

**December 12, 2024**

**Breeka Li Goodlander, Conservation Agent  
Town of Franklin  
Conservation Commission  
355 East Central Street  
Franklin, Massachusetts 02038**

**RE:           55 Constitution Boulevard  
  
              Notice of Intent (Peer Review Response)  
  
              MassDEP File No. 159-1031**

Dear Breeka Li:

Beals Associates, Inc. (“BAI”) has received the BETA Group peer review comments dated November 22, 2024. The review includes comments relative to the above noted project’s application for the Notice of Intent (NOI) dated October 28, 2024. Our office would like to provide the following responses, where necessary, to the comments raised in the letter. Where supporting figures, exhibits, or other materials are necessary, we have included them with this letter. References have been made to the prior submittal letters as needed. We hope that these responses, updated plans, and supporting documentation are acceptable to your department.

In order to simplify this letter, our office has the comments from BETA in italics and the Beals Associates, Inc responses in black.

**Plan and General Comments**

**Comment A1:**

*The Massachusetts Department of Environmental Protection (MassDEP) has not issued a DEP file number as of this writing.*

**Response A1:**

The Massachusetts Department of Environmental Protection (MassDEP) Central Region has issued file number CE 159-1301 on November 25, 2024.

**Comment A2.a:**

*The following element is missing from the provided plan:*

*The proposed tree line and individual trees/shrubs with a diameter greater than 1” proposed for removal should be shown on the Plans per Bylaw Regulation Section 7.18.1.6. It is BETA’s understanding that the Commission generally increases the size threshold for tree location based on the Project and therefore defers to the Commission on this matter.*

**Response A2.a:**

Our office has gone out and located trees greater than 4” in diameter that would be removed per the current proposed project plans. These trees have been added to Sheet C101, Supplemental Existing Conditions Plan. It is estimated that 120+/- trees greater than 4” in diameter will be removed during construction.

**Comment A2.b:**

*The following element is missing from the provided plan:*

*The Construction Sequence and Schedule should be depicted on the Plans per Bylaw Regulation Section 7.18.1.14.*

**Response A2.b:**

The construction sequence was originally provided on Sheet C113, Erosion Control Notes. This sequence has been modified to provide additional detail per BETA Comment W11 and has been updated on Sheet C113, as well as added to Sheet C001, General Notes.

**Construction Comments**

**Comment W1:**

*The Project, as currently depicted, will disturb more than one (1) acre of land; therefore, a Notice of Intent (NOI) must be submitted to the Environmental Protection Agency (EPA) under the Construction General Permit (CGP) and a Stormwater Pollution Prevention Plan (SWPPP) must be prepared. The Commission could consider a Special Condition within the Order of Conditions that requires the submission of the SWPPP for review and approval prior to the commencement of work.*

**Response W1:**

Our office agrees with this comment and the addition of a Special Condition to address the required SWPPP filing. As the Commission is aware, the SWPPP filing will take place just prior to the commencement of construction.

**Comment W2:**

*Invasive species including bush honeysuckle (*Lonicera spp.*), bittersweet (*Celastrus orbiculatus*), and glossy buckthorn (*Frangula alnus*) are present throughout the area proposed for construction. The Applicant should provide a plan detailing how material containing invasive species plant matter will be managed to ensure no further spread occurs as a result of this Project.*

**Response W2:**

An “Invasive Species Removal Practices” section has been created detailing the plan to contain and prevent the spread of invasive species plants. This section has been added to Sheet C001, General Notes, Sheet C111, Demolition Removals and Protection Plan, Sheet C112, Erosion and Sedimentation Control Plan Phase II.

**Comment W3:**

*The proposed snow storage area north of flag SB7 should be moved to a location outside of Buffer Zone.*

**Response W3:**

The snow storage stockpile was located in this area because it would sit on a paved area of the site that would drain back into the overall water quality system. Although it was in the 100-foot buffer, the stockpiles’ location on pavement with a positive drainage path away from natural resource areas was intended to be a good location for this feature. Despite this, the snow storage stockpile area has been relocated to the easterly side of the Building A truck turnaround area. The location is provided as a convenience only and should not interrupt truck operations during the limited amount of time a snow stockpile is present. The snowmelt will drain to the same catch basin as the previous location and will enter the site’s water quality treatment system. The revision to the snow storage stockpile location can be found on Sheet C121, Landscape Plan.

**Comment W4:**

*Several proposed contours are depicted directly over erosion control barriers. The limits of work and/or grading should be revised to reflect a constructable design.*

**Response W4:**

The symbol used for the erosion control barriers acts as a graphical representation and is not an accurate width of the barriers. The intent is to have the controls placed at the toe of slope in areas where they need to be installed. Our office has updated Sheet C112, Erosion and Sedimentation Control Plan Phase II, to depict the location of the erosion control barriers accordingly. It should be noted that the limit of work is not expected to extend beyond the toe of slope, especially in areas within the 100 foot resource area.

**Mitigation Comments****Comment W5:**

*Proposed erosion controls include the use of silt fence and mulch sock. Silt fence is not a permitted erosion control measure in the Town of Franklin (Pg.13 of Town of Franklin Best Development Practices Guidebook). The Applicant should coordinate*

*with the Conservation Commission to determine the appropriate erosion control measure for the Site. Twelve (12)-inch diameter compost filter tube may be an appropriate option commensurate with the scope of the Project.*

**Response W5:**

Our office has removed all references to silt fence from the project plans. We have proposed the use of a 12” compost filter tube, recommended by BETA, in lieu of the silt fence. Sheet 001, General Notes, Sheet C110, Erosion and Sedimentation Control Plan Phase I, Sheet C112, Erosion and Sedimentation Control Plan Phase II, Sheet C113, Erosion and Sedimentation Control Notes, and Sheet C500 Erosion Control Details, have been revised to reflect this change.

**Comment W6:**

*The Applicant has noted that more than 30% of the 50 to 100-foot Buffer Zone will consist of impervious surfaces as a result of the Project. Per Bylaw Regulations Section 4.4.1, the Commission may request additional mitigation. While stormwater improvements and plantings are proposed, it is recommended that additional plantings be provided to improve the remaining vegetated Buffer Zone as discussed in this letter, and the Applicant should determine whether impervious surfaces can be reduced in area.*

**Response W6:**

Our office has revised Sheet C121, Landscape Plan, to include additional plantings to improve the remaining vegetated Buffer Zone. The project’s impervious areas have been reduced to the greatest extent practicable.

**Comment W7:**

*Since pervious areas will remain around the perimeter of the development, the Applicant has included areas of lawn and the planting of select woody species at the Site. It is recommended that open areas proposed as lawn be vegetated with native, herbaceous vegetation subject to an infrequent but consistent mowing schedule to establish meadow areas with Buffer Zone. In addition, the Applicant should also provide additional woody plantings. Where feasible, large diameter native trees should be preserved within areas to be cleared.*

**Response W7:**

Our office has revised Sheet C121, Landscape Plan, to include seed mixes such as a New England Showy Wildflower Mix and a New England Conservation/Wildlife Mix, locations of these seed mixes are depicted on the plan. Additional plantings have been added along the pervious areas abutting the resource areas to improve the vegetated buffer zones.

**Comment W8:**

*The specifications for the proposed seed mix that will be used for stabilization should be provided.*

**Response W8:**

Our office has provided the specifications for each of the two seed mixes being used for stabilization of the site. See Attachment A for the specifications.

**WPA Performance Standard Comments**

**Comment:**

*The Project does not propose any work within Areas Subject to Protection under the Act.*

**Response:**

No response required.

**ByLaw Regulatory Comments**

**Comment W9:**

*The Erosion and Sediment Control Plan should include a description of the measures that will be taken to properly install and maintain the erosion control devices used during the project, the names and phone numbers of all individuals that will be responsible for erosion controls, as well as the requirement that the erosion control will be inspected weekly and all other criteria set forth in Bylaw Regulation Section 7.12.*

**Response W9:**

Maintenance requirements for the erosion control measures are indicated on Sheet C113, Erosion and Sedimentation Control Notes. The name and phone number of the responsible party as well as the weekly requirements for the inspection and maintenance (where needed) will be included in the SWPPP documentation that will be filed as part of the USEPA CGP Notice of Intent. At this time, it is not known who the Contractor's day to day contact will be.

**Comment W10:**

*BETA defers to the Commission on the approval of the Project Narrative due to Bylaw requirements being absent (Bylaw Regulation Section 7.9.1.) including who is performing the work and when the proposed activity will be done.*

**Response W10:**

It is our office's understanding that the only requirements of Bylaw Section 7.9.1 missing from the project narrative are the identification of who is doing the work and when the work will be done. At this time, the contractor's name is not known but will be included in the SWPPP documentation which will be filed at a later date closer to the commencement of construction. The schedule for construction is also unknown but will also be included in the SWPPP documentation.

**Comment W11:**

*The Applicant provided a Construction Sequence that does not appear to include all proposed construction activities including information on how demolition will occur and the construction of the proposed buildings, including any relevant phasing/staging. A Construction Sequence with all proposed construction activities including building construction should be included within the NOI and plan set (Bylaw Regulation Section 7.15.1).*

**Response W11:**

The construction sequence was originally included in the plan set on Sheet C113, Erosion Control and Sedimentation Control Notes, and was also included in the Stormwater Management Report in the Erosion Control section, an appendix to the Notice of Intent package. This sequence has been revised to include a more detailed construction sequence including phasing as well as approximate duration for each phase. This sequence and schedule have been revised on Sheet C113, Erosion and Sedimentation Control Notes, and added to Sheet C001, General Notes.

**Comment W12:**

*The Applicant should submit a Variance request for work proposed within the 0-25-foot and 25-50-foot Buffer Zones. BETA defers to the Commission on the issuance of this waiver.*

**Response W12:**

The only work contemplated by the project in the 0-25-foot buffer zones is the removal of pavement and reconstruction of previously paved areas. We did not consider filing a waiver since the resulting work will reduce the impervious impact within the 0-to-25-foot buffer. Proposed work within the 25-to-50-foot buffer is limited to off-grading of newly developed areas or repaving previously paved areas. Similar to the 0-to-25-foot buffer, the impervious impacts to the 25-to-50-foot buffer will be reduced upon completion of construction. If the commission requests, our office would be happy to file the formal waiver requests, however, with the reduced impacts, we did not think this was necessary.

On behalf of the entire project team, we appreciate the opportunity to provide these responses and clarifications. We look forward to presenting this information to the Franklin Conservation Commission. If you have any additional questions or comments, please do not hesitate to contact us directly at either [tmorey@bealsassociates.com](mailto:tmorey@bealsassociates.com), 617.242.1120 x103 or [tlapshanski@bealsassociates.com](mailto:tlapshanski@bealsassociates.com), 617.242.1120 Ext. 110.

Sincerely,

**Beals Associates, Inc.**

Tyler Lapshanski



Project Engineer

Todd Morey, P.E.



Principal

Attach: Seed Mix Specifications

55 Constitution Boulevard Plans to Accompany Permit Documents (Revised Sheets)

C001, Cover Sheet, C101, Supplemental Existing Conditions, C110, Erosion and Sedimentation Control Plan Phase I, C111, Demolition Removals and Protections Plan, C112, Erosion and Sedimentation Control Plan Phase II, C113, Erosion Control Notes, C121, Landscape Plan, C500, Erosion Control Details.)

CC: *Jeff Sullivan, Northbridge*

*C-1381 File*

## **ATTACHMENT A: SEED MIX SPECIFICATIONS**

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## **NEW ENGLAND WETLAND PLANTS, INC**

**14 Pearl Lane South Hadley, MA 01075**

**PHONE: 413-548-8000 FAX 413-549-4000**

**EMAIL: INFO@NEWP.COM WEB ADDRESS: WWW.NEWP.COM**

### **New England Showy Wildflower Mix**

<b>Botanical Name</b>	<b>Common Name</b>	<b>Indicator</b>
<i>Schizachyrium scoparium</i>	Little Bluestem	FACU
<i>Chamaecrista fasciculata</i>	Partridge Pea	FACU
<i>Sorghastrum nutans</i>	Indian Grass	UPL
<i>Festuca rubra</i>	Red Fescue	FACU
<i>Elymus canadensis</i>	Canada Wild Rye	FACU+
<i>Elymus riparius</i>	Riverbank Wild Rye	FACW
<i>Heliopsis helianthoides</i>	Ox Eye Sunflower	UPL
<i>Coreopsis lanceolata</i>	Lance Leaved Coreopsis	FACU
<i>Rudbeckia hirta</i>	Black Eyed Susan	FACU-
<i>Liatris spicata</i>	Spiked Gayfeather/Marsh Blazing Star	FAC+
<i>Asclepias syriaca</i>	Common Milkweed	FACU-
<i>Vernonia noveboracensis</i>	New York Ironweed	FACW+
<i>Aster novae-angliae (Symphyotrichum novae-angliae)</i>	New England Aster	FACW-
<i>Eupatorium purpureum (Eutrochium maculatum)</i>	Purple Joe Pye Weed	FAC
<i>Asclepias tuberosa</i>	Butterfly Milkweed	NI
<i>Solidago juncea</i>	Early Goldenrod	
<i>Eupatorium perfoliatum</i>	Boneset	FACW

APPLY: 23 LBS/ACRE :1900 sq ft/lb

The New England Showy Wildflower mix includes a selection of native wildflowers and grasses that will mature into a colorful and vibrant native meadow. It is appropriate seed mix for roadsides, commercial landscaping, parks, golf courses, and industrial sites. Always apply on clean bare soil. The mix may be applied by mechanical spreader, or on small sites it can be spread by hand. Lightly rake, or roll to ensure proper seed to soil contact. Best results are obtained with a Spring or late Fall dormant seeding. Late Spring and early Summer seeding will benefit with a light mulching of weed-free straw to conserve moisture. If conditions are drier than usual, watering may be required. Late Fall and Winter dormant seeding require an increase in the seeding rate. Fertilization is not required unless the soils are particularly infertile. Preparation of a clean weed free seed bed is necessary for optimal results.

New England Wetland Plants, Inc. may modify seed mixes at any time depending upon seed availability. The design criteria and ecological function of the mix will remain unchanged. Price is \$/bulk pound, FOB warehouse, Plus SH and applicable taxes.

## NEW ENGLAND WETLAND PLANTS, INC

14 Pearl Lane South Hadley, MA 01075

PHONE: 413-548-8000 FAX 413-549-4000

EMAIL: INFO@NEWP.COM WEB ADDRESS: WWW.NEWP.COM

### New England Conservation/Wildlife Mix

Botanical Name	Common Name	Indicator
<i>Elymus virginicus</i>	Virginia Wild Rye	FACW-
<i>Schizachyrium scoparium</i>	Little Bluestem	FACU
<i>Andropogon gerardii</i>	Big Bluestem	FAC
<i>Festuca rubra</i>	Red Fescue	FACU
<i>Sorghastrum nutans</i>	Indian Grass	UPL
<i>Panicum virgatum</i>	Switch Grass	FAC
<i>Chamaecrista fasciculata</i>	Partridge Pea	FACU
<i>Desmodium canadense</i>	Showy Tick Trefoil	FAC
<i>Asclepias tuberosa</i>	Butterfly Milkweed	NI
<i>Bidens frondosa</i>	Beggar Ticks	FACW
<i>Eupatorium purpureum (Eutrochium maculatum)</i>	Purple Joe Pye Weed	FAC
<i>Rudbeckia hirta</i>	Black Eyed Susan	FACU-
<i>Aster pilosus (Symphyotrichum pilosum)</i>	Heath (or Hairy) Aster	UPL
<i>Solidago juncea</i>	Early Goldenrod	

APPLY: 25 LBS/ACRE :1750 sq ft/lb

The New England Conservation/Wildlife Mix provides a permanent cover of grasses, wildflowers, and legumes for both good erosion control and wildlife habitat value. The mix is designed to be a no maintenance seeding, and is appropriate for cut and fill slopes, detention basin side slopes, and disturbed areas adjacent to commercial and residential projects.

New England Wetland Plants, Inc. may modify seed mixes at any time depending upon seed availability. The design criteria and ecological function of the mix will remain unchanged. Price is \$/bulk pound, FOB warehouse, Plus SH and applicable taxes.

**ATTACHMENT B: 55 CONSTITUTION BOULEVARD PLANS TO  
ACCOMPANY PERMIT DOCUMENTS (REVISED SHEETS)**

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# GENERAL NOTES

- THE CONTRACTOR SHALL NOTIFY THE HIGHWAY DEPARTMENT AT LEAST FORTY-EIGHT (48) HOURS IN ADVANCE OF ANY ROADWORK OR MUNICIPAL CONSTRUCTION.
- THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR THE ELEVATION OF THE EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, SURVEY INFORMATION BY THE PROJECT SURVEYOR, AND MEASUREMENTS TAKEN IN THE FIELD WHERE POSSIBLE. THIS INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AND DISASE (1-888-619-SAFE) AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION UTILITIES. THE CONTRACTOR SHALL CONTACT THE HIGHWAY DEPARTMENT TO MARK OUT ALL TOWN OWNED UTILITIES 72 HOURS PRIOR TO ANY CONSTRUCTION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLAN. THE CONTRACTOR SHALL NOT RELOCATE ANY TOWN OWNED UTILITY WITHOUT PRIOR APPROVAL OF THE HIGHWAY DEPARTMENT. ALL UTILITY WORK WITHIN THE RIGHT OF WAY SHALL BE PERFORMED BY A LICENSED DRAIN LAYER UNDER THE SUPERVISION OF THE HIGHWAY DEPARTMENT.
- MAINTENANCE OF EROSION CONTROL MEASURES IS OF PARAMOUNT IMPORTANCE, AND THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL EROSION CONTROL MEASURES SHOWN ON THE PLANS. ADDITIONAL EROSION CONTROL MEASURES SHALL BE INSTALLED AS DEEMED NECESSARY BY ON-SITE INSPECTIONS BY THE OWNER OR THEIR REPRESENTATIVES AND THE MUNICIPAL CODE ENFORCEMENT OFFICER AT NO ADDITIONAL COST TO THE OWNER.
- ALL MATERIAL SCHEDULES SHOWN ON THE PLANS ARE FOR GENERAL INFORMATION ONLY. THE CONTRACTOR SHALL PREPARE HIS OWN MATERIAL SCHEDULES BASED ON HIS PLAN REVIEW. ALL SCHEDULES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO ORDERING MATERIALS OR PERFORMING WORK.
- ALL MATERIALS AND CONSTRUCTION METHODS SHALL CONFORM TO THE TOWN SPECIFICATIONS, MASSACHUSETTS DEPARTMENT OF TRANSPORTATION STANDARDS, MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION STANDARDS, AWWA STANDARDS AND OTHER RELATED INDUSTRY STANDARDS.
- THIS PROJECT IS SUBJECT TO ALL TERMS AND CONDITIONS OF ALL REGULATIONS ADMINISTERED BY THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION, MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION, MASSACHUSETTS DEPARTMENT OF TRANSPORTATION, HIGHWAY DIVISION, LOCAL UTILITY COMPANIES AND MUNICIPAL OFFICIALS.
- THE CONTRACTOR SHALL REVIEW ALL RELEVANT FEDERAL, STATE AND MUNICIPAL PERMITS ASSOCIATED WITH THIS PROJECT. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CERTIFY THAT ALL RELEVANT REQUIREMENTS REGARDING CONSTRUCTION, TESTING, AND REPORTING OF THE PERMITS HAVE BEEN MET AND THE PROJECT HAS BEEN CONSTRUCTED IN COMPLIANCE WITH THESE PORTIONS OF THE PERMITS.
- ALL SIGNAGE SHALL CONFORM TO THE STANDARDS FOR SIZE, HEIGHT, LOCATION, AND REFLECTIVITY SET FORTH IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST EDITION.
- ALL CURBS SHALL CONFORM TO THE SPECIFICATIONS OR THE MORE STRINGENT OF THE HIGHWAY DEPARTMENT OR THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION, HIGHWAY DIVISION.
- ALL DIMENSIONING UNLESS OTHERWISE NOTED IS TO THE FACE OF CURB, EDGE OF PAVEMENT OR FACE OF BUILDING.
- THE PROJECT IS TO BE SERVED BY PUBLIC WATER, PRIVATE SEWER, AND UNDERGROUND CABLE, TELEPHONE, AND ELECTRIC UTILITIES.
- AN APPROVED SET OF PLANS AND ALL APPLICABLE PERMITS MUST BE AVAILABLE AT THE CONSTRUCTION SITE.
- ANY DAMAGE TO PUBLIC OR PRIVATE PROPERTY RESULTING FROM CONSTRUCTION ACTIVITIES SHALL BE REPAIRED BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER.
- PROPERTY MARKERS AND STREET LINE MONUMENTS SHALL BE PROPERLY PROTECTED AT ALL TIMES DURING CONSTRUCTION TO ENSURE INTEGRITY. IF DISTURBED, THEY SHALL BE REPLACED BY A REGISTERED SURVEYOR AT THE CONTRACTOR'S EXPENSE.
- ADA ACCESSIBLE RAMPS SHALL BE PROVIDED ALONG SIDEWALKS AND AT ALL ROADWAY CROSSINGS. ALL ADA RAMPS SHALL CONFORM TO MASSACHUSETTS ARCHITECTURAL ACCESS BOARD (AAB) STANDARDS AS WELL AS MASSACHUSETTS DEPARTMENT OF TRANSPORTATION STANDARDS.

# GRADING & DRAINAGE NOTES

- ALL STORM DRAIN PIPE SHALL BE HIGH DENSITY POLYETHYLENE PIPE (HDPE), SMOOTH BORE INTERIOR, PROVIDING A MANNING'S ROUGHNESS COEFFICIENT OF 0.010 OR LESS UNLESS OTHERWISE NOTED.
  - THE PROJECT ELEVATIONS ARE BASED ON NGVD 1929 VERTICAL DATUM. THE HORIZONTAL AND VERTICAL CONTROL FOR THE PROJECT WAS PERFORMED BY THE PROJECT SURVEYOR. SITE BENCHMARK(S) SHALL BE LOCATED BY THE PROJECT SURVEYOR PRIOR TO CONSTRUCTION ACTIVITY.
  - ALL EXCESS SOIL EXCAVATED FROM THE PROJECT SITE SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.
  - ALL DISTURBED AREAS NOT TO BE PAVED, SODDED, OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, FERTILIZER, SEED AND MULCH.
  - COMPACTION REQUIREMENTS:
- | LOCATION                                  | MINIMUM COMPACTION |
|---|--------------------|
| SUBBASE AND BASE GRAVEL BELOW PAVED AREAS | 95%                |
| SUBGRADE FILL BELOW PAVED AREAS           | 92%                |
| TRENCH BEDDING MATERIAL                   | 95%                |
| LOAM AND SEED AREAS                       | 90%                |

ALL PERCENTAGES OF COMPACTION SHALL BE OF THE MAXIMUM DRY DENSITY AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH ASTM D-1557

- SOIL REQUIREMENTS: MASSACHUSETTS HIGHWAY DEPARTMENT, STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES. M1.03.0 GRAVEL BORROW: SHALL CONSIST OF INERT MATERIAL THAT IS HARD, DURABLE STONE AND COURSE SAND, FREE FROM LOAM AND CLAY, SURFACE COATINGS, AND DELETERIOUS MATERIAL. MAXIMUM SIZE OF STONE IN GRAVEL SHALL BE AS FOLLOWS: M103.1 TYPE "A" = 6 INCH, M103.0 TYPE "B" = 3 INCH, M1.03.0 TYPE "C" 2 INCH, M103.0 TYPE "D" = 1.5 INCH.
- | SIEVE DESIGNATION | PERCENT PASSING |
|-------------------|-----------------|
| 3/4 INCH          | 50 - 85         |
| No. 4             | 40 - 75         |
| No. 50            | 8 - 28          |
| No. 200           | 0 - 10          |

- M1.03.1 PROCESS GRAVEL FOR SUBBASE: THE APPROVED SOURCE OF BANK-RUN GRAVEL MATERIAL SHALL BE PROCESSED BY MECHANICAL MEANS, THE EQUIPMENT FOR PRODUCING CRUSHED GRAVEL SHALL BE ADEQUATE SIZE AND WITH SUFFICIENT ADJUSTMENTS TO PRODUCE THE DESIRED MATERIALS. THE PROCESSED MATERIAL SHALL BE STOCKPILED IN SUCH A MANNER TO MINIMIZE SEGREGATION OF PARTICLE SIZES. ALL PROCESSED GRAVEL SHALL COME FROM APPROVED STOCKPILES. GRAVEL SHALL CONSIST OF INERT MATERIAL THAT IS HARD, DURABLE STONE AND COURSE SAND, FREE FROM LOAM AND CLAY, SURFACE COATINGS, AND DELETERIOUS MATERIAL.
- | SIEVE DESIGNATION | PERCENT PASSING |
|-------------------|-----------------|
| 3 INCH            | 100             |
| 1 1/2 INCH        | 70 - 100        |
| 3/4 INCH          | 50 - 85         |
| No. 4             | 30 - 60         |
| No. 200           | 0 - 10          |

- M2.01.0 CRUSHED STONE : CRUSHED STONE SHALL CONSIST OF ONE OR THE OTHER OF THE FOLLOWING MATERIALS. (1) DURABLE CRUSHED ROCK CONSISTING OF THE ANGULAR FRAGMENTS OBTAINED BY BREAKING AND CRUSHING SOLID OR QUARTZITIC NATURAL OR ARTIFICIAL STONE INTO A DETRIMENTAL QUANTITY OF THIN, FLAT, ELONGATED OR OTHER OBJECTIONABLE PIECES. (A DETRIMENTAL QUANTITY WILL BE CONSIDERED AS ANY AMOUNT IN EXCESS OF 15% OF THE TOTAL MASS. (2) DURABLE CRUSHED GRAVEL STONE OBTAINED BY ARTIFICIAL CRUSHING OF GRAVEL BOLDERS OR FIELDSTONE WITH A MINIMUM DIAMETER BEFORE CRUSHING OF 200 MILLIMETERS. THE CRUSHED STONE SHALL BE REASONABLY FREE FROM CLAY, LOAM OR DELETERIOUS MATERIAL AND NOT MORE THAN 1.0% OF SATISFACTORY MATERIAL PASSING A 75 MICROMETER SIEVE WILL BE ALLOWED TO ADHERE TO THE CRUSHED STONE. WHERE CRUSHED STONE IS TO BE USED FOR SURFACING, THIS REQUIREMENT SHALL BE NOT MORE THAN 0.5% OF SATISFACTORY MATERIAL PASSING A 75 μM SIEVE.
  - M2.01.1 CRUSHED STONE FOR DRAINAGE FOUNDATIONS : (1 1/2" STONE)
- | SIEVE DESIGNATION | PERCENT PASSING |
|-------------------|-----------------|
| 2 INCH            | 100             |
| 1 1/2 INCH        | 95 - 100        |
| 1 INCH            | 35 - 70         |
| 3/4 INCH          | 0 - 25          |

- M2.01.4 CRUSHED STONE : (3/4" STONE)
- | SIEVE DESIGNATION | PERCENT PASSING |
|-------------------|-----------------|
| 1 INCH            | 100             |
| 3/4 INCH          | 90 - 100        |
| 1/2 INCH          | 10 - 50         |
| 3/8 INCH          | 0 - 20          |
| No. 4             | 0 - 5           |

- M2.01.7 DENSE GRADE CRUSHED STONE FOR SUB-BASE : SUBBASE MATERIAL COMBING CRUSHER-RUN COARSE AGGREGATES OF CRUSHED STONE (TRAP ONLY, MEETING M2.01.0.1) AND FINE AGGREGATES OF NATURAL SAND OR STONE SCREENING UNIFORMLY PREMIED WITH A PREDETERMINED QUANTITY OF WATER. COARSE AGGREGATE SHALL CONSIST OF HARD, DURABLE PARTICLES OF STONE. MATERIALS THAT BREAK UP WHEN ALTERNATELY FROZEN AND THAWED OR WETTED AND DRIED SHALL NOT BE USED. COARSE AGGREGATE SHALL HAVE A PERCENTAGE WEAR, BY THE LOS ANGLES TEST, OF NOT MORE THAN 45. FINE AGGREGATE SHALL CONSIST OF NATURAL OR CRUSHED SAND, THE COMPOSITE MATERIAL SHALL BE FREE FROM CLAY, LOAM OR OTHER PLASTIC MATERIAL, AND SHALL CONFORM TO THE FOLLOWING GRADING REQUIREMENTS:
- | SIEVE DESIGNATION | PERCENT PASSING |
|-------------------|-----------------|
| 2 INCH            | 100             |
| 1 1/2 INCH        | 70 - 100        |
| 3/4 INCH          | 50 - 85         |
| No. 4             | 30 - 55         |
| No. 50            | 8 - 24          |
| No. 200           | 3 - 10          |

- ADJUST ALL MANHOLE COVERS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISHED GRADE.

- CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE FREE OF LOW SPOTS AND PONDING AREAS.

- ALL SUBGRADE SURFACES SHALL BE SLOPED AT NO LESS THAN 1% TO PROMOTE ADEQUATE DRAINAGE TOWARDS DRAINAGE AREAS.
- PROVIDE STABILIZATION OR SEPARATION GEOTEXTILE FABRIC OVER UNSTABLE SOILS AS DIRECTED BY THE OWNERS REPRESENTATIVE OR ENGINEER.
- CATCH BASINS SHALL BE INSPECTED IN THE SPRING AND FALL. ANY STRUCTURES WHICH ARE INSPECTED AND HAVE AN ACCUMULATED SEDIMENT DEPTH OF 12" SHALL BE CLEANED. DISPOSAL OF ACCUMULATED SEDIMENT SHALL BE IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, INSTALLATION, OPERATION AND REMOVAL OF APPROPRIATE EXCAVATION Dewatering SYSTEMS AS WELL AS THE PROTECTION OF EXPOSED SUBGRADE SOILS AT NO ADDITIONAL COST TO THE OWNER. WATER ENTERING EXCAVATIONS SHALL BE CONTROLLED AND PROMPTLY REMOVED TO AVOID SUBGRADE DISTURBANCE. SURFACE WATER RUNOFF SHALL BE DIRECTED AWAY FROM EXPOSED SOIL SURFACES.
- ALL EXISTING STRUCTURES, FENCES, TREES, ETC. WITHIN THE CONSTRUCTION AREA, UNLESS SPECIFICALLY NOTED TO REMAIN, SHALL BE REMOVED.
- ALL DRAINAGE STRUCTURES SHALL BE PRECAST UNLESS OTHERWISE NOTED.
- ALL DRAINAGE STRUCTURES AND STORM SEWER PIPE SHALL MEET HEAVY DUTY TRAFFIC (H-20) LOADING AND BE INSTALLED ACCORDINGLY.

# EROSION CONTROL NOTES

- ALL SEDIMENT / EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY EXCAVATION OR DEMOLITION WORK, ONCE ALL SEDIMENT AND EROSION CONTROL MEASURES ARE INSTALLED, THE APPLICANT AND GENERAL CONTRACTOR SHALL NOTIFY THE HIGHWAY DEPARTMENT FOR INSPECTION BEFORE STARTING ANY DEMOLITION OR EXCAVATION WORK.
- LAND DISTURBING ACTIVITIES SHALL BE ACCOMPLISHED IN A MANNER AND SEQUENCE THAT CAUSES THE LEAST PRACTICAL DISTURBANCE OF THE SITE.
- PRIOR TO BEGINNING ANY CLEARING OR LAND DISTURBING ACTIVITIES, THE CONTRACTOR SHALL INSTALL THE PERIMETER EROSION CONTROL BARRIERS AND THE STABILIZED CONSTRUCTION ENTRANCES.
- ALL GROUND AREAS GRADED FOR CONSTRUCTION SHALL BE GRADED, LOAMED AND SEEDED AS SOON AS POSSIBLE. PERMANENT SEED MIXTURE SHALL CONFORM TO THE SEEDING PLAN CONTAINED IN THE LANDSCAPING PLAN AND EROSION AND SEDIMENT CONTROL NOTES AND DETAILS IN THIS SET.
- PRIOR TO PAVING, THE CONTRACTOR SHALL FLUSH SILT FROM ALL STORM DRAIN LINES.
- SEDIMENT BARRIERS SHALL BE INSPECTED, REPAIRED AND CLEANED AS NOTED IN THE EROSION CONTROL NOTES AND DETAILS FOR THIS PROJECT.
- THE CONTRACTOR SHALL REPAIR AND ADD STONE TO THE CONSTRUCTION ENTRANCES AS THEY BECOME SATURATED WITH MUD TO ENSURE THAT THEY FUNCTION AS INTENDED DURING CONSTRUCTION. ALL PUBLIC STREETS SHALL BE SWEEP AS NECESSARY.
- SILT REMOVED FROM AROUND INLETS AND BEHIND THE SEDIMENT BARRIERS SHALL BE PLACED ON A TOPSOIL STOCKPILE AND MIXED INTO IT FOR LATER USE IN LANDSCAPING OPERATIONS.
- THE CONTRACTOR IS CAUTIONED THAT FAILURE TO COMPLY WITH THE SEQUENCE OF CONSTRUCTION, EROSION/SEDIMENT CONTROL PLAN, AND OTHER PERMIT REQUIREMENTS MAY RESULT IN MONETARY PENALTIES. THE CONTRACTOR SHALL BE ASSESSED ALL SUCH PENALTIES AT NO COST TO THE OWNER.

# UTILITY NOTES

- ALL WATER UTILITY MATERIALS AND INSTALLATION METHODS SHALL CONFORM TO TOWN WATER & SEWER DEPARTMENT STANDARDS. ALL WATER DISTRIBUTION PIPING SHALL BE CLASS S2 DUCTILE IRON PIPE. DISINFECTING OF WATER LINES SHALL CONFORM TO LOCAL REQUIREMENTS AND AWWA STANDARDS. THE CONTRACTOR SHALL COORDINATE ALL CONNECTIONS TO THE MUNICIPAL SYSTEM WITH THE TOWN WATER & SEWER DEPARTMENT.
- WATER SERVICES INTENDED TO BE REUSED SHALL BE CAPPED AND BRACED WITH MECHANICAL JOINT FITTINGS AND APPROPRIATELY SIZED THRUST BLOCK(S) UNTIL THE NEW SERVICE IS TO BE CONNECTED.
- ANY DAMAGE TO UTILITIES PUBLIC OR PRIVATE RESULTING FROM THE PROPOSED UTILITY WORK SHALL BE ADDRESSED IMMEDIATELY BY AND AT THE EXPENSE OF THE APPLICANT, REGARDLESS OF WHETHER THE DAMAGE MANIFESTS ITSELF IMMEDIATELY OR NOT.
- ANY DISTURBANCE TO PUBLIC PROPERTY (SIDEWALK, CURBING, PAVEMENT, ETC. WITHIN THE TOWN RIGHT OF WAY SHALL BE RETURNED TO LIKE OR BETTER CONDITION, MEETING ALL APPLICABLE CURRENT TOWN STANDARDS.
- THE LOCATION OF THE ELECTRIC, TELEPHONE, AND CABLE SERVICES ARE APPROXIMATE. THE CONTRACTOR SHALL COORDINATE WITH THE APPROPRIATE UTILITY COMPANIES FOR EXACT LOCATIONS.
- SANITARY SEWER PIPE SHALL BE POLYVINYL CHLORIDE (PVC) PIPE MEETING THE REQUIREMENTS OF SDR-35 FOR GRAVITY PIPE AND SDR-11 FOR PRESSURE PIPE AS SHOWN ON THE PLANS. ALL SEWER MATERIALS AND INSTALLATION METHODS SHALL CONFORM TO THE DEPARTMENT OF WATER & SEWER STANDARDS.
- COORDINATE ALL UTILITY WORK WITH THE APPROPRIATE UTILITY COMPANY. ALL UTILITY WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE STANDARDS OF THAT UTILITY.
- UNDERGROUND ELECTRICAL, TELEPHONE, AND CABLE CONDUIT SHALL CONFORM TO THE MATERIAL REQUIREMENTS OF THAT UTILITY.
- ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES TO FACILITATE PULLING CABLE.
- THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL BOXES, FITTINGS, CONNECTORS, COVER PLATES AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THE DRAWINGS TO RENDER INSTALLATION OF THE UTILITIES COMPLETE AND OPERATIONAL AT NO EXTRA EXPENSE TO THE OWNER.
- A 10 FOOT MINIMUM EDGE TO EDGE HORIZONTAL SEPARATION SHALL BE PROVIDED BETWEEN ALL WATER AND SANITARY SEWER LINES. AN 18 INCH OUTSIDE TO OUTSIDE VERTICAL SEPARATION SHALL BE PROVIDED AT ALL WATER AND SANITARY SEWER CROSSINGS.
- THRUST BLOCKS SHALL BE SOLID PRECAST CONCRETE BLOCK PLACED BETWEEN BACK OF FITTING AND TRENCH WALL, IN A MANNER TO PREVENT BLOWOFF OF THE FITTING. IN AREAS WHERE THRUST BLOCKS ARE UNABLE TO BE USED TO PROPERLY RESTRAIN THE FITTINGS, THREADED RODS SHALL BE USED TO ANCHOR THE CONNECTION TO THE MAIN.
- THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING RECORD DRAWINGS THROUGHOUT THE PROJECT AND PROVIDING THE OWNER WITH A SET OF THE FINAL RECORD DRAWINGS WHEN THE PROJECT IS COMPLETE.
- ALL TRENCHING, PIPE LAYING AND BACKFILLING SHALL BE IN ACCORDANCE WITH LOCAL REQUIREMENTS AND FEDERAL OSHA REGULATIONS.
- ALL WATER VALVES AND APPURTENANCES SHALL OPEN LEFT.
- FIRE HYDRANTS SHALL BE TOWN OF DOUGLAS APPROVED.
- THE CONTRACTOR IS RESPONSIBLE FOR DIGGING TEST HOLES AND VERIFYING ANY EXISTING UTILITY OR STRUCTURE PRIOR TO CONSTRUCTION. CONTRACTOR SHALL VERIFY THAT BASED ON THE EXACT LOCATION OF EXISTING UTILITIES THERE ARE NO CONFLICTS BETWEEN THEM AND THE PROPOSED UTILITIES.
- THE CONTRACTOR SHALL REFER TO ARCHITECTURAL AND PLUMBING PLANS AND SPECIFICATIONS FOR ACTUAL LOCATION OF ALL DRAIN LATERALS AND UTILITY ENTRANCES TO INCLUDE SANITARY SEWER LATERALS, DOMESTIC AND FIRE PROTECTION WATER SERVICE, ELECTRIC, TELECOMMUNICATIONS AND NATURAL GAS SERVICE.
- WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION.
- ABANDONED EXISTING UTILITIES AND UTILITIES TO BE ABANDONED SHALL EITHER BE ABANDONED IN PLACE AS NOTED OR SHALL BE REMOVED AND DISPOSED OF AS SPECIFIED, ANY UTILITIES 4 INCHES AND LARGER SHALL BE REMOVED, UTILITIES GREATER THAN 8 FEET BELOW GRADE MAY BE ABANDONED IN PLACE IF NOT IN CONFLICT WITH OTHER UTILITIES OR LOCATED WITHIN FUTURE BUILDING FOOTPRINTS. WHEN ABANDONED UTILITIES ARE TO BE LEFT IN PLACE, PLUG OR CAP THE ENDS OF THE CONDUITS AND PIPES. REMOVE ABANDONED UTILITY MANHOLES TO A MINIMUM DEPTH OF 4 FEET BELOW FINISHED GRADE AND PUNCTURE OR BREAK THE BOTTOM SLABS OF MANHOLES AND SIMILAR STRUCTURES TO ALLOW DRAINAGE. BACKFILL ABANDONED MANHOLES WITH SAND. BACKFILL AND COMPACT EXCAVATIONS FROM REMOVAL OF UTILITY FACILITIES AS REQUIRED TO RESTORE THE ORIGINAL GRADE.

# ACCESSIBILITY NOTES

## GENERAL NOTES:

- SPECIAL ATTENTION SHALL BE GIVEN TO COMPLIANCE WITH THE MASSACHUSETTS ARCHITECTURAL ACCESS BOARD (AAB) RULES AND REGULATIONS AND THE AMERICANS DISABILITIES ACT STANDARDS FOR ACCESSIBLE DESIGN (ADAA).
- IT IS ESSENTIAL THAT CONTRACTORS BE AWARE OF THE SITE ACCESSIBILITY REQUIREMENTS. THESE NOTES AND DETAILS ARE INTENDED TO ASSURE THAT CONTRACTORS ARE AWARE OF THE REQUIREMENTS AT THE TIME WHEN THEY ARE BIDDING THE PROJECT. IF SLOPES / GRADES AND DIMENSIONS ARE NOT ACHIEVABLE, THE CONTRACTOR IS REQUIRED TO CONTACT THE OWNER IMMEDIATELY, BEFORE MOVING FORWARD WITH THE WORK.
- THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AND CIVIL ENGINEER IMMEDIATELY OF ANY CONFLICT BETWEEN THESE NOTES AND DETAILS AND OTHER PROJECT DRAWINGS, WHETHER BY BEALS ASSOCIATES, INC. OR OTHERS. THE CONTRACTOR SHALL NOT PROCEED WITH THE WORK FOR WHICH THE ALLEGED CONFLICT HAS BEEN DISCOVERED UNTIL SUCH ALLEGED CONFLICT HAS BEEN RESOLVED. NO CLAIM SHALL BE MADE BY THE CONTRACTOR FOR DELAY DAMAGES AS A RESULT OF RESOLUTION OF ANY SUCH CONFLICT(S).
- AAB REGULATIONS DO NOT ALLOW ANY TOLERANCE ON SLOPE REQUIREMENTS AND THE MAXIMUM SLOPES LISTED BELOW CAN NOT BE EXCEEDED.
- IT IS RECOMMENDED THAT THE CONTRACTOR USE A 2-FOOT DIGITAL LEVEL TO VERIFY SLOPES PRIOR TO PLACING THE FINISHED SURFACE. IT IS FURTHER RECOMMENDED THAT FORMS BE CHECKED PRIOR TO PLACING CONCRETE OR ASPHALT.
- THESE ACCESSIBILITY NOTES AND DETAILS ARE INTENDED TO DEPICT SLOPE AND DIMENSIONAL REQUIREMENTS ONLY. REFER TO SIDEWALK, CURBING, AND PAVEMENT DETAILS FOR ADDITIONAL INFORMATION.

## ACCESSIBLE ROUTE NOTES:

- AT LEAST ONE ACCESSIBLE ROUTE SHALL BE PROVIDED WITHIN THE SITE FROM ACCESSIBLE PARKING SPACES AND ACCESSIBLE PASSENGER LOADING ZONES; PUBLIC STREETS OR SIDEWALKS; AND PUBLIC TRANSPORTATION STOPS TO THE ACCESSIBLE BUILDING OR FACILITY THEY SERVE.
- AT LEAST ONE ACCESSIBLE ROUTE SHALL CONNECT ACCESSIBLE BUILDINGS, ACCESSIBLE FACILITIES, ACCESSIBLE ELEMENTS, AND

- ACCESSIBLE SPACES THAT ARE ON THE SAME SITE.
  - DIRECTIONAL SIGNAGE INDICATING THE ROUTE TO THE NEAREST ACCESSIBLE BUILDING ENTRANCE SHALL BE PROVIDED AT INACCESSIBLE BUILDING ENTRANCES.
  - TRANSITIONS BETWEEN RAMPS, WALKS, LANDINGS, GUTTERS OR STREETS SHALL BE FLUSH AND FREE OF ABRUPT VERTICAL CHANGES (1/4 INCH MAXIMUM VERTICAL CHANGE).
- WALKWAYS:**
- WIDTH OF WALKWAYS SHALL NOT BE LESS THAN 48 INCHES, EXCLUDING CURB STONES.
  - WALKWAYS SHALL PROVIDE A MINIMUM OF 36 INCHES CLEAR, UNOBSTRUCTED PATH OF TRAVEL PAST ALL OBSTRUCTIONS, I.E. UTILITY POLES, FIRE HYDRANTS, ETC.)
  - WALKING SURFACES SHALL HAVE A MAXIMUM RUNNING SLOPE OF 5.0% AND A MAXIMUM CROSS SLOPE OF 2.0%.
  - AT THE INTERSECTION OF TWO SIDEWALKS, THERE SHALL BE A LEVEL LANDING WITH NO SLOPE GREATER THAN 2% IN ANY DIRECTION.
  - ANY WALKING SURFACE WITH A RUNNING SLOPE GREATER THAN 5.0% IS CONSIDERED A RAMP AND SHALL COMPLY WITH THE GUIDELINES FOR RAMP OR CURB CUT RAMP.
  - ACCESSIBLE ROUTE SURFACES SHALL BE STABLE, FIRM AND SLIP RESISTANT.
  - IF CATCH BASINS OR OTHER GRATINGS ARE LOCATED WITHIN AN ACCESSIBLE ROUTE, THEN AN ADA GRATE SHALL BE USED WITH SPACES NO GREATER THAN 1/2 INCH WIDE IN THE DIRECTION OF TRAVEL.

## RAMPS:

- ANY PART OF AN ACCESSIBLE ROUTE WITH A RUNNING SLOPE GREATER THAN 5% SHALL BE CONSIDERED A RAMP OR A CURB CUT RAMP.
- THE MAXIMUM RUNNING SLOPE FOR A RAMP SHALL BE 7.5% AND THE MAXIMUM CROSS SLOPE SHALL BE 1.5%
- THE CLEAR WIDTH OF A RAMP SHALL BE 48 INCHES MINIMUM AS MEASURED BETWEEN THE HANDRAILS.
- THE MAXIMUM RISE FOR ANY RAMP RUN SHALL BE 30 INCHES.
- LANDINGS SHALL BE PROVIDED AT THE TOP AND BOTTOM OF RAMPS. LANDINGS SHALL HAVE A SLOPE NOT STEEPER THAN 2.0% IN ANY DIRECTION. THE LANDING CLEAR WIDTH SHALL BE AT LEAST AS WIDE AS THE WIDEST RAMP RUN LEADING TO THE LANDING. THE LANDING CLEAR LENGTH SHALL BE 60 INCHES MINIMUM. RAMPS THAT CHANGE DIRECTIONS BETWEEN RUNS AT LANDINGS SHALL HAVE A CLEAR LANDING OR SIXTY (60) INCHES BY SIXTY (60) INCHES MINIMUM.
- EDGE PROTECTION COMPLYING WITH AAB AND ADAAG REQUIREMENTS SHALL BE PROVIDED ON EACH SIDE OF RAMP RUNS AND ON EACH SIDE OF RAMP LANDINGS.
- WHERE DOORWAYS ARE LOCATED ADJACENT TO A RAMP LANDING, MANEUVERING CLEARANCES REQUIRED BY 521 CMR FIGURES 25B AND 25C SHALL BE COMPLIED WITH.

## CURB CUT RAMPS:

- CURB CUT RAMPS ARE REQUIRED AT THE CORNER OF EACH INTERSECTION AND WHERE A PEDESTRIAN PATH OF TRAVEL CROSSES A ROAD, DRIVEWAY OR OTHER VEHICULAR WAY.
- THE MAXIMUM RUNNING SLOPE OF A CURB CUT RAMP SHALL BE 7.5% AND THE MAXIMUM CROSS SLOPE SHALL BE 1.5%.
- CURB CUT RAMPS MAY EXTEND UP TO 15 FEET IN LENGTH.
- MAXIMUM SLOPES OF ADJOINING CURB CUT RAMPS IMMEDIATELY ADJACENT TO THE CURB CUT RAMP SHALL NOT BE STEEPER THAN 5%. THE ADJACENT SURFACES AT TRANSITIONS AT CURB CUT RAMPS TO WALKS, CUTTERS AND STREETS SHALL BE AT THE SAME LEVEL.
- THE MINIMUM CLEAR WIDTH OF A CURB CUT RAMP SHALL BE 36 INCHES, EXCLUSIVE OF FLARED SIDES, IF PROVIDED.
- LANDINGS SHALL BE PROVIDED AT THE TOP OF CURB CUT RAMPS. THE CLEAR LENGTH OF THE LANDING SHALL BE 48 INCHES MINIMUM. THE CLEAR WIDTH OF THE LANDING SHALL BE AT LEAST AS WIDE AS THE CURB CUT RAMP, EXCLUDING FLARED SIDES, LEADING TO THE LANDING. LANDINGS SHALL HAVE A SLOPE NOT STEEPER THAN 2% IN ANY DIRECTION.
- IF A CURB CUT RAMP IS LOCATED WHERE PEDESTRIANS MUST WALK ACROSS THE RAMP, OR WHERE IT IS NOT PROTECTED BY HANDRAILS OR GUARDRAILS, IT SHALL HAVE FLARED SIDES.
- WHERE PROVIDED, CURB CUT RAMPS SHALL EXCEED 10% IF THE CLEAR LENGTH OF THE LANDING IS LESS THAN FORTY-EIGHT (48) INCHES THAN THE SLOPE OF THE FLARED SIDES SHALL NOT EXCEED 8.33%.
- CURB CUT RAMPS AND THE FLARED SIDES OF CURB CUT RAMPS SHALL BE LOCATED SO THAT THEY DO NOT PROJECT INTO VEHICULAR TRAFFIC LANES PARKING SPACES OR PARKING ACCESS AISLES. CURBS AT MARKED CROSSINGS SHALL BE WHOLLY CONTAINED WITHIN THE MARKINGS, EXCLUDING ANY FLARED SIDES.
- CURB CUT RAMPS SHALL BE LOCATED OR PROTECTED TO PREVENT OBSTRUCTION BY PARKED VEHICLES.
- CURB CUT RAMPS SHALL HAVE A TWENTY-FOUR (24) INCH DEEP DETECTABLE WARNING PANEL COMPLYING WITH ADAAG, EXTENDING THE FULL WIDTH OF THE RAMP. REFER TO DETECTABLE WARNING DETAILS AND NOTES FOR PLACEMENT.
- WHERE PROVIDED, STOP LINES SHALL BE LOCATED IN ADVANCE OF CURB CUT RAMP.
- WHERE PROVIDED, DRAINAGE INLETS SHALL BE LOCATED UPSTREAM OF CURB RAMPS AND NOT IN THE RAMP AREA.
- CURB CUT RAMP TYPE AND LOCATION ARE SHOWN ON PLAN.

## ACCESSIBLE PARKING SPACES:

- ACCESSIBLE PARKING SPACES SHALL BE LOCATED ON THE SHORTEST ACCESSIBLE ROUTES OF TRAVEL FROM ADJACENT PARKING TO AN ACCESSIBLE BUILDING ENTRANCE.
- ACCESSIBLE PARKING SPACES AND ACCESS AISLES SHALL BE AT LEAST 8 FEET WIDE. WHERE PARKING SPACES AND ACCESS AISLES ARE MARKED WITH LINES THE WIDTH MEASUREMENTS SHALL BE MADE FROM CENTERLINE OF THE MARKINGS.
- PARKING ACCESS AISLES SHALL BE PART OF AN ACCESSIBLE ROUTE TO THE BUILDING OR FACILITY ENTRANCE AND SHALL COMPLY WITH PROVISIONS FOR ACCESSIBLE ROUTES.
- TWO (2) ACCESSIBLE PARKING SPACES MAY SHARE A COMMON ACCESS AISLE.
- ACCESS AISLES SHALL EXTEND THE FULL LENGTH OF THE PARKING SPACE THEY SERVE.
- ACCESS AISLES SHALL NOT OVERLAP THE VEHICULAR WAY. ACCESS AISLES SHALL BE PERMITTED TO BE PLACED ON EITHER SIDE OF THE PARKING SPACE EXCEPT FOR ANGLED VAN PARKING SPACES WHICH SHALL HAVE ACCESS AISLES LOCATED ON THE PASSENGER SIDE OF THE PARKING SPACES.
- SURFACES OF PARKING SPACES AND ACCESS AISLES SERVING THEM SHALL BE STABLE, FIRM AND SLIP RESISTANT. ACCESS AISLES SHALL BE AT THE SAME LEVEL AS THE PARKING SPACES THEY SERVE.
- PARKING SPACES AND ACCESS AISLES SHALL BE LEVEL WITH SURFACE SLOPES NOT EXCEEDING 2.0% IN ANY DIRECTIONS.
- PARKED VEHICLE OVERHANGS SHALL NOT REDUCE THE REQUIRED CLEAR WIDTH OF AN ACCESSIBLE ROUTE.
- PARKING SPACES FOR VANS AND ACCESSIBLE VEHICLES AND VEHICULAR ROUTES SERVING THEM SHALL PROVIDE A VERTICAL CLEARANCE OF 8 FEET 2 INCHES (8'2") MINIMUM. SIGNS SHALL BE PROVIDED AT ENTRANCES TO PARKING FACILITIES INFORMING DRIVERS OF CLEARANCES AND THE LOCATION OF VAN ACCESSIBLE PARKING SPACES.
- EACH ACCESSIBLE PARKING SPACE SHALL BE PROVIDED WITH SIGNAGE DISPLAYING THE INTERNATIONAL SYMBOL OF ACCESSIBILITY. EACH ACCESS AISLE SHALL BE CLEARLY MARKED BY MEANS OF DIAGONAL STRIPES. SIGNS SHALL BE INSTALLED AT A CLEAR HEIGHT OF BETWEEN 5 FEET AND 8 FEET TO THE TOP OF THE SIGN AND SHALL NOT INTERFERE WITH AN ACCESSIBLE ROUTE FROM AN ACCESS AISLE. SIGNS LOCATED WHERE THEY MAY BE HIT BY VEHICLES BEING PARKED SHALL BE INSTALLED WITH BOLLARD PROTECTION.
- ACCESSIBLE PARKING SPACE, ACCESS AISLE STRIPING, AND INTERNATIONAL SYMBOL OF ACCESSIBILITY SHALL BE PAINTED BLUE.

## PASSENGER LOADING ZONES:

- PASSENGER LOADING ZONES SHALL PROVIDE VEHICULAR PULL-UP SPACE 8 FEET WIDE MINIMUM AND 20 FEET LONG MINIMUM.
- PASSENGER LOADING ZONES SHALL PROVIDE A CLEARLY MARKED SPACE THAT IS 5 FEET WIDE MINIMUM AND EXTENDS THE FULL LENGTH OF THE VEHICLE PULL-UP SPACE THEY SERVE.
- ACCESS AISLE SHALL ADJOIN AND ACCESSIBLE ROUTE AND NOT OVERLAP THE VEHICULAR WAY.
- VEHICLE PULL-UP SPACES AND ACCESS AISLES SERVING THEM SHALL BE LEVEL WITH SURFACE SLOPES NOT EXCEEDING 2.0% IN ANY DIRECTION. ACCESS AISLES SHALL BE AT THE SAME LEVEL AS THE VEHICLE PULL-UP SPACE THEY SERVE.
- SURFACES OF VEHICLE PULL-UP SPACES AND ACCESS AISLES SERVING THEM SHALL BE STABLE, FIRM AND SLIP RESISTANT.
- VEHICLE PULL-UP SPACES, ACCESS AISLES SERVING THEM AND A VEHICULAR ROUTE FROM AN ENTRANCE TO THE PASSENGER LOADING ZONE, AND FROM THE PASSENGER LOADING ZONE TO A VEHICULAR EXIT SERVING THEM, SHALL PROVIDE A VERTICAL CLEARANCE OF 9 FEET 6 INCHES (9'6") MINIMUM.

## BUILDING ENTRANCES:

- ALL PUBLIC ENTRANCES SHALL BE ACCESSIBLE.
- THE APPROACH TO AN ACCESSIBLE ENTRANCE SHALL BE A PAVED WALK OR RAMP WITH A SLIP RESISTANT SURFACE, UNINTERRUPTED BY STEPS.
- THE EXTERIOR LANDING AT THE ENTRANCE DOOR SHALL HAVE A LEVEL LANDING MEASURING AT LEAST 5 FEET BY 5 FEET AND SHALL NOT SLOPE MORE THAN 2% IN ANY DIRECTION.
- THE LEVEL LANDING SHALL EXTEND A MINIMUM OR 18 INCHES WIDER THAN THE LATCH ON THE PULL SIDE OF THE DOOR.

# INVASIVE SPECIES REMOVAL PRACTICES:

- EROSION & SEDIMENTATION CONTROL - APPROPRIATE EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IMPLEMENTED PRIOR TO CONSTRUCTION AND MAINTAINED THROUGHOUT THE ENTIRE CONSTRUCTION PROCESS UNTIL THE GROUND SURFACE IS STABILIZED WITH EITHER MULCH OR VEGETATION. PROPERLY CONTROLLED RUN-OFF WILL LIMIT THE SPREAD OF INVASIVE SPECIES FROM ONE AREA TO ANOTHER AREA ON THE SITE.
- EQUIPMENT CLEANING PROCEDURES - IF EARTH MOVING AND EXCAVATION EQUIPMENT IS USED IN AN AREA CONTAINING DOCUMENTED INVASIVE SPECIES, THEN PRIOR TO REMOVAL OF THE EQUIPMENT FROM THE AREA, THE EQUIPMENT SHALL BE INSPECTED AND CLEANED OF DEBRIS AND SOIL BY MECHANICAL MEANS. IF NEEDED, THIS PROTOCOL WILL HELP TO PREVENT THE TRANSPORT OF INVASIVE SPECIES SEEDS OR PROPAGULES (ROOTS, TUBERS, ETC.) TO UNAFFECTED AREAS EITHER ON OR OFF THE PROPERTY.
- MECHANICAL CONTROL - DURING THE SITE CLEARING PROCESS, ALL SURFACE VEGETATION SHALL BE CUT AND CHIPPED INTO MULCH. TO THE GREATEST EXTENT PRACTICABLE DURING THE SITE CLEARING PROCESS, THE ROOTS OF FEW INVASIVE SHRUBS AND VINES SHOULD BE GRUBBED FROM THE SOIL AND CHIPPED INTO A MULCH.
- RE-ESTABLISHMENT OF VEGETATION - FOLLOWING THE COMPLETION OF CONSTRUCTION ACTIVITIES AND TEMPORARY IMPACTS TO AN AREA WITH INVASIVE SPECIES, THE AREA SHALL BE GENERALLY RE-VEGETATED USING AN APPROPRIATE GRASS SEED MIX.

# SITE PREPARATION NOTES

- THE SITE SHALL BE STRIPPED OF EXISTING IMPROVEMENTS WITHIN THE PERIMETER CITY SIDEWALKS AND OWNERS PROPERTY. ALL MATERIALS FROM DEMOLITION SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR UNLESS OTHERWISE NOTED BY THE OWNER, ENGINEER, OR GOVERNING AGENCIES. REFER TO THE BUILDING AND SITE DEMOLITION PLANS FOR THE PROJECT.
- REMOVAL OF EXISTING IMPROVEMENTS SHALL BE AS REQUIRED FOR THIS PROJECT. THE MATERIALS REMOVED FROM THE SITE SHALL BE DISPOSED OF IN A PROPER AND LEGAL MANNER PER FEDERAL, STATE, AND OR LOCAL LAWS AND ORDINANCES.
- IF ANY HAZARDOUS MATERIALS ARE ENCOUNTERED THE OWNER SHALL BE NOTIFIED. THOSE MATERIALS SHALL BE REMOVED AND DISPOSED OF IN A MANNER AS APPROVED BY ALL GOVERNING AGENCIES AND IN A LANDFILL OR DISPOSAL FACILITY LICENSED TO ACCEPT HAZARDOUS MATERIALS.
- PREDEMOLITION PHOTOGRAPHS SHALL BE TAKEN THAT SHOW THE EXISTING CONDITIONS OF THE SITE AND ADJOINING BUILDINGS TO REMAIN. PHOTOS SHALL INCLUDE DAMAGE TO FINISH SURFACES THAT MIGHT BE MISCONSIDERED AS DAMAGE CAUSED BY DEMOLITION OPERATIONS.
- EXISTING BUILDING ADDITIONS, PAVEMENTS, SIDEWALKS, CURBS, DRIVEWAYS, ELECTRICAL TRANSFORMERS, DITCHES, DRAINAGE PIPES AND STRUCTURES, FENCES, LAWNS, TREES, BUSHES, MAILBOXES, SIGNS, POWER POLES, ETC. TO REMAIN SHALL BE PROTECTED FROM DAMAGE DURING THE CONSTRUCTION PROCESS. ANY DAMAGE DURING CONSTRUCTION SHALL BE RESTORED, RECONSTRUCTED OR REPLACED TO AT LEAST THEIR ORIGINAL CONDITION OR AS REQUIRED OR DICTATED BY FEDERAL, STATE, COUNTY, CITY OR LOCAL GOVERNING AGENCIES. ANY UTILITIES REQUIRED TO REMAIN IN SERVICE FOR EXISTING BUILDING ADDITIONS TO REMAIN SHALL BE PROTECTED.
- SAW CUT THE EDGES OF PAVED AREAS CLEAN, NEAT AND TRUE TO LINE SO NO UNWANTED CHIPPING OR BREAKING OF EXISTING PAVEMENT TO REMAIN WILL OCCUR.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT EACH DAY AND REMOVE ALL MUD, DIRT, GRAVEL AND LOOSE MATERIALS TRACKED, DUMPED, SPILLED OR BLOWN FROM THIS SITE ONTO OTHER SITES, RIGHT OF WAYS, PUBLIC OR PRIVATE STREETS OR ROADS, DRIVEWAYS, YARDS OR SIDEWALKS. THE CONTRACTOR SHALL REDUCE AIRBORNE DUST DURING THE ENTIRE DEMOLITION SCHEDULE. WATER MAY BE USED AS A REDUCER.

- THE CONTRACTOR SHALL MAINTAIN EROSION CONTROL DEVICES AS REQUIRED DURING DEMOLITION.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNER AND ALL THE UTILITY COMPANIES AND DEPARTMENTS 72 HOURS OR AS REQUIRED BEFORE DEMOLITION IS TO START TO VERIFY ANY UTILITIES THAT MAY BE PRESENT ON SITE. ALL VERIFICATIONS, LOCATIONS, SIZE AND DEPTHS SHALL BE MADE BY THE APPROPRIATE UTILITY COMPANIES OR DEPARTMENTS. WHEN EXCAVATING AROUND OR OVER EXISTING UTILITIES, THE CONTRACTOR MUST NOTIFY THE UTILITY COMPANY SO A REPRESENTATIVE OF THE UTILITY MAY BE PRESENT DURING THE EXCAVATION TO INSURE THAT THE EXCAVATION, VERIFY THAT UTILITIES HAVE BEEN DISCONNECTED AND CAPPED BEFORE STARTING BUILDING DEMOLITION OPERATIONS.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR OR CONTRACTORS TO OBTAIN ALL FEDERAL, STATE, COUNTY, CITY, AND LOCAL PERMITS FOR ANY AND ALL WORK REQUIRED UNLESS OTHERWISE NOTED. THIS SHALL INCLUDE ALL SUBMITTALS AS REQUIRED INCLUDING STORMWATER RUNOFF CONTROL. THE CONTRACTOR OR CONTRACTORS ARE RESPONSIBLE TO PAY FOR ALL REQUIRED PERMITS BY ANY OR ALL AGENCIES MENTIONED ABOVE UNLESS OTHERWISE NOTED BY THE CONTRACT OR SPECIFICATIONS.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY WITH EACH UTILITY COMPANY AND OR AGENT WHO IS RESPONSIBLE TO REMOVE OR RELOCATE EACH EXISTING UTILITY. IT FURTHER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO BEAR THE COST FOR THE REMOVAL, TERMINATION OR RELOCATION OF THE UTILITIES IF THE RESPONSIBILITY IS NOT COVERED BY THE UTILITY COMPANY.
- ALL CONTRACTORS SHALL TAKE PARTICULAR CARE WHEN EXCAVATING IN AND AROUND EXISTING UTILITY LINES AND EQUIPMENT. ACTUAL FIELD LOCATIONS OF ALL THE EXISTING UTILITIES ARE THE CONTRACTORS RESPONSIBILITY AND MUST BE LOCATED EITHER BY THE REPRESENTATIVE OF THE UTILITY COMPANY OR BY A PRIVATE UNDERGROUND UTILITY LOCATING COMPANY PRIOR TO THE START OF DEMOLITION ACTIVITIES.
- REMOVAL OF EXISTING CONCRETE OR OTHER PAVED AREAS SHALL INCLUDE ALL AGGREGATE BASE MATERIALS. AREAS TO BE REMOVED SHALL BE SAW CUT LEAN, NEAT AND TRUE TO LINE. REMOVE ALL NONORGANIC MATTER THAT WOULD INTERFERE WITH THE GROWTH OF TURF OR PLANT MATERIAL.
- THE CONTRACTOR SHALL NOTIFY THE OWNER PRIOR TO COMMENCEMENT OF DEMOLITION OPERATIONS. NO DEMOLITION, GRADING OR OTHER WORK SHALL COMMENCE WITHIN AREAS UNLESS THERE IS A COORDINATION MEETING HAS BEEN HELD BETWEEN THE CONTRACTOR, OWNER, HIS REPRESENTATIVES AND OTHER STIPULATED PARTIES.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE AT HIS EXPENSE ALL VEHICULAR AND PEDESTRIAN TRAFFIC CONTROL DEVICES REQUIRED BY FEDERAL, STATE, COUNTY, CITY AND LOCAL AGENCIES.
- EXISTING BUILDINGS TO BE DEMOLISHED SHALL BE REMOVED IN THEIR ENTIRETY INCLUDING BASEMENT WALLS, SLABS, AND FOUNDATIONS.
- RECYCLED CRUSHED OR PULVERIZED CONCRETE OR MASONRY MAY BE USED AS BACKFILL OR IN NEW CONSTRUCTION ONLY IF APPROVED BY THE ENVIRONMENTAL, GEOTECHNICAL, AND STRUCTURAL ENGINEERS.
- PERFORM CLEARING, GRUBBING, STUMP REMOVAL, TOPSOIL STOCKPILE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS INCLUDING REMOVAL OF TREES, SHRUBS, STUMPS AND ROOT SYSTEMS TO A MINIMUM DEPTH TO ERADICATE THEM FROM SUB-GRADE, A MINIMUM DEPTH OF 42".
- THE CONTRACTOR MUST VISIT THE SITE AND STUDY EXISTING PHYSICAL CONDITIONS, REVIEW DRAWINGS, AND REACH THEIR OWN CONCLUSIONS ON WORK NECESSARY TO ACCOMPLISH INTENDED RESULTS DESCRIBED BY THE PROJECT DOCUMENTS.
- INSTALL ORANGE SAFETY FENCE OR TEMPORARY CHAIN LINK FENCE AROUND THE PERIMETER OF THE DEMOLITION AREA. NO DEMOLITION EQUIPMENT OR DEMOLITION OPERATIONS SHALL OCCUR OUTSIDE OF THIS PERIMETER FENCING.
- INSTALL SEDIMENT BARRIER ADJACENT TO SAFETY FENCE ALONG DOWNGRADE SIDE OF SITE IN ACCORDANCE WITH STANDARD BMP MEASURES.



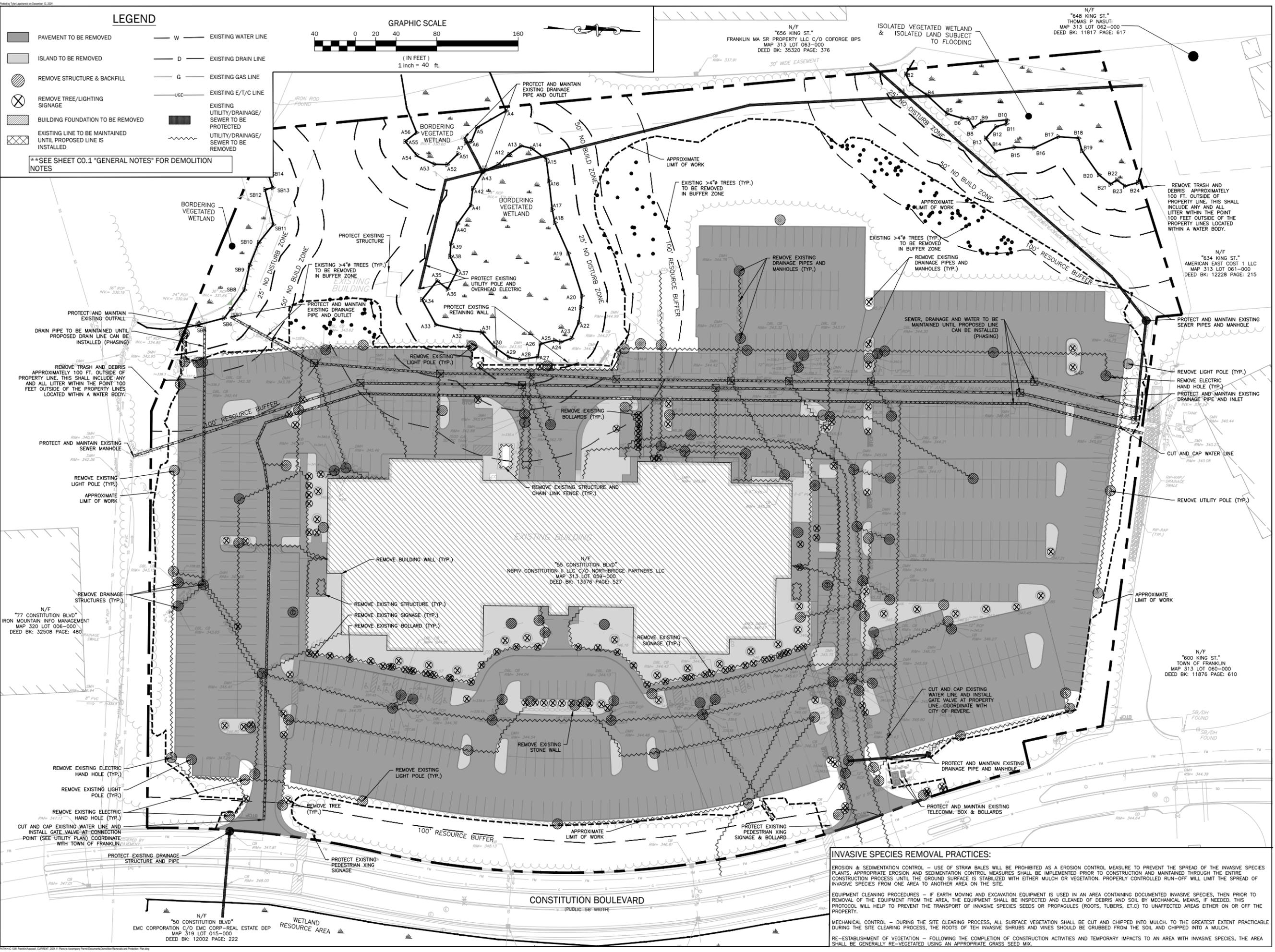


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### LEGEND

- PAVEMENT TO BE REMOVED
- ISLAND TO BE REMOVED
- REMOVE STRUCTURE & BACKFILL
- REMOVE TREE/LIGHTING SIGNAGE
- BUILDING FOUNDATION TO BE REMOVED
- EXISTING LINE TO BE MAINTAINED UNTIL PROPOSED LINE IS INSTALLED
- W — EXISTING WATER LINE
- D — EXISTING DRAIN LINE
- G — EXISTING GAS LINE
- UGE — EXISTING E/T/C LINE
- EXISTING UTILITY/ DRAINAGE/ SEWER TO BE PROTECTED
- UTILITY/ DRAINAGE/ SEWER TO BE REMOVED

**\*\*SEE SHEET CO.1 "GENERAL NOTES" FOR DEMOLITION NOTES**



**INVASIVE SPECIES REMOVAL PRACTICES:**

**EROSION & SEDIMENTATION CONTROL** - USE OF STRAW BALES WILL BE PROHIBITED AS AN EROSION CONTROL MEASURE TO PREVENT THE SPREAD OF THE INVASIVE SPECIES PLANTS. APPROPRIATE EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IMPLEMENTED PRIOR TO CONSTRUCTION AND MAINTAINED THROUGH THE ENTIRE CONSTRUCTION PROCESS UNTIL THE GROUND SURFACE IS STABILIZED WITH EITHER MULCH OR VEGETATION. PROPERLY CONTROLLED RUN-OFF WILL LIMIT THE SPREAD OF INVASIVE SPECIES FROM ONE AREA TO ANOTHER AREA ON THE SITE.

**EQUIPMENT CLEANING PROCEDURES** - IF EARTH MOVING AND EXCAVATION EQUIPMENT IS USED IN AN AREA CONTAINING DOCUMENTED INVASIVE SPECIES, THEN PRIOR TO REMOVAL OF THE EQUIPMENT FROM THE AREA, THE EQUIPMENT SHALL BE INSPECTED AND CLEANED OF DEBRIS AND SOIL BY MECHANICAL MEANS, IF NEEDED. THIS PROTOCOL WILL HELP TO PREVENT THE TRANSPORT OF INVASIVE SPECIES SEEDS OR PROPAGULES (ROOTS, TUBERS, ETC.) TO UNAFFECTED AREAS EITHER ON OR OFF THE PROPERTY.

**MECHANICAL CLEANING** - DURING THE SITE CLEARING PROCESS, ALL SURFACE VEGETATION SHALL BE CUT AND CHIPPED INTO MULCH, TO THE GREATEST EXTENT PRACTICABLE DURING THE SITE CLEARING PROCESS, THE ROOTS OF TERN INVASIVE SHRUBS AND VINES SHOULD BE GRUBBED FROM THE SOIL AND CHIPPED INTO A MULCH.

**RE-ESTABLISHMENT OF VEGETATION** - FOLLOWING THE COMPLETION OF CONSTRUCTION ACTIVITIES AND TEMPORARY IMPACTS TO AN AREA WITH INVASIVE SPECIES, THE AREA SHALL BE GENERALLY RE-VEGETATED USING AN APPROPRIATE GRASS SEED MIX.

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**DEMOLITION REMOVALS AND PROTECTION PLAN**

Sheet Number  
**C111**



### 3. EROSION CONTROL NARRATIVE

#### o. OVERVIEW OF SOIL EROSION AND SEDIMENTATION CONCERNS

THE GENERAL GOALS OF THE EROSION AND SEDIMENT CONTROL PLAN ARE:

- PLAN THE PROJECT TO BE CONSTRUCTED FROM AREAS OF FLATTER GRADES AND AWAY FROM RESOURCES OR THE PROPERTY BOUNDARIES TO THE EXTENT PRACTICAL.
- DEVELOP A CAREFUL CONSTRUCTION SEQUENCE.
- RAPID STABILIZATION OF DENUED AREAS TO MINIMIZE THE PERIOD OF SOIL EXPOSURE.
- RAPID STABILIZATION OF DRAINAGE PATHS TO AVOID RILL AND GULLY EROSION.
- THE USE OF ONSITE MEASURES TO CAPTURE SEDIMENT (COMPOST FILTER TUBE, STRAW WATTLE, ETC.)
- PROTECTION OF NATURAL RESOURCE AREAS AND DRAINAGE COURSES THROUGH BUFFERING AND THE USE OF BEST MANAGEMENT PRACTICES.
- THE IMPLEMENTATION OF LONG-TERM MEASURES FOR EROSION/SEDIMENT POLLUTION TREATMENT THROUGH THE CONSTRUCTION OF PERMANENT WATER QUALITY MEASURES.

THE CONTRACTOR IS RESPONSIBLE FOR ALL EROSION CONTROL MEANS AND METHODS ON THE SITE. THE NARRATIVE AND PLANS WITHIN THE CONTRACT DOCUMENTS ARE ANTICIPATED TO BE THE MINIMUM AMOUNT OF EROSION CONTROL NECESSARY, AND ADJUSTMENTS MAY NEED TO BE MADE DURING THE CONSTRUCTION PHASE IN RESPONSE TO WEATHER, UNFORESEEN CONDITIONS OR OTHER FACTORS WHICH COULD IMPACT SOIL EROSION.

#### b. EROSION AND SEDIMENT CONTROL DEVICES

PRIOR TO AND DURING THE DEVELOPMENT OF THE CONSTRUCTION ACTIVITIES, THE SITE CONTRACTOR SHALL IMPLEMENT AT A MINIMUM THE FOLLOWING EROSION AND SEDIMENTATION CONTROL MEASURES.

##### STRAW MULCH

STRAW MULCH INCLUDING HYDRO SEEDING IS INTENDED TO PROVIDE COVER FOR DENUED OR SEEDED AREAS UNTIL VEGETATION IS ESTABLISHED. MULCHING SHOULD BE OCCURRING SEVERAL TIMES PER WEEK WHEN THE SITE CONSTRUCTION ACTIVITY IS HIGH AND AT SUFFICIENT INTERVALS TO REDUCE THE PERIOD OF EXPOSURE OF BARE SOILS TO THE TIME LIMITS SET FORTH IN THIS PLAN. MULCH PLACED ON SLOPES OF LESS THAN 10 PERCENT SHALL BE ANCHORED BY APPLYING WATER; MULCH PLACED ON SLOPES STEEPER THAN 10 PERCENT SHALL BE COVERED WITH FABRIC NETTING AS IMMEDIATELY AFTER MULCHING AS PRACTICABLE AND ANCHORED WITH STAPLES IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. PROPOSED DRAINAGE CHANNELS, WHICH ARE TO BE REVEGETATED, SHALL RECEIVE CURVEY BLANKETS BY AMERICAN EXCELSIOR OR NORTH AMERICAN GREEN SELECTED FOR THE SLOPE, VELOCITY, AND WHETHER THE MEASURE IS TEMPORARY OR INTENDED TO BE IN PLACE FOR A SUSTAINED PERIOD. STRAW MULCH SHALL BE AVAILABLE ON SITE AT ALL TIMES IN ORDER TO PROVIDE IMMEDIATE TEMPORARY STABILIZATION WHEN NECESSARY.

##### TEMPORARY STORMWATER SETTLEMENT BASINS

TEMPORARY STORMWATER SETTLEMENT BASINS MAY BE CONSTRUCTED TO PROVIDE SEDIMENTATION CONTROL FOR STORMWATER RUNOFF FROM THE INDIVIDUAL SITE AREAS DURING CONSTRUCTION. THESE BASINS MAY BECOME NECESSARY WHERE OTHER EROSION CONTROL MEASURES ARE NOT ADEQUATE TO PREVENT ONSITE SEDIMENTATION. THE BASIN SHOULD ONLY BE USED WHERE THERE IS SUFFICIENT SPACE AND APPROPRIATE TOPOGRAPHY. THE BASIN SHOULD BE LARGE ENOUGH TO HANDLE THE MAXIMUM AMOUNT OF EXPECTED SITE DRAINAGE. THE BASIN SHOULD BE CONSTRUCTED BY EXCAVATION, CONSTRUCTION OF A COMPACTED EMBANKMENT OR A COMBINATION OF BOTH. IT MAY HAVE ONE OR MORE INFLOW POINTS CARRYING POLLUTED RUNOFF. TO IMPROVE TRAP EFFICIENCY, THE BASIN SHOULD HAVE THE MAXIMUM SURFACE AREA POSSIBLE AND SEDIMENT SHOULD ENTER THE BASIN AS FAR FROM THE OUTLET AS POSSIBLE. THIS PROPOSED INFILTRATION MAY BE USED AS A TEMPORARY SEDIMENT BASIN DURING CONSTRUCTION. CONTRACTOR SHALL INSTALL FILTER FABRIC (MIRAFI 140n OR EQUAL) ON THE BOTTOM OF BASIN PRIOR TO DISCHARGE TO BASIN TO PROTECT SOILS FOR FUTURE INFILTRATION. FABRIC SHALL COVER THE ENTIRE BOTTOM AND EXTEND A MINIMUM THREE FEET UP SIDESLOPES. FABRIC SHALL REMAIN IN PLACE UNTIL SITE HAS BEEN PAVED AND/OR STABILIZED. ENGINEER SHALL INSPECT BOTTOM OF BASIN UPON REMOVAL OF FABRIC TO DETERMINE SUITABILITY OF BASIN FOR INFILTRATION.

##### RIPRAP SLOPES AND DITCH LININGS

RIPRAP CAN BE USED AS A TEMPORARY (OR PERMANENT) METHOD TO PROTECT DENUED GROUND FROM RUNOFF WITH ERODIVE VELOCITIES BY DISSIPATING ENERGY AND SLOWING DOWN SURFACE WATER RUNOFF. WELL GRADED RIPRAP FORMS A DENSE, FLEXIBLE SELF-HEALING COVER THAT ADAPTS WELL TO UNEVEN SURFACES. STONES SHOULD BE PLACED ON A PROPER FILTER MATERIAL OF SAND, GRAVEL OR FABRIC TO PREVENT SOIL FROM PIPING THROUGH THE STONE. FOR MOST APPLICATIONS, GRADED RIPRAP IS PREFERRED TO UNIFORM RIPRAP. GRADED RIPRAP FORMS A FLEXIBLE SELF-HEALING COVER WHILE UNIFORM RIPRAP IS MORE RIGID AND CANNOT WITHSTAND THE MOVEMENT OF THE STONES. GRADED RIPRAP IS CHEAPER TO INSTALL, REQUIRING ONLY THAT THE STONES BE DUMPED SO THAT THEY REMAIN IN A WELL-GRADED MASS. HAND OR MECHANICAL PLACEMENT OF INDIVIDUAL STONES IS LIMITED TO THAT NECESSARY TO ACHIEVE THE PROPER THICKNESS AND LINE. UNIFORM RIPRAP REQUIRES PLACEMENT IN A MORE OR LESS UNIFORM PATTERN, REQUIRING MORE HAND OR MECHANICAL LABOR.

##### STONE CHECK DAMS

A CHECK DAM IS A SMALL DAM CONSTRUCTED ACROSS A DRAINAGE DITCH, SWALE OR CHANNEL TO REDUCE THE VELOCITY OF THE SLOUGHING RUNOFF. REDUCED RUNOFF VELOCITY REDUCES EROSION AND GULLING IN THE CHANNEL AND ALLOWS THE SEDIMENT TO SETTLE OUT. WHERE TEMPORARY CHANNELS OR PERMANENT CHANNELS ARE NOT YET VEGETATED, CHANNEL LINING IS INFEASIBLE AND VELOCITY CHECKS ARE REQUIRED. THIS PRACTICE MAY BE USED AS A TEMPORARY OR EMERGENCY MEASURE TO LIMIT EROSION BY REDUCING FLOW IN SMALL OPEN CHANNELS.

##### STRAW BALE BARRIERS

STRAW BALE BARRIERS ARE USED SPECIFICALLY WHERE THE AREA BELOW THE BARRIER IS UNDISTURBED AND VEGETATED. STRAW BALE BARRIERS REQUIRE MORE MAINTENANCE THAN SILT FENCE BARRIERS AND PERMEABILITY THROUGH BALE BARRIERS IS SLOWER THAN SILT FENCE. STRAW BALE BARRIERS SHOULD BE LOCATED WHERE THEY WILL TRAP SEDIMENT. STRAW BALES LOCATED ALONG THE TOP OF A RIDGE SERVE NO USEFUL PURPOSE. STRAW BALE BARRIERS SHALL BE REPLACED WHEN THEY HAVE REACHED THEIR USEFUL LIFE AND THE UPSLOPE AREAS UNSTABILIZED.

##### CULVERT OUTLET APRONS

OUTLET PROTECTION SHOULD BE INSTALLED AT ALL PIPE, CULVERT OR SMALL OUTLETS WHERE VELOCITY OF FLOW MAY CAUSE EROSION AT THE PIPE OUTLET AND IN THE RECEIVING CHANNEL. EROSION AT THESE LOCATIONS IS COMMON AND CAN CAUSE STRUCTURAL FAILURE WITH SERIOUS DOWNSTREAM PROBLEMS. A RIPRAP LINED APRON IS THE MOST COMMONLY USED STRUCTURE FOR THIS PURPOSE BECAUSE IT HAS RELATIVELY LOW COST AND CAN BE INSTALLED EASILY ON MOST SITES.

##### CONSTRUCTION ENTRANCE

A CONSTRUCTION ENTRANCE SHALL BE CONSTRUCTED AT ALL ACCESS POINTS ONTO THE SITE TO PREVENT TRACKING OF SOIL ONTO ADJACENT LOCAL ROADS. PROPOSED CONSTRUCTION ENTRANCES ARE SHOWN ON THE EROSION AND SEDIMENTATION CONTROL PLAN. CONSTRUCTION ENTRANCES PROVIDE AN AREA WHERE MUD CAN BE REMOVED FROM VEHICLE TIRES BEFORE THEY ENTER A PUBLIC ROAD. IF THE ACTION OF THE VEHICLE TRAVELING OVER THE GRAVEL PAD IS NOT SUFFICIENT TO REMOVE THE MAJORITY OF THE MUD, THEN TIRES MUST BE WASHED BEFORE THE VEHICLE ENTERS A PUBLIC ROAD.

##### INLET PROTECTION

STORM DRAIN CATCH BASIN INLET PROTECTION SHALL BE PROVIDED THROUGH THE USE OF STONE SEDIMENT BARRIERS OR A PREMANUFACTURED SILTSACK AS DISTRIBUTED BY A.H. HARRIS OR AN EQUAL APPROVED EQUAL. THE BARRIERS SHALL BE INSPECTED AFTER EACH RAINFALL AND REPAIRS OR REPLACEMENT MADE AS NECESSARY. SEDIMENT SHALL BE REMOVED AND THE BARRIER RESTORED TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO 1/3 THE DESIGN DEPTH OF THE BARRIER. THE BARRIER OR SILTSACK SHALL BE REMOVED WHEN THE TRIBUTARY DRAINAGE AREA HAS BEEN STABILIZED.

##### FILTER BAGS

FILTER BAGS WILL BE REQUIRED TO BE ONSITE AND AVAILABLE FOR CONSTRUCTION DEWATERING. THE USE OF FILTER BAGS SHALL BE REQUIRED IN THE EVENT THAT TRENCH DEWATERING ACTIVITIES CANNOT BE DISCHARGED THROUGH A NATURAL BUFFER AREA AT LEAST 100 FEET IN LENGTH OR AT ANY SIGNS OF ANY TURBID DISCHARGE FROM THE SITE.

##### SLOPE PROTECTION

ADDITIONAL SLOPE PROTECTION WILL BE REQUIRED IN AREAS OF STEEP SLOPES AND WHERE PROPOSED GRADES MEET EXISTING GRADES AT ACUTE ANGLES THAT COULD CAUSE GULLY EROSION. THIS PROTECTION WILL BE MAINLY IN THE FORM OF THE INSTALLATION OF EROSION CONTROL BLANKETS IN AREAS WHERE SLOPES EXCEED 3:1, H:V, UP TO 2:1, H:V. AREAS WHERE SLOPES EXCEED 2:1, H:V, SHOULD BE STABILIZED WITH RIPRAP SLOPE PROTECTION.

##### LOAM AND SEED

LOAM AND SEED IS INTENDED TO SERVE AS THE PRIMARY PERMANENT REVEGETATIVE MEASURE FOR ALL DENUED AREAS NOT PROVIDED WITH OTHER EROSION CONTROL MEASURES, SUCH AS RIPRAP OR PERMANENTLY COVERED WITH ROADWAY GRAVEL, PAVEMENT OR BUILDING AREA.

#### f. TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES

THE FOLLOWING ARE PLANNED AS TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES DURING CONSTRUCTION:

- A CRUSHED STONE-STABILIZED CONSTRUCTION ENTRANCE SHALL BE PLACED AT ANY CONSTRUCTION ACCESS POINTS INTO THE SITE. THE LOCATIONS OF THE CONSTRUCTION ENTRANCES SHOWN ON THE DRAWINGS SHOULD BE CONSIDERED ILLUSTRATIVE AND ADJUSTED AS APPROPRIATE AND LOCATED AT ANY AREA WHERE TRACKING OF MUD AND DEBRIS ONTO EXISTING ROADS, PREVIOUSLY PAVED AREAS WITHIN THE PROJECT, OR STREETS IS A POTENTIAL STONE STABILIZED CONSTRUCTION ENTRANCES WILL REQUIRE THE STONE TO BE REMOVED AND REPLACED AS IT BECOMES COVERED OR FILLED WITH MUD AND MATERIAL TRACKED BY VEHICLES EXITING THE SITE.

- SEDIMENT BARRIER SHALL BE INSTALLED ALONG THE DOWNGRADIENT SIDE OF THE PROPOSED IMPROVEMENT AREAS. THE SEDIMENT BARRIER WILL REMAIN IN PLACE AND PROPERLY MAINTAINED UNTIL THE SITE IS ACCEPTABLY REVEGETATED. SEDIMENT BARRIER IS TO BE USED ALONG THE CONTOUR OF SIGNIFICANT FILL SLOPES AS ILLUSTRATED ON THE EROSION CONTROL PLAN SITE DRAWINGS. SEDIMENT BARRIER NEEDS TO BE CHECKED TO INSURE THE BOTTOM IS PROPERLY KEPT IN AND INSPECTED AFTER SIGNIFICANT RAINS. WOOD CHIPS FROM CLEARING ARE OFTEN USED ON THE CONSTRUCTION SITE IN FRONT OF THE SEDIMENT BARRIER TO PROVIDE AN EXTRA MARGIN OF SAFETY AND SECURITY FOR THE BARRIER. THIS PRACTICE IS ENCOURAGED, PROVIDED THE CHIPS ARE REMOVED OR DISPERSED INTO FORESTED AREAS WHEN THE BARRIER IS REMOVED.

- FILTER BAGS SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS IN THE PLAN SET. THE FILTER BAG'S FUNCTION ON THE PROJECT IS TO RECEIVE ANY WATER PUMPED FROM EXCAVATIONS DURING CONSTRUCTION. A FILTER BAG SHALL BE INSTALLED AND PREPARED FOR OPERATION PRIOR TO ANY TRENCHING ON SITE. WHEN FILTER BAGS ARE OBSERVED TO BE AT 80% CAPACITY, THEY SHALL BE CLEANED OR REPLACED. STONE UNDER THE FILTER BAGS SHALL BE REMOVED AND REPLACED CONCURRENTLY.

- TEMPORARY STOCKPILES OF COMMON EXCAVATION WILL BE PROTECTED AS FOLLOWS:
  - TEMPORARY STOCKPILES SHALL NOT BE LOCATED WITHIN 100 FEET OF CRITICAL AREAS AND AT LEAST

50 FEET UPGRADIENT OF THE PERIMETER SEDIMENT BARRIER.

- INACTIVE STOCKPILES SHALL BE STABILIZED WITHIN 5 DAYS BY EITHER TEMPORARILY SEEDING THE STOCKPILE WITH A HYDRO SEED METHOD COMBINING AN EMULSIFIED MULCH/TACKIFIER OR BY COVERING THE STOCKPILE WITH MULCH. IF NECESSARY, MESH SHALL BE INSTALLED TO PREVENT WIND FROM REMOVING THE MULCH.

- OPEN AREAS OF THE SITE SHALL BE LIMITED TO 5 ACRES. ALL DENUED AREAS WHICH HAVE BEEN ROUGH GRADED SHALL RECEIVE MULCH OR EROSION CONTROL MESH FABRIC WITHIN 7 DAYS OF INITIAL DISTURBANCE OF SOIL. DISTURBED AREAS WITHIN 75' OF CRITICAL AREAS MUST RECEIVE TEMPORARY EROSION CONTROL MEASURES WITHIN 48 HOURS.

- BETWEEN NOVEMBER 1<sup>ST</sup> AND APRIL 1<sup>ST</sup>, OPEN AREA SHALL BE LIMITED TO THREE ACRES, AND DISTURBED SOIL SHALL BE COVERED WITH MULCH WITHIN 5 DAYS OF DISTURBANCE, PRIOR TO ANY PREDICTED STORM EVENT OF THE EQUIVALENT OF EQUIVALENT RAINFALL IN A 24-HOUR PERIOD, OR PRIOR TO ANY WORK SHUTDOWN LASTING MORE THAN 48 HOURS (INCLUDING WEEKENDS AND HOLIDAYS). THE MULCH RATE SHALL BE DOUBLE THE NORMAL RATE.

- FOR WORK THAT IS CONDUCTED BETWEEN NOVEMBER 1<sup>ST</sup> AND APRIL 15<sup>TH</sup> OF ANY CALENDAR YEAR, ALL DENUED AREAS WILL BE COVERED WITH HAY MULCH, APPLIED AT TWICE THE NORMAL APPLICATION RATE, AND (IN AREAS OVER 10% GRADE) ANCHORED WITH A FABRIC NETTING. THE TIME PERIOD FOR APPLYING MULCH SHALL BE LIMITED TO 5 DAYS FOR ALL AREAS OR IMMEDIATELY IN ADVANCE OF A PREDICTED RAINFALL EVENT.

- THE PAVED ACCESS ROADS SHALL BE SWEEPED TO CONTROL MUD AND DUST AS NECESSARY. A STREET SWEEPER SHALL BE AVAILABLE FROM THE CONTRACTOR ON IMMEDIATE NOTICE OR AS REQUESTED BY THE OWNER OR REGULATORY AGENCY.

- STONE CHECK DAMS OR HAY BALE BARRIERS WILL BE INSTALLED AT ANY EVIDENT CONCENTRATED FLOW DISCHARGE POINTS DURING CONSTRUCTION AND EARTHWORK OPERATIONS.

- STORM DRAIN CATCH BASIN INLET PROTECTION SHALL BE PROVIDED THROUGH THE USE OF STONE SEDIMENT BARRIERS OR A PREMANUFACTURED SILTSACK\* AS DISTRIBUTED BY A.H. HARRIS COMPANY, PORTLAND, MAINE. STONE SEDIMENT BARRIER INSTALLATION DETAILS ARE PROVIDED IN THE PLAN SET. THE BARRIERS OR SILTSACKS\* SHALL BE INSPECTED AFTER EACH RAINFALL AND REPAIRS MADE AS NECESSARY, INCLUDING THE REMOVAL OF SEDIMENT. SEDIMENT SHALL BE REMOVED AND THE BARRIER OR SILTSACK\* RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/3 THE DESIGN DEPTH OF THE BARRIER. INLET PROTECTION SHALL BE REMOVED WHEN THE TRIBUTARY DRAINAGE AREA HAS BEEN STABILIZED.

- ALL SLOPES STEEPER THAN 3:1 SHALL RECEIVE EROSION CONTROL MESH.
- ALL AREAS WHICH FEATURE NARROW ANGLES OF SLOPE INTERFACE BETWEEN PROPOSED SURFACES AND EXISTING SURFACES SHALL RECEIVE EROSION CONTROL MESH TO PREVENT SCOURING.
- ADDITIONAL SILTATION FENCES OR SEDIMENT BARRIERS SHALL BE INSTALLED AS CONSTRUCTION PROGRESSES.
- AREAS OF VISIBLE EROSION SHALL BE STABILIZED WITH CRUSHED STONE OR EQUIVALENT MEASURES.

#### 9. STANDARDS FOR STABILIZING SITES FOR WINTER CONDITIONS

THE CONSTRUCTION OF THE PROJECT WILL EXTEND INTO THE WINTER SEASON. THE CONTRACTOR SHALL SCHEDULE WORK TO AVOID CONSTRUCTION OF STORMWATER BASINS DURING THE WINTER MONTHS. FOR PERMITTED WINTER CONSTRUCTION, THE EROSION CONTROL MEASURES ARE SUBSTANTIALLY MORE STRINGENT DUE TO COLD TEMPERATURES AND LACK OF MOISTURE WHICH AIDS IN DRYING THE SUBGRADE SOILS THROUGH EVAPORATION.

THE WINTER CONSTRUCTION PERIOD IS FROM NOVEMBER 15<sup>TH</sup> THROUGH MARCH 15<sup>TH</sup>. IF THE CONSTRUCTION SITE IS NOT STABILIZED WITH PAVEMENT, AGGREGATE SUBBASE GRAVEL, 90% MATURE VEGETATION COVER OR RIPRAP PRIOR TO NOVEMBER 15<sup>TH</sup>, THE AREA OF THE SITE NEEDS TO BE PROTECTED WITH OVER-WINTER STABILIZATION. AN AREA CONSIDERED OPEN IS ANY AREA THAT IS NOT STABILIZED WITH PAVEMENT, VEGETATION, MULCHING, EROSION CONTROL MIX, EROSION CONTROL MATS, RIPRAP OR SUBBASE GRAVEL.

DURING THE WINTER CONSTRUCTION PERIOD THE CONTRACTOR SHALL INSTALL EROSION CONTROL MIX BERMS IN LIEU OF ANY OTHER SEDIMENT BARRIER.

DURING THE WINTER CONSTRUCTION PERIOD, A DOUBLE ROW OF SEDIMENT BARRIERS SHALL BE PLACED BETWEEN ANY DRAINAGE PATH AND THE DISTURBED AREA.

IN ADDITION, DURING THE WINTER CONSTRUCTION PERIOD THE AMOUNT OF EXPOSED AREA SHALL BE LIMITED TO THAT WHICH CAN BE MULCHED WITHIN ONE DAY IN THE EVENT OF A PREDICTED STORM AND SHALL NOT EXCEED A MAXIMUM OPEN AREA OF ONE ACRE.

STANDARD FOR THE TIMELY STABILIZATION OF DITCHES AND CHANNELS: THE CONTRACTOR SHALL CONSTRUCT AND STABILIZE ALL STONE-LINED DITCHES AND CHANNELS ON THE SITE BY NOVEMBER 15<sup>TH</sup>. THE CONTRACTOR SHALL CONSTRUCT AND STABILIZE ALL GRASS LINED DITCHES AND CHANNELS ON THE SITE BY SEPTEMBER 1<sup>ST</sup>. IF THE CONTRACTOR FAILS TO STABILIZE A DITCH OR CHANNEL TO BE GRASS LINED BY SEPTEMBER 1<sup>ST</sup>, THEN THE CONTRACTOR SHALL TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE DITCH FOR LATE FALL AND WINTER:

- i. INSTALL A SOD LINING IN THE DITCH. THE CONTRACTOR SHALL LINE THE DITCH WITH PROPERLY INSTALLED SOD BY OCTOBER 1<sup>ST</sup>. PROPER INSTALLATION INCLUDES THE APPLICANT PINNING THE SOD ONTO THE SOIL WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL, AND ANCHORING THE SOD WITH JUTE OR PLASTIC MESH TO PREVENT THE SOD STRIPS FROM SLOUGHING DURING FLOW CONDITIONS.

- ii. INSTALL A STONE LINING IN THE DITCH. THE CONTRACTOR SHALL LINE THE DITCH WITH STONE RIPRAP BY NOVEMBER 1<sup>ST</sup>. THE CONTRACTOR SHALL HIRE A REGISTERED PROFESSIONAL ENGINEER TO DETERMINE THE STONE SIZE AND LINING THICKNESS NEEDED TO WITHSTAND THE ANTICIPATED FLOW VELOCITIES AND FLOW DEPTHS WITHIN THE DITCH. IF NECESSARY, THE CONTRACTOR SHALL REGRADE THE DITCH PRIOR TO PLACING THE STONE LINING SO AS TO PREVENT THE STONE LINING FROM REDUCING THE DITCH'S CROSS SECTIONAL AREA.

STANDARD FOR THE TIMELY STABILIZATION OF DISTURBED SLOPES: THE CONTRACTOR SHALL CONSTRUCT AND STABILIZE STONE COVERED SLOPES BY NOVEMBER 15<sup>TH</sup>. THE CONTRACTOR SHALL SEED AND MULCH ALL SLOPES TO BE VEGETATED BY SEPTEMBER 1<sup>ST</sup>. A SLOPE IS CONSIDERED ANY AREA HAVING A GRADE OF GREATER THAN 15% (10k:1V). IF THE CONTRACTOR FAILS TO STABILIZE ANY SLOPE TO BE VEGETATED BY SEPTEMBER 1<sup>ST</sup>, THEN THE CONTRACTOR SHALL TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE SLOPE FOR LATE FALL AND WINTER:

- i. STABILIZE THE SOIL WITH TEMPORARY VEGETATION AND EROSION CONTROL MESH. BY OCTOBER 1ST THE CONTRACTOR SHALL SEED THE DISTURBED SLOPE WITH WINTER RYE AT A SEEDING RATE OF 3 POUNDS PER 1000 SQUARE FEET AND APPLY EROSION CONTROL MATS OVER THE MULCHED SLOPE. THE CONTRACTOR SHALL MONITOR GROWTH OF THE RYE OVER THE NEXT 45 DAYS. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR FAILS TO COVER AT LEAST 75% OF THE DISTURBED SLOPE BY NOVEMBER 15TH, THEN THE CONTRACTOR SHALL COVER THE SLOPE WITH A LAYER OF WOOD WASTE COMPOST AS DESCRIBED IN ITEM II OF THIS STANDARD OR WITH STONE RIP RAP AS DESCRIBED IN ITEM IV OF THIS STANDARD.

- ii. STABILIZE THE SLOPE WITH SOD. THE CONTRACTOR SHALL STABILIZE THE DISTURBED SLOPE WITH PROPERLY INSTALLED SOD BY OCTOBER 1ST. PROPER INSTALLATION INCLUDES THE CONTRACTOR PINNING THE SOD ONTO THE SLOPE WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, AND WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL. THE CONTRACTOR SHALL NOT USE LATE-SEASON SOD INSTALLATION TO STABILIZE SLOPES HAVING A GRADE GREATER THAN 33% (3k: 1V) OR HAVING GROUNDWATER SEEPS ON THE SLOPE FACE.

- iii. STABILIZE THE SLOPE WITH WOOD WASTE COMPOST. THE CONTRACTOR SHALL PLACE A SIX-INCH LAYER OF WOOD WASTE COMPOST ON THE SLOPE BY NOVEMBER 15TH. PRIOR TO PLACING THE WOOD WASTE COMPOST, THE CONTRACTOR SHALL REMOVE ANY SNOW ACCUMULATION ON THE DISTURBED SLOPE. THE CONTRACTOR SHALL NOT USE WOOD WASTE COMPOST TO STABILIZE SLOPES HAVING GRADES GREATER THAN 50% (2k: 1V) OR HAVING GROUNDWATER SEEPS ON THE SLOPE FACE.

- iv. STABILIZE THE SLOPE WITH STONE RIPRAP. THE CONTRACTOR SHALL PLACE A LAYER OF STONE RIPRAP ON THE SLOPE BY NOVEMBER 15TH. THE CONTRACTOR SHALL HIRE A REGISTERED PROFESSIONAL ENGINEER TO DETERMINE THE STONE SIZE NEEDED FOR STABILITY AND TO DESIGN A FILTER LAYER FOR UNDERNEATH THE RIPRAP.

STANDARD FOR THE TIMELY STABILIZATION OF DISTURBED SOIL: BY SEPTEMBER 15TH, THE CONTRACTOR SHALL SEED AND MULCH ALL DISTURBED SOILS ON AREAS HAVING A SLOPE LESS THAN 15%. IF THE CONTRACTOR FAILS TO STABILIZE THESE SOILS BY THIS DATE, THEN THE CONTRACTOR SHALL TAKE ONE OF THE FOLLOWING ACTIONS TO STABILIZE THE SOIL FOR LATE FALL AND WINTER.

- i. STABILIZE THE SOIL WITH TEMPORARY VEGETATION. BY OCTOBER 1ST, THE CONTRACTOR SHALL SEED THE DISTURBED SOIL WITH WINTER RYE AT A SEEDING RATE OF 3 POUNDS PER 1,000 SQUARE FEET, LIGHTLY MULCH THE SEEDED SOIL WITH HAY OR STRAW AT 75 POUNDS PER 1,000 SQUARE FEET, AND ANCHOR THE MULCH WITH PLASTIC NETTING. THE CONTRACTOR SHALL MONITOR THE GROWTH OF THE RYE OVER THE NEXT 45 DAYS. IF THE RYE FAILS TO GROW AT LEAST THREE INCHES OR FAILS TO COVER AT LEAST 75% OF THE DISTURBED SOIL BEFORE NOVEMBER 15TH, THEN THE CONTRACTOR SHALL MULCH THE AREA FOR OVER-WINTER PROTECTION AS DESCRIBED IN ITEM III OF THIS STANDARD.

- ii. STABILIZE THE SOIL WITH SOD. THE CONTRACTOR SHALL STABILIZE THE DISTURBED SOIL WITH PROPERLY INSTALLED SOD BY OCTOBER 1ST. PROPER INSTALLATION INCLUDES THE CONTRACTOR PINNING THE SOD ONTO THE SOIL WITH WIRE PINS, ROLLING THE SOD TO GUARANTEE CONTACT BETWEEN THE SOD AND UNDERLYING SOIL, AND WATERING THE SOD TO PROMOTE ROOT GROWTH INTO THE DISTURBED SOIL.

- iii. STABILIZE THE SOIL WITH MULCH. BY NOVEMBER 15TH, THE CONTRACTOR SHALL MULCH THE DISTURBED SOIL BY SPREADING HAY OR STRAW AT A RATE OF AT LEAST 150 POUNDS PER 1,000 SQUARE FEET ON THE AREA SO THAT NO SOIL IS VISIBLE THROUGH THE MULCH. PRIOR TO APPLYING THE MULCH, THE CONTRACTOR SHALL REMOVE ANY SNOW ACCUMULATION ON THE DISTURBED AREA. IMMEDIATELY AFTER APPLYING THE MULCH, THE CONTRACTOR SHALL ANCHOR THE MULCH WITH PLASTIC NETTING TO PREVENT WIND FROM MOVING THE MULCH OFF THE DISTURBED SOIL.

STANDARD FOR TIMELY STABILIZATION OF SOIL STOCKPILES: STOCKPILES OF SOIL OR SUBSOIL WILL BE MULCHED FOR OVER WINTER PROTECTION WITH HAY OR STRAW AT TWICE THE NORMAL APPLICATION RATE OR WITH A FOUR-INCH THICK LAYER OF EROSION CONTROL MIX. THIS WILL BE COMPLETED WITHIN 24-HOURS OF STOCKPIILING OR RE-ESTABLISHED PRIOR TO ANY PREDICTED RAINFALL OR SNOWFALL EVENT. ANY SOIL STOCKPILE WILL NOT BE PLACED (EVEN COVERED WITH MULCH) WITHIN 100 FEET FROM A NATURAL RESOURCE (I.E. WETLAND, ETC.).

#### h. SPECIAL MEASURES FOR SUMMER CONDITIONS

THE SUMMER PERIOD IS GENERALLY OPTIMUM FOR CONSTRUCTION FOR THIS SITE BUT IT IS ALSO THE PERIOD WHERE INTENSE SHORT DURATION STORMS ARE MOST COMMON MAKING DENUED AREAS VERY SUSCEPTIBLE TO EROSION, WHERE DUST CONTROL NEEDS TO BE THE MOST STRINGENT, AND WHERE THE POTENTIAL TO ESTABLISH VEGETATION IS OFTEN RESTRICTED BY MOISTURE DEFICIT. DURING THESE PERIODS THE CONTRACTOR MUST:

- IMPLEMENT A PROGRAM TO APPLY DUST CONTROL MEASURES ON A DAILY BASIS EXCEPT THOSE DAYS WHERE THE PRECIPITATION EXCEEDS 0.25 INCHES;

- SPRAY THE MULCH AFTER ANCHORING WITH WATER TO DAMPEN THE SOIL AND ENCOURAGE EARLY GROWTH. TEMPORARY SEED MAY BE REQUIRED UNTIL THE LATE SUMMER SEEDING SEASON.

- MULCH, COVER, AND MOISTEN STOCKPILES OF FINE-GRAINED MATERIALS THAT ARE SUSCEPTIBLE TO EROSION.

- TAKE ADDITIONAL STEPS NEEDED TO CONTROL FUGITIVE DUST EMISSIONS TO MINIMIZE REDUCTIONS IN VISIBILITY AND THE AIRBORNE DISBURSEMENT OF FINE-GRAINED SOILS. THESE MEASURES MAY ALSO BE REQUIRED IN THE SPRING AND FALL DURING THE DRIER PERIODS OF THESE SEASONS.

#### i. PERMANENT EROSION CONTROL MEASURES

THE FOLLOWING PERMANENT EROSION CONTROL MEASURES HAVE BEEN DESIGNED AS PART OF THE EROSION AND SEDIMENTATION CONTROL PLAN:

- THE DRAINAGE CONVEYANCE SYSTEMS HAVE BEEN DESIGNED TO INTERCEPT AND CONVEY THE 25-YEAR STORM. IN THE CASE OF OPEN CHANNELS OR SWALES, THIS INCLUDES THE DESIGN OF MEASURES TO RESIST SCOUR OF THE CHANNEL.

- ALL STORM DRAIN PIPES SHALL HAVE RIPRAP APRONS AT THEIR OUTLET TO PROTECT THE OUTLET AND RECEIVING CHANNEL OF THE CULVERTS FROM SCOUR AND DETERIORATION. INSTALLATION DETAILS ARE PROVIDED IN THE PLAN SET. THE APRONS SHALL BE INSTALLED AND STABILIZED PRIOR TO DIRECTING RUNOFF TO THE TRIBUTARY PIPE OR CULVERT.

- ALL AREAS DISTURBED DURING CONSTRUCTION, BUT NOT SUBJECT TO OTHER RESTORATION (PAVING, RIPRAP, ETC.) WILL BE LOAMED, LIMED, FERTILIZED, MULCHED, AND SEEDED. FABRIC NETTING, ANCHORED WITH STAPLES, SHALL BE PLACED OVER THE MULCH IN AREAS WHERE THE FINISH GRADE SLOPE IS GREATER THAN 10 PERCENT. NATIVE TOPSOIL SHALL BE STOCKPILED AND TEMPORARILY STABILIZED WITH SEED AND MULCH AND REUSED FOR FINAL RESTORATION WHEN IT IS OF SUFFICIENT QUALITY.

- CATCH BASINS SHALL BE PROVIDED WITH SEDIMENT SUMPS FOR ALL OUTLET PIPES THAT ARE 12" IN DIAMETER OR GREATER.

#### j. TIMING AND SEQUENCE OF THE EROSION CONTROL MEASURES

THE FOLLOWING CONSTRUCTION SEQUENCE SHALL BE REQUIRED TO INSURE THE EFFECTIVENESS OF THE EROSION AND

#### k. PROVISIONS FOR MAINTENANCE OF THE EROSION CONTROL MEASURES

THIS PROJECT IS SUBJECT TO THE REQUIREMENTS OF A US EPA NPDES PERMIT AND AN ACCOMPANYING STORMWATER POLLUTION PREVENTION PLAN (SWPPP). THESE DOCUMENTS REQUIRE THE CONTRACTOR TO PREPARE A LIST AND DESIGNATE BY NAME, ADDRESS AND TELEPHONE NUMBER ALL INDIVIDUALS WHO WILL BE RESPONSIBLE FOR IMPLEMENTATION, INSPECTION AND MAINTENANCE OF ALL EROSION CONTROL MEASURES IDENTIFIED WITHIN THIS SECTION AND AS CONTAINED WITHIN THE CONTRACT DRAWINGS. SPECIFIC RESPONSIBILITIES OF THE INSPECTOR(S) WILL INCLUDE, BUT NOT BE LIMITED TO:

- EXECUTION OF THE CONTRACTOR/SUBCONTRACTOR CERTIFICATION BY ANY AND ALL PARTIES RESPONSIBLE FOR EROSION CONTROL MEASURES ON THE SITE AS REQUIRED BY THE SWPPP.

- ASSURING AND CERTIFYING THE OWNER'S CONSTRUCTION SEQUENCE IS IN CONFORMANCE WITH THE SPECIFIED SCHEDULE OF THIS SECTION. A WEEKLY CERTIFICATION STATING COMPLIANCE, ANY DEVIATIONS, AND CORRECTIVE MEASURES NECESSARY TO COMPLY WITH THE EROSION CONTROL REQUIREMENTS OF THIS SECTION SHALL BE PREPARED AND SIGNED BY THE INSPECTOR(S).

- IN ADDITION TO THE WEEKLY CERTIFICATIONS, THE INSPECTOR(S) SHALL MAINTAIN WRITTEN REPORTS RECORDING CONSTRUCTION ACTIVITIES ON SITE WHICH INCLUDE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR IN A PARTICULAR AREA; DATES WHEN MAJOR CONSTRUCTION ACTIVITIES CEASE IN A PARTICULAR AREA, EITHER TEMPORARY OR PERMANENT; DATES WHEN AN AREA IS STABILIZED.

- INSPECTION OF THE PROJECT WORK SITE AT LEAST ONCE EVERY FOURTEEN (14) CALENDAR DAYS AND BEFORE AND AFTER EACH SIGNIFICANT RAINFALL EVENT (0.25 INCHES OR MORE IN ANY 24-HOUR PERIOD) DURING CONSTRUCTION UNTIL PERMANENT EROSION CONTROL MEASURES HAVE BEEN PROPERLY INSTALLED AND THE SITE HAS BEEN STABILIZED. INSPECTION OF THE PROJECT WORK SITE SHALL INCLUDE:

A. IDENTIFICATION OF PROPER EROSION CONTROL MEASURE INSTALLATION IN ACCORDANCE WITH THE EROSION CONTROL DETAIL SHEET OR AS SPECIFIED IN THIS SECTION.

B. DETERMINE WHETHER EACH EROSION CONTROL MEASURE IS PROPERLY OPERATING. IF NOT, IDENTIFY DAMAGE TO THE CONTROL DEVICE AND DETERMINE REMEDIAL MEASURES.

C. IDENTIFY AREAS THAT APPEAR VULNERABLE TO EROSION AND DETERMINE ADDITIONAL EROSION CONTROL MEASURES THAT SHOULD BE USED TO IMPROVE CONDITIONS.

D. INSPECT AREAS OF RECENT SEEDING TO DETERMINE PERCENT CATCH OF GRASS. A MINIMUM CATCH OF 90 PERCENT IS REQUIRED PRIOR TO REMOVAL OF EROSION CONTROL MEASURES.

E. RECORD DATE OF INSTALLATION OF SORBENT BAGS IN CATCH BASINS, DATES OF PAVING (IF APPLICABLE), DATES REMOVED, AND THE DISPOSAL METHOD AND LOCATION.

- IF INSPECTION OF THE SITE INDICATES A CHANGE SHOULD BE MADE TO THE EROSION CONTROL PLAN, EITHER TO IMPROVE EFFECTIVENESS OR CORRECT A SITE-SPECIFIC DEFICIENCY, THE INSPECTOR SHALL IMMEDIATELY IMPLEMENT THE CORRECTIVE MEASURE AND NOTIFY THE OWNER OF THE CHANGE.

ONCE CONSTRUCTION HAS BEEN COMPLETED, LONG TERM MAINTENANCE OF THE FACILITIES WILL BE THE RESPONSIBILITY OF THE APPLICANT.

#### l. TIMING AND SEQUENCE OF THE EROSION CONTROL MEASURES

PHASE 1: EROSION CONTROL PHASE I – APPROXIMATE DURATION OF WORK = 1 ± WEEK

- LIMIT OF WORK TO BE STAKED OUT AND APPROVED BY THE TOWN OFFICIAL PRIOR TO THE INSTALLATION OF ANY EROSION CONTROL MEASURES.

- INSTALLATION OF THE SEDIMENT BARRIER AND SILT SACKS TO THE EXISTING DRAINAGE STRUCTURES.

- BEGIN CLEARING OF LANDSCAPING ONCE THE SEDIMENT BARRIER AND OTHER EROSION CONTROL MEASURES ARE PROPERLY INSTALLED.

- SCREEN AND STOCKPILE TOPSOIL ON SITE. SEDIMENT BARRIER TO BE INSTALLED AROUND THE PERIMETER OF THE STOCKPILE AREAS.

- APPROXIMATE DURATION OF EROSION CONTROL PHASE I – 1 ± WEEK

PHASE 2: DEMOLITION – APPROXIMATE DURATION OF WORK = 8 ± WEEKS

- DISCONNECT EXISTING UTILITIES AS MARKED OUT IN THE DEMOLITION REMOVALS AND PROTECTION PLAN.

- REMOVE GLYCOL FROM THE EXISTING COOLING SYSTEMS.

- BEGIN DEMOLITION OF THE EXISTING EXISTING BUILDING.

- CRUSH BUILDING AND SITE CONCRETE TO <3" AND STOCKPILE FOR REUSE.

- INSTALL THE CRUSHED STONE CONSTRUCTION ENTRANCES; TO BE INSTALLED PRIOR TO THE REMOVAL OF ASPHALT.

- BEGIN DEMOLITION OF ASPHALT PAVING AND EXISTING UNDERGROUND UTILITIES.

- CRUSH EXISTING ASPHALT PAVING AND STOCKPILE FOR REUSE.

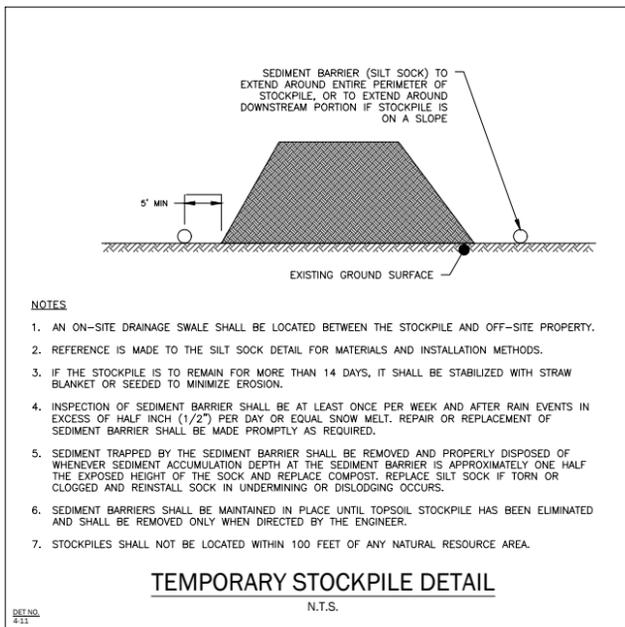
PHASE 3: MASS GRADING OF BUILDING PAD/SITE – APPROXIMATE DURATION OF GRADING = 5± WEEKS & APPROXIMATE DURATION OF BUILDING CONSTRUCTION = 10± MONTHS

- BEGIN MASS GRADING AND BUILDING CONSTRUCTION

PHASE 4: DRAINAGE AND UTILITIES – APPROXIMATE DURATION OF WORK = 20± WEEKS

- BEGIN INSTALLATION OF UNDERGROUND DRAINAGE AND UTILITIES.

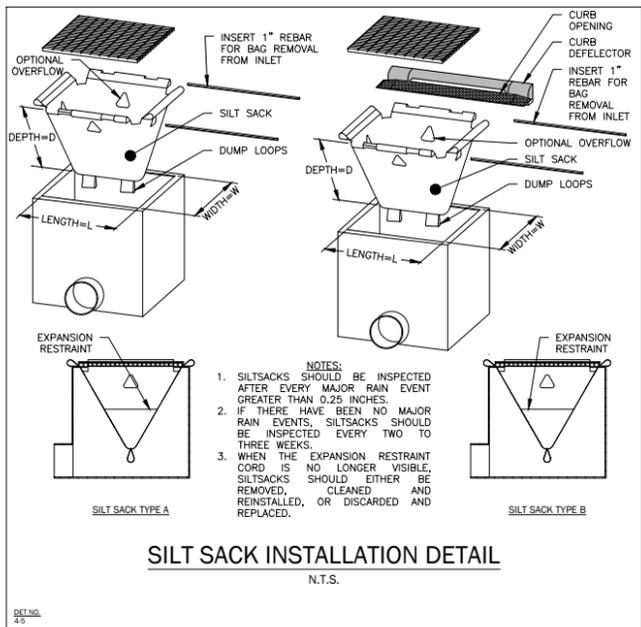




- NOTES**
1. AN ON-SITE DRAINAGE SWALE SHALL BE LOCATED BETWEEN THE STOCKPILE AND OFF-SITE PROPERTY.
  2. REFERENCE IS MADE TO THE SILT SOCK DETAIL FOR MATERIALS AND INSTALLATION METHODS.
  3. IF THE STOCKPILE IS TO REMAIN FOR MORE THAN 14 DAYS, IT SHALL BE STABILIZED WITH STRAW BLANKET OR SEEDED TO MINIMIZE EROSION.
  4. INSPECTION OF SEDIMENT BARRIER SHALL BE AT LEAST ONCE PER WEEK AND AFTER RAIN EVENTS IN EXCESS OF HALF INCH (1/2") PER DAY OR EQUAL SNOW MELT. REPAIR OR REPLACEMENT OF SEDIMENT BARRIER SHALL BE MADE PROMPTLY AS REQUIRED.
  5. SEDIMENT TRAPPED BY THE SEDIMENT BARRIER SHALL BE REMOVED AND PROPERLY DISPOSED OF WHENEVER SEDIMENT ACCUMULATION DEPTH AT THE SEDIMENT BARRIER IS APPROXIMATELY ONE HALF THE EXPOSED HEIGHT OF THE SOCK AND REPLACE COMPOST. REPLACE SILT SOCK IF TORN OR CLOGGED AND REINSTALL SOCK IN UNDERMINING OR DISLODGING OCCURS.
  6. SEDIMENT BARRIERS SHALL BE MAINTAINED IN PLACE UNTIL TOPSOIL STOCKPILE HAS BEEN ELIMINATED AND SHALL BE REMOVED ONLY WHEN DIRECTED BY THE ENGINEER.
  7. STOCKPILES SHALL NOT BE LOCATED WITHIN 100 FEET OF ANY NATURAL RESOURCE AREA.

**TEMPORARY STOCKPILE DETAIL**  
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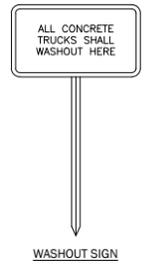
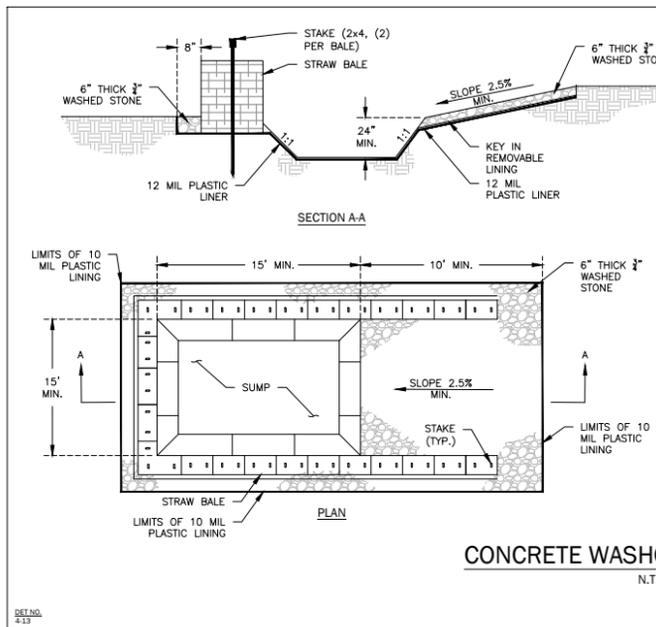
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- NOTES:**
1. SILTSACKS SHOULD BE INSPECTED AFTER EVERY MAJOR RAIN EVENT GREATER THAN 0.25 INCHES.
  2. IF THERE HAVE BEEN NO MAJOR RAIN EVENTS, SILTSACKS SHOULD BE INSPECTED EVERY TWO TO THREE WEEKS.
  3. WHEN THE EXPANSION RESTRAINT CORD IS NO LONGER VISIBLE, SILTSACKS SHOULD EITHER BE REMOVED, CLEANED AND REINSTALLED, OR DISCARDED AND REPLACED.

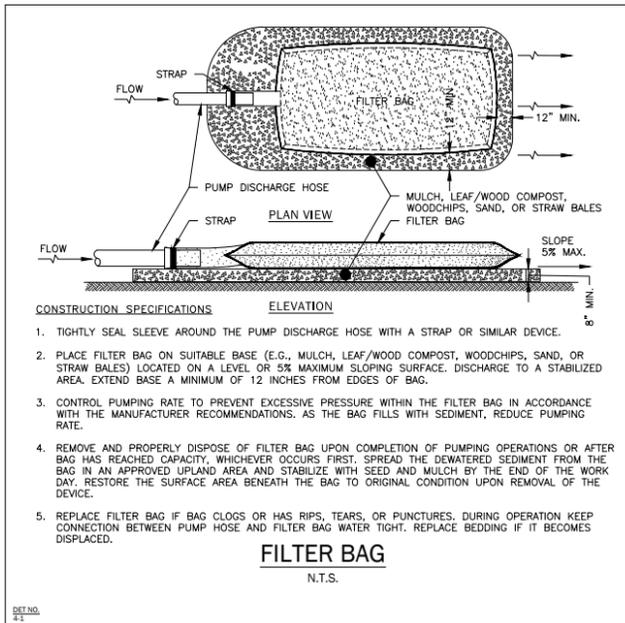
**SILT SACK INSTALLATION DETAIL**  
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**CONCRETE WASHOUT AREA DETAIL**  
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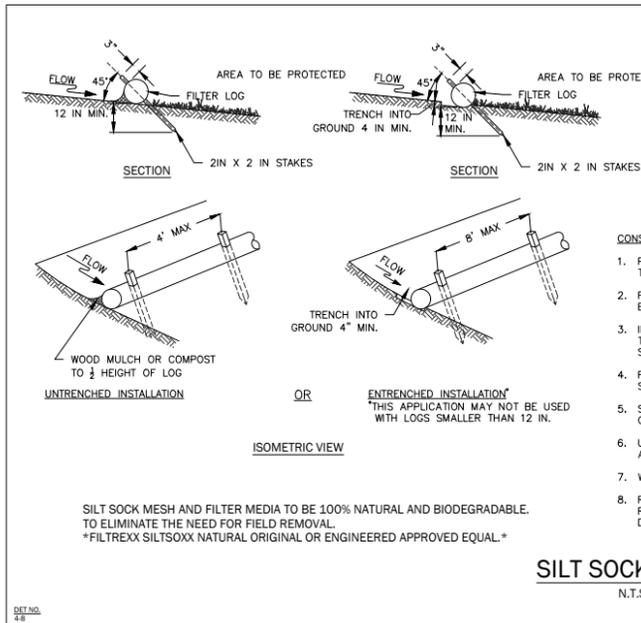
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- CONSTRUCTION SPECIFICATIONS**
1. TIGHTLY SEAL SLEEVE AROUND THE PUMP DISCHARGE HOSE WITH A STRAP OR SIMILAR DEVICE.
  2. PLACE FILTER BAG ON SUITABLE BASE (E.G., MULCH, LEAF/WOOD COMPOST, WOODCHIPS, SAND, OR STRAW BALES) LOCATED ON A LEVEL OR 3% MAXIMUM SLOPING SURFACE. DISCHARGE TO A STABILIZED AREA. EXTEND BASE A MINIMUM OF 12 INCHES FROM EDGES OF BAG.
  3. CONTROL PUMPING RATE TO PREVENT EXCESSIVE PRESSURE WITHIN THE FILTER BAG IN ACCORDANCE WITH THE MANUFACTURER RECOMMENDATIONS. AS THE BAG FILLS WITH SEDIMENT, REDUCE PUMPING RATE.
  4. REMOVE AND PROPERLY DISPOSE OF FILTER BAG UPON COMPLETION OF PUMPING OPERATIONS OR AFTER BAG HAS REACHED CAPACITY, WHICHEVER OCCURS FIRST. SPREAD THE DEWATERED SEDIMENT FROM THE BAG IN AN APPROVED UPLAND AREA AND STABILIZE WITH SEED AND MULCH BY THE END OF THE WORK DAY. RESTORE THE SURFACE AREA BENEATH THE BAG TO ORIGINAL CONDITION UPON REMOVAL OF THE DEVICE.
  5. REPLACE FILTER BAG IF BAG CLOGS OR HAS RIPS, TEARS, OR PUNCTURES. DURING OPERATION KEEP CONNECTION BETWEEN PUMP HOSE AND FILTER BAG WATER TIGHT. REPLACE BEDDING IF IT BECOMES DISPLACED.

**FILTER BAG**  
N.T.S.

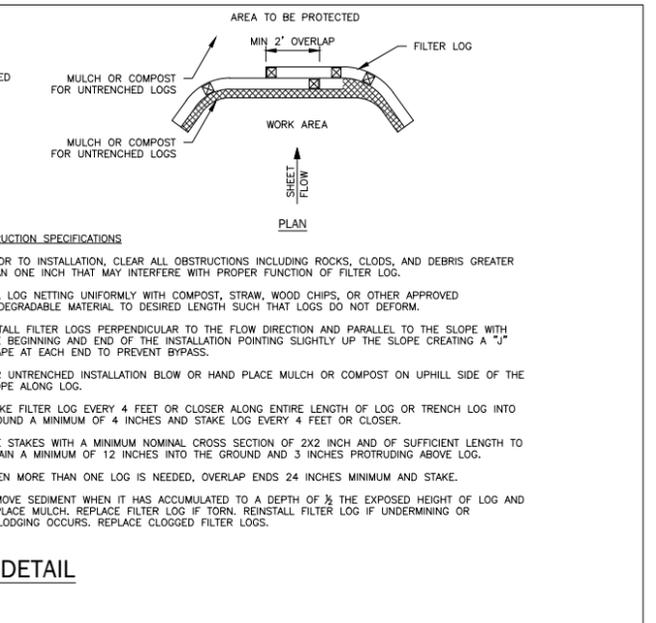
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SILT SOCK MESH AND FILTER MEDIA TO BE 100% NATURAL AND BIODEGRADABLE. TO ELIMINATE THE NEED FOR FIELD REMOVAL.  
\*FILTREXX SILT-SOXX NATURAL ORIGINAL OR ENGINEERED APPROVED EQUAL\*

**SILT SOCK DETAIL**  
N.T.S.

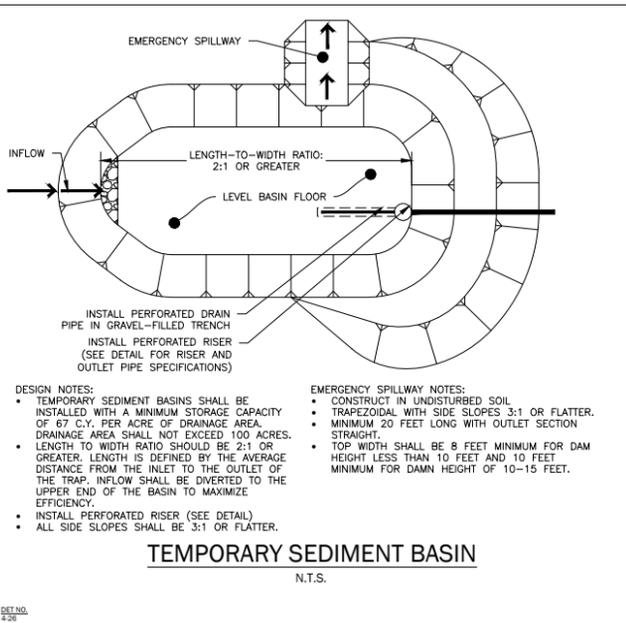
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- CONSTRUCTION SPECIFICATIONS**
1. PRIOR TO INSTALLATION, CLEAR ALL OBSTRUCTIONS INCLUDING ROCKS, CLOGS, AND DEBRIS GREATER THAN ONE INCH THAT MAY INTERFERE WITH PROPER FUNCTION OF FILTER LOG.
  2. FILL LOG NETTING UNIFORMLY WITH COMPOST, STRAW, WOOD CHIPS, OR OTHER APPROVED BIODEGRADABLE MATERIAL TO DESIRED LENGTH SUCH THAT LOGS DO NOT DEFORM.
  3. INSTALL FILTER LOGS PERPENDICULAR TO THE FLOW DIRECTION AND PARALLEL TO THE SLOPE WITH THE BEGINNING AND END OF THE INSTALLATION POINTING SLIGHTLY UP THE SLOPE CREATING A "J" SHAPE AT EACH END TO PREVENT BYPASS.
  4. FOR UNTRENCHED INSTALLATION BLOW OR HAND PLACE MULCH OR COMPOST ON UPHILL SIDE OF THE SLOPE ALONG LOG.
  5. STAKE FILTER LOG EVERY 4 FEET OR CLOSER ALONG ENTIRE LENGTH OF LOG OR TRENCH LOG INTO GROUND A MINIMUM OF 4 INCHES AND STAKE LOG EVERY 4 FEET OR CLOSER.
  6. USE STAKES WITH A MINIMUM NOMINAL CROSS SECTION OF 2X2 INCH AND OF SUFFICIENT LENGTH TO ATTAIN A MINIMUM OF 12 INCHES INTO THE GROUND AND 3 INCHES PROTRUDING ABOVE LOG.
  7. WHEN MORE THAN ONE LOG IS NEEDED, OVERLAP ENDS 24 INCHES MINIMUM AND STAKE.
  8. REMOVE SEDIMENT WHEN IT HAS ACCUMULATED TO A DEPTH OF 1/2 THE EXPOSED HEIGHT OF LOG AND REPLACING MULCH. REPLACE FILTER LOG IF TORN. REINSTALL FILTER LOG IF UNDERMINING OR DISLODGING OCCURS. REPLACE CLOGGED FILTER LOGS.

**SILT SOCK DETAIL**  
N.T.S.

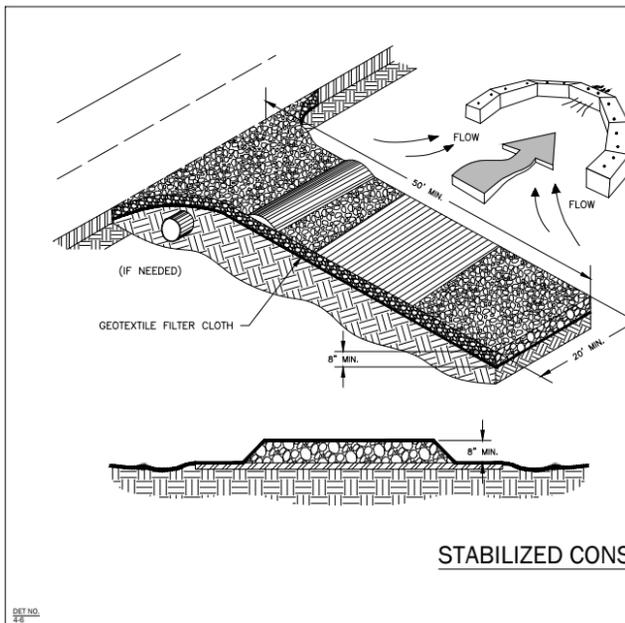
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- DESIGN NOTES:**
- TEMPORARY SEDIMENT BASINS SHALL BE INSTALLED WITH A MINIMUM STORAGE CAPACITY OF 67 C.Y. PER ACRE OF DRAINAGE AREA.
  - DRAINAGE AREA SHALL NOT EXCEED 100 ACRES.
  - LENGTH TO WIDTH RATIO SHOULD BE 2:1 OR GREATER. LENGTH IS DEFINED BY THE AVERAGE DISTANCE FROM THE INLET TO THE OUTLET OF THE TRAP. INFLOW SHALL BE DIVERTED TO THE UPPER END OF THE BASIN TO MAXIMIZE EFFICIENCY.
  - INSTALL PERFORATED RISER (SEE DETAIL).
  - ALL SIDE SLOPES SHALL BE 3:1 OR FLATTER.
- EMERGENCY SPILLWAY NOTES:**
- CONSTRUCT IN UNDISTURBED SOIL.
  - TRAPEZOIDAL WITH SIDE SLOPES 3:1 OR FLATTER.
  - MINIMUM 20 FEET LONG WITH OUTLET SECTION STRAIGHT.
  - TOP WIDTH SHALL BE 8 FEET MINIMUM FOR DAM HEIGHT LESS THAN 10 FEET AND 10 FEET MINIMUM FOR DAM HEIGHT OF 10-15 FEET.

**TEMPORARY SEDIMENT BASIN**  
N.T.S.

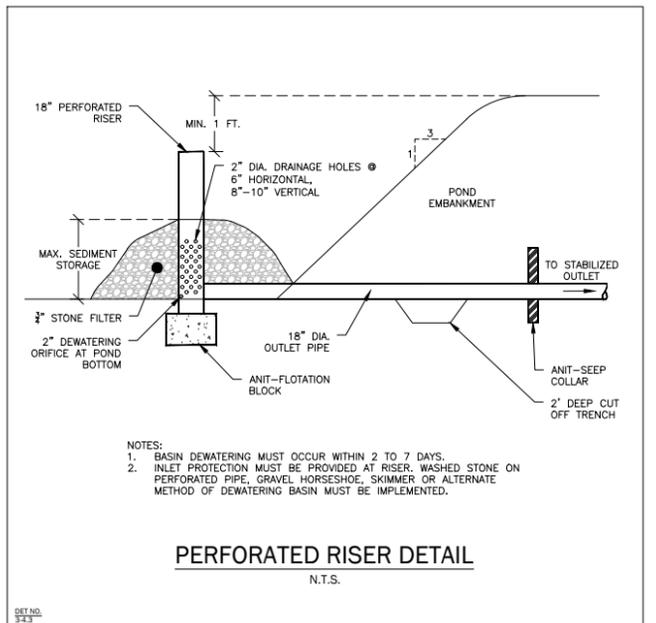
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- NOTES:**
1. STONE SHALL BE COURSE AGGREGATE, 3 INCH STONE.
  2. THE LENGTH OF THE CONSTRUCTION EXIT SHALL NOT BE LESS THAN 50 FEET, EXCEPT FOR A SINGLE FAMILY RESIDENTIAL LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY.
  3. THE MINIMUM THICKNESS OF THE STABILIZED EXIT SHALL NOT BE LESS THAN 8 INCHES.
  4. THE WIDTH SHALL NOT BE LESS THAN THE FULL WIDTH OF THE INGRESS OR EGRESS POINT OR 20 FEET, WHICHEVER IS GREATER.
  5. GEOTEXTILE FILTER CLOTH SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING STONE. FILTER CLOTH IS NOT REQUIRED FOR A SINGLE FAMILY RESIDENTIAL LOT.
  6. AVOID LOCATING ON STEEP SLOPES OR AT CURVES ON PUBLIC ROADS.
  7. ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARD THE CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A BERM WITH 5:1 SIDE SLOPES THAT CAN BE CROSSED BY VEHICLES MAY BE SUBSTITUTED FOR PIPE.
  8. WASHRACKS AND/OR TIRE WASHERS MAY BE REQUIRED DEPENDING ON SCALE AND CIRCUMSTANCE. IF NECESSARY, WASHRACK DESIGN MAY CONSIST OF ANY MATERIAL SUITABLE FOR TRUCK TRAFFIC THAT WILL REMOVE MUD AND DIRT.
  9. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH, OR WATERCOURSE THROUGH THE USE OF SAND BAGS, GRAVEL, BOARDS OR OTHER APPROVED METHODS.
  10. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, WASHED, OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED PROMPTLY.

**STABILIZED CONSTRUCTION ENTRANCE**  
N.T.S.

DET. NO. 4.8



- NOTES:**
1. BASIN DEWATERING MUST OCCUR WITHIN 2 TO 7 DAYS.
  2. INLET PROTECTION MUST BE PROVIDED AT RISER. WASHED STONE ON PERFORATED PIPE, GRAVEL HORSESHOE, SKIMMER OR ALTERNATE METHOD OF DEWATERING BASIN MUST BE IMPLEMENTED.

**PERFORATED RISER DETAIL**  
N.T.S.

DET. NO. 3.43

Revision	Per. Rev.	Revision Comments	Date
1			