









- Width: 50 ft. minimum or full width of entrance/exit roadway, whichever is Length: 200 ft. minimum. The length can be shorter for small sites such Washing facility (optional): Level area with 3 in. washed stone minimum or
- within a high seasonal water table to provide greater bearing strength.

- bar (ridge) with 3:1 side slopes across the foundation area about 15 ft. from the entrance to divert runoff away from the road (Practice 3.24)
- 6. Place stone to dimensions and grade shown in the erosion/sediment control 7. Divert all surface runoff and drainage from the stone pad to a sediment

- roads by brushing or sweeping. Flushing should only be used if the water

Erosion control blanket is biodegradable organic or synthetic mulch incorporated into a polypropylene or similar netting material; it is an alternative to mulch

- * To conserve moisture and increase seed germination and seedling growth.
- Anchoring: Use of staples or stakes to prevent movement or displacement as

temporary or permanent diversion, sediment basin or trap, silt fence,

- 5. Following manufacturer's directions, lay the blankets on the seeded area such that they are in continuous contact with the soil and that the upslope or upstream ones overlap the lower ones by at least 8 inches.
- involves driving 6-8 inch metal staples into the ground in a pattern

TEMPORARY SEEDING

REQUIREMENTS Site and seedbed preparation: Graded and fertilizer applied. Plant Species: Selected on the basis of quick germination, growth, and time of year to be seeded (see Exhibit 3.11-B). Mulch: Clean grain, straw, hay, wood, fibre, etc., to protect seedbed and encourage plant growth. **Seeding Frequency:** As often as possible following construction activity. Daily seeding of rough graded areas when the soil is loose and moist is usually most effective.

SITE PREPARATION:

APPLICATION

(Exhibit 3.11–B

- 1. Install practices needed to control erosion, sedimentation, and water runoff, such as temporary and permanent diversions, sediment traps or basins, silt fences, and straw bale dams (practices 3.21, 3.22, 3.72, 3.73, 3.74, and 3.75). 2. Grade the site as specified in the construction plan.
- SEEDBED PREPARATION: 1. Test soil to determine its nutrient levels. (Contact your county SWDC
- or Cooperative Extension office for assistance and soils information, 2. Fertilize as recommended by the soil test. If testing is not done,
- consider applying 400-600 lbs./acre of 12-12 analysis, or equivalent,
- fertilizer 3. Work the fertilizer into the soil 2-4 in. deep with a disk or rake
- operated across the slope.
- 1. Select a seeding mixture and rate from Exhibit 3.11-B, and plant at depth and on dates shown.
- including available soil testing services.) 2. Apply seed uniformly with a drill or cultipacker-seeder or by
- broadcasting, and cover to the depth shown in Exhibit 3.11-B. 3. If drilling or broadcasting, firm the seedbed with a roller or
- cultipacker
- 4. Mulch seeded areas to increase seeding success. Anchor all mulch by crimping or tackifying. Use of netting or erosion control blankets is possible, but may not be cost-effective for temporary seeding.

Seed Species*	Rate/acre	Planting Depth	Optimum dates**
Wheat or rye	150 lbs.	1 to 1 1/2 in.	9/15 to 10/30
Spring oats	100 lbs.	1 in. [′]	3/1 to 4/15
Annual ryegrass	40 lbs.	1/4 in.	3/1 to 5/1
		,	8/1 to 9/1
German millet	40 lbs.	1 to 2 in.	5/1 to 6/1
Sudangrass	35 lbs.	1 to 2 in.	5/1 to 7/30
 Perennial speci area to be seed ** Seeding done done 	es may be use ded will remain i outside the opt	d as temporary cove idle for more than a imum dates increas	er, especially if the year (Practice 3.12). es the chances of

MAINTENANCE Inspect periodically after planting to see that vegetative stands are adequately established; reseed if necessary. * Check for erosion damage after storm events and repair; reseed and mulch if necessary.

* Topdress fall seeded wheat or rye seedings with 50 lbs./acre of nitrogen in February or March if nitrogen deficiency is apparent. (Exhibit 3.11-B shows only wheat/rye fall seeded.)

(Exhibit 3.13-B 1. Grade the area to be seeded. (Practices 3.21, 3.22, 3.72, 3.74 or 3.75). FOR DORMANT SEEDING actual seeding or if the existing ground cover is adequate, seeding can be directly into it. fertilizer. 2. Apply mulch upon completion of grading (Practice 3.15). cover at rate shown. FOR FROST SEEDING by natural freeze-thaw action. fertilizer Apply mulch upon completion of grading (Practice 3.15). cover at rate shown. Do not work the seed into the soil. Seed species* Wheat or rye Spring oats Annual ryegrass Exhibit 3.13-C. Permanent Dorma This table provides several seed and mixtures are available co. consider site conditions, inclu the tolerance of each species

* To repair previous seedings.

APPLICATION SITE PREPARATION:

and C)

- Seed species* OPEN AND DISTRIBUTED AREAS 1. Perennial ryegrass + white or ladino clover
- 2. Kentucky bluegrass + smooth bromegrass
- + switcharass + timothy
- + perennial ryegrass + white or ladino clover*
- 3. Perennial ryegrass + prairie switchgrass 4. Prarie switch grass
- + white or ladino clover* STEEP BANKS AND CUTS, LOW
- 1. Smooth bromegrass + red clover*
- 2. Prarie switch grass + white or ladino clover*
- 3. Prarie switch grass + red clover*
- (Recommended north of US 40.) 4. Orchardgrass
- + red clover* + ladino clover*
- Crownvetch*
- + prairie switchgrass (Recommended north of US 40
- LAWNS AND HIGH MAINTENANC
- 1. Bluegrass 2. Perennial ryegrass (turf-type)
- + bluearass 3. Prarie switch grass (turf-type)
- + bluegrass CHANNELS AND AREAS OF COM
- 1. Parennial ryegrass + white or ladino clover*
- 2. Kentucky bluegrass + smooth bromearass
- + switchgrass
- + timothy + perennial ryegrass
- + white or ladino clover* 3. Prarie switch grass
- + white or ladino clover
- 4. Prarie switch grass + perennial bluegrass
- + kentucky bluegrass

* For best results: (a) legume seed sho legumes should preferably be spring-seeded, although the grass may be fall-seeded and the legume frost-seeded; (c) if legumes are fall-seeded, do so in early fall.

15 and May 10 or during periods of vigorous growth. for temporary seeding or 3.12 for permanent seeding.

DORMANT AND FROST SEEDING

PURPOSES * To provide early germination and soil stabilization in the spring. * To reduce sediment runoff to downstream areas * To improve the visual aesthetics of the construction area.

REQUIREMENTS Site and seedbed preparation: Graded as needed, and lime and fertilizer applied. Plant species: Selected on the basis of soil type, adaptability to the region, and planned use of the area (see Exhibits 3.13-B and 3.13-C).

2. Install needed erosion/water runoff control practices, such as temporary or permanent diversions, sediment basins, silt fences, or straw bale dams

Site and seedbed preparation and mulching can be done months ahead of

Seeding dates: Dec. 1—Feb. 28 (north of US 40), Dec. 10—Jan. 15 (south of US 40). 1. Broadcast Fertilizer as recommended by a soil test; or if testing was not done consider applying 400-600 lbs./ acre of 12-12-12 analysis or equivalent,

3. Select an appropriate seed species or mixture from Exhibit 3.13-B or Exhibit 3.13-C, and broadcast on top of the mulch and/or into existing ground

Seed is broadcast over the prepared seedbed and incorporated into the soil Seeding dates: Feb. 28-Mar. 28 (north of US 40), Feb. 15-Mar. 15 (south of US 40). 1. Broadcast Fertilizer as recommended by a soil test; or if testing was not done consider applying 400-600 lbs./ acre of 12-12-12 analysis or equivalent,

Select an appropriate seed species or mixture from Exhibit 3.13-B or Exhibit 3.13-C, and broadcast on top of the mulch and/or into existing ground

Exhibit 3.13-B. Temporary Dormant or Frost Seeding Recommendations.

Rate per acre 150lbs. 150 lbs. 60 lbs.

* Perennial species may be used as a temporary cover, especially if the area to be seeded will remain idle for more than a year (Practice 3.12).

mant of Frost Seedin	g Recommendations.
ding options. Addit nmercially When s	tional seed species relecting a mixture
ding soil properties,	slope aspect and
to shade and drou	ughtiness.
Rate per acre	Optimum soil pH
5 (REMAINING IDLE 50 to 75 lbs.	E MORE THAN 1 YR). 5.6 to 7.0
1 1/2 to 3 lbs. 30 lbs.	5.5 to 7.5
5 lbs. 5 lbs.	
15 lbs. 1 1/2 to 3 lbs.	
22 to 45 lbs. 22 to 45 lbs.	5.6 to 7.0
50 to 75 lbs. 1 1/2 to 3 lbs.	5.5 to 7.5
MAINTENANCE A	REAS (NOT MOWED).
35 to 50 lbs. 15 to 30 lbs.	5.5 to 7.5
50 to 75 lbs. 1 1/2 to 3 lbs.	5.5 to 7.5
50 to 75 lbs. 15 to 30 lbs.	5.5 to 7.5
.) 30 to 45 lbs.	5.6 to 7.0
15 to 30 lbs. 1 1/2 to 3 lbs. 15 to 18 lbs. 30 to 45 lbs.	5.6 to 7.0
160 to 210 lbs.	5.5 to 7.5
70 to 90 lbs.	5.6 to 7.0
105 to 135 lbs. 195 to 250 lbs. 30 to 45 lbs	5.6 to 7.5
NCENTRATED FLO	N
150 to 225 lbs. 1 1/2 to 3 lbs.	5.6 to 7.0
30 Íbs. 15 Ibs.	5.5 to 7.5
5 lbs. 6 lbs.	
15 lbs.	
150 to 225 lbs.	5.5 to 7.5
150 to 225 lbs. 22 to 30 lbs. 22 to 30 lbs.	5.5 to 7.5
hould be inoculated; (b)	seeding mixtures containing

NOTE: If using mixtures other than those listed here, increase the seeing rate by 50% over the conventional rate.

MAINTENANCE * Apply 200-300 lbs./acre of 12-12-12 or equivalent fertilizer between Apr. * Re-seed and mulch any areas that have inadequate cover by mid to late Apr. For best results, re-seed within the recommended dates shown in Practices 3.11

(MS)

(Exhibit 3.12–B.

C. and D)

REQUIREMENTS Site and seedbed preparation: Graded, and lime and fertilizer applied. Plant Species: Selected on the basis of soil type, soil pH, region of the state, time of year, and planned use of the area to be seeded (see

PERMANENT SEEDING

Exhibit 3.12–C). Mulch: Clean grain, straw, hay, wood, fibre, etc., to protect seedbed and encourage plant growth. The mulch may need to be anchored to reduce removal by wind or water, or erosion control blankets may be considered.

APPLICATION Permanently seed all final grade areas (e.g., landscape berms, drainage swales, erosion control structures, etc.) as each is completed and all areas where additional work is not scheduled for a period of more than a year. SITE PREPARATION:

> 1. Install practices needed to control erosion, sedimentation, and runoff prior to seeding. These include temporary and permanent diversions, sediment traps and basins, silt fences, and straw bale dams (Practices 3.21, 3.22, 3.72, 3.73, 3.74, and 3.75).

2. Grade the site and fill in depressions that can collect water. 3. Add topsoil to achieve needed depth for establishment of vegetation (Practice 3.02).

SEEDBED PREPARATION: 1. Test soil to determine pH and nutrient levels. (Contact your county SWDC or Cooperative Extension office for assistance and soils information, including available soil testing services.)

- 2. If soil pH is unsuitable for the species to be seeded, apply lime according to test recommendations. 3. Fertilize as recommended by the soil test. If testing was not done.
- consider applying 400-600 lbs./acre of 12-12-12 analysis, or equivalent, fertilizer.
- 4. Till the soil to obtain a uniform seedbed, working the fertilizer and lime into the soil 2-4 in. deep with a disk or rake operated across the slope (Exhibit 3.12-B).

Optimum seeding dates are Mar. 1-May 10 and Aug. 10-Sept. 30. Permanent seeding done between May 10 and Aug. 10 may need to be irrigated. As an alternative, use temporary seeding (Practice 3.11) until the preferred date for permanent seeding.

- 1. Select a seeding mixture and rate from Exhibit 3.12-C, based on site conditions, soil pH, intended land use, and expected level of maintenance.
- 2. Apply seed uniformly with a drill or cultipacker-seeder (Exhibit 3.12-D) or by broadcasting, and cover to a depth of 1/4-1/2 in. 3. If drilling or broadcasting, firm the seedbed with a roller or cultipacker
- 4. Mulch all seeded areas (Practice 3.15). Consider using erosion blankets on sloping areas (Practice 3.17). (NOTE: If seeding is done with a hydroseeder, fertilizer and mulch can be applied with the seed in a slurry mixture.)

Exhibit 3.12–C. Permanent Seeding Recommendations

This table provides several seeding options. Additional seed species and mixtures are available commercially. When selecting a mixture, consider site conditions, including soil properties (e.g., soil pH and drainage), slope aspect and the tolerance of each species to shade and droughtiness. Seed species and mixtures Rate per acre Optimum soil pH OPEN AND DISTURBED AREAS (REMAINING IDLE MORE THAN 1 YR.) 1 Perennial ryegrass 35 to 50 lbs. 5.6 to 7.0 + white or ladino clover* 1 to 2 lbs. 5.5 to 7.5 2. Kentucky bluegrass 20 lbs. + smooth bromegrass 10 lbs. + switchgrass 3 lbs. 4 lbs. + timothy 10 lbs. + perennial ryearass + white or ladino clover* 1 to 2 lbs. 5.6 to 7.0 3. Perennial ryegrass 15 to 30 lbs. + prarie switch grass 15 to 30 lbs. 35 to 50 lbs. 5.5 to 7.5 4. Prarie switch grass + ladino or white clover* 1 to 2 lbs. STEEP BANKS AND CUTS, LOW MAINTENANCE AREAS (NOT MOWED) 25 to 35 lbs. 1. Smooth bromearass 5.5 to 7.5 + red clover* 10 to 20 lbs. 5.5 to 7.5 2. Prarie switch grass 35 to 50 lbs. + white or ladino clover* 1 to 2 lbs. 5.5 to 7.5 3. Prarie switch grass 35 to 50 lbs. + red clover* 10 to 20 lbs. (Recommended north of US 40) 5.6 to 7.0 4. Orchardgrass 20 to 30 lbs. 10 to 20 lbs. + red clover* + ladino clover* 1 to 2 lbs. 5.6 to 7.0 5. Crownvetch* 10 to 12 lbs. + prairie switchgrass 20 to 30 lbs. (Recommended south of US 40) LAWNS AND HIGH MAINTENANCE AREAS 1. Bluegrass 105 to 150 lbs. 5.5 to 7.0 2. Perennial ryegrass (turf—type) 45 to 60 lbs. 5.6 to 7.0 70 to 90 lbs. + bluearass 3. Prarie switch grass(turf-type)130 to 107 lbs. 5.5 to 7.5 + bluegrass 20 to 30 lbs. CHANNELS AND AREAS OF CONCENTRATED FLOW 5.6 to 7.0 100 to 150 lbs. 1. Perennial ryegrass + white or ladino clover* 1 to 2 lbs. 5.5 to 7.5 2. Kentucky bluegrass 20 lbs. + smooth bromegrass 10 lbs. + switchgrass 3 lbs. 4 lbs. + timothv + perennial ryegrass 10 lbs. + white or ladino clover* 1 to 2 lbs. 5.5 to 7.5 3. Prarie switch grass 100 to 150 lbs. + ladino or white clover* 1 to 2 lbs. 5.5 to 7.5 4. Prarie switch grass 100 to 150 lbs. + Perennial ryegrass 15 to 20 lbs. 15 to 20 lbs. + Kentucky bluegrass * For best results: (a) legume seed should be inoculated; (b) seeding

mixtures containing legumes should preferably be spring-seeded, although the grass may be fall-seeded and the legume frost-seeded (Practice 3.13); and (c) if legumes are fall-seeded, do so in early

NOTE: An oat or wheat companion or nurse crop may be used with any of the above permanent seeding mixtures. If so, it is best to seed during the fall seeding period, especially after Sept. 15, and at the following rates: spring oats-1.4 to 3/4 bu./acre; wheat—no more than 1/2 bu./acre.

MAINTENANCE * Inspect periodically, especially after storm events, until the stand is successfully established. (Characteristics of a successful stand include: vigorous dark green or bluish-green seedlings; uniform density with nurse plants, legumes, and grasses well inter-mixed; green leaves; and the perennials remaining green throughout the summer, at least at the

- plant base.) * Plan to add fertilizer the following growing season according to soil test
- recommendations. * Repair damaged, bare or sparse areas by filling any gullies, re-fertilizing, over- or re-seeding, and mulching.
- * If plant cover is sparse or patchy, review the plant materials chosen, soil fertility, moisture condition, and mulching; then repair the affected area either by over-seeding or by re-seeding and mulching after re-preparing the seedbed.
- * If vegetation fails to grow, consider soil testing to determine acidity or nutrient deficiency problems. (Contact your SWCD or Cooperative Extension office for assistance.)
- * If additional fertilization is needed to get a satisfactory stand, do so according to soil test recommendations.

NOTE TO CONTRACTOR

CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS & DEPTHS AND NOTIFY ENGINEER OF ANY INACCURACIES IN LOCATION OR ELEVATION OR ANY CONFLICTS PRIOR TO & AFTER ANY EXCAVATION. NO PAYMENT SHALL BE MADE TO CONTRACTOR FOR UTILITY DESTRUCTION OR UNDERGROUND CHANGES REQUIRED DUE TO CONFLICTING ELEVATIONS.







			revisions:
IN	SF	PRACTICE 3.74 SILT FENCE (SEDIMENT FENCE)	
t on the construction site. If the embankment would industrial buildings, main rvices.)	PURPOSE	To retain sediment from small, sloping disturbed areas by reducing the velocity of sheet flow. (NOTE: Silt fence captures sediment by ponding water to allow deposition, not by filtration. Although the practice usually works best in conjunction with temporary basins, traps, or diversions, it can be sufficiently effective to be used alone. A silt fence is not recommended for use as a diversion; nor is it to be used across a stream, channel or anywhere that concentrated flow is anticipated.)	
imum.	REQUIREMENTS (Exhibit 3.74-B and C)	Drainage Area: Limited to 1/4 acre per 100 ft. of fence; further restricted by slope steepness (see Exhibit 3.74-B). Location: Fence nearly level, approximately following the land contour, and at	
ipe barrel able to withstand ling or cracking. our duration storm event spillway. .5 ft. minimum projection) anchor having a buoyant r displaced by the riser		 least 10 ft. from toe of slope to provide a broad, shallow sediment pool. Trench: 8 in. minimum depth, flat-bottom or v-shaped, filled with compacted soil or gravel to bury lower portion of support wire and/or fence fabric. Support posts: 2 x 2-in. hardwood posts (if used) or steel fence posts set at least 1 ft. deep.* (Steel posts should projections for fastening fabric.) Spacing of posts: 8 ft. maximum if fence supported by wire, 6 ft. for extra-strength fabric without wire backing. Fence height: High enough so depth of integrated deep set water and some and some fence less than 2% 100 ft 	
utlet apron needed unless		1 1/2 ft. at any point along fence line. Support wire (optional): 14 gauge, 6 in.wire fence (needed if using standard- strength fabric).Fence fabric:Woven or non-woven geo-	HITECTU GINEERI PLANNI PLANNI ton, indic
in. lifts while moist.		textile fabric with specified filtering efficiency and tensile strength (see Exhibit 3.74-C) and containing UV inhibitors and stabilizers to ensure 6-mo. minimum life at temperatures 0°-120°F. * Some commercial silt fences come ready to install, with support posts	ARC NIL EN 339-
cy, 24 hour duration storm or flatter.		attached and requiring now wire support. Exhibit 3.74–C. Specifications Minimums for Silt Fence Fabric. Physical Property Woven Fabric Non-woven fabric	
g. eboard 1 ft. (minimum) - Slope 3:1 (max) collar		Filtering efficiency 85% 85% Filtering efficiency 85% 85% Tensile strength at 20% elongation: Standard strength 30lbs./linear in. Standard strength 50lbs./linear in. 50lbs./linear in. Standard strength Stury flow rate 0.3 gal./min./sq.ft. 4.5 gal./min./sq.ft. Water flow rate 15 gal. /min./sq.ft. 220 gal./min./sq.ft. UV resistance 70% 85% Outlet (optional): To allow for safe storm flow bypass without overtopping fence. Placed along fence line to limit water depth to 1 1/2 ft. maximum; crest1 ft. high maximum; weir width4 ft. maximum; splash pad5 ft. wide, 3 ft. long, 1 ft. thick minimum.	OCIATES, INC.
spillway embankment Iow	INSTALLATION	 SITE PREPARATION: 1. Plan for the fence to be at least 10 ft. from the toe of the slope to provide a sediment storage area. 2. Provide access to the area if sediment cleanout will be needed. OUTLET CONSTRUCTION (OPTIONAL) 1. Determine the appropriate location for a reinforced, stabilized bypass flow outlet 	ANYO & ASSo P walnut stre
n imum)		 Set the outlet elevation so that water depth cannot exceed 1 1/2 ft. at the lowest point along the fence line. Locate the outlet weir support posts no more than 4 ft. apart, and install a horizontal brace between them. (Weir height should be no more than 1 ft 	NUM F 12) 332
Exit section		 and water depth no more than 1 1/2 ft. anywhere else along the fence.) Excavate the foundation for the outlet splash pad to minims of 1 ft. deep, 5 ft. wide and 5 ft. long on level grade Fill the excavated foundation with INDOT CA No. 1 stone, being careful that the finished surface blends with the surrounding area, allowing no overfall. 	
n emergency spillway for bed soil		 Stabilize the area around the pad. OUTLET CONSTRUCTION (OPTIONAL) Along the entire intended fence line, dig an 8 in. deep flat-bottomed or V-shaped trench. On the downslope side of the trench drive the wood or steel support posts. 	
ent source as possible, and spillway conditions. woody vegetation, rocks,		at least 1 ft. into the ground, spacing them no more than 8 ft. apart if if the fence is supported by wire or 6 ft. if extra strength fabric is used without support wire. Adjust spacing, if necessary, to ensure that posts are set at the low points along the fence line. (NOTE: If the fence has pre- attached posts or stakes, drive them deep enough so the fabric is satisfactory	
signated disposal areas. have high amounts of cleanout.		 in the trench as described in step 6.) 3. Fasten support wire fence to the upslope side of the posts, extending it 8 in. into the trench. 4. Run a continuous length of geotextile fabric in front of the support wire and posts avoiding joints, particularly at low points in the fence line. 	certified by:
irm, even foundation. layey, workable soil (not and compact by hand tside valley with 1/2 in.		 If a joint is necessary, nall the overlap to the nearest post with a lath. Place the bottom 1 ft. of fabric in the 8 in. deep trench, extending the remaining 4 in. toward the upslope side. Backfill the trench with compacted earth or gravel. NOTE: If using a pre-packed commercial silt fence rather than constructing one, follow the manufacturer's installation instructions. 	
cone. cop of the riser. 5 ft. wide and 10 ft. long of 9 in. minimum.)		Filter Fabric Compacted soil Soil 14"	
eas. It should be clean, , rocks and other debris rumbling yet not so wet toe and the least per—			
rs over the length of the acted fill before traversing		Wire	Ě – – – – – – – – – – – – – – – – – – –
height to allow for settling. nout elevation. (50% of		Exhibit 3.74—E. Detailed example of silt fence installation.	
one end of embankment receiving channel without nplete; or install paving be vegetated.		Drainage way	47401 47401
f exposure. le basin. running into disturbed areas. o improve trap effectiveness.		PLAN VIEW ELEVATION Point "B"	
on. ozardous.	MAINTENANCE	 Inspect the silt fence periodically and after each storm event. If fence fabric tears, starts to decompose or in any way becomes ineffective, replace the affected portion immediately. Remove deposited sediment when it reaches helf the height of the force of the force. 	S L D N C L D
 sly. dment sites.		 * Take care to avoid undermining the fabric to bulge. * Take care to avoid undermining the fence during clean out. * After the contributing area has been stabilized, remove the fence and sediment deposits, bring the disturbed area to grade, and stabilize. 	
vent. accumulates to one half the Ilway, outlet and for erosion toe or around barrel; and			P R C R P R C R P P R C R P P R C R P P R C R
and pool area. bes not drain properly. been permanently stabilized water, remove sediment to to blend with surrounding			title: GENERAL NOTES & LEGENDS
č	<u>NOTE</u> :	ONLY NOTES ON THIS SHEET MARKED WITH AN APPLY TO THIS PROJECT.	
	CONTRA ENGINEE CONFLIC	CTOR SHALL VERIFY ALL UTILITY LOCATIONS & DEPTHS AND NOTIFY ER OF ANY INACCURACIES IN LOCATION OR ELEVATION OR ANY CTS PRIOR TO & AFTER ANY EXCAVATION. NO PAYMENT SHALL BE MADE	designed by: AJW drawn by: AJW checked by: JSF sheet no: C402
		ED DUE TO CONFLICTING ELEVATIONS.	project no.: 402231

CONSTRUCTION STORMWATER GENERAL PERMIT

SECTION A - CONSTRUCTION PLAN ELEMENTS

A1. INDEX OF THE LOCATION OF REQUIRED PLAN ELEMENTS IN THE CONSTRUCTION PLAN: REFER TO THIS SHEET.

A2. A VICINITY MAP DEPICTING THE PROJECT SITE LOCATION IN RELATIONSHIP TO RECOGNIZABLE LOCAL LANDMARKS, TOWNS, AND MAJOR ROADS: REFER TO THE COVER SHEET.

A3. NARRATIVE OF THE NATURE AND PURPOSE OF THE PROJECT: SITE MASS GRADING IN EASTERN BLOCK LOT 2 WITH ACCESS GRAVEL ROAD AND APPLIED EROSION PRACTICES.

A4. LATITUDE AND LONGITUDE TO THE NEAREST FIFTEEN (15) SECONDS: 39.183744, -86.560900

A5. LEGAL DESCRIPTION: DOES NOT APPLY.

A6. 11 X 17-INCH PLAT SHOWING BUILDING LOT NUMBERS/BOUNDARIES AND ROAD LAYOUT/NAMES: DOES NOT APPLY.

A7. BOUNDARIES OF THE ONE HUNDRED (100) YEAR FLOODPLAINS, FLOODWAY FRINGES, AND FLOODWAYS: NOT ON SITE

A8. LAND USE OF ALL ADJACENT PROPERTIES: NORTH AND East PROPERTY IS INDIANA STATE ROADWAY AS WELL AS A VACANT PLOT DIRECTLY NORTH, WESTERN PLOTS ARE RESIDENTIAL AREAS, SOUTH PLOTS CONTAIN VACANT LAND AND GOVERNMENT BUILDINGS

A9. IDENTIFICATION OF A U.S. EPA APPROVED OR ESTABLISHED TMDL: DOES NOT APPLY.

A10. NAME(S) OF THE RECEIVING WATERS: PRIMARY - STOUT CREEK, SECONDARY – BEANBLOSSOM CREEK, TERTIARY – WHITE RIVER

A11. IDENTIFICATION OF DISCHARGES TO A WATER ON THE CURRENT 303(D) LIST OF IMPAIRED WATERS AND POLLUTANT(S) FOR WHICH IT IS IMPAIRED: BEANBLOSSOM CREEK - E. COLI. WHITE RIVER - E. COLI.

A12: SOILS MAP OF THE PREDOMINATE SOIL TYPES: REFER TO THIS SHEET.

A13: IDENTIFICATION AND LOCATION OF ALL KNOWN WETLANDS, LAKES, AND WATER COURSES ON OR ADJACENT TO THE PROJECT SITE (CONSTRUCTION PLAN, EXISTING SITE LAYOUT): PREVIOUS SITE HOME TO QUARRY DIGGING, REMAINING PITS, PONDS, AND LOW POINTS HOLD WATER AT VARYING DRAINAGE RATES. REFER TO C201 AND C301 SITE VIEWS

A14: IDENTIFICATION OF ANY OTHER STATE OR FEDERAL WATER QUALITY PERMITS OR AUTHORIZATIONS THAT ARE REQUIRED FOR CONSTRUCTION ACTIVITIES: DOES NOT APPLY.

A15. IDENTIFICATION AND DELINEATION OF EXISTING COVER, INCLUDING NATURAL BUFFERS: EXISTING TREES COVER MOST OF THE PROPERTY. PONDS AND REMAINING LIMESTONE BLOCKS FROM PAST QUARRY EXCAVATION SPREAD THROUGHOUT

A16: EXISTING SITE TOPOGRAPHY AT AN INTERVAL APPROPRIATE TO INDICATE DRAINAGE PATTERNS: REFER TO C201 OVERALL.

A17: LOCATION(S) WHERE RUN-OFF ENTERS THE PROJECT SITE: RUNOFF ENTERS FROM SOUTHEAST CORNER OF LOT 2, SOUTHERN DRAIN UNDER VERNAL PIKE, AND WESTERN HEADED DOWNWARD SLOPES FROM RESIDENTIAL AREAS.

A18: LOCATION (S) WHERE RUN-OFF DISCHARGES FROM THE PROJECT SITE PRIOR TO LAND DISTURBANCE: THE MAIN DISCHARGE POINT FROM THE SITE IS THE CENTRAL NORTHERN LOW POINT LOCATED AT THE LOWEST PEAK OF THE NORTH PROPERTY LINE. SOME MAY EXIT THE SITE IN THE EAST. NORTHEAST. AND SOUTHEAST. RUN-OFF ULTIMATELY DISCHARGES TO STOUTS CREEK WITHIN THE FLOODPLAIN.

A19: LOCATION OF ALL EXISTING STRUCTURES ON THE PROJECT SITE: EXISTING STRUCTURES ARE SHOWN ON OVERALL SHEET C201.

A20: EXISTING PERMANENT RETENTION OR DETENTION FACILITIES. INCLUDING MANMADE WETLANDS, DESIGNED FOR THE PURPOSED OF STORMWATER MANAGEMENT: PONDS CREATED BY QUARRY EXCAVATION INDICATED ON C201 OVERALL

A21: LOCATIONS WHERE STORMWATER MAY BE DIRECTLY DISCHARGED INTO GROUND WATER, SUCH AS ABANDONED WELLS, SINKHOLES, OR KARST FEATURES: KARST FEATURES INDICATED ON C201 OVERALL

A22: SIZE OF THE PROJECT AREA EXPRESSED IN ACRES: 98.9 ACRES

A23: TOTAL EXPECTED LAND DISTURBANCE EXPRESSED IN ACRES: 27.5 ACRES

A24: PROPOSED FINAL TOPOGRAPHY: PROPOSED FINAL TOPOGRAPHY IS SHOWN ON C201 AND C301 SITE VIEWS

A25: LOCATIONS AND APPROXIMATE BOUNDARIES OF ALL DISTURBED AREAS: Refer to C201 OVERALL AND C301 SITE VIEWS.

A26: LOCATIONS, SIZE, AND DIMENSIONS OF ALL STORMWATER DRAINAGE SYSTEM SUCH AS CULVERTS, STORMWATER SEWER, AND CONVEYANCE CHANNELS: PROPOSED STORMWATER DRAINAGE SYSTEMS ARE SHOWN ON C201 OVERALL AND C301 SITE VIEWS.

A27: LOCATIONS OF SPECIFIC POINTS WHERE STORMWATER AND NON-STORMWATER DISCHARGES WILL LEAVE THE PROJECT SITE: DISCHARGE LOCATIONS ARE SHOWN ON C201 OVERALL AND C301 SITE VIEWS

A28: LOCATION OF ALL PROPOSED SITE IMPROVEMENTS, INCLUDING ROADS, UTILITIES, LOT DELINEATION AND IDENTIFICATION, PROPOSED STRUCTURES, AND COMMON AREAS: PROPOSED SITE IMPROVEMENTS ARE SHOWN ON C201 OVERALL AND C301 SITE VIEWS

A29: LOCATION OF ALL ON-SITE AND OFF-SITE SOIL STOCKPILES AND BORROW AREAS: OFFSITE STOCKPILES ARE TO BE DETERMINED BY DEVELOPER

A30: CONSTRUCTION SUPPORT ACTIVITIES THAT ARE EXPECTED TO BE PART OF THE PROJECT: DOES NOT APPLY.

A31: LOCATION OF ANY IN-STREAM ACTIVITIES THAT ARE PLANNED FOR THE PROJECT INCLUDING, BUT NOT LIMITED TO, STEAM CROSSINGS AND PUMP AROUNDS: DOES NOT APPLY

SECTION B - CONSTRUCTION COMPONENT

B1. DESCRIPTION OF THE POTENTIAL POLLUTANT GENERATING SOURCES AND POLLUTANTS. INCLUDING ALL POTENTIAL NON-STORMWATER **DISCHARGES:**

A. THE MOST ABUNDANT POLLUTANT CAUSED BY CONSTRUCTION WOULD BE SOIL SUSPENDED IN STORM WATER RUNOFF B. FUEL, OILS, AND OTHER FLUIDS ASSOCIATED WITH THE CONSTRUCTION EQUIPMENT COULD POSSIBLY RUNOFF AS WELL C. TRASH ASSOCIATED WITH HUMAN ACTIVITY. INCLUDING CONSTRUCTION MATERIALS.

B2. STABLE CONSTRUCTION ENTRANCE LOCATIONS AND SPECIFICATIONS: REFER TO C201 AND C301 SITE VIEWS FOR TEMPORARY ACCESS PLANS

B3. SPECIFICATIONS FOR TEMPORARY AND PERMANENT STABILIZATION: A COMBINATION OF SILT FENCE AND VEGETATED COVER ARE PROPOSED TO CONTROL EROSION FROM SHEET FLOW AREAS/NEWLY GRADED AREAS.

B4: SEDIMENT CONTROL MEASURES FOR CONCENTRATED FLOW AREAS: RIP-RAP APRONS ARE PROPOSED AT STORM WATER DISCHARGE LOCATIONS. DIVERSION SWALES AND BERMS USED TO REDIRECT OVERLAND FLOW

B5. SEDIMENT CONTROL MEASURES FOR SHEET FLOW AREAS: A COMBINATION OF SILT FENCE AND VEGETATED COVER ARE PROPOSED TO CONTROL EROSION FROM SHEET FLOW AREAS/NEWLY GRADED AREAS.

B7. STORMWATER OUTLET PROTECTION LOCATION AND SPECIFICATIONS: RIP-RAP APRONS ARE SHOWN ON THE SWPP PLAN SHEETS C26 AND C27. RIP-RAP DETAILS ARE SHOWN IN THE SWPP DETAILS ON SHEETS C29 AND C30.

B8. GRADE STABILIZATION STRUCTURE LOCATIONS AND SPECIFICATIONS: SEE THE PLAN

B9. DEWATERING APPLICATIONS AND MANAGEMENT METHODS: DOES NOT

B10. MEASURES UTILIZED FOR WORK WITHIN WATERBODIES: REFER TO THE STREAM RESTORATION PLANS. ACTIVITIES INCLUDE TEMPORARY DIVERSIONS, TEMPORARY DETENTION, TURF REINFORCEMENT, BERMS, AND DIRECTIONS TO PROTECT SENSITIVE AREAS.

B11. MAINTENANCE GUIDELINES FOR EACH PROPOSED STORMWATER QUALITY MEASURE: MONITORING AND MAINTENANCE OF ALL POLLUTION PREVENTION MEASURES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL INSPECT ALL MEASURES AT LEAST ONCE A WEEK AND AFTER EACH STORM EVENT. THE CONTRACTOR SHALL PREPARE A WRITTEN REPORT FOR EACH INSPECTION NOTING CONDITIONS AND MAINTENANCE PROVIDED. A COPY OF EACH REPORT SHALL BE KEPT ON FILE AT THE PROJECT SITE. REFER TO EACH PREVENTION MEASURE DETAIL FOR CONSTRUCTION AND MAINTENANCE GUIDELINES.

B12. PLANNED CONSTRUCTION SEQUENCE THAT DESCRIBES THE IMPLEMENTATION OF STORMWATER QUALITY MEASURES IN RELATION TO LAND DISTURBANCE: SEE THE EROSION CONTROL SEQUENCE ON THIS SHEET.

B13. PROVISIONS FOR EROSION AND SEDIMENT CONTROL ON INDIVIDUAL RESIDENTIAL BUILDING LOTS REGULATED UNDER THE PROPOSED PROJECT: DOES NOT APPLY.

B14. MATERIAL HANDLING AND SPILL PREVENTION AND SPILL RESPONSE PLAN MEETING THE REQUIREMENTS IN 327 IAC 2-6.1: ALL MATERIALS ON-SITE WILL BE HANDLED PER THE REQUIREMENTS OF THE MSDS SHEETS. THE CONTRACTOR SHALL HAVE AN EMERGENCY SPILL CLEAN-UP KIT ON SITE FOR RECOVERY OF PETROLEUM PRODUCT SPILLS AT ALL TIMES. IF A REPORTABLE AMOUNT OF SEDIMENT LADEN WATER OR OTHER POLLUTANT IS ALLOWED TO LEAVE THE SITE, THE CONTRACTOR IS OBLIGATED TO NOTIFY IDEM'S SPILL LINE AT (317) 233-7745 WITHIN 24 HOURS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FINES AND ANY LIABILITY ASSOCIATED WITH SUCH AN EVENT. SEDIMENT LADEN WATER. WHICH OTHERWISE WOULD FLOW FROM THE PROJECT SITE, SHALL BE TREATED BY EROSION AND SEDIMENT CONTROL MEASURES APPROPRIATE TO MINIMIZE SEDIMENTATION. ALL WATER (INCLUDING STORMWATER, GROUNDWATER, OR ANY OTHER WATER) THAT LEAVES THE CONSTRUCTION SITE MUST HAVE A TOTAL SUSPENDED SOLIDS LEVEL OF LESS THAN 50 PARTS PER MILLION OR HAVE NO VISIBLE SEDIMENT. THIS CAN BE DETERMINED ON SITE BY TAKING A SETTLEABLE SOLIDS SAMPLE WITH AN IMHOFF CONE WITH A RESULT OF LESS THAN 0.5 ML PER LITER. IT SHOULD BE EXPECTED THAT ALL MATERIALS NECESSARY TO CONSTRUCT THE PROPOSED SITE IMPROVEMENTS WILL BE ENCOUNTERED ON SITE AT ONE TIME OR ANOTHER. ALL MATERIALS THAT APPEAR ON SITE WILL BE ACCOMPANIED WITH MSDS SHEETS IN ACCORDANCE WITH OSHA GUIDELINES AND THE CODE OF FEDERAL REGULATION (CFR). MSDS SHEETS PROVIDE AMONG OTHER THINGS. THE PROCEDURES FOR CLEAN-UP OF SPILLS AND LEAKS. REFER TO ITEM B1 ABOVE FOR ADDITIONAL INFORMATION.

B15. MATERIAL HANDLING PROCEDURES ASSOCIATE WITH CONSTRUCTION ACTIVITY: REFER TO B14 IN THIS NARRATIVE.

THE DETAILS.

B6. RUN-OFF CONTROL MEASURES: RUN-OFF CONTROL MEASURES INCLUDE TEMPORARY DIVERSIONS.

SECTION C - POST CONSTRUCTION COMPONENT

C1. DESCRIPTION OF POLLUTANTS AND THEIR SOURCES ASSOCIATED WITH WITH THE PROPOSED LAND USE: THE MAIN POST CONSTRUCTION POLLUTANTS MAY COME FROM AUTOMOTIVE USE.

C2. DESCRIPTION OF PROPOSED POST CONSTRUCTION STORMWATER MEASURES: THE CATCH BASINS ARE PROPOSED TO CAPTURE AND TRAP POLLUTED SEDIMENT. THE CATCH BASINS WILL BE REGULARLY CLEANED AND MAINTAINED BY THE MONROE COUNTY HIGHWAY DEPARTMENT.

C3. PLAN DETAILS FOR EACH STORMWATER MEASURE: CATCH BASINS ARE DETAILS ON SHEET CO(4).

C4. SEQUENCE DESCRIBING STORMWATER QUALITY MEASURE IMPLEMENTATION:

SEE SEQUENCE BELOW ON THIS SHEET

C5. DESCRIPTION OF MAINTENANCE GUIDELINES FOR PROPOSED POST CONSTRUCTION WATER QUALITY MEASURES: SEE THE MAINTENANCE NOTE AND GUIDELINES FOR EACH POST CONSTRUCTION MEASURE WITHIN

C6. ENTITY THAT WILL BE RESPONSIBLE FOR OPERATION AND MAINTENCACE OF THE POST-CONSTRUCTION STORMWATER MEASURES: DEVELOPER

Monroe County, Indiana CaD-Caneyville silt loam, 12 to 18 percent slopes Map Unit Setting National map unit symbol: 2z8ys Elevation: 500 to 960 feet Mean annual precipitation: 37 to 52 inches Mean annual air temperature: 43 to 63 degrees F Frost-free period: 173 to 212 days Farmland classification: Not prime farmland Map Unit Composition Caneyville and similar soils: 85 percent Minor components: 15 percent Estimates are based on observations, descriptions, and transects of the mapunit. Description of Caneyville Setting Landform: Hills Landform position (two-dimensional): Backslope Landform position (three-dimensional): Side slope Down-slope shape: Convex Across-slope shape: Linear Parent material: Clayey residuum weathered from limestone Typical profile Ap - 0 to 5 inches: silt loam Bt -5 to 35 inches: clay R - 35 to 45 inches: bedrock Properties and aualities Slope: 12 to 18 percent Depth to restrictive feature: 20 to 40 inches to lithic bedrock Drainage class: Well drained Runoff class: Medium Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr) Depth to water table: More than 80 inches Frequency of flooding: None Frequency of ponding: None Available water supply, 0 to 60 inches: Low (about 4.9 inches) Interpretive groups Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 4e Hydrologic Soil Group: C Ecological site: F122XY002KY - Deep Well Drained Limestone Uplands Other vegetative classification: Trees/Timber (Woody Vegetation)

Hydric soil ratina: No

Monroe County, Indiana CrC-Crider silt loam, 6 to 12 percent slopes Map Unit Setting National map unit symbol: 2vp3r Elevation: 440 to 990 feet Mean annual precipitation: 37 to 58 inches Mean annual air temperature: 43 to 68 degrees F Frost-free period: 150 to 212 days Farmland classification: Not prime farmland Map Unit Composition Crider and similar soils: 80 percent Minor components: 20 percent Estimates are based on observations, descriptions, and transects of the mapunit. Description of Crider Setting Landform: Hills Landform position (two-dimensional): Summit, shoulder Landform position (three-dimensional): Side slope Down-slope shape: Convex Across-slope shape: Linear Parent material: Fine-silty noncalcareous loess over clayey residuum weathered from limestone Typical profile Ap - 0 to 7 inches: silt loam Bt1 - 7 to 36 inches: silty clay loam 2Bt2 - 36 to 80 inches: clay Properties and qualities Slope: 6 to 12 percent Depth to restrictive feature: More than 80 inches Drainage class: Well drained Runoff class: Medium Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr) Depth to water table: More than 80 inches Frequency of flooding: None Frequency of ponding: None Available water supply, 0 to 60 inches: Moderate (about 8.5 inches) Interpretive groups Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 3e Hydrologic Soil Group: B Ecological site: F122XY004KY – Loess Veneered Uplands Other vegetative classification: Trees/Timber (Woody Vegetation) Hydric soil ratina: No

EROSION CONTROL SEQUENCE

1. CONTACT THE MONROE COUNTY PLANNING DEPARTMENT AT: (812) 349-2560 FOR A PRE-CONSTRUCTION MEETING. NOTIFY COUNTY OF AREAS TO START WORK FIRST.

- 2. INSTALL CONSTRUCTION ENTRANCES AS SHOWN ON PLANS
- 3. PRIOR TO ANY EARTH MOVING PLACE SILTATION FENCE ALONG THE DOWNSTREAM SIDE OF ALL GRADING ACTIVITY.
- 4. REMOVE ANY VEGETATION THAT PROHIBITS THE CONSTRUCTION OF THIS SITE.

5. STRIP TOP SOIL FROM ALL AREAS TO BE DISTURBED BY CONSTRUCTION AND STOCK PILE AT LOCATIONS ABOVE SILT FENCE. SEED WITH TEMPORARY SEED MIXTURE TYPE T, IMMEDIATELY.

6. MAINTAIN SILT FENCE DURING CONSTRUCTION AND KEEP CLEAR OF DEBRIS.

7. CONSTRUCT THE TEMPORARY SEDIMENT POND BEFORE THE PERMANENT STORMWATER SYSTEM IS IN PLACE.

8. PERFORM CONSTRUCTION ACTIVITIES AS SHOWN ON THE PLANS. DO NOT DISTURB TURF AREAS OUTSIDE OF CONSTRUCTION LIMITS SO THAT TURF ACTS AS A VEGETATIVE FILTER STRIP.

9. ALL EROSION CONTROL STRUCTURES SHALL BE KEPT IN WORKING ORDER AND INSPECTED UPON COMPLETION OF EVERY RAIN EVENT. ADD ADDITIONAL MEASURES WHEN NECESSARY.

10. UPON COMPLETION OF CONSTRUCTION OF ALL IMPROVEMENTS REDISTRIBUTE TOP SOIL TO ALL PROPOSED GRASSED AREAS.

11. MULCH SEED ALL DISTURBED AREAS IMMEDIATELY UPON COMPLETION OF ALL EARTHMOVING AND UNDERGROUND UTILITY WORK IN ACCORDANCE WITH INDOT SS-621 SEED MIXTURE TYPE U.

12. FERTILIZE AND WATER SEEDED AREAS UNTIL MATURE TURF IS ESTABLISHED.

13. REMOVE ALL TEMPORARY EROSION CONTROL MEASURES UPON THE ESTABLISHMENT OF THE TURF.

14. CALL DANA WILKINSON AT (812) 349-2960 TO SCHEDULE A POST-CONSTRUCTION MEETING TO VERIFY ALL TURF IS ESTABLISHED BEFORE REMOVAL OF TEMPORARY EROSION CONTROL MEASURES.

15. REMOVE THE TEMPORARY COMPONENTS FOR WATER QUALITY AND OTHER COMPONENTS OF THE TEMPORARY PLAN.

16. FILL IN SEDIMENT POND AND PLACE PERMANENT SEEDING IN THESE AREAS. CONTRACTOR TO ENSURE PERMANENT SEEDING BECOMES MATURE VEGETATION SO ONGOING EROSION DOES NOT OCCUR





SOILS MAP SCALE: 1"=1,000'



Monroe County, Indiana Hd-Havmond silt loam, frequently flooded Map Unit Setting National map unit symbol: kz8l Elevation: 340 to 1.020 feet Mean annual precipitation: 40 to 46 inches Mean annual air temperature: 52 to 57 degrees F Frost-free period: 170 to 200 days Farmland classification: Prime farmland if protected from flooding or not frequently flooded during the growing season Map Unit Composition Haymond and similar soils: 97 percent Minor components: 3 percent Estimates are based on observations, descriptions, and transects of the mapunit. Description of Haymond Setting Landform: Flood plains, natural levees Landform position (two-dimensional): Summit Landform position (three-dimensional): Interfluve Down-slope shape: Linear Across-slope shape: Linear Parent material: Silty over loamy alluvium Typical profile Ap - 0 to 10 inches: silt loam Bw - 10 to 44 inches: silt loam C - 44 to 60 inches: stratified silt loam to sandy loam to Ioam Properties and qualities Slope: 0 to 2 percent Depth to restrictive feature: More than 80 inches Drainage class: Well drained Runoff class: Very low Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr) Depth to water table: More than 80 inches Frequency of flooding: None, Frequent Frequency of ponding: None Available water supply, 0 to 60 inches: Very high (about 12.5 inches) Interpretive groups Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 2w Hydrologic Soil Group: B Other vegetative classification: Trees/Timber (Woody Vegetation) Hydric soil rating: No

NOTE TO CONTRACTOR

CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS & DEPTHS AND NOTIFY ENGINEER OF ANY INACCURACIES IN LOCATION OR ELEVATION OR ANY CONFLICTS PRIOR TO & AFTER ANY EXCAVATION. NO PAYMENT SHALL BE MADE TO CONTRACTOR FOR UTILITY DESTRUCTION OR UNDERGROUND CHANGES REQUIRED DUE TO CONFLICTING ELEVATIONS.

