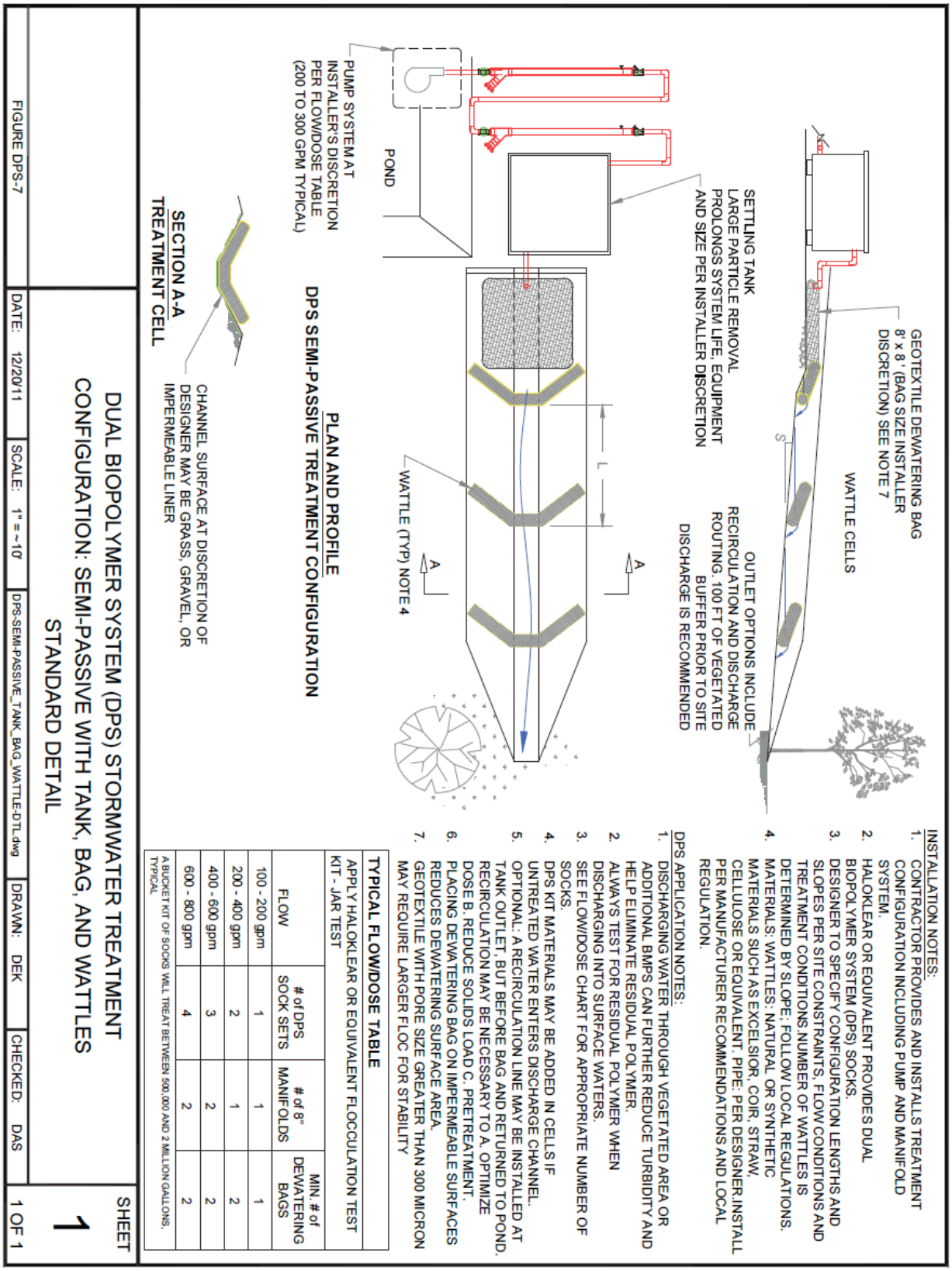


INSTALLATION NOTES:

1. CONTRACTOR PROVIDES AND INSTALLS TREATMENT CONFIGURATION INCLUDING PUMP AND MANIFOLD SYSTEM.
2. HALOKLEAR OR EQUIVALENT PROVIDES DUAL BIOPOLYMER SYSTEM (DPS) SOCKS.
3. DESIGNER TO SPECIFY CONFIGURATION LENGTHS AND SLOPES PER SITE CONSTRAINTS, FLOW CONDITIONS AND TREATMENT CONDITIONS.NUMBER OF WATTLES IS DETERMINED BY SLOPE; FOLLOW LOCAL REGULATIONS.
4. MATERIALS: WATTLES: NATURAL OR SYNTHETIC MATERIALS SUCH AS EXCELSIOR, COIR, STRAW, CELLULOSE OR EQUIVALENT. PIPE: PER DESIGNER.INSTALL PER MANUFACTURER RECOMMENDATIONS AND LOCAL REGULATION.

DPS APPLICATION NOTES:

1. DISCHARGING WATER THROUGH VEGETATED AREA OR ADDITIONAL BMPS CAN FURTHER REDUCE TURBIDITY AND HELP ELIMINATE RESIDUAL POLYMER.
2. ALWAYS TEST FOR RESIDUAL POLYMER WHEN DISCHARGING INTO SURFACE WATERS.
3. SEE FLOW/DOSE CHART FOR APPROPRIATE NUMBER OF SOCKS.
4. DPS KIT MATERIALS MAY BE ADDED IN CELLS IF UNTREATED WATER ENTERS DISCHARGE CHANNEL.
5. OPTIONAL: A RECIRCULATION LINE MAY BE INSTALLED AT TANK OUTLET, BUT BEFORE BAG AND RETURNED TO POND. RECIRCULATION MAY BE NECESSARY TO A. OPTIMIZE DOSE B. REDUCE SOLIDS LOAD C. PRETREATMENT.
6. PLACING DEWATERING BAG ON IMPERMEABLE SURFACES REDUCES DEWATERING SURFACE AREA.
7. GEOTEXTILE WITH PORE SIZE GREATER THAN 300 MICRON MAY REQUIRE LARGER FLOC FOR STABILITY

TYPICAL FLOW/DOSE TABLE

APPLY HALOKLEAR OR EQUIVALENT FLOCCULATION TEST KIT - JAR TEST

FLOW	# of DPS SOCK SETS	# of 8" MANIFOLDS	MIN. # of DEWATERING BAGS
100 - 200 gpm	1	1	1
200 - 400 gpm	2	1	2
400 - 600 gpm	3	2	2
600 - 800 gpm	4	2	2

A BUCKET KIT OF SOCKS WILL TREAT BETWEEN 500,000 AND 2 MILLION GALLONS, TYPICAL

DUAL BIOPOLYMER SYSTEM (DPS) STORMWATER TREATMENT CONFIGURATION: SEMI-PASSIVE WITH TANK, BAG, AND WATTLES STANDARD DETAIL

FIGURE DPS-7	DATE: 12/20/11	SCALE: 1" = ~10'	DPS-SEMI-PASSIVE_TANK_BAG_WATTLE-DTL.dwg	DRAWN: DEK	CHECKED: DAS	SHEET 1 OF 1

Figure AIII-38: Dual Biopolymer (DPS): with Tank, Bag and Wattles.

Active Treatment of Turbid Water Utilizing a Liquid Dual Polymer System with Pre-Filtration and Sand Filtration

WHAT IS ITS PURPOSE?

To clean construction storm water from a pond using an active system prior to discharge into a regulated and/or high quality water body.

PLEASE NOTE: These systems are designed for site specifications.

WHERE AND HOW IS IT COMMONLY USED? (SEE FIGURE DPS-8)

- On a stream of construction run off to treat the water prior to discharge

WHEN SHOULD IT BE INSTALLED?

- Before construction activities begin
- While construction activities are occurring
- To treat water stored on site
- To treat water when larger amounts of sediment load are present
- After project completion to treat dirty water stored on site
- In front of remediation equipment such as carbon filters, etc.
- When a very high quality effluent is required
- When precise dosing of treatment chemicals is required

WHEN SHOULD IT NOT BE INSTALLED?

- When power is not available
- If truck access to the area to service system is not possible

WHAT NEEDS TO BE INSPECTED?

- Is there excessive sediment loading in the storage structure?
- Are the chemical-feed pumps operating correctly?
- Do the chemical storage vessels have adequate product?
- Is the effluent water from the system of sufficient clarity?
- Does the water meet all effluent criteria?
- Does the residual water test show any remaining polymer in the effluent water?

WHAT MAINTENANCE ACTIVITIES CAN BE EXPECTED?

- Removal of sediment from the storage structure
- Maintaining operation of polymer feed pumps
- Changing of polymer storage vessels
- Maintenance of instrumentation
- Monitoring sand filter function to include changing of sand if needed.

NOTES

- Polymers in general should not be directly released into civic storm water systems or natural watercourses.
- Discharging water through vegetated areas or additional BMP's can further reduce turbidity.
- Filtrate can be collected for secondary treatment (optional).
- Biopolymers will completely degrade with enzymatic action.

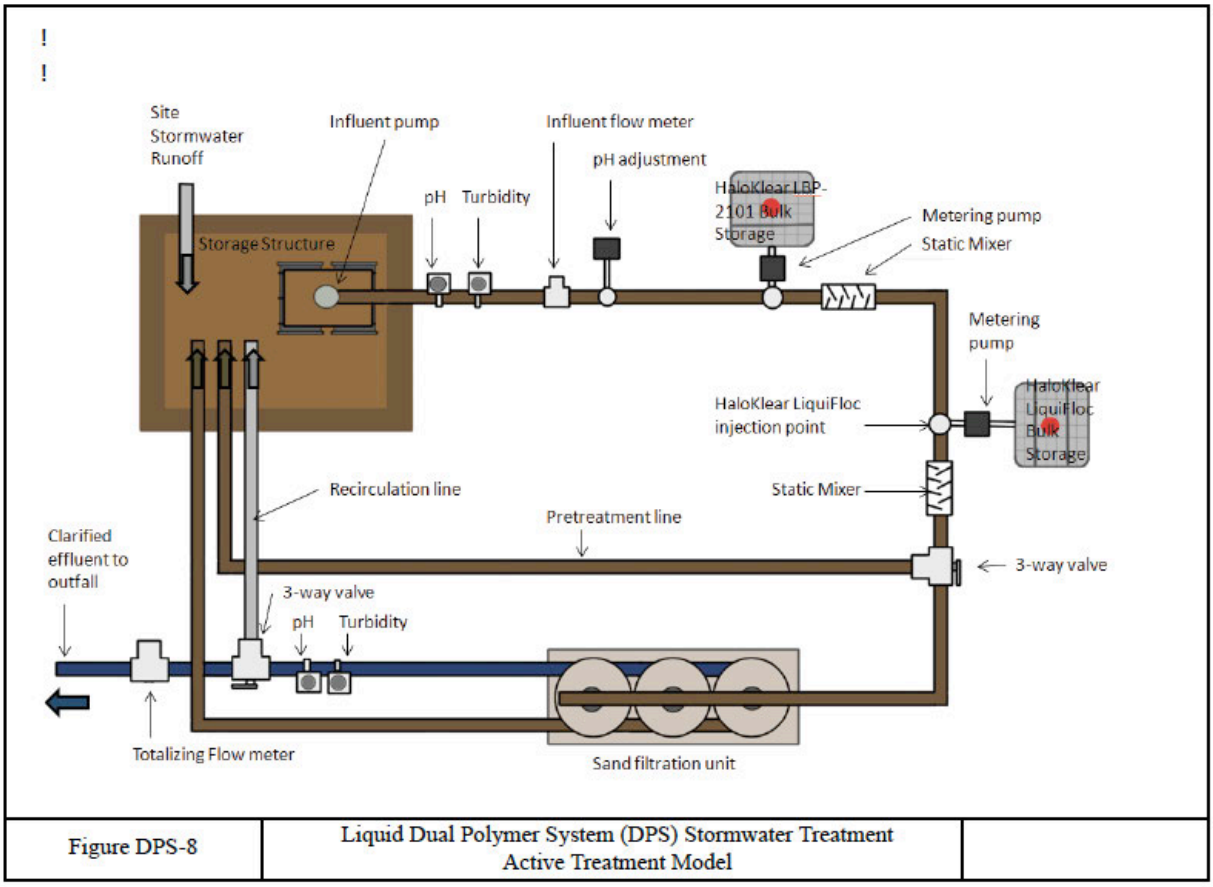


Figure DPS-8	Liquid Dual Polymer System (DPS) Stormwater Treatment Active Treatment Model	

Figure AIII-39: Liquid Dual Biopolymer (DPS): Active Treatment Model.

Semi-Passive Treatment of Turbid Water Utilizing a Liquid Dual Polymer System and Dewatering Bags

WHAT IS ITS PURPOSE?

To clean construction stormwater from a pond using a passive system prior to discharge into a regulated and/or high quality water body

WHERE AND HOW IS IT COMMONLY USED? (SEE FIGURE DPS-2)

- On a stream of construction run off to treat the water prior to discharge

WHEN SHOULD IT BE INSTALLED?

- When a high quality effluent is required
- Before construction activities begin
- While construction activities are occurring
- To treat water stored on site
- To treat water when larger amounts of sediment load are present
- After project completion to clean dirty water stored on site

WHEN SHOULD IT NOT BE INSTALLED?

- When power is not available
- If truck access to the area to deliver chemicals is not possible

WHAT NEEDS TO BE INSPECTED?

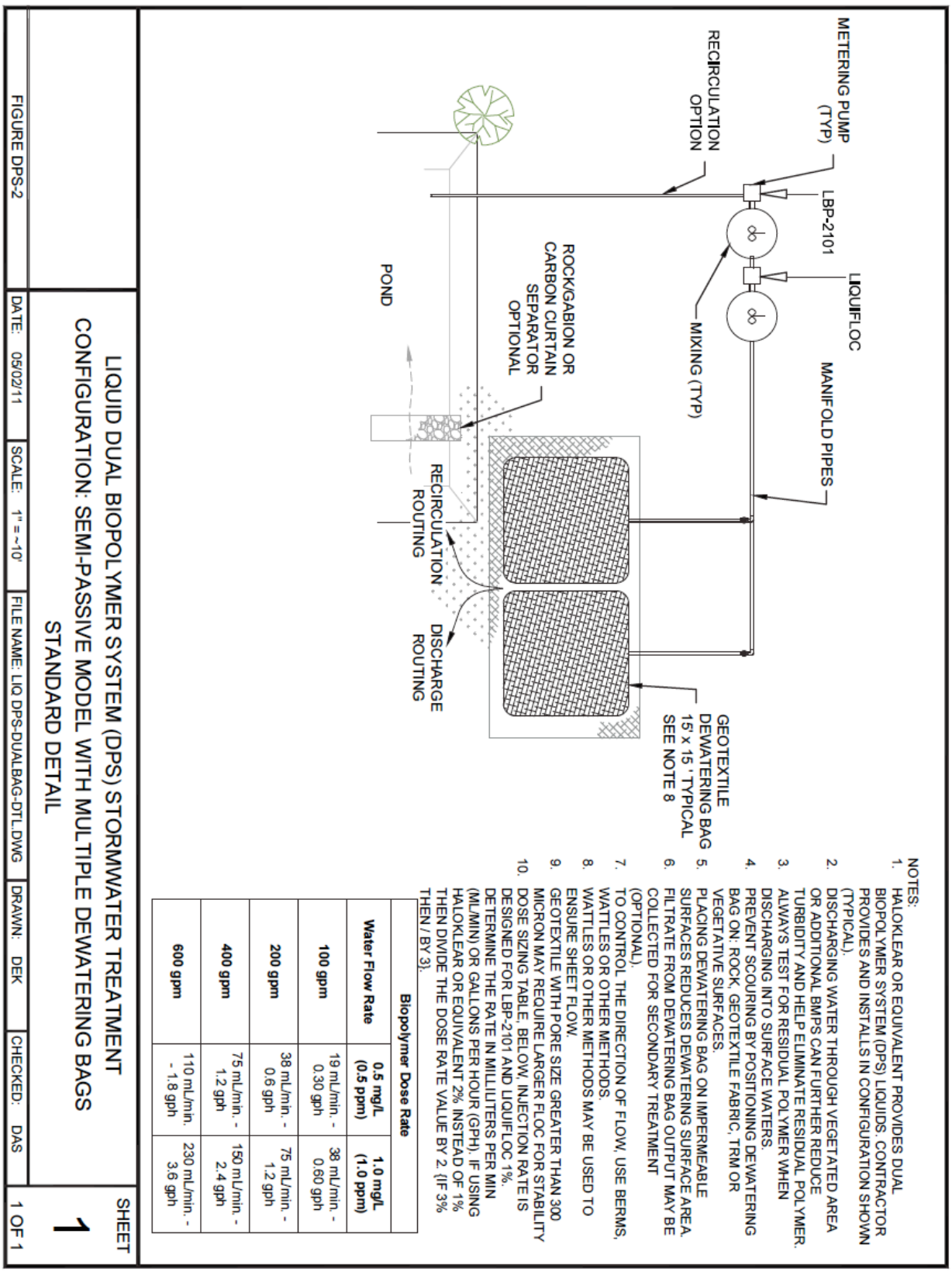
- Is there excessive sediment loading in the pond?
- Are the chemical-feed pumps operating correctly?
- Polymer dose rate jar testing for dose optimization (see chart below)
- Is the effluent water from the system of sufficient clarity?

WHAT MAINTENANCE ACTIVITIES CAN BE EXPECTED?

- Removal of sediment from the feed pond
- Maintaining operation of polymer feed pumps
- Maintaining sufficient quantity of polymer Changing of dewatering bag

NOTES

- Polymers in general should not be directly released into civic stormwater systems or natural watercourses.
- Discharging water through vegetated areas or additional BMP's can further reduce turbidity. Filtrate can be collected for secondary treatment (optional).
- Dewatering bags should be placed on rock, geotextile fabric or vegetative surfaces.
- Biopolymers will completely degrade with enzymatic action.



NOTES:

1. HALOKLEAR OR EQUIVALENT PROVIDES DUAL BIOPOLYMER SYSTEM (DPS) LIQUIDS. CONTRACTOR PROVIDES AND INSTALLS IN CONFIGURATION SHOWN (TYPICAL).
2. DISCHARGING WATER THROUGH VEGETATED AREA OR ADDITIONAL BMPS CAN FURTHER REDUCE TURBIDITY AND HELP ELIMINATE RESIDUAL POLYMER.
3. ALWAYS TEST FOR RESIDUAL POLYMER WHEN DISCHARGING INTO SURFACE WATERS.
4. PREVENT SCOURING BY POSITIONING DEWATERING BAG ON: ROCK, GEOTEXTILE FABRIC, TRM OR VEGETATIVE SURFACES.
5. PLACING DEWATERING BAG ON IMPERMEABLE SURFACES REDUCES DEWATERING SURFACE AREA.
6. FILTRATE FROM DEWATERING BAG OUTPUT MAY BE COLLECTED FOR SECONDARY TREATMENT (OPTIONAL).
7. TO CONTROL THE DIRECTION OF FLOW, USE BERMS, WATTLES OR OTHER METHODS.
8. WATTLES OR OTHER METHODS MAY BE USED TO ENSURE SHEET FLOW.
9. GEOTEXTILE WITH PORE SIZE GREATER THAN 300 MICRON MAY REQUIRE LARGER FLOC FOR STABILITY
10. DOSE SIZING TABLE, BELOW, INJECTION RATE IS DESIGNED FOR LBP-2101 AND LIQUIFLOC 1%. DETERMINE THE RATE IN MILLILITERS PER MIN (ML/MIN) OR GALLONS PER HOUR (GPH). IF USING HALOKLEAR OR EQUIVALENT 2% INSTEAD OF 1% THEN DIVIDE THE DOSE RATE VALUE BY 2. (IF 3% THEN / BY 3).

Biopolymer Dose Rate		
Water Flow Rate	**0.5 mg/L (0.5 ppm)**	**1.0 mg/L (1.0 ppm)**
100 gpm	19 mL/min. - 0.30 gph	38 mL/min. - 0.60 gph
200 gpm	38 mL/min. - 0.6 gph	75 mL/min. - 1.2 gph
400 gpm	75 mL/min. - 1.2 gph	150 mL/min. - 2.4 gph
600 gpm	110 mL/min. - 1.8 gph	230 mL/min. - 3.6 gph

LIQUID DUAL BIOPOLYMER SYSTEM (DPS) STORMWATER TREATMENT CONFIGURATION: SEMI-PASSIVE MODEL WITH MULTIPLE DEWATERING BAGS STANDARD DETAIL

SHEET 1

FIGURE DPS-2	DATE: 05/02/11	SCALE: 1" = ~10'	FILE NAME: LIQ DPS-DUALBAG-DTL.DWG	DRAWN: DEK	CHECKED: DAS	1 OF 1

Figure AIII-40: Liquid Dual Biopolymer (DPS): with Multiple Dewatering Bags.

REFERENCES

1. Alabama Handbook, Practices for Erosion and Sediment Control, Chapter 9 (1993), "Anionic Polyacrylamide Erosion Control (PAM)"
2. Applied Polymer Systems, Inc., Acute and Chronic Toxicity Testing, MACTEC Engineering, 2003.
3. Applied Polymer Systems, Inc., Case History Data Base, Hydrograss Technologies Case File, South Hadley, MA Spring 2006a.
4. Applied Polymer Systems, Inc., Case History Data Base, Hydrograss Technologies Case File, Greenbush Corridor, MA Spring 2006b.
5. Brezonik, P.L. (1984). "Trophic State Indices: Rationale for Multivariate Approaches." In Lake and Reservoir Management, pp. 427-430, EPA-440/5-84-001.
6. Carter, O. C.,Jr., Schiener, BJ. "Removal of Toxic Metals From and Industrial Wastewater Using Flocculants. Fluid/Particle Separation Journal. Vol. 4, No. 4. December 1991.
7. Chang, S.C.., and Jackson, J.L. (1957). A Fractionation of Soil Phosphorus.≅ Soi. Sci., 84, 133-144.
8. Chastain, J. P., Matias B. Vanotti, M. M. Wingfield. "Effectiveness of Liquid-Solid Separation for Treatment of Slushed Dairy Manure: A Case Study." Tektran. December 2000. USDA: Agricultural Research Service. 29 Jan. 2004.
9. Cooke, G.D., and Kennedy, R.H. (1981). Precipitation and Inactivation of Phosphorus as a Lake Restoration Technique. EPA-600/3-81-012.
10. Erwin, L, "Theory of Laminar Mixing" Polym. Eng. Sci.18, 1044 (1978)
11. Flanagan, D. and Canady, N. (2006). "Use of Polyacrylamide in Simulated Land Application of Lagoon Effluent: Part II: Nutrient Loss, Transactions of the ASABE, 49(5): 1371-1381.
12. Garrison, P.J., and Knauer, D.J. (1984). "Long-Term Evaluation of Three Alum Treated Lakes." In Lake and Reservoir Management, pp. 513-517. EPA-440/5-84-001.
13. Georgia Soil Water Conservation Commission, Manual for Erosion and Sedimentation Control in Georgia, Fifth Edition, 2000.
14. Gowdy, W., Hanna, J. and Iwinski, S.R., (2006). "Technological Solutions for Erosion Control and Water Clarification using Polyacrylamide (PAM) and PAM Blends." Remediation Technology Symposium, Banff, Alberta, October 2006.
15. Green, Steven V and Stott D.E., Polyacrylamide: "A Review of the Use, Effectiveness, and Cost of a Soil Erosion Control Amendment", Selected papers from the 10th International Soil Conservation Organization Meeting held May 24-29, 1999 at Purdue University, Pages 384-389.
16. Harper, H.H. (December 1990). "Long-Term Performance Evaluation of the Alum Stormwater Treatment System at Lake Ella, Florida." Final Report submitted to the Florida Department of Environmental Regulation, Project WM339.
17. Iwinski, Steven R. "Erosion Control, Acid Rock Drainage Mitigation and Prevention Using PAM, a Co-Polymer of Polyacrylamide." Admiralty Island National Monument. Juneau, Alaska. May 1996.
18. Iwinski, Steven R., Stein, Ethan A., Condon, Peter D. "The Effects of Polymer on Metal Leaching in ARD Potential Rock." Admiralty Island National Monument. Juneau, Alaska. 29 Aug. 1996.
19. Iwinski, Steven R. "Treatment of Mine and Mill Water." Alaska Miners Association. 1995. Conference Juneau: Abstracts of Professional Papers. No. 18. Pg. 47. April 19-21. 1995.
20. Jernelov, A. (1970). Phosphate Reduction in Lakes by Precipitation with Aluminum Sulfate. 5th

International Water Pollution Research Conference. New York: Pergamon Press.

21. McLaughlin, R.A., Hayes, S.A., and Bartholomew, N., "Innovations (Old and New) for Improving Erosion, Sediment, and Turbidity Control", 2003 International Erosion Control Association Meeting, Las Vegas, NV.
22. Orme S., and Kegley S., PAN Pesticide Data Base, Pesticide Action Network, North America, San Francisco, CA, 2004.
23. Price and Company, Inc., (Case File) Big Rock Point Restoration, Charleoix, MI, Nov. 4, 2004.
24. Price and Company, Inc., (Case File) Oak Park Washtenaw Heights, Ann Arbor, MI, Feb. 3, 2005.
25. Sojka, R. E., Lentz, R. D., Bjornberg, D. J., Aase, J. K. "The PAMphlet." Northwest Irrigation and Soils Research Lab. USDA: Agricultural Research Service. 26 Aug. 2003.
26. Virginia Erosion & Sediment Control Handbook, E&SC Technical Bulletin #2, "Application of Anionic Polyacrylamide for Soil Stabilization and Stormwater Management"
27. Yoon, Tae H., Hichung Moon, Yeong J. Park, Kyoung K. Pask. "Investigation of Metal Binding Sites on Soil Fulvic Acid Using Eu(III) Luminescence Spectroscopy." Environmental Science Technology. 1994. Vol. 28. No. 12. Pg. 2139 – 2146. 1994.

APPENDIX IV
INSPECTION AND SCHEDULING FORMS

Site Name:_____ Date of Evaluation:_____ Page ____ of ____

Completed by: _____ Existing Weather Conditions:_____

Rainfall Event	Date Began	Duration (Hours)	Amount (Inches)	Rainfall Event	Date Began	Duration (Hours)	Amount (Inches)	Rainfall Event	Date Began	Duration (Hours)	Amount (Inches)
1				2				3			

SWPPP Information	YES	NO	N/A	Comments
1. For a nonlinear project, is a sign or other notice: a) Posted conspicuously near the main entrance of the construction site or if not feasible, b) Posted in a local public building such as the town hall or public library For linear projects, is a sign or other notice posted at a publicly accessible location near the active construction project?				
√ Is a copy of the permit attached?				
√ Is the current location of the SWPPP and names and telephone numbers of a contact person for scheduling viewing times shown?				
2. Does a copy of the SWPPP and accompanying sediment and erosion control drawings exist on the construction site?				
√ Is the discharge permit on the construction site?				
√ Is the discharge permit acknowledgement letter on the construction site?				
√ Are the SWPPP and/or accompanying sediment and erosion control drawings updated and documented?				
3. Do inspection records exist on the construction sites?				
√ Has the frequency of inspections occurred as specified in the SWPPP?				
√ Have all previous inspection items been addressed and documented within seven (7) calendar days after an inspection?				
4. Do climatic records exist since the last inspection?				
BMP/Housekeeping Information				
5. Are offsite flows entering the construction site?				If yes, see attached detail report
6. Is there evidence of, or the potential for, increased pollutant (e.g., sediment, fuel, concrete waste, portable toilet waste, etc.) loading to enter the storm water conveyance system due to lack of maintenance or improper BMP installation?				If yes, see attached detail report
7. Do installation, repair and/or maintenance of sediment control BMPs need to occur?				If yes, see attached detail report
8. Do installation, repair and/or maintenance of erosion control BMPs need to occur?				If yes, see attached detail report
9. Is there evidence of sediment discharging off the construction site and onto downstream locations?				If yes, see attached detail report
10. Are vehicles tracking sediment off the construction site?				If yes, see attached detail report
11. If applicable, is soil, construction material, landscaping items, or other debris evident on the streets?				If yes, see attached detail report
12. Do locations exist where consideration of installing additional BMPs not found in the SWPPP should occur?				If yes, see attached detail report
13. Do locations exist where consideration of removing existing BMPs identified and shown in the SWPPP can occur?				If yes, see attached detail report
14. Does your site evaluation indicate a need to possibly update and document the SWPPP report and accompanying sediment and erosion control drawings within the next seven (7) days?				

Site Name:_____ Date of Evaluation:_____ Page ____ of ____

Completed by:_____

Detail Report:	Identify the problem and its location. If appropriate, describe (in general terms) what needs to be done. However, only if qualified (e.g., you are a designer) should you be mandating specific BMPs to install.	Date done (with initials)
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

_____ Date:_____

(Print Name) (Signature)

Title/Qualification of Inspector:_____

To be signed by a corporate officer **ONLY IF <u>NO INCIDENTS</u>** of non-compliance are found: I certify the construction site is in compliance with the SWPPP and any accompanying discharge permit(s) requirements:

_____ Date:_____

(Print Name) (Signature)

PROJECT: DATE:

COMPLETED BY:

SCHEDULE FOR _____ AND _____

Indicate by use of a bar line or symbols when sediment and erosion control measures will be installed or when other activities will be implemented. Use additional forms as necessary.

MONTH																									
WEEK	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
OVERLOT GRADING																									
CONSTRUCTION ACTIVITIES																									
RAINFALL CONTROL																									
STRUCTURAL:																									
Sediment Containment System																									
Continuous Berm Barriers																									
Bale Barriers																									
Silt Fence Barriers																									
Rock Barriers																									
Inlet/Curb Barriers																									
Vehicle Tracking Pad																									
Terracing																									
NON-STRUCTURAL:																									
Permanent Seed Planting																									
Temporary Seed Planting																									
Mulching/Sealant																									
Sod Installation																									
Hillside RECPs																									
Channels RECPs																									
Asphalt/Concrete Paving																									
WIND CONTROL																									
Soil Roughening																									
Perimeter Barrier																									
Additional Barriers																									
Vegetative Methods																									
Soil Binders																									
WEED CONTROL																									
INSPECTION/MAINTENANCE																									

Comments:

PROJECT: DATE:

COMPLETED BY:

SCHEDULE FOR _____ AND _____

Indicate by use of a bar line or symbols when sediment and erosion control measures will be installed or when other activities will be implemented. Use additional forms as necessary.

YEAR												
MONTH	1	2	3	4	5	6	7	8	9	10	11	12
OVERLOT GRADING												
CONSTRUCTION ACTIVITIES												
RAINFALL CONTROL												
STRUCTURAL:												
Sediment Containment System												
Continuous Berm Barriers												
Bale Barriers												
Silt Fence Barriers												
Rock Barriers												
Inlet/Curb Barriers												
Vehicle Tracking Pad												
Terracing												
NON-STRUCTURAL:												
Permanent Seed Planting												
Temporary Seed Planting												
Mulching/Sealant												
Sod Installation												
Hillside RECPs												
Channels RECPs												
Asphalt/Concrete Paving												
WIND CONTROL												
Soil Roughening												
Perimeter Barrier												
Additional Barriers												
Vegetative Methods												
Soil Sealant												
WEED CONTROL												
INSPECTION/MAINTENANCE												

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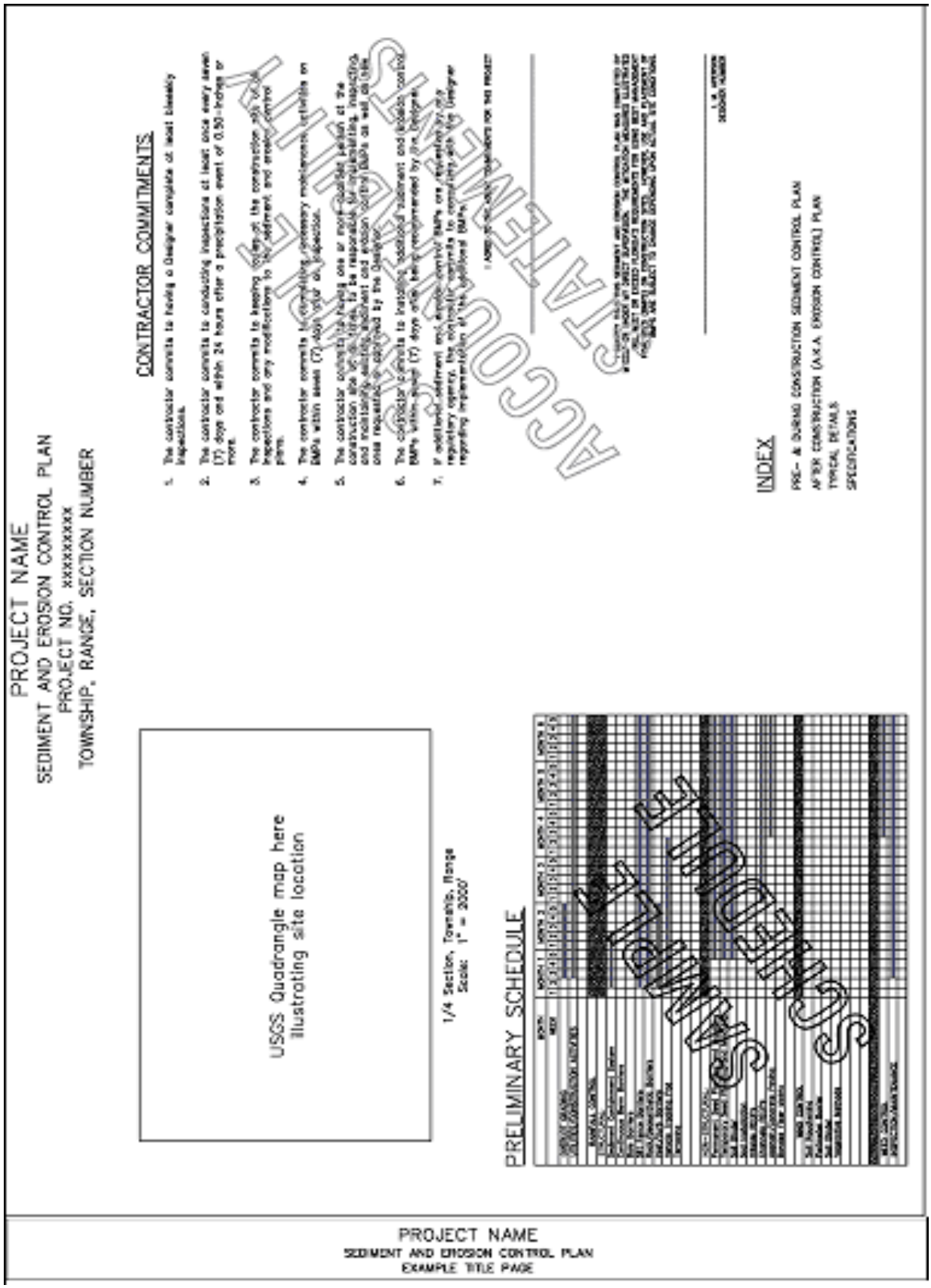
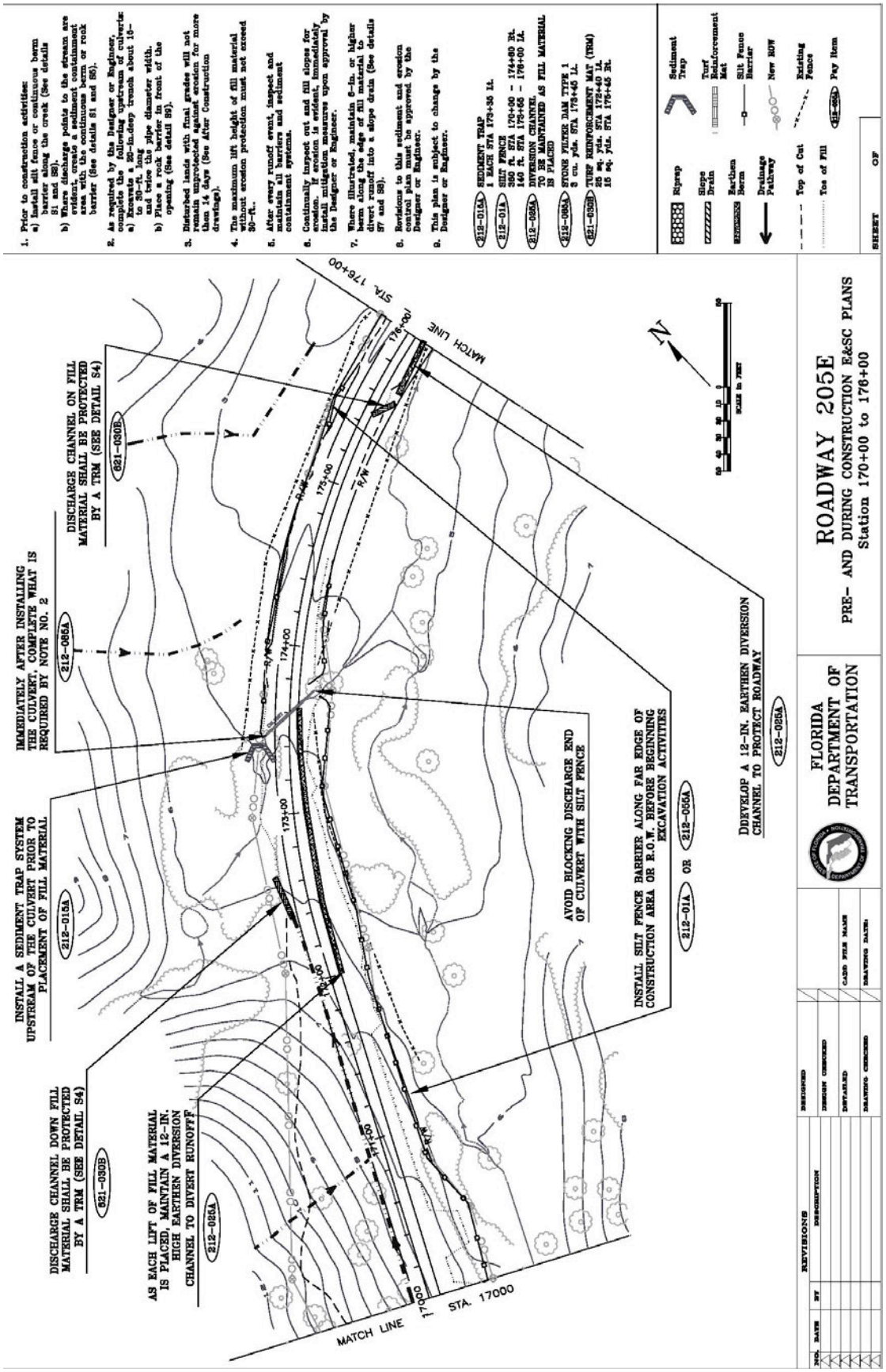
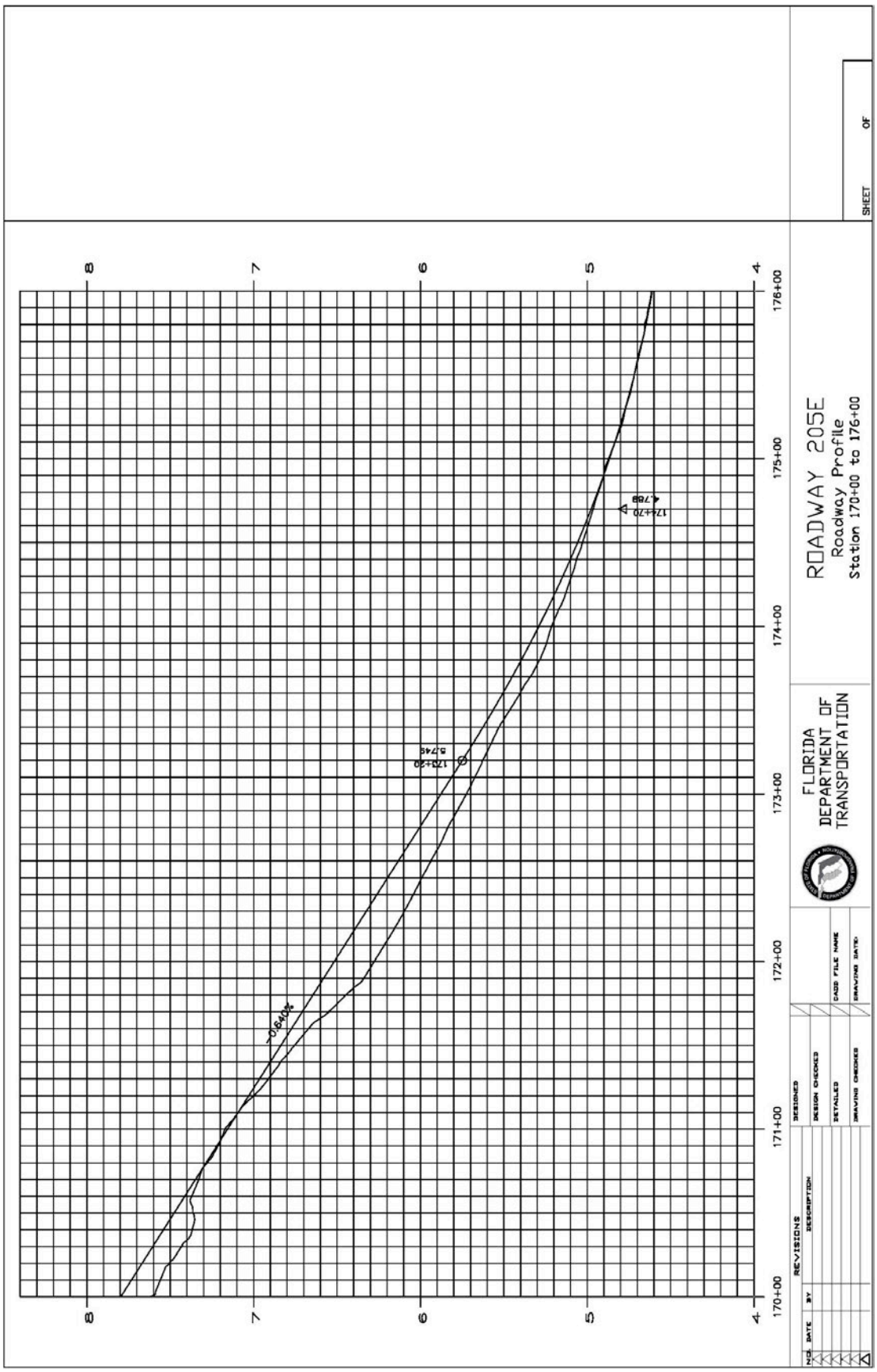
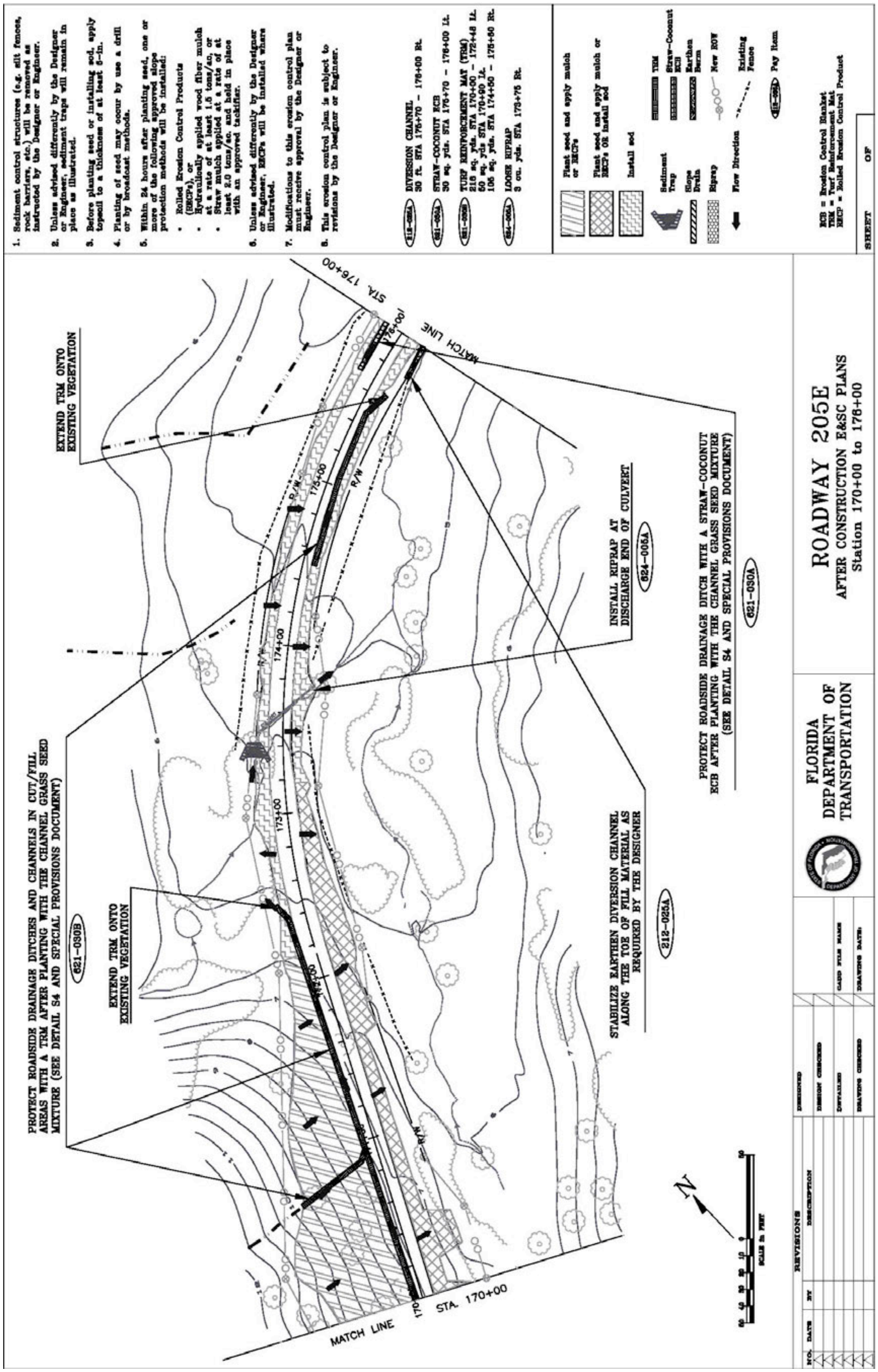
APPENDIX V
EXAMPLE PLANS AND DETAILS

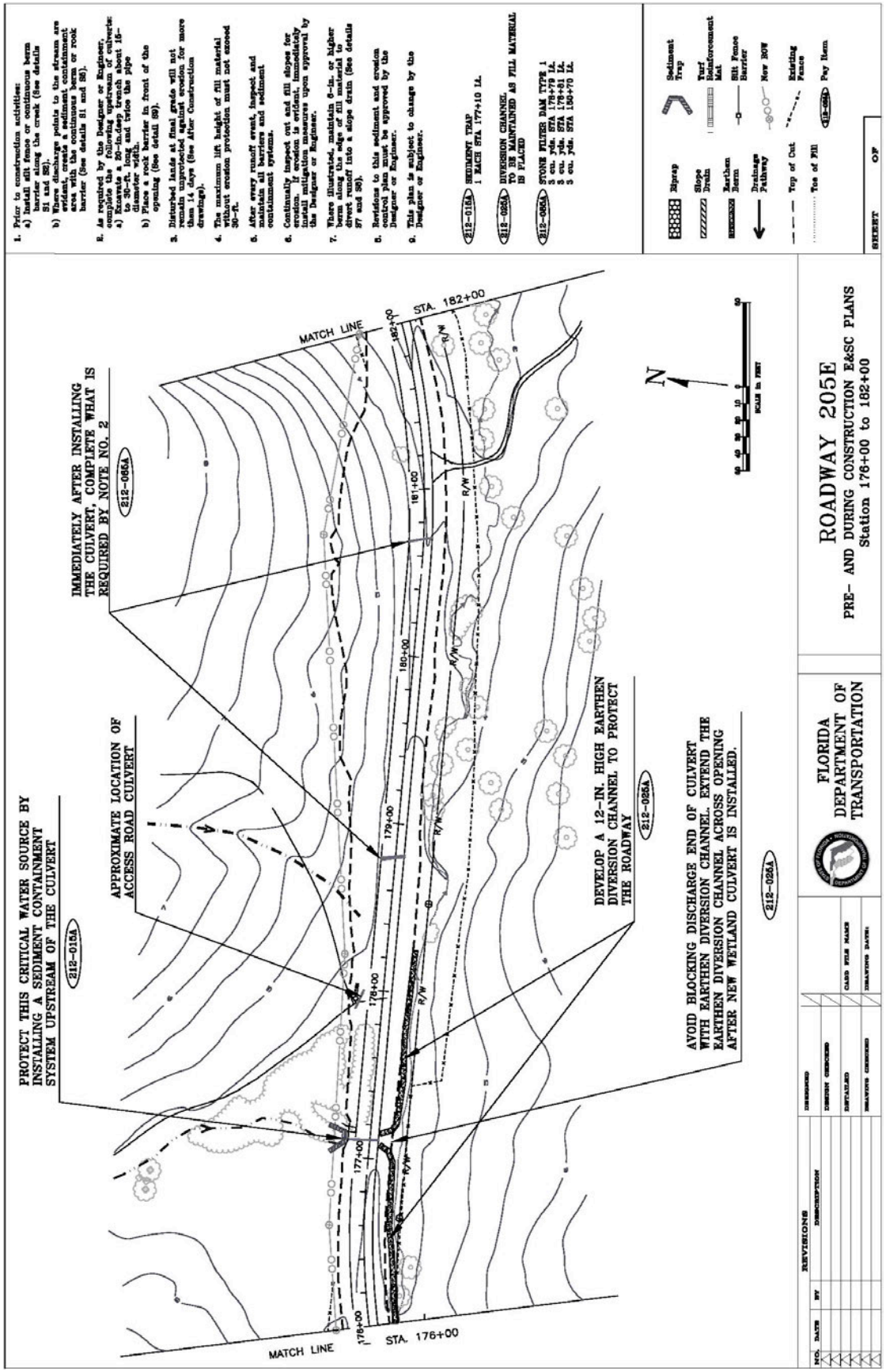


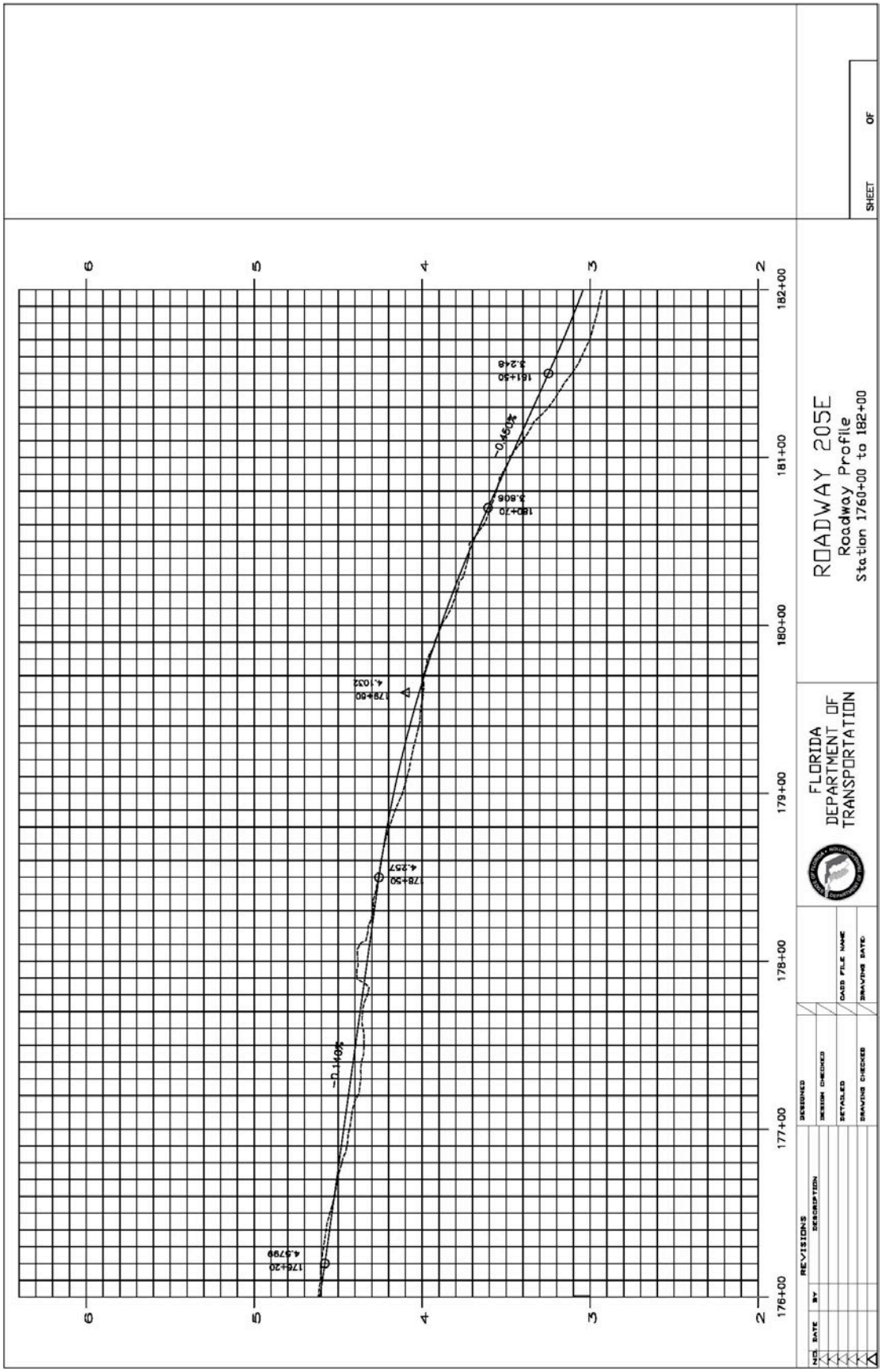
PROJECT NAME
SEDIMENT AND EROSION CONTROL PLAN
EXAMPLE TITLE PAGE


1. Prior to construction activities:
a) Install silt fence or continuous berm barrier along the creek (See details S1 and S5).
b) Where discharge points to the stream are not well vegetated, install sediment containment area with the continuous berm or rock barrier (See details S1 and S5).
2. As required by the Designer or Engineer, complete the following upstream of culverts:
a) Excavate a 50-in.deep trench about 10-30-ft. long.
and twice the pipe diameter width.
b) Place a rock barrier in front of the opening (See detail S5).
3. Disturbed lands with final grades will not remain inactive for more than 14 days (See After Construction drawings).
4. The maximum lift height of fill material without erosion protection must not exceed 30-ft..
5. After every runoff event, inspect and maintain all barriers and sediment containment systems.
6. Continually inspect cut and fill slopes for erosion. If erosion is evident, immediately install mitigation measures upon approval by the Designer or Engineer.
7. Where illustrated, maintain 6-in. or higher berm along the edge of fill material to divert runoff into t slope drain (See details S7 and S8).
8. Revisions to this sediment and erosion control plan must be approved by the Designer or Engineer.
9. This plan is subject to change by the Designer or Engineer.
212-01A SEDIMENT TRAP
1 EACH STA 173+35 Lt.
212-01B SILT FENCE
380 ft. STA 170+00 - 174+80 Lt.
140 ft. STA 175+65 - 176+00 Lt.
212-06A DIVERSION CHANNEL
TO BE MAINTAINED AS FILL MATERIAL IS PLACED
212-06A STONE FILTER DAM TYPE 1
5 cu. yds. STA 173+45 Lt.
621-03GB TURF REINFORCEMENT MAT (TRM)
25 sq. yds. STA 172+40 Lt.
15 sq. yds. STA 176+45 Lt.
Riprap
Sediment Trap
Slope Drain
Turf Reinforcement Mat
Earthen Berm
Silt Fence Barrier
Drainage Pathway
New ROW
Top of Cut
Existing Fence
Toe of Fill
Pay Item
SHEET OF
INSTALL A SEDIMENT TRAP SYSTEM UPSTREAM OF THE CULVERT PRIOR TO PLACEMENT OF FILL MATERIAL
212-01A
DISCHARGE CHANNEL DOWN FILL MATERIAL SHALL BE PROTECTED BY A TRM (SEE DETAIL S4)
621-03GB
212-06A
AS EACH LIFT OF FILL MATERIAL IS PLACED, MAINTAIN A 12-IN. HIGH EARTHEN DIVERSION CHANNEL TO DIVERT RUNOFF
MATCH LINE STA. 17000
IMMEDIATELY AFTER INSTALLING THE CULVERT, COMPLETE WHAT IS REQUIRED BY NOTE NO. 2
212-06A
DISCHARGE CHANNEL ON FILL MATERIAL SHALL BE PROTECTED BY A TRM (SEE DETAIL S4)
621-03GB
INSTALL SILT FENCE BARRIER ALONG FAR EDGE OF CONSTRUCTION AREA OR R.O.W. BEFORE BEGINNING EXCAVATION ACTIVITIES
212-01A OR 212-06A
AVOID BLOCKING DISCHARGE END OF CULVERT WITH SILT FENCE
DEVELOP A 12-IN. EARTHEN DIVERSION CHANNEL TO PROTECT ROADWAY
212-06A
MATCH LINE
STA. 176+00
R/W
173+00
174+00
175+00
176+00
N
SCALE in FEET
REVISIONS
NO. DATE BY DESCRIPTION
DESIGNED
DESIGN CHECKED
DETAILED
CADD FILE NAME
DRAWING CHECKED
DRAWING DATE:
FLORIDA DEPARTMENT OF TRANSPORTATION
ROADWAY 205E
PRE- AND DURING CONSTRUCTION E&SC PLANS
Station 170+00 to 176+00


ROADWAY 205E
Roadway Profile
Station 170+00 to 176+00
FLORIDA
DEPARTMENT OF
TRANSPORTATION
SHEET
OF
REVISIONS
NO
DATE
BY
DESCRIPTION
DESIGNED
DESIGN CHECKED
DETAILED
DRAWING CHECKED
CADD FILE NAME
DRAWING DATE:
170+00
171+00
172+00
173+00
174+00
175+00
176+00
4
5
6
7
8
-0.64%
173+20
5.74S
174+70
4.76S


ROADWAY 205E
AFTER CONSTRUCTION E&SC PLANS
Station 170+00 to 176+00
FLORIDA
DEPARTMENT OF
TRANSPORTATION
PROTECT ROADSIDE DRAINAGE DITCHES AND CHANNELS IN CUT/FILL AREAS WITH A TRM AFTER PLANTING WITH THE CHANNEL GRASS SEED MIXTURE (SEE DETAIL S4 AND SPECIAL PROVISIONS DOCUMENT)
621-030B
EXTEND TRM ONTO EXISTING VEGETATION
STABILIZE EARTHEN DIVERSION CHANNEL ALONG THE TOE OF FILL MATERIAL AS REQUIRED BY THE DESIGNER
212-025A
PROTECT ROADSIDE DRAINAGE DITCH WITH A STRAW-COCONUT ECB AFTER PLANTING WITH THE CHANNEL GRASS SEED MIXTURE (SEE DETAIL S4 AND SPECIAL PROVISIONS DOCUMENT)
621-030A
INSTALL RIPRAP AT DISCHARGE END OF CULVERT
624-005A
MATCH LINE
STA. 170+00
STA. 176+00
REVISIONS
ECB = Erosion Control Blanket
TRM = Turf Reinforcement Mat
RECP = Rolled Erosion Control Product
SHEET
OF


1. Prior to construction activities:
a) Install silt fence or continuous berm barrier along the creek (See details 81 and 82).
b) Where discharge points to the stream are evident, create a sediment containment area with a continuous berm or rock barrier (See details 81 and 85).
2. As required by the Designer or Engineer, complete the following upstream of culverts:
a) Excavate a sediment trap about 15- to 30-ft. long and twice the pipe diameter width.
b) Place a rock barrier in front of the opening (See detail 89).
3. Disturbed lands at final grade will not remain unprotected against erosion for more than 14 days (See After Construction drawings).
4. The maximum lift height of fill material without erosion protection must not exceed 30-ft.
5. After every runoff event, inspect and maintain all barriers and sediment containment systems.
6. Continually inspect cut and fill slopes for signs of erosion. Immediately install mitigation measures upon approval by the Designer or Engineer.
7. Where illustrated, maintain 6-in. or higher berms around the perimeter to prevent direct runoff into a slope drain (See details 87 and 88).
8. Revisions to this sediment and erosion control plan must be approved by the Designer or Engineer.
9. This plan is subject to change by the Designer or Engineer.
212-016A SEDIMENT TRAP
1 EACH STA 177+10 LT.
212-026A DIVERSION CHANNEL
TO BE MAINTAINED AS FILL MATERIAL IS PLACED
212-066A STONE FILTER DAM TYPE 1
5 cu. yds. STA 176+79 LT.
5 cu. yds. STA 179+21 LT.
5 cu. yds. STA 180+70 LT.
Riprap
Slope Drain
Earthen Berm
Drainage Pathway
Top of Cut
Toe of Fill
Sediment Trap
Turf Reinforcement Mat
Silt Fence Barrier
New ROW
Existing Fence
Pay Item
SHEET OF
PROTECT THIS CRITICAL WATER SOURCE BY INSTALLING A SEDIMENT CONTAINMENT SYSTEM UPSTREAM OF THE CULVERT
212-016A
IMMEDIATELY AFTER INSTALLING THE CULVERT, COMPLETE WHAT IS REQUIRED BY NOTE NO. 2
212-066A
APPROXIMATE LOCATION OF ACCESS ROAD CULVERT
DEVELOP A 12-IN. HIGH EARTHEN DIVERSION CHANNEL TO PROTECT THE ROADWAY
212-026A
AVOID BLOCKING DISCHARGE END OF CULVERT WITH EARTHEN DIVERSION CHANNEL. EXTEND THE EARTHEN DIVERSION CHANNEL ACROSS OPENING AFTER NEW WETLAND CULVERT IS INSTALLED.
212-026A
MATCH LINE
STA. 176+00
MATCH LINE
STA. 182+00
176+00
177+00
178+00
179+00
180+00
181+00
182+00
R/W
N
SCALE in FEET
REVISIONS
NO. DATE BY DESCRIPTION
DESIGNED
DESIGN CHECKED
DETAILED
CADD FILE NAME
DRAWING CHECKED
DRAWING DATE:
FLORIDA DEPARTMENT OF TRANSPORTATION
ROADWAY 205E
PRE- AND DURING CONSTRUCTION E&SC PLANS
Station 176+00 to 182+00


ROADWAY 205E
Roadway Profile
Station 1760+00 to 1820+00
FLORIDA
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176+00
177+00
178+00
179+00
180+00
181+00
182+00
176+20
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181+50
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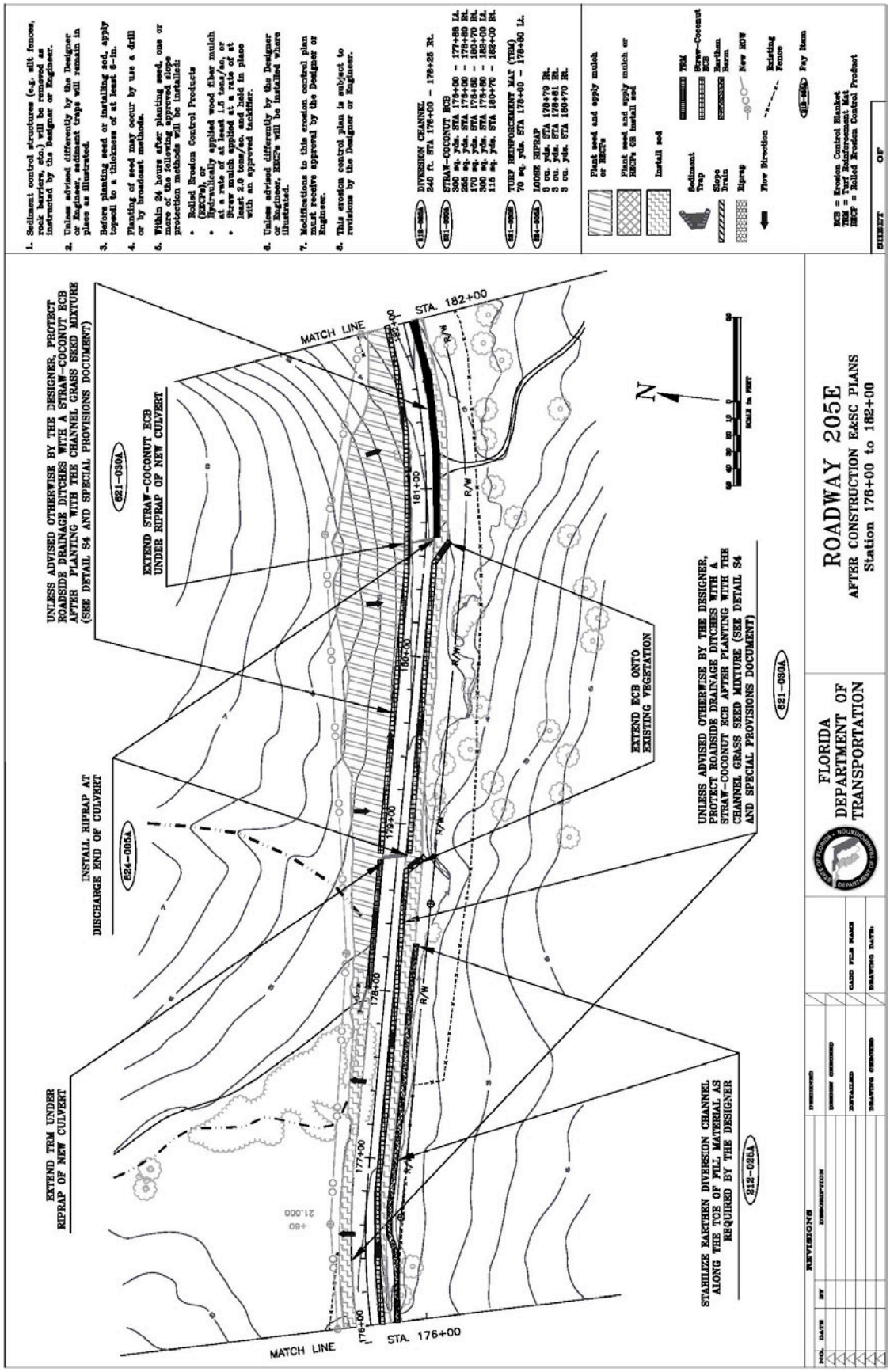
-2.140%
-0.460%


1. Sediment control structures (e.g. silt fences, rock barriers, etc.) will be removed as instructed by the Designer or Engineer.
2. Unless advised differently by the Designer or Engineer, sediment traps will remain in place as illustrated.
3. Before planting seed or installing sod, apply topsoil to a thickness of at least 6-in.
4. Planting of seed may occur by use a drill or by broadcast methods.
5. Within 24 hours after planting seed, one or more of the following approved slope protection methods will be installed:
• Rolled Erosion Control Products (RECPs), or
• Hydraulically applied wood fiber mulch at a rate of at least 1.5 tons/Ac, or
• Straw mulch applied at a rate of at least 2.0 tons/Ac and held in place with an approved tackifier.
6. Planting of seed may occur by use a drill or by broadcast methods.
7. Modifications to this erosion control plan must receive approval by the Designer or Engineer.
8. This erosion control plan is subject to revisions by the Designer or Engineer.
DIVERSION CHANNEL
240 ft. STA 176+60 – 178+25 Rt.
STRAW-COCONUT ECB
300 sq. yds. STA 176+00 – 177+88 Lt.
300 sq. yds. STA 178+00 – 178+60 Rt.
175 sq. yds. STA 178+80 – 180+70 Rt.
300 sq. yds. STA 178+80 – 182+00 Lt.
115 sq. yds. STA 180+70 – 182+00 Rt.
TURF REINFORCEMENT MAT (TRM)
70 sq. yds. STA 176+00 – 176+80 Lt.
LOOSE RIPRAP
3 cu. yds. STA 178+79 Rt.
3 cu. yds. STA 178+81 Rt.
3 cu. yds. STA 180+70 Rt.
Plant seed and apply mulch or RECPs
Plant seed and apply mulch or RECPs OR install sod
Install sod
TRM
Sediment Trap
Fiber-Coconut ECB
Slope Drain
Earthen Berm
Riprap
New ROW
Flow Direction
Existing Fence
Pay Item
ECB = Erosion Control Blanket
TRM = Turf Reinforcement Mat
RECP = Rolled Erosion Control Product
SHEET OF
UNLESS ADVISED OTHERWISE BY THE DESIGNER, PROTECT ROADSIDE DRAINAGE DITCHES WITH A STRAW-COCONUT ECB AFTER PLANTING WITH THE CHANNEL GRASS SEED MIXTURE (SEE DETAIL S4 AND SPECIAL PROVISIONS DOCUMENT)
621-030A
EXTEND STRAW-COCONUT ECB UNDER RIPRAP OF NEW CULVERT
MATCH LINE
STA. 182+00
INSTALL RIPRAP AT DISCHARGE END OF CULVERT
624-005A
EXTEND ECB ONTO EXISTING VEGETATION
UNLESS ADVISED OTHERWISE BY THE DESIGNER, PROTECT ROADSIDE DRAINAGE DITCHES WITH A STRAW-COCONUT ECB AFTER PLANTING WITH THE CHANNEL GRASS SEED MIXTURE (SEE DETAIL S4 AND SPECIAL PROVISIONS DOCUMENT)
621-030A
EXTEND TRM UNDER RIPRAP OF NEW CULVERT
STABILIZE EARTHEN DIVERSION CHANNEL ALONG THE TOE OF FILL MATERIAL AS REQUIRED BY THE DESIGNER
212-026A
MATCH LINE
STA. 176+00
N
SCALE in FEET
REVISIONS
NO. DATE BY DESCRIPTION
DESIGNED
DRAWN CHECKED
DETAILED
QUALITY CONTROL BY
DRAWING CHECKED
CADD FILE NAME
DRAWING DATE:
FLORIDA DEPARTMENT OF TRANSPORTATION
ROADWAY 205E
AFTER CONSTRUCTION E&SC PLANS
Station 176+00 to 182+00

REQUIRED FOR ALL INSTALLED BMPS

1. AT LEAST EVERY 7 DAYS DURING THE RAINFALL SEASON, INSPECT AND REPAIR ANY DAMAGE FOUND.
2. WITHIN 24 HOURS AFTER RUNOFF EVENTS, INSPECT AND REPAIR ANY DAMAGE FOUND.
3. AT LEAST EVERY 30 DAYS DURING THE WINTER MONTHS, INSPECT AND REPAIR ANY DAMAGE FOUND.

NOTES FOR THE ABOVE BMPS

1. REMOVE ACCUMULATED SEDIMENT FROM BEHIND ROCK BARRIERS WHEN IT IS WITHIN 6-IN. OF THE TOP OF THE ROCK.
2. REMOVE ACCUMULATED SEDIMENT FROM BEHIND THE SILT FENCE WHEN IT IS OVER 24-IN. DEEP.
3. REMOVE ROCK BARRIER, POSTS, AND WIRE ONCE EROSION CONTROL PRACTICES ARE INSTALLED.
4. REMOVE SILT FENCE FABRIC AND POSTS ONCE EROSION CONTROL PRACTICES ARE INSTALLED.

REVISIONS			DESIGNED		FLORIDA DEPARTMENT OF TRANSPORTATION		
NO.	DATE	BY	DESCRIPTION	DRAWN CHECKED			
				DETAILED	CADD FILE NAME		
				DRAWING CHECKED	DRAWING DATE:		

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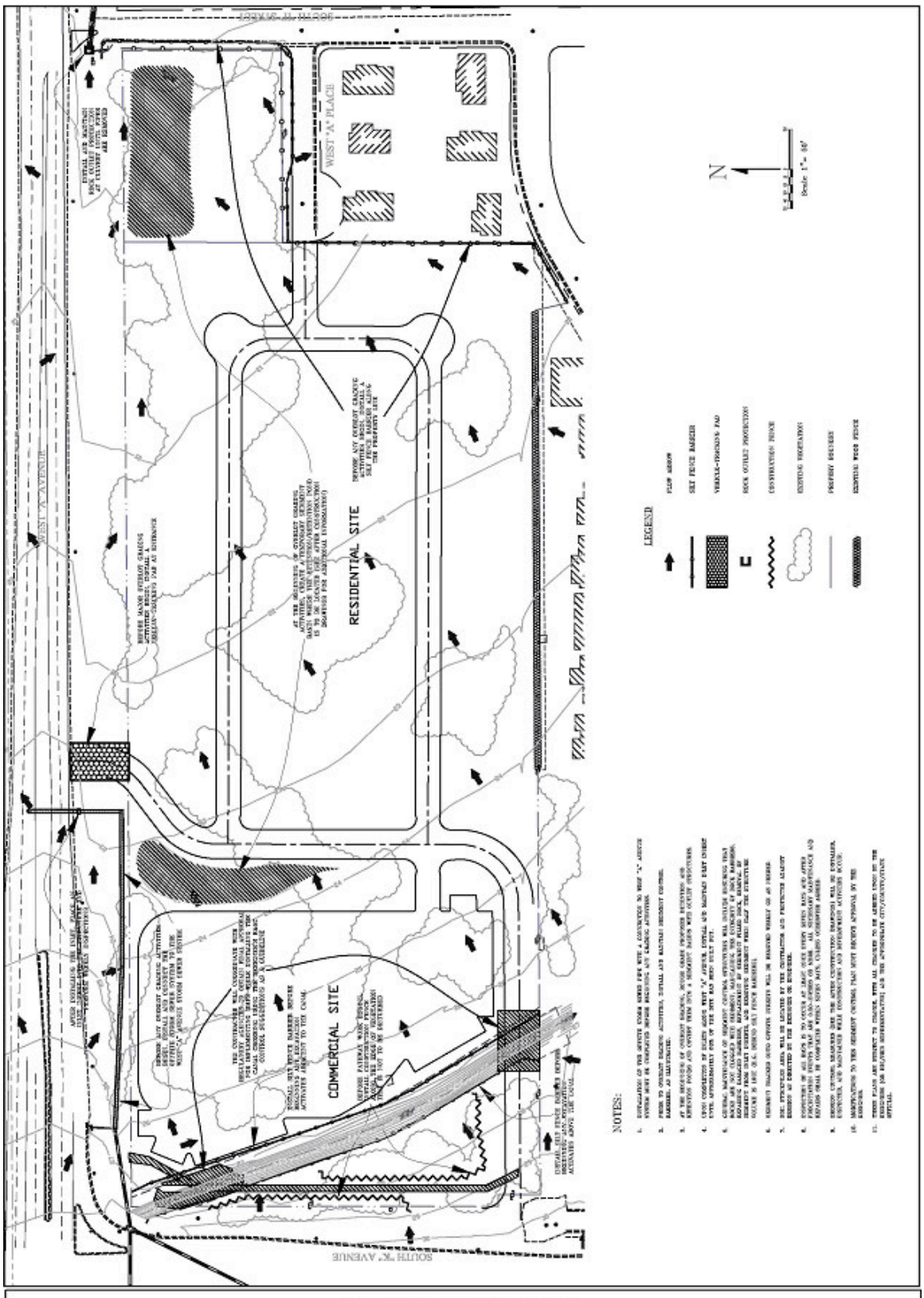
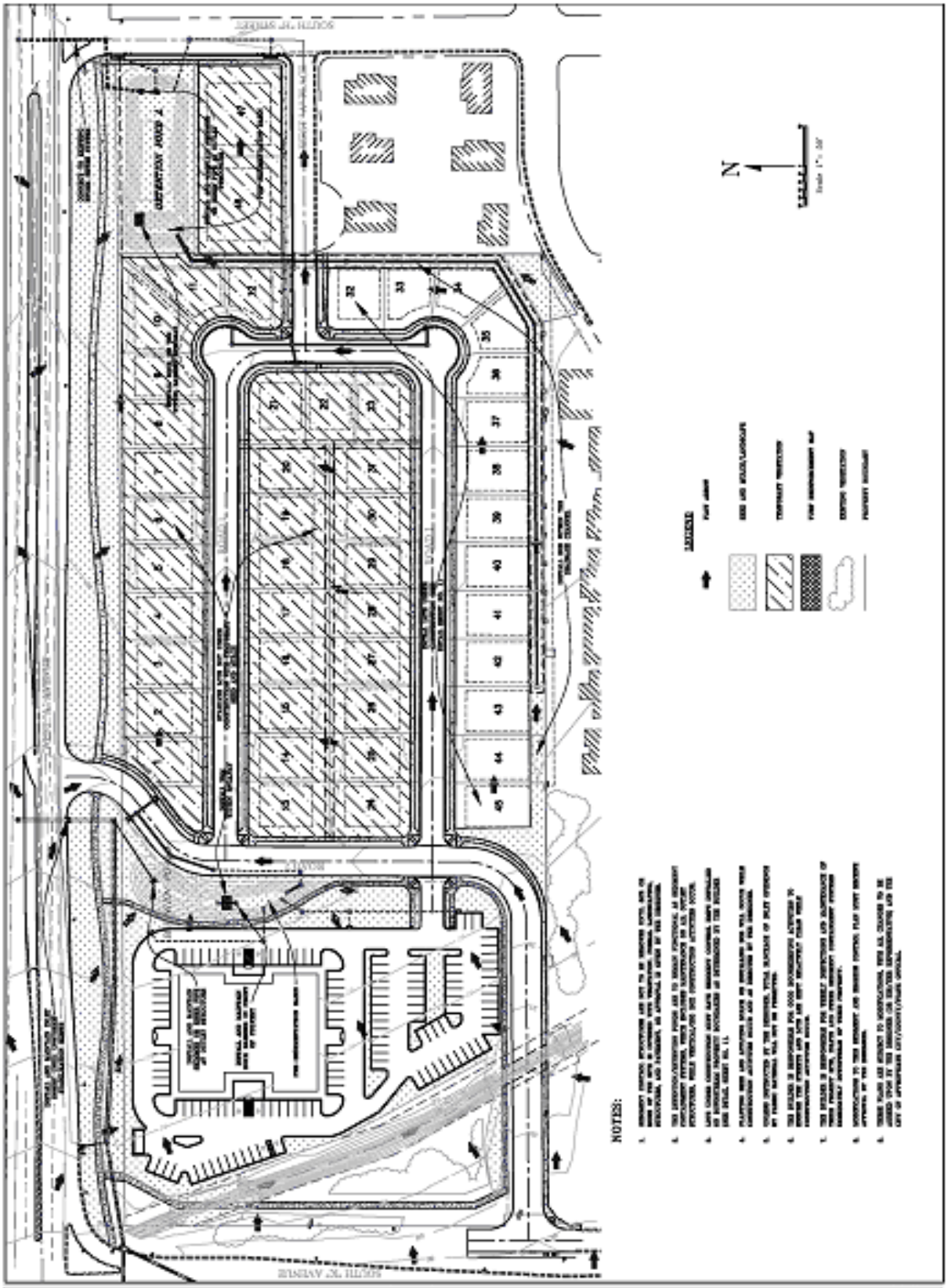
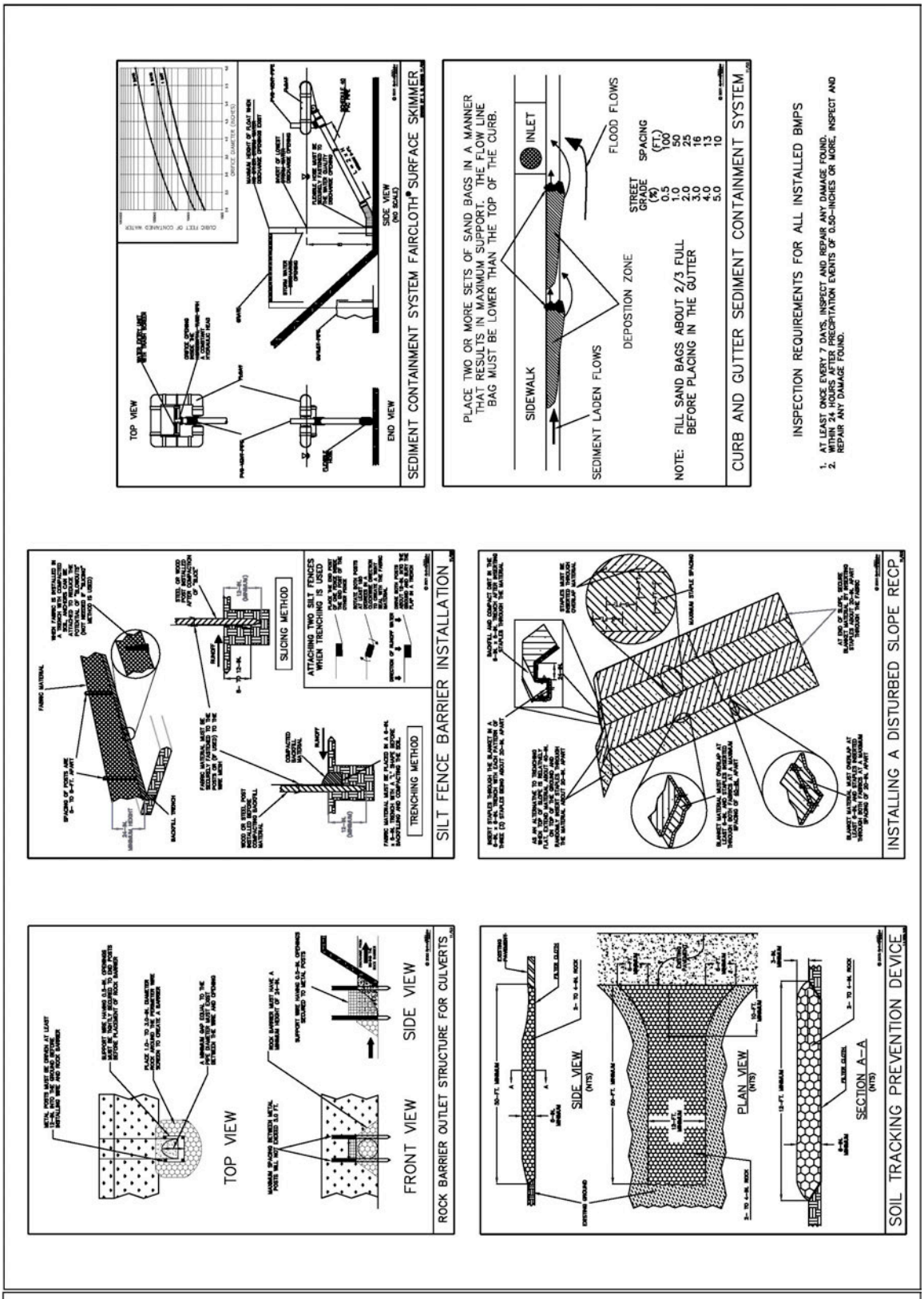


RESIDENTIAL AND COMMERCIAL
PRE– & DURING GRADING
SEDIMENT CONTROL PLAN



RESIDENTIAL AND COMMERCIAL
AFTER GRADING AND DURING CONSTRUCTION
SEDIMENT AND EROSION CONTROL PLAN



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TYPICAL DETAILS PAGE 2