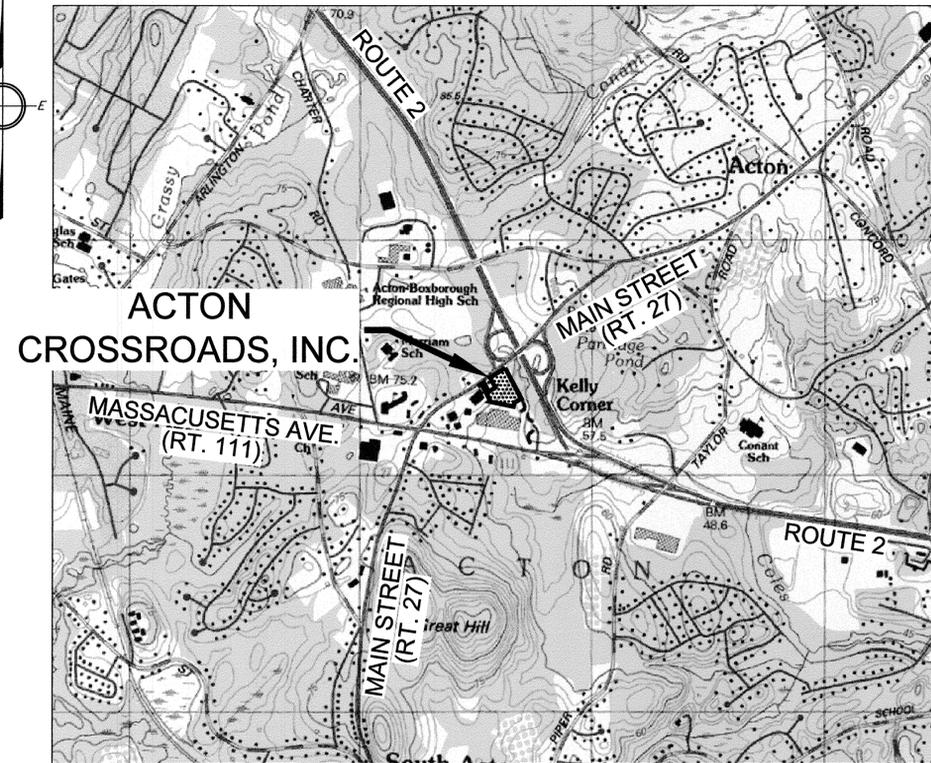


PARKING EXPANSION ACTON CROSSROADS, INC. ACTON, MA

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 RIM 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, STRAW WATTLES OR HAY BALES 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 ACTON 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.



VICINITY MAP
SCALE: 1" = 1,200'

REGULATORY NOTES

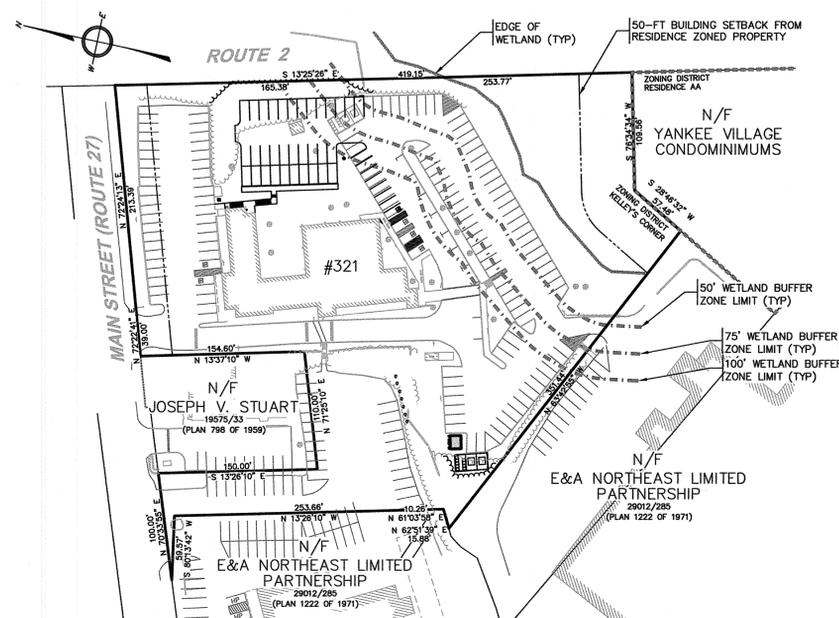
- CONTRACTOR SHALL CONTACT DIG-SAFE FOR UNDERGROUND UTILITY MARKING AT 888.344.7233 AT LEAST 72 HOURS PRIOR TO COMMENCEMENT OF ANY WORK. CONTRACTOR SHALL GIVE TWENTY-FOUR (24)-HOUR NOTICE TO PERTINENT TOWN DEPARTMENTS BEFORE COMMENCING ANY WORK IN THE FIELD.
- CONTRACTOR SHALL COORDINATE AND OBTAIN ALL 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.

SURVEY NOTES

- EXISTING CONDITION INFORMATION BASED ON AN ON-THE-GROUND TOPOGRAPHIC SURVEY PERFORMED BY GOLDSMITH, PREST & RINGWALL, INC. DATED ON MULTIPLE TRIPS BETWEEN 5/17/2002 AND 11/27/2012.
- BOUNDARY INFORMATION BASED ON A PLAN REFERENCE NO. 1, 2, 3 & 4.

FLOOR AREA RATIO COMPUTATIONS

| PARAMETER | AREA (SQUARE FEET) | |
|--|--------------------|--|
| Floor Area Ratio (FAR) = Net Floor Area / Developable Site Area | | |
| Net Floor Area | 26,047 | - includes 11,280 sf of basement floor |
| Developable Site Area = Lot Area - Wetland Area - Flood Plain District Area - Zoning District Other than Principal Use Area - Area within an Access Easement (per Sec. 10.4.3.7) | | |
| Lot Area | 157,726 | |
| Wetland Area | 13,691 | |
| Flood Plain District Area | 0 | None on Site |
| Zoning District Other than Principal Use Area | 0 | None on Site |
| Area within an Access Easement | 0 | |
| Developable Site Area | 144,035 | |
| Floor Area Ratio = | 0.181 | |



PLOT PLAN
SCALE: 1" = 80'

ZONING

| Parameter | Section [1] | Requirement | Remarks |
|--------------------------|--------------------|--|--|
| Zoning District | Sec 2.1 | KC | Kelley's Corner |
| Overlay District | Sec 2.2 | Floodplain District [see note 2] Groundwater Protection | none on site within mapped Zone 4 |
| Proposed Use | Sec 3.5.3 | Allowed | Health Care Facility |
| Lot Area | Sec 5 Table | 10,000 SF | |
| Frontage | Sec 5 Table | 100 FT | |
| Lot Width | Sec 5 Table | 50 FT | |
| Yard | Sec 5 Table | | |
| Front | | 30 FT | |
| Side | | N/A | See Note [3] |
| Rear | | N/A | See Note [3] |
| Building Height | Sec 5 Table | 36 FT | |
| Floor Area Ratio | Sec 5 Table | 0.40 maximum | subject to special KC district requirements [see note 4] |
| Net Floor Area | 10.4.3.8 | 0.40 maximum | for lots subject to Site Plan Special Permit [see note 5] |
| Open Space | Sec 5 Table | N/A | |
| Parking | 6.3.1.9 6.9.5.3 | Office can be 70% of that required | 1 space per 250 SF of NET floor area (can be 50% of required if collective parking is used) |
| Wetlands Setback | see local bylaw | 100 feet from resource areas | 50' no disturb, 75' no structure |
| MDEP Riverfront Area | N/A | | none on site |
| FEMA Floodplain | 25017C0352E | | none on site |
| ACEC | N/A | | none on site |
| Zone 1 Protective Radius | N/A | | none on site |
| Mapped Zone 2 | N/A | | none on site |
| IWPA | N/A | | none on site |

NOTES:

- Reference to section of Zoning Bylaw, where applicable.
- From maps entitled "Flood Insurance Rate Maps and Flood Boundary and Floodway Maps" dated June 4, 2010.
- per table footnote #8 - "If LOT abuts a residential zoning district the minimum side and rear yard shall be 50 feet."
- per 6.3.1.9 "Special Provisions for the Kelley's Corner District", lots within the KC zoning district with greater than or equal to 0.20 Floor Area Ratio shall comply with the requirements of 6.6.3, including but not limited to sidewalk locations, pedestrian plaza's, driveway & parking lot design and building design.
- per 10.4.3.8 of the zoning bylaw outlines the Net Floor Area to be calculated using the "Developable Site Area" (defined in 10.4.3.7) which is the lot area subtracting all land within a wetland, a Flood Plan District, another zoning district in which the principal use of the lot is not located and any access right-of-way easements.

ABBREVIATIONS:

SF=Square Feet, CF=cubic feet; FT=feet; GFA=gross floor area; AC=acres; PB=Planning Board; ZBA=Zoning Board of Appeals; IWPA=interim wetland protection area; ACEC=Area of Critical Environmental Concern; FIRM=Flood Insurance Rate Map; MDEP=Massachusetts Dept of Environmental Protection

PARKING COMPUTATIONS

| USE | FORMULA | VARIABLE | REQUIRED SPACES | EXISTING SPACES | PROPOSED SPACES |
|----------------------------------|--|----------------------------|-----------------|-----------------|-----------------|
| Office | 1 space per 250 SF of Net Floor Area (per section 6.3.1.9) | 26,047 SF (net floor area) | 105 | - | - |
| Kelley's Corner Zoning Reduction | (per section 6.9.5.3) | 70% of required | 74 | 149 | 168 |

Summary Notes:

- Parking totals do not include 32x spaces on parcel F3 / 89.3, since use rights are reserved to abutting parcels
- Proposed "Double Spaces" have only been counted as one parking stall

ABBREVIATIONS:

SF=Square Feet, GFA=Gross Floor Area, App.= Approximate, >=Greater than

COVERAGE COMPUTATIONS

| PARAMETER | AREA (ACRES) | AREA (SQUARE FEET) | FRACTION OF TOTAL LOT AREA (%) |
|-----------------------------|--------------|--------------------|--------------------------------|
| EXISTING CONDITIONS | | | |
| Lot Area | 3.62 | 157,726 | 100% |
| Building Footprint | 0.27 | 11,753 | 7% |
| Other Impervious Areas | 1.65 | 71,994 | 46% |
| Total Impervious Coverage | 1.92 | 83,748 | 53% |
| DEVELOPED CONDITIONS | | | |
| Lot Area | 3.62 | 157,726 | 100% |
| Building Footprint | 0.27 | 11,753 | 7% |
| Other Impervious Areas | 1.84 | 80,119 | 51% |
| Total Impervious Coverage | 2.11 | 91,872 | 58% |

ABBREVIATIONS:

SF=Square Feet, GFA=Gross Floor Area, App.= Approximate, >=Greater than

SHEET INDEX

- TITLE SHEET
- EXISTING CONDITIONS & DEMOLITION PLAN
- SITE PLAN
- STORM WATER POLLUTION PREVENTION PLAN
- CONSTRUCTION DETAILS

PLAN REFERENCES

- "PLAN OF LAND IN ACTON, MASS. OWNED BY ACTON ENTERPRISES, INC." PREPARED BY ACTON SURVEY & ENGINEERING, INC. DATED OCTOBER 6, 1970, REVISED APRIL 1971; AUG. 23, 1971 & SEPT. 3, 1971. ENDORSED BY THE ACTON PLANNING BOARD ON SEPTEMBER 20, 1971. RECORDED AT THE MIDDLESEX SOUTH REGISTRY OF DEEDS PLAN NUMBER 1222 (A OF 3) OF 1971.
- "SUBDIVISION PLAN OF LAND IN ACTON" PREPARED BY ACTON SURVEY & ENGINEERING, INC. SURVEYORS. DATED APRIL 23, 1970. PART OF PLAN FILED IN LAND REGISTRATION OFFICE, OCT. 22, 1971. MIDDLESEX SOUTH REGISTRY OF DEEDS CERTIFICATE 136263, BOOK 811, PAGE 113. PLAN 21698E.
- "SUBDIVISION PLAN OF LAND IN ACTON" PREPARED BY ACTON SURVEY & ENGINEERING, INC. SURVEYORS. DATED JUNE 8, 1971. PART OF PLAN FILED IN LAND REGISTRATION OFFICE, OCT. 22, 1971. MIDDLESEX SOUTH REGISTRY OF DEEDS CERTIFICATE 136263, BOOK 811, PAGE 113. PLAN 21698F.
- "EASEMENT PLAN OF LAND IN ACTON, MASS. PREPARED FOR: ACTON CROSSROADS, INC. AT 321 MAIN STREET" BY GOLDSMITH, PREST & RINGWALL, INC. DATED JAN. 21, 2003

ASSESSORS REFERENCE

ASSESSORS MAP F-3, LOT 82, 89-1 & 99-3
OWNER PER ASSESSOR RECORD:
ACTON CROSSROADS, INC.
321 MAIN STREET
ACTON, MA 01720

APPROVED BY THE
ACTON BOARD OF SELECTMEN

CHAIR _____
APPLICATION FILED _____
HEARING DATE _____
PLAN APPROVED _____

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.

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

GPR Engineering Solutions
for Land & Structures

GOLDSMITH, PREST & RINGWALL, INC.

39 MAIN STREET, SUITE 301, AYER, MA 01432
CIVIL & STRUCTURAL ENGINEERING • LAND SURVEYING & LAND PLANNING
VOICE: 978.772.1590 FAX: 978.772.1591
www.gpr-inc.com

COMMERCIAL DEVELOPMENT
PARKING EXPANSION

TITLE SHEET

ACTON CROSSROADS, INC.
321 MAIN STREET
ACTON, MA

OWNER / APPLICANT:
ACTON CROSSROADS, INC.
321 MAIN STREET
ACTON, MA 01720

DES. BY: NMP DATE: JANUARY 2013 JOB 121072 C.1
CHK. BY: DEM

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EXISTING CONDITIONS NOTES

- THIS LOT IS OUTSIDE OF MAPPED FLOOD ZONES AS SHOWN ON THE F.E.M.A. FLOOD INSURANCE RATE MAP FOR MIDDLESEX COUNTY, MASS., DATED JUNE 4, 2010, COMMUNITY-PANEL NO. 25017c 0352E.
- BUILDING OFFSETS ARE NOT FOR THE REPRODUCTION OF PROPERTY LINES.
- WETLAND RESOURCE AREA BOUNDARY LIMIT SHOWN HEREON BETWEEN WETLAND FLAG 1 (WF-1) THROUGH WF-14 IS PLOTTED FROM FIELD LOCATION OF FLAGS PLACED BY B & C ASSOCIATES.
- TOPOGRAPHY TAKEN FROM AN ON THE GROUND SURVEY BY GOLDSMITH, PREST & RINGWALL, INC. BETWEEN 5/17/2002 AND 11/27/2012.
- SURFACE UTILITY STRUCTURES AND BURIED UTILITY LINES ARE PLOTTED FROM SURVEY DATA AND SHOULD ONLY BE CONSIDERED APPROXIMATE. OTHER UTILITIES MAY EXIST WHICH ARE NOT EVIDENT OR FOR WHICH NO RECORD INFORMATION WAS AVAILABLE.
- CONTRACTORS (IN ACCORDANCE WITH MASS. G.L. CHAPT. 82 SECT. 40 AS AMENDED) MUST CONTACT ALL UTILITY COMPANIES BEFORE EXCAVATING AND DRILLING. ALSO CALL "DIG-SAFE" AT 1-888-344-7233.
- SOIL TESTING LOCATIONS SHOWN HEREON TAKEN FROM RECORD PLANS ON FILE AND AVAILABLE AT THE ACTON BOARD OF HEALTH OFFICES.

DEMOLITION NOTES

- PROPERLY DISPOSE OF NON-SALVAGEABLE MATERIAL/DEBRIS INCLUDING TREE STUMPS AND OTHER UNSUITABLE FILL MATERIAL OFF SITE.
- OWNER SHALL TAKE MEASURES TO CONTROL DUST DURING EARTH REMOVAL AND CONTAIN DIRT ON SITE. STREET SWEEPING AND SWEEPING OF EXISTING PAVEMENT MAY BE REQUIRED DURING CONSTRUCTION.
- COORDINATE WITH OWNER REGARDING DISPOSITION OF SALVAGEABLE MATERIALS.
- 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.

LEGEND

| | |
|---|---------------------------------|
| EXISTING | PROPOSED |
| 100- ELEVATION CONTOUR | 100.0 FG |
| 10000 SPOT GRADE | |
| PROPERTY LINE | |
| BUILDING ENVELOPE | |
| 10-YR FLOODPLAIN LIMIT | |
| 100-YR FLOODPLAIN LIMIT | |
| WETLAND EDGE WITH FLAG NO. | |
| 25' NO-DISTURBANCE ZONE LIMIT | |
| 100' WETLAND BUFFER ZONE LIMIT | |
| SHORELINE | |
| INTERMITTENT STREAM/DITCH | |
| 200' RIVERFRONT ZONE LIMIT | |
| EDGE OF PAVEMENT | |
| GRAVEL/DIRT ROAD | |
| FENCE | |
| STONE WALL | |
| WATER MAIN | |
| WATER SERVICE | |
| FOUNDATION DRAIN | |
| FORCE MAIN | |
| GRAVITY SEWER LINE | |
| GAS LINE | |
| BURIED POWER LINE | |
| STORM DRAIN | |
| CATCH BASIN | |
| DRAIN MANHOLE | |
| HAYBALE BARRIER | |
| SILT FENCE BARRIER | |
| RETAINING WALL | |
| DEEP SOIL OBSERVATION HOLE (HOLE # - MONTH YEAR) | |
| PERC A-1090 PERCOLATION TEST (PERC LETTER - MONTH YEAR) | |
| SBI SOIL BORING | |
| GM1 GROUNDWATER MONITORING WELL | |
| WELL | |
| ELEVATION BENCHMARK | |
| SURFACE RUNOFF DIRECTION | |
| TRAFFIC FLOW DIRECTION | |
| WATER SHUT-OFF VALVE | |
| 15 NUMBER OF PARKING SPACES | |
| | WS WATER MAIN |
| | FD FOUNDATION DRAIN |
| | FM FORCE MAIN |
| | SS GRAVITY SEWER LINE |
| | SD STORM DRAIN |
| | CB CATCH BASIN |
| | DMH DRAIN MANHOLE |
| | SB1 SOIL BORING |
| | GM1 GROUNDWATER MONITORING WELL |
| | WELL |
| | EB ELEVATION BENCHMARK |
| | SRD SURFACE RUNOFF DIRECTION |
| | TFD TRAFFIC FLOW DIRECTION |
| | WSO WATER SHUT-OFF VALVE |
| | 15 NUMBER OF PARKING SPACES |

ABBREVIATIONS

| | |
|--------------------|----------------------|
| TP TOP OF PAVEMENT | BF BOTTOM OF FOOTING |
| TW TOP OF WALL | CLF CHAIN LINK FENCE |
| FG FINISH GRADE | CC CONCRETE CURB |
| FF FIRST FLOOR | STCK STOCKADE FENCE |
| LL LOWER LEVEL | |

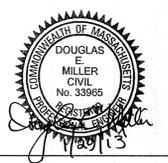
ELEVATION DATUM
DATUM: TOWN OF ACTON

B.M. NO.1

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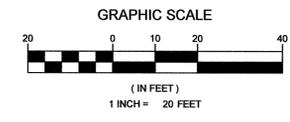
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**COMMERCIAL DEVELOPMENT
 PARKING EXPANSION**

**EXISTING CONDITIONS &
 DEMOLITION PLAN**

ACTON CROSSROADS, INC.
 321 MAIN STREET
 ACTON, MA

OWNER / APPLICANT:
 ACTON CROSSROADS, INC.
 321 MAIN STREET
 ACTON, MA 01720



DES. BY: NMP
 CHK. BY: DEM
 DATE: JANUARY 2013
 JOB 121072
 C.2

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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, 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 SELECTION, 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.
- EXCELSEIOR 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 EXCELSEIOR 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.

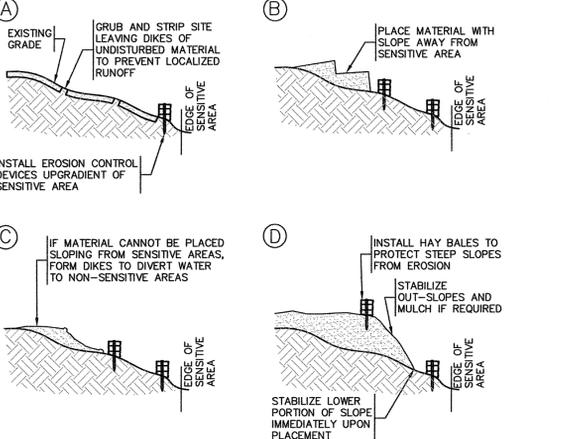
PART 3 - EXECUTION

3.01 THROUGHOUT CONSTRUCTION

- DEVELOP WORK SEQUENCE SO AS TO LIMIT DRAINAGE AREA THAT IS TRIBUTARY TO DISTURBED AREAS. DEVELOP, 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, 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.
- 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

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

- DEVELOP 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, DEVISE 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 MANIFOLDS, 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.

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:

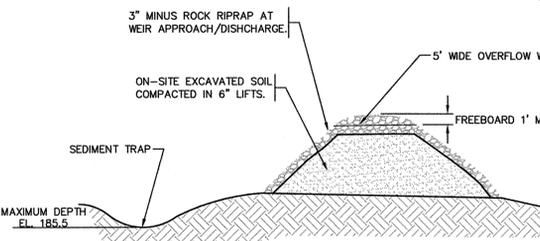
- WALK SITE AND IDENTIFY LOCATIONS OF LIMIT OF WORK AND ENVIRONMENTALLY SENSITIVE AREAS. ESTABLISH A CONSTRUCTION STAGING AREA LOCATED BEYOND ENVIRONMENTALLY SENSITIVE AREAS.
- DEFINE LIMITS OF CLEARING ASSOCIATED WITH CONSTRUCTION;
- INSTALL EROSION CONTROL MEASURES AS SHOWN ON THE APPROVED PLAN AND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

SITE GRADING AND CONSTRUCTION:

- REMOVE TRASH ENCLOSURE AND RELOCATE TO APPROVED AREA ON SITE;
- 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 PARKING EXPANSION AREA;
- CONSTRUCT ACCESS STAIRS;
- PLACE GRAVEL OF PARKING AREA PAVEMENT;
- FINISH GRADE SLOPE FORM EXISTING FRONT PARKING AREA TO NEW EXPANSION PARKING AREA;
- CONSTRUCT BIORETENTION AREA, INSTALL TEMPORARY EROSION CONTROL AS NEEDED TO PROTECT SOIL MEDIA WITHIN BIORETENTION AREA UNTIL FINAL STABILIZATION;
- PLACE PARKING AREA BINDER, CURBING, ADJACENT WALKWAY AND FINAL ASPHALT.

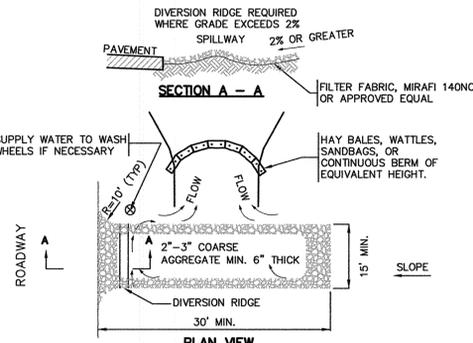
FINAL STABILIZATION:

- COMPLETE FINAL GRADING;
- PREPARE SITE FOR FINAL SEEDING AND LANDSCAPING;
- INSTALL TURF RE-ENFORCEMENT MAT ON RESHAPED SLOPE FROM FRONT PARKING AREA TO EXPANSION PARKING AREA;
- 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 NOT TO SCALE

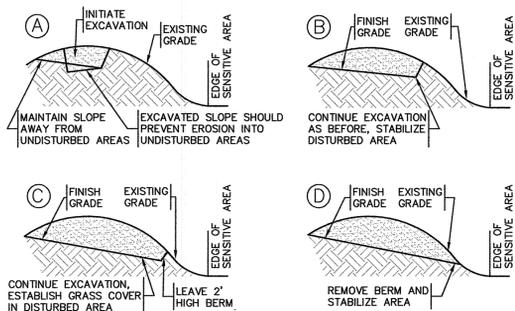


NOTES:

- 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

NOT TO SCALE

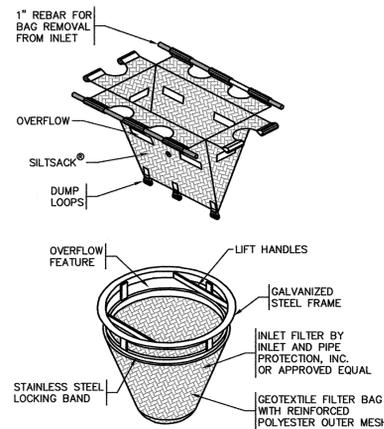


EXCAVATION PROCEDURE

TYPICAL CROSS SECTION NOT TO SCALE

TEMPORARY STOCKPILE

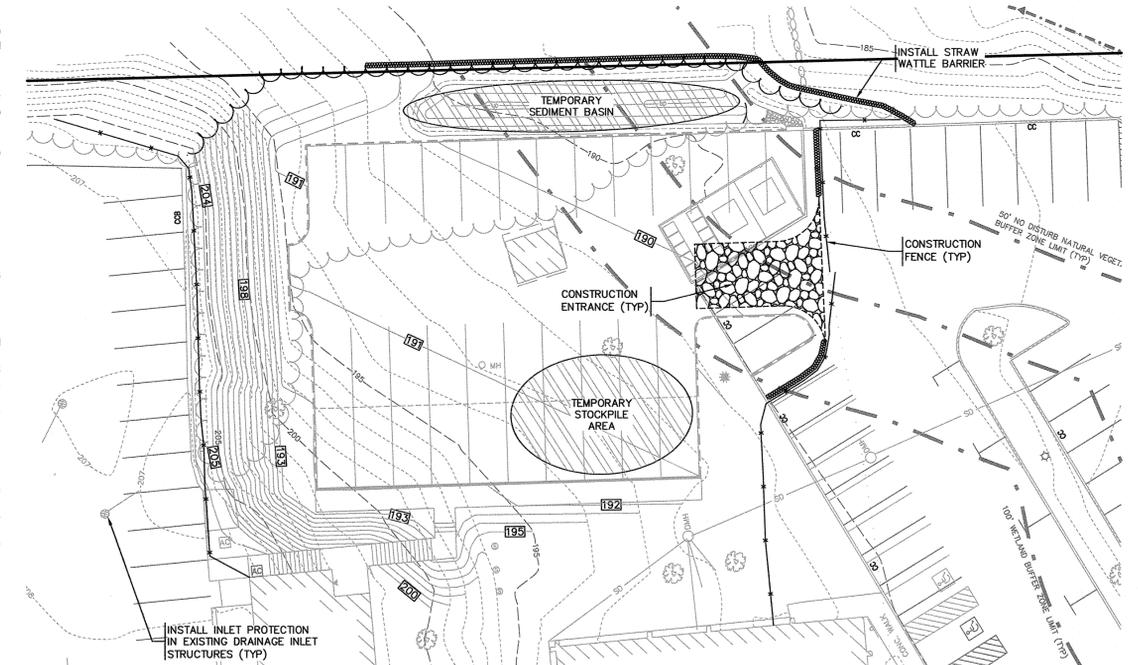
ISOMETRIC VIEW NOT TO SCALE



- NOTES:
- CLEAN INLET PROTECTION WHEN 30% FULL
 - BURLAP IS NOT AN ACCEPTABLE GEOTEXTILE

INLET PROTECTION

TYPICAL CROSS SECTION NOT TO SCALE

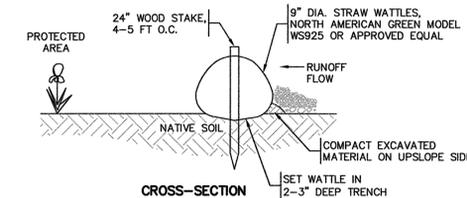


PLAN NOTE:

- 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.

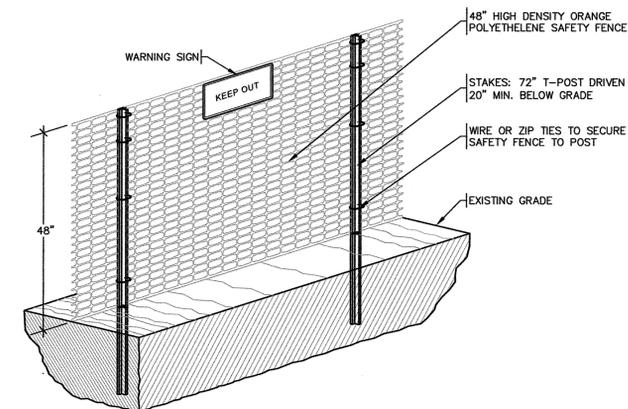
EROSION & SEDIMENT CONTROL PLAN

SCALE: 1" = 20'



STRAW WATTLES

NOT TO SCALE



- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL ACTIVE CONSTRUCTION AREAS DURING CONSTRUCTION AND INSTALLATION LOCATIONS.
- SAFETY FENCE SHOULD BE FASTENED SECURELY TO THE T-POSTS.
- THE FENCING MUST REMAIN IN PLACE DURING ALL PHASES OF CONSTRUCTION; ANY CHANGE OF THE PROTECTIVE FENCING MUST BE APPROVED.
- "KEEP OUT" SIGNS TO BE SPACED AT 100 FT INTERVALS.

CONSTRUCTION SAFETY FENCE

TYPICAL CROSS SECTION NOT TO SCALE

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 PERMIT CONSTRUCTION RECORD

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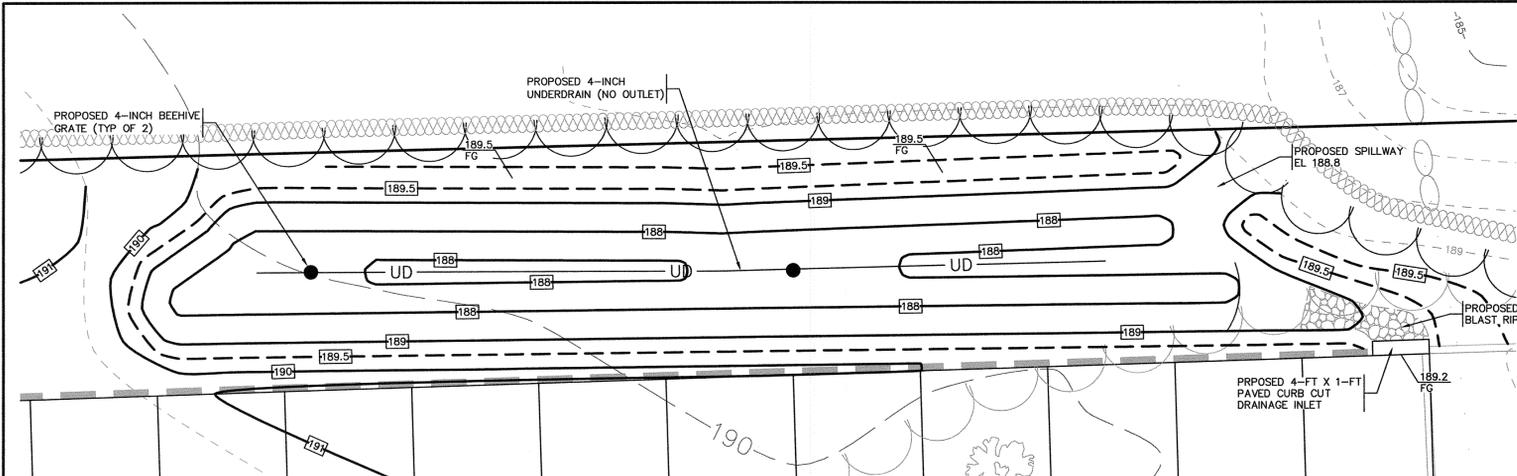
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STORM WATER POLLUTION
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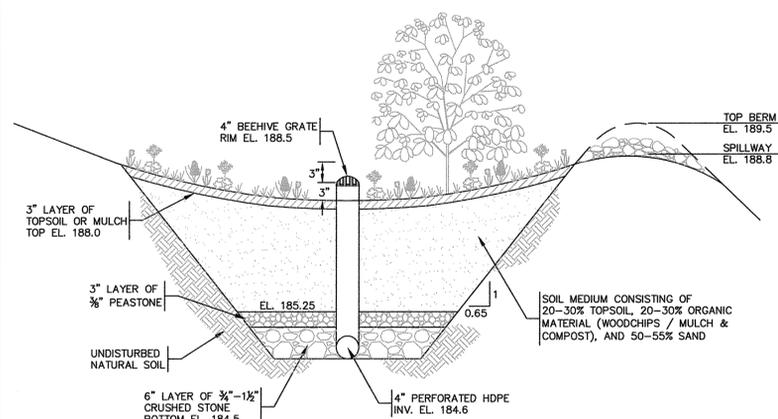
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ACTON, MA

OWNER / APPLICANT:
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BIORETENTION AREA
CROSS SECTION
SCALE: 1" = 6"



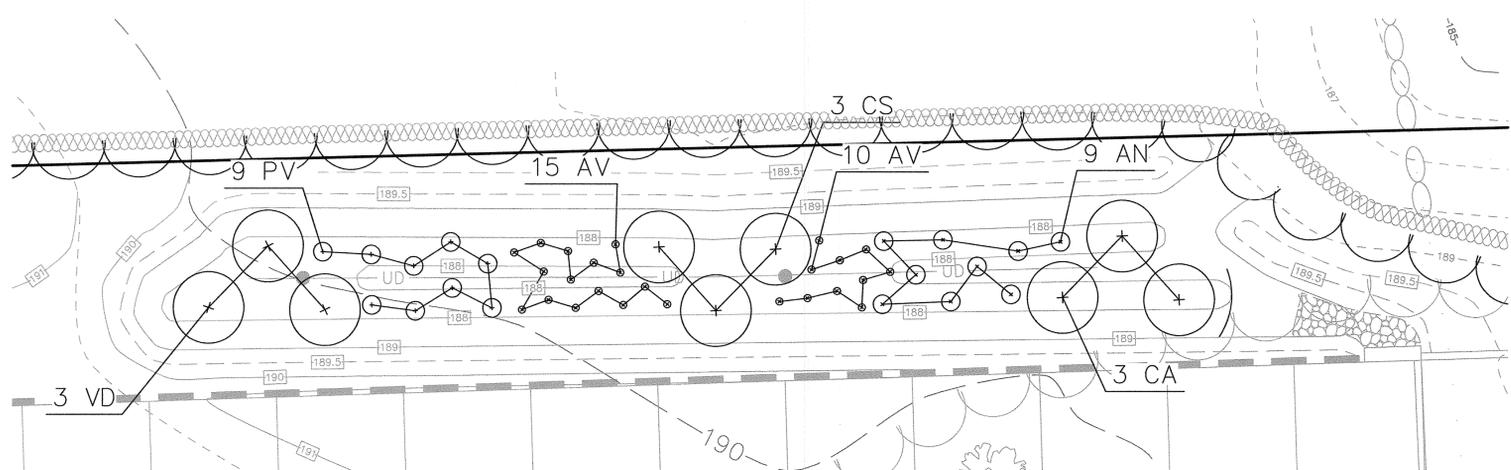
- MATERIAL NOTES:**
- [1] SOIL MIX MUST BE UNIFORM, FREE OF STONES, STUMPS, ROOTS OR SIMILAR OBJECTS LARGER THAN 2 INCHES. CLAY CONTENT SHOULD NOT EXCEED 5%.
 - [2] SOIL PH SHOULD GENERALLY BE BETWEEN 5.5-6.5.
 - [3] USE SOILS WITH 1.5%-3% ORGANIC CONTENT AND MAXIMUM 500-PPM SOLUBLE SALTS. SAND COMPONENT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

BIORETENTION AREA
CROSS SECTION
NOT TO SCALE

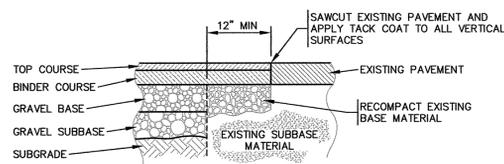
- PLANTING NOTES** FOR BIO-RETENTION BASIN
1. THE CONTRACTOR SHALL COVER THE BOTTOM OF THE EXCAVATION WITH COARSE GRAVEL, OVER PEA GRAVEL, OVER SAND.
 2. THE SOIL MIX FOR BIO-RETENTION AREAS SHOULD BE A MIXTURE OF 40% SAND, 20% TO 30% TOPSOIL, AND 30% TO 40% COMPOST. SOIL PH SHOULD GENERALLY BE 5.5 TO 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 BIO-SOLIDS.
 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. |
| 3 | CA | CORNUS AMOMUM | SILKY DOGWOOD | 2'-3' | 6'-8" O.C. |
| 9 | PV | PANICUM VIRGATUM | SWITCHGRASS | 2" PLUG | 2'-3" O.C. |
| 25 | AV | ANDROPOGON VIRGINICUS | BROOM SEDGE BLUESTEM | 2" PLUG | 1'-2" O.C. |
| 9 | AN | ASTER NOVAE-ANGLIAE | NEW ENGLAND ASTER | 2" PLUG | 2'-3" O.C. |

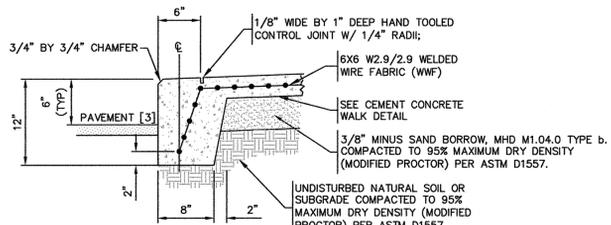


BIORETENTION AREA PLANTINGS
CROSS SECTION
SCALE: 1" = 6"



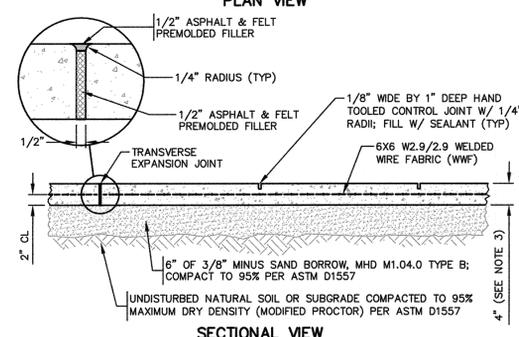
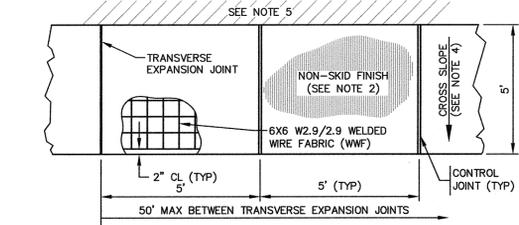
- NOTES:**
- [1] FLEXIBLE PAVEMENT REMOVAL SHALL BE INITIATED BY MAKING A FULL-DEPTH VERTICAL SAWCUT AT THE LOCATIONS INDICATED ON THE PLANS. SAWCUTS SHALL BE ACCOMPLISHED USING A STANDARD DIAMOND-TYPE BLADE SAW.
 - [2] IF SAWCUT IS WITHIN THREE (3) FEET OF AN EXISTING BUILDING, CURB LINE OR EXISTING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



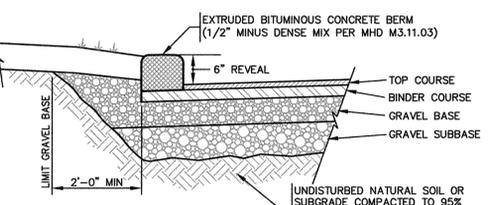
- NOTES:**
- [1] CEMENT CONCRETE: 4000 PSI AT 28 DAYS W/ 3/8" MINUS MAXIMUM PARTICLE SIZE (MHD M4.02.00).
 - [2] VERTICAL BACKFACE OF CURB SHALL BE FORMED AGAINST NATURAL SOIL, OTHERWISE BY BACKFORM LEFT IN PLACE.
 - [3] SEE BITUMINOUS CONCRETE PAVEMENT DETAIL FOR MATERIALS AND SPECIFICATIONS.

MONOLITHIC CEMENT CONCRETE CURB
NOT TO SCALE

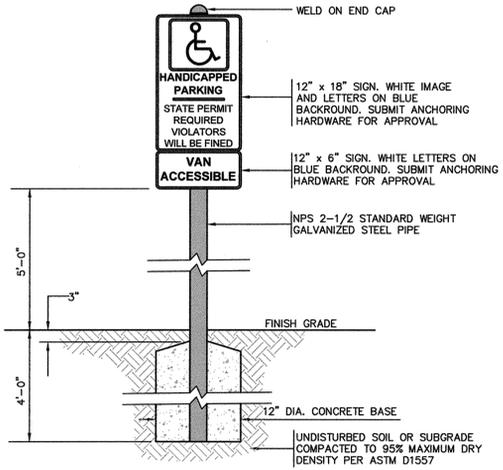


- NOTES:**
- [1] CEMENT CONCRETE: 4000 PSI AT 28 DAYS W/ 3/8" MINUS MAXIMUM PARTICLE SIZE (MHD M4.02.00).
 - [2] PROVIDE MEDIUM HAIR BROOM FINISH TO ALL EXPOSED SURFACES. USE ROUGH HAIR BROOM ON GRADES OVER 6%.
 - [3] A 6-INCH DEPTH IS REQUIRED AT LOCATIONS OF DRIVEWAY CROSSINGS AND STREET INTERSECTIONS.
 - [4] 5% MAXIMUM CROSS SLOPE UNLESS OTHERWISE SHOWN. MAXIMUM CROSS SLOPE SHALL NOT EXCEED 2% IN AREAS DICTATED BY MAAB AND/OR ADA.
 - [5] WHERE SIDEWALK ABUTS FACE OF BUILDING, AN ISOLATION JOINT, SIMILAR TO TRANSVERSE EXPANSION JOINT, SHALL BE USED BETWEEN SIDEWALK AND BUILDING.

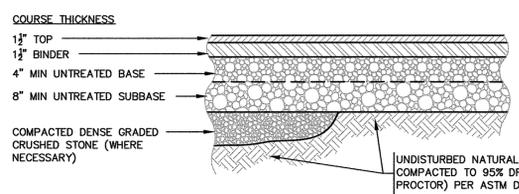
CEMENT CONCRETE WALK
NOT TO SCALE



BITUMINOUS BERM
TYPICAL CROSS SECTION
NOT TO SCALE



HANDICAP PARKING SIGN
NOT TO SCALE



| COURSE | MATERIAL | SPECIFICATION PER MASS HIGHWAY DEPARTMENT (MHD) SIZE (INCH) | MAX AGG. SIZE (INCH) | COMPACTION REQUIREMENTS |
|----------|---------------------|---|----------------------|------------------------------------|
| TOP | BITUMINOUS CONCRETE | M3.11.03 CLASS I, TYPE I-1 | 1/2 | [NOTE 1] AASHTO-T166 |
| BINDER | BITUMINOUS CONCRETE | M3.11.03 CLASS I, TYPE I-1 | 3/4 | [NOTE 1] AASHTO-T166 |
| BASE | GRAVEL BORROW | M1.03.0 TYPE C | 2 | 95% [NOTE 3] ASTM D1557/AASHTO-199 |
| SUBBASE | GRAVEL BORROW | M1.03.0 TYPE B | 3 | 95% [NOTE 3] ASTM D1557/AASHTO-199 |
| SUBGRADE | ORDINARY BORROW | M1.01.0 [SEE NOTE 2] | 8 | 95% [NOTE 3] ASTM D1557/AASHTO-199 |

- 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

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