

# Town of Windham

Planning Department  
8 School Road  
Windham, ME 04062

voice 207.894.5960

fax 207.892.1916

## MEMORANDUM

DATE: May 10, 2021

TO: Barry Tibbetts, Town Manager  
FROM: Mark Arienti, Town Engineer  
Cc: Amanda Lessard, Planning Director  
Doug Fortier, Public Works Director  
Tim Clinton, Anglers Road Commons LLC

RE: Public Acceptance of Streets – Anglers Road Commons, Forsythia Lane

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Anglers Road Commons LLC is offering for public acceptance Forsythia Lane, an 850-foot long road with two connections off the newly re-aligned portion of Anglers Road. Forsythia Lane was built to service the Anglers Road Commons subdivision, a 42-unit apartment complex composed of 21 duplexes. Forsythia Lane is shown relative to the subdivision on the attached approved subdivision plans. All work within the right-of-way on the approved plans has been completed to the satisfaction of Town Staff. Attached with this memorandum are as-built plans and Quitclaim Deed for the road.

Anglers Road Commons LLC is also offering an easement for a five-ft wide footpath from Forsythia Lane through the parking area to the property line to provide public access to Donna Beth Lippman Park and Chaffin Pond. The footpath is shown relative to the subdivision on the attached approved subdivision plan.

The process and submission requirements for offering streets for public acceptance are in Section 911.M.6 of Windham's Subdivision Ordinance and include but are not limited to as-built plans and a deed transferring the road right-of-way. Based on staff review, the application for public acceptance of streets is complete.

It should be noted that all stormwater infrastructure, including soil filter basins, culverts and swales not within the right-of-way will remain the responsibility of the owner.

Please note that the owner warrants all public improvements for a period of one year from the date of acceptance and posts a maintenance guarantee per the subdivision regulations. The maintenance guarantee shall ensure the workmanship and the durability of all materials used in the construction of the roadways, curbing, esplanades, sidewalks, sanitary sewerage systems, storm drainage systems, street lighting, tree planting, and other public improvements located within the right-of-way which may become defective within the one (1) year period, all as determined by the Public Works Director or Town Engineer in accordance with Section 911.M.6. The amount of the maintenance guarantee shall be 10% of the total construction costs of all required improvements.



**QUITCLAIM DEED with COVENANT**  
**(Statutory Short Form Deeds Act**  
**33 M.R.S.A. §761 et seq.)**

ANGLERS ROAD COMMONS, LLC, a limited liability company organized under the laws of the State of Maine and having a mailing address of 9 David Farm Road, Raymond, ME 04071 for consideration paid grants to THE INHABITANTS OF THE TOWN OF WINDHAM, MAINE, a municipal corporation having a mailing address of 8 School Road, Windham, ME 04062 with Quitclaim Covenant, the real property situated in the Town of Windham, County of Cumberland, and State of Maine, bounded and described as set forth on Exhibit A attached hereto and incorporated herein by reference.

WITNESS my hand and seal this \_\_\_\_\_ day of the month of \_\_\_\_\_, 2021.

**SIGNED, SEALED AND DELIVERED** in the presence of:

Anglers Road Commons, LLC

\_\_\_\_\_

\_\_\_\_\_  
By: \_\_\_\_\_  
Its: \_\_\_\_\_



**Exhibit A**

**Forsythia Lane**

A certain parcel of land situated on the southeasterly side of Anglers Road in the Town of Windham, County of Cumberland, State of Maine being bounded and described as follows:

Commencing on the southeasterly sideline of Anglers Road at land now or formerly KEC Properties, LLC as described in a deed recorded in Book 37013 Page 341 in the Cumberland County Registry of Deeds;

Thence northeasterly, by and along the southeasterly sideline of Anglers Road, along a curve concave to the right having a radius of 325.00 feet an arc distance of 73.17 feet;

Thence northeasterly, by and along the southeasterly sideline of Anglers Road, along a curve concave to the left having a radius of 325.00 feet an arc distance of 61.32 feet to the **Point of Beginning**;

Thence S 33° 49' 58" E a distance of 77.09 feet;

Thence southeasterly and easterly along a curve concave to the left having a radius of 220.00 feet an arc distance of 322.76 feet;

Thence N 62° 06' 34" E a distance of 87.33 feet;

Thence northerly and northwesterly along a curve concave to the left having a radius of 70.00 feet an arc distance of 160.91 feet;

Thence N 69° 36' 00" W a distance of 136.80 feet;

Thence northwesterly along a curve concave to the right having a radius of 80.00 feet an arc distance of 37.28 feet;

Thence N 42° 53' 54" W a distance of 96.94 feet to the southeasterly sideline of Anglers Road;

Thence S 49° 56' 23" W, by and along the southeasterly sideline of Anglers Road, a distance of 57.16 feet;

Thence S 32° 52' 23" W, by and along the southeasterly sideline of Anglers Road, a distance of 36.42 feet;

Thence southeasterly along a curve concave to the left having a radius of 325.00 feet an arc distance of 40.01 feet;

Thence northeasterly along a curve concave to the right having a radius of 475.00 feet an arc distance of 35.66 feet;

Thence N 47° 06' 06" E a distance of 56.05 feet;

Thence S 42° 53' 54" E a distance of 84.74 feet;

Thence southeasterly along a curve concave to the left having a radius of 120.00 feet an arc distance of 55.92 feet;

Thence S 69° 36' 00" E a distance of 136.80 feet;

Thence southerly along a curve concave to the right having a radius of 30.00 feet an arc distance of 68.96 feet;

Thence S 62° 06' 34" W a distance of 87.33 feet;

Thence westerly along a curve concave to the right having a radius of 180.00 feet an arc distance of 264.07 feet;

Thence N 33° 49' 58" W a distance of 77.08 feet to the southeasterly sideline of Anglers Road;

Thence westerly, by and along the southeasterly sideline of Anglers Road, along a curve concave to the left having a radius of 325.00 feet an arc distance of 40.03 feet to the Point of Beginning.

Bearings are Grid North.

Reference is made to a plan entitled "Amended Subdivision Plan Anglers Road Commons Apartments Forsythia Lane Windham, Maine for: Anglers Road Commons, LLC dated 7-18-2019 by DM Roma Consulting Engineers recorded in Plan Book 219 Page 364 in the Cumberland County Registry of Deeds.

Preparer of deed does not certify title.

## Easement Deed

**1. Parties.** The parties to this Easement Deed are

A. Parcel A. **Anglers Road Commons, LLC**, a limited liability company organized under the laws of the State of Maine and having a mailing address of 9 David Farm Road, Raymond, ME 04071, owner of certain property in Windham, Maine under the deed recorded at the Cumberland County Registry of Deeds in Book 35885 Page 36 (“Grantor”).

B. Parcel B. **THE INHABITANTS OF THE TOWN OF WINDHAM, MAINE** and having a mailing address of 8 School Road, Windham, ME 04062, owner of certain property in Windham, Maine under the deed recorded at the Cumberland County Registry of Deeds in Book 28567, Page 297 (“Grantee”).

**2. Easement.**

A certain Easement located on Parcel A being bounded and described as follows:

The “5’ footpath” as shown on the plan recorded at the Cumberland County Registry of Deeds Plan Book 219, Page 364 titled Amended Subdivision Plan, Anglers Road Commons Apartments, Forsythia Lane, dated August 29, 2019.

**3. Establishment of Appurtenant Easement.** The Grantor, for consideration paid, grants Grantee an appurtenant Easement across the herein described Easement area for the following purposes:

A. The general public shall have the right to pass and repass over the easement by foot or nonmotorized vehicle to access the abutting Town Park (Parcel B).

B. The following are specifically excluded from said easement grant:

1. The Easement does not convey the right to park any vehicles, trailers, bicycles, pull carts, or motorized or nonmotorized conveyances of any kind (4 wheelers, dune buggies, dirt bikes, etc.) within the Easement area.

2. The Easement does not grant any right to congregate on the easement nor to sunbathe, picnic, or gather together in any way on the easement area.

The land burdened by this Easement is the hereinbefore land described as the Easement located on Parcel A.

The obligation to maintain this Easement shall run with Parcel A and Grantor and its successors and assigns shall maintain the Easement as reasonably necessary to ensure continued safe access by the general public in accordance with Section 3(A). No obligation to maintain the Easement shall run with Parcel B; however, if Grantor or its successors or assigns shall fail to undertake its maintenance responsibilities then Grantee shall have the right, but not the obligation, to perform maintenance on the Easement as reasonably necessary.

WITNESS my hand and seal this \_\_\_\_\_ day of the month of \_\_\_\_\_, 2021.

**SIGNED, SEALED AND DELIVERED** in the presence of:

Anglers Road Commons, LLC

\_\_\_\_\_

By: \_\_\_\_\_  
Its: \_\_\_\_\_

State of Maine                    )  
  )  
Cumberland County            )

ss.

\_\_\_\_\_, 2020

Then personally appeared the above-named \_\_\_\_\_, \_\_\_\_\_ of Anglers Road Commons, LLC and acknowledged the foregoing instrument to be the free act and deed of said limited liability company.

Before me,

\_\_\_\_\_  
Notary Public/Attorney at Law

\_\_\_\_\_  
Print Name

State of Maine                    )  
  )  
Cumberland County            )        ss.

\_\_\_\_\_, 2020

Then personally appeared the above-named Thomas P. McDowell and Marianne McDowell, Trustees of the Thomas P. McDowell Living Trust dated 6/2/20 and the Marianne McDowell Living Trust 6/2/20 and acknowledged the foregoing instrument to be her free act and deed.

Before me,

\_\_\_\_\_  
Notary Public/Attorney

\_\_\_\_\_  
Printed Name of Notary

STRUCTURE	RIM	INV. IN	INV. OUT
PS-1	304.25	294.90 (S-1)	298.30 (SD-2)
SMH-1	304.19	298.80 (S-7)	295.30 (S-1)
SMH-2	304.72	295.90 (S-3)	295.80 (S-2)
SMH-3	304.91	298.25 (S-4)	298.15 (S-3)
SMH-4	304.11	298.80 (S-5)	298.70 (S-4)
SMH-5	305.39	300.15 (S-6)	300.05 (S-5)
SMH-6	305.57	300.45 (S-6)	
SMH-7	305.72		300.35 (S-7)

NAME	SIZE	LENGTH	SLOPE
S-1	8"	89'	0.47%
S-2	8"	84'	0.50%
S-3	8"	154'	1.50%
S-4	8"	92'	0.51%
S-5	8"	134'	0.96%
S-6	8"	58'	0.55%
S-7	8"	161'	0.99%

STRUCTURE	RIM	INV. IN	INV. OUT
CB-1	302.90	298.30 (SD-3)	298.30 (SD-2)
CB-2	304.04	298.75 (SD-4)	298.65 (SD-3)
CB-3	304.04	298.90 (SD-5)	298.85 (SD-4)
CB-4	303.20	299.40 (SD-6)	299.35 (SD-5)
CB-5	304.50	299.90 (SD-7)	299.85 (SD-6)
CB-6	303.99	300.30 (SD-8)	300.20 (SD-7)
CB-7	303.99		300.40 (SD-8)
CB-8	304.24	300.70 (SD-10)	300.60 (SD-9)
DMH-1	303.00	296.30 (8"FD)	296.20 (SD-11)
ECB-1	304.72	296.30 (10"FD)	

NAME	SIZE	LENGTH	SLOPE
SD-1	15"	40'	0.13%
SD-2	15"	28'	0.19%
SD-3	18"	85'	0.43%
SD-4	18"	18'	0.71%
SD-5	15"	98'	0.48%
SD-6	15"	99'	0.47%
SD-7	15"	61'	0.53%
SD-8	12"	18'	0.71%
SD-9	12"	210'	0.58%
SD-10	12"	74'	0.57%
SD-11	12"	148'	0.48%

8'x8' HEATED UTILITY BUILDING TO CONTAIN SANITARY SEWER ADVANCED TREATMENT UNIT CONTROL PANEL AND AIR PUMPS WATER A TESTABLE DOUBLE CHECK VALVE ASSEMBLY AND BACKFLOW PREVENTER CONTRACTOR TO PROVIDE SHOP DRAWINGS PRIOR TO INSTALLATION.

INSTALL CATCH BASIN INLET PROTECTION, TYP.

RETIRE EXISTING WATER SERVICE PER PORTLAND WATER DISTRICT STANDARDS.

SEE SHEET 6 OF 12 PLAN AND PROFILE: ANGLERS ROAD FOR ADDITIONAL DETAIL

EXISTING CATCH BASIN RIM=304.72 INV. IN=301.10 (12"SD) INV. OUT=301.10 (12"SD)

CORE NEW INVERT FOR NEW 12" PIPE. NEW INV. OUT=301.10 EXISTING CULVERT TO BE REMOVED

EXTEND UNDERGROUND CONDUIT TO SITE FROM EXISTING CONDUIT STUBS. CONTRACTOR TO COORDINATE INSTALLATION WITH SERVICE PROVIDERS PRIOR TO CONSTRUCTION

RETIRE EXISTING WATER SERVICES PER PORTLAND WATER DISTRICT STANDARDS, TYP. 2

EXISTING 8" WATER MAIN

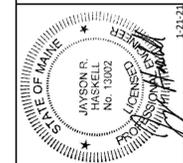
**LEGEND**

	EXISTING		PROPOSED
	PROPERTY LINE/R.O.W.		ABUTTER PROPERTY LINE
	SETBACK		EASEMENT LINE
	CENTERLINE		BUILDING
	EDGE OF PAVEMENT/CURB		EDGE OF GRAVEL
	EDGE OF CONCRETE		CONTOUR LINE
	TREELINE		CATCHBASIN
	CULVERT/STORMDRAIN UNDERDRAIN		SEWER MANHOLE
	SANITARY SEWER PIPE		FORCE MAIN
	WATER MAIN		WATER VALVE
	HYDRANT		UTILITY POLE
	OVERHEAD UTILITIES		UNDERGROUND UTILITIES
	TRANSFORMER PAD		GAS MAIN
	GAS VALVE		RIPRAP
	SILT FENCE		



**AS-BUILT PLAN NOTES:**

- BASE PLAN INFORMATION FROM PLANS PREPARED BY DM ROMA CONSULTING ENGINEERS
- AS-BUILT INFORMATION SHOWN HEREON BASED ON CONTRACTOR'S NOTES AND VISUAL OBSERVATION OF CONSTRUCTED IMPROVEMENTS BY DM ROMA CONSULTING ENGINEERS.

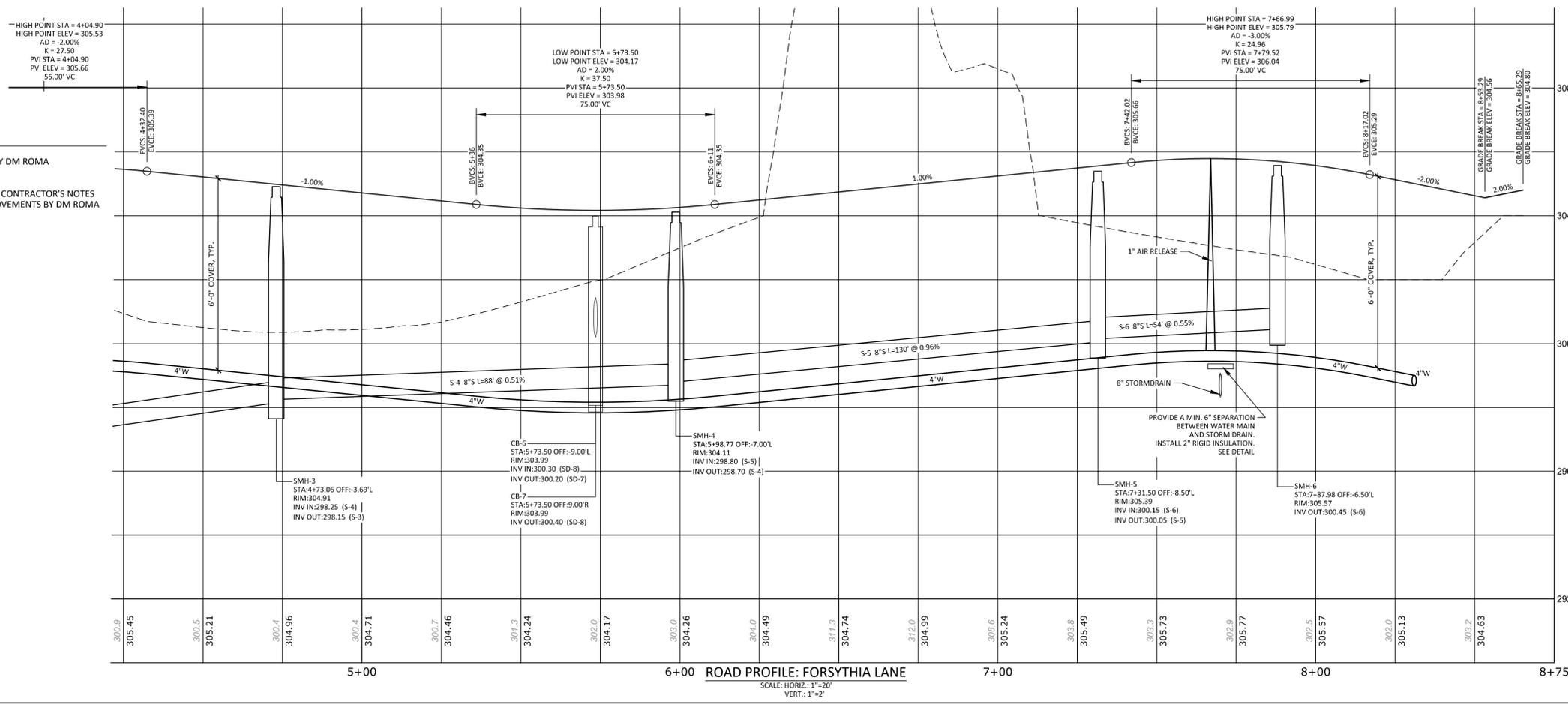
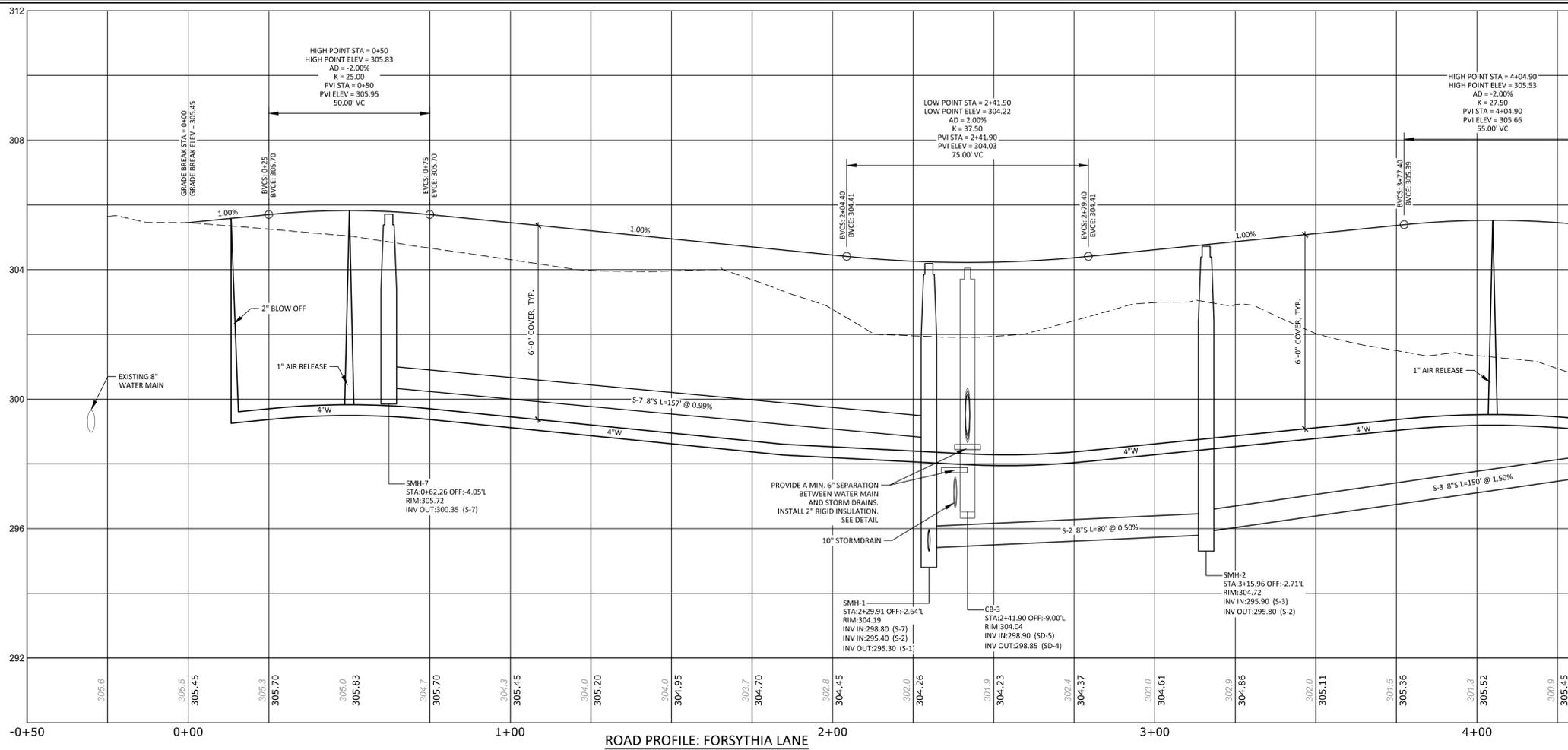


**DM ROMA**  
CONSULTING ENGINEERS  
P.O. BOX 1116  
WINDHAM, ME 04092  
(207) 310-0506

REV	DATE	BY	DESCRIPTION
D	4-2-19	DMR	REVISED PER REVIEW COMMENTS
E	4-26-19	DMR	REVISED PER REVIEW COMMENTS
F	6-11-19	DMR	ISSUED FOR FINAL APPROVAL
G	6-19-19	DMR	REVISED WATER MAIN DESIGN
H	7-2-19	DMR	REVISED PER PWD REVIEW
I	7-18-19	DMR	ISSUED FOR CONSTRUCTION
J	1-21-21	DMR	UPDATED FOR AS-BUILT RECORD DRAWINGS

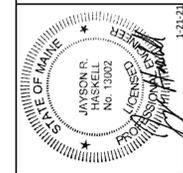
**AS-BUILT GRADING & UTILITY PLAN**  
ANGLERS ROAD COMMONS APARTMENTS  
WINDHAM, MAINE  
FOR: ANGLERS ROAD COMMONS, LLC  
7 FAY ROAD  
SCHITUATE, MA 02066

18093  
JOB NUMBER:  
1" = 20'  
SCALE:  
1-21-2021  
DATE:  
SHEET 1 OF 3  
GU-1



**AS-BUILT PLAN NOTES:**

1. BASE PLAN INFORMATION FROM PLANS PREPARED BY DM ROMA CONSULTING ENGINEERS
2. AS-BUILT INFORMATION SHOWN HEREON BASED ON CONTRACTOR'S NOTES AND VISUAL OBSERVATION OF CONSTRUCTED IMPROVEMENTS BY DM ROMA CONSULTING ENGINEERS.

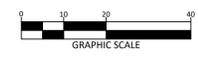


**DM ROMA**  
CONSULTING ENGINEERS  
P.O. BOX 1116  
WINDHAM, ME 04622  
(207) 310-0506

REV	DATE	BY	DESCRIPTION
D	4-2-19	DMR	REVISED PER REVIEW COMMENTS
E	4-26-19	DMR	REVISED PER REVIEW COMMENTS
F	6-11-19	DMR	ISSUED FOR FINAL APPROVAL
G	6-19-19	DMR	REVISED WATER MAIN DESIGN
H	7-2-19	DMR	REVISED PER PWD REVIEW
I	7-18-19	DMR	ISSUED FOR CONSTRUCTION
J	1-21-21	DMR	AS-BUILT

**AS-BUILT ROADWAY PROFILE: FORSYTHIA LN**  
ANGLERS ROAD COMMONS APARTMENTS  
WINDHAM, MAINE  
FOR: ANGLERS ROAD COMMONS, LLC  
7 FAY ROAD  
SCHITUATE, MA 02066

18093 JOB NUMBER:
AS NOTED SCALE:
1-21-2021 DATE:
SHEET 2 OF 3
P-1



## EROSION AND SEDIMENTATION CONTROL NOTES:

IN ORDER TO EFFECTIVELY PREVENT AND CONTROL EROSION RELATED TO SOIL DISTURBANCE, THE FOLLOWING BEST MANAGEMENT PRACTICES (BMPs) SHALL BE EMPLOYED:

### 1. POLLUTION PREVENTION

MINIMIZE DISTURBED AREAS AND PROTECT NATURAL DOWNGRADE BUFFER AREAS TO THE EXTENT PRACTICABLE. CONTROL STORMWATER VOLUME AND VELOCITY WITHIN THE SITE TO MINIMIZE SOIL EROSION. MINIMIZE THE DISTURBANCE OF STEEP SLOPES. CONTROL STORMWATER DISCHARGES, INCLUDING BOTH PEAK FLOW RATES AND VOLUME, TO MINIMIZE EROSION AT OUTLETS. THE DISCHARGE MAY NOT RESULT IN EROSION OF ANY OPEN DRAINAGE CHANNELS, SWALES, STREAM CHANNELS OR STREAM BANKS, UPLAND, OR COASTAL OR FRESHWATER WETLANDS OF THE PROJECT SITE.

WHENEVER PRACTICABLE, NO DISTURBANCE ACTIVITIES SHOULD TAKE PLACE WITHIN 50 FEET OF ANY PROTECTED NATURAL RESOURCE. IF DISTURBANCE ACTIVITIES TAKE PLACE BETWEEN 30 FEET AND 50 FEET OF ANY PROTECTED NATURAL RESOURCE, AND STORMWATER DISCHARGES THROUGH THE DISTURBED AREAS TOWARD THE PROTECTED NATURAL RESOURCE, PERIMETER EROSION CONTROLS MUST BE DOUBLED. IF DISTURBANCE ACTIVITIES TAKE PLACE LESS THAN 30 FEET FROM ANY PROTECTED NATURAL RESOURCE, AND STORMWATER DISCHARGES THROUGH THE DISTURBED AREAS TOWARD THE PROTECTED NATURAL RESOURCE, PERIMETER EROSION CONTROLS MUST BE DOUBLED AND DISTURBED AREAS MUST BE TEMPORARILY OR PERMANENTLY STABILIZED WITHIN 7 DAYS.

### 2. TEMPORARY SOIL STABILIZATION BMPs

TEMPORARY MULCHING SHALL BE APPLIED IMMEDIATELY TO ANY AREAS THAT HAVE BEEN TEMPORARILY OR PERMANENTLY SEEDED. ANY DISTURBED SOIL WITHIN 75' OF A STREAM, WATER BODY OR WETLAND MUST RECEIVE TEMPORARY MULCH WITHIN 48 HOURS FOLLOWING DISTURBANCE AND BEFORE ANY STORM EVENT. ALL OTHER AREAS SHALL RECEIVE TEMPORARY MULCH WITHIN 7 DAYS OF DISTURBANCE AREAS WHICH CANNOT BE SEEDED DURING THE GROWING SEASON SHALL BE MULCHED FOR OVER-WINTER PROTECTION. THE FOLLOWING ARE ACCEPTABLE TEMPORARY MULCHING METHODS:

HAY OR STRAW MULCHES NEED TO BE AIR-DRYED, FREE OF UNDESIRABLE SEEDS AND COARSE MATERIALS. APPLICATION RATE MUST BE 2 BALES (70-90 POUNDS) PER 1000 SQ. FT. OR 1.5 TO 2 TONS (90-100 BALES) PER ACRE TO COVER 90-95% OF THE GROUND SURFACE. HAY OR STRAW CAN BE DRIVEN INTO THE GROUND WITH TRACKED EQUIPMENT IF SLOPES ARE LESS THAN 3%, OR CAN BE ANCHORED WITH JUTE, WOOD FIBER OR PLASTIC NETTING ON STEEPER SLOPES.

EROSION CONTROL MIX MUST CONSIST PRIMARILY OF ORGANIC MATERIAL AND WILL INCLUDE ANY OF THE FOLLOWING: SHREDDED BARK, STUMP GRINDINGS, COMPOSTED BARK OR OTHER ACCEPTABLE PRODUCTS BASED ON A SIMILAR RAW SOURCE. WOOD OR BARK CHIPS, GROUND CONSTRUCTION DEBRIS OR REPROCESSED WOOD PRODUCTS ARE NOT ACCEPTABLE. EROSION CONTROL MIX CAN BE USED AS A STAND-ALONE REINFORCEMENT ON SLOPES OF 2:1 HORIZONTAL TO 1 VERTICAL OR LESS AND DRAINING IN SHEET FLOW. IT CAN BE PLACED WITH A HYDRAULIC BUCKET, WITH A PNEUMATIC BLOWER OR BY HAND, AND MUST PROVIDE 100% SOIL COVERAGE.

EROSION CONTROL MIX SHALL MEET THE FOLLOWING SPECIFICATIONS:

- ORGANIC MATTER CONTENT SHALL BE BETWEEN 80-100%, DRY WEIGHT BASIS.
- PARTICLE SIZE BY WEIGHT SHALL BE 100% PASSING A 6 IN. SCREEN AND BETWEEN 70-85% PASSING 0.75 IN. SCREEN
- ORGANIC PORTION NEEDS TO BE FIBROUS AND ELONGATED
- LARGE PORTIONS OF SILTS, CLAYS OR FINE SANDS ARE NOT ACCEPTABLE IN THE MIX

WHEN USED AS MULCH, THE THICKNESS OF THE EROSION CONTROL MIX IS BASED UPON THE FOLLOWING:

LENGTH OF SLOPE	3:1 SLOPE OR LESS	BETWEEN 2:1 AND 3:1 SLOPE
LESS THAN 20 FT	2.0 IN.	4.0 IN.
BETWEEN 20 - 60 FT	3.0 IN.	5.0 IN.
BETWEEN 60 - 100 FT	4.0 IN.	6.0 IN.

CHEMICAL MULCHES AND SOIL BINDERS MAY BE USED AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL CONSULT WITH THE MANUFACTURER TO DETERMINE ADEQUATE APPLICATION RATES AND METHODS.

EROSION CONTROL BLANKETS AND MATS SHALL BE USED ON STEEP SLOPES AND IN THE BOTTOM OF GRASSED WATERWAYS, OR AS OTHERWISE DIRECTED BY THE ENGINEER. THE MAT SHALL BE INSTALLED WITH FIRM CONTINUOUS CONTACT WITH THE SOIL AND STAPLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

TEMPORARY MULCH SHALL BE INSPECTED FOLLOWING ANY SIGNIFICANT RAINFALL EVENT. IF LESS THAN 90% OF THE SOIL SURFACE IS COVERED BY MULCH, ADDITIONAL MULCH SHALL BE IMMEDIATELY APPLIED. EROSION CONTROL MATS AND MULCH ANCHORING MUST BE INSPECTED AFTER RAINFALL EVENTS FOR DISLOCATION OR FAILURE, AND REPAIRED IMMEDIATELY. INSPECTIONS SHALL TAKE PLACE UNTIL 95% OF THE SOIL SURFACE IS COVERED WITH PERMANENT VEGETATION. WHERE MULCH IS USED WITH ORNAMENTAL PLANTINGS, INSPECT PERIODICALLY THROUGHOUT THE YEAR TO DETERMINE IF MULCH IS MAINTAINING COVERAGE OF THE SOIL SURFACE, AND REPAIR AS NEEDED.

TEMPORARY VEGETATION SHALL BE ESTABLISHED ON SOILS THAT WILL NOT BE BROUGHT TO FINAL GRADE FOR A PERIOD OF MORE THAN 30 DAYS. IF TEMPORARY VEGETATION CANNOT BE ESTABLISHED PRIOR TO OCTOBER 15, TEMPORARY MULCH SHALL BE APPLIED THROUGH THE WINTER AND TEMPORARY VEGETATION SHALL BE PLANTED AT THE BEGINNING OF THE GROWING SEASON THE FOLLOWING YEAR. TO PREPARE THE SEEDBED, THE CONTRACTOR SHALL APPLY FERTILIZER AT A RATE OF 600 POUNDS PER ACRE OF 10-10-10 (N-P205-K20) OR EQUIVALENT AND LIMESTONE AT A RATE OF 3 TONS PER ACRE, IF NECESSARY. LOOSEN SOIL TO A DEPTH OF 2 INCHES IN AREAS THAT HAVE BEEN COMPACTED BY CONSTRUCTION ACTIVITIES. GRASS SEED SHALL BE SELECTED BASED UPON THE TIME OF YEAR THE PLANTING WILL TAKE PLACE AS SUMMARIZED IN THE FOLLOWING TABLE:

SEED	LB. PER ACRE	RECOMMENDED SEEDING DATES
WINTER RYE	112	8/15 - 10/1
OATS	80	4/1 - 7/1 8/15 - 9/15
ANNUAL RYEGRASS	40	4/1 - 7/1

TEMPORARY SEEDING SHALL BE PERIODICALLY INSPECTED TO MAINTAIN AT LEAST 95% VEGETATIVE COVER OF SOIL SURFACE. IF ANY EVIDENCE OF EROSION OR SEDIMENTATION IS APPARENT, REPAIRS SHALL BE MADE AND OTHER TEMPORARY MEASURES SHALL BE USED IN THE INTERIM SUCH AS TEMPORARY MULCH, FILTER BARRIERS, ETC.

### 3. SEDIMENT BARRIER BMPs

PRIOR TO CONSTRUCTION TEMPORARY SEDIMENT BARRIERS SHALL BE INSTALLED AT THE DOWNGRADE EDGE OF ANY AREA TO BE DISTURBED AND ADJACENT TO ANY DRAINAGE CHANNELS WITHIN THE DISTURBED AREA. SEDIMENT BARRIERS INCLUDE ANY OF THE FOLLOWING:

**FILTER BARRIER FENCE, ALSO CALLED SILT FENCE, SHALL BE INSTALLED WHERE SHOWN ON THE PLANS AND IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. THE FILTER FABRIC SHALL BE A PERVIOUS SHEET OF PROPELENE, NYLON, POLYESTER OR ETHYLENE YARN AND SHALL PROVIDE A MINIMUM OF 6 MONTHS USABLE CONSTRUCTION LIFE INCLUDING PROTECTION AGAINST ULTRA-VIOLET LIGHT. THE HEIGHT OF THE FENCE SHALL NOT EXCEED 36 INCHES INSTALLED AND POST SPACING SHALL NOT EXCEED 6 FEET. JOINTS IN THE FENCE SHALL BE AVOIDED TO THE EXTENT POSSIBLE, AND IF NECESSARY SHALL BE SPLICED TOGETHER AT A SUPPORT POST WITH A MINIMUM 6 INCH OVERLAP. A TRENCH SHALL BE EXCAVATED APPROXIMATELY 4 INCHES WIDE AND 4 INCHES DEEP, AND THE BOTTOM 6-8 INCHES OF FABRIC SHALL BE "TOED-IN" TO THE TRENCH AND COMPACTED. THE TRENCH SHOULD BE UPHILL OF THE FABRIC PRIOR TO BURAL.**

**STRAW/HAY BALES SHALL BE INSTALLED WHERE SPECIFIED ON THE PLANS IN A SINGLE ROW WITH THE ENDS OF STRAW BALES TIGHTLY ADJUTING ONE ANOTHER. ALL BALES SHALL BE EITHER WIRE-BOUND OR STRING-TIED. THE BARRIER SHALL BE ENTRENCHED AND BACKFILLED TO A DEPTH OF AT LEAST 4 INCHES, AND THE BALES SHALL BE SECURED WITH AT LEAST TWO WOODEN STAKES OR STEEL REBAR PER BALE. STAKES SHALL BE DRIVEN IN A DIRECTION TO PUSH THE BALES TOGETHER. GAPS BETWEEN BALES SHALL BE CHINKED WITH HAY.**

**EROSION CONTROL MIX BERMS ARE LINEAR BARRIERS COMPOSED OF EROSION CONTROL MIX AS SPECIFIED ABOVE. THE BERM MUST BE A MINIMUM OF 12 INCHES TALL AND 24 INCHES WIDE AT THE BASE IF UPHILL SLOPES ARE LESS THAN 5%. STEEPER SLOPES OR SLOPES GREATER THAN 20 FEET LONG MAY REQUIRE A LARGER WIDTH BERM. EROSION CONTROL MIX BERMS AT THE BASE OF A LONG OR STEEP SLOPE MAY ALSO REQUIRE A FILTER FENCE TO BE INSTALLED ON THE DOWNHILL SIDE OF THE BERM TO PROVIDE ADDITIONAL STABILIZATION AGAINST HIGH RUNOFF FLOWS.**

**CONTINUOUS CONTAINED BERMS, WHICH ARE ALSO REFERRED TO AS A FILTER SOCK, PROVIDES ADDITIONAL STABILITY TO AN EROSION CONTROL MIX BERM AND SHOULD BE USED IN FROZEN GROUND CONDITIONS OR IN AREAS THAT RECEIVE CONCENTRATED FLOW.**

**SEDIMENT BARRIERS SHOULD BE INSTALLED DOWNGRADE OF SOIL OR SEDIMENT STOCKPILES AND STORMWATER PREVENTED RUNNING ONTO THE STOCKPILES. SEDIMENT BARRIERS SHALL BE INSPECTED AFTER ANY SIGNIFICANT RAINFALL EVENT AND REPAIRED IMMEDIATELY IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THE BARRIERS. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR EDGES OF THE BARRIER, OR IF LARGE VOLUMES OF WATER ARE IMPOUNDED BEHIND THE BARRIER, IT MAY BE NECESSARY TO REPLACE THE BARRIER WITH A TEMPORARY STONE CHECK DAM. SEDIMENT SHALL BE REMOVED ONCE IT REACHES HALF THE BARRIER HEIGHT. AFTER THE BARRIER IS REMOVED, ANY REMAINING SILT SHALL EITHER BE REMOVED OR GRADED TO CONFORM WITH THE EXISTING TOPOGRAPHY AND VEGETATED.**

### 4. TEMPORARY CHECK DAMS

STONE CHECK DAMS SHALL BE INSTALLED IN SWALES OR DRAINAGE DITCHES TO REDUCE STORMWATER VELOCITIES AS SHOWN ON THE PLANS. STONE CHECK DAMS ARE NOT EFFECTIVE IN REMOVING SEDIMENT AND SHOULD BE USED IN CONJUNCTION WITH SEDIMENT BARRIERS IDENTIFIED ABOVE. TEMPORARY CHECK DAMS SHALL BE INSTALLED IN MOST CASES. CHECK DAMS SHALL BE NO HIGHER THAN 24 INCHES, AND THE CENTER OF THE CHECK DAM MUST BE AT LEAST 6 INCHES LOWER THAN THE OUTSIDE EDGES. CHECK DAMS SHOULD BE SPACED SUCH THAT THE CREST OF THE DOWNSTREAM CHECK DAM IS AT THE SAME ELEVATION AS THE TOE OF THE UPSTREAM CHECK DAM. CHECK DAMS IN A DRAINAGE DITCH OR WATERWAY SHOULD BE INSTALLED PRIOR TO DIRECTING RUNOFF TO THEM.

### 5. STORM DRAIN INLET PROTECTION

STORM DRAIN INLETS THAT ARE MADE OPERATIONAL BEFORE THEIR DRAINAGE AREA IS STABILIZED SHALL BE PROTECTED WITH A FILTER UNTIL THE DRAINAGE AREA IS EITHER PAVED OR STABILIZED WITH 95% VEGETATIVE GROWTH. THE FOLLOWING ARE ACCEPTABLE BMPs ASSOCIATED WITH STORM DRAIN INLET PROTECTION:

**HAY BALE OR SILT FENCE INLET STRUCTURE CONSISTS OF HAY BALES OR SILT FENCE CONFIGURED AROUND A CATCH BASIN INLET FRAME AND INSTALLED ACCORDING TO THE METHODS OUTLINED ABOVE. THIS METHOD IS SUITABLE FOR OPEN PIPE (CULVERT) INLETS, FIELD INLETS OR ROAD INLETS THAT HAVE NOT YET BEEN PAVED.**

**MANUFACTURED SEDIMENT FILTERS ARE THE PREFERRED METHOD FOR PROTECTING CATCH BASIN INLETS IN PAVED OR GRAVEL ROADWAYS. THE FILTERS TYPICALLY CONSIST OF A FABRIC OR OTHER PERVIOUS MATERIAL THAT IS PLACED ABOVE OR BELOW THE GRATE THAT TRAPS SEDIMENT ON THE SURFACE AND ALLOWS WATER TO FLOW THROUGH THE GRATE. CONSIDERATIONS SUCH AS WEATHER CONDITIONS, SLOPES, TRIBUTARY WATERSHED AREA AND EXPECTED SEDIMENT ACCUMULATION SHOULD BE FACTORED INTO MAKING A DECISION ON ANY PARTICULAR PRODUCT, AND THE MANUFACTURER'S RECOMMENDATIONS ON INSTALLATION AND MAINTENANCE SHALL BE STRICTLY ADHERED TO.**

### 6. STABILIZED CONSTRUCTION ENTRANCE/EXIT

TO REDUCE THE TRACKING OF SEDIMENT ONTO ROADWAYS, A STABILIZED CONSTRUCTION EXIT SHALL BE INSTALLED AT ALL POINTS OF EGRESS WHERE VEHICLES MAY TRAVEL FROM THE PROJECT SITE TO PUBLIC ROAD OR OTHER PAVED AREA. THE STONE PAD SHALL CONSIST OF A MINIMUM 6-INCH DEPTH OF 2-3 INCH CRUSHED STONE, AND SHALL BE PLACED ON A GEOTEXTILE FABRIC. THE PAD SHALL EXTEND AT LEAST 75 FEET TO THE PROJECT SITE AND BE A MINIMUM OF 10 FEET WIDE. THE EXIT SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OF SEDIMENT ONTO ROADWAYS. THE CONTRACTOR SHALL SWEEP OR WASH PAVEMENT AT EXITS THAT HAVE EXPERIENCED ANY MUD-TRACKING. MAINTAIN THE PAD UNTIL ALL DISTURBED AREAS ARE STABILIZED.

### 7. DUST CONTROL

THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING DUST ON THE PROJECT SITE AND ON ADJACENT ROADWAYS. EXPOSED SOIL SURFACES SHALL BE MOISTENED PERIODICALLY WITH ADEQUATE WATER TO CONTROL DUST. GRAVEL SURFACES SHALL EITHER BE TREATED WITH AN APPLICATION OF CALCIUM CHLORIDE OR COVERED WITH CRUSHED STONE IF DUST CONTROL BECOMES DIFFICULT WITH NORMAL WATER APPLICATIONS.

### 8. LAND GRADING AND SLOPE PREPARATION

GRADING SHALL BE PLANNED SO AS TO MINIMIZE THE LENGTH OF TIME BETWEEN INITIAL SOIL EXPOSURE AND FINAL GRADING. ON LARGE PROJECTS THIS SHOULD BE ACCOMPLISHED BY PHASING THE OPERATION AND COMPLETING THE FIRST PHASE UP TO FINAL GRADING AND SEEDING BEFORE STARTING THE NEXT PHASE. ANY EXPOSED AREA THAT WILL NOT BE FINISH GRADED WITHIN 14 DAYS SHALL BE TREATED WITH MULCH OR PLANTED WITH TEMPORARY VEGETATION. PROVISIONS SHALL BE MADE TO SAFELY CONVEY SURFACE RUNOFF TO STORM DRAINS, PROTECTED OUTLETS OR TO STABLE WATER COURSES TO ENSURE THAT SURFACE RUNOFF WILL NOT DAMAGE SLOPES OR OTHER GRADED AREAS. CUT AND FILL SLOPES THAT ARE TO BE STABILIZED WITH GRASS SHALL NOT BE STEEPER THAN 2:1. AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS OR OTHER OBJECTIONABLE MATERIALS. AREAS SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 INCHES PRIOR TO PLACEMENT OF TOPSOIL. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL MATERIAL TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES. ALL FILLS SHALL BE PLACED AND COMPACTED IN LAYERS NOT TO EXCEED 8 INCHES IN THICKNESS. FILL MATERIAL SHALL BE FREE OF STUMPS, BUILDING DEBRIS AND OTHER OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY LIFTS. FROZEN MATERIAL OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILL SLOPES OR STRUCTURAL FILLS. FILL SHALL NOT BE PLACED ON A FROZEN FOUNDATION. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED APPROPRIATELY. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY FOLLOWING FINISHED GRADING.

### 9. TOPSOIL

IF POSSIBLE, TOPSOIL SHALL BE STOCKPILED ON THE PROJECT SITE AND REUSED. HIGH QUALITY TOPSOIL SHALL BE FRIABLE AND LOAMY (LOAM, SANDY LOAM, SILT LOAM, SANDY CLAY LOAM, CLAY LOAM), AND SHALL BE FREE OF DEBRIS, TRASH, STUMPS, ROCKS, ROOTS AND NOXIOUS WEEDS. AFTER THE AREAS TO BE TOPSOILED HAVE BEEN BROUGHT TO GRADE, AND IMMEDIATELY PRIOR TO SPREADING THE TOPSOIL, THE SUBGRADE SHALL BE LOOSENED BY SCARIFYING TO A DEPTH OF AT LEAST 2 INCHES TO ENSURE BONDING WITH SUBSOIL. THE TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED TO A MINIMUM COMPACTED DEPTH OF 4 INCHES. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS. IT IS NECESSARY TO COMPACT THE TOPSOIL ENOUGH TO ENSURE GOOD CONTACT WITH THE UNDERLYING SOIL, BUT UNDUCE COMPACTION IS TO BE AVOIDED.

### 10. PERMANENT SOIL STABILIZATION

IF THE AREA WILL NOT BE WORKED FOR MORE THAN ONE YEAR OR HAS BEEN BROUGHT TO FINAL GRADE, THEN PERMANENTLY STABILIZE THE AREA WITHIN 7 DAYS BY PLANTING VEGETATION, SEEDING, SOD, OR THROUGH THE USE OF PERMANENT MULCH, OR RIPRAP, OR ROAD SUB-BASE. IF USING VEGETATION FOR STABILIZATION, SELECT THE PROPER VEGETATION FOR THE LIGHT, MOISTURE, AND SOIL CONDITIONS; AMEND AREAS OF DISTURBED SUBSOILS WITH TOPSOIL, COMPOST, OR FERTILIZERS; PROTECT SEEDED AREAS WITH MULCH OR, IF NECESSARY, EROSION CONTROL BLANKETS, AND SCHEDULE SODDING, PLANTING, AND SEEDING SO TO AVOID DIE-OFF FROM SUMMER DROUGHT AND FALL FROSTS. NEWLY SEEDD OR SODDED AREAS MUST BE PROTECTED FROM VEHICLE TRAFFIC, EXCESSIVE PEDESTRIAN TRAFFIC, AND CONCENTRATED RUNOFF UNTIL THE VEGETATION IS WELL-ESTABLISHED WITH 90% COVER BY HEALTHY VEGETATION. IF NECESSARY, AREAS MUST BE REWORKED AND RESTABILIZED IF GERMINATION IS SPARSE, PLANT COVERAGE IS SPOTTY, OR TOPSOIL EROSION IS EVIDENT. ONE OR MORE OF THE FOLLOWING MAY APPLY TO A PARTICULAR SITE.

**SEEDD AREAS:** TO PREPARE THE SEEDBED, APPLY 10-20-20 FERTILIZER AT A RATE OF 800 POUNDS PER ACRE AND GROUND LIMESTONE AT A RATE OF 3 TONS PER ACRE. WORK THE FERTILIZER AND LIMESTONE INTO THE TOPSOIL TO A DEPTH OF 4 INCHES AND REMOVE ANY STONES, ROOTS OR OTHER VISIBLE DEBRIS. SELECT A SEED MIXTURE THAT IS APPROPRIATE FOR THE SOIL TYPE AND MOISTURE CONTENT AS FOUND AT THE SITE, AND FOR THE AMOUNT OF SUN EXPOSURE AND FOR LEVEL OF USE. REFER TO THE USDA SOIL CONSERVATION SERVICE OR THE LOCAL SOIL AND WATER CONSERVATION DISTRICT FOR APPROPRIATE SEED MIXTURES. APPLY SEED UNIFORMLY IN ACCORDANCE WITH SUPPLIER RECOMMENDATIONS AND IMMEDIATELY COVER WITH MULCH AS DESCRIBED IN THE TEMPORARY MULCHING SECTION OF THIS PLAN.

**HYDROSEEDING SHALL BE DONE IN ACCORDANCE WITH SUPPLIER'S RECOMMENDATIONS. FOR SEEDD AREAS TO BE PERMANENTLY STABILIZED, 90% OF THE DISTURBED SOIL SHALL BE COVERED WITH MATURE HEALTHY PLANTS WITH NO EVIDENCE OF WASHING OR RILLING OF THE TOPSOIL.**

**SOD STRIPS SHALL BE LAID AT RIGHT ANGLES TO DIRECTION OF SLOPE OR FLOW OF WATER STARTING AT LOWEST ELEVATION. JOINTS SHALL BE STAGGERED, AND ALL STRIPS SHALL BE ROLLED OR TAMPED INTO PLACE. ON SLOPES, SOD SHALL BE ANCHORED WITH STAPLES, WIRE OR PINS. IRRIGATE SODDED AREA IMMEDIATELY AFTER INSTALLATION. FOR SODDED AREAS TO BE PERMANENTLY STABILIZED, THE ROOTS OF THE SOD MUST BE COMPLETELY BOUND INTO THE UNDERLYING SOIL WITH NO SLUMPING OF THE SOD OR DIE-OFF.**

**PERMANENT MULCH IS A LONG TERM COVER THAT PROVIDES A GOOD BUFFER AROUND DISTURBED AREAS. THE EROSION CONTROL MIX SHALL CONSIST PRIMARILY OF ORGANIC MATERIAL AND MAY INCLUDE SHREDDED BARK, STUMP GRINDINGS OR COMPOSTED BARK, WOOD CHIPS, GROUND CONSTRUCTION DEBRIS, REPROCESSED WOOD PRODUCTS OR BARK CHIPS ARE NOT ACCEPTABLE. THE EROSION CONTROL MIX SHALL CONTAIN A WELL-GRADED MIXTURE OF PARTICLE SIZES AND MAY CONTAIN ROCKS LESS THAN 4 INCHES IN DIAMETER. EROSION CONTROL MIX MUST BE FREE OF REFUSE, PHYSICAL CONTAMINANTS AND MATERIAL TOXIC TO PLANT GROWTH.**

**RIPRAP STONE SHALL CONSIST OF SUB-ANGULAR FINE STONE OR ROUGH UNEVEN QUARRY STONE OF APPROXIMATELY RECTANGULAR SHAPE. THE DEPTH OF STONE SHALL BE A MINIMUM OF 2.2 TIMES THE MAXIMUM STONE DIAMETER. A GRAVEL OR GEOTEXTILE FILTER BLANKET SHALL BE PLACED BETWEEN THE RIPRAP AND UNDERLYING SOIL SURFACE. EARTHWORK SHALL BE COMPLETED SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME. LIMIT THE EXPOSED AREA TO THOSE AREAS IN WHICH WORK IS TO OCCUR DURING THE FOLLOWING 15 DAYS AND THAT CAN BE MULCHED IN ONE DAY PRIOR TO ANY SNOW EVENT. AN AREA SHALL BE CONSIDERED DENIED UNTIL THE SUBBASE GRAVEL IS INSTALLED IN THE ROADWAY AREAS OR THE AREAS OF FUTURE LOAM AND SEED HAVE BEEN LOADED, SEEDD AND MULCHED. A COVER OF EROSION CONTROL MIX IS THE PREFERRED TEMPORARY MULCH DURING WINTER CONDITIONS.**

**DITCHES, CHANNELS AND SWALES ARE CONSIDERED PERMANENTLY STABILIZED WHEN THE CHANNEL HAS 90% COVER OF HEALTHY VEGETATION WITH A WELL GRASSED RIPRAP LINING, EROSION CONTROL BLANKET, OR WITH ANOTHER NON-EROSIVE LINING SUCH AS CONCRETE OR ASPHALT PAVEMENT. THERE MUST BE NO EVIDENCE OF SLUMPING OF THE CHANNEL LINING, UNDERCUTTING OF THE BANKS, OR DOWNCUTTING OF THE CHANNEL.**

### 11. STORMWATER CHANNELS

EACH CHANNEL SHOULD BE CONSTRUCTED IN SECTIONS SO THAT THE SECTION'S GRADING, SHARPING, AND INSTALLATION OF THE PERMANENT LINING CAN BE COMPLETED THE SAME DAY. IF A CHANNEL'S FINAL GRADING OR LINING INSTALLATION MUST BE DELAYED, THEN DIVERSION BERMS MUST BE USED TO DIVERT STORMWATER AWAY FROM THE CHANNEL. PROPERLY-SPACED CHECK DAMS MUST BE INSTALLED IN THE CHANNEL TO SLOW THE WATER VELOCITY, AND A TEMPORARY LINING INSTALLED ALONG THE CHANNEL TO PREVENT SCOURING.

### 12. REMOVAL OF EROSION CONTROL MEASURES

ONCE THE SITE IS PERMANENTLY STABILIZED WITH PAVEMENT, GRAVEL OR AS DESCRIBED IN SECTION 10 PERMANENT SOIL STABILIZATION, THE CONTRACTOR SHALL PROPERLY REMOVE ALL TEMPORARY EROSION CONTROL MEASURES. CONTRACTOR SHALL ENSURE THAT ANY DEBRIS, TRAPPED SEDIMENT OR OTHER CONSTRUCTION MATERIALS ARE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF.

## WINTER EROSION AND SEDIMENTATION CONTROL NOTES:

THE WINTER CONSTRUCTION PERIOD TYPICALLY BEGINS IN EARLY NOVEMBER AND ENDS IN MID APRIL. IF A CONSTRUCTION SITE IS NOT STABILIZED WITH PAVEMENT, A ROAD GRAVEL BASE, 75% MATURE VEGETATION COVER OR RIPRAP BY NOVEMBER 15 THEN THE SITE NEEDS TO BE PROTECTED WITH OVER-WINTER STABILIZATION. WINTER EXCAVATION AND EARTHWORK SHALL BE COMPLETED SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME. LIMIT THE EXPOSED AREA TO THOSE AREAS IN WHICH WORK IS TO OCCUR DURING THE FOLLOWING 15 DAYS AND THAT CAN BE MULCHED IN ONE DAY PRIOR TO ANY SNOW EVENT. AN AREA SHALL BE CONSIDERED DENIED UNTIL THE SUBBASE GRAVEL IS INSTALLED IN THE ROADWAY AREAS OR THE AREAS OF FUTURE LOAM AND SEED HAVE BEEN LOADED, SEEDD AND MULCHED. A COVER OF EROSION CONTROL MIX IS THE PREFERRED TEMPORARY MULCH DURING WINTER CONDITIONS.

### 1. NATURAL RESOURCE PROTECTION

ANY AREAS WITHIN 75 FEET FROM ANY REGULATED NATURAL RESOURCES, IF NOT STABILIZED WITH A MINIMUM OF 75% MATURE VEGETATION CATCH, SHALL BE MULCHED BY DECEMBER 1 AND ANCHORED WITH PLASTIC NETTING OR PROTECTED WITH AN EROSION CONTROL COVER. DURING WINTER CONSTRUCTION, A DOUBLE ROW OF SEDIMENT BARRIERS (FOR EXAMPLE, SILT FENCE BACKED WITH HAY BALES OR EROSION CONTROL MIX) WILL BE PLACED BETWEEN ANY REGULATED NATURAL RESOURCE AND THE DISTURBED AREA. PROJECTS CROSSING THE REGULATED NATURAL RESOURCE SHALL BE PROTECTED A MINIMUM DISTANCE OF 100 FEET ON EITHER SIDE FROM THE RESOURCE. EXISTING PROJECTS NOT STABILIZED BY DECEMBER 1 SHALL BE PROTECTED WITH THE SECOND LINE OF SEDIMENT BARRIER TO ENSURE FUNCTIONALITY DURING THE SPRING THAW AND RAINS.

### 2. SEDIMENT BARRIERS

DURING FROZEN CONDITIONS, SEDIMENT BARRIERS MAY CONSIST OF EROSION CONTROL MIX BERMS OR ANY OTHER RECOGNIZED SEDIMENT BARRIERS AS FROZEN SOIL PREVENTS THE PROPER INSTALLATION OF HAY BALES OR SILT FENCES.

### 3. MULCHING

ALL AREAS SHALL BE CONSIDERED TO BE DENIUED UNTIL SEEDED AND MULCHED. HAY AND STRAW MULCH SHALL BE APPLIED AT A RATE OF 3 TONS PER ACRE (TWICE THE NORMAL ACCEPTED RATE) AND SHALL BE PROPERLY ANCHORED. EROSION CONTROL MIX MUST BE APPLIED WITH A MINIMUM 4 INCHES THICKNESS. MULCH SHALL NOT BE SPREAD ON TOP OF SNOW. SNOW MUST BE REMOVED DOWN TO A ONE-INCH DEPTH PRIOR TO APPLICATION. AFTER EACH DAY OF FINAL GRADING, THE AREA WILL BE PROPERLY STABILIZED WITH ANCHORED HAY OR STRAW OR EROSION CONTROL MATTING. AN AREA SHALL BE CONSIDERED TO HAVE BEEN STABILIZED WHEN EXPOSED SURFACES HAVE BEEN EITHER MULCHED OR ADEQUATELY ANCHORED SO THAT GROUND SURFACE IS NOT VISIBLE THROUGH THE MULCH. BETWEEN THE DATES OF NOVEMBER 1 AND APRIL 15, ALL MULCH SHALL BE ANCHORED BY EITHER MULCH NETTING OR CHEMICAL, TRACKING OR WOOD CELLULOSE FIBER. THE COVER WILL BE CONSIDERED SUFFICIENT WITH THE GROUND SURFACE IS NOT VISIBLE THROUGH THE MULCH. AFTER NOVEMBER 15, MULCH AND ANCHORING OF ALL EXPOSED SOIL SHALL OCCUR AT THE END OF EACH FINAL GRADING WORKDAY.

### 4. SOIL STOCKPILING

STOCKPILES OF SOIL OR SUBSOIL WILL BE MULCHED FOR OVER WINTER PROTECTION WITH HAY OR STRAW AT TWICE THE NORMAL RATE FOR WITH A FOUR-INCH LAYER OF EROSION CONTROL MIX. THIS WILL BE DONE WITHIN 24 HOURS OF STACKING AND RE-ESTABLISHED PRIOR TO ANY RAINFALL OR SNOWFALL. ANY SOIL STOCKPILE WILL NOT BE PLACED WITHIN 100 FEET FROM ANY REGULATED NATURAL RESOURCE.

### 5. SEEDING

BETWEEN THE DATES OF OCTOBER 15 AND APRIL 1, LOAM OR SEED WILL NOT BE REQUIRED. DURING PERIODS OF ABOVE FREEZING TEMPERATURES FINISHED AREAS SHALL BE FINE GRADED AND EITHER PROTECTED MULCH OR TEMPORARILY SEEDED AND MULCHED UNTIL SUCH TIME AS THE FINAL TREATMENT CAN BE APPLIED. IF THE DATE IS AFTER NOVEMBER 1 AND IF THE EXPOSED AREA HAS BEEN LOADED, FINAL GRADED WITH A UNIFORM SURFACE, THEN THE AREA MAY BE DORMANT SEEDD AT A RATE OF 3 TIMES HIGHER THAN SPECIFIED FOR PERMANENT SEEDD AND THEN MULCHED. IF DORMANT SEEDING IS USED, ALL DISTURBED AREAS SHALL RECEIVE 4 INCHES OF SEED AND SEED AT AN APPLICATION RATE OF 5 LBS PER 1,000 S.F. ALL AREAS INSUFFICIENTLY VEGETATED (LESS THAN 75%) IN THE SPRING SHALL BE REVEGETATED.

### 6. OVER-WINTER STABILIZATION OF DITCHES AND CHANNELS

ALL STONE-LINED DITCHES AND CHANNELS MUST BE CONSTRUCTED BY NOVEMBER 1. ALL GRASS-LINED DITCHES AND CHANNELS MUST BE CONSTRUCTED AND STABILIZED BY SEPTEMBER 1. IF A GRASS-LINED DITCH OR CHANNEL IS STABILIZED BY SEPTEMBER 1, THEN EITHER A SOD LINING SHALL BE INSTALLED PRIOR TO OCTOBER 1 OR THE DITCH MUST BE LINED WITH STONE RIPRAP BACKED BY AN APPROPRIATE GRAVEL BED OR GEOTEXTILE PRIOR TO NOVEMBER 1.

### 7. OVER-WINTER STABILIZATION OF DISTURBED SLOPES

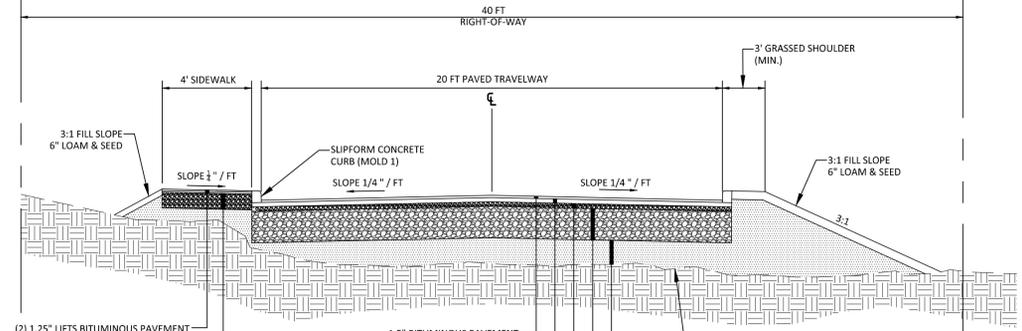
ALL STONE-COVERED SLOPES MUST BE CONSTRUCTED AND STABILIZED BY NOVEMBER 15. ALL SLOPES TO BE VEGETATED MUST BE SEEDED AND MULCHED BY SEPTEMBER 1. ALL AREAS HAVING A GRADE STEEPER THAN 8% SHALL BE CONSIDERED A SLOPE. IF A SLOPE TO BE VEGETATED IS NOT STABILIZED BY SEPTEMBER 1, THEN THE SLOPE SHALL EITHER BE STABILIZED WITH TEMPORARY VEGETATION AND EROSION CONTROL MATS BY OCTOBER 1, SOD BY OCTOBER 1, EROSION CONTROL MIX BY NOVEMBER 1 OR STONE RIPRAP BY NOVEMBER 15. SEE APPLICABLE SECTIONS UNDER EROSION AND SEDIMENTATION CONTROL NOTES FOR PROPER INSTALLATION METHODS.

### 8. OVER-WINTER STABILIZATION OF DISTURBED SOILS

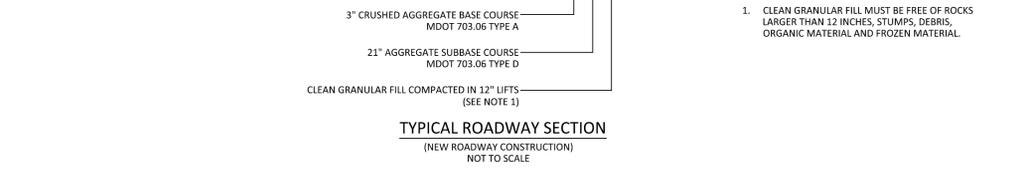
BY SEPTEMBER 15, ALL DISTURBED SOILS ON AREAS HAVING A SLOPE LESS THAN 15% MUST BE SEEDED AND MULCHED. IF THE DISTURBED AREAS ARE NOT STABILIZED BY THIS DATE, THEN THE AREA SHALL EITHER BE STABILIZED WITH TEMPORARY VEGETATION BY OCTOBER 1, SOD BY OCTOBER 1, OR MULCH BY NOVEMBER 15. SEE APPLICABLE SECTIONS UNDER EROSION AND SEDIMENTATION CONTROL NOTES FOR PROPER INSTALLATION METHODS.

### 9. MAINTENANCE

MAINTENANCE MEASURES SHALL BE APPLIED AS NEEDED DURING THE ENTIRE CONSTRUCTION SEASON. AFTER EACH RAINFALL, SNOW STORM OR PERIOD OF THAWING AND RUNOFF, THE SITE CONTRACTOR SHALL PERFORM A VISUAL INSPECTION OF ALL INSTALLED EROSION CONTROL MEASURES AND PERFORM REPAIRS AS NEEDED TO INSURE THEIR CONTINUOUS FUNCTION. FOLLOWING THE TEMPORARY AND/OR FINAL SEEDING AND MULCHING, THE CONTRACTOR SHALL, IN THE SPRING, INSPECT AND REPAIR ANY DAMAGES AND/OR BARE SPOTS. AN ESTABLISHED VEGETATIVE COVER MEANS A MINIMUM OF 85% OF AREAS VEGETATED WITH VIGOROUS GROWTH.



TYPICAL ROADWAY SECTION  
(NEW ROADWAY CONSTRUCTION)  
NOT TO SCALE



TYPICAL ROADWAY SECTION  
(ANGLER'S ROAD CONSTRUCTION)  
NOT TO SCALE

## HOUSEKEEPING NOTES

- SPILL PREVENTION: CONTROLS MUST BE USED TO PREVENT POLLUTANTS FROM CONSTRUCTION AND WASTE MATERIALS ON SITE TO ENTER STORMWATER, WHICH INCLUDES STORAGE PRACTICES TO MINIMIZE EXPOSURE OF THE MATERIALS TO STORMWATER. THE SITE CONTRACTOR OR OPERATOR MUST DEVELOP, AND IMPLEMENT AS NECESSARY, APPROPRIATE SPILL PREVENTION, CONTAINMENT, AND RESPONSE PLANNING MEASURES.
- GROUNDWATER PROTECTION: DURING CONSTRUCTION, LIQUID PETROLEUM PRODUCTS AND OTHER HAZARDOUS MATERIALS WITH THE POTENTIAL TO CONTAMINATE GROUNDWATER MAY NOT BE STORED OR HANDLED IN AREAS OF THE SITE DRAINING TO AN INFILTRATION AREA. AN "INFILTRATION AREA" IS ANY AREA OF THE SITE THAT BY DESIGN OR AS A RESULT OF SOILS, TOPOGRAPHY AND OTHER RELEVANT FACTORS ACCUMULATES RUNOFF THAT INFILTRATES INTO THE SOIL, DIKES, BERMS, Sumps, AND OTHER FORMS OF SECONDARY CONTAINMENT THAT PREVENT DISCHARGE TO GROUNDWATER. TO ISOLATE PORTIONS OF THE SITE FOR THE PURPOSES OF STORAGE AND HANDLING OF THESE MATERIALS, ANY PROJECT PROPOSING INFILTRATION OF STORMWATER MUST PROVIDE ADEQUATE PRE-TREATMENT OF STORMWATER PRIOR TO DISCHARGE OF STORMWATER TO THE INFILTRATION AREA, OR PROVIDE FOR STORAGE WITHIN THE INFILTRATION AREA, IN ORDER TO PREVENT THE ACCUMULATION OF FINES, REDUCTION IN INFILTRATION RATE, AND CONSEQUENT FLOODING AND DESTABILIZATION.
- FUGITIVE SEDIMENT AND DUST: ACTIONS MUST BE TAKEN TO ENSURE THAT ACTIVITIES DO NOT RESULT IN NOTICEABLE EROSION OF SOILS OR FUGITIVE DUST EMISSIONS DURING OR AFTER CONSTRUCTION. OIL MAY NOT BE USED FOR DUST CONTROL, BUT OTHER WATER ADDITIVES MAY BE CONSIDERED AS NEEDED. A STABILIZED CONSTRUCTION ENTRANCE (SCE) SHOULD BE INCLUDED TO MINIMIZE TRACKING OF MUD AND SEDIMENT. IF OFF-SITE TRACKING OCCURS, PUBLIC ROADS SHOULD BE SWEEP IMMEDIATELY AND NO LESS THAN ONCE A WEEK AND PRIOR TO SIGNIFICANT STORM EVENTS. OPERATIONS DURING DRY MONTHS, THAT EXPERIENCE FUGITIVE DUST PROBLEMS, SHOULD WET DOWN UNPAVED ACCESS ROADS ONCE A WEEK OR MORE FREQUENTLY AS NEEDED WITH A WATER ADDITIVE TO SUPPRESS FUGITIVE SEDIMENT AND DUST.
- DEBRIS AND OTHER MATERIALS: MINIMIZE THE EXPOSURE OF CONSTRUCTION DEBRIS, BUILDING AND LANDSCAPING MATERIALS, TRASH, FERTILIZERS, PESTICIDES, HERBICIDES, DETERGENTS, SANITARY WASTE AND OTHER MATERIALS TO PRECIPITATION AND STORMWATER DURING DISCHARGE. THESE MATERIALS MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE.
- EXCAVATION DE-WATERING: EXCAVATION DE-WATERING IS THE REMOVAL OF WATER FROM TRENCHES, FOUNDATIONS, COFFER DAMS, PONDS, AND OTHER AREAS WITHIN THE CONSTRUCTION AREA THAT RETAIN WATER AFTER EXCAVATION. IN MOST CASES THE COLLECTED WATER IS HEAVILY SILTED AND HINDERS CORRECT AND SAFE CONSTRUCTION PRACTICES. THE COLLECTED WATER REMOVED FROM THE PONDING AREA, EITHER THROUGH GRAVITY OR PUMPING, MUST BE SPREAD THROUGH NATURAL WOODDED BUFFERS OR REMOVED TO AREAS THAT ARE SPECIFICALLY DESIGNED TO COLLECT THE MAXIMUM AMOUNT OF SEDIMENT POSSIBLE. USE A COFFERDAM SEDIMENTATION BASIN. AVOID ALLOWING THE WATER TO FLOW OVER DISTURBED AREAS OF THE SITE. EQUIVALENT MEASURES MAY BE TAKEN IF APPROVED BY THE DEPARTMENT.
- AUTHORIZED NON-STORMWATER DISCHARGES: IDENTIFY AND PREVENT CONTAMINATION BY NON-STORMWATER DISCHARGES. WHERE ALLOWED NON-STORMWATER DISCHARGES EXIST, THEY MUST BE IDENTIFIED AND STEPS SHOULD BE TAKEN TO ENSURE THE IMPLEMENTATION OF APPROPRIATE POLLUTION PREVENTION MEASURES FOR THE NON-STORMWATER COMPONENT(S) OF THE DISCHARGE. AUTHORIZED NON-STORMWATER DISCHARGES ARE:
  - DISCHARGES FROM FIRE FIGHTING ACTIVITY;
  - FIRE HYDRANT FLUSHINGS;
  - VEHICLE WASHWATER IF DETERGENTS ARE NOT USED AND WASHING IS LIMITED TO THE EXTERIOR OF VEHICLES (ENGINE, UNDERCARRIAGE AND TRANSMISSION WASHING IS PROHIBITED);
  - DUST CONTROL RUNOFF IN ACCORDANCE WITH PERMIT CONDITIONS AND APPENDIX (C)(3);
  - ROUTINE EXTERNAL BUILDING WASHDOWN, NOT INCLUDING SURFACE PAINT REMOVAL, THAT DOES NOT INVOLVE DETERGENTS;
  - PAVEMENT WASHWATER (WHERE SPILLS/LEAKS OF TOXIC OR HAZARDOUS MATERIALS HAVE NOT OCCURRED, UNLESS ALL SPILLED MATERIAL HAD BEEN