PROPOSED SITE PLAN DOCUMENTS

FOR

WS DEVELOPMENT

PROPOSED

INDUSTRIAL DEVELOPMENT

LOCATION OF SITE:

MAPS: 24, 30, & 31

LOTS: 10 & 12, 73-1, & 3

HARTFORD AVENUE, TOWN OF BELLINGHAM

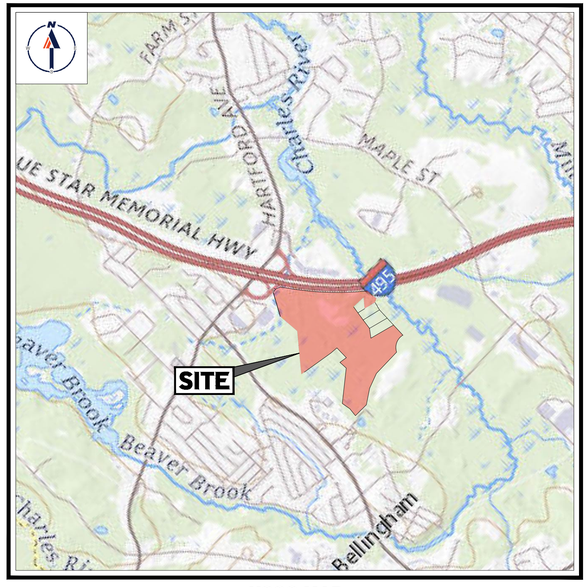
NORFOLK COUNTY, MASSACHUSETTS

REFERENCES

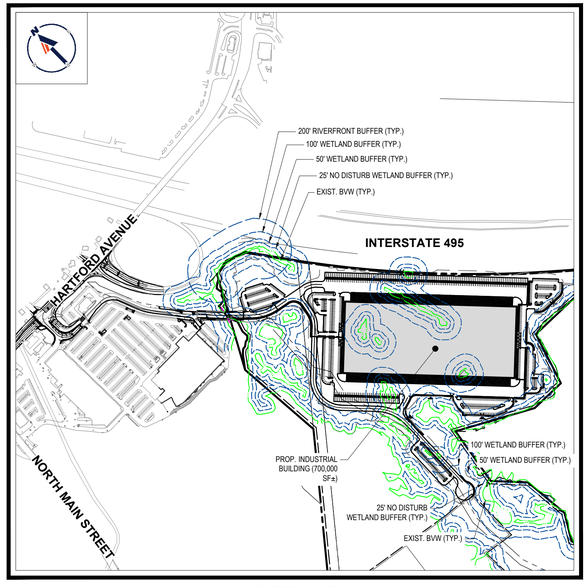
BOUNDARY & TOPOGRAPHIC SURVEY:
CONTROL POINT ASSOCIATES, INC.
352 TURNPIKE ROAD, SOUTHBOROUGH, MA 01772
DATE: 02/04/2022
REVISED:

GEOTECHNICAL INVESTIGATION REPORT:
MILLER ENGINEERING & TESTING, INC.
100 SHEFFIELD ROAD, MANCHESTER, NH 03108
DATE: 05/14/2008
REVISED:

* THE ABOVE REFERENCED DOCUMENTS ARE INCORPORATED BY REFERENCE AS PART OF THESE PLANS, HOWEVER, BOHLER ENGINEERING DOES NOT CERTIFY THE ACCURACY OF THE WORK REFERENCED OR DERIVED FROM THESE DOCUMENTS, BY OTHERS.



USGS MAP
SCALE: 1" = 2,000'
SOURCE: USGS



SITE MAP
SCALE: 1" = 500'

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PARTIAL TOPOGRAPHIC SURVEY (BY OTHERS)	

PREPARED BY

BOHLER

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

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REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	03/03/2023	PLANNING BOARD COMMENTS	OCR / MMA
2	05/01/2023	SITE LAYOUT UPDATES	OCR / MMA
3	07/28/2023	PLANNING BOARD COMMENTS	CJP / MMA
4	12/06/2023	CON COM COMMENTS	OCR / MMA

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ALWAYS CALL 811
It's fast. It's free. It's the law.

PERMIT SET

THIS DRAWING IS INTENDED FOR MUNICIPAL AND/OR AGENCY REVIEW AND APPROVAL. IT IS NOT INTENDED AS A CONSTRUCTION DOCUMENT UNLESS INDICATED OTHERWISE.

PROJECT No.:	W221023
DRAWN BY:	OCR/AJS
CHECKED BY:	MMA
DATE:	09/22/2022
CAD I.D.:	W221023-X-TTLB-SPPD

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

WS DEVELOPMENT

PROPOSED DEVELOPMENT
MAPS: 24, 30, & 31
LOTS: 10 & 12, 73-1, & 3
HARTFORD AVENUE,
TOWN BELLINGHAM ,
NORFOLK COUNTY,
MASSACHUSETTS

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

SHEET TITLE:

COVER SHEET

SHEET NUMBER:

C-101

REVISION 4 - 12/06/2023

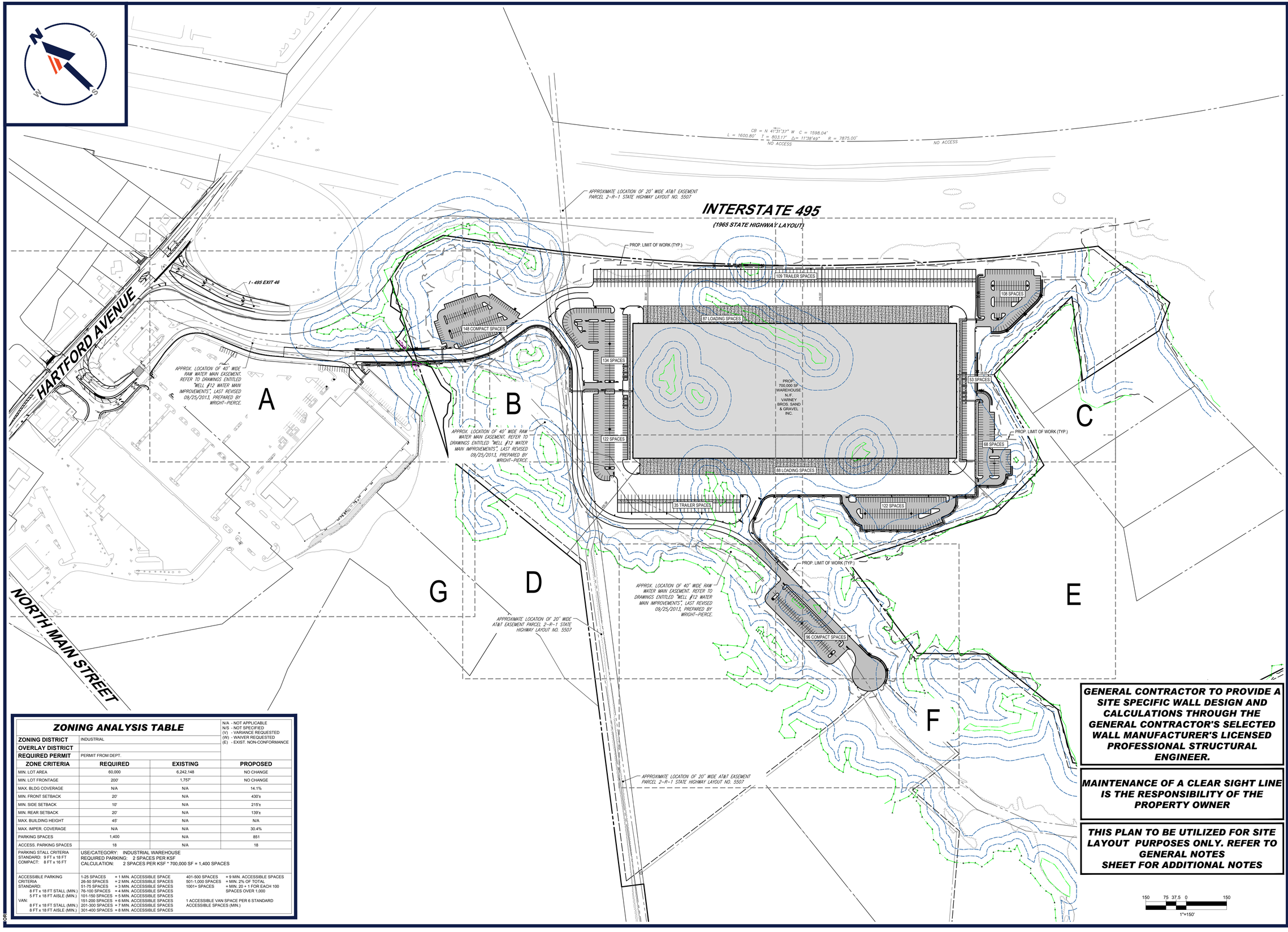
P:\2022\W221023\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W221023-SPPD-4A-----LAYOUT C-101-COVR

GENERAL NOTES

1. THESE PLANS ARE SOLELY BASED ON INFORMATION THE OWNER AND OTHERS PROVIDED TO BOHLER ENGINEERING, (HEREIN "BOHLER") PRIOR TO THE DATE ON WHICH THE ENGINEER OF RECORD AND BOHLER PREPARED THESE PLANS. THE CONTRACTOR MUST FIELD VERIFY ALL EXISTING CONDITIONS AND IMMEDIATELY NOTIFY BOHLER ; IN WRITING, IF ANY DETAIL SITE CONDITIONS DIFFER FROM THOSE SHOWN ON THESE PLANS, OR IF THE PROPOSED WORK CONFLICTS WITH ANY OTHER SITE FEATURES.
2. THE CONTRACTOR MUST STRICTLY COMPLY WITH THESE NOTES AND ALL SPECIFICATIONS/REPORTS CONTAINED HEREIN. THE CONTRACTOR MUST ENSURE THAT ALL SUBCONTRACTORS FULLY AND COMPLETELY CONFORM TO AND COMPLY WITH THESE REQUIREMENTS. THESE NOTES, AND THE REQUIREMENTS ARTICULATED IN THE NOTES CONTAINED IN ALL THE OTHER DRAWINGS THAT COMPRISE THE PLAN SET OF DRAWINGS. ADDITIONAL NOTES AND SPECIFIC PLAN NOTES MAY BE FOUND ON THE INDIVIDUAL PLANS. THESE GENERAL NOTES APPLY TO THIS ENTIRE DOCUMENT PACKAGE. 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.
3. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR MUST CONFIRM WITH THE ENGINEER OF RECORD AND BOHLER THAT THE LATEST EDITION OF THE DOCUMENTS AND/OR STANDARDS REFERENCED WITHIN THE PLAN REFERENCES ARE BEING USED FOR CONSTRUCTION. THIS IS THE CONTRACTOR'S SOLE AND COMPLETE RESPONSIBILITY.
4. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR MUST ENSURE THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION IS TO BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED THE CONDITIONS OF APPROVAL TO ALL PLANS AND OTHER DOCUMENTS HAVE BEEN APPROVED AND ISSUED FOR CONSTRUCTION AND HAS ALSO CONFIRMED THAT ALL NECESSARY AND REQUIRED PERMITS HAVE BEEN OBTAINED. THE CONTRACTOR MUST HAVE COPIES OF ALL PERMITS AND APPROVALS ON SITE AT ALL TIMES.
5. THE CONTRACTOR MUST ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH THESE PLANS, SPECIFICATIONS/REPORTS AND CONDITIONS OF APPROVAL, AND ALL APPLICABLE REQUIREMENTS, RULES, REGULATIONS, STATUTORY REQUIREMENTS, CODES, LAWS AND STANDARDS OF ALL GOVERNMENTAL ENTITIES WITH JURISDICTION OVER THE PROJECT, AND ALL PROVISIONS IN AND CONDITIONS OF THE CONSTRUCTION CONTRACT WITH THE OWNER/DEVELOPER INCLUDING ALL EXHIBITS, ATTACHMENTS AND ADDENDA TO SAME.
6. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR MUST COORDINATE THE BUILDING LAYOUT BY CAREFULLY REVIEWING THE MOST CURRENT ARCHITECTURAL, CIVIL AND STRUCTURAL CONSTRUCTION DOCUMENTS (INCLUDING, BUT NOT LIMITED TO, MECHANICAL, ELECTRICAL, PLUMBING AND FIRE SUPPRESSION PLANS), WHERE APPLICABLE), THE CONTRACTOR MUST IMMEDIATELY NOTIFY ONE ANOTHER AND THE ENGINEER OF RECORD AND BOHLER, IN WRITING, OF ANY CONFLICTS, DISCREPANCIES OR AMBIGUITIES WHICH EXIST BETWEEN THESE PLANS AND ANY OTHER PLANS THAT COMPRISE THE CONSTRUCTION DOCUMENTS.
7. CONTRACTOR MUST REFER TO AND ENSURE COMPLIANCE WITH THE APPROVED ARCHITECTURAL/BUILDING PLANS OF RECORD FOR EXACT LOCATIONS AND DIMENSIONS OF ENTRY/EXIT POINTS, ELEVATIONS, PRECISE BUILDING DIMENSIONS, AND EXACT BUILDING UTILITY LOCATIONS.
8. THE CONTRACTOR MUST FIELD VERIFY ALL DIMENSIONS AND MEASUREMENTS SHOWN ON THESE PLANS, PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR MUST IMMEDIATELY NOTIFY ENGINEER OF RECORD AND BOHLER, 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 RE-DONE OR REPAIRED DUE TO DIMENSIONS, MEASUREMENTS OR GRADES SHOWN INCORRECTLY ON THESE PLANS PRIOR TO BOTH (A) THE CONTRACTOR GIVING ENGINEER OF RECORD AND BOHLER WRITTEN NOTIFICATION OF SUCH DISCREPANCIES, AND (B) ENGINEER OF RECORD AND BOHLER, THEREAFTER, PROVIDING THE CONTRACTOR WITH WRITTEN AUTHORIZATION TO PROCEED WITH SUCH ADDITIONAL WORK.
9. THE CONTRACTOR MUST VERIFY ALL DIMENSIONS AND MEASUREMENTS INCLUDED ON DESIGN DOCUMENTS HEREIN AND MUST NOT SCALE OFF THE DRAWINGS DUE TO POTENTIAL PRINTING INACCURACIES. ALL DIMENSIONS AND MEASUREMENTS ARE TO BE CHECKED AND CONFIRMED BY THE GENERAL CONTRACTOR PRIOR TO PREPARATION OF SHOP DRAWINGS, FABRICATION/ORDERING OF ANY MATERIALS AND COMMENCEMENT OF THE WORK. SITE PLAN DRAWINGS ARE NOT INTENDED AS SURVEY DOCUMENTS. DIMENSIONS SUPERSEDE GRAPHICAL REPRESENTATIONS. THE CONTRACTOR MUST MAKE CONTRACTOR'S OWN MEASUREMENTS FOR LAYOUT OF IMPROVEMENTS.
10. THE OWNER AND CONTRACTOR MUST BE FAMILIAR WITH AND RESPONSIBLE FOR THE PROCUREMENT OF ANY AND ALL CERTIFICATIONS REQUIRED FOR THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
11. WHEN INCLUDED AS ONE OF THE REFERENCED DOCUMENTS, THE GEOTECHNICAL REPORT, SPECIFICATIONS AND RECOMMENDATIONS SET FORTH THEREIN 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: (A) THE PLANS; AND (B) THE GEOTECHNICAL REPORT AND RECOMMENDATIONS, MUST TAKE PRECEDENCE UNLESS SPECIFICALLY NOTED OTHERWISE ON THE PLANS. THE CONTRACTOR MUST NOTIFY THE ENGINEER OF RECORD AND BOHLER, IN WRITING, OF ANY SUCH CONFLICT, DISCREPANCY OR AMBIGUITY BETWEEN THE GEOTECHNICAL REPORT AND PLANS AND SPECIFICATIONS, PRIOR TO PROCEEDING WITH ANY FURTHER WORK. IF A GEOTECHNICAL REPORT WAS NOT CREATED, THEN THE CONTRACTOR MUST FOLLOW ALL OF THE REQUIREMENTS OF ANY AND ALL MUNICIPAL, COUNTY, STATE, AND FEDERAL LAWS AND APPLICABLE SPECIFICATIONS WHICH HAVE JURISDICTION OVER THIS PROJECT.
12. ENGINEER OF RECORD AND BOHLER ARE NEITHER LIABLE NOR RESPONSIBLE FOR ANY SUBSURFACE CONDITIONS AND FURTHER, HAS NO LIABILITY FOR ANY HAZARDOUS MATERIALS, HAZARDOUS SUBSTANCES, OR POLLUTANTS ON, ABOUT OR UNDER THE PROPERTY.
13. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING WHEN AND WHERE SHORING IS REQUIRED AND FOR INSTALLING ALL SHORING REQUIRED DURING EXCAVATION (TO BE PERFORMED IN ACCORDANCE WITH CURRENT OSHA STANDARDS) AND ADDITIONAL PRECAUTIONS NEEDED TO BE TAKEN TO ASSURE THE STABILITY OF ADJACENT, NEARBY AND CONTIGUOUS STRUCTURES AND PROPERTIES. ALL OF THIS WORK IS TO BE PERFORMED AT CONTRACTOR'S SOLE COST AND EXPENSE.
14. THE CONTRACTOR MUST EXERCISE EXTREME CAUTION 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. THE 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 PROVIDE A SAFE WORK ENVIRONMENT FOR THIRD PARTIES, PEDESTRIANS AND ANYONE INVOLVED WITH THE PROJECT.
15. DEBRIS MUST NOT BE BURIED ON THE SUBJECT SITE. ALL DEMOLITION AND CONSTRUCTION WASTES, UNUSABLE EXCAVATED MATERIAL, EXCESS SOIL AND DEBRIS (SOLID WASTE) MUST BE DISPOSED OF IN ACCORDANCE WITH THE REQUIREMENTS OF ANY AND ALL MUNICIPAL, COUNTY, STATE, AND FEDERAL LAWS AND APPLICABLE CODES WHICH HAVE JURISDICTION OVER THIS PROJECT OR OVER THE CONTRACTOR.
16. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO MAINTAIN RECORDS TO DEMONSTRATE PROPER AND FULLY COMPLIANT DISPOSAL ACTIVITIES, TO BE PROMPTLY PROVIDED TO THE OWNER UPON REQUEST.
17. THE CONTRACTOR MUST REPAIR, AT CONTRACTOR'S SOLE COST , ALL 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 MUST 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, 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. THE CONTRACTOR MUST BEAR ALL COSTS ASSOCIATED WITH SAME. THE CONTRACTOR MUST, PROMPTLY, DOCUMENT ALL EXISTING DAMAGE AND NOTIFY, IN WRITING, THE OWNER AND THE CONSTRUCTION MANAGER PRIOR TO THE START OF CONSTRUCTION.
18. THE ENGINEER OF RECORD AND BOHLER ARE NOT RESPONSIBLE FOR AND HAVE NO CONTRACTUAL, LEGAL OR OTHER RESPONSIBILITIES FOR JOB SITE SAFETY JOB SITE SUPERVISION, OR ANYTHING RELATED TO SAME. THE ENGINEER OF RECORD AND BOHLER HAVE NOT BEEN RETAINED TO PERFORM OR TO BE RESPONSIBLE FOR JOB SITE SAFETY, SAME BEING WHOLLY OUTSIDE OF ENGINEER OF RECORD'S AND BOHLER SERVICES AS RELATED TO THE PROJECT. THE ENGINEER OF RECORD AND BOHLER ARE NOT RESPONSIBLE TO IDENTIFY OR REPORT ANY JOB SITE SAFETY ISSUES OR ANY JOB SITE CONDITIONS, AT ANY TIME.
19. THE CONTRACTOR MUST IMMEDIATELY IDENTIFY IN WRITING, TO THE ENGINEER OF RECORD AND BOHLER , ANY DISCREPANCIES THAT MAY OR COULD AFFECT THE PUBLIC SAFETY, HEALTH OR GENERAL WELFARE, OR PROJECT COST. IF THE CONTRACTOR PROCEEDS WITH CONSTRUCTION WITHOUT PROVIDING PROPER WRITTEN NOTIFICATION AS DESCRIBED ABOVE, IT WILL BE AT THE CONTRACTOR'S OWN RISK AND, FURTHER, THE CONTRACTOR MUST INDEMNIFY, DEFEND AND HOLD HARMLESS THE ENGINEER OF RECORD AND BOHLER FOR ANY AND ALL DAMAGES, COSTS, INJURIES, ATTORNEY'S FEES AND THE LIKE WHICH RESULT FROM OR ARE IN ANY WAY RELATED TO SAME INCLUDING, BUT NOT LIMITED TO, ANY THIRD PARTY AND FIRST PARTY CLAIMS.
20. THE ENGINEER OF RECORD AND BOHLER ARE NOT RESPONSIBLE FOR ANY INJURY OR DAMAGES RESULTING FROM THE CONTRACTOR'S FAILURE TO BUILD OR CONSTRUCT IN STRICT ACCORDANCE WITH THE APPROVED PLANS, AND CURRENT CODES, RULES, STATUTES AND THE LIKE. IF THE CONTRACTOR AND/OR OWNER FAIL TO BUILD OR CONSTRUCT IN STRICT ACCORDANCE WITH THE APPROVED PLANS, RULES, STATUTES, CODES AND THE LIKE, THE CONTRACTOR AND/OR OWNER AGREE TO AND MUST JOINTLY, INDEPENDENTLY, SEPARATELY, AND SEVERALLY INDEMNIFY AND HOLD THE ENGINEER OF RECORD AND BOHLER HARMLESS FOR AND FROM ALL INJURIES, CLAIMS AND DAMAGES THAT ENGINEER AND BOHLER SUFFER AND ANY AND ALL COSTS THAT ENGINEER AND BOHLER INCUR AS RELATED TO SAME.
21. ALL CONTRACTORS MUST CARRY AT LEAST THE MINIMUM AMOUNT OF THE SPECIFIED AND COMMERCIALLY REASONABLE STATUTORY WORKERS COMPENSATION INSURANCE, EMPLOYER'S LIABILITY INSURANCE AND COMMERCIAL GENERAL LIABILITY INSURANCE (CGL) INCLUDING ALSO ALL UMBRELLA COVERAGES. ALL CONTRACTORS MUST HAVE THEIR CGL POLICIES ENDORSED TO NAME BOHLER , 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 INSUREDS WITH RESPECT TO PROVIDE OPERATIONS. THE CONTRACTOR'S POLICIES SHALL BE ENDORSED TO INSURE (DEFEND, IF APPLICABLE) AND HOLD HARMLESS AND INDEMNITY OBLIGATIONS ASSUMED AND AGREED TO BY THE CONTRACTOR HEREIN. ALL CONTRACTORS MUST FURNISH BOHLER WITH CERTIFICATIONS OF INSURANCE OR CERTIFICATES OF INSURANCE AS EVIDENCE OF THE REQUIRED INSURANCE COVERAGES PRIOR TO COMMENCEMENT OF CONSTRUCTION. THE REMOVAL OF EACH POLICY DURING THE ENTIRE PERIOD OF CONSTRUCTION AND FOR TWO YEARS AFTER THE COMPLETION OF CONSTRUCTION AND AFTER ALL PERMITS ARE ISSUED, WHICHEVER DATE IS LATER. IN ADDITION, ALL CONTRACTORS AGREE THAT THEY WILL, TO THE FULLEST EXTENT PERMITTED UNDER LAW AND TO THE FULLEST EXTENT PERMITTED UNDER THEIR RESPECTIVE MANUFACTURER WARRANTIES, INDEMNIFY AND HOLD HARMLESS BOHLER 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, LIABILITIES AND 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. THE CONTRACTOR MUST NOTIFY ENGINEER, IN WRITING, AT LEAST THIRTY (30) DAYS PRIOR TO ANY TERMINATION, SUSPENSION OR CHANGE OF ITS INSURANCE HEREUNDER.
22. THE ENGINEER OF RECORD AND BOHLER ARE 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 IN SCOPE AND REVISIONS THAT RESULT FROM SAME. THE CONTRACTOR IS FULLY AND SOLELY RESPONSIBLE FOR DETERMINING THE MEANS AND METHODS FOR COMPLETION OF THE WORK, PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
23. NEITHER THE PROFESSIONAL ACTIVITIES OF BOHLER, NOR THE PRESENCE OF BOHLER 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 (HEREIN "BOHLER PARTIES") SHALL RELIEVE THE CONTRACTOR OF AND FROM 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 ALL HEALTH AND SAFETY PRECAUTIONS REQUIRED BY ANY REGULATORY AGENCIES WITH JURISDICTION OVER THE PROJECT AND/OR PROPERTY. BOHLER PARTIES HAVE NO STOP WORK AUTHORITY TO EXERCISE ANY CONTROL OVER (OR ANY RESPONSIBILITY FOR) ANY CONSTRUCTION, THE CONTRACTOR OR ITS EMPLOYEES RELATING TO THEIR WORK AND ANY AND ALL HEALTH AND SAFETY PROGRAMS OR PROCEDURES. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR JOB SITE SAFETY. THE CONTRACTOR MUST INDEMNIFY, DEFEND, PROTECT AND HOLD HARMLESS BOHLER PARTIES FOR AND FROM ANY LIABILITY TO BOHLER PARTIES RESULTING FROM THE CONTRACTOR'S WORK, SERVICES AND/OR VIOLATIONS OF THIS NOTE, THESE NOTES OR ANY NOTES IN THE PLAN SET AND, FURTHER, THE CONTRACTOR MUST NAME BOHLER AS AN ADDITIONAL INSURED UNDER THE GENERAL CONTRACTOR'S POLICIES OF GENERAL LIABILITY INSURANCE AS DESCRIBED ABOVE.
24. WHEN IT IS CLEARLY AND SPECIFICALLY WITHIN BOHLER'S SCOPE OF SERVICES CONTRACT WITH THE OWNER/DEVELOPER, BOHLER 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 EVALUATING CONFORMANCE WITH THE DESIGN INTENT AND THE INFORMATION SHOWN IN THE CONSTRUCTION CONTRACT DOCUMENTS. CONSTRUCTION MEANS AND 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. BOHLER WILL PERFORM ITS SHOP DRAWING REVIEW WITH REASONABLE PROMPTNESS, AS CONDITIONS PERMIT. ANY DOCUMENT, DOCUMENTING BOHLER'S REVIEW OF A SPECIFIC ITEM OR LIMITED SCOPE, MUST NOT INDICATE THAT BOHLER HAS REVIEWED THE ENTIRE ASSEMBLY OF WHICH THE ITEM IS A COMPONENT. BOHLER IS NOT RESPONSIBLE FOR ANY DEVIATIONS FROM THE CONSTRUCTION DOCUMENTS THAT THE CONTRACTOR MUST, IN WRITING, PROMPTLY AND IMMEDIATELY BRING ANY DEVIATIONS FROM THE CONSTRUCTION DOCUMENTS TO BOHLER'S ATTENTION. BOHLER IS NOT REQUIRED TO REVIEW PARTIAL SUBMISSIONS OR THOSE FOR WHICH SUBMISSIONS OF CORRELATED ITEMS HAVE NOT BEEN RECEIVED.
25. IF THE CONTRACTOR DEVIATES FROM THESE PLANS AND/OR SPECIFICATIONS, INCLUDING THE NOTES CONTAINED HEREIN, WITHOUT FIRST OBTAINING THE PRIOR WRITTEN AUTHORIZATION OF THE ENGINEER OF RECORD AND BOHLER FOR ALL DEVIATIONS WITHIN ENGINEER'S SCOPE, THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE PAYMENT OF ALL COSTS INCURRED IN CORRECTING ANY WORK PERFORMED WHICH DEVIATES FROM THE PLANS, ALL FINES AND/OR PENALTIES ASSESSED WITH RESPECT THERETO AND ALL COMPENSATORY OR PUNITIVE DAMAGES RESULTING THEREFROM AND, FURTHER, MUST DEFEND, INDEMNIFY, PROTECT, AND HOLD HARMLESS THE ENGINEER OF RECORD AND BOHLER PARTIES TO THE FULLEST EXTENT PERMITTED UNDER THE LAW, FOR AND FROM ALL FEES, ATTORNEYS' FEES, DAMAGES, COSTS, JUDGMENTS, CLAIMS, INJURIES, PENALTIES AND THE LIKE RELATED TO SAME.
26. THE CONTRACTOR IS RESPONSIBLE FOR A MAINTAINING AND PROTECTING THE TRAFFIC CONTROL PLAN AND ELEMENTS IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REQUIREMENTS, FOR ALL WORK PERFORMED IN THE RIGHT OF WAY OR ON SITE. THE COST FOR THIS ITEM MUST BE INCLUDED IN THE CONTRACTOR'S PRICE AND IS THE CONTRACTOR'S SOLE RESPONSIBILITY.
27. 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, THE ENGINEER OF RECORD AND BOHLER ARE 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 THE ENGINEER OF RECORD AND BOHLER PARTIES, HARMLESS FOR ALL INJURIES, DAMAGES AND COSTS THAT ENGINEER OF RECORD AND BOHLER INCUR AS A RESULT OF SAID FAILURE.
28. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ENSURING THAT ALL CONSTRUCTION ACTIVITIES AND MATERIALS COMPLY WITH AND CONFORM TO APPLICABLE FEDERAL, STATE AND LOCAL RULES AND REGULATIONS, LAWS, ORDINANCES, AND CODES, AND ALL APPLICABLE 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.
29. THE CONTRACTOR MUST STRICTLY COMPLY WITH THE LATEST AND CURRENT OSHA STANDARDS AND REGULATIONS, AND/OR ANY OTHER AGENCY WITH JURISDICTION OVER EXCAVATION AND TRENCHING PROCEDURES. ENGINEER OF RECORD AND BOHLER HAS NO RESPONSIBILITY FOR OR AS RELATED TO EXCAVATION AND TRENCHING PROCEDURES AND WORK.
30. THE CONTRACTOR AND THE OWNER MUST INSTALL ALL ELEMENTS AND COMPONENTS IN STRICT COMPLIANCE WITH AND IN ACCORDANCE WITH MANUFACTURER'S STANDARDS AND RECOMMENDED INSTALLATION CRITERIA AND SPECIFICATIONS. IF THE CONTRACTOR AND/OR OWNER FAIL TO DO SO, THEY AGREE TO JOINTLY, INDEPENDENTLY, SEPARATELY, COLLECTIVELY, AND SEVERALLY INDEMNIFY, DEFEND, PROTECT AND HOLD ENGINEER OF RECORD AND BOHLER PARTIES HARMLESS FOR ALL INJURIES AND DAMAGES THAT ENGINEER SUFFERS AND COSTS THAT ENGINEER INCURS AS A RESULT OF SAID FAILURE.
31. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN AN ON-SITE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IN COMPLIANCE WITH THE ENVIRONMENTAL PROTECTION AGENCY (EPA) REQUIREMENTS OR LOCAL GOVERNING AGENCY FOR SITES WHERE ONE (1) ACRE OR MORE IS DISTURBED BY CONSTRUCTION ACTIVITIES (UNLESS THE LOCAL JURISDICTION REQUIRES A DIFFERENT THRESHOLD). THE CONTRACTOR MUST ENSURE THAT ALL ACTIVITIES, INCLUDING THOSE OF ALL 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 AND FURTHER, THE CONTRACTOR IS SOLELY AND COMPLETELY RESPONSIBLE FOR FAILING TO DO SO.
32. AS CONTAINED IN THESE DRAWINGS AND ASSOCIATED DOCUMENTS PREPARED BY THE ENGINEER OF RECORD AND BOHLER, THE USE OF THE WORDS 'CERTIFY OR 'CERTIFICATION' CONSTITUTE(S) AN EXPRESSION ONLY OF PROFESSIONAL OPINION REGARDING THE INFORMATION WHICH IS THE SUBJECT OF THE ENGINEER OF RECORD'S AND BOHLER KNOWLEDGE OR BELIEF AND IN ACCORDANCE WITH COMMON AND ACCEPTED PROCEDURE CONSISTENT WITH THE APPLICABLE STANDARDS OF PRACTICE, AND DOES NOT CONSTITUTE A WARRANTY OR GUARANTEE OF ANY NATURE OR TYPE, EITHER EXPRESSED OR IMPLIED, UNDER ANY CIRCUMSTANCES.

GENERAL DEMOLITION NOTES

1. THE GENERAL NOTES MUST BE INCLUDED AS PART OF THIS ENTIRE DOCUMENT PACKAGE AND ARE PART OF THE CONTRACT DOCUMENTS. THE GENERAL NOTES ARE REFERENCED HEREIN, AND THE CONTRACTOR MUST REFER TO THEM AND FULLY COMPLY WITH THESE NOTES, IN THEIR ENTIRETY. THE CONTRACTOR MUST BE FAMILIAR WITH AND ACKNOWLEDGE FAMILIARITY WITH ALL OF THE GENERAL NOTES AND ALL OF THE PLANS' SPECIFIC NOTES.
2. THE CONTRACTOR MUST CONDUCT DEMOLITION/REMOVALS ACTIVITIES IN SUCH A MANNER AS TO ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, SIDEWALKS, WALKWAYS, AND ALL OTHER ADJACENT FACILITIES. THE CONTRACTOR MUST OBTAIN ALL APPLICABLE PERMITS FROM THE APPROPRIATE GOVERNMENTAL AUTHORITY(IES) PRIOR TO THE COMMENCEMENT OF ANY ROAD OPENING OR DEMOLITION ACTIVITIES IN OR ADJACENT TO THE RIGHT-OF-WAY.
3. WHEN DEMOLITION-RELATED ACTIVITIES IMPACT ROADWAYS AND/OR ROADWAY RIGHT-OF-WAY, THE CONTRACTOR MUST PROVIDE POLITE AND CONSIDERATE FLAGGERS IN ACCORDANCE WITH THE CURRENT EDITION OF THE CURRENT FEDERAL HIGHWAY ADMINISTRATION "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD), AND THE FEDERAL, STATE, AND LOCAL REGULATIONS.
4. THE DEMOLITION (AND/OR REMOVALS) PLAN IS INTENDED TO PROVIDE GENERAL INFORMATION AND TO IDENTIFY ONLY CONDITIONS REGARDING ITEMS TO BE DEMOLISHED, REMOVED, AND/OR SALVAGED.
   4.1. THE CONTRACTOR MUST ALSO REVIEW ALL CONSTRUCTION DOCUMENTS AND INCLUDE WITHIN THE DEMOLITION ACTIVITIES ALL INCIDENTAL WORK NECESSARY FOR THE CONSTRUCTION OF THE NEW SITE IMPROVEMENTS.
   4.2. THIS PLAN IS NOT INTENDED TO AND DOES NOT PROVIDE DIRECTION REGARDING THE MEANS, METHODS, SEQUENCING, TECHNIQUES AND PROCEDURES TO BE EMPLOYED TO ACCOMPLISH THE WORK. ALL MEANS, METHODS, SEQUENCING, TECHNIQUES AND PROCEDURES TO BE USED MUST BE IN STRICT ACCORDANCE AND COMPLIANCE WITH ALL STATE, AND LOCAL, AND JURISDICTIONAL REQUIREMENTS. THE CONTRACTOR MUST COMPLY WITH ALL OSHA AND OTHER SAFETY PRECAUTIONS NECESSARY TO PROVIDE A SAFE WORK SITE FOR THE CONTRACTOR AND THE PUBLIC.
5. THE CONTRACTOR MUST PROVIDE ALL "METHODS AND MEANS" NECESSARY TO PREVENT MOVEMENT, SETTLEMENT, OR COLLAPSE OF EXISTING STRUCTURES, AND ANY OTHER IMPROVEMENTS THAT ARE REMAINING ON OR OFF SITE. THE CONTRACTOR, AT THE CONTRACTOR'S SOLE COST, MUST REPAIR ALL DAMAGE TO ALL ITEMS AND FEATURES THAT ARE TO REMAIN. CONTRACTOR MUST HAVE NEW MATERIAL FOR ALL REPAIRS. CONTRACTOR'S REPAIRS MUST INCLUDE THE RESTORATION OF ALL ITEMS AND FEATURES REPAIRED TO THEIR PRE-DEMOLITION CONDITION, OR BETTER. CONTRACTOR MUST PERFORM ALL REPAIRS AT THE CONTRACTOR'S SOLE EXPENSE.
6. ENGINEER OF RECORD AND BOHLER ARE NOT RESPONSIBLE FOR JOB SITE SAFETY OR SUPERVISION. THE CONTRACTOR MUST PROCEED WITH THE DEMOLITION IN A SYSTEMATIC AND SAFE MANNER, COMPLYING WITH ALL OSHA REQUIREMENTS, TO ENSURE PUBLIC AND CONTRACTOR SAFETY AND SAFETY TO ALL PROPERTY ON THE SITE OR ADJACENT OR NEAR TO THE SAME.
7. THE CONTRACTOR IS RESPONSIBLE FOR JOB SITE SAFETY, WHICH MUST INCLUDE, BUT IS NOT LIMITED TO, THE INSTALLATION AND MAINTENANCE OF BARRIERS, FENCING, OTHER APPROPRIATE AND/OR NECESSARY SAFETY PRECAUTIONS AND ITEMS NECESSARY TO PROTECT THE PUBLIC FROM AREAS OF CONSTRUCTION AND CONSTRUCTION ACTIVITIES. THE CONTRACTOR MUST SAFEGUARD THE SITE AS NECESSARY TO PERFORM THE DEMOLITION IN SUCH A MANNER AS TO PREVENT THE ENTRY OF ALL UNAUTHORIZED PERSONS AT ANY TIME, TO OR NEAR THE DEMOLITION AREA.
8. PRIOR TO THE COMMENCEMENT OF ANY SITE ACTIVITY AND ANY DEMOLITION ACTIVITY, THE CONTRACTOR MUST, IN WRITING, RAISE ANY QUESTIONS CONCERNING THE CONTENTS OF THESE PLANS AND/OR ANY NECESSARY SAFETY PRECAUTIONS AND/OR PROCEDURES TO ENSURE PUBLIC AND WORKER SAFETY STANDARDS, AND/OR THE SAFETY OF THE CONTRACTOR AND/OR THIRD PARTIES IN PERFORMING THE WORK ON THIS PROJECT. ANY SUCH CONCERNS MUST BE CONVEYED TO THE ATTENTION OF THE ENGINEER OF RECORD AND/OR BOHLER , IN WRITING AND IMMEDIATELY, AND THE ENGINEER OF RECORD AND BY BOHLER, IN WRITING. ALL DEMOLITION ACTIVITIES MUST BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THESE PLANS AND SPECIFICATIONS AND ALL APPLICABLE FEDERA



ZONING ANALYSIS TABLE

N/A - NOT APPLICABLE
N/S - NOT SPECIFIED
(V) - VARIANCE REQUESTED
(W) - WAIVER REQUESTED
(E) - EXIST. NON-CONFORMANCE

ZONING DISTRICT	INDUSTRIAL		
OVERLAY DISTRICT			
REQUIRED PERMIT	PERMIT FROM DEPT.		
ZONE CRITERIA	**REQUIRED**	**EXISTING**	**PROPOSED**
MIN. LOT AREA	60,000	6,242,148	NO CHANGE
MIN. LOT FRONTAGE	200'	1,757'	NO CHANGE
MAX. BLDG COVERAGE	N/A	N/A	14.1%
MIN. FRONT SETBACK	20'	N/A	430'±
MIN. SIDE SETBACK	10'	N/A	215'±
MIN. REAR SETBACK	20'	N/A	139'±
MAX. BUILDING HEIGHT	45'	N/A	N/A
MAX. IMPER. COVERAGE	N/A	N/A	30.4%
PARKING SPACES	1,400	N/A	851
ACCESS. PARKING SPACES	18	N/A	18

PARKING STALL CRITERIA
STANDARD: 9 FT x 18 FT
COMPACT: 8 FT x 16 FT

USE/CATEGORY: INDUSTRIAL WAREHOUSE
REQUIRED PARKING: 2 SPACES PER KSF
CALCULATION: 2 SPACES PER KSF * 700,000 SF = 1,400 SPACES

ACCESSIBLE PARKING CRITERIA
STANDARD:
8 FT x 18 FT STALL (MIN.)
5 FT x 18 FT AISLE (MIN.)
VAN:
8 FT x 18 FT STALL (MIN.)
8 FT x 18 FT AISLE (MIN.)

1-25 SPACES	= 1 MIN. ACCESSIBLE SPACE	401-500 SPACES	= 9 MIN. ACCESSIBLE SPACES
26-50 SPACES	= 2 MIN. ACCESSIBLE SPACES	501-1,000 SPACES	= MIN. 2% OF TOTAL
51-75 SPACES	= 3 MIN. ACCESSIBLE SPACES	1001+ SPACES	= MIN. 20 + 1 FOR EACH 100 SPACES OVER 1,000
76-100 SPACES	= 4 MIN. ACCESSIBLE SPACES		
101-150 SPACES	= 5 MIN. ACCESSIBLE SPACES		
151-200 SPACES	= 6 MIN. ACCESSIBLE SPACES	1 ACCESSIBLE VAN SPACE PER 6 STANDARD ACCESSIBLE SPACES (MIN.)	
201-300 SPACES	= 7 MIN. ACCESSIBLE SPACES		
301-400 SPACES	= 8 MIN. ACCESSIBLE SPACES		

GENERAL CONTRACTOR TO PROVIDE A SITE SPECIFIC WALL DESIGN AND CALCULATIONS THROUGH THE GENERAL CONTRACTOR'S SELECTED WALL MANUFACTURER'S LICENSED PROFESSIONAL STRUCTURAL ENGINEER.

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150 75 37.5 0 150
1"=150'

P:\2022\W221023\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W221023-SPPD-4A.---LAYOUT C-301-SITE OVERALL

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LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
SUSTAINABLE DESIGN
PERMITTING SERVICES
TRANSPORTATION SERVICES

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REVISIONS

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4	12/06/2023	CON COM COMMENTS	OCR / MMA

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DRAWN BY:	OCR/AJS
CHECKED BY:	MMA
DATE:	09/22/2022
CAD I.D.:	W221023-X-TTLB-SPPD

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

WS DEVELOPMENT

PROPOSED DEVELOPMENT
MAPS: 24, 30, & 31
LOTS: 10 & 12, 73-1, & 3
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TOWN BELLINGHAM ,
NORFOLK COUNTY,
MASSACHUSETTS

BOHLER
352 TURNPIKE ROAD
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MASSACHUSETTS REGISTERED No. 41530
NEW HAMPSHIRE LICENSE No. 15476
CONNECTICUT LICENSE No. 26177
RHODE ISLAND LICENSE No. 9616
MAINE LICENSE No. 12553

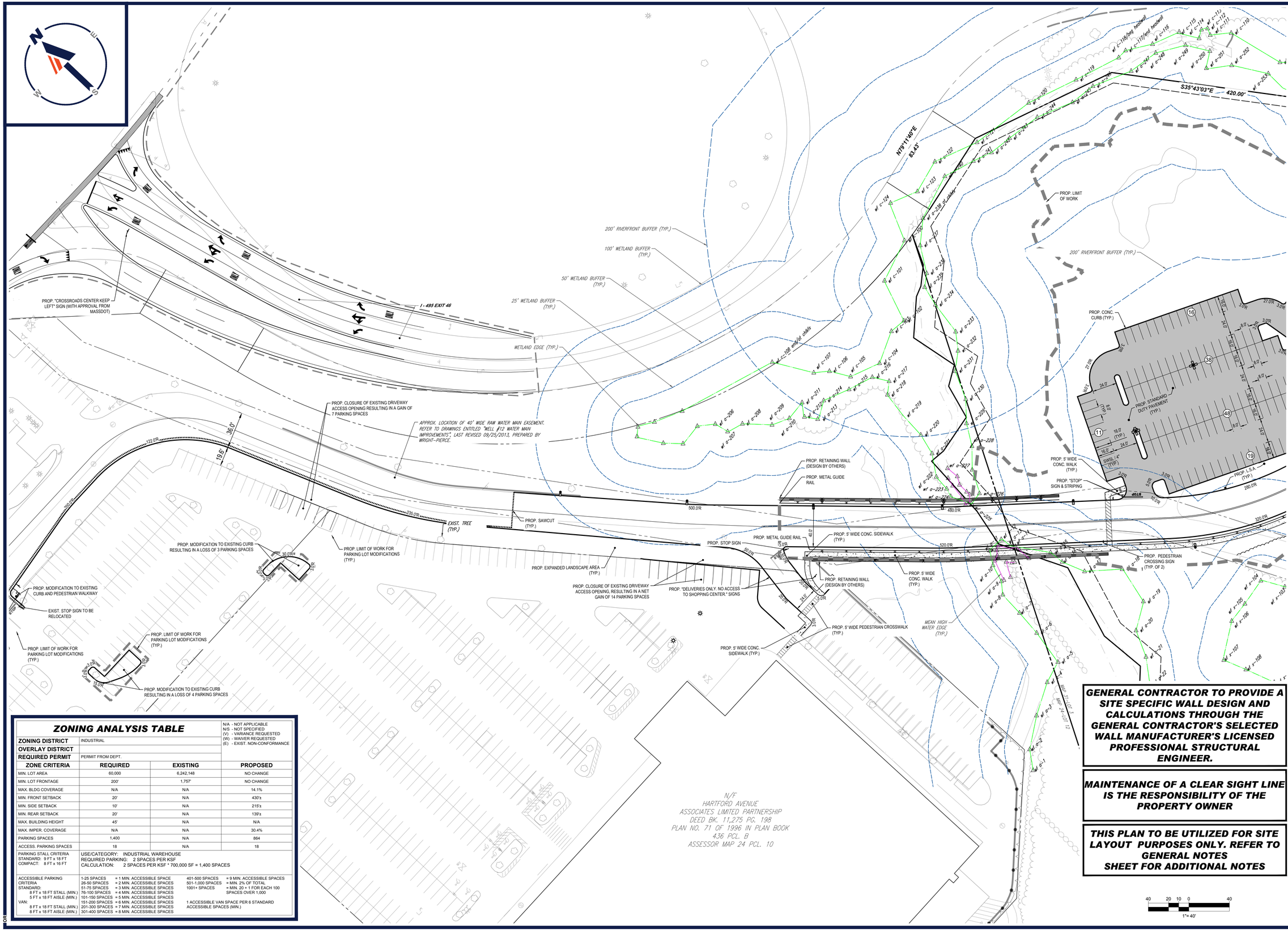
SHEET TITLE:

OVERALL SITE LAYOUT PLAN

SHEET NUMBER:

C-301

REVISION 4 - 12/06/2023



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OVERLAY DISTRICT			
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MIN. FRONT SETBACK	20'	N/A	430'±
MIN. SIDE SETBACK	10'	N/A	215'±
MIN. REAR SETBACK	20'	N/A	139'±
MAX. BUILDING HEIGHT	45'	N/A	N/A
MAX. IMPER. COVERAGE	N/A	N/A	30.4%
PARKING SPACES	1,400	N/A	864
ACCESS. PARKING SPACES	18	N/A	18

PARKING STALL CRITERIA
STANDARD: 9 FT x 18 FT
COMPACT: 8 FT x 16 FT

USE/CATEGORY: INDUSTRIAL WAREHOUSE
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40 20 10 0 40
1"= 40'

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REVISIONS

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4	12/06/2023	CON COM COMMENTS	OCR / MMA

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PROJECT No.:	W221023
DRAWN BY:	OCR/AJS
CHECKED BY:	MMA
DATE:	09/22/2022
CAD I.D.:	W221023-X-TTLB-SPPD

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

WS DEVELOPMENT

PROPOSED DEVELOPMENT
MAPS: 24, 30, & 31
LOTS: 10 & 12, 73-1, & 3
HARTFORD AVENUE,
TOWN BELLINGHAM ,
NORFOLK COUNTY,
MASSACHUSETTS

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

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JOHN/A KUCICH
CIVIL
No. 41538
PROFESSIONAL ENGINEER
MASSACHUSETTS REGISTRATION NO. 41538
NEW HAMPSHIRE LICENSE No. 15476
CONNECTICUT LICENSE No. 26177
RHODE ISLAND LICENSE No. 9616
MAINE LICENSE No. 12553

SHEET TITLE:

SITE LAYOUT PLAN A

SHEET NUMBER:

C-302

REVISION 4 - 12/06/2023

P:\2022\W221023\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W221023-SPPD-4A-----LAYOUT C-302-SITE A

RTE. I-495
(1965 STATE HIGHWAY LAYOUT)

S35°42'59"E
420.00'

WETLAND EDGE (TYP.)
25' WETLAND BUFFER (TYP.)
50' WETLAND BUFFER (TYP.)
100' WETLAND BUFFER (TYP.)

PROP. LIMIT OF WORK (TYP.)

PROP. CONC. PAVING (TYP.)

PROP. HEAVY DUTY PAVEMENT

PROP. 6" HEAVY DUTY CONCRETE PARKING

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

PROP. "STOP" SIGN & STRIPING

PROP. CONC. WALK (TYP.)

PROP. 5' WIDE CONC. WALK (TYP.)

PROP. PEDESTRIAN CROSSING SIGN (TYP. OF 2)

PROP. RETAINING WALL (DESIGN BY OTHERS)

PROP. STANDARD DUTY PAVEMENT (TYP.)

SWSL / 4" (TYP.)

PROP. ACCESSIBLE SIGN IN BOLLARD (TYP. OF 16)

PROP. TRANSITION CURB (TYP. OF 10)

APPROX. LOCATION OF 40' WIDE RAW WATER MAIN EASEMENT. REFER TO DRAWINGS ENTITLED "WELL #12 WATER MAIN IMPROVEMENTS" LAST REVISED 09/25/2013, PREPARED BY WRIGHT-PIERCE.

PROP. 700,000 SF WAREHOUSE N.F.F.

GENERAL CONTRACTOR TO PROVIDE A SITE SPECIFIC WALL DESIGN AND CALCULATIONS THROUGH THE GENERAL CONTRACTOR'S SELECTED WALL MANUFACTURER'S LICENSED PROFESSIONAL STRUCTURAL ENGINEER.

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40 20 10 0 40
1"= 40'

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LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
SUSTAINABLE DESIGN
PERMITTING SERVICES
TRANSPORTATION SERVICES

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DRAWN BY:	OCR/AJS
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CAD I.D.:	W221023-X-TTLB-SPPD

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

WS DEVELOPMENT

PROPOSED DEVELOPMENT
MAPS: 24, 30, & 31
LOTS: 10 & 12, 73-1, & 3
HARTFORD AVENUE,
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JOHN A. KUCICH
CIVIL
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REGISTERED PROFESSIONAL ENGINEER
MASSACHUSETTS LICENSE No. 49248
NEW HAMPSHIRE LICENSE No. 15476
CONNECTICUT LICENSE No. 26177
RHODE ISLAND LICENSE No. 9616
MAINE LICENSE No. 12553

SHEET TITLE:

SITE LAYOUT PLAN B

SHEET NUMBER:

C-303

REVISION 4 - 12/06/2023

P:\2022\W221023\CAD\DRAWING\PLAN SETS\CIVIL SITE PLANS\W221023-SPPD-4A.....\LAYOUT C-303-SITE B

RTE. I-495
(1965 STATE HIGHWAY LAYOUT)

PROP. LIMIT OF WORK

PROP. CONC. PAVING (TYP.)

PROP. HEAVY DUTY PAVEMENT

PROP. 6" HEAVY DUTY CONCRETE PARKING

PROP. 5' WIDE CONC. WALK (TYP.)

PROP. CONC. CURB (TYP.)

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

PROP. STANDARD DUTY PAVEMENT (TYP.)

PROP. RETAINING WALL (DESIGN BY OTHERS)

PROP. CHAIN LINK FENCE

PROP. METAL GUIDE RAIL

PROP. L.S.A (TYP.)

PROP. PEDESTRIAN CROSSING SIGN (TYP. OF 2)

PROP. "STOP" SIGN & STRIPING

PROP. CONC. CURB (TYP.)

PROP. CHAIN LINK FENCE

PROP. METAL GUIDE RAIL

PROP. RETAINING WALL (DESIGN BY OTHERS)

PROP. ACCESSIBLE SIGN IN BOLLARD (TYP. OF 16)

PROP. TRANSITION CURB (TYP. OF 12)

PROP. "STOP" SIGN & STRIPING

PROP. CONC. WALK (TYP.)

PROP. LIMIT OF WORK (TYP.)

PROP. "STOP" SIGN & STRIPING

WETLAND EDGE (TYP.)

25' WETLAND BUFFER (TYP.)

50' WETLAND BUFFER (TYP.)

100' WETLAND BUFFER (TYP.)

100 YEAR FLOOD PLAIN

N/F
THE UNITED STATES OF AMERICA
DEED BK. 5912
PG. 304
TRACT NO. 2714
ASSESSOR MAP 30, PCL. 3A

PROP. 700,000 SF WAREHOUSE
N./F. VARNEY BROS. SAND & GRAVEL INC.

N88°36'28"W 408.12'

S17°42'57"W 384.25'

N39°07'01"E 314.91'

GENERAL CONTRACTOR TO PROVIDE A SITE SPECIFIC WALL DESIGN AND CALCULATIONS THROUGH THE GENERAL CONTRACTOR'S SELECTED WALL MANUFACTURER'S LICENSED PROFESSIONAL STRUCTURAL ENGINEER.

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40 20 10 0 40
1"= 40'

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NEW HAMPSHIRE LICENSE No. 15476
CONNECTICUT LICENSE No. 26177
RHODE ISLAND LICENSE No. 9616
MAINE LICENSE No. 12553

SHEET TITLE:

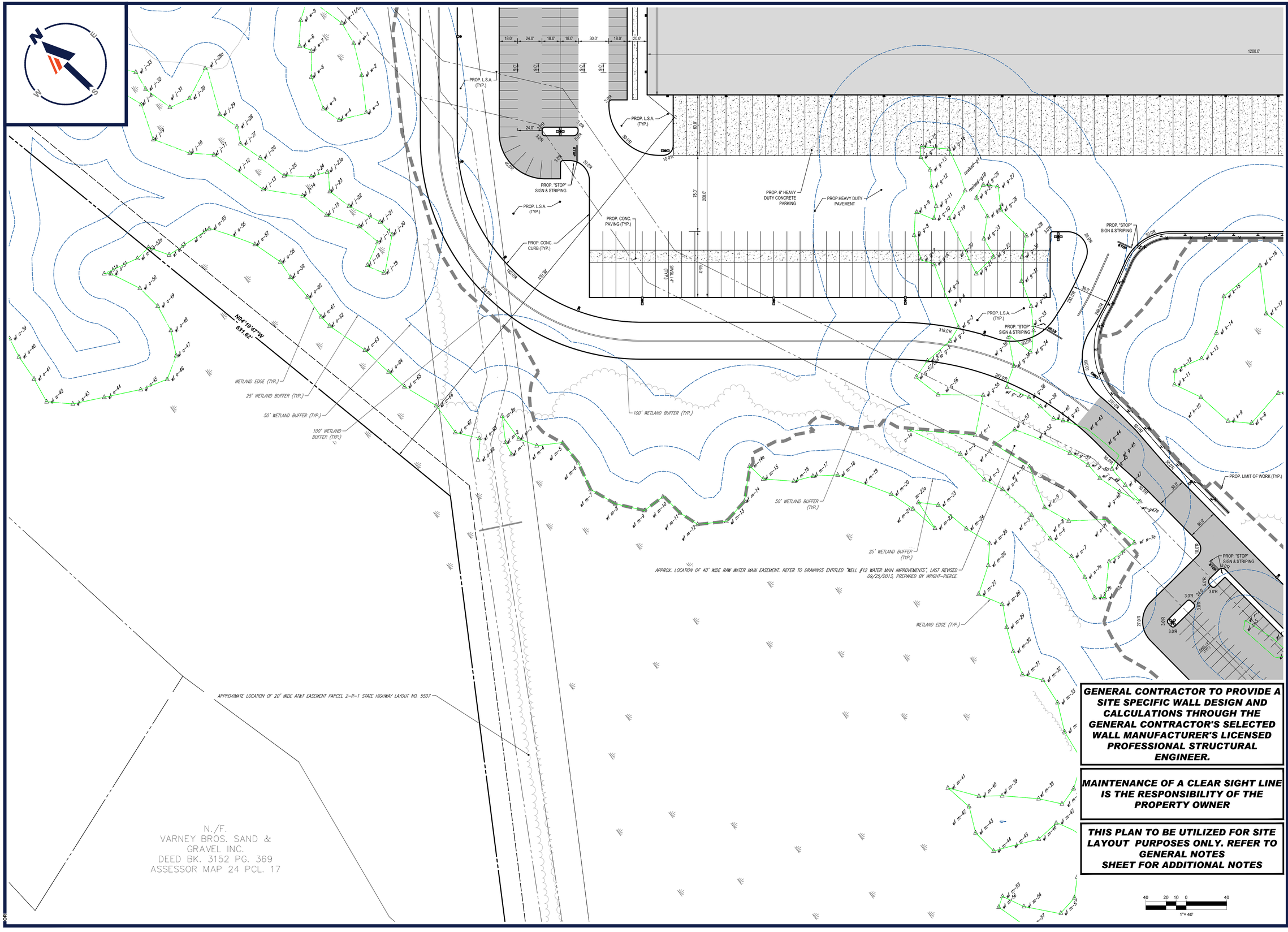
SITE LAYOUT PLAN C

SHEET NUMBER:

C-304

REVISION 4 - 12/06/2023

P:\2022\W221023\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W221023-SPPD-A1-----LAYOUT C-304-SITE C



P:\2022\W221023\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W221023-SPPD-4A---LAYOUT C-305-SITE D

DR

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3	07/28/2023	PLANNING BOARD COMMENTS	CJP / MMA
4	12/06/2023	CON COM COMMENTS	OCR / MMA

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PROJECT No.:	W221023
DRAWN BY:	OCR/AJS
CHECKED BY:	MMA
DATE:	09/22/2022
CAD I.D.:	W221023-X-TTLB-SPPD

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

WS DEVELOPMENT

PROPOSED DEVELOPMENT
MAPS: 24, 30, & 31
LOTS: 10 & 12, 73-1, & 3
HARTFORD AVENUE,
TOWN BELLINGHAM , NORFOLK COUNTY,
MASSACHUSETTS

BOHLER
352 TURNPIKE ROAD
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900
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CIVIL
REGISTERED PROFESSIONAL ENGINEER
MASSACHUSETTS REGISTRATION NO. 41530
NEW HAMPSHIRE LICENSE No. 15476
CONNECTICUT LICENSE No. 26177
RHODE ISLAND LICENSE No. 9616
MAINE LICENSE No. 12553

SHEET TITLE:

SITE LAYOUT PLAN D

SHEET NUMBER:

C-305

REVISION 4 - 12/06/2023

PROP. LIMIT OF WORK (TYP.)
PROP. CONC. WALK (TYP.)
PROP. "STOP" SIGN & STRIPING
PROP. L.S.A. (TYP.)
PROP. 5' WIDE CONC. WALK (TYP.)
PROP. CHAIN LINK FENCE
PROP. METAL GUIDE RAIL
PROP. RETAINING WALL (DESIGN BY OTHERS)
PROP. 6" HEAVY DUTY CONCRETE PARKING
PROP.HEAVY DUTY PAVEMENT
PROP. CONC. CURB (TYP.)
PROP. 5' WIDE CONC. WALK (TYP.)
PROP. STANDARD DUTY PAVEMENT (TYP.)
PROP. "STOP" SIGN & STRIPING
PROP. CONC. CURB (TYP.)
PROP. CONC. CURB (TYP.)
PROP. LIMIT OF WORK (TYP.)
PROP. "STOP" SIGN & STRIPING
PROP. CHAIN LINK FENCE
PROP. METAL GUIDE RAIL
PROP. RETAINING WALL (DESIGN BY OTHERS)
PROP. L.S.A. (TYP.)
PROP. STANDARD DUTY PAVEMENT (TYP.)
PROP. "STOP" SIGN & STRIPING
PROP. CONC. CURB (TYP.)
PROP. CHAIN LINK FENCE
PROP. METAL GUIDE RAIL
PROP. RETAINING WALL (DESIGN BY OTHERS)
PROP. LIMIT OF WORK (TYP.)
PROP. STANDARD DUTY PAVEMENT (TYP.)
WETLAND EDGE (TYP.)
25' WETLAND BUFFER (TYP.)
50' WETLAND BUFFER (TYP.)
100' WETLAND BUFFER (TYP.)
100 YEAR FLOOD PLAIN
N61°32'10"W 576.78'
S09°27'02"W 405.79'
S42°59'38"E 261.08'
N88°52'30"W 252.05'
N/F
THE UNITED STATES OF AMERICA
DEED BK. 6314 PG. 48
TRACT NO. 2700-3
ASSESSOR MAP 31 PCL. 3E

GENERAL CONTRACTOR TO PROVIDE A SITE SPECIFIC WALL DESIGN AND CALCULATIONS THROUGH THE GENERAL CONTRACTOR'S SELECTED WALL MANUFACTURER'S LICENSED PROFESSIONAL STRUCTURAL ENGINEER.

MAINTENANCE OF A CLEAR SIGHT LINE IS THE RESPONSIBILITY OF THE PROPERTY OWNER

THIS PLAN TO BE UTILIZED FOR SITE LAYOUT PURPOSES ONLY. REFER TO GENERAL NOTES SHEET FOR ADDITIONAL NOTES

40 20 10 0 40
1"= 40'

P:\2022\W221023\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W221023-SPPD-4A.—LAYOUT C-306-SITE E

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REVISIONS

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PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

WS DEVELOPMENT

PROPOSED DEVELOPMENT
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LOTS: 10 & 12, 73-1, & 3
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Phone: (508) 480-9900
www.BohlerEngineering.com

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MASSACHUSETTS LICENSE No. 41838
NEW HAMPSHIRE LICENSE No. 15476
CONNECTICUT LICENSE No. 26177
RHODE ISLAND LICENSE No. 9616
MAINE LICENSE No. 12553

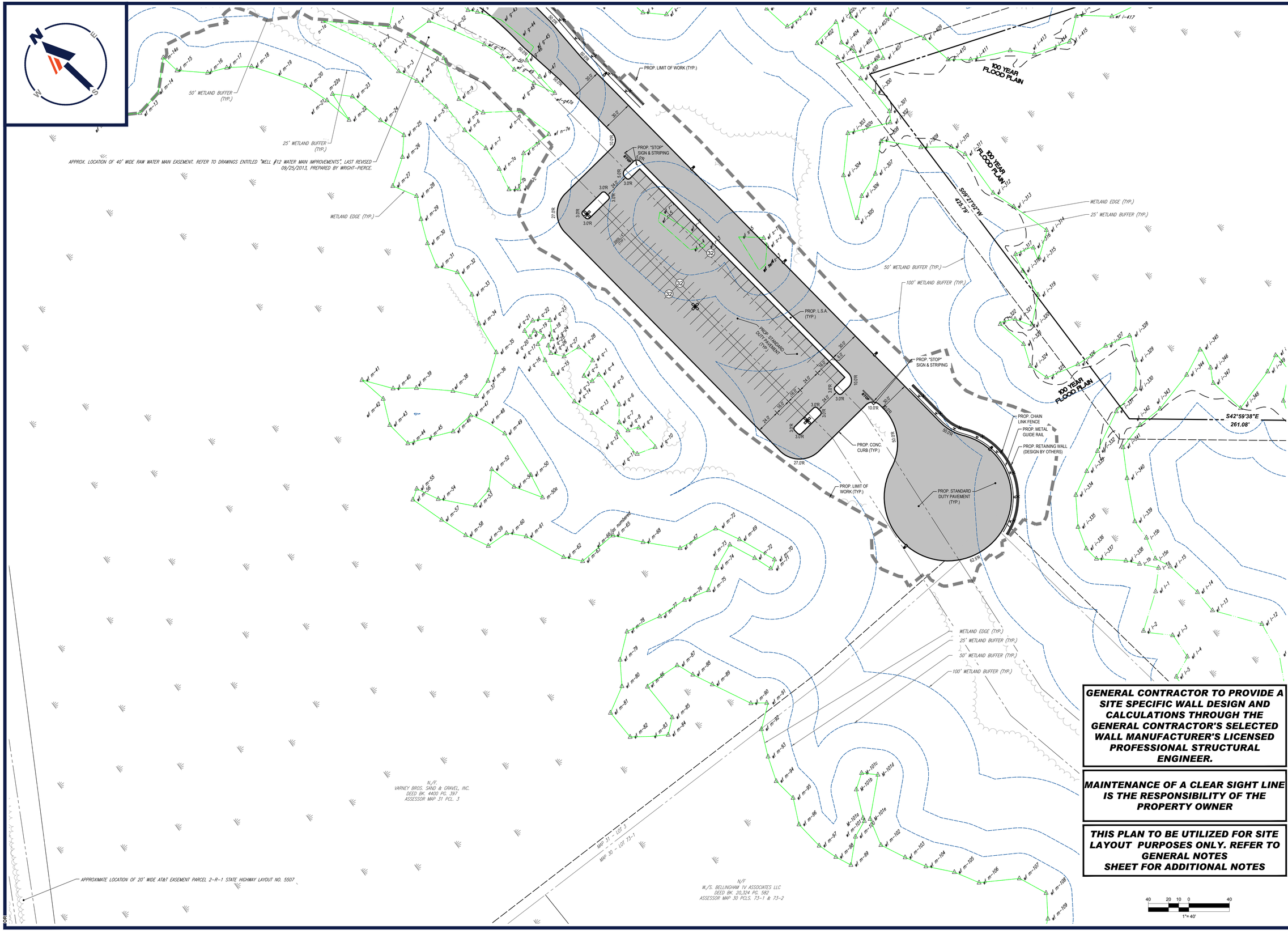
SHEET TITLE:

SITE LAYOUT PLAN E

SHEET NUMBER:

C-306

REVISION 4 - 12/06/2023



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40 20 10 0 40
1"= 40'

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FOR

WS DEVELOPMENT

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NEW HAMPSHIRE LICENSE No. 15476
CONNECTICUT LICENSE No. 26177
RHODE ISLAND LICENSE No. 9616
MAINE LICENSE No. 12553

SHEET TITLE:

SITE LAYOUT PLAN F

SHEET NUMBER:

C-307

REVISION 4 - 12/06/2023

P:\2022\W221023\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W221023-SPPD-4A.-----LAYOUT(C-307-SITE F
OR

BELLINGHAM
CROSSROADS SHOPPING CENTER

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	-	-
PROJECT FILE NO.	2148.00		

INTERNAL ACCESS DESIGN
REVISED 11/01/23

N

PROPOSED NEW MAST ARM WITH WAREHOUSE TRAFFIC USE LEFT LANE SIGN OVER OUTERMOST LEFT TURN LANE

PROPOSED RAISED MEDIAN

PROPOSED SCORED CONCRETE

WAREHOUSE TRAFFIC USE LEFT LANE

PROPOSED DO NOT BLOCK INTERSECTION BOX AND SIGN

PROPOSED RAISED MEDIAN

PROPOSED RRFB

LOSS OF 1 PARKING SPACE

BENCHMARK: MBMK-HYD BNT BOLT EL=267.04'

BENCHMARK: MBMK-BONNET BOLT EL=258.26'

SEPTEMBER 22, 1965 SHLO #5507 SECTION 2

SEPTEMBER 22, 1965 SHLO #5507 NO ACCESS

1965 AUXILIARY BASELINE "S"

495 SB ON-RAMP

WB-67 - Interstate Semi-Trailer

50.00'

10.00'

12.00'

12.00'

HMA SW

OLDSYS FPB

ROCK

GRASS

DENSE WOODS

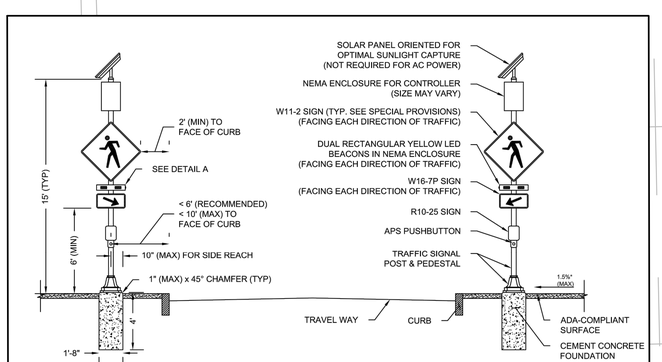
STOP

ONLY

WAREHOUSE TRAFFIC ONLY

SHOPPING CENTER ONLY

DO NOT ENTER

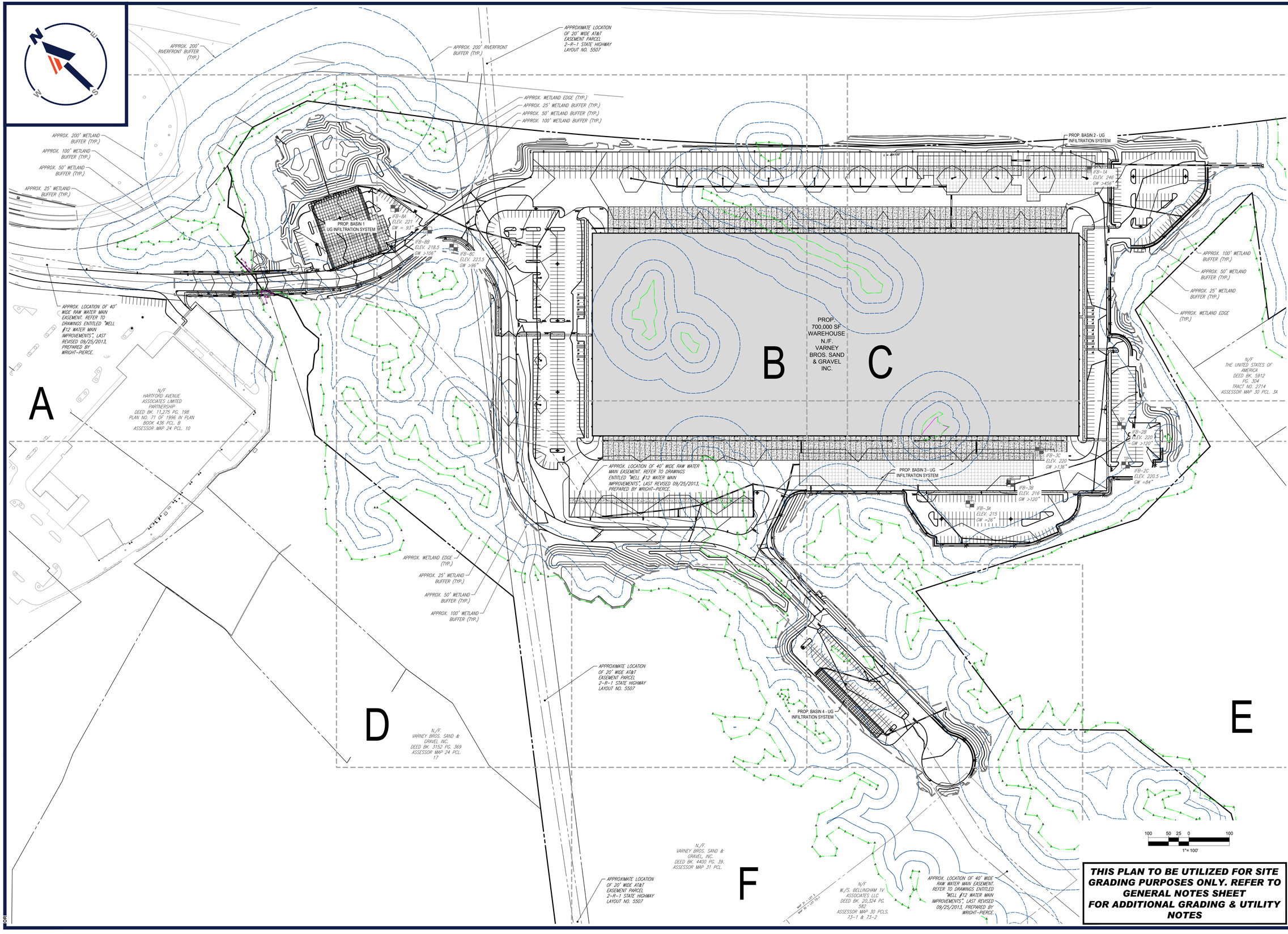


RECTANGULAR RAPID FLASHING BEACON (RRFB)

0 20 50 100

SCALE: 1" = 20'

Designed by Chappell Engineering Associates LLC



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P:\2022\W221023\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W221023-GRAD-A1-----LAYOUT C-401 - OVERALL GRAD

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COMMONWEALTH OF MASSACHUSETTS
JOSHUA KUCEWICZ
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NEW HAMPSHIRE LICENSE NO. 15429
CONNECTICUT LICENSE NO. 26127
RHODE ISLAND LICENSE NO. 14719
FLORIDA LICENSE NO. 77553

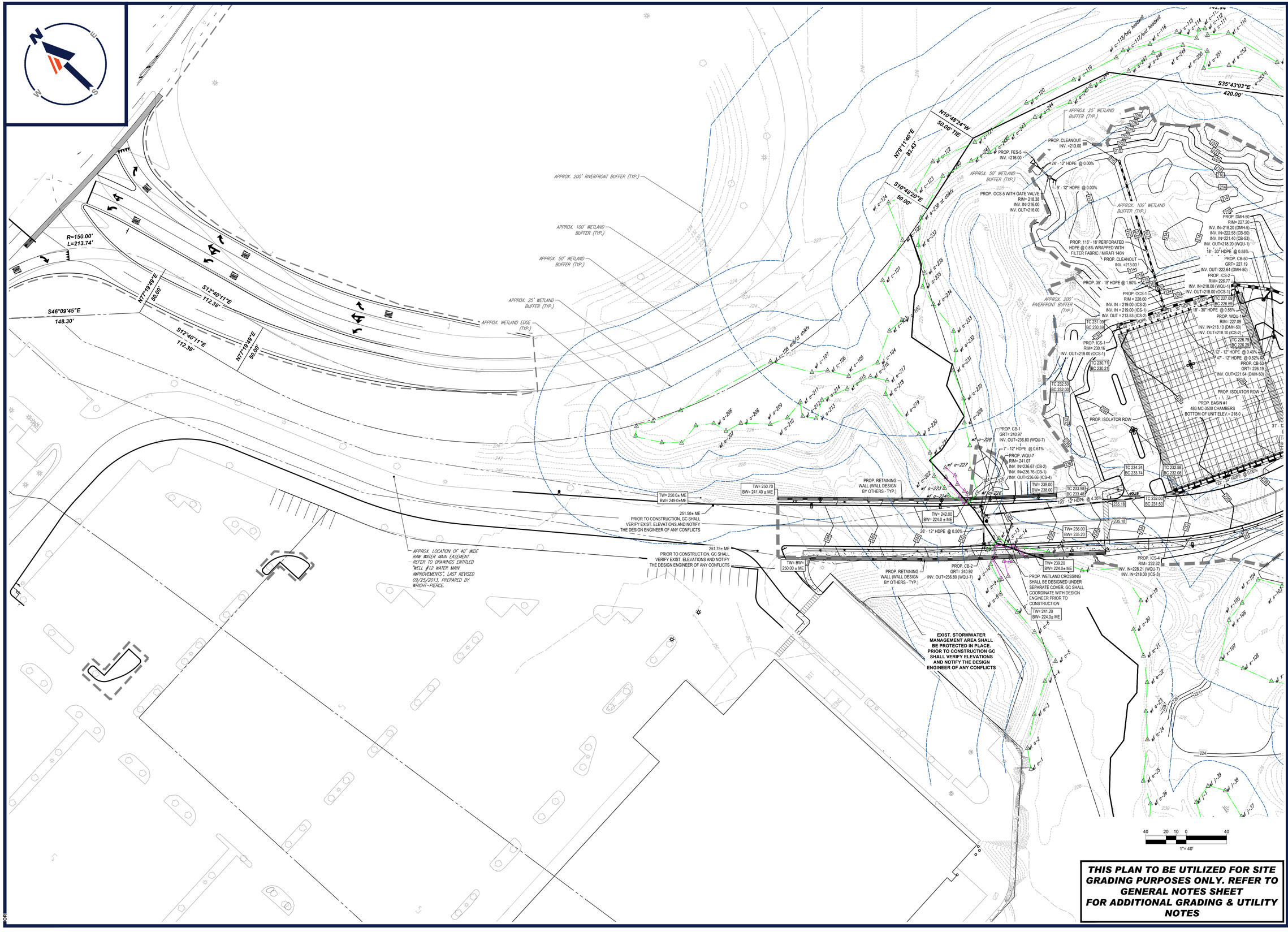
SHEET TITLE:

OVERALL GRADING AND DRAINAGE PLAN

SHEET NUMBER:

C-401

REVISION 4 - 12/06/2023



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PROFESSIONAL ENGINEER
MASSACHUSETTS
CONNECTICUT LICENSE No. 28127
RHODE ISLAND LICENSE No. 14553

SHEET TITLE:

GRADING AND DRAINAGE PLAN A

SHEET NUMBER:

C-402

REVISION 4 - 12/06/2023

P:\2022\W221023\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W221023-GRAD-A1-----LAYOUT1 C-402-GRAD A

RTE. I-495
(1965 STATE HIGHWAY LAYOUT)

R=3000.00'
L=215.95'
N53°19'0
24.00
N53°04'44"E
125.00'
S35°42'59"E
420.00'
APPROX. 200' RIVERFRONT BUFFER (TYP.)
APPROX. WETLAND EDGE (TYP.)
APPROX. 25' WETLAND BUFFER (TYP.)
APPROX. 50' WETLAND BUFFER (TYP.)
APPROX. 100' WETLAND BUFFER (TYP.)
APPROX. LOCATION OF 40' WIDE RAW WATER MAIN EASEMENT. REFER TO DRAWINGS ENTITLED "WELL #12 WATER MAIN IMPROVEMENTS", LAST REVISED 09/25/2013, PREPARED BY WRIGHT-PIERCE.
PROP. RETAINING WALL (WALL DESIGN BY OTHERS - TYP.)
PROP. DMH-50
RIM= 227.20
INV. IN=218.20 (DMH-5)
INV. IN=222.58 (CB-50)
INV. IN=221.40 (CB-53)
INV. OUT=218.20 (WQU-1)
18" - 30" HDPE @ 0.55%
PROP. CB-50
GRT= 227.19
INV. OUT=222.64 (DMH-50)
PROP. ICS-2
RIM= 226.77
INV. IN=218.00 (WQU-1)
INV. OUT=218.00 (ICS-1)
PROP. WQU-1
RIM= 227.09
INV. IN=218.10 (DMH-50)
INV. OUT=218.10 (ICS-2)
PROP. ISOLATOR ROW
PROP. BASIN #1
483 MC-3500 CHAMBERS
BOTTOM OF UNIT ELEV.= 218.0
PROP. CB-7
GRT= 224.04
INV. OUT=219.71 (DMH-6)
PROP. DMH-6
RIM= 224.38
INV. IN=219.60 (CB-9)
INV. IN=219.60 (CB-7)
INV. IN=219.60 (CB-8)
INV. IN=219.60 (CB-79)
INV. OUT=219.60 (DMH-5)
144' - 12" HDPE @ 0.50%
PROP. DMH-5
RIM= 223.22
INV. IN=219.12 (DMH-7)
INV. IN=219.12 (DMH-6)
INV. OUT=219.12 (DMH-50)
22' - 12" HDPE @ 0.51%
PROP. CB-9
GRT= 224.93
INV. OUT=220.32 (DMH-6)
PROP. CB-8
GRT= 224.23
INV. OUT=219.71 (DMH-6)
22' - 12" HDPE @ 0.50%
64' - 12" HDPE @ 0.50%
PROP. CB-79
GRT= 224.10
INV. OUT=219.92 (DMH-6)
PROP. CB-16
GRT= 228.37
INV. OUT=220.90 (DMH-8)
184' - 30" HDPE @ 0.50%
95' - 18" HDPE @ 0.51%
21' - 12" HDPE @ 0.52%
73' - 24" HDPE @ 0.51%
54' - 24" HDPE @ 0.50%
124' - 24" HDPE @ 0.50%
77' - 24" HDPE @ 0.50%
85' - 18" HDPE @ 0.50%
112' - 18" HDPE @ 0.50%
8' - 12" HDPE @ 0.59%
101' - 12" HDPE @ 0.51%
PROP. CB-10
GRT= 226.77
INV. OUT=220.42 (DMH-8)
PROP. DMH-8
RIM= 226.73
INV. IN=220.37 (DMH-9)
INV. IN=220.37 (CB-10)
INV. IN=220.37 (CB-16)
INV. OUT=220.37 (DMH-7A)
PROP. CB-11
GRT= 227.53
INV. OUT=220.80 (DMH-9)
9' - 12" HDPE @ 0.54%
PROP. 5' ACCESSIBLE WALKWAY. MAX. 2% CROSS SLOPE AND MAX. 5% RUNNING SLOPE (TYP.)
PROP. CB-12
GRT= 227.13
INV. OUT=221.16 (DMH-10)
9' - 12" HDPE @ 0.53%
MAX. 2% IN ANY DIRECTION FOR ACCESSIBLE AREA (TYP.)
PROP. DMH-10
RIM= 227.33
INV. IN=221.11 (DMH-11)
INV. IN=221.11 (CB-12)
INV. OUT=221.11 (DMH-9)
PROP. DMH-11
RIM= 227.83
INV. IN=221.75 (DMH-12)
INV. IN=221.75 (CB-13)
INV. OUT=221.75 (DMH-10)
8' - 12" HDPE @ 0.50%
PROP. CB-13
GRT= 227.64
INV. OUT=221.79 (DMH-11)
PROP. DMH-12
RIM= 227.90
INV. IN=222.31 (CB-15)
INV. IN=222.31 (CB-14)
INV. OUT=222.31 (DMH-11)
PROP. CB-14
GRT= 227.64
INV. OUT=222.36 (DMH-12)
9' - 12" HDPE @ 0.54%
PROP. CB-35
GRT= 223.00
INV. OUT=219.87 (DMH-33A)
PROP. CB-35A
GRT= 223.00
INV. OUT=219.40 (DMH-33A)
20' - 24" HDPE @ 0.50%
115' - 18" HDPE @ 0.50%
PROP. DMH-33A
RIM= 223.59
INV. IN=219.30 (CB-35)
INV. IN=219.30 (CB-35A)
INV. OUT=219.30 (DMH-33)
PROP. CB-34
GRT= 223.00
INV. OUT=218.84 (DMH-33)
20' - 18" HDPE @ 0.50%
PROP. CB-34A
GRT= 223.00
INV. OUT=218.28 (DMH-32A)
PROP. DMH-33
RIM= 223.59
INV. IN=218.74 (DMH-33A)
INV. IN=218.74 (CB-34)
INV. OUT=218.74 (DMH-32A)
113' - 36" HDPE @ 0.50%
PROP. CB-33
GRT= 223.00
INV. OUT=217.72 (DMH-32)
20' - 18" HDPE @ 0.50%
PROP. DMH-32
RIM= 223.59
INV. IN=217.62 (CB-33)
INV. IN=217.62 (DMH-32A)
INV. OUT=217.62 (DMH-31A)
PROP. DMH-32A
RIM= 223.59
INV. IN=218.18 (CB-34A)
INV. IN=218.18 (DMH-33)
INV. OUT=218.18 (DMH-32)
PROP. DMH-R3
RIM= 226.65
INV. IN=223.00 (DMH-R2)
INV. OUT=223.00 (DMH-R4)
200' - 30" HDPE @ 0.50%
200' - 30" HDPE @ 0.75%
PROP. RD-1
RIM= 232.42
INV. OUT=226.50 (DMH-R1)
PROP. DMH-R1
RIM= 228.65
INV. IN=225.00 (RD-1)
INV. OUT=225.00 (DMH-R2)
PROP. DMH-R2
RIM= 228.65
INV. IN=224.00 (DMH-R1)
INV. OUT=224.00 (DMH-R3)
PROP. DMH-R11
GRT= 228.72
INV. IN=223.25 (DMH-R10)
INV. OUT=223.20 (DMH-R12)
286' - 24" HDPE @ 0.63%
200' - 24" HDPE @ 0.50%
PROP. ICS-3
RIM= 227.48
INV. IN=218.00 (WQU-8)
INV. OUT=218.00 (ICS-4)
PROP. DMH-4
RIM= 224.46
INV. IN=218.33 (CB-17)
INV. IN=218.33 (CB-3)
INV. IN=218.33 (CB-4)
INV. OUT=218.33 (DMH-52)
29' - 18" HDPE @ 0.51%
PROP. DMH-52
RIM= 225.24
INV. IN=218.18 (DMH-4)
INV. IN=218.18 (CB-52)
INV. IN=218.18 (CB-54)
INV. OUT=218.18 (WQU-8)
16' - 24" HDPE @ 0.50%
18' - 24" HDPE @ 0.54%
PROP. CB-3
GRT= 224.10
INV. OUT=218.39 (DMH-4)
12' - 12" HDPE @ 0.50%
32' - 12" HDPE @ 0.50%
PROP. CB-4
GRT= 223.97
INV. OUT=218.49 (DMH-4
PROP. DMH-7
RIM= 223.94
INV. IN=219.48 (DMH-7A)
INV. IN=219.48 (CB-6)
INV. IN=219.48 (CB-5)
INV. OUT=219.48 (DMH-5)
PROP. CB-5
GRT= 223.86
INV. OUT=219.63 (DMH-7)
PROP. CB-6
GRT= 223.89
INV. OUT=219.59 (DMH-7)
PROP. DMH-7A
RIM= 224.74
INV. IN=219.75 (DMH-8)
INV. OUT=219.75 (DMH-7)
PROP. CB-17
GRT= 223.12
INV. OUT=218.81 (DMH-4)
29' - 12" HDPE @ 0.52%
PROP. CB-52
GRT= 225.09
INV. OUT=218.54 (DMH-52)
PROP. CB-54
GRT= 226.48
INV. OUT=218.34 (DMH-52)
PROP. CB-53
GRT= 226.19
INV. OUT=221.64 (DMH-50)
PROP. CB-79
GRT= 224.10
INV. OUT=219.92 (DMH-6)
IFB-8A ELEV. 221 GW = 93"
IFB-8B ELEV. 218.5 GW >106"
IFB-8C ELEV. 223.5 GW >96"
TP
TC 227.49 BC 226.99
TC 227.09 BC 226.59
TC 226.50 BC 226.00
TC 226.79 BC 226.29
TC 227.28 BC 226.78
TC 227.39 BC 226.89
TC 225.50 BC 225.00
TC 224.50 BC 224.00
TC 224.98 BC 224.48
TC 224.50 BC 224.00
TC 225.09 BC 224.59
TC 225.75 BC 225.25
TC 226.26 BC 225.76
TC 226.89 BC 226.39
TC 226.76 BC 226.26
TC 228.35 BC 227.85
TC 227.55 BC 227.05
TC 228.29 BC 227.79
TC 228.74 BC 228.24
TC 229.00 BC 228.50
TC 229.40 BC 228.90
TC 229.42 BC 228.92
TC 230.50 BC 230.00
TC 230.68 BC 230.18
TC 230.35 BC 229.85
TC 230.75 BC 230.25
TC 229.52 BC 229.02
TC 229.04 BC 228.54
TC 230.25 BC 229.75
TC 228.82 BC 228.32
TC 228.40 BC 227.90
TC 228.19 BC 227.69
TC 230.40 BC 229.90
TC 226.12 BC 225.62
TC 225.90 BC 225.40
TC 226.92 BC 226.42
TC 228.07 BC 227.57
TC 227.50 BC 227.00
TC 226.40 BC 225.90
TC 226.39 BC 225.89
TC 226.70 BC 226.29
TW= BW= 224.70
TW= 225.00 BW= 210.00 ± ME
TW= BW= 225.0
TC=BC 230.68
TC=BC 230.35
TC=BC 230.70
TC=BC 230.30
TC=BC 230.00
226.80
226.00
224.46
224.50
227.00
230.93
231.00
230.40
228.10
228.50
RIDGE
STOP
MAX. 2% IN ANY DIRECTION FOR ACCESSIBLE AREA (TYP.)
PROP. 5' ACCESSIBLE WALKWAY. MAX. 2% CROSS SLOPE AND MAX. 5% RUNNING SLOPE (TYP.)
PROP. 700,000 SF WAREHOUSE N./F. VARNEY BROS. SAND & GRAVEL INC. FFE = 231.00
40 20 10 0 40
1"= 40'
THIS PLAN TO BE UTILIZED FOR SITE GRADING PURPOSES ONLY. REFER TO GENERAL NOTES SHEET FOR ADDITIONAL GRADING & UTILITY NOTES

P:\2022\W221023\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W221023-GRAD-4A-----LAYOUT C-403-GRADE B

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REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	03/03/2023	PLANNING BOARD COMMENTS	OCR / MMA
2	05/01/2023	SITE LAYOUT UPDATES	OCR / MMA
3	07/28/2023	PLANNING BOARD COMMENTS	CJP / MMA
4	12/06/2023	CON COM COMMENTS	OCR / MMA

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PROJECT No.:	W221023
DRAWN BY:	OCR/AJS
CHECKED BY:	MMA
DATE:	09/22/2022
CAD I.D.:	W221023-X-TTLB-SPPD

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

WS DEVELOPMENT

PROPOSED DEVELOPMENT
MAPS: 24, 30, & 31
LOTS: 10 & 12, 73-1, & 3
HARTFORD AVENUE,
TOWN BELLINGHAM ,
NORFOLK COUNTY,
MASSACHUSETTS

BOHLER
352 TURNPIKE ROAD
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900
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CIVIL
No. 41530
REGISTERED PROFESSIONAL ENGINEER
JOHN A. KUCH, PE
MASSACHUSETTS LICENSE No. 41530
NEW HAMPSHIRE LICENSE No. 18117
CONNECTICUT LICENSE No. 28127
RHODE ISLAND LICENSE No. 14610
MAINE LICENSE No. 24555

SHEET TITLE:

GRADING AND DRAINAGE PLAN B

SHEET NUMBER:

C-403

REVISION 4 - 12/06/2023

RTE. I-495
(1965 STATE HIGHWAY LAYOUT)

PROP. 700,000 SF WAREHOUSE N./F. VARNEY BROS. SAND & GRAVEL INC. FFE = 231.00

PROP. OCS-2
RIM= 226.08
INV. IN=217.00 (BSN2A-OUT (1))
INV. OUT=217.00 (DMH-35)

PROP. FES-2
GRT= 208.85
INV. IN=209.77 (DMH-35)

PROP. DMH-35
RIM= 230.99
INV. IN=216.35 (OCS-2)
INV. OUT=213.92 (FES-2)

PROP. DMH-32
RIM= 223.59
INV. IN=217.62 (CB-33)
INV. IN=217.62 (DMH-32A)
INV. OUT=217.62 (DMH-31A)

PROP. DMH-31A
RIM= 223.59
INV. IN=217.05 (DMH-32)
INV. IN=217.06 (CB-33A)
INV. OUT=217.06 (DMH-31)

PROP. DMH-31
RIM= 223.59
INV. IN=216.50 (DMH-31A)
INV. IN=216.50 (CB-32)
INV. OUT=216.50 (BSN2 - A)

PROP. DMH-R3
RIM= 226.65
INV. IN=223.00 (DMH-R2)
INV. OUT=223.00 (DMH-R4)

PROP. DMH-R4
RIM= 228.63
INV. IN=220.18 (RD-5)
INV. IN=221.58 (DMH-R3)
INV. OUT=218.00 (BSN2 - B)

PROP. RD-5
RIM= 231.01
INV. OUT=223.00 (DMH-R4)

PROP. DMH-R13
RIM= 228.61
INV. OUT=224.00 (DMH-R12)

PROP. DMH-R15
RIM= 228.64
INV. IN=223.09 (DMH-R14)
INV. IN=222.53 (DMH-R16)
INV. OUT=217.30 (ICS-15)

PROP. DMH-R16
GRT= 228.89
INV. OUT=224.70 (DMH-R15)

PROP. DMH-24
RIM= 225.82
INV. IN=217.04 (WQU-3)
INV. OUT=217.04 (BSN2 - C)
27' - 18" HDPE @ 0.51%

PROP. DMH-36
RIM= 227.39
INV. IN=218.75 (CB-30)
INV. IN=217.85 (CB-31)
INV. OUT=217.85 (WQU-3)

PROP. DMH-23
RIM= 228.26
INV. IN=219.98 (CB-28)
INV. IN=219.98 (CB-27)
INV. OUT=219.98 (DMH-21)

PROP. DMH-20
RIM= 227.52
INV. IN=219.87 (CB-24)
INV. IN=219.87 (CB-25)
INV. IN=219.87 (CB-26)
INV. OUT=219.87 (DMH-21)

PROP. CB-32
GRT= 223.00
INV. OUT=216.60 (DMH-31)

PROP. CB-31
GRT= 226.35
INV. OUT=218.08 (DMH-36)

PROP. CB-30
GRT= 224.80
INV. OUT=219.05 (DMH-36)

PROP. CB-29
GRT= 227.86
INV. OUT=217.90 (WQU-3)

PROP. CB-28
GRT= 229.36
INV. OUT=220.87 (DMH-23)

PROP. CB-27
GRT= 227.88
INV. OUT=220.03 (DMH-23)

PROP. CB-25
GRT= 225.17
INV. OUT=220.21 (DMH-20)

PROP. CB-24
GRT= 226.57
INV. OUT=220.10 (DMH-20)

PROP. WQU-2A
GRT= 223.00
INV. OUT=217.10

PROP. WQU-2B
GRT= 223.00
INV. OUT=217.10

PROP. WQU-2C
GRT= 223.91
INV. OUT=217.10

PROP. WQU-3
RIM= 226.99
INV. IN=217.18 (DMH-36)
INV. IN=217.18 (CB-29)
INV. OUT=217.18 (DMH-24)

PROP. BASIN #2A
318 RETAIN-IT UNITS
BOTTOM OF UNIT ELEV.= 216.0

PROP. BASIN #2B
294 RETAIN-IT UNITS
BOTTOM OF UNIT ELEV.= 216.0

PROP. RETAINING WALL (WALL DESIGN BY OTHERS - TYP.)

PROP. 5' ACCESSIBLE WALKWAY. MAX. 2% CROSS SLOPE AND MAX. 5% RUNNING SLOPE (TYP.)

MAX. 2% IN ANY DIRECTION FOR ACCESSIBLE AREA (TYP.)

APPROX. WETLAND EDGE (TYP.)
APPROX. 25' WETLAND BUFFER (TYP.)
APPROX. 50' WETLAND BUFFER (TYP.)
APPROX. 100' WETLAND BUFFER (TYP.)

N/F
THE UNITED STATES OF AMERICA
DEED BK. 5912
PG. 304
TRACT NO. 2714
ASSESSOR MAP 30 PCL. 3A

N68°39'26"W 408.12'
S17°42'57"W 384.25'
N39°07'01"E 314.91'

THIS PLAN TO BE UTILIZED FOR SITE GRADING PURPOSES ONLY. REFER TO GENERAL NOTES SHEET FOR ADDITIONAL GRADING & UTILITY NOTES

40 20 10 0 40
1" = 40'

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REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	03/03/2023	PLANNING BOARD COMMENTS	OCR / MMA
2	05/01/2023	SITE LAYOUT UPDATES	OCR / MMA
3	07/28/2023	PLANNING BOARD COMMENTS	CJP / MMA
4	12/06/2023	CON COM COMMENTS	OCR / MMA

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PROJECT No.:	W221023
DRAWN BY:	OCR/AJS
CHECKED BY:	MMA
DATE:	09/22/2022
CAD I.D.:	W221023-X-TTLB-SPPD

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

WS DEVELOPMENT

PROPOSED DEVELOPMENT
MAPS: 24, 30, & 31
LOTS: 10 & 12, 73-1, & 3
HARTFORD AVENUE,
TOWN BELLINGHAM ,
NORFOLK COUNTY,
MASSACHUSETTS

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JOHNA KUCEWICZ
CIVIL
No. 41530
REGISTERED PROFESSIONAL ENGINEER
NEW HAMPSHIRE LICENSE No. 15426
RHODE ISLAND LICENSE No. 14719
CONNECTICUT LICENSE No. 27513

SHEET TITLE:

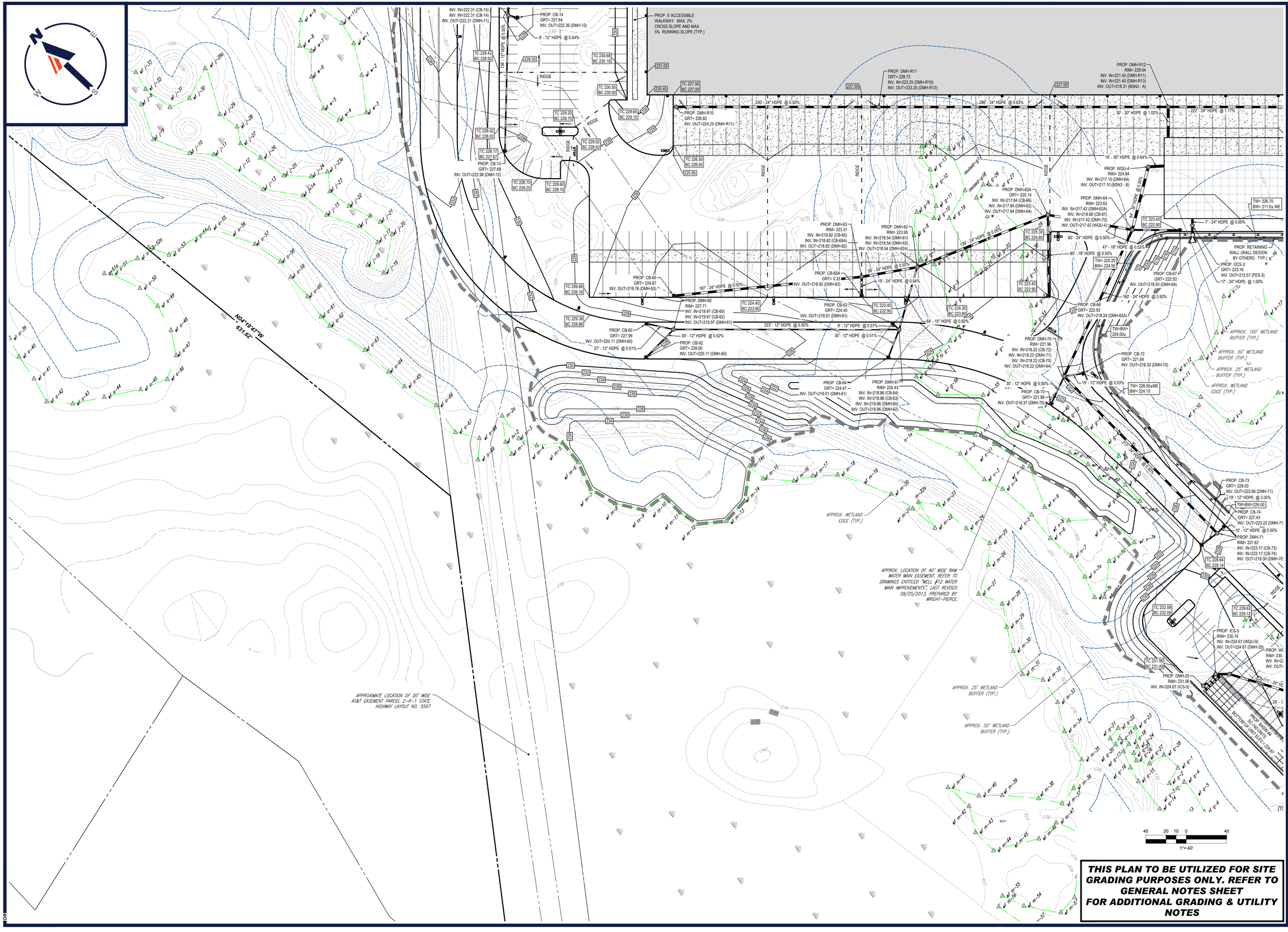
GRADING AND DRAINAGE PLAN C

SHEET NUMBER:

C-404

REVISION 4 - 12/06/2023

P:\2022\W221023\CAD\DRAWINGS\PLAN SET\CIVIL SITE PLANS\W221023-GRAD-A... — LAYOUT: C-404-GRAD C



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4	12/06/2023	CON COM COMMENTS	OCR / MMA

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PROJECT No.:	W221023
DRAWN BY:	OCR/AJS
CHECKED BY:	MMA
DATE:	09/22/2022
CAD I.D.:	W221023-X-TTLB-SPPD

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

WS DEVELOPMENT

PROPOSED DEVELOPMENT
MAPS: 24, 30, & 31
LOTS: 10 & 12, 73-1, & 3
HARTFORD AVENUE,
TOWN BELLINGHAM ,
NORFOLK COUNTY,
MASSACHUSETTS

BOHLER

352 TURNPIKE ROAD
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Phone: (508) 480-9900

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No. 41530
REGISTERED PROFESSIONAL ENGINEER
JOHN A. KUCZARSKI
CIVIL
MASSACHUSETTS LICENSE No. 41530
NEW HAMPSHIRE LICENSE No. 18412
CONNECTICUT LICENSE No. 29167
RHODE ISLAND LICENSE No. 14151
MAINE LICENSE No. 22551

SHEET TITLE:

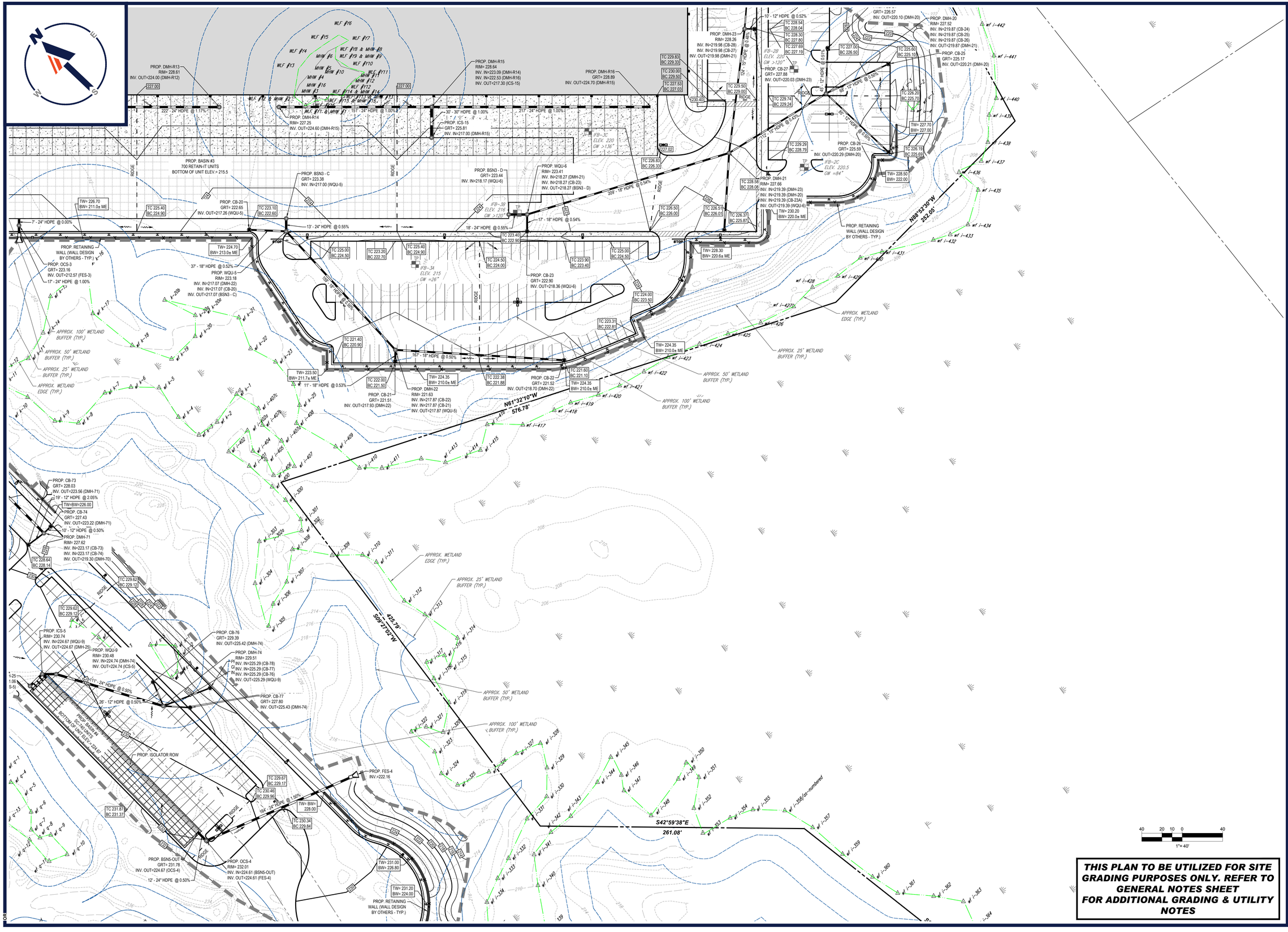
GRADING AND DRAINAGE PLAN D

SHEET NUMBER:

C-405

REVISION 4 - 12/06/2023

P:\2022\W221023\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W221023-GRAD-4A-----LAYOUT: C-405-GRAD D



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REVISIONS

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4	12/06/2023	CON COM COMMENTS	OCR / MMA

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PROJECT No.:	W221023
DRAWN BY:	OCR/AJS
CHECKED BY:	MMA
DATE:	09/22/2022
CAD I.D.:	W221023-X-TTLB-SPPD

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

WS DEVELOPMENT

PROPOSED DEVELOPMENT
MAPS: 24, 30, & 31
LOTS: 10 & 12, 73-1, & 3
HARTFORD AVENUE,
TOWN BELLINGHAM ,
NORFOLK COUNTY,
MASSACHUSETTS

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352 TURNPIKE ROAD
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JOHN A. KUCEWICZ
CIVIL
No. 41530
REGISTERED PROFESSIONAL ENGINEER
MASSACHUSETTS NEW YORK CONNECTICUT RHODE ISLAND
PROFESSIONAL ENGINEER LICENSE No. 41530 LICENSE No. 29745 LICENSE No. 22553

SHEET TITLE:

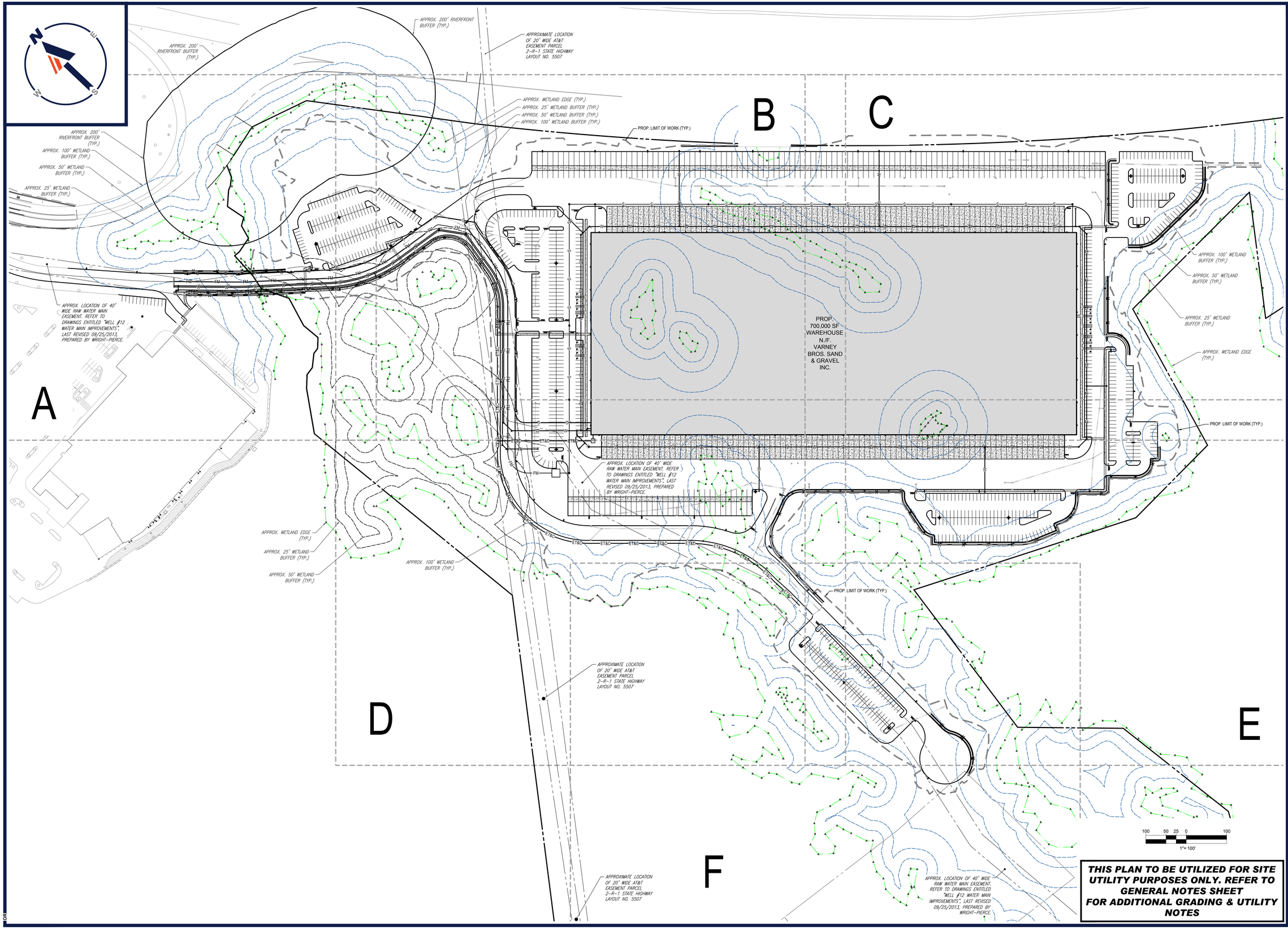
GRADING AND DRAINAGE PLAN E

SHEET NUMBER:

C-406

REVISION 4 - 12/06/2023

P:\2022\W221023\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W221023-GRAD-4A-----LAYOUT: C-406-GRAD E



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P:\2022\W221023\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W221023-UTIL-4A-----LAYOUT C-501 - OVERALL UTIL

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REVISIONS

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1	03/03/2023	PLANNING BOARD COMMENTS	OCR / MMA
2	05/01/2023	SITE LAYOUT UPDATES	OCR / MMA
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4	12/06/2023	CON COM COMMENTS	OCR / MMA

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CHECKED BY:	MMA
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CAD I.D.:	W221023-X-TTLB-SPPD

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

WS DEVELOPMENT

PROPOSED DEVELOPMENT
MAPS: 24, 30, & 31
LOTS: 10 & 12, 73-1, & 3
HARTFORD AVENUE,
TOWN BELLINGHAM ,
NORFOLK COUNTY,
MASSACHUSETTS

BOHLER

352 TURNPIKE ROAD
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Phone: (508) 480-9900

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JOHN A. KUCICH
CIVIL
No. 41530
REGISTERED PROFESSIONAL ENGINEER
MASSACHUSETTS (41530) · NEW HAMPSHIRE (19641) · CONNECTICUT (PEC.0031727) · RHODE ISLAND (CONTACT NO. 9813) · MAINE LICENSE No. 22553

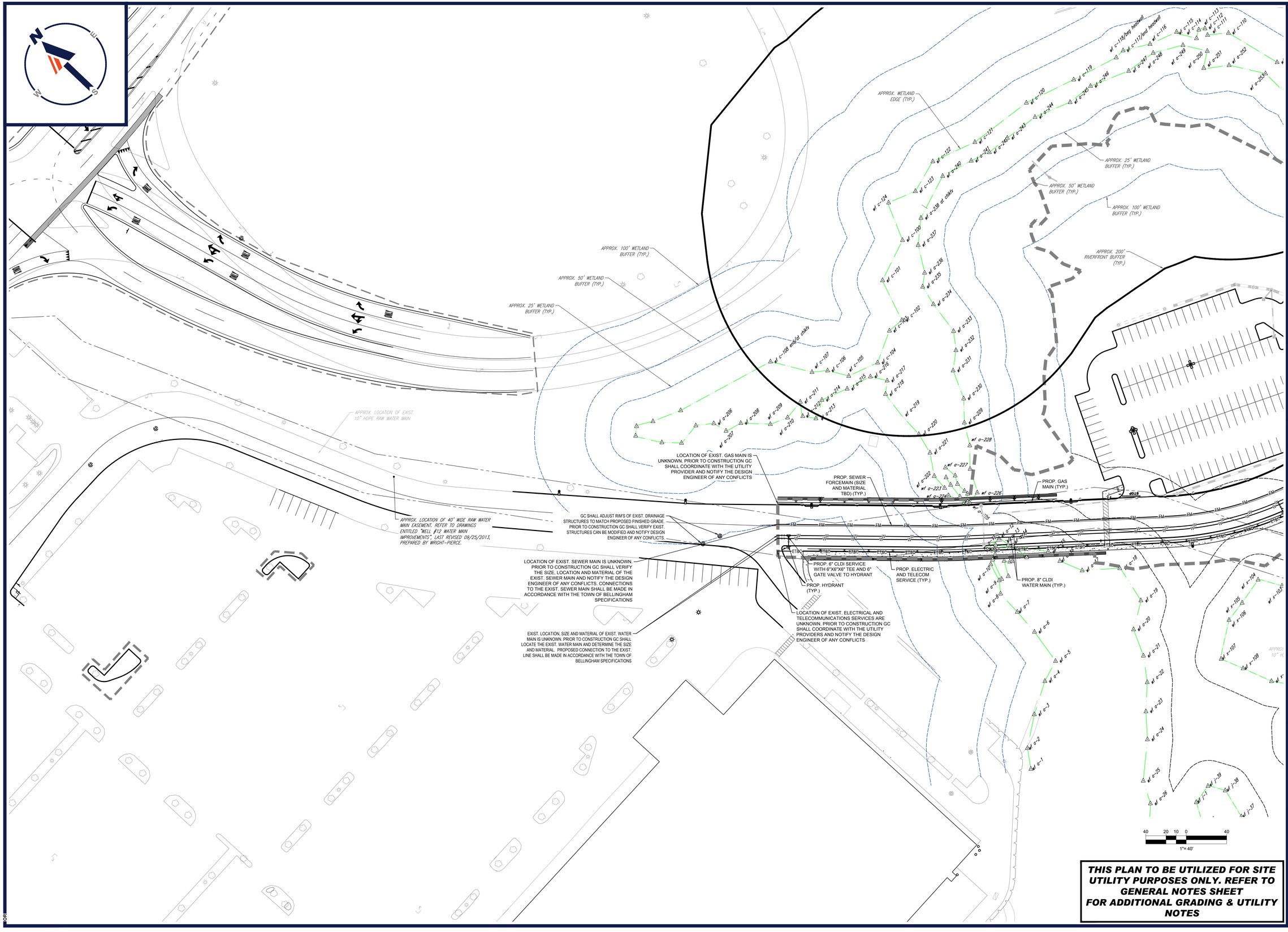
SHEET TITLE:

OVERALL UTILITY PLAN

SHEET NUMBER:

C-501

REVISION 4 - 12/06/2023



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PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

WS DEVELOPMENT

PROPOSED DEVELOPMENT
MAPS: 24, 30, & 31
LOTS: 10 & 12, 73-1, & 3
HARTFORD AVENUE,
TOWN BELLINGHAM ,
NORFOLK COUNTY,
MASSACHUSETTS

BOHLER

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CIVIL
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REGISTERED PROFESSIONAL ENGINEER

SHEET TITLE:

UTILITY PLAN A

SHEET NUMBER:

C-502

REVISION 4 - 12/06/2023

P:\2022\W221023\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W221023-UTIL-4A----LAYOUT: C-502-UTIL A

RTE. I-495
(1965 STATE HIGHWAY LAYOUT)

APPROXIMATE LOCATION OF 20' WIDE AT&T EASEMENT PARCEL 2-R-1 STATE HIGHWAY LAYOUT NO. 5507

APPROX. 200' RIVERFRONT BUFFER (TYP.)
APPROX. WETLAND EDGE (TYP.)
APPROX. 25' WETLAND BUFFER (TYP.)
APPROX. 50' WETLAND BUFFER (TYP.)
APPROX. 100' WETLAND BUFFER (TYP.)

PROP. LIMIT OF WORK (TYP.)

PROP. HYDRANT (TYP.)

PROP. 6" CLDI SERVICE WITH 6"X6"X6" TEE AND 6" GATE VALVE TO HYDRANT

PROP. SMH5
RIM=226.71
INV. IN=217.30 (SMH4)
INV. IN=223.60 (- (33))
INV. OUT=217.20 (SMH6)

PROP. SMH6
RIM=227.71
INV. IN=216.88 (SMH5)
INV. OUT=216.78 (SMH7)

64 - 8" SAN @ 0.5%

280 - 8" SAN @ 0.5%

300 - 8" SAN @ 0.5%

PROP. SMH4
RIM=225.49
INV. IN=218.80 (SMH3)
INV. OUT=218.70 (SMH5)

PROP. 8" CLDI WATER MAIN (TYP.)

PROP. SMH3
RIM=224.93
INV. IN=220.40 (SMH2)
INV. OUT=220.30 (SMH4)

70 - 8" SAN @ 2.0%

PROP. BEND WITH THRUST BLOCK (TYP.)

PROP. 8" CLDI WATER MAIN (TYP.)

PROP. APPROX. LOCATION OF PROP. 8" SDR-35 SEWER OUTLET (INV.=225.00). GC TO COORDINATE OUTLET LOCATION AND ELEVATION WITH ARCH. / MEP. PRIOR TO CONSTRUCTION AND NOTIFY DESIGN ENGINEER OF ANY CONFLICTS.

PROP. GAS MAIN (TYP.)

PROP. 8" CLDI WATER MAIN (TYP.)

PROP. BEND WITH THRUST BLOCK (TYP.)

PROP. 6" CLDI SERVICE WITH 6"X6"X6" TEE AND 6" GATE VALVE TO HYDRANT

PROP. HYDRANT (TYP.)

APPROX. LOCATION OF EXIST. 10" HDPE RAW WATER MAIN

APPROX. LOCATION OF 40' WIDE RAW WATER MAIN EASEMENT. REFER TO DRAWINGS ENTITLED "WELL #12 WATER MAIN IMPROVEMENTS", LAST REVISED 09/25/2013, PREPARED BY WRIGHT-PIERCE.

PROP. SEWER FORCEMAIN (SIZE AND MATERIAL TBD) (TYP.)

PROP. HYDRANT (TYP.)

PROP. 6" CLDI SERVICE WITH 6"X6"X6" TEE AND 6" GATE VALVE TO HYDRANT

PROP. ELECTRIC AND TELECOM SERVICE (TYP.)

EXIST. MANUAL AIR RELEASE MANHOLE

PROP. SMH7
RIM=229.78
INV. IN=215.28 (SMH6)
INV. OUT=215.18 (SMH8)

PROP. SMH8
RIM=229.50
INV. IN=214.26 (SMH7)
INV. OUT=214.16 (SMH9)

181 - 8" SAN @ 0.5%

153 - 8" SAN @ 0.5%

PROP. BEND WITH THRUST BLOCK (TYP.)

APPROX. LOCATION OF PROP. UNDERGROUND GAS SERVICE AND GAS METERS. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY AND ARCH. / MEP

APPROX. LOCATION OF PROP. 8" CLDI FIRE SERVICE AND 3" DOMESTIC WATER SERVICE ENTRY WITH VALVES. GC TO COORDINATE WITH ARCH. / MEP.

PROP. 700,000 SF WAREHOUSE N.F. VARNEY BROS. SAND & GRAVEL INC.

40 20 10 0 40
1"= 40'

THIS PLAN TO BE UTILIZED FOR SITE UTILITY PURPOSES ONLY. REFER TO GENERAL NOTES SHEET FOR ADDITIONAL GRADING & UTILITY NOTES

P:\2022\W221023\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W221023-UTIL-40.—LAYOUT: C-503-UTIL B

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REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	03/03/2023	PLANNING BOARD COMMENTS	OCR / MMA
2	05/01/2023	SITE LAYOUT UPDATES	OCR / MMA
3	07/28/2023	PLANNING BOARD COMMENTS	CJP / MMA
4	12/06/2023	CON COM COMMENTS	OCR / MMA

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PROJECT No.:	W221023
DRAWN BY:	OCR/AJS
CHECKED BY:	MMA
DATE:	09/22/2022
CAD I.D.:	W221023-X-TTLB-SPPD

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

WS DEVELOPMENT

PROPOSED DEVELOPMENT
MAPS: 24, 30, & 31
LOTS: 10 & 12, 73-1, & 3
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SHEET TITLE:

UTILITY PLAN B

SHEET NUMBER:

C-503

REVISION 4 - 12/06/2023

RTE. I-495
(1965 STATE HIGHWAY LAYOUT)

PROP. HYDRANT (TYP.)

PROP. 6" CLDI SERVICE WITH 6"X6"X6" TEE AND 6" GATE VALVE TO HYDRANT

300 - 8" SAN @ 0.5%

PROP. SMH3
RIM=224.93
INV. IN=220.40 (SMH2)
INV. OUT=220.30 (SMH4)

PROP. SMH2
RIM=225.01
INV. IN=222.00 (SMH1)
INV. OUT=221.90 (SMH3)

PROP. 8" CLDI WATER MAIN (TYP.)

PROP. SMH1
RIM=226.24
INV. IN=223.60 (-.(27))
INV. OUT=223.50 (SMH2)

PROP. HYDRANT (TYP.)

PROP. 6" CLDI SERVICE WITH 6"X6"X6" TEE AND 6" GATE VALVE TO HYDRANT

70 - 8" SAN @ 2.0%

PROP. BEND WITH THRUST BLOCK (TYP.)

PROP. APPROX. LOCATION OF PROP. 8" SDR-35 SEWER OUTLET (INV.=225.00). GC TO COORDINATE OUTLET LOCATION AND ELEVATION WITH ARCH. / MEP. PRIOR TO CONSTRUCTION AND NOTIFY DESIGN ENGINEER OF ANY CONFLICTS.

PROP. 8" CLDI WATER MAIN (TYP.)

PROP. 6" CLDI SERVICE WITH 6"X6"X6" TEE AND 6" GATE VALVE TO HYDRANT

PROP. HYDRANT (TYP.)

PROP. LIMIT OF WORK (TYP.)

PROP. 700,000 SF WAREHOUSE N./F. VARNEY BROS. SAND & GRAVEL INC.

APPROX. 100' WETLAND BUFFER (TYP.)

APPROX. WETLAND EDGE (TYP.)

APPROX. 25' WETLAND BUFFER (TYP.)

APPROX. 50' WETLAND BUFFER (TYP.)

APPROX. 100' WETLAND BUFFER (TYP.)

APPROX. 50' WETLAND BUFFER (TYP.)

APPROX. 25' WETLAND BUFFER (TYP.)

APPROX. WETLAND EDGE (TYP.)

40 20 10 0 40
1"= 40'

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3	07/28/2023	PLANNING BOARD COMMENTS	CJP / MMA
4	12/06/2023	CON COM COMMENTS	OCR / MMA

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DRAWN BY:	OCR/AJS
CHECKED BY:	MMA
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CAD I.D.:	W221023-X-TTLB-SPPD

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

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TOWN BELLINGHAM ,
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JOSHUA KUCEWICZ
CIVIL
No. 41530
REGISTERED PROFESSIONAL ENGINEER
CONNECTICUT License No. 29127
RHODE ISLAND License No. 13553
MAINE License No. 23553

SHEET TITLE:

UTILITY PLAN C

SHEET NUMBER:

C-504

REVISION 4 - 12/06/2023

P:\2022\W221023\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W221023-UTIL-4A-----LAYOUT C-504-UTIL C

PROP. SMH8
RIM=229.50
INV. IN=214.26 (SMH7)
INV. OUT=214.16 (SMH9)
181 - 8" SAN @ 0.5%

APPROX. LOCATION OF PROP. UNDERGROUND GAS SERVICE AND GAS METERS. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY AND ARCH. / MEP

APPROX. LOCATION OF PROP. 8" CLDI FIRE SERVICE AND 3" DOMESTIC WATER SERVICE ENTRY WITH VALVES. GC TO COORDINATE WITH ARCH. / MEP.

PROP. BEND WITH THRUST BLOCK (TYP.)

PROP. BEND WITH THRUST BLOCK (TYP.)

PROP. HYDRANT (TYP.)
PROP. 6" CLDI SERVICE WITH 6"X6"X6" TEE AND 6" GATE VALVE TO HYDRANT

PROP. HYDRANT AND 6" GATE VALVE (TYP.)

PROP. 8" CLDI WATER MAIN (TYP.)

APPROX. LOCATION OF PROP. UNDERGROUND ELECTRIC, TELEPHONE AND CABLE SERVICE CONNECTION. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY AND ARCH. / MEP

APPROX. TRANSFORMER ON CONC. PAD WITH BOLLARD PROTECTION IN ACCORDANCE WITH UTILITY COMPANY REQUIREMENTS

23 - 4" SAN @ 0.5%

PROP. SEWER PUMP STATION (DESIGN BY OTHERS)

PROP. SMH9
RIM=227.48
INV. IN=213.25 (SMH8)
INV. OUT=213.15 (PUMP STATION)

PROP. 6" CLDI SERVICE WITH 6"X6"X6" TEE AND 6" GATE VALVE TO HYDRANT

PROP. HYDRANT (TYP.)

APPROX. LOCATION OF EXIST. 10" HDPE RAW WATER MAIN

PROP. ELECTRIC AND TELECOM SERVICE (TYP.)

APPROX. 100' WETLAND BUFFER (TYP.)

APPROX. 50' WETLAND BUFFER (TYP.)

APPROX. 25' WETLAND BUFFER (TYP.)

APPROX. WETLAND EDGE (TYP.)

APPROX. 25' WETLAND BUFFER (TYP.)

APPROX. 50' WETLAND BUFFER (TYP.)

PROP. LIMIT OF WORK (TYP.)

APPROX. LOCATION OF 40' WIDE RAW WATER MAIN EASEMENT. REFER TO DRAWINGS ENTITLED "WELL #12 WATER MAIN IMPROVEMENTS", LAST REVISED 09/25/2013, PREPARED BY WRIGHT-PIERCE.

APPROX. 25' WETLAND BUFFER (TYP.)

APPROX. 50' WETLAND BUFFER (TYP.)

APPROXIMATE LOCATION OF 20' WIDE AT&T EASEMENT PARCEL 2-R-1 STATE HIGHWAY LAYOUT NO. 5507

40 20 10 0 40
1" = 40'

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REVISIONS

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1	03/03/2023	PLANNING BOARD COMMENTS	OCR / MMA
2	05/01/2023	SITE LAYOUT UPDATES	OCR / MMA
3	07/28/2023	PLANNING BOARD COMMENTS	CJP / MMA
4	12/06/2023	CON COM COMMENTS	OCR / MMA

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DRAWN BY:	OCR/AJS
CHECKED BY:	MMA
DATE:	09/22/2022
CAD I.D.:	W221023-X-TTLB-SPPD

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

WS DEVELOPMENT

PROPOSED DEVELOPMENT
MAPS: 24, 30, & 31
LOTS: 10 & 12, 73-1, & 3
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TOWN BELLINGHAM ,
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JOHN A. KUCZARSKI
CIVIL
No. 41530
REGISTERED PROFESSIONAL ENGINEER
MAINE LICENSE No. 12793
NEW HAMPSHIRE LICENSE No. 19472
CONNECTICUT LICENSE No. 28127
RHODE ISLAND LICENSE No. 14157
VERMONT LICENSE No. 026531

SHEET TITLE:

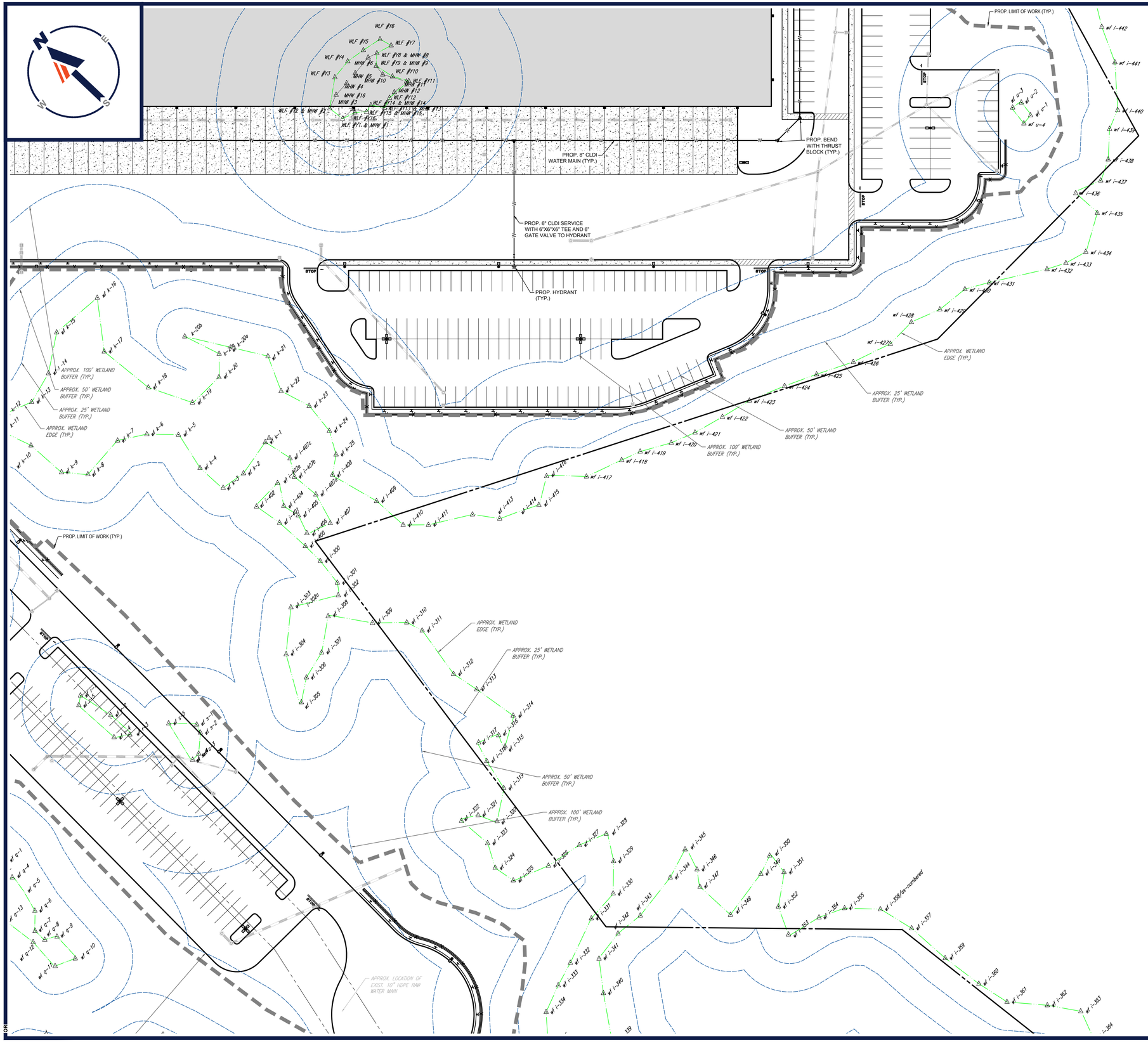
UTILITY PLAN D

SHEET NUMBER:

C-505

REVISION 4 - 12/06/2023

P:\2022\W221023\C-ADD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W221023-UTIL-4A.----LAYOUT: C-505-UTIL D



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40 20 10 0 40
1"= 40'

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4	12/06/2023	CON COM COMMENTS	OCR / MMA

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PROJECT No.:	W221023
DRAWN BY:	OCR/AJS
CHECKED BY:	MMA
DATE:	09/22/2022
CAD I.D.:	W221023-X-TTLB-SPPD

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

WS DEVELOPMENT

PROPOSED DEVELOPMENT
MAPS: 24, 30, & 31
LOTS: 10 & 12, 73-1, & 3
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CIVIL
No. 41530
REGISTERED PROFESSIONAL ENGINEER
MASSACHUSETTS | CONNECTICUT | NEW HAMPSHIRE | NEW YORK | OHIO | RHODE ISLAND | VERMONT License No. 24197 | MAINE License No. 24197

SHEET TITLE:

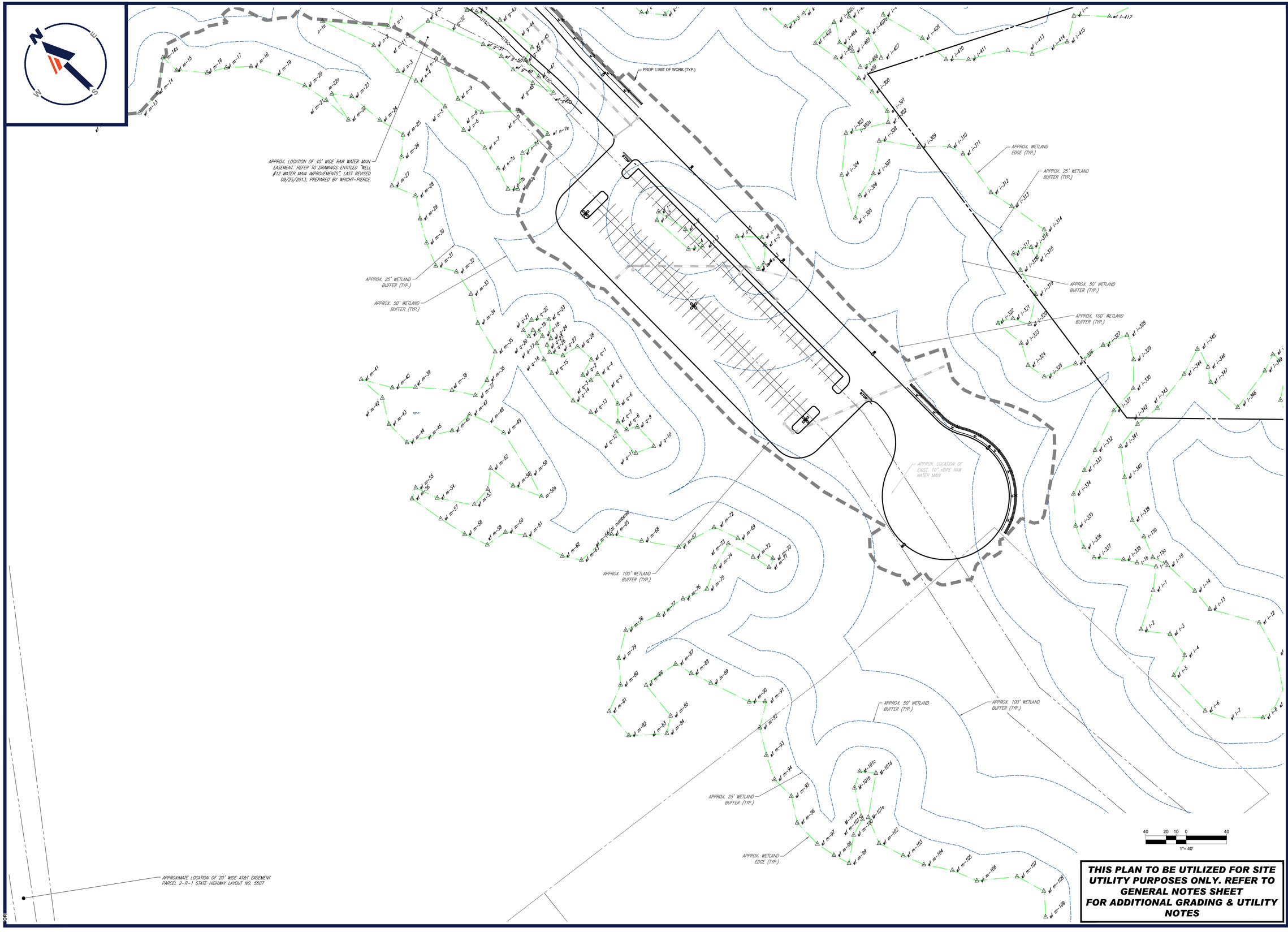
UTILITY PLAN E

SHEET NUMBER:

C-506

REVISION 4 - 12/06/2023

P:\2022\W221023\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W221023-UTIL-4A.dwg—LAYOUT: C-506-UTIL E



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P:\2022\W221023\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W221023-UTIL-4A-----LAYOUT: C-507-UTIL F

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REVISIONS

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4	12/06/2023	CON COM COMMENTS	OCR / MMA

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PROJECT No.:	W221023
DRAWN BY:	OCR/AJS
CHECKED BY:	MMA
DATE:	09/22/2022
CAD I.D.:	W221023-X-TTLB-SPPD

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

WS DEVELOPMENT

PROPOSED DEVELOPMENT
MAPS: 24, 30, & 31
LOTS: 10 & 12, 73-1, & 3
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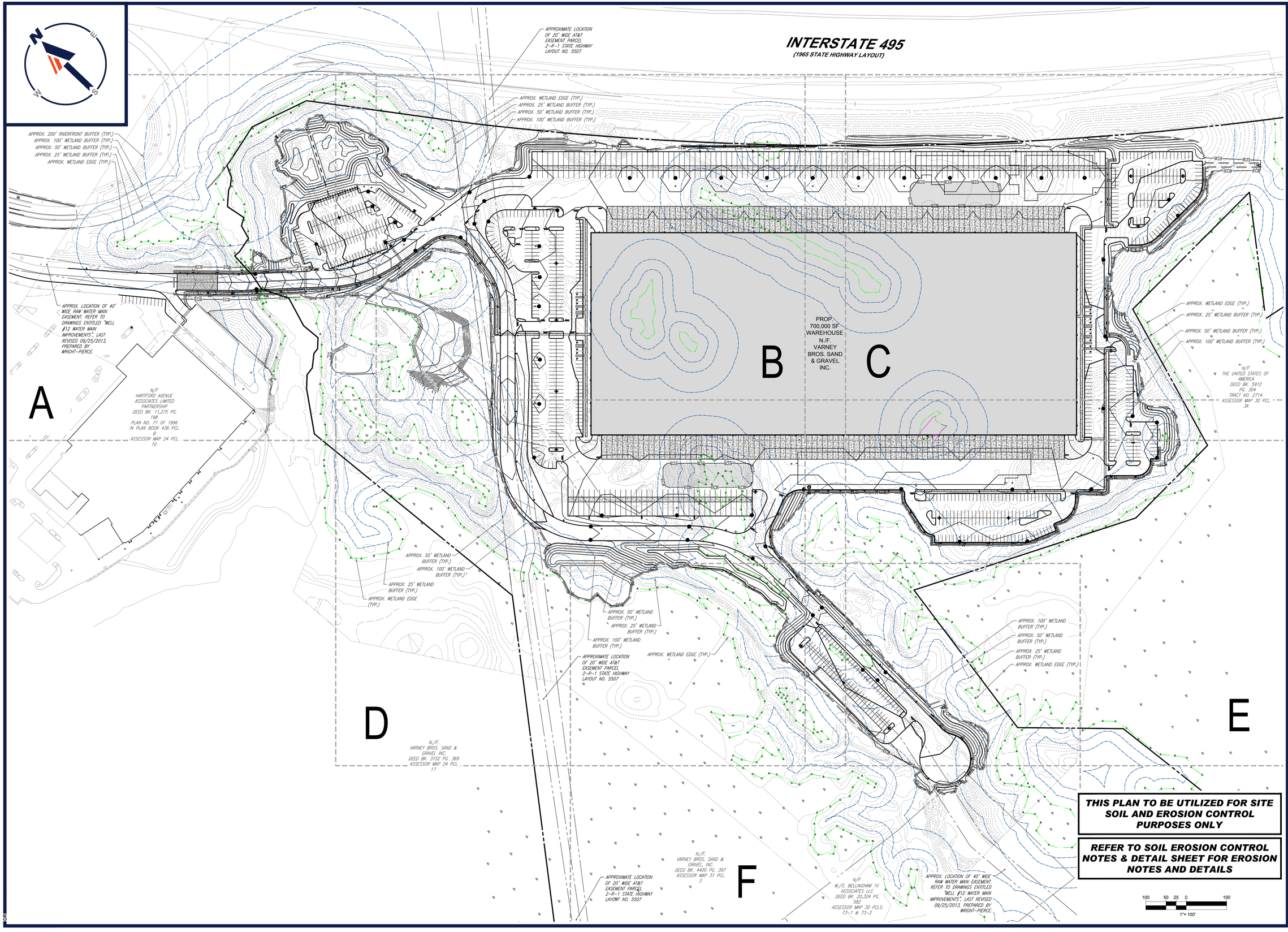
SHEET TITLE:

UTILITY PLAN F

SHEET NUMBER:

C-507

REVISION 4 - 12/06/2023



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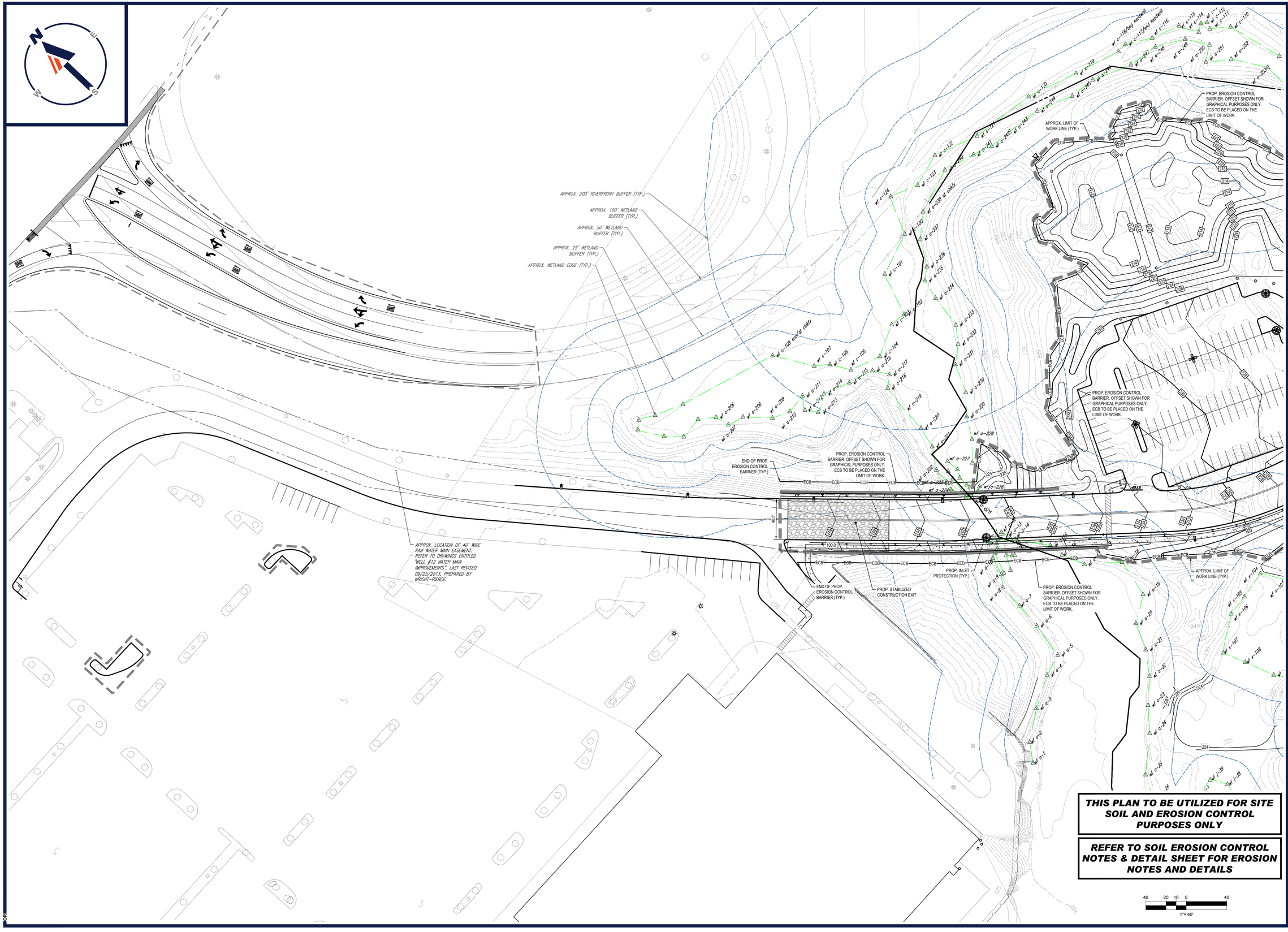
MASSACHUSETTS LICENSE No. 41535
NEW HAMPSHIRE LICENSE No. 15476
CONNECTICUT LICENSE No. 26177
RHODE ISLAND LICENSE No. 9616
MAINE LICENSE No. 12553

SHEET TITLE:
OVERALL SOIL EROSION & SEDIMENT CONTROL PLAN

SHEET NUMBER:
C-601

REVISION 4 - 12/06/2023

P:\2022\W221023\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W221023-EROS-4-A-----1LAYOUT C-601-EROS OVERALL



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

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CAD I.D.:	W221023-X-TTLB-SPPD

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

WS DEVELOPMENT

PROPOSED DEVELOPMENT
MAPS: 24, 30, & 31
LOTS: 10 & 12, 73-1, & 3
HARTFORD AVENUE, TOWN BELLINGHAM , NORFOLK COUNTY, MASSACHUSETTS

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SHEET TITLE:

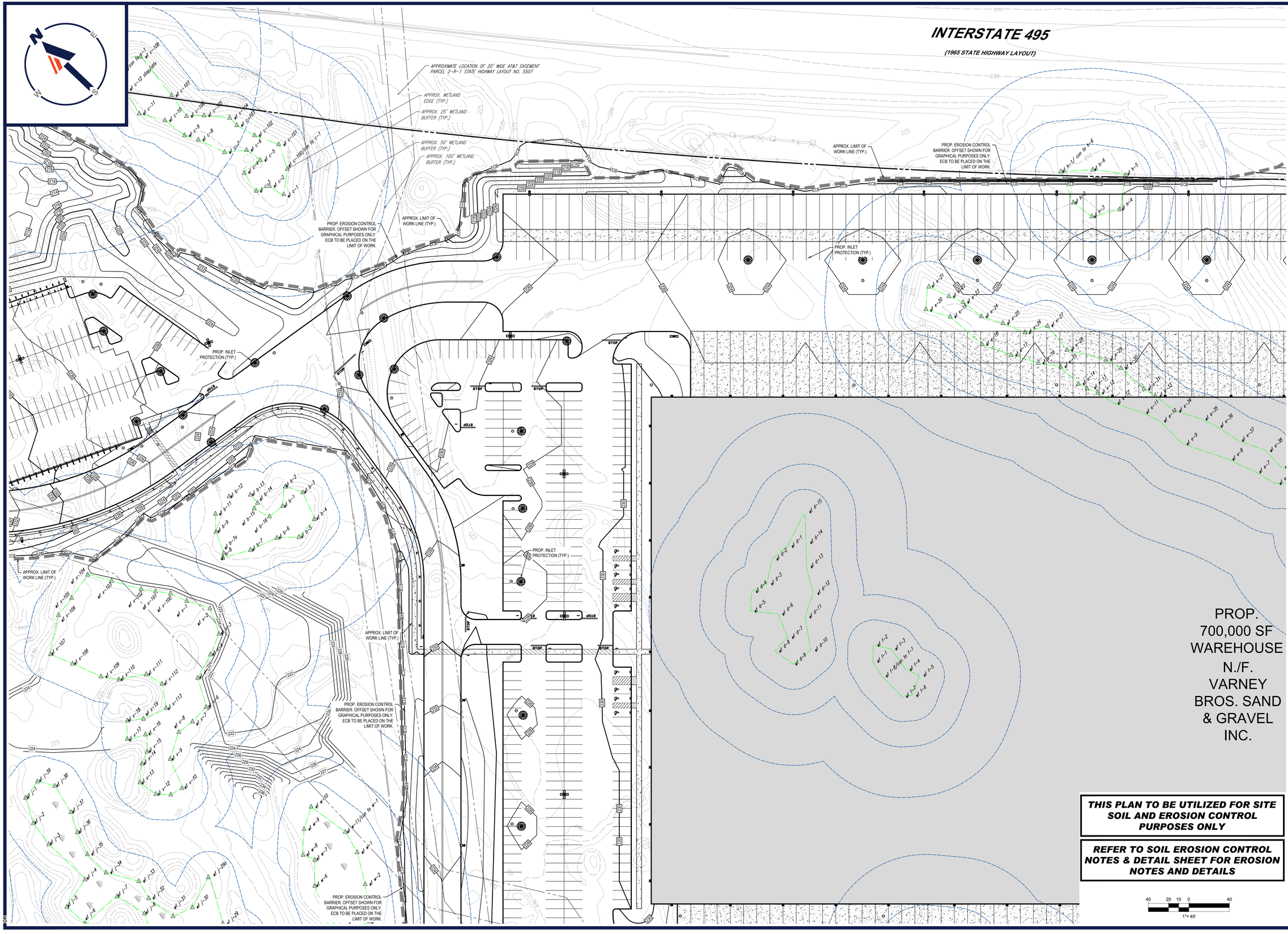
SOIL EROSION & SEDIMENT CONTROL PLAN A

SHEET NUMBER:

C-602

REVISION 4 - 12/06/2023

P:\2022\W221023\C-ADD\RAWINGS\PLAN SETS\CIVIL SITE PLANS\W221023-ERO3-4-A——LAYOUT C-602-ERO03 A



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

40 20 10 0 40
1"= 40'

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REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	03/03/2023	PLANNING BOARD COMMENTS	OCR / MMA
2	05/01/2023	SITE LAYOUT UPDATES	OCR / MMA
3	07/28/2023	PLANNING BOARD COMMENTS	CJP / MMA
4	12/06/2023	CON COM COMMENTS	OCR / MMA

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PROJECT No.:	W221023
DRAWN BY:	OCR/AJS
CHECKED BY:	MMA
DATE:	09/22/2022
CAD I.D.:	W221023-X-TTLB-SPPD

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

WS DEVELOPMENT

PROPOSED DEVELOPMENT
MAPS: 24, 30, & 31
LOTS: 10 & 12, 73-1, & 3
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TOWN BELLINGHAM ,
NORFOLK COUNTY,
MASSACHUSETTS

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MAINE LICENSE No. 12553

SHEET TITLE:

SOIL EROSION & SEDIMENT CONTROL PLAN B

SHEET NUMBER:

C-603

REVISION 4 - 12/06/2023

P:\2022\W221023\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W221023-EROS-A1A---LAYOUT C-603-EROS B

PROP. EROSION CONTROL BARRIER. OFFSET SHOWN FOR GRAPHICAL PURPOSES ONLY. ECB TO BE PLACED ON THE LIMIT OF WORK.

APPROX. LIMIT OF WORK LINE (TYP.)

PROP. EROSION CONTROL BARRIER. OFFSET SHOWN FOR GRAPHICAL PURPOSES ONLY. ECB TO BE PLACED ON THE LIMIT OF WORK.

PROP. INLET PROTECTION (TYP.)

APPROX. LOCATION OF STOCKPILE AREA (TYP.) LOCATION AND SIZE MAY VARY DEPENDING UPON PHASE OF CONSTRUCTION

APPROX. LOCATION OF EROSION CONTROL BARRIERS FOR STOCKPILE (TYP.)

PROP. 700,000 SF WAREHOUSE N./F. VARNEY BROS. SAND & GRAVEL INC.

APPROX. LIMIT OF WORK LINE (TYP.)

PROP. INLET PROTECTION (TYP.)

PROP. EROSION CONTROL BARRIER. OFFSET SHOWN FOR GRAPHICAL PURPOSES ONLY. ECB TO BE PLACED ON THE LIMIT OF WORK.

PROP. INLET PROTECTION (TYP.)

APPROX. LIMIT OF WORK LINE (TYP.)

APPROX. WETLAND EDGE (TYP.)

APPROX. 25' WETLAND BUFFER (TYP.)

APPROX. 50' WETLAND BUFFER (TYP.)

APPROX. 100' WETLAND BUFFER (TYP.)

PROP. EROSION CONTROL BARRIER. OFFSET SHOWN FOR GRAPHICAL PURPOSES ONLY. ECB TO BE PLACED ON THE LIMIT OF WORK.

PROP. INLET PROTECTION (TYP.)

N/F THE UNITED STATES OF AMERICA DEED BK. 5912 PG. 304

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MAINE LICENSE No. 12553

SHEET TITLE:

SOIL EROSION & SEDIMENT CONTROL PLAN C

SHEET NUMBER:

C-604

REVISION 4 - 12/06/2023

P:\2022\W221023\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W221023-EROS-4A-----LAYOUT C-604-EROS C

PROP. EROSION CONTROL BARRIER. OFFSET SHOWN FOR GRAPHICAL PURPOSES ONLY. ECB TO BE PLACED ON THE LIMIT OF WORK.

APPROX. LIMIT OF WORK LINE (TYP.)

APPROX. LOCATION OF STOCKPILE AREA (TYP.) LOCATION AND SIZE MAY VARY DEPENDING UPON PHASE OF CONSTRUCTION

APPROX. LOCATION OF EROSION CONTROL BARRIERS FOR STOCKPILE (TYP.)

PROP. INLET PROTECTION (TYP.)

APPROX. WETLAND EDGE (TYP.)

APPROX. 25' WETLAND BUFFER (TYP.)

APPROX. 50' WETLAND BUFFER (TYP.)

APPROX. 100' WETLAND BUFFER (TYP.)

APPROXIMATE LOCATION OF 20' WIDE AT&T EASEMENT PARCEL 2-R-1 STATE HIGHWAY LAYOUT NO. 5507

N/F
VARNEY BROS. SAND & GRAVEL INC.
DEED BK. 3152 PG. 369
ASSESSOR MAP 24 PCL. 17

APPROX. LOCATION OF 40' WIDE RAW WATER MAIN EASEMENT. REFER TO DRAWINGS ENTITLED "WELL #12 WATER MAIN IMPROVEMENTS", LAST REVISED 09/25/2013, PREPARED BY WRIGHT-PIERCE.

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SHEET TITLE:
SOIL EROSION & SEDIMENT CONTROL PLAN D

SHEET NUMBER:
C-605

REVISION 4 - 12/06/2023

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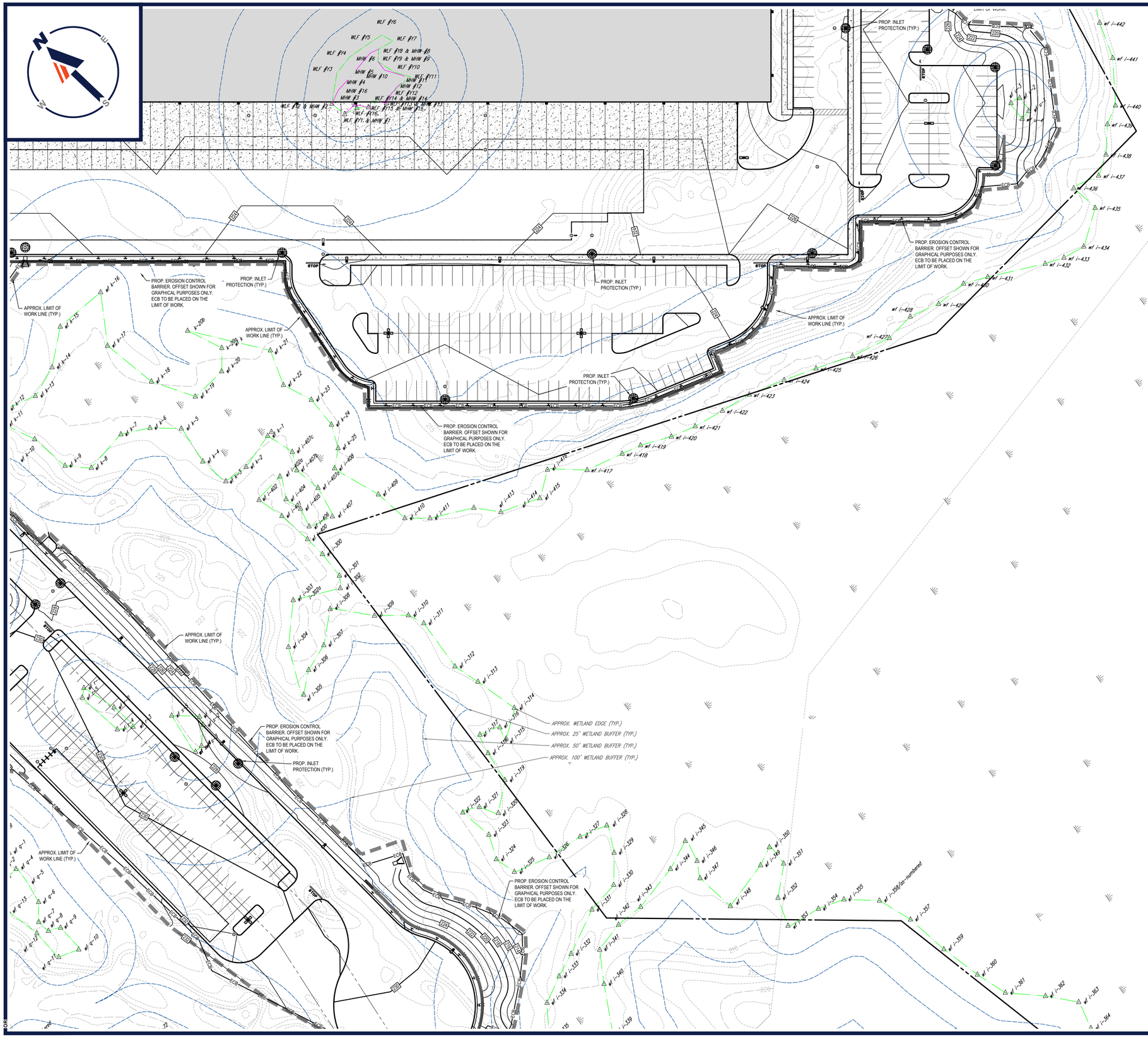

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FOR

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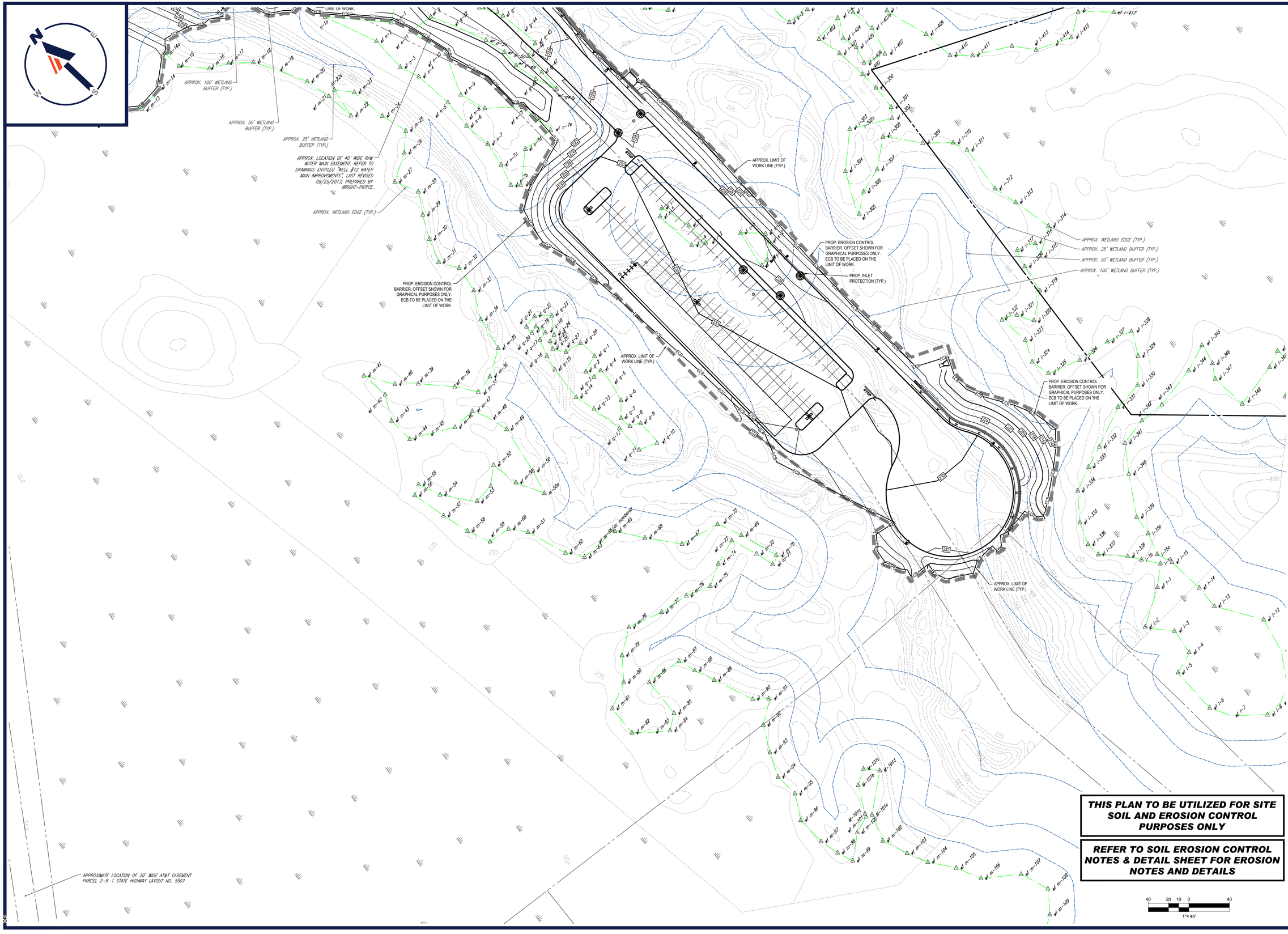
RHODE ISLAND LICENSE No. 06119
MAINE LICENSE No. 12553

SHEET TITLE:
SOIL EROSION & SEDIMENT CONTROL PLAN E

SHEET NUMBER:
C-606

REVISION 4 - 12/06/2023



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SHEET TITLE:
SOIL EROSION & SEDIMENT CONTROL PLAN F

SHEET NUMBER:
C-607

REVISION 4 - 12/06/2023

EROSION AND 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 IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS. AT A MINIMUM, AREAS SHALL BE PERMANENTLY STABILIZED ACCORDING TO THE CURRENT EDITION OF THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP), OR IN THE ABSENCE OF A SWPPP, THEY SHALL BE PERMANENTLY STABILIZED WITHIN 14 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 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 PERMANENTLY STABILIZED. FOR SEDIMENT CONTROL DEVICES THAT ARE WITHIN AREAS SUBJECT TO CONSERVATION COMMISSION JURISDICTION, THE DEVICES SHALL REMAIN IN PLACE AND BE REMOVED IN ACCORDANCE WITH THE ORDER OF CONDITIONS.

6. NO SLOPES, EITHER PERMANENT OR TEMPORARY, SHALL BE STEEPER THAN TWO TO ONE (2:1) UNLESS OTHERWISE INDICATED ON THE PLANS. SLOPE PROTECTION FOR SLOPES GREATER THAN 2:1 SHALL BE DESIGNED BY A GEOTECHNICAL ENGINEER.

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 SHALL BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL STANDARDS.

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, OR DEPTH SPECIFIED ON THE LANDSCAPE PLAN, 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 WHERE SLOPES DO NOT EXCEED 2:1, SOD ON SLOPES STEEPER THAN 3:1 SHOULD BE PEGGED.
    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 NON-TOXIC BINDER WILL BE USED ON STRAW MULCH FOR WIND CONTROL.

11. ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED ONCE THE SITE IS 70% STABILIZED. FOR EROSION CONTROL MEASURES THAT ARE WITHIN AREAS SUBJECT TO CONSERVATION COMMISSION JURISDICTION, THE MEASURES SHALL REMAIN IN PLACE AND BE REMOVED IN ACCORDANCE WITH THE ORDER OF CONDITIONS.

12. WETLANDS WILL BE PROTECTED WITH BARRIERS CONSISTING OF STRAW BALES, COMPOST TUBES, SILT FENCE OR A COMBINATION THEREOF.

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:

LOCATION	MULCH	MULCH RATE (1000 SF)
PROTECTED 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 NON-TOXIC BINDER SHALL BE USED TO ADDITIONAL 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.

15. PROPOSED LOCATIONS OF SURFACE STORMWATER MANAGEMENT BASINS CAN BE UTILIZED AS A TEMPORARY SEDIMENT TRAP DURING CONSTRUCTION SEDIMENT TRAPS SHALL BE SIZED AND CONSTRUCTED IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REQUIREMENTS.
    15.1. TEMPORARY SEDIMENT TRAPS SHALL BE SIZED PER THE CURRENT EDITION OF THE "MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS" AND PROVIDE A MINIMUM OF 1,800 CF PER ACRE OF TRIBUTARY AREA WITH A MAXIMUM TRIBUTARY AREA OF 5 ACRES, MAINTAIN A 2:1 LENGTH TO WIDTH RATIO, AND NOT EXCEED 5 FT IN HEIGHT. UPON SITE STABILIZATION, ACCUMULATED SEDIMENT SHALL BE REMOVED AND THE TEMPORARY SEDIMENT TRAP EXCAVATED TO 1 FOOT BELOW THE TRAP. THE AREA SHALL THEN BE SCARIFIED TO PREVENT COMPACTION AND PROMOTE INFILTRATION, AND GRADED AND STABILIZED IN ACCORDANCE WITH THE GRADING AND LANDSCAPE PLANS.

16. 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.

17. EXISTING CATCH BASIN STRUCTURES SHALL BE PROTECTED UNTIL SUCH TIME AS THEY ARE REMOVED.

18. THE CONTRACTOR MUST PERFORM DEWATERING (IF REQUIRED), IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN AND PAY FOR THE COSTS ASSOCIATED WITH ANY AND ALL NECESSARY DISCHARGE PERMITS ASSOCIATED WITH SAME.

19. THE CONTRACTOR MUST LOCATE CONSTRUCTION WASTE MATERIAL STORAGE AREAS TO MINIMIZE EXPOSURE TO STORMWATER. THE CONTRACTOR MUST IMMEDIATELY PLACE CONSTRUCTION WASTE IN ON-SITE STORAGE CONTAINERS UNTIL THAT CONSTRUCTION WASTE IS READY FOR OFF-SITE DISPOSAL. THE CONTRACTOR MUST MAINTAIN SPILL PREVENTION AND RESPONSE EQUIPMENT AND MAKE SAME CONTINUOUSLY AVAILABLE ON-SITE FOR USE BY THE CONTRACTOR'S EMPLOYEES WHO MUST BE PROPERLY TRAINED IN THE APPLICATION OF SPILL PREVENTION AND RESPONSE PROCEDURES.

20. EROSION CONTROL NOTES DURING WINTER CONSTRUCTION

21. WINTER CONSTRUCTION PERIOD: NOVEMBER 1 THROUGH APRIL 15.

22. WINTER EXCAVATION AND EARTHWORK SHALL BE DONE SUCH THAT THE AMOUNT OF AREA OPEN AT ONE TIME IS MINIMIZED TO THE MAXIMUM EXTENT PRACTICABLE AND IN CONFORMANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN SUCH THAT ADEQUATE PROVISIONS ARE EMPLOYED TO CONTROL STORMWATER RUNOFF.

23. 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.

24. AN AREA SHALL BE CONSIDERED TO HAVE BEEN TEMPORARILY STABILIZED WHEN EXPOSED SURFACES HAVE BEEN EITHER MULCHED WITH STRAW OR 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.

25. FOR AREAS WHERE CONSTRUCTION ACTIVITIES HAVE CEASED FOR A PERIOD EXCEEDING 14 DAYS BETWEEN THE DATES OF NOVEMBER 1ST AND APRIL 1ST, LOAM OR SEED WILL NOT BE REQUIRED. THE SLOPES SHALL BE FINE GRADED AND EITHER PROTECTED WITH MULCH OR TEMPORARILY SEEDED. 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 AS APPLICABLE. SLOPES SHALL NOT BE LEFT UNSTABILIZED OVER THE WINTER OR IN AREAS WHERE WORK HAS CEASED FOR MORE THAN 14 DAYS 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 SEDIMENT BARRIERS OR STONE CHECK DAMS IN ACCORDANCE WITH THE STANDARD DETAILS.

26. MULCHING REQUIREMENTS:
    26.1. BETWEEN THE DATES OF NOVEMBER 1ST AND APRIL 15TH ALL MULCH SHALL BE ANCHORED BY EITHER PEG LINE, MULCH NETTING OR WOOD CELLULOSE FIBER.
    26.2. 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%.
    26.3. 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%.

27. ALL DISTURBED AREAS SHALL BE STABILIZED IN ACCORDANCE WITH THE STORMWATER PREVENTION PLAN.

28. DURING THE WINTER CONSTRUCTION PERIOD ALL SNOW SHALL BE REMOVED FROM AREAS OF SEEDING AND MULCHING PRIOR TO PLACEMENT.

P:\2022\W221023\C-CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W221023-ER08-4-A-----3-LAYOUT C-608-ENOTE

GENERAL EROSION AND SEDIMENT CONTROL NOTES

1. THE GENERAL NOTES MUST BE INCLUDED AS PART OF THIS ENTIRE DOCUMENT PACKAGE AND ARE PART OF THE CONTRACT DOCUMENTS. THE GENERAL NOTES ARE REFERENCED HEREIN, AND THE CONTRACTOR MUST REFER TO THEM AND FULLY COMPLY WITH THESE NOTES, IN THEIR ENTIRETY. THE CONTRACTOR MUST BE FAMILIAR WITH AND ACKNOWLEDGE FAMILIARITY WITH ALL OF THE GENERAL NOTES AND ALL OF THE PLANS' SPECIFIC NOTES.

2. EROSION CONTROL MEASURES MUST CONFORM TO THE STATE, LOCAL, AND FEDERAL GUIDELINES FOR URBAN EROSION AND SEDIMENT CONTROL UNLESS OTHERWISE NOTED, OR UNLESS ENGINEER CLEARLY AND SPECIFICALLY, IN WRITING, DIRECTS OTHERWISE. INSTALLATION OF EROSION CONTROL, CLEARING, AND SITE WORK MUST BE PERFORMED EXACTLY AS INDICATED IN THE EROSION CONTROL CONSTRUCTION NOTES.

3. THE DISTURBED LAND AREA OF THIS SITE IS APPROXIMATELY 44.133 ACRES.

4. THE FOLLOWING EROSION CONTROL MEASURES ARE PROPOSED FOR THIS SITE:
    4.1. STABILIZED CONSTRUCTION ENTRANCE/ EXIT - A TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT IS TO BE INSTALLED AT THE DESIGNATED LOCATION SHOWN ON THE PLAN. THIS AREA MUST BE GRADED SO THAT RUNOFF WATER WILL BE RETAINED ON-SITE.
    4.2. SEDIMENT FENCE - INSTALL SILT FENCE(S) AND/OR SILT SOCK AROUND ALL OF THE DOWNSLOPE PERIMETERS OF THE SITE, TEMPORARY FILL AND SOIL STOCKPILES.
    4.3. INSTALL FILTER FABRIC DROP INLET PROTECTION AROUND EACH DRAINAGE INLET AS DRAINAGE STRUCTURES ARE INSTALLED TO REDUCE THE QUANTITY OF SEDIMENT. INSTALL TEMPORARY INLET PROTECTION ON INLETS DOWNSLOPE FROM DISTURBANCE, WHICH MAY BE BEYOND THE LIMITS OF DISTURBED AREA.

5. INSTALLATION OF EROSION CONTROL DEVICES MUST BE IN ACCORDANCE WITH ALL OF THE MANUFACTURER'S RECOMMENDATIONS.

6. THE CONTRACTOR MUST INSPECT EROSION CONTROL MEASURES WEEKLY. THE CONTRACTOR MUST REMOVE ANY SILT DEPOSITS GREATER THAN 6" OR HALF THE OF THE EROSION CONTROL BARRIER'S HEIGHT COLLECTED ON THE FILTER FABRIC AND/OR SILT SOCK BARRIERS AND EXCAVATE AND REMOVE ANY SILT FROM DROP INLET PROTECTION.

7. THE CONTRACTOR MUST APPLY TEMPORARY SEED AND MULCH TO ALL DISTURBED AREAS THAT WILL NOT BE BROUGHT TO FINISHED GRADE AND VEGETATED WITHIN 7 DAYS. WHEN AREAS ARE DISTURBED AFTER THE GROWING SEASON, THE CONTRACTOR MUST STABILIZE SAME WITH GEOTEXTILE FABRIC AND MAINTAIN SAME IN STRICT ACCORDANCE WITH BEST MANAGEMENT PRACTICES.

8. THE CONTRACTOR MUST INSTALL ADDITIONAL EROSION CONTROL MEASURES IF ENGINEER SO REQUIRES, TO PREVENT ANY, INCLUDING THE INCIDENTAL, DISCHARGE OF SILT-LADEN RUNOFF FROM EXITING THE SITE.

9. THE CONTRACTOR MUST BE RESPONSIBLE FOR INSPECTING AND MAINTAINING ALL EROSION CONTROL MEASURES ON THE SITE UNTIL PERMANENT PAVING AND TURF/LANDSCAPING IS ESTABLISHED. THE COSTS OF INSTALLING AND MAINTAINING THE EROSION CONTROL MEASURES MUST BE INCLUDED IN THE BID PRICE FOR THE SITE WORK AND THE CONTRACTOR IS RESPONSIBLE FOR ALL SUCH COSTS.

10. THE CONTRACTOR MUST CONTINUE TO MAINTAIN ALL EROSION CONTROL MEASURES UNTIL THE COMPLETION OF CONSTRUCTION AND THE ESTABLISHMENT OF VEGETATION.

11. THE CONTRACTOR MUST REMOVE EROSION CONTROL MEASURES, SILT AND DEBRIS AFTER ESTABLISHING PERMANENT VEGETATION COVER OR OTHER INSTALLING A DIFFERENT, SPECIFIED METHOD OF STABILIZATION.

12. THIS PLAN REPRESENTS THE MINIMUM LEVEL OF IMPLEMENTATION OF TEMPORARY EROSION AND SEDIMENTATION CONTROL FACILITIES, MEASURES AND STRUCTURES. ADDITIONAL FACILITIES, MEASURES AND STRUCTURES MUST BE INSTALLED WHERE NECESSARY TO COMPLY WITH ALL APPLICABLE CODES AND STANDARDS AND/OR TO PREVENT ANY, INCLUDING THE INCIDENTAL DISCHARGE OF SILT-LADEN RUNOFF FROM EXITING THE SITE.

13. THE CONTRACTOR MUST PROTECT ALL EXISTING TREES AND SHRUBS. THE CONTRACTOR MUST REFER TO THE LANDSCAPE AND/OR DEMOLITION PLAN(S) FOR TREE PROTECTION, FENCE LOCATIONS AND DETAILS.

14. THE CONTRACTOR MUST REFER TO GRADING PLANS FOR ADDITIONAL INFORMATION.

15. THE CONTRACTOR MUST CLEAN EXISTING AND PROPOSED DRAINAGE STRUCTURES AND INTERCONNECTING PIPES ON OR OFF-SITE AS THE JURISDICTIONAL AGENCY REQUIRES, BOTH AT THE TIME OF SITE STABILIZATION AND AT END OF PROJECT.

16. SOIL EROSION CONTROL MEASURES MUST BE ADJUSTED OR RELOCATED BY THE CONTRACTOR AS IDENTIFIED DURING SITE OBSERVATION IN ORDER TO MAINTAIN THE COMPLETE EFFECTIVENESS OF ALL CONTROL MEASURES.

17. THE CONTRACTOR MUST IDENTIFY, ON THE PLAN, THE LOCATION OF WASTE CONTAINERS, FUEL STORAGE TANKS, CONCRETE WASHOUT AREAS AND ANY OTHER LOCATIONS WHERE HAZARDOUS MATERIALS ARE STORED.

THE FOLLOWING CONSTRUCTION SEQUENCE IS RECOMMENDED:

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

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

-INSTALLATION OF INLET PROTECTION IN STREET (AS SHOWN)

-DEMOLITION OF EXISTING SITE STRUCTURES (SEE DEMOLITION PLAN)

-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 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

RECOMMENDED CONSTRUCTION SEQUENCE

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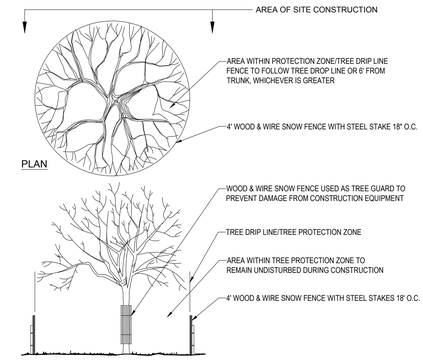

TREE PROTECTION DURING SITE CONSTRUCTION

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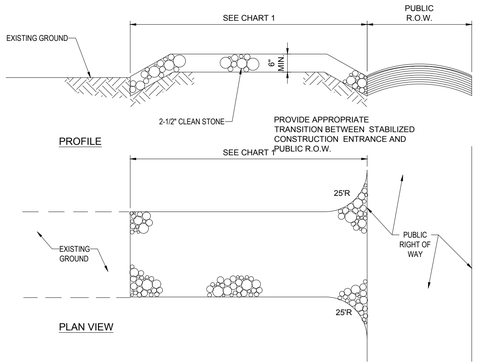

PERCENT SLOPE OF ROADWAY	LENGTH OF STONE REQUIRED	
	COARSE GRAINED SOILS	FINE GRAINED SOILS
0 TO 2%	50 FT	100 FT
2% TO 5%	100 FT	200FT
>5%	ENTIRE ENTRANCE STABILIZED WITH FABC BASE COURSE (1)	

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

CHART 1

STABILIZED CONSTRUCTION ENTRANCE

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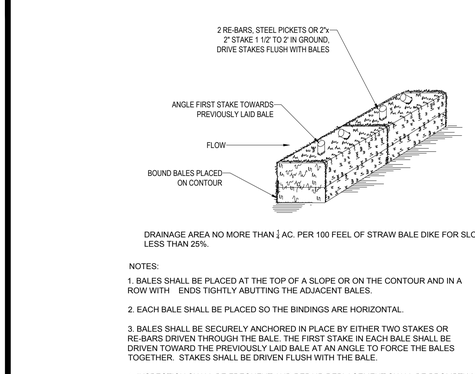

DRAINAGE AREA NO MORE THAN ½ AC. PER 100 FEEL OF STRAW BALE DIKE FOR SLOPES LESS THAN 25%.

NOTES:

1. BALES SHALL BE PLACED AT THE TOP OF A SLOPE OR ON THE CONTOUR AND IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.

2. EACH BALE SHALL BE PLACED SO THE BINDINGS ARE HORIZONTAL.

3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY EITHER TWO STAKES OR RE-BARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE AT AN ANGLE TO FORCE THE BALES TOGETHER. STAKES SHALL BE DRIVEN FLUSH WITH THE BALE.

4. INSPECTION SHALL BE FREQUENT AND REPAIR REPLACEMENT SHALL BE PROMPTLY AS NEEDED.

5. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

STRAW BALE

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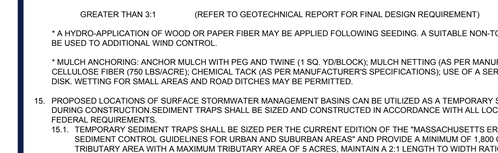
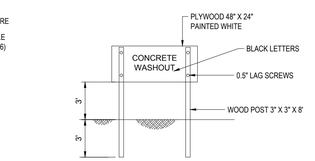
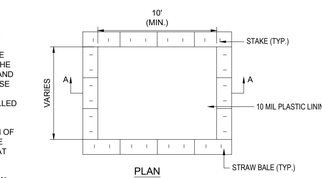


NOTES:
1. TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE LOCATED A MINIMUM OF 50 FT. FROM STORM DRAIN INLETS.
2. ONCE CONCRETE WASTES ARE WASHED INTO THE DESIGNATED AREA AND ALLOWED TO HARDEN, THE CONCRETE SHOULD BE BROKEN UP, REMOVED, AND DISPOSED OF OFF-SITE. CONTRACTOR TO DISPOSE OF HARDENED CONCRETE ON A REGULAR BASIS.
3. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30 FT. OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
4. PLASTIC LINING MATERIAL SHOULD BE A MINIMUM OF 10 MIL POLYETHYLENE SHEETING AND SHOULD BE FREE OF HOLES, TEARS, OR OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.
5. WASHOUT FACILITIES MUST BE CLEANED, OR NEW FACILITIES MUST BE CONSTRUCTED AND READY FOR USE ONCE THE WASHOUT IS 75% FULL.
6. STRAW BALE AND STAPLES MAY BE SUBSTITUTED WITH ALTERNATE SECURING MEASURES SUCH AS CONCRETE BLOCK.





CONCRETE WASTE MANAGEMENT AREA

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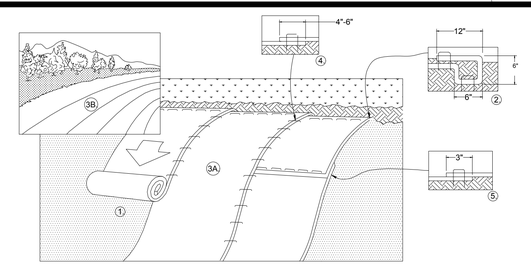

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH AS SHOWN IN DETAIL 2. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS PER MANUFACTURES RECOMMENDATION.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH MINIMUM 6" OVERLAP. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH.
6. PLACE STAPLES/STAKES PER MANUFACTURER'S RECOMMENDATION FOR THE APPROPRIATE SLOPE BEING APPLIED.

NOTES:
1. IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.
2. FOLLOW EROSION CONTROL TECHNOLOGY COUNCIL SPECIFICATION FOR PRODUCT SELECTION.

EROSION CONTROL BLANKET 2:1 SLOPES (SLOPE INSTALLATION)

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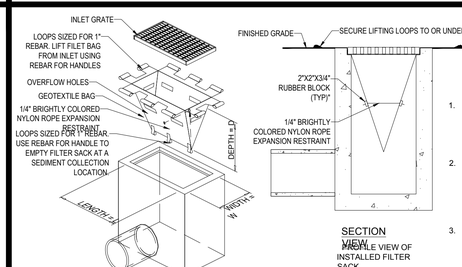
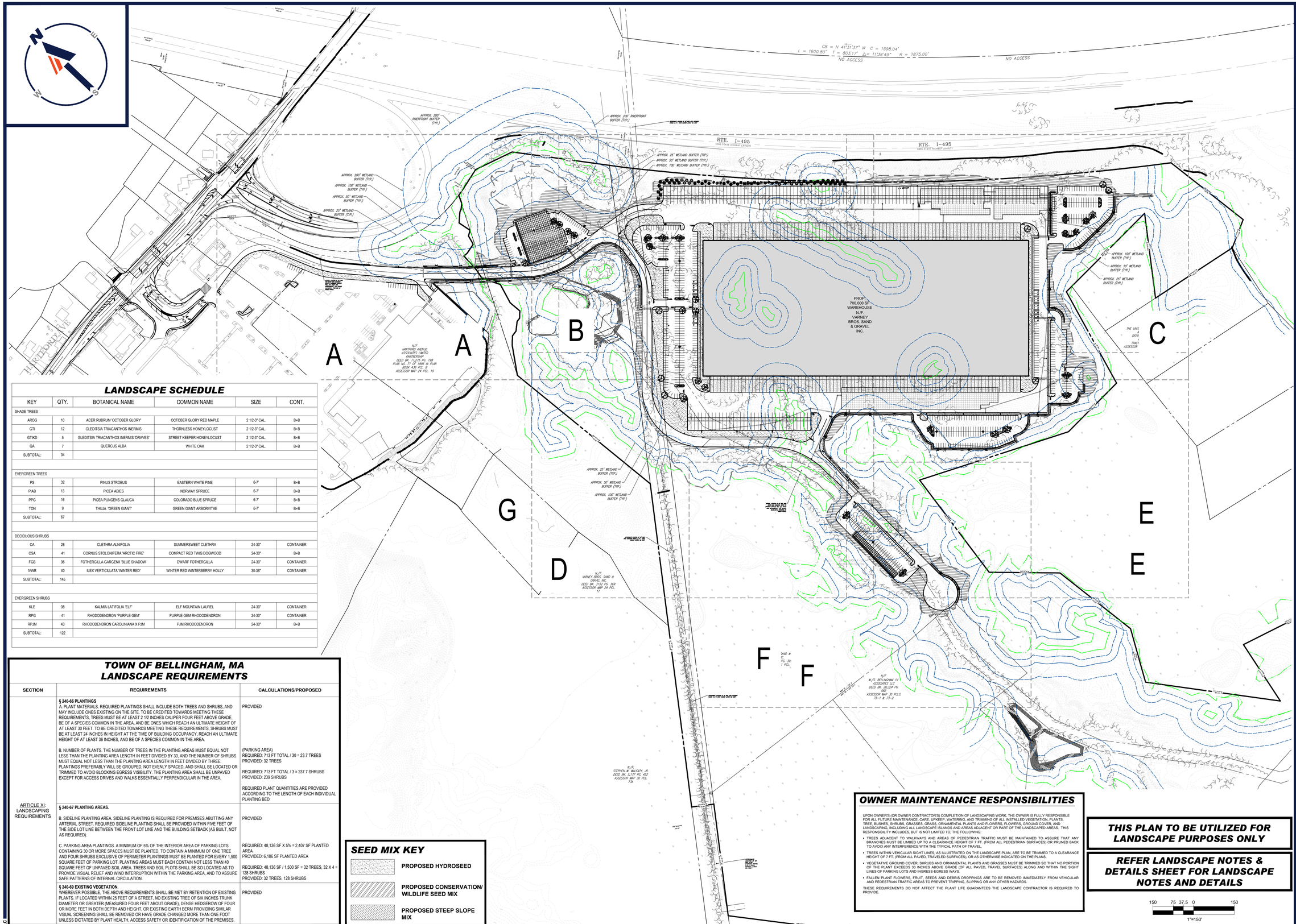


LOW TO MODERATE FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE		
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	300 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20%
PUNCTURE	ASTM D-4833	120 LBS
MULLEN BURST	ASTM D-3786	800 PSI
TRAPEZOID TEAR	ASTM D-4533	120 LBS
UV RESISTANCE	ASTM D-4355	80%
APPARENT 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}

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

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 WI



LANDSCAPE SCHEDULE

KEY	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	CONT.
SHADE TREES					
AROG	10	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	2 1/2-3" CAL.	B+B
GTI	12	GLEDITSIA TRIACANTHOS INERMIS	THORNLESS HONEYLOCUST	2 1/2-3" CAL.	B+B
GTIKD	5	GLEDITSIA TRIACANTHOS INERMIS 'DRAVES'	STREET KEEPER HONEYLOCUST	2 1/2-3" CAL.	B+B
QA	7	QUERCUS ALBA	WHITE OAK	2 1/2-3" CAL.	B+B
SUBTOTAL:	34				
EVERGREEN TREES					
PS	32	PINUS STROBUS	EASTERN WHITE PINE	6-7'	B+B
PIAB	13	PICEA ABIES	NORWAY SPRUCE	6-7'	B+B
PPG	16	PICEA PUNGENS GLAUCA	COLORADO BLUE SPRUCE	6-7'	B+B
TON	9	THUJA 'GREEN GIANT'	GREEN GIANT ARBORVITAE	6-7'	B+B
SUBTOTAL:	67				
DECIDUOUS SHRUBS					
CA	28	CLETHRA ALNIFOLIA	SUMMERSWEET CLETHRA	24-30"	CONTAINER
CSA	41	CORNUS STOLONIFERA 'ARCTIC FIRE'	COMPACT RED TWIG DOGWOOD	24-30"	B+B
FGB	36	FOTHERGILLA GARGENII 'BLUE SHADOW'	DWARF FOTHERGILLA	24-30"	CONTAINER
IVWR	40	ILEX VERTICILLATA 'WINTER RED'	WINTER RED WINTERBERRY HOLLY	30-36"	CONTAINER
SUBTOTAL:	145				
EVERGREEN SHRUBS					
KLE	38	KALMIA LATIFOLIA 'ELF'	ELF MOUNTAIN LAUREL	24-30"	CONTAINER
RPG	41	RHODODENDRON 'PURPLE GEM'	PURPLE GEM RHODODENDRON	24-30"	CONTAINER
RPJM	43	RHODODENDRON CAROLINIANA X PJM	PJM RHODODENDRON	24-30"	B+B
SUBTOTAL:	122				

TOWN OF BELLINGHAM, MA LANDSCAPE REQUIREMENTS

SECTION	REQUIREMENTS	CALCULATIONS/PROPOSED
ARTICLE XI: LANDSCAPING REQUIREMENTS	**§ 240-66 PLANTINGS** A. PLANT MATERIALS. REQUIRED PLANTINGS SHALL INCLUDE BOTH TREES AND SHRUBS, AND MAY INCLUDE ONES EXISTING ON THE SITE. TO BE CREDITED TOWARDS MEETING THESE REQUIREMENTS, TREES MUST BE AT LEAST 2 1/2 INCHES CALIPER FOUR FEET ABOVE GRADE, BE OF A SPECIES COMMON IN THE AREA, AND BE ONES WHICH REACH AN ULTIMATE HEIGHT OF AT LEAST 30 FEET. TO BE CREDITED TOWARDS MEETING THESE REQUIREMENTS, SHRUBS MUST BE AT LEAST 24 INCHES IN HEIGHT AT THE TIME OF BUILDING OCCUPANCY, REACH AN ULTIMATE HEIGHT OF AT LEAST 36 INCHES, AND BE OF A SPECIES COMMON IN THE AREA. B. NUMBER OF PLANTS. THE NUMBER OF TREES IN THE PLANTING AREAS MUST EQUAL NOT LESS THAN THE PLANTING AREA LENGTH IN FEET DIVIDED BY 30, AND THE NUMBER OF SHRUBS MUST EQUAL NOT LESS THAN THE PLANTING AREA LENGTH IN FEET DIVIDED BY THREE. PLANTINGS PREFERABLY WILL BE GROUPED, NOT EVENLY SPACED, AND SHALL BE LOCATED OR TRIMMED TO AVOID BLOCKING EGRESS VISIBILITY. THE PLANTING AREA SHALL BE UNPAVED EXCEPT FOR ACCESS DRIVES AND WALKS ESSENTIALLY PERPENDICULAR IN THE AREA.	PROVIDED (PARKING AREA) REQUIRED: 713 FT TOTAL / 30 = 23.7 TREES PROVIDED: 32 TREES REQUIRED: 713 FT TOTAL / 3 = 237.7 SHRUBS PROVIDED: 239 SHRUBS REQUIRED PLANT QUANTITIES ARE PROVIDED ACCORDING TO THE LENGTH OF EACH INDIVIDUAL PLANTING BED
	§ 240-67 PLANTING AREAS. B. SIDELINE PLANTING AREA. SIDELINE PLANTING IS REQUIRED FOR PREMISES ABUTTING ANY ARTERIAL STREET. REQUIRED SIDELINE PLANTING SHALL BE PROVIDED WITHIN FIVE FEET OF THE SIDE LOT LINE BETWEEN THE FRONT LOT LINE AND THE BUILDING SETBACK (AS BUILT, NOT AS REQUIRED). C. PARKING AREA PLANTINGS. A MINIMUM OF 5% OF THE INTERIOR AREA OF PARKING LOTS CONTAINING 30 OR MORE SPACES MUST BE PLANTED, TO CONTAIN A MINIMUM OF ONE TREE AND FOUR SHRUBS EXCLUSIVE OF PERIMETER PLANTINGS MUST BE PLANTED FOR EVERY 1,500 SQUARE FEET OF PARKING LOT. PLANTING AREAS MUST EACH CONTAIN NOT LESS THAN 40 SQUARE FEET OF UNPAVED SOIL AREA. TREES AND SOIL PLOTS SHALL BE SO LOCATED AS TO PROVIDE VISUAL RELIEF AND WIND INTERRUPTION WITHIN THE PARKING AREA, AND TO ASSURE SAFE PATTERNS OF INTERNAL CIRCULATION.	PROVIDED REQUIRED: 48,136 SF X 5% = 2,407 SF PLANTED AREA PROVIDED: 6,186 SF PLANTED AREA REQUIRED: 48,136 SF / 1,500 SF = 32 TREES, 32 X 4 = 128 SHRUBS PROVIDED: 32 TREES, 128 SHRUBS
	§ 240-69 EXISTING VEGETATION. WHEREVER POSSIBLE, THE ABOVE REQUIREMENTS SHALL BE MET BY RETENTION OF EXISTING PLANTS. IF LOCATED WITHIN 25 FEET OF A STREET, NO EXISTING TREE OF SIX INCHES TRUNK DIAMETER OR GREATER (MEASURED FOUR FEET ABOUT GRADE); DENSE HEDGEROW OF FOUR OR MORE FEET IN BOTH DEPTH AND HEIGHT, OR EXISTING EARTH BERM PROVIDING SIMILAR VISUAL SCREENING SHALL BE REMOVED OR HAVE GRADE CHANGED MORE THAN ONE FOOT UNLESS DICTATED BY PLANT HEALTH, ACCESS SAFETY OR IDENTIFICATION OF THE PREMISES.	PROVIDED

SEED MIX KEY

- PROPOSED HYDROSEED
- PROPOSED CONSERVATION/ WILDLIFE SEED MIX
- PROPOSED STEEP SLOPE MIX

OWNER MAINTENANCE RESPONSIBILITIES

UPON OWNER'S (OR OWNER CONTRACTOR'S) COMPLETION OF LANDSCAPING WORK, THE OWNER IS FULLY RESPONSIBLE FOR ALL FUTURE MAINTENANCE, CARE, UPKEEP, WATERING, AND TRIMMING OF ALL INSTALLED VEGETATION, PLANTS, TREE, BUSHES, SHRUBS, GRASSES, GRASS, ORNAMENTAL PLANTS AND FLOWERS, FLOWERS, GROUND COVER, AND LANDSCAPING, INCLUDING ALL LANDSCAPE ISLANDS AND AREAS ADJACENT OR PART OF THE LANDSCAPED AREAS. THIS RESPONSIBILITY INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING:

- TREES ADJACENT TO WALKWAYS AND AREAS OF PEDESTRIAN TRAFFIC MUST BE MAINTAINED TO ASSURE THAT ANY BRANCHES MUST BE LIMBED UP TO A CLEARANCE HEIGHT OF 7 FT. (FROM ALL PEDESTRIAN SURFACES) OR PRUNED BACK TO AVOID ANY INTERFERENCE WITH THE TYPICAL PATH OF TRAVEL.
- TREES WITHIN VEHICULAR SIGHT LINES, AS ILLUSTRATED ON THE LANDSCAPE PLAN, ARE TO BE TRIMMED TO A CLEARANCE HEIGHT OF 7 FT. (FROM ALL PAVED, TRAVELED SURFACES), OR AS OTHERWISE INDICATED ON THE PLANS.
- VEGETATIVE GROUND COVER, SHRUBS AND ORNAMENTAL PLANTS AND GRASSES MUST BE TRIMMED SO THAT NO PORTION OF THE PLANT EXCEEDS 30 INCHES ABOVE GRADE (OF ALL PAVED, TRAVEL SURFACES) ALONG AND WITHIN THE SIGHT LINES OF PARKING LOTS AND INGRESS-EGRESS WAYS.
- FALLEN PLANT FLOWERS, FRUIT, SEEDS AND DEBRIS DROPPINGS ARE TO BE REMOVED IMMEDIATELY FROM VEHICULAR AND PEDESTRIAN TRAFFIC AREAS TO PREVENT TRIPPING, SLIPPING OR ANY OTHER HAZARDS.

THESE REQUIREMENTS DO NOT AFFECT THE PLANT LIFE GUARANTEES THE LANDSCAPE CONTRACTOR IS REQUIRED TO PROVIDE.

THIS PLAN TO BE UTILIZED FOR LANDSCAPE PURPOSES ONLY

REFER LANDSCAPE NOTES & DETAILS SHEET FOR LANDSCAPE NOTES AND DETAILS

150 75 37.5 0 150

1"=150'

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REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	03/03/2023	PLANNING BOARD COMMENTS	OCR / MMA
2	05/01/2023	SITE LAYOUT UPDATES	OCR / MMA
3	07/28/2023	PLANNING BOARD COMMENTS	CJP / MMA
4	12/06/2023	CON COM COMMENTS	OCR / MMA

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PROJECT No.:	W221023
DRAWN BY:	OCR/AJS
CHECKED BY:	MMA
DATE:	09/22/2022
CAD I.D.:	W221023-X-TTLB-SPPD

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

WS DEVELOPMENT

PROPOSED DEVELOPMENT
MAPS: 24, 30, & 31
LOTS: 10 & 12, 73-1, & 3
HARTFORD AVENUE, TOWN BELLINGHAM , NORFOLK COUNTY, MASSACHUSETTS

BOHLER

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M.J. MRVA

REGISTERED LANDSCAPE ARCHITECT
MASSACHUSETTS No. 1217
RHODE ISLAND No. 419
NEW YORK No. 002359
NEW HAMPSHIRE No. 109
CONNECTICUT No. 1359
MAINE No.4248
EXPIRES: 2/24/24

SHEET TITLE:

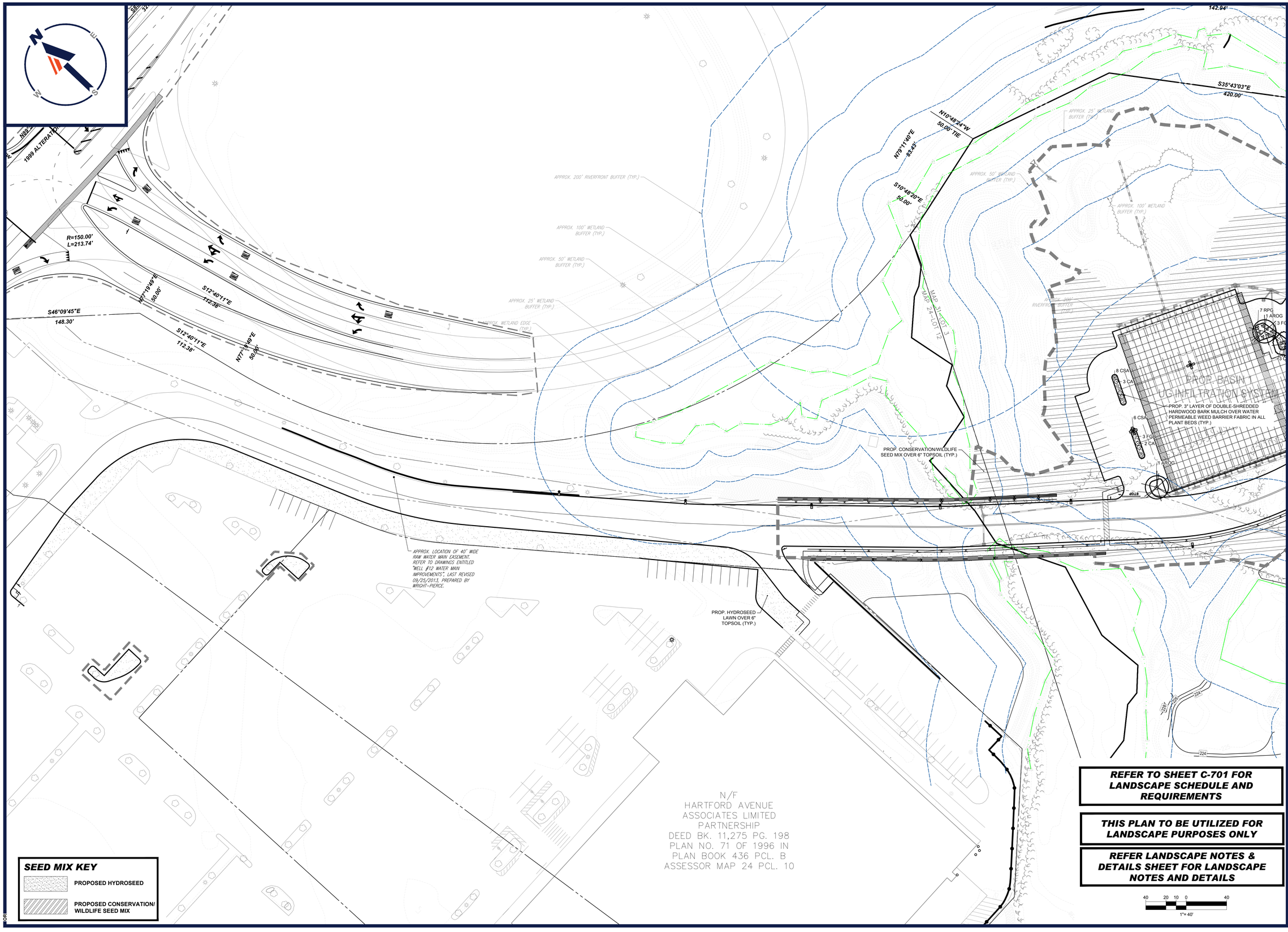
OVERALL LANDSCAPE PLAN

SHEET NUMBER:

C-701

REVISION 4 - 12/06/2023

P:\2022\W221023\C-CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W221023-LSCP-4A-----LAYOUT C-701-OVERALL LAND



P:\2022\W221023\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W221023-SSP-4A----LAYOUT C-702-LAND A

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PROJECT No.:	W221023
DRAWN BY:	OCR/AJS
CHECKED BY:	MMA
DATE:	09/22/2022
CAD I.D.:	W221023-X-TTLB-SPPD

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

WS DEVELOPMENT

PROPOSED DEVELOPMENT
MAPS: 24, 30, & 31
LOTS: 10 & 12, 73-1, & 3
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RHODE ISLAND No. 419
NEW YORK, No. 002359
NEW HAMPSHIRE No. 109
CONNECTICUT No. 1359
MAINE No.#246

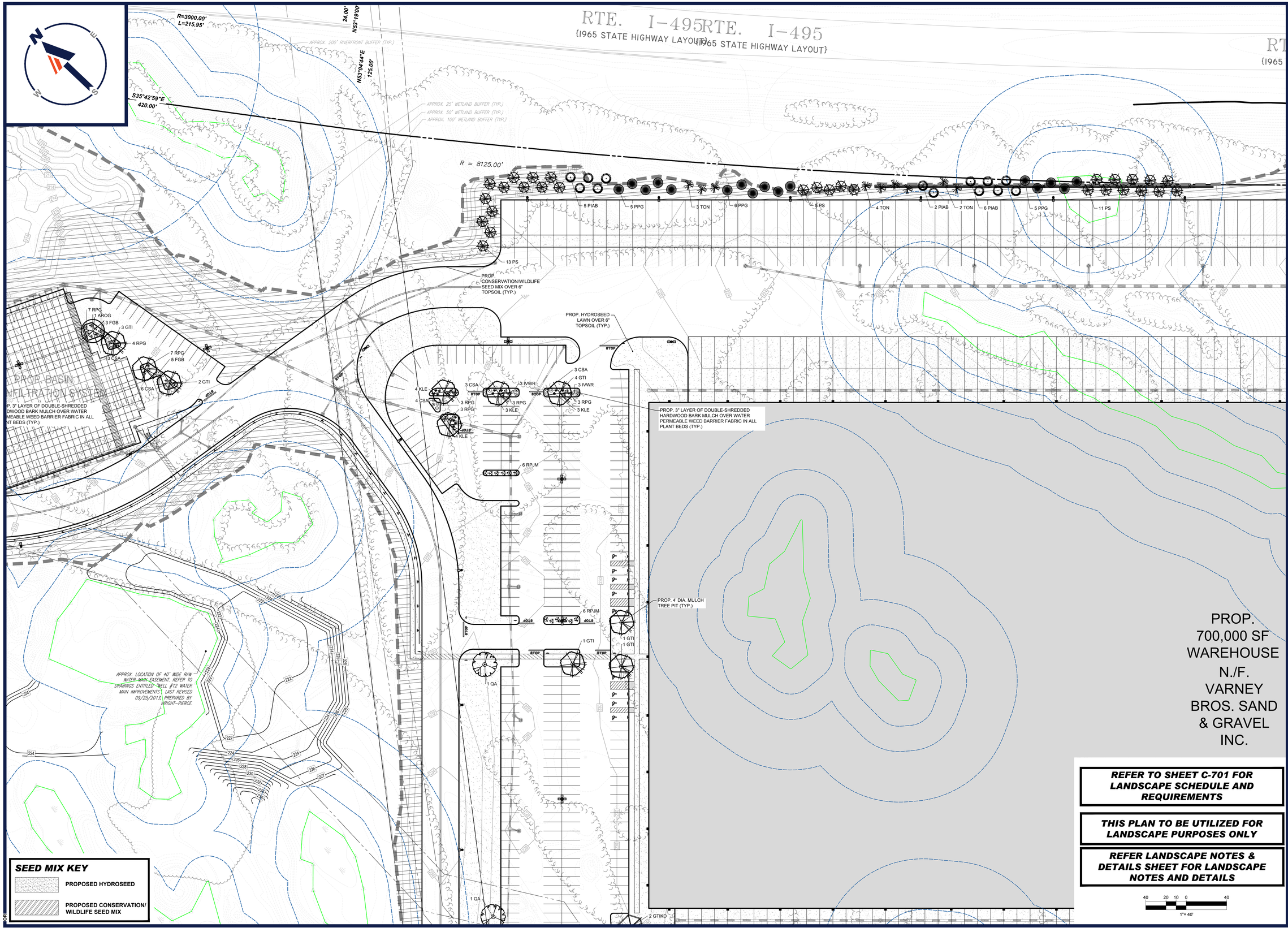
SHEET TITLE:

LANDSCAPE PLAN A

SHEET NUMBER:

C-702

REVISION 4 - 12/06/2023



REFER TO SHEET C-701 FOR LANDSCAPE SCHEDULE AND REQUIREMENTS

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REFER LANDSCAPE NOTES & DETAILS SHEET FOR LANDSCAPE NOTES AND DETAILS

40 20 10 0 40
1"= 40'

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2	05/01/2023	SITE LAYOUT UPDATES	OCR / MMA
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4	12/06/2023	CON COM COMMENTS	OCR / MMA

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PROJECT No.:	W221023
DRAWN BY:	OCR/AJS
CHECKED BY:	MMA
DATE:	09/22/2022
CAD I.D.:	W221023-X-TTLB-SPPD

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

WS DEVELOPMENT

PROPOSED DEVELOPMENT
MAPS: 24, 30, & 31
LOTS: 10 & 12, 73-1, & 3
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NEW YORK No. 002359
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CONNECTICUT No. 1359
MAINE No.4248

SHEET TITLE:

LANDSCAPE PLAN B

SHEET NUMBER:

C-703

REVISION 4 - 12/06/2023

RTE. I-495
(1965 STATE HIGHWAY LAYOUT)

PROP. BASIN 2 UG INFILTRATION SYSTEM

L = 2017.15'

PROP. 700,000 SF WAREHOUSE N./F. VARNEY BROS. SAND & GRAVEL INC.

PROP. HYDROSEED LAWN OVER 6" TOPSOIL (TYP.)

PROP. 4' DIA. MULCH TREE PIT (TYP.)

PROP. 3" LAYER OF DOUBLE-SHREDDED HARDWOOD BARK MULCH OVER WATER PERMEABLE WEED BARRIER FABRIC IN ALL PLANT BEDS (TYP.)

APPROX. WETLAND EDGE (TYP.)

APPROX. 25' WETLAND BUFFER (TYP.)

APPROX. 50' WETLAND BUFFER (TYP.)

APPROX. 100' WETLAND BUFFER (TYP.)

APPROX. 100' WETLAND BUFFER (TYP.)

APPROX. 50' WETLAND BUFFER (TYP.)

APPROX. 25' WETLAND BUFFER (TYP.)

N/F THE UNITED STATES OF AMERICA DEED BK. 5912

N88°36'28"W 408.12'

N39°07'01"E 214.91'

S27°06'44"E 1,152.24'

SEED MIX KEY

- PROPOSED HYDROSEED
- PROPOSED CONSERVATION/ WILDLIFE SEED MIX

REFER TO SHEET C-701 FOR LANDSCAPE SCHEDULE AND REQUIREMENTS

THIS PLAN TO BE UTILIZED FOR LANDSCAPE PURPOSES ONLY

REFER LANDSCAPE NOTES & DETAILS SHEET FOR LANDSCAPE NOTES AND DETAILS

40 20 10 0 40
1"= 40'

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4	12/06/2023	CON COM COMMENTS	OCR / MMA

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DRAWN BY:	OCR/AJS
CHECKED BY:	MMA
DATE:	09/22/2022
CAD I.D.:	W221023-X-TTLB-SPPD

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

WS DEVELOPMENT

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MAPS: 24, 30, & 31
LOTS: 10 & 12, 73-1, & 3
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NORFOLK COUNTY,
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NEW HAMPSHIRE No. 109
CONNECTICUT No. 1389
MAINE No.4248

SHEET TITLE:

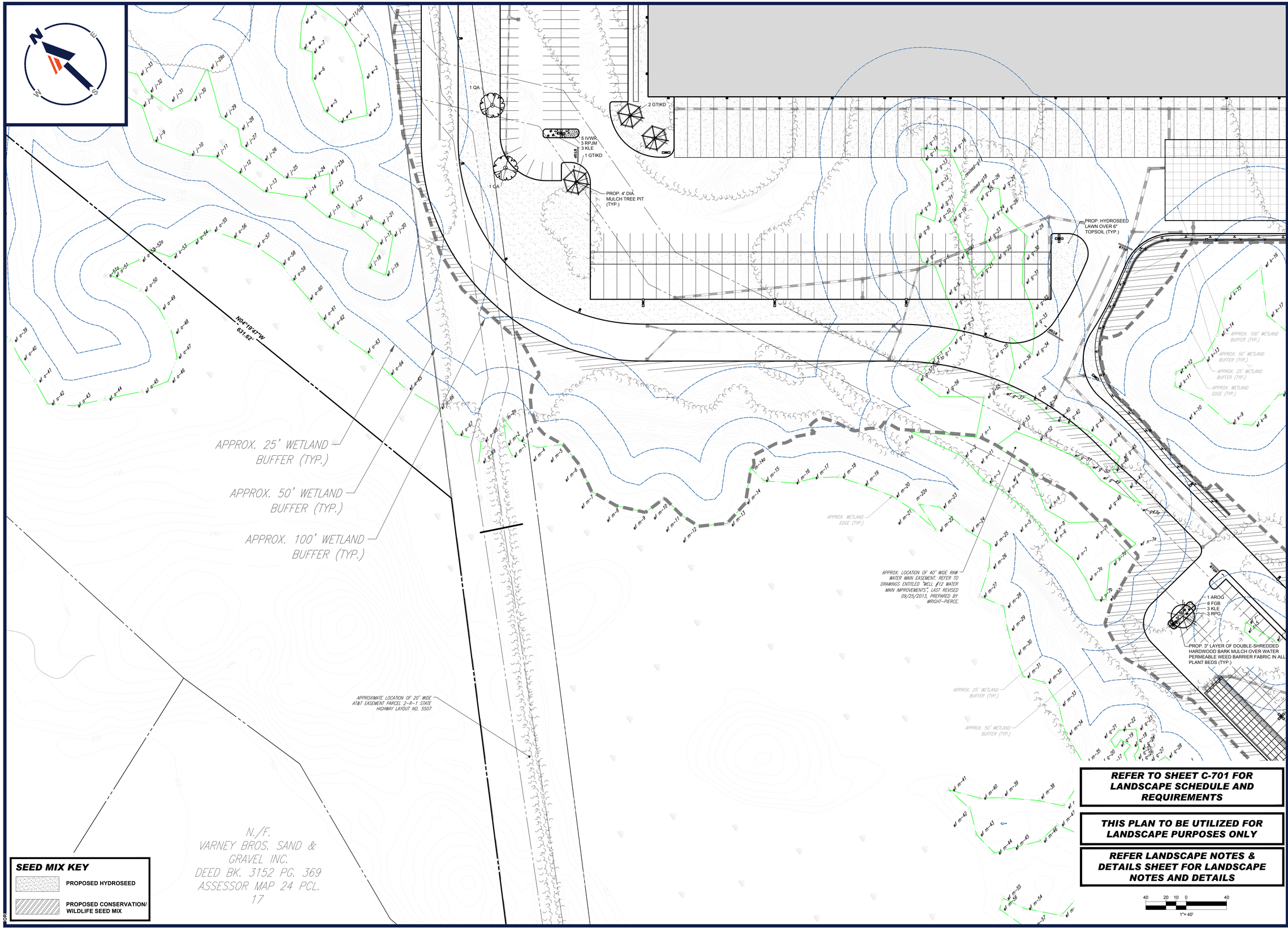
LANDSCAPE PLAN C

SHEET NUMBER:

C-704

REVISION 4 - 12/06/2023

P:\2022\W221023\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W221023-SSP-4A-----3A-LAYOUT C-704-LAND C.DWG



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4	12/06/2023	CON COM COMMENTS	OCR / MMA

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CAD I.D.:	W221023-X-TTLB-SPPD

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PROPOSED SITE PLAN DOCUMENTS

FOR

WS DEVELOPMENT

PROPOSED DEVELOPMENT
MAPS: 24, 30, & 31
LOTS: 10 & 12, 73-1, & 3
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NEW YORK No. 002359
NEW HAMPSHIRE No. 109
CONNECTICUT No. 1359
MAINE No. 2308
09/22/2022

SHEET TITLE:

LANDSCAPE PLAN D

SHEET NUMBER:

C-705

REVISION 4 - 12/06/2023

P:\2022\W221023\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W221023-LSCP-4A.——LAYOUT: C-705-LAND D

PROP. 4" DIA. MULCH TREE PIT (TYP.)

PROP. HYDROSEED LAWN OVER 6" TOPSOIL (TYP.)

1 OA

3 RPJM
1 GTI
3 CSA
3 IVWR

3 RPJM
1 GTI
3 KLE
5 CSA

PROP. BASIN 3 - UG INFILTRATION SYSTEM

STOP

1 AROG
5 RPJM
3 CA
5 IVWR

6 CA

5 RPJM
6 KLE
2 AROG
3 IVWR
5 FGB

PROP. 3" LAYER OF DOUBLE-SHREDDED HARDWOOD BARK MULCH OVER WATER PERMEABLE WEED BARRIER FABRIC IN ALL PLANT BEDS (TYP.)

N88°52'30"W
252.05'

N61°32'10"W
576.78'

S09°27'02"W
425.79'

S42°59'38"E
261.08'

APPROX. 100' WETLAND BUFFER (TYP.)

APPROX. 50' WETLAND BUFFER (TYP.)

APPROX. 25' WETLAND BUFFER (TYP.)

APPROX. WETLAND EDGE (TYP.)

1 AROG
6 FGB
3 KLE
3 RPG

PROP. BASIN 4 - UG INFILTRATION SYSTEM

1 AROG
6 FGB
3 RPG
3 KLE

SEED MIX KEY

- PROPOSED HYDROSEED
- PROPOSED CONSERVATION/ WILDLIFE SEED MIX

REFER TO SHEET C-701 FOR LANDSCAPE SCHEDULE AND REQUIREMENTS

THIS PLAN TO BE UTILIZED FOR LANDSCAPE PURPOSES ONLY

REFER LANDSCAPE NOTES & DETAILS SHEET FOR LANDSCAPE NOTES AND DETAILS

40 20 10 0 40
1"= 40'

P:\2022\W221023\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W221023-SDP-4A-----LAYOUT C-706-LAND E

LOR

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2	05/01/2023	SITE LAYOUT UPDATES	OCR / MMA
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4	12/06/2023	CON COM COMMENTS	OCR / MMA

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PROJECT No.:	W221023
DRAWN BY:	OCR/AJS
CHECKED BY:	MMA
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CAD I.D.:	W221023-X-TTLB-SPPD

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

WS DEVELOPMENT

PROPOSED DEVELOPMENT
MAPS: 24, 30, & 31
LOTS: 10 & 12, 73-1, & 3
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NEW YORK, No. 002389
NEW HAMPSHIRE No. 109
CONNECTICUT No. 1369
MAINE No.4248

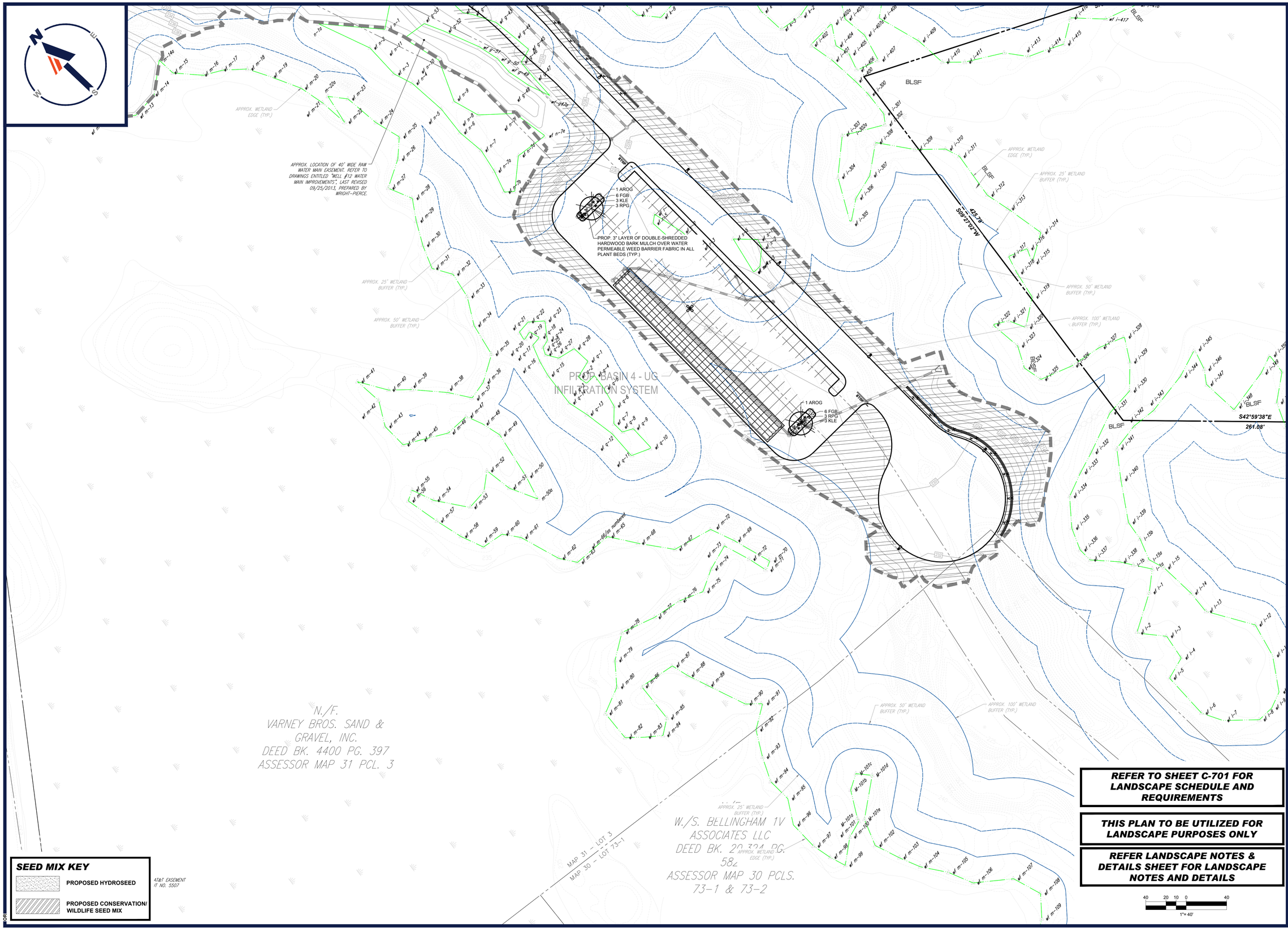
SHEET TITLE:

LANDSCAPE PLAN E

SHEET NUMBER:

C-706

REVISION 4 - 12/06/2023



SEED MIX KEY

- PROPOSED HYDROSEED
- PROPOSED CONSERVATION/ WILDLIFE SEED MIX

P:\2022\W221023\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W221023-LSCP-A.dwg, 12/6/2023 2:04:47 PM, CRT

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REVISIONS

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PROJECT No.:	W221023
DRAWN BY:	OCR/AJS
CHECKED BY:	MMA
DATE:	09/22/2022
CAD I.D.:	W221023-X-TTLB-SPPD

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

WS DEVELOPMENT

PROPOSED DEVELOPMENT
MAPS: 24, 30, & 31
LOTS: 10 & 12, 73-1, & 3
HARTFORD AVENUE,
TOWN BELLINGHAM ,
NORFOLK COUNTY,
MASSACHUSETTS

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

M.J. MRVA
REGISTERED LANDSCAPE ARCHITECT
MASSACHUSETTS No. 1217
RHODE ISLAND No. 419
NEW YORK No. 002359
NEW HAMPSHIRE No. 109
CONNECTICUT No. 1359
MAINE No. 4048
PROFESSIONAL

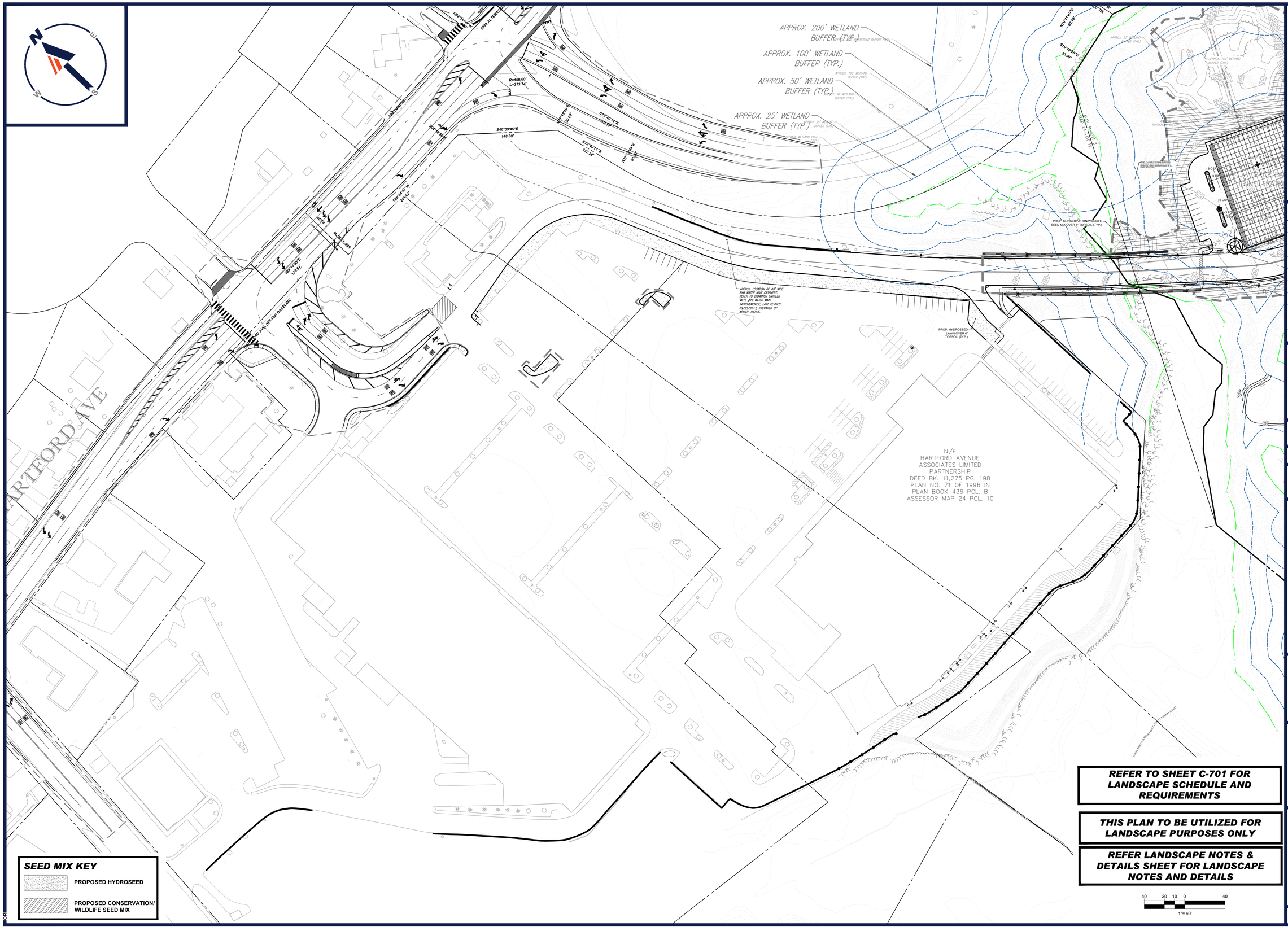
SHEET TITLE:

LANDSCAPE PLAN F

SHEET NUMBER:

C-707

REVISION 4 - 12/06/2023


APPROX. 200' WETLAND BUFFER (TYP.)
APPROX. 100' WETLAND BUFFER (TYP.)
APPROX. 50' WETLAND BUFFER (TYP.)
APPROX. 25' WETLAND BUFFER (TYP.)
APPROX. WETLAND EDGE (TYP.)
APPROX. LOCATION OF 40' WIDE RAM WATER MAIN EASEMENT. REFER TO DRAWINGS ENTITLED "BELL #13 WATER MAIN IMPROVEMENTS", LAST REVISED 05/25/2012, PREPARED BY WRIGHT-PIERCE.
PROP. CONSERVATION/WILDLIFE SEED MIX OVER 6" TOPSOIL (TYP.)
PROP. HYDROSEED LAWN OVER 6" TOPSOIL (TYP.)
HARTFORD AVE. (RT-138) BASELINE
HARTFORD AVE
N/F
HARTFORD AVENUE ASSOCIATES LIMITED PARTNERSHIP
DEED BK. 11,275 PG. 198
PLAN NO. 71 OF 1996 IN
PLAN BOOK 436 PCL. B
ASSESSOR MAP 24 PCL. 10
S46°09'45"E 148.30'
S12°40'11"E 172.39'
S89°54'47"W 241.05'
S39°16'05"E 139.64'
N77°19'49"E 50.00'
S12°40'11"E 44.28'
R=150.00' L=213.74'
N77°19'49"E 50.00'
S12°40'11"E 50.00'
N77°19'49"E 50.00'
S12°40'11"E 50.00'
N77°19'49"E 50.00'
S12°40'11"E 50.00

LANDSCAPE SPECIFICATIONS

1. SCOPE OF WORK:

1.1. THE LANDSCAPE CONTRACTOR SHALL BE REQUIRED TO PERFORM ALL CLEARING, FINISHED GRADING, SOIL PREPARATION, PERMANENT SEEDING OR SODDING, PLANTING AND MULCHING INCLUDING ALL LABOR, MATERIALS, TOOLS AND EQUIPMENT NECESSARY FOR THE COMPLETION OF THIS PROJECT, UNLESS OTHERWISE CONTRACTED BY THE GENERAL CONTRACTOR.

2. MATERIALS

2.1. GENERAL - ALL HARDSCAPE MATERIALS SHALL MEET OR EXCEED SPECIFICATIONS AS OUTLINED IN THE STATE DEPARTMENT OF TRANSPORTATION'S SPECIFICATIONS.

2.2. TOPSOIL - NATURAL, FRIABLE, LOAMY SILT SOIL HAVING AN ORGANIC CONTENT NOT LESS THAN 5%, A PH RANGE BETWEEN 4.5-7.0. IT SHALL BE FREE OF DEBRIS, ROCKS LARGER THAN ONE INCH (1"), WOOD, ROOTS, VEGETABLE MATTER AND CLAY CLODS.

2.3. LAWN - ALL DISTURBED AREAS ARE TO BE TREATED WITH A MINIMUM 6" THICK LAYER OF TOPSOIL, OR AS DIRECTED BY THE LOCAL ORDINANCE OR CLIENT, AND SEEDED OR SODDED IN ACCORDANCE WITH THE PERMANENT STABILIZATION METHODS INDICATED ON THE LANDSCAPE PLAN

2.3.1. LAWN SEED MIXTURE SHALL BE FRESH, CLEAN NEW CROP SEED.

2.3.2. SOD SHALL BE STRONGLY ROOTED, WEED AND DISEASE/PEST FREE WITH A UNIFORM THICKNESS. SOD INSTALLED ON SLOPES GREATER THAN 4:1 SHALL BE PEGGED TO HOLD SOD IN PLACE.

2.4. MULCH - ALL PLANTING BEDS SHALL BE MULCHED WITH A 3" THICK LAYER OF DOUBLE SHREDDED HARDWOOD BARK MULCH, UNLESS OTHERWISE STATED ON THE LANDSCAPE PLAN AND/OR LANDSCAPE PLAN NOTES /DETAILS.

2.5. FERTILIZER

2.5.1. FERTILIZER SHALL BE DELIVERED TO THE SITE MIXED AS SPECIFIED IN THE ORIGINAL UNOPENED STANDARD BAGS SHOWING WEIGHT, ANALYSIS AND NAME OF MANUFACTURER. FERTILIZER SHALL BE STORED IN A WEATHERPROOF PLACE SO THAT IT CAN BE KEPT DRY PRIOR TO USE.

2.5.2. FOR THE PURPOSE OF BIDDING, ASSUME THAT FERTILIZER SHALL BE 10% NITROGEN, 6% PHOSPHORUS AND 4% POTASSIUM BY WEIGHT. A FERTILIZER SHOULD NOT BE SELECTED WITHOUT A SOIL TEST PERFORMED BY A CERTIFIED SOIL LABORATORY.

2.6. PLANT MATERIAL

2.6.1. ALL PLANTS SHALL IN ALL CASES CONFORM TO THE REQUIREMENTS OF THE "AMERICAN STANDARD FOR NURSERY STOCK" (ANSI Z60.1), LATEST EDITION, AS PUBLISHED BY THE AMERICAN NURSERY & LANDSCAPE ASSOCIATION (FORMERLY THE AMERICAN ASSOCIATION OF NURSERYMEN).

2.6.2. IN ALL CASES, BOTANICAL NAMES SHALL TAKE PRECEDENCE OVER COMMON NAMES FOR ANY AND ALL PLANT MATERIAL.

2.6.3. PLANTS SHALL BE LEGIBLY TAGGED WITH THE PROPER NAME AND SIZE. TAGS ARE TO REMAIN ON AT LEAST ONE PLANT OF EACH SPECIES FOR VERIFICATION PURPOSES DURING THE FINAL INSPECTION.

2.6.4. TREES WITH ABRASION OF THE BARK, SUN SCALDS, DISFIGURATION OR FRESH CUTS OF LIMBS OVER 1¼", WHICH HAVE NOT BEEN COMPLETELY CALLUSED, SHALL BE REJECTED. PLANTS SHALL NOT BE BOUND WITH WIRE OR ROPE AT ANY TIME SO AS TO DAMAGE THE BARK OR BREAK BRANCHES.

2.6.5. ALL PLANTS SHALL BE TYPICAL OF THEIR SPECIES OR VARIETY AND SHALL HAVE A NORMAL HABIT OF GROWTH: WELL DEVELOPED BRANCHES, DENSELY FOLIATED, VIGOROUS ROOT SYSTEMS AND BE FREE OF DISEASE, INSECTS, PESTS, EGGS OR LARVAE.

2.6.6. CALIPER MEASUREMENTS OF NURSERY GROWN TREES SHALL BE TAKEN AT A POINT ON THE TRUNK SIX INCHES (6") ABOVE THE NATURAL GRADE FOR TREES UP TO AND INCLUDING A FOUR INCH (4") CALIPER SIZE. IF THE CALIPER AT SIX INCHES (6") ABOVE THE GROUND EXCEEDS FOUR INCHES (4") IN CALIPER, THE CALIPER SHOULD BE MEASURED AT A POINT 12" ABOVE THE NATURAL GRADE.

2.6.7. SHRUBS SHALL BE MEASURED TO THE AVERAGE HEIGHT OR SPREAD OF THE SHRUB, AND NOT TO THE LONGEST BRANCH.

2.6.8. TREES AND SHRUBS SHALL BE HANDLED WITH CARE BY THE ROOT BALL.

3. GENERAL WORK PROCEDURES

3.1. CONTRACTOR TO UTILIZE WORKMANLIKE INDUSTRY STANDARDS IN PERFORMING ALL LANDSCAPE CONSTRUCTION. THE SITE IS TO BE LEFT IN A CLEAN STATE AT THE END OF EACH WORKDAY. ALL DEBRIS, MATERIALS AND TOOLS SHALL BE PROPERLY STORED, STOCKPILED OR DISPOSED OF.

3.2. WASTE MATERIALS AND DEBRIS SHALL BE COMPLETELY DISPOSED OF AT THE CONTRACTOR'S EXPENSE. DEBRIS SHALL NOT BE BURIED, INCLUDING ORGANIC MATERIALS, BUT SHALL BE REMOVED COMPLETELY FROM THE SITE.

4. SITE PREPARATIONS

4.1. BEFORE AND DURING PRELIMINARY GRADING AND FINISHED GRADING, ALL WEEDS AND GRASSES SHALL BE DUG OUT BY THE ROOTS AND DISPOSED OF IN ACCORDANCE WITH GENERAL WORK PROCEDURES OUTLINED HEREIN.

4.2. ALL EXISTING TREES TO REMAIN SHALL BE PRUNED TO REMOVE ANY DAMAGED BRANCHES. THE ENTIRE LIMB OF ANY DAMAGED BRANCH SHALL BE CUT OFF AT THE BRANCH COLLAR. CONTRACTOR SHALL ENSURE THAT CUTS ARE SMOOTH AND STRAIGHT. ANY EXPOSED ROOTS SHALL BE CUT BACK WITH CLEAN, SHARP TOOLS AND TOPSOIL SHALL BE PLACED AROUND THE REMAINDER OF THE ROOTS. EXISTING TREES SHALL BE MONITORED ON A REGULAR BASIS FOR ADDITIONAL ROOT OR BRANCH DAMAGE AS A RESULT OF CONSTRUCTION. ROOTS SHALL NOT BE LEFT EXPOSED FOR MORE THAN ONE (1) DAY. CONTRACTOR SHALL WATER EXISTING TREES AS NEEDED TO PREVENT SHOCK OR DECLINE.

4.3. CONTRACTOR SHALL ARRANGE TO HAVE A UTILITY STAKE-OUT TO LOCATE ALL UNDERGROUND UTILITIES PRIOR TO INSTALLATION OF ANY LANDSCAPE MATERIAL. UTILITY COMPANIES SHALL BE CONTACTED THREE (3) DAYS PRIOR TO THE BEGINNING OF WORK.

5. TREE PROTECTION

5.1. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING TREES TO REMAIN. A TREE PROTECTION ZONE SHALL BE ESTABLISHED AT THE DRIP LINE OR AT THE LIMIT OF CONSTRUCTION DISTURBANCE, WHICHEVER IS GREATER. LOCAL STANDARDS THAT MAY REQUIRE A MORE STRICT TREE PROTECTION ZONE SHALL BE HONORED.

5.2. A FORTY-EIGHT INCH (48") HIGH WOODEN SNOW FENCE OR ORANGE COLORED HIGH-DENSITY 'VISI-FENCE', OR APPROVED EQUAL, MOUNTED ON STEEL POSTS SHALL BE PLACED ALONG THE BOUNDARY OF THE TREE PROTECTION ZONE. POSTS SHALL BE LOCATED AT A MAXIMUM OF EIGHT FEET (8') ON CENTER OR AS INDICATED WITHIN THE TREE PROTECTION DETAIL.

5.3. WHEN THE TREE PROTECTION FENCING HAS BEEN INSTALLED, IT SHALL BE INSPECTED BY THE APPROVING AGENCY PRIOR TO DEMOLITION, GRADING, TREE CLEARING OR ANY OTHER CONSTRUCTION. THE FENCING ALONG THE TREE PROTECTION ZONE SHALL BE REGULARLY INSPECTED BY THE LANDSCAPE CONTRACTOR AND MAINTAINED UNTIL ALL CONSTRUCTION ACTIVITY HAS BEEN COMPLETED.

5.4. AT NO TIME SHALL MACHINERY, DEBRIS, FALLEN TREES OR OTHER MATERIALS BE PLACED, STOCKPILED OR LEFT STANDING IN THE TREE PROTECTION ZONE.

6. SOIL MODIFICATIONS

6.1. CONTRACTOR SHALL ATTAIN A SOIL TEST FOR ALL AREAS OF THE SITE PRIOR TO CONDUCTING ANY PLANTING. SOIL TESTS SHALL BE PERFORMED BY A CERTIFIED SOIL LABORATORY.

6.2. LANDSCAPE CONTRACTOR SHALL REPORT ANY SOIL OR DRAINAGE CONDITIONS CONSIDERED DETRIMENTAL TO THE GROWTH OF PLANT MATERIAL. SOIL MODIFICATIONS, AS SPECIFIED HEREIN, MAY NEED TO BE CONDUCTED BY THE LANDSCAPE CONTRACTOR DEPENDING ON SITE CONDITIONS.

6.3. THE FOLLOWING AMENDMENTS AND QUANTITIES ARE APPROXIMATE AND ARE FOR BIDDING PURPOSES ONLY. COMPOSITION OF AMENDMENTS SHOULD BE REVISED DEPENDING ON THE OUTCOME OF A TOPSOIL ANALYSIS PERFORMED BY A CERTIFIED SOIL LABORATORY.

6.3.1. TO INCREASE A SANDY SOIL'S ABILITY TO RETAIN WATER AND NUTRIENTS, THOROUGHLY TILL ORGANIC MATTER INTO THE TOP 6-12". USE COMPOSTED BARK, COMPOSTED LEAF MULCH OR PEAT MOSS. ALL PRODUCTS SHOULD BE COMPOSTED TO A DARK COLOR AND BE FREE OF PIECES WITH IDENTIFIABLE LEAF OR WOOD STRUCTURE. AVOID MATERIAL WITH A PH HIGHER THAN 7.5.

6.3.2. TO INCREASE DRAINAGE, MODIFY HEAVY CLAY OR SILT (MORE THAN 40% CLAY OR SILT) BY ADDING COMPOSTED PINE BARK (UP TO 30% BY VOLUME) AND/OR AGRICULTURAL GYPSUM. COARSE SAND MAY BE USED IF ENOUGH IS ADDED TO BRING THE SAND CONTENT TO MORE THAN 60% OF THE TOTAL MIX. SUBSURFACE DRAINAGE LINES MAY NEED TO BE ADDED TO INCREASE DRAINAGE.

6.3.3. MODIFY EXTREMELY SANDY SOILS (MORE THAN 85%) BY ADDING ORGANIC MATTER AND/OR DRY, SHREDDED CLAY LOAM UP TO 30% OF THE TOTAL MIX.

7. FINISHED GRADING

7.1. UNLESS OTHERWISE CONTRACTED, THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF TOPSOIL AND THE ESTABLISHMENT OF FINE-GRADING WITHIN THE DISTURBANCE AREA OF THE SITE.

7.2. LANDSCAPE CONTRACTOR SHALL VERIFY THAT SUBGRADE FOR INSTALLATION OF TOPSOIL HAS BEEN ESTABLISHED. THE SUBGRADE OF THE SITE MUST MEET THE FINISHED GRADE LESS THE REQUIRED TOPSOIL THICKNESS (1"±).

7.3. ALL LAWN AND PLANTING AREAS SHALL BE GRADED TO A SMOOTH, EVEN AND UNIFORM PLANE WITH NO ABRUPT CHANGE OF SURFACE AS DEPICTED WITHIN THIS SET OF CONSTRUCTION PLANS, UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER OR LANDSCAPE ARCHITECT.

7.4. ALL PLANTING AREAS SHALL BE GRADED AND MAINTAINED TO ALLOW FREE FLOW OF SURFACE WATER IN AND AROUND THE PLANTING BEDS. STANDING WATER SHALL NOT BE PERMITTED IN PLANTING BEDS.

8. TOPSOILING

8.1. CONTRACTOR SHALL PROVIDE A 6" THICK MINIMUM LAYER OF TOPSOIL, OR AS DIRECTED BY THE LOCAL ORDINANCE OR CLIENT, IN ALL PLANTING AREAS. TOPSOIL SHOULD BE SPREAD OVER A PREPARED SURFACE IN A UNIFORM LAYER TO ACHIEVE THE DESIRED COMPACTED THICKNESS.

8.2. ON-SITE TOPSOIL MAY BE USED TO SUPPLEMENT THE TOTAL AMOUNT REQUIRED. TOPSOIL FROM THE SITE MAY BE REJECTED IF IT HAS NOT BEEN PROPERLY REMOVED, STORED AND PROTECTED PRIOR TO CONSTRUCTION.

8.3. CONTRACTOR SHALL FURNISH TO THE APPROVING AGENCY AN ANALYSIS OF BOTH IMPORTED AND ON-SITE TOPSOIL TO BE UTILIZED IN ALL PLANTING AREAS. THE PH AND NUTRIENT LEVELS MAY NEED TO BE ADJUSTED THROUGH SOIL MODIFICATIONS AS NEEDED TO ACHIEVE THE REQUIRED LEVELS AS SPECIFIED IN THE MATERIALS SECTION ABOVE.

8.4. ALL LAWN AREAS ARE TO BE CULTIVATED TO A DEPTH OF SIX INCHES (6"). ALL DEBRIS EXPOSED FROM EXCAVATION AND CULTIVATION SHALL BE DISPOSED OF IN ACCORDANCE WITH GENERAL WORK PROCEDURES SECTION ABOVE. THE FOLLOWING SHALL BE TILLED INTO THE TOP FOUR INCHES (4") IN TWO DIRECTIONS (QUANTITIES BASED ON A 1,000 SQUARE FOOT AREA - FOR BID PURPOSES ONLY [SEE SPECIFICATION 6.A.]):

8.4.1. 20 POUNDS 'GRO-POWER' OR APPROVED SOIL CONDITIONER/FERTILIZER

8.4.2. 20 POUNDS NITRO-FORM (COURSE) 38-0-0 BLUE CHIP OR APPROVED NITROGEN FERTILIZER

8.5. THE SPREADING OF TOPSOIL SHALL NOT BE CONDUCTED UNDER MUDDY OR FROZEN CONDITIONS.

9. PLANTING

9.1. INSOFAR THAT IT IS FEASIBLE, PLANT MATERIAL SHALL BE PLANTED ON THE DAY OF DELIVERY. IN THE EVENT THAT THIS IS NOT POSSIBLE, LANDSCAPE CONTRACTOR SHALL PROTECT UNINSTALLED PLANT MATERIAL. PLANTS SHALL NOT REMAIN UNPLANTED FOR LONGER THAN A THREE DAY PERIOD AFTER DELIVERY. PLANTS THAT WILL NOT BE PLANTED FOR A PERIOD OF TIME GREATER THAN THREE DAYS SHALL BE HEALED IN WITH TOPSOIL OR MULCH TO HELP PRESERVE ROOT MOISTURE.

9.2. PLANTING OPERATIONS SHALL BE PERFORMED DURING PERIODS WITHIN THE PLANTING SEASON WHEN WEATHER AND SOIL CONDITIONS ARE SUITABLE AND IN ACCORDANCE WITH ACCEPTED LOCAL PRACTICE. PLANTS SHALL NOT BE INSTALLED IN TOPSOIL THAT IS IN A MUDDY OR FROZEN CONDITION.

9.3. ANY INJURED ROOTS OR BRANCHES SHALL BE PRUNED TO MAKE CLEAN-CUT ENDS PRIOR TO PLANTING UTILIZING CLEAN, SHARP TOOLS. ONLY INJURED OR DISEASED BRANCHING SHALL BE REMOVED.

9.4. ALL PLANTING CONTAINERS, BASKETS AND NON-BIODEGRADABLE MATERIALS SHALL BE REMOVED FROM ROOT BALLS DURING PLANTING. NATURAL FIBER BURLAP MUST BE CUT FROM AROUND THE TRUNK OF THE TREE AND FOLDED DOWN AGAINST THE ROOT BALL PRIOR TO BACKFILLING.

9.5. POSITION TREES AND SHRUBS AT THEIR INTENDED LOCATIONS AS PER THE PLANS AND SECURE THE APPROVAL OF THE LANDSCAPE ARCHITECT PRIOR TO EXCAVATING PITS, MAKING NECESSARY ADJUSTMENTS AS DIRECTED.

9.6. PRIOR TO THE ISSUANCE OF ANY CERTIFICATE OF OCCUPANCY, THE PROPOSED LANDSCAPE, AS SHOWN ON THE APPROVED LANDSCAPE PLAN, MUST BE INSTALLED, INSPECTED AND APPROVED BY THE APPROVING AGENCY. THE APPROVING AGENCY SHALL TAKE INTO ACCOUNT SEASONAL CONSIDERATIONS IN THIS REGARD AS FOLLOWS. THE PLANTING OF TREES, SHRUBS, VINES OR GROUND COVER SHALL OCCUR ONLY DURING THE FOLLOWING PLANTING SEASONS:

9.6.1. PLANTS: MARCH 15 TO DECEMBER 15

9.6.2. LAWN: MARCH 15 TO JUNE 15 OR SEPT. 1 TO DECEMBER 1

9.6.3. PLANTINGS REQUIRED FOR A CERTIFICATE OF OCCUPANCY SHALL BE PROVIDED DURING THE NEXT APPROPRIATE SEASON AT THE MUNICIPALITY'S DISCRETION. CONTRACTOR SHOULD CONTACT APPROVING AGENCY FOR POTENTIAL SUBSTITUTIONS.

9.7. FURTHERMORE, THE FOLLOWING TREE VARIETIES ARE UNUSUALLY SUSCEPTIBLE TO WINTER DAMAGE. WITH TRANSPLANT SHOCK AND THE SEASONAL LACK OF NITROGEN AVAILABILITY, THE RISK OF PLANT DEATH IS GREATLY INCREASED. IT IS NOT RECOMMENDED THAT THESE SPECIES BE PLANTED DURING THE FALL PLANTING SEASON:

ACER RUBRUM	PLATANUS X ACERIFOLIA
BETULA VARIETIES	POPULUS VARIETIES
CARPINUS VARIETIES	PRUNUS VARIETIES
CRATAEGUS VARIETIES	PYRUS VARIETIES
KOELREUTERIA	QUERCUS VARIETIES
LIQUIDAMBAR STYRACIFLUA	TILIA TOMENTOSA
LIRIODENDRON TULIPIFERA	ZELKOVA VARIETIES

9.8. PLANTING PITS SHALL BE DUG WITH LEVEL BOTTOMS, WITH THE WIDTH TWICE THE DIAMETER OF ROOT BALL. THE ROOT BALL SHALL REST ON UNDISTURBED GRADE. EACH PLANT PIT SHALL BE BACKFILLED IN LAYERS WITH THE FOLLOWING PREPARED SOIL MIXED THOROUGHLY:

9.8.1. 1 PART PEAT MOSS

9.8.2. 1 PART COMPOSTED COW MANURE BY VOLUME

9.8.3. 3 PARTS TOPSOIL BY VOLUME

9.8.4. 21 GRAMS 'AGRIFORM' PLANTING TABLETS (OR APPROVED EQUAL) AS FOLLOWS:

9.8.4.1. 2 TABLETS PER 1 GALLON PLANT

9.8.4.2. 3 TABLETS PER 5 GALLON PLANT

9.8.4.3. 4 TABLETS PER 15 GALLON PLANT

9.8.4.4. LARGER PLANTS: 2 TABLETS PER ½" CALIPER OF TRUNK

9.9. FILL PREPARED SOIL AROUND BALL OF PLANT HALF-WAY AND INSERT PLANT TABLETS. COMPLETE BACKFILL AND WATER THOROUGHLY.

9.10. ALL PLANTS SHALL BE PLANTED SO THAT THE TOP OF THE ROOT BALL, THE POINT AT WHICH THE ROOT FLARE BEGINS, IS SET AT GROUND LEVEL AND IN THE CENTER OF THE PIT. NO SOIL IS TO BE PLACED DIRECTLY ON TOP OF THE ROOT BALL.

9.11. ALL PROPOSED TREES DIRECTLY ADJACENT TO WALKWAYS OR DRIVEWAYS SHALL BE PRUNED AND MAINTAINED TO A MINIMUM BRANCHING HEIGHT OF 7' FROM GRADE.

9.12. GROUND COVER AREAS SHALL RECEIVE A ½" LAYER OF HUMUS RAKED INTO THE TOP 1" OF PREPARED SOIL PRIOR TO PLANTING. ALL GROUND COVER AREAS SHALL BE WEEDED AND TREATED WITH A PRE-EMERGENT CHEMICAL AS PER MANUFACTURER'S RECOMMENDATION.

9.13. NO PLANT, EXCEPT GROUND COVERS, GRASSES OR VINES, SHALL BE PLANTED LESS THAN TWO FEET (2') FROM EXISTING STRUCTURES AND SIDEWALKS.

9.14. ALL PLANTING AREAS AND PLANTING PITS SHALL BE MULCHED AS SPECIFIED HEREIN TO FILL THE ENTIRE BED AREA OR SAUCER. NO MULCH IS TO TOUCH THE TRUNK OF THE TREE OR SHRUB.

9.15. ALL PLANTING AREAS SHALL BE WATERED IMMEDIATELY UPON INSTALLATION IN ACCORDANCE WITH THE WATERING SPECIFICATIONS AS LISTED HEREIN.

10. TRANSPLANTING (WHEN REQUIRED)

10.1. ALL TRANSPLANTS SHALL BE DUG WITH INTACT ROOT BALLS CAPABLE OF SUSTAINING THE PLANT.

10.2. IF PLANTS ARE TO BE STOCKPILED BEFORE REPLANTING, THEY SHALL BE HEALED IN WITH MULCH OR SOIL, ADEQUATELY WATERED AND PROTECTED FROM EXTREME HEAT, SUN AND WIND.

10.3. PLANTS SHALL NOT BE DUG FOR TRANSPLANTING BETWEEN APRIL 10 AND JUNE 30.

10.4. UPON REPLANTING, BACKFILL SOIL SHALL BE AMENDED WITH FERTILIZER AND ROOT GROWTH HORMONE.

10.5. TRANSPLANTS SHALL BE GUARANTEED FOR THE LENGTH OF THE GUARANTEE PERIOD SPECIFIED HEREIN.

10.6. F TRANSPLANTS DIE, SHRUBS AND TREES LESS THAN SIX INCHES (6") DBH SHALL BE REPLACED IN KIND. TREES GREATER THAN SIX INCHES (6") DBH MAY BE REQUIRED TO BE REPLACED IN ACCORDANCE WITH THE MUNICIPALITY'S TREE REPLACEMENT GUIDELINES.

11. WATERING

11.1. NEW PLANTINGS OR LAWN AREAS SHALL BE ADEQUATELY IRRIGATED BEGINNING IMMEDIATELY AFTER PLANTING. WATER SHALL BE APPLIED TO EACH TREE AND SHRUB IN SUCH MANNER AS NOT TO DISTURB BACKFILL AND TO THE EXTENT THAT ALL MATERIALS IN THE PLANTING HOLE ARE THOROUGHLY SATURATED. WATERING SHALL CONTINUE AT LEAST UNTIL PLANTS ARE ESTABLISHED.

11.2. SITE OWNER SHALL PROVIDE WATER IF AVAILABLE ON SITE AT TIME OF PLANTING. IF WATER IS NOT AVAILABLE ON SITE, CONTRACTOR SHALL SUPPLY ALL NECESSARY WATER. THE USE OF WATERING BAGS IS RECOMMENDED FOR ALL NEWLY PLANTED TREES.

11.3. IF AN IRRIGATION SYSTEM HAS BEEN INSTALLED ON THE SITE, IT SHALL BE USED TO WATER PROPOSED PLANT MATERIAL, BUT ANY FAILURE OF THE SYSTEM DOES NOT ELIMINATE THE CONTRACTOR'S RESPONSIBILITY OF MAINTAINING THE DESIRED MOISTURE LEVEL FOR VIGOROUS, HEALTHY GROWTH.

12. GUARANTEE

12.1. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL PLANTS FOR A PERIOD OF 1 YEAR FROM APPROVAL OF LANDSCAPE INSTALLATION BY THE APPROVING AGENCY. CONTRACTOR SHALL SUPPLY THE OWNER WITH A MAINTENANCE BOND FOR TEN PERCENT (10%) OF THE VALUE OF THE LANDSCAPE INSTALLATION WHICH WILL BE RELEASED AT THE CONCLUSION OF THE GUARANTEE PERIOD AND WHEN A FINAL INSPECTION HAS BEEN COMPLETED AND APPROVED BY THE OWNER OR AUTHORIZED REPRESENTATIVE.

12.2. ANY DEAD OR DYING PLANT MATERIAL SHALL BE REPLACED FOR THE LENGTH OF THE GUARANTEE PERIOD. REPLACEMENT OF PLANT MATERIAL SHALL BE CONDUCTED AT THE FIRST SUCCEEDING PLANTING SEASON. ANY DEBRIS SHALL BE DISPOSED OF OFF-SITE, WITHOUT EXCEPTION.

12.3. TREES AND SHRUBS SHALL BE MAINTAINED BY THE CONTRACTOR DURING CONSTRUCTION AND THROUGHOUT THE 90 DAY MAINTENANCE PERIOD AS SPECIFIED HEREIN. CULTIVATION, WEEDING, WATERING AND THE PREVENTATIVE TREATMENTS SHALL BE PERFORMED AS NECESSARY TO KEEP PLANT MATERIAL IN GOOD CONDITION AND FREE OF INSECTS AND DISEASE.

12.4. LAWNS SHALL BE MAINTAINED THROUGH WATERING, FERTILIZING, WEEDING, MOWING, TRIMMING AND OTHER OPERATIONS SUCH AS ROLLING, REGARDING AND REPLANTING AS REQUIRED TO ESTABLISH A SMOOTH, ACCEPTABLE LAWN, FREE OF ERODED OR BARE AREAS.

13. CLEANUP

13.1. UPON THE COMPLETION OF ALL LANDSCAPE INSTALLATION AND BEFORE THE FINAL ACCEPTANCE, THE CONTRACTOR SHALL REMOVE ALL UNUSED MATERIALS, EQUIPMENT AND DEBRIS FROM THE SITE. ALL PAVED AREAS ARE TO BE CLEANED.

13.2. THE SITE SHALL BE CLEANED AND LEFT IN A NEAT AND ACCEPTABLE CONDITION AS APPROVED BY THE OWNER OR AUTHORIZED REPRESENTATIVE.

14. MAINTENANCE (ALTERNATIVE BID):

14.1. A 90 DAY MAINTENANCE PERIOD SHALL COMMENCE AT THE END OF ALL LANDSCAPE INSTALLATION OPERATIONS. THE 90 DAY MAINTENANCE PERIOD ENSURES TO THE OWNER/OPERATOR THAT THE NEWLY INSTALLED LANDSCAPING HAS BEEN MAINTAINED AS SPECIFIED ON THE APPROVED LANDSCAPE PLAN. ONCE THE INITIAL 90 DAY MAINTENANCE PERIOD HAS EXPIRED, THE OWNER/OPERATOR MAY REQUEST THAT BIDDERS SUBMIT AN ALTERNATE MAINTENANCE BID FOR A MONTHLY MAINTENANCE CONTRACT. THE ALTERNATE MAINTENANCE CONTRACT WILL ENCOMPASS ANY WORK THAT IS CONSIDERED APPROPRIATE TO ENSURE THAT PLANT AND LAWN AREAS ARE HEALTHY AND MANICURED TO THE APPROVAL OF THE OWNER/OPERATOR.

"NATIVE DETENTION AREA MIX" AS PREPARED BY:

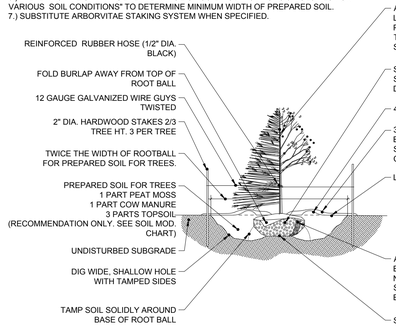
ERNST CONSERVATION SEEDS, INC.
8884 MERCER PIKE, MEADVILLE, PA 16335
PHONE: 800-873-3321 / 814-336-2404
EMAIL: SALES@ERNSTSEED.COM
WEBSITE: WWW.ERNSTSEED.COM

APPLICATION RATE: 1/2 LB. / 1000 SQ. FT. (20 LBS. / ACRE)

MIX COMPOSITION:
25.0% PANICUM VIRGATUM, 'SHELTER' (SWITCHGRASS, 'SHELTER')
24.0% PANICUM CLANDESTINUM, 'TIOGA' (DEERTONGUE, 'TIOGA')
22.0% CAREX VULPINOIDEA, PA ECOTYPE (FOX SEDGE, PA ECOTYPE)
21.0% ELYMUS VIRGINICUS, PA ECOTYPE (VIRGINIA WILDRYE, PA ECOTYPE)
6.0% AGROSTIS PERENNANS, ALBANY PINE BUSH-NY ECOTYPE (AUTUMN BENTGRASS, ALBANY PINE BUSH-NY ECOTYPE)
1.0% JUNCUS EFFUSUS (SOFT RUSH)
1.0% PANICUM RIGIDULUM, PA ECOTYPE (REDTOP PANICGRASS, PA ECOTYPE)

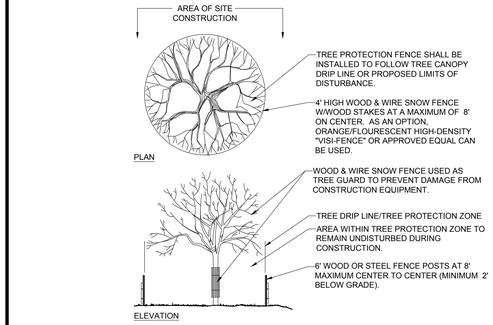
BASIN SEED MIX SPECIFICATIONS

NOTES:
1.) NO SOIL OR MULCH SHALL BE PLACED AGAINST ROOT COLLAR OF PLANT.
2.) REMOVE ALL NON-BIODEGRADABLE MATERIAL AND ROPE FROM TRUNK & TOP OF ROOT BALL. FOLD BURLAP BACK 1/3 FROM ROOT BALL.
3.) PLANTING DEPTH SHALL BE THE SAME AS GROWN IN NURSERY.
4.) THOROUGHLY SOAK THE TREE ROOT BALL AND ADJACENT PREPARED SOIL SEVERAL TIMES DURING THE FIRST MONTH
AFTER PLANTING AND REGULARLY THROUGHOUT THE FOLLOWING TWO SUMMERS.
5.) THE BOTTOM OF PLANTING PIT EXCAVATIONS SHOULD BE ROUGH TO AVOID MATTING OF SOIL LAYERS AS
NEW SOIL IS ADDED. IT IS PREFERABLE TO TILL THE FIRST LIFT (2 TO 3 IN.) OF PLANTING SOIL INTO THE SUBSOIL.
6.) REFER TO THE CHART "GENERAL RANGE OF SOIL MODIFICATIONS & VOLUMES FOR VARIOUS SOIL CONDITIONS" TO DETERMINE MINIMUM WIDTH OF PREPARED SOIL.
7.) SUBSTITUTE ARBORVITAE STAKING SYSTEM WHEN SPECIFIED.



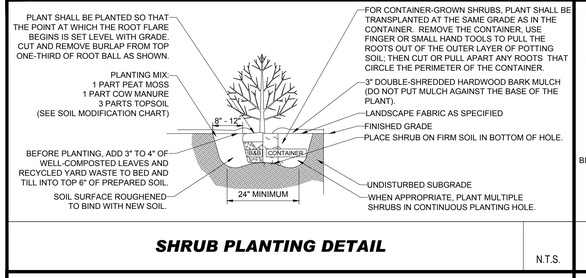
TREE PLANTING DETAIL

N.T.S.



TREE PROTECTION DURING SITE CONSTRUCTION

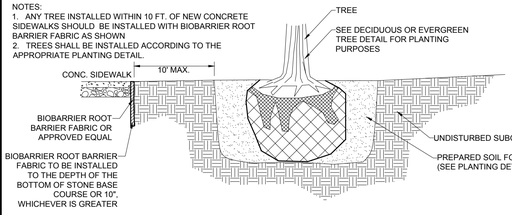
N.T.S.



SHRUB PLANTING DETAIL

N.T.S.

NOTES:
1. ANY TREE INSTALLED WITHIN 10 FT. OF NEW CONCRETE SIDEWALKS SHOULD BE INSTALLED WITH BIOBARRIER ROOT BARRIER FABRIC AS SHOWN
2. TREES SHALL BE INSTALLED ACCORDING TO THE APPROPRIATE PLANTING DETAIL.



BIOBARRIER ROOT BARRIER DETAIL

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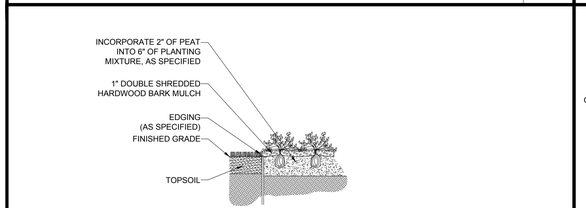
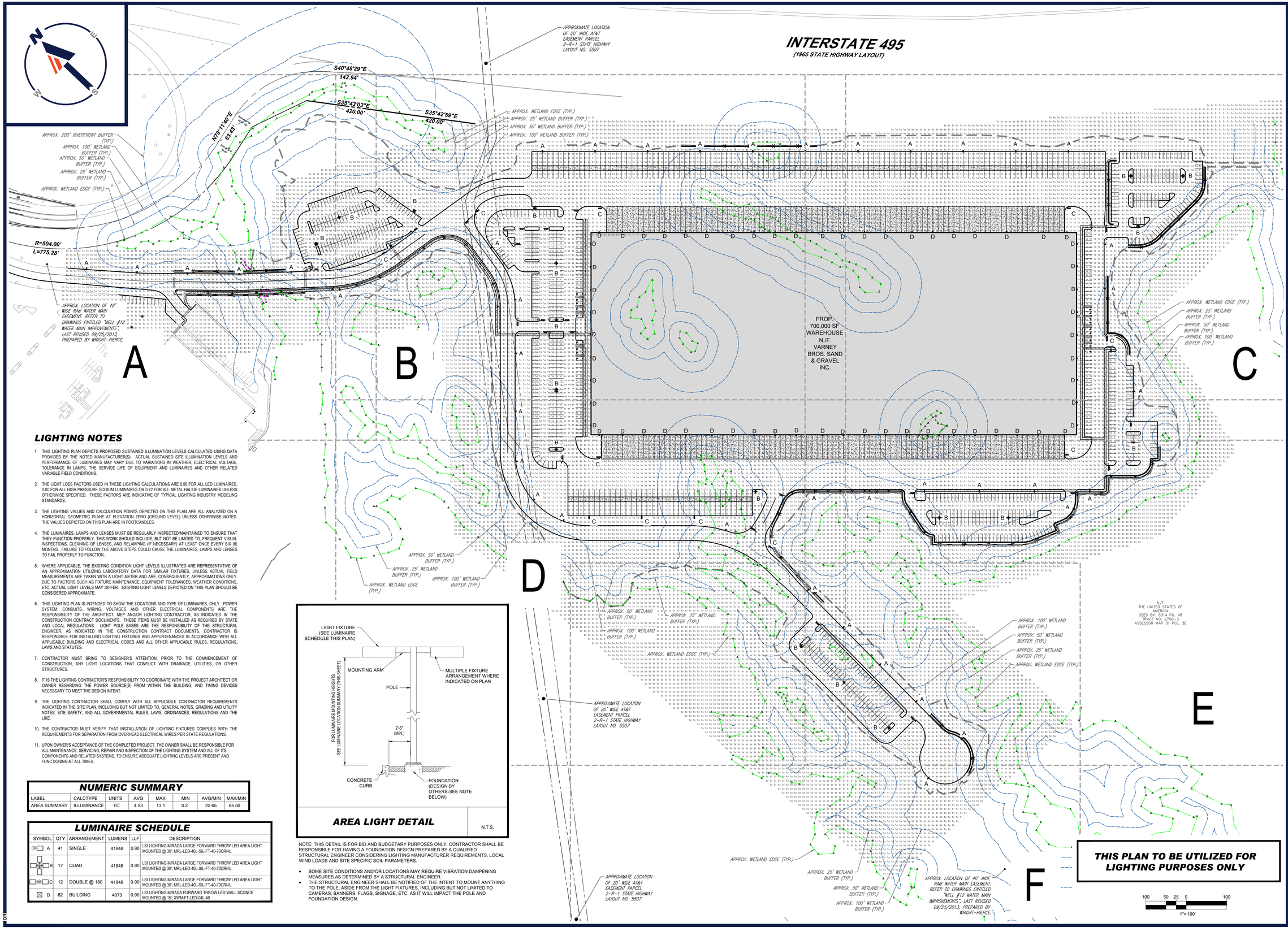

IN



LIGHTING NOTES

1. THIS LIGHTING PLAN DEPICTS PROPOSED SUSTAINED ILLUMINATION LEVELS CALCULATED USING DATA PROVIDED BY THE NOTED MANUFACTURER(S). ACTUAL SUSTAINED SITE ILLUMINATION LEVELS AND PERFORMANCE OF LUMINAIRES MAY VARY DUE TO VARIATIONS IN WEATHER, ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS, THE SERVICE LIFE OF EQUIPMENT AND LUMINAIRES AND OTHER RELATED VARIABLE FIELD CONDITIONS.
2. THE LIGHT LOSS FACTORS USED IN THESE LIGHTING CALCULATIONS ARE 0.90 FOR ALL LED LUMINAIRES, 0.80 FOR ALL HIGH PRESSURE SODIUM LUMINAIRES OR 0.72 FOR ALL METAL HALIDE LUMINAIRES UNLESS OTHERWISE SPECIFIED. THESE FACTORS ARE INDICATIVE OF TYPICAL LIGHTING INDUSTRY MODELING STANDARDS.
3. THE LIGHTING VALUES AND CALCULATION POINTS DEPICTED ON THIS PLAN ARE ALL ANALYZED ON A HORIZONTAL GEOMETRIC PLANE AT ELEVATION ZERO (GROUND LEVEL) UNLESS OTHERWISE NOTED. THE VALUES DEPICTED ON THIS PLAN ARE IN FOOTCANDLES.
4. THE LUMINAIRES, LAMPS AND LENSES MUST BE REGULARLY INSPECTED/MAINTAINED TO ENSURE THAT THEY FUNCTION PROPERLY. THIS WORK SHOULD INCLUDE, BUT NOT BE LIMITED TO, FREQUENT VISUAL INSPECTIONS, CLEANING OF LENSES, AND RELAMPING (IF NECESSARY) AT LEAST ONCE EVERY SIX (6) MONTHS. FAILURE TO FOLLOW THE ABOVE STEPS COULD CAUSE THE LUMINAIRES, LAMPS AND LENSES TO FAIL PROPERLY TO FUNCTION.
5. WHERE APPLICABLE, THE EXISTING CONDITION LIGHT LEVELS ILLUSTRATED ARE REPRESENTATIVE OF AN APPROXIMATION UTILIZING LABORATORY DATA FOR SIMILAR FIXTURES. UNLESS ACTUAL FIELD MEASUREMENTS ARE TAKEN WITH A LIGHT METER AND ARE, CONSEQUENTLY, APPROXIMATIONS ONLY. DUE TO FACTORS SUCH AS FIXTURE MAINTENANCE, EQUIPMENT TOLERANCES, WEATHER CONDITIONS, ETC, ACTUAL LIGHT LEVELS MAY DIFFER. EXISTING LIGHT LEVELS DEPICTED ON THIS PLAN SHOULD BE CONSIDERED APPROXIMATE.
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7. CONTRACTOR MUST BRING TO DESIGNER'S ATTENTION, PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, ANY LIGHT LOCATIONS THAT CONFLICT WITH DRAINAGE, UTILITIES, OR OTHER STRUCTURES.
8. IT IS THE LIGHTING CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE PROJECT ARCHITECT OR OWNER REGARDING THE POWER SOURCE(S) FROM WITHIN THE BUILDING, AND TIMING DEVICES NECESSARY TO MEET THE DESIGN INTENT.
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10. THE CONTRACTOR MUST VERIFY THAT INSTALLATION OF LIGHTING FIXTURES COMPLIES WITH THE REQUIREMENTS FOR SEPARATION FROM OVERHEAD ELECTRICAL WIRES PER STATE REGULATIONS.
11. UPON OWNER'S ACCEPTANCE OF THE COMPLETED PROJECT, THE OWNER SHALL BE RESPONSIBLE FOR ALL MAINTENANCE, SERVICING, REPAIR AND INSPECTION OF THE LIGHTING SYSTEM AND ALL OF ITS COMPONENTS AND RELATED SYSTEMS, TO ENSURE ADEQUATE LIGHTING LEVELS ARE PRESENT AND FUNCTIONING AT ALL TIMES.

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LUMINAIRE SCHEDULE

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C	12	DOUBLE @ 180	41848	0.90	LSI LIGHTING MIRADA LARGE FORWARD THROW LED AREA LIGHT MOUNTED @ 30'; MRL-LED-40L-SIL-FT-40-70CRI-IL
D	62	BUILDING	4073	0.90	LSI LIGHTING MIRADA FORWARD THROW LED WALL SCONCE MOUNTED @ 15'; XWM-FT-LED-04L-40

AREA LIGHT DETAIL — N.T.S.

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THIS PLAN TO BE UTILIZED FOR LIGHTING PURPOSES ONLY

100 50 25 0 100
1"= 100'

BOHLER
SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
LAND DEVELOPMENT
PERMITTING SERVICES
TRANSPORTATION SERVICES

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REVISIONS

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PROJECT No.:	W221023
DRAWN BY:	OCR/AJS
CHECKED BY:	MMA
DATE:	09/22/2022
CAD I.D.:	W221023-X-TTLB-SPPD

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

WS DEVELOPMENT

PROPOSED DEVELOPMENT
MAPS: 24, 30, & 31
LOTS: 10 & 12, 73-1, & 3
HARTFORD AVENUE, TOWN BELLINGHAM , NORFOLK COUNTY, MASSACHUSETTS

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

JAMES KUCH — COMMONWEALTH OF MASSACHUSETTS — PROFESSIONAL ENGINEER
MASSACHUSETTS LICENSE No. 31530
NEW HAMPSHIRE LICENSE No. 15476
CONNECTICUT LICENSE No. 26177
RHODE ISLAND LICENSE No. 9616
MAINE LICENSE No. 12553

SHEET TITLE:

OVERALL LIGHTING PLAN

SHEET NUMBER:

C-801

REVISION 4 - 12/06/2023

P:\2022\W221023\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W221023-LGHT-4A-----1A LAYOUT C-793-LIGHT OVERALL

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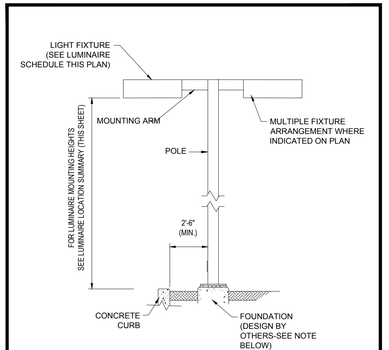

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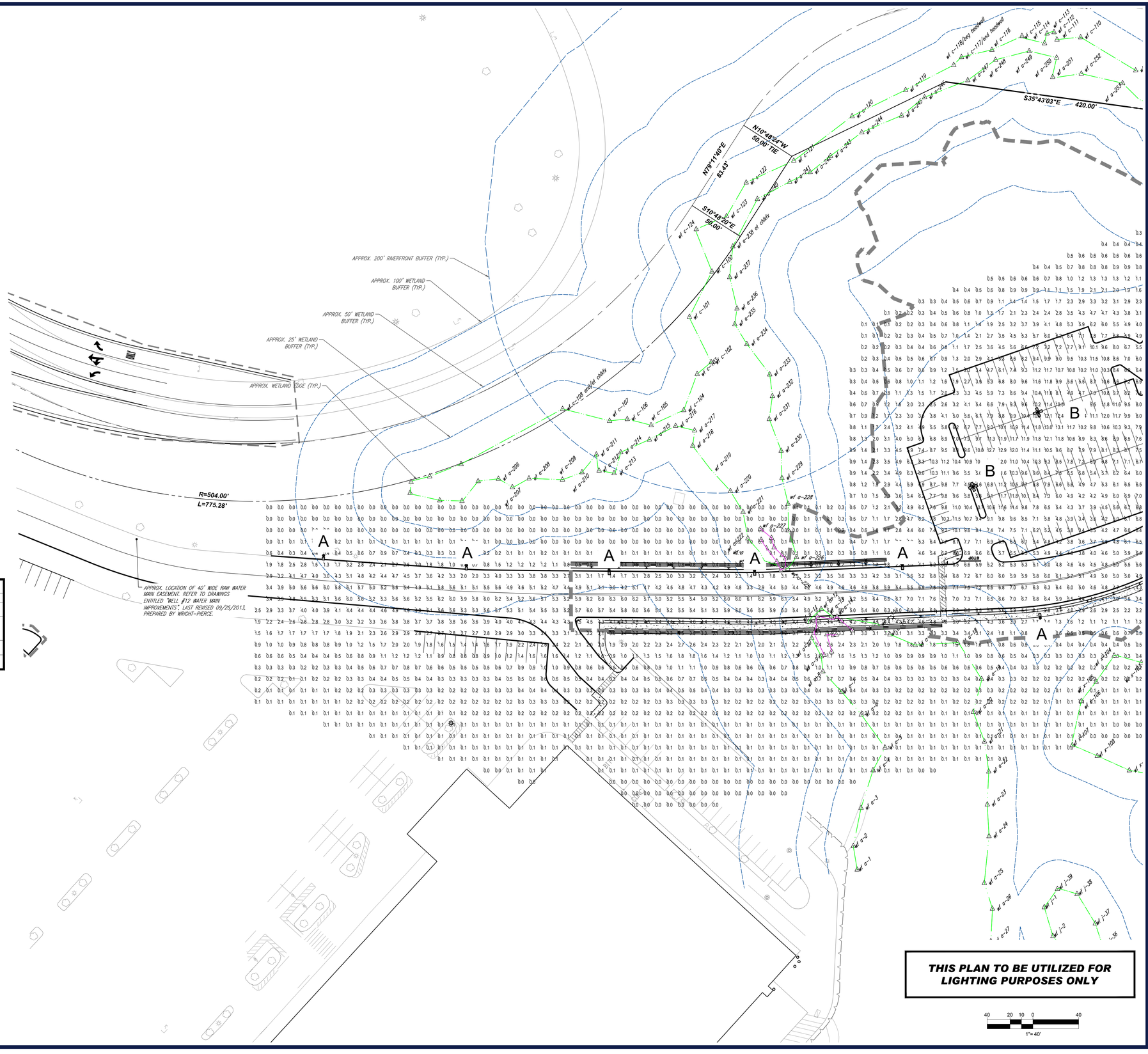

BOHLER
SITE CIVIL AND CONSULTING ENGINEERING
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MASSACHUSETTS

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

SHEET TITLE:

LIGHTING PLAN A

SHEET NUMBER:

C-802

REVISION 4 - 12/06/2023

P:\2022\W221023\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W221023-LIGHT-4A-----X_LAYOUT C-764-LIGHT A

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D	62	BUILDING	4073	0.90	LSI LIGHTING MIRADA FORWARD THROW LED WALL SCONCE MOUNTED @ 15'; XWM-FT-LED-04L-40

AREA LIGHT DETAIL — N.T.S.

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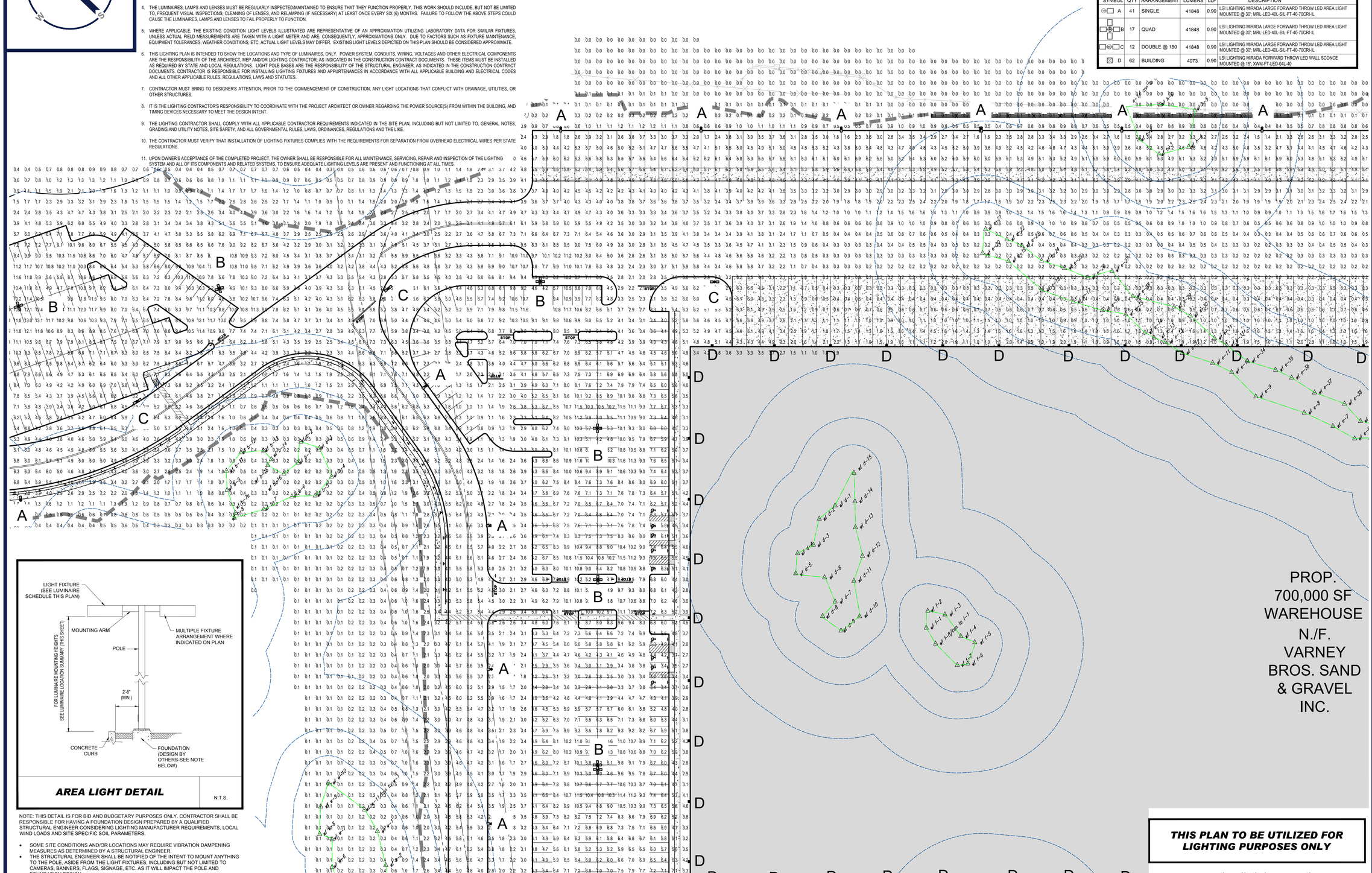

THIS PLAN TO BE UTILIZED FOR LIGHTING PURPOSES ONLY

BOHLER
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PROGRAM MANAGEMENT
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PERMITTING SERVICES
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REVISIONS

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2	05/01/2023	SITE LAYOUT UPDATES	OCR / MMA
3	07/28/2023	PLANNING BOARD COMMENTS	CJP / MMA
4	12/06/2023	CON COM COMMENTS	OCR / MMA

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PROJECT No.:	W221023
DRAWN BY:	OCR/AJS
CHECKED BY:	MMA
DATE:	09/22/2022
CAD I.D.:	W221023-X-TTLB-SPPD

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

WS DEVELOPMENT

PROPOSED DEVELOPMENT
MAPS: 24, 30, & 31
LOTS: 10 & 12, 73-1, & 3
HARTFORD AVENUE,
TOWN BELLINGHAM ,
NORFOLK COUNTY,
MASSACHUSETTS

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

J. A. KUCICH, JOHN A. KUCICH, CIVIL, No. 49248, PROFESSIONAL ENGINEER, MASSACHUSETTS REGISTRATION No. 51530, NEW HAMPSHIRE LICENSE No. 15476, CONNECTICUT LICENSE No. 26177, RHODE ISLAND LICENSE No. 9616, MAINE LICENSE No. 12553

SHEET TITLE:

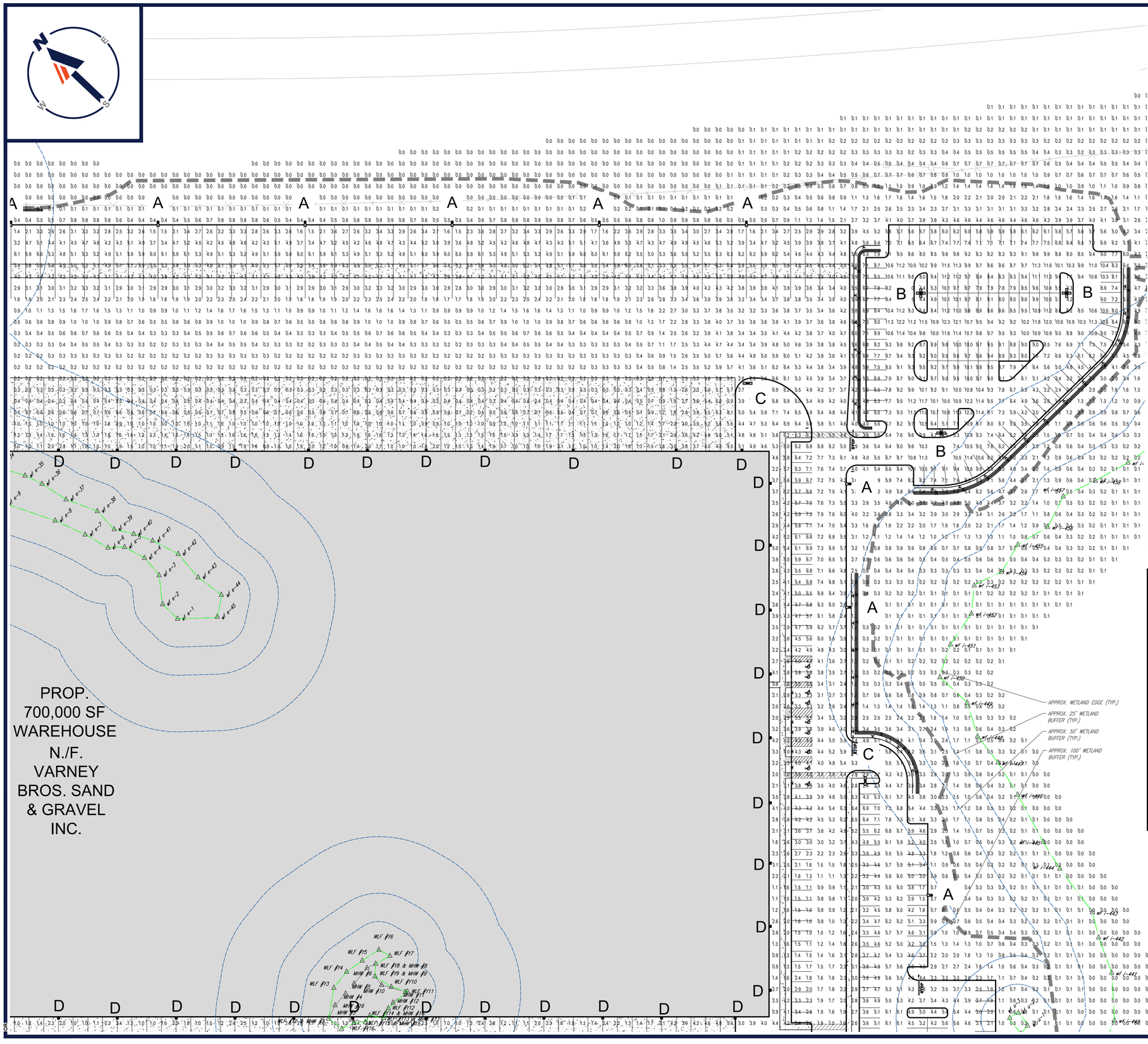
LIGHTING PLAN B

SHEET NUMBER:

C-803

REVISION 4 - 12/06/2023

P:\2022\W221023\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W221023-LGHT-A1-----LAYOUT: C-705-LIGHT B



LIGHTING NOTES

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2. THE LIGHT LOSS FACTORS USED IN THESE LIGHTING CALCULATIONS ARE 0.90 FOR ALL LED LUMINAIRES, 0.80 FOR ALL HIGH PRESSURE SODIUM LUMINAIRES OR 0.72 FOR ALL METAL HALIDE LUMINAIRES UNLESS OTHERWISE SPECIFIED. THESE FACTORS ARE INDICATIVE OF TYPICAL LIGHTING INDUSTRY MODELING STANDARDS.
3. THE LIGHTING VALUES AND CALCULATION POINTS DEPICTED ON THIS PLAN ARE ALL ANALYZED ON A HORIZONTAL GEOMETRIC PLANE AT ELEVATION ZERO (GROUND LEVEL) UNLESS OTHERWISE NOTED. THE VALUES DEPICTED ON THIS PLAN ARE IN FOOTCANDLES.
4. THE LUMINAIRES, LAMPS AND LENSES MUST BE REGULARLY INSPECTED/MAINTAINED TO ENSURE THAT THEY FUNCTION PROPERLY. THIS WORK SHOULD INCLUDE, BUT NOT BE LIMITED TO, FREQUENT VISUAL INSPECTIONS, CLEANING OF LENSES, AND RELAMPING (IF NECESSARY) AT LEAST ONCE EVERY SIX (6) MONTHS. FAILURE TO FOLLOW THE ABOVE STEPS COULD CAUSE THE LUMINAIRES, LAMPS AND LENSES TO FAIL PROPERLY TO FUNCTION.
5. WHERE APPLICABLE, THE EXISTING CONDITION LIGHT LEVELS ILLUSTRATED ARE REPRESENTATIVE OF AN APPROXIMATION UTILIZING LABORATORY DATA FOR SIMILAR FIXTURES, UNLESS ACTUAL FIELD MEASUREMENTS ARE TAKEN WITH A LIGHT METER AND ARE, CONSEQUENTLY, APPROXIMATIONS ONLY, DUE TO FACTORS SUCH AS FIXTURE MAINTENANCE, EQUIPMENT TOLERANCES, WEATHER CONDITIONS, ETC, ACTUAL LIGHT LEVELS MAY DIFFER. EXISTING LIGHT LEVELS DEPICTED ON THIS PLAN SHOULD BE CONSIDERED APPROXIMATE.
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7. CONTRACTOR MUST BRING TO DESIGNERS ATTENTION, PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, ANY LIGHT LOCATIONS THAT CONFLICT WITH DRAINAGE, UTILITIES, OR OTHER STRUCTURES.
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NUMERIC SUMMARY

LABEL	CALCTYPE	UNITS	AVG	MAX	MIN	AVG/MIN	MAX/MIN
AREA SUMMARY	ILLUMINANCE	FC	4.53	13.1	0.2	22.65	65.50

LUMINAIRE SCHEDULE

SYMBOL	QTY	ARRANGEMENT	LUMENS	LLF	DESCRIPTION
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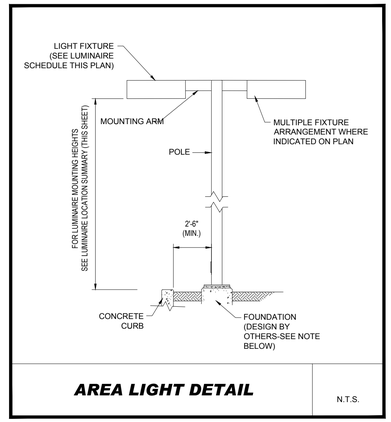

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THIS PLAN TO BE UTILIZED FOR LIGHTING PURPOSES ONLY

1" = 40'

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SUSTAINABLE DESIGN
PERMITTING SERVICES
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DRAWN BY:	OCR/AJS
CHECKED BY:	MMA
DATE:	09/22/2022
CAD I.D.:	W221023-X-TTLB-SPPD

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

WS DEVELOPMENT

PROPOSED DEVELOPMENT
MAPS: 24, 30, & 31
LOTS: 10 & 12, 73-1, & 3
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TOWN BELLINGHAM ,
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SHEET TITLE:

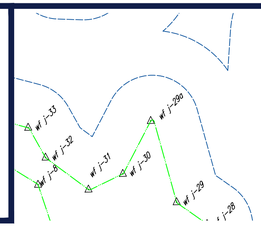
LIGHTING PLAN C

SHEET NUMBER:

C-804

REVISION 4 - 12/06/2023

P:\2022\W221023\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W221023-LIGHT-4A-----LAYOUT: C-704-LIGHT C



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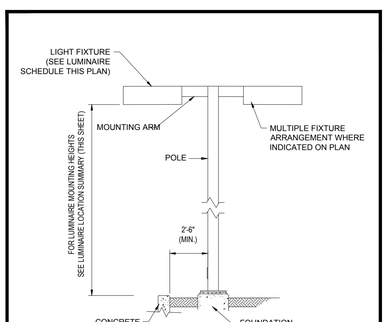

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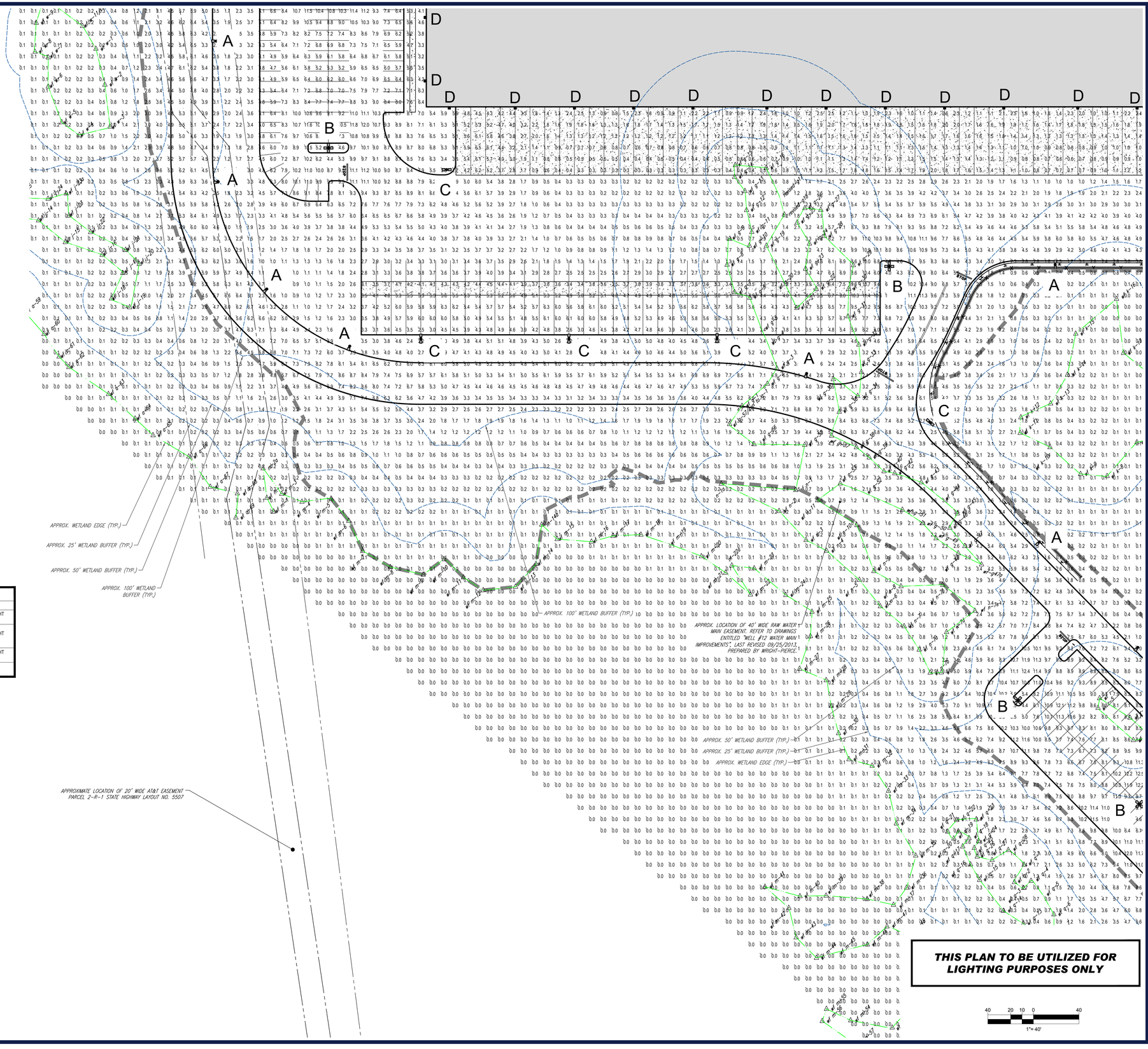

THIS PLAN TO BE UTILIZED FOR LIGHTING PURPOSES ONLY

40 20 10 0 40
1"= 40'

P:\2022\W221023\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W221023-LIGHT-4A-----LAYOUT: C-707-LIGHT D

BOHLER

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LAND SURVEYING
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PROJECT No.:	W221023
DRAWN BY:	OCR/AJS
CHECKED BY:	MMA
DATE:	09/22/2022
CAD I.D.:	W221023-X-TTLB-SPPD

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

WS DEVELOPMENT

PROPOSED DEVELOPMENT
MAPS: 24, 30, & 31
LOTS: 10 & 12, 73-1, & 3
HARTFORD AVENUE,
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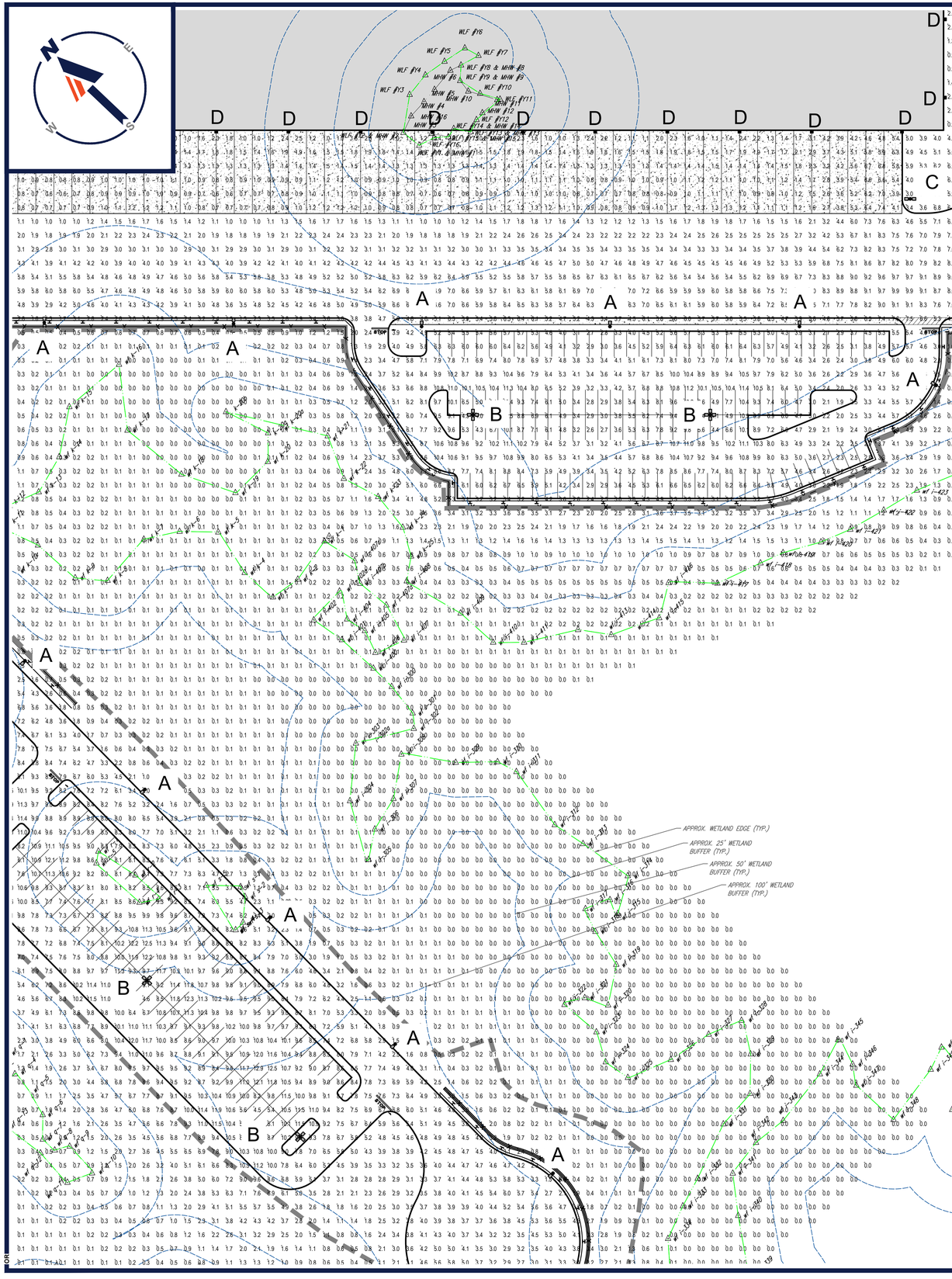
SHEET TITLE:

LIGHTING PLAN D

SHEET NUMBER:

C-805

REVISION 4 - 12/06/2023



LIGHTING NOTES

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9. THE LIGHTING CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CONTRACTOR REQUIREMENTS INDICATED IN THE SITE PLAN, INCLUDING BUT NOT LIMITED TO, GENERAL NOTES, GRADING AND UTILITY NOTES, SITE SAFETY, AND ALL GOVERNMENTAL RULES, LAWS, ORDINANCES, REGULATIONS AND THE LIKE.
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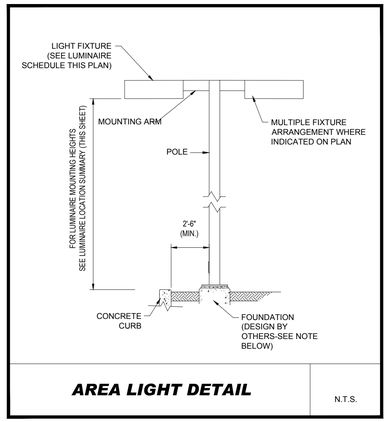
11. UPON OWNER'S ACCEPTANCE OF THE COMPLETED PROJECT, THE OWNER SHALL BE RESPONSIBLE FOR ALL MAINTENANCE, SERVICING, REPAIR AND INSPECTION OF THE LIGHTING SYSTEM AND ALL OF ITS COMPONENTS AND RELATED SYSTEMS, TO ENSURE ADEQUATE LIGHTING LEVELS ARE PRESENT AND FUNCTIONING AT ALL TIMES.

NUMERIC SUMMARY

LABEL	CALCTYPE	UNITS	AVG	MAX	MIN	AVG/MIN	MAX/MIN
AREA SUMMARY	ILLUMINANCE	FC	4.53	13.1	0.2	22.65	65.50

LUMINAIRE SCHEDULE

SYMBOL	QTY	ARRANGEMENT	LUMENS	LLF	DESCRIPTION
A	41	SINGLE	41848	0.90	LSI LIGHTING MIRADA LARGE FORWARD THROW LED AREA LIGHT MOUNTED @ 30'; MRL-LED-40L-SIL-FT-40-70CRI-IL
B	17	QUAD	41848	0.90	LSI LIGHTING MIRADA LARGE FORWARD THROW LED AREA LIGHT MOUNTED @ 30'; MRL-LED-40L-SIL-FT-40-70CRI-IL
C	12	DOUBLE @ 180	41848	0.90	LSI LIGHTING MIRADA LARGE FORWARD THROW LED AREA LIGHT MOUNTED @ 30'; MRL-LED-40L-SIL-FT-40-70CRI-IL
D	62	BUILDING	4073	0.90	LSI LIGHTING MIRADA FORWARD THROW LED WALL SCONCE MOUNTED @ 15'; XWM-FT-LED-04L-40



AREA LIGHT DETAIL — N.T.S.

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- SOME SITE CONDITIONS AND/OR LOCATIONS MAY REQUIRE VIBRATION DAMPENING MEASURES AS DETERMINED BY A STRUCTURAL ENGINEER.
- THE STRUCTURAL ENGINEER SHALL BE NOTIFIED OF THE INTENT TO MOUNT ANYTHING TO THE POLE. ASIDE FROM THE LIGHT FIXTURES, INCLUDING BUT NOT LIMITED TO CAMERAS, BANNERS, FLAGS, SIGNAGE, ETC. AS IT WILL IMPACT THE POLE AND FOUNDATION DESIGN.

THIS PLAN TO BE UTILIZED FOR LIGHTING PURPOSES ONLY

40 20 10 0 40
1"= 40'

BOHLER
SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
WATER RESOURCE SERVICES
PERMITTING SERVICES
TRANSPORTATION SERVICES

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REVISIONS

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PROJECT No.:	W221023
DRAWN BY:	OCR/AJS
CHECKED BY:	MMA
DATE:	09/22/2022
CAD I.D.:	W221023-X-TTLB-SPPD

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

WS DEVELOPMENT

PROPOSED DEVELOPMENT
MAPS: 24, 30, & 31
LOTS: 10 & 12, 73-1, & 3
HARTFORD AVENUE,
TOWN BELLINGHAM ,
NORFOLK COUNTY,
MASSACHUSETTS

BOHLER
352 TURNPIKE ROAD
SOUTHBOROUGH, MA 01772
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J. J. KUCICH — JOHN J. KUCICH — CIVIL — No. 47248 — REGISTERED PROFESSIONAL ENGINEER
MASSACHUSETTS LICENSE No. 31530
NEW HAMPSHIRE LICENSE No. 15476
CONNECTICUT LICENSE No. 26177
RHODE ISLAND LICENSE No. 9616
MAINE LICENSE No. 12553

SHEET TITLE:

LIGHTING PLAN E

SHEET NUMBER:

C-806

REVISION 4 - 12/06/2023

P:\2022\W221023\CAD\DRAWING\PLAN SET\CIVIL SITE PLANS\W221023-LGHT-E1A---LAYOUT C-706-LIGHT E

LIGHTING NOTES

1. THIS LIGHTING PLAN DEPICTS PROPOSED SUSTAINED ILLUMINATION LEVELS CALCULATED USING DATA PROVIDED BY THE NOTED MANUFACTURER(S). ACTUAL SUSTAINED SITE ILLUMINATION LEVELS AND PERFORMANCE OF LUMINAIRES MAY VARY DUE TO VARIATIONS IN WEATHER, ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS, THE SERVICE LIFE OF EQUIPMENT AND LUMINAIRES AND OTHER RELATED VARIABLE FIELD CONDITIONS.
2. THE LIGHT LOSS FACTORS USED IN THESE LIGHTING CALCULATIONS ARE 0.90 FOR ALL LED LUMINAIRES, 0.80 FOR ALL HIGH PRESSURE SODIUM LUMINAIRES OR 0.72 FOR ALL METAL HALIDE LUMINAIRES UNLESS OTHERWISE SPECIFIED. THESE FACTORS ARE INDICATIVE OF TYPICAL LIGHTING INDUSTRY MODELING STANDARDS.
3. THE LIGHTING VALUES AND CALCULATION POINTS DEPICTED ON THIS PLAN ARE ALL ANALYZED ON A HORIZONTAL GEOMETRIC PLANE AT ELEVATION ZERO (GROUND LEVEL) UNLESS OTHERWISE NOTED. THE VALUES DEPICTED ON THIS PLAN ARE IN FOOTCANDLES.
4. THE LUMINAIRES, LAMPS AND LENSES MUST BE REGULARLY INSPECTED/MAINTAINED TO ENSURE THAT THEY FUNCTION PROPERLY. THIS WORK SHOULD INCLUDE, BUT NOT BE LIMITED TO, FREQUENT VISUAL INSPECTIONS, CLEANING OF LENSES, AND RELAMPING (IF NECESSARY) AT LEAST ONCE EVERY SIX (6) MONTHS. FAILURE TO FOLLOW THE ABOVE STEPS COULD CAUSE THE LUMINAIRES, LAMPS AND LENSES TO FAIL PROPERLY TO FUNCTION.
5. WHERE APPLICABLE, THE EXISTING CONDITION LIGHT LEVELS ILLUSTRATED ARE REPRESENTATIVE OF AN APPROXIMATION UTILIZING LABORATORY DATA FOR SIMILAR FIXTURES, UNLESS ACTUAL FIELD MEASUREMENTS ARE TAKEN WITH A LIGHT METER AND ARE, CONSEQUENTLY, APPROXIMATIONS ONLY. DUE TO FACTORS SUCH AS FIXTURE MAINTENANCE, EQUIPMENT TOLERANCES, WEATHER CONDITIONS, ETC, ACTUAL LIGHT LEVELS MAY DIFFER. EXISTING LIGHT LEVELS DEPICTED ON THIS PLAN SHOULD BE CONSIDERED APPROXIMATE.
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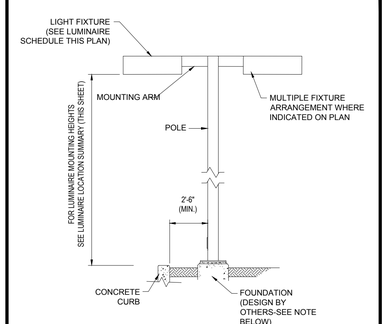

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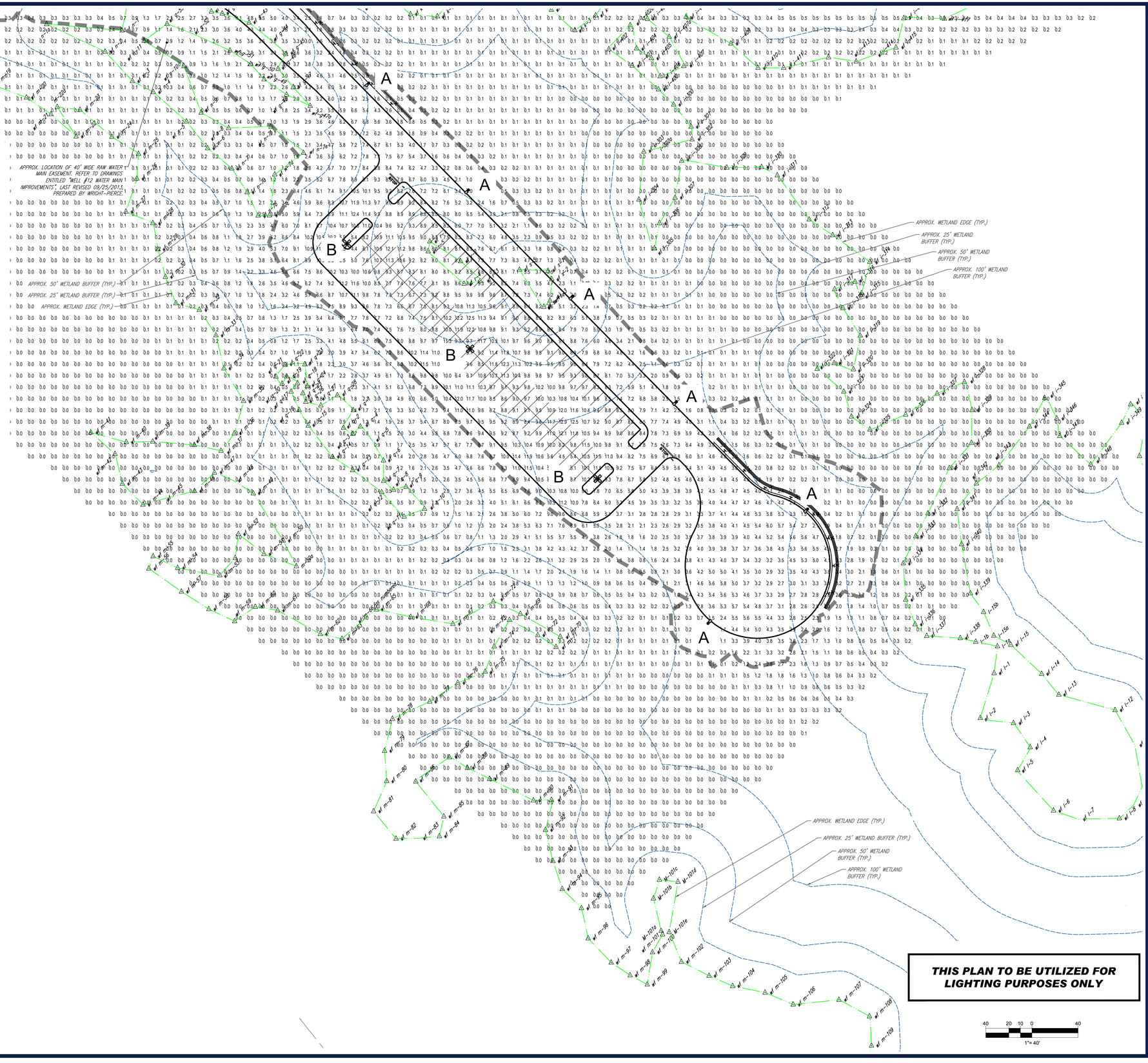

THIS PLAN TO BE UTILIZED FOR LIGHTING PURPOSES ONLY

BOHLER
SITE CIVIL AND CONSULTING ENGINEERING
LAND SURVEYING
PROGRAM MANAGEMENT
LANDSCAPE ARCHITECTURE
MUNICIPAL ENGINEERING
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DRAWN BY:	OCR/AJS
CHECKED BY:	MMA
DATE:	09/22/2022
CAD I.D.:	W221023-X-TTLB-SPPD

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

WS DEVELOPMENT

PROPOSED DEVELOPMENT
MAPS: 24, 30, & 31
LOTS: 10 & 12, 73-1, & 3
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TOWN BELLINGHAM ,
NORFOLK COUNTY,
MASSACHUSETTS

BOHLER
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RHODE ISLAND LICENSE No. 9616
MAINE LICENSE No. 12553

SHEET TITLE:

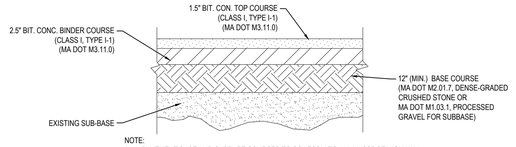
LIGHTING PLAN F

SHEET NUMBER:

C-807

REVISION 4 - 12/06/2023

P:\2022\W221023\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W221023-LGHT-4A---3-LAYOUT C-709-LIGHT F



NOTE:
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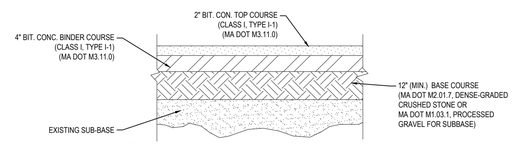
2. GC TO REFER TO GEOTECHNICAL REPORT FOR PAVEMENT SPECIFICATIONS.

TYPICAL STANDARD DUTY PAVEMENT SECTION

N.T.S.



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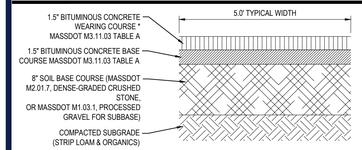
TYPICAL HEAVY DUTY PAVEMENT SECTION

N.T.S.



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BITUMINOUS CONCRETE SIDEWALK PAVEMENT SECTION

N.T.S.

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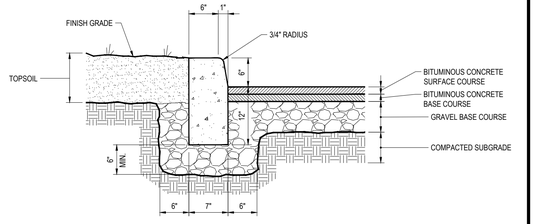
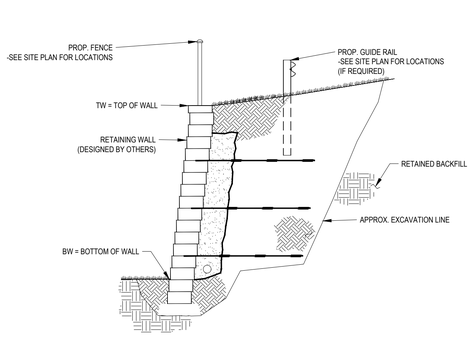


NOTE:
1. CURB SHALL CONSIST OF 4,000 PSI AIR ENTRAINED CONCRETE, EXPOSED EDGES TO HAVE RUBBED FINISH AND SURFACE SHALL BE TREATED WITH A CONCRETE PENETRANT/SEALER.
2. THE ENDS OF CURB SECTIONS SHALL BE CHAMFERED 1/4 INCH.
3. THE CORNERS OF CURB SECTIONS SHALL MATCH THE ADJACENT CURB IN SIZE, COLOR AND FINISH.
4. CURBS, CURB CORNERS OR EDGING SHALL BE FITTED TOGETHER AS CLOSELY AS POSSIBLE.
5. EXPANSION JOINTS SHALL BE INSTALLED AT A MAXIMUM OF TWENTY FEET (20') ON CENTER USING PREFORMED EXPANSION JOINT FILLER HAVING A THICKNESS OF 1/2 INCH.

PRECAST CONCRETE CURB

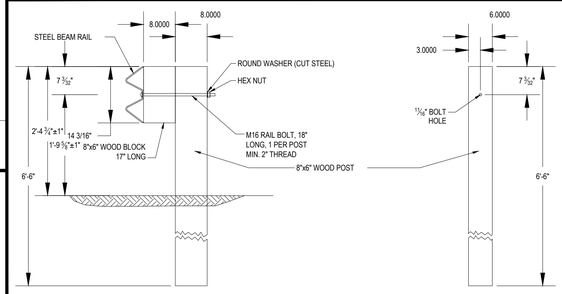
N.T.S.



NOTES:
[1] THIS DETAIL PROVIDED FOR REFERENCE ONLY. DESIGN OF PROPOSED RETAINING WALLS TO BE PREPARED BY A LICENSED STRUCTURAL ENGINEER.
[2] RETAINING WALL & ASSOCIATED REINFORCEMENT SHALL BE DESIGNED TO ACCOMMODATE PROPOSED FENCE, GUIDE RAIL, SUBSURFACE STRUCTURES, UTILITIES AND ALL OTHER WORK SHOWN ON THESE SITE DEVELOPMENT PLANS.
[3] RETAINING WALL DESIGNER MUST ACCOUNT FOR MULTIPLE STORM STRUCTURES BEHIND WALL INCLUDING PARALLEL STORM PIPE THAT MAY INTERFERE WITH GEOSYNTHETIC REINFORCEMENT.
[4] SEE GRADING & DRAINAGE PLAN FOR PROPOSED ELEVATIONS AND SLOPES ASSOCIATED WITH SAME.

REINFORCED RETAINING WALL

N.T.S.

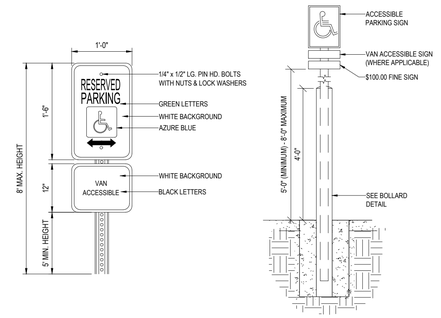


* WHEN PLACED IN MEDIAN, CHANGE TO THRIE BEAM, AND CHANGE HEIGHT TO 2'-8 1/2"±1"

NOTES:
1. POST SPACING, APPROACH END & TRAILING ENDS ARE THE SAME AS THOSE SHOWN FOR STEEL "H" POSTS PER MASSDOT 401.9.0.
2. ALL NUTS, BOLTS & WASHERS ARE TO BE GALVANIZED.
3. ALL SPLICES ARE TO BE MADE AT POSTS.

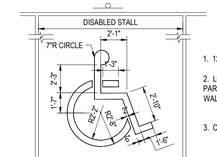
GUIDE RAIL DETAIL

N.T.S.



ACCESSIBLE PARKING SIGN W/ BOLLARD DETAIL

N.T.S.

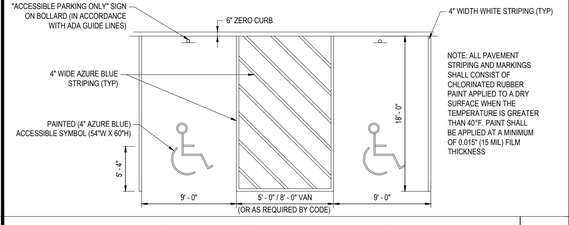


NOTE:
WHEELCHAIR SYMBOL PAINT SHALL CONFORM TO THE STRIPING PAINT SPECIFIED AND SYMBOL SHALL BE CENTERED IN THE STALL

1. 12"x18", 5' TO BOTTOM OF SYMBOL
2. LOCATED SO THAT IT CANNOT BE OBSCURED BY A CAR PARKED IN THE SPACE (2' BEHIND CURB OR 2' BEHIND WALK, AS APPLICABLE)
3. CONFORM TO LOCAL CODES

ACCESSIBLE PARKING SPACE PAINTING DETAIL

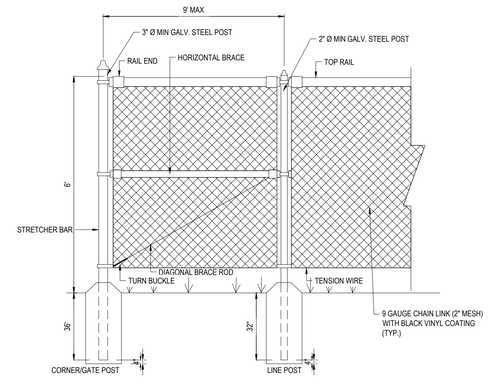
N.T.S.



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

HANDICAPPED STALL MARKING & PARKING LOT STRIPING DETAIL

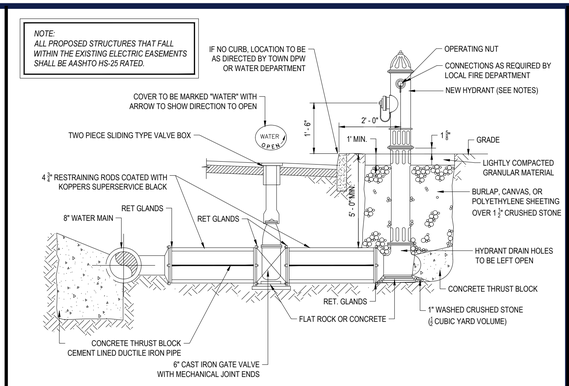
N.T.S.



BLACK VINYL CHAIN LINK FENCE

N.T.S.

N.T.S.

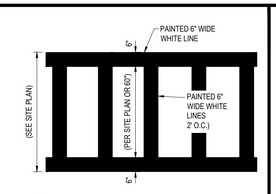


NOTE:
ALL PROPOSED STRUCTURES THAT FALL WITHIN THE EXISTING ELECTRIC EASEMENTS SHALL BE AASHTO HS-25 RATED.

NOTES:
1. HYDRANTS AND APPURTENANCES SHALL BE EQUAL IN QUALITY TO THOSE PRESENTLY BEING PURCHASED BY THE TOWN OF BELLINGHAM WATER DEPARTMENT AND SHOULD BE APPROVED BY THE TOWN PRIOR TO ORDERING MATERIALS.
2. HYDRANTS SHALL CONFORM IN ALL RESPECTS TO U.S. PIPE METROPOLITAN 250 MODEL-94 OR CLOW MEDALLION, PER THE TOWN OF BELLINGHAM WATER DEPARTMENT RULES AND REGULATIONS, DATED 12/11/12.
3. HYDRANTS SHALL HAVE A 5 1/4" MAIN VALVE, 2-2 1/2" HOSE NOZZLES, 1-4 1/2" PUMPER NOZZLE, INDEPENDENT DRAIN AND DRAIN ROD, 1- 1 1/4" OPERATING NUT, AND NATIONAL STANDARD THREADS.
4. HYDRANTS SHALL OPEN COUNTER-CLOCKWISE.
5. HYDRANTS SHALL BE INSTALLED NOT LESS THAN 34" FROM THE GROUND AND NOT MORE THAN 40" HIGH.

HYDRANT & VALVE INSTALLATION

N.T.S.



NOTE:
1. CROSSWALK TO BE CONSTRUCTED IN ACCORDANCE WITH THE TOWN OF SUTTON STANDARD SPECIFICATIONS

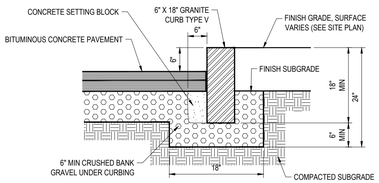
CROSSWALK DETAIL

N.T.S.

NOTES:
1. BOTH SIGNS SHALL BE IN ACCORDANCE WITH THE LATEST MUTCD EDITION, WARNING SIGNS W11-2 (TOP) & W16-7P (BOTTOM) WITH A BLACK LEGEND ON A FLUORESCENT YELLOW-GREEN BACKGROUND

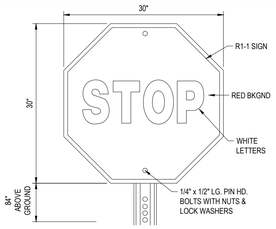
"PED. CROSSING" SIGN

N.T.S.



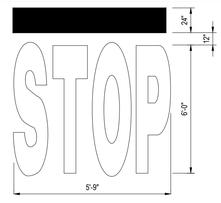
VERTICAL GRANITE CURB

N.T.S.



"STOP" BAR DETAIL

N.T.S.



"STOP" BAR DETAIL

N.T.S.

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REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	03/03/2023	PLANNING BOARD COMMENTS	OCR / MMA
2	05/01/2023	SITE LAYOUT UPDATES	OCR / MMA
3	07/28/2023	PLANNING BOARD COMMENTS	CJP / MMA
4	12/06/2023	CON COM COMMENTS	OCR / MMA

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PROJECT No.:	W221023
DRAWN BY:	OCR/AJS
CHECKED BY:	MMA
DATE:	09/22/2022
CAD I.D.:	W221023-X-TTLB-SPPD

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

WS DEVELOPMENT

PROPOSED DEVELOPMENT
MAPS: 24, 30, & 31
LOTS: 10 & 12, 73-1, & 3
HARTFORD AVENUE,
TOWN BELLINGHAM ,
NORFOLK COUNTY,
MASSACHUSETTS

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

JOHN A. KUCICH
COMMONWEALTH OF MASSACHUSETTS
CIVIL
No. 41930
PROFESSIONAL ENGINEER
MASSACHUSETTS (CERTIFICATE NO. 41930)
NEW HAMPSHIRE (LICENSE NO. 19317)
CONNECTICUT (LICENSE NO. 28127)
RHODE ISLAND (LICENSE NO. 14,101)
MAINE (LICENSE NO. 12455)

SHEET TITLE:

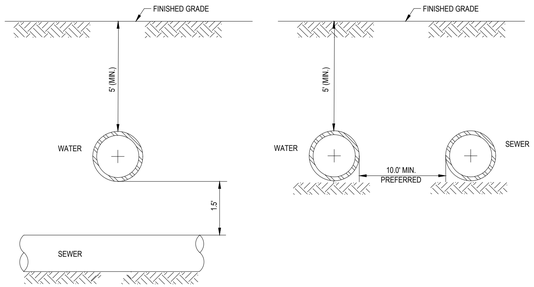
DETAIL SHEET

SHEET NUMBER:

C-901

REVISION 4 - 12/06/2023

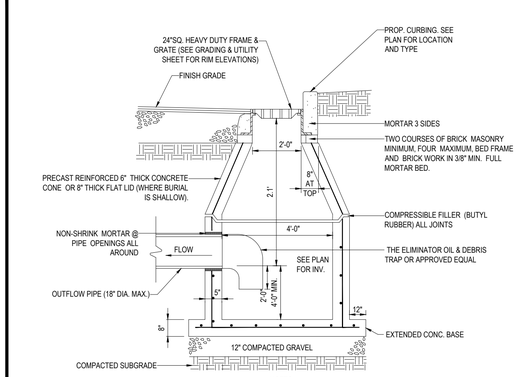
P:\2022\W221023\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W221023-SDETL-4A-----LAYOUT: C-901 DETAILS



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.

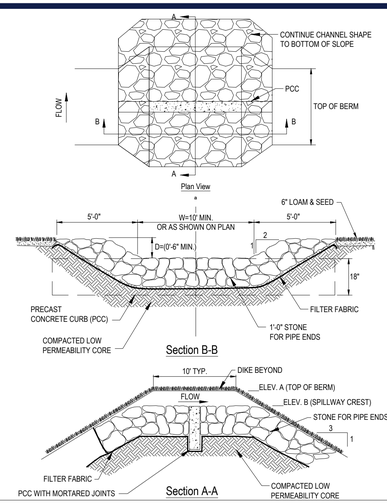


NOTE:
ALL PROPOSED STRUCTURES THAT FALL WITHIN THE EXISTING ELECTRIC EASEMENTS SHALL BE AASHTO HS-25 RATED.

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. USE VERTICAL GRANITE CURB INLET AT ALL CATCH BASIN LOCATIONS.
4. GRATES FOR CATCH BASINS CB200-CB210 AND CB300-CB311 SHALL BE INSCRIBED WITH "DO NOT DUMP - DRAINS TO WATERWAYS", OR APPROVED EQUAL.

PRECAST CONCRETE DEEP SUMP CATCH BASIN DETAIL

N.T.S.

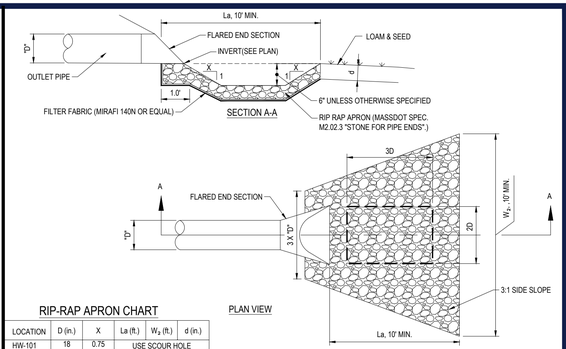


EMERGENCY SPILLWAY SCHEDULE

STORMWATER MANAGEMENT AREA	Elev. A	Elev. B
B2a	352.00	351.00
B2b	373.00	372.00
B2c	380.00	379.00
B3a	378.15	377.15

OVERFLOW SPILLWAY

N.T.S.



RIP-RAP APRON CHART

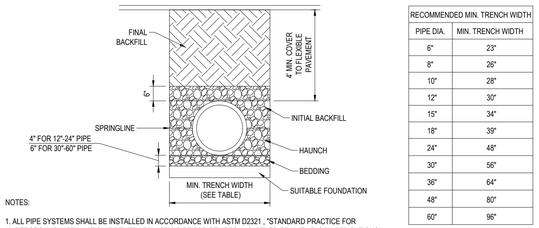
LOCATION	D (in.)	X	La (ft.)	W_a (ft.)	d (in.)
HW-101	18	0.75	USE SCOUR HOLE		
HW-201	12	0.50	10	10	6
HW-301	12	0.50	12	11	6
HW-400	24	1.00	USE SCOUR HOLE		
HW-500	18	0.75	10	12	6
FES-100	36	1.50	USE SCOUR HOLE		
FES-200	18	0.75	USE SCOUR HOLE		
FES-300	36	1.50	USE SCOUR HOLE		
FES-600	42	1.75	USE SCOUR HOLE		
FES-700	24	1.00	14	16	12
FES-701	30	1.25	USE SCOUR HOLE		
HW-7B	18	0.75	13	14	12
HW-9B	36	1.50	USE SCOUR HOLE		
HW-10B	36	1.50	USE SCOUR HOLE		
HW-8B	36	1.50	USE SCOUR HOLE		

SCOUR HOLE CHART

LOCATION	D (in.)	F (ft.)	C (ft.)	B (ft.)	d (in.)
HW-101	18	0.75	9	7.5	6
HW-400	24	1.00	9	7.5	12
FES-100	36	1.50	18	15	12
FES-200	18	0.75	9	7.5	6
FES-300	36	1.50	18	15	12
FES-600	42	1.75	21	17.5	18
FES-701	30	1.25	15	12.5	12
HW-9B	36	1.50	18	15	12
HW-10B	36	1.50	18	15	12
HW-8B	36	1.50	18	15	12

FLARED END SECTION WITH RIP RAP APRON

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 FOR HDPE PIPE SHALL MEET THE REQUIREMENTS OF AASHTO M 145, A-1, A-2-4, A-2-5, OR A-3. A STABLE AND UNIFORM BEDDING SHALL BE PROVIDED FOR THE PIPE AND ANY PROTRUDING FEATURES OF ITS JOINT AND/OR FITTINGS. THE MIDDLE OF THE BEDDING EQUAL TO 1/3 OF THE PIPE O.D. MAY BE LOOSELY PLACED, WHILE THE REMAINDER SHALL BE COMPACTED TO A MINIMUM 95% OF MAXIMUM DENSITY PER AASHTO T99. A MINIMUM OF 4" OF BEDDING SHALL BE PROVIDED PRIOR TO PLACEMENT OF THE PIPE, UNLESS AN UNYIELDING MATERIAL (ROCK CUTS) IS PRESENT IN THE TRENCH BOTTOM, THEN A 6" CUSHION OF BEDDING IS RECOMMENDED. BEDDING MATERIAL SIZE SHALL BE 1.5" MAXIMUM GRANULAR MATERIAL.

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 SHALL BE FOUR (4) FEET, PER THE TOWN OF BELLINGHAM SUBDIVISION RULES & REGULATIONS.

NOTE:
ALL PROPOSED UNDERGROUND UTILITIES THAT FALL WITHIN THE EXISTING ELECTRIC EASEMENTS SHALL BE AASHTO HS-25 RATED.

HDPE STORM DRAINAGE TRENCH

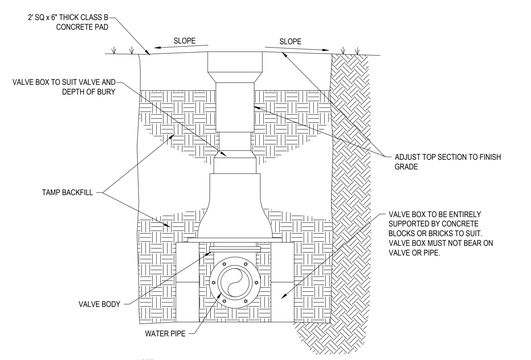
N.T.S.

NOTE:
ALL PROPOSED STRUCTURES THAT FALL WITHIN THE EXISTING ELECTRIC EASEMENTS SHALL BE AASHTO HS-25 RATED.

NOTES:
1. ALL STRUCTURES SHALL BE SUITABLE FOR H-20 LOADING AND SHALL MEET THE REQUIREMENTS OF ASTM C478.
2. CONTRACTOR SHALL SIZE MANHOLE AS NECESSARY TO ACCOMMODATE THE PROPOSED PIPE SIZES AND PENETRATIONS USING GEOMETRY SHOWN ON THE GRADING AND DRAINAGE PLANS AS WELL AS INFORMATION PROVIDED IN THE ROADWAY PROFILES.

TYP. PRECAST CONCRETE MANHOLE STORM DRAIN

N.T.S.

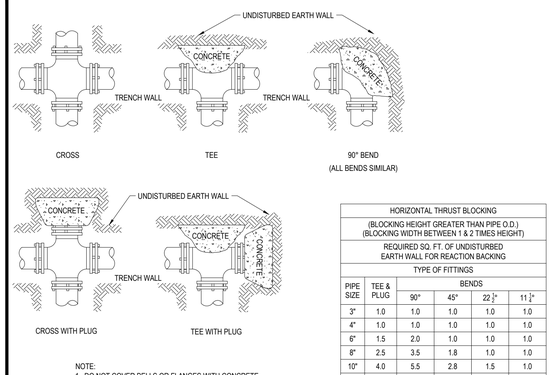


NOTE:
GATE VALVE SHALL BE IN ACCORDANCE WITH THE TOWN OF BELLINGHAM DEPARTMENT OF PUBLIC WORKS MATERIALS SPECIFICATIONS.

NOTE:
ALL PROPOSED STRUCTURES THAT FALL WITHIN THE EXISTING ELECTRIC EASEMENTS SHALL BE AASHTO HS-25 RATED.

GATE VALVE

N.T.S.

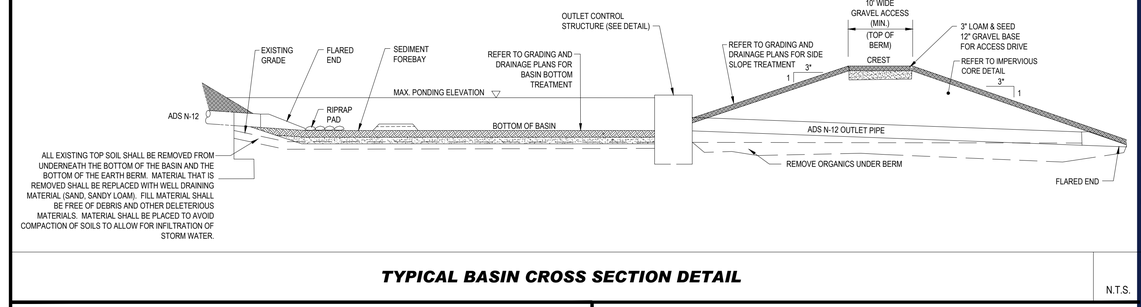


HORIZONTAL THRUST BLOCKING					
(BLOCKING HEIGHT GREATER THAN PIPE O.D.) (BLOCKING WIDTH BETWEEN 1 & 2 TIMES HEIGHT)					
REQUIRED SQ. FT. OF UNDISTURBED EARTH WALL FOR REACTION BACKING					
TYPE OF FITTINGS					
PIPE SIZE	TEE & PLUG	BENDS			
		90°	45°	22 1/2°	11 1/4°
3"	1.0	1.0	1.0	1.0	1.0
4"	1.0	1.0	1.0	1.0	1.0
6"	1.5	2.0	1.0	1.0	1.0
8"	2.5	3.5	1.8	1.0	1.0
10"	4.0	5.5	2.8	1.5	1.0
12"	6.0	8.0	4.0	2.0	1.5

NOTE:
1. DO NOT COVER BELLS OR FLANGES WITH CONCRETE
2. WRAP ALL FITTINGS WITH VISQUEEN.
3. BACK ALL TEES ACCORDING TO SIZE OF BRANCH.
4. BACKING FUTURE LINE EXTENSIONS SHALL BE SUCH THAT LATER REMOVAL IS POSSIBLE.
5. ALL BENDS WHERE FITTINGS ARE USED, BOTH HORIZONTAL OR VERTICAL SHALL BE BACKED.
6. REACTION BACKING TABLE IS BASED ON 100 P.S.I. AND SOIL BEARING PRESSURE OF 2000 lb./sq.ft. ADDITIONAL BACKING MAY BE REQUIRED IN SOME AREAS AS DIRECTED BY ENGINEERS.
7. ALL CONCRETE SHALL BE 2500 P.S.I.
8. 18" AND LARGER REQUIRES SPECIFIC ANTI-THRUST DESIGN.

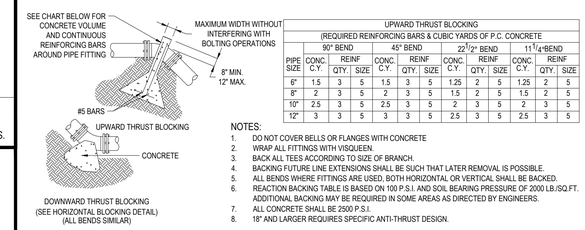
HORIZONTAL THRUST BLOCKING

N.T.S.



TYPICAL BASIN CROSS SECTION DETAIL

N.T.S.



UPWARD THRUST BLOCKING (REQUIRED REINFORCING BARS & CUBIC YARDS OF P.C. CONCRETE												
	90° BEND			45° BEND			22 1/2° BEND			11 1/4°BEND		
PIPE SIZE	CONC. C.Y.	REINF QTY.	REINF SIZE	CONC. C.Y.	REINF QTY.	REINF SIZE	CONC. C.Y.	REINF QTY.	REINF SIZE	CONC. C.Y.	REINF QTY.	REINF SIZE
6"	1.5	3	5	1.5	3	5	1.25	2	5	1.25	2	5
8"	2	3	5	2	3	5	1.5	2	5	1.5	2	5
10"	2.5	3	5	2.5	3	5	2	3	5	2	3	5
12"	3	3	5	3	3	5	2.5	3	5	2.5	3	5

NOTES:
1. DO NOT COVER BELLS OR FLANGES WITH CONCRETE
2. WRAP ALL FITTINGS WITH VISQUEEN.
3. BACK ALL TEES ACCORDING TO SIZE OF BRANCH.
4. BACKING FUTURE LINE EXTENSIONS SHALL BE SUCH THAT LATER REMOVAL IS POSSIBLE.
5. ALL BENDS WHERE FITTINGS ARE USED, BOTH HORIZONTAL OR VERTICAL SHALL BE BACKED.
6. REACTION BACKING TABLE IS BASED ON 100 P.S.I. AND SOIL BEARING PRESSURE OF 2000 LB./SQ.FT. ADDITIONAL BACKING MAY BE REQUIRED IN SOME AREAS AS DIRECTED BY ENGINEERS.
7. ALL CONCRETE SHALL BE 2500 P.S.I.
8. 18" AND LARGER REQUIRES SPECIFIC ANTI-THRUST DESIGN.

VERTICAL THRUST BLOCKING

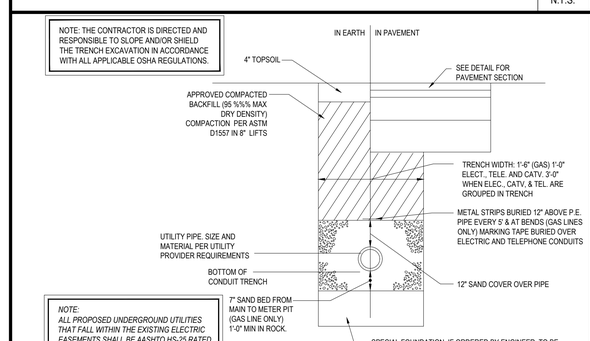
N.T.S.

NOTES:
1. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING SITE SPECIFIC DESIGN FROM MANUFACTURER.
2. DEVICES NEED TO BE PLACED BEYOND THE AREA OF RESTRAINTS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

TYPICAL WATER LINE JOINT RESTRAINT "MEGALUG" DETAIL

N.T.S.

NOTE: THE CONTRACTOR IS DIRECTED AND RESPONSIBLE TO SLOPE AND/OR SHIELD THE TRENCH EXCAVATION IN ACCORDANCE WITH ALL APPLICABLE OSHA REGULATIONS.



NOTE:
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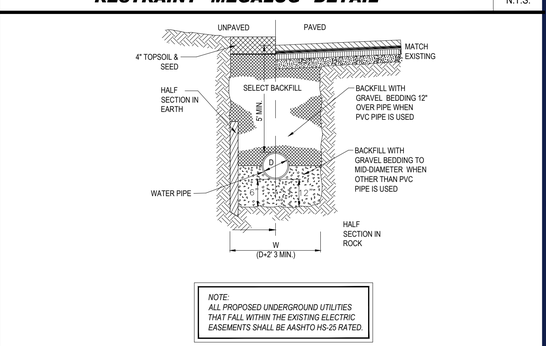
ELECTRICAL, TELEPHONE AND GAS TRENCH DETAIL

N.T.S.



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TYPICAL WATER TRENCH

N.T.S.

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PROJECT No.: W221023
DRAWN BY: OCR/AJS
CHECKED BY: MMA
DATE: 09/22/2022
CAD I.D.: W221023-X-TTLB-SPPD

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

WS DEVELOPMENT

PROPOSED DEVELOPMENT
MAPS: 24, 30, & 31
LOTS: 10 & 12, 73-1, & 3
HARTFORD AVENUE,
TOWN BELLINGHAM ,
NORFOLK COUNTY,
MASSACHUSETTS

BOHLER
352 TURNPIKE ROAD
SOUTHBOROUGH, MA 01772
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SHEET TITLE:

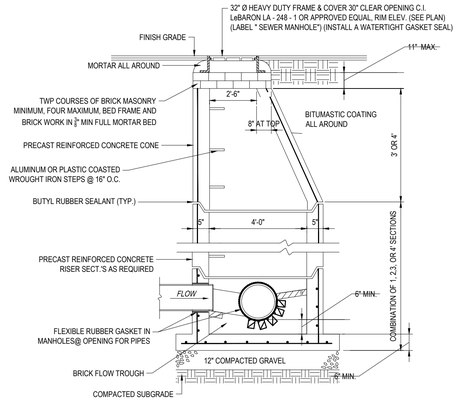
DETAIL SHEET

SHEET NUMBER:

C-902

REVISION 4 - 12/06/2023

P:\2022\W221023\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W221023-DETL-4A-----3A LAYOUT C-902-DETAILS



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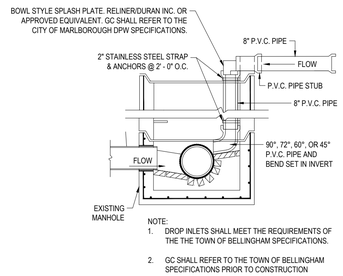
NOTE: ALL STRUCTURES SHALL BE SUITABLE FOR H-20 LOADING AND SHALL MEET THE REQUIREMENTS OF ASTM C478.

TYP. PRECAST CONCRETE SANITARY MANHOLE

N.T.S.



NOTE:
1. DROP INLETS SHALL MEET THE REQUIREMENTS OF THE THE TOWN OF BELLINGHAM SPECIFICATIONS.
2. GC SHALL REFER TO THE TOWN OF BELLINGHAM SPECIFICATIONS PRIOR TO CONSTRUCTION

NOTE:
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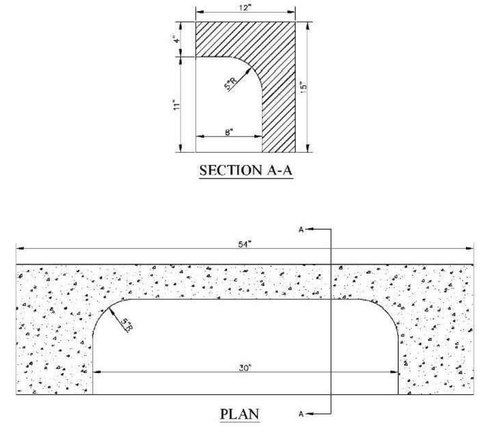
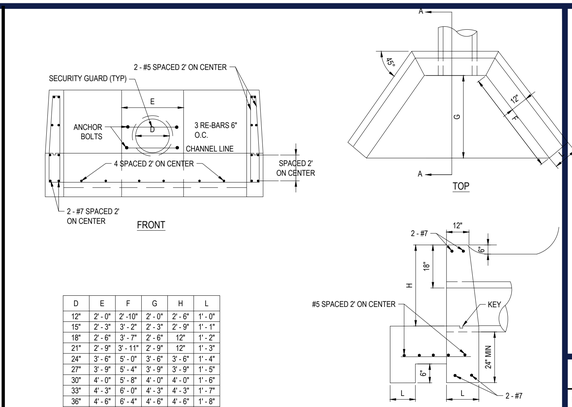
SEWER DROP INLET

N.T.S.



GRANITE INLET STONE

N.T.S.

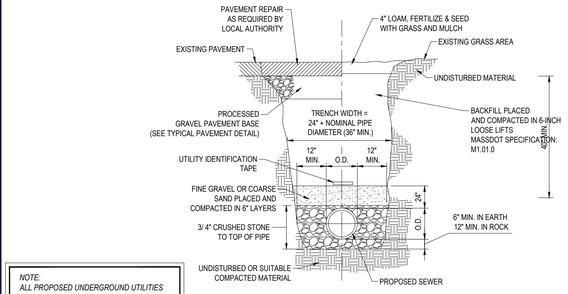


D	E	F	G	H	L
12"	2' - 0"	2' -10"	2' - 0"	2' - 6"	1' - 0"
15"	2' - 3"	3' - 2"	2' - 3"	2' - 9"	1' - 1"
18"	2' - 6"	3' - 7"	2' - 6"	12"	1' - 2"
21"	2' - 9"	3' - 11"	2' - 9"	12"	1' - 3"
24"	3' - 6"	5' - 0"	3' - 6"	3' - 6"	1' - 4"
27"	3' - 9"	5' - 4"	3' - 9"	3' - 9"	1' - 5"
30"	4' - 0"	5' - 8"	4' - 0"	4' - 0"	1' - 6"
33"	4' - 3"	6' - 0"	4' - 3"	4' - 3"	1' - 7"
36"	4' - 6"	6' - 4"	4' - 6"	4' - 6"	1' - 8"
39"	4' - 9"	6' - 9"	4' - 9"	4' - 9"	1' - 9"
42"	5' - 0"	7' - 1"	5' - 0"	5' - 0"	1' - 10"
48"	5' - 6"	7' - 9"	5' - 6"	5' - 6"	2' - 0"

NOTE: ALL CONCRETE TO BE CLASS "B" CONCRETE AIR ENTRAINED 3500 psi MIN. ALL REINFORCED SHALL HAVE 2 INCHES OF COVER TO FACE OF WALL. AS DIRECTED BY THE TOWN ENGINEER

TYPICAL HEADWALL DETAIL

N.T.S.



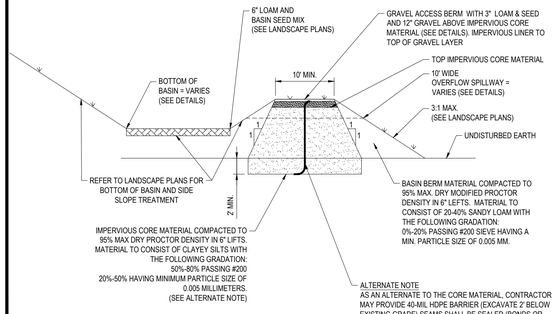
NOTE:
ALL PROPOSED UNDERGROUND UTILITIES THAT FALL WITHIN THE EXISTING ELECTRIC EASEMENTS SHALL BE AASHTO HS-25 RATED.

NOTE: THE CONTRACTOR IS DIRECTED AND RESPONSIBLE TO SLOPE AND/OR SHIELD THE TRENCH EXCAVATION IN ACCORDANCE WITH ALL APPLICABLE OSHA REGULATIONS.

NOTE:
1. DETAIL SHOWN FOR GRAPHICAL PURPOSES ONLY. PROVIDE SEWER LINE TRENCH IN ACCORDANCE WITH UTILITY OWNER'S REQUIREMENTS.

SEWER TRENCH DETAIL

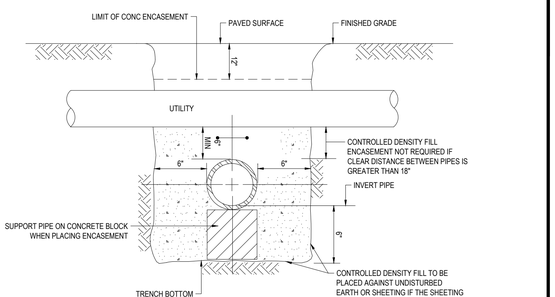
N.T.S.



NOTE: FOUNDATION FOR BERM CONSTRUCTION SHALL BE CLEARED OF ALL TOP SOIL, ROCKS, STUMPS, OR OTHER DELETERIOUS MATERIAL TO A FIRM SURFACE.

BASIN IMPERVIOUS CORE DETAIL

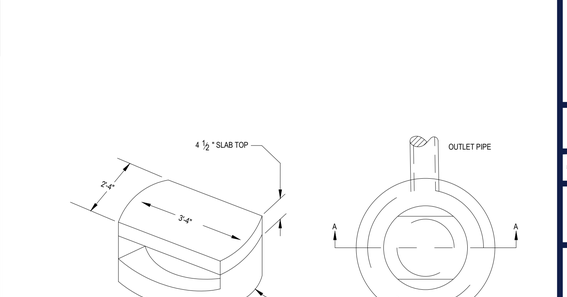
N.T.S.



NOTES:
1. PIPE MUST BE BRACED VERTICALLY & HORIZONTALLY TO PREVENT FLOATATION DURING PLACEMENT OF CONCRETE
2. ALL CONTROLLED DENSITY FILL ENCASEMENT SHALL BE KEPT 12" BELOW THE BOTTOM OF ASPHALT PAVEMENT

CONCRETE ENCASEMENT AT UTILITY CROSSING

N.T.S.

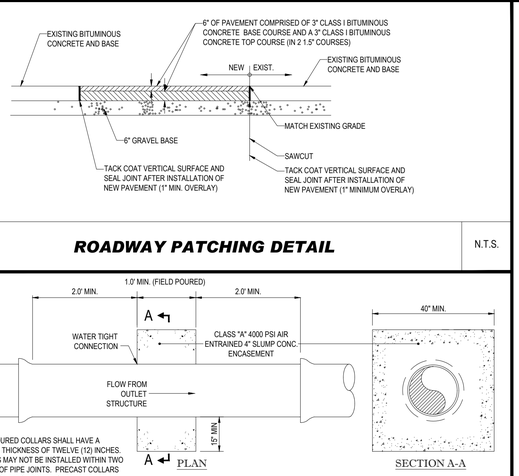


SECTION A-A

NOTES: CONTRACTOR SHALL SIZE STRUCTURE AS NECESSARY TO ACCOMMODATE THE PROPOSED PIPE SIZES AND PENETRATIONS USING GEOMETRY SHOWN ON THE GRADING AND DRAINAGE PLANS AS WELL AS INFORMATION PROVIDED IN THIS DETAIL

TYPICAL DROP INLET DETAIL

N.T.S.



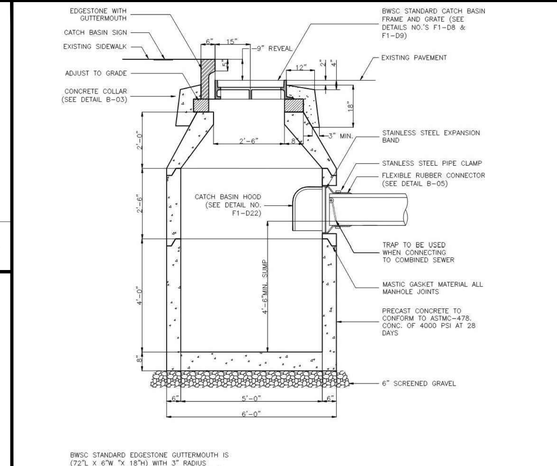
ROADWAY PATCHING DETAIL

N.T.S.

NOTE:
FIELD POURED COLLARS SHALL HAVE A MINIMUM THICKNESS OF TWELVE (12) INCHES. COLLARS MAY NOT BE INSTALLED WITHIN TWO (2) FEET OF PIPE JOINTS. PRECAST COLLARS NOT ALLOWED ON CORRUGATED PIPE.

ANTI-SEEP COLLAR DETAIL

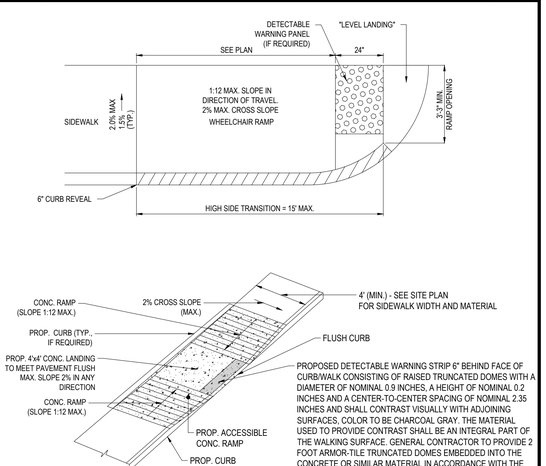
N.T.S.



BWSC STANDARD EDGESTONE GUTTERMOUTH IS (72"L x 6"W "x 18"H) WITH 3" RADIUS INLET THROAT ROUNDING. MINIMUM WIDTH IS 6". ALL OTHER DIMENSIONS TOLERANCES TO ±1".

CATCH BASIN WITH CURB INLET

N.T.S.



ACCESSIBLE RAMP

N.T.S.

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4	12/06/2023	CON COM COMMENTS	OCR / MMA

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PROJECT NO.: W221023
DRAWN BY: OCR/AJS
CHECKED BY: MMA
DATE: 09/22/2022
CAD I.D.: W221023-X-TTLB-SPPD

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

WS DEVELOPMENT

PROPOSED DEVELOPMENT
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LOTS: 10 & 12, 73-1, & 3
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TOWN BELLINGHAM ,
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MASSACHUSETTS

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REGISTERED PROFESSIONAL ENGINEER
MASSACHUSETTS
NEW HAMPSHIRE
RHODE ISLAND LICENSE No. 14476
CONNECTICUT
MAINE LICENSE No. 24551

SHEET TITLE:

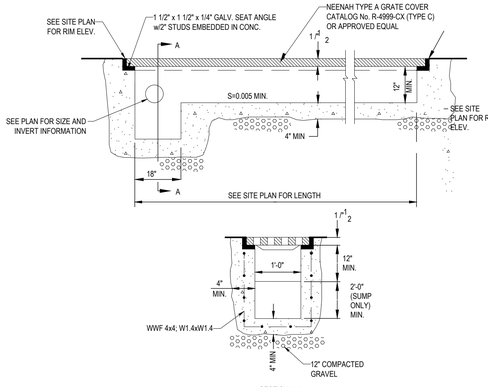
DETAIL SHEET

SHEET NUMBER:

C-903

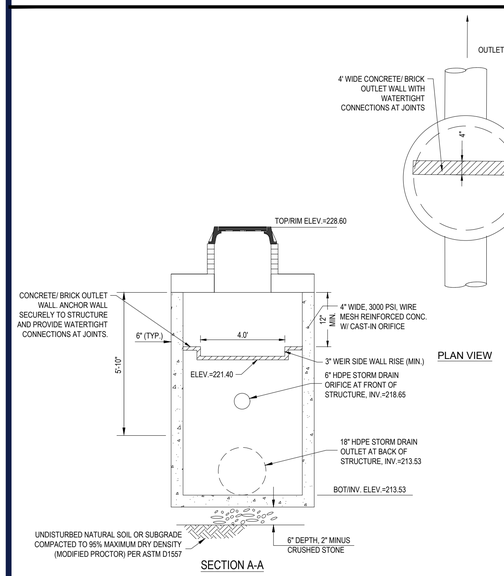
REVISION 4 - 12/06/2023

P:\2022\W221023\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W221023-SETL-4A-----LAYOUT_C-903-DETAILS



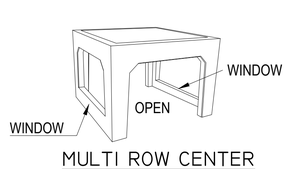
TRENCH DRAIN DETAIL

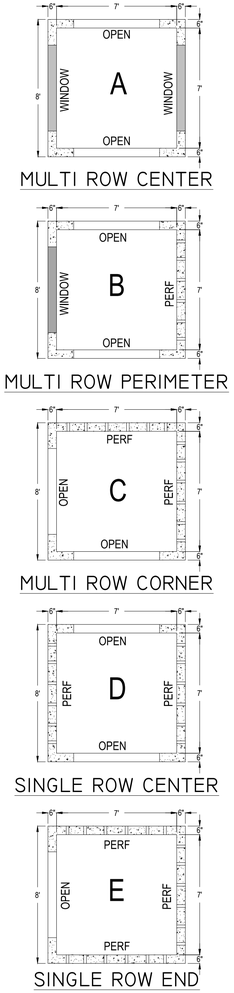
N.T.S.

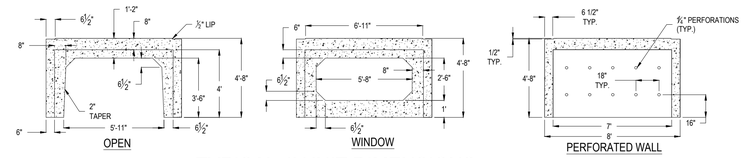


UNDERGROUND BASIN 1 OUTLET CONTROL STRUCTURE (OCS-1) DETAIL

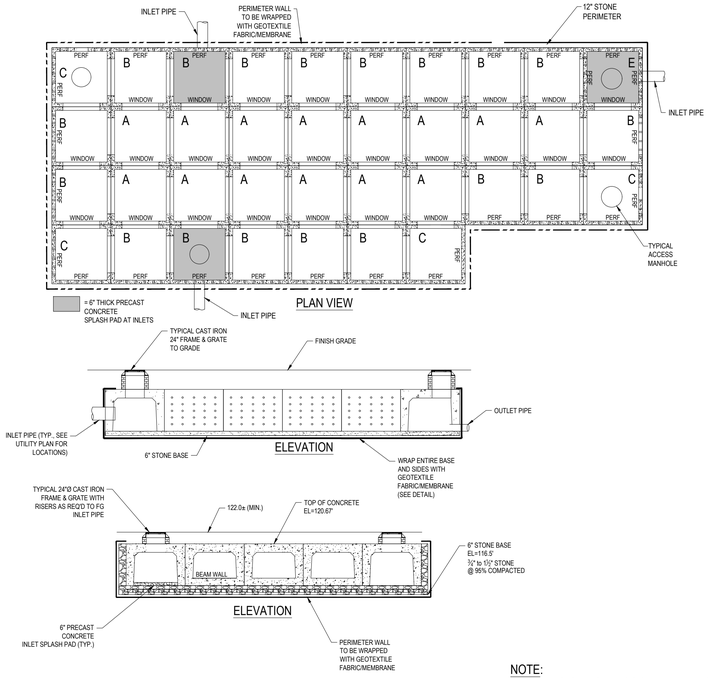
N.T.S.







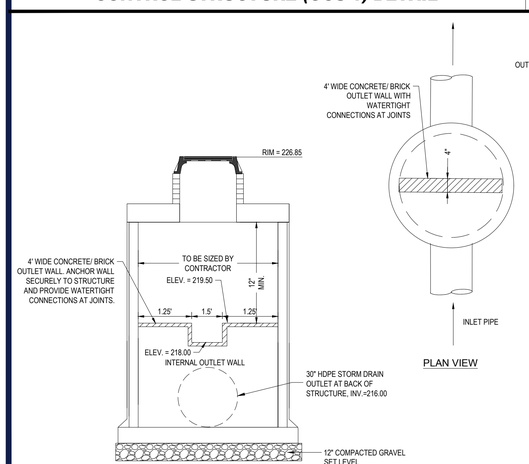
TYPICAL 4' UNIT DIMENSIONS



NOTE:
FINAL DESIGN TO BE COORDINATED & PREPARED BY THE MANUFACTURER.

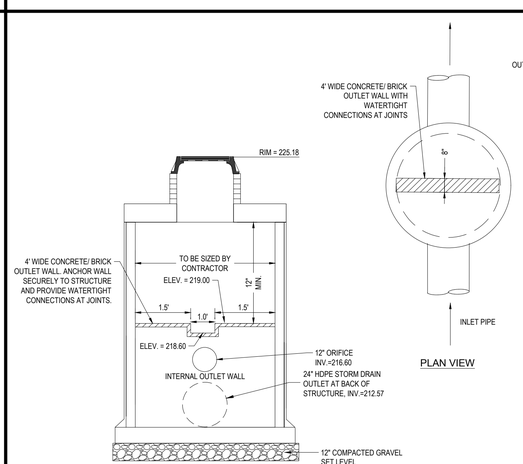
RETAIN-IT UNDERGROUND INFILTRATION BASIN DETAILS

N.T.S.



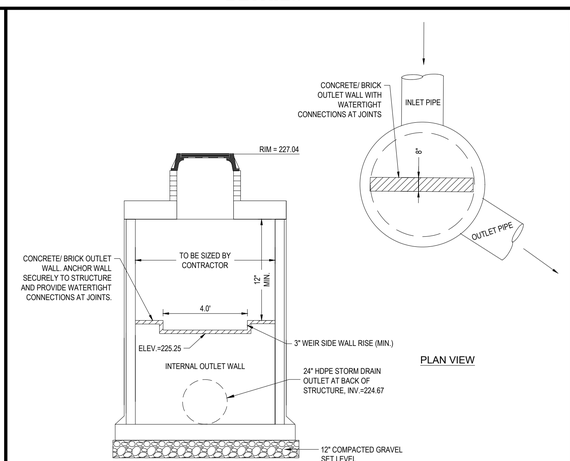
BASIN 2 - UG INFILTRATION SYSTEM OUTLET CONTROL STRUCTURE DETAIL

N.T.S.



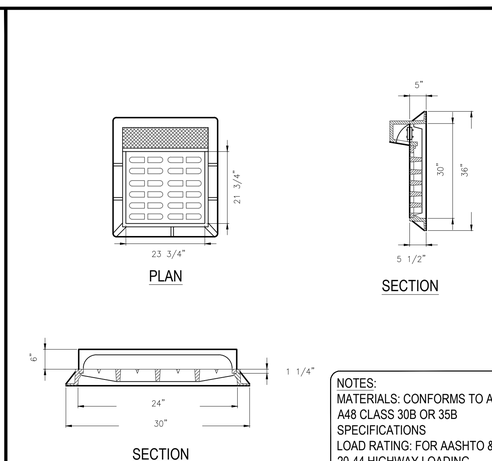
BASIN 3 - UG INFILTRATION SYSTEM OUTLET CONTROL STRUCTURE DETAIL

N.T.S.



BASIN 4 - UG INFILTRATION SYSTEM OUTLET CONTROL STRUCTURE DETAIL

N.T.S.



NOTES:
MATERIALS: CONFORMS TO ASTM A48 CLASS 30B OR 35B SPECIFICATIONS
LOAD RATING: FOR AASHTO & HS 20-44 HIGHWAY LOADING

30" X 24" H.D. FLAT CURB INLET

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PROJECT No.:	W221023
DRAWN BY:	OCR/AJS
CHECKED BY:	MMA
DATE:	09/22/2022
CAD I.D.:	W221023-X-TTLB-SPPD

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

WS DEVELOPMENT

PROPOSED DEVELOPMENT
MAPS: 24, 30, & 31
LOTS: 10 & 12, 73-1, & 3
HARTFORD AVENUE,
TOWN BELLINGHAM ,
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NO. 26127
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COMMONWEALTH OF MASSACHUSETTS
MARK M. LEMENAGER
NO. 22553
REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS

SHEET TITLE:

DETAIL SHEET

SHEET NUMBER:

C-904

REVISION 4 - 12/06/2023

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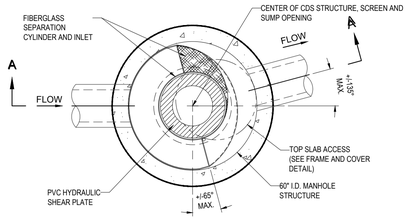
CDS2020-5-C DESIGN NOTES

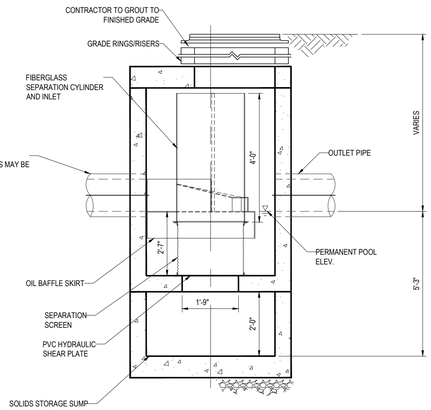
CDS2020S-C RATED TREATMENT CAPACITY IS 2.4 CFS, OR PER LOCAL REGULATIONS. MAXIMUM HYDRAULIC INTERNAL BYPASS CAPACITY IS 10.0 CFS. IF THE SITE CONDITIONS EXCEED 14.0 CFS, AN UPSTREAM BYPASS STRUCTURE IS REQUIRED.

THE STANDARD CDS2020-5-C CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

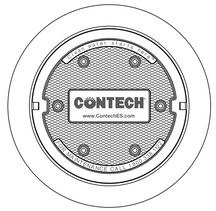
CONFIGURATION DESCRIPTION
GRATED INLET ONLY (NO INLET PIPE)
GRATED INLET WITH INLET PIPE OR PIPES
CURB INLET ONLY (NO INLET PIPE)
CURB INLET WITH INLET PIPE OR PIPES
SEPARATE OIL BAFFLE (SINGLE INLET PIPE REQUIRED FOR THIS CONFIGURATION)
SEDIMENT WEIR FOR NJDEP / NJCAT CONFORMING UNITS



PLAN VIEW B-B
N.T.S.



ELEVATION A-A
N.T.S.



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

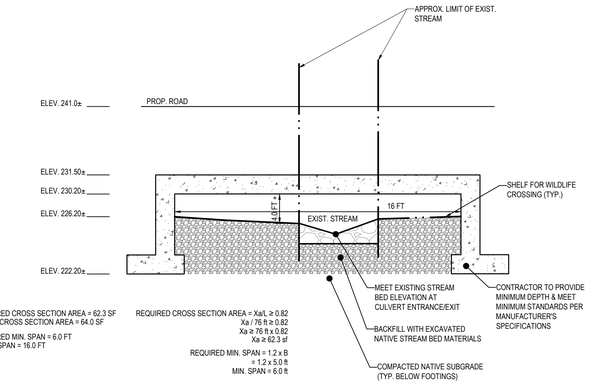
GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
4. CDS 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 HS20 (AASHTO M 306) LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
6. PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

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 CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
C. CONTRACTOR TO ADD 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.

CONTECH CDS2020-5-C STANDARD DETAIL

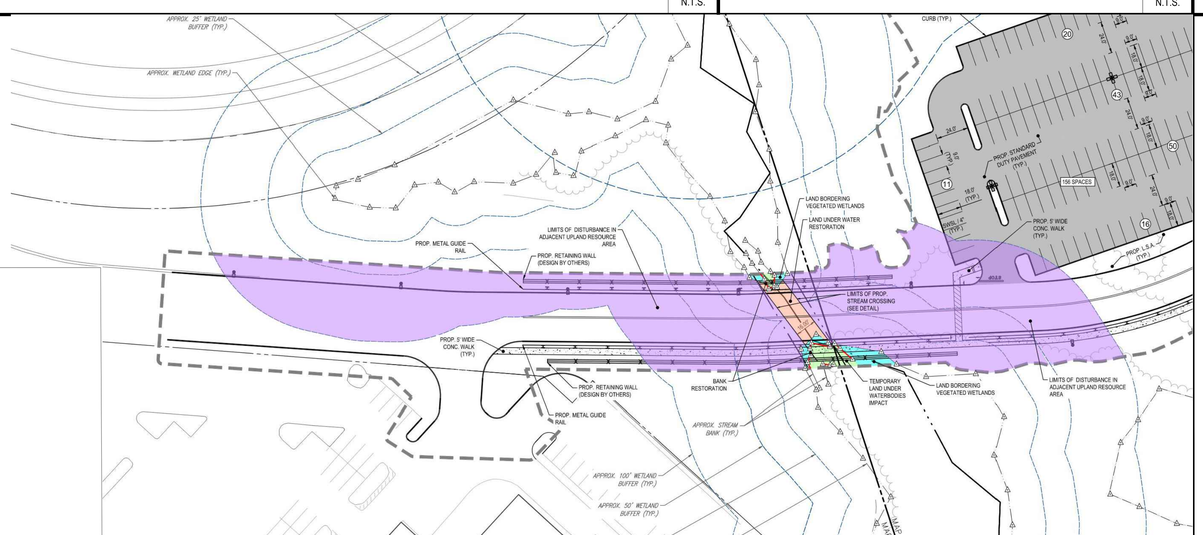
N.T.S.

N.T.S.



ROAD A DOWNSTREAM CROSSING DETAIL

N.T.S.

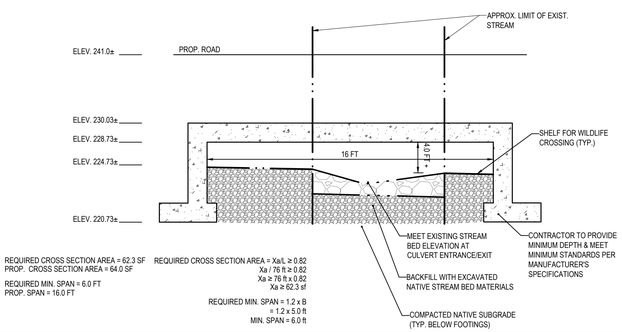


LEGEND

- BANK RESTORATION (95 ± LF)
- TEMPORARY DISTURBANCE TO LAND UNDER WATERBODIES (560.25± SF)
- LIMITS OF DISTURBANCE IN ADJACENT UPLAND RESOURCE AREA (39,568.06± SF)
- LAND BORDERING VEGETATED WETLANDS (660.73± SF)
- LAND UNDER WATER RESTORATION (831.32± SF)

SPRING BROOK CULVERT DETAIL

N.T.S.



ROAD A UPSTREAM CROSSING DETAIL

N.T.S.

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352 TURNPIKE ROAD
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SHEET TITLE:

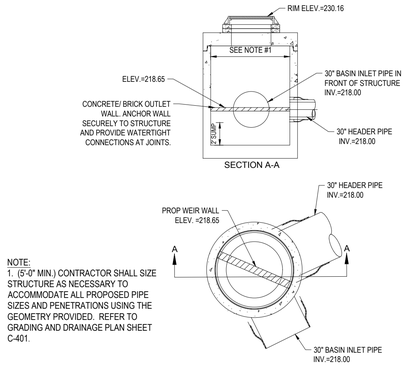
WETLAND A CROSSING DETAIL SHEET

SHEET NUMBER:

C-905

REVISION 4 - 12/06/2023

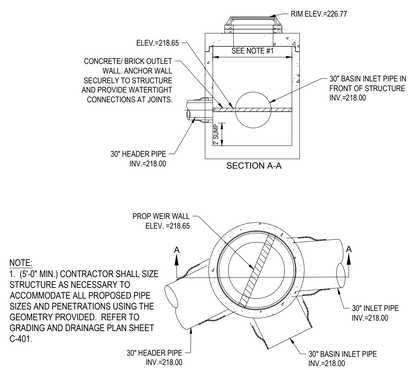
P:\2022\W221023\CAD\DRAWINGS\PLAN SETS\CIVIL SITE PLANS\W221023-DETL-4A-----LAYOUT C-905-DETAILS



NOTE:
1. (5'-0" MIN.) CONTRACTOR SHALL SIZE STRUCTURE AS NECESSARY TO ACCOMMODATE ALL PROPOSED PIPE SIZES AND PENETRATIONS USING THE GEOMETRY PROVIDED. REFER TO GRADING AND DRAINAGE PLAN SHEET C-401.

INLET CONTROL STRUCTURE (ICS-1)

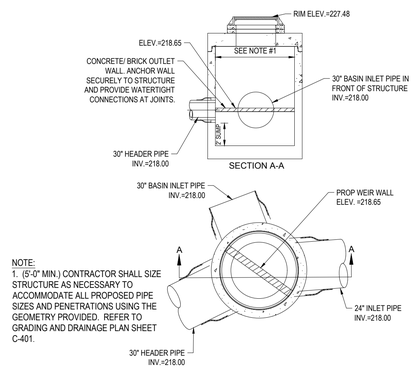
N.T.S.



NOTE:
1. (5'-0" MIN.) CONTRACTOR SHALL SIZE STRUCTURE AS NECESSARY TO ACCOMMODATE ALL PROPOSED PIPE SIZES AND PENETRATIONS USING THE GEOMETRY PROVIDED. REFER TO GRADING AND DRAINAGE PLAN SHEET C-401.

INLET CONTROL STRUCTURE (ICS-2)

N.T.S.



NOTE:
1. (5'-0" MIN.) CONTRACTOR SHALL SIZE STRUCTURE AS NECESSARY TO ACCOMMODATE ALL PROPOSED PIPE SIZES AND PENETRATIONS USING THE GEOMETRY PROVIDED. REFER TO GRADING AND DRAINAGE PLAN SHEET C-401.

INLET CONTROL STRUCTURE (ICS-3)

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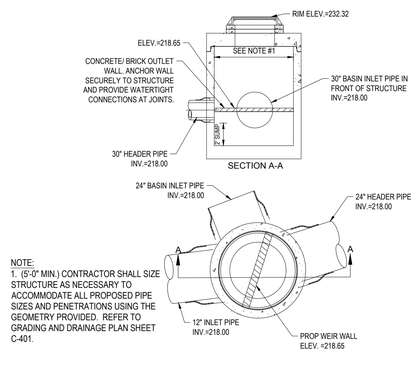
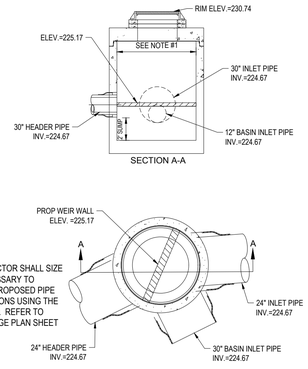


NOTE:
1. (5'-0" MIN.) CONTRACTOR SHALL SIZE STRUCTURE AS NECESSARY TO ACCOMMODATE ALL PROPOSED PIPE SIZES AND PENETRATIONS USING THE GEOMETRY PROVIDED. REFER TO GRADING AND DRAINAGE PLAN SHEET C-401.

INLET CONTROL STRUCTURE (ICS-4)

N.T.S.



NOTE:
1. (5'-0" MIN.) CONTRACTOR SHALL SIZE STRUCTURE AS NECESSARY TO ACCOMMODATE ALL PROPOSED PIPE SIZES AND PENETRATIONS USING THE GEOMETRY PROVIDED. REFER TO GRADING AND DRAINAGE PLAN SHEET C-401.

INLET CONTROL STRUCTURE (ICS-5)

N.T.S.

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1	03/03/2023	PLANNING BOARD COMMENTS	OCR / MMA
2	05/01/2023	SITE LAYOUT UPDATES	OCR / MMA
3	07/28/2023	PLANNING BOARD COMMENTS	CJP / MMA
4	12/06/2023	CON COM COMMENTS	OCR / MMA

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CHECKED BY:	MMA
DATE:	09/22/2022
CAD I.D.:	W221023-X-TTLB-SPPD

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

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SHEET TITLE:

DETAIL SHEET

SHEET NUMBER:

C-906

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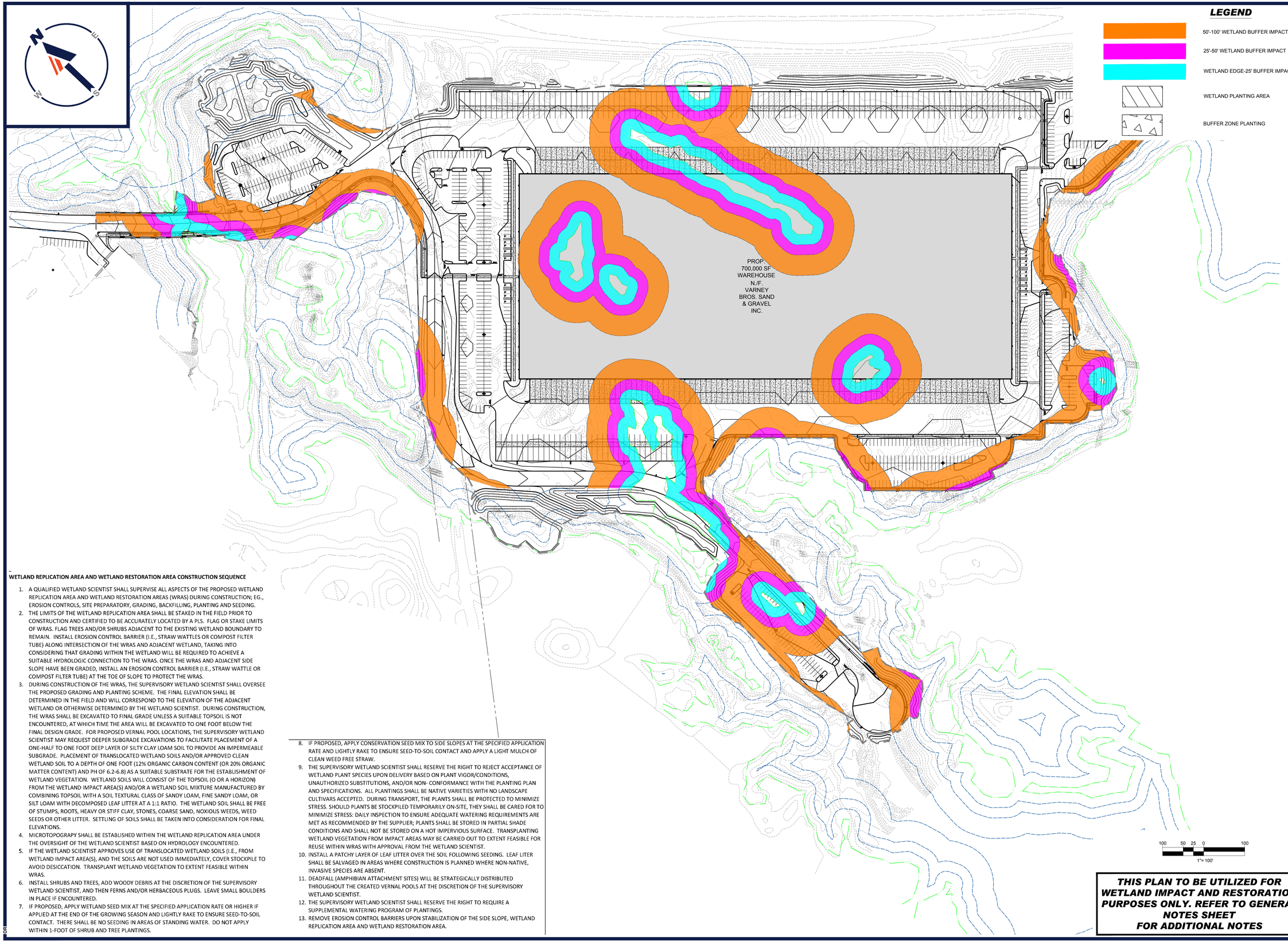

WETLAND REPLICATION AREA AND WETLAND RESTORATION AREA CONSTRUCTION SEQUENCE

1. A QUALIFIED WETLAND SCIENTIST SHALL SUPERVISE ALL ASPECTS OF THE PROPOSED WETLAND REPLICATION AREA AND WETLAND RESTORATION AREAS (WRAS) DURING CONSTRUCTION; EG., EROSION CONTROLS, SITE PREPARATORY, GRADING, BACKFILLING, PLANTING AND SEEDING.
2. THE LIMITS OF THE WETLAND REPLICATION AREA SHALL BE STAKED IN THE FIELD PRIOR TO CONSTRUCTION AND CERTIFIED TO BE ACCURATELY LOCATED BY A PLS. FLAG OR STAKE LIMITS OF WRAS. FLAG TREES AND/OR SHRUBS ADJACENT TO THE EXISTING WETLAND BOUNDARY TO REMAIN. INSTALL EROSION CONTROL BARRIER (I.E., STRAW WATTLES OR COMPOST FILTER TUBE) ALONG INTERSECTION OF THE WRAS AND ADJACENT WETLAND, TAKING INTO CONSIDERING THAT GRADING WITHIN THE WETLAND WILL BE REQUIRED TO ACHIEVE A SUITABLE HYDROLOGIC CONNECTION TO THE WRAS. ONCE THE WRAS AND ADJACENT SIDE SLOPE HAVE BEEN GRADED, INSTALL AN EROSION CONTROL BARRIER (I.E., STRAW WATTLE OR COMPOST FILTER TUBE) AT THE TOE OF SLOPE TO PROTECT THE WRAS.
3. DURING CONSTRUCTION OF THE WRAS, THE SUPERVISORY WETLAND SCIENTIST SHALL OVERSEE THE PROPOSED GRADING AND PLANTING SCHEME. THE FINAL ELEVATION SHALL BE DETERMINED IN THE FIELD AND WILL CORRESPOND TO THE ELEVATION OF THE ADJACENT WETLAND OR OTHERWISE DETERMINED BY THE WETLAND SCIENTIST. DURING CONSTRUCTION, THE WRAS SHALL BE EXCAVATED TO FINAL GRADE UNLESS A SUITABLE TOPSOIL IS NOT ENCOUNTERED, AT WHICH TIME THE AREA WILL BE EXCAVATED TO ONE FOOT BELOW THE FINAL DESIGN GRADE. FOR PROPOSED VERNAL POOL LOCATIONS, THE SUPERVISORY WETLAND SCIENTIST MAY REQUEST DEEPER SUBGRADE EXCAVATIONS TO FACILITATE PLACEMENT OF A ONE-HALF TO ONE FOOT DEEP LAYER OF SILTY CLAY LOAM SOIL TO PROVIDE AN IMPERMEABLE SUBGRADE. PLACEMENT OF TRANSLOCATED WETLAND SOILS AND/OR APPROVED CLEAN WETLAND SOIL TO A DEPTH OF ONE FOOT (12% ORGANIC CARBON CONTENT (OR 20% ORGANIC MATTER CONTENT) AND PH OF 6.2-6.8) AS A SUITABLE SUBSTRATE FOR THE ESTABLISHMENT OF WETLAND VEGETATION. WETLAND SOILS WILL CONSIST OF THE TOPSOIL (O OR A HORIZON) FROM THE WETLAND IMPACT AREA(S) AND/OR A WETLAND SOIL MIXTURE MANUFACTURED BY COMBINING TOPSOIL WITH A SOIL TEXTURAL CLASS OF SANDY LOAM, FINE SANDY LOAM, OR SILT LOAM WITH DECOMPOSED LEAF LITTER AT A 1:1 RATIO. THE WETLAND SOIL SHALL BE FREE OF STUMPS, ROOTS, HEAVY OR STIFF CLAY, STONES, COARSE SAND, NOXIOUS WEEDS, WEED SEEDS OR OTHER LITTER. SETTLING OF SOILS SHALL BE TAKEN INTO CONSIDERATION FOR FINAL ELEVATIONS.
4. MICROTOPOGRAPY SHALL BE ESTABLISHED WITHIN THE WETLAND REPLICATION AREA UNDER THE OVERSIGHT OF THE WETLAND SCIENTIST BASED ON HYDROLOGY ENCOUNTERED.
5. IF THE WETLAND SCIENTIST APPROVES USE OF TRANSLOCATED WETLAND SOILS (I.E., FROM WETLAND IMPACT AREA(S), AND THE SOILS ARE NOT USED IMMEDIATELY, COVER STOCKPILE TO AVOID DESICCATION. TRANSPLANT WETLAND VEGETATION TO EXTENT FEASIBLE WITHIN WRAS.
6. INSTALL SHRUBS AND TREES, ADD WOODY DEBRIS AT THE DISCRETION OF THE SUPERVISORY WETLAND SCIENTIST, AND THEN FERNS AND/OR HERBACEOUS PLUGS. LEAVE SMALL BOULDERS IN PLACE IF ENCOUNTERED.
7. IF PROPOSED, APPLY WETLAND SEED MIX AT THE SPECIFIED APPLICATION RATE OR HIGHER IF APPLIED AT THE END OF THE GROWING SEASON AND LIGHTLY RAKE TO ENSURE SEED-TO-SOIL CONTACT. THERE SHALL BE NO SEEDING IN AREAS OF STANDING WATER. DO NOT APPLY WITHIN 1-FOOT OF SHRUB AND TREE PLANTINGS.
8. IF PROPOSED, APPLY CONSERVATION SEED MIX TO SIDE SLOPES AT THE SPECIFIED APPLICATION RATE AND LIGHTLY RAKE TO ENSURE SEED-TO-SOIL CONTACT AND APPLY A LIGHT MULCH OF CLEAN WEED FREE STRAW.
9. THE SUPERVISORY WETLAND SCIENTIST SHALL RESERVE THE RIGHT TO REJECT ACCEPTANCE OF WETLAND PLANT SPECIES UPON DELIVERY BASED ON PLANT VIGOR/CONDITIONS, UNAUTHORIZED SUBSTITUTIONS, AND/OR NON- CONFORMANCE WITH THE PLANTING PLAN AND SPECIFICATIONS. ALL PLANTINGS SHALL BE NATIVE VARIETIES WITH NO LANDSCAPE CULTIVARS ACCEPTED. DURING TRANSPORT, THE PLANTS SHALL BE PROTECTED TO MINIMIZE STRESS. SHOULD PLANTS BE STOCKPILED TEMPORARILY ON-SITE, THEY SHALL BE CARED FOR TO MINIMIZE STRESS: DAILY INSPECTION TO ENSURE ADEQUATE WATERING REQUIREMENTS ARE MET AS RECOMMENDED BY THE SUPPLIER; PLANTS SHALL BE STORED IN PARTIAL SHADE CONDITIONS AND SHALL NOT BE STORED ON A HOT IMPERVIOUS SURFACE. TRANSPLANTING WETLAND VEGETATION FROM IMPACT AREAS MAY BE CARRIED OUT TO EXTENT FEASIBLE FOR REUSE WITHIN WRAS WITH APPROVAL FROM THE WETLAND SCIENTIST.
10. INSTALL A PATCHY LAYER OF LEAF LITTER OVER THE SOIL FOLLOWING SEEDING. LEAF LITER SHALL BE SALVAGED IN AREAS WHERE CONSTRUCTION IS PLANNED WHERE NON-NATIVE, INVASIVE SPECIES ARE ABSENT.
11. DEADFALL (AMPHIBIAN ATTACHMENT SITES) WILL BE STRATEGICALLY DISTRIBUTED THROUGHOUT THE CREATED VERNAL POOLS AT THE DISCRETION OF THE SUPERVISORY WETLAND SCIENTIST.
12. THE SUPERVISORY WETLAND SCIENTIST SHALL RESERVE THE RIGHT TO REQUIRE A SUPPLEMENTAL WATERING PROGRAM OF PLANTINGS.
13. REMOVE EROSION CONTROL BARRIERS UPON STABILIZATION OF THE SIDE SLOPE, WETLAND REPLICATION AREA AND WETLAND RESTORATION AREA.

THIS PLAN TO BE UTILIZED FOR WETLAND IMPACT AND RESTORATION PURPOSES ONLY. REFER TO GENERAL NOTES SHEET FOR ADDITIONAL NOTES

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1	03/03/2023	PLANNING BOARD COMMENTS	OCR / MMA
2	05/01/2023	SITE LAYOUT UPDATES	OCR / MMA
3	07/28/2023	PLANNING BOARD COMMENTS	CJP / MMA
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CHECKED BY:	MMA
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CAD I.D.:	W221023-X-TTLB-SPPD

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

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COMMONWEALTH OF MASSACHUSETTS — JOHN A. KUCEWICZ — CIVIL — No. 41530 — REGISTERED PROFESSIONAL ENGINEER — 12/06/2023

SHEET TITLE:

OVERALL IMPACT PLAN

SHEET NUMBER:

C-1000

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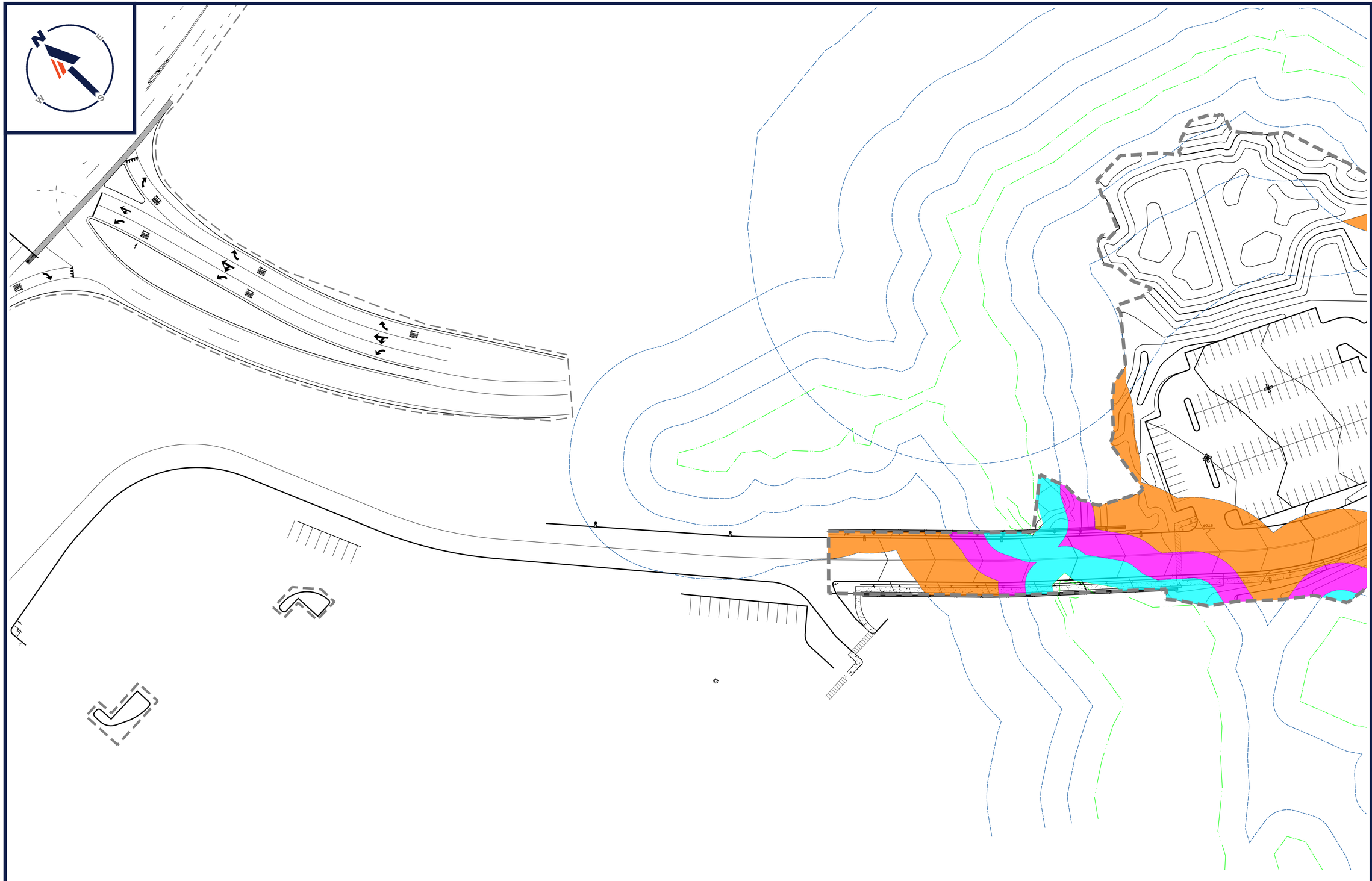

LEGEND

- 50'-100' WETLAND BUFFER IMPACT
- 25'-50' WETLAND BUFFER IMPACT
- WETLAND EDGE-25' BUFFER IMPACT

THIS PLAN TO BE UTILIZED FOR WETLAND IMPACT AND RESTORATION PURPOSES ONLY. REFER TO GENERAL NOTES SHEET FOR ADDITIONAL NOTES

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CHECKED BY:	MMA
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PROPOSED SITE PLAN DOCUMENTS

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COMMONWEALTH OF MASSACHUSETTS
JOHN A. KUCICH
CIVIL
No. 41530
REGISTERED PROFESSIONAL ENGINEER

SHEET TITLE:

IMPACT PLAN A

SHEET NUMBER:

C - 1001

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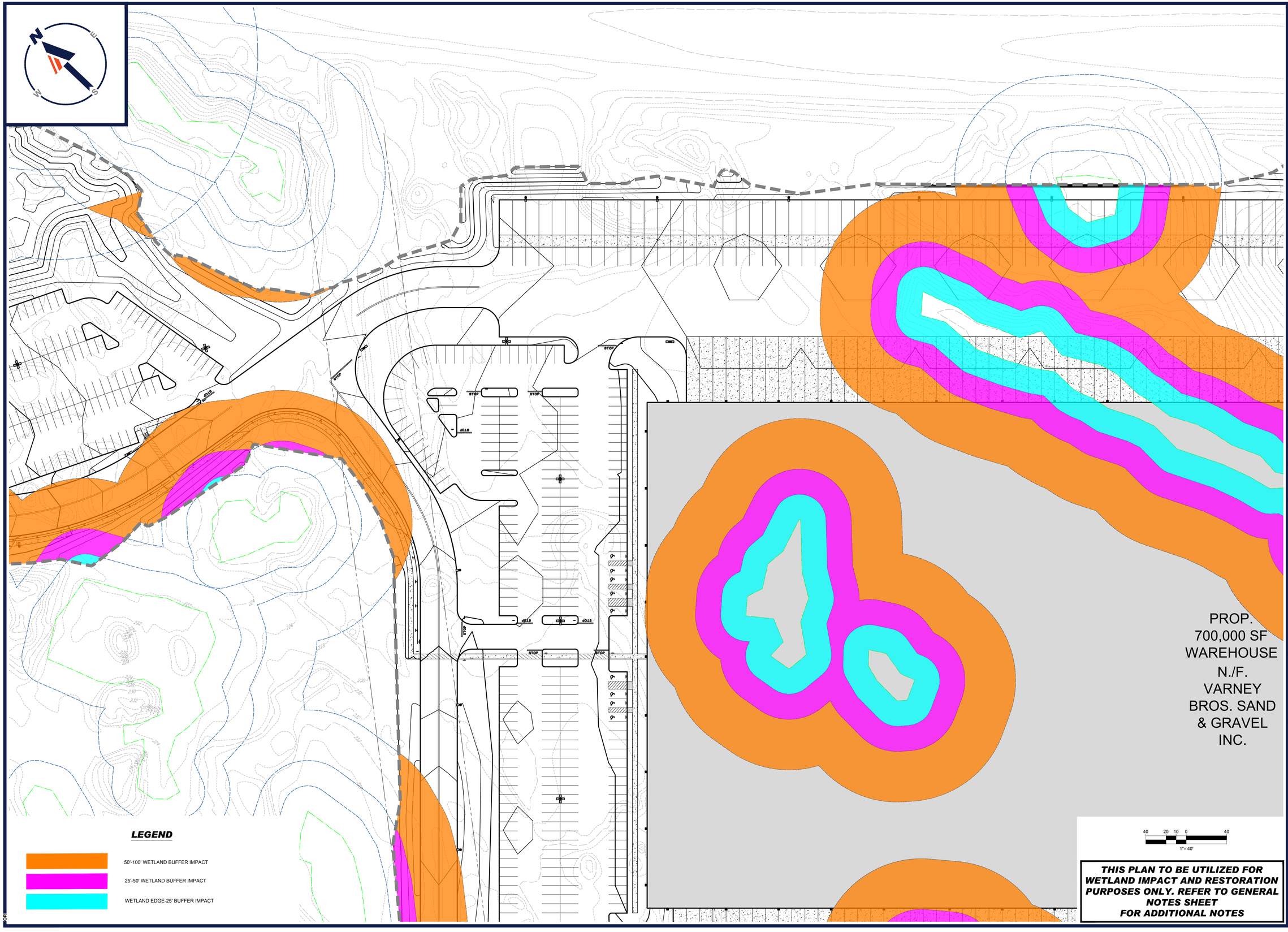

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SHEET TITLE:

IMPACT PLAN B

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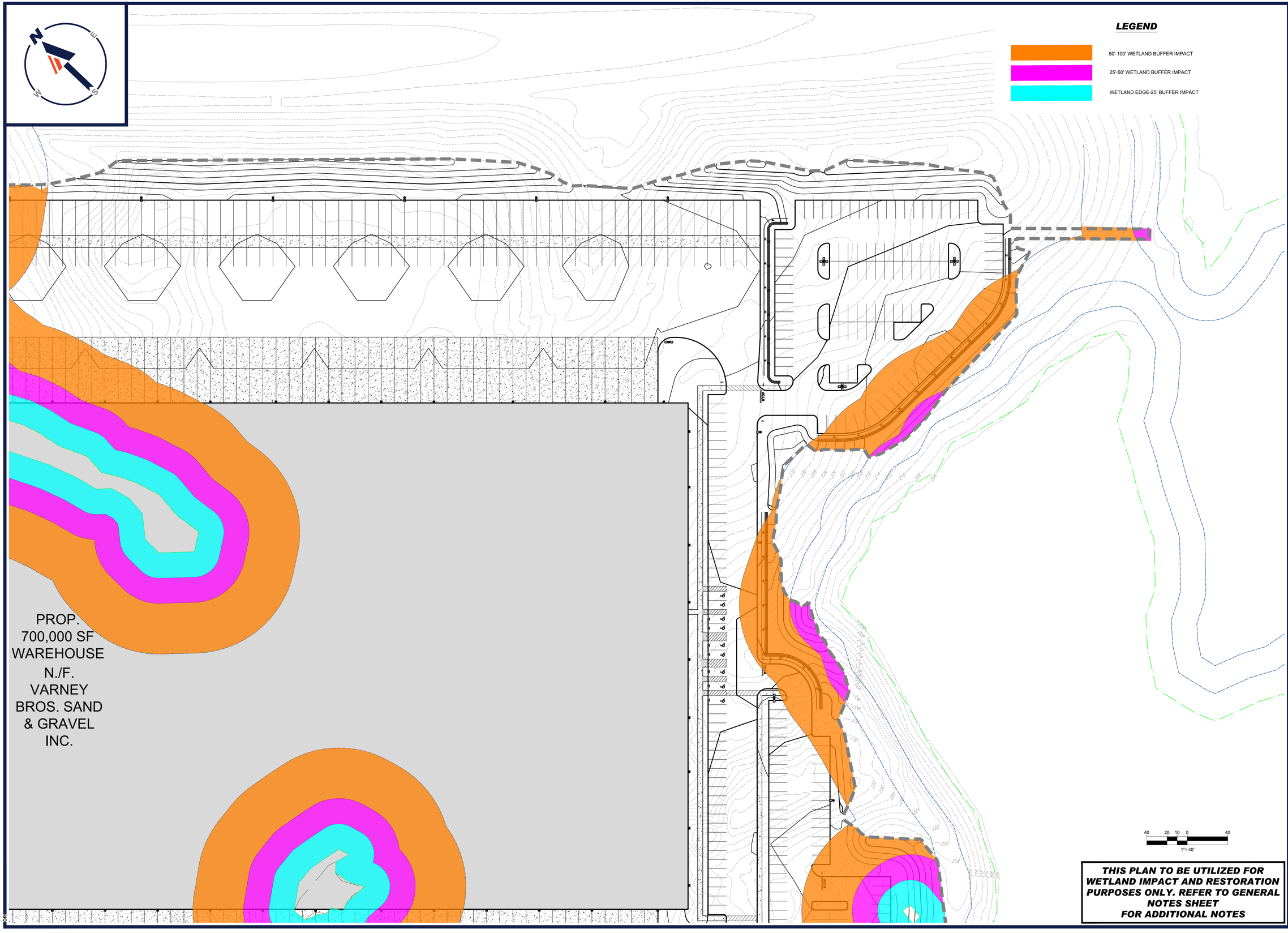

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SHEET TITLE:

IMPACT PLAN C

SHEET NUMBER:

C - 1003

REVISION 4 - 12/06/2023

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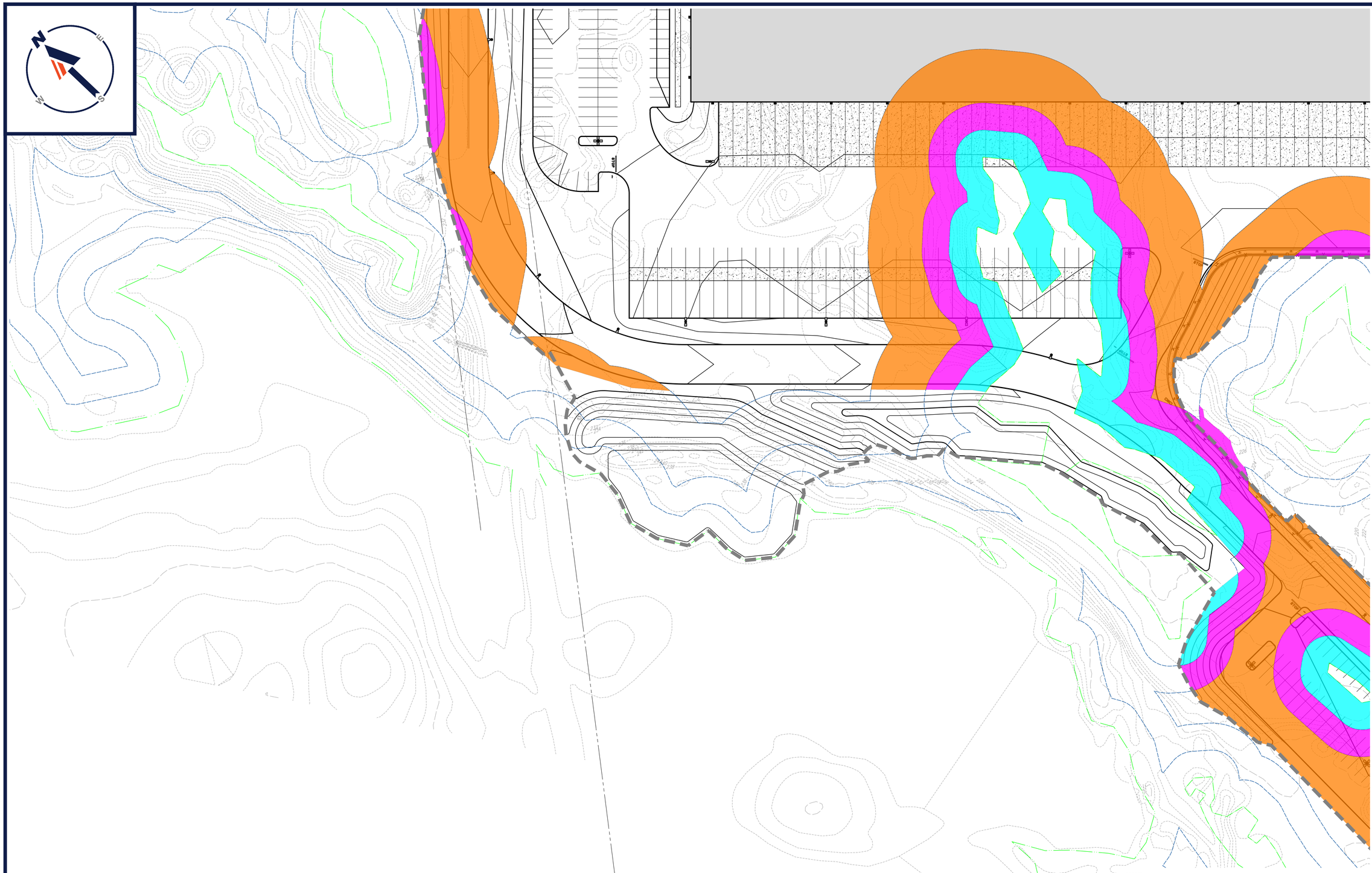
OCR



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ORIGINAL PLOT SIZE: 24" X 36"

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COMMONWEALTH OF MASSACHUSETTS
JOHN A. KUCEWICZ
CIVIL
No. 41530
REGISTERED PROFESSIONAL ENGINEER
I CERTIFY THAT THIS PLAN IS CORRECT

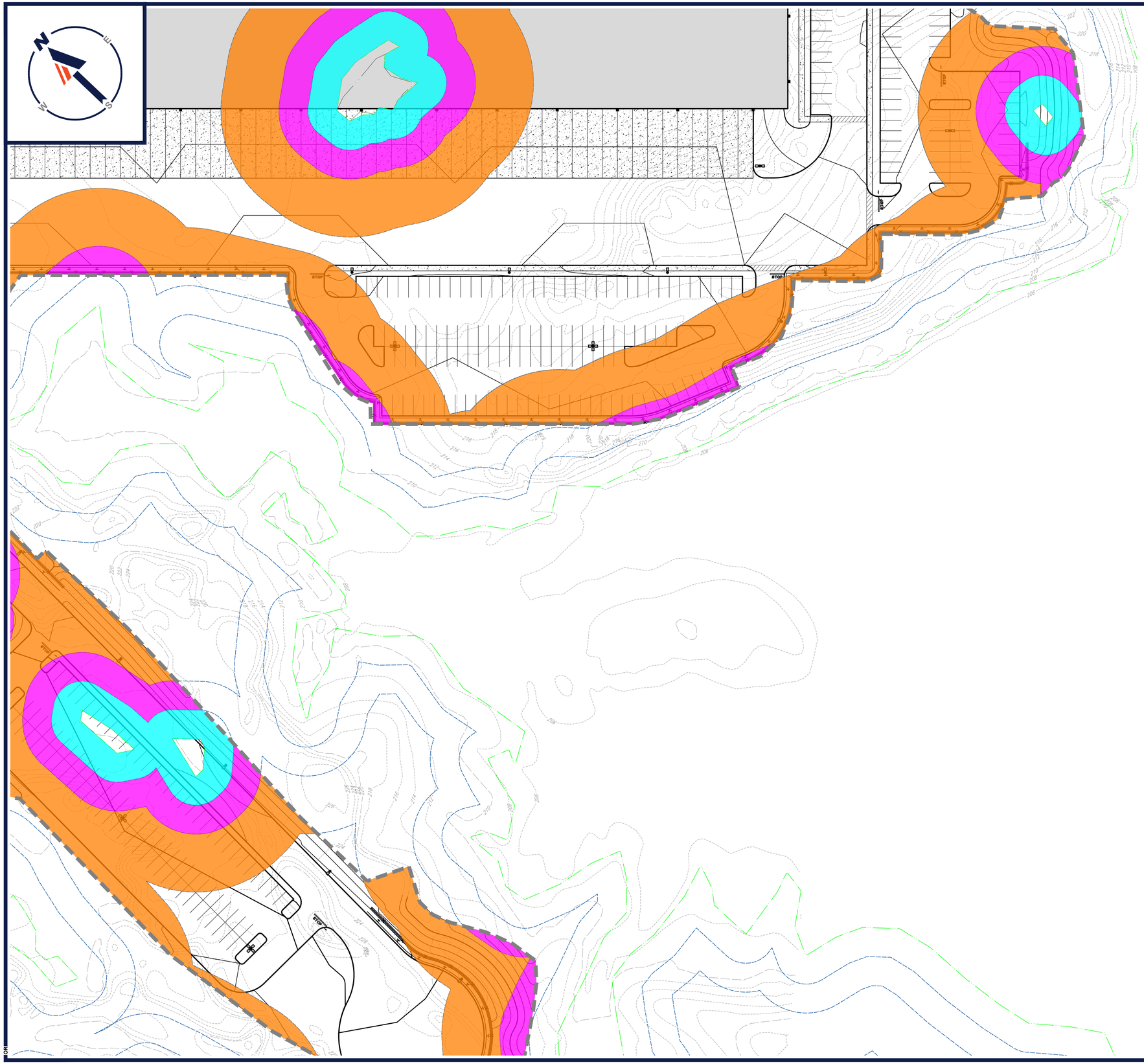
SHEET TITLE:

IMPACT PLAN D

SHEET NUMBER:

C-1004

REVISION 4 - 12/06/2023



LEGEND

- 50'-100' WETLAND BUFFER IMPACT
- 25'-50' WETLAND BUFFER IMPACT
- WETLAND EDGE-25' BUFFER IMPACT

40 20 10 0 40

1"= 40'

THIS PLAN TO BE UTILIZED FOR WETLAND IMPACT AND RESTORATION PURPOSES ONLY. REFER TO GENERAL NOTES SHEET FOR ADDITIONAL NOTES

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REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	03/03/2023	PLANNING BOARD COMMENTS	OCR / MMA
2	05/01/2023	SITE LAYOUT UPDATES	OCR / MMA
3	07/28/2023	PLANNING BOARD COMMENTS	CJP / MMA
4	12/06/2023	CON COM COMMENTS	OCR / MMA

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DRAWN BY:	OCR/AJS
CHECKED BY:	MMA
DATE:	09/22/2022
CAD I.D.:	W221023-X-TTLB-SPPD

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

WS DEVELOPMENT

PROPOSED DEVELOPMENT
MAPS: 24, 30, & 31
LOTS: 10 & 12, 73-1, & 3
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JOSHUA KUCEWICZ
CIVIL
No. 41530
REGISTERED PROFESSIONAL ENGINEER
RELEASED FOR PERMITTING, NOT FOR CONSTRUCTION

SHEET TITLE:

IMPACT PLAN E

SHEET NUMBER:

C-1005

REVISION 4 - 12/06/2023

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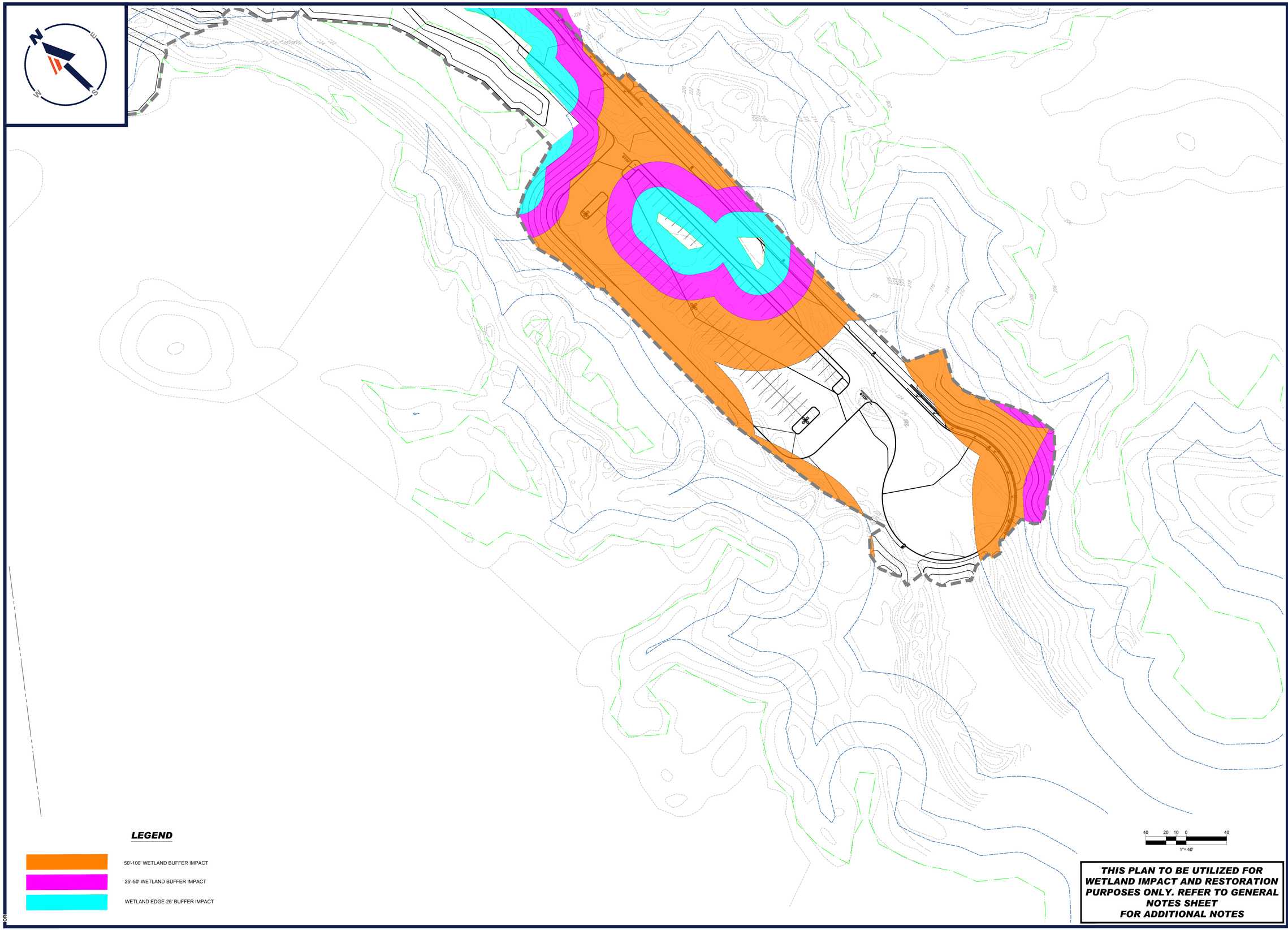
OCR



LEGEND

- 50'-100' WETLAND BUFFER IMPACT
- 25'-50' WETLAND BUFFER IMPACT
- WETLAND EDGE-25' BUFFER IMPACT

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CHECKED BY:	MMA
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PROPOSED SITE PLAN DOCUMENTS

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JOHN C. KUCEWICZ
CIVIL
No. 41530
REGISTERED PROFESSIONAL ENGINEER

SHEET TITLE:

IMPACT PLAN F

SHEET NUMBER:

C-1006

REVISION 4 - 12/06/2023

WETLAND PLANTING AREA - PLANT LIST

BUFFER ZONE PLANTING - ERNST SEEDS - RIGHT OF WAY NATIVE WOOD MIX W/ANNUAL RYEGRASS MIX AND PLANT LIST

WRA #1
WRA #2
WRA #3
WRA #3A
WRA #4
WRA #5
WRA #6
WRA #7
WRA D
BZR A
BZR B
BZR C
BZR D
BZR E
BZR F
BZR G
BZR H
BZR L

PROP. 700,000 SF WAREHOUSE N./F. VARNEY BROS. SAND & GRAVEL INC.

POTENTIAL WETLAND

A B C D E F G H I J K L M N O P Q R S T U V W X Y

BZR = BUFFER ZONE RESTORATION

WRA = WETLAND RESTORATION AREA

150 75 37.5 0 150
1"=150'

P:\2022\221023\CAD\DRAWINGS\PLAN SETS\WETLAND\W221023-WETM-4A_---LAYOUT: C-1007 OVERALL RESTORATION PLAN

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PROFESSIONAL ENGINEER

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NEW HAMPSHIRE LICENSE No. 15426
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RHODE ISLAND LICENSE No. 20016
MAINE LICENSE No. 22553

SHEET TITLE:

OVERALL RESTORATION PLAN

SHEET NUMBER:

C-1007

REVISION 4 - 12/06/2023

WETLAND PLANTING AREA - PLANT LIST

BUFFER ZONE PLANTING - ERNST SEEDS - RIGHT OF WAY NATIVE WOOD MIX W/ANNUAL RYEGRASS MIX AND PLANT LIST

Plant Species (Common Name)	Plant Species (Latin Name)	Spacing	Size
Wetland Replication Area #1			
Red maple	*Acer rubrum*	10-12' O.C.+	3'-4' minimum
Yellow birch	*Betula alleghaniensis*	10-12' O.C.+	3'-4' minimum
Winterberry	*Ilex verticillata*	6' O.C, clustered	3'-4' minimum
Common spicebush	*Lindera benzoin*	6' O.C, clustered	3'-4' minimum
Sweet pepperbush	*Clethra alnifolia*	6' O.C, clustered	3'-4' minimum
Cinnamon fern	*Osmunda cinnamomea*	1' O.C., clustered	1#
Tussock sedge	*Carex stricta*	1' O.C., clustered	2" plug
Soft rush	*Juncus effusus*	1' O.C., clustered	2" plug
Cardinal flower	*Lobelia cardinalis*	1' O.C., clustered	2" plug
White wood aster	*Aster divanculus*	1' O.C., clustered	2" plug
Great blue lobelia	*Lobelia siphilitica*	1' O.C., clustered	2" plug
Buffer Zone			
Red oak	*Quercus rubra*	10-12' O.C.	3'-4' minimum
Eastern white pine	*Pinus strobus*	10-12' O.C.	3'-4' minimum
Witch hazel	*Hamamelis virginiana*	6' O.C, clustered	3'-4' minimum
Sassafras	*Sassafras albidium*	6' O.C, clustered	3'-4' minimum
Nannyberry	*Viburnum lentago*	6' O.C, clustered	3'-4' minimum

Plant Species (Common Name)	Plant Species (Latin Name)	Spacing	Size
Wetland Replication Area #2			
Wetland Replication Area			
Buttonbush	*Cephalanthus occidentalis*	6' O.C, clustered	3'-4' minimum
Highbush blueberry	*Vaccinium corymbosum*	6' O.C, clustered	3'-4' minimum
Common winterberry	*Ilex verticillata*	6' O.C, clustered	3'-4' minimum
Tussock sedge	*Carex stricta*	1' O.C., clustered	2" plug
Woolgrass	*Scirpus cyperinus*	1' O.C., clustered	2" plug
Spicebush	*Lindera Benzoin*	6' O.C, clustered	3'-4' minimum
Sweet Pepperbush	*Clethra alnifolia*	6' O.C, clustered	3'-4' minimum
Pussy Willow	*Salix Discolor*	6' O.C, clustered	3'-4' minimum
Buffer Zone			
Red oak	*Quercus rubra*	10-12' O.C.	3'-4' minimum
Eastern white pine	*Pinus strobus*	10-12' O.C.	3'-4' minimum
Gray dogwood	*Cornus racemose*	6' O.C, clustered	3'-4' minimum
Witch hazel	*Hamamelis virginiana*	6' O.C, clustered	3'-4' minimum
Sassafras	*Sassafras albidium*	6' O.C, clustered	3'-4' minimum
Nannyberry	*Viburnum lentago*	6' O.C, clustered	3'-4' minimum
American hazelnut	*Corylus americana*	6' O.C, clustered	3'-4' minimum
Right-of-Way Native Woods Mix w/ Annual Rye, Ernst Seeds			

WETLAND REPLICATION AREA #2 (19,464± SF)

PROP. BUFFER ZONE RESTORATION AREA B (14,800 SF.)

WETLAND REPLICATION AREA #1 (741± SF)

PROP. BUFFER ZONE RESTORATION AREA A (388 SF.)

APPROX. EXIST. WETLAND EDGE AS AMENDED PER THE CONSERVATION COMMISSION SITE WALK

APPROX. 25' WETLAND BUFFER (TYP.)

APPROX. 50' WETLAND BUFFER (TYP.)

APPROX. 100' WETLAND BUFFER (TYP.)

APPROX. 200' RIVERFRONT BUFFER (TYP.)

APPROX. WETLAND EDGE (TYP.)

ELEV. = 214.00

20 10 5 0 20
1"= 20'

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PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

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PROPOSED DEVELOPMENT
MAPS: 24, 30, & 31
LOTS: 10 & 12, 73-1, & 3
HARTFORD AVENUE, TOWN BELLINGHAM , NORFOLK COUNTY, MASSACHUSETTS

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SHEET TITLE:

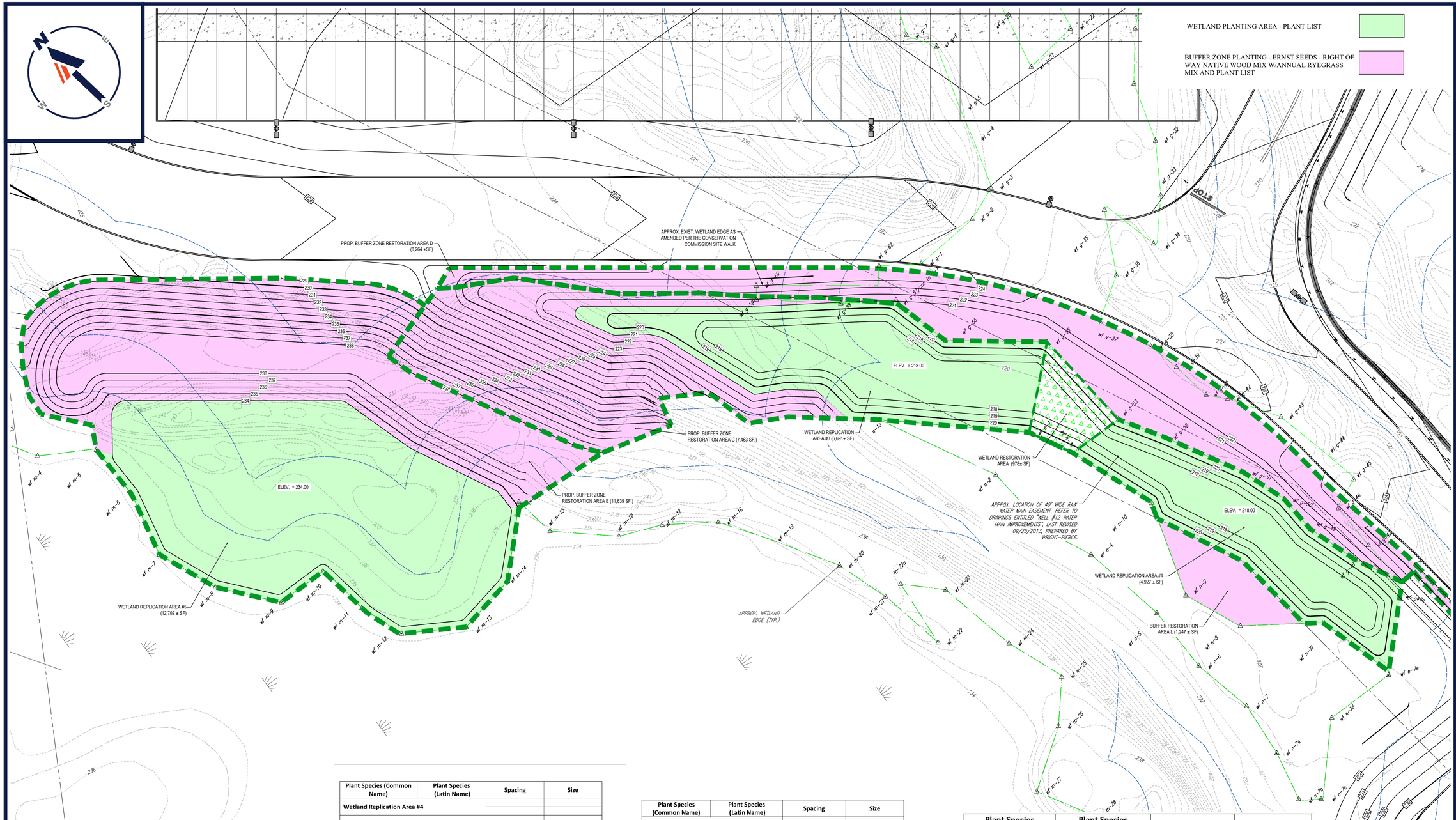
RESTORATION PLAN A

SHEET NUMBER:

C-1008

REVISION 4 - 12/06/2023

P:\2022\W221023\CAD\DRAWINGS\PLAN SETS\WETLANDS\W221023-WETP-4A.dwg, ——LAYOUT: C-1008 RESTORATION PLAN A, OCR



Plant Species (Common Name)	Plant Species (Latin Name)	Spacing	Size
Wetland Replication Area #3			
Maleberry	*Lyonia ligustrina*	6' O.C, clustered	3'-4' minimum
Red-osier dogwood	*Cornus sericea*	6' O.C, clustered	3'-4' minimum
Speckled alder	*Alnus incana/rugosa*	6' O.C, clustered	3'-4' minimum
Common elderberry	*Sambucus canadensis*	6' O.C, clustered	3'-4' minimum
Steeplebush	*Spirea tomentosa*	6' O.C, clustered	3'-4' minimum
Sensitive fern	*Oncoclea sensibilis*		
PA New England Province FacW Mix*			
Buffer Zone			
Bayberry	*Morella (Myrica pensylvanica)*	6' O.C, clustered	3'-4' minimum
Sweet pepperbush	*Clethra alnifolia*	6' O.C, clustered	3'-4' minimum
Meadowsweet	*Spirea latifolia*	6' O.C, clustered	3'-4' minimum
Serviceberry	*Amelanchiar canadensis*	6' O.C, clustered	3'-4' minimum
New England Conservation/Wildlife Mix**			

Plant Species (Common Name)	Plant Species (Latin Name)	Spacing	Size
Wetland Replication Area #4			
Maleberry	*Lyonia ligustrina*	6' O.C, clustered	3'-4' minimum
Red-osier dogwood	*Cornus sericea*	6' O.C, clustered	3'-4' minimum
Speckled alder	*Alnus incana/rugosa*	6' O.C, clustered	3'-4' minimum
Common elderberry	*Sambucus canadensis*	6' O.C, clustered	3'-4' minimum
Steeplebush	*Spirea tomentosa*	6' O.C, clustered	3'-4' minimum
Sensitive fern	*Oncoclea sensibilis*		
PA New England Province FacW Mix*			
Buffer Zone			
Bayberry	*Morella (Myrica pensylvanica)*	6' O.C, clustered	3'-4' minimum
Sweet pepperbush	*Clethra alnifolia*	6' O.C, clustered	3'-4' minimum
Meadowsweet	*Spirea latifolia*	6' O.C, clustered	3'-4' minimum
Serviceberry	*Amelanchiar canadensis*	6' O.C, clustered	3'-4' minimum
New England Conservation/Wildlife Mix**			

PA New England Province FacW Mix, Ernst Conservation Seeds (www.ernstseed.com), or approved equivalent, applied at a rate of 1lb per 2,200 sf or higher if applied at the end of the growing season. Lightly rake to insure seed-soil contact.

New England Conservation/Wildlife Mix, New England Wetland Plants (www.newp.com), or approved equivalent, applied at a rate of 1,750 sf/lb, or higher if applied at the end of the growing season. Lightly rate to insure seed-soil contact. May include annual or winter rye depending on time of application.

Plant Species (Common Name)	Plant Species (Latin Name)	Spacing	Size
Wetland Replication Area #5			
Red maple	*Acer rubrum*	10-12' O.C.+	3'-4' minimum
Atlantic white cedar	*Chamaecyparis thyoides*	10-12' O.C.+	3'-4' minimum
Winterberry	*Ilex verticillata*	6' O.C, clustered	3'-4' minimum
Common spicebush	*Lindera benzoin*	6' O.C, clustered	3'-4' minimum
Highbush blueberry	*Vaccinium corymbosum*	6' O.C, clustered	3'-4' minimum
Swamp azalea	*Rhododendron viscosum*	6' O.C, clustered	3'-4' minimum
Northern arrowwood	*Viburnum dentatum*	6' O.C, clustered	3'-4' minimum
Cinnamon fern	*Osmunda cinnamomea*	1' O.C., clustered	1#
Tussock sedge	*Carex stricta*	1' O.C., clustered	2" plug
Fringed sedge	*Carex crinita*		
Soft rush	*Juncus effusus*	1' O.C., clustered	2" plug
Cardinal flower	*Lobelia cardinalis*	1' O.C., clustered	2" plug
Stout wood-reedgrass	*Cinna arundinacea*		
Great blue lobelia	*Lobelia siphilitica*	1' O.C., clustered	2" plug
Buffer Zone			
Red oak	*Quercus rubra*	10-12' O.C.	3'-4' minimum
Eastern white pine	*Pinus strobus*	10-12' O.C.	3'-4' minimum
Witch hazel	*Hamamelis virginiana*	6' O.C, clustered	3'-4' minimum
Sweet pepperbush	*Clethra alnifolia*	6' O.C, clustered	3'-4' minimum

Plant Species (Common Name)	Plant Species (Latin Name)	Spacing	Size
Buffer Zone Restoration Areas			
Red maple	*Acer rubrum*	10-12' O.C.	3'-4' minimum
Red oak	*Quercus rubra*	10-12' O.C.	3'-4' minimum
Eastern white pine	*Pinus strobus*	10-12' O.C.	3'-4' minimum
Black birch	*Betula lenta*	10-12' O.C.	3'-4' minimum
Witch hazel	*Hamamelis virginiana*	6' O.C, clustered	3'-4' minimum
Gray dogwood	*Cornus racemose*	6' O.C, clustered	3'-4' minimum
Nannyberry	*Viburnum lentago*	6' O.C, clustered	3'-4' minimum
Serviceberry	*Amelancier canadensis*	6' O.C, clustered	3'-4' minimum
Black chokeberry	*Aronia melanocarpa*	6' O.C, clustered	3'-4' minimum
Bayberry	*Morella (Myrica) pensylvanica*	6' O.C, clustered	3'-4' minimum
Sweet fern	*Comptonia peregrina*	3' O.C, clustered	3'-4' minimum
New England Conservation/Wildlife Mix			

Buffer Zone Restoration Note:

If needed, apply approximately 12 inches of topsoil and blend into adjacent grades.

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SHEET TITLE:

RESTORATION PLAN B

SHEET NUMBER:

C-1009

REVISION 4 - 12/06/2023

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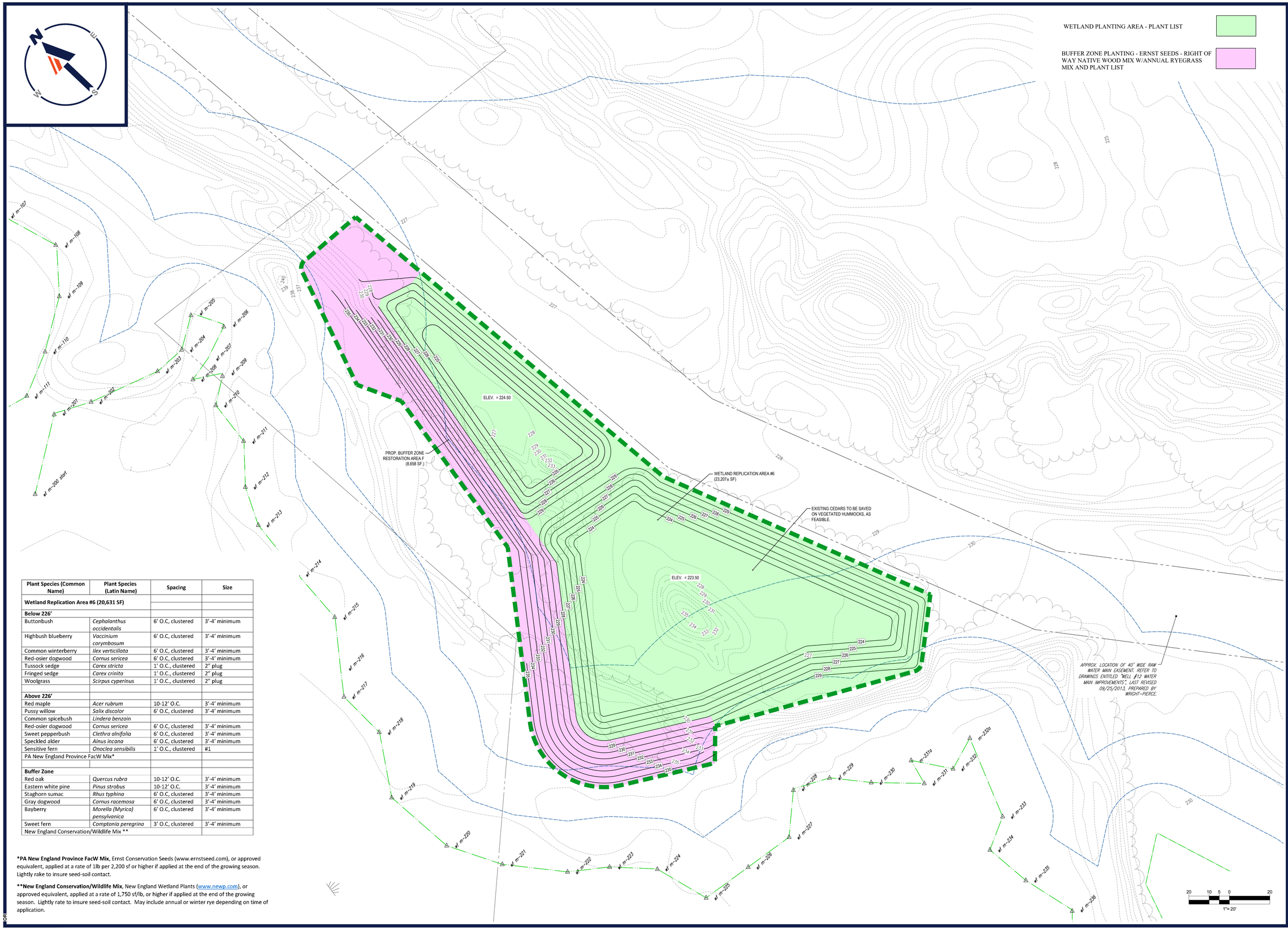

Plant Species (Common Name)	Plant Species (Latin Name)	Spacing	Size
Wetland Replication Area #6 (20,631 SF)			
Below 226'			
Buttonbush	*Cephalanthus occidentalis*	6' O.C, clustered	3'-4' minimum
Highbush blueberry	*Vaccinium corymbosum*	6' O.C, clustered	3'-4' minimum
Common winterberry	*Ilex verticillata*	6' O.C, clustered	3'-4' minimum
Red-osier dogwood	*Cornus sericea*	6' O.C, clustered	3'-4' minimum
Tussock sedge	*Carex stricta*	1' O.C., clustered	2" plug
Fringed sedge	*Carex crinita*	1' O.C., clustered	2" plug
Woolgrass	*Scirpus cyperinus*	1' O.C., clustered	2" plug
Above 226'			
Red maple	*Acer rubrum*	10-12' O.C.	3'-4' minimum
Pussy willow	*Salix discolor*	6' O.C, clustered	3'-4' minimum
Common spicebush	*Lindera benzoin*		
Red-osier dogwood	*Cornus sericea*	6' O.C, clustered	3'-4' minimum
Sweet pepperbush	*Clethra alnifolia*	6' O.C, clustered	3'-4' minimum
Speckled alder	*Alnus incana*	6' O.C, clustered	3'-4' minimum
Sensitive fern	*Onoclea sensibilis*	1' O.C., clustered	#1
PA New England Province FacW Mix*			
Buffer Zone			
Red oak	*Quercus rubra*	10-12' O.C.	3'-4' minimum
Eastern white pine	*Pinus strobus*	10-12' O.C.	3'-4' minimum
Staghorn sumac	*Rhus typhina*	6' O.C, clustered	3'-4' minimum
Gray dogwood	*Cornus racemosa*	6' O.C, clustered	3'-4' minimum
Bayberry	*Morella (Myrica) pensylvanica*	6' O.C, clustered	3'-4' minimum
Sweet fern	*Comptonia peregrina*	3' O.C, clustered	3'-4' minimum
New England Conservation/Wildlife Mix **			

***PA New England Province FacW Mix**, Ernst Conservation Seeds (www.ernstseed.com), or approved equivalent, applied at a rate of 1lb per 2,200 sf or higher if applied at the end of the growing season. Lightly rake to insure seed-soil contact.

****New England Conservation/Wildlife Mix**, New England Wetland Plants (www.newp.com), or approved equivalent, applied at a rate of 1,750 sf/lb, or higher if applied at the end of the growing season. Lightly rate to insure seed-soil contact. May include annual or winter rye depending on time of application.

P:\2022\W221023\C-CAD\DRAWINGS\PLAN SET\SWETLAND\W221023-WETP-4A.----LAYOUT: C-1010 RESTORATION PLAN C

BOHLER

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

THE DESIGN, IDEAS, DETAILS AND CONCEPTS OF THESE PLANS ARE PROPRIETARY AND SHALL NOT BE DISCLOSED OR USED FOR ANY PURPOSE, WITHOUT PRIOR WRITTEN AUTHORIZATION FROM BOHLER. ONLY APPROVED PLANS SHALL BE UTILIZED FOR CONSTRUCTION PURPOSES.
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REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	03/03/2023	PLANNING BOARD COMMENTS	OCR / MMA
2	05/01/2023	SITE LAYOUT UPDATES	OCR / MMA
3	07/28/2023	PLANNING BOARD COMMENTS	CJP / MMA
4	12/06/2023	CON COM COMMENTS	OCR / MMA

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ALWAYS CALL 811
It's fast. It's free. It's the law.

PERMIT SET

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PROJECT No.:	W221023
DRAWN BY:	OCR/AJS
CHECKED BY:	MMA
DATE:	09/22/2022
CAD I.D.:	W221023-X-TTLB-SPPD

PROJECT:

PROPOSED SITE PLAN DOCUMENTS

FOR

WS DEVELOPMENT

PROPOSED DEVELOPMENT
MAPS: 24, 30, & 31
LOTS: 10 & 12, 73-1, & 3
HARTFORD AVENUE,
TOWN BELLINGHAM ,
NORFOLK COUNTY,
MASSACHUSETTS

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

J.A. KUCICH
PROFESSIONAL ENGINEER
MASSACHUSETTS LICENSE No. 41930
NEW HAMPSHIRE LICENSE No. 15476
CONNECTICUT LICENSE No. 26127
RHODE ISLAND LICENSE No. 2616
MAINE LICENSE No. 24553

SHEET TITLE:

RESTORATION PLAN C

SHEET NUMBER:

C-1010

REVISION 4 - 12/06/2023

WETLAND PLANTING AREA - PLANT LIST

BUFFER ZONE PLANTING - ERNST SEEDS - RIGHT OF WAY NATIVE WOOD MIX W/ANNUAL RYEGRASS MIX AND PLANT LIST

Plant Species (Common Name)	Plant Species (Latin Name)	Spacing	Size
Wetland Replication Area #7			
Wetland Replication Area			
Buttonbush	*Cephalanthus occidentalis*	6' O.C, clustered	3'-4' minimum
Highbush blueberry	*Vaccinium corymbosum*	6' O.C, clustered	3'-4' minimum
Common winterberry	*Ilex verticillata*	6' O.C, clustered	3'-4' minimum
Red-osier dogwood	*Cornus sericea*	6' O.C, clustered	3'-4' minimum
Tussock sedge	*Carex stricta*	1' O.C., clustered	2" plug
Fringed sedge	*Carex crinita*	1' O.C., clustered	2" plug
Woolgrass	*Scirpus cyperinus*	1' O.C., clustered	2" plug
Buffer Zone			
Red oak	*Quercus rubra*	10-12' O.C.	3'-4' minimum
Eastern white pine	*Pinus strobus*	10-12' O.C.	3'-4' minimum
Staghorn sumac	*Rhus typhina*	6' O.C, clustered	3'-4' minimum
Gray dogwood	*Cornus racemosa*	6' O.C, clustered	3'-4' minimum
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Sweet fern	*Comptonia peregrina*	3' O.C, clustered	3'-4' minimum
New England Conservation/Wildlife Mix **			

APPROX. EXIST. WETLAND EDGE AS AMENDED PER THE CONSERVATION COMMISSION SITE WALK

PROP. WETLAND REPLICATION AREA #7 (68,272 SF.)

PROP. BUFFER ZONE RESTORATION AREA G (10,945 SF.)

PROP. BUFFER ZONE RESTORATION AREA H (3,419 ±SF)

APPROX. LOCATION OF 40' WIDE RAW WATER MAIN EASEMENT, REFER TO DRAWINGS ENTITLED "WELL #12 WATER MAIN IMPROVEMENTS", LAST REVISED 09/25/2013, PREPARED BY WRIGHT-PIERCE.

PROP. LIMIT OF WORK (TYP.)

ELEV. = 223.00

ELEV. = 222.00

STOP

1"= 20'

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PROJECT:

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FOR

WS DEVELOPMENT

PROPOSED DEVELOPMENT
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J.A. KUCICH

PROFESSIONAL ENGINEER

MASSACHUSETTS LICENSE No. 41535
NEW HAMPSHIRE LICENSE No. 15426
CONNECTICUT LICENSE No. 29177
RHODE ISLAND LICENSE No. 9016
MAINE LICENSE No. 2553

SHEET TITLE:

RESTORATION PLAN D

SHEET NUMBER:

C-1011

REVISION 4 - 12/06/2023

P:\2022\W221023\CAD\DRAWINGS\PLAN SETS\WETLAND\W221023-WETM-1A-----LAYOUT C-1011 RESTORATION PLAN D

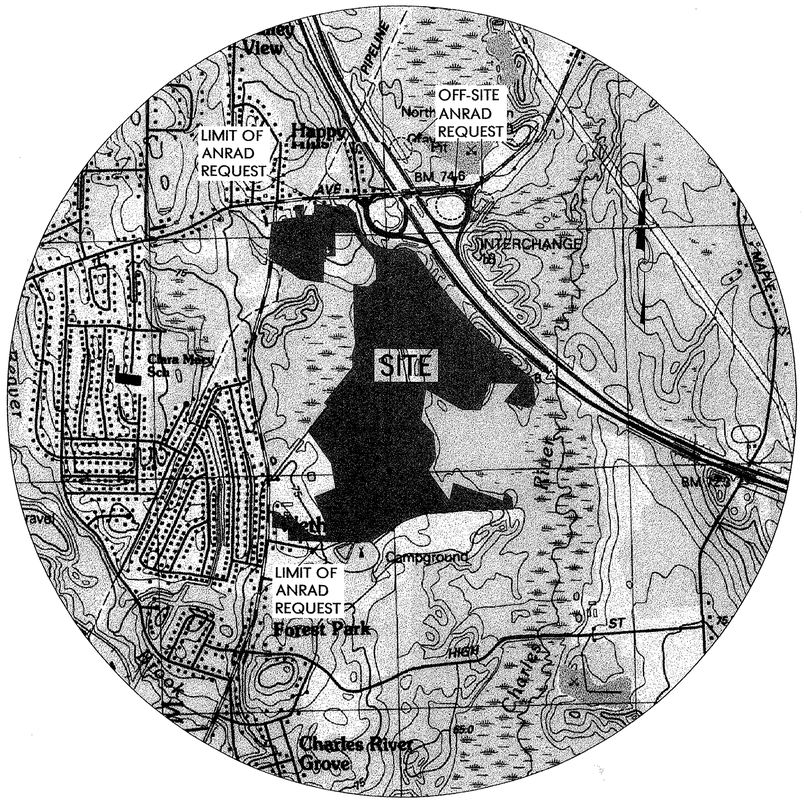
SEPTEMBER 6, 2005

WETLAND DELINEATION PLAN

In The Town Of
Bellingham, Massachusetts

PREPARED FOR

W/S Development Associates LLC



SCALE: 1"=1000'

PREPARED BY:

HERITAGE DESIGN GROUP

PLANNERS ♦ SURVEYORS ♦ ENGINEERS

ONE MAIN STREET
WHITINSVILLE, MASSACHUSETTS 01588
TEL 508-266-2066 ~ FAX 508-266-2067
A LIMITED LIABILITY COMPANY

INDEX OF PLANS

COVER SHEET	1 of 1
SHEET INDEX	1 of 1
WETLAND DELINEATION PLAN	1 THRU 13 OF 13

REVISIONS

NO.	DATE	DESCRIPTION	BY
2	6-28-06	WETLAND FLAGS PER BELLINGHAM C.C. REVIEW	FJO
1	5-22-06	WETLAND FLAGS PER BELLINGHAM C.C. REVIEW	FJO

COMMONWEALTH OF MASSACHUSETTS
HOLLAND E SHAW
No. 36014
REGISTERED
PROFESSIONAL LAND SURVEYOR
6-28-06

2005-065_ANRAD.dwg

GENERAL CONSERVATION NOTES:

1. WETLAND RESOURCE AREAS WERE DELINEATED BY ENVIRONMENTAL RESOURCES MANAGEMENT DURING THE SPRING OF 2005, IN ACCORDANCE WITH THE MASSACHUSETTS WETLAND PROTECTION ACT (M.G.L. C.131 5.40), THE RIVERS PROTECTION ACT (CHAPTER 258 OF ACTS OF 1996), AND REGULATIONS (310 CMR 10.00), AND SECTION 404 OF THE FEDERAL CLEAN WATER ACT.

2. ALL WETLAND AREAS PRESENT ON THE SUBJECT PROPERTIES ARE SHOWN ON THESE PLANS FOR PARCELS LISTED IN ANRAD REQUEST, WITH THE EXCEPTION OF TWO AREAS BEYOND THE "LIMIT OF ANRAD REQUEST" AS SHOWN ON THESE DRAWINGS; AND FOR ALL PARCELS OWNED BY UNITED STATES OF AMERICA ARMY CORPS OF ENGINEERS, WHERE THE ANRAD REQUEST IS LIMITED TO THE NORTHERN EDGE OF CHARLES RIVER SWAMP. NO OTHER WETLANDS EXIST WITHIN 100 FT. OF THE PROPERTY LINE.

3. THE WETLAND FLAGS SHOWN WERE FIELD LOCATED BY GPS, RELATIVE TO STATE PLANE COORDINATE SYSTEM NAD 83.

4. PROPERTY LIES IN ZONE A4 "AREAS OF 100-YEAR FLOOD", ZONE B "AREAS BETWEEN LIMITS OF THE 100-YEAR FLOOD AND 500-YEAR FLOOD", AND ZONE C "AREAS OF MINIMAL FLOODING", AS DEPICTED ON NFIP FIRM COMMUNITY PANEL #250232 0002 B, EFFECTIVE DATE: DECEMBER 15, 1982.

5. FLOOD ZONE AREAS AND ELEVATION CONTOURS COMPILED FROM GEOSPATIAL DATA PROVIDED BY THE OFFICE OF GEOGRAPHIC AND ENVIRONMENTAL INFORMATION (MASS GIS), COMMONWEALTH OF MASSACHUSETTS EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS.

6. OFF-SITE WETLAND RESOURCE AREAS WERE DELINEATED BY ENVIRONMENTAL RESOURCES MANAGEMENT ON APRIL 22, 2006, IN ACCORDANCE WITH THE MASSACHUSETTS WETLAND PROTECTION ACT (M.G.L. C.131 5.40), THE RIVERS PROTECTION ACT (CHAPTER 258 OF ACTS OF 1996), AND REGULATIONS (310 CMR 10.00), AND SECTION 404 OF THE FEDERAL CLEAN WATER ACT.

7. WETLAND FLAG REVISIONS (5/22/06) PER THE BELLINGHAM CONSERVATION COMMISSION FIELD REVIEWS FROM SEPTEMBER 24, 2005 THROUGH MAY 6, 2006. REFER TO THE ORDER OF RESOURCE AREA DELINEATION FOR LIST OF FLAG CHANGES AND ADDITIONS.

WETLAND FLAG SERIES AND DISTANCES

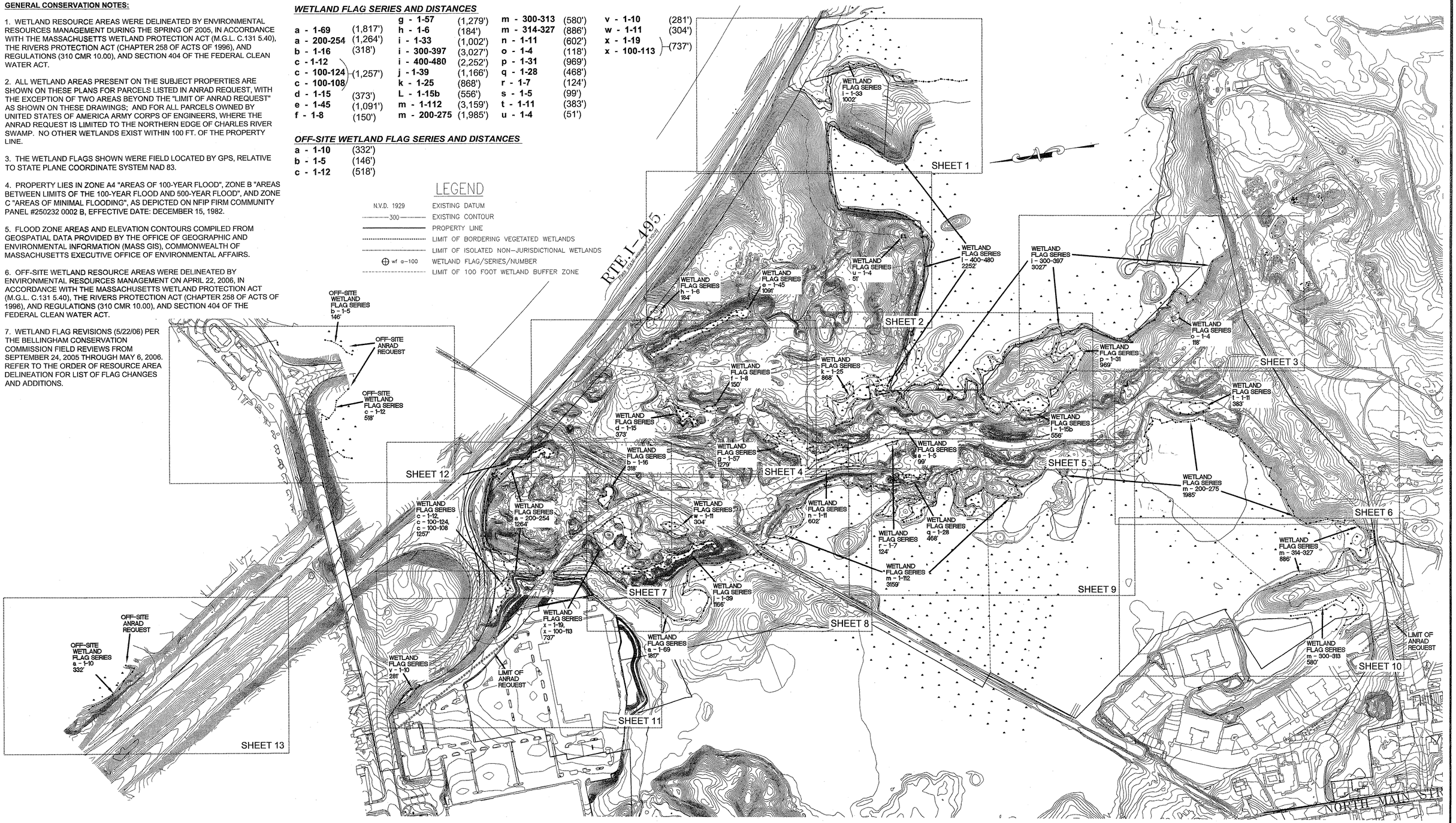
a - 1-69	(1,817')	g - 1-57	(1,279')	m - 300-313	(580')	v - 1-10	(281')
a - 200-254	(1,264')	h - 1-6	(184')	m - 314-327	(886')	w - 1-11	(304')
b - 1-16	(318')	i - 1-33	(1,002')	n - 1-11	(602')	x - 1-19	(737')
c - 1-12	(1,257')	i - 300-397	(3,027')	o - 1-4	(118')	x - 100-113	
c - 100-124		i - 400-480	(2,252')	p - 1-31	(969')		
c - 100-108		j - 1-39	(1,166')	q - 1-28	(468')		
d - 1-15	(373')	k - 1-25	(868')	r - 1-7	(124')		
e - 1-45	(1,091')	L - 1-15b	(556')	s - 1-5	(99')		
f - 1-8	(150')	m - 1-112	(3,159')	t - 1-11	(383')		

OFF-SITE WETLAND FLAG SERIES AND DISTANCES

a - 1-10	(332')
b - 1-5	(146')
c - 1-12	(518')

LEGEND

N.V.D. 1929	EXISTING DATUM
300	EXISTING CONTOUR
	PROPERTY LINE
	LIMIT OF BORDERING VEGETATED WETLANDS
	LIMIT OF ISOLATED NON-JURISDICTIONAL WETLANDS
wf a-100	WETLAND FLAG/SERIES/NUMBER
	LIMIT OF 100 FOOT WETLAND BUFFER ZONE



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HERITAGE DESIGN GROUP

PLANNERS ♦ SURVEYORS ♦ ENGINEERS

ONE MAIN STREET
WHITINSVILLE, MASSACHUSETTS 01588
TEL 508-266-2066 FAX 508-266-2067
A LIMITED LIABILITY COMPANY

ASSESSORS INFORMATION:	DEED REFERENCE*:	RECORD OWNERS:
MAP 24 / LOT 12	BK 11111 ~ PG 466 & BK 11216 ~ PG 27	BELLINGHAM NORTH MAIN STREET LLC
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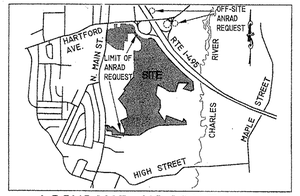
		COMMONWEALTH OF MASSACHUSETTS (ROUTE I-495)

*NORFOLK DISTRICT REGISTRY OF DEEDS
**BASED ON BELLINGHAM ASSESSORS RECORDS

PLAN REFERENCE*:
PL BK 436 ~ No. 71 OF 1996
PL BK 515 ~ No. 762 & 763 OF 2003
PL BK 332 ~ No. 171 OF 1986

COMMONWEALTH OF MASSACHUSETTS
HOLLAND E. SHAW No. 30314 REGISTERED PROFESSIONAL LAND SURVEYOR
6.28.06



LOCUS MAP - NO SCALE

NO.	DATE	DESCRIPTION	BY
2	6-28-06	WETLAND FLAGS PER BELLINGHAM C.C. REVIEW	FJO
1	5-22-06	WETLAND FLAGS PER BELLINGHAM C.C. REVIEW	FJO

GRAPHIC SCALE

200 0 100 200 400 800

(IN FEET)
1 inch = 200 ft.

WETLAND DELINEATION PLAN
IN
BELLINGHAM, MASSACHUSETTS
PREPARED FOR
W/S DEVELOPMENT ASSOCIATES LLC
SCALE: 1"=200' SEPTEMBER 6, 2005

INDEX SHEET

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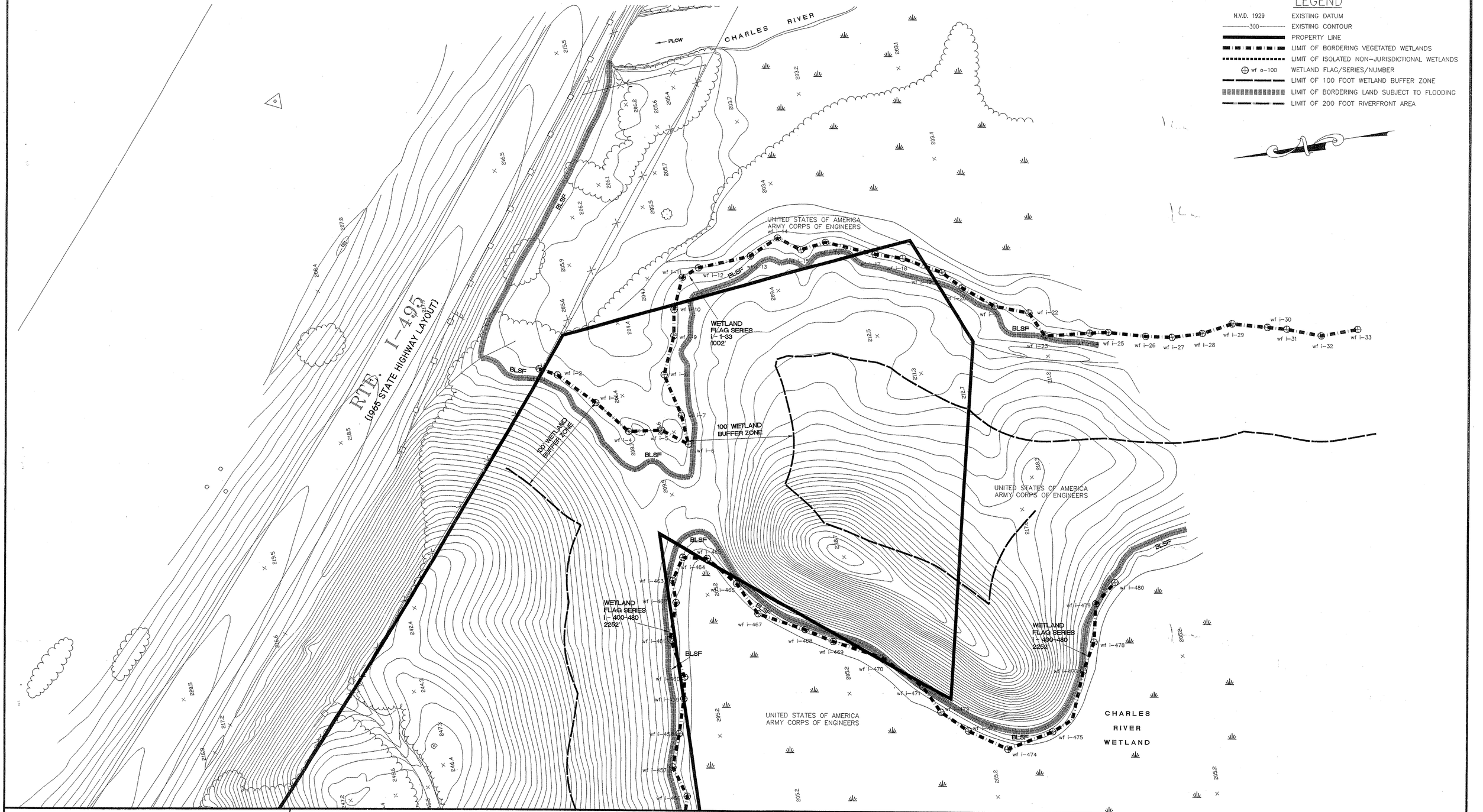

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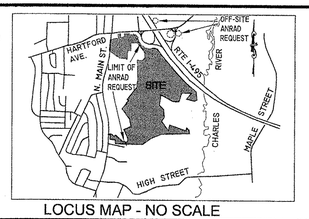

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GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

WETLAND DELINEATION PLAN
IN
BELLINGHAM, MASSACHUSETTS
PREPARED FOR
W/S DEVELOPMENT ASSOCIATES LLC
SCALE: 1"=40' SEPTEMBER 6, 2005
SHEET 1 OF 13

2005-065_ANRAD.dwg

LEGEND

N.V.D. 1929	EXISTING DATUM
300	EXISTING CONTOUR
	PROPERTY LINE
	LIMIT OF BORDERING VEGETATED WETLANDS
	LIMIT OF ISOLATED NON-JURISDICTIONAL WETLANDS
wf a-100	WETLAND FLAG/SERIES/NUMBER
	LIMIT OF 100 FOOT WETLAND BUFFER ZONE
	LIMIT OF BORDERING LAND SUBJECT TO FLOODING
	LIMIT OF 200 FOOT RIVERFRONT AREA

RTE. I-495
(1965 STATE HIGHWAY LAYOUT)

CHARLES RIVER WETLAND

UNITED STATES OF AMERICA
ARMY CORPS OF ENGINEERS

WETLAND FLAG SERIES
j - 400-480
2252'

WETLAND FLAG SERIES
e - 1-45
1091'

WETLAND FLAG SERIES
h - 1-6
184'

WETLAND FLAG SERIES
j - 1-4
51'

ISOLATED NON-JURISDICTIONAL WETLAND

100' WETLAND BUFFER ZONE

BLSF

PREPARED BY

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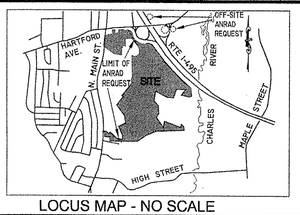

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(IN FEET)
1 inch = 40 ft.

WETLAND DELINEATION PLAN
IN
BELLINGHAM, MASSACHUSETTS
PREPARED FOR
W/S DEVELOPMENT ASSOCIATES LLC

SCALE: 1"=40' SEPTEMBER 6, 2005

SHEET 2 OF 13

2005-065_ANRAD.dwg

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⊕ wf o-100	WETLAND FLAG/SERIES/NUMBER
	LIMIT OF 100 FOOT WETLAND BUFFER ZONE
	LIMIT OF BORDERING LAND SUBJECT TO FLOODING
	LIMIT OF 200 FOOT RIVERFRONT AREA

CHARLES RIVER WETLAND

UNITED STATES OF AMERICA
ARMY CORPS OF ENGINEERS

BLSF

WETLAND FLAG SERIES i - 300-397 3027'

100' WETLAND BUFFER ZONE

ISOLATED NON-JURISDICTIONAL WETLAND

WETLAND FLAG SERIES O - 1-4 118'

WETLAND FLAG SERIES p - 1-31 969'

N/F RICHARD HILL

176-3

117-3

PREPARED BY

HERITAGE DESIGN GROUP

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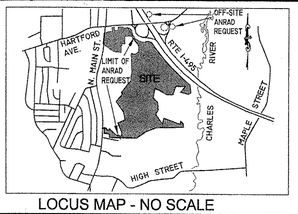
		COMMONWEALTH OF MASSACHUSETTS (ROUTE I-495)

*NORFOLK DISTRICT REGISTRY OF DEEDS
**BASED ON BELLINGHAM ASSESSORS RECORDS

PLAN REFERENCE*:
PL BK 436 ~ No. 71 OF 1996
PL BK 515 ~ No. 762 & 763 OF 2003
PL BK 332 ~ No. 171 OF 1986

COMMONWEALTH OF MASSACHUSETTS
HOLLAND E. SHAW No. 30914 REGISTERED PROFESSIONAL LAND SURVEYOR
6-30-06



LOCUS MAP - NO SCALE

NO.	DATE	DESCRIPTION	BY
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1	5-22-06	WETLAND FLAGS PER BELLINGHAM C.C. REVIEW	FJO

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

WETLAND DELINEATION PLAN
IN
BELLINGHAM, MASSACHUSETTS
PREPARED FOR
W/S DEVELOPMENT ASSOCIATES LLC
SCALE: 1"=40' SEPTEMBER 6, 2005

SHEET 3 OF 13

2005-065_ANRAD.dwg

LEGEND

N.V.D. 1929	EXISTING DATUM
300	EXISTING CONTOUR
	PROPERTY LINE
	LIMIT OF BORDERING VEGETATED WETLANDS
	LIMIT OF ISOLATED NON-JURISDICTIONAL WETLANDS
⊕ wf a-100	WETLAND FLAG/SERIES/NUMBER
	LIMIT OF 100 FOOT WETLAND BUFFER ZONE
	LIMIT OF BORDERING LAND SUBJECT TO FLOODING
	LIMIT OF 200 FOOT RIVERFRONT AREA

RTE. I-495
(1965 STATE HIGHWAY LAYOUT)

ISOLATED NON-JURISDICTIONAL WETLAND

ISOLATED NON-JURISDICTIONAL WETLAND

WETLAND FLAG SERIES e - 1-45 1091'

WETLAND FLAG SERIES f - 1-8 150'

ISOLATED NON-JURISDICTIONAL WETLANDS

WETLAND FLAG SERIES d - 1-15 373'

WETLAND FLAG SERIES c - 1-12, c - 100-124, c - 100-108 1257'

100' WETLAND BUFFER ZONE

WETLAND FLAG SERIES g - 1-57 1279'

ISOLATED NON-JURISDICTIONAL WETLAND

100' WETLAND BUFFER

MAP 31 - LOT 3
MAP 25 - LOT 1

MAP 31 - LOT 3
MAP 25 - LOT 1

PREPARED BY

HERITAGE DESIGN GROUP

PLANNERS ♦ SURVEYORS ♦ ENGINEERS

ONE MAIN STREET
WHITINSVILLE, MASSACHUSETTS 01588
TEL 508-266-2066 FAX 508-266-2067
A LIMITED LIABILITY COMPANY

ASSESSORS INFORMATION:	DEED REFERENCE*:	RECORD OWNERS:
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MAP 30 / LOT 73	BK 20324 ~ PG 585	JEFFERSON AT BELLINGHAM, L.P.
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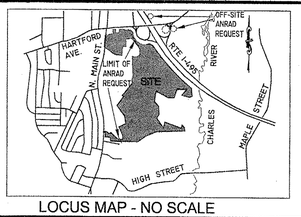
COMMONWEALTH OF MASSACHUSETTS
HOLLAND E. SHAW
No. 30316
REGISTERED PROFESSIONAL LAND SURVEYOR
9.9.06



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PREPARED FOR
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SCALE: 1"=40' SEPTEMBER 6, 2005

SHEET 4 OF 13

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LEGEND

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wf a-100	WETLAND FLAG/SERIES/NUMBER
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	LIMIT OF BORDERING LAND SUBJECT TO FLOODING
	LIMIT OF 200 FOOT RIVERFRONT AREA

CHARLES RIVER WETLAND

UNITED STATES OF AMERICA
ARMY CORPS OF ENGINEERS

WETLAND FLAG SERIES k - 1-25 868'

WETLAND FLAG SERIES i - 400-480 2252'

WETLAND FLAG SERIES i - 300-397 3027'

WETLAND FLAG SERIES i - 1-15b 556'

WETLAND FLAG SERIES p - 1-31 969'

WETLAND FLAG SERIES g - 1-57 1279'

WETLAND FLAG SERIES n - 1-11 602'

WETLAND FLAG SERIES r - 1-7 124'

WETLAND FLAG SERIES s - 1-5 99'

WETLAND FLAG SERIES m - 1-112 3159'

WETLAND FLAG SERIES m - 200-275 1985'

ISOLATED NON-JURISDICTIONAL WETLAND

100' WETLAND BUFFER ZONE

BLSF

MAP 30

MAP 31

PREPARED BY

HERITAGE DESIGN GROUP

PLANNERS ♦ SURVEYORS ♦ ENGINEERS

ONE MAIN STREET
WHITINSVILLE, MASSACHUSETTS 01588
TEL 508-266-2066 FAX 508-266-2067

A LIMITED LIABILITY COMPANY

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DEED REFERENCE*:

*NORFOLK DISTRICT REGISTRY OF DEEDS

**BASED ON BELLINGHAM ASSESSORS RECORDS

RECORD OWNERS:

BELLINGHAM NORTH MAIN STREET LLC
VARNEY BROS. SAND & GRAVEL, INC.
W/S DEVELOPMENT ASSOCIATES LLC
JEFFERSON AT BELLINGHAM, L.P.
W/S BELLINGHAM IV ASSOCIATES LLC
UNITED STATES OF AMERICA ARMY CORPS OF ENGINEERS
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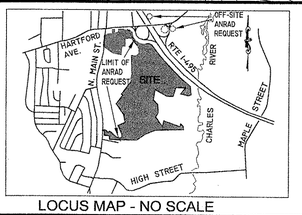
COMMONWEALTH OF MASSACHUSETTS
HOLLAND E. SHAW
No. 30314
REGISTERED
PROFESSIONAL LAND SURVEYOR
9.6.06



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SCALE: 1"=40' SEPTEMBER 6, 2005

SHEET 5 OF 13

2005-065_ANRAD.dwg

WETLAND FLAG SERIES t - 1-11 383'

ISOLATED NON-JURISDICTIONAL WETLAND

100' WETLAND BUFFER ZONE

WETLAND FLAG SERIES m - 200-275 1985'

ATLANTIC WHITE CEDAR SWAMP

MAP 31 - LOT 3
MAP 30 - LOT 73-1

N/F RICHARD HILL

176-2

N/F G LAND INC.

WETLAND FLAG SERIES m - 200-275 1985

LEGEND

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	LIMIT OF BORDERING LAND SUBJECT TO FLOODING
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PREPARED BY

HERITAGE DESIGN GROUP

PLANNERS ♦ SURVEYORS ♦ ENGINEERS

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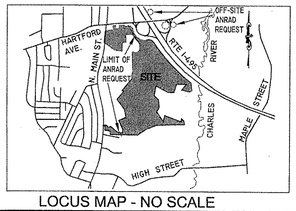
HOLLAND E. SHAW No. 30314 REGISTERED PROFESSIONAL LAND SURVEYOR COMMONWEALTH OF MASSACHUSETTS



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WETLAND DELINEATION PLAN

IN

BELLINGHAM, MASSACHUSETTS

PREPARED FOR

W/S DEVELOPMENT ASSOCIATES LLC

SCALE: 1"=40' SEPTEMBER 6, 2005

SHEET 6 OF 13

2005-065_ANRAD.dwg

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RTE. I-495
(1965 STATE HIGHWAY LAYOUT)

WETLAND FLAG SERIES a - 200-254 1264'

WETLAND FLAG SERIES c - 1-12, c - 100-124, c - 100-108 1257'

WETLAND FLAG SERIES b - 1-16 318'

WETLAND FLAG SERIES x - 1-19, x - 100-113 737'

WETLAND FLAG SERIES w - 1-11 304'

WETLAND FLAG SERIES j - 1-39 1165'

WETLAND FLAG SERIES f - 1-69 1817'

ISOLATED NON-JURISDICTIONAL WETLAND

100' WETLAND BUFFER ZONE

200' RIVERFRONT AREA

INTERMITTENT STREAM

INTERMITTENT FLOW

SPRING BROOK

CULVERT

DETENTION POND

MAP 25 - LOT 1

MAP 179-2A

MAP 179-2

OFF-SITE ANRAD REQUEST

LIMIT OF ANRAD REQUEST

SITE

HARTFORD AVE.

W. MAIN ST.

RTE I-495

RIVER

CHARLES

MAPLE STREET

HIGH STREET

LOCUS MAP - NO SCALE

PREPARED BY

HERITAGE DESIGN GROUP

PLANNERS ♦ SURVEYORS ♦ ENGINEERS

ONE MAIN STREET
WHITINSVILLE, MASSACHUSETTS 01588
TEL 508-266-2066 FAX 508-266-2067

A LIMITED LIABILITY COMPANY

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COMMONWEALTH OF MASSACHUSETTS
HOLLAND E. SHAW
No. 30314
REGISTERED
PROFESSIONAL LAND SURVEYOR
C. 2.9.06

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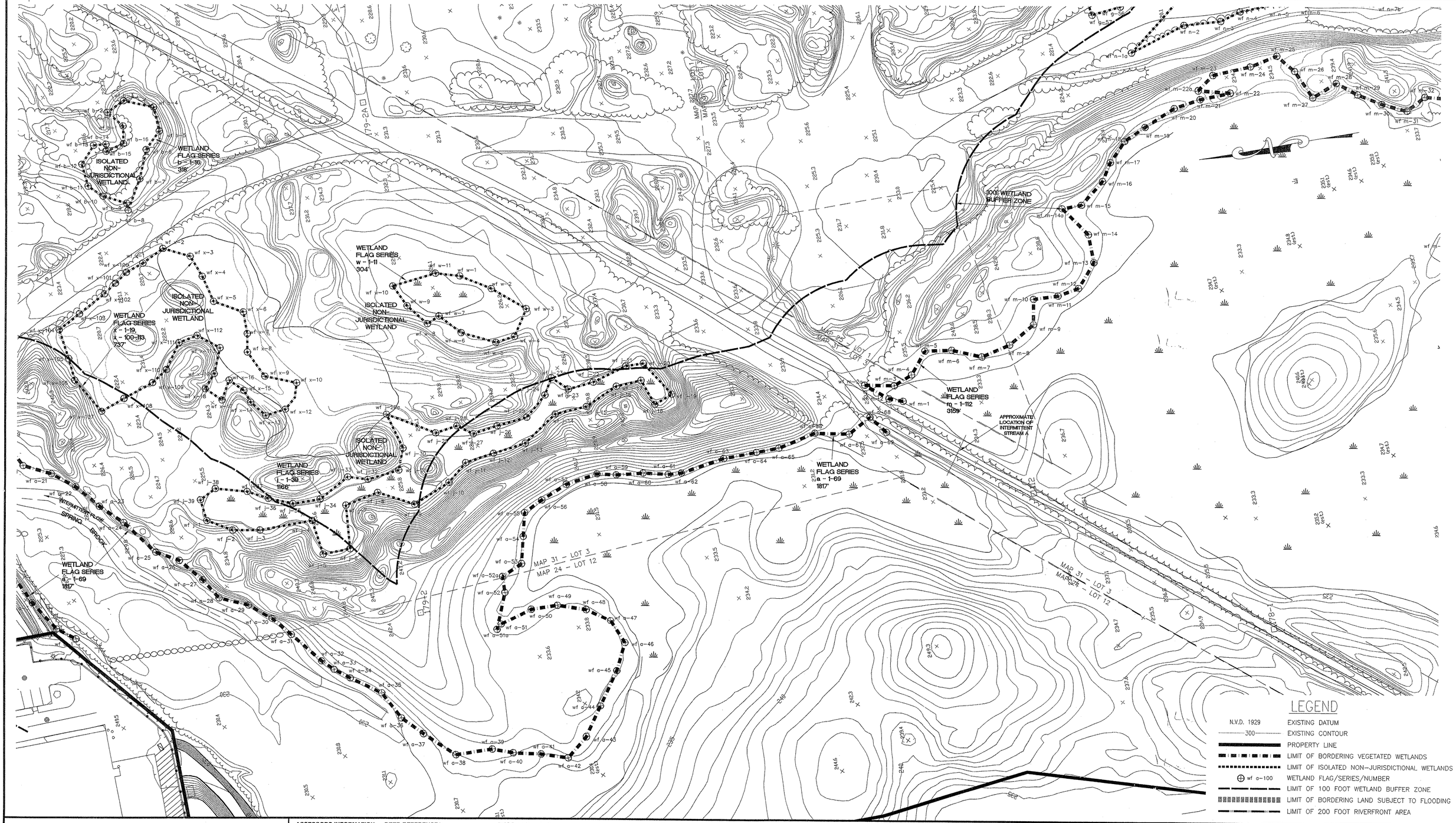

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PREPARED BY

HERITAGE DESIGN GROUP

PLANNERS ♦ SURVEYORS ♦ ENGINEERS

ONE MAIN STREET
WHITINSVILLE, MASSACHUSETTS 01588
TEL 508-266-2066 FAX 508-266-2067

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COMMONWEALTH OF MASSACHUSETTS
HOLLAND E. SHAW
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WETLAND FLAG SERIES n - 1-11 602'

ISOLATED NON-JURISDICTIONAL WETLAND

WETLAND FLAG SERIES r - 1-7 124'

ISOLATED NON-JURISDICTIONAL WETLAND

100' WETLAND BUFFER ZONE

WETLAND FLAG SERIES m - 1-112 3159'

WETLAND FLAG SERIES m - 200-275 1985'

WETLAND FLAG SERIES q - 1-28 468'

ISOLATED NON-JURISDICTIONAL WETLAND

WETLAND FLAG SERIES m - 1-112 3159'

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MAP 31 – LOT 3

MAP 30 – LOT 73-1

ATLANTIC WHITE CEDAR SWAMP

LEGEND

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PREPARED BY

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No. 9314
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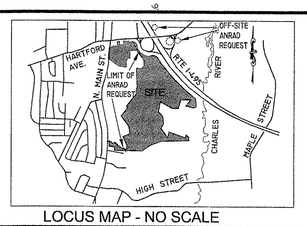

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WETLAND FLAG SERIES m - 200-275 1985'

WETLAND FLAG SERIES m - 314-327 886'

WETLAND FLAG SERIES m - 300-313 580'

INTERMITTENT STREAM B

INTERMITTENT STREAM FLOW

MAP 31 - LOT 3

MAP 30S2 - LOT 73-1

100' WETLAND BUFFER ZONE

LIMIT OF ANRAD REQUEST

N/F JEFFERSON AT BELLINGHAM, L.P.

N/F M G LAND INC.

PREPARED BY

HERITAGE DESIGN GROUP

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A LIMITED LIABILITY COMPANY

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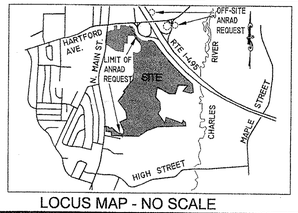
MAP 24 / LOT 12	BK 11111 ~ PG 466 & BK 11216 ~ PG 27	BELLINGHAM NORTH MAIN STREET LLC
MAP 31 / LOT 3	BK 4400 ~ PG 398**	VARNEY BROS. SAND & GRAVEL, INC.
MAP 25 / LOT 1	BK 12351 ~ PG 282	W/S DEVELOPMENT ASSOCIATES LLC
MAP 30 / LOT 73	BK 20324 ~ PG 585	JEFFERSON AT BELLINGHAM, L.P.
MAP 30 / LOT 73-1	BK 20324 ~ PG 582	W/S BELLINGHAM IV ASSOCIATES LLC
MAP 31 / LOT 3E	BK 6314 ~ PG 41**	UNITED STATES OF AMERICA ARMY CORPS OF ENGINEERS
MAP 31 / LOT 1	BK 6155 ~ PG 180**	UNITED STATES OF AMERICA ARMY CORPS OF ENGINEERS
MAP 31 / LOT 3D	BK 6156 ~ PG 109**	UNITED STATES OF AMERICA ARMY CORPS OF ENGINEERS
MAP 30 / LOT 3A (a/k/a 31-3A)	BK 5912 ~ PG 301**	UNITED STATES OF AMERICA ARMY CORPS OF ENGINEERS
MAP 30 / LOT 3C (a/k/a 31-3C)	BK 6156 ~ PG 94**	COMMONWEALTH OF MASSACHUSETTS (ROUTE I-495)

*NORFOLK DISTRICT REGISTRY OF DEEDS
**BASED ON BELLINGHAM ASSESSORS RECORDS

PLAN REFERENCE*:
PL BK 436 ~ No. 71 OF 1996
PL BK 515 ~ No. 762 & 763 OF 2003
PL BK 332 ~ No. 171 OF 1986

HOLLAND E. SMAW No. 36314 REGISTERED PROFESSIONAL LAND SURVEYOR COMMONWEALTH OF MASSACHUSETTS



LOCUS MAP - NO SCALE

NO.	DATE	DESCRIPTION	BY
2	6-28-06	WETLAND FLAGS PER BELLINGHAM C.C. REVIEW	FJO
1	5-22-06	WETLAND FLAGS PER BELLINGHAM C.C. REVIEW	FJO

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

WETLAND DELINEATION PLAN
IN
BELLINGHAM, MASSACHUSETTS
PREPARED FOR
W/S DEVELOPMENT ASSOCIATES LLC
SCALE: 1"=40' SEPTEMBER 6, 2005

SHEET 10 OF 13

2005-065_ANRAD.dwg

LEGEND

N.V.D. 1929	EXISTING DATUM
300	EXISTING CONTOUR
	PROPERTY LINE
	LIMIT OF BORDERING VEGETATED WETLANDS
	LIMIT OF ISOLATED NON-JURISDICTIONAL WETLANDS
wf a-100	WETLAND FLAG/SERIES/NUMBER
	LIMIT OF 100 FOOT WETLAND BUFFER ZONE
	LIMIT OF BORDERING LAND SUBJECT TO FLOODING
	LIMIT OF 200 FOOT RIVERFRONT AREA

WETLAND FLAG SERIES c - 1-12, c - 100-124, c - 100-108 1257

WETLAND FLAG SERIES a - 200-254 1264

WETLAND FLAG SERIES v - 1-10 281

WETLAND FLAG SERIES a - 1-69 1817

ISOLATED NON-JURISDICTIONAL WETLAND

DETENTION POND

DETENTION POND

100' WETLAND BUFFER ZONE

CULVERT

SPRING BROOK

N/F HARTFORD AVE. ASSOCIATES LIMITED PARTNERSHIP

RTE. I-495 (1965 STATE HIGHWAY LAYOUT)

LIMIT OF ANRAD REQUEST

LIMIT OF ANRAD REQUEST

BIT CONC

PREPARED BY

HERITAGE DESIGN GROUP

PLANNERS ♦ SURVEYORS ♦ ENGINEERS

ONE MAIN STREET
WHITINSVILLE, MASSACHUSETTS 01588
TEL 508-266-2066 FAX 508-266-2067
A LIMITED LIABILITY COMPANY

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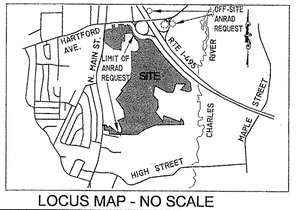
PL BK 332 ~ No. 171 OF 1986

HOLLAND E SHAW No. 30314 REGISTERED PROFESSIONAL LAND SURVEYOR COMMONWEALTH OF MASSACHUSETTS



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GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

WETLAND DELINEATION PLAN

IN

BELLINGHAM, MASSACHUSETTS

PREPARED FOR

W/S DEVELOPMENT ASSOCIATES LLC

SCALE: 1"=40' SEPTEMBER 6, 2005

SHEET 11 OF 13

2005-065_ANRAD.dwg

LEGEND

N.V.D. 1929	EXISTING DATUM
300	EXISTING CONTOUR
	PROPERTY LINE
	LIMIT OF BORDERING VEGETATED WETLANDS
	LIMIT OF ISOLATED NON-JURISDICTIONAL WETLANDS
wf a-100	WETLAND FLAG/SERIES/NUMBER
	LIMIT OF 100 FOOT WETLAND BUFFER ZONE
	LIMIT OF BORDERING LAND SUBJECT TO FLOODING
	LIMIT OF 200 FOOT RIVERFRONT AREA

PREPARED BY

HERITAGE DESIGN GROUP

PLANNERS ♦ SURVEYORS ♦ ENGINEERS

ONE MAIN STREET
WHITINSVILLE, MASSACHUSETTS 01588
TEL 508-266-2066 FAX 508-266-2067
A LIMITED LIABILITY COMPANY

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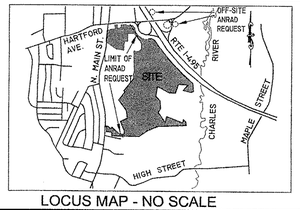
PL BK 515 ~ No. 762 & 763 OF 2003
PL BK 332 ~ No. 171 OF 1986

COMMONWEALTH OF MASSACHUSETTS
HOLLAND E. SHAW No. 40314 REGISTERED PROFESSIONAL LAND SURVEYOR



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(IN FEET)
1 inch = 40 ft.

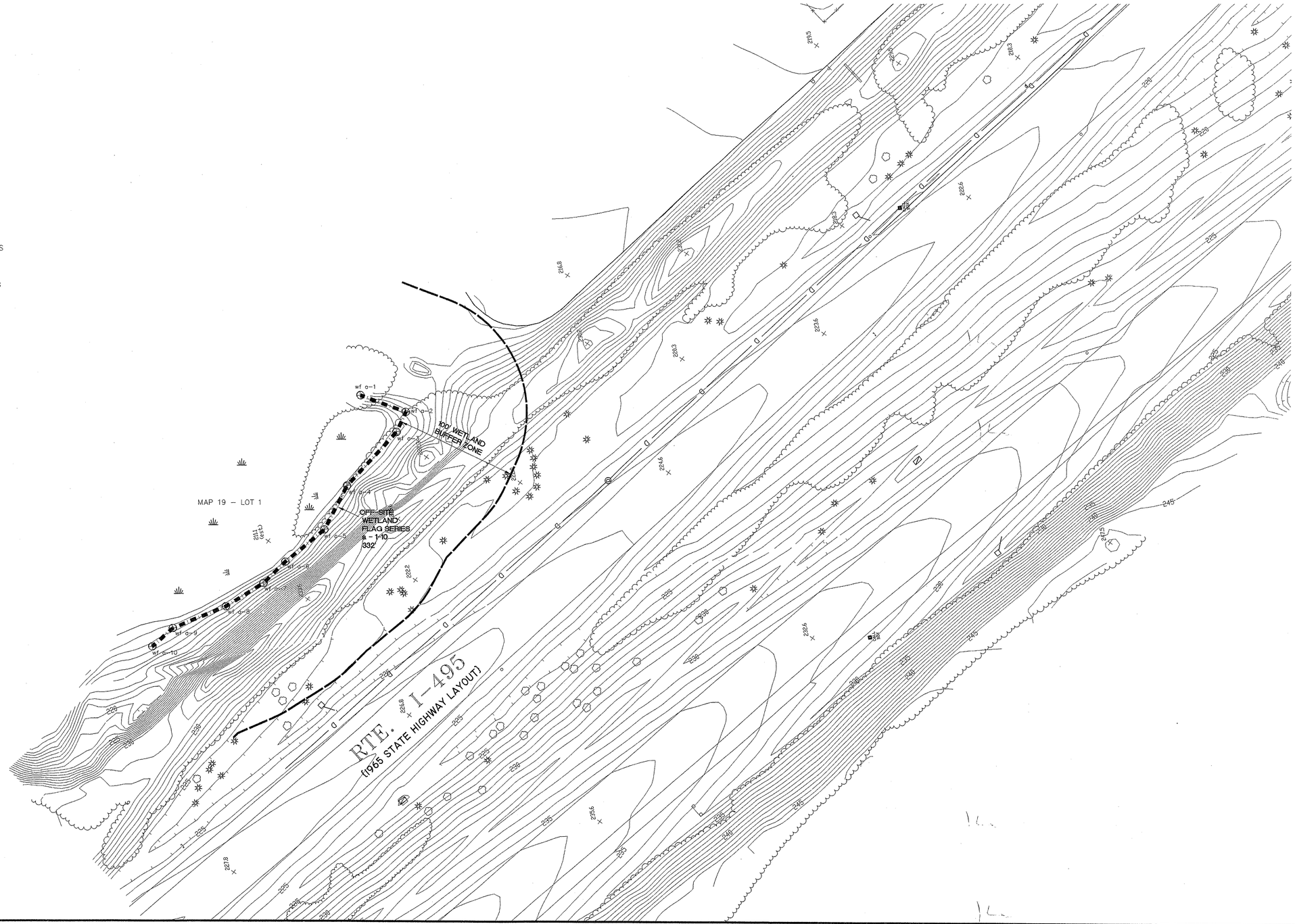
WETLAND DELINEATION PLAN
IN
BELLINGHAM, MASSACHUSETTS
PREPARED FOR
W/S DEVELOPMENT ASSOCIATES LLC
SCALE: 1"=40' SEPTEMBER 6, 2005

SHEET 12 OF 13

2005-065_ANRAD.dwg

LEGEND

N.V.D. 1929	EXISTING DATUM
300	EXISTING CONTOUR
	PROPERTY LINE
	LIMIT OF BORDERING VEGETATED WETLANDS
	LIMIT OF ISOLATED NON-JURISDICTIONAL WETLANDS
⊕ wf a-100	WETLAND FLAG/SERIES/NUMBER
	LIMIT OF 100 FOOT WETLAND BUFFER ZONE
	LIMIT OF BORDERING LAND SUBJECT TO FLOODING
	LIMIT OF 200 FOOT RIVERFRONT AREA



PREPARED BY

HERITAGE DESIGN GROUP

PLANNERS ♦ SURVEYORS ♦ ENGINEERS

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WHITINSVILLE, MASSACHUSETTS 01588
TEL 508-266-2066 FAX 508-266-2067

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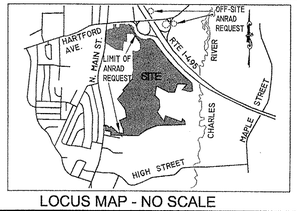
PL BK 515 ~ No. 762 & 763 OF 2003
PL BK 352 ~ No. 171 OF 1986

COMMONWEALTH OF MASSACHUSETTS
HOLLAND E. SHAW
No. 30314
REGISTERED PROFESSIONAL LAND SURVEYOR



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GRAPHIC SCALE

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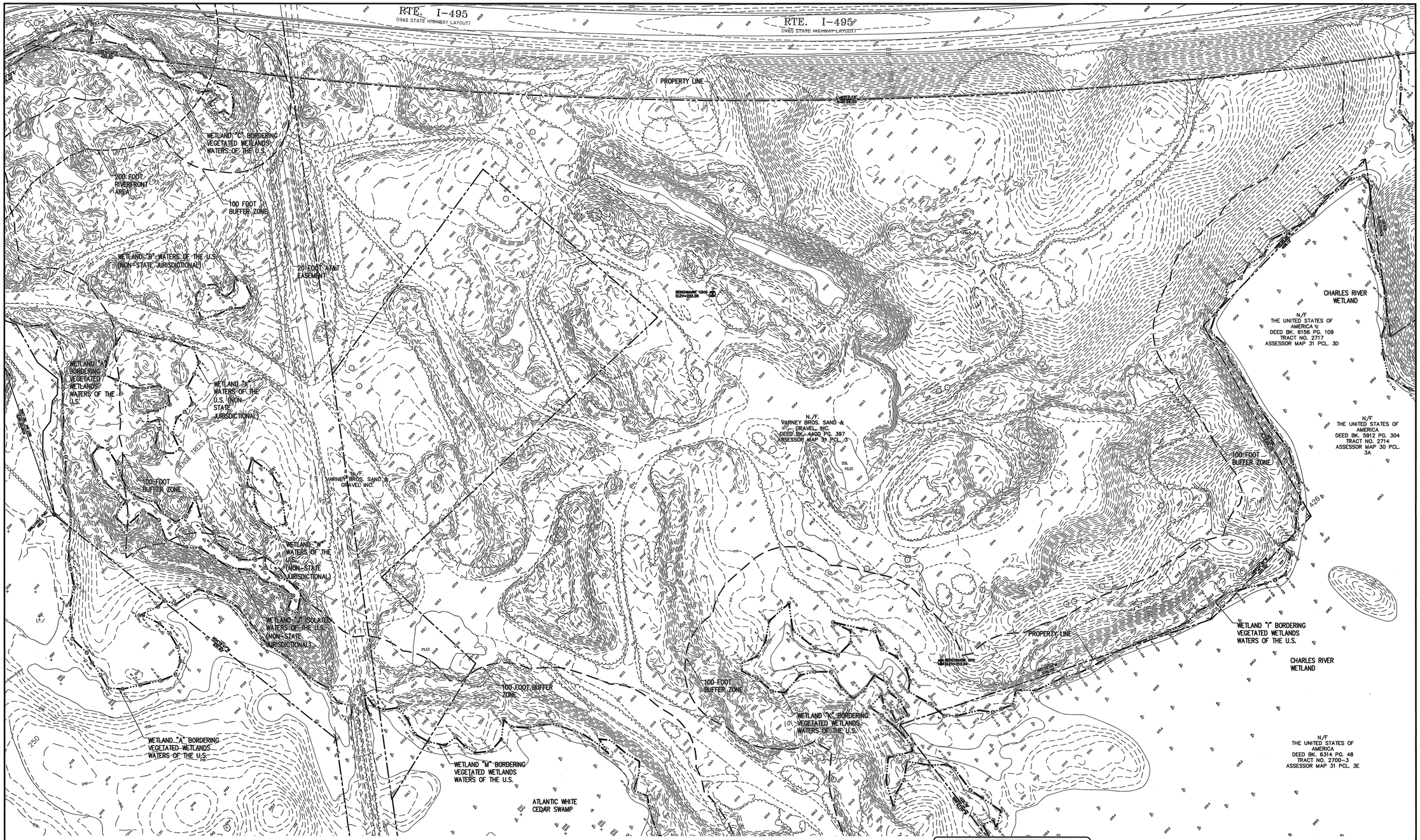
(IN FEET)
1 inch = 40 ft.

WETLAND DELINEATION PLAN
IN
BELLINGHAM, MASSACHUSETTS
PREPARED FOR
W/S DEVELOPMENT ASSOCIATES LLC
SCALE: 1"=40' SEPTEMBER 6, 2005

SHEET 13 OF 13

2005-065_ANRAD.dwg



NOTES:

1. THE LIMITS OF BORDERING VEGETATED WETLANDS, ISOLATED WETLANDS, RIVERFRONT AREA, AND 100 FOOT BUFFER ZONE SHOWN ON THIS PLAN HAVE BEEN ESTABLISHED BY AN ORDER OF RESOURCE AREA DELINEATION (ORAD) ISSUED BY THE BELLINGHAM CONSERVATION COMMISSION ON JULY 31, 2006.
2. THE FLOW REGIMES (INTERMITTENT/PERENNIAL) OF SPRING BROOK AND STREAMS A, B, AND C WERE ESTABLISHED BY THE ORAD.
3. THE 100-YEAR FLOOD PLAIN ON THE SITE IS CONTAINED WITHIN THE BORDERING VEGETATED WETLANDS PER THE ORAD.
4. ISOLATED LAND SUBJECT TO FLOODING IS NOT PRESENT ON THIS SITE PER THE ORAD.
5. THE U.S. ARMY CORPS OF ENGINEERS ISSUED PRELIMINARY JURISDICTIONAL DETERMINATION FOR THE SITE ON NOVEMBER 27, 2006 THAT IDENTIFIED ISOLATED WETLANDS A, B, C, I, J, K, L, M, P, W, AND X AS FEDERALLY JURISDICTIONAL WATERS OF THE U.S. THE LIMITS OF ISOLATED WETLANDS SHOWN ON THIS PLAN WERE ESTABLISHED BY THE ORAD.
6. EXISTING TOPOGRAPHIC SURVEY PERFORMED BY HERITAGE DESIGN GROUP, ONE MAIN STREET, WHITINSVILLE, MA, 01588 TEL. (508) 266-2066 BETWEEN 4/06 AND 12/06.
7. VERTICAL DATUM NVD 1929.

HERITAGE DESIGN GROUP
PLANNERS • SURVEYORS • ENGINEERS
LANDSCAPE ARCHITECTS
ONE MAIN STREET
WHITINSVILLE, MASSACHUSETTS 01588
TEL 508-266-2066 - FAX 508-266-2067
A LIMITED LIABILITY COMPANY

COMMONWEALTH OF MASSACHUSETTS — HOLLAND E. SHAW No. 39019 — REGISTERED PROFESSIONAL LAND SURVEYOR — 2-1-08

LEGEND

210	CONTOUR W/ELEVATION
211	CONTOUR W/ELEVATION
	GRAVEL BOUNDARY
	FENCE
	TREE LINE
	WETLAND BOUNDARY
	100 FOOT WETLAND BUFFER
	RIVERFRONT AREA
X 211.3	SPOT GRADE
	TREE
	EDGE OF STREAM
wf x-1	WETLAND FLAG & NO.
	BENCHMARK

GRAPHIC SCALE

80 0 40 80 160 320

(IN FEET)
1 inch = 80 ft.

NOT FOR CONSTRUCTION

THESE PLANS WERE PREPARED FOR THE PURPOSE OF OBTAINING STATE AND LOCAL APPROVALS AND ARE NOT INTENDED TO BE USED AS CONSTRUCTION DOCUMENTS.

No.	Date	Description
3	1/22/08	CONSERVATION COMMISSION COMMENTS & MISCELLANEOUS CHANGES
2	11/29/07	NO CHANGES

Revisions

Drawn By	Designed By	Checked By	Approved By
SJW	SJW	DMA	

TETRA TECH RIZZO
One Grant Street
Framingham, MA 01701-9005
508.903.2000
www.tetratechrizzo.com

Project Title
The Shoppes at Bellingham
Bellingham, MA

Sheet Title
Overall Existing Site Conditions Plan

Scale: 1"=80'
Job No.: 12700557
File Name: 12700557P-CEC01
Date: 6-21-07

Sheet No.
C-2

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(1965 STATE HIGHWAY LAYOUT)

SEE SHEET C-4

SEE SHEET C-5

SPRING BROOK

INTERMITTENT FLOW

S35°43'03"E 420.00'

WETLAND "C" BORDERING VEGETATED WETLANDS WATERS OF THE U.S.

DENSE TREES

200 FOOT RIVERFRONT AREA

100 FOOT BUFFER ZONE

20 FOOT (AT&T) EASEMENT

WETLAND "B" WATERS OF THE U.S. (NON-STATE JURISDICTIONAL)

100 FOOT BUFFER ZONE

WETLAND "X" WATERS OF THE U.S. (NON-STATE JURISDICTIONAL)

WETLAND "A" BORDERING VEGETATED WETLANDS WATERS OF THE U.S.

PROPERTY LINE

PROPERTY LINE

BENCHMARK TOHV ELEV=232.28

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

LEGEND

- 210 CONTOUR W/ELEVATION
- 211 CONTOUR W/ELEVATION
- GRAVEL BOUNDARY
- FENCE
- TREE LINE
- WETLAND BOUNDARY
- 100 FOOT WETLAND BUFFER
- RIVERFRONT AREA
- X 211.3 SPOT GRADE
- TREE
- EDGE OF STREAM
- wf x-1 WETLAND FLAG & NO.
- BENCHMARK

HERITAGE DESIGN GROUP

PLANNERS • SURVEYORS • ENGINEERS
LANDSCAPE ARCHITECTS

ONE MAIN STREET
WHITINSVILLE, MASSACHUSETTS 01588
TEL 508-266-2066 - FAX 508-266-2067
A LIMITED LIABILITY COMPANY

COMMONWEALTH OF MASSACHUSETTS
HOLLAND SHAW No. 29314
REGISTERED PROFESSIONAL LAND SURVEYOR
2-1-08

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Project Title

The Shoppes at Bellingham
Bellingham, MA

Sheet Title

Existing Site Conditions Plan
Sheet 1 of 4

Scale: 1"=40'
Job No.: 12700557
File Name: 12700557P-CEC01
Date: 6-21-07

Sheet No.
C-3

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RTE. I-495
(1965 STATE HIGHWAY LAYOUT)

PROPERTY LINE

L=201.15'
R=81.25.00

SEE SHEET C-3

100 FOOT BUFFER ZONE

WETLAND 1" BORDERING VEGETATED WETLANDS' WATERS OF THE U.S.

N88°36'26"W
408.12'

CHARLES RIVER WETLAND

N34°07'01"E
314.81'

PROPERTY LINE

SEE SHEET C-6

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

LEGEND

210	CONTOUR W/ELEVATION
211	CONTOUR W/ELEVATION
	GRAVEL BOUNDARY
x x x	FENCE
	TREE LINE
	WETLAND BOUNDARY
	100 FOOT WETLAND BUFFER
	RIVERFRONT AREA
X 211.3	SPOT GRADE
	TREE
	EDGE OF STREAM
wf x-1	WETLAND FLAG & NO.
	BENCHMARK

HERITAGE DESIGN GROUP
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LANDSCAPE ARCHITECTS
ONE MAIN STREET
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HOLLAND E. SHAW
No. 30316
REGISTERED PROFESSIONAL LAND SURVEYOR
2-1-08

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Sheet Title
Existing Site Conditions Plan
Sheet 2 of 4

Scale: 1"=40'
Job No.: 12700557
File Name: 12700557P-CEC01
Date: 6-21-07

Sheet No.
C-4

J:\Project\12700557\Civil\Plot\Planning Board Submission\12700557P-CEC01.dwg 1/28/2008 8:06:34 AM EST

SEE SHEET C-3

SEE SHEET C-6

WETLAND "K" WATERS OF THE U.S. (NON-STATE JURISDICTIONAL)

WETLAND "M" WATERS OF THE U.S. (NON-STATE JURISDICTIONAL)

WETLAND "J" WATERS OF THE U.S. (NON-STATE JURISDICTIONAL)

100 FOOT BUFFER ZONE

20 FOOT AT&T EASEMENT

WETLAND "A" BORDERING VEGETATED WETLANDS WATERS OF U.S.

PROPERTY LINE

N/F MARNEY BROS. SAND & GRAVEL INC.

100 FOOT BUFFER ZONE

PILES

100 FOOT BUFFER ZONE

WETLAND "M" BORDERING VEGETATED WETLANDS WATERS OF THE U.S.

ATLANTIC WHITE CEDAR SWAMP

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

LEGEND

210	CONTOUR W/ELEVATION
211	CONTOUR W/ELEVATION
	GRAVEL BOUNDARY
x x x	FENCE
	TREE LINE
	WETLAND BOUNDARY
	100 FOOT WETLAND BUFFER
	RIVERFRONT AREA
X 211.3	SPOT GRADE
	TREE
	EDGE OF STREAM
wf x-1	WETLAND FLAG & NO.
	BENCHMARK

HERITAGE DESIGN GROUP
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LANDSCAPE ARCHITECTS
ONE MAIN STREET
WHITINSVILLE, MASSACHUSETTS 01588
TEL 508-266-2066 - FAX 508-266-2067
A LIMITED LIABILITY COMPANY

COMMONWEALTH OF MASSACHUSETTS
HOLLAND E. SHAW
No. 39914
REGISTERED PROFESSIONAL ENGINEER
1-08

NOT FOR CONSTRUCTION

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1	11/29/07	NO CHANGES

Revisions

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Sheet Title
Existing Site Conditions Plan
Sheet 3 of 4

Scale: 1"=40'
Job No.: 12700557
File Name: 12700557P-CEC01
Date: 6-21-07

Sheet No.
C-5

J:\Project\12700557\Civil\Plot\Planning Board Submission\12700557P-CEC01.dwg 1/28/2008 8:06:34 AM EST

SEE SHEET C-4

SEE SHEET C-5

100 FOOT BUFFER ZONE

SOIL PILES

WETLAND "K" BORDERING VEGETATED WETLANDS WATERS OF THE U.S.

100 FOOT BUFFER ZONE

BENCHMARK 6HV
ELEV=212.34

100 FOOT BUFFER ZONE

100 FOOT BUFFER ZONE

WETLAND "I" BORDERING VEGETATED WETLANDS WATERS OF THE U.S.

PROPERTY LINE

CHARLES RIVER WETLAND

N68°32'30"W
252.05

N61°32'10"W
375.78

S09°27'02"W
425.79

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

LEGEND

- 210 CONTOUR W/ELEVATION
- 211 CONTOUR W/ELEVATION
- GRAVEL BOUNDARY
- FENCE
- TREE LINE
- WETLAND BOUNDARY
- 100 FOOT WETLAND BUFFER
- RIVERFRONT AREA
- X 211.3 SPOT GRADE
- TREE
- EDGE OF STREAM
- wf x-1 WETLAND FLAG & NO.
- BENCHMARK

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TEL 508-266-2066 - FAX 508-266-2067
A LIMITED LIABILITY COMPANY

COMMONWEALTH OF MASSACHUSETTS
HOLLAND E. SHAW
No. 39014
REGISTERED PROFESSIONAL ENGINEER
2-1-08

NOT FOR CONSTRUCTION

THESE PLANS WERE PREPARED FOR THE PURPOSE OF OBTAINING STATE AND LOCAL APPROVALS AND ARE NOT INTENDED TO BE USED AS CONSTRUCTION DOCUMENTS.

No.	Date	Description
3	1/22/08	CONSERVATION COMMISSION COMMENTS & MISCELLANEOUS CHANGES
2	11/29/07	NO CHANGES
1		

Revisions

Drawn By	Designed By	Checked By	Approved By
SJW	SJW	DMA	

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Project Title

The Shoppes at Bellingham
Bellingham, MA

Sheet Title

Existing Site Conditions Plan
Sheet 4 of 4

Scale: 1"=40'
Job No.: 12700557
File Name: 12700557P-CEC01
Date: 6-21-07

Sheet No.
C-6

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