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EROSION CONTROL PLAN MILLINGTON SUPPACT TN
7/22/2003
ENSAFE ALLEN AND HOSHALL

EROSION CONTROL PLAN

NSA MID-SOUTH
MILLINGTON, TN

Revision: 1

Prepared for:

NSA MID-SOUTH
MILLINGTON, TN

Prepared by:

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Memphis, TN 38134
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July 22, 2003

EROSION CONTROL PLAN

NAVAL SUPPORT ACTIVITY MID-SOUTH
MILLINGTON, TENNESSEE

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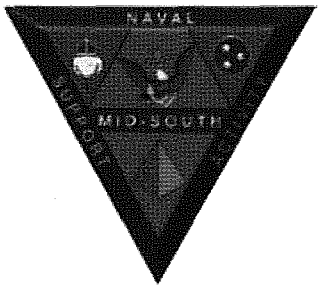

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Table of Contents

List of Appendices

1.0 INTRODUCTION

This Erosion Control Plan (ECP) identifies erosion and siltation problems and provides appropriate best management practices (BMPs) for Naval Support Activity (NSA) Mid-South, Millington, Tennessee. Its primary objective is to conserve, protect, and enhance the natural resources at NSA Mid-South. It was developed in response to recommendations in the NSA Mid-South Integrated Natural Resources Management Plan (e2M, 2001).

1.1 Site Description

The approximately 1,600-acre activity is relatively flat with few gently rolling hills. Natural and engineered ditches, which empty into the Big Creek Drainage Canal on the south side of the facility, drain the area. Approximately 1,319 acres are managed as "improved space," which includes buildings and landscaping that require routine maintenance. Nearly 221 acres of hardwood and pine forests and open water are managed as unimproved land. The remaining 60 acres of "semi-improved" lands — road shoulders, ditch slopes, and swales — require erosion control.

At NSA Mid-South, erosion is commonly caused by (1) scalping, which occurs when lawn mowers aggressively remove vegetation in ditches, (2) contractor-led construction activities without properly installed or ineffective erosion control measures, and (3) steep slopes along natural conveyances. Erosion is aided by the large area of relatively impervious materials (concrete and asphalt) that increases the volume of storm water runoff and consequently, the velocity of the water in the drainage system. Erosion causes total suspended solids in the facility's storm water to increase, which leads to siltation and clogging of the drainage system. Silt accumulation as well as culvert damage (e.g., broken concrete or crushed opening) tends to impede flow through the drainage system and often results in standing water, which leads to additional erosion problems, flooding, and stressed vegetation.

1.2 Plan Development

A field investigation was conducted from October 7 to 25, 2002, to identify erosion and siltation problems. The findings were documented with photographs (Appendix A) and written

descriptions (copies of the field inspection forms are in Appendix B). Appendix C includes figures that identify culverts, ditches/swales, land areas, as well as "waters of the state" with erosion and siltation problems. Findings are also summarized on tables in Appendix D.

This plan addresses areas along drainage conveyances that are sloughing due to steep slopes and mower scalping and areas associated with construction-related erosion. Based on the findings, specific erosion and siltation control measures and BMPs are recommended to reduce erosion problems. A cost estimate to implement the erosion control measures and best management practices is in Appendix E.

Sections 2 to 5 are organized according to the physical entity in which problems were identified or the activity with which they are associated.

For Information on	Refer to
Culverts	Section 2
Ditches/Swales	Section 3
Land Areas	Section 4
Waters of the State	Section 5

Within each section, a table lists the blocks (A to M and W) and specific locations within the facility where problems were identified. It also provides a cross-reference to the photographs in Appendix A, which are organized by their alphabetic designation (Tab A for Block A, etc.) Each area also has its own figure (Appendix C) as outlined below.

Block/Figure	Block/Figure	Block/Figure	Block/Figure	Block/Figure
A/1	D/4	G/7	J/10	M/13
B/2	E/5	H/8	K/11	W/14
C/3	F/6	I/9	L/12	

Section 6, Conclusions and Recommendations, summarizes common problems and suggests appropriate erosion control measures and BMPs.

2.0 CULVERTS

Most of the culverts with erosion control problems were made of materials such as concrete, polyvinyl chloride, and corrugated metal pipe ranging in diameters from 3.5 inches to 72 inches. The five major erosion problems are discussed below.

2.1 Silt Accumulation

Evidence of silt accumulation was identified in 11 blocks in Table 1. Accumulation ranges from trace amounts to completely silted culverts. Surrounding features that may have contributed to the erosion problems were noted.

2.2 Active Erosion

Evidence of active erosion includes gullies, ruts, rills, and scouring. Active erosion is causing silt to accumulate at the culvert entrances, which is impeding water flow. It is also causing gullies or holes to form in front of the culverts, resulting in standing water. Erosion behind the headwalls is exposing portions of the culverts. Culverts with evidence of active erosion are listed in Table 2.

2.3 Standing Water

Many of the culverts with standing water are associated with small, obstructed roadside ditches with numerous entrance roads/drives. Culverts with standing water are listed in Table 3. Standing water results in persistent flooding and stressed vegetation.

2.4 Steep Slopes

Steep slopes near culvert entrances promote erosion (gullies, ruts, and rills) during storm events, resulting in the gradual siltation of the conveyances. Erosion will continue to impede efficient water flow through the culvert without the implementation of slope stability measures. Steep slopes are identified in Table 4.

2.5 Damaged Culverts

Culvert deterioration decreases conveyance efficiency and frequently results in standing water. As discussed before, this leads to additional erosion problems, flooding, and stressed vegetation. Culverts requiring repair are listed in Table 5.

3.0 DITCHES/SWALES

Onsite ditches range from small swales used to collect water runoff from roads and parking lots to large ditches that carry a considerable volume of water. The small swales are mostly grass-lined and along roads. Problems associated with the small swales are comparable to the culverts: silt accumulation, active erosion, and standing water (typically due to a blocked or absent outlet). The small roadside swales are the most common location of erosion under sidewalks and entrance roads/drives.

Most of the larger ditches are in outlying areas; however, several large ditches are in populated areas such as Blocks D, E, and H (Figures 4, 5, and 8). Some are lined with concrete; others have considerable vegetative growth ranging from tall, thick grass to trees. Bank erosion and debris accumulation are the primary concerns for impeding flow through the large ditches. Steep slopes in both small swales and large ditches result in erosion and the formation of gullies, ruts, and rills. The four major erosion problems associated with the ditches are discussed below.

3.1 Silt Accumulation

As summarized in Table 6, silt accumulates in the concrete-lined ditches in two areas (D and F) and interferes with water flow in the channels. Excessive vegetative growth in portions of the ditches where significant silt accumulation has occurred results in further flow hindrance, which subsequently causes more sediment to accumulate.

3.2 Active Erosion

Gullies, ruts, and rills, which are commonly associated with the active erosion of ditches and swales (Table 7), result in uneven terrain and potential areas for standing water. Sloughing was noted along some of the ditches and swales due to steep slope erosion (see Section 3.4). There is evidence that the swales and ditches are being impacted by storm water runoff in addition to scalping due to lawn mowing. Areas left unstabilized following the completion of construction projects were also noted. These unprotected areas are also susceptible to erosion

from storm water runoff. The active erosion increases the total suspended solids in the ditches and swales, which leads to siltation and flow restrictions.

3.3 Standing Water

Water stagnates in the swales and ditches because of obstructed culverts, the absence of an outlet, and silt and debris accumulation. Standing water results in persistent flooding around entrance drives and roads, erosion and flooding along sidewalks, and stressed vegetation. Impacts from standing water are noted in Table 8.

3.4 Steep Slopes

Steep slopes contribute to active erosion along swales and ditches. These are susceptible to sloughing during storm events because of relatively high flow velocities. This results in increased swale/ditch sediment loading. Steep slopes are identified in Table 9.

4.0 OPEN LAND AREAS

Erosion and standing water are problematic for large open land areas on the site. Erosion causes large areas of bare soil, while standing water restricts revegetation.

4.1 Active Erosion

Some of the erosion was identified around construction sites where bare soil was prevalent due to ineffective erosion control measures and along sidewalks where standing water was present. Bare soil, especially on slopes, is particularly susceptible to erosion. Active erosion results in uneven terrain and the formation of gullies, rut, rills, and sinkholes. Areas with active erosion are listed in Table 10.

Erosion and Siltation Problems Due to Construction

Several construction areas with erosion and siltation problems were noted during the investigation. The northwest corner of Block (Figure 10) had exposed soil from a trench dug along the north side of Dakar Street. An area of bare soil in Block B (Figure 2) was noted south of Building 449 and west of Buildings 451 and 452 (Table 10). Erosion was occurring near the sidewalk and evidence of standing water was observed (Appendix A: B11). Recent fence installations in Blocks F and M contributed to erosion problems. Bare soil and evidence of standing water was observed in the area in Block F south of Buildings 344 and 1669 (Appendix A: F20, F21, F22). Similarly, an area of bare soil in Block M southeast of Building 1669 had active erosion from a recent fence installation.

Sidewalk Erosion

As listed in Table 11, soil near several sidewalks in Blocks B and C (Figures 2 and 3) have evidence of erosion. These eroded areas near the sidewalks are in small roadside ditches and are primarily the result of standing water.

4.2 Standing Water

Water commonly stands in low areas, areas with high points of silt accumulation in front of storm drains, and where there are no drainage outlets. As discussed before, standing water

stresses vegetation, leaving bare soil susceptible to erosion. Standing water results in persistent road/drive and sidewalk flooding. Standing water concerns for land areas are listed in Table 12.

5.0 WATERS OF THE STATE

A "Waters of the State Determination" is pending state and federal approval. Figure 15 shows several culverts and ditches considered to be waters of the state or potential waters of the state by the Tennessee Department of Environment and Conservation. This determination applies to pooling and flowing bodies of water. Waters of the state require appropriate authority notification and approval prior to any alteration.

5.1 Culverts

Some areas determined to be waters of the state are pooled water around culverts (Table 13). The culverts are typically along high-flow rate ditches. Waters of the state are undesirable because of unnecessary regulatory attention.

5.2 Ditches

Several large ditches in outlying and heavily occupied areas were also identified as waters of the state (Table 14). Most had year-round flowing water and aquatic vegetation and biota. Gullies, ruts, and rills due to steep slopes were observed in several ditches. Debris accumulating in these ditches, especially Big Creek Drainage Canal, also impedes flow.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

The most prevalent problems at NSA Mid-South are silt accumulation in swales/ditches and culverts, erosion, and standing water. These issues are interrelated as shown below.

Ditches with active erosion (including gullies, ruts, and rills) cause silt to accumulate near culverts ...

⇩

... which restricts water flow through culverts ...

⇩

... increases siltation rates in ditches and swales ....

⇩

... causes standing water...

⇩

... and excessive vegetation in channels, which restricts flow, causes flooding, and continues erosion.

In addition, steep slopes are susceptible to sloughing and scalping during lawn mowing. Poorly drained areas (1) erode the soil around nearby buildings and walkways, (2) result in bare upgradient soil and stressed vegetation, (3) and tend to flood sidewalks and drives/roads.

6.2 Recommendations

BMPs are recommended to address the erosion control deficiencies. As listed in the Appendix D summary tables, the erosion and sediment problems are ranked on a scale from one (requires immediate attention) to five based on the following criteria:

1. Storm water flow is being impeded by silted and damaged culverts and/or ditches with excessive sediment and vegetation buildup.

2. Erosion and sediment is causing standing water.

3. Steep and barren slopes are causing gullies, ruts, and rills.

4. Active erosion is causing storm water conveyance systems to fill with sediment.

5. Erosion is occurring around and under sidewalks.

Culverts

Culverts throughout NSA Mid-South have silt accumulation problems. The following steps will improve flow and reduce the aforementioned upstream problems:

1. Clean out the problem culverts and restore them to full pipe flow.
2. Replace damaged or destroyed culverts to eliminate the potential for standing water.
3. Implement a site-wide program to routinely inspect, identify, clean out, and maintain facility culverts.

Ditches and Swales

Because most of the swale/ditch problems (standing water, sediment accumulation, and excessive vegetation) result from culvert deficiencies, these issues will be partially remedied when the culverts are addressed. However, to complete swale/ditch remediation, remaining sediment will have to be removed mechanically (e.g., excavated).

Erosion problems associated with steep bank slopes will be remedied by regrading slopes (cutting and filling where necessary) and seeding, fertilizing, and placing erosion control devices (e.g., erosion control blankets and hard-armor erosion control systems) on the reshaped banks. The erosion control blankets will provide temporary slope stability while vegetation is established on the new slopes. The hard-armor erosion control systems will provide long-term slope stability for high erosion (high velocity) areas and areas where steep slopes are necessary. The modifications will reduce sloughing, scalping during mowing, bank erosion, scouring, and active erosion.

Open Land Areas

The problems associated with open land areas include low-lying areas and sinkholes that contain persistent standing water and stressed vegetation. The following measures will reduce standing water and increase vegetation in problem areas:

1. Add site fill.
2. Construct swales to direct water to conveyance ditches and culverts.
3. Seed, fertilize, and mulch bare soil. Commonly used ratios for seeding, fertilizing, and mulching are summarized below.

Season/Time	Material	Rate (lb/Ac)
September to November	Fescue Grass	15
	Rye Grass	14
March	Fescue Grass	15
	Rye Grass	14
April	Bermuda Grass	4
	Bahia	15
During seeding	17-17-17 Fertilizer	300
After grass is established	34-0-0 Fertilizer	200
Promptly after seeding	Threshed straw	2,000

Construction Areas

Although various erosion control measures were in place in these areas, most were installed improperly or ineffective. Corrective measures for construction areas include the following:

1. Implement a construction Erosion Control Plan.

2. Install erosion control devices (silt fence or hay bales) immediately downgradient of the source/disturbed area.

3. Install downgradient erosion control devices (silt fence or hay bales) and storm water inlet controls (silt fence along ditches and around culverts and inlet siltation covers).

4. Revegetate disturbed areas immediately following construction.

4. Implement inspection program to evaluate construction activities and erosion control systems.

The State of Tennessee requires a permit for storm water discharge(s) from construction sites that involve grubbing, clearing, grading or excavating of one or more acres of land. As part of this permit, a Storm Water Pollution Prevention Plan (SWPPP) must be prepared. The SWPPP shall include a description of appropriate erosion and sediment controls. Inspections of these controls are required as follows:

1. Before anticipated storm events or series of events such as intermittent showers over one or more days;
2. Within 24 hours after the end of a storm event of 0.5 inches or greater; and
3. Once per week during construction and thereafter until the site is fully stabilized (at least 75% vegetation cover of earthen areas).

In addition, all construction sites at NSA Mid-South shall follow erosion control measures outlined in Section 3.3 of General Specification 01575 entitled *Temporary Environmental Controls* dated 09/2003 (Appendix F).

Sidewalk Erosion

Most erosion problems near sidewalks are due to standing water. The following remedies will minimize sidewalk erosion:

1. Add site fill along sidewalks.
2. Clean out culverts near the sidewalk and restore them to full pipe flow.
3. Construct new culverts where there is no outlet.

Road Erosion

Generally, road erosion problems are related to culverts and roadside ditches/swales used to collect runoff from roads. BMPs outlined above for culverts and ditches/roads would also help address road erosion and road flooding.

Waters of the State

Alterations to any drainage basin considered a water of the state will require appropriate notification and authorization based on the observations outlined in the letter, Water of the State Determination (EnSafe Inc., 2003 [pending]).

7.0 REFERENCES

e2M (2001). *Integrated Natural Resources Management Plan.* 2001 Bala Cynwyd, PA.

EnSafe Inc. (2003) *Water of the State Determination Letter.* Pending.

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7.0 REFERENCES

e2M (2001). *Integrated Natural Resources Management Plan.* 2001 Bala Cynwyd, PA.

EnSafe Inc. (2003) *Water of the State Determination Letter.* Pending.

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Appendix A
Site Photographs

A1: Culvert with dry silt in pipe

A2: Culvert silted one-quarter

A3: Culvert silted one-half

A4: Culvert completely silted

A5: Culvert completely silted

A6: Culvert with erosion at inlet

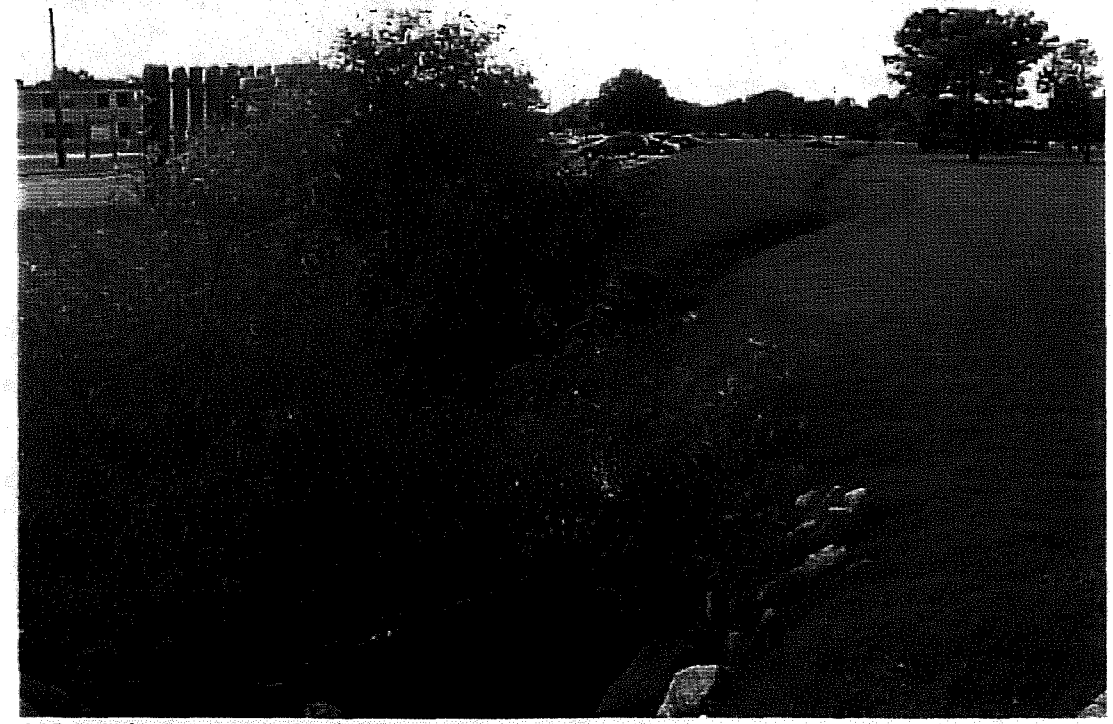
A7: Culvert with erosion at outlet

A8: Culvert with erosion at outlet

A9: Culvert with gullies, ruts, and rills

A10: Culvert with steep slopes

A11: Ditch with steep slopes



A12: Ditch with steep slopes and black willows

A13: Ditch with steep slopes and black willows

A14: Ditch with steep slopes

A15: Sinkhole

A16: Bare soil

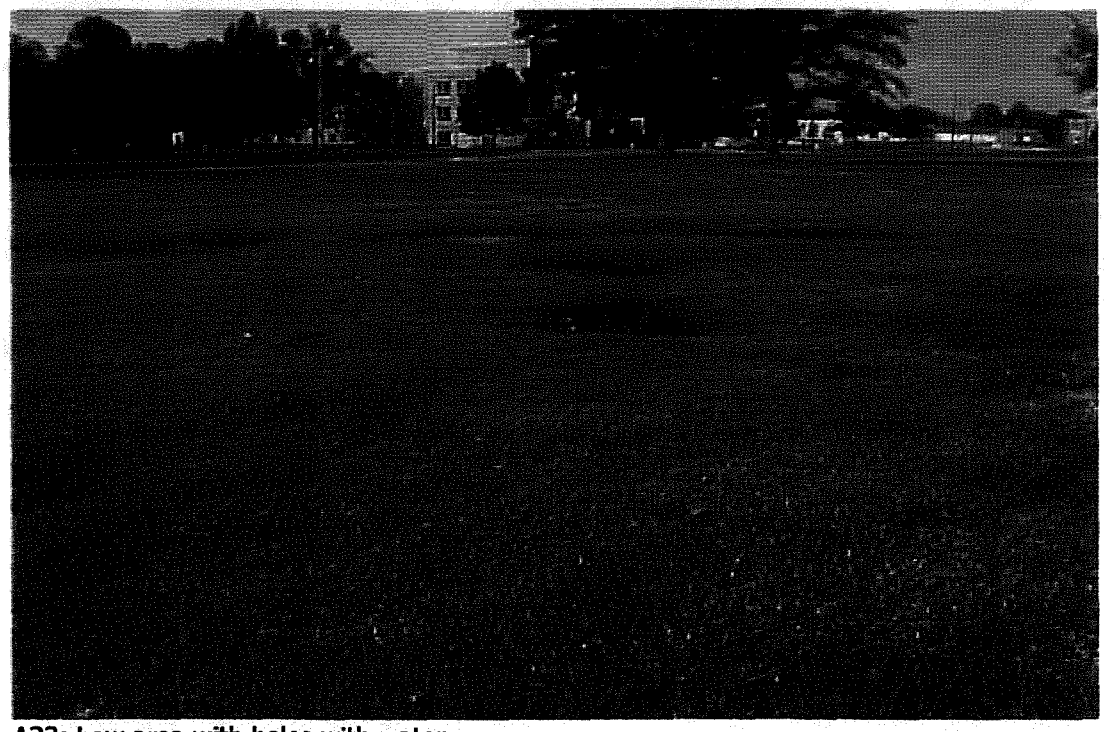
A17: Bare soil

A18: Bare soil

A19: 20' by 20' wet area

A20: Low area with standing water

A21: Low area with standing water



A22: Low area with holes with water

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A23: Low area with holes with water

B1: Storm drain with silt flow; standing water; silt fence placed around drain

B2: Bare soil

B3: Water with bare soil

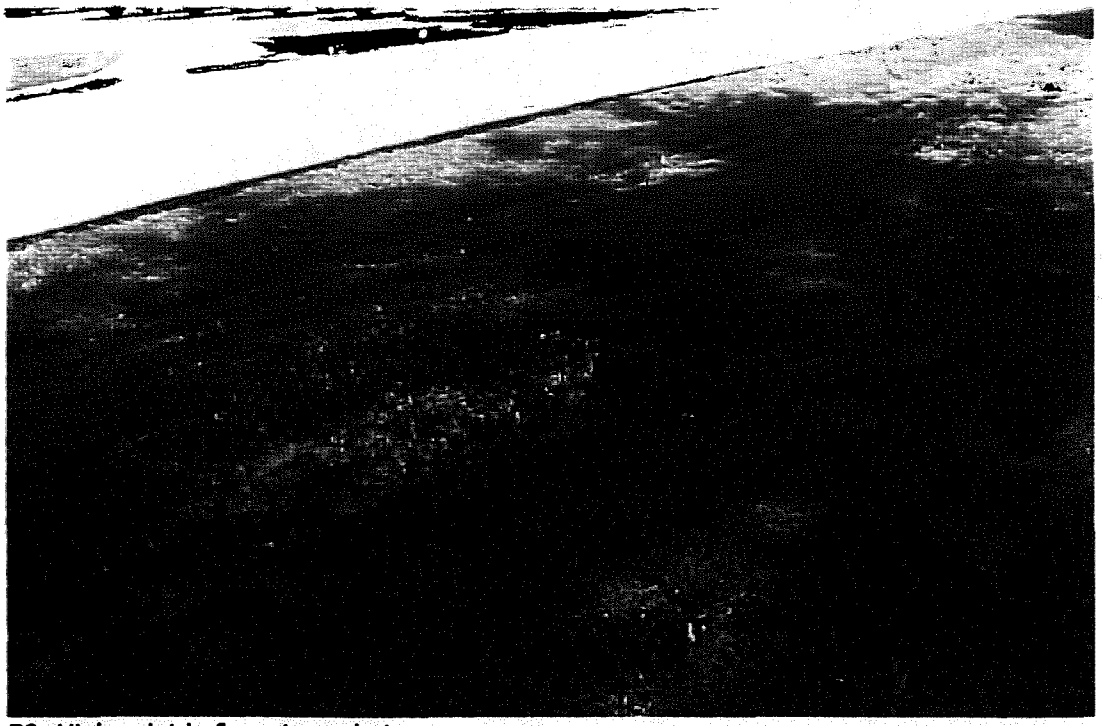
B4: Water with bare soil

B5: Standing water

B6: Standing water on drive

B7: Standing water on sidewalk

B8: Standing water on sidewalk



B9: High point before storm drain

B10: Sidewalk erosion

B11: Sidewalk erosion; standing water

B12: Sidewalk erosion

B13: Sidewalk erosion

B14: Water with no outlet

B15: Erosion near sidewalk

B16: Water with no outlet

B17: Blocked storm drain; standing water

C1: Culvert silted one-quarter

C2: Culvert silted one-half

C3: Culvert with steep slopes and gullies, ruts, and rills

C4: Culvert with gullies, ruts, and rills

C5: Culvert with gullies, ruts, and rills

C6: Storm drain with steep slopes

C7: Eroded hole in front of culvert

C8: Storm drain needs repair.

C9: Ditch with east-grassy, west-bare soil and steep slopes

C10: Ditch with east-grassy, west-bare soil and steep slopes

C11: Bare soil

C12: Bare ground under oaks with standing water

C13: Bare ground under oaks with standing water

C14: Bare ground under oaks with standing water

C15: High point before storm drain; standing water

C16: Standing water, no outlet

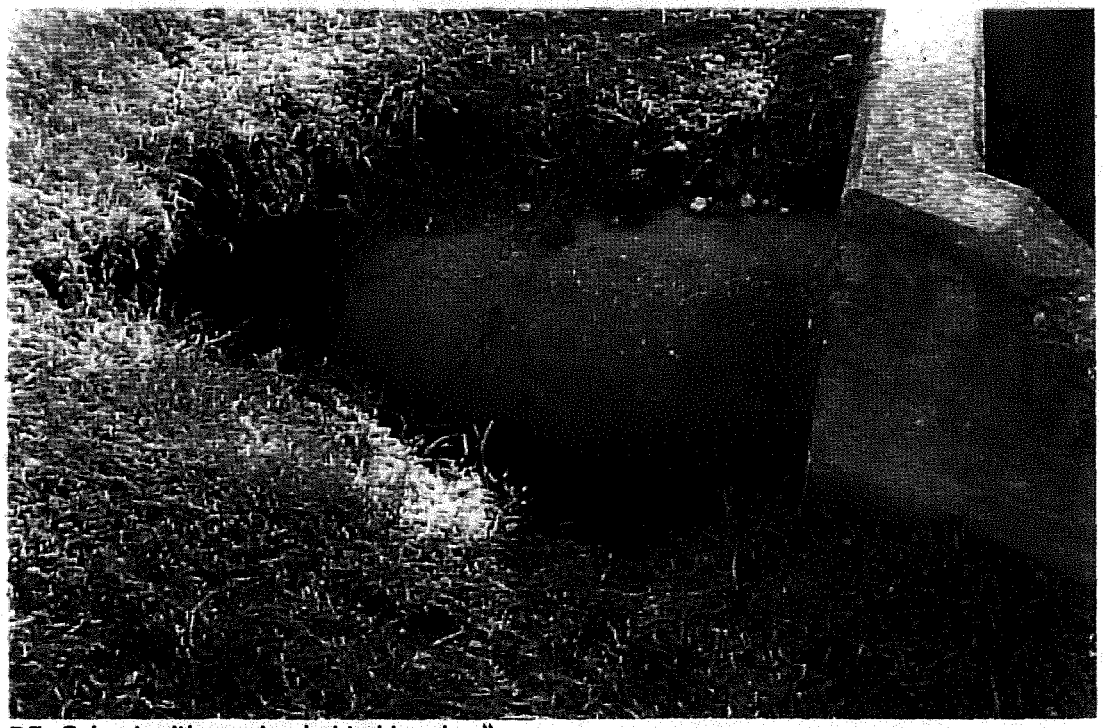
C17: Sidewalk erosion due to water

D1: Culvert silted one-half

D2: Culvert silted one-half

D3: Culvert silted one-half

D4: Culvert with erosion around headwall



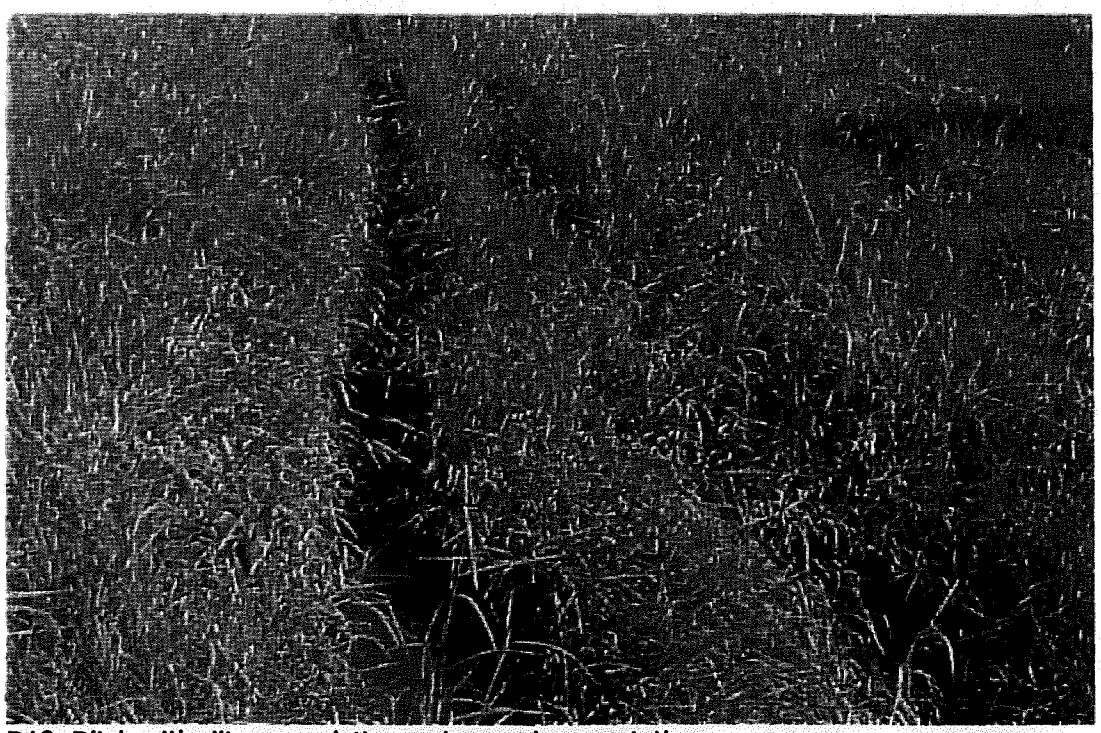
D5: Culvert with erosion behind headwall

D6: Culvert with erosion behind headwall

D7: Culvert with erosion under concrete and steep slopes

D8: Ditch with standing water and excessive vegetation

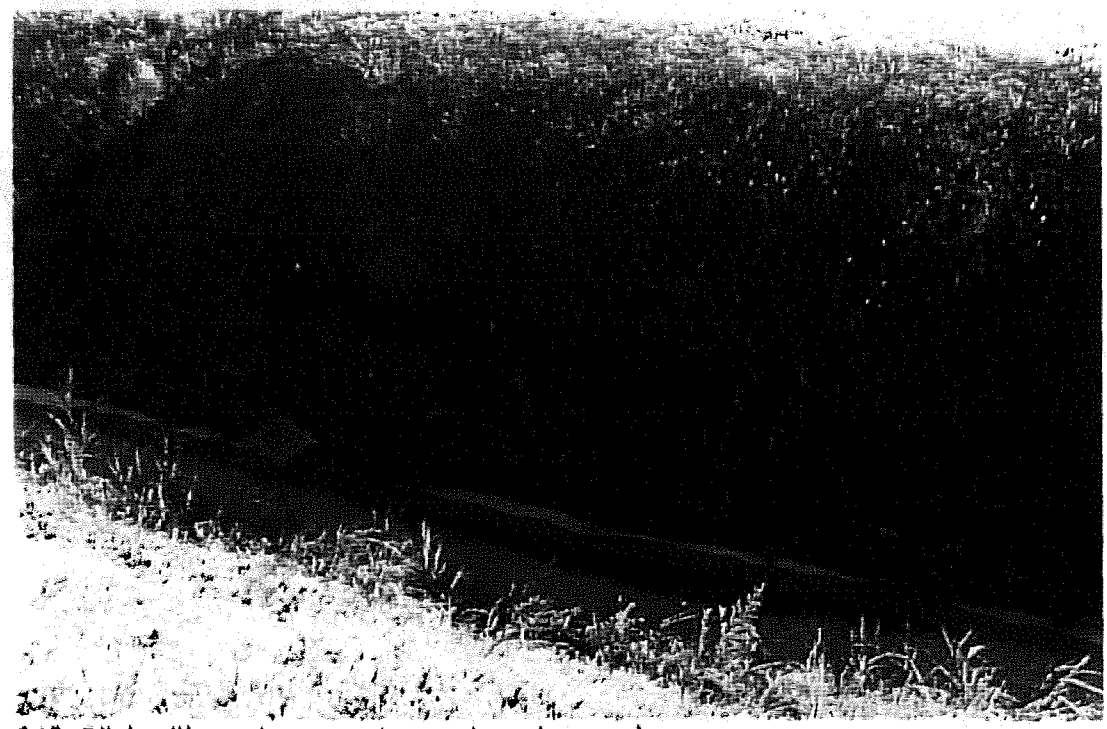
D9: Broken culvert



D10: Ditch with silt accumulation and excessive vegetation

D11: Ditch with steep slopes, silt accumulation, and excessive vegetation

D12: Ditch with erosion around the concrete and steep slopes



D13: Ditch with erosion around concrete and steep slopes

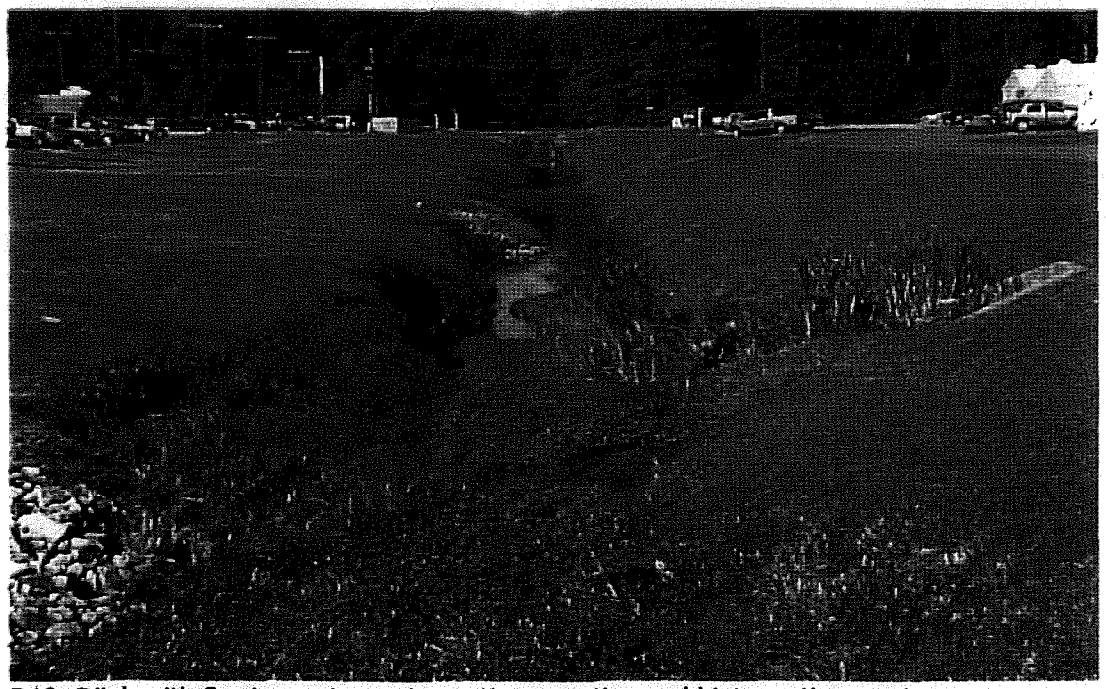
D14: Ditch with erosion around concrete and steep slopes

D15: Low area with standing water

D16: Low area with standing water

D17: Ditch with flowing water and aquatic vegetation and biota; steep slopes; gullies, ruts, and rills

D18: Ditch with flowing water and aquatic vegetation and biota; steep slopes; gullies, ruts, and rills



D19: Ditch with flowing water and aquatic vegetation and biota; active erosion; steep slopes; gullies, ruts, and rills

D20: Ditch with flowing water and aquatic vegetation and biota; active erosion; steep slopes; gullies, ruts, and rills

F1: Accumulation of silt in channel; erosion in front

F2: PVC culvert silted one-quarter

F3: Culvert with gullies, ruts, and rills

F4: Damaged storm grate

F5: Concrete channel with soil buildup

F6: Asphalt ditch with silt and mud buildup

F7: Ditch with active erosion and bare soil

F8: Ditch with active erosion, gullies, ruts, rills, and bare soil

F9: Sinkhole

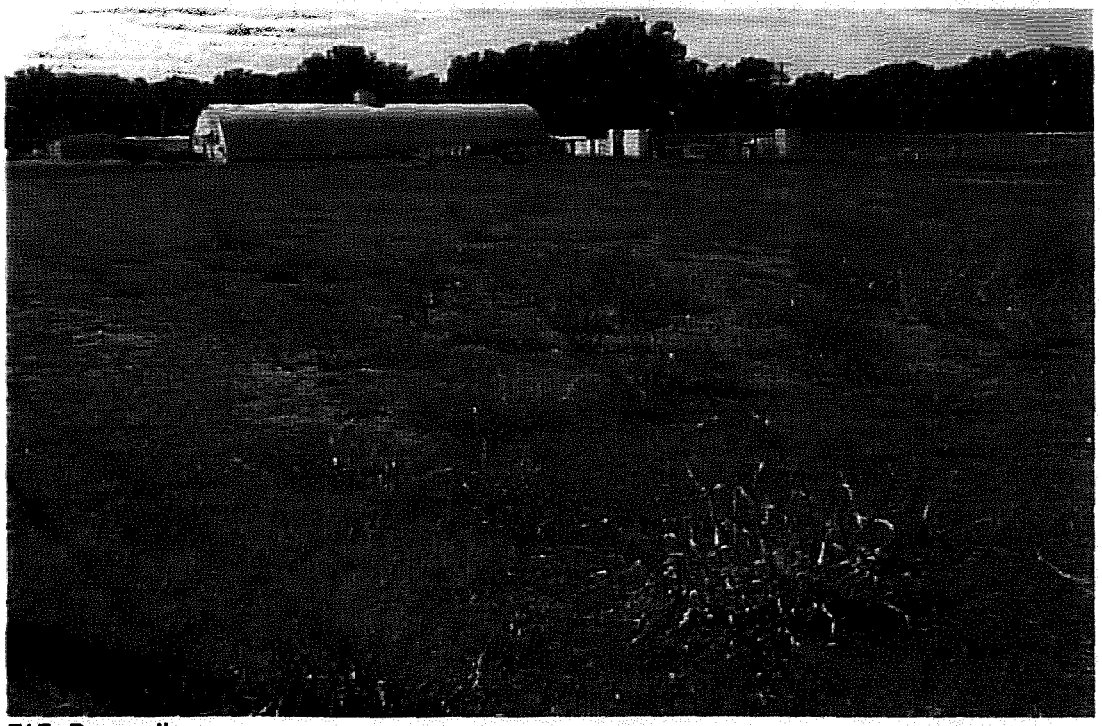
F10: Ditch with gullies, ruts, and rills

F11: Ditch with steep slopes

F12: Ditch with steep slopes

F13: Soil erosion

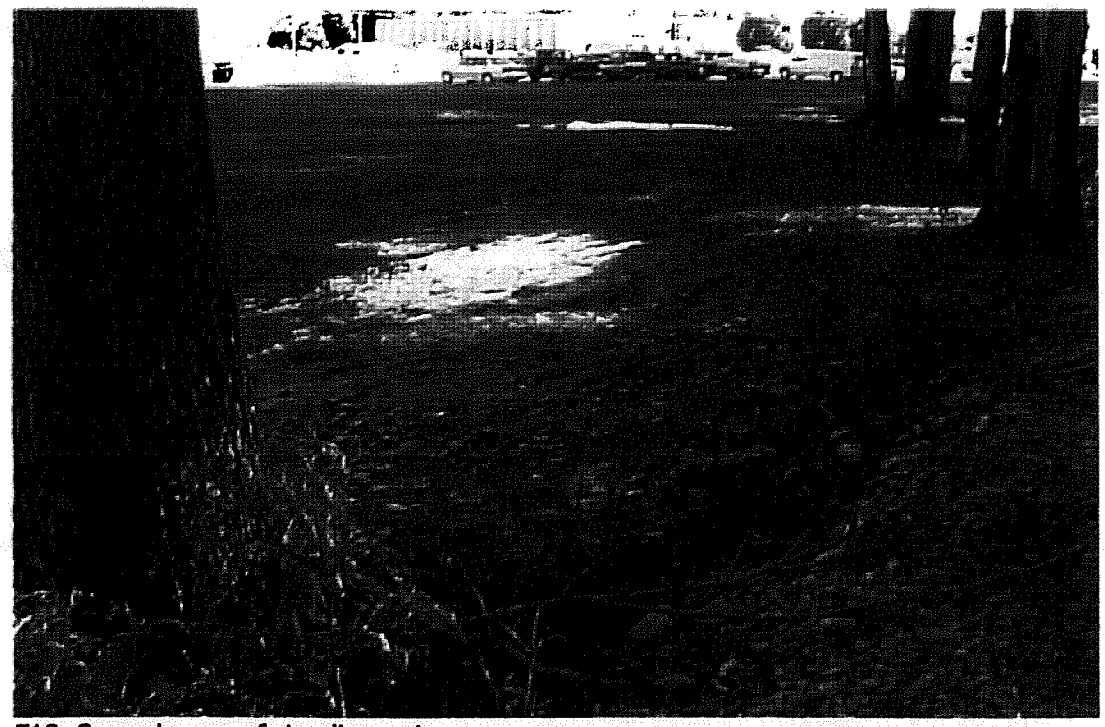
F14: Bare soil



F15: Bare soil

F16: Several areas of standing water

F17: Standing water with silt



F18: Several areas of standing water

F19: Standing water with bare soil

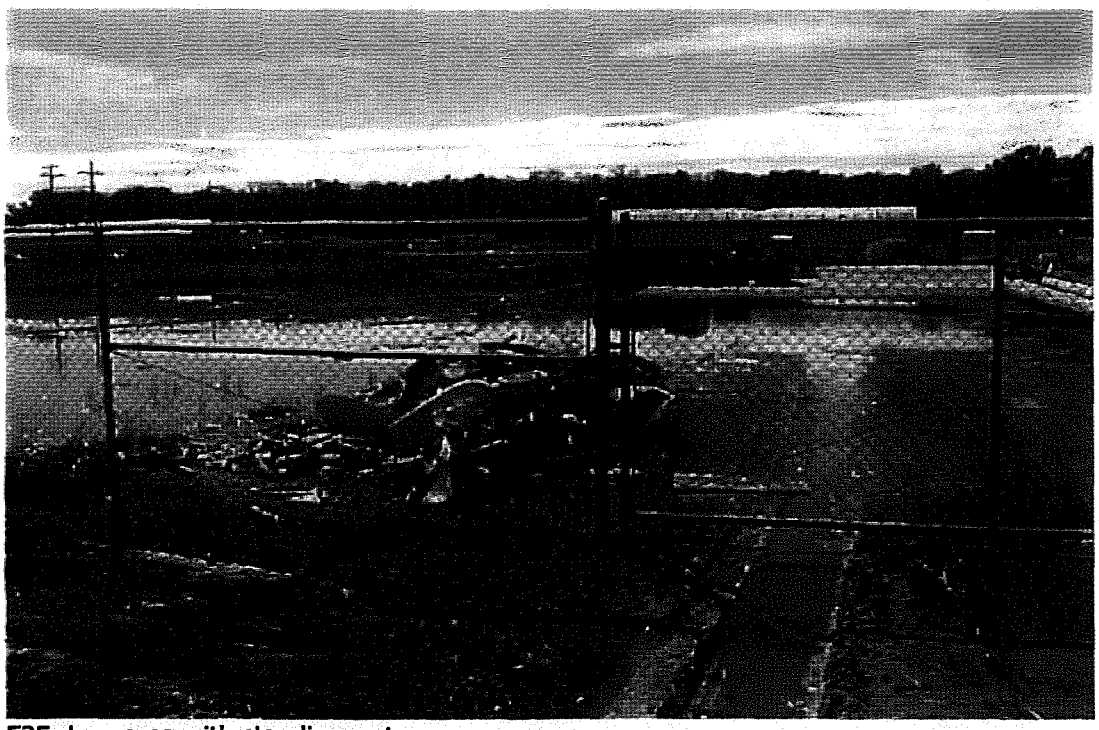
F20: Bare soil with evidence of standing water, possibly from recent fence installation

F21: Bare soil with evidence of standing water, possibly from recent fence installation

F22: Bare soil with evidence of standing water, possibly from recent fence installation

F23: Standing water on bare soil; stressed vegetation

F24: Low area with standing water



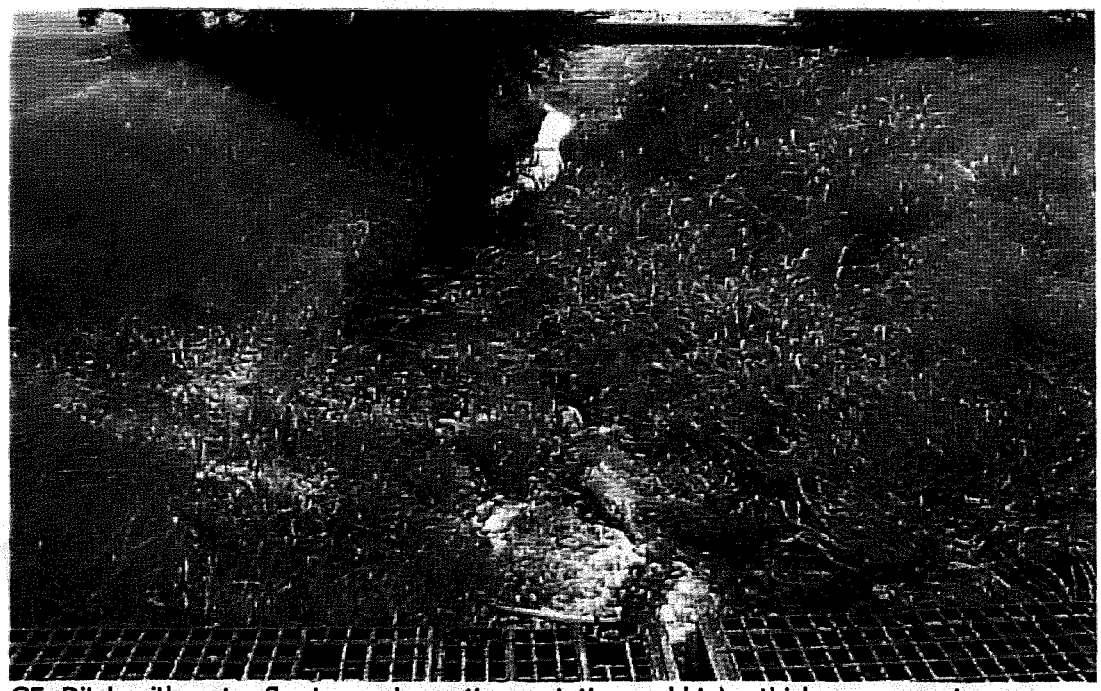
F25: Low area with standing water

G1: Culvert with broken concrete

G2: Ditch with water flowing and aquatic vegetation and biota

G3: Ditch with water flowing and aquatic vegetation and biota; heavy growth

G4: Ditch with water flowing and aquatic vegetation and biota; heavy growth



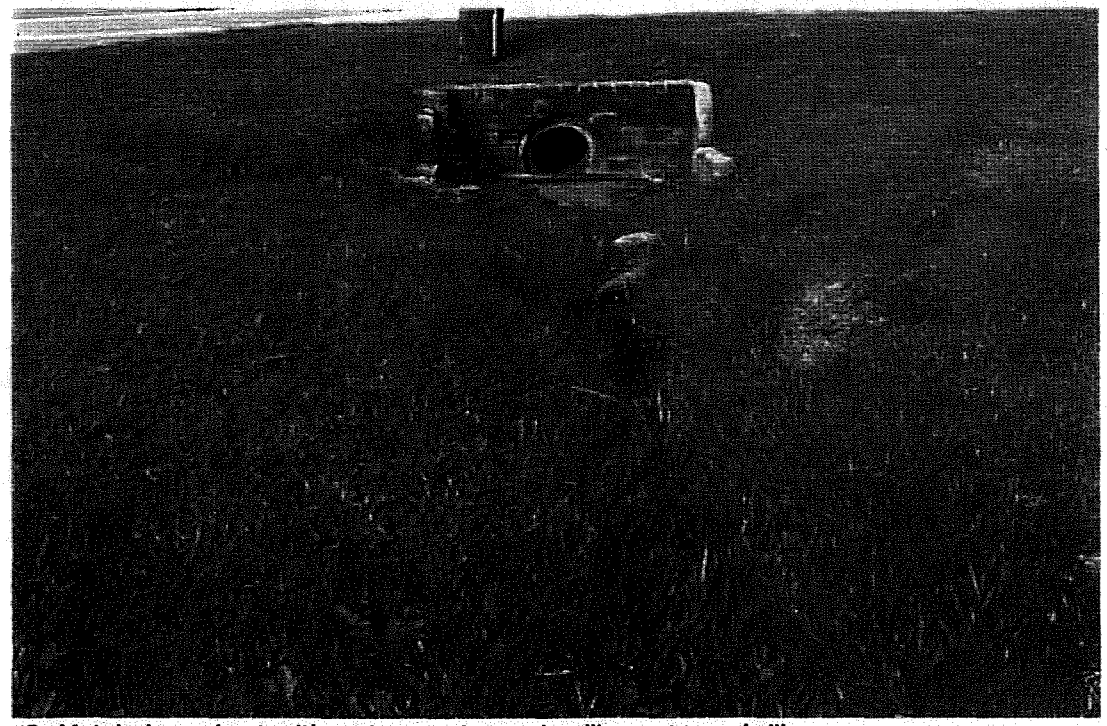
G5: Ditch with water flowing and aquatic vegetation and biota; thick grass; erosion around bridges

H1: Culvert silted one-half

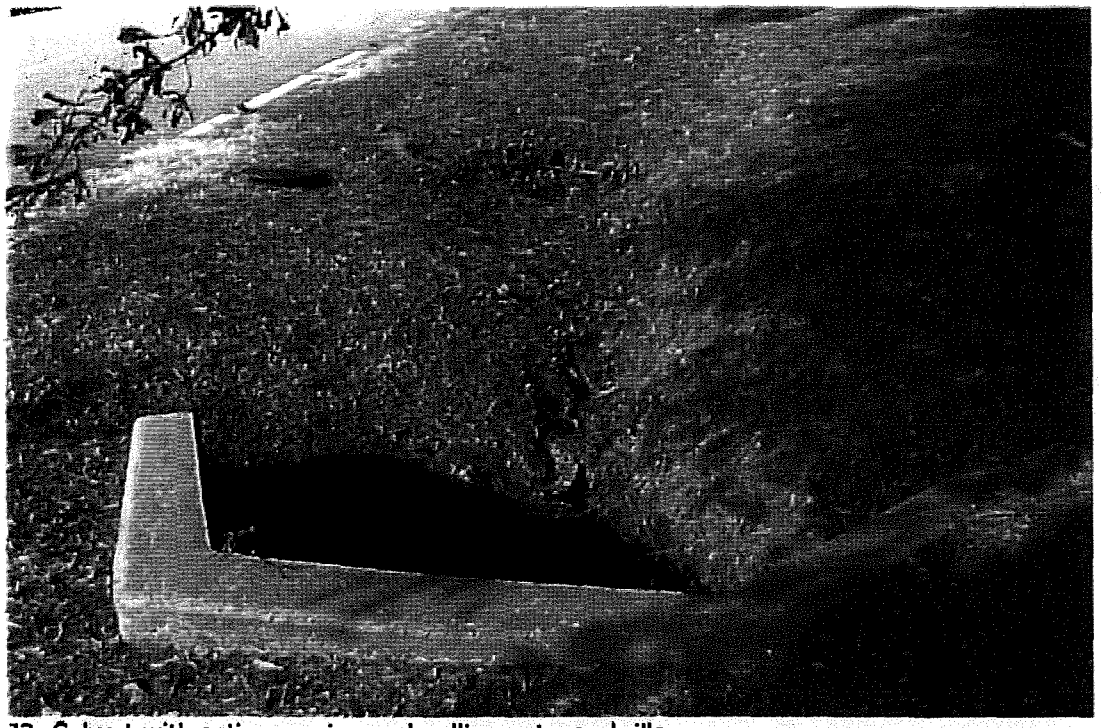
H2: Ditch with standing water

H3: Ditch with pooling water and aquatic vegetation and biota; active erosion; steep slopes; gullies, ruts, and rills

J1: Culvert completely silted



J2: Metal pipe culvert with active erosion and gullies, ruts, and rills



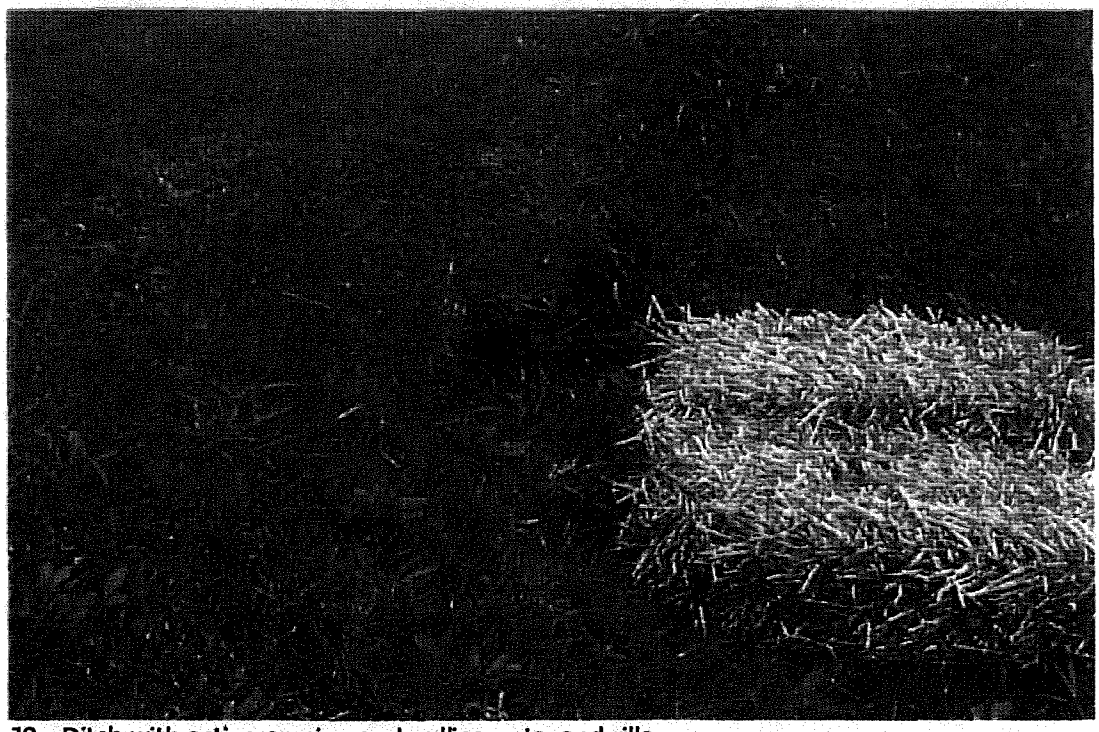
J3: Culvert with active erosion and gullies, ruts, and rills

J4: Destroyed culvert

J5: Ditch with active erosion, steep slopes and gullies, ruts, and rills

J6: Ditch with active erosion and gullies, ruts, and rills

J7: Ditch with active erosion and gullies, ruts, and rills



J8: Ditch with active erosion and gullies, ruts, and rills

J9: Ditch with water and no outlet

J10: Sidewalk erosion due to water

K1: Culvert with standing water

K2: Bare soil

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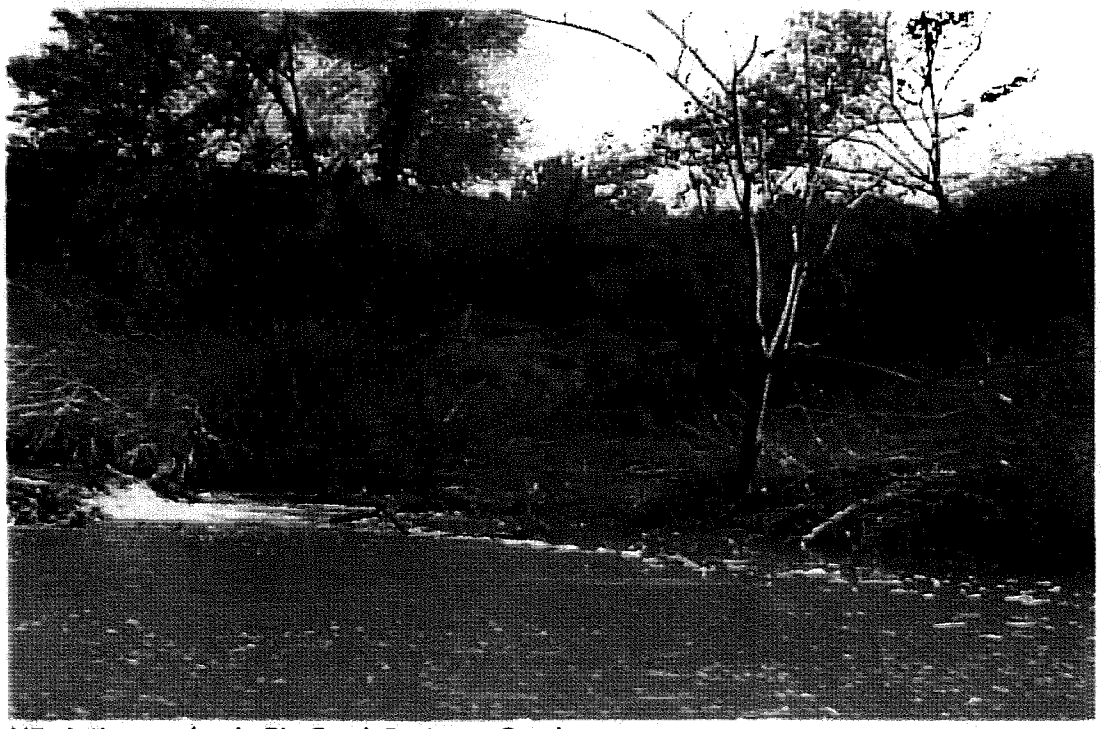
K3: Bare soil

M1: Plugged pipe in Big Creek Drainage Canal

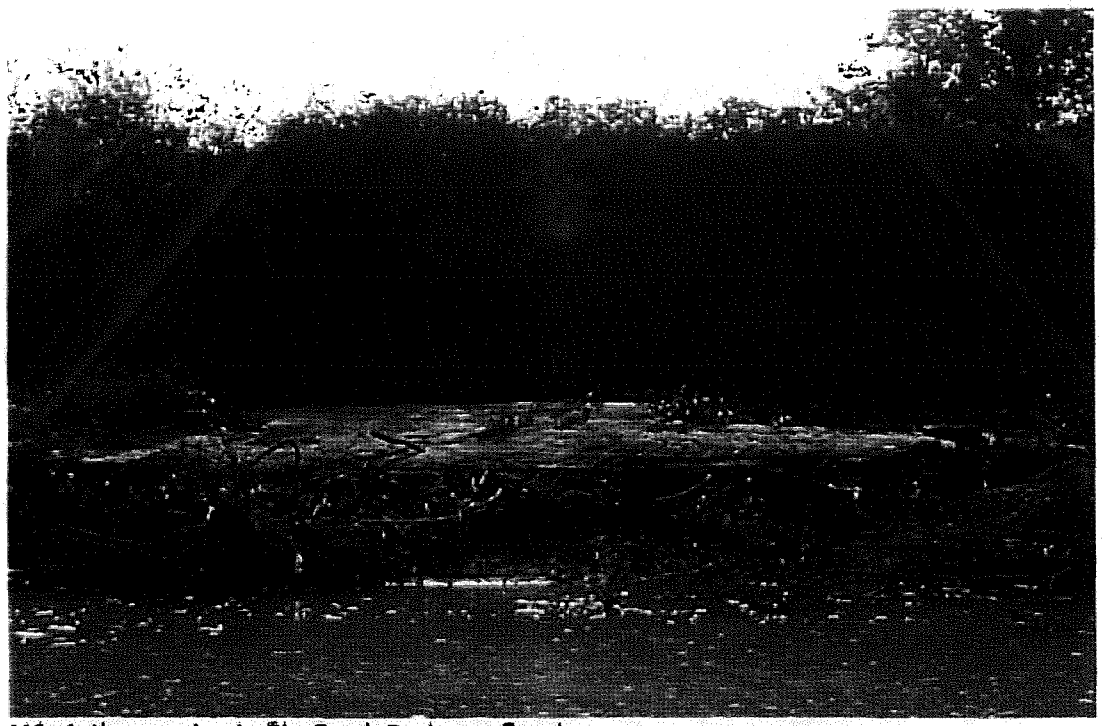
M2: Broken culvert

M3: Ditch with standing water

M4: Concrete slab in bank



M5: Active erosion in Big Creek Drainage Canal



M6: Active erosion in Big Creek Drainage Canal

M7: Active erosion in Big Creek Drainage Canal

M8: Big Creek Drainage Canal with active erosion, steep slopes, gullies ruts, and rills

M9: Big Creek Drainage Canal with active erosion, steep slopes, gullies ruts, and rills

M10: Ditch with flowing and pooling water with aquatic biota; steep slopes; gullies, ruts, and rills. Portions have erosion and riprap.

M11: Ditch with flowing and pooling water with aquatic biota; steep slopes; gullies, ruts, and rills. Portions have erosion and riprap.

M12: Ditch with aquatic vegetation and biota; active erosion; steep slopes; gullies, ruts, and rills

M13: Debris in creek

M14: Backup at intersection of ditch and Big Creek Drainage Canal

M15: Blockage in Big Creek Drainage Canal

Appendix B

Erosion and Waters of the State Inspection Forms

Erosion & Waters of the State Inspection Form

Inspector's Name: Chris Triplett

Block ID: A

Ditch/Land IDs: A

Date: 10/07/02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
ALAN-1	4				BT1/1&2
ALAN-2	Sink hole				BT1/2
A-1	LOW AREA				BT1/3
ALAN-3	LOW AREA				BT1/4
ACUL-1	CULVERT - ? SILTED IN				BT1/5
ACUL-2	CULVERT	14"			
ACUL-3	CULVERT	18"X36"			
ACUL-4	CULVERT -3	12"X25'			BT1/7
ALAN-4	LOW AREAS				BT1/8
ALAN-5	LOW AREAS				BT1/9&10
ACUL-5	CULVERT EROSION AT INLET	18"			BT1/11
ACUL-6	CULVERT	15"X38"			
ACUL-7	CULVERT	18"X40"			
ACUL-8&9	CULVERT	16"X38"			

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
3 — Gullies, Ruts, Rills (minimal, moderate, major)
4 — Bare Soil Upgradient
5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion a Waters of the State
Inspection Form

Inspector's Name: Chris Triplett

Block ID: A

Ditch/Land IDs:

Date: 10/07/02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
ACUL-10 + 11	Culvert Erosion at entrance	15"x38"			
ACUL-12	Culvert	26"			BTI/12
AD-3	2		? Y		BTI/13
ACUL-13	Culvert Erosion at outlet				BTI/14
ACUL-14	CULVERT SILTED IN (HALF)	10"			BTI/15
ACUL-15	CULVERT EROSION AT OUTLET	15"			BTI/16
ACUL-16	CULVERT SILTED IN (1/4)	10"			BTI/17
ACUL-17	CULVERT SILTED IN (100%)	3½" (PVC)			BTI/18
ALAN-6	4				BTI/19
ALAN-7	4				BTI/20

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
3 — Gullies, Ruts, Rills (minimal, moderate, major)
4 — Bare Soil Upgradient
5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion and Waters of the State Inspection Form

Inspector's Name: Phil Atkinson

Block ID: A

Ditch/Land IDs:

Date: 10-7-02

w = wet area
D = ditch

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
A-D1	Ditch		N		A-1
A-D2	Ditch		N		A-2
A-S1	Storm Drain (18"x24")		N		
A-W1	wet area (~20' x20')				A-3
A-C1	Culvert # clean+clear	15"			A4-A5
A-C2	"	36"			
A-C3	"	36"			
A-C4	"	16"			
A-C5	"	34"			
A-D3	Ditch 2 - riprap - black willows				A6-A8
A-D4	Ditch				A-9
A-D5	Ditch				A-10
A-C6	culvert (dry) silt in pipe	18"			A-10
A-C7	culvert (2x2) 2pairs	18" each			A-11+12

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
3 — Gullies, Ruts, Rills (minimal, moderate, major)
4 — Bare Soil Upgradient
5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion and Waters of the State Inspection Form

Inspector's Name: Phil Atkinson

Block ID: A

Ditch/Land IDs:

Date: 10-7-02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
A-D6	Ditch	~~"~~			
A-C8	culvert (2)	12"			A-13

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
3 — Gullies, Ruts, Rills (minimal, moderate, major)
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5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion and Waters of the State Inspection Form

Inspector's Name: Chris Triflett **Block ID:** Q 15

Ditch/Land IDs: **Date:** 10/07/02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
BD-3	WATER HAS NO OUTLET AND HAS ERODED UNDER SIDEWALK				BT2/142
BCUL-1 & 2	Culvert	12"			
BD-5	WATER HAS ERODED UNDER SIDEWALK				
BSD-1	STRONG DRAIN HAS SILT FLOWING INTO IT				BT2/3
BLAN-1	4				BT2/4
BDE-1	WATER HAS ERODED UNDER SIDEWALK				BT2/5
BCUL-3	CULVERT	12"			
BSWCUL-1	SIDEWALK CULVERT	10"x 60"			
BCUL-4	CULVERT I AND O	12"			
BSW-1	WATER IN DITCH HAS NO OUTLET				BT2/6
BSW-2	STANDING WATER HIGH POINT BEGINS SD				BT2/07
BD-19	STANDING WATER				B

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
3 — Gullies, Ruts, Rills (minimal, moderate, major)
4 — Bare Soil Upgradient
5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion and Waters of the State Inspection Form

Inspector's Name: Phil Atkinson

Block ID: B

Ditch/Land IDs:

Date: 10-7-02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
B-W1	Standing H_2O in drive				B-1
B-W2	" " " sidewalk				B-2
B-C1	Culvert	12"			
B-D1	Ditch (minor flow)				
B-C2	culvert (sidewalk)	15"x25"			
B-D~~2~~5	Ditch (minor)				
B-D~~3~~6	Ditch (minor)				
B-C3	culvert (sidewalk)	6"h x 15"w			
B-C4	undermashed sidewalk				B-3
B-C5	" "				B4
B-C6	" "				B5
B-C7	sidewalk culvert	10"x24"w			
B-C8	" "	"			
B-D7	ditch (minor)				

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
3 — Gullies, Ruts, Rills (minimal, moderate, major)
4 — Bare Soil Upgradient
5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion and Waters of the State Inspection Form

Inspector's Name: Phil Atkinson

Block ID: B

Ditch/Land IDs:

Date: 10-7-02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
B - W2	water standing				B-6
B - C9/C11/C10	Sidewalk culvert	6x15			
B - W3	standing H_2O - poor drainage also in Road to storm sewer				B-7/8
B - W4	several small areas of water in former housing units				
B - W5	" " " " in grass - no grass				
B - D8	ditch (minor)				
B - SD1	storm drain				B-9
B - W6	standing water (several areas)				B-10
B - D8	ditch (minor)				
B - D9	ditch (minor)				
B - C12/13/14	sidewalk culvert	8x24			
B - D10	ditch (dead grass) poorly drained				
B - D11	ditch (new sod)				B-11
B - C15	sidewalk culvert	10x15			

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
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5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion and Waters of the State Inspection Form

Inspector's Name: Phil Atkinson

Block ID: B

Ditch/Land IDs:

Date: 10-7-02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
B-D12	ditch (blocked storm drain				B-12
B-C16	sidewalk culverts				

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
3 — Gullies, Ruts, Rills (minimal, moderate, major)
4 — Bare Soil Upgradient
5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion and Waters of the State Inspection Form

Inspector's Name: Chris Triplett **Block ID:** C

Ditch/Land IDs: **Date:** 10/07/02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
ELAN-1	4				BT2/8
CCUL-1	CULVERT FROZEN HOSE	18"			BT2/9
CLAN-2	4				BT2/10
CLAN-3	LOW AREA				BT2/11
CCUL-2	CULVERT	4" PVC			BT2/12
CLAN-4	4				
CDSW-1	STANDING WATER HIGH SPOT BEFORE SD				BT2/13
CCUL-3	CULVERT 2 + 3	18"			BT2/14
C1-D1	2 + 3 STANDING LATER				BT2/15 & 16
CCUL-4	CULVERT 3	10"			BT2/17 & 18
CCUL-5	CULVERT	10"			~~BT2/19~~
C1-D2	3				BT2/19
CLAN-5	LOW AREA				BT2/20
CLAN-6	WATER HAS FROZEN UNDER SIDEWALK				BT2/21

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
3 — Gullies, Ruts, Rills (minimal, moderate, major)
4 — Bare Soil Upgradient
5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion a. Waters of the State Inspection Form

Inspector's Name: Chas Taylor **Block ID:** C

Ditch/Land IDs: **Date:** 10/07/02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
CLAN-7	@ 4				BT2/22
CD-5	STANDING WATER NO OUTLET				BT3/1
CD7-1	~~CULV~~ STORM DRAIN NEEDS REPAIR + 3				BT3/2
CCUL-6	CULVERT SILTED IN (1/4)	15"			BT3/[illegible]
CCUL-7	" " " (1/2)	15"			BT3/[illegible]
CLAN-8	LOW AREA HOLDING WATER 14				BT3/[illegible] S

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
3 — Gullies, Ruts, Rills (minimal, moderate, major)
4 — Bare Soil Upgradient
5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion and Waters of the State Inspection Form

Inspector's Name: Phil Atkinson

Block ID: C

Ditch/Land IDs:

Date: 10-7-02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
C-D1	ditch (minor)				
C-SD1	storm drain (2)				C-1
C-C1	culvert (PVC)	6"			
C-W1	standing water				C-2
C-G1	Ground - bare				C-3
C-C2/3	culvert	15"			
C-D2	ditch (East (grassy) (west bare soil) little)				C4/5
C-G2	Ground - bare, under oaks				C6/7/8
C-C4	culvert	20"			
C-C5	steel culvert (slight washout under sidewalk)	10"			
C-W2	wet area (dead grass)				
C-C6	steel grate w/ concrete culvert	16"			
C-D3	ditch (some holes with H_2O no grass)				
C-C7	culvert (2)	18"			

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
3 — Gullies, Ruts, Rills (minimal, moderate, major)
4 — Bare Soil Upgradient
5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion a[illegible] Waters of the State
Inspection Form

Inspector's Name: Phil Atkinson

Block ID: C

Ditch/Land IDs:

Date: 10-7-02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
C-W3	standing water and bare soil in ditch				
C-G3	bare soil 1				
C-C8	sidewalk undermine?				
C-D4	ditch - ok				
C-W4	standing water in grass w/bare spots				
C-D5	ditch - concrete lined - ok				

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
3 — Gullies, Ruts, Rills (minimal, moderate, major)
4 — Bare Soil Upgradient
5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion and Waters of the State Inspection Form

Inspector's Name: Brad Taylor **Block ID:**

Ditch/Land IDs: **Date:** 10/8/02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
D-4	Erosion around concrete				BT4 1
D-4	(1)-(2)				BT4 2
D-4	8 culverts at bridge	3"			BT4 3
DCUL 1		60"			
DCUL 2		24"			
DCUL 3		15"			
DCUL 4		18"			
DCUL 5		24"			
DCUL 6		18"			
DCUL 7	RIP RAP 50% silted	12"			BT4 4
DCUL 8	erosion around headwall	24"			BT4 5
DCUL 9		18"			
DCUL 10	Erosion behind headwall	36"			BT4 6
DCUL 11		24"			

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
3 — Gullies, Ruts, Rills (minimal, moderate, major)
4 — Bare Soil Upgradient
5 — Accumulation of Silt In Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion a. Waters of the State Inspection Form

Inspector's Name: Brad Taylor **Block ID:** D

Ditch/Land IDs: **Date:** 10/8/02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
D-3	(2)(3)		Y	WF AV AB	BT4 7/8
DCHL 12	2 - 8'x8' box cul.	8'x8' (2)			
DCHL 13		36"			
DCHL 14		25"			
D-3	(1) (2)				BT4 9
D7	(1)(2)(3) entire length		Y	WF AV AB	BT4 10/11
DCHL 15	2- 54"	2-54"			
DCHL 16	eroding behind headwall	31"			BT4 13
DCHL 17	Broken	20"			BT4 12
DCHL 18	4" silt	36"			
DCHL 19	2- culverts	2-54"			
DCHL 20	3" silt	36"			
DCHL 21		12"			
DCHL 22	75' silted	12"			

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
3 — Gullies, Ruts, Rills (minimal, moderate, major)
4 — Bare Soil Upgradient
5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion a[illegible] Waters of the State
Inspection Form

Inspector's Name: Brad Taylor

Block ID: D

Ditch/Land IDs:

Date: 10/8/02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
D-11	Ditch		N		
DCUL 23	50% silted				BT4 14
D-12	Ditch		N		
DCUL-24	(6) standing water	36"			BT4 16
DCUL-25		31"			
DCUL-26		18"			
D-6	(5) (6)				BT4 15
D-12	Swale				
DCUL27	PVC	8"			
DCUL28	Conc.	12"			
D-13	Ditch		N		
DCUL29	B	24"			
DCUL30		24"			

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
3 — Gullies, Ruts, Rills (minimal, moderate, major)
4 — Bare Soil Upgradient
5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion a[illegible] Waters of the State Inspection Form

Inspector's Name: B. Taylor **Block ID:**

Ditch/Land IDs: **Date:**

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
DCuL 31		18"			
DCuL 32		18"			
D-15	swale		N		
DCuL 33	54"x 36" oval culvert	54x36			
D-16			N		
D-17			N		
DCuL 34	2-24" culv.	2-24"			
DLAN 1	Low Lying Area				BT4 17/18
DCuL 35	Corrug. steel	32"			
DCuL 36	corrug steel	32"			
D-18	Standing water			AV only	
DCuL 37	54x36 oval	54x36			
DCuL 38/39	Corrug. steel 1/4 silted	12"			
D-19			N		

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
3 — Gullies, Ruts, Rills (minimal, moderate, major)
4 — Bare Soil Upgradient
5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion a[illegible] Waters of the State
Inspection Form

Inspector's Name: B. Taylor

Block ID: D

Ditch/Land IDs:

Date: 10/8/02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
DCHL 40	½ silted	10"			BT4 19
DCHL 41	corrug	16"			
DCHL 42		16"			
DLAN 2	low lying area		N	too small	BT4 20
DCHL43	58 x 38 oval	58"x38"			
DCHL 44	concrete	15"			
DCHL 45	conc.	15"			
D-20	swale		N		
DCHL46	corrug 50) ? 50% silted	16			
DCHL47	corrug. 50).	16			
DCHL48		18			
DCHL49		18			
D-21	ditch				
D-22	swale				

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
3 — Gullies, Ruts, Rills (minimal, moderate, major)
4 — Bare Soil Upgradient
5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion and Waters of the State Inspection Form

Inspector's Name: _____ **Block ID:** _____

Ditch/Land IDs: _____ **Date:** _____

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
DLAN3	low lying area		N		BT4 21
DCUL 50		18"			
DCUL 51	erosion under concrete (2)	72"			BT5 1
DCUL 52					
D 24	(2) (5) (6)		Y? F.S.	all sign	BT5 2/3
DCUL 53		16"			
DCUL 54		16"			
DCUL 55		16"			
DCUL 56		16"			
DCUL 57		68"			
DCUL 58		15"			
DCUL 59		15"			
DCUL 60		16"			
DCUL 61/62	2- 6" conc.	2-6"			

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
3 — Gullies, Ruts, Rills (minimal, moderate, major)
4 — Bare Soil Upgradient
5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion a[illegible] Waters of the State Inspection Form

Inspector's Name: Brad Taylor

Block ID: D

Ditch/Land IDs:

Date: 10/8/02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
D-2	conc. lined -DRY		N		
DCULVT63	3-8" conc	8			
DCULVT64	3-8" conc	8			
DCULVT65	3-8" conc	8			

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
3 — Gullies, Ruts, Rills (minimal, moderate, major)
4 — Bare Soil Upgradient
5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion a... Waters of the State Inspection Form

Inspector's Name: JRC/FKS

Block ID: (E)

Ditch/Land IDs:

Date: 10/7/02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
E1	Roadside Ditch (North End) -(1, 2, 7)	NA	Y	WP, AV, AB	1/10
E-CUL-01	culvert w/ liner + apron -(to E-1)	28"	—		1/11
E-CUL-02	OUTFALL apron - 50% blocked (to E-1)	16"	—		1/12
E-CUL-03	w/ apron (to E-1)	16"	—		
E-CUL-04	- w/apron (to E-1)	18"	—		
-05	- gap between liner + ditch (to E-1)	24"	—		
-06	- 50% blockage (to E-1)	24"	—		
-07	w/ apron (to E-1)	18"	—		
-08	oval (28"x45") to E1	28"	—		
-09	outfall to E-1	36"	—		
-10	" "	24"	—		
-11	oval (28x45") - E-1	28"	—		
E-CUL-12	No culvert - SCOUR (7) E1	NA	—		1/13
E-CUL-13	w/ apron E-1	30"	—		

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
3 — Gullies, Ruts, Rills (minimal, moderate, major)
4 — Bare Soil Upgradient
5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion and Waters of the State Inspection Form

Inspector's Name: JRC / FKS

Block ID: E

Ditch/Land IDs:

Date: 10/7/2

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
E-CUL-14	apron E-1	18"			
E-CUL-15	E-1	18"			
-16	oval 28 x 45" E-1	28"			
-17	outfall under bridge	18"			
-18	box culvert	96"			
-19	outfall to E-1	16"			
-20	" "	18"		AB AV in E-1 here	
-21	1'x3' metal box culvert to E-SWL-02	12"			
-22	oval 28 x 45" to E-SWL-02	28"			
-23	1'x3' metal box culvert (ESWL05)	12"			
-24	24" x 38" oval ESWL04 to -05	24"			
-25	24 x 38 oval ESWL06 to -03	24"			
-26	24 x 38 oval ESWL06 to -07	24"			
-27	24 x 38 oval ESWL05 to -01	24"			

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
3 — Gullies, Ruts, Rills (minimal, moderate, major)
4 — Bare Soil Upgradient
5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion and Waters of the State Inspection Form

Inspector's Name: Jay Cornelius / Fred Swan

Block ID: E

Ditch/Land IDs:

Date: 10-7-02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
E-SWL-01	Dry roadside swale to E-1 (North)	NA	N	NW, MC	—
E-SWL-02	Roadside swale (E-CUL-21) w/ small (South) pool	NA	N	WP, MC	—
E-SWL-03	Interior roadside swale (E-CUL 11, 25, 16)	NA	N	NW, MC	—
E-SWL-04	Interior roadside swale (1/4 circle) (E-CUL-22, 24)	NA	N	NW, MC	—
E-SWL-05	Exterior roadside swale (E-CUL 23, 24)	NA	N	NW, MC	—
E-SWL-06	Interior roadside swale (1/2 circle) (E-CUL-25, 26)	NA	N	NW, MC	—
E-SWL-07	" " " (North) E-CUL 08, 04, 24	NA	N	NW, MC	—
E-SWL-08	Swale by cart path (NE)	NA	N	NW, MC	—
E-CUL-28	Large dbl. box culvert - 18ft x 4ft	48"	—	—	—
E-CUL-29	Metal corr. pipe	18"	—	—	—
E-CUL-30	w/ apron, part blocked	18"			
E-CUL-31	metal	18"			
EG	swale (east side of Block E)	—	N	NW, MC	
E7	swale (SE - Block E)	—	N	NW, MC	

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
3 — Gullies, Ruts, Rills (minimal, moderate, major)
4 — Bare Soil Upgradient
5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion and Waters of the State Inspection Form

Inspector's Name: JRC/FFS

Block ID: E

Ditch/Land IDs:

Date: 10/7/02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
E-2	E/W Ditch	NA	N	NW, MC	—
E-3	N/S Ditch - Mobile Home Park	NA	N	NW, MC	—
E-4	N/S Ditch - Mobile Home Park	NA	N	NW, MC	—
E-CUL-32	w/ concrete apron (E-2)	12"			
-33	storm water outfall (E-2)	12"			
-34	" (E-2)	18"			
-35	w/ concrete apron	14"			
-36	50% blocked (E-SWL-13)	18"			
-37	(E-SWL-13)	15"			
-38	under entrance to mobile park	18"			
-39	by Commissary (E-SWL-13)	18"			
-40	in Mobile Home Park (N)-E-3	15"			
-41	" " (S)-E-4	15"			
-42	concrete wall	36"			

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
3 — Gullies, Ruts, Rills (minimal, moderate, major)
4 — Bare Soil Upgradient
5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion and Waters of the State Inspection Form

5 of 5

Inspector's Name: Jpc/FKS

Block ID: E

Ditch/Land IDs:

Date: 10/7/02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
E-CUL-43	midway up bank (E-2)	10"			—
-44	bridge over (E-2) (near E-1)	—			—
-45	6x6' box culvert (E-1)	6 ft		AV, AB in E-1 here, WP	—
-46	outfall to E-1	18"			
-47	outfall to E-1; conc. w/apron	24"			1/7
-48	48" x 5' dbl. box culvert (E-1)	5 ft.		E-1 = WP, AV, AB - (Erosion) 2,5,6 — (WOS)	1/5,6,8,9
-49	54" → 12" stacked pipes (E-5)	54"			
-50	E-5	46"			
-51	E-5	46"			
E-5	swale (E/W)	—	N	MC, NW	
ESWL-09	swale from woods S of Commissary (from E to ESWL-12)	—	N	MC, NW	
ESWL-10	swale from W to ESWL-12	—	N	MC, NW	
ESWL-11	E/W swale (to E-5)	—	N	MC, WP to east	
ESWL-12	N/S swale (to E-5)	—	N	MC, NW	

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
3 — Gullies, Ruts, Rills (minimal, moderate, major)
4 — Bare Soil Upgradient
5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion and Waters of the State Inspection Form

Inspector's Name: Chris Tapleth

Block ID: F

Ditch/Land IDs:

Date: 10/08/02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
FLAN-2	SINK hole				CT1/6
FLAN-3	LOW AREA STANDING WATER				CT1/9
FCUL-7	CULVERT (BELOW GRADE)	16"			
FCUL-8	CULVERT	2-10"			
FCUL-9	CULVERT + 3	18"			CT1/8
FCUL-10	CULVERT	2-10"			
FCUL-11	CULVERT	12"			
FCUL-12	CULVERT (PVC) +SQ(¼)	8"			CT1/9
FD-13	1, 3, + 4				CT1/10
FLAN-4	LOW AREA STANDING WATER				CT1/11
FCUL-13	CULVERT CMP	22"			
FCUL-14	CULVERT (5)	2-18"			CT1/12
FLAN-5	4				CT1/13
FLAN-6	LOW AREA STANDING WATER				

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
3 — Gullies, Ruts, Rills (minimal, moderate, major)
4 — Bare Soil Upgradient
5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion and Waters of the State Inspection Form

Inspector's Name: Phil Atkinson

Block ID: F

Ditch/Land IDs:

Date: 10-8-02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
F-C12	Culvert	32"			F18
F-C13	steel culvert	8"? damaged			
F-W4	standing water				F19

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
3 — Gullies, Ruts, Rills (minimal, moderate, major)
4 — Bare Soil Upgradient
5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion and Waters of the State Inspection Form

Inspector's Name: Phil Atkinson

Block ID: F

Ditch/Land IDs:

Date: 10-8-02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
F-D7	ditch, grassy, minor				
F-D8	ditch w/damaged storm grate)				F13
F-D9	ditch, concrete channel w/soil building				F14
F-C5	culvert (2 total culverts)	8"			F14
F-C6	culvert	48"			F15
F-D10	ditch ~2,		Yes	WF, AV, AB, MC	F16
F-W2	standing water w/silt				
F-C7	culvert	16"			
F-C8	steel culvert	6"			
F-C9	" "	"			
F-C10	culvert	16"			
F-D11	ditch dry, grassy				
F-C11	culvert	24"			
F-W3	standing water, bare soil				F17

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
3 — Gullies, Ruts, Rills (minimal, moderate, major)
4 — Bare Soil Upgradient
5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion and Waters of the State Inspection Form

Inspector's Name: Phil Atkinson

Block ID: F

Ditch/Land IDs:

Date: 10-8-02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
F-S1	Soil erosion		0		F1
F-D1	Ditch 1, 4.		off property		F2
F-S2	bare soil w/ H_2O (may be from recent fence install)				F3, 4, 5,
F-S3	Soil-bare, vege. stressed, standing H_2O				F6
F-C1	culvert	14"			
F-D2	ditch, asphalt, silt + mud building				F7
F-C2	culvert, steel	35"			F8
F-D3	ditch (3 minimal)				F9
F-C3	culvert, steel, 5	24"			F-10
F-D4	ditch, new?, 5, 6, WP, need better drainage?				F9
F-W1	water standing				F11
F-D5	ditch, grassy, minor erosion at 1 sct/m				F12
F-C4	plastic culvert	12"			
F-D6	ditch, minor, grass				

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
3 — Gullies, Ruts, Rills (minimal, moderate, major)
4 — Bare Soil Upgradient
5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion & Waters of the State Inspection Form

Inspector's Name: Chris Triplett **Block ID:** F

Ditch/Land IDs: **Date:** 10/04/02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
F-CUL-15	CULVERT	15"			
F-CUL-16	CULVERT	18"X44"			

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
3 — Gullies, Ruts, Rills (minimal, moderate, major)
4 — Bare Soil Upgradient
5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion and Waters of the State Inspection Form

Inspector's Name: Chris Triple H

Block ID: F

Ditch/Land IDs:

Date: 10/08/02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
FD-4	2				CT1/1
FCUL-1	Culvert	18"			
FCUL-2	Culvert	15"			
FD-8	2				
FCUL-3	CULVERT C-HOPE	8"			
FD-9	2				CT1/2
FLAN-1	4				CT1/3
FCUL-4		18"			
FD-5	2				CT1/4
FCUL-5	CULVERT	8" X 34"			
~~FCUL-6~~		~~8" X 24"~~			
FCUL-6	CULVERT CMP	12"			
FCUL-7	CULVERT CMP	12"			
FD-11	STANDING WATER NO OUTLET				CT1/5

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
3 — Gullies, Ruts, Rills (minimal, moderate, major)
4 — Bare Soil Upgradient
5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion a[illegible] Waters of the State
Inspection Form

Inspector's Name: B. Taylor

Block ID: Golf course

Ditch/Land IDs:

Date: 10/8/02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
G-1	swale		N		
B-20	(2) (6)				BT6 1/2
GCUL 1/2	corrug. plastic	40"			
G-21	erosion around bridge				BT6 3
GCUL 3		10"			
GCUL 4/5	Bridge 6'8" 10'8"	86" x			BT6/4
GCUL 6/7	Broken conc.	22"			BT6 5
GCUL 8/9	1/2 silted	14"			
GCUL 10/11	Broken head wall	41"			
GCUL 12		20"			
GCUL 13		26"			
GCUL 14/15	Corrug. metal	18"		aquatic veg.	
GCUL 16	opening not visible				
GCUL 17/18	each point has two culverts	18"			

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
3 — Gullies, Ruts, Rills (minimal, moderate, major)
4 — Bare Soil Upgradient
5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion a Waters of the State
Inspection Form

Inspector's Name: Brad Taylor

Block ID: G

Ditch/Land IDs:

Date: 10/4/02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
GLAN 1	low/wet area				BT6 7
GCUL 19/20	conc.	16"			
GCUL 21/22	metal	8"			
FLAP	flapper valve (10' across)				BT6 8
GCUL 23/24	corrug. ~~alu~~ steel	56"			
GCUL 25	corrug. steel	56"			
GCUL 26/27	corrug. steel	56"			
GCUL 28	PVC	6"			
GCUL 29	PVC	4"			
GCUL 30					BT 6 9/10
GCUL 31		12"			
GCUL 32	corrug. metal w/ conc. headwall	52"			
GCUL 33	conc.	56"			
GCUL 34	~~conc.~~ steel	12"			

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
3 — Gullies, Ruts, Rills (minimal, moderate, major)
4 — Bare Soil Upgradient
5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion and Waters of the State Inspection Form

Inspector's Name: B. Taylor

Block ID: G

Ditch/Land IDs:

Date: 10/9/02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
G 1	swale				
G 2	swale (conc. liner)				
G 3	swale (conc. liner)				
G 4	swale				
G 5	swale				
G 6	swale (grassy)				
G 7	swale (entire length N of road)				
G 8	swale				
G 9	ditch				
G 10	swale (grassy) (S. side of road)				
G 11	ditch (06)		Y	WF AV AB	BT6 8
G 12 / 13	swales along driveway				
G 14	swale				
G 15	swale (drains W to ditch)				

Erosion Feature Codes
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OTHER (describe)

Erosion a[illegible] Waters of the State Inspection Form

Inspector's Name: B. Taylor

Block ID: G

Ditch/Land IDs:

Date: 10/9/02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
G16	swale				
G17	ditch		Y	WF AV AB	
G18	ditch		Y	WF AV AB	
G19	ditch		Y	WF AV AB	
G20	large ditch (heavy growth)		Y	WF AV AB water in places	check w/ F. Swan
G21	large ditch (thick grass)		Y		
G22	swale				
G23	large ditch		Y	WF AV AB	
G24	Swale (length W. of road)				
G25	swale				
G26	Swale				
G27	swale (conc. lined.)				
G28	Swale				
G29	swale (conc. lined)				

Erosion Feature Codes
1 — Active Erosion
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OTHER (describe)

WOS Feature Codes
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NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion a[illegible] Waters of the State
Inspection Form

Inspector's Name: B. Taylor

Block ID: G

Ditch/Land IDs:

Date: 10/9/02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
G30	swale				
G31	ditch (grassy)		Y	WF AV AB	
G32	swale				
G33	ditch				
G34	swale				
G35	swale				
G36	swale				
G37	swale into ditch				

Erosion Feature Codes
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7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion a[illegible] Waters of the State
Inspection Form

Inspector's Name: Chris Triplett

Block ID: 14

Ditch/Land IDs:

Date: 10/09/02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
14D-19	1, 2, 3				PATH/7+8 +9
Hcul-54	Culvert	18"			

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
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4 — Bare Soil Upgradient
5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion and Waters of the State Inspection Form

Inspector's Name: Chris Triplett

Block ID: 14

Ditch/Land IDs:

Date: 10/09/02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
HCUL-40	Culvert	24"			
HCUL-41	"	25"			
HCUL-42	" (SILT & WATER)	18"			
HCUL-43	CULVERT	36"			
HCUL-44	Culvert	18"			
HCUL-45	Culvert (WATER)	18"			
HCUL-46	Culvert (some silt)	18"			
HCUL-47	Culvert Standing water (Fish)	56"			
H 1	1, 2, 3, STANDING WATER (WP, AV, AB)				FACTH/C
HCUL-48	Culvert	18"			
HCUL-49	"	18"			
HCUL-50	" CMP OVAL	24"X36"			
HCUL-51	" CMP OVAL	24"X36"			
HCUL-52	" CMP OVAL	24X36"			

Erosion Feature Codes
1 — Active Erosion
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5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion and Waters of the State Inspection Form

Inspector's Name: Chris Tripleth

Block ID: 14

Ditch/Land IDs:

Date: 10/09/09/22

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
HCUL-27	Culvert	2-21"			
HD-18	2, 1 WATER STANDING (FISH)		?		
HCUL-28	Culvert water + silt (1/4)	15"			
HCUL-29	Culvert water	15"			
HCUL-30	BLACK STEEL CULVERT	6"			
HCUL-31	Culvert & 3, 1	12"			
HCUL-32	Culvert	12"			
HCUL-33	Culvert	12"			
HCUL-34	Culvert	15"			
HCUL-35	11	36"			
HCUL-36	11	12"			
HCUL-37	Culvert (1/4 silt)	18"			
HCUL-38	Culvert	24"			10/09
HCUL-39	11 (1/4 (silt)	18"			

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
3 — Gullies, Ruts, Rills (minimal, moderate, major)
4 — Bare Soil Upgradient
5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion a[illegible] Waters of the State
Inspection Form

Inspector's Name: Chris Trioleth

Block ID: H

Ditch/Land IDs:

Date: 10/08/02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
HCUL-13	Culvert (½ silted in)	12"			PICTURES
HCUL-14	Culvert Standing water	15"			
HCUL-15	Culvert " "	15"			
HCUL-16	" " "	18"			
HCUL-17	Box Culvert	15"X15"			
HCUL-18	Culvert	12"			
HCUL-19	"	24"			
HCUL-20	" ½ silted in	18"			
HCUL-21	" (1 - ½ silted in)	2 - 12"			
HCUL-22	" ¼ silted in	12"			
HCUL-23	" ½ silted in	12"			
HCUL-24	"	18"			
HCUL-25	"	15"			
HCUL-26	"	15"			

Erosion Feature Codes
1 — Active Erosion
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OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion and Waters of the State Inspection Form

Inspector's Name: Chris Triplett

Block ID: H

Ditch/Land IDs:

Date: 10/08/02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
HD-9	WATER STANDING				PACT H/1
HCUL-1	Culvert	52"			~~PACT H/2~~
H8	2 Conc Lined				PACT H/2-3
HCUL-2	Culvert	2-21"			
HCUL-3	Culvert	25"			
HCUL-4	Culvert C-HDPE	12"			
HCUL-5	Culvert	12"			
HCUL-6	Culvert	12"			
HCUL-7	Culvert	2-24"			
HCUL-8	Culvert	~~20~~ 12"			
HCUL-9	Culvert	12"			
HCUL-10	1	18"			
HCUL-11	1 Silted in (90%)	18"			
HCUL-12	1	12"			PACT H/4

Erosion Feature Codes
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7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion a[illegible] Waters of the State
Inspection Form

Inspector's Name: Chris Triplett

Block ID: J

Ditch/Land IDs:

Date: 10/15/02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
JSCUL-1	Side walk under cut By water				CTPA-J/1
JD-1	Standing water				
JCUL-1	Silted in 100%				CTPA-J/2
JCUL-2	CULVERT METAL	11"			
JCUL-3	CULVERT BLACK PLAS	12"			
JCUL-4	CULVERT SILTED IN (1/2)	12"			
JCUL-5	CULVERT	18"			
JCUL-6	CULVERT	18"			
JCUL-7	CULVERT	18"			
JCUL-8	CULVERT 1/3 silted in	16"			
JCUL-9	11	11"			
JCUL-10	11 1/4 filled with Rocks	15"			
JCUL-11	11 3- Erosion in front of it	24"			CTPA-J/3
JCUL-12	CULVERT	24"			

Erosion Feature Codes
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5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion a[illegible] Vaters of the State
Inspection Form

Inspector's Name: Chris Triplett

Block ID: J

Ditch/Land IDs:

Date: 10/15/02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
JCUL-13	Culvert	15"			CTPA-J/4
JCUL-14	11	24"			
JD-8	1, 2, 3				
JCUL-15	CULVERT	15"			
JCUL-16	CULVERT	18"			
JCUL-17	CULVERT	15"			
JCUL-18	CULVERT SIDE WALK	18"			
JD-10	1, 2, 3				CTPA-J/5
JCUL-19	CULVERT	15"			
JCUL-20	11	12"			
JCUL-21	11	10"			
JCUL-22	11	12"			
JCUL-23	11 1, 3 METAL PIPE	15"			CTPA-J/6
JCUL-24	11	15"			

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OTHER (describe)

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NW — No Water
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OTHER (describe)

Erosion & Waters of the State Inspection Form

Inspector's Name: Chris Triplett

Block ID: J

Ditch/Land IDs:

Date: 10/15/02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
J CUL-25	CULVERT SOME EROSION FROM FLEX BOX	10"			
J CUL-26	CULVERT	24"			
J CUL-27	11	24"			
J CUL-28	11 3" of mud	18"			
JD-11	1, 3				
J CUL-29	CULVERT	12"			
J CUL-30	CULVERT T CMP (2" mud)	15"			
J CUL-31	11	12"			
J CUL-32	11	15"			
J CUL-33	11	15"			
J CUL-34	11	15"			
J CUL-35	11	2 - 6"			
J CUL-36	11	18"			
JD-12	HIGH GRASS IN DITCH LINE				CTR-J/7

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OTHER (describe)

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WF — Water Present/FLOWING
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NW — No Water
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OTHER (describe)

Erosion a[illegible] Vaters of the State
Inspection Form

Inspector's Name: Chris Triplett

Block ID: J

Ditch/Land IDs:

Date: 10/15/02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
JCUL-37	Culvert ½ silted in & full of water	15"			
JCUL-38	"	15"			
JCUL-39	"	12"			
JCUL-40	"	15"			
JCUL-41	"	15"			
JD-13-E	1, 3				CTPA-J/8
JCUL-42	CULVERT	18"			"
JD-14-E	1, 3				CTPA-J/9
JCUL-43	CULVERT	18"			
JCUL-44	"	18"			
JD-15-E	1, 3				CTPA-J/10
JCUL-45	CULVERT	15"			
JCUL-46	"	18"			
JCUL-47	"	21"			

Erosion Feature Codes
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NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion a Vaters of the State
Inspection Form

Inspector's Name: Chris Triplett

Block ID: J

Ditch/Land IDs:

Date: 10/15/02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
JCUL 48	CULVERT	16"			
JCUL-49	CULVERT 100% → 2"-MUD	10"			
JCUL-50	CULVERT IN BAD SHAPE	18"			
JCUL-51	"	15"			
JCUL-52	" DESTROYED	15"			CTPA-J/11
JCUL-53	CULVERT	12"			
JCUL-54	"	12"			CTPA-J/12
JLAN-1	1, 4				
JD-15	STANDING WATER NO OUTLET				CTPA-J/13
JCUL-55	CULVERT	18"			
JCUL-56	CULVERT	18"			
JCUL-57	"	15"			
JCUL-58	" silted in	15"			
JCUL-59	"	12"			

Erosion Feature Codes
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7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion & Waters of the State Inspection Form

Inspector's Name: Chris Triplett

Block ID: J

Ditch/Land IDs:

Date: 10/15/03

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
FCUL-60	CULVERT	2-10"			

Erosion Feature Codes
1 — Active Erosion
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6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion and Waters of the State Inspection Form

CTM...

Inspector's Name: Chris Triplett **Block ID:** K

Ditch/Land IDs: **Date:** 10/08/02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
KLAN-1	4				CTMAK/1
KCUL-1	CULVERT	15"			
KLAN-2	4				CTMAK/2
KCUL-2	CULVERT	15"			
KCUL-3	CULVERT HOLDING WATER	15"			CTMAK/3

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
3 — Gullies, Ruts, Rills (minimal, moderate, major)
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6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion and Waters of the State Inspection Form

Inspector's Name: Brad Taylor / Amy Liddell

Block ID: Whitty Housing

Ditch/Land IDs:

Date: 10/25

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
W-1	conc lined ditch			picture is common to all conc. lined ditches	AL1/6
W-2	swale				
W-3	swale				
W-4	swale				
W-5/6/7	conc lined				
W-8/9/10	conc lined				
W-11	swale				
W-12	conc. lined				
W-13	large swale				
WCUL-1	haybales + grass planted	18"			AL1/7-8
WCUL-2	30% silted erosion around headwall	18"			AL1/9

Erosion Feature Codes
1 — Active Erosion
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4 — Bare Soil Upgradient
5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Area H

Feature ID (Ditch ID + #)	Culvert	Description of Feature	Number	Culvert ID (w/diameter)	Water of State? (Y/N)	Water of State Feature/Notes (Code or Description)	Poto (Disk/Frame #)
HD-18			1 2 3				PACTH/7 PACTH/8 PACTH/9
HCUL-54	culvert			18"			
HCUL-40	culvert			24"			
HCUL-41	culvert			25"			
HCUL-42	culvert	silt and water		18"			
HCUL-43	culvert			36"			
HCUL-44	culvert			12"			
HCUL-45	culvert	water		18"			
HCUL-46	culvert	some silt		18"			
HCUL-47	culvert	standing water; fish		56"			
H-1		standing water	1 2 3		yes	WP AV AB	PACTH/6
HCUL-48	culvert			18"			
HCUL-49	culvert			18"			
HCUL-50	culvert	CMP oval		24" x 36"			
HCUL-51	culvert	CMP oval		24" x 36"			
HCUL-52	culvert	CMP oval		24" x 36"			
HCUL-27	culvert			Two 21"			
HCUL-28	culvert	water and 1/4" of silt		15"			
HCUL-29	culvert	water		15"			
HCUL-30	culvert	black steel		6"			
HCUL-31	culvert		1 3	12"			
HCUL-32	culvert			12"			
HCUL-33	culvert			12"			
HCUL-34	culvert			15"			
HCUL-35	culvert			36"			
HCUL-36	culvert			12"			

HCUL-37	culvert	1/4" of silt		18"			
HCUL-38	culvert			24"			
HCUL-39	culvert	1/4" of silt		18"			
HCUL-13	culvert	1/2" of silt		12"			PACTH/5
HCUL-14	culvert	standing water		15"			
HCUL-15	culvert	standing water		15"			
HCUL-16	culvert	standing water		18"			
HCUL-17	culvert	box		15" x 15"			
HCUL-18	culvert			12"			
HCUL-19	culvert			24"			
HCUL-20	culvert	1/2" of silt		18"			
HCUL-21	culvert	1/2" to 1" of silt		Two 12"			
HCUL-22	culvert	1/4" of silt		12"			
HCUL-23	culvert	1/2" of silt		12"			
HCUL-24	culvert			18"			
HCUL-25	culvert			15"			
HCUL-26	culvert			15"			
HD-9		water standing					PACTH/1
HCUL-1	culvert			52"			
H-8		Concrete lined	2				PACTH/2 PACTH/3
HCUL-2	culvert			Two 21"			
HCUL-3	culvert			25"			
HCUL-4	culvert	C-HDPE		12"			
HCUL-5	culvert			12"			
HCUL-6	culvert			12"			
HCUL-7	culvert			Two 24"			
HCUL-8	culvert			12"			
HCUL-9	culvert			12"			
HCUL-10	culvert			18"			
HCUL-11	culvert	silted in 90%		18"			
HCUL-12	culvert			12"			PACTH/4

Erosion & Waters of the State Inspection Form

Inspector's Name: Jay C. / Fred S.

Block ID: I

Ditch/Land IDs:

Date: 10/7/02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
I-1	swale along N boundary of I (2)	—	N	NW	—
I-2	armored - swale, E to base of perimeter Rd.	—	N	NW	—
I-3	continuation of E-2; to I-CUL-01	—	N	WP, AV	—
I-4	armored swale, E to base of perimeter Rd	—	N	NW	—
I-CUL-01	70 x 42" ovzl (to I-3)	42"	—	—	—
I-CUL-02	metal pipe w/ zpron (to I-3)	24"	—	—	—
I-CUL-03	gated pipe (near base boundary)	50"	—	—	—

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
3 — Gullies, Ruts, Rills (minimal, moderate, major)
4 — Bare Soil Upgradient
5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion a Waters of the State Inspection Form

Inspector's Name: JRC/FGS

Block ID: L

Ditch/Land IDs:

Date: 10/7/02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
L1	BIG CREEK - (1, 2, 3, 7)	NA	Y	WF, WP, AV, AB	~~0~~
L2	Ditch draining to Wetland 12 - (4)	NA	Y	WP,	1/1-4
L3	Ditch along fenceline (1, 2, 7) NO ACCESS	NA	Y	WF, WP, AV, AB	~~0~~
L4	Drainage from offsite field - NO ACCESS	NA	?	?	~~0~~
L5	Trib. to Big Creek - NO ACCESS	NA	?	?	~~0~~
~~OFF SITE~~					

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
3 — Gullies, Ruts, Rills (minimal, moderate, major)
4 — Bare Soil Upgradient
5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion and Waters of the State Inspection Form

Inspector's Name: Brad Taylor / Amy Liddell

Block ID: Big Creek

Ditch/Land IDs:

Date: 10/25

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
MD4-02	Backup @ intersection of ditch/creek				AL1/1
MD4-3	blockage in Big Creek				AL1/2
~~D=MA~~	~~Ditch~~				AL1/3-5
MD4-4	Pics of sideslopes				
MD-7	DITCH				

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
3 — Gullies, Ruts, Rills (minimal, moderate, major)
4 — Bare Soil Upgradient
5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion and Waters of the State Inspection Form

Inspector's Name: Chris Triplett

Block ID: M

Ditch/Land IDs:

Date: 10/09/02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
MCUL-1	CuLvert Cmp	32"			PICTm/1&2
M1	2, 3 WF, WP, FISH		?		PICTm/3&4
MD-1	Follow TREES AND STANDING WATER				
MCUL-1	Culvert	15"			
MCUL-2	Culvert	52"			
MCUL-3	Culvert	38"			
MD-2	1, 2, 3 Standing water				
MCUL-4	Culvert CMP Silted in (1/2)	24"			
MCUL-5	CULVERT	55"			
MCUL-6	CULVERT	8' x 8'			
M-3	STANDING WATER				PICTm/5
M-6	AB, AV FISH 1, 2, 3		X		PICTm/6
MCUL-7	Culvert	5'			
MD-3	1, 2, 3				

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
3 — Gullies, Ruts, Rills (minimal, moderate, major)
4 — Bare Soil Upgradient
5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion and Waters of the State Inspection Form

Inspector's Name: Chris Triplett

Block ID: M4

Ditch/Land IDs:

Date: 10/09/02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
MCUL-8	Culvert Broken	15"			PA CD#7
MP-4	STANDING WATER				
MCUL-8	CULVERT OVAL	38" x 60"			
MCUL-9	CULVERT	32"			
MCUL-10	CULVERT	18"			
MCUL-11	CULVERT SILTED IN (½)	18"			

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
3 — Gullies, Ruts, Rills (minimal, moderate, major)
4 — Bare Soil Upgradient
5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Erosion a. Waters of the State Inspection Form

Inspector's Name: Chris Triplett

Block ID: M

Ditch/Land IDs:

Date: 10/15/02

Feature ID (Ditch ID + #)	Description of Feature (Culvert, evidence of erosion, etc.) Use code or describe.	Culvert ID (w/ diameter)	Water of State? (Y/N/?)	Water of State Feature/Notes (Code or Description)	Photo (Disk/Frame #)
MLAN-1	1				CTPA-M2/1, 2, 3
MCUL-12	PLUGGED PIPE				CTPA-M2/5
MLAN-2	CONCRETE SLAB IN BANK, 2				CTPA-M2/6
MLAN-3	1, 2, 3				CTPA-M2/7+8
MD4-1	DEBRIS IN CREEK				CTPA-M2/9

Erosion Feature Codes
1 — Active Erosion
2 — Steep Slopes
3 — Gullies, Ruts, Rills (minimal, moderate, major)
4 — Bare Soil Upgradient
5 — Accumulation of Silt in Channel
6 — Excessive Vegetation in Channel (blocking flow)
7 — Scour Signs/Undercut banks
OTHER (describe)

WOS Feature Codes
WF — Water Present/FLOWING
WP — Water Present/POOLS
AV — Aquatic Vegetation Present
AB — Aquatic Biota Present (Fish/Benthic)

NW — No Water
MC — Mowed channel (banks and bed)
OTHER (describe)

Appendix C

Site Figures

Appendix D

Tables

Table 1
Culverts with Silt Accumulation

Rank	Block	Location	Dimension(s)*	Description	Photo No.**
1	A	NE corner of Hornet Ave and McCain St; west end of ditch; south of McCain St	18"	Dry silt in pipe	A1
1	A	100 feet from north end of ditch; west of Hornet Ave between McCain St and Essex St	10"	25% silted	A2
1	A	300 feet from north end of ditch; west of Hornet Ave between McCain St and Essex St	10"	50% silted	A3
1	A	North of Building S-237	3.5"	Completely silted, area of erosion in front of culvert	A4
1	A	400 feet north of Wasp Ave and Essex St; west of Wasp Ave	Dimensions not identifiable	Completely silted	A5
1	B	300 feet from north end of ditch; east of Wasp Ave between Essex St and Intrepid St		Storm drain with silt flow; partially collapsed black tarp barricade	B1
1	C	SE of Kittyhawk Ave and Intrepid St	15"	25% silted	C1
1	C	SE of Kittyhawk Ave and Intrepid St	15"	50% silted	C2
1	D	East end of ditch located south of Integrity Dr	Two 36"	10% silted, located in ditch with active erosion	
1	D	400 feet west of Building 262 on west entrance drive	Two 12"	CMP; 25% silted	
1	D	150 feet south of Ticonderoga St in ditch located west of Honor Dr	12"	50% silted	D1
1	D	200 feet west of Building 784; south end of swale on east side of Honor Dr	Dimensions not identifiable	50% silted	D2
1	D	475 feet west of Building 262 on west entrance drive	10"	50% silted	D3
1	D	275 feet SW of Building 784; north end of ditch located east of Honor Dr	12"	75% silted	
1	E	SE of Hutchins Dr and Singleton Ave	16"	Outfall apron one-half blocked	
1	E	275 feet south of Singleton Ave and Hutchins Dr; east of Singleton Ave	24"	50% silted	
1	E	Entrance drive to Building 782 off Polaris Dr	18"	50% silted	
1	F	NE corner of Building S-202	Two 18"	Accumulation of silt in channel; erosion in front	F1
1	F	150 feet north of Building S-202; north end of ditch	8"	Polyvinyl Chloride; 25% silted, low area with standing water to north; ditch has erosion	F2
1	G	Entrance drive to Building 551 off ATTU St	Two 14"	50% silted	
1	G	300 feet NE of intersection of Singleton Ave and ATTU St; north end of swale	Dimensions not identifiable	Opening no longer visible	
1	H	SE of Singleton Ave and Essex St; west end of ditch	18"	Evidence of some silt	
1	H	Entrance drive to Building 544 off Singleton Ave	18"	Silt and standing water	
1	H	Entrance drive to Buildings 518 and 516 off Elrod Loop	15"	25% silted with standing water	
1	H	South of entrance drive to Building 502 off Elrod Loop	12"	25% silted	

Table 1 Culverts with Silt Accumulation					
Rank	**Block**	**Location**	**Dimension(s)***	**Description**	**Photo No.****
1	H	Entrance drive to Buildings 545 to 548 off Singleton Ave	18"	25% silted	
1	H	Entrance drive to Buildings 537 and 538 off McCain St	18"	25% silted	
1	H	Entrance drive to Buildings 531 and 533 off Mitscher Dr	12"	50% silted	H1
1	H	South of Elrod Loop and Essex St	18"	50% silted	
1	H	Between entrance drive to Building 501 and Building 606 in ditch along Elrod Loop	12"	50% silted	
1	H	North of entrance drive to Building 501 in ditch along Elrod Loop	Two 12"	50% silted to all silted	
1	H	East of entrance drive to Buildings 535 and 536 off McCain St	18"	90% silted	
1	I	175 feet NW of Talos Dr and Eagle St intersection	24"	Partially blocked	
1	J	375 feet west of Singleton Ave and ATTU St intersection, north of ATTU St	15"	25% silted, in ditch with erosion	
1	J	100 feet south of Astoria Ave and Bougainville St	16"	33% silted	
1	J	East of Building 1514; south end of ditch located west of Memphis Ave	15"	50% silted; standing water	
1	J	SE of Indianapolis Ave and Bougainville St	12"	50% silted	
1	J	325 feet north of Indianapolis Ave and Bougainville St; east of Indianapolis Ave	Dimensions not identifiable	Completely silted; standing water; flooded sidewalk to north	J1
1	J	200 feet east of Hornet Ave and Eniwetok St; north of Eniwetok St	15"	Corrugated metal; 10% silted, in ditch with erosion	
1	J	250 feet east of Astoria Ave and Casablanca St; north of Casablanca St	10"	20% silted	
1	J	Intersection of Memphis Ave and Dakar Ave	18"	10% silted, in ditch with standing water	
1	J	SE of Astoria Ave and ATTU St	15"	25% blocked with rocks	
1	M	1,100 feet west of Building 787; east side of Wasp Ave	18"	50% silted	
1	M	100 feet south of Kittyhawk Ave and Ticonderoga St	21"	Corrugated metal; 50% silted, near ditch with erosion	
1	M	800 feet south of Building 787; south bank of Big Creek Drainage Canal	Dimensions not identifiable	Plugged pipe	M1

Notes:

* Dimension is diameter unless otherwise noted

**See Appendix A.

Table 2 Culverts with Active Erosion					
Rank	**Block**	**Location**	**Dimension(s)***	**Description**	**Photo No.****
4	A	150 feet NW of Building 429, north side of Essex St	18"	Active erosion at inlet	A6
4	A	150 feet west of Hornet Ave and Essex St	15" x 38" (box) 15" x 35" (box)	Active erosion at inlet	
4	A	175 feet from south end of ditch; west of Hornet Ave between McCain St and Essex St	15"	Active erosion at outlet	A7
4	A	125 feet from north end of ditch; west of Hornet Ave between McCain St and Essex St	15"	Active erosion at outlet	A8
4	A	375 feet north of Wasp Ave and Essex St; east of Wasp Ave	12" x 25" (box)	Gullies, ruts, rills	A9
4	B	275 feet west of Hornet Ave and Essex St; south of Essex St	12"	Active erosion	
4	C	325 feet south of Building 797	18"	Steep slopes; gullies, ruts, rills	C3
4	C	East of Building 777	10"	Gullies, ruts, rills	C4, 5
4	C	250 feet south of Tarawa Ave and Intrepid St; east of Tarawa Ave		Storm drain with steep slopes	C6
4	C	250 feet north of Singleton Ave and Oriskany St; west of Singleton Ave	18"	Eroded hole in front of culvert	C7
4	D	175 feet SW of Building 769 in ditch west of Honor Dr	24"	Active erosion around headwall	D4
4	D	200 feet SE of Building S-241	36"	Active erosion behind headwall; pipe exposed	D5
4	D	250 feet SE of Honor Dr and Integrity Dr; north side of ditch	31"	Active erosion behind headwall; eroded channel	D6
4	D	SE of Tennessee St and Oriskany St intersection	72"	Erosion under concrete; steep slopes	D7
4	F	150 feet west of Building S-72	18"	Gullies, ruts, rills	F3
4	H	Entrance drive to Buildings 513 and 514 off Elrod Loop	12"	Gullies, ruts, rills	
4	J	Hornet Ave and Bougainville St	15"	Metal pipe; gullies, ruts, rills	J2
4	J	NE of Indianapolis Ave and Bougainville St	10"	Active erosion around box	
4	J	South of Building 778 on ATTU St; east end of ditch north of ATTU St	24"	Erosion in front; gullies, ruts, rills	J3
4	W	NW of Building 2025 and west of ATTU St Extended	18"	30% silted erosion around headwall	

Notes:

* Dimension is diameter unless otherwise noted.

** See Appendix A.

Table 3 Culverts with Standing Water					
Rank	**Block**	**Location**	**Dimension(s)***	**Description**	**Photo No.****
2	D	300 feet SE of Building 769 and west of Honor Dr; north end of ditch	36"	Excessive vegetation in channel	D8
2	H	Ditch west of Mitscher Dr between entrance drive to Buildings 530/532 and 534	15"	Standing water	
2	H	Entrance drive to Building 529 off Mitscher Dr	15"	Standing water	
2	H	Entrance drive for Building 527 and 528 off Mitscher Dr	18"	Standing water	
2	H	Entrance drive for Buildings 515 and 517 off Elrod Loop	15"	Standing water	
2	H	NW of Singleton Ave and Essex St	18"	Standing water	
2	K	East of 2nd grouping of buildings, in ditch west of road	15"	Standing water	K1

Notes:
* Dimension is diameter unless otherwise noted.
** See Appendix A.

Table 4 Culverts with Steep Slopes					
Rank	**Block**	**Location**	**Dimension(s)***	**Description**	**Photo No.****
3	A	NE of Building S-238; east end of ditch south of McCain St	12"	Steep slopes	A10
3	C	200 feet west of Building 797	Two – 18"	Steep slopes	

Notes:
* Dimension is diameter unless otherwise noted.
** See Appendix A.

Table 5 Damaged Culverts Needing Replacement or Repair					
Rank	**Block**	**Location**	**Dimension(s)***	**Description**	**Photo No.****
1	C	275 feet north of Kittyhawk Ave and Oriskany St; east of Kittyhawk Ave		Storm drain needs repair; gullies, ruts, rills	C8
1	D	350 feet from east end of ditch located south of Integrity Dr, north side of ditch	20"	Broken	D9
1	E	200 feet south of Singleton Ave and Hutchins Rd; east of Singleton Ave		Gap between liner and ditch	
1	F	Entrance drive to Building S-212 off Kearsarge Ave	8"	Corrugated steel; damaged	
1	F	NE of intersection of Kittyhawk Ave and Ticonderoga St		Damaged storm grate	F4
1	G	Near the west entrance to Building N-26A on ATTU St Extended	22"	Broken concrete	G1
1	G	175 feet west of the entrance drive to Buildings 554 and 1441 on ATTU St Extended	41"	Broken headwalls	

Table 5 Damaged Culverts Needing Replacement or Repair					
Rank	**Block**	**Location**	**Dimension(s)***	**Description**	**Photo No.****
1	J	250 feet east of Astoria Ave and Casablanca St; south of Casablanca St	18"	Bad shape	
1	J	200 feet west of Indianapolis Ave and Casablanca St; south of Casablanca St	15"	Destroyed	J4
1	M	West of Building 787 and Honor Dr	15"	Broken	M2

Notes:
* Dimension is diameter unless otherwise noted.
** See Appendix A.

Table 6 Ditches/Swales with Silt Accumulation					
Rank	**Block**	**Location**	**Length (ft)**	**Description**	**Photo No.***
1	D	275 feet west of Building 784; west of Honor Dr	175	Excessive vegetation in channel	D10
4/1	D	East of Honor Dr; south of Oriskany St	500	Steep slopes; excessive vegetation in channel	D11
1	F	East side of Kittyhawk Ave; north of Ticonderoga St	150	Concrete channel with soil buildup	F5
1	F	West of intersection of Kearsarge Ave and Ticonderoga St	200	Asphalt ditch with silt and mud build up	F6

Note:
* See Appendix A.

Table 7 Ditches/Swales with Active Erosion					
Rank	**Block**	**Location**	**Length (ft)**	**Description**	**Photo No.***
4	D	West of Honor Dr; south of Ticonderoga St	500	Active erosion; erosion around concrete; steep slopes	D12, 13, 14
4	F	100 feet west of Buildings S-202, S-183, S-184, and S-235	1,300	Active erosion; bare soil	F7
4	F	150 feet north of Building 202	100	Active erosion; gullies, ruts, rills; bare soil	F8
4	F	East of Kearsarge Ave; south of Essex St	400	Linear sinkhole	F9
4	F	SW of Wasp Ave and Ticonderoga St	275	Grassy; minor erosion in one section	
4	H	Starts between Buildings 520 and 518 and extends south	500	Active erosion; steep slopes	
4	F	South of Building S-9 and Ticonderoga St	325	Gullies, ruts, rills	F10
4	J	North side of ATTU St; east of Memphis Ave	450	Active erosion; steep slopes; gullies, ruts, rills	J5
4	J	East side of Hornet Ave to north side of ATTU St to west side of Memphis St	1,150	Active erosion; steep slopes; gullies, ruts, rills	
4	J	North side of Eniwetok St	300	Active erosion; gullies, ruts, rills	

Table 7 Ditches/Swales with Active Erosion					
Rank	**Block**	**Location**	**Length (ft)**	**Description**	**Photo No.***
4	J	West of Helena Ave; south of Casablanca St	100	Active erosion; gullies, ruts, rills	J6
4	J	West of Marblehead Ave; south of Casablanca St	100	Active erosion; gullies, ruts, rills	J7, 8
4	M	West of Wasp Ave; south of Ticonderoga St	600	Active erosion; steep slopes; gullies, ruts, rills	

Note:
* See Appendix A.

Table 8 Ditches/Swales with Standing Water					
Rank	**Block**	**Location**	**Length (ft)**	**Description**	**Photo No.***
2	B	East of Tarawa Ave; south side of Essex St	300	Standing water	
2	B	325 feet north of Tarawa Ave and Intrepid St; west of Tarawa Ave	100	Poorly drained; dead grass	
2	C	175 feet west of Building 797; east side of street	300	Holes with water; areas of no grass	
2	D	450 feet south of Building 787; north of Big Creek Drainage Canal from Honor Dr to Singleton Ave	1,050	Standing water	
2	H	300 feet south of South Essex St	900	Standing water	H2
2	J	100 feet south of Hornet Ave and Casablanca St; east of Hornet Ave	100	Standing water with no outlet; active erosion; gullies, ruts, rills	J9
2	J	North of the armory to west of Indianapolis Ave to north of ATTU St	475	Standing water	
2	M	200 feet south of Kearsarge Ave and Ticonderoga St	250	Standing water with trees	
2	M	900 feet south of Wasp Ave and Ticonderoga St; north of Big Creek Drainage Canal	450 (10–20 wide)	Standing water	M3
2	M	South of Ticonderoga St from Kearsarge Ave to Kittyhawk Ave	500	Standing water, active erosion; steep slopes; gullies, ruts rills	

Note:
* See Appendix A.

Table 9 Ditches/Swales with Steep Slopes					
Rank	**Block**	**Location**	**Length (ft)**	**Description**	**Photo No.***
3	A	West of Hornet Ave between McCain St and Essex St	600	Steep slopes; Black Willows	A11, 12, 13, 14
3	C	South of Intrepid St; north of McDonalds and Building 797	750	Steep slopes; east, grassy; west, bare soil	C9, 10

Table 9 Ditches/Swales with Steep Slopes					
Rank	**Block**	**Location**	**Length (ft)**	**Description**	**Photo No.***
3	F	West of Buildings S-242, S-66, S-70, and S-72	1,800	Steep slopes	F11
3	F	250 feet north of Building 1664; south of Navy Rd	325	Steep slopes	
3	F	250 to 300 feet east of Buildings 1664 and S-242	850	Steep slopes	F12
3	H/I	East of access road along eastern boundary of Block H and Block I	4,000	Steep Slopes	
3	I	North of Corvus Loop	1,400	Swale; steep slopes	
3	M	750 feet south of Building 787 in north bank of Big Creek Drainage Canal		Steep slopes, concrete slab in bank	M4

Note:
* See Appendix A.

Table 10 Land Areas with Active Erosion				
Rank	**Block**	**Location**	**Description**	**Photo No.***
4	A	NE of Kittyhawk Ave and Essex St	Sinkhole, marked with orange cones	A15
4	A	500 feet west of Building 499	Bare soil	A16
4	A	North of Building S-238	Two areas, bare soil	A17, 18
4	B	300 feet south of Wasp Ave and Essex St intersection; east of Wasp Ave	Bare soil	B2
4	C	350 feet SE of Tarawa Ave and Intrepid St intersection	Bare ground	C11
4	C	150 feet south of McDonalds	Bare ground under oaks; standing water	C12, 13, 14
4	C	250 – 300 feet SW of Building S-797	Bare soil	
4	E	125 feet SW of Sample Dr and Mears St in ditch east of Singleton Ave	Scour signs/ undercut banks	
4	F	West of a complex of buildings at the west end of Ticonderoga St	Erosion between buildings and fence	F13
4	F	200 feet NW of Building S-242	Sparse grass; bare soil	F14
4	F	200 feet south of Kearsarge Ave and Intrepid St; west of Kearsarge Ave	Bare soil	F15
4	J	West of Building 1583; each side of walkway	Bare soil	
4	K	225 feet west of main road; west of building complexes	Bare soil	K2, 3

Note:
* See Appendix A.

Table 11 Sidewalk Erosion				
Rank	**Block**	**Location**	**Description**	**Photo No.***
5	B	375 feet north of Wasp Ave and Intrepid St; east of Wasp Ave	Sidewalk erosion; standing water	B10, 11, 12, 13
2/5	B	South of Essex St; between Hornet Ave and Tarawa Ave	Water has no outlet; erosion near sidewalks	B14
2/5	B	SE corner of Kittyhawk Ave and Essex St	Water has no outlet; erosion near sidewalks	B15, 16
5	B	West of Wasp Ave from Intrepid St to Essex St	Minor flow; erosion under sidewalk	
1	B	NE of Tarawa Ave and Intrepid St	Block storm drain; water pools by sidewalk	B17
1	C	NE of the intersection of Wasp Ave and Oriskany St	Water pools by sidewalk, no outlet	C16
5	C	SE of intersection of Tennessee Ave and Intrepid St	Sidewalk erosion	
5	C	East of walkway to Building 797	10" steel culvert; sidewalk erosion	
5	C	375 feet NE of Wasp Ave and Oriskany St	Sidewalk erosion due to water	C17
5	J	425 feet north of Bougainville St; east of Indianapolis Ave	Sidewalk erosion; water on sidewalk	J10

Note:
* See Appendix A

Table 12 Land Areas with Standing Water				
Rank	**Block**	**Location**	**Description**	**Photo No.***
2	A	275 feet east of Building 499	20' x 20' wet area	A19
2	A	250 feet NW of Wasp Ave and Essex St	Low area	A20
2	A	300 and 350 feet NE of Wasp Ave and Essex St	Two low areas	A21
2	A	325 and 425 feet NW of Building 499	Two low areas with holes with water	A22, 23
2	B	Inside the complex of Buildings 441 to 446	Three areas; water in grass with bare spots	
2	B	North of Tennessee Avenue and Intrepid St	Water in bare soil	B3, 4
2	B	350 feet north of Building 797; north of Intrepid St	Water with no grass	
2	B	200 - 300 feet NW of McDonalds; north of Intrepid St	Several small areas of water	B5
2	B	Entrance drive to Building 458 off Kittyhawk Ave	Water on drive	B6
2	B	South of entrance drive to Building 458 off Kittyhawk Ave	Water on sidewalk	B7, 8
2	B	375 feet north of Tarawa Ave and Intrepid St; west of Intrepid St	High point before storm drain, standing water	B9
2	C	North of Building 797	Dead grass	
2	C	400 feet SW of Tennessee Ave and Intrepid St	Grass with bare spots	
2	C	West of Building 752 and north of Oriskany St	High point before storm drain, standing water	C15
2	D	550 feet SE of the corner of Building 787	Low area; near ditch with water	

Table 12 Land Areas with Standing Water				
Rank	**Block**	**Location**	**Description**	**Photo No.***
2	D	East entrance drive to Building 262 off Honor Dr	Low area with nearby ditches	D15
2	D	Entrance drive to Building 364 off Wasp Ave, near Singleton Ave	Low area	D16
2	F	400 feet south of Kearsarge Ave and Intrepid St; east of Kearsarge Ave	Several areas	F16
2	F	West of Building S-195	Standing water with silt	F17
2	F	100 feet SE of Kittyhawk Ave and Ticonderoga St	Several areas	F18
2	F	150 feet south of Building S-9 and south of Ticonderoga St	Puddle	
2	F	125 feet east of Building S-220	Bare soil	F19
2	F	South of Buildings 344 and 1669	Water with bare soil; possibly from recent fence installation	F20, 21, 22
2	F	SW of Building S-235	Bare soil; vegetation stressed	F23
2	F	West of Building S-66	Low area	F24
2	F	200 feet north of Building S-202	Low area	F25
2	F	150 feet SE of Kearsarge Ave and Intrepid St	Low area	
2	G	125 feet north of Building 1564	Low, wet area	
2	L	600 ft south of Enterprise St and buildings; west of access road	Wetland area	
2	M	250 feet SW of Kearsarge Ave and Ticonderoga St; SE of Building 1669	Bare soil; possibly from recent fence installation	

Note:
* See Appendix A

Table 13 Waters of the State — Culverts					
Rank	**Block**	**Location**	**Dimension(s)**	**Descriptions**	**Photo No.***
2	E	Singleton Ave and Polaris Dr	72" x 72"	Water pooling with aquatic vegetation and biota (fish)	
2	E	650 feet south of Singleton Ave and Polaris Dr	48" x 60"	Double-box culvert; water pooling with aquatic vegetation and biota (crayfish); steep slopes; accumulation of silt	
2	H	SE of Singleton Ave and Essex St	56"	Aquatic biota (fish)	

Note:
* See Appendix A.

Table 14
Waters of the State — Ditches/Swales

Rank	Block	Location	Length (ft)	Description	Photo No.*
3	D	175 feet south of Building S-241	750	Flowing water with aquatic vegetation and biota; steep slopes; gullies, ruts, rills	D17, 18
3	D	South of Integrity Dr	1,000	Flowing water with aquatic vegetation and biota; active erosion; steep slopes; gullies, ruts, rills	D19, 20
2/3	E	East of Singleton Ave from Hutchins Dr to south of Polaris Dr	2,700	Water pooling (north end) with aquatic vegetation and biota; active erosion, steep slopes, scour signs	
4	G	450 feet west of Building 1282	300	Flowing water with aquatic vegetation and biota	G2
4	G	1400 feet north of ATTU St Extended; north end of property	1,400	Flowing water with aquatic vegetation and biota; heavy growth	G3, 4
4	G	550 feet west of Wherry Housing Complex; ends at bridge on ATTU St Extended	1,450	Flowing water with aquatic vegetation and biota; thick grass; erosion around bridges	G5
3	H	East of Singleton Ave between Essex St and Hutchins Rd	550	Water pooling with aquatic vegetation and biota; active erosion; steep slopes; gullies, ruts, rills	H3
3	L	Big Creek Drainage Canal east of Singleton Parkway	3,500	Water flowing and pooling with aquatic vegetation and biota; active erosion; steep slopes; gullies, ruts, rills; scour signs/undercut banks	
3/4	L	600 feet south of Enterprise St	1,300	Water pooling; drains to wetland; bare soil	
4	M	Big Creek Drainage Canal; west of bridge on Singleton Parkway		Active erosion	M5, 6, 7
3	M	200 feet south of the end of Honor Dr in Big Creek Drainage Canal	100 ft	Active erosion; steep slopes; gullies, ruts, rills	M8, 9
3	M	East end is 300 feet south of intersection of Kittyhawk Ave and Ticonderoga St; west end ties in to Big Creek Drainage Canal	2,800 feet	Flowing and pooling water with aquatic biota; steep slopes; gullies ruts, rills; portion have erosion and riprap	M10, 11
3	M	West end is 600 feet SE of Wasp Ave and Ticonderoga St (South of Building S-241); east end is 400 feet north of Wasp Ave and Honor Dr	1,700 feet	Aquatic vegetation and biota; active erosion; steep slopes; gullies, ruts, rills	M12
1	M	350 feet SE of Building 262 in Big Creek Drainage Canal		Debris in creek	M13
1	M	2,400 feet west of Kearsarge Ave and Ticonderoga St; intersection of ditch and Big Creek Drainage Canal		Backup caused by fallen trees and accumulation of soil and limbs	M14
1	M	2,400 feet west of Kearsarge Ave and Ticonderoga St in Big Creek Drainage Canal		Blockage cause by accumulation of soil, limbs, and leaves	M15

Note:
* See Appendix A.

Appendix E

Cost Estimate

As shown in Table E-1, the estimated total cost for implementing the erosion control plan at NSA Mid-South is nearly $244,000. This includes mobilization/demobilization, removing silt from culverts, replacing five 25-foot-long culverts and two headwalls, improving ditches and swales, backfilling and seeding open land areas, and remedying erosion problems at sidewalks.

The cost estimate assumes that silt will be removed from 25 feet of each targeted culvert. A cost to remove silt is estimated at $2.85 per foot for culverts that are 25% blocked. The cost increases by 10% for culverts that are 50% blocked, 20% for culverts that are 75% blocked, and 40% for culverts that are completely silted.

Because the culverts, ditches, and sidewalk erosion areas to be backfilled, are relatively small but numerous, most of the cost associated with this activity is equipment relocation and operation rather than fill materials. As a result, the cost to backfill with soil ($300) is based on location rather than fill quantities. This includes hauling, placement, and compaction as well.

For Operations and Maintenance, culvert clean out costs assumes 300 linear feet of culvert will require attention each year.

For cost estimating purposes, the ditches are assumed to have 3H:1V slopes and are 5 feet deep.

Table E-1
Erosion Control Plan Cost Estimate
NSA Mid-South

Item No.	Description	Estimated Quantities	Units	Unit Cost	Totals
1.0	**Mobilization/Demobilization**				
1.1	Mobilization/Demobilization	1	Ls	$15,000	$15,000
				Subtotal	$15,000
2.0	**Silted Culverts**				
2.1	Trace to one-fourth silted	500	Lf	$2.85	$1,425
2.2	One-half silted	450	Lf	$3.14	$1,411
2.3	Three-fourth silted	50	Lf	$3.42	$171
2.4	Fully silted	150	Lf	$4.00	$600
2.5	Erosion control (riprap/ hard armour)	21	Each	$1,200	$25,200
2.6	Soil Fill	16	Each	$300	$4,800
				Subtotal	$33,607

Table E-1
Erosion Control Plan Cost Estimate
NSA Mid-South

Item No.	Description	Estimated Quantities	Units	Unit Cost	Totals
3.0	**Replace Culverts**				
3.1	Pavement Removal	78	Sy	$20.14	$1,566
3.2	Excavation	185	Cy	$5.55	$1,028
3.3	Removal	125	Lf	$8.95	$1,119
3.4	Replacement Culvert 8", CMP	25	Lf	$13.85	$346
3.5	Replacement Culvert 15", concrete	50	Lf	$17	$850
3.6	Replacement Culvert 18", concrete	25	Lf	$21	$525
3.7	Replacement Culvert 20", concrete	25	Lf	$26	$650
3.8	Replacement Headwalls, 41" culvert	1	Each	$850	$850
3.9	Replacement Headwalls, 22" culvert	1	Each	$590	$590
3.10	Backfill/Compaction	185	Cy	$18.75	$3,472
3.11	Pavement Placement	78	Sy	$24	$1,842
				Subtotal	$9,125
4.0	**Ditches/Swales**				
4.1	Vegetation/Debris Removal	100	Tons	$17	$1,675
4.2	Soil Fill	19	Each	$300	$5,700
4.3	Seed, Fertilize, Mulch	11.00	Acre	$1,600	$17,603
4.4	Cut Bank Slopes	10,000	Lf	$9.75	$97,500
4.5	Erosion Control Blankets	48,556	Sy	$0.76	$36,902
4.6	Hard-armor Erosion Control (if needed)	67,500	Sf	$1.75	$118,125
				Subtotal	$277,506
5.0	**Land Areas**				
5.1	Soil Fill	2,400	Cy	$8.25	$19,800
5.2	Seed, Fertilize, Mulch	2.38	Acre	$1,600	$3,803
5.3	Cut Drainage Ditch	1,500	Lf	$4.25	$6,375
5.4	Seed, Fertilize, Mulch New Drainage Ditches	1.03	Acre	$1,600	$1,653
				Subtotal	$29,978
6.0	**Sidewalk Erosion**				
6.1	Soil Fill	9	Each	$300.00	$2,700
6.2	Sidewalk Removal	14	Sy	$6.70	$93
6.3	Excavation	46	Cy	$5.55	$257
6.4	Culvert 8"	50	Lf	$12.50	$625
6.5	Sidewalk Placement	14	Sy	$16.35	$227
				Subtotal	$3,902
7.0	**Operations and Maintenance**				
7.1	Inspections	1	Ls	$120	$120
7.2	Clean Out of Culverts	300	Lf	$2.85	$855
7.3	Revegetation	2	Acre	$1,600	$3,200
				Subtotal	$4,175
				For 10 Years at 8% Discount	$38,698
				Contractor Total	$407,816
				Oversight Cost	$40,782
				Total	**$448,600**

Appendix F

General Specification 01575

SECTION 01575

TEMPORARY ENVIRONMENTAL CONTROLS
09/2003

PART 1 GENERAL

1.1 REFERENCES

The publications listed below from a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

CODE OF FEDERAL REGULATIONS (CFR)

29 CFR	Parts 1900-1910, Latest Edition
29 CFR 1926	Occupational Safety and Health Standards for Construction
CFR Title 40	All Parts, Latest Edition
CFR Title 49	All Parts, Latest Edition

1.2 DEFINITIONS

1.2.1 Sediment

Soil and other debris that has eroded and has been transported by runoff water or wind.

1.2.2 Solid Wastes

Rubbish, debris, garbage, and other discarded solid materials, except hazardous waste as defined in paragraph entitled "Hazardous Waste", resulting from industrial, commercial, and agricultural operations and from community activities.

1.2.3 Sanitary Wastes

Wastes characterized as domestic sanitary sewage.

1.2.4 Rubbish

Combustible and noncombustible wastes such as paper, boxes, glass, crockery, metal, lumber, cans, and bones.

1.2.5 Debris

Combustible and noncombustible wastes such as ashes and waste materials resulting from construction or maintenance and repair work, leaves, and tree trimmings.

1.2.6 Chemical Wastes

This includes salts, acids, alkalies, herbicides, pesticides, and organic chemicals.

1.2.7 Garbage

Waste material derived in whole or in part from fruits, vegetables, meats, or other plants or animals (including poultry) material; other refuse of any character whatsoever that has been associated with any such material on board any means of conveyance, including food scraps, table refuse, galley refuse, food wrappers or packing materials (other waste material from stores, food preparation areas, dining rooms, etc).

1.2.8 Hazardous Waste

Any material which can no longer be used for its intended purpose or discarded material, liquid, solid or gas, which meets the definition of a hazardous material and/or is designated a hazardous waste by the Environmental Protection Agency (EPA), the Tennessee Department of Environment and Conservation (TDEC) or the U.S. Navy.

1.2.9 Hazardous Materials

Hazardous materials as defined in 49 CFR 171 and listed in 49 CFR 172.

1.2.10 Landscape Features

Trees, plants, shrubs, and ground cover.

1.2.11 Lead Acid Battery Electrolyte

The electrolyte substance (liquid medium) within a battery cell.

1.2.12 Oily Waste

Petroleum products and bituminous materials.

1.2.13 Special Waste

Refers to items that require special or separate handling and/or certain disposal requirements.

1.2.14 Class I Ozone Depleting Substance (ODS)

Class I and Class II ODS's are defined in Sections 602 (a and b) of The Clean Air Act.

1.2.15 Recycling. A series of activities, including collection, separation, and processing, by which products or other materials are recovered from the solid waste stream. These materials may be used as raw materials in new product manufacture; sold; or distributed in commerce; or the reuse of such materials as substitutes for goods made of virgin materials, other than fuel, for producing heat or power by combustion. A resource recovery in which a waste product is collected and treated for use as a raw material in the manufacture of the same or another product (e.g., ground glass used in the manufacture of new glass.

1.2.16 Re-use. Return of a material or product to the economy for use without any change in its identity by finding different purposes for the materials. For example, a soft-drink bottle is re-used when it is

returned to the bottling company for refilling. Special processing is not required.

1.3 SUBMITTALS

Submit the following in accordance with Section 01330, "Submittal Procedures".

1.3.1 SD-08, Statements

a. Environmental Protection Plan

b. Notice of Intent

c. Notice of Termination

d. Transformer and capacitor inventory and certification

1.3.2 SD-12, Field Test Reports

a. Abrasive blasting waste materials (if required).

Submit a copy of an approved laboratory analysis of materials collected as a result from abrasive blasting operations for TCLP metals, before disposing of waste materials.

1.3.3 SD-18, Records

a. Solid waste disposal permit certification letter

b. Solid waste disposal tickets

c. Environmental training records

d. Hazardous waste certification

e. Environmental Plan review

f. Environmental Permits

g. Regulatory Notification

1.3.3.1 Solid Waste Disposal Permit

Submit one copy of a State permit or license showing that the landfill is approved before transporting wastes off Government property. All landfills used for disposal purposes for Naval Support Activity Mid-South shall be located within 120 miles of the base.

1.3.3.1.1 Solid Waste, Recycling, and Re-use Report

Monthly the Contractor shall submit a solid waste, recycling, and re-use report to the PW Environmental Division via the Contracting Officer. For each waste, the report shall state the classification (using the definitions provided in this section), amount, location, and name of the business receiving the solid waste. The Contractor shall include copies of the waste handling/recycler/re-use facilities' weight tickets,

receipts, bills of sale, and other sales documentation. In lieu of sales documentation, the Contractor may submit a statement indicating the disposition for the solid waste/recycled or re-use materials, which is signed by an officer of the Contractor firm authorized to legally obligate or bind the firm. The sales documentation or Contractor certification shall include the receiver's tax identification number and business, EPA or State registration number, along with the receiver's delivery and business addresses and telephone numbers. For each reusable material retained by the Contractor for his own use, the Contractor shall submit on the solid waste, recycling, and re-use report the information previously described in this paragraph. Revenue or disposal cost received shall be reported to the PW Environmental Division via the Contracting Officer unless required by other provisions or specifications of this Contract or public law.

1.3.3.2 Disposal for Hazardous Waste

All hazardous waste shall be turned over to the Navy for proper disposal.

1.3.3.3 Hazardous Waste Certification

Submit written certification that hazardous waste turned in for disposal was generated on Government property and is identified, packaged, and labeled in accordance with 40 CFR 261, 40 CFR 262, and 40 CFR 263. This shall be accomplished by completion of a container storage log, which shall be government provided.

1.3.4 CLASS I ODS PROHIBITION

Class I ODS as defined and identified herein shall not be used in the performance of this contract, nor be provided as part of the equipment. This prohibition shall be considered to prevail over any other provision, specification, drawing, or referenced documents.

1.4 ENVIRONMENTAL PROTECTION REQUIREMENTS

Provide and maintain, during the life of the contract, environmental protection as defined. Plan for and provide environmental protective measures to control pollution that develops during normal construction practice. Plan for and provide environmental protective measures required to correct conditions that develop during the construction of permanent or temporary environmental features associated with the project. Comply with federal, state, and local regulations pertaining to the environment, including water, air, solid waste, hazardous waste and substances, oily substance, and noise pollution.

1.4.1 Facility Hazardous Waste Generator Status

Naval Support Activity Mid-South is designated as a Large Quantity Generator. All work conducted within the boundaries of this activity shall meet the regulatory requirements of this generator designation. The Contractor shall comply with all provisions of federal, state, and local regulatory requirements applicable to this generator status regarding training and storage, handling, and disposal of all construction derived wastes.

1.4.2 Contractor Liabilities for Environmental Protection

The Contractor is advised that this project and the station are subject to federal, state, and local regulatory agency inspections to review compliance with environmental laws and regulations. The Contractor shall fully cooperate with any representative from any federal, state, or local regulatory agency that may visit the job site and shall provide immediate notification to the Contracting Officer, who shall accompany them on any subsequent site inspections. The Contractor shall complete, maintain, and make available to the Contracting Officer, station, or regulatory agency personnel all documentation relating to environmental compliance under applicable federal, state, and local laws and regulations. The Contractor shall immediately notify the Contracting Officer if a Notice of Violation (NOV) is issued to the Contractor.

The Contractor shall be responsible for all damages to persons or property resulting from Contractor fault or negligence as well as for the payment of any civil fines or penalties, which may be assessed by any federal, state, or local regulatory agency as a result of the Contractor's or any subcontractor's violation of any applicable federal, state, or local environmental law or regulation. Should a Notice of Violation (NOV), Notice of Noncompliance (NON), Notice of Deficiency (NOD), or similar regulatory agency notice be issued to the Government as facility owner/operator on account of the actions or inaction's of the Contractor or one of its subcontractors in the performance of work under this contract, the Contractor shall fully cooperate with the Government in defending against regulatory assessment of any civil fines or penalties arising out of such actions or inaction's.

1.5 ENVIRONEMTAL MANAGER

The Contractor shall appoint in writing an Environmental Manager for the project site. The Environmental Manager shall be directly responsible for coordinating all contractor compliance with federal, state, local, and station requirements. The Environmental Manager shall inspect the job site daily for environmental compliance. The Environmental Manager shall ensure compliance with Hazardous Waste Program requirements (including hazardous waste handling, storage, manifesting, and disposal); implement the Environmental Protection Plan; ensure compliance with all environmental permits; ensure all environmental permits are closed out; ensure compliance with Hazardous Materials (storage, handling, and reporting) requirements; and coordinate any remediation of regulated substances (lead, asbestos, PCB transformers). This can be a collateral position; however the person in this position shall be trained to adequately accomplish the following duties: ensure waste segregation and storage compatibility requirements are met; inspect and manage Satellite Accumulation areas; ensure only authorized personnel add wastes to containers; ensure all Contractor personnel are trained in 40 CFR requirements in accordance with their position requirements; coordinate removal of waste containers; and maintain the Environmental Records binder and required documentation, including environmental permits compliance and close out. The Contractor is allowed to sub-contract this service as long as the Environmental Manager meets the contract requirement and inspects the project daily and is on call the rest of the time on an as needed basis. The environmental manager shall inspect the job site between the hours of 7:00 a.m. and 4:00 p.m. and any other time that an environmental problem arises.

1.5.1 ENVIRONMENTAL MANAGER TRAINING

The Environmental Manager shall have the following training:

a. DOT training in accordance with 49 CFR 172.700

b. HazCom training in accordance with 29 CFR 1926.59

c. Hazardous Waste training in accordance with 40 CFR 261 and 262

d. 40-hour Asbestos Supervisor training in accordance with 40 CFR 763. Subpart E, Appendix C (when asbestos removal is part of the contract).

e. Asbestos Awareness in accordance with 40 CFR 763.92 when asbestos is present on the job site.

1.6 ENVIRONMENTAL PROTECTION PLAN

Five days after the award of contract, the Contractor shall meet with the PW Environmental Division with the Contracting Officer to discuss the proposed Environmental Protection Plan and develop a mutual understanding relative to the details of environmental protection, including measures for protecting natural resources, required reports, and other measures to be taken. An Environmental Protection Plan shall be submitted for approval and shall be approved by the Government before work can begin. Allow three (3) weeks for approval of initial plan. The Contractor shall include in the Environmental Protection Plan a copy of the letter appointing the Environmental Manager. The letter shall state that he/she is responsible for managing and implementing the Environmental Protection Plan as described in this contract and the Environmental Manager's authority to direct the removal and replacement of non-conforming work.

1.6.1 Environmental Plan Format

The Environmental Protection Plan shall be submitted using the following format and shall include specific discussion, measures, actions, and/or reports required to address each of the listed items to the extent applicable to this contract. The minimum requirements for each listed section is described in subsequent paragraphs in this section.

ENVIRONMENTAL PROTECTION PLAN

Contractor Organization
Address and Phone Numbers

a. Environmental Manager Appointment letter
b. Pre-construction survey results
c. Hazardous Materials management
d. 29, 40, and 49 CFR Employee training documentation
e. Hazardous Waste Management
f. Solid Waste Management
g. Environmental Permit requirements
h. Spill Response
i. Protection of Natural Resources

(1) Land Resources
(2) Tree Protection
(3) Replacement of damaged landscape features
(4) Temporary construction
(5) Stream crossings
(6) Fish and Wildlife Resources
(7) Wetland areas

j. Protection of Historical and Archaeological Resources

(1) Objectives
(2) Methods

k. Storm Water Management and Control

(1) Ground cover
(2) Erodible soils
(3) Temporary measures
(4) Mechanical retardation and control of runoff
(5) Vegetation and mulch

1.6.1.1 Preconstruction Survey

Perform a Preconstruction Survey of the project site with the Contracting Officer or designated representative and take photographs showing existing environmental conditions in and adjacent to the site. Submit a report for the record.

1.6.1.2 Hazardous Material Management

List all hazardous material (HM), including quantities, proposed to be brought to the station and copies of the corresponding material safety data sheets (MSDS). Every effort to use the most environmentally friendly and non-hazardous product available should be made. All hazardous materials shall be approved by the PW Environmental Division via the Contracting Officer. Any hazardous material disapproved in favor of a more environmentally friendly or less hazardous material shall be done at no cost to the Government. Account for the quantity of HM brought to the station, the quantity used or expended during the contract, and the leftover quantity. Any unused HM that has additional useful life shall be removed from the station by the Contractor. If a HM has no useful life it shall be handled as a Hazardous Waste.

1.6.1.3 Contractor 29, 40, and 49 CFR Employee Training Records

Prepare and maintain employee training records throughout the term of the contract meeting applicable 29, 40, and 49 CFR requirements. The Contractor shall ensure every employee completes a program of classroom instruction or on-the-job training that teaches them to perform their duties in a way that ensures compliance with federal, state, and local regulatory requirements. The Contractor shall provide a Position Description for each employee, by subcontractor, based on the Davis-Bacon Wage Rate designation or other equivalent method, evaluating the employee's association with hazardous and regulated wastes. This Position Description shall include training requirements as defined in 29, 40, and 49 CFR. The Contractor shall provide certification of employee training in the Environmental Plan.

1.6.1.4 Hazardous Waste Management

Provide a list of Hazardous Waste to be generated during construction, including estimated quantities. All HW generated on board this base shall be turned over to the Navy for proper disposal. Include a Storage Plan that at a minimum describes proposed storage location(s) and containers to be used. Prior to generation of HW, contact the PW Environmental Division via the Contracting Officer for labeling requirements for storage of hazardous wastes. Store HW near the point of generation up to a total quantity of one quart of acute hazardous waste or 55 gallons of hazardous waste. When storage containers are full, they shall be turned in to the HW permitted storage facility, Building 1694, within 3 days.

1.6.1.5 Solid Waste, Recycling, and Re-use Management

Describe the procedures to be used for management and disposal of Solid Waste. Describe the procedures to be used for recycling and re-use. List all materials that the contractor will be recycling and include where it will be recycled. Document all approvals and licenses required for compliance with State regulations.

1.6.1.6 Environmental Permit

Requirements Document all permits required for the project. Describe how the compliance with permit requirements will be accomplished and who is responsible. Address all requirements such as, but not limited to, testing, inspection, and P.E. certification.

1.6.1.7 Spill Response

Identify potential sources of spills and describe measures to be taken to prevent spills. Describe the actions to be taken to contain and clean-up a spill should one occur. All personal that clean up spill shall be trained to the technician level training per the 29 CFR.

1.6.2 Regulatory Notification

The Contractor is responsible for all regulatory notification requirements in accordance with federal, state, and local regulations. The Contractor shall forward copies to the Contracting Officer prior to commencement of work activities. Typically, regulatory notifications shall be provided for the following (this listing is not all-inclusive): demolition, renovation, NPDES defined site work, and remediation of regulated materials (asbestos, hazardous waste, lead paint).

1.7 OZONE DEPLETING SUBSTANCES

1.7.1 Regulatory Requirements for Ozone Depleting Substances (ODS)

The Contractor shall provide a list of any Class I or II ODS equipment installed or removed to include the following information:

- location of equipment/processes; application for which the ODS is used (i.e., refrigerant, transformers, solvents, etc.);

- serial number of equipment;
- model number of equipment;
- type ODS used (i.e., R113, R11, or R22, etc.);
- size of the equipment/process (i.e., 10 ton);
- quantity of ODS used in equipment (actual total charge);
- source of any ODS added to equipment/process (either virgin product or recycled);
- date equipment leak tested, if applicable, in accordance with 40 CFR 82.156;
- date and quantity ODS added to equipment/process;
- date and quantity of ODS recovered from equipment/process;
- location of ODS removed from equipment/processes (i.e., stored on station, turned in to the Naval Reserve (Class I), sent to reclamation facility (Class II), etc., and;
- date the equipment/process converted or retrofitted.

Equipment includes large and small appliances. Examples are water coolers and refrigerators. These items shall be included in the inventory by quantity and type ODS only.

Small appliances (containing 5 lbs. or less) shall be grouped together. However, disposal of small appliances shall be listed separately.

1.7.2 Recovery of ODS and Disposal of Class II ODS

Prevent discharge of Class I and Class II ODS into the atmosphere. Place recovered ODS in cylinders which meet ARI Guideline K suitable for the type of ODS (filled to more than 80 percent capacity), and provide appropriate Department of Transportation and any other appropriate labeling. Recovered Class II ODS shall be removed from Government property and disposed of in accordance with 40 CFR 82 except as otherwise specified.

1.7.2.1 Disposal of Class I ODS

All Class I ODS removed from Government systems shall remain the property of the Government and shall be shipped in a Contractor provided DOT approved container suitable for shipment to: Defense Depot Richmond Virginia, SW0400, Cylinder Operations, 8000 Jefferson Davis Highway, Richmond, VA 23297-5000 at the Contractor's expense. All ODS containers used for shipment shall become property of the Government. Provide the PW Environmental Division via the Contracting Officer with notification of time of shipment and documentation of all shipments.

1.7.3 New Ozone Depleting Substance or Substitute Equipment

All new ODS or substitute equipment shall be permanently marked showing

the quantity of ODS or substitute required.

1.7.4 Polychlorinated Biphenyls (PCB)

The Contractor shall ensure that all newly procured transformers and other equipment containing hydraulic or dielectric fluid contains less than 1 ppm of PCB's. The Contractor shall notify the PW Environmental Division via the Contracting Officer and the base Environmental Manager upon identification of unlabeled, misplaced, or unmarked equipment that may contain hydraulic or insulating fluid. This equipment may include vehicle components and electrical equipment. The questionable components shall be handled in accordance with 40 CFR 761, until it has been determined that they do not contain PCB's. All PCB-contaminated material will be turned over to the Government for proper disposal. Specific requirements applicable to this contract for work related to PCB's are specified elsewhere.

1.7.4.1 Transformer and Capacitor Tracking

Submit an inventory of installed or removed transformers and capacitors. Provide manufacturer, date of manufacture, serial number, size, location, certification of PCB content, and presence of proper PCB label as required by 40 CFR 761.30.(1)(a)(vi). Provide a copy to the Public Works Department, Environmental Division.

1.7.4.2 Light Ballast

Any light fixtures, which are being removed and disposed of, shall have the ballast removed if they do not have a PCB-free label. The disposal of PCB-contaminated ballasts is specified elsewhere.

1.7.4.2.1 Disposal of Light Ballast

Containers storing PCB or suspected PCB-containing light ballasts for disposal shall be turned in and delivered to the Government at Building 1694 less than 6 months from the date that the first light ballast is placed in the storage container. These light ballasts shall be stored in accordance with 40 CFR 761.65. All PCB light ballasts shall be properly packaged in DOT-approved containers for storage and shipment, and each container properly labeled. The container shall not be filled over 2/3 full. The container shall be a open-head steel drum meeting the DOT specification listed in the 49 CFR. The Contractor is responsible for properly labeling and dating each container.

1.8 ADMINISTRATIVE REQUIREMENTS

1.8.1 Licenses and Permits

Obtain licenses and permits pursuant to the "Permits and Responsibilities" FAR Clause except for the following permits which will be obtained by the Contracting Officer:

NONE

For all permits obtained, perform inspections of the work in progress, and submit certification to the PW Environmental Division via the Contracting Officer that the work conforms to the contract and permit requirements.

1.8.2 Licenses, Permits, and Other Responsibilities

Environmental compliance obligations under this contract, including but not limited to the following:

a. Understand and perform all requirements under federal, state, and local environmental laws, regulations, and ordinances that are applicable to the work being performed under this contract. This responsibility extends to securing all permits as required under such laws, regulations, and ordinances.

b. Advising Contractor's agents, employees, and subcontractor's, who shall perform operations, activities, or services under this contract of these requirements.

c. Further:

(1) Notify the Government promptly upon receipt of regulatory notices, orders, or requests for information, and promptly supply copies to the Government.

(2) Comply with environmental regulatory notices or orders to the extent attributable to the Contractor's conduct, regardless of whether or not the Contractor is the named recipient of the notice or order.

(3) Correct conditions of environmental noncompliance identified by the Government in the absence of regulatory noncompliance notices. This includes cleaning up any contamination released from the Contractor's operations, whether such contamination is on or off Government property.

d. Upon the Government's request, provide the Government and any regulatory agency with information that may be required regarding the actual or potential environmental impacts of Contractor's operations. The information shall be timely and complete and in a form acceptable to the Government and/or the regulatory agency.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 PROTECTION OF NATURAL RESOURCES

Preserve the Natural Resources within the project boundaries and outside the limits of permanent work. Restore to an equivalent or improved condition upon completion of work. Confine construction activities to within the limits of the work indicated or specified.

3.1.1 Land Resources

Except in area to be cleared, do not remove, cut, deface, injure, or destroy trees or shrubs without the Contracting Officer's permission. Do

not fasten or attach ropes, cables, or guys to existing nearby trees for

anchorage's unless authorized by the Contracting Officer. Where such use of attached ropes, cables, or guys is authorized, the Contractor shall be responsible for any resultant damage.

3.1.1.1 Protection of Trees

Protect existing trees, which are to remain, and which may be injured, bruised, defaced, or otherwise damaged by construction operations. Remove displaced rocks from uncleared areas. By approved excavation, remove trees with 30 percent or more of their root systems destroyed. Removal of trees and the procedure for removal requires approval of the Contracting Officer.

3.1.1.2 Replacement

Remove trees and other landscape features scarred or damaged by equipment operations, and replace with equivalent, undamaged trees and landscape features. Obtain the Contracting Officer's approval before removal or replacement.

3.1.2 WATER RESOURCES

3.1.2.1 Stream Crossings

The PW Environmental Division's approval via the Contracting Officer is required before any equipment shall be permitted to ford live streams. In area where frequent crossings are required, install temporary culverts or bridges. Obtain the Contracting Officer's approval prior to installation. Remove temporary culverts or bridges upon completion of work, and repair the area to its original condition.

3.1.2.2 Oily and Hazardous Wastes

Prevent oily or other hazardous substances from entering the ground, drainage areas, or local bodies of water. All temporary fuel oil or petroleum storage tanks shall have a temporary concrete or steel berm of sufficient size and strength to contain the capacity of the tanks plus 10 percent in the event of leakage or spillage. All temporary tanks shall be locked when not being used and drainage logs shall be filled out and submitted to the ROICC and Public Works Department, Environmental Division. The Public Works Department, Environmental Division shall approve all tanks.

3.1.3 Fish and Wildlife Resources

Do not disturb fish and wildlife. Do not alter water flow or otherwise significantly disturb the native habitat adjacent to the project and critical to the survival of fish and wildlife, except as indicated or specified.

3.2 HISTORICAL AND ARCHAEOLOGICAL RESOURCES

Carefully protect in-place and report immediately to the Contracting Officer historical and archaeological items or human skeletal remains discovered in the course of work. Stop work in the immediate area of the

discovery until directed by the Contracting Officer to resume work. The Government retains ownership and control over historical and archaeological resources.

3.3 EROSION AND SEDIMENT CONTROL MEASURES (Applies to all sites regardless of site area.)

3.3.1 Local Erosion and Sediment Control Plan

a. Washing of equipment or vehicles outside of a containment area will not be allowed on base.

b. All dumpsters shall be covered when not in use and/or when it is raining.

c. Notify the PW Environmental Division via the Contracting Officer at (901) 874-5367 before any dewatering discharges.

d. Storm water controls shall be in place before and during any ground disturbance, which would cause runoff. Controls will remain in place until soil has been stabilized. Sediment that escapes the site shall be removed to prevent its reaching streams, creeks, and ditches. Remove sediment from traps, silt fences, straw bales, and etc., as necessary and when design capacity has been reduced by 50 percent. Pre-construction ground cover is not to be destroyed more than 20 days before grading or earth moving. Project shall be phased to stabilize one phase within 21 days after starting another. Temporary soil stabilization with appropriate annual vegetation or straw shall be applied on areas no more than 7 days after temporarily ceased; except if resuming within 14 days. Permanent soil stabilization with perennial vegetation shall be applied within 7 days after final grading and completed in 15 days.

e. Visually check and repair control measures, on a weekly basis, to ensure proper functioning during dry periods and within 24-hours after any rainfall of 0.5 inches within a 24-hour period. All repairs shall be completed within 24-hours from when the problem is identified. Daily checking and repairing is necessary during prolonged rainfall. A written inspection report of the weekly inspections shall be submitted within the first 10 days of each month to the Environmental Division.

f. Keep records of control measure maintenance, checks, and repairs throughout the entire construction period.

g. Specify the individual that is responsible for erosion and sediment controls.

h. NAVSUPPACT MID-SOUTH'S STANDARD OPERATING PROCEDURE ON WASHING BUILDINGS, ROOFS, EQUIPMENT, CONCRETE PADS, AND PARKING LOTS ARE AS FOLLOWS:

CLEANING MOLD AND MILDEW:

(1) Only clean small areas to prevent runoff. The Tennessee

Department of Environment and Conservation (TDEC) does not want any runoff reaching the storm drains. Do not wash if it is raining.

(2) Mist a solution of bleach (Sodium Hypochlorite), or a chemical approved by the Public Works Department, Environmental Division, on the material that needs mold and mildew cleaning. The solution is 1/2 cup or 4 oz. of bleach to every gallon of water.

(3) Let stand for fifteen (15) minutes.

(4) Rinse with water.

(5) Notify the PW Environmental Division via the Contracting Officer at least two working days before beginning the operation. Please call the Environmental Division at 874-5357 for this notification. They will inspect the operation, before, during, and after cleanup for pH monitoring and prevention of runoff.

CLEANING DIRT STAINS:

(1) Pressure wash with water only. Do not add detergent to the spray. Do not wash if it is raining.

(2) Only clean small areas to prevent runoff. The Tennessee Department of Environment and Conservation (TDEC) does not want any runoff reaching the storm drains.

(3) Notify the PW Environmental Division via the Contracting Officer at least two working days before beginning the operation. Please call the Environmental Division at 874-5367 for this notification. They will inspect the operation before, during, and after cleanup for pH monitoring and prevention of runoff.

CLEANING PETROLEUM STAINS:

(1) Place plastic sheets under areas that need cleaning or other means of containing any runoff until it can be captured. Do not wash if it is raining.

(2) Mist a solution of Simple Green, or a chemical approved by the Public Works Department, Environmental Division, on the material that needs petroleum stain removed. The solution is a ratio of 1:10, i.e. one gallon of Simple Green to every ten gallons of water.

(3) Use a wet/dry vac to vacuum up all runoff. This runoff contains petroleum products that are in violation of our Storm Water Permit.

(4) Take all vacuumed runoff to the oil/water separator located at Building S-8 for proper disposal.

(5) Notify the Environmental Division at least two working days before beginning the operation. Please call the Environmental Division at 874-5367 for this notification. They will inspect

the operation before, during, and after cleanup for pH monitoring and prevention of runoff.

3.3.2 Burning

Open burning is not permitted.

3.3.3 Protection of Erodible Soils

Immediately finish the earthwork brought to a final grade, as indicated or specified. Immediately protect side and back slopes upon completion of rough grading. Plan and conduct earthwork to minimize duration of exposure of unprotected soils.

3.3.4 Temporary Protection of Erodible Soils

Use the following methods to prevent erosion and control sedimentation:

3.3.4.1 Mechanical Retardation and Control of Runoff

Mechanically retard and control the rate of runoff from the construction site. This includes construction of diversion ditches, benches, berms, and use of silt fences and straw bales to retard and divert runoff to protected drainage courses. Each bale shall be securely anchored by at least two stakes or rebars driven through the bale. The first stake in each bale shall be driven toward the previously laid bale to force the bales together. Stakes or rebars shall be driven deep enough into the ground to securely anchor the bales. The gaps between bales shall be chinked (filled by wedging) with straw to prevent water escaping between the bales. (Loose straw scattered over the area immediately uphill from the straw bale barrier tends to increase barrier efficiency). Standard strength synthetic filter fabric fence shall be purchased in a continuous roll and cut to the length of the barrier to avoid the use of joints and thus improve the strength and efficiency of the barrier. The stakes shall be spaced a maximum of 3 feet apart at the barrier location and driven securely into the ground (minimum of 8 inches). A trench shall be excavated approximately 4 inches wide and 4 inches deep along the line of stakes and up-slope from the barrier. The filter material shall be stapled to wooden stakes, and 8 inches of the fabric shall be extended into the trench. Heavy-duty wire staples at least 1/2 inch long shall be used. Filter material shall not be stapled to existing trees. The trench shall be backfilled and the soil compacted over the filter material.

3.3.4.2 Vegetation and Mulch

Provide temporary protection on sides and back slopes as soon as rough grading is completed or sufficient soil is exposed to require erosion protection. Protect slopes by accelerated growth of permanent vegetation, temporary vegetation, mulching, or netting. Stabilize slopes by hydro-seeding, anchoring mulch in place, covering with anchored netting, sodding, or such combination of these and other methods necessary for effective erosion control.

a. Provide new seeding where ground is disturbed. Include topsoil or nutriment during the seeding operation necessary to establish a suitable stand of grass.

3.3.5 STORM WATER POLLUTION CONTROL (Applies only to 1 acres or more)

3.3.5.1 The Tennessee Department of Environment and Conservation (TDEC), Division of Water Pollution Control, under Tennessee Rule 1200-4-10-.05, requires that a Notice of Intent (NOI) Form be filed for a general National Pollutant Discharge Elimination System (NPDES) permit at least 30 days prior to the commencement of any construction activity, which disturbs 5 or more acres. The Rule also applies to dewatering discharges from work area at construction sites. Notify the Environmental Division at (901) 874-5367 and ROICC before any dewatering discharges. Provide a copy of the NOI to the Public Works Department, Environmental Division, and the ROICC before sending it to the State. Provide a copy of the permit to the Public Works Department, Environmental Division, upon receipt.

3.3.5.2 Construction site NOI's should be submitted to TDEC at least 30 days prior to commencement of the site disturbance, at the following address:

Tennessee Department of Environment and Conservation
Storm Water NOI Processing
Division of Water Pollution Control
401 Church Street
Nashville, TN 37243-1534

3.3.5.3 Among other criteria specified in the Tennessee Rule, the "developer" of the construction activity, i.e., the person who engages in or contracts for, or intends to engage in or contract for, construction activity that disturbs at least 1 acres of land, shall submit an NOI containing the following:

a. A map, which includes boundaries 1-2 miles outside of the property, identifies the site, construction area, and receiving waters or receiving storm water.

b. A brief description of the project with an estimated timetable, the date site disturbance shall commence, and the number of acres on which soil shall be disturbed.

c. A statement indicating whether or not a site-specific erosion control plan has been prepared for the project.

d. A certification that all work shall comply with state/local sediment and erosion plans, or storm water management plans. Specific reference to applicable plans shall also be made.

3.3.5.4 A written, site-specific Storm Water Control Plan shall also be prepared, describing the construction management techniques and sediment/erosion control measures used to minimize erosion of soil and discharge of sediment and other pollutants to the waters of the State. Specifications of the construction site Storm Water Control Plan are given in Tennessee Rule 1200-4-10-.05. Among other criteria, it shall also provide an implementation schedule for control measures, as well as the name of the person(s) responsible for implementation and maintenance of the program. During applicable construction activities, all control measures shall be checked weekly, within 24-hours of a 0.5-inch rainfall

event, and daily during wet weather. The plan is to be kept on site and be made available to the Division of Water Pollution Control inspector upon request. Records of all maintenance activities and inspections shall also be kept.

3.3.5.5 The Tennessee Rule also specifies the following construction management techniques, vegetative controls, and structural controls, which apply to all land disturbance work.

3.3.5.5.1 Construction Management Techniques

a. Minimize clearing and grubbing.

b. Sequence construction to minimize exposure time of cleared surface area, and pre-construction ground cover is not to be destroyed more than 20 days before grading or earth moving.

c. Project shall be phased to stabilize one phase within 21 days after starting another.

d. Install sediment and erosion controls prior to and during earth moving operations and maintenance. Controls will remain in place until soil has been stabilized.

e. Check and repair control measures, on a weekly basis, to ensure proper functioning during dry periods and check within 24 hours after any rainfall of 0.5 inches within a 24-hour period. Daily checking and repairing is necessary during prolonged rainfall. A written inspection report of the weekly inspections shall be submitted within the first 10 days of each month to the Environmental Division.

f. Keep records of control measure maintenance, checks, and repairs throughout the entire construction period.

g. Specify individual responsible for erosion and sediment controls.

3.3.5.5.2 Vegetative Controls

a. Do not destroy, remove, or disturb vegetative, pre-construction, ground cover, more than 20 calendar days prior to grading or earth moving.

b. Temporary soil stabilization with appropriate annual vegetation or straw shall be applied on area no more than 7 days after temporary soil stabilization has ceased; except if resuming within 14 days.

c. Permanent soil stabilization with perennial vegetation shall be applied within 7 days after final grading.

3.3.5.5.3 Structural Controls

a. Divert all surface water flowing toward the construction area by using berms, channels, or sediment traps, as necessary.

b. Design erosion and sediment control measures according to size and slope of disturbed areas or drainage areas, to detain runoff and sediment.

c. Discharge contents of sediment basins and traps through a pipe or lined channel so that the discharge does not cause erosion.

d. Hold muddy water pumped out from excavation and work areas in settling basins, or treat it by filtration prior to its discharge into surface waters.

3.3.5.6 The state of Tennessee does not require the sampling of discharges from storm water outfalls associated with construction activities. However, the following discharge criteria has been specified:

a. The discharge shall not cause an objectionable color contrast in receiving streams; the discharge shall not contain distinctly visible floating scum; oil or other matter; and, the discharge shall not contain any materials in concentration sufficient to be hazardous to humans, wildlife, plant life, or fish and aquatic life in receiving streams.

b. Other than NPDES Storm Water Permits, there are no State regulations of general applicability, which cover construction site sedimentation and soil erosion in Tennessee. The Tennessee Erosion and Sediment Control Handbook, published by the TDEC, contains voluntary guidelines and Best Management Practices (BMPs) for construction site erosion and sediment control.

3.3.5.7 STORM WATER POLLUTION PREVENTION PLAN

40 CFR 122.26, EPA 832-R-92-005. Provide "Storm Water Pollution Prevention Plan".

a. Identify potential sources of pollution, which may reasonably be expected to affect the quality of storm water discharge from the site.

b. Describe and ensure implementation of practices, which shall be used to reduce the pollutants in storm water discharge associated with industrial activity at the construction site.

c. Ensure compliance with terms of EPA general permit for storm water discharge.

d. Provide completed copy of Notice of Intent and Notice of Termination, except for effective date.

3.4 CONTROL AND DISPOSAL OF SOLID WASTES

Pick up solid wastes, and place in covered containers, which are regularly emptied. Do not prepare or cook food on the project site. Prevent contamination of the site or other areas when handling and disposing of wastes. At project completion, leave the areas clean. Recycling is encouraged and may be coordinated with the PW Environmental Division via the Contracting Officer and the activity recycling coordinator. Remove all solid waste (including non-hazardous debris) from Government property and dispose off-site at a State permitted, approved landfill. Solid waste disposal off-site shall comply with most stringent local, state, and federal requirements including 40 CFR 241, 40 CFR 243, and 40

CFR 258. All lead-based paint containing debris shall be disposed of at

an EPA/State approved, permitted landfill. The Contractor shall not offer for sale, giveaway or etc., any lead containing material or debris. An exception to the lead-based paint containing debris disposal is the

Contractor may submit for approval a request to send the lead-based paint containing debris to a permitted, State approved recycler.

3.4.1 Dumpsters

Equip dumpsters with a secure cover. Keep cover closed at all times, except when being loaded with trash and debris. Locate dumpsters behind the construction fence or out of the public view. Empty site dumpsters at least once a week, or as needed to keep the site free of debris and trash. If necessary, provide 208-liter 55-gallon trash containers to collect debris in the construction site area. Locate the trash containers behind the construction fence or out of the public view. Empty trash containers at least once a day.

3.4.2 Removal from Government Property

Remove and dispose of rubbish and debris from Government property to a state approved, permitted landfill only.

3.5 CONTROL AND DISPOSAL OF HAZARDOUS WASTE AND REGULATED WASTE

3.5.1 Hazardous Waste Generation

Handle generated hazardous waste in accordance with 40 CFR 262.

3.5.1.2 Hazardous Waste and Regulated Waste Disposal

Removal of hazardous waste and regulated waste items from Government property shall not occur. Transport of hazardous waste shall be by the Government or its designated representative. Hazardous waste shall be properly identified, packaged, and labeled in accordance with 49 CFR 172. Provide a container storage log, MSDS for hazardous waste turned in to the PW Environmental Division via the Contracting Officer. Hazardous waste shall not be brought onto the station.

3.5.1.3 Regulated Waste Storage/Satellite Accumulation/90-Day Storage Areas

If the work requires the temporary storage/collection of regulated or hazardous wastes, the Contractor may request the establishment of a Regulated Waste Storage Area, a Satellite Accumulation Area, or a less than 90-Day Storage Area at the point of generation. The Contractor shall submit a request in writing to the PW Environmental Division via the Contracting Officer providing the following information:

Contract Number	_____	Contractor	_____
Haz/Waste or Regulated Waste POC	_____	Phone Number	_____
Type of Waste	_____	Source of Waste	_____

Emergency POC _____ Phone Number _____

Location of the Site: _____
(Attach Site Plan to the Request)
Attach a waste determination form. Allow ten working days for processing this request.

If the Contractor sets up a less than 90-day site this shall be done within 10 working days of the Contractor starting to work. Less than 90-day sites shall be inspected and approved by Public Works Department, Environmental Division, within 10 working days of the Contractor starting to work. The less than 90-day site shall be in compliance with TCA-1200-1-11. The Public Works Department, Environmental Division, will inspect the site monthly.

3.5.2 Spills of Oil and Hazardous Materials

Take precautions to prevent spills of oil and hazardous material. The Contractor is required to have a spill kit on hand, and to handle small petroleum spills on site. In the event of a spill, during normal working hours, immediately notify the Contracting Officer and the Public Works Department, Environmental Division. If the spill is mobile, or if it enters the storm water or sanitary sewer, or if there is a threat to life, health, or of fire, notify the Base Fire Department. In the event of a spill, outside normal working hours, immediately notify the Contracting Officer, Base Fire Department, and the OOD. Spill response shall be in accordance with the Base Facility Response Plan and applicable federal, state, and local regulations. The Contractor is responsible for all Contractor-caused spills and clean up shall start immediately.

3.5.3 Lead-Acid Batteries

Dispose of lead-acid batteries that are not damaged or leaking at a state approved, permitted battery recycler. For lead-acid batteries that are leaking or have cracked casings, dispose of the electrolyte solution using the following alternative:

All lead-acid batteries that are not recycled shall be turned in to the Government in accordance with 40 CFR 262, in DOT approved containers.

3.5.3.1 Batteries

Batteries that are turned over to the Navy shall be handled in accordance with TCA Chapter 1200-1-11-.12 and 40 CFR 273.

3.5.4 Mercury Control

Thermostats, switches, and other components that contain mercury, which are being removed, shall have the ampule containing mercury removed and only the ampule turned in to the Government for disposal. Upon removal, place ampules containing mercury in DOT approved containers, label, and turn in to the PW Environmental Division via the Contracting Officer for disposal. Packaging requirements shall meet 49-CFR-173.211. All work shall be in accordance with TCA Chapter 1200-1-11-.12 and 40 CFR 273.

3.5.5 Petroleum Products

Conduct the fueling and lubricating of equipment and motor vehicles in a manner that protects against spills and evaporation. Any excess oil shall be turned over to the Government along with an MSDS for recycling. Rags shall be containerized and turned in to the Government for disposal. MSDS's shall be provided for contaminants of rags.

3.5.6 Fluorescent Light Tubes

Fluorescent light tubes are considered hazardous waste if they can no longer be used for their intended purpose and/or shall be discarded. The Contractor shall remove fluorescent light tubes, properly package in DOT-approved containers for storage and shipment, properly label each container and transport each container of light bulbs to Building 1694. These are considered materials that shall be recycled by the Government rather than waste. Packaging requirement shall meet 49 CFR 173.213. All work shall be in accordance with TCA Chapter 1200-1-11-.12 and 40 CFR 273.

3.5.7 Disposal Containers

The Contractor is responsible for purchasing, and providing Department of Transportation (DOT) approved containers for all hazardous waste, fluorescent light tubes, PCB-contaminated light ballasts, contaminated rags, or any other wastes that shall be turned over to the Government for disposal.

3.5.8 Disposal of Empty Containers

Empty containers shall be in accordance with 40 CFR 261.7.

3.5.9 Aerosol Container

The use of materials in aerosol containers is restricted. Empty aerosol containers shall be turned in to the Navy for puncturing. The Contractor shall turn in 20 empty aerosol cans per day or the pervious amount used the day before whichever is greater. All empty aerosol cans shall be delivered to Building 1694 by appointment.

3.5.10 Delivery to Building 1694

All transportation of materials to Building 1694 shall be scheduled at least two working days in advance of the delivery.

3.6 DUST CONTROL

Keep dust down at all times, including non-working periods. Sprinkle or treat, with dust suppressants, the soil at the site, haul roads, and other areas disturbed by operations. Dry power brooming shall not be permitted. Instead, use vacuuming, wet mopping, wet sweeping, or wet power brooming. Air blowing shall be permitted only for cleaning non-particulate debris such as steel reinforcing bars. Only wet cutting shall be permitted for cutting concrete blocks, concrete, and bituminous concrete. Do not shake bags of cement, concrete mortar, or plaster unnecessarily.

3.6.1 Abrasive Blasting Operations

All abrasive blasting operations require the written approval of the Public Works Department, Environmental Division, before blasting operations can commence.

The use of silica is prohibited in abrasive blasting.

Provide tarpaulin drop cloths and windscreens to enclose abrasive blasting operations to confine and collect dust, abrasive agent, paint chips, and other debris (in accordance with the requirements specified). (Perform work involving removal of hazardous material in accordance with 29 CFR 1910).

3.6.2 Disposal Requirements

Collect dust, abrasive, paint, and other debris resulting from abrasive blasting operations and store in DOT-approved 55-gallon, open-top drums with watertight lids. The Contractor shall be required to provide information regarding contaminants mixed with blasting residue. The Contractor is required to properly label the drums of waste. Take a representative sample of this material, and test for EP toxicity with respect to lead, chromium, and cadmium. Additional testing may be required based on types of materials being blasted. The sampling and testing shall be performed in accordance with 40 CFR 261. Transport the entire containerized blasting residue to Building 1694 for disposal.

3.7 Termite Treatment

All of the buildings at NSA Mid-South have been treated with termiticide. No soil from under these buildings shall leave the Contractor site unless otherwise specified in the contract and approved by Public Works Department, Environmental Division. The Contractor shall take appropriate precautions to protect his workers.

3.8 Smoke Detectors

All smoke detectors that are being dispose of that contain a small radioactive component shall be turn in to the Navy intact for disposal.

3.9 Air Sampling

The contractor shall perform air sampling for at least 25 percent of the time during building demolition to test for asbestos and lead emission.

Culverts
- culvert (no visible problems)
- Gullies, Ruts, Rills (minimal, moderate, major)
- Steep Slopes
- dry silt in pipe
- erosion at entrance
- erosion at inlet
- erosion at outlet
- silted
- silted in 1/4
- silted in 100%
- silted in half
- storm drain (18" x 24")
- NSA Block A
- Buildings

Ditches
- Ditch (no visible problems)
- Black willows, Steep Slopes, Ditch

- Bare Soil Upgradient
- Low Area
- sink hole
- wet area (20"x20")

REVISIONS		
Rev Number:	Rev Date:	Rev By:
Rev Number:	Rev Date:	Rev By:
Rev Number:	Rev Date:	Rev By:
Rev Number:	Rev Date:	Rev By:
Rev Number:	Rev Date:	Rev By:

Naval Facilities Engineering Command Southern Division

NSA MEMPHIS
MILLINGTON, TENNESSEE

FIGURE 1
BLOCK A

Dr by:	Tr by:	
Ck by:	App by:	Sheet 1
Date: 01/21/03	APR Name:	Of 1

D:\projects\NsaMidSouth\Erosion-Control\Erosion-Control.apr BLOCK A

Culverts
- 30% silted erosion around headwall
- hay bales and grass

NSA Block
Buildings

Ditches
- Ditch (no visible problems)
- Concrete
- Swale
- large, Swale
- lined, Ditch, Concrete

REVISIONS

Rev Number:	Rev Date:	Rev By:
Rev Number:	Rev Date:	Rev By:
Rev Number:	Rev Date:	Rev By:
Rev Number:	Rev Date:	Rev By:
Rev Number:	Rev Date:	Rev By:

NSA MEMPHIS
MILLINGTON, TENNESSEE

FIGURE 14
BLOCK W

Dr by:	Tr by:	
Ck by:	App by:	Sheet 1
Date: 12/16/02	APR Name:	Of 1

D:\projects\NsaMidSouth\Erosion-Control\

N

Waters of State
Non Waters of State
Potential Waters of State
NSA Mid-South Boundary
Buildings
Roads

600 0 600 Feet

REVISIONS		
Rev Number:	Rev Date:	Rev By:
Rev Number:	Rev Date:	Rev By:
Rev Number:	Rev Date:	Rev By:
Rev Number:	Rev Date:	Rev By:
Rev Number:	Rev Date:	Rev By:

NSA MEMPHIS
MILLINGTON, TENNESSEE

Figure 15
Waters of the State

Dr by:		Tr by:	
Ck by:		App by:	Sheet 1
Date: 03/27/03	APR Name:		Of 1

N

Culverts
- Culvert (no visible problems)
- 1/2 silted, Corrugated Steel
- Active Erosion
- Active Erosion, Steep Slopes, Gullies, Ruts, Rills (minimal, moderate, major)
- CMP
- CMP silt in 1/2
- Oval
- Plugged Pipe
- backup at intersection of ditch/creek
- blockage in big breek
- broken
- debris in creek
- pictures of side slope
- silted in 1/2
- slab in bank, Steep Slopes, Concrete

NSA Block M

Buildings

Ditches
- Ditch (no visible problems)
- Accumulation of Silt in Channel, Excessive Vegetation in Channel (blocking flow)
- Active Erosion, Steep Slopes, Gullies, Ruts, Rills (minimal, moderate, major)
- Active Erosion, Steep Slopes, Gullies, Ruts, Rills (minimal, moderate, major), Standing Water
- Standing Water
- Steep Slopes, Gullies, Ruts, Rills (minimal, moderate, major)
- trees, Standing Water

bare soil with water maybe from recent fence installation

400 0 400 Feet

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FIGURE 13
BLOCK M

Dr by:		Tr by:	
Ck by:		App by:	Sheet 1
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N

300 0 300 Feet

Culverts
- Culvert (no visible problems)
- Nsa Block L
- Buildings

Ditches
- Ditch (no visible problems)
- Big Creek, Active Erosion, Steep Slopes, Gullies, Ruts, Rills (minimal, moderate, major), Scour signs/undercut draining to Wetland, Bare Soil Upgradient, Ditch

WETLAND

REVISIONS		
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FIGURE 12
BLOCK L

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N

N-100

Culverts
- Culvert (no visible problems)
- Standing Water

NSA Block K

Buildings

Ditches
- Ditch (no visible problems)

Bare Soil Upgradient

70 0 70 Feet

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FIGURE 11
BLOCK K

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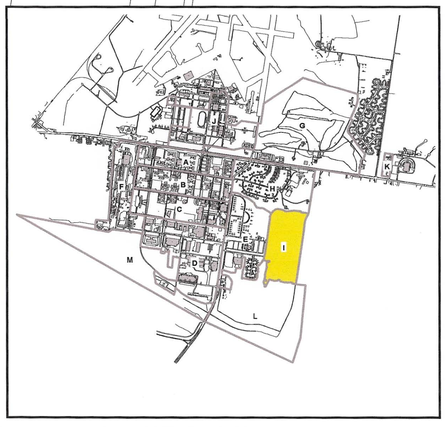
N

200 0 200 Feet



Culverts
- Culvert (no visible problems)
- gated pipe (near base boundary)
- metal pipe (to I-3), With Apron
- partly blocked, With Apron
- to I-3, Oval

NSA Block I
Buildings

Ditches
- Ditch (no visible problems)
- E/W, Ditch
- Standing Water
- along north boundary of I, Steep Slopes, Swale armored; E to base of perimeter road, Swale
- continuation of E-2; to I-CUL-1
- east side of Block E, Swale
- lined, Steep Slopes, Concrete

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FIGURE 9
BLOCK I

Dr by:		Tr by:	
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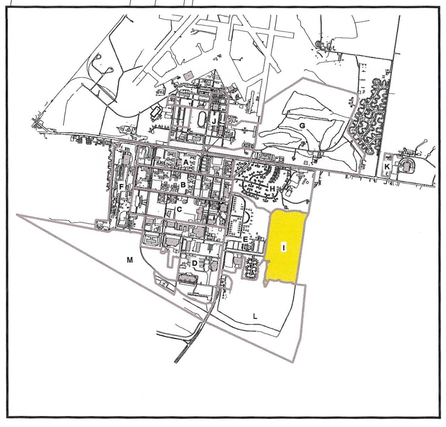
N

200 0 200 Feet



Culverts
- Culvert (no visible problems)
- gated pipe (near base boundary)
- metal pipe (to I-3), With Apron
- partly blocked, With Apron
- to I-3, Oval

NSA Block I
Buildings

Ditches
- Ditch (no visible problems)
- E/W, Ditch
- Standing Water
- along north boundary of I, Steep Slopes, Swale armored; E to base of perimeter road, Swale
- continuation of E-2; to I-CUL-1
- east side of Block E, Swale
- lined, Steep Slopes, Concrete

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FIGURE 9
BLOCK I

Dr by:		Tr by:	
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Culverts
- Culvert (no visible problems)
- Active Erosion, Gullies, Ruts, Rills (minimal, moderate, major)
- C-HDPE
- CMP, Oval
- Standing Water
- black steel
- box
- fish, Standing Water
- silt 1/2
- silt 1/2 to 1
- silt 1/4
- silt 1/4, Standing Water
- silt, Standing Water
- silted in 90%
- some silt

NSA Block H

Buildings

Ditches
- Ditch (no visible problems)
- Active Erosion, Steep Slopes
- Active Erosion, Steep Slopes, Gullies, Ruts, Rills (minimal, moderate, major), Standing Water
- Standing Water
- lined, Steep Slopes, Concrete

200 0 200 Feet

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FIGURE 8
BLOCK H

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Culverts
- Culvert (no visible problems)
- 1/4 filled with rocks
- 100% 2" of mud
- 3" of mud
- Active Erosion, Gullies, Ruts, Rills (minimal, moderate, major)
- CMP 2" of mud
- bad shape
- black iron
- destroyed
- erosion in front of culvert, Gullies, Ruts, Rills (minimal, moderate, major)
- metal
- metal pipe, Active Erosion, Gullies, Ruts, Rills (minimal, moderate, major)
- no outlet, Standing Water
- silt 1/2
- silt 1/2, Standing Water
- silt 1/3
- silt 1/4
- silted in 100%
- some erosion from box

Sidewalk
Sidewalk, Standing Water
NSA Block J
Buildings

Ditches
- Ditch (no visible problems)
- Active Erosion, Gullies, Ruts, Rills (minimal, moderate, major)
- Active Erosion, Steep Slopes, Gullies, Ruts, Rills (minimal, moderate, major)
- Standing Water
- high grass, Ditch

Active Erosion, Bare Soil Upgradient

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FIGURE 10
BLOCK J

Dr by:		Tr by:	
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FIGURE 7
BLOCK G

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Culverts
- Culvert (no visible problems)
- Accumulation of Silt in Channel
- CMP
- Corrugated HDPE
- Corrugated Steel
- Gullies, Ruts, Rills (minimal, moderate, major)
- PVC; silt accumulation 1/4, Accumulation of Silt in Channel
- damaged, Corrugated Steel
- plastic

NSA Block F

Buildings

Ditches
- Ditch (no visible problems)
- Active Erosion, Bare Soil Upgradient, Ditch
- Active Erosion, Gullies, Ruts, Rills (minimal, moderate, major), Bare Soil Upgradient
- Active Erosion, Gullies, Ruts, Rills (minimal, moderate, major), Standing Water
- Gullies, Ruts, Rills (minimal, moderate, major), Ditch
- Steep Slopes
- Steep Slopes, Gullies, Ruts, Rills (minimal, moderate, major)
- asphalt; silt and mud build-up, Ditch
- concrete channel with soil build-up, Ditch
- damaged storm grate, Ditch
- dry; grassy, Ditch
- grassy; minor erosion in one section, Ditch
- grassy; minor, Ditch
- minor; grass, Ditch
- sink hole
- trees, Standing Water

- Bare Soil Upgradient
- Low Area, Standing Water
- Puddle
- Standing Water
- bare soil with water maybe from recent fence installation
- bare soil, Standing Water
- bare soil; vegetation stressed, Standing Water
- silt, Standing Water
- soil erosion

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FIGURE 6
BLOCK F

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FIGURE 5
BLOCK E

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FIGURE 4
BLOCK D

Dr by:	Tr by:		
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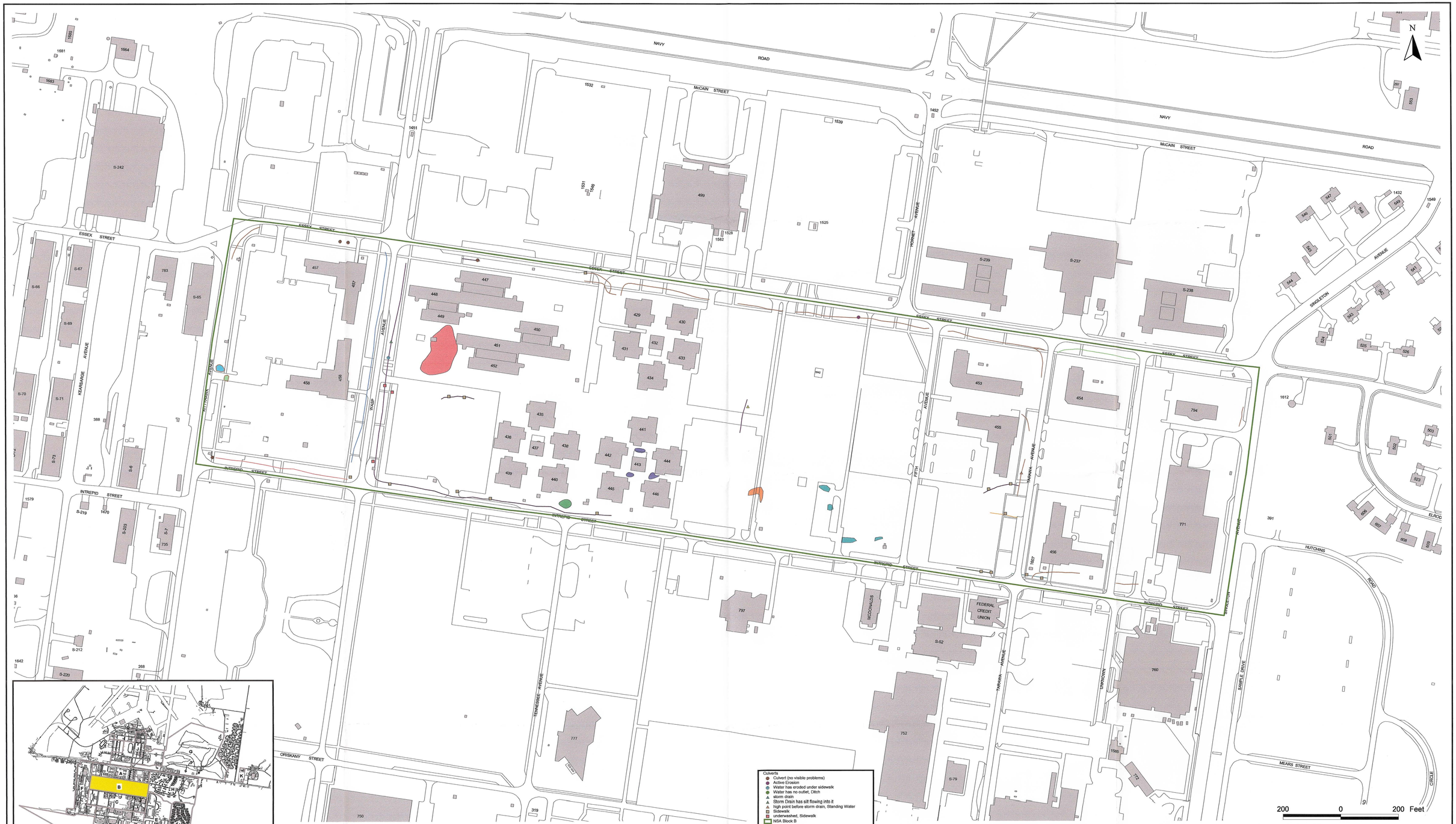

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FIGURE 2
BLOCK B

Dr by:		Tr by:	
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