

SITE PLAN REVIEW AND STORMWATER
MANAGEMENT PERMIT APPLICATION
91 GROTON-HARVARD ROAD
AYER, MA

SITE DATA

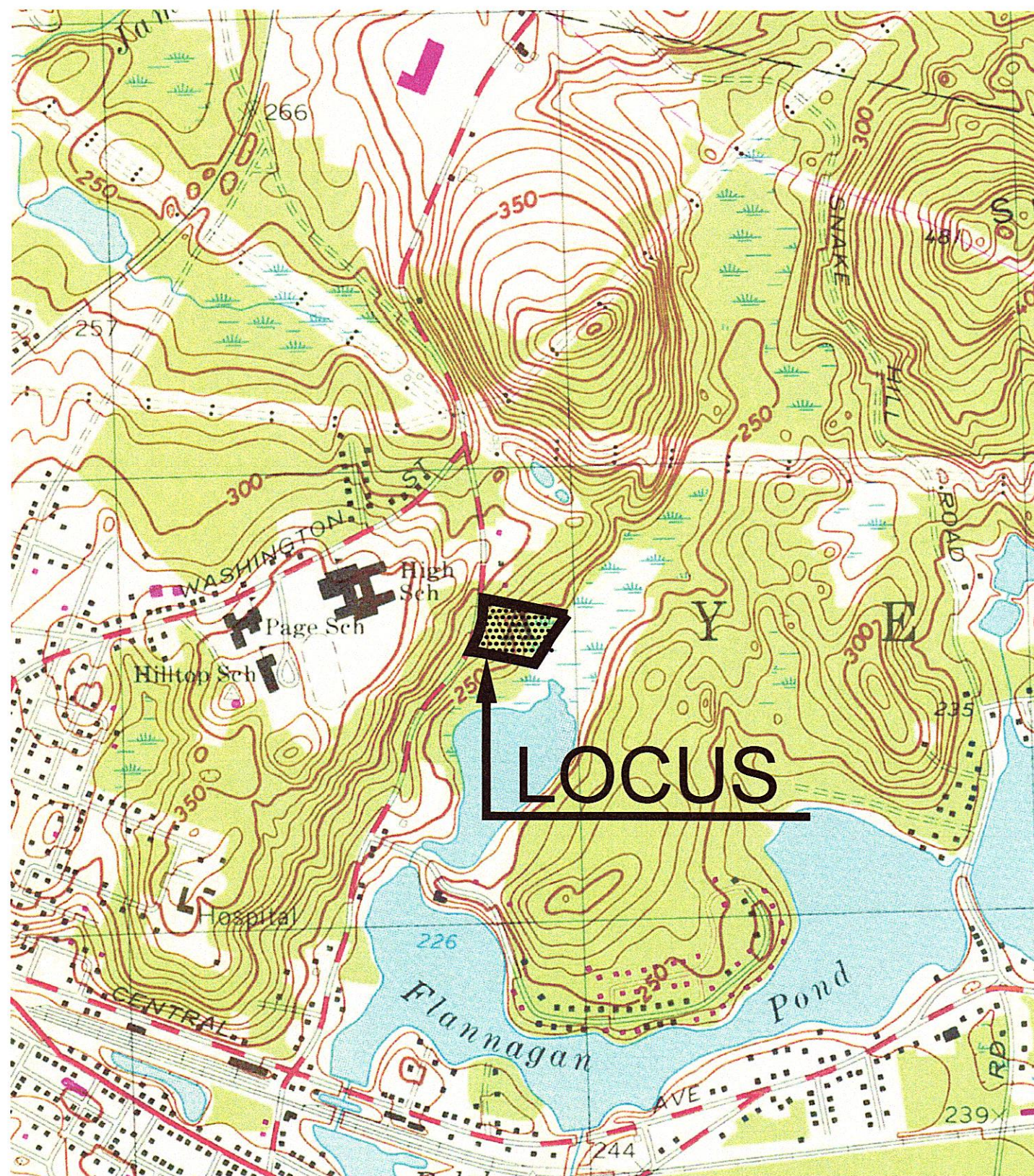
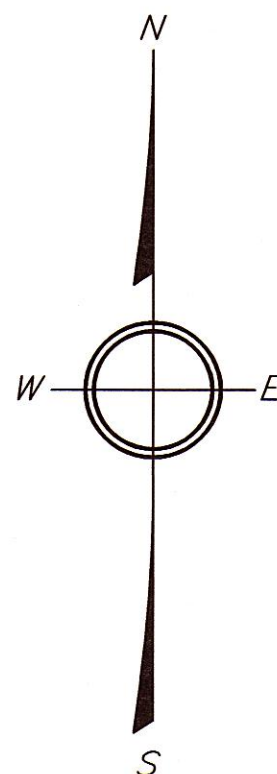
LOT AREA: 4.21± AC. (183,585 SF)
BUILDING USE: BUSINESS OFFICE, WAREHOUSE & EXTERIOR STORAGE
WATER SUPPLY: MUNICIPAL WATER MAIN
SEWAGE DISPOSAL: ON-SITE SEWAGE DISPOSAL SYSTEM (495 GPD)

GENERAL NOTES

- LOCATIONS OF EXISTING UNDERGROUND UTILITIES/OBSTRUCTIONS/SYSTEMS SHOWN HEREON ARE APPROXIMATE ONLY. ALL UTILITIES/OBSTRUCTIONS/SYSTEMS MAY NOT BE SHOWN. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING ALL UNDERGROUND UTILITIES/OBSTRUCTIONS/SYSTEMS, WHETHER OR NOT SHOWN HEREON.
- UNLESS OTHERWISE SHOWN, ALL NEW UTILITIES SHALL BE UNDERGROUND.
- BURIED UTILITIES SHALL BE INSTALLED IN ACCORDANCE WITH THEIR RESPECTIVE COMPANY SPECIFICATIONS.
- CONSTRUCTION LAYOUT OF BUILDING AND SITE IMPROVEMENTS SHALL BE PERFORMED BY A LICENSED PROFESSIONAL LAND SURVEYOR. LOCATIONS OF EXISTING FEATURES OR PROPOSED IMPROVEMENTS DERIVED BY SCALING DRAWINGS MAY NOT BE ACCURATE. PROPERTY LINES SHOWN HEREON ARE APPROXIMATE. SEE PLAN REFERENCE HEREON.
- SAFETY MEASURES, CONSTRUCTION METHODS, AND CONTROL OF WORK SHALL BE RESPONSIBILITY OF CONTRACTOR.
- CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR AND/OR REPLACEMENT OF ANY EXISTING UTILITY OR STRUCTURE DAMAGED DURING CONSTRUCTION THAT ARE NOT DESIGNATED FOR DEMOLITION AND/OR REMOVAL HEREON. DAMAGED UTILITY OR STRUCTURE SHALL BE REPAIRED TO THE SATISFACTION OF THEIR RESPECTIVE OWNERS.
- ANY INTENDED REVISION OF THE HORIZONTAL AND/OR VERTICAL LOCATION OF IMPROVEMENTS TO BE CONSTRUCTED AS SHOWN HEREON SHALL BE REVIEWED AND APPROVED BY ENGINEER PRIOR TO IMPLEMENTATION.
- CONTRACTOR SHALL NOTIFY ENGINEER UPON COMMENCEMENT OF CONSTRUCTION IN ORDER TO ENSURE THAT REQUIRED INSPECTIONS ARE PERFORMED IN A TIMELY AND EFFICIENT MANNER.
- CONTRACTOR SHALL PROMPTLY NOTIFY ENGINEER UPON DISCOVERY OF ANY UNFORESEEN SURFACE OR SUBSURFACE CONDITIONS THAT MAY IMPACT SITE CONSTRUCTION.
- FINISH RM ELEVATIONS SHOULD MATCH PAVEMENT, GRADING OR LANDSCAPING, UNLESS SPECIFICALLY INDICATED OTHERWISE.
- WHERE EXISTING UTILITY LINES/STRUCTURES ARE TO BE CUT/BROKEN DOWN/ABANDONED, LINES/STRUCTURES SHALL BE PLUGGED/CAPPED/FILLED IN ACCORDANCE WITH UTILITY OWNER REQUIREMENTS.
- EROSION CONTROL MEASURES, SUCH AS SILT FENCE OR STRAW WATTLES AS MAY BE SHOWN HEREON, SHALL BE INSTALLED BEFORE EARTH DISTURBANCE OCCURS WITHIN BUFFER ZONE, AND SHALL SERVE AS THE LIMIT OF WORK.
- WHERE THE WORD "INSTALL" IS USED HEREIN, IT IS INTENDED TO DIRECT CONTRACTOR TO "FURNISH, INSTALL, AND PLACE IN OPERATION" THE COMPONENT REFERRED TO.
- LIMITS OF WORK SHALL BE STAKED IN THE FIELD PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- ALL STORM DRAIN PIPE TO BE SMOOTH INTERIOR HDPE PIPE, 2.0 PSI GASKETED JOINT, UNLESS OTHERWISE NOTED.
- WHERE SHOWN, CONSTRUCTION NOTES ARE INTENDED TO SUMMARIZE AND CLARIFY MAJOR ITEMS OF WORK. THESE NOTES SHOULD NOT BE CONSTRUED AS AN EXHAUSTIVE LISTING OF ALL WORK REQUIRED. CONTRACTOR SHOULD CONTACT ENGINEER WHEN FURTHER CLARIFICATION OF DEPICTED WORK IS DESIRED.
- CONSTRUCTION OF FIRE AND DOMESTIC WATER SUPPLY IMPROVEMENTS SHALL CONFORM TO TOWN OF AYER REQUIREMENTS.
- WHERE DIMENSIONS INVOLVE CURB, DIMENSIONS ARE TO FACE OF CURB. WHERE SLOPED GRANITE CURB OR CAPE COD BERM SPECIFIED, FACE OF CURB IS EDGE OF FINISH PAVEMENT AT TOE OF CURB.
- NO DEBRIS, JUNK, RUBBISH OR OTHER NON-BIODEGRADABLE MATERIALS, FILL CONTAINING HAZARDOUS MATERIALS OR WASTES, OR STUMPS SHALL BE BURIED ON ANY LAND ON THIS SITE, OR LEFT ON ANY LOT OR ON THE STREET RIGHT OF WAY.

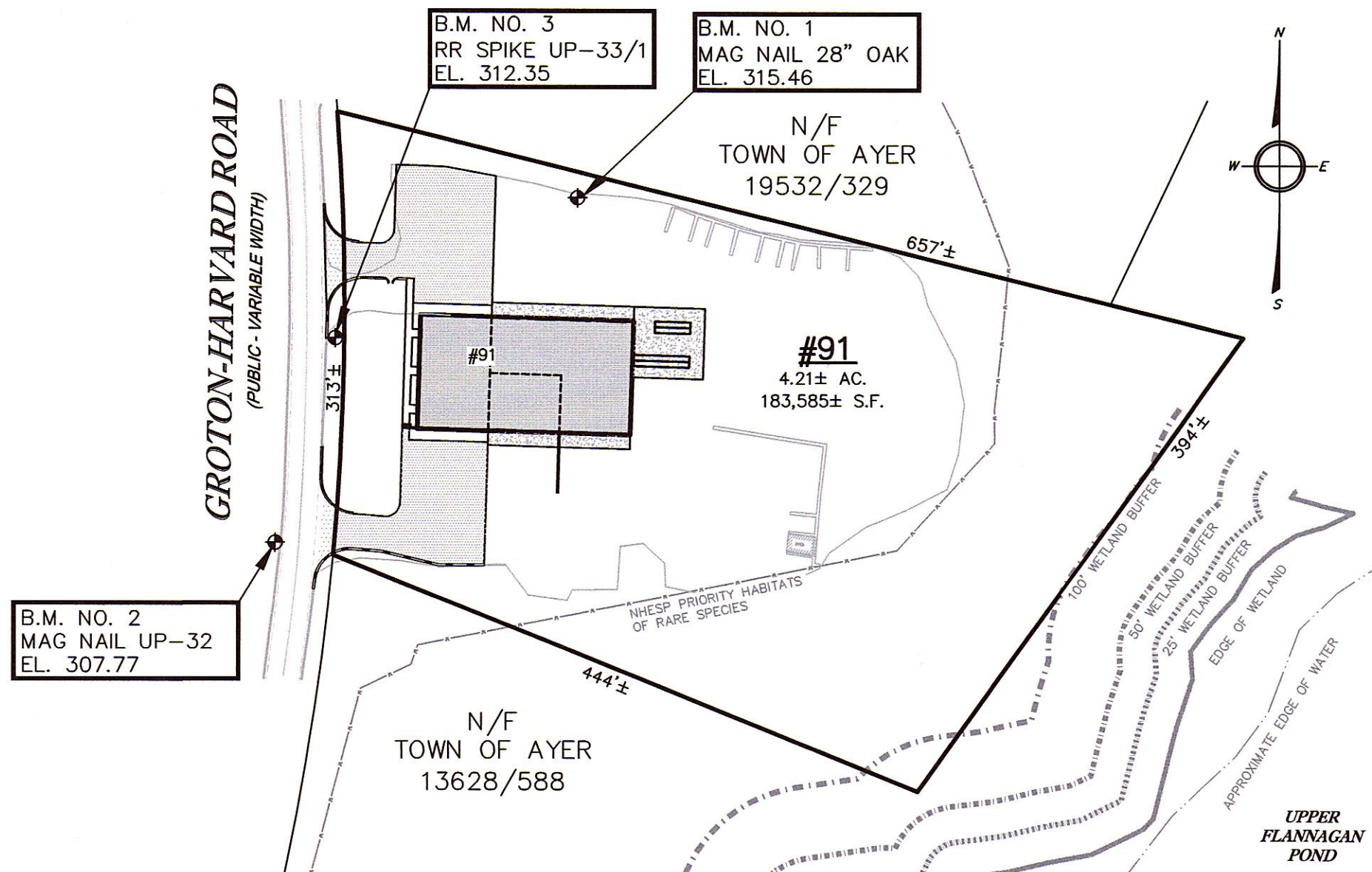
REGULATORY NOTES

- CONTRACTOR SHALL CONTACT DIG-SAFE FOR UNDERGROUND UTILITY MARKING AT 888.344.7233 AT LEAST 72 HOURS PRIOR TO COMMENCEMENT OF ANY WORK. CONTRACTOR SHALL GIVE TWENTY-FOUR (24)-HOUR NOTICE TO PERTINENT TOWN DEPARTMENTS BEFORE COMMENCING ANY WORK IN THE FIELD.
- CONTRACTOR SHALL COORDINATE AND OBTAIN ALL CONSTRUCTION PERMITS REQUIRED BY REGULATORY AUTHORITIES.
- CONTRACTOR SHALL BE AWARE OF ALL CONSTRUCTION REQUIREMENTS, CONDITIONS, AND LIMITATIONS IMPOSED BY PERMITS AND APPROVALS ISSUED BY REGULATORY AUTHORITIES PRIOR TO COMMENCEMENT OF ANY WORK.
- ALL WORK OUTSIDE OF BUILDING THAT IS LESS THAN 10 FEET FROM THE INSIDE FACE OF BUILDING FOUNDATION SHALL CONFORM WITH THE UNIFORM STATE PLUMBING CODE OF MASSACHUSETTS, 248 CMR 2.00.
- GENERAL COMPLIANCE WITH 28 CFR PART 36 - 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN AND 521 CMR PART C, EXTERIOR OF THE MASSACHUSETTS ARCHITECTURAL ACCESS BOARD REGULATIONS IS INTENDED. CONTRACTOR SHALL VERIFY COMPLIANCE DURING CONSTRUCTION AND SHALL NOTIFY THE OWNER OF ANY NON-COMPLIANCE ISSUES AS SOON AS DISCOVERED.



VICINITY MAP

SCALE: 1" = 1,000'



PLOT PLAN

SCALE: 1" = 100'

Zoning Summary

| Owner: North Atlantic Concrete | | Map: 13 | |
|--------------------------------------|--------------------------|--|--|
| Site Address: 91 Groton-Harvard Road | | Parcel: 8 | |
| Ayer, MA | | Lot: — | |
| Proposed Use: | | Mixed Use (Business Office, Interior Storage & Exterior Storage) | |
| Parameter | Section [1] | Requirement | Remarks |
| Zoning District | Zoning Map | Residence A-1 | |
| Overlay District | Zoning Map | — | |
| Use | 5.2.5.10 Business Office | Not allowed | Existing Non-conforming |
| | 5.2.6.3 Interior Storage | Not allowed | Existing Non-conforming |
| | 5.2.6.4 Exterior Storage | Not Allowed | Existing Non-conforming |
| Lot Area | 6.2 (Table) | 40,000 SF | 183,585 SF |
| Frontage | 6.2 (Table) | 150 FT | 312.8 FT |
| Yard | 6.2 (Table) | | |
| | Front | 35 FT | |
| | Side | 15 FT | |
| | Rear | 30 FT | |
| Max. Building Height | 6.2 (Table) | 35 FT, 2-1/2-story | 22 FT |
| Max. Building Coverage | 6.2 (Table) | 15% | Existing Non-conforming, see coverage computations |
| Max. Floor Area Ratio | 6.2 (Table) | N/A | |
| Minimum Open Space | 6.2 (Table) | 80% | Existing Non-conforming, see coverage computations |
| Loading Space | 9.1.3.C | Minimum one loading space | |

NOTES:
[1] Reference to section of Zoning Bylaw, last revised April 2022.

ABBREVIATIONS:
SF=square feet; CF=cubic feet; FT=feet; GFA=gross floor area; AC=acres; PB=Planning Board; ZBA=Zoning Board of Appeals; MPA=interim wellhead protection area; ACEC=Area of Critical Environmental Concern; FRM=Flood Insurance Rate Map; MDEP=Massachusetts Dept of Environmental Protection

Coverage Computations

| Parameter | Area (Acres) | Area (SF) | Fraction of Total Lot Area (%) |
|---------------------------|--------------|-----------|--------------------------------|
| Existing Condition | | | |
| Lot Area | 4.21 | 183,585 | 100% |
| Building Footprint | 0.08 | 2,522 | 1.4% |
| Paved Area | 0.38 | 16,727 | 9.1% |
| Gravel Area | 1.82 | 79,239 | 43.2% |
| Total Impervious Coverage | 2.26 | 98,488 | 53.6% |
| Total Open Space [1] | 1.95 | 85,097 | 46.4% |
| Proposed Condition | | | |
| Building Footprint | 0.28 | 12,350 | 6.7% |
| Paved Area | 0.43 | 18,933 | 10.1% |
| Gravel Area | 1.51 | 65,762 | 35.8% |
| Total Impervious Coverage | 2.22 | 96,755 | 52.7% |
| Total Open Space [1] | 1.99 | 86,830 | 47.3% |

[1] Total Open Space excludes building footprint, paved area, and gravel area

Parking Computations

| Use [1] | Formula | Variable | Required Spaces | Provided Spaces |
|------------------|----------------------------|----------|-----------------|-----------------|
| Business Office | One space per 400 SF GFA | 4,000 SF | 10 | |
| Interior Storage | One space per 1,500 SF GFA | 8,000 SF | 6 | |
| | | Total: | 16 | 16 |

NOTES:
[1] Reference to section of Zoning Bylaw, last revised April 25, 2022.

LOCAL SITE PLAN APPLICATION WAIVERS

- REQUIRED: PROVIDE DETAILED LANDSCAPING PLAN.
- REQUESTED: WAIVE A DETAILED LANDSCAPING PLAN WITHIN SITE PLAN APPLICATION BECAUSE THE PROPOSED PLANTING ON SITE IS LIMITED TO SHRUBS IN FRONT OF THE PROPOSED COMMERCIAL BUILDING. (SEE SHEET C4.1 AND C6.1) THE REDEVELOPMENT OF THE PROJECT SITE WILL GENERALLY MAINTAIN THE EXISTING TREES/SHRUBS THAT ARE ACTING AS NATURAL LANDSCAPE BUFFER/SCREENING SURROUNDING THE PREVIOUSLY DISTURBED PORTION OF THE SITE.
- REQUIRED: PROVIDE TRAFFIC IMPACT STATEMENT DETAILS.
- REQUESTED: WAIVE FOR TRAFFIC IMPACT STATEMENT DETAILS WITHIN SITE PLAN APPLICATION BECAUSE ALTHOUGH THE PROPOSED BUILDING MAY PROVIDE MORE SPACE FOR OFFICE AND INTERIOR STORAGE USE, THE APPLICANT DOES NOT ANTICIPATE MORE ONSITE PERSONNEL / EMPLOYEES THAT WOULD BE COMING AND LEAVING THE SITE ON A DAILY BASIS THAN THE CURRENT CONDITION AND EXISTING BUSINESSES RENTING INTERIOR AND EXTERIOR STORAGE SPACE WILL REMAIN THE SAME, THEREFORE ONSITE TRAFFIC PATTERNS WILL GENERALLY REMAIN THE SAME.
- REQUIRED: PROVIDE PHOTOMETRIC PLANS FOR ALL OUTDOOR LIGHTING WITHIN SITE PLAN APPLICATION.
- REQUESTED: WAIVE FOR PHOTOMETRIC PLANS WITHIN SITE PLAN APPLICATION BECAUSE SITE LIGHTING IS LIMITED TO WALL MOUNTED LIGHT FIXTURES THAT ARE MOUNTED TO THE EXTERIOR WALL OF THE PROPOSED BUILDING WITH AUTOMATIC SHUT-OFF FUNCTION AS OPERATING HOURS FOR THE EXISTING BUSINESSES ARE LIMITED TO WEEKDAYS FROM 7AM - 5PM, THEREFORE A PHOTOMETRIC PLAN WOULD BE UNNECESSARY.

LOCAL STORMWATER MANAGEMENT WAIVER REQUEST

- REQUIRED: STORMWATER MANAGEMENT SYSTEMS ON REDEVELOPMENT SITES SHALL ALSO IMPROVE EXISTING CONDITIONS BY REQUIRING THAT STORMWATER MANAGEMENT SYSTEMS BE DESIGNED TO:
- RETAIN THE VOLUME OF RUNOFF EQUIVALENT TO, OR GREATER THAN, 0.80 INCH MULTIPLIED BY THE TOTAL POST-CONSTRUCTION IMPERVIOUS SURFACE AREA ON THE SITE AND/OR
 - REMOVE 80% OF THE AVERAGE ANNUAL POST-CONSTRUCTION LOAD OF TOTAL SUSPENDED SOLIDS (TSS) GENERATED FROM THE TOTAL POST-CONSTRUCTION IMPERVIOUS AREA ON THE SITE AND 50% OF THE AVERAGE ANNUAL LOAD OF TOTAL PHOSPHORUS (TP) GENERATED FROM THE TOTAL POST-CONSTRUCTION IMPERVIOUS SURFACE AREA ON THE SITE.
- REQUESTED: ALLOW WATER QUALITY RETENTION VOLUME AND POLLUTANT REMOVAL (TSS AND TP) TO BE PROVIDED TO ONLY THE REDEVELOPMENT PORTION OF THE PROJECT SITE.

SHEET INDEX

- C1.1 TITLE SHEET
C2.1 EXISTING CONDITIONS PLAN
C3.1 EROSION AND SEDIMENT CONTROL PLAN
C4.1 SITE LAYOUT AND UTILITIES PLAN
C5.1 GRADING AND DRAINAGE PLAN
C6.1 CONSTRUCTION DETAILS
C6.2 CONSTRUCTION DETAILS

EXISTING CONDITIONS NOTES:

- EXISTING CONDITION INFORMATION BASED ON AN ON-THE-GROUND TOPOGRAPHIC & BOUNDARY SURVEY PERFORMED BY GOLDSMITH, PREST & RINGWALL, INC. DATED 05/04/2018, 11/08/2023 & 11/20/2023.
- THE WETLAND DELINEATION SHOWN HAS BEEN PERFORMED BY MATTHEW S. MARRO ENVIRONMENTAL CONSULTING DURING NOVEMBER 2023.
- WATER SERVICE TIE CARD AS PROVIDED BY THE TOWN OF AYER DEPARTMENT OF PUBLIC WORKS FOR 91 GROTON-HARVARD ROAD. DATED 4/27/2023.

PLAN REFERENCES:

- "SUBDIVISION OF LAND IN AYER, MASS." SURVEYED FOR BREAKTHROUGH CORPORATION BY CHARLES A. PERKINS CO. INC. DATED SEPTEMBER 1972. REVISED NOVEMBER 30, 1972. AS RECORDED MIDDLESEX SOUTH REGISTRY OF DEEDS. PLAN NO. 140 OF 1973. BOOK 12375, PAGE 638.
- "1977 WATER MAIN CONSTRUCTION - GROTON HARVARD ROAD STA. 374+80 TO STA. 464+65" PREPARED BY CDM SMITH, INC. DATED OCTOBER 1977. LAST REVISED NOVEMBER 1978 FOR RECORD DRAWING.
- "PACKAGE PLAN - NORTH ATLANTIC CONCRETE" AS PREPARED BY PACKAGE STEEL SYSTEMS, INC. PREPARED FOR NORTH ATLANTIC CONCRETE DATED 11/20/23. PLAN ID. 02311-0260. DRAWING: FRXS-2.
- "COMMERCIAL DEVELOPMENT - SUBSURFACE SEWAGE DISPOSAL SYSTEM - 91 GROTON-HARVARD ROAD" AS PREPARED BY GOLDSMITH, PREST & RINGWALL, INC. DATED TBD.

DRAWING ISSUED FOR:

- ☐ CONCEPT ☐ CONSTRUCTION
☒ PERMIT ☐ CONSTRUCTION RECORD

THIS DRAWING MAY NOT SHOW CONSTRUCTION DETAILS AND SPECIFICATIONS FOR ALL PROPOSED IMPROVEMENTS, AND MAY NOT IDENTIFY ALL CONSTRUCTION WORK ITEMS/AREAS OF CONTRACTOR JURISDICTION.

PER 250 CMR 5.03(13), THE FOLLOWING ARE EXCLUDED FROM THE PROFESSIONAL ENGINEER'S RESPONSIBILITY: ALL BOUNDARY INFORMATION; LOCATION OF EXISTING STRUCTURES, TREES, UTILITIES, TOPOGRAPHY OR SIMILAR FEATURES; DESIGN OF RETAINING WALLS, PROPRIETARY EQUIPMENT. SEE EXISTING CONDITION NOTES.

NO. DATE BY APP. REVISION DESCRIPTION

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for Land & Structures

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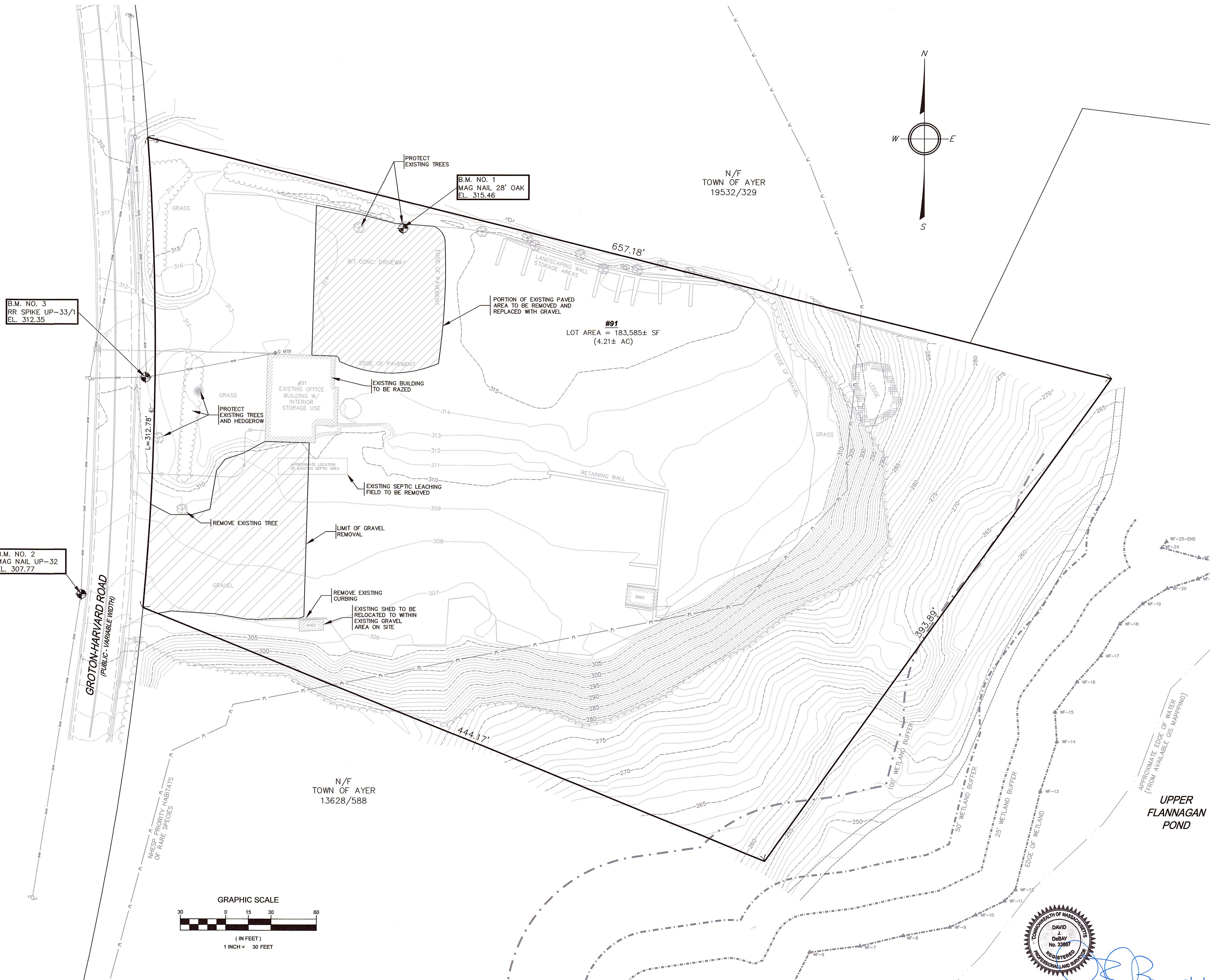
COMMERCIAL DEVELOPMENT

TITLE SHEET

91 GROTON-HARVARD ROAD
AYER, MA

PREPARED FOR:
NORTH ATLANTIC CONCRETE
270 AYER RD, UNIT 1
HARVARD, MA 01451

DES. BY: KI
CHK. BY: NMP
DATE: MARCH 2024
JOB 231083
C1.1



| LEGEND | |
|----------|--------------------------------|
| EXISTING | PROPOSED |
| 100 | ELEVATION CONTOUR |
| 100.0 | SPOT GRADE |
| --- | PROPERTY LINE |
| --- | WETLAND DELINEATION |
| --- | WETLAND BUFFER ZONE |
| --- | SHORELINE |
| --- | 100-YEAR FLOODPLAIN LIMIT |
| --- | TREE LINE / EDGE OF VEGETATION |
| --- | EDGE OF PAVEMENT |
| --- | CAPE COD BERM CURBING |
| --- | GRANITE CURBING |
| --- | GRAVEL/DIRT ROAD |
| --- | STOCKADE FENCE |
| --- | STONE WALL |
| --- | WATER MAIN |
| --- | WATER SERVICE |
| --- | FIRE SERVICE |
| --- | WATER VALVE |
| --- | FIRE HYDRANT |
| --- | FORCE MAIN |
| --- | GRAVITY SEWER LINE |
| --- | SEWER MANHOLE |
| --- | GAS LINE |
| --- | GAS SERVICE |
| --- | GAS VALVE |
| --- | BURIED POWER LINE |
| --- | OVERHEAD POWER LINE |
| --- | UTILITY POLE |
| --- | GUY WIRE |
| --- | ELECTRIC BOX |
| --- | STORM DRAIN |
| --- | UNDERDRAIN |
| --- | ROOF DRAIN |
| --- | FOUNDATION DRAIN |
| --- | CATCH BASIN |
| --- | DRAIN MANHOLE |
| --- | SILT FENCE BARRIER |
| --- | STRAW WATTLES |
| --- | DEEP SOIL OBSERVATION HOLE |
| --- | SITE LUMINAIRE |
| --- | SIGN |
| --- | SURFACE RUNOFF DIRECTION |
| --- | STONE BOUND |
| --- | DRILL HOLE |
| --- | IRON ROD |

| ABBREVIATIONS | |
|---------------|---------------------------|
| EL | ELEVATION |
| INV | INVERT |
| SF | SQUARE FEET |
| AC | ACRES |
| FT | FEET |
| R | RADIUS |
| DIA | DIAMETER |
| BIT | BITUMINOUS |
| CONC | CONCRETE |
| L | LENGTH |
| S | SLOPE |
| HDPE | HIGH DENSITY POLYETHYLENE |
| PVC | POLYVINYL CHLORIDE |
| RCP | REINFORCED CONCRETE PIPE |
| N/F | NOW OR FORMERLY |
| VP | VERNAL POOL |
| WF | WETLAND FLAG |
| TW | TOP OF WALL |
| BW | BOTTOM OF WALL |
| FG | FINISH GRADE |
| BSMT | BASEMENT |
| FF | FINISH FLOOR |

EXISTING CONDITIONS NOTES:

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- THE WETLAND DELINEATION SHOWN HAS BEEN PERFORMED BY MATTHEW S. MARRO ENVIRONMENTAL CONSULTING DURING NOVEMBER 2023.

| DRAWING ISSUED FOR: | |
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| <input type="checkbox"/> CONCEPT | <input type="checkbox"/> CONSTRUCTION |
| <input checked="" type="checkbox"/> PERMIT | <input type="checkbox"/> CONSTRUCTION RECORD |
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COMMERCIAL DEVELOPMENT

EXISTING CONDITIONS & DEMOLITION PLAN

**91 GROTON-HARVARD ROAD
AYER, MA**

PREPARED FOR:
NORTH ATLANTIC CONCRETE
270 AYER RD, UNIT 1
HARVARD, MA 01451

| | | | |
|--------------|------------------|------------|------|
| DES. BY: KI | DATE: MARCH 2024 | JOB 231083 | C2.1 |
| CHK. BY: NMP | | | |

EROSION AND SEDIMENT CONTROL REQUIREMENTS

PART 1 - GENERAL

1.01 SUMMARY

- A. FURNISH, INSTALL, AND MAINTAIN TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL MEASURES, SUCH AS, BUT NOT NECESSARILY LIMITED TO, HAY BALE AND SILT FENCE BARRIERS, RIPRAP, DIVERSION CHANNELS AND BERMS, CHECK DAMS, STRATEGICALLY LOCATED STOCKPILES, SEDIMENT BASINS, MULCH, AND SEED MIX (HEREINAFTER "CONTROL MEASURES") ADEQUATE TO PREVENT THE CONVEYANCE OF EROSION PRODUCTS (E.G. SOIL, MULCH, SOD) OFF SITE, OR INTO ENVIRONMENTALLY SENSITIVE AREAS, OR INTO AREAS WHERE WORK WILL BE ADVERSELY IMPACTED. ENVIRONMENTALLY SENSITIVE AREAS INCLUDE, BUT ARE NOT NECESSARILY LIMITED TO, WETLANDS, TRIBUTARIES TO WETLANDS, WETLAND BUFFER ZONES, INTERMITTENT AND PERENNIAL STREAMS / RIVERS, AND THEIR ATTENDANT BUFFER ZONES.
1. REFER TO DRAWINGS FOR LOCATION AND DETAILS OF CONTROL MEASURES REQUIRED TO COMMENCE WORK. THESE CONTROL MEASURES WILL BE ADEQUATE ONLY FOR VEGETATION CLEARING; THE DRAWINGS ARE NOT INTENDED TO GRAPHICALLY DEPICT ALL CONTROL MEASURES THAT WILL BE REQUIRED TO MEET THE REQUIREMENTS DESCRIBED IN 1.01.A.
2. DEVISE AND EMPLOY CONTROL MEASURES THROUGHOUT THE DURATION OF PROJECT, OVER ALL AREAS DISTURBED OR UNDISTURBED BY CONSTRUCTION, AS NECESSARY TO MEET THE REQUIREMENTS DESCRIBED IN 1.01.A.
3. DEVISE AND EMPLOY TEMPORARY CONTROL MEASURES AS NECESSARY TO MEET THE REQUIREMENTS DESCRIBED IN 1.01.A, WHILE ALLOWING WORK TO PROCEED IN AN EFFICIENT, COST EFFECTIVE MANNER.
4. DEVISE, EMPLOY AND MAINTAIN CONTROL MEASURES UNTIL SUCH TIME AS THE ENTIRE SITE IS PERMANENTLY STABILIZED BY ESTABLISHED VEGETATION, FINISH LANDSCAPE MATERIALS, PAVED SURFACES, AND/OR ROOF AREA.
5. ONCE THE SITE IS PERMANENTLY STABILIZED AND CERTIFIED AS SUCH BY ENGINEER, REMOVE TEMPORARY CONTROL MEASURES WHILE PROTECTING STABILIZED SURFACES.

1.02 SUBMITTALS

- A. SUBMIT PRODUCT DATA, WARRANTY, AND TEST REPORTS AS INDICATED ON THE DRAWINGS.

1.03 QUALITY ASSURANCE

- A. COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS FROM ACCEPTABLE MANUFACTURERS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- B. CONFORM TO CONDITIONS OF APPROVAL ISSUED BY REGULATORY AGENCIES INCLUDING, BUT NOT NECESSARILY LIMITED TO, LOCAL PLANNING BOARD, CONSERVATION COMMISSION, BOARD OF SELECTMEN, BOARD OF HEALTH, PUBLIC WORKS / HIGHWAY DEPARTMENT, STATE ENVIRONMENTAL PROTECTION DEPARTMENT, AND U.S. GOVERNMENT, ENVIRONMENTAL PROTECTION AGENCY WHERE CONDITIONS OF REGULATORY APPROVAL DIFFER FROM REQUIREMENTS CONTAINED HEREIN OR ON THE DRAWINGS, COMPLY WITH THE MORE STRINGENT REQUIREMENT.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. STRAW WATTLES: 100% WHEAT STRAW WITH NATURAL BIO-DEGRADABLE JUTE NETTING. MINIMUM 9-INCH DIAMETER AND 10 FEET LONG. USE 12-INCH OR 20-INCH DIAMETER WATTLES TO PROTECT LARGER UNSTABLE AREAS.
- B. SILT FENCE: NON-WOVEN, UV-RESISTANT, POLYPROPYLENE FABRIC, FLOW RATED AT 10 GPM/SF MINIMUM, GRAB TENSILE RATED AT 124 POUNDS MINIMUM, WITH INTEGRAL STAKE LOOPS, AND HARDWOOD STAKES. USE NO. 2130 BY AMOCO FABRICS & FIBERS, OR APPROVED EQUAL.
- C. MULCH: ORGANICS INCLUDING HAY, PROCESSED PINE / HEMLOCK TWIGS AND NEEDLES.
- D. SEED MIXES: PERENNIAL RYEGRASS, KENTUCKY BLUEGRASS, AND / OR FINE FESCUE, DISEASE RESISTANT. NON-MAINTAINED AREA OPTION - ANNUAL RYEGRASS COMBINED WITH MEDIUM RED CLOVER.
- E. EXCELSIOR BLANKET: CURLED WOOD FIBER ON PHOTODEGRADABLE EXTRUDED PLASTIC MATRIX, 80% OF FIBERS 6-INCHES LONG OR LONGER, WEIGHT 0.975 POUNDS / SY, CONTAINING NO CHEMICAL ADDITIVES. USE CURLEX I BLANKET BY AMERICAN EXCELSIOR COMPANY, OR APPROVED EQUAL.
- F. ROCK RIPRAP: SOUND, ANGULAR, 6-INCH MINUS PROCESSED ROCK, BLAST ROCK, OR TAILINGS.
- G. CRUSHED STONE: SOUND, ANGULAR, 2-INCH MINUS PROCESSED CRUSHED STONE

PART 3 - EXECUTION

3.01 THROUGHOUT CONSTRUCTION

- A. DEVISE WORK SEQUENCE SO AS TO LIMIT DRAINAGE AREA THAT IS TRIBUTARY TO DISTURBED AREAS. DEVISE, EMPLOY, AND MAINTAIN CONTROL MEASURES SUCH AS DIVERSION CHANNELS AND BERMS, STRATEGICALLY LOCATED STOCKPILES, AND SEDIMENT BASINS TO SUBDIVIDE DRAINAGE AREAS INTO SMALL, MANAGEABLE SUBAREAS, THEREBY MINIMIZING RUNOFF AND THE POTENTIAL FOR EROSION.
- B. MAINTAIN BARRIER AT LIMIT OF WORK AND PROTECT EXISTING VEGETATION / FACILITIES OUTSIDE OF LIMIT OF WORK.
- C. MAINTAIN SPARE MATERIAL STOCKPILES FOR IMMEDIATE EMPLOYMENT / REPAIR / EXPANSION OF CONTROL MEASURES. AT A MINIMUM, SUCH MATERIALS SHALL INCLUDE HAY BALES, SILT FENCE AND STAKES, AND CRUSHED STONE.
- D. INSPECT AND MAINTAIN EFFECTIVENESS OF CONTROL MEASURES BY REPAIRING AS NECESSARY TO ENSURE INTENDED FUNCTION; BY SUPPLEMENTING AS NECESSARY FOR ADEQUATE EXTENT; BY REMOVING TRAPPED PRODUCTS OF EROSION AS NECESSARY TO MAINTAIN EFFECTIVE TRAP VOLUME.
- E. LIMIT EXTENT OF WORK AREA SO THAT ALL DISTURBED AREAS CAN BE STABILIZED WITH CONTROL MEASURES WITHIN A 24-HOUR PERIOD.
- F. INSTALL CONTROL MEASURES AS SOON AS PRACTICABLE AFTER EACH MANAGEABLE PORTION OF EARTHWORK IS COMPLETE. EMPLOY TEMPORARY MEASURES AS NECESSARY TO STABILIZE DISTURBED AREAS, EVEN WHERE SUBSEQUENT CONSTRUCTION OPERATIONS MAY REQUIRE RE-DISTURBANCE.
- G. WHEN INTENSE RAINFALL IS EXPECTED, CONSIDER, DEVISE, AND EMPLOY REINFORCING CONTROL MEASURES PRIOR TO THE RAINFALL EVENT TO MEET THE REQUIREMENTS DESCRIBED IN 1.01.A, IF NECESSARY, EMPLOY TEMPORARY CONTROL MEASURES ON MATERIAL STOCKPILES TO COUNTERACT POTENTIAL SEDIMENT TRANSPORT DURING INTENSE RAINFALL.
- H. WHEN VEHICLE REFUELING IS REQUIRED ON SITE, CONDUCT REFUELING OPERATIONS OUTSIDE OF ENVIRONMENTALLY SENSITIVE AREAS.
- I. PROPERLY DISPOSE OF DEBRIS, SOLID WASTE, TRASH, AND CONSTRUCTION WASTE / BYPRODUCTS OFF SITE.
- J. SWEEP ON-SITE PAVED AREAS AND OFF-SITE STREETS AS NECESSARY TO PREVENT SILT AND DEBRIS ORIGINATING ON SITE FROM ENTERING CLOSED DRAINAGE SYSTEMS AND / OR ENVIRONMENTALLY SENSITIVE AREAS.

3.02 SITE PREPARATION AND ACCESS

- A. WALK SITE AND IDENTIFY LOCATIONS OF LIMIT OF WORK AND ENVIRONMENTALLY SENSITIVE AREAS. ESTABLISH CONSTRUCTION STAGING AREA, LOCATED BEYOND ENVIRONMENTALLY SENSITIVE AREAS.
- B. INSTALL CONTROL MEASURES AS SHOWN ON THE DRAWINGS, INCLUDING THOSE DEFINING THE LIMIT OF WORK.
- C. LIMIT VEHICULAR TRAFFIC TO AND FROM SITE TO MINIMIZE TRANSPORT OF SEDIMENT.
- 3.03 CLEARING, GRUBBING, AND STRIPPING
- A. SCHEDULE GRUBBING AND STRIPPING TO OCCUR IMMEDIATELY PRIOR TO EARTH DISTURBANCE, DEPENDING ON SITE AREA, CONSIDER MULTIPLE GRUBBING PHASES, SEQUENCED TO TAKE ADVANTAGE OF THE EROSION PREVENTION POTENTIAL OF EXISTING VEGETATIVE COVER.
- B. MINIMIZE THE AREA OF EXISTING VEGETATION REMOVED WHEREVER POSSIBLE.
- C. LOCATE AND SIZE STOCKPILES TO MINIMIZE EROSION POTENTIAL. TAKING ADVANTAGE OF TERRAIN SLOPE AND ASPECT, WHERE APPROPRIATE.
- D. PROTECT VEGETATION, INCLUDING ROOT SYSTEMS, BEYOND LIMIT OF CLEARING.
- E. PROCESS TIMBER, STUMPS, SLASH, AND BRUSH SO AS TO PROTECT ENVIRONMENTALLY SENSITIVE AREAS AND INSTALLED CONTROL MEASURES. PROPERLY DISPOSE OF EXCESS OFF SITE. BURIAL OF STUMPS ON SITE IS PROHIBITED.

3.04 EXCAVATION FOR BUILDING FOUNDATIONS AND UTILITIES

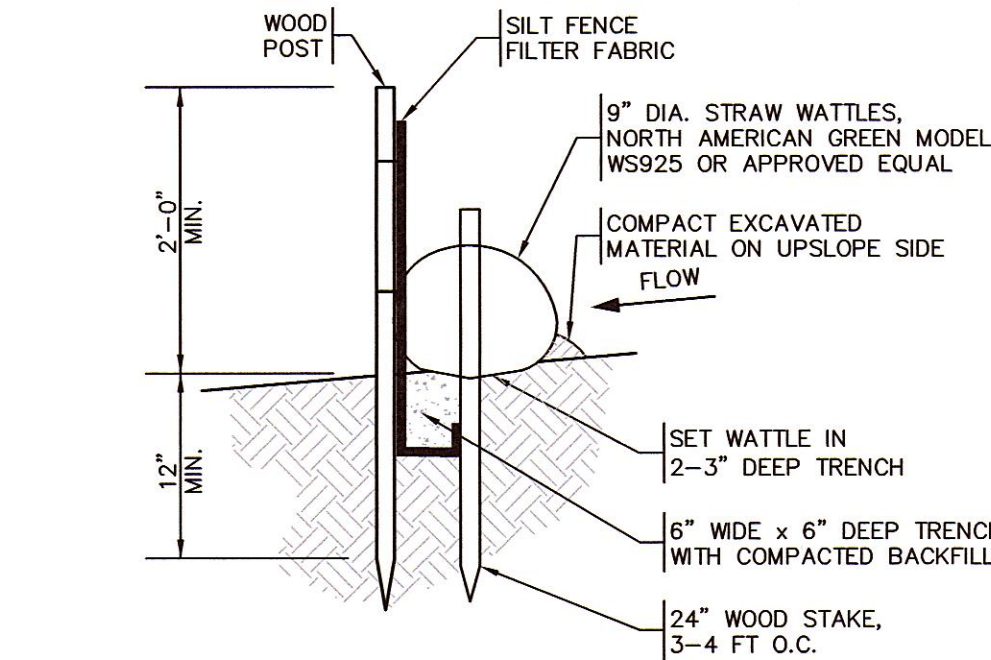
- A. DEVISE AND INSTALL CONTROL MEASURES ADEQUATE TO HANDLE DISCHARGES AND TRAP SEDIMENT FROM FOOTING PUMP AND WELL POINT PUMPS PRIOR TO EXCAVATION.
- B. ARMOR SUMP PUMP DISCHARGE LOCATIONS TO PREVENT EROSION AT POINT OF DISCHARGE AND AREAS DOWNSTREAM.
- C. IF FOUNDATION EXCAVATIONS GRADE TO DAYLIGHT ON THE LOW SIDE, DEVISE AND INSTALL CONTROL MEASURES TO HANDLE SURFACE AND GROUNDWATER FLOW FROM EXCAVATION LOW POINT.
- D. STOCKPILE EXCAVATED MATERIALS TO BAFFLE OVERLAND RUNOFF, AVOIDING THE CREATION OF LENGTHY PATHS OF CONCENTRATED RUNOFF.
- E. BACKFILL UTILITY TRENCHES AS SOON AS PRACTICABLE TO PREVENT FLOODING, SLOUGHING, POTENTIAL OVERFLOW, AND REPETITIVE EARTH DISTURBANCE.

3.05 SITE GRADING

- A. WHEN PRACTICABLE, FOLLOW EXCAVATION AND FILL PRACTICES SHOWN ON DRAWINGS TO LOCALIZE AND MINIMIZE EROSION.
- B. MONITOR SEDIMENT VOLUME IN TEMPORARY SEDIMENT BASINS AND AT DIVERSION BERMS AND CHECK DAMS. IN ALL AREAS EXCEPT THOSE THAT DO NOT PRESENT POTENTIAL PROBLEMS WITH REGARD TO FUTURE SOIL STABILITY, DRAINAGE, OR BEARING CAPACITY, REMOVE AND PROPERLY DISPOSE OF TRAPPED SEDIMENT BEFORE BRINGING SITE TO FINAL SUBGRADE.

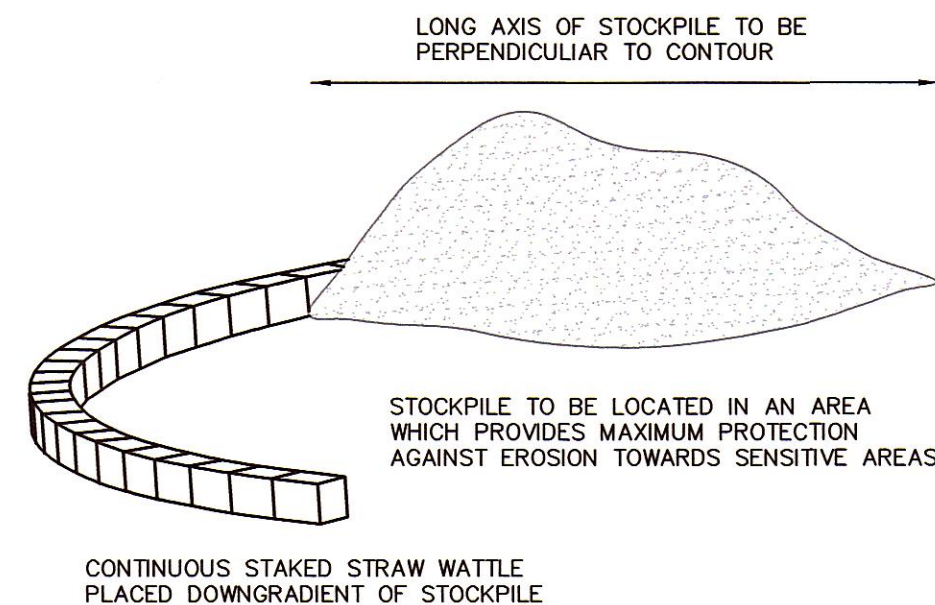
3.06 STORMWATER MANAGEMENT SYSTEM

- A. THE STORMWATER MANAGEMENT SYSTEM INCLUDES, BUT IS NOT NECESSARILY LIMITED TO, ALL PERMANENT DETENTION / RETENTION BASINS, DISCHARGE STRUCTURES / WEIRS, CULVERTS, OPEN CHANNELS, CURBS, GUTTERS, PAVED SWALES, CATCH BASINS, DRAIN MANHOLES, DRAINAGE PIPES, ROOF DRAIN MANIFOLDS, WATER QUALITY SWALES, SEPARATORS, AND SIMILAR STORMWATER RUNOFF CONVEYANCE, TREATMENT, AND STORAGE FACILITIES.
- B. INSTALL STORMWATER MANAGEMENT SYSTEM COMPONENTS STARTING AT THE DOWNSTREAM END AND PROCEED UPSTREAM. WHERE POSSIBLE, COMPLETE INSTALLATION OF PERMANENT DETENTION / RETENTION BASINS PRIOR TO BEGINNING WORK ON UPSTREAM SYSTEM COMPONENTS.
- C. INSTALL CONTROL MEASURES AT FINISHED UPSTREAM AND DOWNSTREAM PIPE ENDS AS SOON AS POSSIBLE AFTER COMPLETION OF PIPE RUN. SUCH MEASURES INCLUDE, BUT ARE NOT NECESSARILY LIMITED TO, RIPRAP, CHECK DAMS, HAY BALE / SILT FENCE BARRIERS, AND VELOCITY DISSIPATORS.
- D. AT THE END OF EACH DAY OR WHEN RAINFALL IS EXPECTED, PLUG UPSTREAM END OF PIPES / DAM OPEN CHANNELS OR OTHERWISE REDIRECT POTENTIAL RUNOFF AND PREVENT FLOW FROM ENTERING PARTIALLY COMPLETED SYSTEM / SYSTEM COMPONENTS.
- E. WHERE PORTIONS OF A NEW SYSTEM ARE TO BE ACTIVATED PRIOR TO COMPLETION OF THE ENTIRE SYSTEM, EMPLOY CONTROL MEASURES TO PREVENT SILT AND DEBRIS FROM ENTERING THE SYSTEM. EMPLOY SILT SACKS OR FABRIC ON CATCH BASIN INLETS, AND PIPE AND CULVERT OPENINGS. EMPLOY CHECK DAMS AND TEMPORARY SEDIMENT BASINS UPSTREAM OF AND ALONG OPEN CHANNELS, SWALES, AND DITCHES TO TRAP SEDIMENT UPGRADIENT OF ENVIRONMENTALLY SENSITIVE AREAS.
- F. REMOVE TRAPPED SEDIMENT AND DEBRIS FROM ALL SYSTEM COMPONENTS AFTER COMPLETION OF INSTALLATION, AND AGAIN AFTER THE ENTIRE SITE IS PERMANENTLY STABILIZED BY ESTABLISHED VEGETATION, FINISH LANDSCAPE MATERIALS, PAVED SURFACES, AND/OR ROOF AREA. REMOVE TRAPPED SEDIMENT AND DEBRIS FROM DETENTION / RETENTION BASIN BOTTOMS SO THAT FINISH BOTTOM MATERIALS / INFILTRATION FUNCTION CONFORM TO DESIGN.
- 3.07 LANDSCAPING
- A. COMPLETE LANDSCAPING AS SOON AS POSSIBLE AFTER COMPLETION OF FINAL SUBGRADE.
- B. IMMEDIATELY AFTER PLACEMENT OF TOPSOIL, STABILIZE WITH CONTROL MEASURES INCLUDING, BUT NOT NECESSARILY LIMITED TO, SEED MIX, MULCH, AND / OR BLANKET.



- NOTES:
- [1] INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY.
- [2] TRAPPED SEDIMENT SHALL BE REMOVED TO A NON-SENSITIVE UPLAND AREA.

STRAW WATTLE / SILT FENCE BARRIER
TYPICAL CROSS SECTION
NOT TO SCALE



TEMPORARY STOCKPILE
ISOMETRIC VIEW
NOT TO SCALE

LEGEND

| EXISTING | | PROPOSED |
|----------|--------------------------------|----------|
| 100.0 | ELEVATION CONTOUR | 100.0 |
| 100.0 | SPOT GRADE | 100.0 |
| 100.0 | PROPERTY LINE | 100.0 |
| 100.0 | WETLAND DELINEATION | 100.0 |
| 100.0 | WETLAND BUFFER ZONE | 100.0 |
| 100.0 | SHORELINE | 100.0 |
| 100.0 | 100-YEAR FLOODPLAIN LIMIT | 100.0 |
| 100.0 | TREE LINE / EDGE OF VEGETATION | 100.0 |
| 100.0 | CAPE COD BERM CURBING | 100.0 |
| 100.0 | GRAVEL/DIRT ROAD | 100.0 |
| 100.0 | STONE WALL | 100.0 |
| 100.0 | WATER MAIN | 100.0 |
| 100.0 | WATER SERVICE | 100.0 |
| 100.0 | FIRE SERVICE | 100.0 |
| 100.0 | WATER VALVE | 100.0 |
| 100.0 | FIRE HYDRANT | 100.0 |
| 100.0 | FORCE MAIN | 100.0 |
| 100.0 | GRAVITY SEWER LINE | 100.0 |
| 100.0 | SEWER MANHOLE | 100.0 |
| 100.0 | GAS LINE | 100.0 |
| 100.0 | GAS SERVICE | 100.0 |
| 100.0 | GAS VALVE | 100.0 |
| 100.0 | BURIED POWER LINE | 100.0 |
| 100.0 | OVERHEAD POWER LINE | 100.0 |
| 100.0 | UTILITY POLE | 100.0 |
| 100.0 | GUY WIRE | 100.0 |
| 100.0 | ELECTRIC BOX | 100.0 |
| 100.0 | STORM DRAIN | 100.0 |
| 100.0 | UNDERDRAIN | 100.0 |
| 100.0 | ROOF DRAIN | 100.0 |
| 100.0 | FOUNDATION DRAIN | 100.0 |
| 100.0 | CATCH BASIN | 100.0 |
| 100.0 | DRAIN MANHOLE | 100.0 |
| 100.0 | SILT FENCE BARRIER | 100.0 |
| 100.0 | STRAW WATTLE | 100.0 |
| 100.0 | DEEP SOIL OBSERVATION HOLE | 100.0 |
| 100.0 | SITE LUMINAIRE | 100.0 |
| 100.0 | SIGN | 100.0 |
| 100.0 | SURFACE RUNOFF DIRECTION | 100.0 |
| 100.0 | STONE BOUND | 100.0 |
| 100.0 | DRILL HOLE | 100.0 |
| 100.0 | IRON ROD | 100.0 |

ABBREVIATIONS

| | | | |
|------|-------------|------|---------------------------|
| EL | ELEVATION | HDPE | HIGH DENSITY POLYETHYLENE |
| INV | INVERT | PVC | POLYVINYL CHLORIDE |
| SF | SQUARE FEET | RCP | REINFORCED CONCRETE PIPE |
| AC | ACRES | N/F | NOW OR FORMERLY |
| FT | FEET | VP | VERNAL POOL |
| R | RADIUS | WF | WETLAND FLAG |
| DIA | DIAMETER | TW | TOP OF WALL |
| BIT | BITUMINOUS | BW | BOTTOM OF WALL |
| CONC | CONCRETE | FG | FINISH GRADE |
| L | LENGTH | BSMT | BASEMENT |
| S | SLOPE | FF | FINISH FLOOR |

DRAWING ISSUED FOR:

- ☐ CONCEPT ☐ CONSTRUCTION
- ☒ PERMIT ☐ CONSTRUCTION RECORD

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COMMERCIAL DEVELOPMENT

EROSION AND SEDIMENT CONTROL PLAN

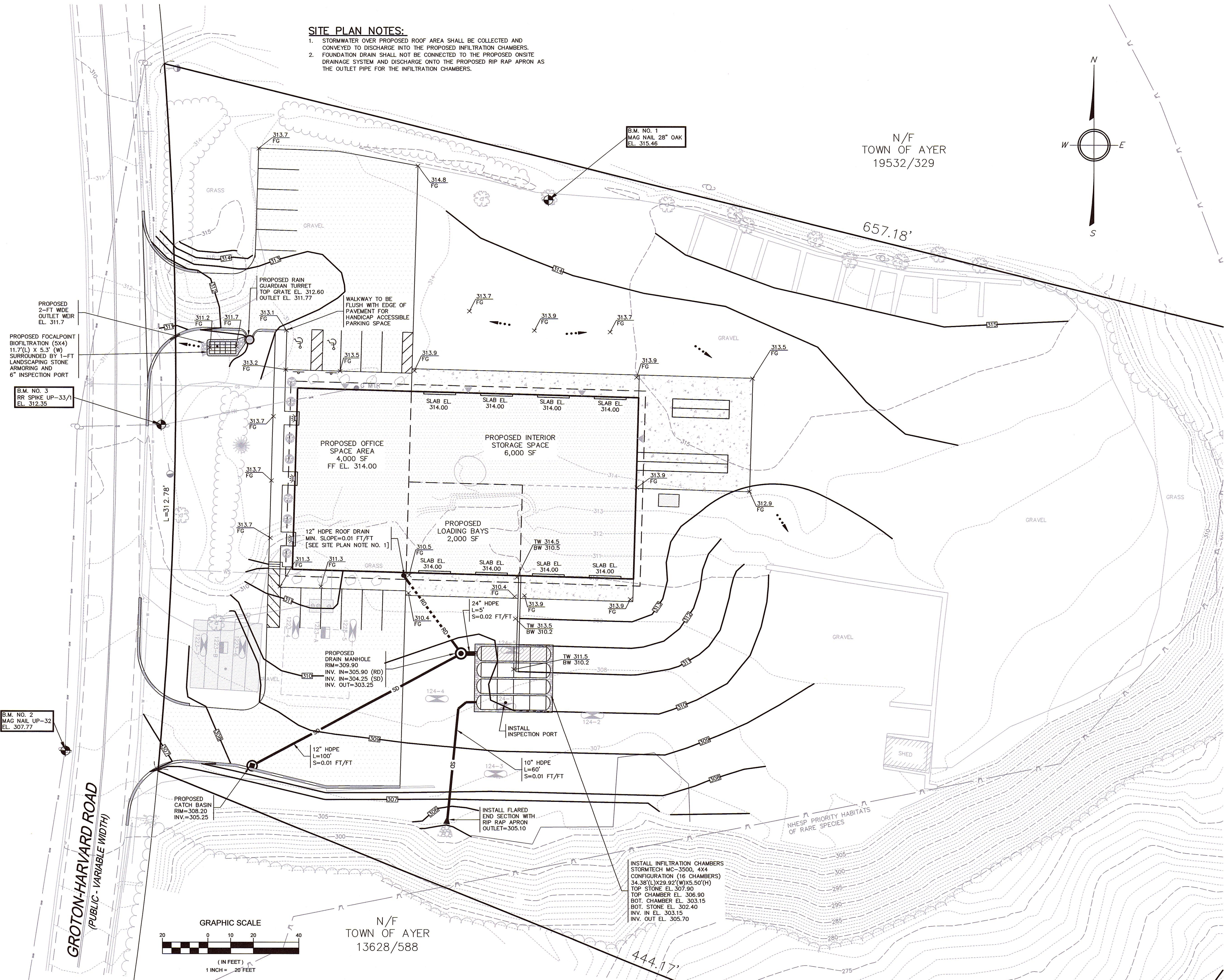
91 GROTON-HARVARD ROAD
AYER, MA

PREPARED FOR:
NORTH ATLANTIC CONCRETE
270 AYER RD, UNIT 1
HARVARD, MA 01451

| | | | |
|--------------|------------------|------------|------|
| DES. BY: KI | DATE: MARCH 2024 | JOB 231083 | C3.1 |
| CHK. BY: NMP | | | |

SITE PLAN NOTES:

1. STORMWATER OVER PROPOSED ROOF AREA SHALL BE COLLECTED AND CONVEYED TO DISCHARGE INTO THE PROPOSED INFILTRATION CHAMBERS.
2. FOUNDATION DRAIN SHALL NOT BE CONNECTED TO THE PROPOSED ON-SITE DRAINAGE SYSTEM AND DISCHARGE ONTO THE PROPOSED RIP RAP APRON AS THE OUTLET PIPE FOR THE INFILTRATION CHAMBERS.



LEGEND

| EXISTING | PROPOSED |
|----------|--------------------------------|
| 100 | ELEVATION CONTOUR |
| X100.0 | SPOT GRADE |
| --- | PROPERTY LINE |
| --- | WETLAND DELINEATION |
| --- | WETLAND BUFFER ZONE |
| --- | SHORELINE |
| --- | 100-YEAR FLOODPLAIN LIMIT |
| --- | TREE LINE / EDGE OF VEGETATION |
| --- | EDGE OF PAVEMENT |
| --- | CAPE COD BERM CURBING |
| --- | GRANITE CURBING |
| --- | GRAVEL/DIRT ROAD |
| --- | STOCKADE FENCE |
| --- | STONE WALL |
| --- | WATER MAIN |
| --- | WATER SERVICE |
| --- | FIRE SERVICE |
| --- | WATER VALVE |
| --- | FIRE HYDRANT |
| --- | FORCE MAIN |
| --- | GRAVITY SEWER LINE |
| --- | SEWER MANHOLE |
| --- | GAS LINE |
| --- | GAS SERVICE |
| --- | GAS VALVE |
| --- | BURIED POWER LINE |
| --- | OVERHEAD POWER LINE |
| --- | UTILITY POLE |
| --- | GUY WIRE |
| --- | ELECTRIC BOX |
| --- | STORM DRAIN |
| --- | UNDERDRAIN |
| --- | ROOF DRAIN |
| --- | FOUNDATION DRAIN |
| --- | CATCH BASIN |
| --- | DRAIN MANHOLE |
| --- | SILT FENCE BARRIER |
| --- | STRAW WATTLERS |
| --- | SOIL OBSERVATION HOLE |
| --- | SITE LUMINAIRE |
| --- | SIGN |
| --- | SURFACE RUNOFF DIRECTION |
| --- | STONE BOUND |
| --- | DRILL HOLE |
| --- | IRON ROD |

ABBREVIATIONS

| | | | |
|------|-------------|------|---------------------------|
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| FT | FEET | VP | VERNAL POOL |
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| DIA | DIAMETER | TW | TOP OF WALL |
| BIT | BITUMINOUS | BW | BOTTOM OF WALL |
| CONC | CONCRETE | FG | FINISH GRADE |
| L | LENGTH | BSMT | BASEMENT |
| S | SLOPE | FF | FINISH FLOOR |

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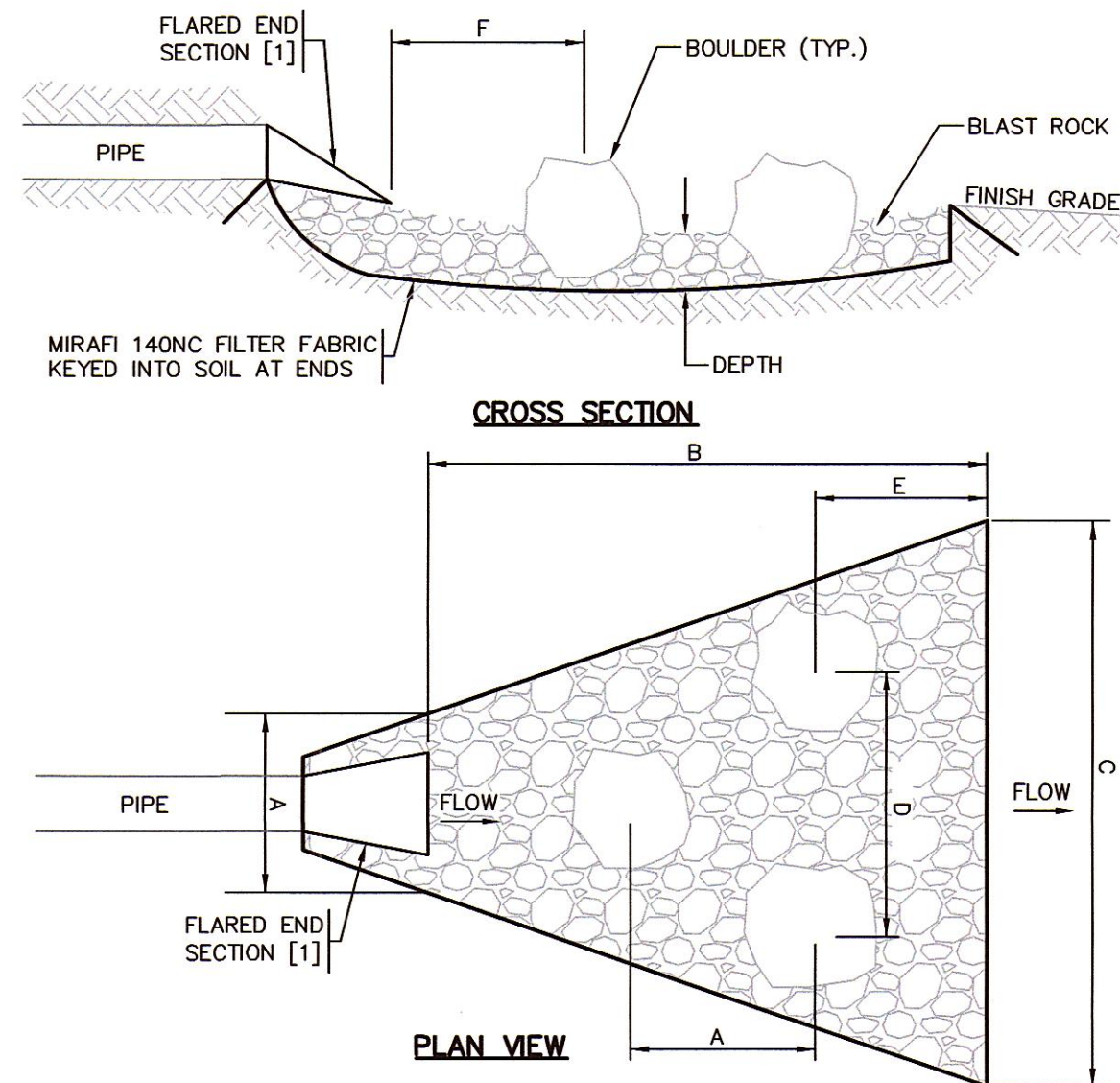
GRADING AND DRAINAGE PLAN

91 GROTON-HARVARD ROAD
AYER, MA

PREPARED FOR:
NORTH ATLANTIC CONCRETE
270 AYER RD, UNIT 1
HARVARD, MA 01451

| | | | |
|--------------|------------------|------------|------|
| DES. BY: KI | DATE: MARCH 2024 | JOB 231083 | C5.1 |
| CHK. BY: NMP | | | |

P:\23-1-2024\231083\DWG\PERMIT\SITE PLAN.DWG 03-28-24 4:21:48 PM - LAYOUT 06.1-CD

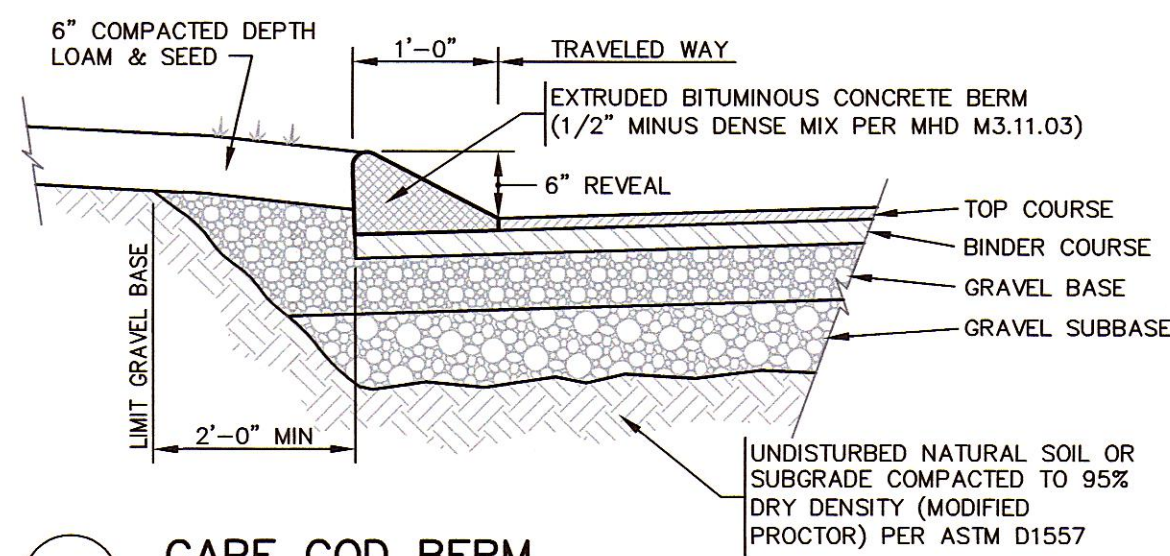


| PIPE DIA. | A (FT) | B (FT) | C (FT) | D (FT) | E (FT) | F (FT) | DEPTH (FT) | BLAST ROCK | BOULDER |
|-----------|--------|--------|--------|--------|--------|--------|------------|------------|-----------|
| 10 IN. | 2 | 6 | 7 | 3 | 1.5 | 1 | 0.5 | 6" MINUS | 15" - 21" |

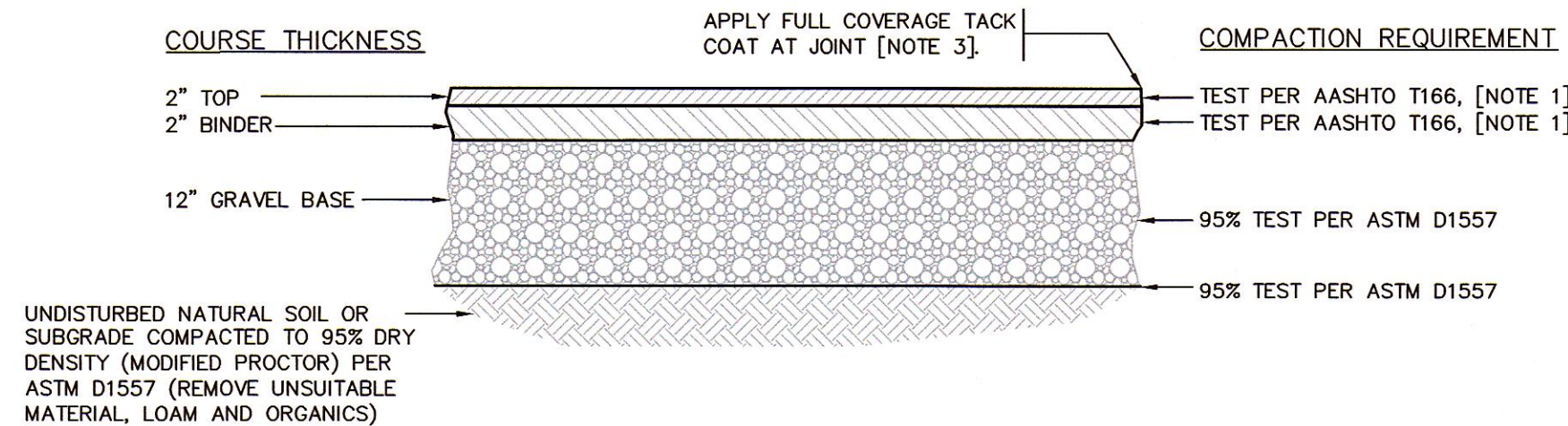
- NOTES:
- [1] INSTALL TRASH RACK OR OTHER MEANS OF PREVENTION ON PIPE OUTLET TO PREVENT UNWANTED ITEMS FROM ENTERING CULVERT.
 - [2] DO NOT PLACE BOULDERS WITHIN LEVEL SPREADER FOR INLET PIPE DIAMETERS LESS THAN 12".



FLARED END SECTION
NOT TO SCALE



CAPE COD BERM
TYPICAL CROSS SECTION
NOT TO SCALE

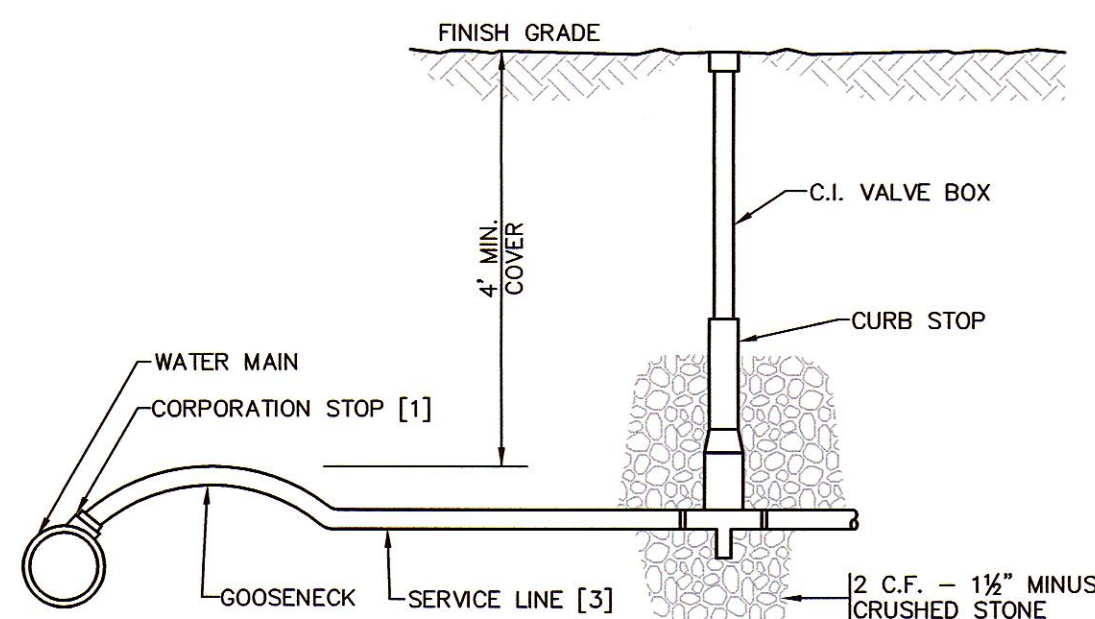


| COURSE | MATERIAL | SPECIFICATION PER MASS HIGHWAY DEPARTMENT (MHD) | MAX AGG. SIZE (INCH) |
|---------------------|---------------------|---|----------------------|
| TOP | BITUMINOUS CONCRETE | M3.11.03 CLASS I, TYPE 1-1 | 1 1/2 |
| BINDER | BITUMINOUS CONCRETE | M3.11.03 CLASS I, TYPE 1-1 | 3/4 |
| BASE | GRAVEL BORROW [2] | M1.03.0 TYPE B | 3 |
| UNSUITABLE SUBGRADE | ORDINARY BORROW | ON-SITE EXCAVATED MATERIAL | 12 |

- NOTES:
- [1] COMPACT TO TEST AVERAGE OF 95% NO TEST LOWER THAN 93%.
 - [2] ACCEPTABLE SUBSTITUTE MATERIAL: 3/4" MINUS DENSE GRADED CRUSHED STONE.
 - [3] EXISTING PAVEMENT SHALL BE SAW CUT VERTICALLY AT FINAL JOINT LOCATIONS.



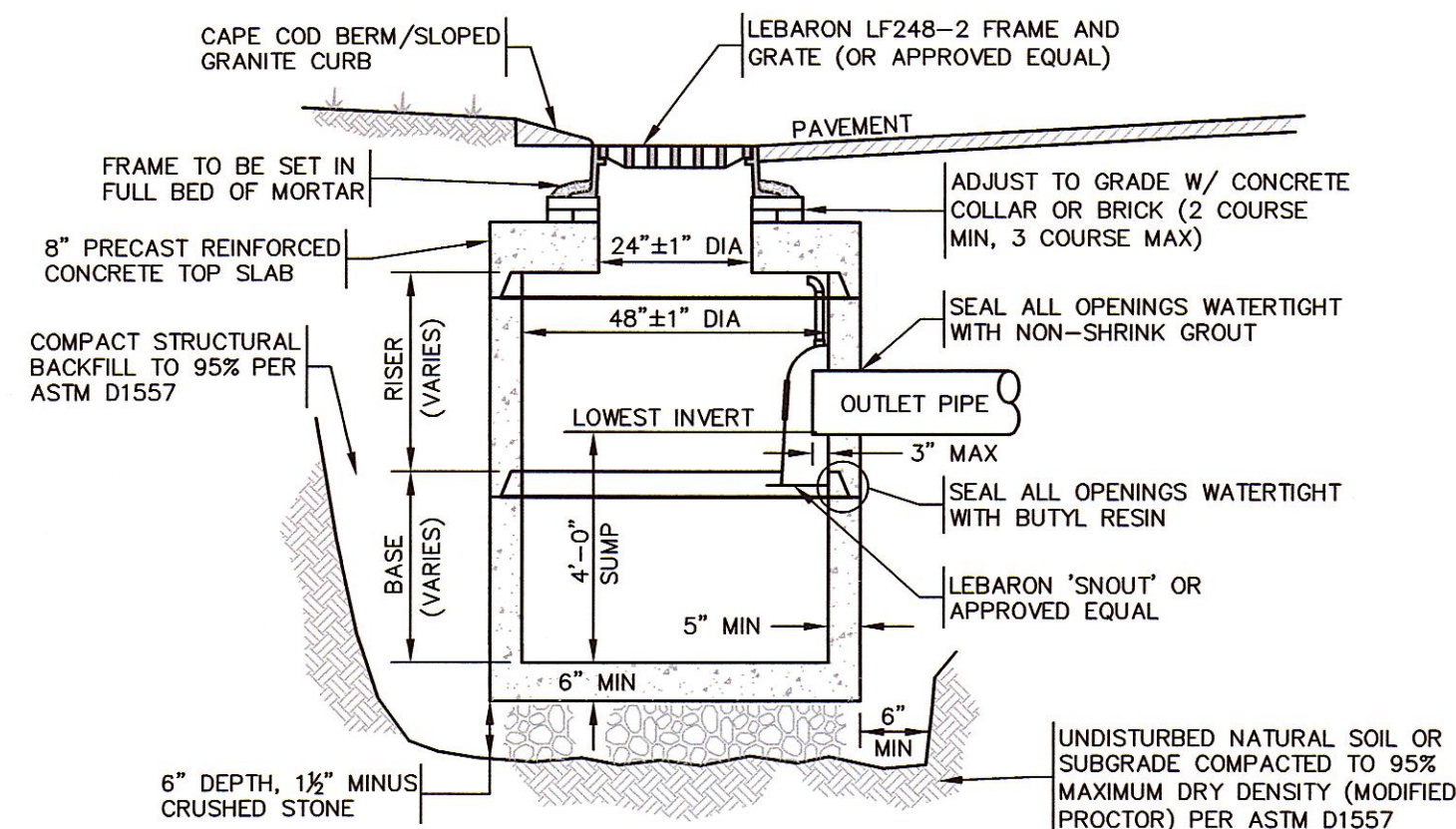
BITUMINOUS CONCRETE PAVEMENT
TYPICAL CROSS SECTION
NOT TO SCALE



- NOTES:
- [1] WATER SERVICES LARGER THAN 1" ARE TO BE RESTRAINED TO MAIN WITH APPROVED SADDLE.
 - [2] COORDINATE BUILDING CONNECTION WITH PLUMBING DRAWINGS.
 - [3] ALL MATERIALS PER MUNICIPAL STANDARDS.



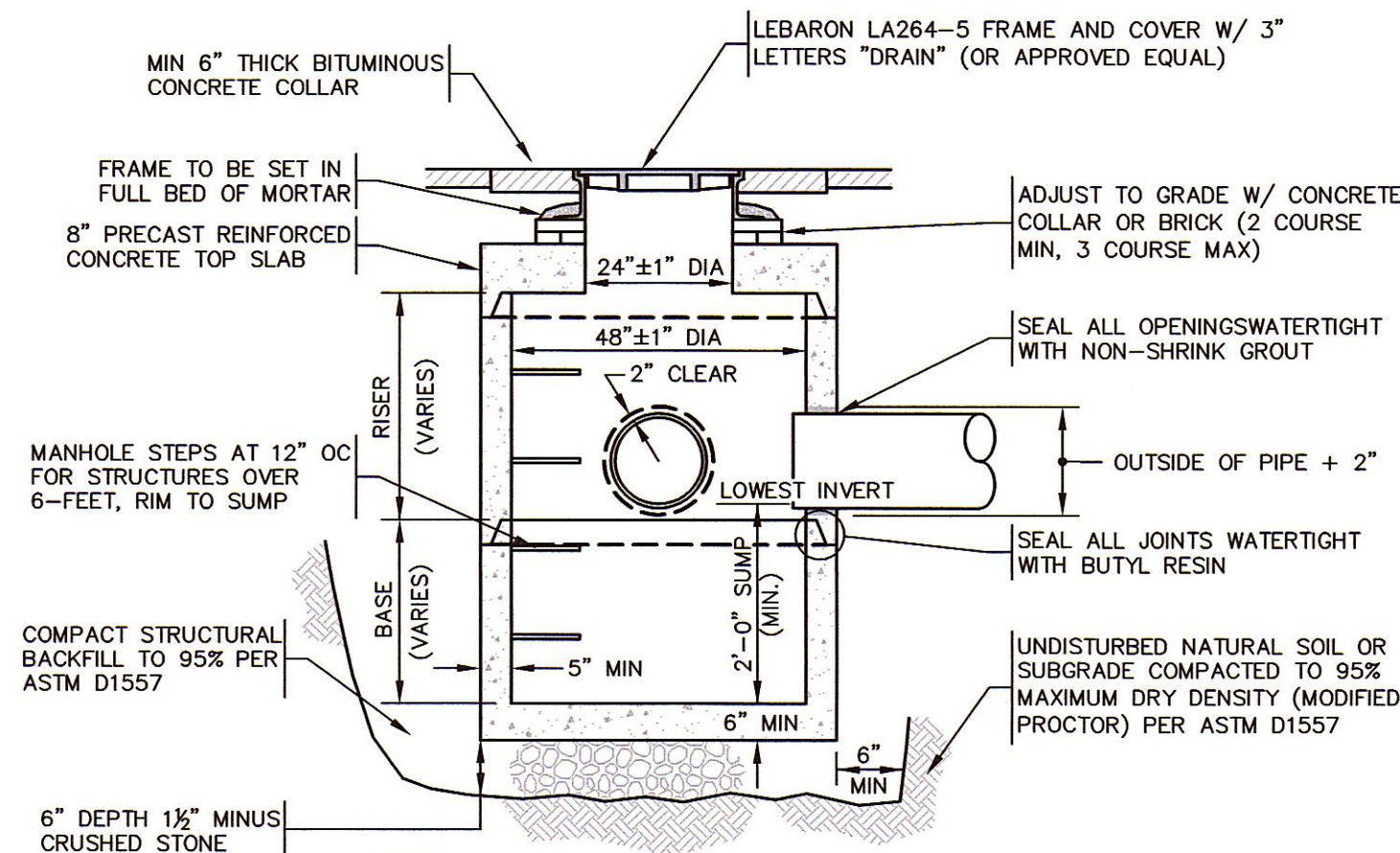
WATER SERVICE
TYPICAL CROSS SECTION
NOT TO SCALE



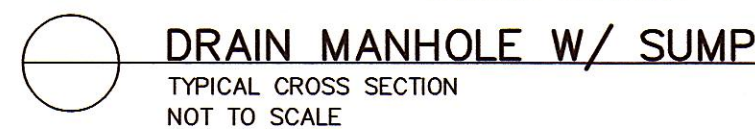
- NOTES:
- [1] 4,000 PSI PRECAST CONCRETE AT 28 DAYS CONFORMING WITH LATEST ASTM C478.
 - [2] REINFORCING PER LATEST ASTM A185.
 - [3] STRUCTURE SHALL BE RATED FOR H-20 LOADING UNLESS SPECIFIED OTHERWISE.



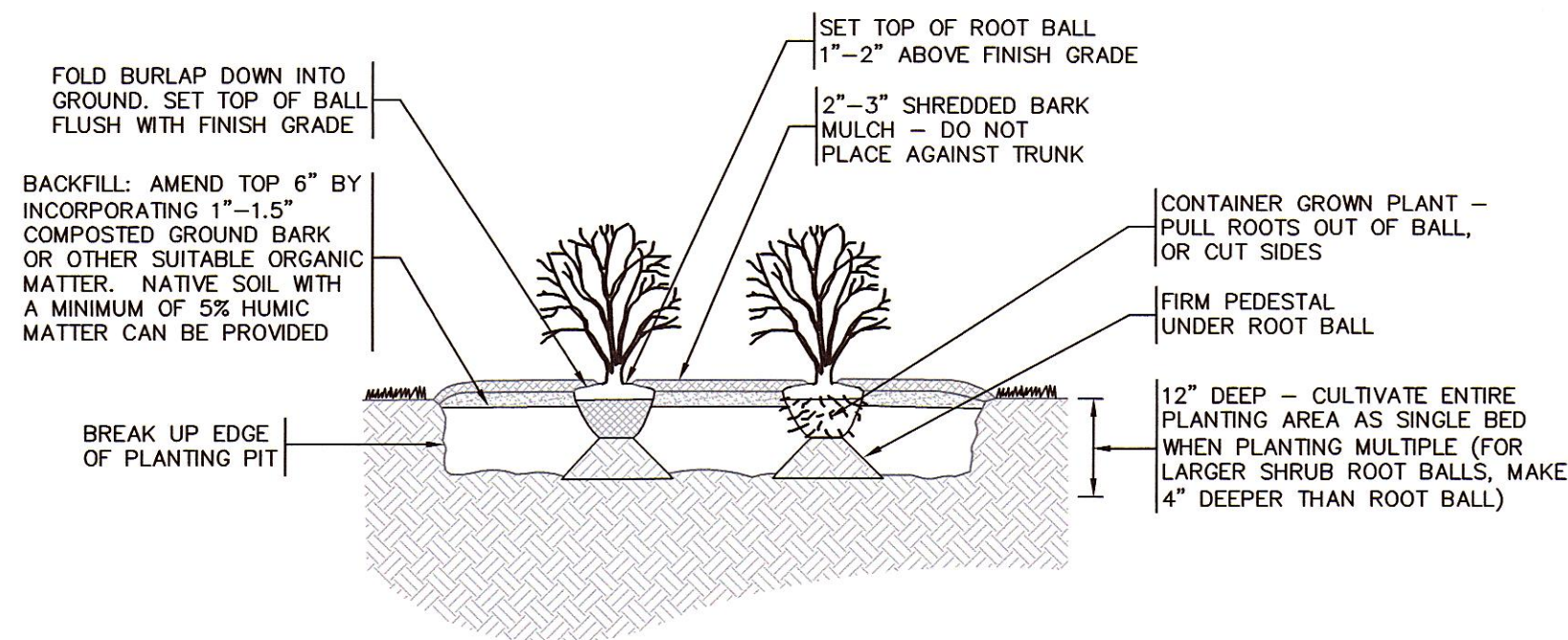
CATCH BASIN
TYPICAL CROSS SECTION
NOT TO SCALE



- NOTES:
- [1] 4,000 PSI PRECAST CONCRETE AT 28 DAYS CONFORMING WITH LATEST ASTM C478.
 - [2] REINFORCING PER LATEST ASTM A185.
 - [3] STRUCTURE SHALL BE RATED FOR H-20 LOADING UNLESS SPECIFIED OTHERWISE.



DRAIN MANHOLE W/ SUMP
TYPICAL CROSS SECTION
NOT TO SCALE



- NOTES:
1. ALL SHRUBS MUST CONFORM TO THE STANDARDS SET FORTH IN THE MOST RECENT AMERICAN STANDARDS FOR NURSERY STOCK, PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN (A.A.N).
 2. SOIL ANALYSIS SHALL BE OBTAINED PRIOR TO PLANTING. SOIL SHALL BE AMENDED AS RECOMMENDED.
 3. SHEET PREPARATION OF BEDS IS HIGHLY PREFERRED TO INDIVIDUALLY DUG HOLES.



SHRUB PLANTING
NOT TO SCALE

Plant List

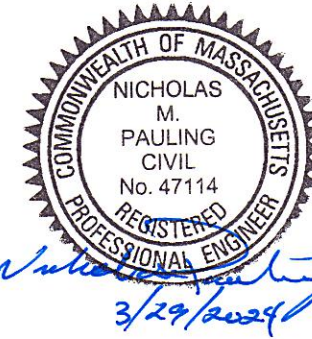
| SHRUBS | | | |
|--------|----------------------------------|-------------------------------|---------|
| Symbol | Botanical Name | Common Name | Size |
| PJM | Rhododendron PJM | PJM Rhododendron | 2'-3' |
| IG | Ilex glabra compacta | Compact Inkberry | 18"-24" |
| HB | Hydrangea macrophylla "Bluewave" | Bigleaf Hydrangea "Blue Wave" | 18"-24" |

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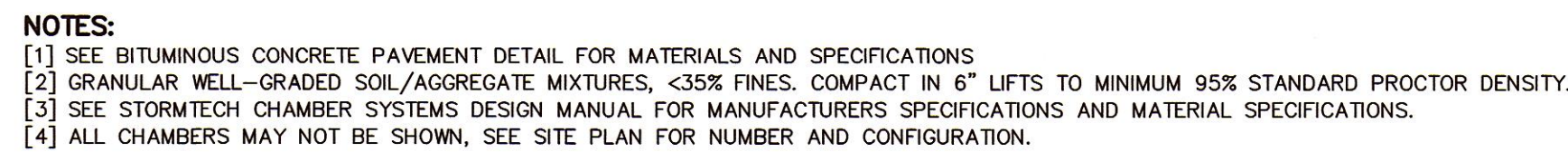
COMMERCIAL DEVELOPMENT

CONSTRUCTION DETAILS

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PREPARED FOR:
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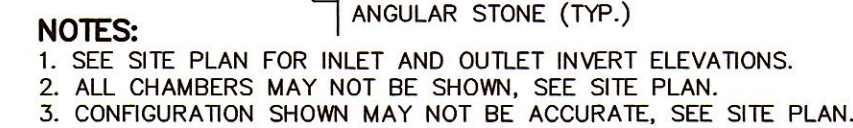
DES. BY: KI DATE: MARCH 2024 JOB 231083 C6.1
CHK. BY: NMP



TYPICAL CROSS SECTION
NOT TO SCALE



TYPICAL CROSS SECTION
NOT TO SCALE

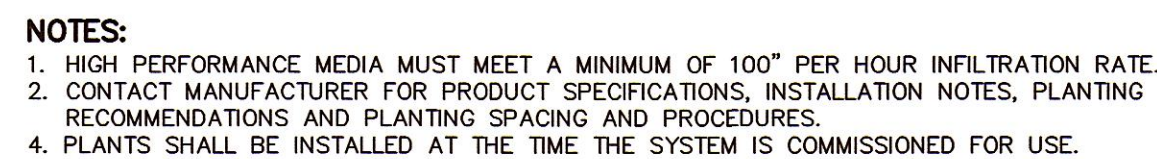


TYPICAL PLAN VIEW
NOT TO SCALE



- NOTES:**
1. INLET WIDTH AND DISTANCE BETWEEN BACK OF CURB AND RAIN GUARDIAN TURRET MAY VARY WITH SITE CONDITIONS.
 2. CONCRETE BASE EXTENDS BEYOND THE FILTER WALL OF THE RAIN GUARDIAN TURRET TO SERVE AS A SPLASH DISSIPATOR.
 3. THE TOP OF THE CLASS 5 BASE (COMPACTED TO 95% STANDARD PROCTOR) IS PRECISELY 1'-4" BELOW THE GUTTER LINE ELEVATION.
 4. CONTACT MANUFACTURER FOR PRODUCT SPECIFICATIONS AND INSTALLATION NOTES.
 5. THE RIGHT-TURN (OR LEFT-TURN) RAIN GUARDIAN TURRET IS A NON-STANDARD PRODUCT AND REQUIRES ADVANCED NOTICE WHEN ORDERING.

NOT TO SCALE



NOT TO SCALE

| Common Name | Zones | Light Requirements | Mature Height | Advantages |
|--------------------|------------|-------------------------------|---------------|--|
| Feather Reed Grass | 5, 6, 7 | Full sun, half sun/half shade | 36-40" | Attracts birds, privacy, low maintenance |
| Doylea | 4, 5, 6, 7 | Full to half sun, half shade | 14-60" | Attracts butterflies, reblooming, easy to grow, low maintenance |
| Switchgrass | 4, 5, 6, 7 | Full sun, half sun/half shade | 36-48" | Attracts birds, privacy, low maintenance |
| Black Eyed Susans | 4, 5, 6, 7 | Full sun, half sun/half shade | 18-36" | Bee friendly, attracts butterflies and birds, long bloom time, easy to grow, low maintenance |
| Azaleas | 5, 6, 7 | Half sun/half shade | 36-42" | Bee friendly, attracts butterflies and birds, low maintenance |
| Cone Flower | 4, 5, 6, 7 | Full sun | 24-36" | Bee friendly, attracts butterflies and birds, long bloom time, easy to grow, low maintenance |
| Catmint | 4, 5, 6, 7 | Full sun, half sun/half shade | 12-18" | Bee friendly, attracts butterflies and birds, long bloom time, easy to grow, low maintenance |

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☐ CONCEPT ☐ CONSTRUCTION
☒ PERMIT ☐ CONSTRUCTION
RECORD

THIS DRAWING MAY NOT SHOW CONSTRUCTION
DETAILS AND SPECIFICATIONS FOR ALL PROPOSED
IMPROVEMENTS, AND MAY NOT IDENTIFY ALL
CONSTRUCTION WORK ITEMS/AREAS OF
CONTRACTOR JURISDICTION.

PER 250 CMR 5.03(13), THE FOLLOWING ARE EXCLUDED FROM THE PROFESSIONAL ENGINEER'S RESPONSIBILITY: ALL BOUNDARY INFORMATION; LOCATION OF EXISTING STRUCTURES, TREES, UTILITIES, TOPOGRAPHY OR SIMILAR FEATURES; DESIGN OF RETAINING WALLS, PROPRIETARY EQUIPMENT. SEE EXISTING CONDITION NOTES.

| NO. | DATE | BY | APP. | REVISION DESCRIPTION |
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COMMERCIAL DEVELOPMENT

CONSTRUCTION DETAILS

91 GROTON-HARVARD ROAD
AYER, MA

PREPARED FOR:
NORTH ATLANTIC CONCRETE
270 AYER RD, UNIT 1
HARVARD, MA 01451

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| DES. BY: KI | DATE: MARCH 2024 | JOB 231083 |
| CHK. BY: NMP | | |

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