

**ELEVATION DATUM**  
 DATUM: NAVD 1988

**SITE STATISTICS:**  
 LOT AREA: 23,245 S.F.  
 WATER SUPPLY: MUNICIPAL  
 SEWAGE DISPOSAL: ONSITE SEWAGE DISPOSAL SYSTEM  
 DEVELOPABLE SITE AREA: 22,107 S.F. (LOT AREA - FLOOD PLAIN)  
 FLOOR AREA RATIO (FAR): 0.19 (DATA PROVIDED BY ARCHITECT)  
 OPEN SPACE: 50% OF 23,245 S.F. = 11,622.5 S.F.  
 12,792 S.F. (55%) PROVIDED

**REFERENCES**

- DEED RECORDED IN BOOK 50618, PAGE 265, M.S.D.R.D.
- 1940 STATE HIGHWAY ALTERATION.
- PLAN RECORDED AS PLAN #498 OF 1949
- PLAN RECORDED AS PLAN #916 OF 1967
- "ALPHA CARS SITE PLAN" PREPARED BY YM DESIGN, INC. DATED APRIL 20, 2016.
- "ZONING BOARD OF APPEALS PLAN" PREPARED BY GOLDSMITH, PREST AND RINGWALL, INC. PREPARED FOR DMITRY BYHOVOSKY, DATED: JUNE 3, 2016.

**ASSESSORS REFERENCE:**  
 ASSESSORS PROPERTY ID F4-10

**EXISTING CONDITIONS NOTES:**

- EXISTING CONDITION INFORMATION BASED ON AN ON-THE-GROUND TOPOGRAPHIC AND BOUNDARY SURVEY PERFORMED BY GOLDSMITH, PREST & RINGWALL, INC. DURING APRIL 2016.
- WET FLAG "A&B" SERIES HAVE BEEN DELINEATED BY THIS OFFICE. WF-W-200 SERIES FLAGS FROM BRUCE FREEMAN RAIL TRAIL PHASE 2A BY GREENMAN-PEDERSEN, INC SHEET 43A OF 159. PROJECT FIVE 604532. MAY 20, 2014.
- THE PURPOSE OF THIS PLAN IS TO ACCOMPANY AN APPLICATION TO THE NATURAL RESOURCE DEPARTMENT.

**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 HIGHER THAN 4 FEET ABOVE GRADE, PROPRIETARY EQUIPMENT. SEE EXISTING CONDITION NOTES.

NO.	DATE	BY	APP.	REVISION DESCRIPTION

**GPR** Engineering Solutions for Land & Structures

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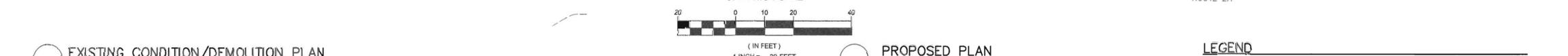
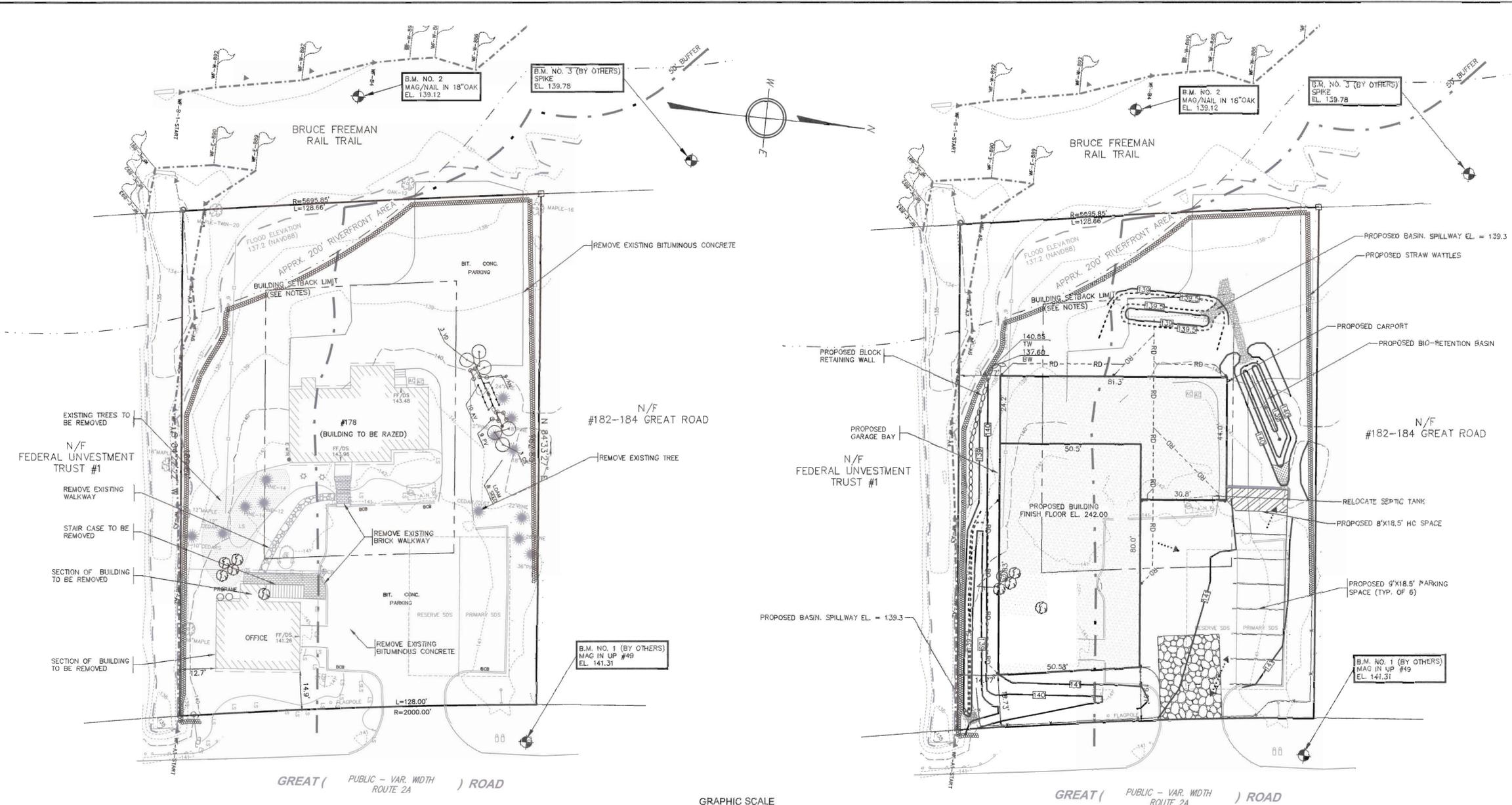
**COMMERCIAL DEVELOPMENT**

**EXISTING CONDITIONS/DEMO PLAN & PROPOSED SITE PLAN**

**ALPHA CARS**  
 178 GREAT ROAD  
 ACTON MA, 01720

PREPARED FOR:  
 178 GREAT RD., ACTON LLC  
 649 MASSACHUSETTS AVE.  
 BOXBOROUGH, MA 01719

DES. BY: JEG	DATE: JULY 2016	JOB: 161025	1 OF 3
CHECK BY: BDR			



**LEGEND**

	ELEVATION CONTOUR		PROPOSED SPOT GRADE
	PROPERTY LINE		PROPOSED WETLAND DELINEATION
	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		SILT FENCE BARRIER

**ZONING SUMMARY**

Parameter	Section [1]	Requirement	Remarks
Zoning District	Section 3.1	LB	Limited Business
Overlay District	Section 4.1 Section 4.3.2.3 Section 5.4	Floodplain District [see below] Groundwater District 3 Transfer of Development Rights	Within mapped Zone AE See Note [2] Sending district
Proposed Use	Section 3.1	3.5.22	Vehicle Sale and Rental
Lot Area	Section 5.1	20,000 SF	See Note [3]
Frontage	Section 5.1	200 LF	See Note [4]
Lot Width	Section 5.1	50 FT	
Yard	Section 5.1 Table		
Front		75 FT	See Note [5]
Side		30 FT	
Rear		30 FT	
Building Height	Section 5.1	36 FT	
Floor Area Ratio	Section 5.1	0.20	See Note [6]
Open Space	Section 5.1	50%	
Parking	Section 6	One space per 600 SF NFA	Section 6.3.1.8
Driveways and Entrances	Section 6		
Wetlands Setback	Acton Wetland	Bylaw and Regulations	See Note [7]
MDEP Riverfront Area	possible Riverfront		checking on location
FEMA Floodplain	25017C0356F	2014 FEMA Flood Zone 100 year	
Zone 1 Protective Radius	N/A		none on site
Mapped Zone 2	N/A		none on site
IMPA	N/A		none on site

ce to section of Zoning Bylaw, where applicable.  
 5.4.2.2 Establishes LB as a sending District.  
 10.3.4.7 Developable Site Area = Lot area less wetlands, Flood plain, any other zoning district which the principal use is a non conforming lot due to lack of required frontage (128).  
 5.1 Footnote (6). The front yard may be reduced to 20% of the lot depth but not less than 36 FT. (64.55)  
 5.1 Footnote (4) Subject to Section 5.4. Parking limits the building size base on 5.4.2.2 for new construction.  
 3.2 local regulations require 50 ft setback of undisturbed natural vegetation and 75 ft setback for driveways, roadways res. Section 3.3 Work for pre existing structures or activities not presently in compliance with 3.2 may not increase the non-conformance of those structures or activities. See bylaw.

**NOTES:**  
 feet; CF=cubic feet; FT=feet; GFA=gross floor area; AC=acres; PB=Planning Board; ZBA=Zoning Board of Appeals;  
 im wetland protection area; ACEC=Area of Critical Environmental Concern; FIRN=Flood Insurance Rate Map;  
 ssachusetts Dept of Environmental Protection

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# EROSION AND SEDIMENT CONTROL REQUIREMENTS

## PART 1 - GENERAL

- 1.01 SUMMARY
- FURNISH, INSTALL, AND MAINTAIN TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL MEASURES, SUCH AS, BUT NOT NECESSARILY LIMITED TO, STRAW WATTLES, 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:
    - 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.
    - DEVELOP 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.
    - DEVELOP 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.
    - DEVELOP, 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.
    - ONCE THE SITE IS PERMANENTLY STABILIZED AND CERTIFIED AS SUCH BY ENGINEER, REMOVE TEMPORARY CONTROL MEASURES WHILE PROTECTING STABILIZED SURFACES.

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

## 1.03 QUALITY ASSURANCE

- 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.
- 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.

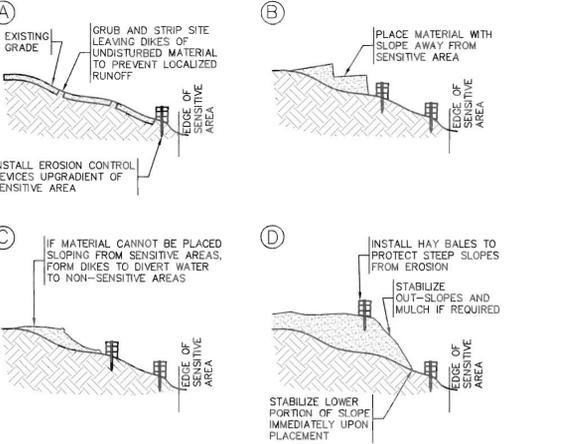
## PART 2 - PRODUCTS

- 2.01 MATERIALS
- STRAW WATTLES: RECYCLED, COMPRESSED AGRICULTURAL STRAW, WRAPPED IN PHOTODEGRADABLE BLACK SYNTHETIC NETTING, 9-INCH DIAMETER, 25-FOOT LENGTHS OR 12-INCH 10-FOOT LENGTHS.
  - HAY BALES: DRY GRASS OR STRAW, MACHINE BOUND WITH JUTE OR WIRE, APPROXIMATE SIZE EACH BALE 42" X 16" X 16".
  - 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.
  - MULCH: ORGANICS INCLUDING HAY, PROCESSED PINE / HEMLOCK TWIGS AND NEEDLES.
  - SEED MIXES: PERENNIAL RYEGRASS, KENTUCKY BLUEGRASS, AND / OR FINE FESCUE, DISEASE RESISTANT. NON-MAINTAINED AREA OPTION - ANNUAL RYEGRASS COMBINED WITH MEDIUM RED CLOVER.
  - 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.
  - ROCK RIPRAP: SOUND, ANGULAR, 6-INCH MINUS PROCESSED ROCK, BLAST ROCK, OR TAILINGS. CRUSHED STONE: SOUND, ANGULAR, 2-INCH MINUS PROCESSED CRUSHED STONE.

## PART 3 - EXECUTION

- 3.01 THROUGHOUT CONSTRUCTION
- DEVELOP WORK SEQUENCE SO AS TO LIMIT DRAINAGE AREA THAT IS TRIBUTARY TO DISTURBED AREAS. DEVE, 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.
  - MAINTAIN BARRIER AT LIMIT OF WORK AND PROTECT EXISTING VEGETATION / FACILITIES OUTSIDE OF LIMIT OF WORK.
  - 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.
  - 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.
  - LIMIT EXTENT OF WORK AREA SO THAT ALL DISTURBED AREAS CAN BE STABILIZED WITH CONTROL MEASURES WITHIN A 24-HOUR PERIOD.
  - 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. WHEN INTENSE RAINFALL IS EXPECTED, CONSIDER, DEVE, 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.
  - WHEN VEHICLE REFUELING IS REQUIRED ON SITE, CONDUCT REFUELING OPERATIONS OUTSIDE OF ENVIRONMENTALLY SENSITIVE AREAS.
  - PROPERLY DISPOSE OF DEBRIS, SOLID WASTE, TRASH, AND CONSTRUCTION WASTE / BYPRODUCTS OFF SITE.
  - 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
- WALK SITE AND IDENTIFY LOCATIONS OF LIMIT OF WORK AND ENVIRONMENTALLY SENSITIVE AREAS. ESTABLISH CONSTRUCTION STAGING AREA, LOCATED BEYOND ENVIRONMENTALLY SENSITIVE AREAS.
  - INSTALL CONTROL MEASURES AS SHOWN ON THE DRAWINGS, INCLUDING THOSE DEFINING THE LIMIT OF WORK.
  - LIMIT VEHICULAR TRAFFIC TO AND FROM SITE TO MINIMIZE TRANSPORT OF SEDIMENT.



## FILL PROCEDURE

SLOPE PROFILES NOT TO SCALE FILL\_PROC.DWG 2/6/08

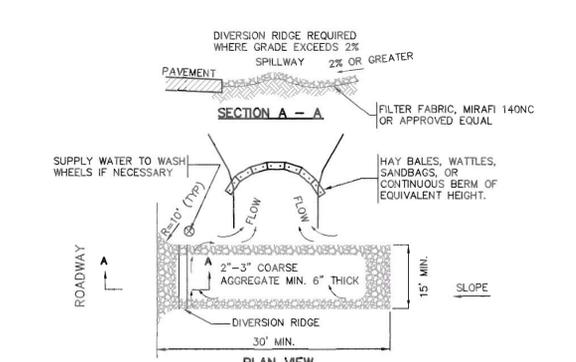
- 3.03 CLEARING, GRUBBING, AND STRIPPING
- SCHEDULE GRUBBING AND STRIPPING TO OCCUR IMMEDIATELY PRIOR TO EARTH DISTURBANCE. DEPENDING ON SITE AREA, CONSIDER MULTIPLE GRUBBING PHASES, SEQUENCED TO TAKE ADVANTAGE OF THE EROSION PREVENTION POTENTIAL OF EXISTING VEGETATIVE COVER.
  - MINIMIZE THE AREA OF EXISTING VEGETATION REMOVED WHEREVER POSSIBLE.
  - LOCATE AND SIZE STOCKPILES TO MINIMIZE EROSION POTENTIAL, TAKING ADVANTAGE OF TERRAIN SLOPE AND ASPECT, WHERE APPROPRIATE.
  - PROTECT VEGETATION, INCLUDING ROOT SYSTEMS, BEYOND LIMIT OF CLEARING.
  - 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
- DEVE AND INSTALL CONTROL MEASURES ADEQUATE TO HANDLE DISCHARGES AND TRAP SEDIMENT FROM FOOTING SUMP AND WELL POINT PUMPS PRIOR TO EXCAVATION.
  - ARMOR SUMP PUMP DISCHARGE LOCATIONS TO PREVENT EROSION AT POINT OF DISCHARGE AND AREAS DOWNSTREAM.
  - IF FOUNDATION EXCAVATIONS GRADE TO DAYLIGHT ON THE LOW SIDE, DEVE AND INSTALL CONTROL MEASURES TO HANDLE SURFACE AND GROUNDWATER FLOW FROM EXCAVATION LOW POINT.
  - STOCKPILE EXCAVATED MATERIALS TO BAFFLE OVERLAND RUNOFF, AVOIDING THE CREATION OF LENGTHY PATHS OF CONCENTRATED RUNOFF.
  - BACKFILL UTILITY TRENCHES AS SOON AS PRACTICABLE TO PREVENT FLOODING, SLOUGHING, POTENTIAL OVERFLOW, AND REPETITIVE EARTH DISTURBANCE.

- 3.05 SITE GRADING
- WHERE APPLICABLE, FOLLOW EXCAVATION AND FILL PRACTICES SHOWN ON DRAWINGS TO LOCALIZE AND MINIMIZE EROSION.
  - 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.

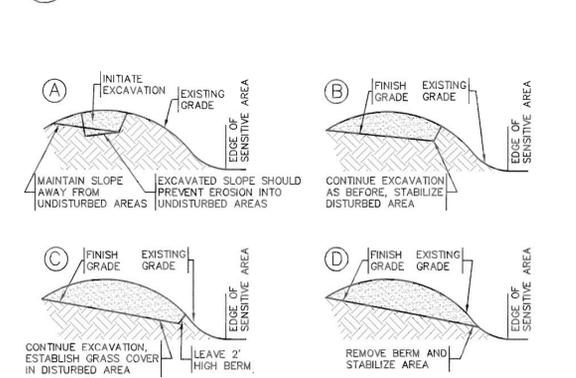
- 3.06 STORMWATER MANAGEMENT SYSTEM
- THE STORMWATER MANAGEMENT SYSTEM INCLUDES, BUT IS NOT NECESSARILY LIMITED TO, ALL PERMANENT DETENTION / RETENTION BASINS, DISCHARGE STRUCTURES / WEIRS, CULVERTS, OPEN CHANNELS, CURBS, GUTTERS, PAVED SWALES, CATCH BASINS, DRAIN MANHOLES, DRAINAGE PIPES, ROOF DRAIN MANHOLES, WATER QUALITY SWALES, SEPARATORS, AND SIMILAR STORMWATER RUNOFF CONVEYANCE, TREATMENT, AND STORAGE FACILITIES.
  - 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.
  - 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.
  - 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.
  - 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.
  - 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
- COMPLETE LANDSCAPING AS SOON AS POSSIBLE AFTER COMPLETION OF FINAL SUBGRADE.
  - IMMEDIATELY AFTER PLACEMENT OF TOPSOIL, STABILIZE WITH CONTROL MEASURES INCLUDING, BUT NOT NECESSARILY LIMITED TO, SEED MIX, MULCH, AND / OR BLANKET.



- NOTES:
- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
  - WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
  - WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
  - USE SANDBAGS, HAY BALES OR OTHER APPROVED METHODS TO CHANNELIZE RUNOFF TO BASIN AS REQUIRED.

## CONSTRUCTION ENTRANCE



## EXCAVATION PROCEDURE

TYPICAL CROSS SECTION EXCAV\_PROC.DWG 2/6/08 NOT TO SCALE

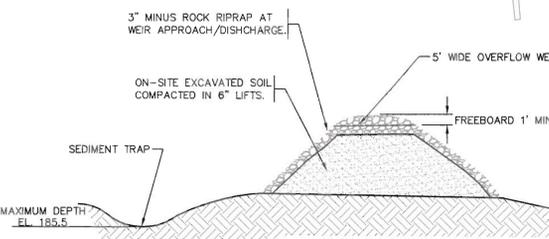
## GENERAL SEQUENCE OF CONSTRUCTION

IN AN EFFORT TO PROTECT ENVIRONMENTALLY SENSITIVE AREAS ON AND ADJACENT TO SITE, THE FOLLOWING PROCEDURE WILL SERVE AS A GUIDE TO THE CONTRACTOR IN COMPLETING SITE WORK:

- BEFORE ANY GRADING ACTIVITIES BEGIN:
- WALK SITE AND IDENTIFY LOCATIONS OF LIMIT OF WORK AND ENVIRONMENTALLY SENSITIVE AREAS. ESTABLISH A CONSTRUCTION STAGING AREA LOCATED BEYOND ENVIRONMENTALLY SENSITIVE AREAS.
  - DEFINE LIMITS OF CLEARING ASSOCIATED WITH CONSTRUCTION.
  - INSTALL EROSION CONTROL MEASURES AS SHOWN ON THE APPROVED PLAN AND AS DIRECTED BY ORDER OF CONDITIONS. PLACE REQUIRED SIGNAGE.

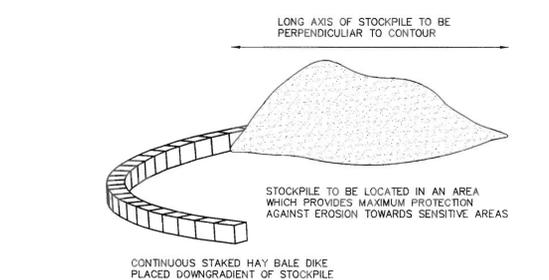
- SITE GRADING AND CONSTRUCTION:
- REMOVE EXISTING STRUCTURES AND PARKING AREA;
  - BEGIN CLEARING AND GRUBBING OPERATIONS;
  - BEGIN SITE GRADING AND TOPSOIL STRIPPING;
  - ESTABLISH TOPSOIL STOCKPILE AREAS;
  - INSTALL STRAW WATTLES AROUND STOCKPILES;
  - DISTURBED AREAS WHERE CONSTRUCTION WILL CEASE FOR MORE THAN 14 DAYS WILL BE STABILIZED WITH EROSION CONTROLS;
  - ROUGH GRADE BUILDING PADS AND PARKING AREA;
  - INSTALL BUILDING FOUNDATION AND PARKING AREA;
  - PLACE GRAVEL OF PARKING AREA PAVEMENT;
  - CONSTRUCT BUILDING;
  - CONSTRUCT BIORETENTION AREA, INSTALL TEMPORARY EROSION CONTROL AS NECESSARY TO PROTECT SOIL MEDIA WITHIN BIORETENTION AREA UNTIL FINAL STABILIZATION;
  - PLACE PARKING AREA BINDER, CURBING AND FINAL ASPHALT.

- FINAL STABILIZATION:
- COMPLETE FINAL GRADING;
  - PREPARE SITE FOR FINAL SEEDING AND LANDSCAPING;
  - HYDRO-SEED AND PLANT LANDSCAPING AS SHOWN AROUND PARKING AREA AND WITHIN BIORETENTION AREA;
  - MONITOR STABILIZED AREAS UNTIL FINAL STABILIZATION IS ACHIEVED. RE-SEED EXPOSED SOILS;
  - REMOVE ALL EROSION CONTROL MEASURES AND SIGNS. SWEEP PAVED AREAS;
  - STRIP PAVEMENT MARKINGS AS SHOWN ON APPROVED PLANS.



## TEMPORARY SEDIMENT BASIN

TYPICAL CROSS SECTION TEMP\_SED\_BSN.DWG 2/6/08 NOT TO SCALE

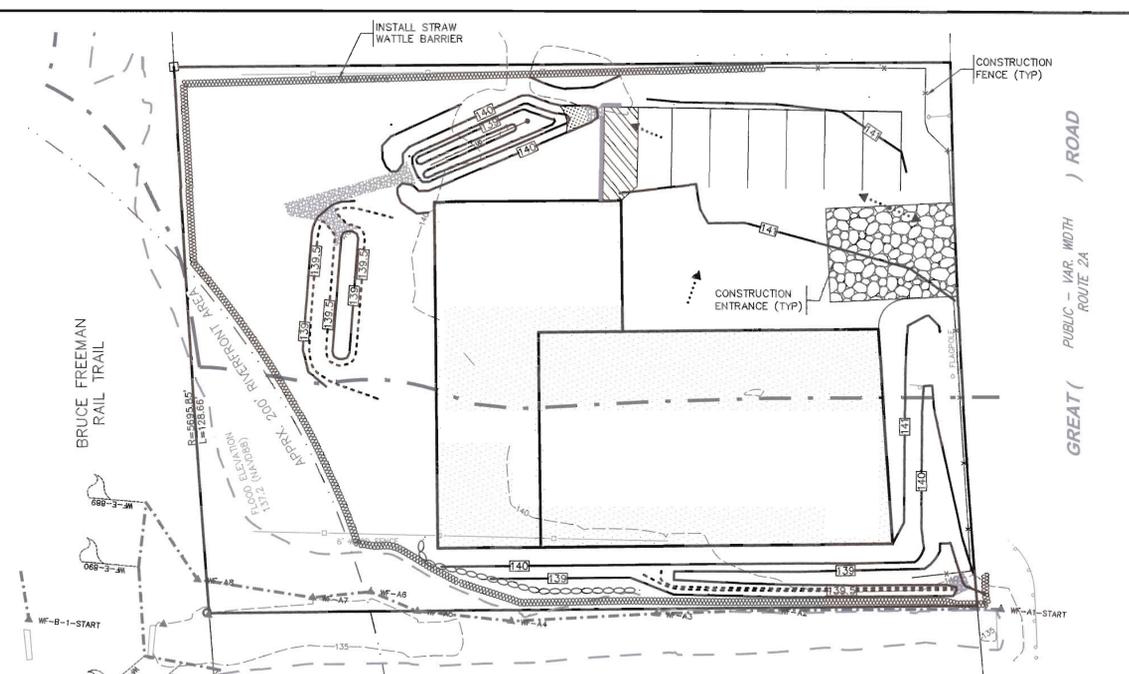


## TEMPORARY STOCKPILE

ISOMETRIC VIEW TEMP\_STOCKPILE.DWG 2/6/08 NOT TO SCALE

## PLAN NOTES:

- WORK WITHIN THE WETLANDS ABUTTING AND SOUTH OF THE PROJECT SITE IS LIMITED TO REMOVAL OF INVASIVE SPECIES, REMOVING DEBRIS AND PLANTING OF NATIVE SHRUBS AND GRASSES.
- THE AREA OF PROJECT SITE WEST OF THE NEW BUILDING TO THE RAIL TRAIL IS TO BE RECLAIMED AS LAWN AND PLANTINGS OF NATIVE SHRUBS AND TREES. THESE PROPOSED PLANTINGS TO BE APPROVED BY THE NATURAL RESOURCE DEPARTMENT PRIOR TO INSTALLATION.

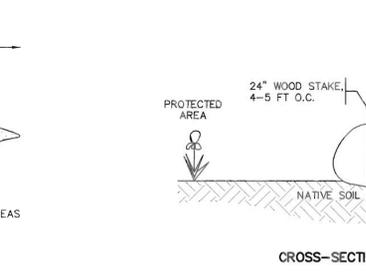


PLAN NOTE:  
 [1] LOCATIONS AND USES OF EROSION & SEDIMENT CONTROL PROCEDURES AND DEVICES SHOWN HEREON ARE A GENERAL GUIDE TO THEIR USE RATHER THAN A PROPOSED LAYOUT TO BE FOLLOWED BY THE CONTRACTOR. THE CONTRACTOR IS WHOLLY RESPONSIBLE FOR THE USE, LOCATION AND IMPLEMENTATION OF THESE CONTROLS TO ENSURE THE PROTECTION OF SENSITIVE AREAS ON AND ADJACENT TO THE SITE DURING CONSTRUCTION.

EROSION & SEDIMENT CONTROL PLAN  
 SCALE: 1" = 20'

## TEMPORARY SEDIMENT BASIN

TYPICAL CROSS SECTION TEMP\_SED\_BSN.DWG 2/6/08 NOT TO SCALE

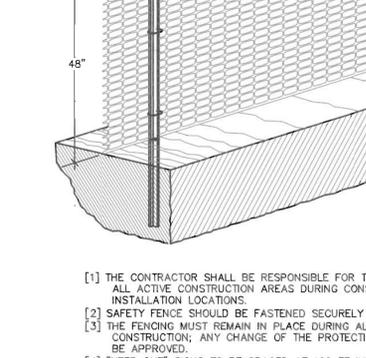


## TEMPORARY STOCKPILE

ISOMETRIC VIEW TEMP\_STOCKPILE.DWG 2/6/08 NOT TO SCALE

## CONSTRUCTION ENTRANCE

TYPICAL CROSS SECTION CONST\_ENTRNC.DWG 2/6/08 NOT TO SCALE



## CONSTRUCTION SAFETY FENCE

TYPICAL CROSS SECTION CONST\_ENTRNC.DWG 2/6/08 NOT TO SCALE

## 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 HIGHER THAN 4 FEET ABOVE GRADE, PROPRIETARY EQUIPMENT. SEE EXISTING CONDITION NOTES.

NO.	DATE	BY	APP.	REVISION DESCRIPTION

**GPR** Engineering Solutions for Land & Structures

**GOLDSMITH, PREST & RINGWALL, INC.**  
 39 MAIN STREET, SUITE 301, AYER, MA 01432  
 CIV-L ENGINEERING • LAND SURVEYING • LAND PLANNING  
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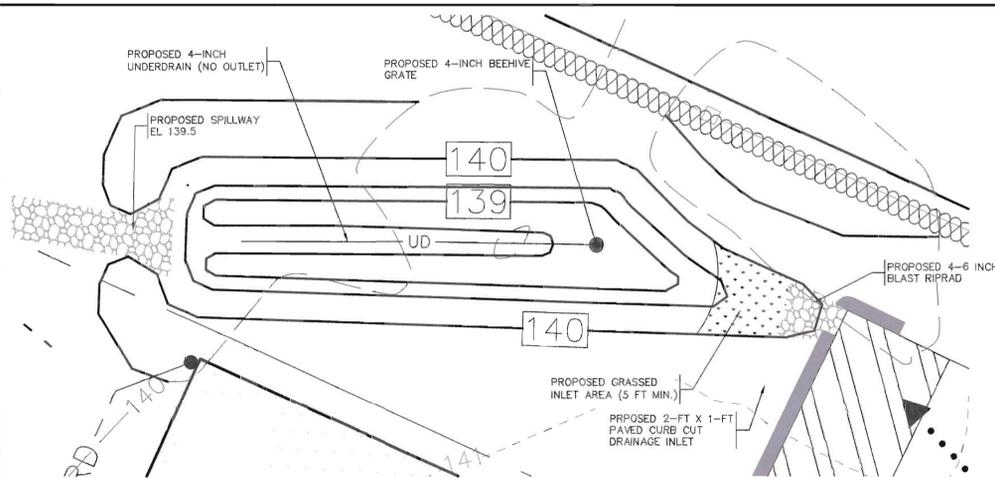
COMMERCIAL DEVELOPMENT

STORM WATER POLLUTION PREVENTION PLAN

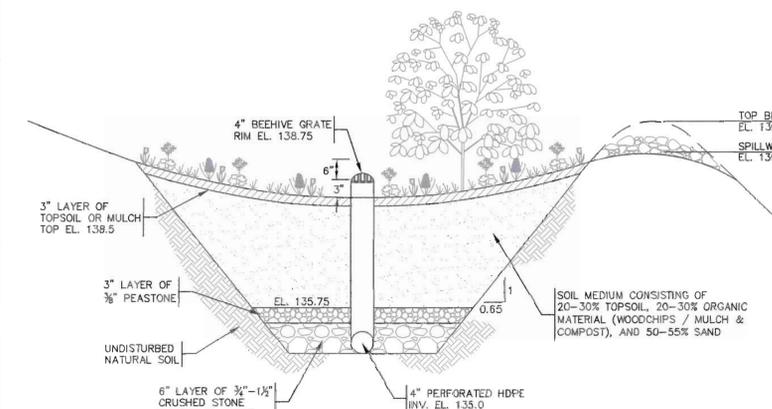
ALPHA CARS  
 178 GREAT ROAD  
 ACTON, MA

PREPARED FOR:  
 178 GREAT RD., ACTON LLC  
 649 MASSACHUSETTS AVE.  
 BOXBOROUGH, MA 01719

DES. BY: JEG	DATE: JULY 2016	JOB 161025	2 OF 3
CHK. BY: DEM			



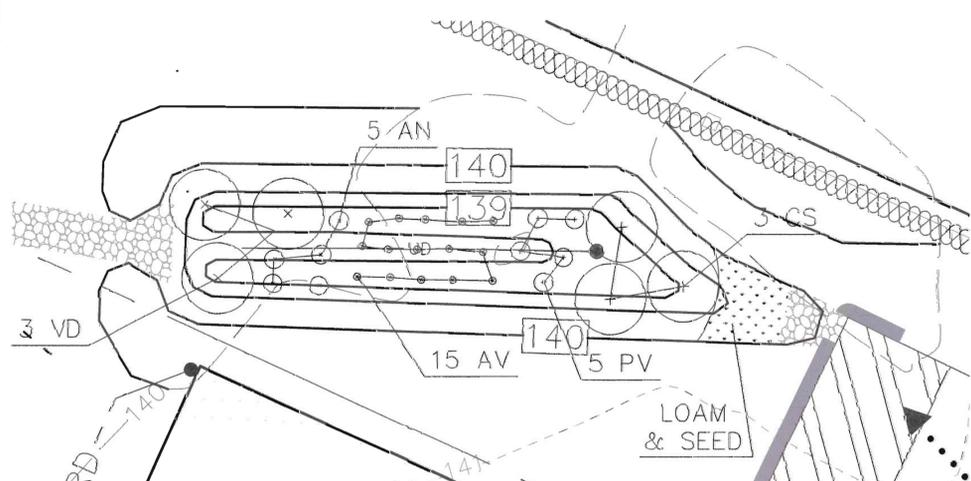
**BIORETENTION AREA**  
CROSS SECTION  
SCALE: 1" = 6'



**MATERIAL NOTES:**

- [1] SOIL MIX MUST BE UNIFORM, FREE OF STONES, STUMPS, ROOTS OR SIMILAR OBJECTS LARGER THAN 2 INCHES. CLAY CONTENT SHOULD NOT EXCEED 5%.
- [2] SOIL pH SHOULD GENERALLY BE BETWEEN 5.5-6.5.
- [3] USE SOILS WITH 1.5%-3% ORGANIC CONTENT AND MAXIMUM 500-PPM SOLUBLE SALTS.
- [4] SAND COMPONENT SHOULD BE GRAVELLY SAND THAT MEETS ASTM D 422.
- [5] TOPSOIL COMPONENT SHALL BE LOAMY SAND.
- [6] COMPOST COMPONENT MUST BE PROCESSED FROM YARD WASTE IN ACCORDANCE WITH MASS DEP. GUIDELINES. COMPOST SHALL NOT CONTAIN BIOSOLIDS.
- [7] ON-SITE SOIL MIXING OR PLACEMENT IS NOT ALLOWED IF SOIL IS SATURATED OR SUBJECT TO WATER WITHIN 48 HOURS. COVER AND STORE SOIL TO PREVENT WETTING OR SATURATION.
- [8] TEST SOIL FOR FERTILITY AND MICRO-NUTRIENTS AND, ONLY IF NECESSARY, AMEND MIXTURE TO CREATE OPTIMUM CONDITIONS FOR PLANT ESTABLISHMENT AND EARLY GROWTH.
- [9] GRADE THE AREA TO ALLOW A PONDING DEPTH OF 6-8 INCHES; DEPENDING ON SITE CONDITIONS, MORE OR LESS PONDING MAY BE APPROPRIATE.
- [10] MULCH SHALL BE FINE-SHREDDED HARDWOOD.

**BIORETENTION AREA**  
CROSS SECTION  
NOT TO SCALE



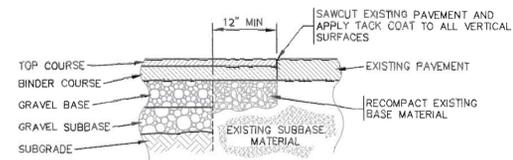
**BIORETENTION AREA PLANTINGS**  
CROSS SECTION  
SCALE: 1" = 6'

**PLANTING NOTES FOR BIO-RETENTION BASIN**

1. THE CONTRACTOR SHALL COVER THE BOTTOM OF THE EXCAVATION WITH COARSE GRAVEL, OVER PEA GRAVEL, OVER SAND.
2. THE SOIL MIX FOR BIO-RETENTION AREAS SHOULD BE A MIXTURE OF 40% SAND, 20% TO 30% TOPSOIL, AND 30% TO 40% COMPOST. SOIL PH SHOULD GENERALLY BE 5.5 TO 6.5. USE SOILS WITH 1.5% TO 3% ORGANIC CONTENT AND MAX. 500 PPM SOLUBLE SALTS. THE TOPSOIL COMPONENT SHALL BE A SANDY LOAM, LOAMY SAND OR LOAM TEXTURE.
3. THE COMPOST COMPONENT MUST BE PROCESSED FROM YARD WASTE IN ACCORDANCE WITH MASSDEP GUIDELINES. THE COMPOST SHALL NOT CONTAIN BIOSOLIDS.
4. ON-SITE SOIL MIXING OR PLACEMENT IS NOT ALLOWED IF SOIL IS SATURATED OR SUBJECT TO WATER WITHIN 48 HOURS. COVER AND STORE SOIL TO PREVENT WETTING OR SATURATION.
5. COVER THE SOIL WITH 2 TO 3 INCHES OF FINE-SHREDDED HARDWOOD MULCH. SUBMIT SAMPLE OF MULCH FOR APPROVAL.
6. DURING CONSTRUCTION, AVOID EXCESSIVELY COMPACTING SOILS AROUND THE BIO-RETENTION AREAS AND ACCUMULATING SILT AROUND THE DRAIN FIELD. PLACE PLANTING SOILS IN 1-FOOT TO 2-FOOT LIFTS AND COMPACT THEM WITH MINIMAL PRESSURE UNTIL THE DESIRED ELEVATION IS REACHED.
7. INSPECT EACH MONTH, AND WEED OUT INVASIVE PLANT MATERIAL AND REMOVE TRASH.
8. MULCH ONE TIME PER YEAR IN THE SPRING. INSPECT AND RE-MULCH VOID AREAS AS NEEDED. REPLACE MULCH EVERY TWO YEARS IN THE EARLY SPRING.
9. FERTILIZE ONE TIME INITIALLY IN THE SPRING.
10. REMOVE DEAD VEGETATION IN THE FALL AND SPRING, TWICE PER YEAR. REPLACE DEAD VEGETATION ANNUALLY IN THE SPRING.
11. PRUNE 1-2 TIMES PER YEAR.

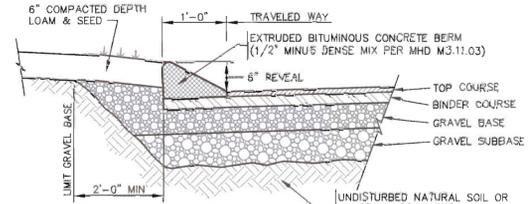
**BIORETENTION AREA PLANT LIST**

NO.	KEY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING
3	VD	VIBURNUM DENDATUM	ARROWWOOD VIBURNUM	2'-3'	6'-8' O.C.
3	CS	CORNUS SERICEA	RED OSIER DOGWOOD	2'-3'	6'-8' O.C.
5	PV	PANICUM VIRGATUM	SWITCHGRASS	2" PLUG	2'-3' O.C.
15	AV	ANDROPOGON VIRGINICUS	BROOM SEDGE BLUESTEM	2" PLUG	1'-2' O.C.
5	AN	ASTER NOVAE-ANGLIAE	NEW ENGLAND ASTER	2" PLUG	2'-3' O.C.

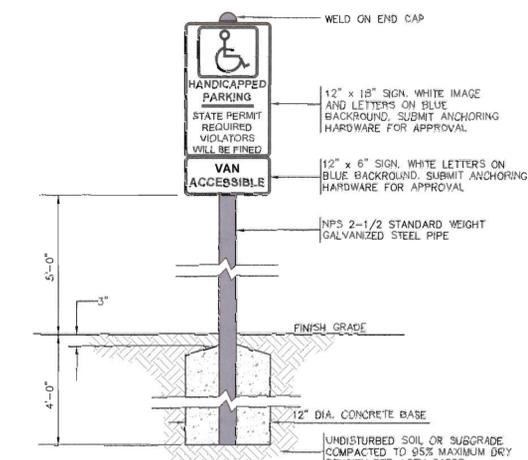


- NOTES:**
- [1] FLEXIBLE PAVEMENT REMOVAL SHALL BE INITIATED BY MAKING A FULL-DEPTH VERTICAL SAWCUT AT THE LOCATIONS INDICATED ON THE PLANS. SAWCUTS SHALL BE ACCOMPLISHED USING A STANDARD DIAMOND-TYPE BLADE SAW.
  - [2] IF SAWCUT IS WITHIN THREE (3) FEET OF AN EXISTING BUILDING, CURB LINE OR EXISTING FENCE, COMPLETELY REMOVE EXISTING PAVEMENT AND REPLACE ACCORDING TO THE REQUIREMENTS OF THE BITUMINOUS CONCRETE PAVEMENT SECTION.

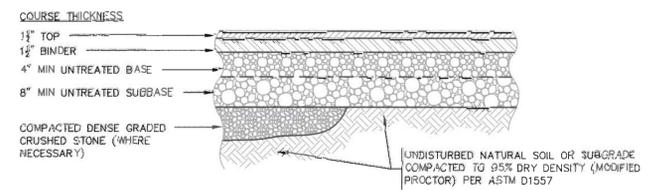
**FLEXIBLE PAVEMENT SAWCUT DETAIL**  
TYPICAL CROSS SECTION  
NOT TO SCALE



**CAPE COD BERM**  
TYPICAL CROSS SECTION  
NOT TO SCALE



**HANDICAP PARKING SIGN**  
NOT TO SCALE



COURSE	MATERIAL	SPECIFICATION PER MASS HIGHWAY DEPARTMENT (MHD)	MAX. AGG. SIZE (INCH)	COMPACTION REQUIREMENTS	TEST DESIGNATION
TOP	BITUMINOUS CONCRETE	M3.11.03 CLASS 1, TYPE I-1	1 1/2	(NOTE 1)	AASHTO-T166
BINDER	BITUMINOUS CONCRETE	M3.11.03 CLASS 1, TYPE I-1	3/4	(NOTE 1)	AASHTO-T166
BASE	GRAVEL BORROW	MT.03.0 TYPE C	2	95% (NOTE 3)	ASTM D1557/AASHTO-T99
SUBBASE	GRAVEL BORROW	MT.03.0 TYPE B	3	95% (NOTE 3)	ASTM D1557/AASHTO-T99
SUBGRADE	ORDINARY BORROW	MT.01.0 (SEE NOTE 2)	6	95% (NOTE 3)	ASTM D1557/AASHTO-T99

- NOTES:**
- [1] COMPACT TO TEST AVERAGE OF 95% TEST SHALL NOT BE LOWER THAN 93%.
  - [2] UNSUITABLE MATERIAL IN THE SUBGRADE SHALL BE REMOVED AND REPLACED WITH AN ACCEPTABLE SUBSTITUTE MATERIAL: 3/4" MINUS DENSE GRADED CRUSHED STONE.
  - [3] MATERIAL SHALL BE SPREAD AND COMPACTED IN LAYERS NOT EXCEEDING 8-INCHES IN DEPTH. COMPACTED MEASUREMENT; LAST LAYER OF MATERIAL SHALL NOT EXCEED 4-INCHES IN DEPTH, COMPACTED MEASUREMENT.

**BITUMINOUS CONCRETE PAVEMENT**  
TYPICAL CROSS SECTION  
NOT TO SCALE

**DRAWING ISSUED FOR:**

CONCEPT     CONSTRUCTION  
 PERMIT         CONSTRUCTION RECORD

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**COMMERCIAL DEVELOPMENT**

**CONSTRUCTION DETAILS**

**ALPHA CARS**  
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CHK. BY: DEM			

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