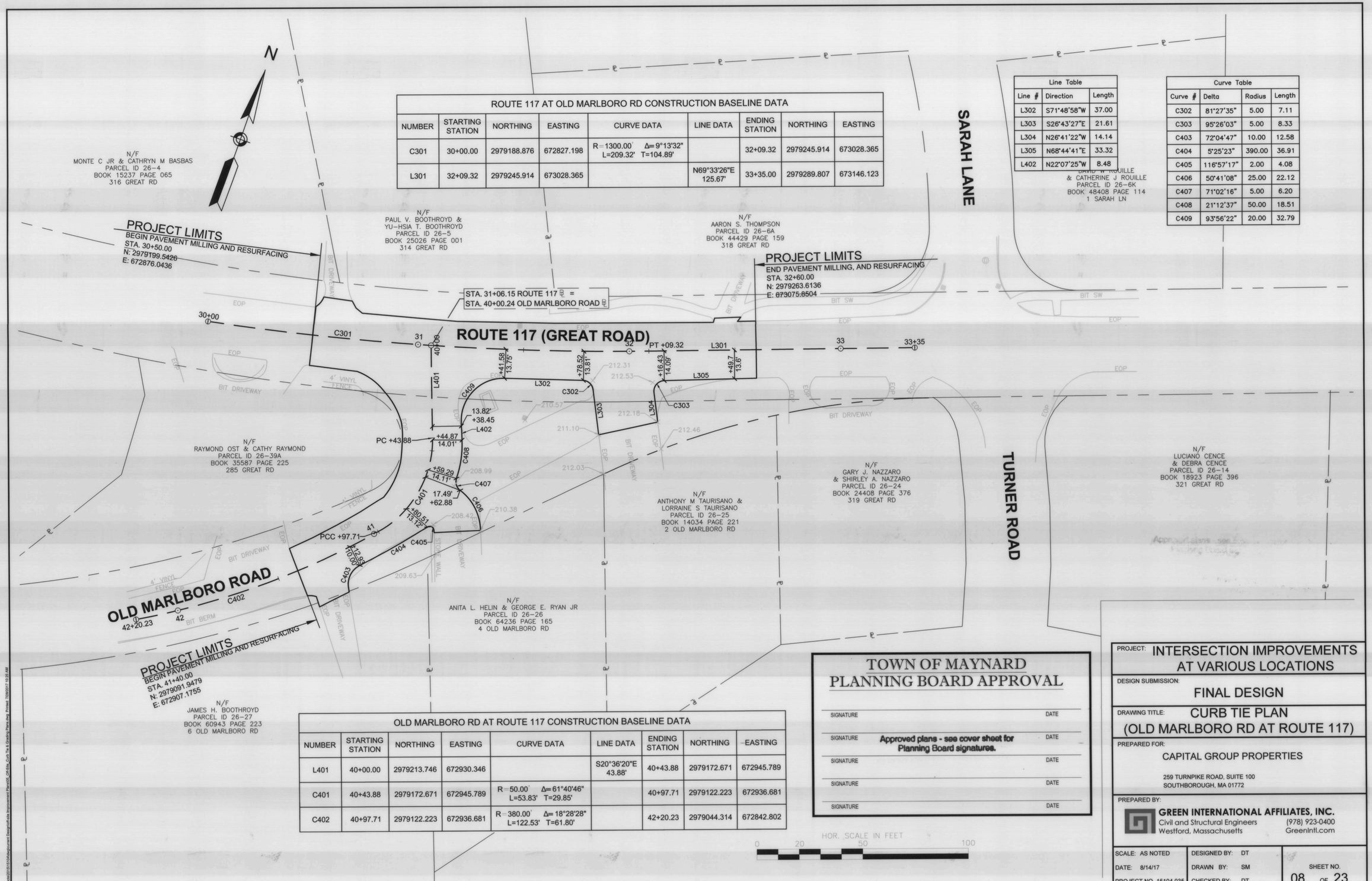
DESIGN SUBMISSION: FINAL DESIGN

DRAWING TITLE: CURB TIE PLAN (ROUTE 27 AT ROUTE 117)

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

SCALE: AS NOTED	DESIGNED BY: DT		SHEET NO.
DATE: 8/14/17	DRAWN BY: SM		07 OF 23
PROJECT NO. 15104.035	CHECKED BY: DT		


N
ROUTE 117 AT OLD MARLBORO RD CONSTRUCTION BASELINE DATA
NUMBER | STARTING STATION | NORTHING | EASTING | CURVE DATA | LINE DATA | ENDING STATION | NORTHING | EASTING
C301 | 30+00.00 | 2979188.876 | 672827.198 | R=1300.00' Δ=9°13'32" L=209.32' T=104.89' | | 32+09.32 | 2979245.914 | 673028.365
L301 | 32+09.32 | 2979245.914 | 673028.365 | | N69°33'26"E 125.67' | 33+35.00 | 2979289.807 | 673146.123
Line Table
Line # | Direction | Length
L302 | S71°48'58"W | 37.00
L303 | S26°43'27"E | 21.61
L304 | N26°41'22"W | 14.14
L305 | N68°44'41"E | 33.32
L402 | N22°07'25"W | 8.48
Curve Table
Curve # | Delta | Radius | Length
C302 | 81°27'35" | 5.00 | 7.11
C303 | 95°26'03" | 5.00 | 8.33
C403 | 72°04'47" | 10.00 | 12.58
C404 | 5°25'23" | 390.00 | 36.91
C405 | 116°57'17" | 2.00 | 4.08
C406 | 50°41'08" | 25.00 | 22.12
C407 | 71°02'16" | 5.00 | 6.20
C408 | 21°12'37" | 50.00 | 18.51
C409 | 93°56'22" | 20.00 | 32.79
N/F MONTE C JR & CATHRYN M BASBAS PARCEL ID 26-4 BOOK 15237 PAGE 065 316 GREAT RD
N/F PAUL V. BOOTHROYD & YU-HSIA T. BOOTHROYD PARCEL ID 26-5 BOOK 25026 PAGE 001 314 GREAT RD
N/F AARON S. THOMPSON PARCEL ID 26-6A BOOK 44429 PAGE 159 318 GREAT RD
SARAH LANE
N/F DAVID W ROUILLE & CATHERINE J ROUILLE PARCEL ID 26-6K BOOK 48408 PAGE 114 1 SARAH LN
PROJECT LIMITS
BEGIN PAVEMENT MILLING AND RESURFACING
STA. 30+50.00
N: 2979199.5426
E: 672876.0436
STA. 31+06.15 ROUTE 117 ℄ = STA. 40+00.24 OLD MARLBORO ROAD ℄
PROJECT LIMITS
END PAVEMENT MILLING, AND RESURFACING
STA. 32+60.00
N: 2979263.6136
E: 673075.8504
ROUTE 117 (GREAT ROAD)
30+00
31
40+00
32
PT +09.32
33
33+35
C301
L401
L301
L302
L303
L304
L305
C302
C303
C408
C409
+41.58 13.75'
+78.52 13.81'
+16.43 14.09'
+49.7 13.6'
13.82'
+38.45
L402
PC +43.88
+44.87 14.01'
+59.29 14.11'
17.49' +62.88
C401
C406
C407
+80.51 13.12'
PCC +97.71
41
C403
C404
C405
12.95' 10.00'
OLD MARLBORO ROAD
C402
42+20.23
42
PROJECT LIMITS
BEGIN PAVEMENT MILLING AND RESURFACING
STA. 41+40.00
N: 2979091.9479
E: 672907.1755
N/F RAYMOND OST & CATHY RAYMOND PARCEL ID 26-39A BOOK 35587 PAGE 225 285 GREAT RD
N/F ANTHONY M TAURISANO & LORRAINE S TAURISANO PARCEL ID 26-25 BOOK 14034 PAGE 221 2 OLD MARLBORO RD
N/F GARY J. NAZZARO & SHIRLEY A. NAZZARO PARCEL ID 26-24 BOOK 24408 PAGE 376 319 GREAT RD
TURNER ROAD
N/F LUCIANO CENCE & DEBRA CENCE PARCEL ID 26-14 BOOK 18923 PAGE 396 321 GREAT RD
N/F ANITA L. HELIN & GEORGE E. RYAN JR PARCEL ID 26-26 BOOK 64236 PAGE 165 4 OLD MARLBORO RD
N/F JAMES H. BOOTHROYD PARCEL ID 26-27 BOOK 60943 PAGE 223 6 OLD MARLBORO RD
OLD MARLBORO RD AT ROUTE 117 CONSTRUCTION BASELINE DATA
NUMBER | STARTING STATION | NORTHING | EASTING | CURVE DATA | LINE DATA | ENDING STATION | NORTHING | EASTING
L401 | 40+00.00 | 2979213.746 | 672930.346 | | S20°36'20"E 43.88' | 40+43.88 | 2979172.671 | 672945.789
C401 | 40+43.88 | 2979172.671 | 672945.789 | R=50.00' Δ=61°40'46" L=53.83' T=29.85' | | 40+97.71 | 2979122.223 | 672936.681
C402 | 40+97.71 | 2979122.223 | 672936.681 | R=380.00' Δ=18°28'28" L=122.53' T=61.80' | | 42+20.23 | 2979044.314 | 672842.802
TOWN OF MAYNARD
PLANNING BOARD APPROVAL
SIGNATURE DATE
SIGNATURE DATE
Approved plans - see cover sheet for Planning Board signatures.
SIGNATURE DATE
SIGNATURE DATE
SIGNATURE DATE
HOR. SCALE IN FEET
0 20 50 100
PROJECT: INTERSECTION IMPROVEMENTS AT VARIOUS LOCATIONS
DESIGN SUBMISSION: FINAL DESIGN
DRAWING TITLE: CURB TIE PLAN (OLD MARLBORO RD AT ROUTE 117)
PREPARED FOR: CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772
PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers
Westford, Massachusetts
(978) 923-0400
GreenIntl.com
SCALE: AS NOTED
DATE: 8/14/17
PROJECT NO. 15104.035
DESIGNED BY: DT
DRAWN BY: SM
CHECKED BY: DT
SHEET NO. 08 OF 23

N

Line Table		
Line #	Direction	Length
L502	S62°15'51"W	57.06
L503	N55°41'43"W	15.86
L702	N11°00'06"E	82.16

Curve Table			
Curve #	Delta	Radius	Length
C503	62°02'26"	5.00	5.41
C702	9°32'29"	371.25	61.82
C703	60°48'14"	25.00	26.53

B STREET CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L601	60+33.18	2977626.704	671185.473		N84°16'25"W 36.82'	60+70.00	2977630.378	671148.838
C601	60+00.00	2977620.676	671218.063	R=200.00' Δ=9°30'20" L=33.18' T=16.63'		60+33.18	2977626.704	671185.473

OLD MARLBORO RD AT B ST CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C501	50+00.00	2977708.055	671223.533	R=91.80' Δ=24°31'32" L=39.30' T=19.95'		50+39.30	2977718.458	671261.116
L501	50+39.30	2977718.458	671261.116		N62°15'51"E 40.43'	50+79.72	2977737.273	671296.898
C502	50+79.72	2977737.273	671296.898	R=489.00' Δ=9°37'03" L=82.08' T=41.14'		51+61.81	2977769.211	671372.408

MARLBORO ST CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L701	70+00.00	2977537.475	671204.719		N9°08'26"E 94.01'	70+94.01	2977630.290	671219.653
C701	70+94.01	2977630.290	671219.653	R=360.00' Δ=23°38'09" L=148.51' T=75.33'		72+42.52	2977777.587	671212.765

PROJECT LIMITS
BEGIN PAVEMENT MILLING AND RESURFACING
STA. 70+00.00
N: 2977537.4749
E: 671204.7190

PROJECT LIMITS
BEGIN PAVEMENT MILLING AND RESURFACING
STA. 60+70.00
N: 2977630.3779
E: 671148.5379

PROJECT LIMITS
END PAVEMENT MILLING AND RESURFACING
STA. 72+30.00
N: 2977765.4159
E: 671215.6868

PROJECT LIMITS
END PAVEMENT MILLING, AND RESURFACING
STA. 51+40.00
N: 2977761.9706
E: 671351.8418

STA. 50+00 OLD MARLBORO RD AT B ST ℄ =
STA. 71+72.03 MARLBORO ST ℄

STA. 60+00 B STREET ℄ =
STA. 70+84.26 MARLBORO ST ℄

N/F
COMEAU MATTHEW ADAMS STEPHANIE
PARCEL ID 25-105
BOOK 51226 PAGE 151
31 MARLBORO ST

N/F
ALBERT A. FAVA
PARCEL ID 25-95
BOOK 64413 PAGE 463
33 MARLBORO ST

N/F
JOHN M. FAVA
PARCEL ID 25-44
BOOK 52626 PAGE 448
30 MARLBORO ST

N/F
RICHARD J DECAPUA &
KARI-ANN DECAPUA
PARCEL ID 25-94
BOOK 49182 PAGE 339
37 MARLBORO ST

N/F
JENNY L. MEYVAERT
PARCEL ID 25-45
BOOK 46392 PAGE 236
34 MARLBORO ST

N/F
THE CHAPELL FAMILY TRUST,
HARRY F CHAPELL & CAROLYN M CHAPELL TRUSTEES
PARCEL ID 25-46
BOOK 20319 PAGE 272
41 OLD MARLBORO RD

N/F
KRISTEN PATTEN & JUSTIN MCKINNON
PARCEL ID 29-16
BOOK 54395 PAGE 220
43 OLD MARLBORO RD

N/F
MONICA M. COAKLEY
PARCEL ID 25-93
BOOK 28240 PAGE 126
42 OLD MARLBORO RD

N/F
TOWN OF MAYNARD DPW
PARCEL ID 29-11
BOOK 11843 PAGE 171
OLD MARLBORO RD

N/F
JAMES M. CONDON JR
& BETTE ANN CONDON
PARCEL ID 25-92
BOOK 25647 PAGE 594
40 OLD MARLBORO RD

N/F
MARC P CRYAN
& MEGHAN E CRYAN
PARCEL ID 29-15
BOOK 50468 PAGE 475
44 OLD MARLBORO RD

MARLBORO STREET

B STREET

OLD MARLBORO ROAD

HOR. SCALE IN FEET
0 20 50 100

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE DATE

SIGNATURE DATE

Approved plans - see cover sheet for Planning Board signatures.

SIGNATURE DATE

SIGNATURE DATE

SIGNATURE DATE

PROJECT: INTERSECTION IMPROVEMENTS AT VARIOUS LOCATIONS

DESIGN SUBMISSION: FINAL DESIGN

DRAWING TITLE: CURB TIE PLAN (OLD MARLBORO RD AT MARLBORO ST)

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

SCALE: AS NOTED | DESIGNED BY: DT
DATE: 8/14/17 | DRAWN BY: SM
PROJECT NO. 15104.035 | CHECKED BY: DT
SHEET NO. 09 OF 23

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PROJECT LIMITS

BEGIN PAVEMENT MILLING AND RESURFACING
STA. 10+00.00
N: 2978729.7565
E: 670373.3348

RET

N/F
TOWN OF MAYNARD
PROP ID 24-3
BOOK 6156 PAGE 32

LOCATION LINE OF 1980 COUNTY LAYOUT

VARIES 11.00 / 11.00 / 12.00

MATCH EXISTING
10+00
DBYL-42'
+42
PC +50.00
DBDL-80'
+61
SYGL-25'
DBYL-80'
+16
SWL-355'
+22
PRC +11.84
DWLEx - 52'
+36
PT +61.80
SWL-556'
+48
DWLEx - 122'
SWL-556'
+69
SWL-211'
+46
SWL-211'
+43
SWL-53'
+26
SWL-53'
+26
SWL-233'
+32
SWL-325'
+26

ROUTE 27 (PARKER STREET)

DBYL-210'
+33
SWL-200'
+33
SWL-227'
+51
SWL-355'
+51
+35
+41
SL-47'
+29
+51
SL-21'
5.00'

13+70.51
20+00

STA. 13+70.51 ROUTE 27 EQ =
STA. 20+00.00 ROUTE 117

LOCATION LINE OF 1919 COUNTY LAYOUT

LOCATION LINE OF 1980 COUNTY LAYOUT

RET R3-7L PROP

RET "DOWNTOWN MAYNARD"

RET D6 "117 EAST WESTON / WALTHAM - NEXT RIGHT"
RET D6 "117 WEST STOW - NEXT LEFT"

"117 EAST WESTON / WALTHAM - RIGHT" RET D6
"117 WEST STOW - LEFT" RET D6

PROP R1-2

PROP R10-17a
MOUNTED ON SIGNAL POST

LIMIT OF WORK
END PAVEMENT MILLING, AND RESURFACING
STA. 13+50.00

RET D3-1 "PARKER ST"
RET R1-2
RET R1-5

MATCH EXISTING

R3-7L R&D
R10-12 PROP
MOUNTED ON PROP SIGNAL POST
R3-7L RET
R1-2 PROP
MATCH EXISTING

MATCH EXISTING

RET R3-7L
RET S1-1
R1-2 R&D
RET S1-1
R10-17a PROP

D6 RET "27 NORTH MAYNARD / ACTON - RIGHT"
D6 RET "27 SOUTH SUDBURY - LEFT"
RET R3-7L

RET D3-1 "GREAT RD"
RET D3-1 "PARKER ST"

"DOWNTOWN MAYNARD" RET

LOCATION LINE OF 1980 COUNTY LAYOUT
RET M3-1
RET M1-5
RET R2-1

S1-1 RET
W16-7P RET

N/F
TOWN OF MAYNARD SELECTMEN
PARCEL ID 25-13
BOOK 18000 PAGE 250
GREAT RD

N/F
TOWN OF MAYNARD GLENWOOD CEMETARY
PARCEL ID 25-14
BOOK M6178 PAGE 531
PARKER ST

LIMIT OF WORK
END PAVEMENT MILLING, AND RESURFACING
STA. 20+25.00

N/F
DAVID M. OTIS
PARCEL ID 25-128
BOOK 63761 PAGE 498
102 PARKER ST

N/F
MICHAEL E. BASS
PARCEL ID 25-156
BOOK 43853 PAGE 487
100 PARKER ST

N/F
JAMES J. DUGGAN &
KAREN A. DUGGAN
PARCEL ID 25-157
BOOK 53210 PAGE 434
235 GREAT RD

N/F
LEE A. MAKELA &
RACHAEL A. SIMKINS
PARCEL ID 25-158
BOOK 39755 PAGE 423
237 GREAT RD

N/F
COHAN ANDREW N & WILLIAMS HEATHER
PARCEL ID 25-159
BOOK 63902 PAGE 598
239 GREAT RD

ROUTE 117 (GREAT ROAD)

21 DBYL-307'
SWL-166'
DWLEx - 165'
PC +08.27
DBYL-307'
PRC +72.63
DWLEx - 91'
+08
+10
11.00
11.00
+22
D9-2 R&R
M6-1R R&R
R3-7L PROP

RET R2-1

D6 RET "27 NORTH MAYNARD / ACTON - NEXT RIGHT"
D6 RET "27 SOUTH SUDBURY - NEXT LEFT"

PT +17.55
+50
+50
30
MATCH EXISTING

PROJECT LIMITS
BEGIN PAVEMENT MILLING AND RESURFACING
STA. 23+50.00
N: 2978972.5798
E: 670574.1867

0
24+00

WF#A-6 WF#A-5 WF#A-4 WF#A-3 WF#A-7 WF#A-8 WF#A-9

HOR. SCALE IN FEET
0 20 50 100

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE DATE
SIGNATURE DATE
Approved plans - see cover sheet for Planning Board signatures.
SIGNATURE DATE
SIGNATURE DATE
SIGNATURE DATE

PROJECT: INTERSECTION IMPROVEMENTS AT VARIOUS LOCATIONS

DESIGN SUBMISSION: FINAL DESIGN

DRAWING TITLE: SIGN & STRIPING PLAN (ROUTE 27 AT ROUTE 117)

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

SCALE: AS NOTED	DESIGNED BY: DT	SHEET NO.
DATE: 8/14/17	DRAWN BY: SM	10 OF 23
PROJECT NO. 15104.035	CHECKED BY: DT	

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N

N/F
MONTE C JR & CATHRYN M BASBAS
PARCEL ID 26-4
BOOK 15237 PAGE 065
316 GREAT RD

N/F
PAUL V. BOOTHROYD &
YU-HSIA T. BOOTHROYD
PARCEL ID 26-5
BOOK 25026 PAGE 001
314 GREAT RD

N/F
AARON S. THOMPSON
PARCEL ID 26-6A
BOOK 44429 PAGE 159
318 GREAT RD

N/F
DAVID W ROUILLE
& CATHERINE J ROUILLE
PARCEL ID 26-6K
BOOK 48408 PAGE 114
1 SARAH LN

SARAH LANE

PROJECT LIMITS
BEGIN PAVEMENT MILLING AND RESURFACING
STA. 30+50.00
N: 2979199.5426
E: 672876.0436

STA. 31+06.15 ROUTE 117 ℄ =
STA. 40+00.24 OLD MARLBORO ROAD ℄

PROJECT LIMITS
END PAVEMENT MILLING, AND RESURFACING
STA. 32+60.00
N: 2979263.6136
E: 673075.6504

ROUTE 117 (GREAT ROAD)

LOCATION LINE OF 1920 COUNTY LAYOUT

1920 BA

30+00
MATCH EXISTING
DBYL-41'
SWL-209'
DBYL-135'
PT +09.32
MATCH EXISTING
SWL-29'
PROP R1-1
R5-1 R&D
SWL-125'
R1-1 R&D
SL-22'
PROP R5-1
PROP SP-1
R5-1 PROP
SP-1 PROP
D3-1 R&R "OLD MARLBORO RD"
14.00
PC +43.88
DBYL-121'
PCC +97.41
R5-1 R&D
"WELCOME TO MAYNARD" RET

N/F
RAYMOND OST & CATHY RAYMOND
PARCEL ID 26-39A
BOOK 35587 PAGE 225
285 GREAT RD

N/F
GARY J. NAZZARO
& SHIRLEY A. NAZZARO
PARCEL ID 26-24
BOOK 24408 PAGE 376
319 GREAT RD

N/F
ANTHONY M TAURISANO &
LORRAINE S TAURISANO
PARCEL ID 26-25
BOOK 14034 PAGE 221
2 OLD MARLBORO RD

TURNER ROAD

N/F
LUCIANO CENCE
& DEBRA CENCE
PARCEL ID 26-14
BOOK 18923 PAGE 396
321 GREAT RD

OLD MARLBORO ROAD
42+20.23
42

PROJECT LIMITS
BEGIN PAVEMENT MILLING AND RESURFACING
STA. 41+40.00
N: 2979091.9479
E: 672907.1755

N/F
JAMES H. BOOTHROYD
PARCEL ID 26-27
BOOK 60943 PAGE 223
6 OLD MARLBORO RD

N/F
ANITA L. HELIN & GEORGE E. RYAN JR
PARCEL ID 26-26
BOOK 64236 PAGE 165
4 OLD MARLBORO RD

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE DATE

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SIGNATURE DATE

SIGNATURE DATE

SIGNATURE DATE

HOR. SCALE IN FEET
0 20 50 100

PROJECT: INTERSECTION IMPROVEMENTS AT VARIOUS LOCATIONS

DESIGN SUBMISSION: FINAL DESIGN

DRAWING TITLE: SIGN & STRIPING PLAN (OLD MARLBORO RD AT ROUTE 117)

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

SCALE: AS NOTED	DESIGNED BY: DT	SHEET NO.
DATE: 8/14/17	DRAWN BY: SM	11 OF 23
PROJECT NO. 15104.035	CHECKED BY: DT	

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TOWN OF MAYNARD
PLANNING BOARD APPROVAL

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SIGNATURE DATE

SIGNATURE DATE

N/F
COMEAU MATTHEW ADAMS STEPHANIE
PARCEL ID 25-105
BOOK 51226 PAGE 151
31 MARLBORO ST

N/F
ALBERT A. FAVA
PARCEL ID 25-95
BOOK 64413 PAGE 463
33 MARLBORO ST

N/F
JOHN M. FAVA
PARCEL ID 25-44
BOOK 52626 PAGE 448
30 MARLBORO ST

N/F
JENNY L. MEYVAERT
PARCEL ID 25-45
BOOK 46392 PAGE 236
34 MARLBORO ST

N/F
THE CHAPELL FAMILY TRUST,
HARRY F CHAPELL & CAROLYN M CHAPELL TRUSTEES
PARCEL ID 25-46
BOOK 20319 PAGE 272
41 OLD MARLBORO RD

N/F
RICHARD J DECAPUA &
KARI-ANN DECAPUA
PARCEL ID 25-94
BOOK 49182 PAGE 339
37 MARLBORO ST

N/F
KRISTEN PATTEN & JUSTIN MCKINNON
PARCEL ID 29-16
BOOK 54395 PAGE 220
43 OLD MARLBORO RD

N/F
MONICA M. COAKLEY
PARCEL ID 25-93
BOOK 28240 PAGE 126
42 OLD MARLBORO RD

N/F
TOWN OF MAYNARD DPW
PARCEL ID 29-11
BOOK 11843 PAGE 171
OLD MARLBORO RD

N/F
JAMES M. CONDON JR
& BETTE ANN CONDON
PARCEL ID 25-92
BOOK 25647 PAGE 594
40 OLD MARLBORO RD

N/F
MARC P CRYAN
& MEGHAN E CRYAN
PARCEL ID 29-15
BOOK 50468 PAGE 475
44 OLD MARLBORO RD

MARLBORO STREET

OLD MARLBORO ROAD

B STREET

PROJECT LIMITS
END PAVEMENT MILLING AND RESURFACING
STA. 72+30.00
N: 2977765.3159
E: 671215.8885

PROJECT LIMITS
BEGIN PAVEMENT MILLING AND RESURFACING
STA. 60+70.00
N: 2977639.3779
E: 671148.8379

PROJECT LIMITS
END PAVEMENT MILLING, AND RESURFACING
STA. 51+40.00
N: 2977761.9706
E: 671351.8418

PROJECT LIMITS
BEGIN PAVEMENT MILLING AND RESURFACING
STA. 70+00.00
N: 2977537.4749
E: 671204.7190

"MARLBORO ST" R&D, PROP D3-1a
R&R R1-1

STA. 50+00 OLD MARLBORO RD AT B ST ℄ =
STA. 71+72.03 MARLBORO ST ℄

STA. 70+84.26 MARLBORO ST ℄ =
STA. 60+00.00 B STREET ℄

"B ST" RET D3-1
RET R1-1

PROP R1-1

R1-1 RET

D3-1b R&D, PROP
"OLD MARLBORO RD"
MOUNT WITH R1-1

R2-1 RET

PC +94.01 DBYL-43'

PC +79.72 51 DBYL-112'

DBYL-69'

DBYL-46'

LOCATION LINE OF 1960 COUNTY LAYOUT

HOR. SCALE IN FEET
0 20 50 100

PROJECT:	INTERSECTION IMPROVEMENTS AT VARIOUS LOCATIONS
DESIGN SUBMISSION:	FINAL DESIGN
DRAWING TITLE:	SIGN & STRIPING PLAN (OLD MARLBORO RD AT MARLBORO ST)
PREPARED FOR:	CAPITAL GROUP PROPERTIES 259 TURNPIKE ROAD, SUITE 100 SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

SCALE: AS NOTED	DESIGNED BY: DT	SHEET NO.
DATE: 8/14/17	DRAWN BY: SM	12 OF 23
PROJECT NO. 15104.035	CHECKED BY: DT	

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N

NOTES:
1. ALL EXISTING SIGNAGE TO REMAIN UNLESS OTHERWISE NOTED.

HOR. SCALE IN FEET
0 100 250 500

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE DATE
SIGNATURE DATE
Approved plans - see cover sheet for Planning Board signatures.
SIGNATURE DATE
SIGNATURE DATE
SIGNATURE DATE

PROJECT: INTERSECTION IMPROVEMENTS AT VARIOUS LOCATIONS

DESIGN SUBMISSION: FINAL DESIGN

DRAWING TITLE: SIGN & STRIPING PLAN (HAYNES SQUARE)

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

SCALE: AS NOTED	DESIGNED BY: DT	SHEET NO. 13 OF 23
DATE: 8/14/17	DRAWN BY: SM	
PROJECT NO. 15104.035	CHECKED BY: DT	

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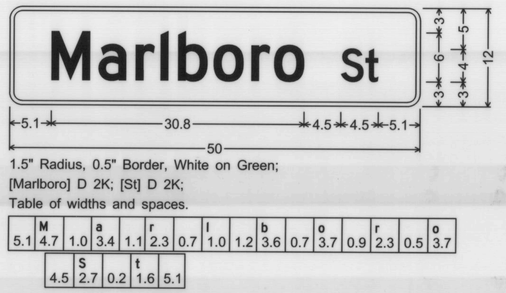
IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NO. REQ'D.	UNIT AREA IN SQUARE FEET	TOTAL AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND	BORDER			
D3-1a	50"	12"	Marlboro St	SEE MUTCD STANDARDS			1	SEE MUTCD STANDARDS			P5 1 1 MOUNTED W/ R1-1	4.17	4.17
D3-1b	66"	12"	Old Marlboro Rd				1				P5 0 1 MOUNTED W/ R1-1	5.50	5.50
R2-1	24"	30"	SPEED LIMIT 25				2				P5 0*	5.00	10.00*
R3-7L	30"	30"	LEFT LANE MUST TURN LEFT				2				P5 2	6.25	12.50
R1-1	30"	30"	STOP				2				P5 2	5.18	10.36
R1-2	36"X36"X36"		YIELD				2				P5 2	3.90	7.80
R5-1	30"	30"	DO NOT ENTER				2				P5 1 1 MOUNTED W/ R1-1	6.25	12.50
R10-12	30"	36"	LEFT TURN YIELD ON GREEN				1				0 MOUNTED ON SIGNAL POST	7.50	7.50
R10-17a	36"	48"	RIGHT ON RED ARROW AFTER STOP				2				P5 0 1 MOUNTED W/ S1-1; 1 MOUNTED ON SIGNAL POST	12.00	24.00
SP-1	30"	18"	7:00-9:00 AM EXCEPT SCHOOL BUSES	2.5	1	1	2	WHITE	BLACK	BLACK	P5 0 2 MOUNTED W/ R5-1	3.75	7.50
W2-1	30"	30"		SEE MUTCD STANDARDS			2	SEE MUTCD STANDARDS			P5 2	6.25	12.50
													114.33

NOTES:

SEE THE 2009 "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ITS REVISIONS, THE 2012 MASSACHUSETTS AMENDMENTS TO THE 2009 MUTCD, AND THE STANDARD MUNICIPAL TRAFFIC CODE FOR LATEST SPECIFICATION ON TEXT, DIMENSIONS AND COLOR. ALSO REFER TO 2006 MASSACHUSETTS HIGHWAY DEPARTMENT (MHD) SUPPLEMENTAL SPECIFICATIONS TO THE 1995 STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES (METRIC EDITION) SUBSECTION M9.30.0.

* SIGN TO BE INCLUDED IN COST OF RADAR SPEED FEEDBACK DISPLAY SIGN ASSEMBLY

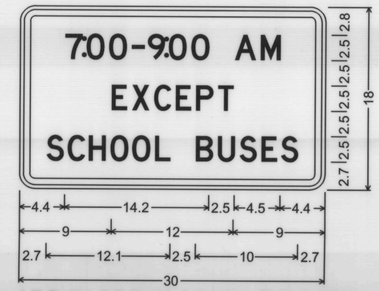
D3-1a



1.5" Radius, 0.5" Border, White on Green;
[Marlboro] D 2K; [St] D 2K;
Table of widths and spaces.

	M		a		r		l		b		o		r		o		
5.1	4.7	1.0	3.4	1.1	2.3	0.7	1.0	1.2	3.6	0.7	3.7	0.9	2.3	0.5	3.7		
							S		t								
4.5							2.7	0.2	1.6	5.1							

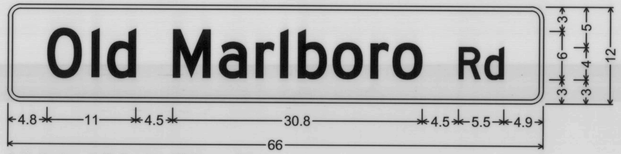
SP-1



1.5" Radius, 0.6" Border, 0.4" Indent, Black on White;
[7:00-9:00 AM] D; [EXCEPT] D;
[SCHOOL BUSES] D 80% spacing;
Table of letter and object lefts.

7	:	0	0	-	9	:	0	0									
4.4	6.1	6.5	8.7	11.0	12.5	14.2	14.6	16.8									
			A	M													
			21.1	23.6													
E	X	C	E	P	T												
9.0	11.0	13.2	15.3	17.3	19.5												
S	C	H	O	O	L												
2.7	4.7	6.8	8.9	11.1	13.3												
			B	U	S	E	S										
			17.3	19.5	21.6	23.8	25.7										

D3-1b



1.5" Radius, 0.5" Border, White on Green;
[Old] D 2K; [Marlboro] D 2K; [Rd] D 2K;
Table of widths and spaces.

4.8	O 4.3	1.2	l 0.9	1.0	d 3.6												
		M		a		r		l		b		o		r		o	
4.5	4.7	1.0	3.4	1.1	2.3	0.7	1.0	1.2	3.6	0.7	3.7	0.9	2.3	0.5	3.7		
	R		d														
4.5	2.7	0.4	2.4	4.9													

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE

Approved plans - see cover sheet for Planning Board signatures.

PROJECT: INTERSECTION IMPROVEMENTS AT VARIOUS LOCATIONS

DESIGN SUBMISSION: FINAL DESIGN

DRAWING TITLE: TRAFFIC SIGN SUMMARY

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers
Westford, Massachusetts
(978) 923-0400
GreenIntl.com

SCALE: NTS	DESIGNED BY: DT	SHEET NO.
DATE: 8/14/17	DRAWN BY: SM	14 OF 23
PROJECT NO. 15104.035	CHECKED BY: JS/DT	

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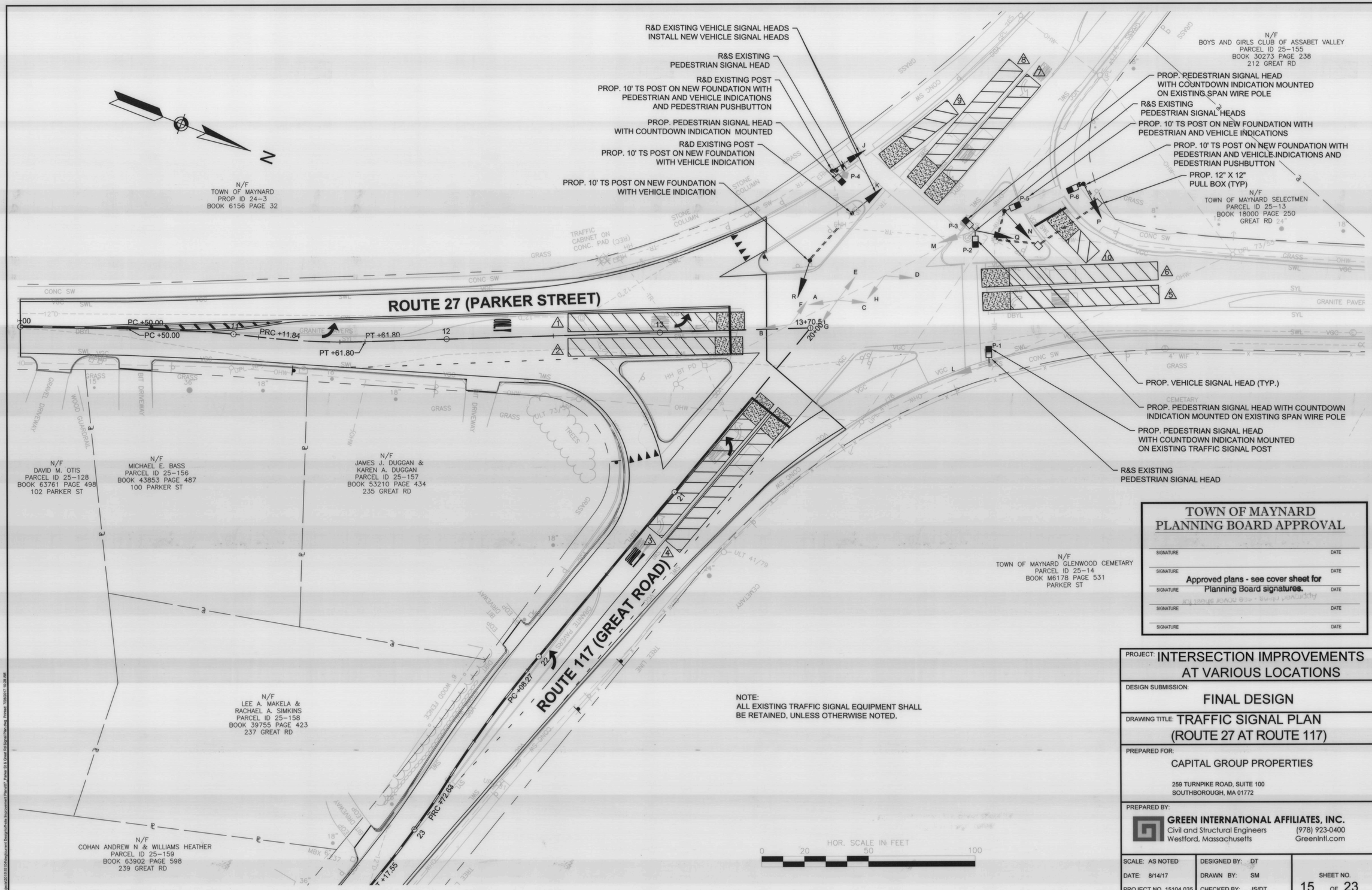


NOTE:
ALL EXISTING TRAFFIC SIGNAL EQUIPMENT SHALL BE RETAINED, UNLESS OTHERWISE NOTED.

TOWN OF MAYNARD PLANNING BOARD APPROVAL

SIGNATURE DATE

SIGNATURE DATE

Approved plans - see cover sheet for Planning Board signatures.

SIGNATURE DATE

SIGNATURE DATE

SIGNATURE DATE

PROJECT: INTERSECTION IMPROVEMENTS AT VARIOUS LOCATIONS

DESIGN SUBMISSION: FINAL DESIGN

DRAWING TITLE: TRAFFIC SIGNAL PLAN (ROUTE 27 AT ROUTE 117)

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

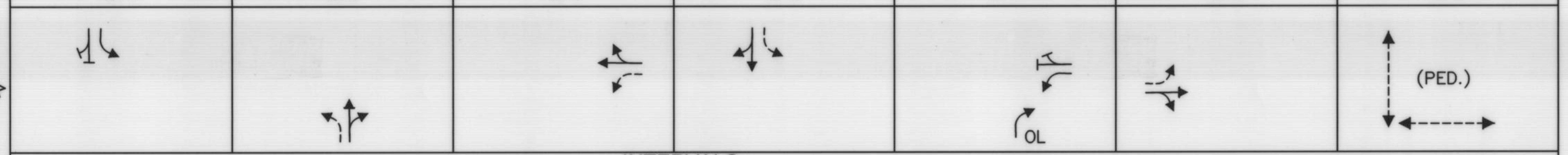
PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers
Westford, Massachusetts
(978) 923-0400
GreenIntl.com

SCALE: AS NOTED	DESIGNED BY: DT	SHEET NO.
DATE: 8/14/17	DRAWN BY: SM	15 OF 23
PROJECT NO. 15104.035	CHECKED BY: JS/DT	

SEQUENCE & TIMING FOR FULL ACTUATED CONTROL

PARKER ST. (RT. 27) AT GREAT RD. (RT. 117)

APPROX. NORTH



INTERVALS

APPROACH	DIRECTION	HOUSINGS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	FLASHING OPERATION
PARKER STREET (ROUTE 27)	NB	A,B	R	R	R	R	R	R	G	Y	R	R	R	R	G	Y	R	R	R	R	R	R	R	FR
PARKER STREET (ROUTE 27)	NB	M	R	R	R	R	R	R	G	Y	R	R	R	R	←G / G	←Y / Y	R	R	R	R	R	R	R	FR
PARKER STREET (ROUTE 27)	SB	C,D,N,P,Q	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	FR
GREAT ROAD (ROUTE 117)	EB	E,F	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FY
GREAT ROAD (ROUTE 117)	EB	J,K	R	R	R	G	Y	R	R	R	R	R	R	R	G→ / R	Y→ / R	R	R	R	R	R	R	R	FY
GREAT ROAD (ROUTE 117)	WB	G,H,L	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	FY
GREAT ROAD (ROUTE 117)	WB	R	←G / G	←Y / Y	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	FY
PEDESTRIAN	ALL	P1-P6	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW	DW	OUT

TIMING IN SECONDS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
MINIMUM GREEN (INITIAL)	5			5			5			5			5			5						EMERGENCY ONLY
MAX GREEN 1	5			28			42			38			8			29						
MAX GREEN 2	5			12			43			22			14			24						
MAX GREEN 3	5			18			52			28			16			31						
VEHICLE EXTENSION	3			3			3			3			3			3						
YELLOW CLEARANCE		3			3			3			3			3			3					
RED CLEARANCE			2			2			2			2			2			2				
PED WALK INTERVAL																			7	13	3	
RECALL		NONE			SOFT			NONE			SOFT			NONE			NONE			NONE		
DETECTION (MEMORY)		NON-LOCK			NON-LOCK			NON-LOCK			NON-LOCK			NON-LOCK			NON-LOCK			LOCK		

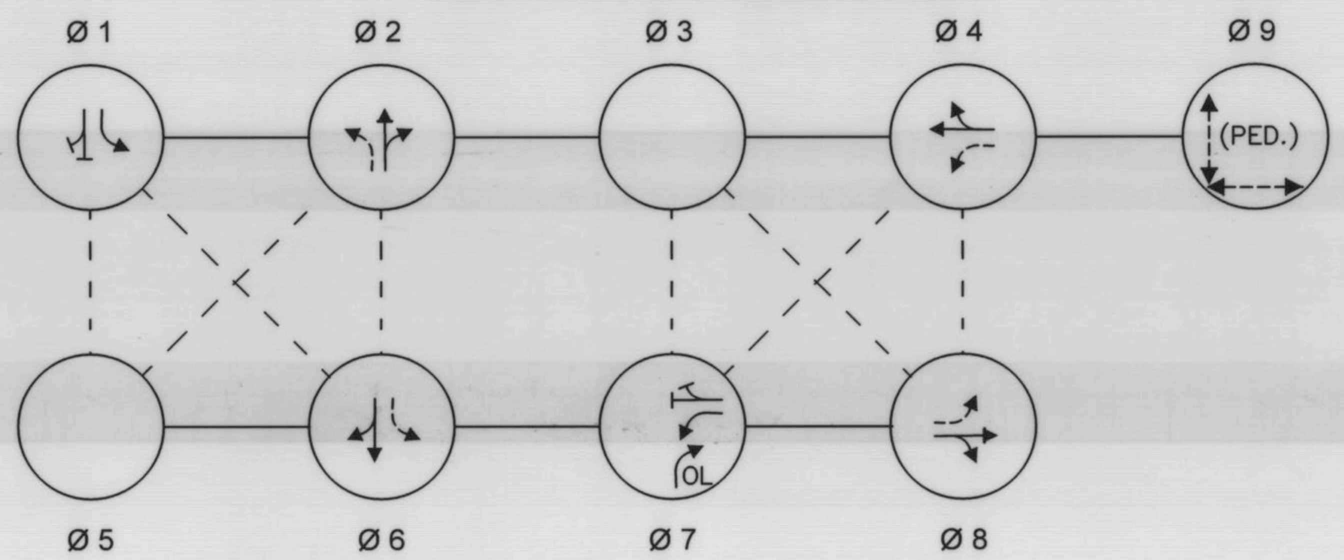
NOTES:
1. STANDARD NEMA CLEARANCES SHALL APPLY.
2. MAXIMUM GREEN 1 SHALL BE IN EFFECT DURING ALL TIMES EXCEPT AS NOTED BELOW.
3. MAXIMUM GREEN 2 SHALL BE IN EFFECT ON WEEKDAYS FROM 12:00PM TO 7:00PM.
4. MAXIMUM GREEN 3 SHALL BE IN EFFECT ON SATURDAYS AND SUNDAYS FROM 9:00AM TO 6:00PM.

GENERAL NOTES:
1. ALL EXISTING SIGNAL EQUIPMENT SHALL BE RETAINED, UNLESS OTHERWISE NOTED.
2. CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING SIGNAL TIMING, PHASING AND EQUIPMENT.

VIDEO DETECTION DATA

DETECTOR NO.	PHASE CALLED	PHASE EXT.	OPERATIONS	DELAY TIME	EXT. TIME
1	ø4 & ø7	ø4 & ø7	PRESENCE	–	–
2	ø4	ø4	PRESENCE	–	–
3	ø1 & ø6	ø1 & ø6	PRESENCE	–	–
4	ø6	ø6	PRESENCE	–	–
5	ø8	ø8	PRESENCE	–	–
6	ø8	ø8	PRESENCE	–	–
7	ø2	ø2	PRESENCE	–	–
8	ø2	ø2	PRESENCE	–	–
9	ø2	ø2	PRESENCE	–	–

NEMA DUAL RING PHASING NOTES:



NOTES:
1. PHASES ASSOCIATED BY A SOLID LINE SHALL NOT OPERATE CONCURRENTLY.
2. PHASES ASSOCIATED BY A DASHED LINE MAY OPERATE CONCURRENTLY.
3. THROUGH MOVEMENTS MAY INCLUDE RIGHT TURNS.
4. IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT SHALL NOT CHANGE DURING THE CHANGE INTERVAL(S) UNLESS OTHERWISE NOTED.

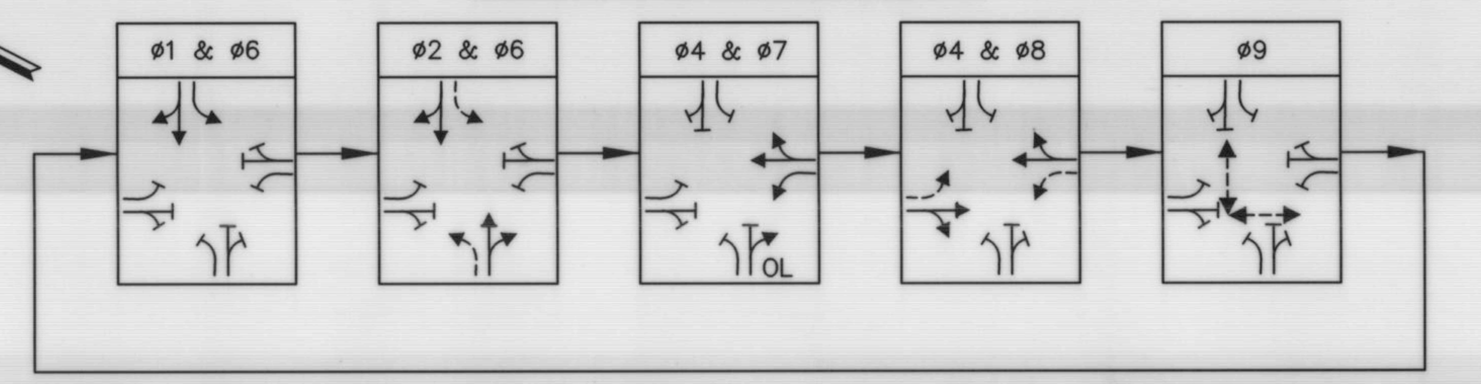
PARKER ST. (RT. 27) AT GREAT RD. (RT. 117)
MAJOR ITEMS LIST

6	16 INCH LED PEDESTRIAN INDICATION WITH COUNTDOWN
3	12 INCH 1 WAY 3-SECTION LED VEHICLE SIGNAL INDICATION
1	12 INCH 1 WAY 4-SECTION LED VEHICLE SIGNAL INDICATION
2	12 INCH 1 WAY 5-SECTION LED VEHICLE SIGNAL INDICATION
5	10 FT PEDESTRIAN SIGNAL POST, BASE & FDN
2	PED. PUSH BUTTON W/ SIGN AND SADDLE (ADA COMPLIANT)
2	12" X 12" PULLBOX

ALL CABLE, LABOR, MISCELLANEOUS MATERIALS AND EQUIPMENT NECESSARY TO COMPLETE THE INSTALLATION OF A FULLY OPERATIONAL SIGNAL SYSTEM AS INTENDED ON TRAFFIC SIGNAL PLAN (SHEET 15).

APPROX. NORTH

PREFERENTIAL PHASING DIAGRAM



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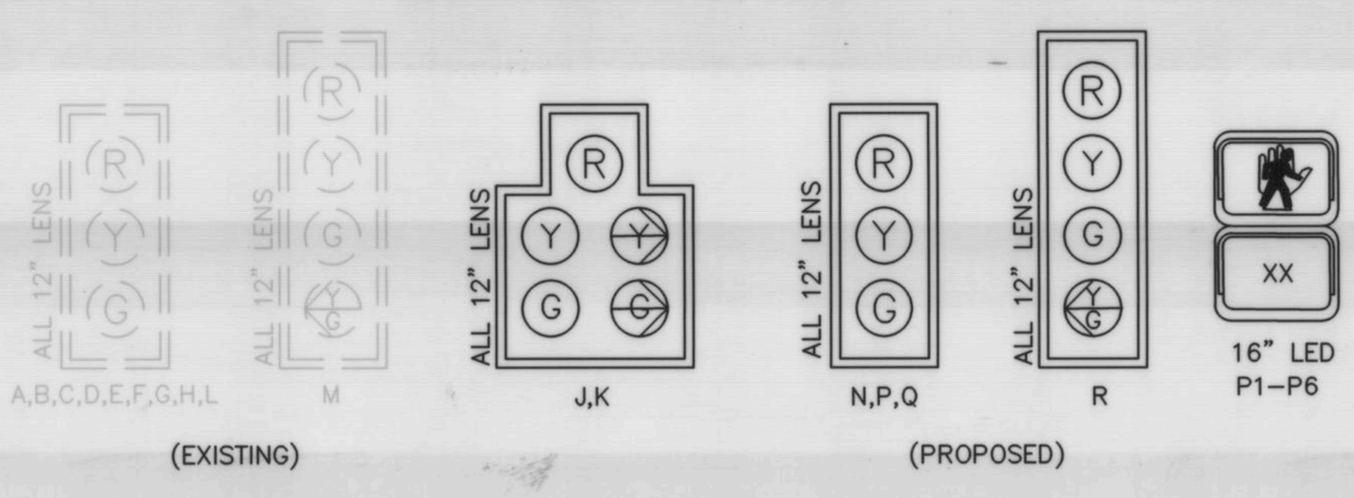


NOTES:
1. ALL VEHICLE LENSES SHALL BE LED TYPE.
2. ALL VEHICLE SIGNAL HEADS SHALL BE 12 INCHES.
3. ALL HOUSINGS TO BE PROVIDED WITH TUNNEL VISORS AND 5-INCH NON-LOUVERED BACKPLATES WITH 3-INCH RETROREFLECTIVE BORDER.
4. ALL HOUSINGS TO BE FIXED MOUNTED.
5. ALL SIGNALHEAD BACKPLATES SHALL BE NON-LOUVERED.

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE DATE

SIGNATURE DATE
Approved plans - see cover sheet for Planning Board signatures.

SIGNATURE DATE

SIGNATURE DATE

SIGNATURE DATE

PROJECT: INTERSECTION IMPROVEMENTS AT VARIOUS LOCATIONS

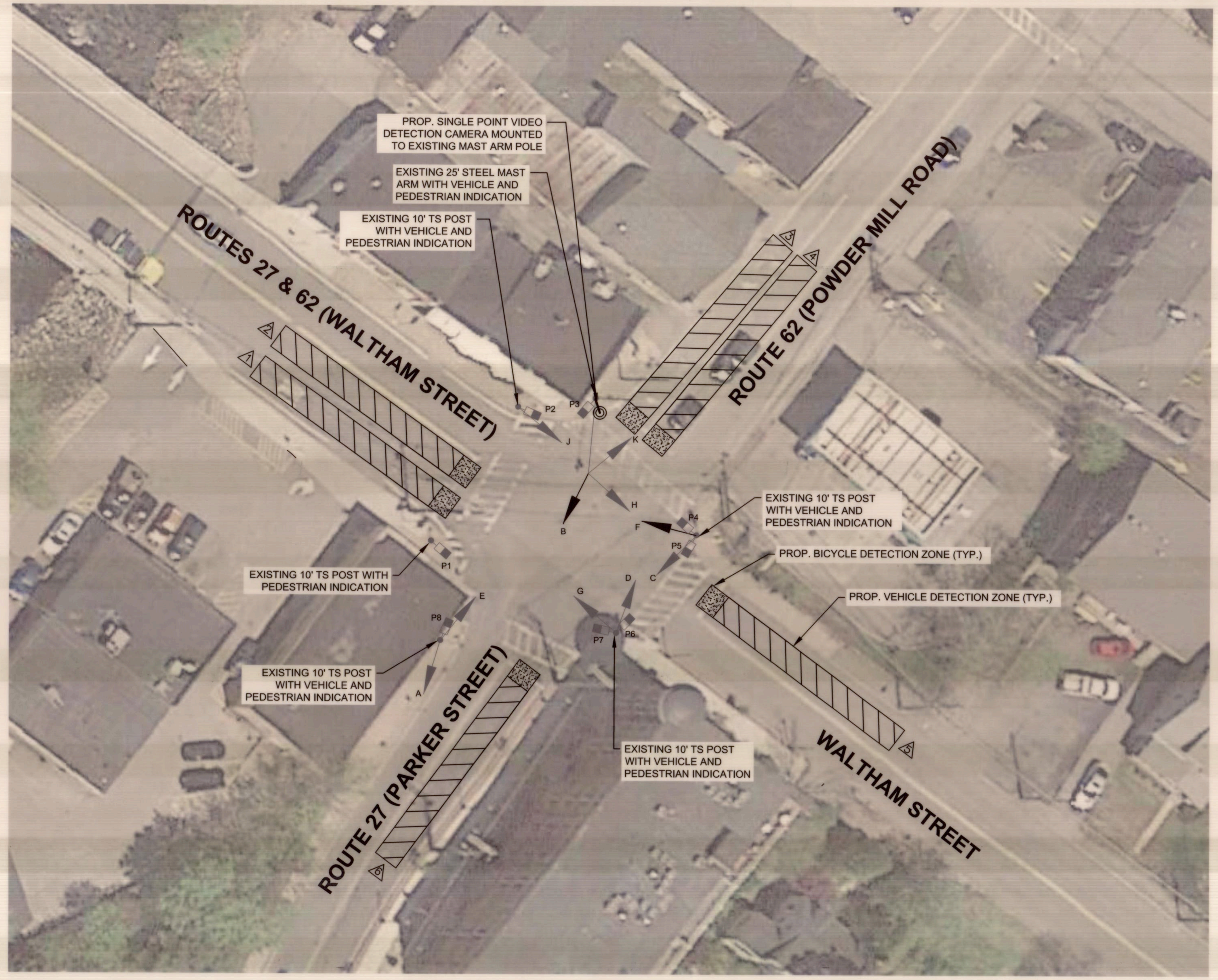
DESIGN SUBMISSION: FINAL DESIGN

DRAWING TITLE: SEQUENCE & TIMING PLAN (ROUTE 27 AT ROUTE 117)

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

SCALE: NTS
DATE: 8/14/17
PROJECT NO. 15104.035
DESIGNED BY: DT
DRAWN BY: SM
CHECKED BY: JS/DT



N

NOTES:

1. ALL EXISTING PAVEMENT MARKINGS TO REMAIN.
2. ALL EXISTING SIGNAL EQUIPMENT TO BE RETAINED, EXCEPT FOR THE GREEN LEFT ARROW LENSES ON SIGNAL HEADS B & F.
3. REMOVE EXISTING GREEN LEFT ARROW LENSES ON SIGNAL HEADS B & F AND REPLACE WITH BI-MODAL GREEN/YELLOW LEFT ARROW LENSES, RETAIN EXISTING GREEN, YELLOW, AND RED CIRCULAR LENSES.

HOR. SCALE IN FEET
0 20 50 100

TOWN OF MAYNARD PLANNING BOARD APPROVAL

SIGNATURE	DATE
SIGNATURE Approved plans - see cover sheet for Planning Board signatures.	DATE
SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE

PROJECT: INTERSECTION IMPROVEMENTS AT VARIOUS LOCATIONS

DESIGN SUBMISSION: FINAL DESIGN

DRAWING TITLE: TRAFFIC SIGNAL PLAN (ROUTE 27 AT WALTHAM ST)

PREPARED FOR: CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers
Westford, Massachusetts
(978) 923-0400
GreenIntl.com

SCALE: AS NOTED	DESIGNED BY: DT	
DATE: 8/14/17	DRAWN BY: SM	SHEET NO.
PROJECT NO. 15104.035	CHECKED BY: JS/DT	17 OF 23

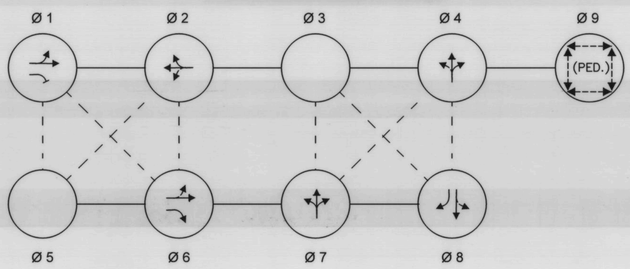
SEQUENCE & TIMING FOR FULL ACTUATED CONTROL
PARKER ST. AT WALTHAM ST. / POWDER MILL RD.

APPROX. NORTH

APPROACH	DIRECTION	HOUSINGS	Ø1			Ø2			Ø4			Ø6			Ø7			Ø8			Ø9			FLASHING OPERATION
			INTERVALS																					
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	16	17	18	
PARKER STREET	NB	A,C	R	R	R	R	R	R	G	Y	R	R	R	R	G	Y	R	R	R	R	R	R	R	FR
PARKER STREET	NB	B	R	R	R	R	R	R	G	Y	R	R	R	R	⊸ / G	⊸ / Y	R	R	R	R	R	R	R	FR
POWDER MILL ROAD	SB	D,E,K	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	FR
WALTHAM STREET	EB	F	⊸ / G	⊸ / Y	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	FY
WALTHAM STREET	EB	G	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	FY
WALTHAM STREET	WB	H,J	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FY
PEDESTRIAN	ALL	P1-P8	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW	DW	OUT
			TIMING IN SECONDS																					
MINIMUM GREEN (INITIAL)			5			5			5			5			5			5						EMERGENCY ONLY
MAX GREEN 1			14			16			34			34			19			11						
MAX GREEN 2			24			24			70			52			37			29						
MAX GREEN 3			27			22			69			53			40			25						
VEHICLE EXTENSION			3			3			3			3			3			3						
YELLOW CLEARANCE				3			3			3			3			3			3					
RED CLEARANCE					1			1			1			1			1			1				
PED WALK INTERVAL																					5	12	3	
RECALL				NONE			SOFT			NONE			SOFT			NONE			NONE			NONE		
DETECTION (MEMORY)				NON-LOCK			NON-LOCK			NON-LOCK			NON-LOCK			NON-LOCK			NON-LOCK			LOCK		

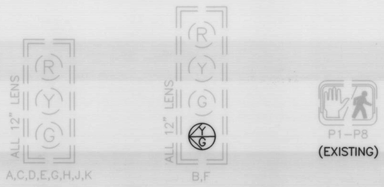
NOTES:
1. STANDARD NEMA CLEARANCES SHALL APPLY.
2. MAXIMUM GREEN 1 SHALL BE IN EFFECT DURING ALL TIMES EXCEPT AS NOTED BELOW.
3. MAXIMUM GREEN 2 SHALL BE IN EFFECT ON WEEKDAYS FROM 3:00PM TO 7:00PM.
4. MAXIMUM GREEN 3 SHALL BE IN EFFECT ON SATURDAYS FROM 10:00AM TO 6:00PM.

NEMA DUAL RING PHASING NOTES:



NOTES:
1. PHASES ASSOCIATED BY A SOLID LINE SHALL NOT OPERATE CONCURRENTLY.
2. PHASES ASSOCIATED BY A DASHED LINE MAY OPERATE CONCURRENTLY.
3. THROUGH MOVEMENTS MAY INCLUDE RIGHT TURNS.
4. IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT SHALL NOT CHANGE DURING THE CHANGE INTERVAL(S) UNLESS OTHERWISE NOTED.

SIGNAL IDENTIFICATION



(EXISTING)

(REMOVE EXISTING GREEN LEFT ARROW LENSES AND REPLACE WITH BI-MODAL GREEN/YELLOW LEFT ARROW LENSES, RETAIN EXISTING GREEN, YELLOW, AND RED CIRCULAR LENSES.)

(EXISTING)

VIDEO DETECTION DATA

DETECTOR NO.	PHASE CALLED	PHASE EXT.	OPERATIONS	DELAY TIME	EXT. TIME
1	ø1 & ø6	ø1 & ø6	PRESENCE	–	–
2	ø6	ø6	PRESENCE	–	–
3	ø8	ø8	PRESENCE	–	–
4	ø8	ø8	PRESENCE	–	–
5	ø2	ø2	PRESENCE	–	–
6	ø4 & ø7	ø4 & ø7	PRESENCE	–	–

PARKER ST. AT WALTHAM ST. / POWDER MILL RD.
MAJOR ITEMS LIST

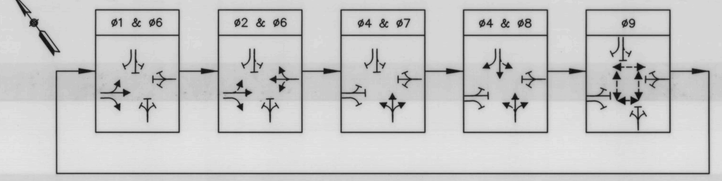
1	GRIDSMART VIDEO DETECTION SYSTEM

ALL CABLE, LABOR, MISCELLANEOUS MATERIALS AND EQUIPMENT NECESSARY TO COMPLETE THE INSTALLATION OF A FULLY OPERATIONAL SIGNAL SYSTEM AS INTENDED ON TRAFFIC SIGNAL PLAN (SHEET 15).

GENERAL NOTES:
1. ALL EXISTING SIGNAL EQUIPMENT SHALL BE RETAINED. CONTRACTOR RESPONSIBLE FOR UPDATING SIGNAL TIMING AND OFFSETS.
2. CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING SIGNAL TIMING, PHASING AND EQUIPMENT.

PREFERENTIAL PHASING DIAGRAM

APPROX. NORTH



TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE DATE

SIGNATURE Approved plans - see cover sheet for Planning Board signatures. DATE

SIGNATURE DATE

SIGNATURE DATE

SIGNATURE DATE

PROJECT: INTERSECTION IMPROVEMENTS AT VARIOUS LOCATIONS

DESIGN SUBMISSION: FINAL DESIGN

DRAWING TITLE: SEQUENCE & TIMING PLAN (ROUTE 27 AT WALTHAM ST)

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

SCALE: NTS	DESIGNED BY: DT	SHEET NO.
DATE: 8/14/17	DRAWN BY: SM	18 OF 23
PROJECT NO. 15104.035	CHECKED BY: JS/DT	

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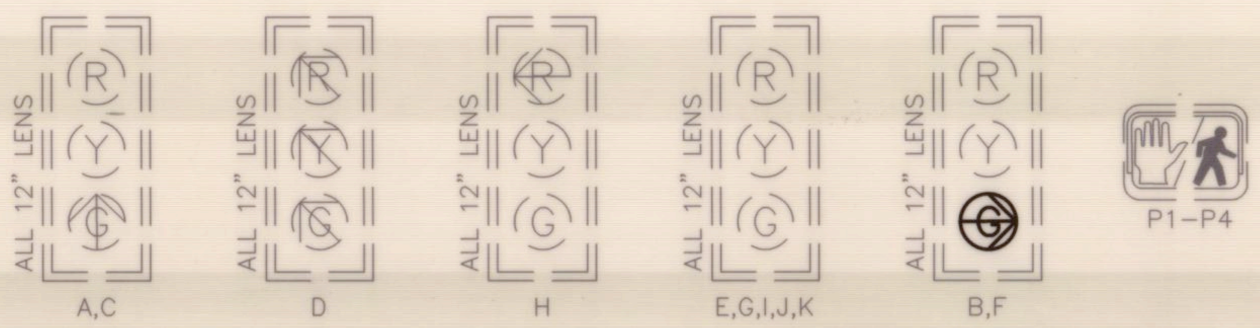
HOR. SCALE IN FEET
0 10 25 50

NOTES:

1. ALL EXISTING SIGNAL EQUIPMENT TO BE RETAINED, EXCEPT FOR THE GREEN LENSES ON SIGNAL HEADS B & F.
2. ALL EXISTING TRAFFIC SIGNAL TIMING AND PHASING TO BE RETAINED.
3. ALL EXISTING PAVEMENT MARKINGS AND SIGNS TO BE RETAINED.

SIGNAL IDENTIFICATION



(REMOVE EXISTING GREEN CIRCULAR LENSES AND REPLACE WITH GREEN RIGHT ARROW LED LENSES. RETAIN EXISTING YELLOW AND RED CIRCULAR LENSES.)

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE

Approved plans - see cover sheet for Planning Board signatures.

PROJECT: INTERSECTION IMPROVEMENTS AT VARIOUS LOCATIONS

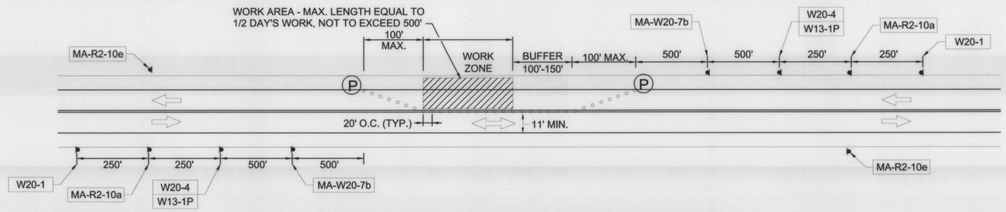
DESIGN SUBMISSION: FINAL DESIGN

DRAWING TITLE: TRAFFIC SIGNAL PLAN (ROUTE 62 AT ROUTE 117)

PREPARED FOR: CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

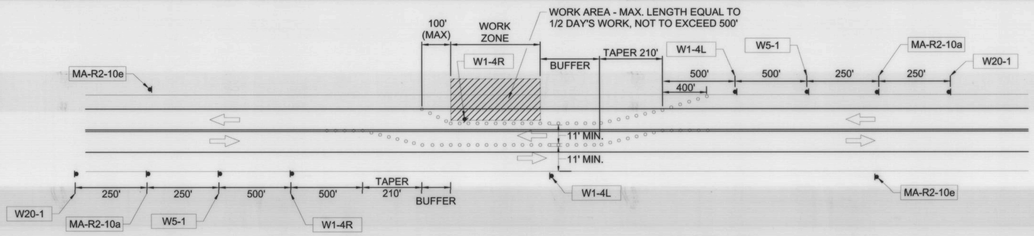
PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers
Westford, Massachusetts
(978) 923-0400
GreenIntl.com

SCALE: AS NOTED	DESIGNED BY: DT	SHEET NO.
DATE: 8/14/17	DRAWN BY: SM	19 OF 23
PROJECT NO. 15104.035	CHECKED BY: JS/DT	



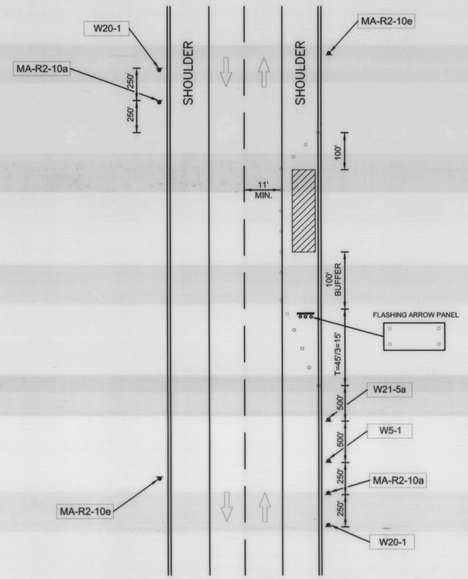
TYPICAL APPLICATION - TWO LANE ROAD
ONE LANE ALTERNATING TRAFFIC

NOT TO SCALE



TYPICAL APPLICATION - TWO LANE ROAD
SHOULDER AND PARTIAL TRAVEL LANE CLOSURE

NOT TO SCALE



TYPICAL APPLICATION: WORK WITHIN SHOULDERS
NOTE: THIS TEMPLATE IS FOR NON-ENCROACHMENT IN TRAVEL LANE

TYPICAL TRAFFIC MANAGEMENT PLAN
FOR TWO-WAY ROAD, SHOULDER CLOSURE ONLY

NOT TO SCALE

LEGEND

- SIGN
- REFLECTORIZED DRUM
- (P) POLICE DETAIL
- WORK AREA
- TRAFFIC FLOW DIRECTION
- TYPE III BARRICADE
- ARROW BOARD

TEMPORARY TRAFFIC CONTROL NOTES:

1. MINIMUM LANE WIDTH OF 11 FEET SHALL BE MAINTAINED AT ALL TIMES.
2. THESE PLANS ARE NOT INTENDED TO LIMIT THE CONTRACTOR'S APPROACH TO SCHEDULE THE WORK BUT TO OUTLINE ONE WAY OF PROGRESSING. THE CONTRACTOR IS EXPECTED TO USE KNOWLEDGE AND EXPERIENCE TO PERFORM THE WORK IN THE MOST EFFICIENT AND SAFE MANNER IN COMPLIANCE WITH THE DRAWINGS AND SPECIFICATIONS.
3. PLACE ALL SAFETY DEVICES AND CONSTRUCTION SIGNING BEFORE ACTUAL CONSTRUCTION WORK BEGINS.
4. DISTANCES ARE A GUIDE AND MAY BE ADJUSTED BASED ON FIELD CONDITIONS WITH THE APPROVAL OF THE ENGINEER.
5. EXISTING SIGNS NO LONGER APPLICABLE SHALL BE TEMPORARILY COVERED DURING CONSTRUCTION OR REMOVED AND RESET UPON COMPLETION OF CONSTRUCTION. THE COST SHALL BE INCIDENTAL TO THE CONTRACT.
6. SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY MUST PASS THE CRITERIA SET FORTH IN THE NCHRP 350 REPORT.
7. TEMPORARY PAVEMENT MARKINGS, NO LONGER APPLICABLE, SHALL BE REMOVED. CONTRACTOR SHALL RECORD EXISTING PAVEMENT MARKINGS AND RESTORE ALL MARKINGS TO EXISTING CONDITIONS AT THE CONCLUSION OF CONSTRUCTION AT EACH LOCATION.
8. ALL TRAFFIC CONTROL DEVICES SHALL BE REMOVED IMMEDIATELY WHEN NO LONGER NEEDED.
9. UNLESS OTHERWISE NOTED, ALL PAVEMENT MARKINGS, SIGNS AND OTHER TRAFFIC EQUIPMENT REMOVED OR DAMAGED AS A RESULT OF THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED IN CONFORMANCE WITH THE CONTACT DOCUMENTS.
10. CONTRACTOR SHALL INSTALL, RENEW AND MAINTAIN ALL TRAFFIC CONTROL DEVICES AS SHOWN ON THE DRAWINGS IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
11. ACCESS/EGRESS TO ALL ABUTTERS SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION. CONTRACTOR SHALL MAINTAIN EMERGENCY PASSAGE AT ALL TIMES TO BUILDINGS WITHIN AND ADJACENT TO THE PROJECT LIMITS AS WELL AS A LARGER AREA IF AFFECTED BY CONSTRUCTION CONDITIONS. CONTRACTOR SHALL MAINTAIN 24 HOUR EMERGENCY VEHICLE ACCESS TO CONSTRUCTION AREAS.
14. CONTRACTOR SHALL COORDINATE WITH ABUTTERS FOR THE PROPOSED WORK AND SHALL NOTIFY EACH ABUTTER AT LEAST 24 HOURS IN ADVANCE OF THE START OF THE WORK THAT WILL REQUIRE TEMPORARY CLOSURE OF ACCESS TO THEIR PROPERTY.
15. THE CONTRACTOR SHALL COORDINATE THE WORK WITH ALL ABUTTING PROJECTS.
16. RESIDENTS AND COMMERCIAL PROPERTY OWNERS ALONG PARKER STREET AND OLD MARLBORO ROAD SHALL BE NOTIFIED OF ROADWAY CONSTRUCTION. ROADWAY CONSTRUCTION SHALL NOT TAKE PLACE DURING THE PEAK HOURS (MON-FRI: 7AM-9AM; 4PM-6PM) ALONG THE EAST SIDE OF PARKER STREET, IN FRONT OF #141 PARKER STREET, AND ON OLD MARLBORO ROAD.

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE		DATE
SIGNATURE		DATE
SIGNATURE	Approved plans - see cover sheet for Planning Board signatures.	DATE
SIGNATURE		DATE
SIGNATURE		DATE

PROJECT: INTERSECTION IMPROVEMENTS AT VARIOUS LOCATIONS

DESIGN SUBMISSION: FINAL DESIGN

DRAWING TITLE: TRAFFIC MANAGEMENT PLAN 1

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

SCALE: NTS	DESIGNED BY: DT	SHEET NO. 20 OF 23
DATE: 8/14/17	DRAWN BY: SM	
PROJECT NO. 15104.035	CHECKED BY: DT	

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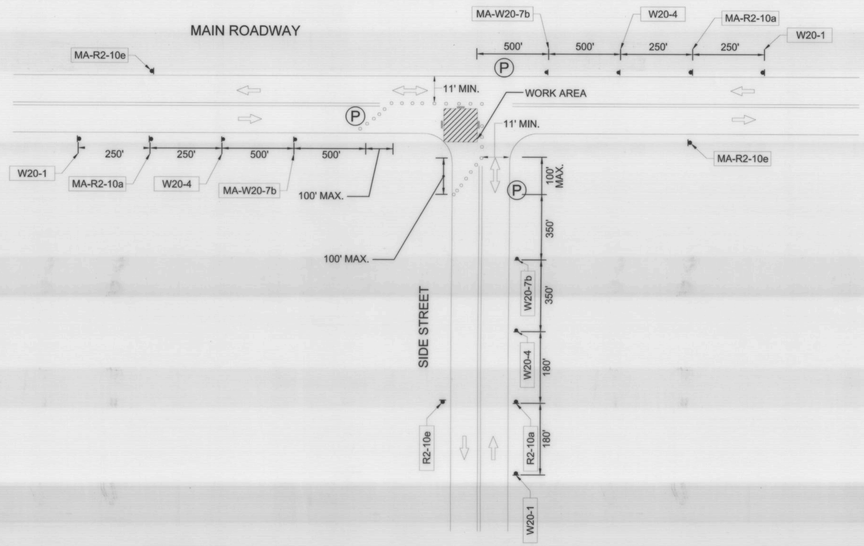
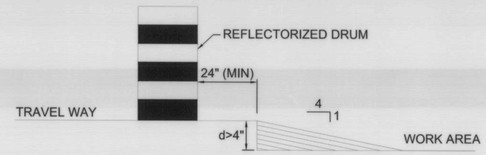


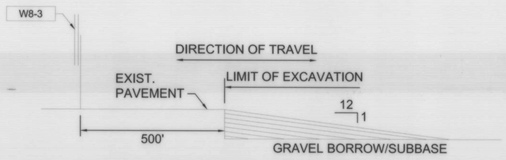
NOTE:
USE SIMILAR TRAFFIC SETUP FOR WORK AT OPPOSITE SIDE OF INTERSECTION.

TYPICAL APPLICATION - SINGLE LANE APPROACH, ONE QUADRANT CLOSURE AT THREE-LEGGED INTERSECTION



LATERAL DROP-OFF DETAIL

NOT TO SCALE



LONGITUDINAL DROP-OFF DETAIL

NOT TO SCALE

TOWN OF MAYNARD PLANNING BOARD APPROVAL

SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE

Approved plans - see cover sheet for Planning Board signatures.

PROJECT: INTERSECTION IMPROVEMENTS AT VARIOUS LOCATIONS

DESIGN SUBMISSION: FINAL DESIGN

DRAWING TITLE: TRAFFIC MANAGEMENT PLAN 2

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers
Westford, Massachusetts
(978) 923-0400
GreenIntl.com

SCALE: NTS	DESIGNED BY: DT	SHEET NO.
DATE: 8/14/17	DRAWN BY: SM	21 OF 23
PROJECT NO. 15104.035	CHECKED BY: DT	

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CONSTRUCTION SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN (INCHES) WIDTH	HEIGHT	TEXT	TEXT DIMENSIONS (INCHES) LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.	COLOR BACK-GROUND	LEGEND	BORDER	POST SIZE AND NUMBER REQUIRED	NUMBER OF SIGNS REQUIRED	UNIT AREA (S.F.)	TOTAL AREA (S.F.)
MA-R2-10a	48	36	WORK ZONE / SPEEDING FINES DOUBLED	SEE MASSDOT STANDARD DETAIL			SEE MASSDOT STD. DETAIL			MASSDOT SPEC. MOUNT ON POST	5	12.00	60.00
MA-R2-10e	36	48	END ROAD WORK / DOUBLE FINES END								5	12.00	60.00
MA-W20-7b	36	36	POLICE OFFICER AHEAD								5	9.00	45.00
W1-4L	36	36		SEE MUTCD STANDARD DETAIL			SEE MUTCD STD. DETAIL			MUTCD SPEC. MOUNT ON POST	2	9.00	18.00
W1-4R	36	36									2	9.00	18.00
W5-1	36	36	ROAD NARROWS								3	9.00	27.00
W8-3	36	36	PAVEMENT ENDS								2	9.00	18.00
W13-1P	24	24	XX M.P.H. ***								2	4.00	8.00
W20-1	36	36	ROAD WORK AHEAD								5	9.00	45.00
W20-4	36	36	ONE LANE ROAD AHEAD								5	9.00	45.00
W21-5a	36	36	SHOULDER WORK								1	9.00	9.00
													353.00

NOTES:

- SEE THE 2009 "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ITS REVISIONS, THE 2012 MASSACHUSETTS AMENDMENTS TO THE 2009 MUTCD, AND THE STANDARD MUNICIPAL TRAFFIC CODE FOR LATEST SPECIFICATION ON TEXT, DIMENSIONS AND COLOR. ALSO REFER TO 2006 MASSACHUSETTS HIGHWAY DEPARTMENT (MHD) SUPPLEMENTAL SPECIFICATIONS TO THE 1995 STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES (METRIC EDITION) SUBSECTION M9.30.0.
- UNLESS OTHERWISE NOTED, ALL POSTS TO BE P-5.

*** 25 MPH IF ON GREAT ROAD OR ON PARKER STREET, 20 MPH OTHERWISE

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE DATE

SIGNATURE DATE

Approved plans - see cover sheet for Planning Board signatures.

SIGNATURE DATE

SIGNATURE DATE

SIGNATURE DATE

PROJECT: INTERSECTION IMPROVEMENTS AT VARIOUS LOCATIONS

DESIGN SUBMISSION: FINAL DESIGN

DRAWING TITLE: TRAFFIC MANAGEMENT PLAN 3

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers
Westford, Massachusetts
(978) 923-0400
GreenIntl.com

SCALE: NTS | DESIGNED BY: DT
DATE: 8/14/17 | DRAWN BY: SM
PROJECT NO. 15104.035 | CHECKED BY: DT
SHEET NO. 22 OF 23

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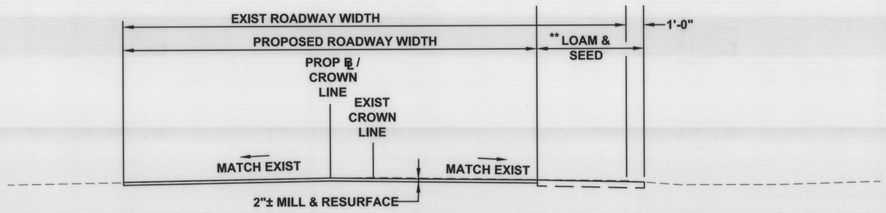
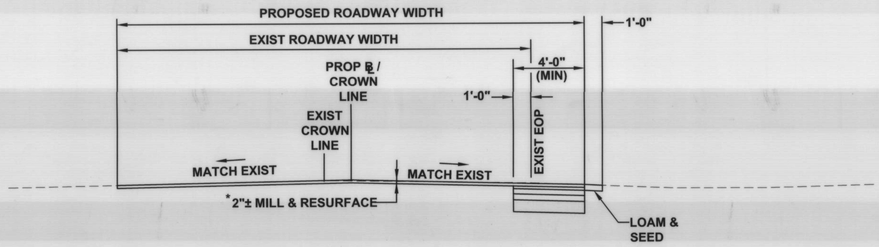


MILL AND OVERLAY WITH NARROWING

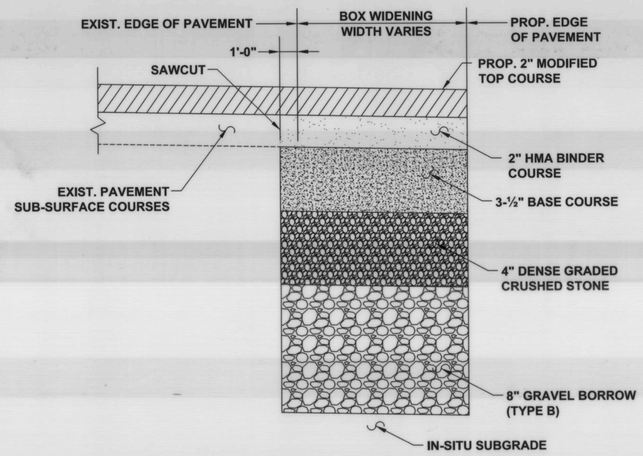
*VARY MILLING DEPTH AS NEEDED TO SHIFT EXISTING CROWNLINE TO PROPOSED BASELINE

**REMOVE EXISTING PAVEMENT AND REPLACE WITH LOAM & SEED



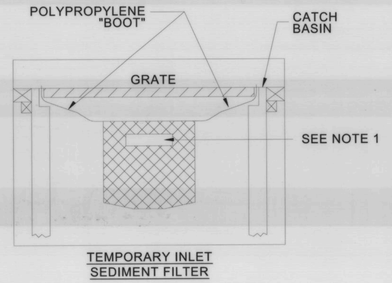
MILL AND OVERLAY WITH BOX WIDENING

*VARY MILLING DEPTH AS NEEDED TO SHIFT EXISTING CROWNLINE TO PROPOSED BASELINE

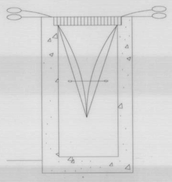


BOX WIDENING DETAIL (≥ 4'0")

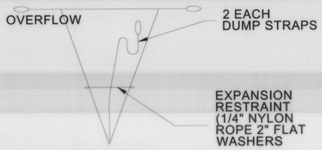
NOT TO SCALE



TEMPORARY INLET SEDIMENT FILTER



INSTALLATION DETAIL

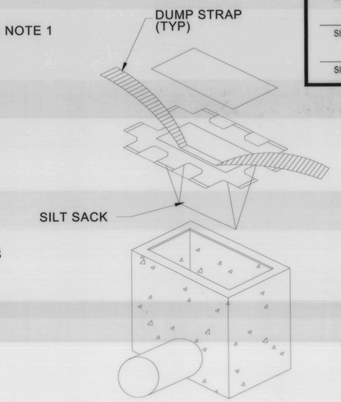


BAG DETAIL

NOTE 1:
TEMPORARY INLET SEDIMENT FILTER TO BE INSTALLED ON ALL PAVED CATCH BASINS OR STORM INLETS. INLET FILTER TO BE SIMILAR TO "STREAMGUARD" AS MANUFACTURED BY STORMWATER SERVICES CORPORATION (206-767-0441) OR "SILTSACK" AS MANUFACTURED BY ATLANTIC CONSTRUCTION FABRICS, INC. (800-448-3636). CLEAN FILTER AS NEEDED.

INLET PROTECTION FILTER BAG

NOT TO SCALE



PAVEMENT NOTES

PROPOSED FULL DEPTH PAVEMENT AND BOX WIDENING > 4'0"

SURFACE:	2" HOT MIX ASPHALT MODIFIED TOP COURSE
INTERMEDIATE:	2" HOT MIX ASPHALT BINDER COURSE
BASE:	3-½" HOT MIX ASPHALT BASE COURSE MATERIAL PLACED IN ONE COURSE
SUBBASE:	4" DENSE GRADED CRUSHED STONE FOR SUB-BASE OVER 8" GRAVEL BORROW (TYPE B)

PROPOSED PAVEMENT MILLING AND RESURFACING

SURFACE:	2" HOT MIX ASPHALT MODIFIED TOP COURSE ±2" PAVEMENT MILLING (VARIABLE DEPTH TO MEET PROPOSED GRADING)

PROPOSED CEMENT CONCRETE SIDEWALK

SURFACE:	4" CEMENT CONCRETE
FOUNDATION:	8" GRAVEL BORROW, (TYPE B)

NOTE:

ASPHALT EMULSION FOR TACK COAT (RS-1) SHALL BE APPLIED AT A RATE OF 0.05 GAL/SY OVER NEW AND SMOOTH INTERMEDIATE COURSES.
ASPHALT EMULSION FOR TACK COAT (RS-1) SHALL BE APPLIED AT A RATE OF 0.07 GAL/SY OVER MILLED SURFACES.

TOWN OF MAYNARD PLANNING BOARD APPROVAL

SIGNATURE		DATE
SIGNATURE	Approved plans - see cover sheet for Planning Board signatures.	DATE
SIGNATURE		DATE
SIGNATURE		DATE
SIGNATURE		DATE

PROJECT: INTERSECTION IMPROVEMENTS AT VARIOUS LOCATIONS

DESIGN SUBMISSION: FINAL DESIGN

DRAWING TITLE: CONSTRUCTION DETAILS

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers
Westford, Massachusetts
(978) 923-0400
GreenIntl.com

SCALE: NTS	DESIGNED BY: DT	SHEET NO.
DATE: 8/14/17	DRAWN BY: SM	23 OF 23
PROJECT NO. 15104.035	CHECKED BY: DT	

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TOWN OF MAYNARD, MASSACHUSETTS

PROPOSED ROADWAY RECONSTRUCTION

OF

PARKER STREET (ROUTE 27)

INDEX

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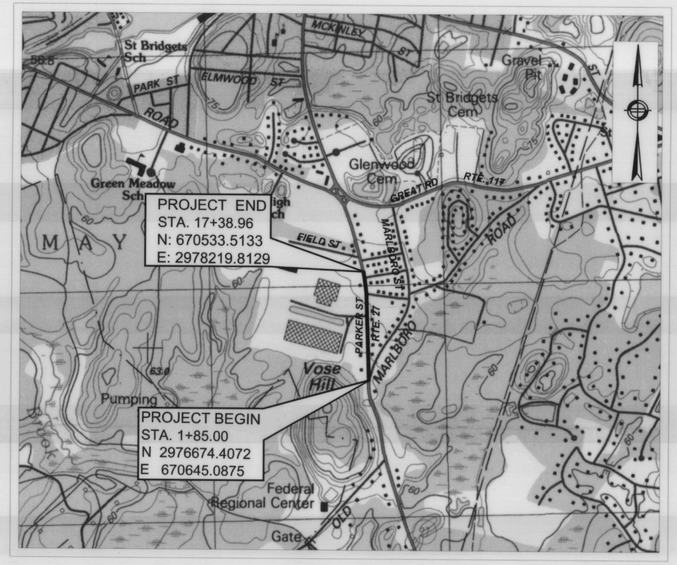

LOCATION PLAN

1000 0 1000 2000

SCALE IN FEET

LENGTH OF PROJECT = 1553.96 FEET = 0.29 MILES

THE MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES DATED 1988, AS AMENDED, THE SUPPLEMENTAL SPECIFICATIONS DATED JULY 1, 2015, THE 2016 CONSTRUCTION STANDARD DETAILS, THE 1996 CONSTRUCTION AND TRAFFIC STANDARD DETAILS (AS RELATES TO TRAFFIC STANDARD DETAILS ONLY), THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS WITH MASSACHUSETTS AMENDMENTS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS, THE 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS AND HIGHWAY LIGHTING AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, WILL GOVERN.

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE	9/26/17 DATE
SIGNATURE	9/26/17 DATE
SIGNATURE	DATE
SIGNATURE	9/27/17 DATE
SIGNATURE	9/27/17 DATE

COMMONWEALTH OF MASSACHUSETTS
JASON S. SOBEL
CIVIL
No. 47550
REGISTERED PROFESSIONAL ENGINEER
8/14/2017

NO.	DATE	REVISIONS

PROJECT: PARKER STREET (ROUTE 27)

DESIGN SUBMISSION: FINAL DESIGN

DRAWING TITLE: TITLE SHEET

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers
Westford, Massachusetts
(978) 923-0400
GreenIntl.com

SCALE: AS NOTED	DESIGNED BY: EN	SHEET NO. 01 OF 43
DATE: 8/14/17	DRAWN BY: EN	
PROJECT NO. 15104.035	CHECKED BY: DT	

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ABBREVIATIONS

GENERAL

AADT	ANNUAL AVERAGE DAILY TRAFFIC
ABAN	ABANDON
ADJ	ADJUST
APPROX.	APPROXIMATE
A.C.	ASPHALT CONCRETE
ACCM PIPE	ASPHALT COATED CORRUGATED METAL PIPE
BIT.	BITUMINOUS
BC	BOTTOM OF CURB
BD.	BOUND
BL	BASELINE
BLDG	BUILDING
BM	BENCHMARK
BO	BY OTHERS
BOS	BOTTOM OF SLOPE
BR.	BRIDGE
CB	CATCH BASIN
CBCI	CATCH BASIN WITH CURB INLET
CC	CEMENT CONCRETE
CCM	CEMENT CONCRETE MASONRY
CEM	CEMENT
CI	CURB INLET
CIP	CAST IRON PIPE
CIT	CHANGE IN TYPE
CLF	CHAIN LINK FENCE
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CSP	CORRUGATED STEEL PIPE
CO.	COUNTY
CONC	CONCRETE
CONT	CONTINUOUS
CONST	CONSTRUCTION
CR GR	CROWN GRADE
DHV	DESIGN HOURLY VOLUME
DI	DROP INLET
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DW	STEADY DON'T WALK - PORTLAND ORANGE
DWY	DRIVEWAY
ELEV (or EL.)	ELEVATION
EMB	EMBANKMENT
EOP	EDGE OF PAVEMENT
EXIST (or EX)	EXISTING
EXC	EXCAVATION
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
FDN.	FOUNDATION
FLDSTN	FIELDSTONE
GAR	GARAGE
GD	GROUND
GG	GAS GATE
GI	GUTTER INLET
GIP	GALVANIZED IRON PIPE
GRAN	GRANITE
GRAV	GRAVEL
GRD	GUARD
HDW	HEADWALL
H.E.S.	HIGH EARLY STRENGTH
HMA	HOT MIX ASPHALT
HOR	HORIZONTAL
HYD	HYDRANT
INV	INVERT
JCT	JUNCTION
L	LENGTH OF CURVE
LB	LEACH BASIN
LP	LIGHT POLE
LT	LEFT
MAX	MAXIMUM
MB	MAILBOX
MH	MANHOLE
MHB	MASSACHUSETTS HIGHWAY BOUND
MIN	MINIMUM
NIC	NOT IN CONTRACT
NO.	NUMBER
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
P.G.L.	PROFILE GRADE LINE
PI	POINT OF INTERSECTION
POC	POINT ON CURVE
POT	POINT ON TANGENT
PRC	POINT OF REVERSE CURVATURE
PROJ	PROJECT
PROP	PROPOSED
PSB	PLANTABLE SOIL BORROW

ABBREVIATIONS (cont.)

GENERAL

PT	POINT OF TANGENCY
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
PVMT	PAVEMENT
PWW	PAVED WATER WAY
PVC	POINT OF VERTICAL CURVATURE
R	RADIUS OF CURVATURE
R&D	REMOVE AND DISPOSE
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
RDWY	ROADWAY
REM	REMOVE
RET	RETAIN
RET WALL	RETAINING WALL
ROW	RIGHT OF WAY
RR	RAILROAD
R&R	REMOVE AND RESET
R&S	REMOVE AND STACK
RT	RIGHT
SB	STONE BOUND
SHLD	SHOULDER
SMH	SEWER MANHOLE
ST	STREET
STA	STATION
SSD	STOPPING SIGHT DISTANCE
SHLO	STATE HIGHWAY LAYOUT LINE
SW	SIDEWALK
T	TANGENT DISTANCE OF CURVE/TRUCK %
TAN	TANGENT
TEMP	TEMPORARY
TC	TOP OF CURB
TOS	TOP OF SLOPE
TYP	TYPICAL
UP	UTILITY POLE
VAR	VARIES
VERT	VERTICAL
VC	VERTICAL CURVE
WCR	WHEEL CHAIR RAMP
WG	WATER GATE
WIP	WROUGHT IRON PIPE
WM	WATER METER/WATER MAIN
X-SECT	CROSS SECTION

TRAFFIC SIGNAL

CAB.	CABINET
CCVE	CLOSED CIRCUIT VIDEO EQUIPMENT
DW	STEADY DON'T WALK
FDW	FLASHING DON'T WALK
FR	FLASHING CIRCULAR RED
FRL	FLASHING RED LEFT ARROW
FRR	FLASHING RED RIGHT ARROW
FY	FLASHING CIRCULAR AMBER
FYL	FLASHING AMBER LEFT ARROW
FYR	FLASHING AMBER RIGHT ARROW
G	STEADY CIRCULAR GREEN
GL	STEADY GREEN LEFT ARROW
GR	STEADY GREEN RIGHT ARROW
GSL	STEADY GREEN SLASH LEFT ARROW
GSR	STEADY GREEN SLASH RIGHT ARROW
GV	STEADY GREEN VERTICAL ARROW
OL	OVERLAP
PED	PEDESTRIAN
PTZ	PAN, TILE, ZOOM
R	STEADY CIRCULAR RED
RL	STEADY RED LEFT ARROW
RR	STEADY RED RIGHT ARROW
TR SIG	TRAFFIC SIGNAL
TSC	TRAFFIC SIGNAL CONDUIT
W	STEADY WALK
Y	STEADY CIRCULAR AMBER
YL	STEADY AMBER LEFT ARROW

GENERAL SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
JB	JB	JERSEY BARRIER ON BRIDGE OR JERSEY BARRIER
CB	CB	CATCH BASIN
		CATCH BASIN CURB INLET
FP	FP	FLAG POLE
GP	GP	GAS PUMP
MB	MB	MAIL BOX
		POST SQUARE
		POST CIRCULAR
WELL	WELL	WELL
EHH	EHH	ELECTRIC HANDHOLE
		FENCE GATE POST
GG	GG	GAS GATE
BHL #	BHL #	BORING HOLE
MW #	MW #	MONITORING WELL
TP #	TP #	TEST PIT
		HYDRANT
		LIGHT POLE
CO.BD.		COUNTY BOUND
		GPS POINT
		CABLE MANHOLE
		DRAINAGE MANHOLE
		ELECTRIC MANHOLE
		GAS MANHOLE
		MISC MANHOLE
		SEWER MANHOLE
		TELEPHONE MANHOLE
		WATER MANHOLE
MHB	MHB	MASSACHUSETTS HIGHWAY BOUND
MON		MONUMENT
SB		STONE BOUND
TB		TOWN OR CITY BOUND
		TRAVERSE OR TRIANGULATION STATION
TPL or GUY	TPL or GUY	TROLLEY POLE OR GUY POLE
HTP		TRANSMISSION POLE
UFB	UFB	UTILITY POLE W/ FIREBOX
UPDL	UPDL	UTILITY POLE WITH DOUBLE LIGHT
ULT	ULT	UTILITY POLE W / 1 LIGHT
UPL	UPL	UTILITY POLE
		BUSH
SIZE & TYPE		TREE
		STUMP
		SWAMP / MARSH
WG	WG	WATER GATE
PM	PM	PARKING METER
		SIGN AND POST
		SIGN AND POST (2 POSTS)
		OVERHEAD CABLE/WIRE
		CURBING
100 99		CONTOURS
		UNDERGROUND DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND ELECTRIC DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND GAS MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND SEWER MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND TELEPHONE DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND WATER MAIN (DOUBLE LINE 24 INCH AND OVER)
		BALANCE STONE WALL
		GUARD RAIL - STEEL POSTS
		GUARD RAIL - WOOD POSTS
x	x	CHAIN LINK OR METAL FENCE
		WOOD FENCE
		HAY BALES/SILT FENCE
		TREE LINE OR LIMIT OF CLEARING AND GRUBBING
		SAWCUT LINE
		TOP OR BOTTOM OF SLOPE
		LIMIT OF EDGE OF PAVEMENT OR COLD PLANE AND OVERLAY
		BANK OF RIVER OR STREAM
		BORDER OF WETLAND
		100 FT WETLAND BUFFER
		200 FT RIVERFRONT BUFFER
		STATE HIGHWAY LAYOUT
		TOWN OR CITY LAYOUT
		COUNTY LAYOUT
		RAILROAD SIDELINE
		TOWN OR CITY BOUNDARY LINE
		PROPERTY LINE OR APPROXIMATE PROPERTY LINE
		EASEMENT

TRAFFIC SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
1	1	CONTROLLER PHASE ACTUATED
		TRAFFIC SIGNAL HEAD (SIZE AS NOTED)
		WIRE LOOP DETECTOR (6' x 6' TYP UNLESS OTHERWISE SPECIFIED)
		VIDEO DETECTION CAMERA
		VEHICLE VIDEO DETECTION ZONE
		BICYCLE VIDEO DETECTION ZONE
		MICROWAVE DETECTOR
		PEDESTRIAN PUSH BUTTON, SIGN (DIRECTIONAL ARROW AS SHOWN) AND SADDLE
		EMERGENCY PREEMPTION CONFIRMATION STROBE LIGHT
		VEHICULAR SIGNAL HEAD
		VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED
		FLASHING BEACON
		PEDESTRIAN SIGNAL HEAD, (TYPE AS NOTED OR AS SPECIFIED)
RRSG	RRSG	RAILROAD SIGNAL
OR		SIGNAL POST AND BASE (ALPHA-NUMERIC DESIGNATION NOTED)
	20'	MAST ARM, SHAFT AND BASE (ARM LENGTH AS NOTED)
		HIGH MAST POLE OR TOWER
	20'	MAST ARM WITH LUMINAIRE
		OPTICAL PRE-EMPTION DETECTOR
		CONTROL CABINET, GROUND MOUNTED
		CONTROL CABINET, POLE MOUNTED
		FLASHING BEACON CONTROL AND METER PEDESTAL
		LOAD CENTER ASSEMBLY
		PULL BOX 12"x12" (OR AS NOTED)
		ELECTRIC HANDHOLE 12"x24" (OR AS NOTED)
		TRAFFIC SIGNAL CONDUIT

PAVEMENT MARKINGS SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		PAVEMENT ARROW - WHITE
ONLY	ONLY	LEGEND "ONLY" - WHITE
	SL	STOP LINE
	CW	CROSSWALK
	SWL	SOLID WHITE LINE
	SYL	SOLID YELLOW LINE
	SYGL	SOLID YELLOW GORE LINE
	BWL	BROKEN WHITE LINE
	BYL	BROKEN YELLOW LINE
	DWL	DOTTED WHITE LINE (2' LINE & 6' GAP)
	DYL	DOTTED YELLOW LINE (2' LINE & 6' GAP)
	DWLEx	DOTTED WHITE LINE EXTENSION (2' LINE & 6' GAP)
	DYLEx	DOTTED YELLOW LINE EXTENSION (2' LINE & 6' GAP)
	DBWL	DOUBLE WHITE LINE
	DBYL	DOUBLE YELLOW LINE
	SYGL	SOLID YELLOW GORE LINE - 8"

TOWN OF MAYNARD PLANNING BOARD APPROVAL

SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE

Approved plans - see cover sheet for Planning Board signatures.

PROJECT:
PARKER STREET (ROUTE 27)

DESIGN SUBMISSION:
FINAL DESIGN

DRAWING TITLE:
PLAN SYMBOLS

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers
Westford, Massachusetts
(978) 923-0400
GreenIntl.com

SCALE: AS NOTED	DESIGNED BY: EN	SHEET NO.
DATE: 8/14/17	DRAWN BY: EN	02 OF 23
PROJECT NO. 15104.035	CHECKED BY: DT	

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GENERAL NOTES

1. THE WORK UNDER THIS PROJECT INCLUDES BUT IS NOT LIMITED TO FULL DEPTH ROADWAY RECONSTRUCTION, INSTALLATION OF DRAINAGE STRUCTURES AND PIPES, PLACEMENT OF PAVEMENT MARKINGS, GUARDRAIL, PROTECTION OF EXISTING UTILITIES TO REMAIN, GRADING, INSTALLATION AND MAINTENANCE OF EROSION CONTROLS, INSTALLATION OF TRAFFIC SIGNS, AND TRAFFIC MAINTENANCE DURING CONSTRUCTION.
2. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ALL CONFLICTS BETWEEN THE EXISTING UTILITIES AND PROPOSED WORK. THE ENGINEER RESERVES THE RIGHT TO MODIFY THE DESIGN TO REALIGN PIPING AND STRUCTURE LOCATIONS AND INVERTS TO SUIT ACTUAL FIELD CONDITIONS ENCOUNTERED.
3. ALL EXISTING STREET NAME, REGULATORY, GUIDE, AND WARNING SIGNS, INCLUDING POSTS, WITHIN THE LIMITS OF WORK ARE TO BE RETAINED UNLESS OTHERWISE NOTED.
4. THE CONTRACTOR SHALL RETAIN AND PROTECT ALL CURBS, FENCES, WALLS, TREES, SHRUBS, POSTS, LANDSCAPE FEATURES, AND OTHER MISCELLANEOUS ITEMS WITHIN ABUTTING PROPERTIES UNLESS OTHERWISE NOTED. WHEN RETAINING THOSE ITEMS IS NOT PRACTICAL IN THE OPINION OF THE ENGINEER, THE CONTRACTOR SHALL REMOVE, STOCKPILE, PROTECT AND RESET THE ITEMS. THE CONTRACTOR SHALL REPLACE ITEMS DAMAGED DURING REMOVAL, STOCKPILING, OR RESETTING DUE TO NEGLIGENCE, CARELESSNESS, OR MISHANDLING WITH EQUIVALENT NEW ITEMS AT NO COST TO THE DEVELOPER.
5. THE CONTRACTOR SHALL PROVIDE ALL SAFETY CONTROL (SIGNS, REFLECTORIZED DRUMS, ETC) FOR CONSTRUCTION OPERATIONS IN ACCORDANCE WITH THE TRAFFIC MANAGEMENT PLANS INCLUDED HEREIN AND THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. PROVIDING SAFETY CONTROLS SHALL BE INCLUDED IN THE COST OF ITEM 852. SAFETY SIGNING FOR TRAFFIC MANAGEMENT, ITEM 859. REFLECTORIZED DRUM, AND ITEM 999.001 POLICE DETAIL.
5. ALL LANDSCAPED AREAS BETWEEN THE PROPOSED EDGE OF PAVEMENT AND SLOPE LIMITS, INCLUDING BUT NOT LIMITED TO LAWNS, BARK MULCH, PLANTING BEDS, ETC., SHALL BE REPLACED IN KIND.
6. THE CONTRACTOR SHALL INSTALL ALL EROSION CONTROL MEASURES PRIOR TO THE START OF WORK.
7. MAILBOXES SHALL BE SET IN ACCORDANCE WITH MASSDOT STANDARD DETAIL E 504.1.0., EXCEPT THE MAILBOX DOOR SHALL FACE TOWARDS THE STREET.
8. ALL TREES SHALL BE RETAINED AND PROTECTED UNLESS OTHERWISE NOTED. THE COSTS FOR PROTECTION SHALL BE INCIDENTAL TO THE CONTRACT.
9. ALL OFFSETS TO THE DRAINAGE MANHOLES ARE TO THE CENTER OF THE COVER. THE LOCATION AND ORIENTATION OF THE BELOW GRADE STRUCTURE SHALL BE FIELD COORDINATED BY THE CONTRACTOR TO AVOID CONFLICTS WITH EXISTING UTILITIES.
10. ALL GRATES, FRAMES AND COVERS OF STRUCTURES TO BE REMOVED OR ABANDONED SHALL BE DELIVERED BY THE CONTRACTOR TO THE TOWN OF MAYNARD HIGHWAY DEPARTMENT AND STACKED AT A LOCATION DESIGNATED BY THE TOWN.
11. ALL UTILITIES AND THEIR APPURTENANCES SHALL BE RETAINED AND PROTECTED UNLESS OTHERWISE NOTED
12. ALL RCP SHALL BE CLASS III UNLESS OTHERWISE NOTED.

PLAN NOTES

1. THE BASE MAP IS COMPILED FROM AN ACTUAL-ON-THE-GROUND TOPOGRAPHIC SURVEY PERFORMED BY GREEN INTERNATIONAL AFFILIATES, INC. MAY - AUGUST, 2014
2. THIS DRAWING WAS PREPARED SOLELY FOR AND IS INTENDED FOR THE WORK ASSOCIATED WITH THIS PROJECT. THE USE OR REUSE OF THESE DRAWINGS FOR OTHER PURPOSES OR BY PARTIES NOT DIRECTLY CONTRACTED TO THIS PROJECT IS PROHIBITED WITHOUT PRIOR WRITTEN PERMISSION.
3. HORIZONTAL DATUM IN MASSACHUSETTS STATE PLANE (2001) U.S. SURVEY FEET. VERTICAL DATUM IS NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

UTILITY NOTES

1. THE CONTRACTOR IS HEREBY MADE AWARE THAT EXISTING UTILITIES, INCLUDING BUT NOT LIMITED TO EXISTING WATER AND DRAIN PIPES; DRAINAGE AND SEWER STRUCTURES; GAS LINES, COMMUNICATION LINES AND UTILITY POLES, MAY NEED TO BE PROTECTED AND/OR SHORED UP DURING THE CONSTRUCTION OF THE PROPOSED IMPROVEMENTS UNDER THIS PROJECT. THE COST OF THE WORK REQUIRED FOR THE PROTECTION, MAINTENANCE AND SUPPORT OF THESE OR OTHER EXISTING ABOVEGROUND OR UNDERGROUND UTILITIES IN THE VICINITY OF THE PROPOSED WORK SHALL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED INCIDENTAL TO THE WORK UNDER THIS CONTRACT.
2. THIS PLAN WAS PREPARED IN CONFORMANCE WITH AMERICAN SOCIETY OF CIVIL ENGINEERS STANDARD CI/ASCE 38-02 "STANDARD GUIDELINE FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA", QL"C". REFER TO UTILITY QUALITY LEVEL INFORMATION INDEX. ACCURACY OF UTILITY LOCATIONS IS NOT GUARANTEED.
3. BELOW GROUND STRUCTURES, UNLESS DIMENSIONED, ARE SYMBOLIC ONLY.
4. PRIOR TO THE START OF ANY WORK ON THE SITE, THE CONTRACTOR SHALL VERIFY THE ACTUAL LOCATION OF ALL UTILITIES, SHOWN OR NOT SHOWN ON THIS PLAN. CONTACT DIG-SAFE AT 1-888-344-7233 (1-888-DIG-SAFE) AT LEAST 72 HOURS PRIOR TO THE START OF EXCAVATION.
5. IF AN EXISTING PIPE TO BE REMOVED EXTENDS OUTSIDE THE PROPOSED ROADWAY LIMIT, IT SHALL BE CUT AND CAPPED AT NO ADDITIONAL COST.

UTILITY QUALITY LEVEL INFORMATION INDEX (SEE ASCE/CI 38-02):

UTILITY QUALITY LEVEL A:
PRECISE HORIZONTAL AND VERTICAL LOCATION OF UTILITIES OBTAINED BY THE ACTUAL EXPOSURE (OR VERIFICATION OF PREVIOUSLY EXPOSED AND SURVEYED UTILITIES) AND SUBSEQUENT MEASUREMENT OF SUBSURFACE UTILITIES, USUALLY AT A SPECIFIC POINT. MINIMALLY INTRUSIVE EXCAVATION EQUIPMENT IS TYPICALLY USED TO MINIMIZE THE POTENTIAL FOR UTILITY DAMAGE. A PRECISE HORIZONTAL AND VERTICAL LOCATION, AS WELL AS OTHER UTILITY ATTRIBUTES, IS SHOWN ON PLAN DOCUMENTS. ACCURACY IS TYPICALLY SET TO 15-MM VERTICAL AND TO APPLICABLE HORIZONTAL SURVEY AND MAPPING ACCURACY AS DEFINED OR EXPECTED BY THE PROJECT OWNER. INFORMATION IS ONLY VALID WITHIN THE VISIBLE LIMITS OF THE TEST HOLE.

UTILITY QUALITY LEVEL B:
INFORMATION OBTAINED THROUGH THE APPLICATION OF APPROPRIATE SURFACE GEOPHYSICAL METHODS TO DETERMINE THE EXISTENCE AND APPROXIMATE HORIZONTAL POSITION OF SUBSURFACE UTILITIES. QUALITY LEVEL B DATA SHOULD BE REPRODUCIBLE BY SURFACE GEOPHYSICS AT ANY POINT OF THEIR DEPICTION. THIS INFORMATION IS SURVEYED TO APPLICABLE TOLERANCES DEFINED BY THE PROJECT AND REDUCED ONTO PLAN DOCUMENTS.

UTILITY QUALITY LEVEL C:
INFORMATION OBTAINED BY SURVEYING AND PLOTTING VISIBLE ABOVE-GROUND UTILITY FEATURES AND BY USING PROFESSIONAL JUDGMENT IN CORRELATING THIS INFORMATION TO QUALITY LEVEL D INFORMATION.

UTILITY QUALITY LEVEL D:
INFORMATION DERIVED FROM EXISTING RECORDS OR ORAL RECOLLECTIONS.

DRAINAGE NOTES

1. COMPACTED $^{3}/_{4}$" CRUSHED STONE SHALL BE PLACED TO A MINIMUM DEPTH OF 12" BENEATH ALL NEW MANHOLES AND CATCH BASINS.
2. COMPACTED $^{3}/_{4}$" CRUSHED STONE SHALL BE PLACED TO A MINIMUM DEPTH OF 6" BELOW THE INVERT OF ALL DRAINAGE PIPES UP TO THE SPRING LINE OF THE PROPOSED PIPE, AS SHOWN IN THE TYPICAL PIPE TRENCH DETAIL (SEE SHEET 19).
3. ALL OFFSETS TO THE CATCH BASINS ARE TO THE BACK CENTER OF THE GRATE. THE LOCATION AND ORIENTATION OF THE BELOW GRADE STRUCTURE SHALL BE FIELD COORDINATED BY THE CONTRACTOR TO AVOID CONFLICTS WITH EXISTING UTILITIES.
4. ALL STRUCTURES SHOULD HAVE ECCENTRIC CONES UNLESS THEY ARE FLAT SLABS OR AS OTHERWISE REQUIRED BY THE ENGINEER.
5. ALL STRUCTURES SHALL MEET HS-25 LOADING.
6. ALL STRUCTURES TO BE MANUFACTURED TO MEET OR EXCEED ASTM C-478 AND AASHTO M199 SPECS.
7. ALL REINFORCING FOR EACH STRUCTURE SHALL CONFORM TO ASTM A-185 AND BE PLACED AS PER ASTM C-478.
8. ALL CONCRETE TO BE 4000 PSI (MINIMUM) CEMENT PER ASTM C-478.
9. BUTYL RUBBER JOINT SEALANT PER ASTM C-990 AND AASHTO M-198. WATERPROOFING PER CONTRACT SPECS.

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE		DATE
SIGNATURE		DATE
SIGNATURE	Approved plans - see cover sheet for Planning Board signatures.	DATE
SIGNATURE		DATE
SIGNATURE		DATE

PROJECT:
PARKER STREET (ROUTE 27)

DESIGN SUBMISSION:
FINAL DESIGN

DRAWING TITLE:
GENERAL NOTES

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

SCALE: AS NOTED	DESIGNED BY: AF	SHEET NO.
DATE: 8/14/17	DRAWN BY: AF	03 OF 43
PROJECT NO. 15104.035	CHECKED BY: DT	

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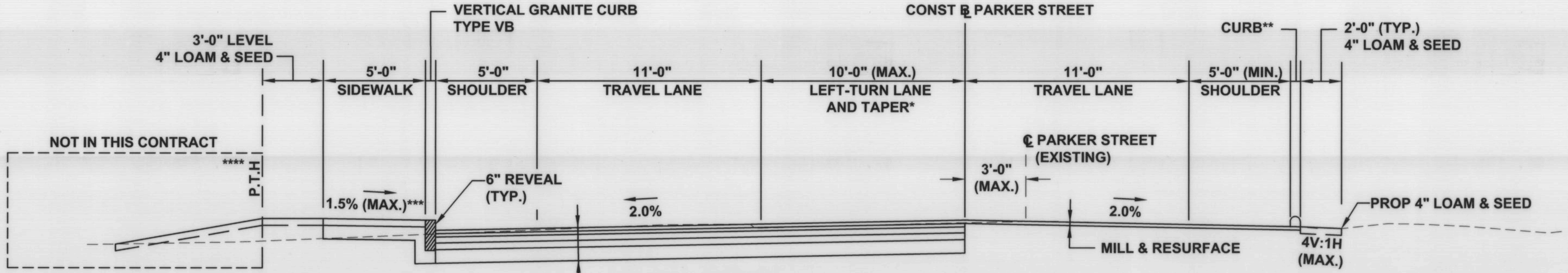


**** P.T.H. REFLECTS LIMIT OF ROADWAY CONTRACT GRADING FINAL GRADING TO BE COORDINATED WITH MAYNARD CROSSING SITE DEVELOPMENT

ROUTE 27 (PARKER STREET)

STA. 5+32± - 8+57±
SCALE: 1"=4'

* CENTER GORE MARKINGS STA. 5+32 - 6+45±
** HMA CURB, TYPE-3 STA. 6+56± - 7+17± RT GRAN. CURB TYPE VB 7+81± - 9+15± RT
*** TOLERANCE FOR CONSTRUCTION 0.5% (TYP.)

PAVEMENT NOTES

PROPOSED FULL DEPTH PAVEMENT AND BOX WIDENING > 4'0" (SEE SHEET 32 FOR DETAIL)

SURFACE:	2" HOT MIX ASPHALT MODIFIED TOP COURSE
INTERMEDIATE:	2" HOT MIX ASPHALT BINDER COURSE
BASE:	3-½" HOT MIX ASPHALT BASE COURSE MATERIAL PLACED IN ONE COURSE
SUBBASE:	4" DENSE GRADED CRUSHED STONE FOR SUB-BASE OVER 8" GRAVEL BORROW (TYPE B)

PROPOSED PAVEMENT MILLING AND RESURFACING

SURFACE:	2" HOT MIX ASPHALT MODIFIED TOP COURSE ±2" PAVEMENT MILLING (VARIABLE DEPTH TO MEET PROPOSED GRADING)

PROPOSED HMA DRIVEWAY

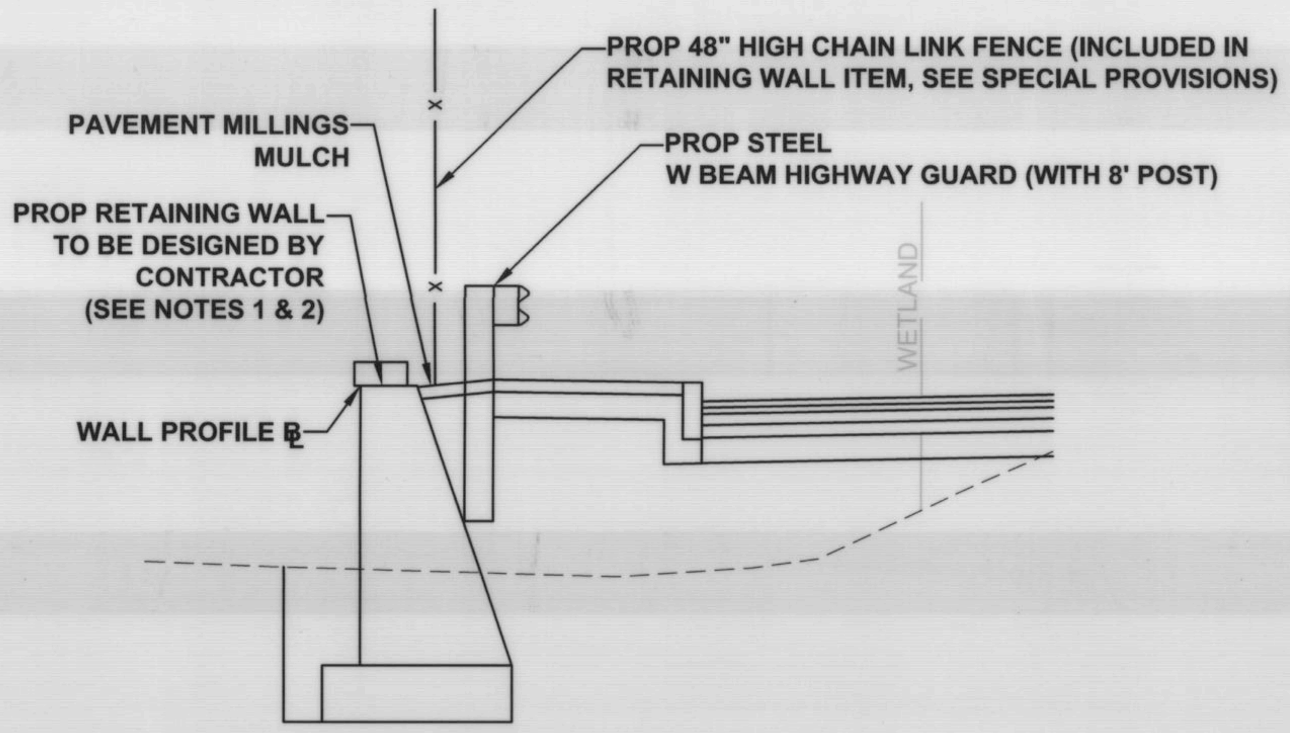
SURFACE:	1-½" MODIFIED TOP COURSE OVER
INTERMEDIATE:	2" HOT MIX ASPHALT BINDER COURSE
BASE:	8" GRAVEL BORROW (TYPE B)

PROPOSED CEMENT CONCRETE SIDEWALK

SURFACE:	4" CEMENT CONCRETE
FOUNDATION:	8" GRAVEL BORROW, (TYPE B)

NOTE:

ASPHALT EMULSION FOR TACK COAT (RS-1) SHALL BE APPLIED AT A RATE OF 0.05 GAL/SY OVER NEW AND SMOOTH INTERMEDIATE COURSES.
ASPHALT EMULSION FOR TACK COAT (RS-1) SHALL BE APPLIED AT A RATE OF 0.07 GAL/SY OVER MILLED SURFACES.

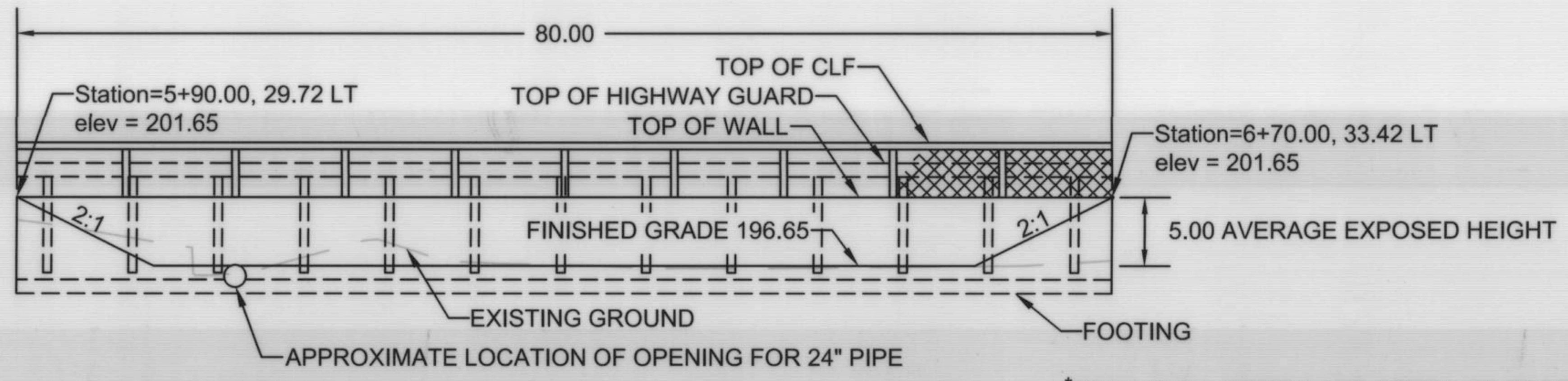


PROP RETAINING WALL

STA. 5+90± - 6+70±
SCALE: 1"=4'

NOTES:

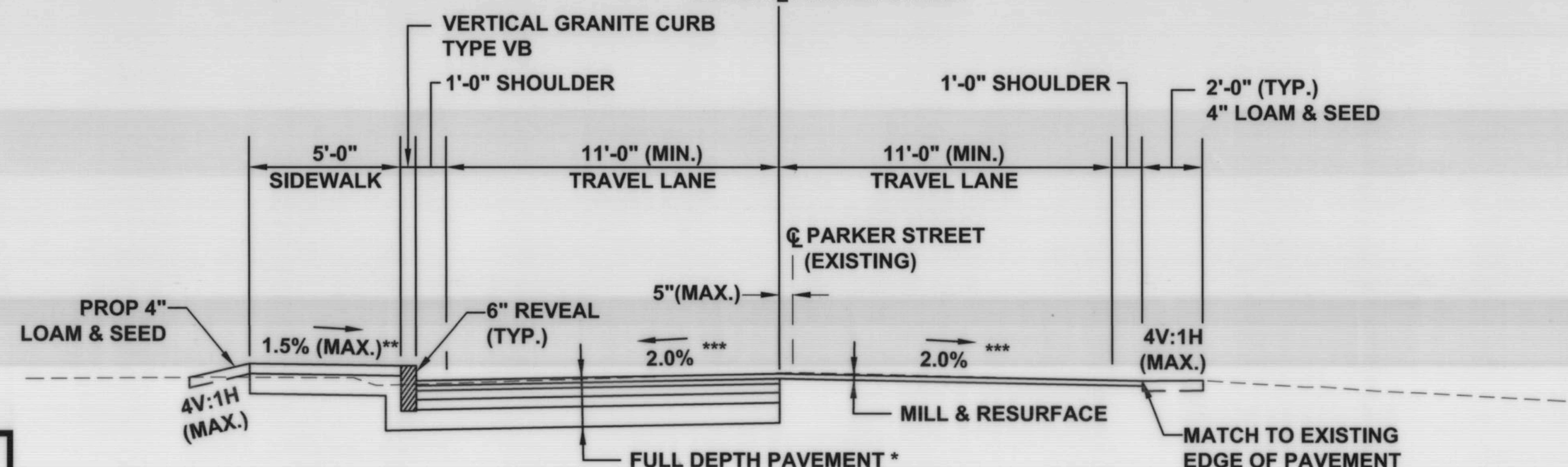
1. MASSDOT STD E 302.2.0 WALL SHOWN, FINAL WALL DESIGN TO BE COMPLETED BY CONTRACTOR.
2. CONTRACTOR TO PROVIDE SHOP DRAWINGS SUPPORTED BY GEO-TECHINAL ANALYSIS OF EXISTING SOIL CONDITIONS AND STRUCTURAL CALCULATIONS TO ENGINEER FOR APPROVAL.



RETAINING WALL ELEVATION - (LOOKING EAST)

*FINAL WALL DESIGN AND DEPTH OF FOOTING TO BE DETERMINED BY CONTRACTOR

0 10 20 30 40
SCALE: 1" = 10'



ROUTE 27 (PARKER STREET)

STA. 1+85 - 3+05
STA. 4+35 - 5+32±
SCALE: 1"=4'

* MILL AND RESURFACE FULL WIDTH STA. 1+85 - 3+05 & 4+35 - 4+60
** TOLERANCE FOR CONSTRUCTION 0.5% (TYP.)
*** MATCH EXISTING 2.5±% CROSS SLOPE STA. 1+85 - 3+05

HOR. SCALE IN FEET
0 4 10 20

TOWN OF MAYNARD PLANNING BOARD APPROVAL

SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE Approved plans - see cover sheet for Planning Board signatures.	DATE
SIGNATURE	DATE
SIGNATURE	DATE

PROJECT: PARKER STREET (ROUTE 27)

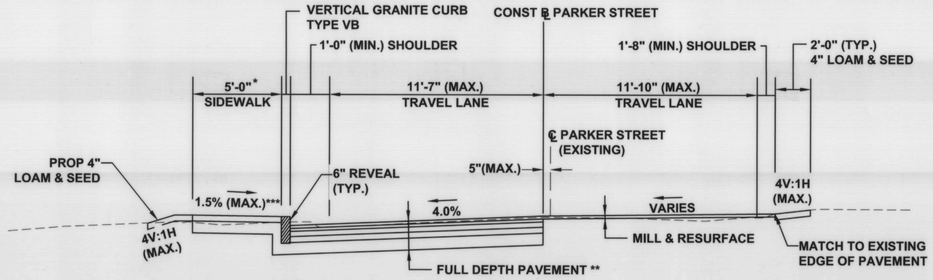
DESIGN SUBMISSION: FINAL DESIGN

DRAWING TITLE: TYPICAL SECTIONS 1

PREPARED FOR: CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY: GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

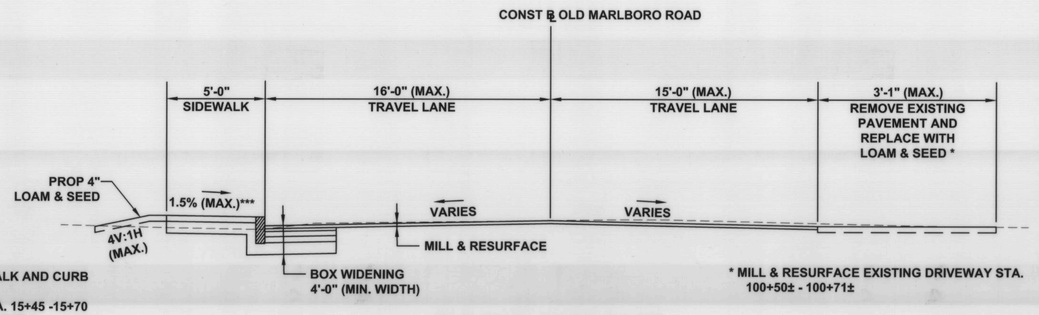
SCALE: AS NOTED	DESIGNED BY: DT	SHEET NO.
DATE: 8/14/17	DRAWN BY: SM	04 OF 43
PROJECT NO. 15104.035	CHECKED BY: JM	



ROUTE 27 (PARKER STREET)

STA. 14+47± - 15+70±
SCALE: 1"=4'

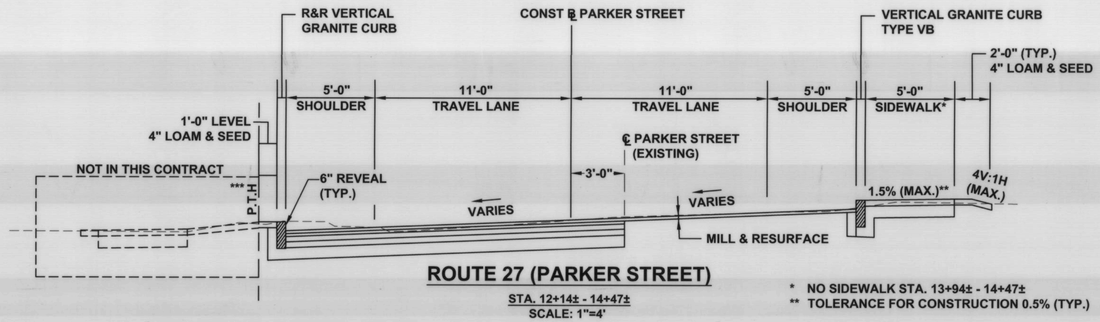
* RETAIN LOCATION OF EXISTING SIDEWALK AND CURB STA 15+45 LT - 15+70 LT
** MILL AND RESURFACE FULL WIDTH STA. 15+45 -15+70
*** TOLERANCE FOR CONSTRUCTION 0.5% (TYP.)



* MILL & RESURFACE EXISTING DRIVEWAY STA. 100+50± - 100+71±

OLD MARLBORO ROAD

STA. 100+58± -101+14
SCALE: 1"=4'

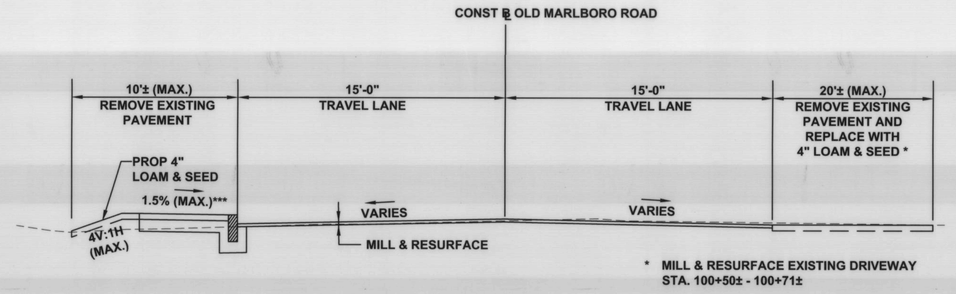


ROUTE 27 (PARKER STREET)

STA. 12+14± - 14+47±
SCALE: 1"=4'

* NO SIDEWALK STA. 13+94± - 14+47±
** TOLERANCE FOR CONSTRUCTION 0.5% (TYP.)

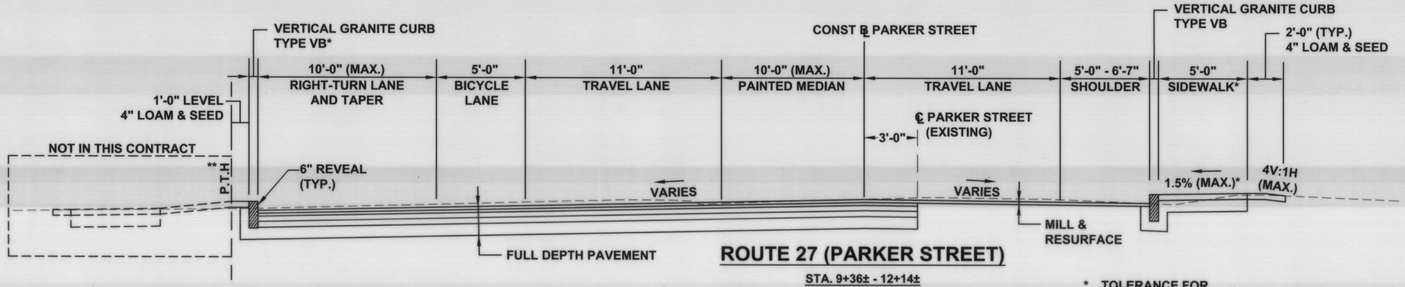
*** P.T.H. REFLECTS LIMIT OF ROADWAY CONTRACT GRADING FINAL GRADING TO BE COORDINATED WITH MAYNARD CROSSING SITE DEVELOPMENT



* MILL & RESURFACE EXISTING DRIVEWAY STA. 100+50± - 100+71±

OLD MARLBORO ROAD

STA. 100+13± - 100+58±
SCALE: 1"=4'



ROUTE 27 (PARKER STREET)

STA. 9+36± - 12+14±
SCALE: 1"=4'

** P.T.H. REFLECTS LIMIT OF ROADWAY CONTRACT GRADING FINAL GRADING TO BE COORDINATED WITH MAYNARD CROSSING SITE DEVELOPMENT

* TOLERANCE FOR CONSTRUCTION 0.5% (TYP.)

HOR. SCALE IN FEET
0 4 10 20

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE DATE
SIGNATURE DATE
Approved plans - see cover sheet for Planning Board signatures.
SIGNATURE DATE
SIGNATURE DATE
SIGNATURE DATE

PROJECT:
PARKER STREET (ROUTE 27)

DESIGN SUBMISSION:
FINAL DESIGN

DRAWING TITLE:
TYPICAL SECTIONS 2

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

SCALE: AS NOTED	DESIGNED BY: DT	SHEET NO.
DATE: 8/14/17	DRAWN BY: SM	05 OF 43
PROJECT NO. 15104.035	CHECKED BY: JM	

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N

PROJECT LIMITS
BEGIN PAVEMENT MILLING AND RESURFACING
STA. 1+85.00
N: 2976674.4072
E: 670645.0875

LIMIT OF WORK
END PAVEMENT MILLING, AND RESURFACING
STA. 3+05.00

LIMIT OF WORK
BEGIN PAVEMENT MILLING AND RESURFACING
STA. 4+35.00

N/F
BOARDMAN REALTY TRUST,
LESLIE E. BOARDMAN & JAMES R BOARDMAN
PARCEL ID 29-3
BOOK 28038 PAGE 253
145 PARKER ST

N/F
LEXVEST PARKER LLC C/O GOODWIN PARTNERS LLP
PARCEL ID 29-2
BOOK 1430 PAGE 87
141 PARKER ST

MATCH EXIST WALK
PROP. CEM. CONC. WHEELCHAIR RAMP
PROP. CEM. CONC. SIDEWALK
STA. 02+43.91 PARKER STREET ℄
STA. 100+00.00 OLD MARLBORO ROAD ℄

PROP. SAWCUT AND MATCH EXISTING
PROP. EDGE OF ROADWAY
PROP. CONDUIT TRENCH CROSSING
BEGIN PROP. GRAN. CURB TYPE VB STA. 4+35
3" REVEAL
CONSTRUCTION ℄
PROP. SAWCUT AND MATCH EXISTING
PROP. MILL AND OVERLAY
R&D EXISTING PAVEMENT
PROP. LOAM & SEED (TYP.)
PROP. SAWCUT
R&R MAILBOX
TREE HAS BEEN REMOVED
PROP. BOX WIDENING STA. 100+58 - 101+14
INCREASE SIDEWALK WIDTH TO MAINTAIN 4' MIN CLEARANCE TO EXIST HYDRANT
PROP. CEM. CONC. SIDEWALK TRANSITION TO MATCH EXIST
PC +58.60
PT +160.91
LIMIT OF WORK
LIMIT OF PAVEMENT MILLING AND RESURFACING
STA. 101+20.00
LIMIT OF MILLING AND RESURFACING (SOUTHBOUND)
BEGIN FULL DEPTH RECONSTRUCTION (SOUTHBOUND)
CONTINUE PAVEMENT MILLING AND RESURFACING (NORTHBOUND)
STA. 4+60.00

PARKER STREET

OLD MARLBORO ROAD

CONSTRUCTION ℄

PROP. SAWCUT
R&D EXISTING PAVEMENT
PROP. EDGE OF ROADWAY
PROP. LOAM & SEED
PROP. SLOPE LIMIT (TYP.)
PROP. GRAN. CURB TYPE VB
PROP. SAWCUT AND MATCH EXISTING

PROP. CEM. CONC. SIDEWALK
PROP. RETAINING WALL TO BE DESIGNED BY CONTRACTOR
PROP. GRAN. CURB TYPE VB
PIPE OPENING TO BE INCORPORATED INTO WALL
PROP. MULCH
R&D MULCH
PROP. CEM. CONC. WHEELCHAIR RAMP
PROP. TERMINAL SECTION STA. 5+65
PROP. SAWCUT AND MATCH EXISTING
PROP. HMA DRIVEWAY
PROP. GRAN. CURB TYPE VB
PROP. TRANSITION CURB
PROP. CEM. CONC. WHEELCHAIR RAMP
PROP. LOAM & SEED (TYP.)
PROP. GRAN. CURB TYPE VB
PROP. CEM. CONC. SIDEWALK
PROP. SLOPE LIMIT (TYP.)
PROP. SAWCUT
R10.00'
(R&D HEADWALL)
(R&D GUARDRAIL)
PROP. FULL DEPTH RECONSTRUCTION
PC +05.29
PRC +54.84
PT +02.21
PROP. MILL AND OVERLAY
PROP. SAWCUT (TYP.)

N/F
KATHERINE CORCORAN
& JOHN F SANFORD
PARCEL ID 29-25
BOOK 44117 PAGE 460
138 PARKER ST

N/F
SCOTT DOUGHTY & ARLENE DOUGHTY
PARCEL ID 29-24
BOOK 39514 PAGE 510
140 PARKER ST

N/F
JOSEPH A REGAN &
MELANIE A REGAN
PARCEL ID 29-8
BOOK 62027 PAGE 563
56 A OLD MARLBORO RD

N/F
IGOR A. MUKHANOV
PARCEL ID 29-8-2
BOOK 62278 PAGE 171
56 B OLD MARLBORO RD

N/F
ADAM E. COTTON
& LAURA A. COTTON
PARCEL ID 29-8-1
BOOK 62278 PAGE 171
56 C OLD MARLBORO RD

N/F
BRUCE J. CARR & KAREN J.
PARCEL ID 29-23
BOOK 15170 PAGE 372
55 OLD MARLBORO RD

CONTINUED ON SHEET NO. 07

FOR CONSTRUCTION PROFILE SEE SHEET 09
FOR DRAINAGE AND UTILITY PLAN SEE SHEET 15
FOR PAVEMENT MARKING AND SIGNING PLAN SEE SHEET 20

HOR. SCALE IN FEET
0 20 50 100

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE DATE
SIGNATURE DATE
Approved plans - see cover sheet for Planning Board signatures.
SIGNATURE DATE
SIGNATURE DATE
SIGNATURE DATE

PROJECT:
PARKER STREET (ROUTE 27)

DESIGN SUBMISSION:
FINAL DESIGN

DRAWING TITLE:
CONSTRUCTION PLAN 1

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

SCALE: AS NOTED	DESIGNED BY: DT	SHEET NO.
DATE: 8/14/17	DRAWN BY: MB	06 OF 43
PROJECT NO. 15104.035	CHECKED BY: JM	

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PIPE OPENING TO BE INCORPORATED INTO WALL
PROP. RETAINING WALL TO BE DESIGNED BY CONTRACTOR
PROP. STEEL W BEAM HIGHWAY GUARD (WITH 8' POSTS ON 2' LEVEL AREA IN FRONT OF WALL)
PROP. TERMINAL SECTION STA. 6+80 R10.00'
PROP. CEM. CONC. SIDEWALK
P.T.H. (SEE NOTE 1)
PROP. LOAM & SEED (TYP.)
PROP. GRAN. CURB TYPE VB
PROP. CEM. CONC. WHEELCHAIR RAMP
PROP. CEM. CONC. SIDEWALK
PROP. FILTER TUBES (TYP.) (SEE NOTE 2)
(R&D HEADWALL)
(R&D GUARDRAIL)
(R&D)
(REM)
PT +02.21
CONSTRUCTION B
BEGIN PROP. HMA CURB, TYPE-3 STA. 6+56
END. PROP. HMA CURB, TYPE-3 STA. 7+17
BEGIN PROP. HMA CURB, TYPE-3 STA. 7+81
END PROP. HMA CURB, TYPE-3 STA. 9+15
PROP. SAWCUT (TYP.)
PROP. MILL AND OVERLAY
PROP. HMA CURB, TYPE-3
PROP. COBBLESTONE
PROP. MOUNTABLE CURB
LIMIT OF WORK
MATCH TO CONSTRUCTION OF "SITE DEVELOPMENT PLANS FOR MAYNARD CROSSING" AT 129 PARKER STREET
P.T.H.
NOT IN THIS CONTRACT
R&D CEM. CONC. WHEELCHAIR RAMP
R&D GRANITE TRANSITION CURB
R&D BIT WALK
PROP. FULL DEPTH RECONSTRUCTION
PROP. CEM. CONC. DRIVE
PC +48.06
PROP. CEM. CONC. DRIVE
PROP. HMA DRIVE
SAWCUT & MATCH EXIST.
PROP. HMA DRIVE
PROP. GRAN. CURB TYPE VB
PROP. LOAM & SEED (TYP.)
PROP. CEM. CONC. WHEELCHAIR RAMP
PROP. GRAN. CURB TYPE VB
PROP. CEM. CONC. SIDEWALK (TYP.)
SAWCUT & MATCH EXIST.
R&R MAILBOX
MB
(RET)
PARKER STREET
CONTINUED ON SHEET NO. 06
CONTINUED ON SHEET NO. 08

N/F
MAYNARD CROSSINGS JV LLC
PARCEL ID 25-152
BOOK 1466 PAGE 70
129 PARKER ST

N/F
ANTONIO C HIPOLITO JR
PARCEL ID 29-26
BOOK 43803 PAGE 579
136 PARKER ST

N/F
FRANK J SCACCIOTTI
PARCEL ID 29-27
BOOK 65079 PAGE 504
132 PARKER ST

N/F
NGOUANE LIM & LECK LIM
PARCEL ID 29-28
BOOK 16057 PAGE 136
130 PARKER ST

N/F
FRITZ VERNET & JOSETTE VERNET
PARCEL ID 29-29
BOOK 39292 PAGE 532
128 PARKER ST

N/F
JOHN J. CAFARELLA III & ELIZABETH A. DARRAH CAFARELLA
PARCEL ID 29-31
BOOK 34559 PAGE 2
126 PARKER ST

NOTES:

1. P.T.H. REFLECTS LIMIT OF ROADWAY CONTRACT. FINAL GRADING TO BE COORDINATED WITH MAYNARD CROSSING SITE DEVELOPMENT.
2. FINAL LOCATION OF FILTER TUBES TO BE COORDINATED WITH MAYNARD CROSSING SITE DEVELOPMENT.

HOR. SCALE IN FEET
0 20 50 100

FOR CONSTRUCTION PROFILE SEE SHEET 10
FOR DRAINAGE AND UTILITY PLAN SEE SHEET 16
FOR PAVEMENT MARKING AND SIGNING PLAN SEE SHEET 21

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE DATE
SIGNATURE DATE
Approved plans - see cover sheet for Planning Board signatures.
SIGNATURE DATE
SIGNATURE DATE
SIGNATURE DATE

PROJECT:
PARKER STREET (ROUTE 27)

DESIGN SUBMISSION:
FINAL DESIGN

DRAWING TITLE:
CONSTRUCTION PLAN 2

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

SCALE: AS NOTED	DESIGNED BY: DT	
DATE: 8/14/17	DRAWN BY: MB	SHEET NO.
PROJECT NO. 15104.035	CHECKED BY: JM	07 OF 43

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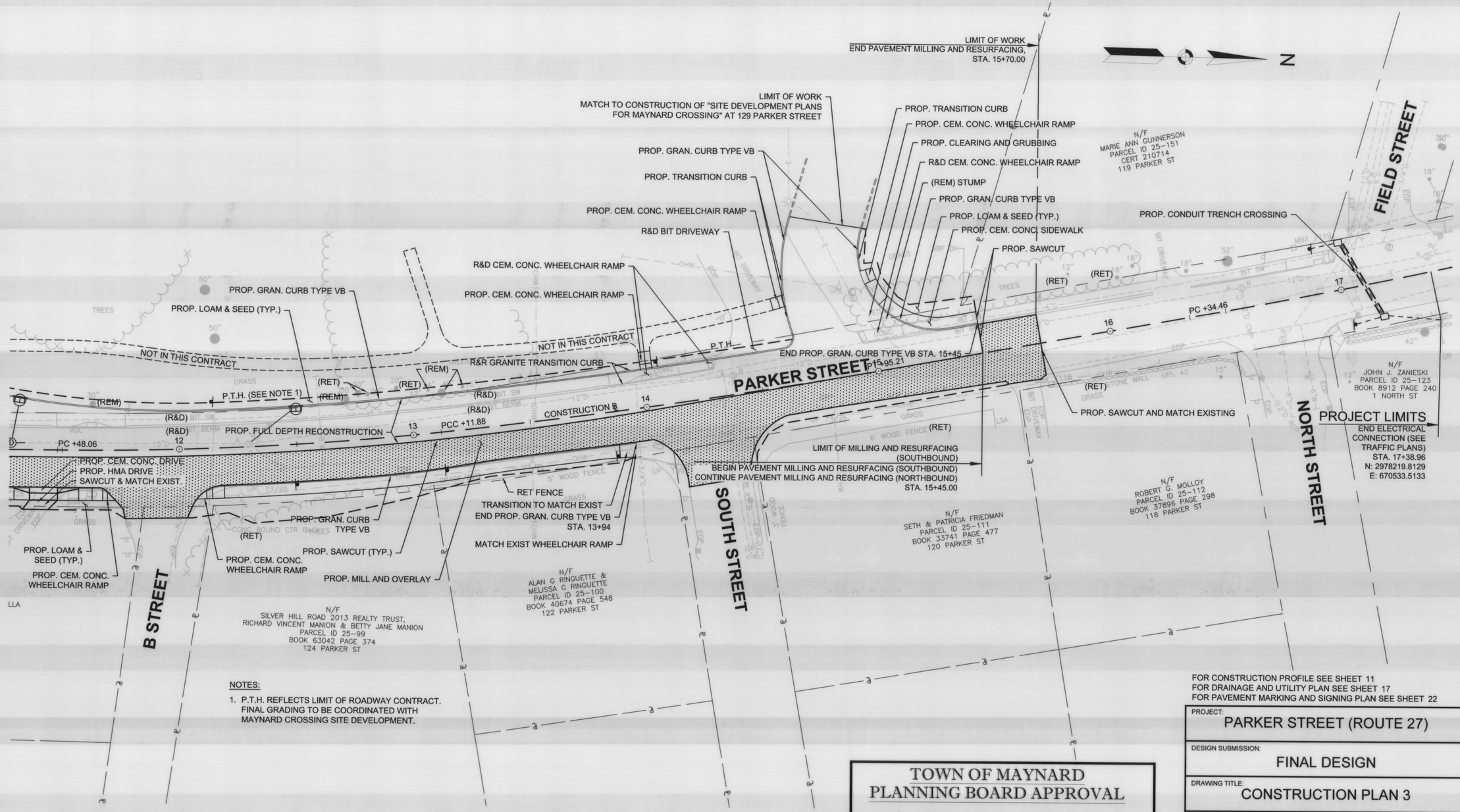

NOTES:

1. P.T.H. REFLECTS LIMIT OF ROADWAY CONTRACT. FINAL GRADING TO BE COORDINATED WITH MAYNARD CROSSING SITE DEVELOPMENT.

FOR CONSTRUCTION PROFILE SEE SHEET 11
FOR DRAINAGE AND UTILITY PLAN SEE SHEET 17
FOR PAVEMENT MARKING AND SIGNING PLAN SEE SHEET 22

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE

Approved plans - see cover sheet for Planning Board signatures.

PROJECT:
PARKER STREET (ROUTE 27)

DESIGN SUBMISSION:
FINAL DESIGN

DRAWING TITLE:
CONSTRUCTION PLAN 3

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers
Westford, Massachusetts
(978) 923-0400
GreenIntl.com

SCALE: AS NOTED	DESIGNED BY: DT	SHEET NO.
DATE: 8/14/17	DRAWN BY: MB	08 OF 43
PROJECT NO. 15104.035	CHECKED BY: JM	

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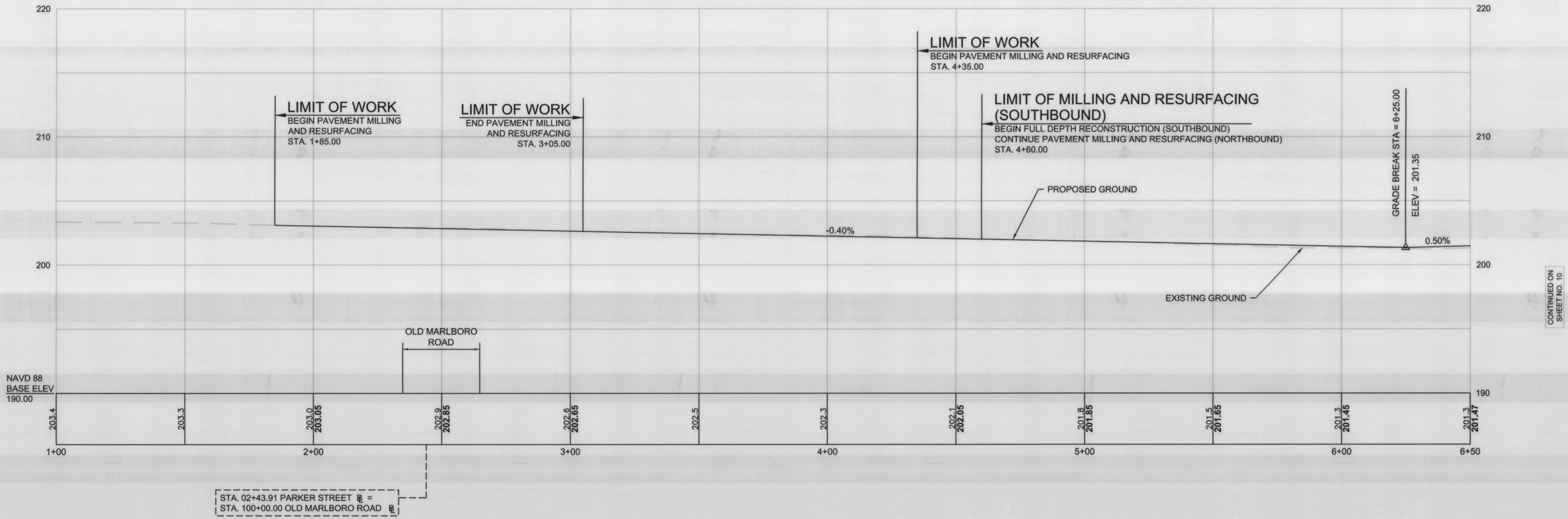
PARKER STREET



CONTINUED ON SHEET NO. 10

NOTE:
CONTINUATION OF PROFILE IN AREA OF MILLING AND RESURFACING, AS WELL AS BETWEEN WORK ZONES, IS FOR INFORMATIONAL PURPOSES ONLY.

HOR. SCALE IN FEET
20 0 20 40
VER. SCALE IN FEET
4 0 4 8

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE DATE

SIGNATURE DATE

Approved plans - see cover sheet for Planning Board signatures.

SIGNATURE DATE

SIGNATURE DATE

SIGNATURE DATE

FOR CONSTRUCTION PLAN SEE SHEET 06
FOR DRAINAGE AND UTILITY PLAN SEE SHEET 15
FOR PAVEMENT MARKING AND SIGNING PLAN SEE SHEET 20

PROJECT:
PARKER STREET (ROUTE 27)

DESIGN SUBMISSION:
FINAL DESIGN

DRAWING TITLE:
PROFILE 1

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

SCALE: AS NOTED	DESIGNED BY: DT	
DATE: 8/14/17	DRAWN BY: DT	SHEET NO. 09 OF 43
PROJECT NO. 15104.035	CHECKED BY: JM	

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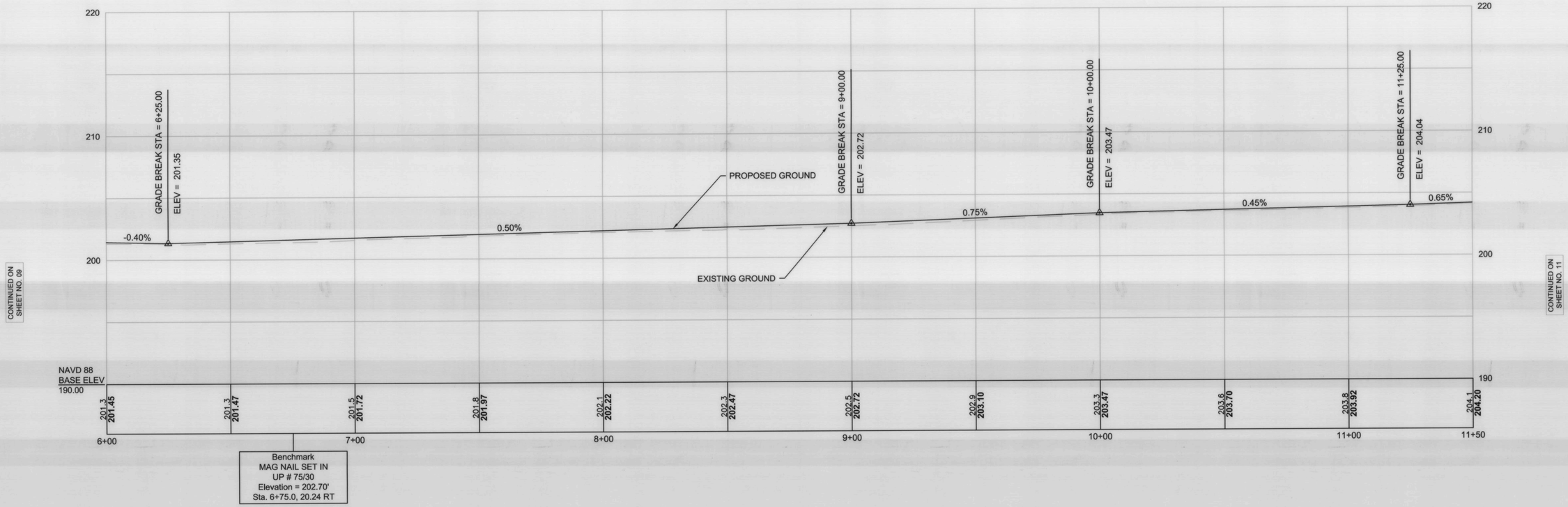
PARKER STREET



HOR. SCALE IN FEET
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4 0 4 8
VER. SCALE IN FEET

FOR CONSTRUCTION PLAN SEE SHEET 07
FOR DRAINAGE AND UTILITY PLAN SEE SHEET 16
FOR PAVEMENT MARKING AND SIGNING PLAN SEE SHEET 21

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE DATE

SIGNATURE DATE

Approved plans - see cover sheet for Planning Board signatures.

SIGNATURE DATE

SIGNATURE DATE

SIGNATURE DATE

PROJECT:
PARKER STREET (ROUTE 27)

DESIGN SUBMISSION:
FINAL DESIGN

DRAWING TITLE:
PROFILE 2

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

SCALE: AS NOTED	DESIGNED BY: DT	SHEET NO.
DATE: 8/14/17	DRAWN BY: DT	10 OF 43
PROJECT NO. 15104.035	CHECKED BY: JM	

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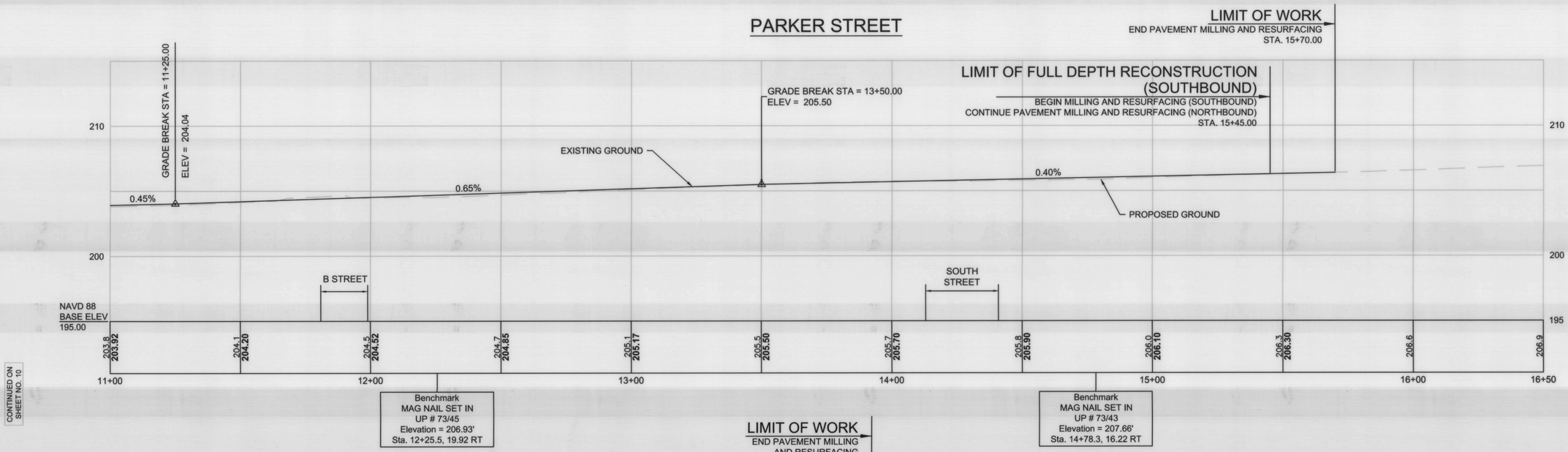
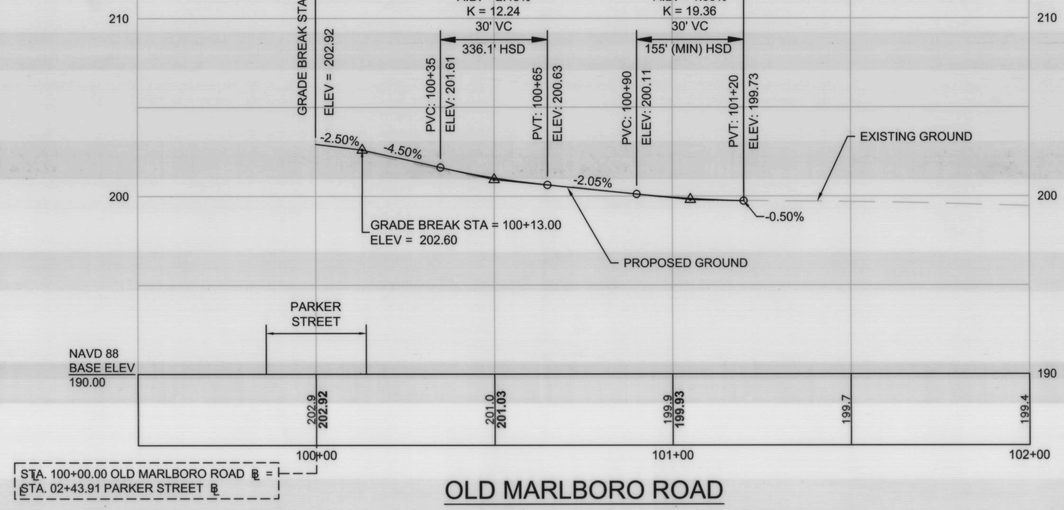
PARKER STREET



CONTINUED ON SHEET NO. 10

OLD MARLBORO ROAD



HOR. SCALE IN FEET
20 0 20 40
VER. SCALE IN FEET
4 0 4 8

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE	DATE
SIGNATURE Approved plans - see cover sheet for Planning Board signatures.	DATE
SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE

FOR CONSTRUCTION PLAN SEE SHEET 08
FOR DRAINAGE AND UTILITY PLAN SEE SHEET 17
FOR PAVEMENT MARKING AND SIGNING PLAN SEE SHEET 22

PROJECT:
PARKER STREET (ROUTE 27)

DESIGN SUBMISSION:
FINAL DESIGN

DRAWING TITLE:
PROFILE 3

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers
Westford, Massachusetts
(978) 923-0400
GreenIntl.com

SCALE: AS NOTED	DESIGNED BY: DT	
DATE: 8/14/17	DRAWN BY: DT	SHEET NO.
PROJECT NO. 15104.035	CHECKED BY: JM	11 OF 43

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Line Table		
Line #	Direction	Length
L100	S0°58'24"E	20.32
L101	S89°03'01"W	21.05
L102	S28°22'28"W	24.05
L103	N33°37'28"E	5.79
L104	N89°03'01"E	12.67
L105	S0°58'24"E	10.21
L106	S0°36'05"E	58.17
L116	S0°56'59"E	27.22

Curve Table			
Curve #	Delta	Radius	Length
C100	90°01'25"	20.00	31.42
C101	60°40'33"	50.00	52.95
C102	55°25'33"	50.00	48.37
C103	90°20'24"	24.89	39.24
C104	7°12'27"	200.00	25.16
C105	82°42'40"	20.00	28.87
C106	12°09'11"	40.00	8.48
C107	74°10'23"	20.00	25.89
C108	7°22'36"	781.00	100.55

PARKER STREET CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	0+00.00	2976489.433	670648.154		N0°56'59"W 505.29'	5+05.29	2976994.658	670639.778
C1	5+05.29	2976994.658	670639.778	R=800.00' Δ=3°32'54" L=49.54' T=24.78'		5+54.84	2977044.136	670637.424
C2	5+54.84	2977044.136	670637.424	R=765.00' Δ=3°32'54" L=47.38' T=23.70'		6+02.21	2977091.450	670635.173
L2	6+02.21	2977091.450	670635.173		N0°56'59"W 545.85'	11+48.06	2977637.222	670626.125

OLD MARLBORO ROAD CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L4	100+00.00	2976733.310	670644.111		N89°03'01"E 58.60'	100+58.60	2976734.281	670702.704
C7	100+58.60	2976734.281	670702.704	R=40.00' Δ=58°35'48" L=40.91' T=22.45'		100+99.51	2976754.002	670736.523
L5	100+99.51	2976754.002	670736.523		N30°27'13"E 150.49'	102+50.00	2976883.731	670812.797

LIMIT OF WORK
STA. 1+85.00
N: 2976674.4072
E: 670645.0875

STA. 02+43.91 PARKER STREET ℄ =
STA. 100+00.00 OLD MARLBORO ROAD ℄

CONSTRUCTION ℄
N0°56'59"W
505.29'

PARKER STREET

OLD MARLBORO ROAD

PC +58.60
PT +99.51
PC +05.29
PRC +54.84
PT +02.21

LIMIT OF WORK
STA. 101+20.00

JOSEPH N/F
MELANIE A REGAN &
PARCEL ID 29-8
BOOK 62027 PAGE 563
56 A OLD MARLBORO RD

N/F
SCOTT DOUGHTY & ARLENE DOUGHTY
PARCEL ID 29-24
BOOK 39514 PAGE 510
140 PARKER ST

N/F
KATHERINE CORCORAN
& JOHN F SANFORD
PARCEL ID 29-25
BOOK 44117 PAGE 460
138 PARKER ST

N/F
ADAM E. COTTON
& LAURA A. COTTON
PARCEL ID 29-8.1
BOOK 62278 PAGE 171
56 C OLD MARLBORO RD

N/F
BRUCE J. CARR & KAREN J.
PARCEL ID 29-23
BOOK 15170 PAGE 372
55 OLD MARLBORO RD

CONTINUED ON SHEET NO. 13

LEGEND

(D#) DRIVEWAY

W# WHEELCHAIR RAMP

HOR. SCALE IN FEET
0 20 50 100

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE DATE

SIGNATURE DATE

Approved plans - see cover sheet for Planning Board signatures.

SIGNATURE DATE

SIGNATURE DATE

SIGNATURE DATE

PROJECT:
PARKER STREET (ROUTE 27)

DESIGN SUBMISSION:
FINAL DESIGN

DRAWING TITLE:
CURB TIE & GRADING PLAN 1

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers
Westford, Massachusetts
(978) 923-0400
GreenIntl.com

SCALE: AS NOTED	DESIGNED BY: DT	SHEET NO.
DATE: 8/14/17	DRAWN BY: JG	12 OF 43
PROJECT NO. 15104.035	CHECKED BY: JM	

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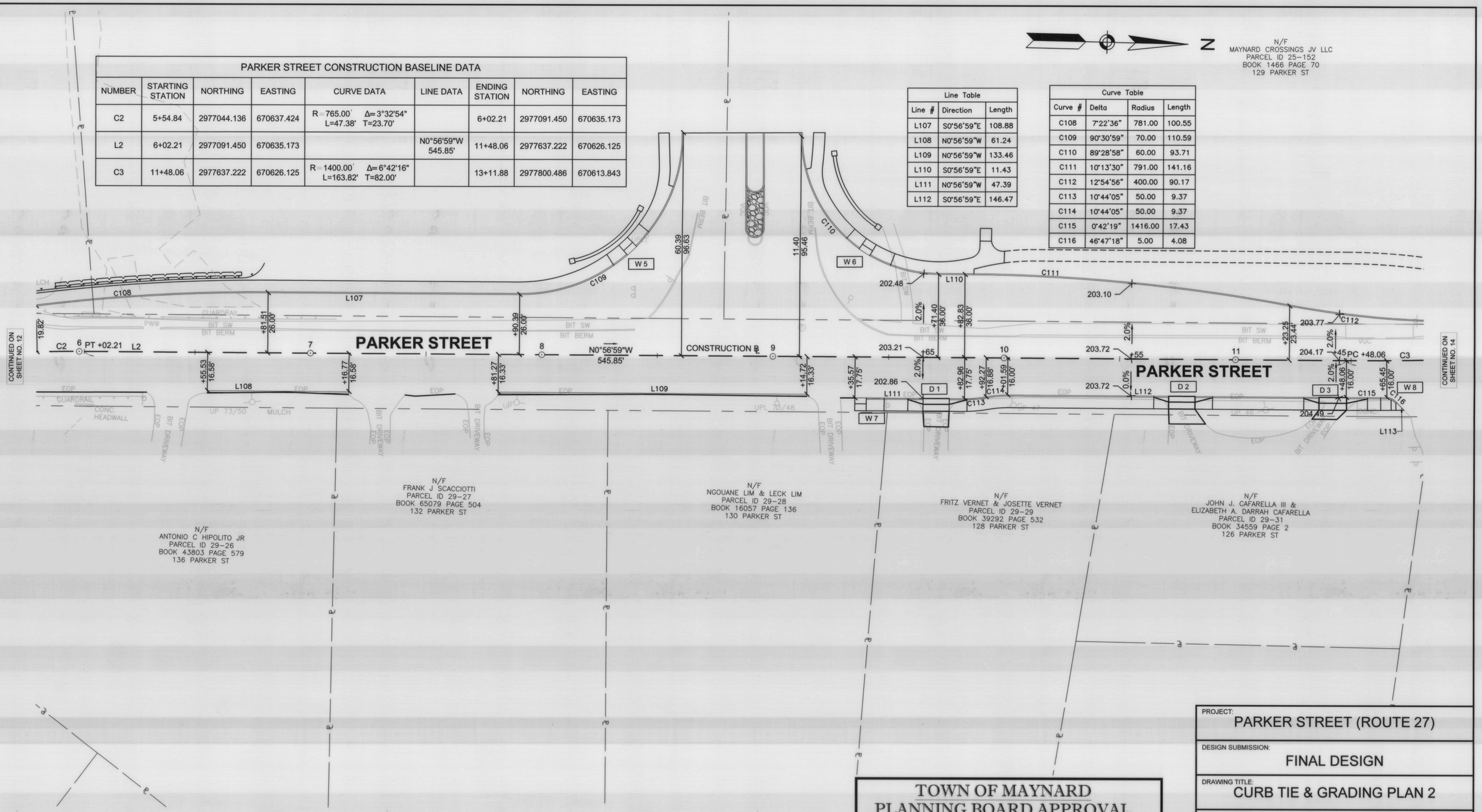
PARKER STREET CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C2	5+54.84	2977044.136	670637.424	R=765.00' Δ=3°32'54" L=47.38' T=23.70'		6+02.21	2977091.450	670635.173
L2	6+02.21	2977091.450	670635.173		N0°56'59"W 545.85'	11+48.06	2977637.222	670626.125
C3	11+48.06	2977637.222	670626.125	R=1400.00' Δ=6°42'16" L=163.82' T=82.00'		13+11.88	2977800.486	670613.843

Line Table		
Line #	Direction	Length
L107	S0°56'59"E	108.88
L108	N0°56'59"W	61.24
L109	N0°56'59"W	133.46
L110	S0°56'59"E	11.43
L111	N0°56'59"W	47.39
L112	S0°56'59"E	146.47

Curve Table			
Curve #	Delta	Radius	Length
C108	7°22'36"	781.00	100.55
C109	90°30'59"	70.00	110.59
C110	89°28'58"	60.00	93.71
C111	10°13'30"	791.00	141.16
C112	12°54'56"	400.00	90.17
C113	10°44'05"	50.00	9.37
C114	10°44'05"	50.00	9.37
C115	0°42'19"	1416.00	17.43
C116	46°47'18"	5.00	4.08



LEGEND

(D#) DRIVEWAY

[W#] WHEELCHAIR RAMP

HOR. SCALE IN FEET
0 20 50 100

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE DATE

SIGNATURE DATE

SIGNATURE DATE

SIGNATURE DATE

SIGNATURE DATE

Approved plans - see cover sheet for Planning Board signatures.

PROJECT:
PARKER STREET (ROUTE 27)

DESIGN SUBMISSION:
FINAL DESIGN

DRAWING TITLE:
CURB TIE & GRADING PLAN 2

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

SCALE: AS NOTED	DESIGNED BY: DT	SHEET NO.
DATE: 8/14/17	DRAWN BY: JG	13 OF 43
PROJECT NO. 15104.035	CHECKED BY: JM	

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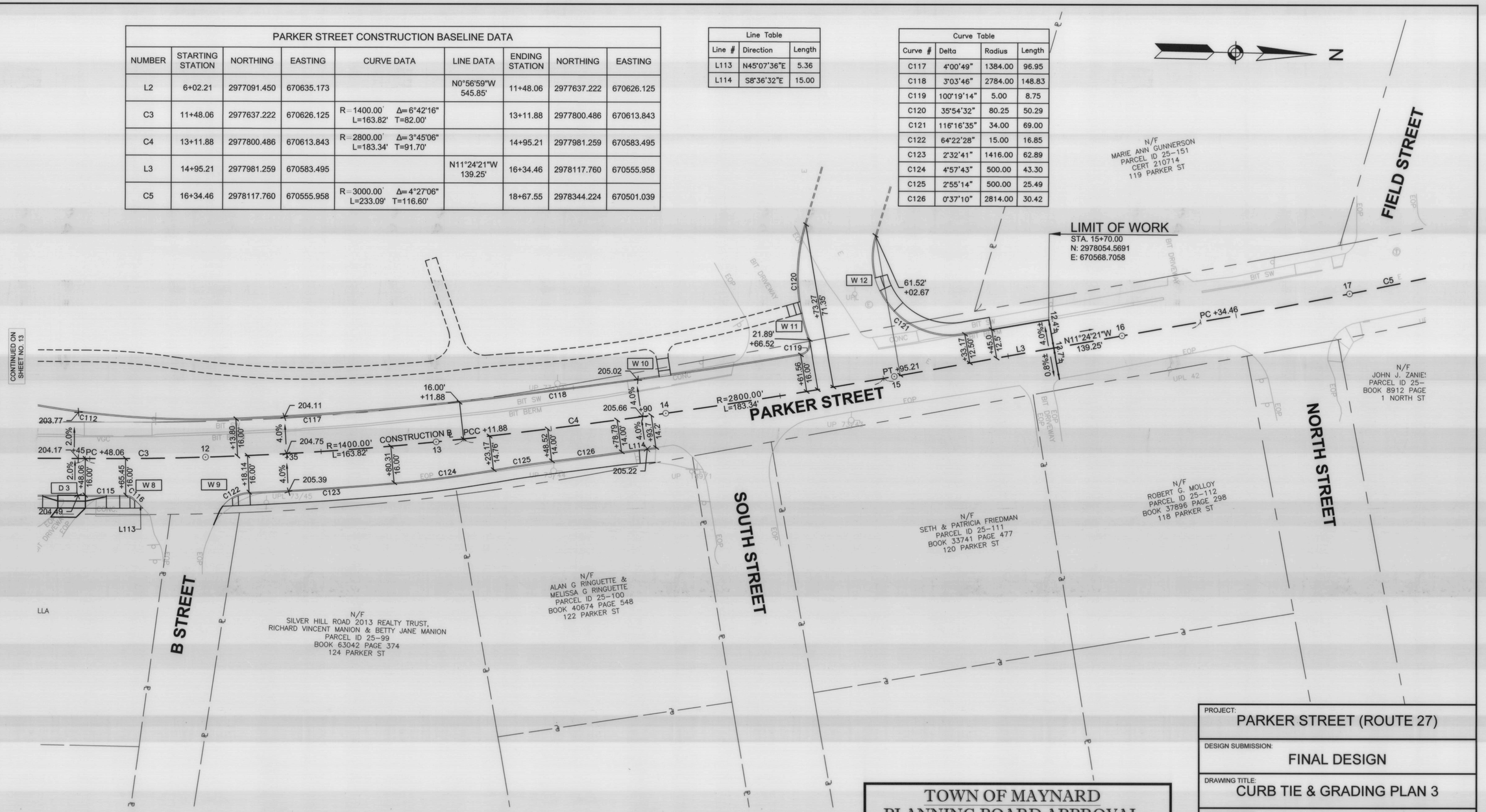
PARKER STREET CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L2	6+02.21	2977091.450	670635.173		N0°56'59"W 545.85'	11+48.06	2977637.222	670626.125
C3	11+48.06	2977637.222	670626.125	R=1400.00' Δ=6°42'16" L=163.82' T=82.00'		13+11.88	2977800.486	670613.843
C4	13+11.88	2977800.486	670613.843	R=2800.00' Δ=3°45'06" L=183.34' T=91.70'		14+95.21	2977981.259	670583.495
L3	14+95.21	2977981.259	670583.495		N11°24'21"W 139.25'	16+34.46	2978117.760	670555.958
C5	16+34.46	2978117.760	670555.958	R=3000.00' Δ=4°27'06" L=233.09' T=116.60'		18+67.55	2978344.224	670501.039

Line Table		
Line #	Direction	Length
L113	N45°07'36"E	5.36
L114	S8°36'32"E	15.00

Curve Table			
Curve #	Delta	Radius	Length
C117	4°00'49"	1384.00	96.95
C118	3°03'46"	2784.00	148.83
C119	100°19'14"	5.00	8.75
C120	35°54'32"	80.25	50.29
C121	116°16'35"	34.00	69.00
C122	64°22'28"	15.00	16.85
C123	2°32'41"	1416.00	62.89
C124	4°57'43"	500.00	43.30
C125	2°55'14"	500.00	25.49
C126	0°37'10"	2814.00	30.42



TOWN OF MAYNARD PLANNING BOARD APPROVAL

SIGNATURE DATE

SIGNATURE DATE

Approved plans - see cover sheet for Planning Board signatures.

SIGNATURE DATE

SIGNATURE DATE

SIGNATURE DATE

PROJECT:
PARKER STREET (ROUTE 27)

DESIGN SUBMISSION:
FINAL DESIGN

DRAWING TITLE:
CURB TIE & GRADING PLAN 3

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

SCALE: AS NOTED	DESIGNED BY: DT	SHEET NO.
DATE: 8/14/17	DRAWN BY: JG	14 OF 43
PROJECT NO. 15104.035	CHECKED BY: JM	

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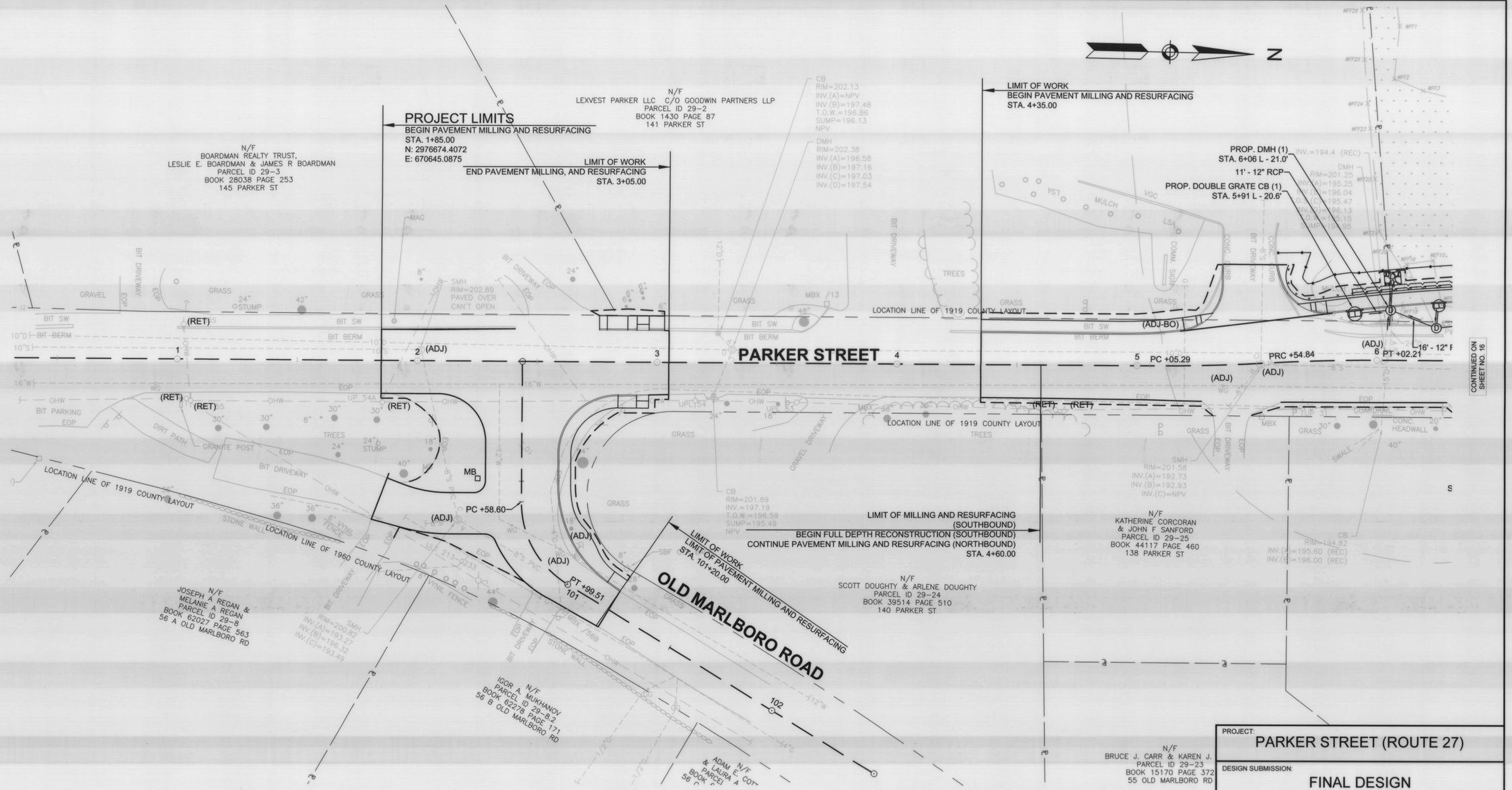

DRAINAGE STRUCTURE DATA						
STRUCTURE	STATION	OFFSET	RIM	INV. IN	INV. OUT	NOTES
PROP. DMH (1)	6+06 (Parker Street)	21.0 L	201.01	196.50 - (12" FROM PROP. DMH (2) - N) 196.10 - (12" FROM PROP. DOUBLE GRATE CB (1) - S) 194.10 - (24" FROM - E)	194.10 - (24" TO - W)	
PROP. DOUBLE GRATE CB (1)	5+91 (Parker Street)	20.6 L	201.07		196.22 - (12" TO PROP. DMH (1) - N)	

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE DATE

SIGNATURE DATE

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SIGNATURE DATE

SIGNATURE DATE

SIGNATURE DATE

PROJECT:
PARKER STREET (ROUTE 27)

DESIGN SUBMISSION:
FINAL DESIGN

DRAWING TITLE:
DRAINAGE & UTILITY PLAN 1

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

SCALE: AS NOTED	DESIGNED BY: KK	SHEET NO.
DATE: 8/14/17	DRAWN BY: OV	15 OF 43
PROJECT NO. 15104.035	CHECKED BY: AF	

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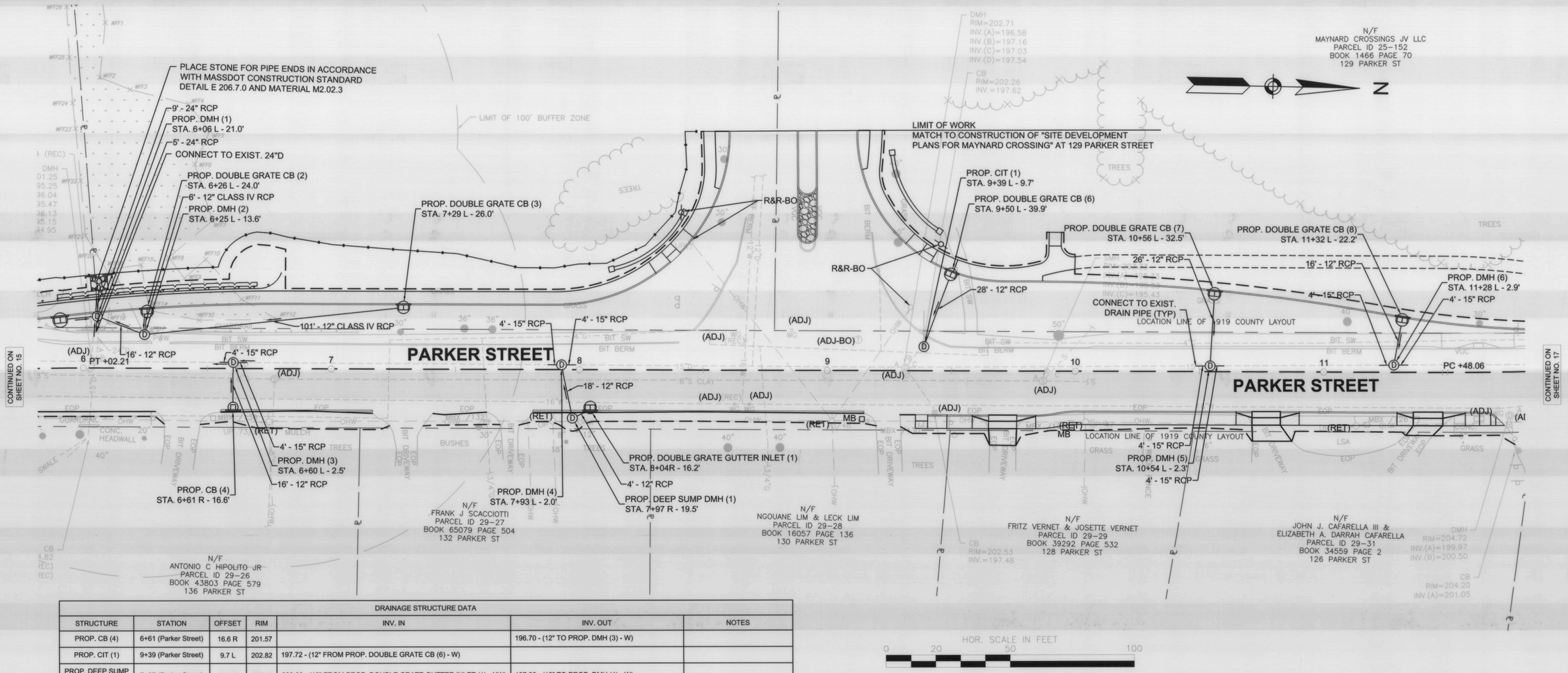

DRAINAGE STRUCTURE DATA

STRUCTURE	STATION	OFFSET	RIM	INV. IN	INV. OUT	NOTES
PROP. CB (4)	6+61 (Parker Street)	16.6 R	201.57		196.70 - (12" TO PROP. DMH (3) - W)	
PROP. CIT (1)	9+39 (Parker Street)	9.7 L	202.82	197.72 - (12" FROM PROP. DOUBLE GRATE CB (6) - W)		
PROP. DEEP SUMP DMH (1)	7+97 (Parker Street)	19.5 R	202.16	200.30 - (12" FROM PROP. DOUBLE GRATE GUTTER INLET (1) - NW)	197.90 - (12" TO PROP. DMH (4) - W)	
PROP. DMH (1)	6+06 (Parker Street)	21.0 L	201.01	196.50 - (12" FROM PROP. DMH (2) - N) 196.10 - (12" FROM PROP. DOUBLE GRATE CB (1) - S) 194.10 - (24" FROM - E)	194.10 - (24" TO - W)	
PROP. DMH (2)	6+25 (Parker Street)	13.6 L	201.08	196.76 - (12" FROM PROP. DOUBLE GRATE CB (3) - N) 196.76 - (12" FROM PROP. DOUBLE GRATE CB (2) - W)	196.66 - (12" TO PROP. DMH (1) - S)	
PROP. DMH (3)	6+60 (Parker Street)	2.5 L	201.48	196.60 - (12" FROM PROP. CB (4) - E) 196.14 - (15" FROM - N)	196.14 - (15" TO - S)	MATCH EXISTING INVERTS ON EXISTING 15" DRAIN
PROP. DMH (4)	7+93 (Parker Street)	2.0 L	202.15	196.35 - (15" FROM - N) 197.70 - (12" FROM PROP. DEEP SUMP DMH (1) - E)	196.31 - (15" TO - S)	MATCH EXISTING INVERTS ON EXISTING 15" DRAIN
PROP. DMH (5)	10+54 (Parker Street)	2.3 L	203.67	198.00 - (12" FROM PROP. DOUBLE GRATE CB (7) - W) 197.92 - (15" FROM - N)	197.90 - (15" TO - S)	MATCH EXISTING INVERTS ON EXISTING 15" DRAIN
PROP. DMH (6)	11+28 (Parker Street)	2.9 L	204.00	198.54 - (12" FROM PROP. DOUBLE GRATE CB (8) - W) 198.46 - (15" FROM - N)	198.44 - (15" TO - S)	MATCH EXISTING INVERTS ON EXISTING 15" DRAIN
PROP. DOUBLE GRATE CB (1)	5+91 (Parker Street)	20.6 L	201.07		196.22 - (12" TO PROP. DMH (1) - N)	
PROP. DOUBLE GRATE CB (2)	6+26 (Parker Street)	24.0 L	200.87		196.86 - (12" TO PROP. DMH (2) - E)	
PROP. DOUBLE GRATE CB (3)	7+29 (Parker Street)	26.0 L	201.35		197.40 - (12" TO PROP. DMH (2) - S)	
PROP. DOUBLE GRATE CB (6)	9+50 (Parker Street)	39.9 L	202.68		197.93 - (12" TO PROP. CIT (1) - E)	
PROP. DOUBLE GRATE CB (7)	10+56 (Parker Street)	32.5 L	203.08		198.27 - (12" TO PROP. DMH (5) - E)	
PROP. DOUBLE GRATE CB (8)	11+32 (Parker Street)	22.2 L	204.14		198.78 - (12" TO PROP. DMH (6) - E)	
PROP. DOUBLE GRATE GUTTER INLET (1)	8+04 (Parker Street)	16.2 R	202.38		200.35 - (12" TO PROP. DEEP SUMP DMH (1) - SE)	

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE DATE

SIGNATURE DATE

Approved plans - see cover sheet for Planning Board signatures.

SIGNATURE DATE

SIGNATURE DATE

SIGNATURE DATE

PROJECT:
PARKER STREET (ROUTE 27)

DESIGN SUBMISSION:
FINAL DESIGN

DRAWING TITLE:
DRAINAGE & UTILITY PLAN 2

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

SCALE: AS NOTED | DESIGNED BY: KK
DATE: 8/14/17 | DRAWN BY: OV
PROJECT NO. 15104.035 | CHECKED BY: AF

SHEET NO. 16 OF 43

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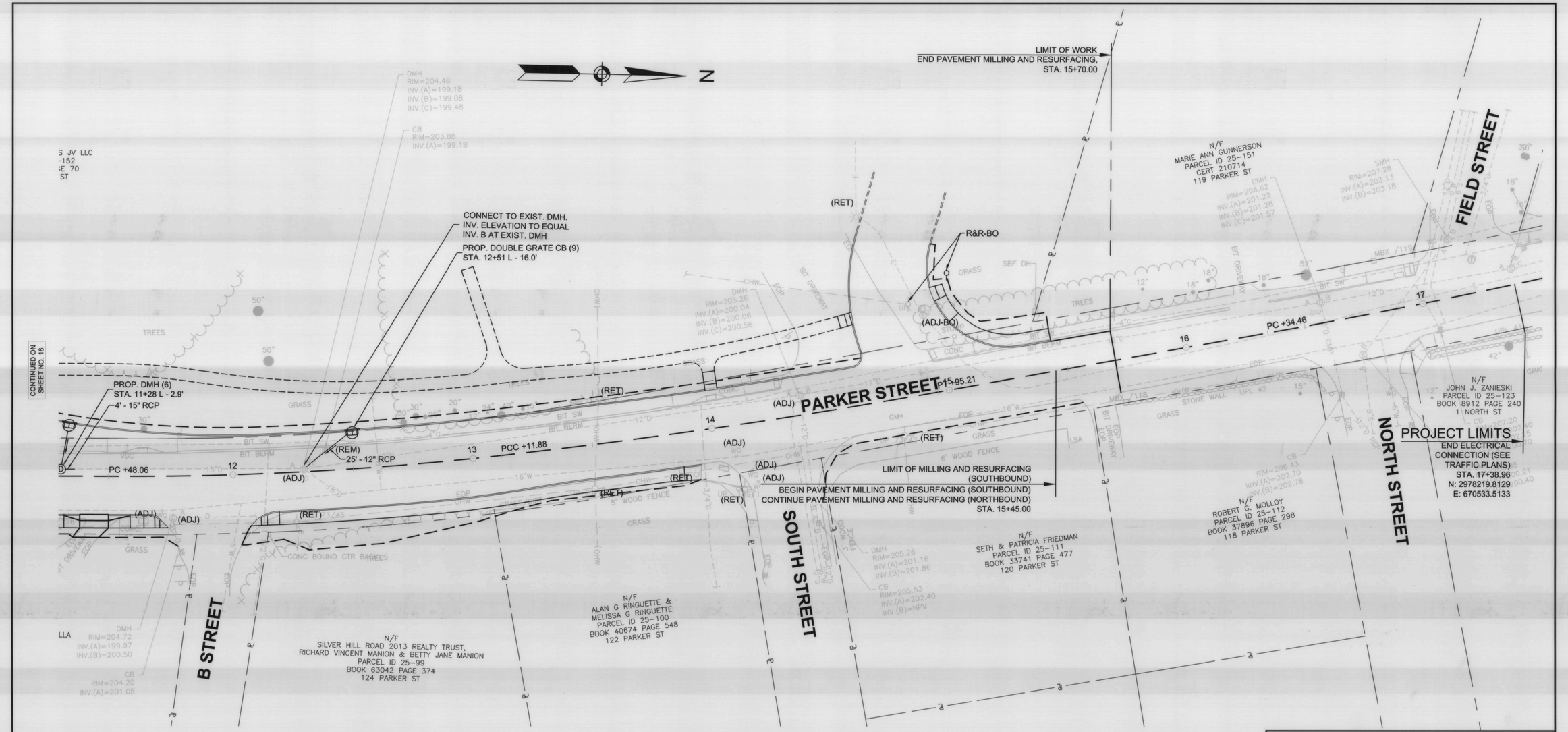

DRAINAGE STRUCTURE DATA						
STRUCTURE	STATION	OFFSET	RIM	INV. IN	INV. OUT	NOTES
PROP. DOUBLE GRATE CB (9)	12+51 (Parker Street)	16.0 L	204.71		199.39 - (12" TO - SE)	

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

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SIGNATURE DATE

SIGNATURE DATE

PROJECT:
PARKER STREET (ROUTE 27)

DESIGN SUBMISSION:
FINAL DESIGN

DRAWING TITLE:
DRAINAGE & UTILITY PLAN 3

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

SCALE: AS NOTED	DESIGNED BY: KK	SHEET NO.
DATE: 8/14/17	DRAWN BY: OV	17 OF 43
PROJECT NO. 15104.035	CHECKED BY: AF	

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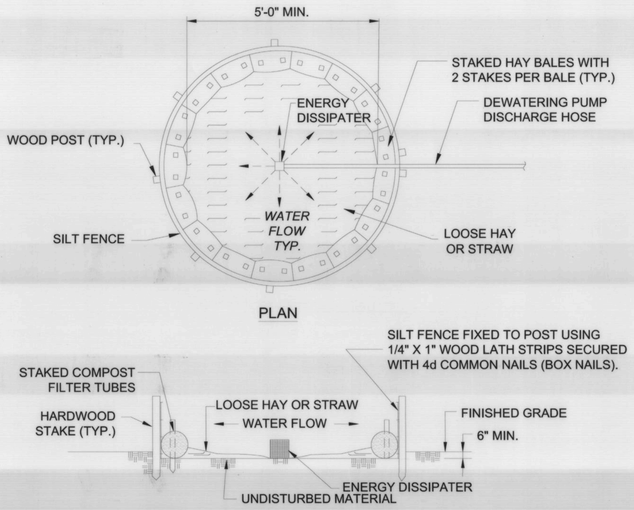
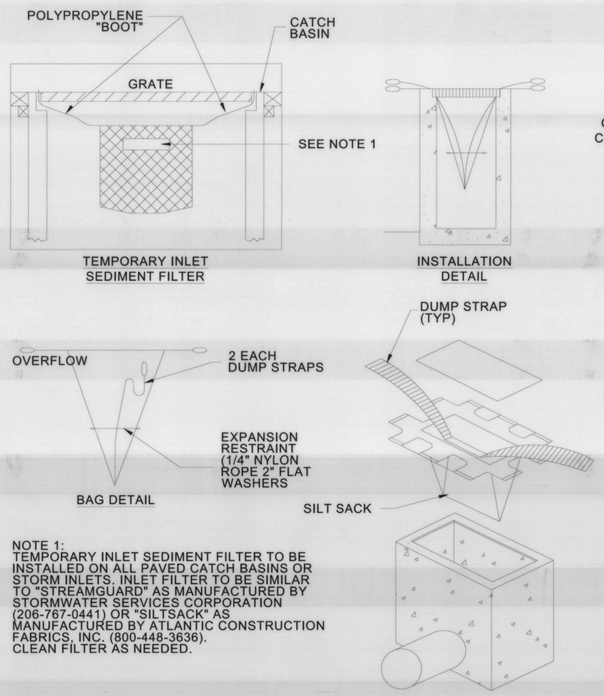


NOTE:
THIS DETAIL SHOWS ONE METHOD OF SEDIMENTATION CONTROL DURING DEWATERING.

DEWATERING SEDIMENTATION BASIN DETAIL

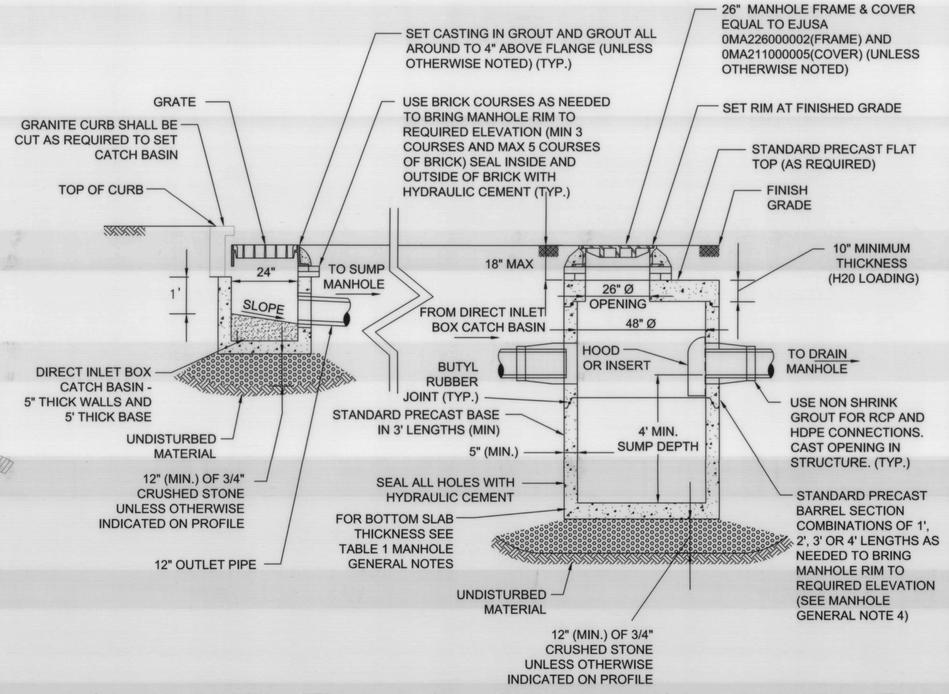
NOT TO SCALE



NOTE 1:
TEMPORARY INLET SEDIMENT FILTER TO BE INSTALLED ON ALL PAVED CATCH BASINS OR STORM INLETS. INLET FILTER TO BE SIMILAR TO "STREAMGUARD" AS MANUFACTURED BY STORMWATER SERVICES CORPORATION (206-767-0441) OR "SILTSACK" AS MANUFACTURED BY ATLANTIC CONSTRUCTION FABRICS, INC. (800-448-3636). CLEAN FILTER AS NEEDED.

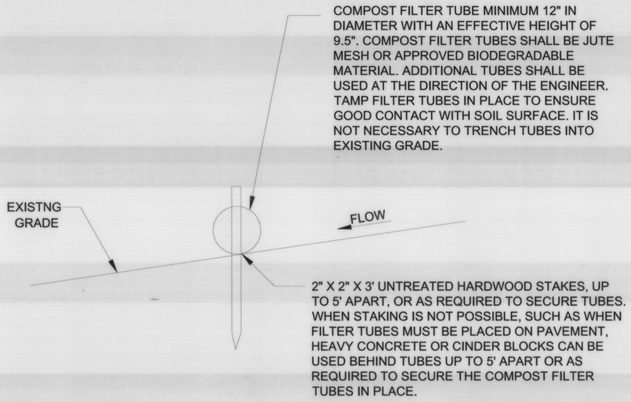
INLET PROTECTION FILTER BAG

NOT TO SCALE



DOUBLE GRATE GUTTER INLET AND DEEP SUMP DRAIN MANHOLE

NOT TO SCALE



TYPICAL COMPOST FILTER TUBE DETAIL

NOT TO SCALE

EROSION AND SEDIMENT CONTROLS

1. THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING THE EROSION AND SEDIMENT DURING THE CONSTRUCTION PROCESS. SITE SPECIFIC CONDITIONS MAY REQUIRE MODIFICATIONS IN THE FIELD, BUT THE CONTRACTOR MUST ENSURE THAT THE CHANGES MEET THE MINIMUM REQUIREMENTS OF THIS PLAN AND ARE APPROVED BY THE ENGINEER.
2. IN ORDER TO MINIMIZE EROSION AND SEDIMENT RUNOFF FROM THE SITE, THE CONTRACTOR SHALL MAINTAIN EXISTING VEGETATION WHERE POSSIBLE AND STABILIZE THE DISTURBED PORTIONS OF THE SITE AS QUICKLY AS POSSIBLE. THIS MAY INCLUDE PHASING THE PROJECT AS NEEDED TO MINIMIZE THE SIZE OF THE DISTURBED AREAS ON THE SITE. THE COST OF PHASING THE PROJECT IS INCIDENTAL TO THE CONTRACT.
3. THE CONTRACTOR MUST ALSO ANTICIPATE INCREASED RUNOFF FROM STEEPER SLOPES AND DURING HIGH GROUNDWATER CONDITIONS. THIS MAY OCCUR DURING THE WET SEASON (TYPICALLY MARCH THROUGH APRIL) OR AFTER SIGNIFICANT PRECIPITATION EVENTS.
4. THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF SILT FENCES, DRAINAGE SWALES, EARTH DIKES, TEMPORARY SETTLING BASINS, CHECK DAMS AND TEMPORARY SEDIMENT BASINS. THESE PRACTICES INCLUDE DIVERTING FLOWS FROM EXPOSED SOILS, LIMITING RUNOFF AND LIMITING THE DISCHARGE OF POLLUTANTS FROM EXPOSED AREAS OF THE SITE TO THE MAXIMUM EXTENT PRACTICABLE AND SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
5. ALL DISTURBED SURFACES SHALL BE STABILIZED WITHIN 14 DAYS AFTER CONSTRUCTION IN ANY PORTION OF THE SITE THAT HAS BEEN COMPLETED OR WHERE CONSTRUCTION HAS TEMPORARILY CEASED.
6. THE CONTRACTOR SHALL, AT ALL TIMES, HAVE A STOCKPILE OF COMPOST FILTER TUBES AND SILT FENCE ADEQUATE TO REINFORCE/REPLACE EROSION AND SEDIMENT CONTROL AS NEEDED.
7. IF REQUIRED, THE CONTRACTOR SHALL OBTAIN ALL PERMITS ASSOCIATED WITH DEWATERING ACTIVITIES AT NO ADDITIONAL COST TO THE TOWN.

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE DATE
SIGNATURE DATE
Approved plans - see cover sheet for Planning Board signatures.
SIGNATURE DATE
SIGNATURE DATE
SIGNATURE DATE

PROJECT:
PARKER STREET (ROUTE 27)

DESIGN SUBMISSION:
FINAL DESIGN

DRAWING TITLE:
DRAINAGE DETAILS 1

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers
Westford, Massachusetts
(978) 923-0400
GreenIntl.com

SCALE: AS NOTED	DESIGNED BY: AF	
DATE: 8/14/17	DRAWN BY: AF	SHEET NO.
PROJECT NO. 15104.035	CHECKED BY: LB	18 OF 43

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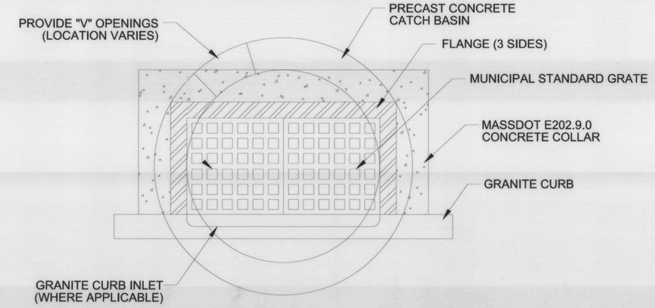
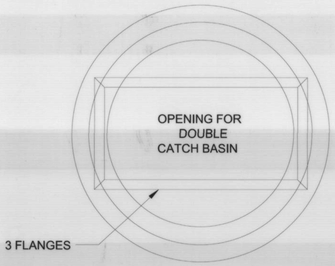
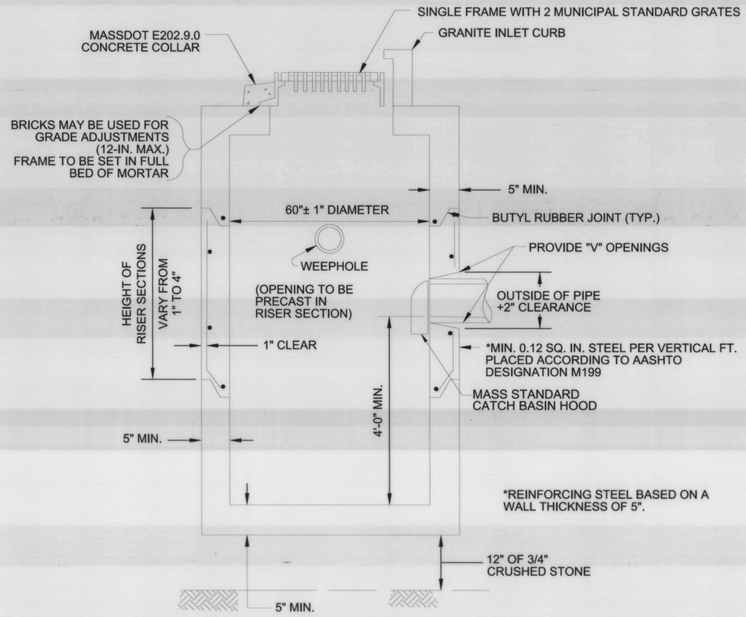


PLAN



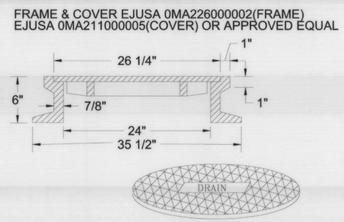


DOUBLE GRATE CATCH BASIN

NOT TO SCALE

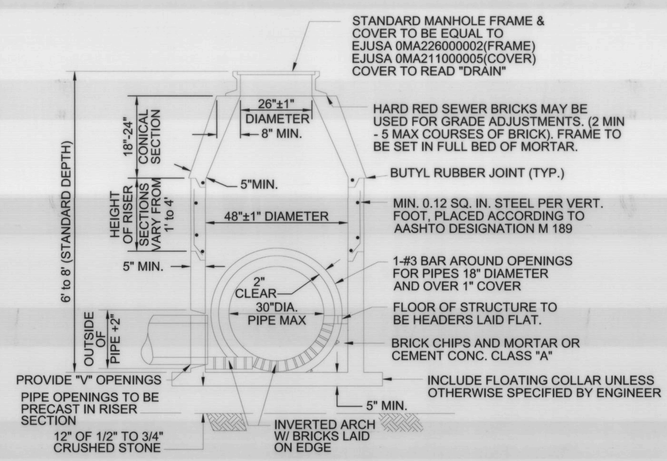
NOTE:

1. FACE OF PIPE FLUSH OR NOT TO PROJECT MORE THAN 4" FROM FACE OF WALL ALONG CENTERLINE OF PIPE.
2. FRAME SHALL BE EQUAL TO EJUSA 0MA544000001
2. FOR DESCRIPTION, MATERIALS AND CONSTRUCTION METHOD, SEE SPECIFICATIONS.
3. ALL CONCRETE TO BE AIR ENTRAINED.



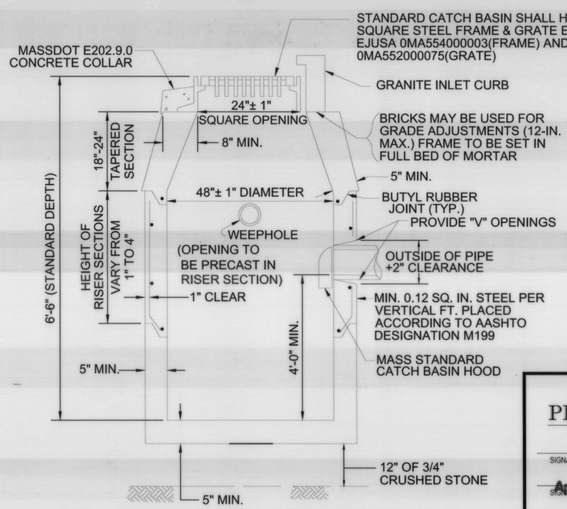
DRAIN MANHOLE FRAME & COVER

NOT TO SCALE



DRAIN MANHOLE

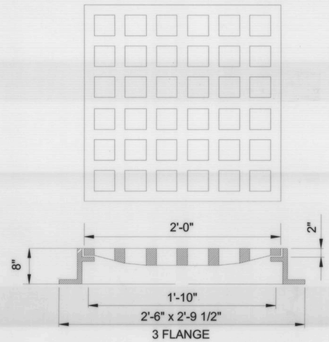
NOT TO SCALE



NOTE: NO BELL ENDS IN CATCH BASIN. CONNECTIONS TO BE TIGHTLY SEALED WITH MORTAR.

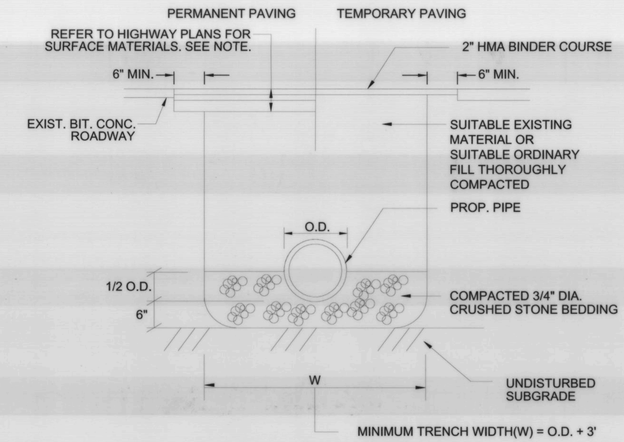
CATCH BASIN

NOT TO SCALE



TYPICAL CATCH BASIN FRAME AND GRATE MUNICIPAL STANDARD

NOT TO SCALE



TYPICAL PIPE TRENCH

NOT TO SCALE

NOTE:

1. PERMANENT PAVING TO BE USED IN ALL AREAS OF COLD PLANE AND OVERLAY. MATERIALS SHALL MATCH CORRESPONDING FULL DEPTH SECTION. REFER TO TYPICAL ROADWAY SECTIONS.

TOWN OF MAYNARD PLANNING BOARD APPROVAL

SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE

Approved plans - see cover sheet for Planning Board signatures.

PROJECT: PARKER STREET (ROUTE 27)

DESIGN SUBMISSION: FINAL DESIGN

DRAWING TITLE: DRAINAGE DETAILS 2

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

SCALE: AS NOTED	DESIGNED BY: AF	SHEET NO.
DATE: 8/14/17	DRAWN BY: AF	19 OF 43
PROJECT NO. 15104.035	CHECKED BY: LB	

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N

N/F
LEXVEST PARKER LLC C/O GOODWIN PARTNERS LLP
PARCEL ID 29-2
BOOK 1430 PAGE 87
141 PARKER ST

N/F
BOARDMAN REALTY TRUST,
LESLIE E. BOARDMAN & JAMES R BOARDMAN
PARCEL ID 29-3
BOOK 28038 PAGE 253
145 PARKER ST

LIMIT OF WORK
BEGIN PAVEMENT MARKINGS
STA. 4+35.00

PROP. RECTANGULAR FLASHING BEACONS WITH SIGNS (W11-2, W16-7P) AND PEDESTRIAN PUSHBUTTON
STA. 2+87.40; 18.83 LT
STA. 2+98.54; 20.05 RT

MATCH TO EXISTING PAVEMENT MARKINGS

DBYL - 6'
MATCH TO EXISTING PAVEMENT MARKINGS

SWL - 6'
MATCH TO EXISTING PAVEMENT MARKINGS

MATCH TO EXISTING PAVEMENT MARKINGS

PROP W11-1

PROP W16-1P

LOCATION LINE OF 1919 COUNTY LAYOUT

SWL - 104'

DBYL - 39'

DBYL - 25'

+85 SWL - 24' +09

SWL - 356'

DBYL - 97'

STA. 4+93

SWL - 498'

SYGL - 14'

DBYL - 227'

DBYL - 227'

SYGL - 14'

PARKER STREET

PROP. UNDERGROUND ELECTRIC CONNECTION TO UP#54

PROP. PULLBOX (TYP)

D3-1 R&R, MOUNT WITH R1-1

R1-1 R&R

SL - 25'

DBYL - 82'

PC+58.60

LIMIT OF WORK
LIMIT PAVEMENT MARKINGS
STA. 100+18.68

LIMIT OF WORK
LIMIT PAVEMENT MARKINGS
STA. 101+00.13

101 +99.51
+00

LOCATION LINE OF 1919 COUNTY LAYOUT

LOCATION LINE OF 1960 COUNTY LAYOUT

5.00 (MIN.)

CONTINUED ON SHEET NO. 21

N/F
KATHERINE CORCORAN
& JOHN F SANFORD
PARCEL ID 29-25
BOOK 44117 PAGE 460
138 PARKER ST

N/F
SCOTT DOUGHTY & ARLENE DOUGHTY
PARCEL ID 29-24
BOOK 39514 PAGE 510
140 PARKER ST

N/F
JOSEPH A REGAN &
MELANIE A REGAN
PARCEL ID 29-8
BOOK 62027 PAGE 563
56 A OLD MARLBORO RD

N/F
IGOR A MUKHANOV
PARCEL ID 29-8-2
BOOK 62278 PAGE 171
56 B OLD MARLBORO RD

N/F
ADAM E COTTON
& LAURA A COTTON
PARCEL ID 29-8-1
BOOK 62278 PAGE 171
56 C OLD MARLBORO RD

OLD MARLBORO ROAD

102

N/F
BRUCE J. CARR & KAREN J.
PARCEL ID 29-23
BOOK 15170 PAGE 372
55 OLD MARLBORO RD

HOR. SCALE IN FEET
0 20 50 100

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE DATE

SIGNATURE DATE

Approved plans - see cover sheet for Planning Board signatures.

SIGNATURE DATE

SIGNATURE DATE

SIGNATURE DATE

PROJECT:
PARKER STREET (ROUTE 27)

DESIGN SUBMISSION:
FINAL DESIGN

DRAWING TITLE:
PAVEMENT MARKING AND SIGNING PLAN 1

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

SCALE: AS NOTED	DESIGNED BY: DT	SHEET NO.
DATE: 8/14/17	DRAWN BY: SM	20 OF 43
PROJECT NO. 15104.035	CHECKED BY: JM	

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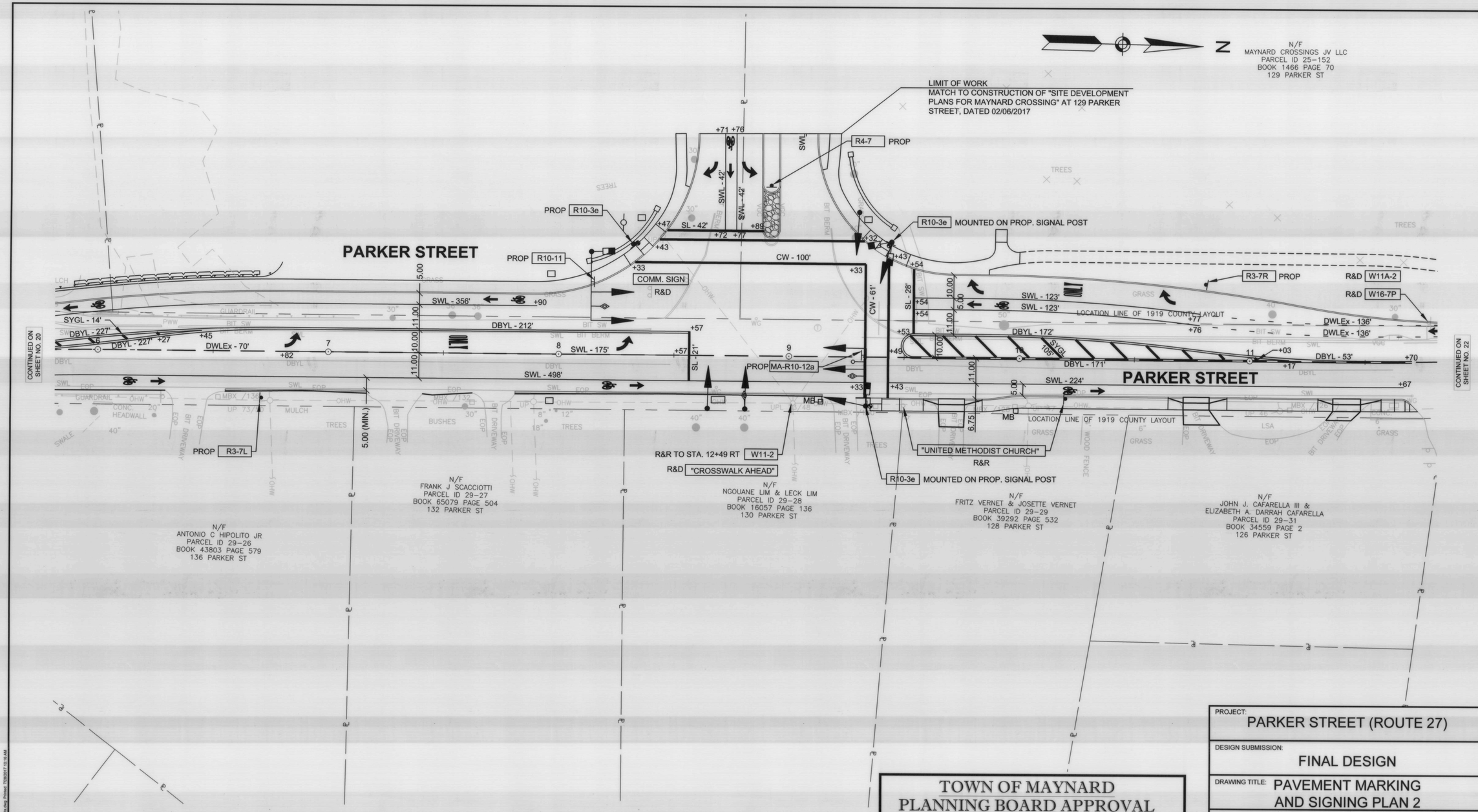

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE DATE

SIGNATURE DATE

SIGNATURE DATE

Approved plans - see cover sheet for Planning Board signatures.

SIGNATURE DATE

SIGNATURE DATE

PROJECT:
PARKER STREET (ROUTE 27)

DESIGN SUBMISSION:
FINAL DESIGN

DRAWING TITLE: PAVEMENT MARKING AND SIGNING PLAN 2

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers
Westford, Massachusetts
(978) 923-0400
GreenIntl.com

SCALE: AS NOTED	DESIGNED BY: DT	SHEET NO.
DATE: 8/14/17	DRAWN BY: SM	21 OF 43
PROJECT NO. 15104.035	CHECKED BY: JM	

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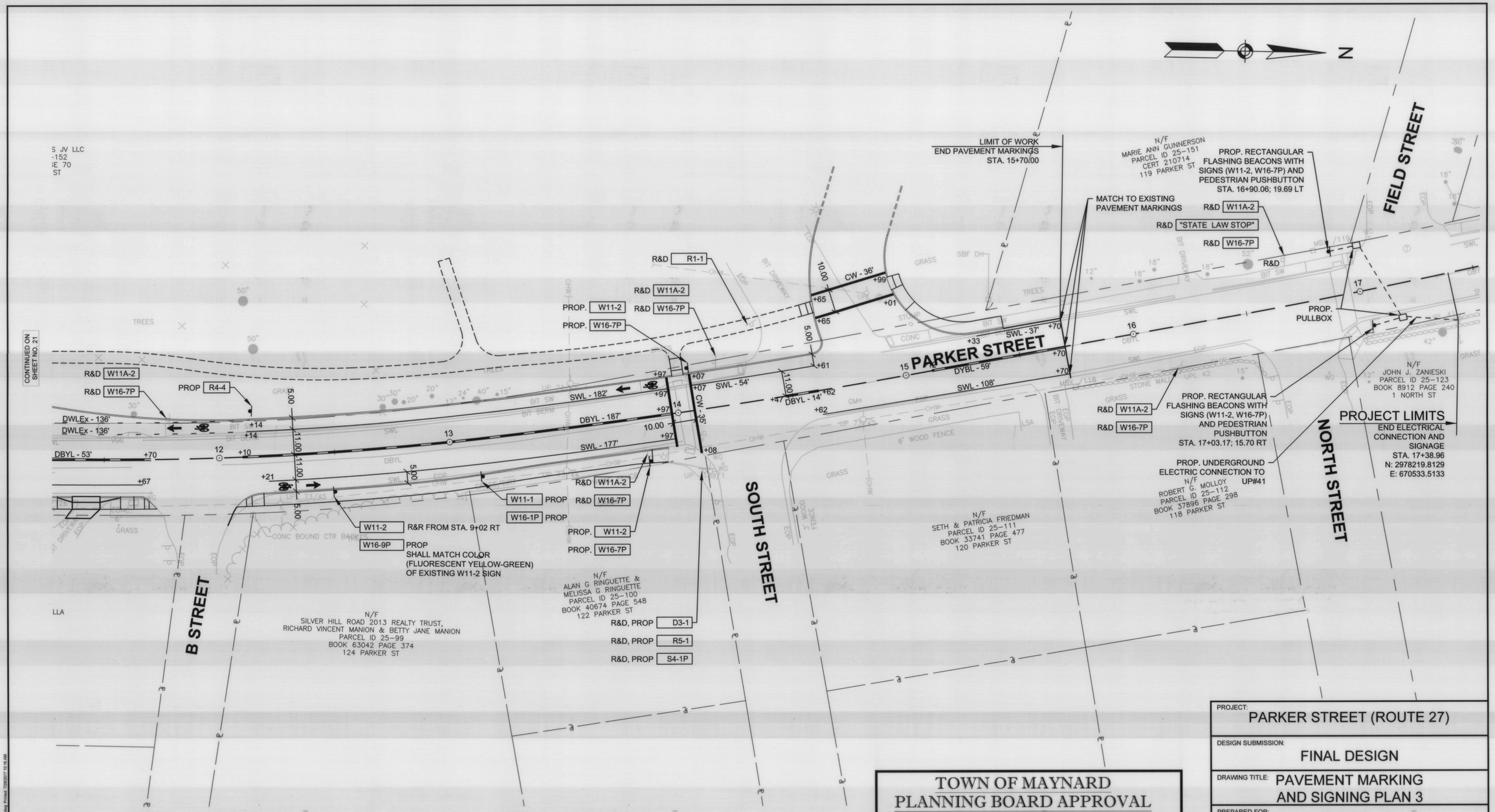

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE DATE

SIGNATURE DATE

Approved plans - see cover sheet for Planning Board signatures.

SIGNATURE DATE

SIGNATURE DATE

SIGNATURE DATE

PROJECT:
PARKER STREET (ROUTE 27)

DESIGN SUBMISSION:
FINAL DESIGN

DRAWING TITLE: PAVEMENT MARKING AND SIGNING PLAN 3

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

SCALE: AS NOTED	DESIGNED BY: DT	SHEET NO.
DATE: 8/14/17	DRAWN BY: SM	22 OF 43
PROJECT NO. 15104.035	CHECKED BY: JM	

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TRAFFIC SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	TEXT	TEXT DIMENSIONS (INCHES) LETTER HEIGHT	TEXT DIMENSIONS (INCHES) VERTICAL SPACING	TEXT DIMENSIONS (INCHES) ARROW RTE. MKR.	NUMBER OF SIGNS REQUIRED	COLOR BACK-GROUND	COLOR LEGEND	COLOR BORDER	POST SIZE AND NO. REQ'D.	UNIT AREA IN SQUARE FEET	TOTAL AREA IN SQUARE FEET
R3-7L	30"	30"	LEFT LANE MUST TURN LEFT	SEE MUTCD STANDARDS			1	SEE MUTCD STANDARDS			P5 1	6.25	6.25
R3-7R	30"	30"	RIGHT LANE MUST TURN RIGHT				1				P5 1	6.25	6.25
R4-4	36"	30"	BEGIN RIGHT TURN LANE YIELD TO BIKES				1				P5 1	7.50	7.50
R4-7	24"	30"					1				P5 1	5.00	5.00
R5-1	30"	30"	DO NOT ENTER				1				P5 0 MOUNTED W/ D3-1	6.25	6.25
R10-11	24"	30"	NO TURN ON RED				1				P5 0 MOUNTED ON MAST ARM	5.00	5.00
R10-3e	9"	15"					3				P5 0 MOUNTED OVER PUSH-BUTTON	0.94	2.82
MA-R10-12a	30"	36"	LEFT TURN YIELD ON FLASHING	SEE MASSDOT STANDARD SIGNS			1	WHITE	BLACK / YELLOW	BLACK	P5 0 MOUNTED ON MAST ARM	7.50	7.50
W11-1	30"	30"		SEE MUTCD STANDARDS			2	FLUOR-ESCENT YELLOW-GREEN	BLACK	BLACK	P5 2	6.25	12.50
W11-2*	30"	30"					6	FLUOR-ESCENT YELLOW-GREEN	BLACK	BLACK	P5 2; 4 MOUNTED ON RRFB POSTS	6.25	37.50*
W16-1P	18"	24"	SHARE THE ROAD	SEE MUTCD STANDARDS			2	FLUOR-ESCENT YELLOW-GREEN	BLACK	BLACK	P5 0 2 W/ W11-1	3.00	6.00
W16-7P*	24"	12"					6	FLUOR-ESCENT YELLOW-GREEN	BLACK	BLACK	P5 0 2 W/ W11-2, 4 MOUNTED ON RRFB POSTS	2.00	12.00*
W16-9P	24"	12"	AHEAD				1	FLUOR-ESCENT YELLOW-GREEN	BLACK	BLACK	P5 1 1 W/ W11-2	2.00	2.00
S4-1P (3:30 PM - 5:30 PM)	24"	10"'	3:30 PM - 5:30 PM				1	SEE MUTCD STANDARDS			P5 0 MOUNTED W/ D3-1	1.67	1.67
D3-1	12"	40"	South St	SEE BELOW			1	SEE BELOW			P5 1	3.33	3.33
													121.57

NOTES:

SEE THE 2009 "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ITS REVISIONS, THE 2012 MASSACHUSETTS AMENDMENTS TO THE 2009 MUTCD, AND THE STANDARD MUNICIPAL TRAFFIC CODE FOR LATEST SPECIFICATION ON TEXT, DIMENSIONS AND COLOR. ALSO REFER TO 2006 MASSACHUSETTS HIGHWAY DEPARTMENT (MHD) SUPPLEMENTAL SPECIFICATIONS TO THE 1995 STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES (METRIC EDITION) SUBSECTION M9.30.0.

* SIGN TO BE INCLUDED IN COST OF RAPID RECTANGULAR FLASHING BEACON (RRFB) ASSEMBLY

D3-1

1.5" Radius, 0.5" Border, White on Green;
[South] D 2K; [St] D 2K;
Table of widths and spaces.

	S		o		u		t		h	
5.4	4.1	0.7	3.6	0.9	3.6	0.6	2.4	0.7	3.5	
		S		t						
4.5		2.7	0.3	1.6	5.4					

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE		DATE
SIGNATURE	Approved plans - see cover sheet for Planning Board signatures.	DATE
SIGNATURE		DATE
SIGNATURE		DATE
SIGNATURE		DATE

PROJECT: PARKER STREET (ROUTE 27)

DESIGN SUBMISSION: FINAL DESIGN

DRAWING TITLE: TRAFFIC SIGN SUMMARY

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

SCALE: AS NOTED	DESIGNED BY: SM		
DATE: 8/14/17	DRAWN BY: SM		SHEET NO.
PROJECT NO. 15104.035	CHECKED BY: JM		23 OF 43

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N

N/F
MAYNARD CROSSINGS JV LLC
PARCEL ID 25-152
BOOK 1466 PAGE 70
129 PARKER ST

PROP. 12" X 12" PULL BOX (TYP.)

PROP. STUB POLE ON NEW FOUNDATION WITH ADA COMPLIANT PUSHBUTTON EQUIPPED WITH SIGN AND SADDLE

PROP. UTILITY POLE TO BE INSTALLED BY OTHERS

PROP. SERVICE CONNECTION

PROP. NEMA TS-2, TYPE 1 CONTROLLER AND CABINET ON NEW FOUNDATION AND CONCRETE PAD

PROP. 30' TYPE 2 STEEL MAST ARM ON NEW FOUNDATION WITH VEHICLE AND PED. INDICATIONS AND EMERGENCY PRE-EMPTION RECEIVER. STA. 8+13.87; 44.79' LT

PROP. 3" ELECTRICAL CONDUIT TYPE NM

PROP. 3" ELECTRICAL CONDUIT TYPE NM

PROP. 10' TS POST ON NEW FOUNDATION WITH VEHICLE INDICATION.

PROP. 10' TS POST ON NEW FOUNDATION WITH TWO PED. SIGNAL INDICATION, ONE ADA COMPLIANT PUSHBUTTON EQUIPPED WITH SIGN AND SADDLE, AND ONE VEHICLE INDICATION.

PROP. VEHICLE DETECTION ZONE (TYP.)

PROP. BICYCLE DETECTION ZONE (TYP.)

PROP. 3" ELECTRICAL CONDUIT TYPE NM (TYP.)

PROP. 10' TS POST ON NEW FOUNDATION WITH VEHICLE INDICATION

PROP. 8" X 23" PULL BOX

PROP. 10' TS POST ON NEW FOUNDATION WITH VEHICLE INDICATION AND EMERGENCY PRE-EMPTION RECEIVER

PROP. 25' TYPE 2 STEEL MAST ARM ON NEW FOUNDATION WITH VEHICLE INDICATIONS, EMERGENCY PRE-EMPTION RECEIVER AND INDICATOR, AND VIDEO DETECTION CAMERA STA. 9+49.58; 18.83' RT

PARKER STREET

PARKER STREET

B STREET

CW - 100'

CW - 61'

N0°54'12"W
1077.51'

S0°54'12"E
858.08'

SWL - 356'

SWL - 175'

SWL - 98'

SWL - 123'

SWL - 220'

SWL - 224'

DBYL - 212'

DBYL - 171'

DBYL - 53'

DWLEx - 70'

DWLEx - 136'

DWLEx - 136'

SYL - 227'

SYGL

5.00 (MIN.)

N/F
ANTONIO C HIPOLITO JR
PARCEL ID 29-26
BOOK 43803 PAGE 579
136 PARKER ST

N/F
FRANK J SCACCIOTTI
PARCEL ID 29-27
BOOK 65079 PAGE 504
132 PARKER ST

N/F
NGOUANE LIM & LECK LIM
PARCEL ID 29-28
BOOK 16057 PAGE 136
130 PARKER ST

N/F
FRITZ VERNET & JOSETTE VERNET
PARCEL ID 29-29
BOOK 39292 PAGE 532
128 PARKER ST

N/F
JOHN J. CAFARELLA III &
ELIZABETH A. DARRAH CAFARELLA
PARCEL ID 29-31
BOOK 34559 PAGE 2
126 PARKER ST

LEGEND

- VEHICULAR SIGNAL HEAD
- PEDESTRIAN SIGNAL HEAD
- SINGLE-POINT WIDE ANGLE VIDEO DETECTION CAMERA
- 12"X12" PULL BOX
- 8"X23" PULL BOX
- PRE-EMPTION RECEIVER
- PRE-EMPTION INDICATOR LIGHT
- 3 INCH CONDUIT
- CONTROLLER CABINET
- PEDESTRIAN PUSH BUTTON, SIGN, AND SADDLE

NOTES:

CONTRACTOR SHALL VERIFY ALL UNDERGROUND UTILITY LOCATIONS IN THE FIELD PRIOR TO PERFORMING EXCAVATIONS.

ALL 3" ELECTRICAL CONDUIT ACROSS ROADWAY AND DRIVEWAY SURFACES SHALL BE SCHEDULE 80.

HOR. SCALE IN FEET
0 20 50 100

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE DATE

SIGNATURE DATE

Approved plans - see cover sheet for Planning Board signatures.

SIGNATURE DATE

SIGNATURE DATE

SIGNATURE DATE

PROJECT:
PARKER STREET (ROUTE 27)

DESIGN SUBMISSION:
FINAL DESIGN

DRAWING TITLE:
TRAFFIC SIGNAL PLAN

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

SCALE: AS NOTED	DESIGNED BY: JG	SHEET NO.
DATE: 8/14/17	DRAWN BY: JG	24 OF 43
PROJECT NO. 15104.035	CHECKED BY: JS	

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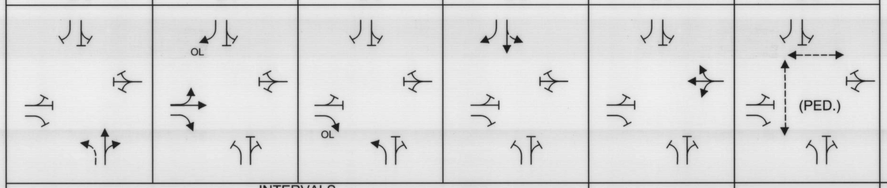
SEQUENCE & TIMING FOR

PARKER STREET AT 129 PARKER STREET PRIMARY DRIVEWAY

APPROX. NORTH



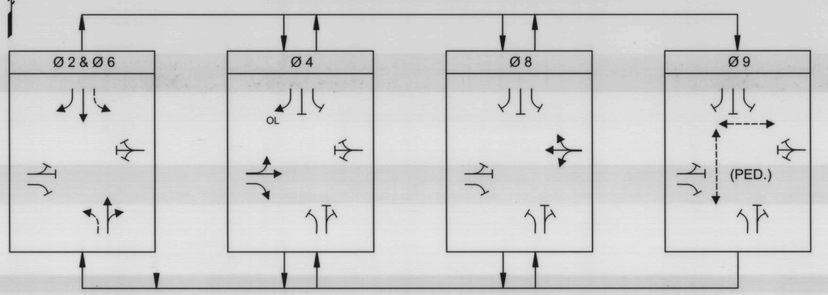
APPROACH	DIRECTION	HOUSINGS	INTERVALS 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
ROUTE 27 (PARKER STREET)	NBL	A	~~FY~~	~~SY~~	~~R~~	~~R~~	~~R~~	~~R~~	~~G~~	~~SY~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	FY
ROUTE 27 (PARKER STREET)	NB	B,C	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FR
PRIMARY SITE DRIVE	EB	D	R	R	R	G / ~~G~~	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	FR
PRIMARY SITE DRIVE	EB	E	R	R	R	G / ~~G~~	Y / ~~Y~~	R	~~G~~ / R	~~Y~~ / R	R	R	R	R	R	R	R	R	R	R	FR
ROUTE 27 (PARKER STREET)	SB	F	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	FY
ROUTE 27 (PARKER STREET)	SB	G	R	R	R	~~G~~	~~Y~~	R	R	R	R	G	Y	R	R	R	R	R	R	R	FR
RESIDENTIAL DRIVEWAY	WB	H	R	R	R	R	R	R	R	R	R	R	R	R	G / ~~G~~	Y	R	R	R	R	FR
RESIDENTIAL DRIVEWAY	WB	J	R	R	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	FR
PEDESTRIAN	ALL	P1-P4	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW	DW	OUT
TIMING IN SECONDS																					
MINIMUM GREEN			5			10			10			10			6						EMERGENCY ONLY
MAX GREEN 1			37.5			12			-			37.5			6						
MAX GREEN 2			32.5			17			6.5			21.5			6						
MAX GREEN 3			31.5			23			6.5			20.5			6						
VEHICLE EXTENSION			3			3			3			3			3						
YELLOW CLEARANCE				3.5			3			3			3.5			3					
RED CLEARANCE					1			3			2			1			4.5				
PED WALK INTERVAL																		7	22		
RECALL			SOFT			NONE			NONE			SOFT			NONE			NONE			

NOTES:

1. STANDARD NEMA CLEARANCES SHALL APPLY.
2. MAXIMUM GREEN 1 SHALL BE IN EFFECT ON WEEKDAYS FROM 7:00 PM TO 12:00 AM, WEEKDAYS FROM 12:00 AM TO 12:00 PM, AND ON SATURDAYS FROM 12:00 AM TO 9:00 AM AND 6:00 PM TO 12:00 AM.
3. MAXIMUM GREEN 2 SHALL BE IN EFFECT ON WEEKDAYS FROM 12:00 PM TO 7:00 PM.
4. MAXIMUM GREEN 3 SHALL BE IN EFFECT ON SATURDAYS AND SUNDAYS FROM 9:00 AM TO 6:00 PM.
5. PREEMPTION MINIMUM GREENS SHALL BE SIX SECONDS.
6. EMERGENCY VEHICLE PREEMPTION SHALL BE ACTUATED BY AN OPTICAL SIGNAL FROM AN OPTICAL EMITTER MOUNTED ON AN EMERGENCY VEHICLE AND RECEIVED BY AN OPTICAL DETECTOR LOCATED AT INTERSECTION. A SEPARATE RECEIVING DETECTOR IS REQUIRED FOR EACH DETECTED APPROACH.
7. NORMAL CLEARANCES SHALL BE PROVIDED ON PHASES THAT ARE TERMINATED BY PREEMPTION DEMAND.

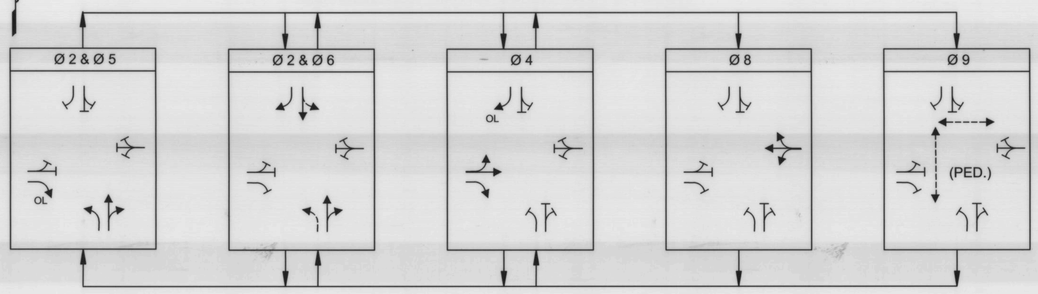
APPROX. NORTH

PREFERENTIAL PHASING SEQUENCE - MAX GREEN 1

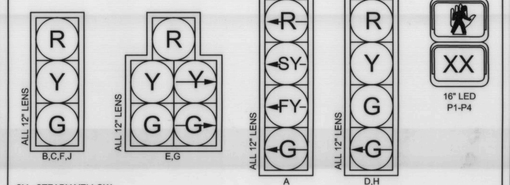


APPROX. NORTH

PREFERENTIAL PHASING SEQUENCE - MAX GREEN 2 & 3.



SIGNAL IDENTIFICATION



SY - STEADY YELLOW
FY - FLASHING YELLOW

NOTES:

1. ALL VEHICLE LENSES SHALL BE LED TYPE.
2. ALL VEHICLE SIGNAL HEADS SHALL BE 12 INCHES.
3. ALL HOUSINGS TO BE PROVIDED WITH TUNNEL VISORS AND 5-INCH NON-LOUVERED BACKPLATES WITH 3-INCH RETROREFLECTIVE BORDER.
4. ALL HOUSINGS TO BE FIXED MOUNTED.
5. ALL SIGNALHEAD BACKPLATES SHALL BE NON-LOUVERED.

MAJOR ITEMS REQUIRED

QUANTITY	ITEM
1	SERVICE CONNECTION (UNDERGROUND)
1	CONTROLLER NEMA 8 PHASE TS-2 (TYPE-1), CAB. & FDN.
1	30 FT TYPE II, GALV. STEEL MAST ARM ASSEMBLY, BASE & FDN
1	25 FT TYPE II, GALV. STEEL MAST ARM ASSEMBLY, BASE & FDN
4	SIGNAL POLE AND BASE STANDARD, 10 FT. W / FOUNDATION
1	STUB POLE W / FOUNDATION
6	12 INCH 1 WAY 3-SECTION LED VEHICLE SIGNAL INDICATION
1	12 INCH 1 WAY 4-SECTION LED VEHICLE SIGNAL INDICATION (ALL ARROWS)
2	12 INCH 1 WAY 5-SECTION LED VEHICLE SIGNAL INDICATION (RED CIRCLE, RIGHT ARROWS)
4	16 INCH LED PEDESTRIAN INDICATION WITH COUNTDOWN
3	PED. PUSH BUTTON W / SIGN AND SADDLE (ADA COMPLIANT)
5	12" x 12" PULLBOX
1	8" x 23" PULLBOX
1	GRIDSMART VIDEO DETECTION SYSTEM
1	PREEMPTION PHASE SELECTOR MODULE-FOUR CHANNEL
1	PREEMPTION CARD RACK
1	EMERGENCY PRE-EMPTION INDICATOR (STROBE) LIGHT
3	EMERGENCY PRE-EMPTION RECEIVER (DETECTOR) - ONE WAY

PLUS ALL NECESSARY DUCT, CABLE, LABOR, MISCELLANEOUS MATERIAL AND EQUIPMENT TO COMPLETE THE INSTALLATION OF A FULLY OPERATIONAL SIGNAL SYSTEM AS INTENDED ON THESE PLANS

VIDEO DETECTION DATA

DETECTOR NO.	PHASE CALLED	PHASE EXT.	OPERATIONS	DELAY TIME	EXT. TIME
1	Ø6	Ø6	PRESENCE	-	-
2	Ø6	Ø6	PRESENCE	-	-
3	Ø6	Ø4 & Ø6	PRESENCE	-	-
4	Ø4	Ø4	PRESENCE	-	-
5	Ø4	Ø4	PRESENCE	-	-
6	Ø4	Ø4 & Ø5	PRESENCE	-	-
7	Ø5	Ø2 & Ø5	PRESENCE	-	-
8	Ø2	Ø2 & Ø5	PRESENCE	-	-
9	Ø2	Ø2 & Ø5	PRESENCE	-	-
10	Ø8	Ø8	PRESENCE	-	-

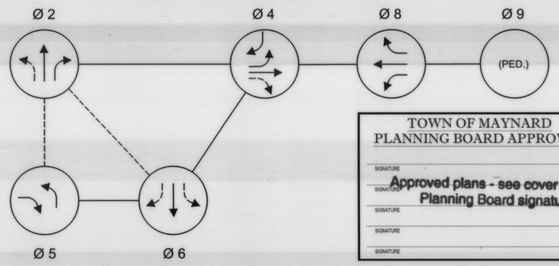
FIRE PRE-EMPTION SCHEDULE

RECEIVER AND PRIORITY	PRE-EMPT PHASE ASSIGNMENT	APPROACH AND MOVEMENT	VEHICLE PHASE ASSIGNMENT	NEXT PHASE CALLED
R1	1	NB	Ø 2 + Ø 5	Ø 2 + Ø 6
R2	2	SB	Ø 6	Ø 2 + Ø 6
R3	2	EB	Ø 4	Ø 2 + Ø 6

NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE OPTICALLY TRANSMITTED BY OPTICAL EMITTERS MOUNTED IN EMERGENCY VEHICLES AND RECEIVED BY OPTICAL RECEIVERS LOCATED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES AS FOLLOWS: (R1, R2, THEN R3)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY OPTICAL RECEIVER R3 (OR OTHERS AS PROVIDED) THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD IN EMERGENCE PRE-EMPTION THE ASSOCIATED GREEN PHASE FOR A MINIMUM OF TEN (10) SECONDS OR UNTIL, PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN PROVIDE PRE-EMPTION PHASE CLEARANCE SERVICE THEN RESUME NORMAL OPERATION.
4. MINIMUM GREEN, NORMAL VEHICLE AND PEDESTRIAN CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. ONCE PRE-EMPTION TERMINATES THE SIGNAL WILL RETURN TO PHASES 2+6 TO RESUME NORMAL OPERATION.

NEMA DUAL RING PHASING NOTES:



1. PHASE 5 SHALL BE OMITTED DURING MAXIMUM GREEN 1.
2. PHASES ASSOCIATED BY A SOLID LINE SHALL NOT OPERATE CONCURRENTLY.
3. PHASES ASSOCIATED BY A DASHED LINE MAY OPERATE CONCURRENTLY.
4. IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT SHALL NOT CHANGE DURING THE CHANGE INTERVAL(S) UNLESS OTHERWISE NOTED.

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE DATE
SIGNATURE DATE
Approved plans - see cover sheet for Planning Board signatures.
SIGNATURE DATE
SIGNATURE DATE

PROJECT:
PARKER STREET (ROUTE 27)

DESIGN SUBMISSION:
FINAL DESIGN

DRAWING TITLE:
SEQUENCE AND TIMING PLAN

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

SCALE: AS NOTED	DESIGNED BY: JG	
DATE: 8/14/17	DRAWN BY: JG	SHEET NO. 25 OF 43
PROJECT NO. 15104.035	CHECKED BY: JS/DT	

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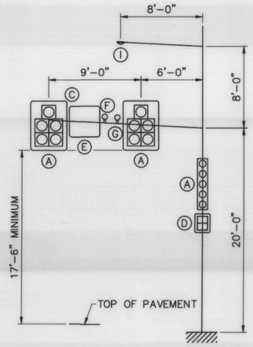
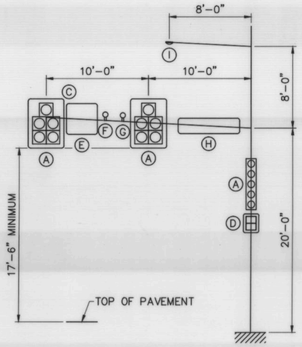
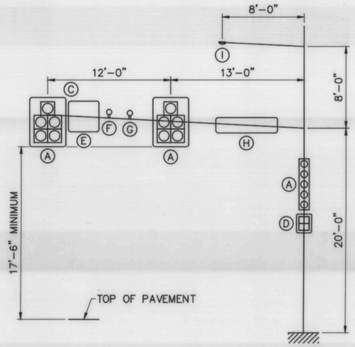


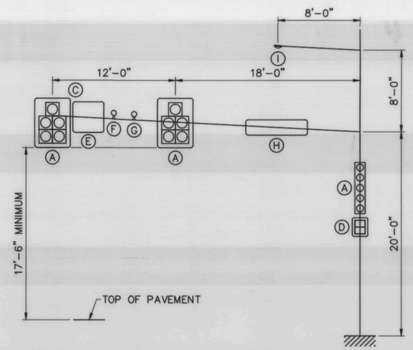
15' SPAN



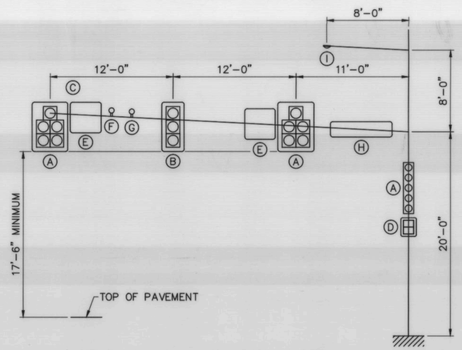
20' SPAN



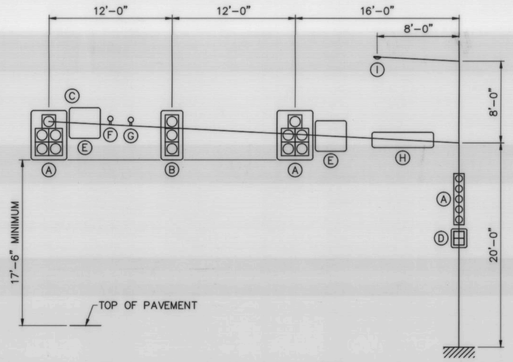
25' SPAN



30' SPAN



35' SPAN



40' SPAN

DESIGN LOADING							
DEVICE	DESCRIPTION	PROJ. AREA (FT^2)	WEIGHT (LBS)	DEVICE	DESCRIPTION	PROJ. AREA (FT^2)	WEIGHT (LBS)
(A)	5 SECTION, 1 WAY SIGNAL	13.33	110	(F)	DETECTOR	1.00	10
(B)	3 SECTION, 1 WAY SIGNAL	8.67	74	(G)	STROBE	1.00	10
(C)	DAMPENER PLATE (NOT SHOWN)	0.00	9	(H)	72" X 18" STREET NAME SIGN	9.00	12
(D)	DUAL PEDESTRIAN SIGNAL	8.00	80	(I)	OPTIONAL LUMINAIRE	3.30	75
(E)	36" X 36" REGULATORY SIGN	9.00	12				

NOTE: ALL SIGNALS HAVE 5.0" NON-LOUVERED BACKPLATES WITH REFLECTIVE BORDERS

NOTE:

DETAILS FROM MASSDOT STANDARD DRAWINGS (2015)

massDOT Highway Division

STANDARD DRAWINGS

OVERHEAD SIGNAL STRUCTURE & FOUNDATION
15' – 40' ARM
LOAD DIAGRAMS

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION
10 PARK PLAZA BOSTON, MASS

DECEMBER, 2015

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE DATE

SIGNATURE DATE

Approved plans - see cover sheet for Planning Board signatures.

SIGNATURE DATE

SIGNATURE DATE

SIGNATURE DATE

PROJECT:
PARKER STREET (ROUTE 27)

DESIGN SUBMISSION:
FINAL DESIGN

DRAWING TITLE:
TRAFFIC DETAILS NO. 1

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

SCALE: NOT TO SCALE	DESIGNED BY: JG	
DATE: 8/14/17	DRAWN BY: JG	SHEET NO.
PROJECT NO. 16033.01X	CHECKED BY: JS	26 OF 43

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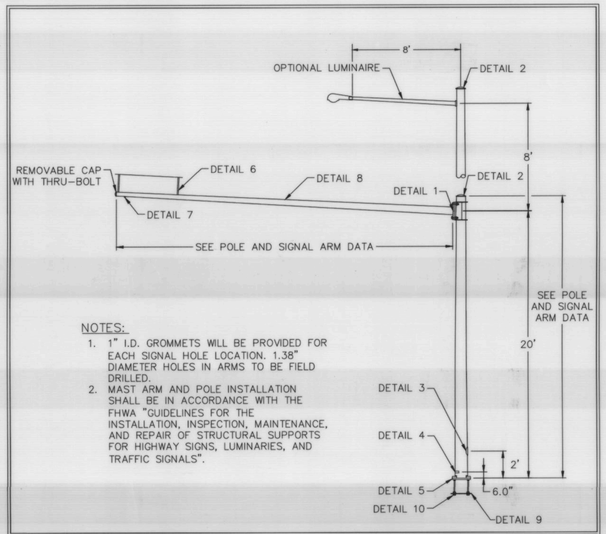
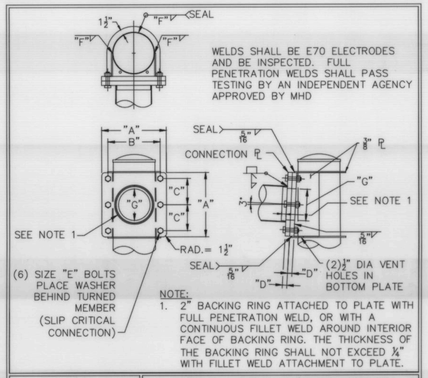


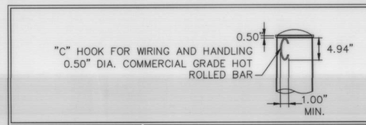
NOTES:
1. 1" I.D. GROMMETS WILL BE PROVIDED FOR EACH SIGNAL HOLE LOCATION. 1.38" DIAMETER HOLES IN ARMS TO BE FIELD DRILLED.
2. MAST ARM AND POLE INSTALLATION SHALL BE IN ACCORDANCE WITH THE FHWA "GUIDELINES FOR THE INSTALLATION, INSPECTION, MAINTENANCE, AND REPAIR OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINARIES, AND TRAFFIC SIGNALS".

MAST ARM ELEVATION

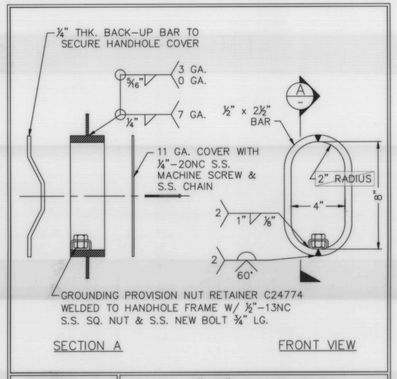


NOTE:
1. 2" BACKING RING ATTACHED TO PLATE WITH FULL PENETRATION WELD, OR WITH A CONTINUOUS FILLET WELD AROUND INTERIOR FACE OF BACKING RING. THE THICKNESS OF THE BACKING RING SHALL NOT EXCEED ¼" WITH FILLET WELD ATTACHMENT TO PLATE.

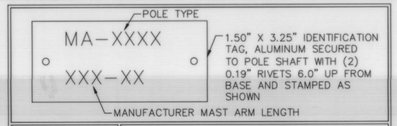
DETAIL 1 | SIGNAL ARM ATTACHMENT



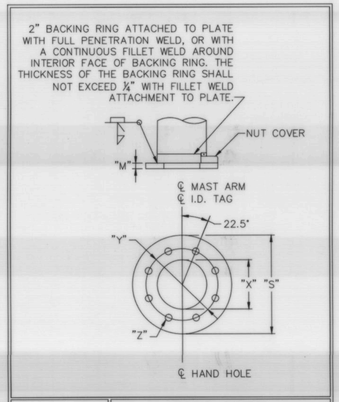
DETAIL 2 | POLE TOP



DETAIL 3 | 4"x8" HANDHOLE

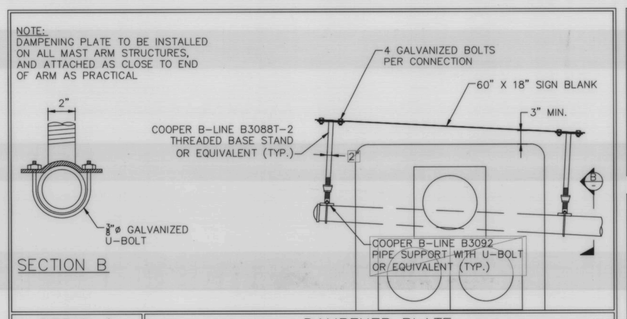


DETAIL 4 | I.D. TAG



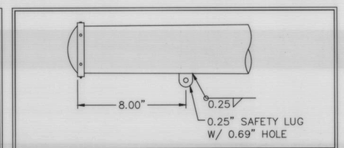
DETAIL 5 | POLE BASE

NOTE:
DAMPENING PLATE TO BE INSTALLED ON ALL MAST ARM STRUCTURES, AND ATTACHED AS CLOSE TO END OF ARM AS PRACTICAL



SECTION B

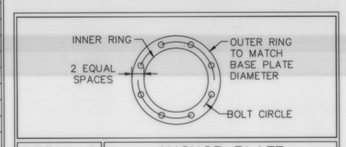
DETAIL 6 | DAMPENER PLATE



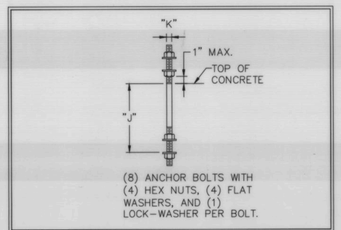
DETAIL 7 | SAFETY HANGER LUG

NOTES:
1. TELESCOPIC FIELD SPLICE REQUIRED ON ALL MAST ARM LENGTHS OF 45' OR GREATER
2. THE MINIMUM SPLICE LENGTH SHALL BE AT LEAST 1.5 TIMES THE INSIDE DIAMETER OF THE EXPOSED END OF THE FEMALE SECTION.

DETAIL 8 | ARM SPLICE DETAIL



DETAIL 9 | ANCHOR PLATE



DETAIL 10 | ANCHOR BOLT

MATERIAL DATA

COMPONENT	DESIGNATION	YIELD (KSI)
POLE TUBE	ASTM A595 GR. A	55
POLE BASE PLATE	AASHTO M270, OR ASTM A709	50
ANCHOR BOLTS	AASHTO M314, OR ASTM A307 GR. C	55
GALVANIZING	AASHTO M111 OR M232	
ARM TUBE	ASTM A595 GR. A	55
ARM CONNECTION PLATE	AASHTO M270, OR ASTM A709	50
ARM CONNECTING BOLTS	AASHTO M164, OR ASTM A325 **	

** BOLTS WHICH ACCUMULATE RUST OR DIRT SHALL BE DISCARDED.

POLE AND SIGNAL ARM DATA

LOCATIONS	SIGNAL ARM TUBE				POLE TUBE				POLE BASE					ANCHOR BOLT		SIGNAL ARM ATTACHMENT DATA						
	SPAN (FT)	FIXED END DIA. (IN)	FREE END DIA. (IN)	WALL THK.	BASE DIA. (IN)	TOP DIA. (IN)	LENGTH (FT)	WALL THK.	PLATE CIRCLE "S" (IN)	BOLT CIRCLE "Y" (IN)	THK. "M" (IN)	HOLE "Z" (IN)	HOLE "X" (IN)	DIA. "K" (IN)	EMBED. LENGTH "J" (IN)	"A" (IN)	"B" (IN)	"C" (IN)	"D" (IN)	"E" (IN)	"F" (IN)	"G" (IN)
	15.00	9.00	6.90	7 GA.	13.00	9.92	22.00	7 GA.	24.00	19.00	2.00	1.50	10.00	1.25	36.00	17.25	14.00	7.00	2.00	1.00	0.188	7.00
	20.00	9.00	6.20	7 GA.	13.00	9.92	22.00	3 GA.	27.00	22.00	2.00	1.75	10.00	1.50	36.00	17.75	14.50	7.25	2.00	1.00	0.250	7.00
	25.00	10.00	6.50	7 GA.	13.00	9.92	22.00	3 GA.	27.00	22.00	2.00	1.75	10.00	1.50	36.00	18.25	15.00	7.50	2.00	1.00	0.250	7.50
	30.00	11.00	6.80	7 GA.	13.50	10.42	22.00	3 GA.	27.00	22.00	2.00	1.75	10.50	1.50	36.00	18.75	15.50	7.75	2.00	1.00	0.250	8.75
	35.00	12.00	7.10	3 GA.	15.00	11.92	22.00	3 GA.	27.00	22.00	2.00	1.75	12.50	1.50	36.00	20.25	17.00	8.50	2.00	1.25	0.313	6.50
	40.00	13.00	7.40	3 GA.	16.00	12.92	22.00	3 GA.	29.00	24.00	2.00	2.00	12.00	1.75	36.00	21.25	18.00	9.00	2.00	1.25	0.313	6.75
	45.00	13.50	7.20	3 GA.	17.50	14.42	22.00	3 GA.	29.00	24.00	2.00	2.00	12.00	1.75	48.00	22.25	19.00	9.50	2.25	1.25	0.313	8.00
	50.00	14.50	7.50	3 GA.	17.00	13.92	22.00	0 GA.	29.00	24.00	2.00	2.00	12.00	1.75	48.00	22.75	19.50	9.75	2.25	1.25	0.313	8.50
	55.00	16.00	8.30	3 GA.	18.00	14.92	22.00	0 GA.	31.00	26.00	2.00	2.25	12.00	2.00	48.00	23.75	20.00	10.00	2.25	1.25	0.313	8.75
	60.00	16.00	8.00	0 GA.	19.50	16.42	22.00	0 GA.	31.00	26.00	2.00	2.25	14.00	2.00	48.00	25.75	22.00	11.00	2.50	1.50	0.313	7.50

NOTE:
DETAILS FROM MASSDOT STANDARD DRAWINGS (2015)

MassDOT Highway Division

STANDARD DRAWINGS

OVERHEAD SIGNAL STRUCTURE & FOUNDATION MAST ARM DETAILS

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION
10 PARK PLAZA BOSTON, MASS

DECEMBER, 2015

TOWN OF MAYNARD PLANNING BOARD APPROVAL

SIGNATURE DATE

SIGNATURE DATE

Approved plans - see cover sheet for Planning Board signatures.

SIGNATURE DATE

SIGNATURE DATE

SIGNATURE DATE

PROJECT: PARKER STREET (ROUTE 27)

DESIGN SUBMISSION: FINAL DESIGN

DRAWING TITLE: TRAFFIC DETAILS NO. 2

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

SCALE: NOT TO SCALE	DESIGNED BY: JG	
DATE: 8/14/17	DRAWN BY: JG	SHEET NO. 27 OF 43
PROJECT NO. 16033.01X	CHECKED BY: JS	

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PIER FOUNDATIONS FOR 110 MPH WIND SPEED ZONE

SOIL TYPE	15' & 20' MAST ARMS				25' & 30' MAST ARMS				35' & 40' MAST ARMS				45' & 50' MAST ARMS				55' & 60' MAST ARMS			
	DIAMETER	DEPTH	VERT. BARS	TIE BARS	DIAMETER	DEPTH	VERT. BARS	TIE BARS	DIAMETER	DEPTH	VERT. BARS	TIE BARS	DIAMETER	DEPTH	VERT. BARS	TIE BARS	DIAMETER	DEPTH	VERT. BARS	TIE BARS
DRY SAND (LOOSE)	3'-6"	8'-6"	18-#8	#5 @ 12"	3'-6"	9'-0"	18-#8	#5 @ 12"	3'-6"	11'-6"	18-#8	#5 @ 9"	4'-0"	12'-0"	18-#9	#5 @ 9"	4'-6"	13'-0"	18-#10	#5 @ 6"
DRY SAND (DENSE)	3'-6"	7'-6"	18-#8	#5 @ 12"	3'-6"	7'-6"	18-#8	#5 @ 12"	3'-6"	8'-6"	18-#8	#5 @ 9"	4'-0"	9'-0"	18-#9	#5 @ 9"	4'-6"	9'-6"	18-#10	#5 @ 6"
WET SAND (LOOSE)	3'-6"	9'-6"	18-#8	#5 @ 12"	3'-6"	11'-6"	18-#8	#5 @ 12"	3'-6"	14'-6"	18-#8	#5 @ 9"	4'-0"	15'-6"	18-#9	#5 @ 9"	4'-6"	16'-6"	18-#10	#5 @ 6"
WET SAND (DENSE)	3'-6"	8'-6"	18-#8	#5 @ 12"	3'-6"	9'-0"	18-#8	#5 @ 12"	3'-6"	10'-6"	18-#8	#5 @ 9"	4'-0"	11'-6"	18-#9	#5 @ 9"	4'-6"	12'-0"	18-#10	#5 @ 6"
CLAY (SOFT TO MEDIUM STIFF)	3'-6"	12'-0"	18-#8	#5 @ 12"	3'-6"	12'-0"	18-#8	#5 @ 12"	3'-6"	13'-0"	18-#8	#5 @ 9"	4'-0"	14'-0"	18-#9	#5 @ 9"	4'-6"	15'-6"	18-#10	#5 @ 6"
CLAY (STIFF)	3'-6"	10'-6"	18-#8	#5 @ 12"	3'-6"	10'-6"	18-#8	#5 @ 12"	3'-6"	11'-0"	18-#8	#5 @ 9"	4'-0"	12'-0"	18-#9	#5 @ 9"	4'-6"	13'-6"	18-#10	#5 @ 6"

PIER FOUNDATIONS FOR 130 MPH WIND SPEED ZONE

SOIL TYPE	15' & 20' MAST ARMS				25' & 30' MAST ARMS				35' & 40' MAST ARMS				45' & 50' MAST ARMS				55' & 60' MAST ARMS			
	DIAMETER	DEPTH	VERT. BARS	TIE BARS	DIAMETER	DEPTH	VERT. BARS	TIE BARS	DIAMETER	DEPTH	VERT. BARS	TIE BARS	DIAMETER	DEPTH	VERT. BARS	TIE BARS	DIAMETER	DEPTH	VERT. BARS	TIE BARS
DRY SAND (LOOSE)	3'-6"	10'-0"	18-#8	#5 @ 12"	3'-6"	10'-6"	18-#8	#5 @ 12"	3'-6"	13'-6"	18-#8	#5 @ 8"	4'-0"	14'-6"	18-#9	#5 @ 6"	4'-6"	15'-6"	18-#10	#5 @ 5"
DRY SAND (DENSE)	3'-6"	8'-6"	18-#8	#5 @ 12"	3'-6"	9'-0"	18-#8	#5 @ 12"	3'-6"	10'-0"	18-#8	#5 @ 8"	4'-0"	11'-0"	18-#9	#5 @ 6"	4'-6"	11'-6"	18-#10	#5 @ 5"
WET SAND (LOOSE)	3'-6"	11'-6"	18-#8	#5 @ 12"	3'-6"	13'-6"	18-#8	#5 @ 12"	3'-6"	17'-0"	18-#8	#5 @ 8"	4'-0"	18'-6"	18-#9	#5 @ 6"	4'-6"	19'-6"	18-#10	#5 @ 5"
WET SAND (DENSE)	3'-6"	10'-0"	18-#8	#5 @ 12"	3'-6"	10'-0"	18-#8	#5 @ 12"	3'-6"	12'-6"	18-#8	#5 @ 8"	4'-0"	13'-6"	18-#9	#5 @ 6"	4'-6"	14'-6"	18-#10	#5 @ 5"
CLAY (SOFT TO MEDIUM STIFF)	3'-6"	12'-6"	18-#8	#5 @ 12"	3'-6"	13'-0"	18-#8	#5 @ 12"	3'-6"	14'-0"	18-#8	#5 @ 8"	4'-0"	16'-0"	18-#9	#5 @ 6"	4'-6"	17'-6"	18-#10	#5 @ 5"
CLAY (STIFF)	3'-6"	11'-0"	18-#8	#5 @ 12"	3'-6"	11'-0"	18-#8	#5 @ 12"	3'-6"	12'-0"	18-#8	#5 @ 8"	4'-0"	13'-0"	18-#9	#5 @ 6"	4'-6"	14'-0"	18-#10	#5 @ 5"

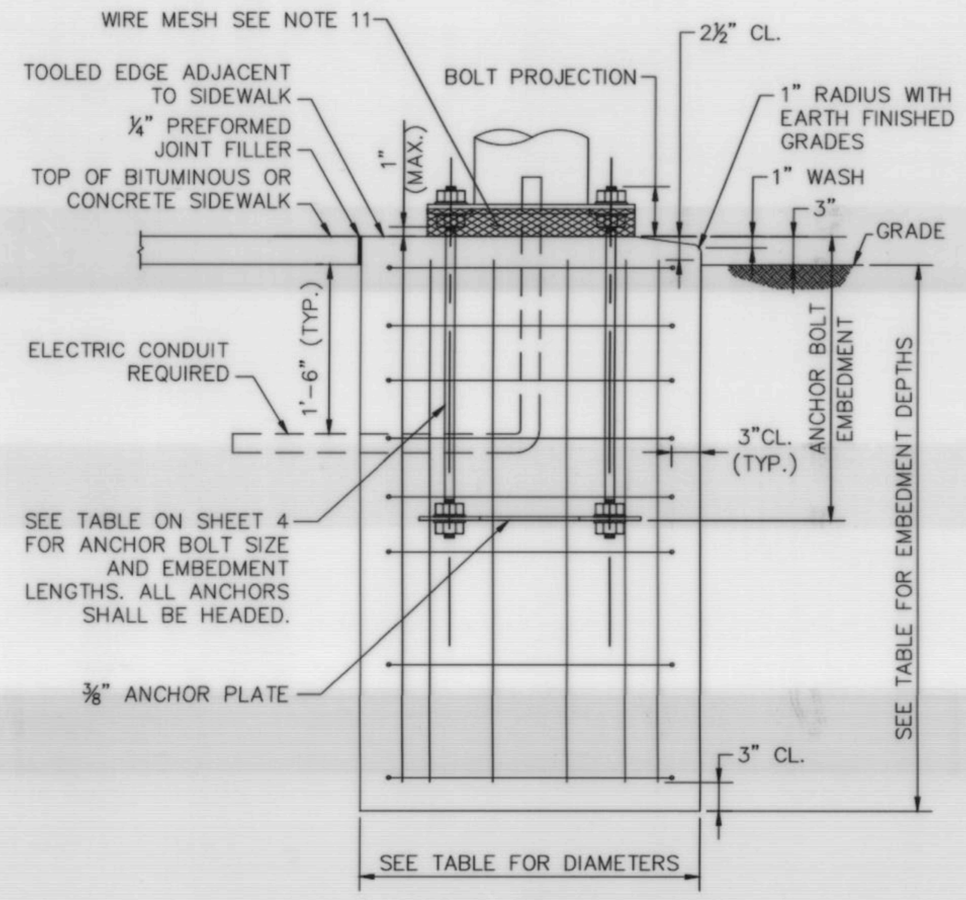
BASIS OF DESIGN

ALL MAST ARM STRUCTURES AND FOUNDATIONS ARE DESIGNED IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, SIXTH EDITION 2013, AND THE FOLLOWING PARAMETERS:

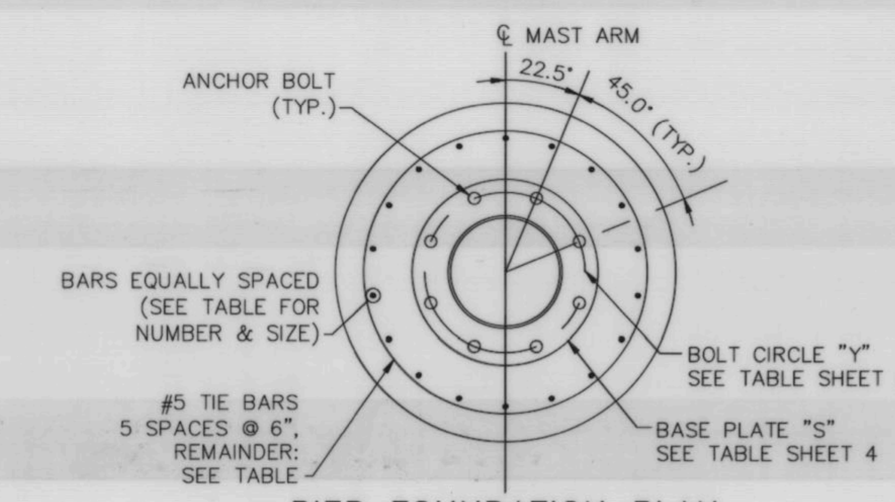
OVERTURNING DESIGN	FOUNDATIONS ARE SIZED TO RESIST OVERTURNING ACCORDING TO BROMS' DESIGN METHOD WITH A SAFETY FACTOR THAT INCLUDES AN OVERLOAD FACTOR OF 2.0 AND A SOIL UNDERSTRENGTH FACTOR OF 0.7.		
SOIL PARAMETERS		UNIT WEIGHT	FRICTION ANGLE
	LOOSE DRY SAND:	γ = 102 PCF	ϕ = 33°
	DENSE DRY SAND:	γ = 116 PCF	ϕ = 39°
	LOOSE WET SAND:	γ = 125 PCF	ϕ = 33°
	DENSE WET SAND:	γ = 135 PCF	ϕ = 39°
		UNIT WEIGHT	SHEAR STRENGTH
	SOFT TO MEDIUM STIFF CLAY:	γ = 113 PCF	S_U = 1.0 KSF
	STIFF CLAY:	γ = 120 PCF	S_U = 1.9 KSF
DEFLECTION LIMITS	MAXIMUM LATERAL DEFLECTION AT TOP OF MAST ARM FOUNDATION SHAFTS: ½"		

NOTES:

1. FOUNDATIONS SHALL BE 4000 PSI, 565 MASSDOT APPROVED MIX DESIGN.
2. FOUNDATIONS SHALL BE INSTALLED IN ACCORDANCE WITH MASSDOT STANDARD SPECIFICATIONS ITEM 945 – DRILLED SHAFTS
3. REINFORCEMENT SHALL BE ASTM A615 GRADE 60.
4. ANCHOR BOLTS SHALL BE SET BY TEMPLATE.
5. PROVIDE FOR ELECTRICAL CONDUIT.
6. EXCAVATION SHALL BE BY THE AUGER METHOD TO THE NEAT LINES OF THE OUTSIDE DIMENSION OF THE FOUNDATIONS WITHOUT DISTURBING THE SOIL AROUND AND BELOW THE PROPOSED FOUNDATION BOTTOM. ALTERNATE METHODS OF EXCAVATION MAY BE SUBMITTED TO MASSDOT FOR APPROVAL IF THEY MEET THE REQUIREMENTS LISTED IN NOTES 6, 7, AND 8.
7. THE EARTH WALLS OF THE FOUNDATION SHALL BE ADEQUATELY AND SECURELY PROTECTED AT ALL TIMES AGAINST CAVE-INS, DISPLACEMENT OF THE SURROUNDING EARTH AND FOR THE EXCLUSION OF GROUND WATER. THIS MAY BE DONE BY THE USE OF STEEL CYLINDER LINERS OR CASINGS THAT ARE APPROVED BY MASSDOT. IF LINERS ARE USED THEY MAY BE RECLAIMED PROVIDED THAT THEY ARE WITHDRAWN AS THE CONCRETE IS BEING PLACED, MAINTAINING A SUFFICIENT HEAD OF CONCRETE WITHIN THE LINER TO PREVENT REDUCTION IN THE FOUNDATION DIAMETER AND TO PREVENT EXTRANEOUS MATERIAL FROM FALLING IN FROM THE SIDES AND MIXING WITH THE CONCRETE.
8. IF THE SOIL IS DISTURBED OR REMOVED BEYOND THE NEAT LINES OF THE OUTSIDE DIMENSION OF THE FOUNDATION, IT SHALL BE REPLACED WITH CONCRETE. ANY ADDITIONAL COST FOR THE CONCRETE SHALL BE PAID FOR BY THE CONTRACTOR.
9. SPECIAL CARE SHOULD BE GIVEN TO AREAS WHERE WET SOIL IS ENCOUNTERED, TO INSURE THAT THE PREAUGERED HOLE DOES NOT COLLAPSE. THIS MAY REQUIRE THE USE OF STEEL CYLINDER LINERS OR CASINGS TO HOLD THE SOIL IN PLACE UNTIL READY FOR CONCRETE PLACEMENT, UPON APPROVAL FROM THE MASSDOT. THE STEEL CYLINDERS OR CASINGS SHALL BE WITHDRAWN AS THE FOUNDATION CONCRETE IS PLACED.
10. IF LEDGE OR UNSUITABLE SOIL IS ENCOUNTERED (i.e. ONE WHICH DOES NOT APPLY TO THE DESIGN TABLES SHOWN ON THIS SHEET), AN ALTERNATIVE DESIGN SHALL BE PROVIDED BY THE DESIGN ENGINEER. IF UTILITIES OR OTHER UNDERGROUND OBSTRUCTIONS ARE ENCOUNTERED, THE CONTRACTOR SHALL BACKFILL THE AREA TO ITS ORIGINAL CONDITION UNTIL AN ALTERNATE DESIGN HAS BEEN PROVIDED BY THE DESIGN ENGINEER AND APPROVED BY MASSDOT. SPECIAL FOUNDATIONS SHALL BE DESIGNED IN ACCORDANCE WITH BASIS OF DESIGN TABLE ABOVE.
11. A GALVANIZED WIRE MESH SCREEN SHALL BE INSTALLED AT BASE OF POLE. SCREEN SHALL BE PRESS-FORMED OF 3 OR 4 MESH, 21 GAGE OR HEAVIER, STAINLESS STEEL OR HOT DIPPED GALVANIZED WIRE SCREEN OR APPROVED EQUIVALENT. SCREEN SHALL BE SCREWED INTO POLE BASE PLATE, AND SHALL BE FLUSH WITH THE TOP OF THE PIER FOUNDATION.
12. SANDY SOILS WITH STANDARD PENETRATION VALUES GREATER THAN 20 BLOWS PER FOOT SHALL BE CLASSIFIED AS DENSE DRY SAND AND DENSE WET SAND. SANDY SOILS WITH STANDARD PENETRATION VALUES RANGING FROM 6 TO 20 BLOWS PER FOOT SHALL BE CLASSIFIED LOOSE DRY SAND AND LOOSE WET SAND. SANDY SOILS WITH FEWER THAN 6 BLOWS PER FOOT SHALL REQUIRE SPECIAL FOUNDATION DESIGNS BY THE DESIGN ENGINEER AND APPROVED BY MASSDOT. SPECIAL FOUNDATIONS SHALL BE DESIGNED IN ACCORDANCE WITH BASIS OF DESIGN TABLE ABOVE.
13. CLAYS WITH STANDARD PENETRATION VALUES GREATER THAN 6 BLOWS PER FOOT SHALL BE CLASSIFIED AS STIFF CLAY. CLAYS WITH STANDARD PENETRATION VALUES RANGING FROM 2 TO 6 BLOWS PER FOOT SHALL BE CLASSIFIED AS SOFT TO MEDIUM STIFF CLAY. CLAYS WITH FEWER THAN 2 BLOWS PER FOOT SHALL REQUIRE SPECIAL FOUNDATION DESIGNS BY THE DESIGN ENGINEER AND APPROVED BY MASSDOT. SPECIAL FOUNDATIONS SHALL BE DESIGNED IN ACCORDANCE WITH BASIS OF DESIGN TABLE ABOVE.
14. A SANDY SOIL SHALL ONLY BE CLASSIFIED AS 'DRY' IF THE ENTIRE DRY SAND SHAFT LENGTH SITS ABOVE WET SOILS ACCORDING TO THE BORING LOGS. IF ANY PART OF THE SHAFT LENGTH IS CAST AT OR BELOW THE GROUNDWATER LEVEL, THE SOIL SHALL BE CLASSIFIED AS 'WET'.
15. WHERE THE PREDOMINATING SOIL TYPE IS INORGANIC SILT, THE SOIL SHOULD BE TREATED AS CLAY OR WET LOOSE SAND, WHICHEVER LEADS TO A MORE CONSERVATIVE FOUNDATION. INORGANIC SILTS WITH STANDARD PENETRATION N-VALUES LESS THAN 2 BLOWS PER FOOT, ORGANIC SILTS, AND PEAT SHALL REQUIRE SPECIAL FOUNDATION DESIGNS BY THE DESIGN ENGINEER AND APPROVED BY MASSDOT. SPECIAL FOUNDATIONS SHALL BE DESIGNED IN ACCORDANCE WITH BASIS OF DESIGN TABLE ABOVE.
16. WHERE FILL CONTAINS CLAY OR SILT, IT SHOULD BE TREATED AS SOFT CLAY.
17. MAST ARM FOUNDATIONS ARE DESIGNED TO SUPPORT MAST ARMS WITH OR WITHOUT OPTIONAL LUMINAIRE.
18. CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT FOUNDATION DIAMETER IS AT LEAST 17.5" GREATER THAN BOLT CIRCLE DIAMETER FOR ALL STRUCTURES
19. IN ORDER TO CREATE A FLUSH SURFACE, CONTRACTOR SHALL REFER TO THE FINAL ELEVATIONS SHOWN ON THE DESIGN PLANS WHEN INSTALLING FOUNDATIONS IMMEDIATELY ADJACENT TO OR WITHIN A SIDEWALK AREA.



PIER FOUNDATION DETAIL
NO SCALE



PIER FOUNDATION PLAN
NO SCALE

NOTE:

DETAILS FROM MASSDOT STANDARD DRAWINGS (2015)

massDOT
STANDARD DRAWINGS
OVERHEAD SIGNAL STRUCTURE & FOUNDATION
MAST ARM CORED PIER FOUNDATIONS
MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION
10 PARK PLAZA BOSTON, MASS
DECEMBER, 2015

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE

Approved plans - see cover sheet for Planning Board signatures.

PROJECT: PARKER STREET (ROUTE 27)

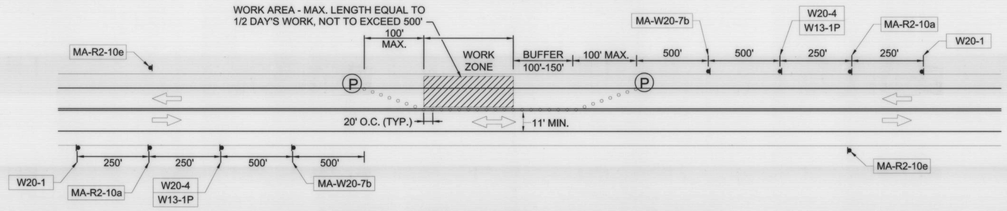
DESIGN SUBMISSION: FINAL DESIGN

DRAWING TITLE: TRAFFIC DETAILS NO. 3

PREPARED FOR: CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

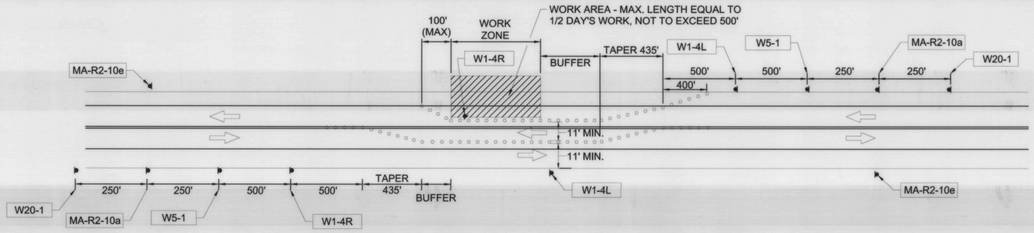
PREPARED BY: GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

SCALE: NOT TO SCALE	DESIGNED BY: JG	SHEET NO.
DATE: 8/14/17	DRAWN BY: JG	28 OF 43
PROJECT NO. 16033.01X	CHECKED BY: JS	



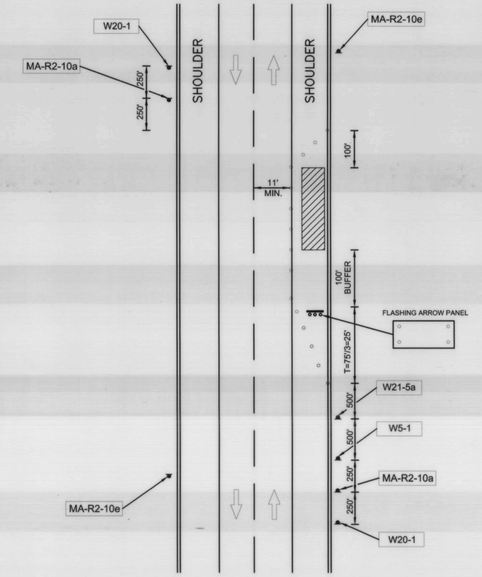
TYPICAL APPLICATION - TWO LANE ROAD
ONE LANE ALTERNATING TRAFFIC

NOT TO SCALE



TYPICAL APPLICATION - TWO LANE ROAD
SHOULDER AND PARTIAL TRAVEL LANE CLOSURE

NOT TO SCALE



TYPICAL APPLICATION: WORK WITHIN SHOULDERS
NOTE: THIS TEMPLATE IS FOR NON-ENCROACHMENT IN TRAVEL LANE

TYPICAL TRAFFIC MANAGEMENT PLAN
FOR TWO-WAY ROAD, SHOULDER CLOSURE ONLY

NOT TO SCALE

LEGEND

- SIGN
- REFLECTORIZED DRUM
- POLICE DETAIL
- WORK AREA
- TRAFFIC FLOW DIRECTION
- TYPE III BARRICADE
- ARROW BOARD

TEMPORARY TRAFFIC CONTROL NOTES:

1. MINIMUM LANE WIDTH OF 11 FEET SHALL BE MAINTAINED ALL THE TIME.
2. THESE PLANS ARE NOT INTENDED TO LIMIT THE CONTRACTOR'S APPROACH TO SCHEDULE THE WORK BUT TO OUTLINE ONE WAY OF PROGRESSING. THE CONTRACTOR IS EXPECTED TO USE KNOWLEDGE AND EXPERIENCE TO PERFORM THE WORK IN THE MOST EFFICIENT AND SAFE MANNER IN COMPLIANCE WITH THE DRAWINGS AND SPECIFICATIONS.
3. PLACE ALL SAFETY DEVICES AND CONSTRUCTION SIGNING BEFORE ACTUAL CONSTRUCTION WORK BEGINS.
4. DISTANCES ARE A GUIDE AND MAY BE ADJUSTED BASED ON FIELD CONDITIONS WITH THE APPROVAL OF THE ENGINEER.
5. EXISTING SIGNS NO LONGER APPLICABLE SHALL BE TEMPORARILY COVERED DURING CONSTRUCTION OR REMOVED AND RESET UPON COMPLETION OF CONSTRUCTION. THE COST SHALL BE INCIDENTAL TO THE CONTRACTOR.
6. SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY MUST PASS THE CRITERIA SET FORTH IN THE NCHRP 350 REPORT.
7. TEMPORARY PAVEMENT MARKINGS, NO LONGER APPLICABLE, SHALL BE REMOVED. CONTRACTOR SHALL RECORD EXISTING PAVEMENT MARKINGS AND RESTORE ALL MARKINGS TO EXISTING CONDITIONS AT THE CONCLUSION OF CONSTRUCTION AT EACH LOCATION.
8. ALL TRAFFIC CONTROL DEVICES SHALL BE REMOVED IMMEDIATELY WHEN NO LONGER NEEDED.
9. UNLESS OTHERWISE NOTED, ALL PAVEMENT MARKINGS, SIGNS AND OTHER TRAFFIC EQUIPMENT REMOVED OR DAMAGED AS A RESULT OF THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED IN CONFORMANCE WITH THE CONTACT DOCUMENTS.
10. CONTRACTOR SHALL INSTALL, RENEW AND MAINTAIN ALL TRAFFIC CONTROL DEVICES AS SHOWN ON THE DRAWINGS IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
11. ACCESS/EGRESS TO ALL ABUTTERS SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION. CONTRACTOR SHALL MAINTAIN EMERGENCY PASSAGE AT ALL TIMES TO BUILDINGS WITHIN AND ADJACENT TO THE PROJECT LIMITS AS WELL AS A LARGER AREA IF AFFECTED BY CONSTRUCTION CONDITIONS. CONTRACTOR SHALL MAINTAIN 24 HOUR EMERGENCY VEHICLE ACCESS TO CONSTRUCTION AREAS.
14. CONTRACTOR SHALL COORDINATE WITH ABUTTERS FOR THE PROPOSED WORK AND SHALL NOTIFY EACH ABUTTER AT LEAST 24 HOURS IN ADVANCE OF THE START OF THE WORK THAT WILL REQUIRE TEMPORARY CLOSURE OF ACCESS TO THEIR PROPERTY.
15. THE CONTRACTOR SHALL COORDINATE THE WORK WITH ALL ABUTTING PROJECTS.
16. RESIDENTS AND COMMERCIAL PROPERTY OWNERS ALONG PARKER STREET AND OLD MARLBORO ROAD SHALL BE NOTIFIED OF ROADWAY CONSTRUCTION. ROADWAY CONSTRUCTION SHALL NOT TAKE PLACE DURING THE PEAK HOURS (MON-FRI: 7AM-9AM; 4PM-6PM) ALONG THE EAST SIDE OF PARKER STREET, IN FRONT OF #141 PARKER STREET, AND ON OLD MARLBORO ROAD.

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE	DATE
SIGNATURE	DATE
Approved plans - see cover sheet for Planning Board signatures.	
SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE

PROJECT:
PARKER STREET (ROUTE 27)

DESIGN SUBMISSION:
FINAL DESIGN

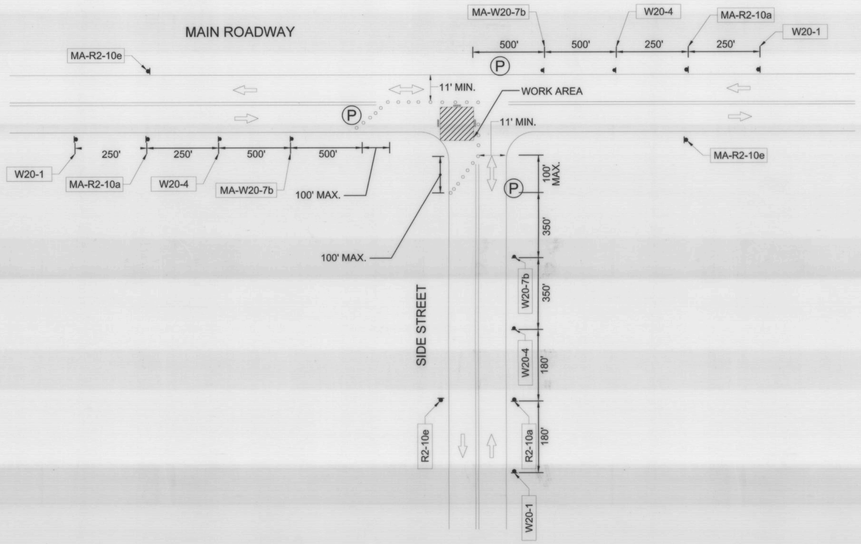
DRAWING TITLE:
TRAFFIC MANAGEMENT PLAN 1

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

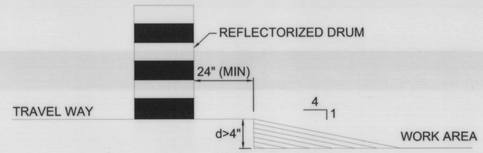
SCALE: AS NOTED	DESIGNED BY: SM	SHEET NO.
DATE: 8/14/17	DRAWN BY: SM	29 OF 43
PROJECT NO. 15104.035	CHECKED BY: JM	

E:\Phoenix\2015\15104\document Design\parker Street Route 27 Maynard, Traffic Management Sheets.dwg Printed: 7/28/2017 10:18 AM



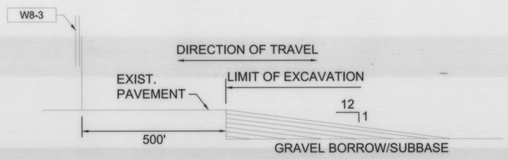
NOTE:
USE SIMILAR TRAFFIC SETUP FOR WORK AT OPPOSITE SIDE OF INTERSECTION.

TYPICAL APPLICATION - SINGLE LANE APPROACH, ONE QUADRANT CLOSURE AT THREE-LEGGED INTERSECTION



LATERAL DROP-OFF DETAIL

NOT TO SCALE



LONGITUDINAL DROP-OFF DETAIL

NOT TO SCALE

TOWN OF MAYNARD PLANNING BOARD APPROVAL

SIGNATURE		DATE
SIGNATURE	Approved plans - see cover sheet for Planning Board signatures.	DATE
SIGNATURE		DATE
SIGNATURE		DATE
SIGNATURE		DATE

PROJECT:
PARKER STREET (ROUTE 27)

DESIGN SUBMISSION:
FINAL DESIGN

DRAWING TITLE:
TRAFFIC MANAGEMENT PLAN 2

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

SCALE: AS NOTED	DESIGNED BY: SM	SHEET NO
DATE: 8/14/17	DRAWN BY: SM	30 OF 43
PROJECT NO. 15104.035	CHECKED BY: JM	

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CONSTRUCTION SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN (INCHES) WIDTH	HEIGHT	TEXT	TEXT DIMENSIONS (INCHES) LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.	COLOR BACK-GROUND	LEGEND	BORDER	POST SIZE AND NUMBER REQUIRED	NUMBER OF SIGNS REQUIRED	UNIT AREA (S.F.)	TOTAL AREA (S.F.)
MA-R2-10a	48	36	WORK ZONE SPEEDING FINES DOUBLED	SEE MASSDOT STANDARD DETAIL			SEE MASSDOT STD. DETAIL			MASSDOT SPEC. MOUNT ON POST	5	12.00	60.00
MA-R2-10e	36	48	END ROAD WORK / DOUBLE FINES END								5	12.00	60.00
MA-W20-7b	36	36	POLICE OFFICER AHEAD								5	9.00	45.00
W1-4L	36	36		SEE MUTCD STANDARD DETAIL			SEE MUTCD STD. DETAIL			MUTCD SPEC. MOUNT ON POST	2	9.00	18.00
W1-4R	36	36									2	9.00	18.00
W5-1	36	36	ROAD NARROWS								3	9.00	27.00
W8-3	36	36	PAVEMENT ENDS								2	9.00	18.00
W13-1P	24	24	25 M.P.H.								2	4.00	8.00
W20-1	36	36	ROAD WORK AHEAD								5	9.00	45.00
W20-4	36	36	ONE LANE ROAD AHEAD								5	9.00	45.00
W21-5a	36	36	SHOULDER WORK								1	9.00	9.00
													353.00

NOTES:

- SEE THE 2009 "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ITS REVISIONS, THE 2012 MASSACHUSETTS AMENDMENTS TO THE 2009 MUTCD, AND THE STANDARD MUNICIPAL TRAFFIC CODE FOR LATEST SPECIFICATION ON TEXT, DIMENSIONS AND COLOR. ALSO REFER TO 2006 MASSACHUSETTS HIGHWAY DEPARTMENT (MHD) SUPPLEMENTAL SPECIFICATIONS TO THE 1995 STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES (METRIC EDITION) SUBSECTION M9.30.0.
- UNLESS OTHERWISE NOTED, ALL POSTS TO BE P-5.

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE DATE
SIGNATURE DATE
SIGNATURE DATE
SIGNATURE DATE
SIGNATURE DATE

Approved plans - see cover sheet for Planning Board signatures.

PROJECT: PARKER STREET (ROUTE 27)

DESIGN SUBMISSION: FINAL DESIGN

DRAWING TITLE: TRAFFIC MANAGEMENT PLAN 3

PREPARED FOR: CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers
Westford, Massachusetts
(978) 923-0400
GreenIntl.com

SCALE: AS NOTED
DATE: 8/14/17
PROJECT NO. 15104.035
DESIGNED BY: SM
DRAWN BY: SM
CHECKED BY: JM
SHEET NO. 31 OF 43

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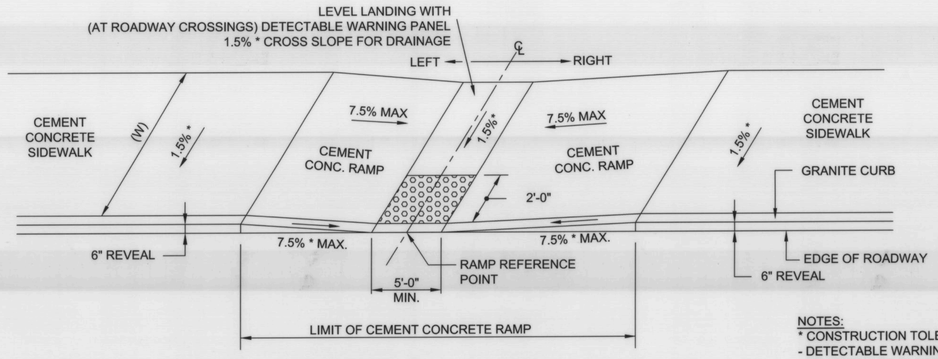
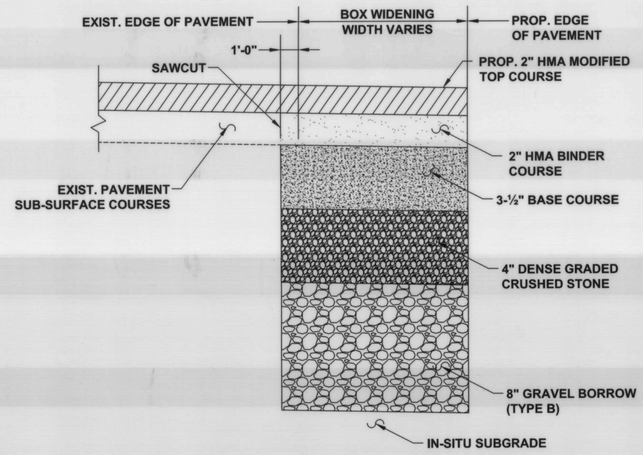


CURB CUT RAMP (NARROW SIDEWALK) DETAIL E 107.2.1

NOT TO SCALE

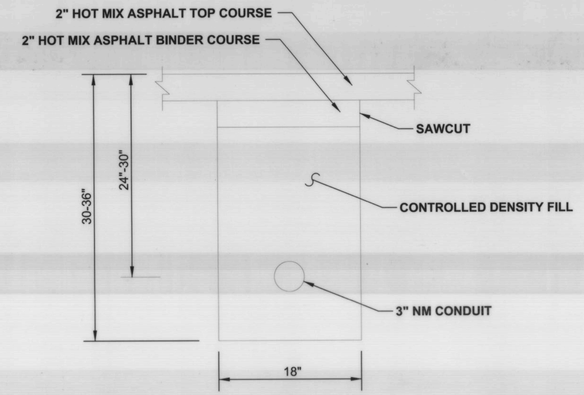
NOTES:
* CONSTRUCTION TOLERANCE ± 0.5%
- DETECTABLE WARNING PANELS SHALL BE INSTALLED IN ACCORDANCE WITH CONSTRUCTION STD E 107.6.5

WCR #	BASELINE	RAMP REFERENCE POINT		WIDTH OF RAMP (FT.)	WIDTH OF SIDEWALK (W) (FT.)	ROADWAY GUTTER SLOPE	TRANSITION LENGTH	
		STATION	OFFSET				LEFT SIDE	RIGHT SIDE
1	PARKER ST	02+94.08	13.35 LT	5'-0"	5'-6"	-0.40%	3'-10"	6'-6"
2	PARKER ST	02+94.08	13.60 RT	5'-0"	5'-0"	-0.40%	-	7'-8"
5	PARKER ST	08+38.69	45.41 LT	5'-0"	5'-0"	1.00%	6'-6"	7'-8"
6	PARKER ST	09+39.22	45.43 LT	5'-0"	5'-0"	1.00%	6'-6"	9'-0"
7	PARKER ST	09+38.07	17.75 RT	5'-0"	5'-0"	0.75%	7'-8"	-
12	PARKER ST	14+99.72	40.55 LT	5'-0"	5'-0"	1.50%	-	9'-0"



BOX WIDENING DETAIL (≥ 4'0")

NOT TO SCALE



CONDUIT DETAIL FOR ROADWAY CROSSING

NOT TO SCALE

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE DATE
SIGNATURE DATE
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SIGNATURE DATE
SIGNATURE DATE

Approved plans - see cover sheet for Planning Board signatures.

PROJECT: PARKER STREET (ROUTE 27)

DESIGN SUBMISSION: FINAL DESIGN

DRAWING TITLE: CONSTRUCTION DETAILS 1

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers
Westford, Massachusetts
(978) 923-0400
GreenIntl.com

SCALE: AS NOTED	DESIGNED BY: DT	
DATE: 8/14/17	DRAWN BY: JG	SHEET NO.
PROJECT NO. 15104.035	CHECKED BY: JM	32 OF 43

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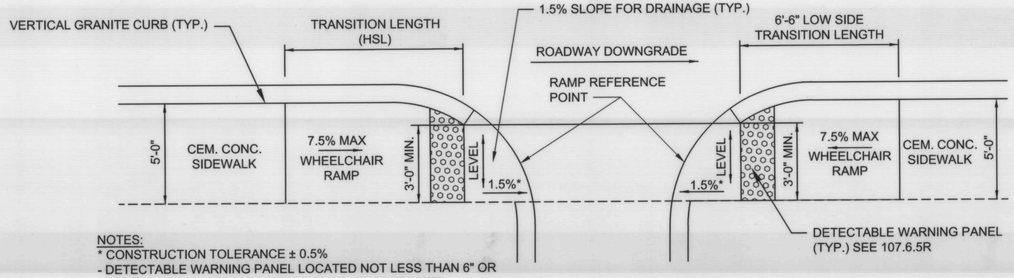
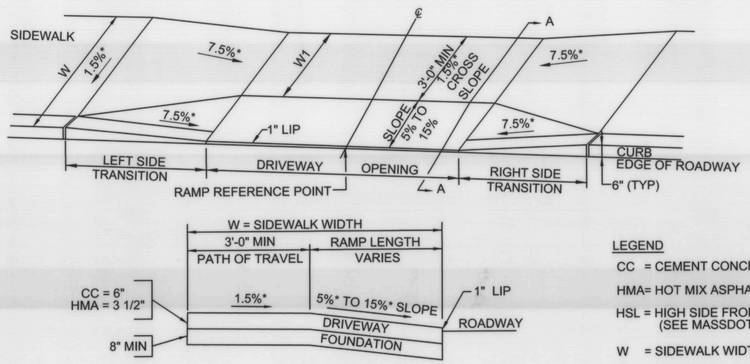


NOTES:
* CONSTRUCTION TOLERANCE ± 0.5%
- DETECTABLE WARNING PANEL LOCATED NOT LESS THAN 6" OR MORE THAN 24" FROM ROADWAY EDGE (GUTTER LINE).
- TRUNCATED DOMES TO BE ALIGNED WITH DIRECTIONS OF TRAVEL.
- DETECTABLE WARNING PANELS SHALL BE INSTALLED IN ACCORDANCE WITH CONSTRUCTION STD E 107.6.5
- ROADWAY, GUTTER, AND FIRST 6" OF SIDEWALK TO BE ADJUSTED FOR FIELD CONDITIONS.

CONTINUOUS DIRECTION OF PEDESTRIAN TRAVEL WCR DETAIL E 107.6.0

NOT TO SCALE

WCR #	BASELINE	RAMP REFERENCE POINT		WIDTH OF RAMP OPENING (FT.)	WIDTH OF SIDEWALK (FT.)	ROADWAY GUTTER SLOPE	TRANSITION LENGTH
		STATION	OFFSET				
3	PARKER ST	05+30.71	20.07 LT	3'-0"	5'-0"	-0.40%	7'-8"
4	PARKER ST	05+69.86	22.62 LT	3'-0"	5'-0"	-0.40%	6'-6"
8	PARKER ST	11+71.28	20.00 RT	3'-0"	5'-0"	0.65%	6'-6"
9	PARKER ST	12+08.12	20.00 RT	3'-0"	5'-0"	0.65%	7'-8"



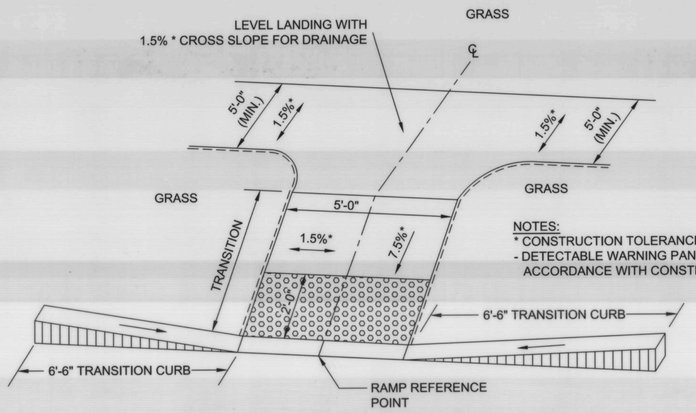
SECTION A-A

LEGEND
CC = CEMENT CONCRETE
HMA= HOT MIX ASPHALT
HSL = HIGH SIDE FRONT TRANSITION LENGTH (SEE MASSDOT STANDARD DRAWING NO. E 107.9.0)
W = SIDEWALK WIDTH
W_1 = LENGTH OF PRIMARY RAMP
Wc = CURB WIDTH
* = TOLERANCE FOR CONSTRUCTION ±0.5%
USABLE SIDEWALK WIDTH PER AAB = W-Wc

CEMENT CONCRETE DRIVEWAYS WITH SIDEWALK

NOT TO SCALE

DRIVEWAY #	BASELINE	REFERENCE POINT DRIVEWAY WITH SIDEWALK		WIDTH OF DRIVEWAY OPENING	WIDTH OF SIDEWALK (W)	LENGTH OF PRIMARY RAMP (W1)	ROADWAY GUTTER SLOPE (%)	LEFT SIDE TRANSITION LENGTH*	RIGHT SIDE TRANSITION LENGTH*
		STATION	OFFSET						
D 1	PARKER ST	9+70.77	17.75 RT	11.38	5.50	3.00	0.75%	7'-8"	6'-6"
D 2	PARKER ST	10+76.96	16.00 RT	11.35	5.50	3.00	0.55%	7'-8"	6'-6"
D 3	PARKER ST	11+42.23	16.00 RT	12.00	5.50	3.00	1.38%	9'-0"	6'-6"

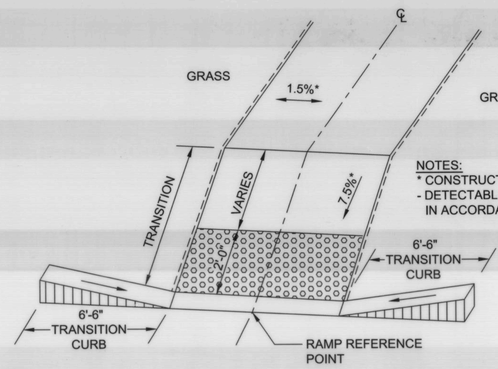


NOTES:
* CONSTRUCTION TOLERANCE ± 0.5%
- DETECTABLE WARNING PANELS SHALL BE INSTALLED IN ACCORDANCE WITH CONSTRUCTION STD E 107.6.5

PERPENDICULAR CURB CUT RAMP FROM LEVEL LANDING TANGENT SECTION

NOT TO SCALE

WCR #	BASELINE	RAMP REFERENCE POINT		WIDTH OF ROAD ACCESS RAMP (FT.)	SIDEWALK TRANSITION LENGTH	CURB TRANSITION LENGTH
		STATION	OFFSET			
10	PARKER ST	14+01.94	16.00 LT	5'-0"	7'-1"	6'-6"



NOTES:
* CONSTRUCTION TOLERANCE ± 0.5%
- DETECTABLE WARNING PANELS SHALL BE INSTALLED IN ACCORDANCE WITH CONSTRUCTION STD E 107.6.5

STRAIGHT-APPROACH PERPENDICULAR CURB CUT RAMP

NOT TO SCALE

WCR #	BASELINE	RAMP REFERENCE POINT		WIDTH OF RAMP (FT.)	WIDTH OF SIDEWALK (FT.)	TRANSITION LENGTH
		STATION	OFFSET			
11	PARKER ST	14+65.19	36.34 LT	5'-0"	5'-0"	6'-6"

TOWN OF MAYNARD PLANNING BOARD APPROVAL

SIGNATURE	DATE
SIGNATURE	DATE
Approved plans - see cover sheet for Planning Board signatures.	
SIGNATURE	DATE
SIGNATURE	DATE
SIGNATURE	DATE

PROJECT: PARKER STREET (ROUTE 27)

DESIGN SUBMISSION: FINAL DESIGN

DRAWING TITLE: CONSTRUCTION DETAILS 2

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers
Westford, Massachusetts
(978) 923-0400
GreenIntl.com

SCALE: AS NOTED	DESIGNED BY: DT	
DATE: 8/14/17	DRAWN BY: JG	SHEET NO.
PROJECT NO. 15104.035	CHECKED BY: JM	33 OF 43

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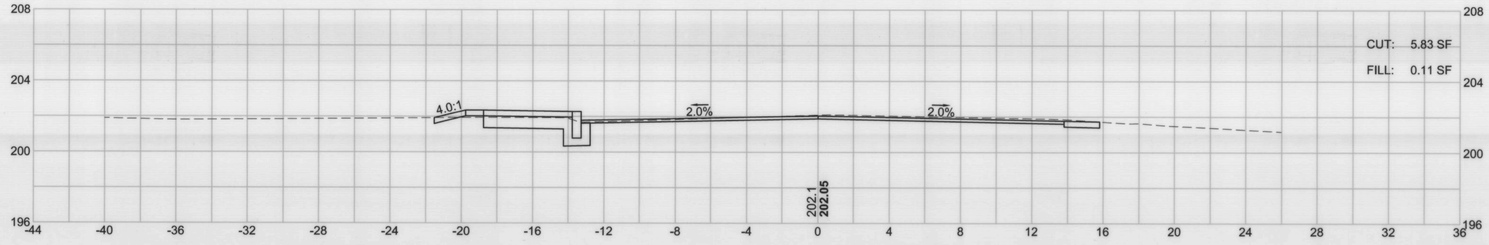

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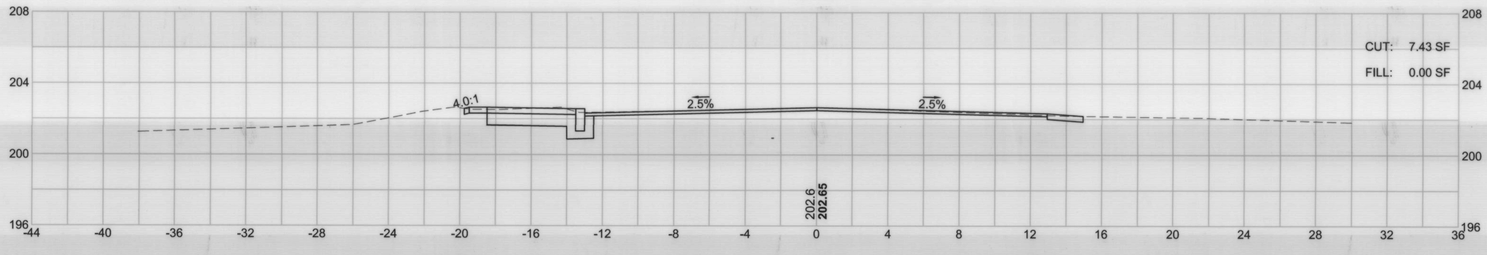

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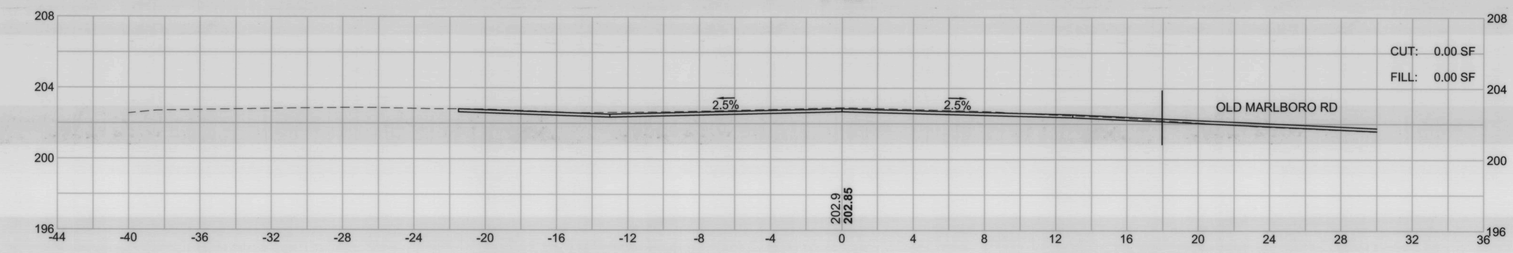

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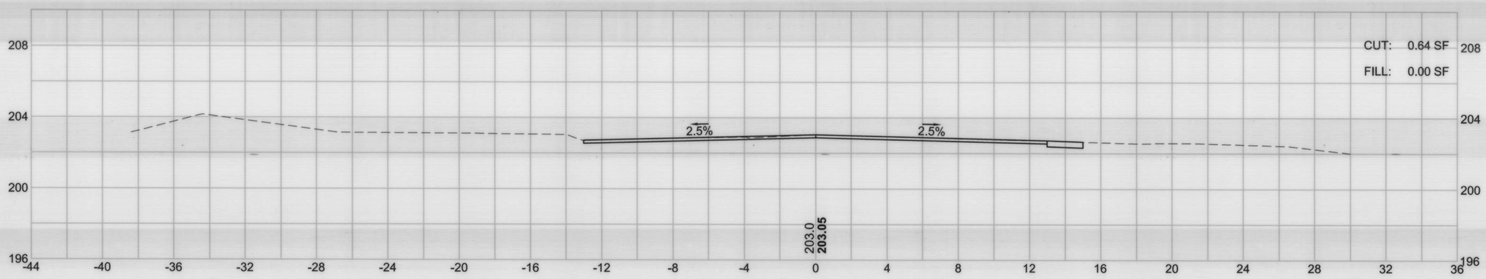

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VER. SCALE IN FEET

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE DATE

SIGNATURE DATE

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SIGNATURE DATE

SIGNATURE DATE

SIGNATURE DATE

PROJECT:
PARKER STREET (ROUTE 27)

DESIGN SUBMISSION:
FINAL DESIGN

DRAWING TITLE:
CROSS SECTIONS 1

PREPARED FOR:
CAPITAL GROUP PROPERTIES

259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:

GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

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DATE: 8/14/17	DRAWN BY: DT	SHEET NO.
PROJECT NO. 15104.035	CHECKED BY: JM	34 OF 43

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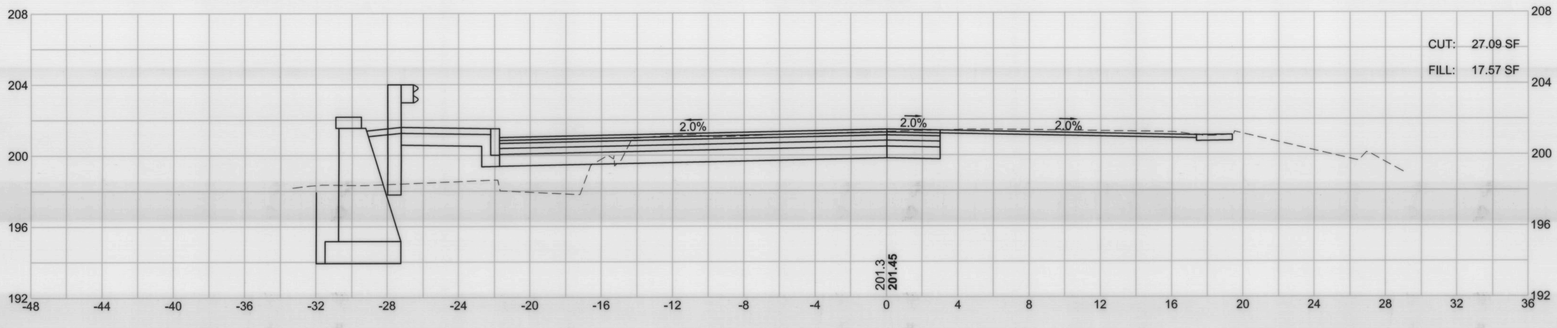

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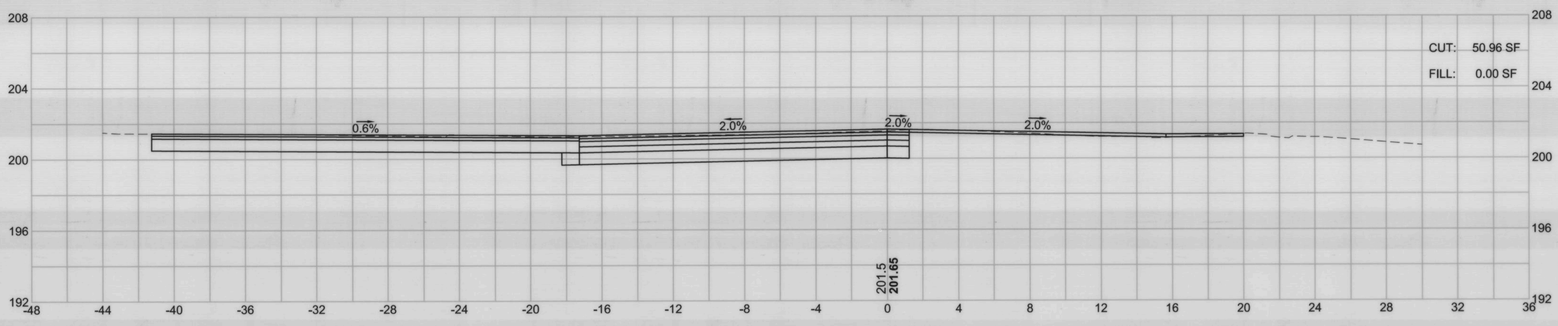

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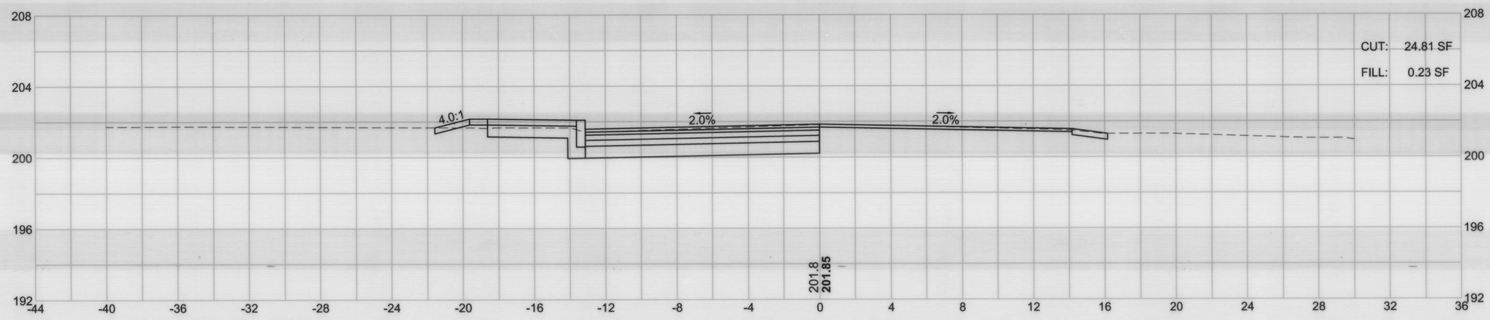

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TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE DATE

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SIGNATURE DATE

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PROJECT:
PARKER STREET (ROUTE 27)

DESIGN SUBMISSION:
FINAL DESIGN

DRAWING TITLE:
CROSS SECTIONS 2

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

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DATE: 8/14/17	DRAWN BY: DT	35 OF 43
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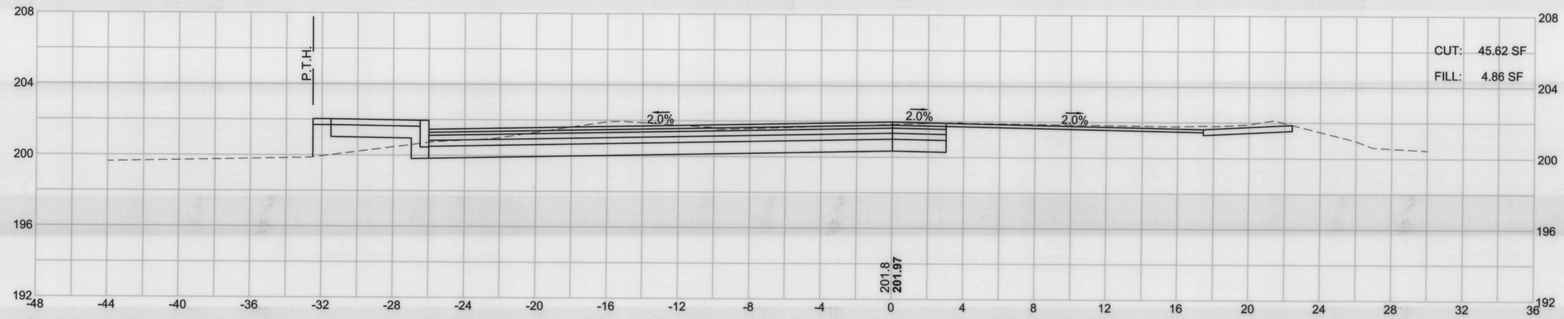

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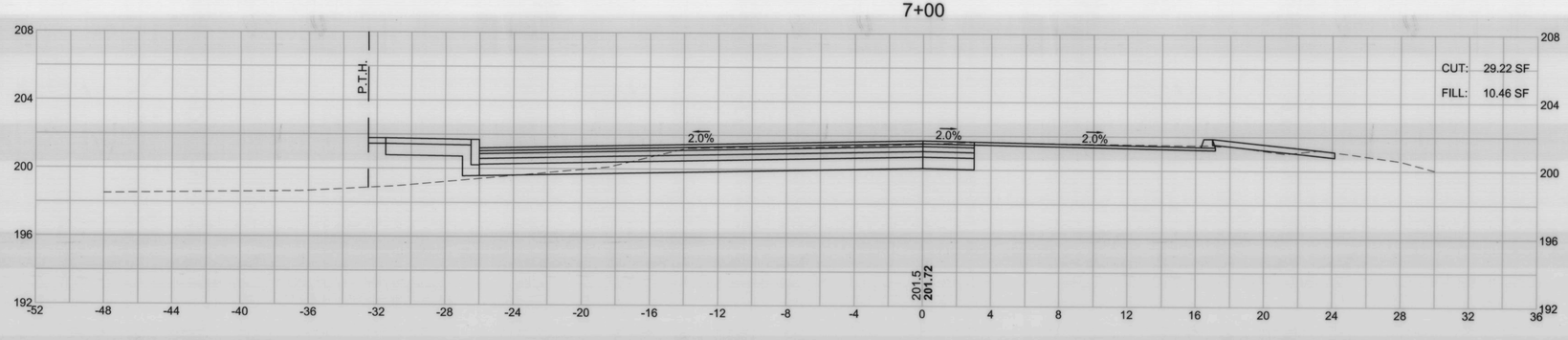

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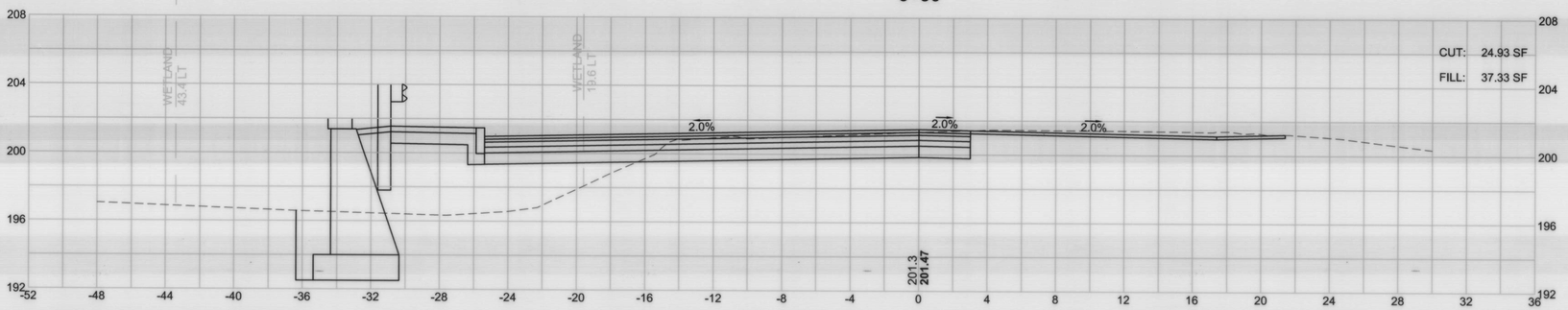

P.T.H. REFLECTS LIMIT OF ROADWAY CONTRACT
FINAL GRADING TO BE COORDINATED WITH
MAYNARD CROSSING SITE DEVELOPMENT

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TOWN OF MAYNARD
PLANNING BOARD APPROVAL

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PROJECT:
PARKER STREET (ROUTE 27)

DESIGN SUBMISSION:
FINAL DESIGN

DRAWING TITLE:
CROSS SECTIONS 3

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

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PROJECT NO. 15104.035	CHECKED BY: JM	

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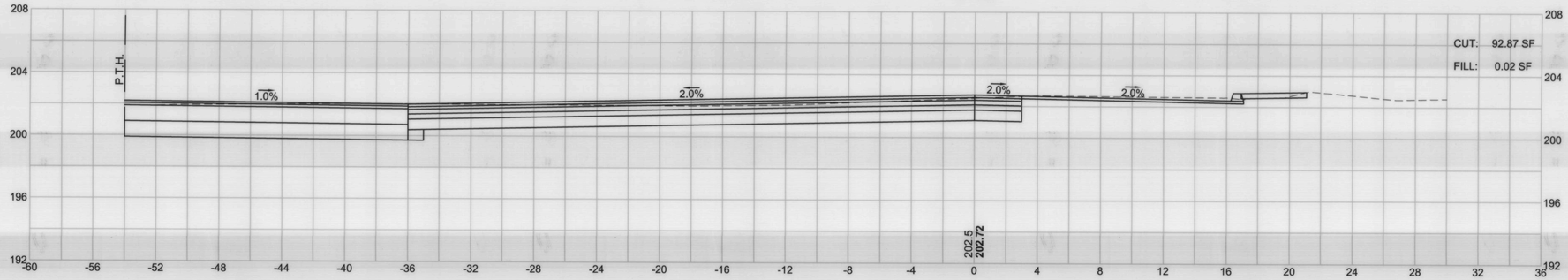

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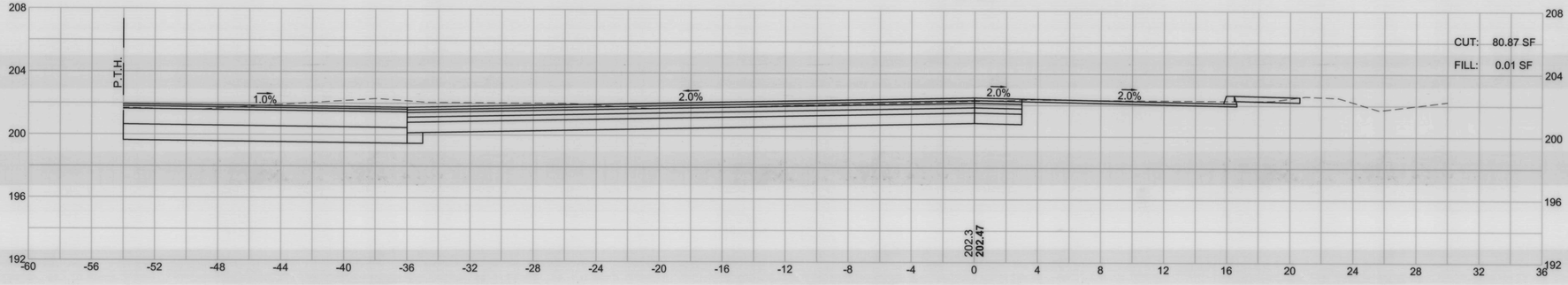

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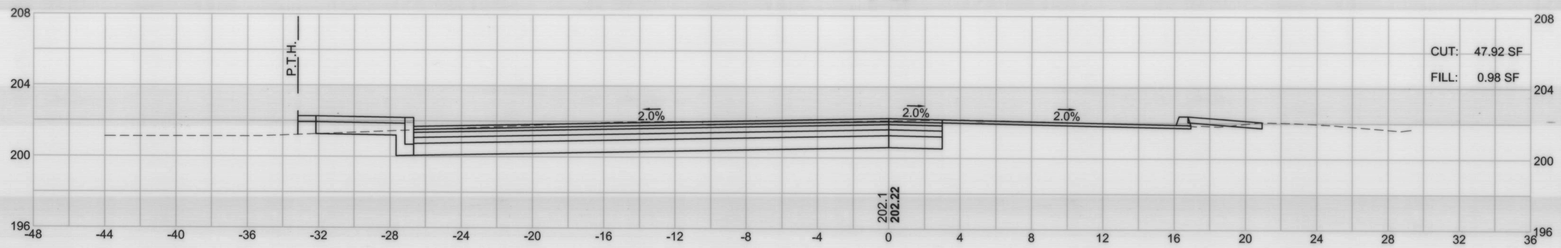

P.T.H. REFLECTS LIMIT OF ROADWAY CONTRACT
FINAL GRADING TO BE COORDINATED WITH
MAYNARD CROSSING SITE DEVELOPMENT

HOR. SCALE IN FEET
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TOWN OF MAYNARD
PLANNING BOARD APPROVAL

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PROJECT:
PARKER STREET (ROUTE 27)

DESIGN SUBMISSION:
FINAL DESIGN

DRAWING TITLE:
CROSS SECTIONS 4

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

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DATE: 8/14/17	DRAWN BY: DT	37 OF 43
PROJECT NO. 15104.035	CHECKED BY: JM	

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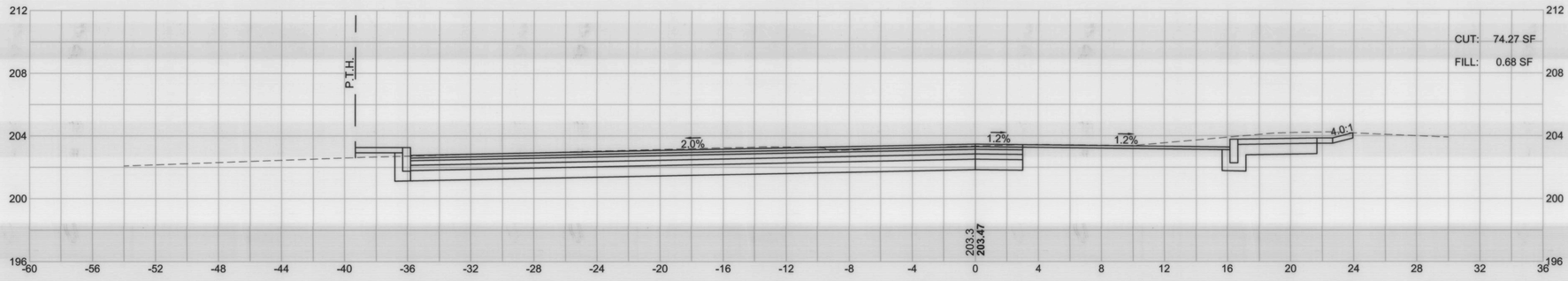

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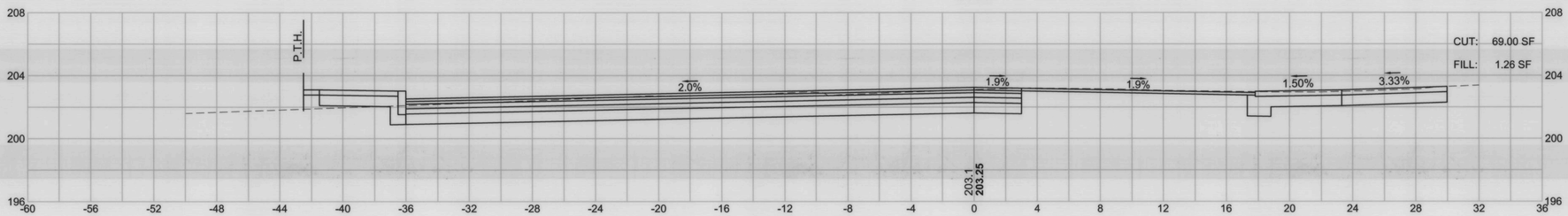

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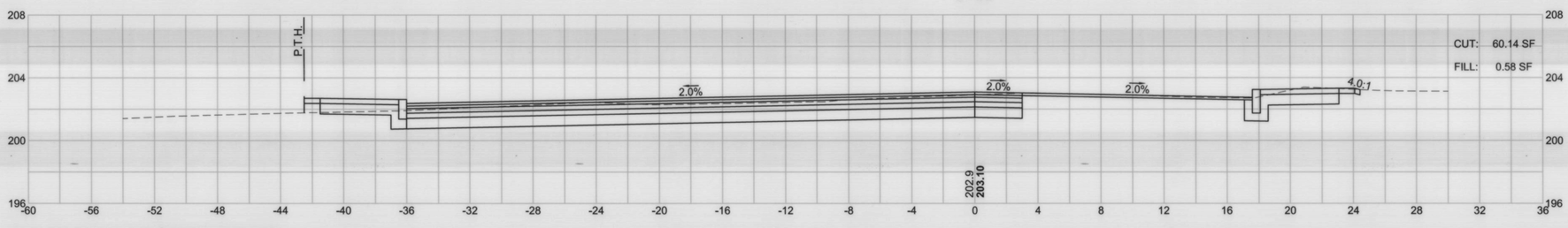

P.T.H. REFLECTS LIMIT OF ROADWAY CONTRACT
FINAL GRADING TO BE COORDINATED WITH
MAYNARD CROSSING SITE DEVELOPMENT

HOR. SCALE IN FEET
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TOWN OF MAYNARD
PLANNING BOARD APPROVAL

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SIGNATURE DATE

PROJECT:
PARKER STREET (ROUTE 27)

DESIGN SUBMISSION:
FINAL DESIGN

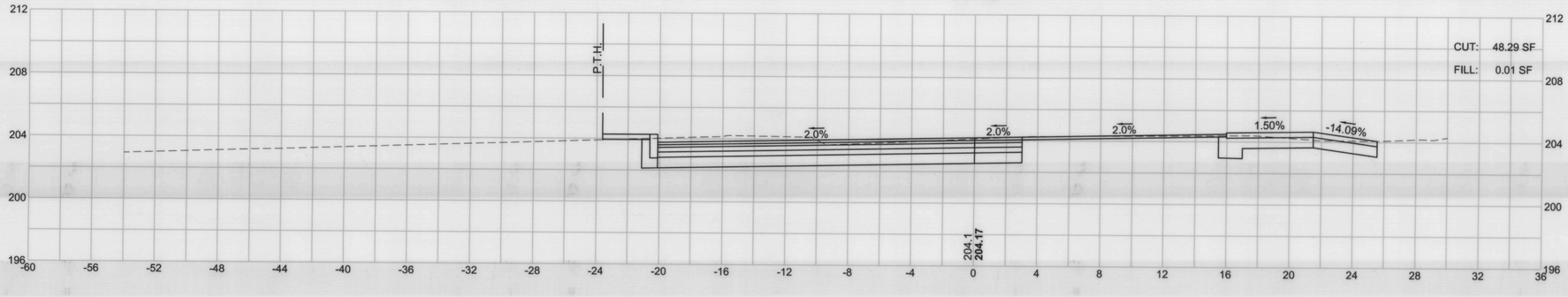
DRAWING TITLE:
CROSS SECTIONS 5

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers
Westford, Massachusetts
(978) 923-0400
GreenIntl.com

SCALE: AS NOTED	DESIGNED BY: DT	SHEET NO.
DATE: 8/14/17	DRAWN BY: DT	38 OF 43
PROJECT NO. 15104.035	CHECKED BY: JM	

11+45



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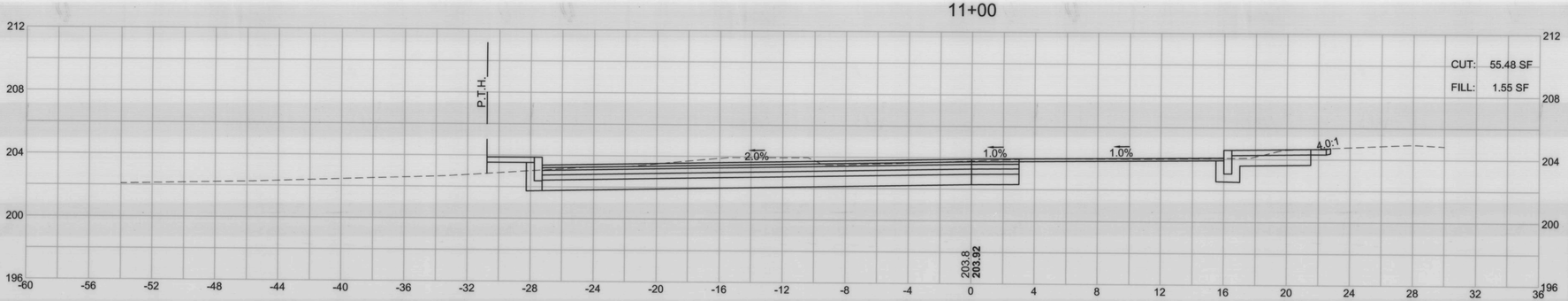

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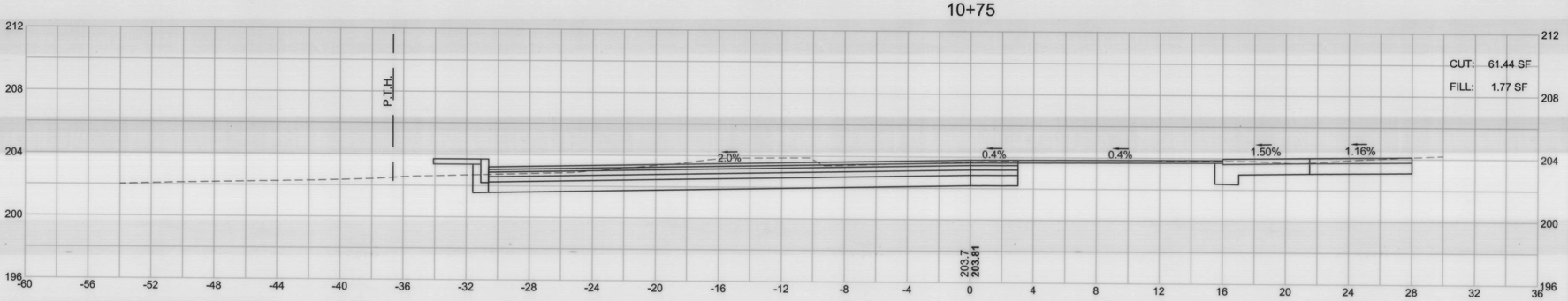

P.T.H. REFLECTS LIMIT OF ROADWAY CONTRACT
FINAL GRADING TO BE COORDINATED WITH
MAYNARD CROSSING SITE DEVELOPMENT

HOR. SCALE IN FEET
4 0 4 8
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VER. SCALE IN FEET

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE DATE
SIGNATURE DATE
Approved plans - see cover sheet for Planning Board signatures.
SIGNATURE DATE
SIGNATURE DATE
SIGNATURE DATE

PROJECT:
PARKER STREET (ROUTE 27)

DESIGN SUBMISSION:
FINAL DESIGN

DRAWING TITLE:
CROSS SECTIONS 6

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers
Westford, Massachusetts
(978) 923-0400
GreenIntl.com

SCALE: AS NOTED	DESIGNED BY: DT	SHEET NO.
DATE: 8/14/17	DRAWN BY: DT	39 OF 43
PROJECT NO. 15104.035	CHECKED BY: JM	

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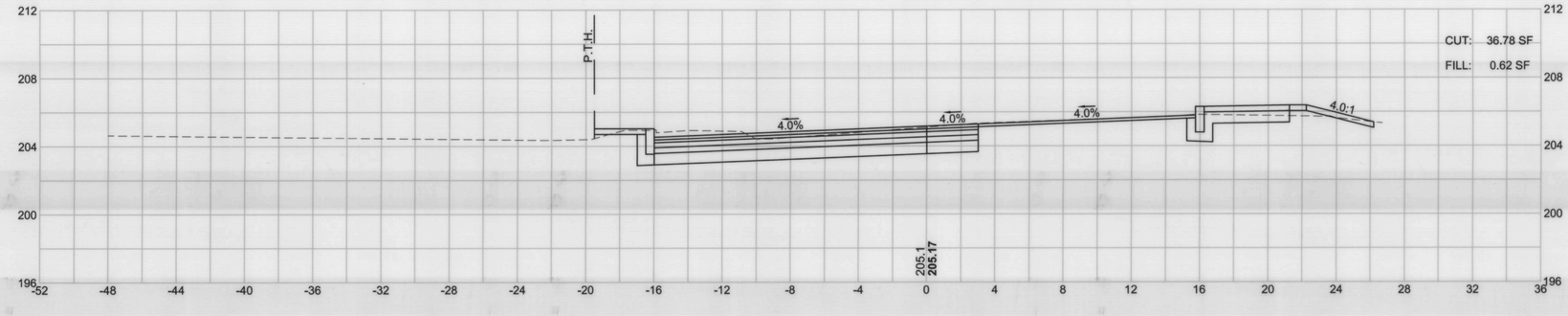
13+00



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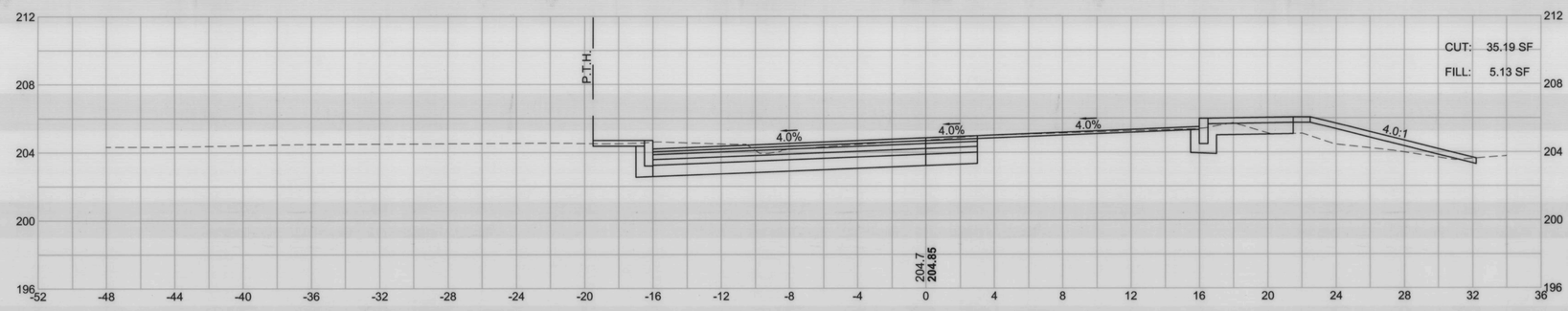

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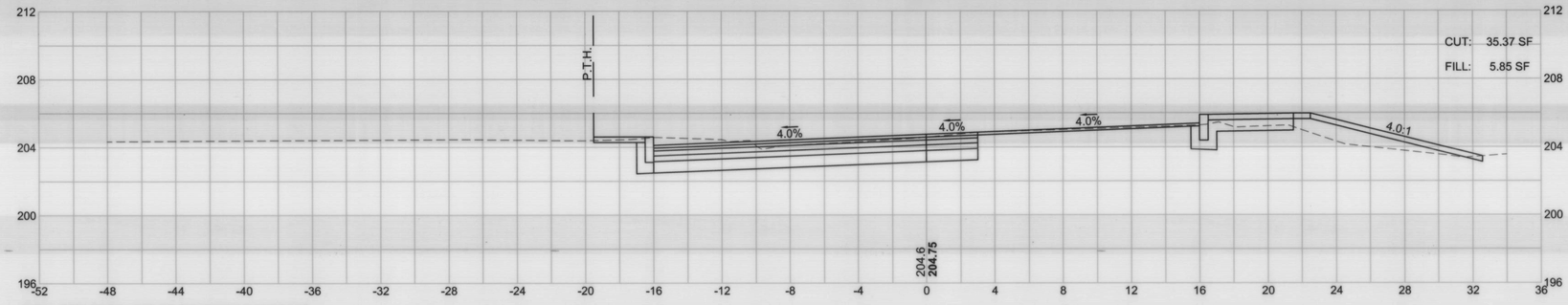

P.T.H. REFLECTS LIMIT OF ROADWAY CONTRACT
FINAL GRADING TO BE COORDINATED WITH
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HOR. SCALE IN FEET
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PLANNING BOARD APPROVAL

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SIGNATURE DATE
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PROJECT:
PARKER STREET (ROUTE 27)

DESIGN SUBMISSION:
FINAL DESIGN

DRAWING TITLE:
CROSS SECTIONS 7

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
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SCALE: AS NOTED	DESIGNED BY: DT	SHEET NO.
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PROJECT NO. 15104.035	CHECKED BY: JM	

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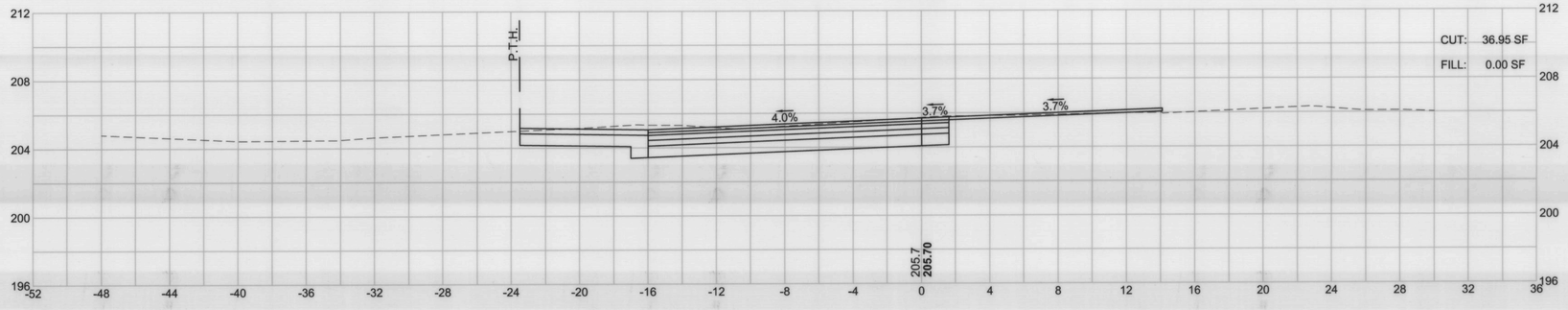
14+00



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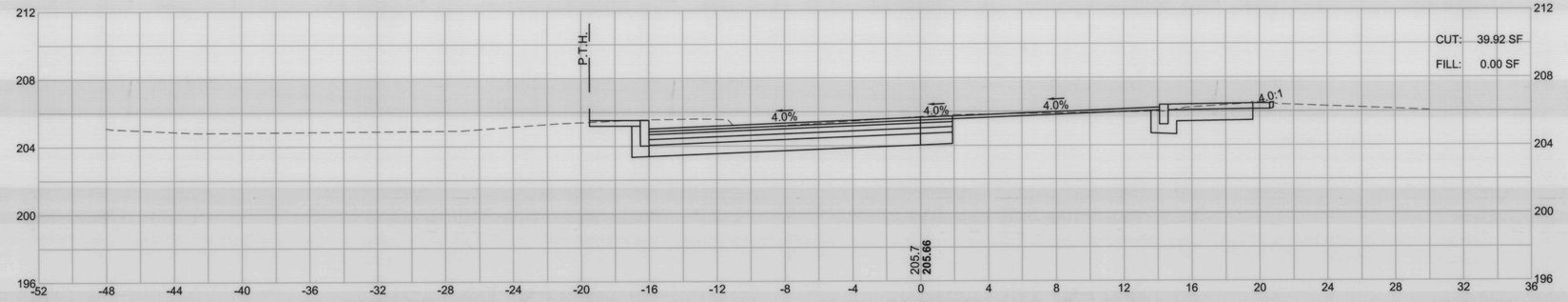

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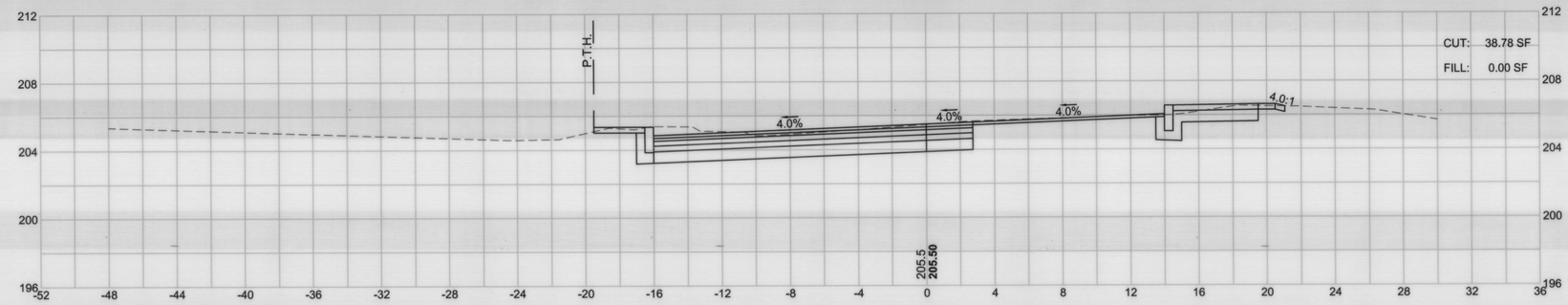

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HOR. SCALE IN FEET
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TOWN OF MAYNARD
PLANNING BOARD APPROVAL

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PROJECT:
PARKER STREET (ROUTE 27)

DESIGN SUBMISSION:
FINAL DESIGN

DRAWING TITLE:
CROSS SECTIONS 8

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
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SCALE: AS NOTED	DESIGNED BY: DT	SHEET NO.
DATE: 8/14/17	DRAWN BY: DT	41 OF 43
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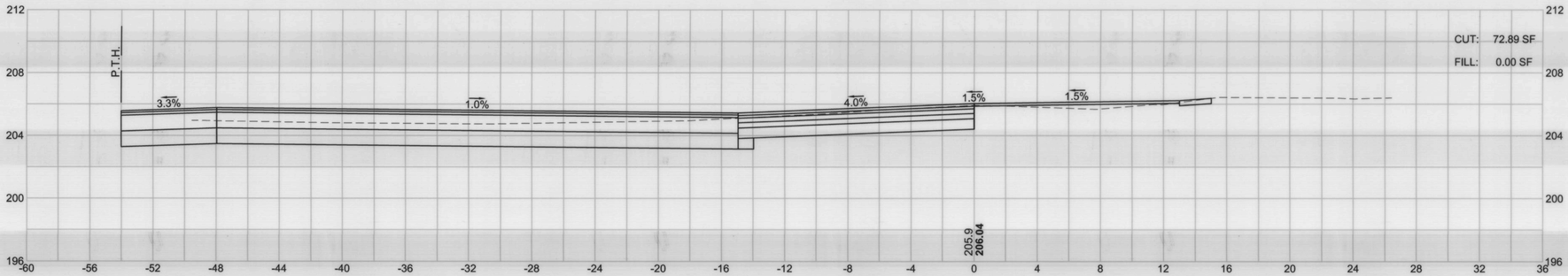
14+85



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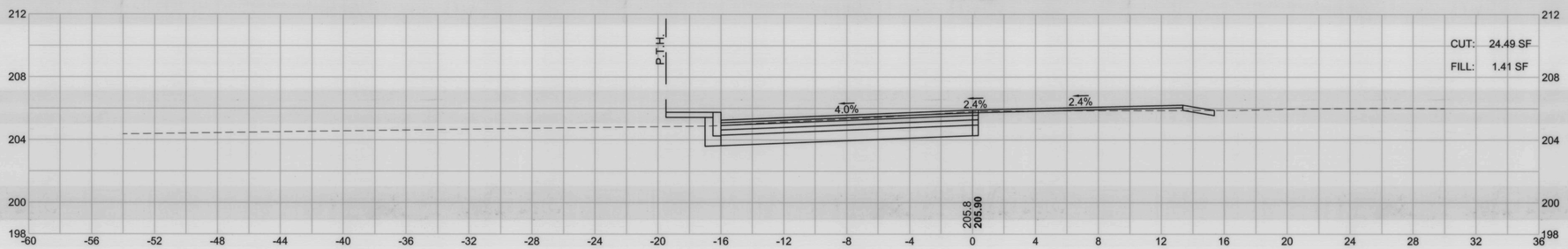

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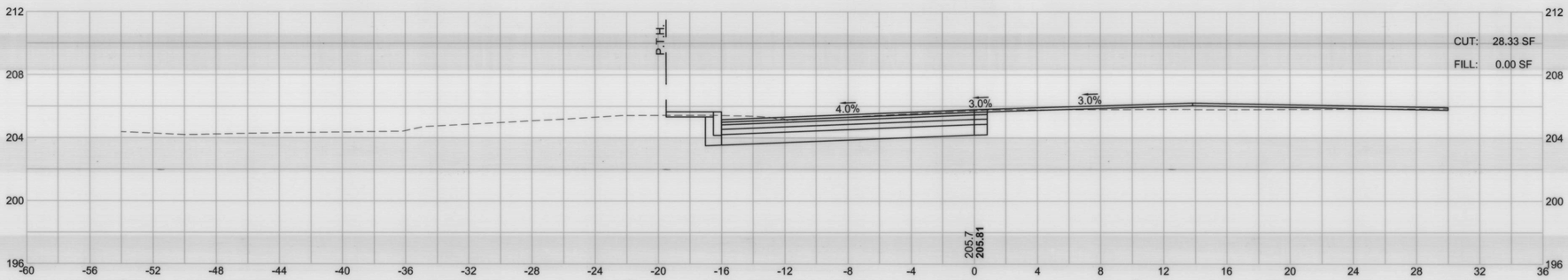

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SIGNATURE DATE
SIGNATURE DATE

PROJECT:
PARKER STREET (ROUTE 27)

DESIGN SUBMISSION:
FINAL DESIGN

DRAWING TITLE:
CROSS SECTIONS 9

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

SCALE: AS NOTED	DESIGNED BY: DT	
DATE: 8/14/17	DRAWN BY: DT	SHEET NO.
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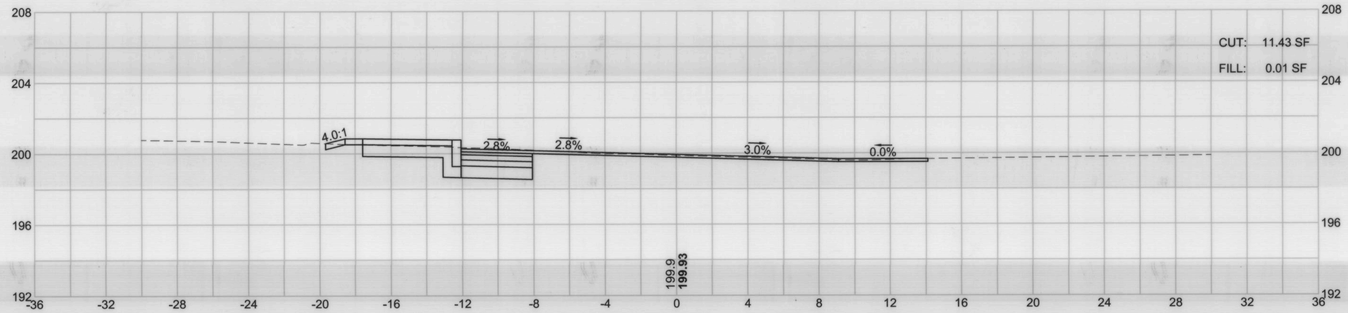
101+00



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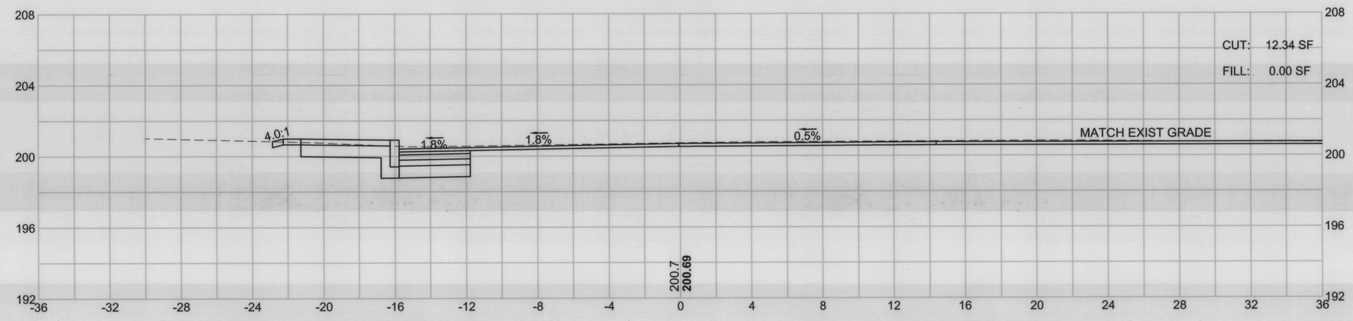

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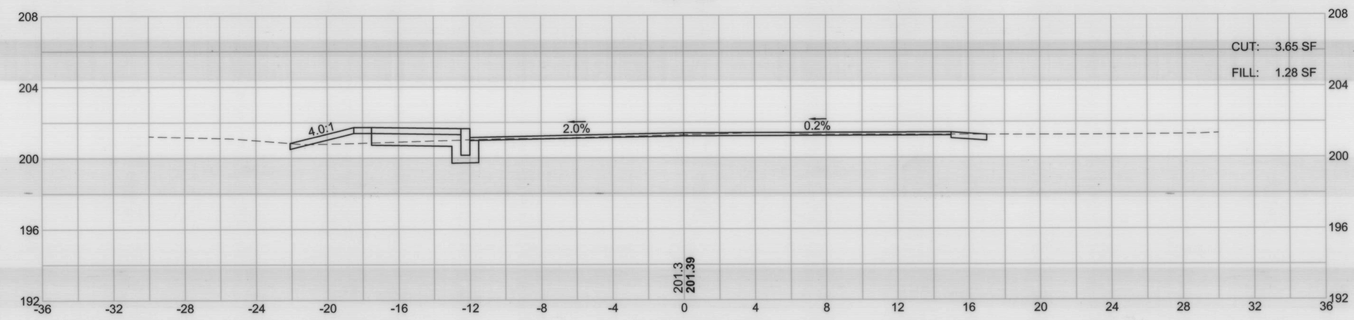

HOR. SCALE IN FEET
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VER. SCALE IN FEET

TOWN OF MAYNARD
PLANNING BOARD APPROVAL

SIGNATURE		DATE
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SIGNATURE		DATE

PROJECT:
PARKER STREET (ROUTE 27)

DESIGN SUBMISSION:
FINAL DESIGN

DRAWING TITLE:
CROSS SECTIONS 10

PREPARED FOR:
CAPITAL GROUP PROPERTIES
259 TURNPIKE ROAD, SUITE 100
SOUTHBOROUGH, MA 01772

PREPARED BY:
GREEN INTERNATIONAL AFFILIATES, INC.
Civil and Structural Engineers (978) 923-0400
Westford, Massachusetts GreenIntl.com

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