

Minutes

Quarterly Teleconference for Florida Phase I MS4 NPDES Coordinators

Wednesday, March 20, 2019

Next quarterly teleconference for Phase I NPDES Coordinators:

- June 26, 2019
- Submit agenda items by June 12th to Robin.Starkie@floridadep.gov.
- Sign up in GovDelivery for teleconference notifications.
https://public.govdelivery.com/accounts/FLDEP/subscriber/new?topic_id=FLDEP_439

NPDES Stormwater Contacts:

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Michelle Bull	Phase I MS4 Coordinator	850-245-7561
Steve Cioccia	Phase I MS4 Coordinator	850-245-8568
Jonathan Turner	Phase I MS4 Coordinator	850-245-8482
Cierra Robinson	MS4 Assistance	850-245-5742
Hector Rivera	Phase II MS4 Coordinator	850-245-8667
Jason Maron	Phase II MS4 Coordinator	850-245-7568

NOTES

TURBIDITY CONTROL PLANS: Melissa Pulver, Reedy Creek Improvement District MS4 Turbidity compliance issues are not uncommon when working in waterways (ponds, canals, wetlands, etc.). Contractors respond with “knee-jerk” reactions in an effort to correct the issue that often results in worsening the original problem. RCID wanted to come up with a way for contractors to think through their work process so that if they ran into turbidity or compliance concerns during construction, they had a plan in place and knew what to do.

RCID created a “Turbidity Control Plan” with two parts:

- The first part of the plan is a narrative explaining the contractor’s means and methods of doing the work. The means and methods explanation is used to help understand how the construction will be performed. It also helps to identify methods that may result in turbidity/compliance concerns. Feedback is provided to the contractor that creates open communication for ways to mitigate /prevent turbidity. Provides opportunity to ensure local codes/regulations are followed.
- The second part of the plan focuses on the contractor’s response if there is a major rain event and things go wrong such there is a turbid discharge from the construction site. What products will they use, and how will the implement different turbidity treatment methods. This helps the contractors by having a plan in place should the need arise.
- In addition to the narrative portion of the plan, we also ask for a site plan that identifies erosion controls, cofferdam locations (if applicable), any additional BMPs needed/required for the work and locations of floc logs, particle curtains, turbidity treatment locations, etc.
- Plans are required for construction within 10 ft of a wetland or waterbody.
- The plan was implemented in 2013, around the construction boom. It has led to more proactive response, more communication, and allows contractors to continue work.

Many times following the creation of this plan, the contractors will order the necessary supplies needed to have on hand to deal with turbidity issues. While this doesn’t resolve all compliance

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violations, it does help the contractor to have a plan and know what to do if they find themselves in a situation that involves turbidity.

After implementing this plan and requirement, we began to see much fewer violations, less harmful impacts to the environment and a smoother construction process for all. We add this approved document to the SWPPP on site for all field personnel to have access to.

See attachments:

- RCID Turbidity Control Plan Application
- RCID Turbidity Control Plan Example
- RCID Turbidity Control Plan Reviewer Checklist

INDUSTRIAL AND HIGH-RISK FACILITIES: Michelle Bull
Facility inventory and inspections are required in multiple sections of the permit.

Part III.A.5 – Municipal Waste Treatment, Storage or Disposal Facilities

- Facilities that may not be covered by an MSGP (inspect at least annually)
MSGP – Multi-Sector Generic Permit, known as the Industrial Stormwater Permit.
 - Municipal waste transfer stations
 - Dumpster located on municipally owned properties for use by the public
 - Dumpsters at recreational facilities.
- Sector L MSGP - Landfills
 - Landfills
 - Land application sites
 - Open dumps
- Sector K MSGP – Hazardous Waste
 - Hazardous waste treatment storage, or disposal facilities
- Sector P MSGP – Land Transportation
 - Facilities that have vehicle and equipment maintenance shops and cleaning operations, storage of vehicles waiting for maintenance, storage of related waste materials, vehicle exterior washdown, and rinsing of transfer equipment. This Sector is for the following type of vehicles:
 - **dump trucks**
 - **garbage collection without disposal**
 - **transportation such as bus, rail or subway**

Each permittee should evaluate their municipal operations to determine if they need to be inspected, or if they need an MSGP. Contact the NPDES Stormwater Notices Center at NPDES-Stormwater@dep.state.fl.us if you think you need MSGP coverage for a municipal facility. The [Phase I MS4 Permitting Resource Manual](#) (pg. 28) lists some appropriate BMPs for municipal WTSD facilities.

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Part III.A.7.c – Illicit Discharges and Improper Disposal – Inspections

During the Proactive Illicit Discharge Detection and Elimination (IDDE) Inspection program, staff should look for industrial facilities that may need an MSGP. The Program maintains lists of permitted industrial and construction facilities.

<https://floridadep.gov/water/stormwater/content/stormwater-facility-information>.

Contact the NPDES Stormwater Notices Center at NPDES-Stormwater@dep.state.fl.us if you think a facility may need MSGP coverage for a municipal facility.

Part III.A.8.a – Industrial and High-Risk Runoff

(From 10/18/17 and 7/18/18 teleconferences) The permit requires permittees to maintain an inventory of high-risk facilities discharging into the permittee's MS4, including facilities that are on the Toxics Release Inventory (TRI) maintained by the U.S. EPA, and facilities determined to be high-risk during a proactive IDDE inspection.

The [Phase I MS4 Permitting Resource Manual](#) (pg. 50) gives guidance for establishing criteria to prioritize industrial and high-risk facilities for inspection, including:

- the type of industrial activity (SIC codes)
- the use and management of chemicals and raw materials at a facility and the likelihood that these can contribute pollutants into stormwater from the site
- the size and location of the facility with respect to its discharge point

When reviewing the TRI list, permittees may also consider the type of spill (air violations likely do not have potential to impact MS4), whether previous spills impacted the MS4, number of spills (chronic violations), and timing of spills (during rain event, poor handling, etc.).

Industrial facilities can be a significant contributor of pollutants to the MS4. It is important to evaluate municipal and other facilities to ensure they have the proper permits and are properly implementing BMPs to be protective of stormwater.

See attachments:

- o [EPA Factsheet 2.8 – Pollution Prevention/Good Housekeeping Measures](#)
- o DEP Industrial Activity Brochure
- o DEP MSGP Sector P Flyer
- o Federal Register (Vol. 60, No 189, pgs. 50977-50984) MSGP Sector P Language
- o List of Industrial Categories that need an MSGP

GENERAL UPDATES: Jonathan Turner

The NPDES Stormwater Program is in the process of filling an additional MS4 coordinator to assist with general rule-making and permitting of FDOT MS4s. This person should be introduced at the next scheduled teleconference.

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EPA e-reporting implementation. This rule applies to all NPDES permits and requires the electronic transmittal of permit applications, monitoring data, and permit reports. The phase applying to MS4 permits is required to be implemented by December 2020. The NPDES Stormwater Program is in the process of working with IT to ensure that we have our state processes aligned with EPA. Once the implementation is finalized, there will be outreach efforts to the permittees, both during the quarterly teleconferences and in individual outreach efforts.

Q & A:

Margarita Kruffy with the City of Miami Beach is looking for innovating ideas of treating stormwater before disposal into injection wells. If you have suggestions, please contact her at MargaritaKruffy@miamibeachfl.gov.

Shannon Wetzel, Seminole County asked about training. Part III.A.8.a inspection program should include training inspectors as per Part III.A.7.c of the permit. While Part III.A.5 does not specify inspection requirements, it is recommended that inspectors have IDDE training as well.



Reedy Creek Improvement District Turbidity Control Plan Application

Project Name:

Contractor:

Attach a site plan with location of work area, erosion control measures, installation/demolition plans with related cross-section and/or detail sheets. Please include specifications of each erosion control measure and water controlling device (if needed). Include items like upper and lower elevations of structures, the normal water level or control elevation for the water body, the location and elevation of permanent erosion control devices (rip rap, articulating concrete blocks, bahia sod, or other means of final stabilization.) and any other pertinent hydraulic information.

List scope of work to be performed:

Installation	Demolition	Maintenance
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Means and methods of construction:

Do you anticipate dewatering for this work? If yes, please complete an application for dewatering and submit to RCID Compliance for review/approval prior to expected commencement of dewatering activities.

Will a water controlling device or cofferdam be used during these activities? Yes No

If yes, please identify what type:

Cofferdam

Sheet Pile

Aqua Bladder

Rock Bags & Visqueen

Other*

What are the means and methods for treating turbidity contained within the erosion control measures? Please include pumps, application methods, treatment setup details, product formulation details and the use of items like particle curtains or other media to help with collection of flocculant from treated water. Please include PAM product specifications.

Note: Turbidity readings shall be recorded a minimum of twice daily inside and outside of each floating turbidity barrier for the duration of the work. Turbidity treatment is recommended to begin when turbidity reaches 20 NTU. RCID recommends the use of floating head intake and discharge hoses during the treatment of turbidity.

Please submit completed turbidity control plan application and all associated documents for RCID Compliance review via Buzzsaw under the SWPPP folder for this project.



**Turbidity
Control Plan
Approved For
Construction
Date _____**

PROJECT: World Drive North Early Works
RE: Sheet Pile Installation Erosion Control & Plan
PREPARED BY: Jr. Davis Construction
SUBMITTED TO RCID: Reedy Creek Improvement District Planning & Engineering Department
DATE: January 6th, 2017

This narrative with the attached site maps provide details of the construction sequencing and methods to construct the temporary sheet pile walls within the L-404 canal for the World Drive North Early Works project.

As indicated on the erosion control site map all perimeter erosion control measures have been installed for the overall project. Additional measures will be implemented for each construction phase. These measures are described below in each phase narrative. The project will be constructed in three phases as indicated on the attached plans. All phases shall monitor turbidity three times a day in the following areas: upstream of the work area, downstream of the work area and within construction limits. All turbidity readings shall be logged and communicated to RCID Compliance daily.

Phase 1 – Utility Corridor Canal Crossing

The first phase consists of installing two temporary sheet pile walls (TW-4 and TW-5 on Sheet No. 4) across canal L-404 to isolate the area for installation of reclaimed water utility pipe and conduits for two 69kV electrical lines. Prior to installation of sheet pile walls, a double row of full depth floating turbidity barrier and a triple row of particle curtain will be installed on the downstream (west) side of the work area. FTB and particle curtains shall be inspected and approved by RCID Compliance prior to installation of sheet piles. Both sets of sheet piles will be driven using a vibratory hammer, starting on the north bank, south across the canal. The downstream (TW-5) sheet pile wall will be constructed first followed by the upstream (TW-4) wall. Flow within the L-404 canal as well as erosion control measures during

construction activities within the isolated area will be maintained per the canal water control plan, submitted under separate cover. Once the sheet piles have been installed the isolated area will be dewatered as indicated in the utility crossing dewatering plan, submitted under separate cover. Once the area is dewatered a 20" DIP reclaimed water main, a 6 way concrete encased electrical duct bank, and six runs of 6" conduit will be installed under the bottom of the canal. In the event there is a forecasted rain event, all exposed soil shall be covered with filter fabric, visqueen, or jute mat treated with APS 705 Powder. Once the utilities are installed the disturbed areas will be stabilized with sod on the slopes to the NWL and treating exposed soil with APS 705 powder to control turbidity. Water will be pumped into the area to equalize the water level with water being discharged over floc logs in area determined in the field by RCID Compliance that will cause the least amount of erosion or turbidity and the walls will be removed. The sheet piles will be pulled beginning with the sheets in the middle of the canal, moving out to each shore.

During the installation and removal processes, the water in canal L-404 will be monitored for increases in turbidity. Turbidity levels shall be monitored three times a day in the following areas: upstream of the work area, downstream of the work area and within construction limits. All turbidity readings shall be logged and communicated to RCID Compliance daily. RCID approved floc logs (APS 703d#3 and/or 706b) will be used within the isolated area during pumping to equalize the area prior to the removal to control turbidity. If water turbidity rises to a limit of 20 NTU, RCID Compliance shall be contacted immediately to evaluate field conditions and provide recommendations for treatment. RCID approved floc logs (APS 703d#3 and/or 706b) and powder PAM (APS 712 silt stop) will be deployed as needed to bring turbidity down within acceptable limits. Should turbidity levels reach 30NTU construction activity will be stopped and RCID Compliance notified to give further direction on turbidity treatment. Once acceptable levels of turbidity have been achieved, construction activities will resume. Water quality within the canal will continue to be monitored. Floating turbidity barrier and particle curtain will be left in place for phases 2 and 3.

Phase 2 – Jack and Bore Pit Isolation

The second phase consists of installing temporary sheet pile walls (TW-1 and TW-2 on Sheet No. 2) to isolate two areas, one to the east of World Drive and one to the west, for jack and bore pits. Double row of full depth floating turbidity barrier and triple row of particle curtain will be left in place from phase 1 on the downstream (west) side of the work area. Sheet piles will be driven using a vibratory hammer starting at the existing headwall, outwards along the canal and then turning into the canal

bank. In order to seal the area off, a column of concrete will be formed and tremie poured in the gap between the head wall of the box culvert and the end of the sheet piles. These sheet piles will not block any portion of the existing box culvert under World Drive and will not impede any water flow within canal L-404. Once sheet piles are installed the isolated areas will be dewatered as indicated in the jack and bore dewatering plan (submitted under separate cover). A 60" steel casing will be installed under World Drive with the casing being pushed from west to east. In the event there is a forecasted rain event, all exposed soil shall be covered with filter fabric, visqueen, or jute mat treated with APS 705 Powder. Once the casing is installed the disturbed areas will be stabilized using sod on the slopes to the NWL and treating exposed soils with APM 705 powder. Water will be pumped into the areas, discharging over floc logs in area determined in the field by RCID Compliance that will cause the least amount of erosion or turbidity, to equalize the water level on each side of the walls and the walls will be removed. The sheet piles will be removed in reverse order that they were driven, starting from the canal bank, back to the existing headwall.

During the installation and removal processes, the water in canal L-404 will be monitored for increases in turbidity. Turbidity levels shall be monitored three times a day in the following areas: upstream of the work area, downstream of the work area and within construction limits. All turbidity readings shall be logged and communicated to RCID Compliance daily. RCID approved floc logs (APS 703d#3 and/or 706b) will be used within the isolated area during pumping to equalize the area prior to the removal to control turbidity. If water turbidity rises to a limit of 20 NTU, RCID Compliance shall be contacted immediately to evaluate field conditions and provide recommendations for treatment. RCID approved floc logs (APS 703d#3 and/or 706b) and powder PAM (APS 712 silt stop) will be deployed as needed to bring turbidity down within acceptable limits. Should turbidity levels reach 30NTU construction activity will be stopped and RCID Compliance notified to give further direction on turbidity treatment. Once acceptable levels of turbidity have been achieved, construction activities will resume. Water quality within the canal will continue to be monitored. Floating turbidity barrier and particle curtain will be left in place for phase 3.

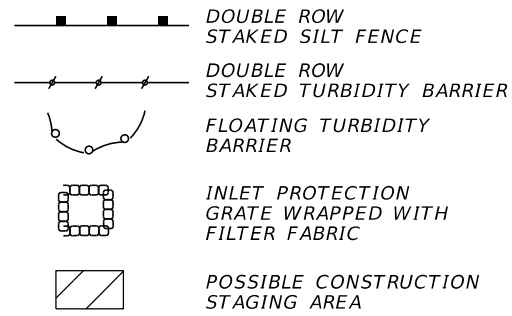
Phase 3 – Box Culvert Extension

The third phase consists of installing two temporary sheet pile walls (TW-3 and TW-6 on Sheet No. 3 and 5) across canal L-404 to isolate the area for installation of precast box culvert sections. Double row of full depth floating turbidity barrier and triple row of particle curtain will be left in place from phase 2 on

the downstream (west) side of the work area. Sheet piles will be driven using a vibratory hammer, starting on the north bank, south across the canal on both the east and west side of World Drive. The downstream (TW-6) sheet pile wall will be constructed first, followed by the upstream (TW-3) wall. Flow within the L-404 canal as well as erosion control measures during construction activities within the isolated area will be maintained per the canal water control plan, submitted under separate cover. Once the sheet piles have been installed the isolated area will be dewatered as indicated in the box culvert dewatering plan, submitted under separate cover. Once the area is dewatered rip-rap stabilization will be installed on the canal bottom, per attached plan sheets, and the slopes will be stabilized with geotextile fabric. Once stabilization is in place precast box culvert sections will be set on each side of the existing box culvert. Concrete headwalls will be formed and poured in place on each side of the extended box culvert. Once the box culvert and headwalls are installed, water will be pumped into the area, over floc logs in area determined in the field by RCID Compliance that will cause the least amount of erosion or turbidity, to equalize the water level inside the walls, and the walls will be removed. The sheet piles will be pulled beginning with the sheets in the middle of the canal, moving out to each shore.

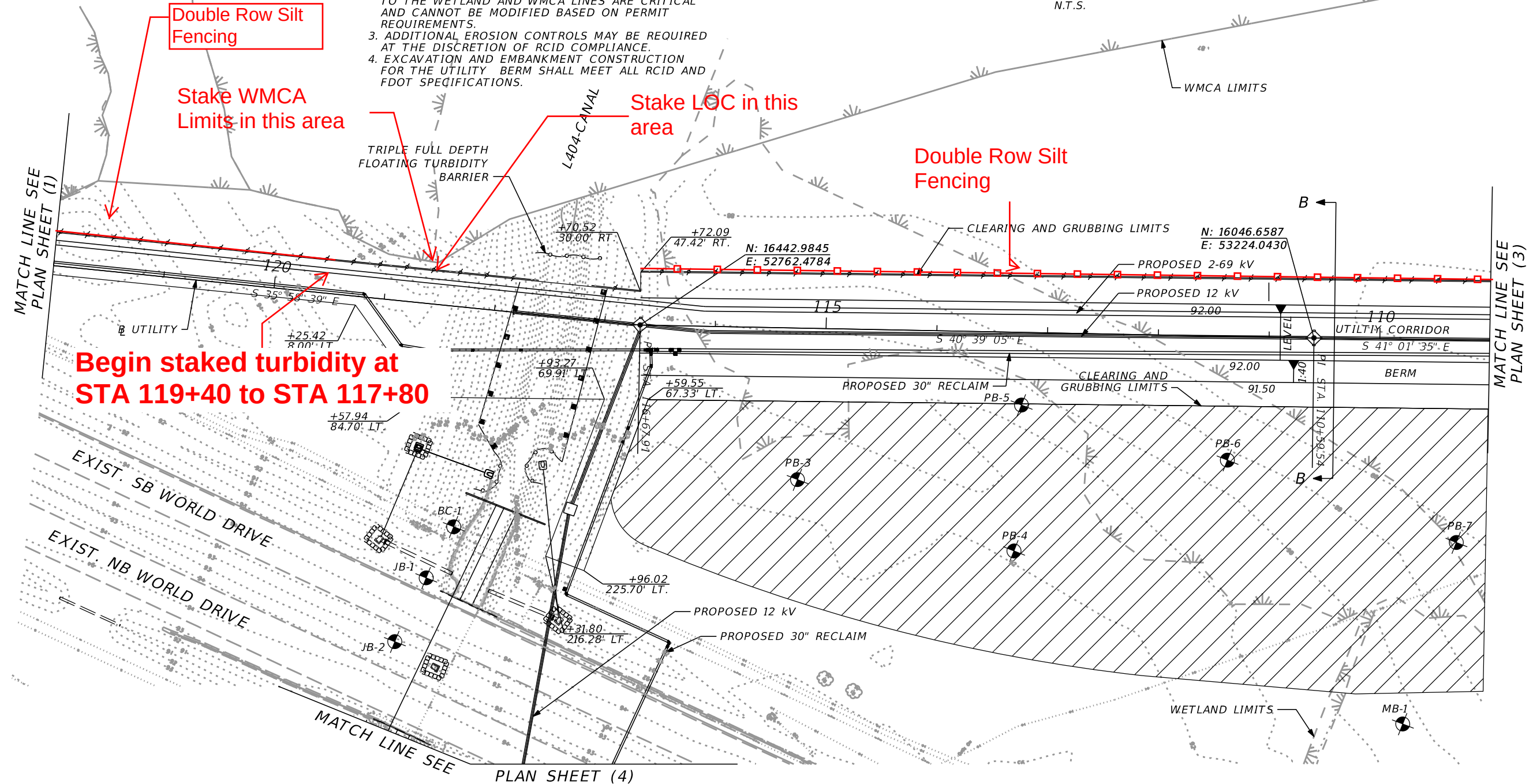
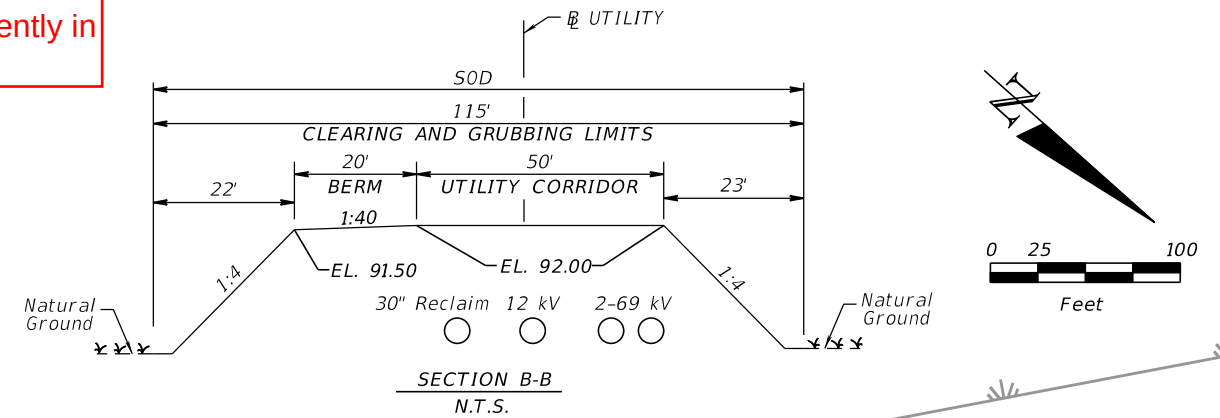
During the installation and removal processes, the water in canal L-404 will be monitored for increases in turbidity. Turbidity levels shall be monitored three times a day in the following areas: upstream of the work area, downstream of the work area and within construction limits. All turbidity readings shall be logged and communicated to RCID Compliance daily. RCID approved floc logs (APS 703d#3 and/or 706b) will be used within the isolated area during pumping to equalize the area prior to the removal, to control turbidity. If water turbidity rises to a limit of 20 NTU, RCID Compliance shall be contacted immediately to evaluate field conditions and provide recommendations for treatment. RCID approved floc logs (APS 703d#3 and/or 706b) and powder PAM (APS 712 silt stop) will be deployed as needed to bring turbidity down within acceptable limits. Should turbidity levels reach 30NTU construction activity will be stopped and RCID Compliance shall be notified to give further direction on turbidity treatment. Once acceptable levels of turbidity have been achieved, construction activities will resume. Water quality within the canal will continue to be monitored. Once removal is complete, water turbidity levels have returned to acceptable levels, and RCID Compliance has given approval, floating turbidity barrier and particle curtain will be removed.

LEGEND



- NOTES:
1. THE SECTION SHOWN IS TYPICAL AND MAY BE MODIFIED IF APPROVED BY THE ENGINEER.
 2. THE CLEARING AND GRUBBING LIMIT ADJACENT TO THE WETLAND AND WMCA LINES ARE CRITICAL AND CANNOT BE MODIFIED BASED ON PERMIT REQUIREMENTS.
 3. ADDITIONAL EROSION CONTROLS MAY BE REQUIRED AT THE DISCRETION OF RCID COMPLIANCE.
 4. EXCAVATION AND EMBANKMENT CONSTRUCTION FOR THE UTILITY BERM SHALL MEET ALL RCID AND FDOT SPECIFICATIONS.

Perimeter Erosion
Control Currently in
Place



Engineering Consultants, Inc.
11486 CORPORATE BLVD., SUITE 151
ORLANDO, FL 32817
407-901-5060

NO.	REVISIONS	REASON	BY	DATE
1				
2				
3				
4				

WORLD DRIVE NORTH-EARLY WORKS PACKAGE
REEDY CREEK IMPROVEMENT DISTRICT
LAKE BUENA VISTA, FL

PROJECT #	T201503
DRAWN: SAH	
APPROVED: SWD	
DATE:	06/22/2016

STEPHEN W. DICKISON,
P.E.
P.E.# 56129
AUTHORIZATION# 27205

SHEET
6

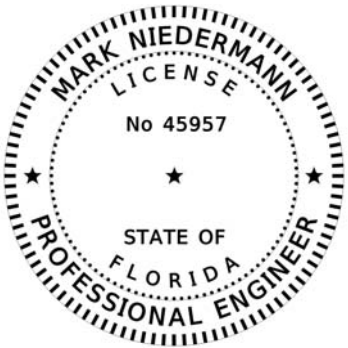
STEEL SHEET PILE WALL, CANTILEVER DATA TABLE										Table Date 07-01-12		
CONSTRUCTION INFORMATION								DESIGN PARAMETERS				
WALL DESCRIPTION	WALL LOCATION		MINIMUM * SECTION MODULUS (in³/ft)		MINIMUM REQUIRED MOMENT OF INERTIA (in⁴/ft)	MINIMUM WALL TIP ELEVATION (ft) (SEE NOTE 2)	WALL TOP ELEV. (ft)	SOIL ELEVATION		WATER ELEVATION		FACTORED DESIGN LIVE LOAD (psf)
			A-328 (ksi) fy=39 ksi	A-572 (ksi) fy=50 ksi				** FRONT OF WALL (ft)	BACK OF WALL (ft)	FRONT OF WALL (ft)	BACK OF WALL (ft)	
TW-1	110+75.50 TO 110+62.88	119.02' RT. TO 161.19' RT.	22.5	17.5	125.4	54.8	91.0	80.8	82.0	80.8	91.0	0
TW-2	110+65.86 TO 110+85.06	56.51' LT. TO 14.95' LT.	22.5	17.5	125.4	54.8	91.0	80.8	82.0	80.8	91.0	0
TW-3	111+17.06 TO 110+32.40	159.75' RT. TO 154.97' RT.	25.8	20.2	114.5	56.0	91.0	82.0	91.0	81.8	91.0	0
TW-4	111+01.56 TO 110+54.34	243.34' LT. TO 233.06' LT.	22.5	17.5	125.4	54.8	91.0	80.8	82.0	80.8	91.0	0
TW-5	110+37.06 TO 110+86.88	304.85' LT. TO 320.90' LT.	22.5	17.5	125.4	54.8	91.0	80.8	82.0	80.8	91.0	0
TW-6	110+49.95 TO 111+42.66	121.00' LT. TO 121.00' LT.	25.8	20.2	114.5	56.0	91.0	82.0	91.0	81.8	91.0	0

* MINIMUM SECTION MODULUS IS BASED ON HOT ROLLED SECTIONS. FOR COLD ROLLED SECTIONS, INCREASE MINIMUM SECTION MODULUS BY 20%.
** MINIMUM OF DESIGN GROUND SURFACE OR DESIGN SCOUR DEPTH.

NOTES:

1. THE DESIGN PARAMETERS INDICATED IN THIS TABLE WERE USED IN THE SHEET PILE WALL ANALYSIS. IF THE CONTRACTOR PLANS OPERATIONS WHICH EXCEED THE DESIGN PARAMETERS SHOWN ABOVE, CONTACT FBT FOR A POSSIBLE REDESIGN.
2. PIPE PENETRATION IS PRESENT IN WALL TW-3, THEREFORE, SEVERAL SHEETS ADJACENT TO THE OPENING SHALL HAVE A MINIMUM TIP OF 52.0. SEE SHEET 6 FOR MORE DETAILS.
3. WALL LOCATIONS ARE BASED OFF OF SKETCHES FROM THE CONTRACTOR.

Mark Niedermann, PE #45957
S&S pages 1-7 on 10-18-16



Mark Niedermann

Digitally signed by Mark Niedermann
DN: c=US, o=IdenTrust ACES Business Representative, ou=FLORIDA BRIDGE AND TRANSPORTATION, cn=Mark Niedermann,
0.9.2342.19200300.100.1.1=A01097C000001527E64697B00001AC0
Date: 2016.10.18 14:36:52 -04'00'

REVISIONS						MARK NIEDERMANN, PE P.E. LICENSE NUMBER 45957 FBT-FLORIDA BRIDGE AND TRANSPORTATION, INC. 633 DARTMOUTH STREET ORLANDO, FL 32804 (407) 513-9709 CERTIFICATE OF AUTHORIZATION 26379	DRAWN BY: CEM CHECKED BY: JAV DESIGNED BY: DWN CHECKED BY: JAV			SHEET TITLE: TEMPORARY SHEET PILE WALL			REF. DWG. NO.
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID	PROJECT NAME: WORLD DRIVE NORTH EARLY WORKS PACKAGE	SHEET NO. 1		

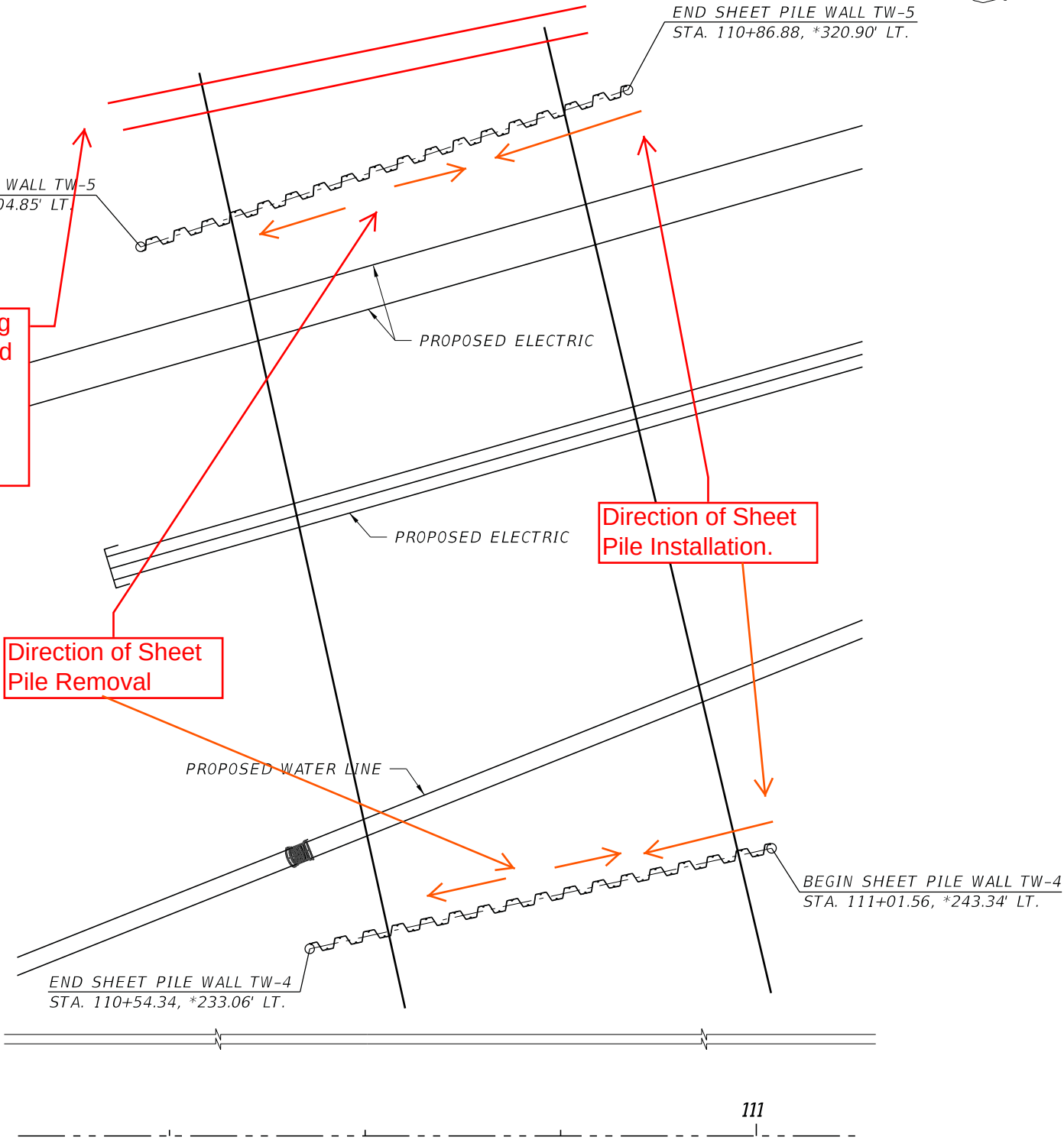
PHASE 1 SHEET PILES



Double row floating turbidity barrier and triple row particle curtain installed before sheet pile installation.

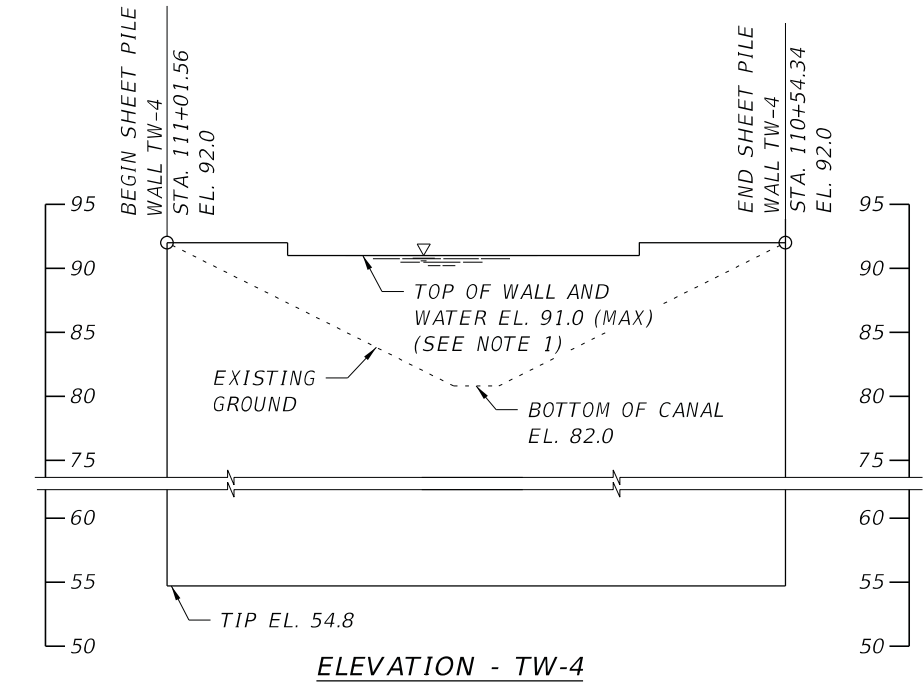
Direction of Sheet Pile Removal

Direction of Sheet Pile Installation.

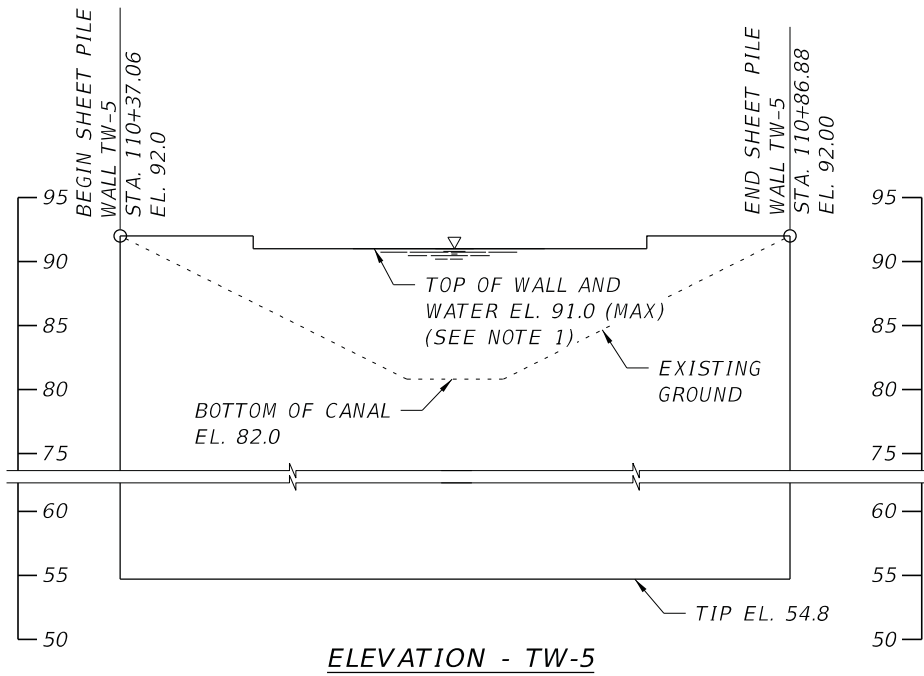


PLAN - TW-4 AND TW-5

* ACTUAL OFFSET MUST BE DETERMINED BY PROBING TO AVOID THE LOCATION OF EXISTING BURIED UTILITIES.



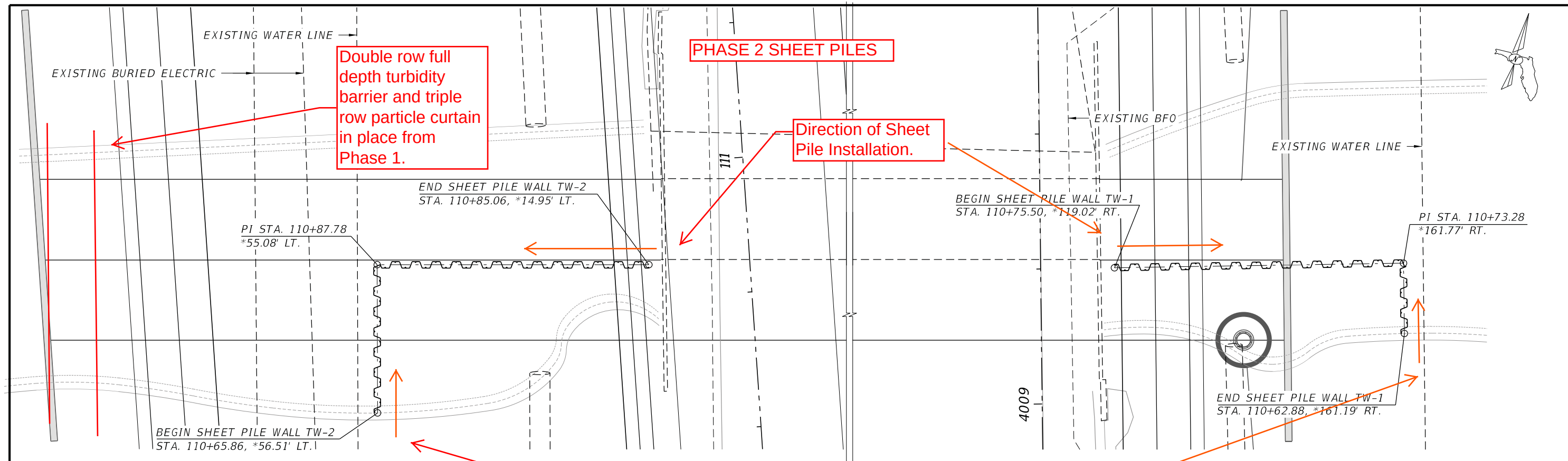
ELEVATION - TW-4



ELEVATION - TW-5

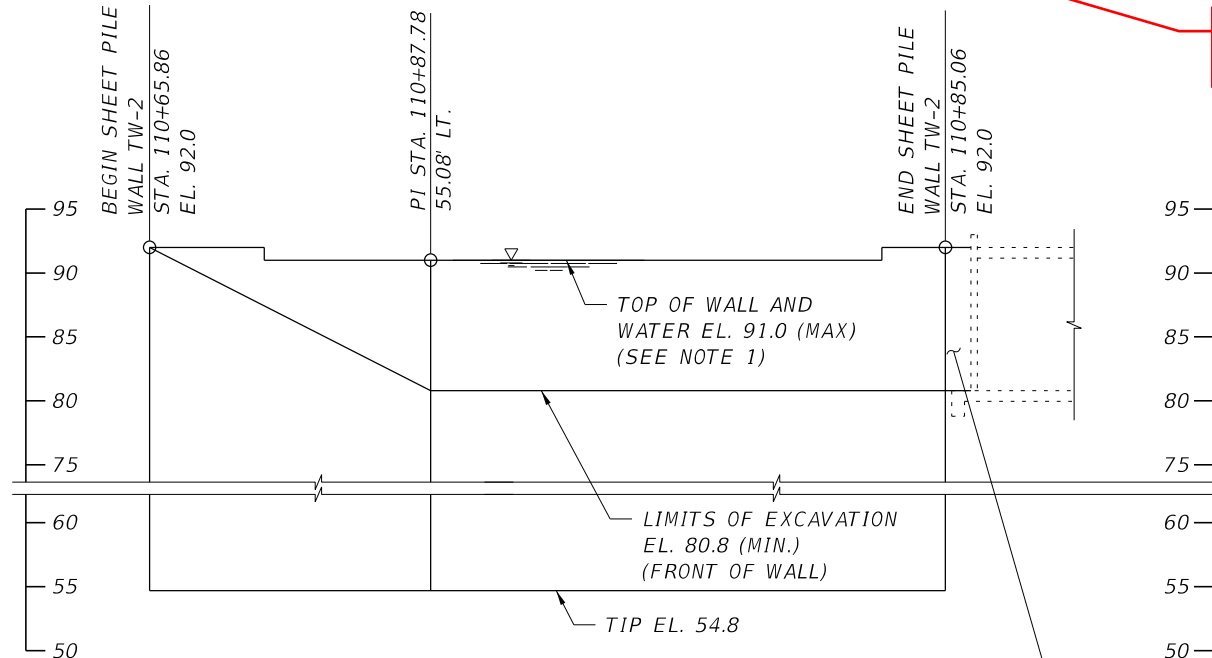
- NOTES:
1. SHEET PILE WAS DESIGNED FOR WATER ELEVATIONS SHOWN. CONTRACTOR SHALL DRIVE TOP OF SHEETS TO EL. 91.00 SO THAT THE WATER WILL NOT EXCEED THE DESIGN ELEVATIONS.

REVISIONS						MARK NIEDERMANN, PE P.E. LICENSE NUMBER 45957 FBT-FLORIDA BRIDGE AND TRANSPORTATION, INC. 633 DARTMOUTH STREET ORLANDO, FL 32804 (407) 513-9709 CERTIFICATE OF AUTHORIZATION 26379			DRAWN BY: CEM CHECKED BY: JAV DESIGNED BY: DWN CHECKED BY: JAV			SHEET TITLE: TEMPORARY SHEET PILE WALL TW-4 AND TW-5			REF. DWG. NO.
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION				ROAD NO.	COUNTY	FINANCIAL PROJECT ID	PROJECT NAME: WORLD DRIVE NORTH EARLY WORKS PACKAGE			SHEET NO.
									WORLD DR						4

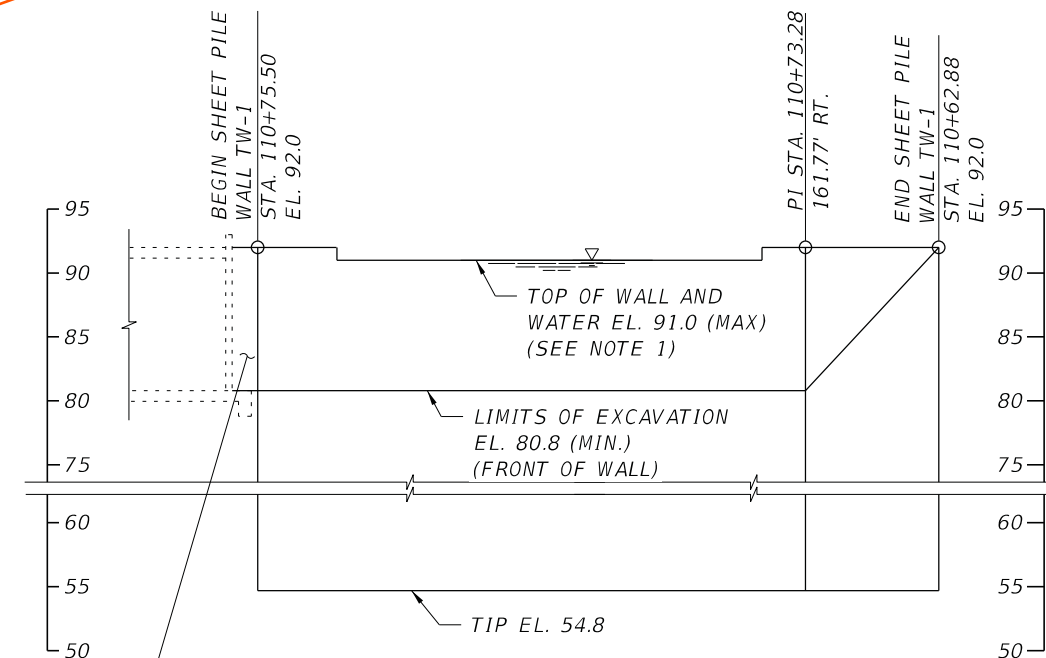


PLAN - TW-1 AND TW-2

* ACTUAL OFFSET MUST BE DETERMINED BY PROBING TO AVOID THE EDGE OF FOOTING, EDGE OF BOTTOM SLAB AND LOCATION OF EXISTING BURIED UTILITIES.



ELEVATION - TW-2



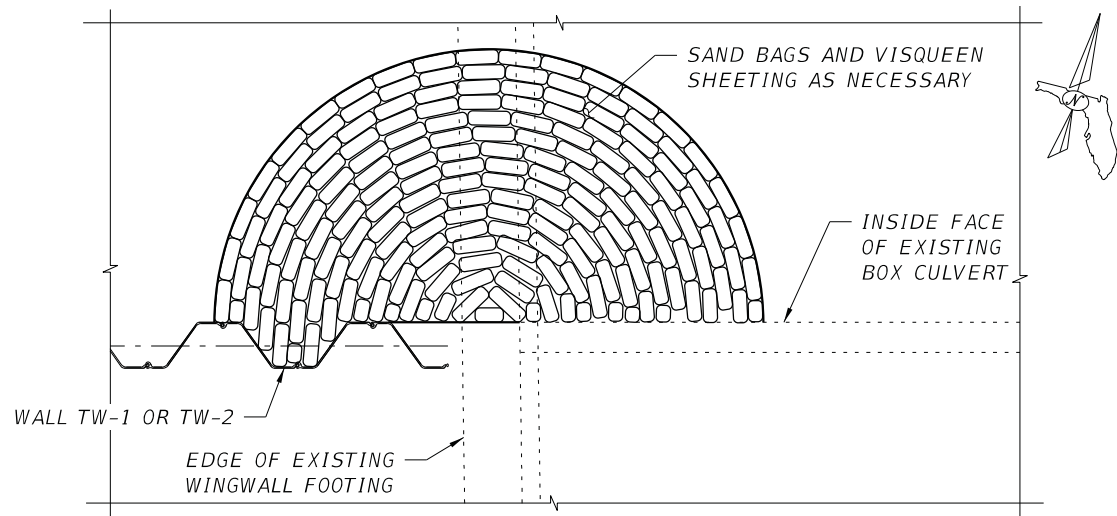
ELEVATION - TW-1

NOTES:

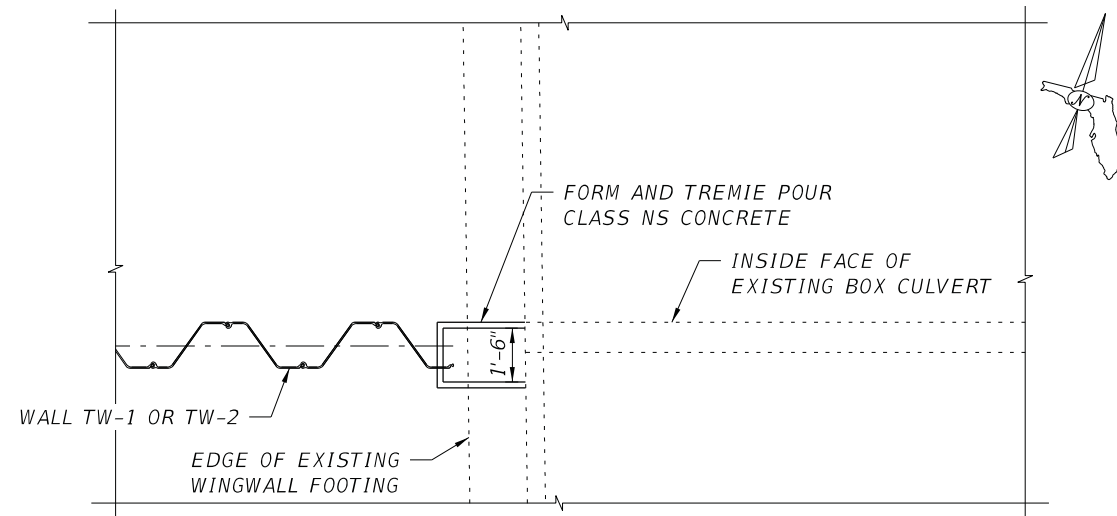
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SAND BAGS AND VISQUEEN SHEETING AS NECESSARY OR FORM AND TREMIE POUR CLASS NS CONCRETE. SEE OPTION 1 AND OPTION 2 DETAILS ON SHEET 7.

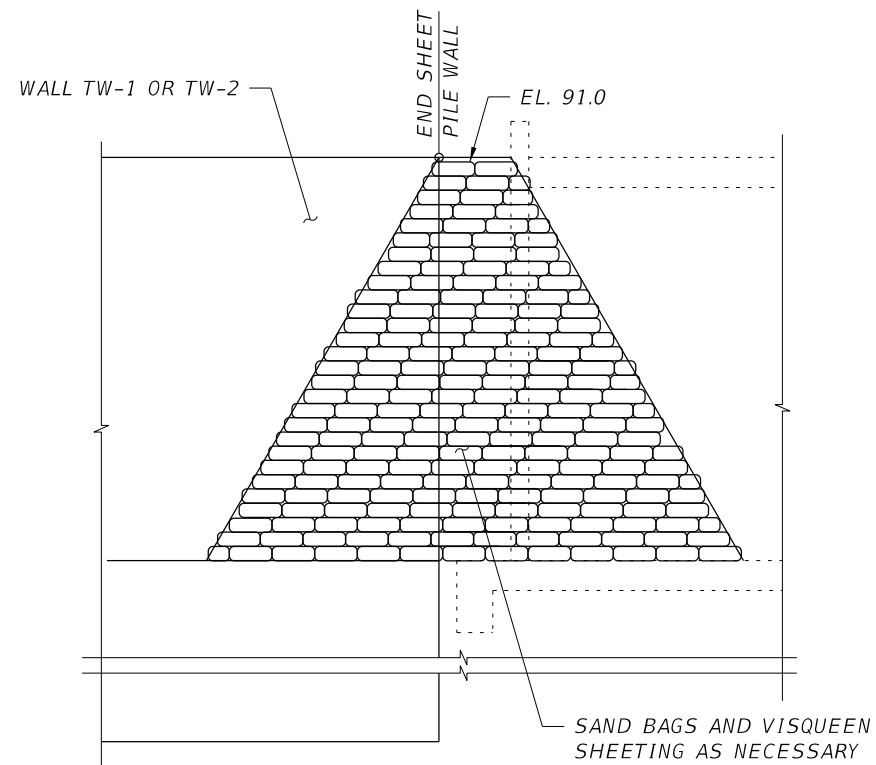
REVISIONS						MARK NIEDERMANN, PE P.E. LICENSE NUMBER 45957 FBT-FLORIDA BRIDGE AND TRANSPORTATION, INC. 633 DARTMOUTH STREET ORLANDO, FL 32804 (407) 513-9709 CERTIFICATE OF AUTHORIZATION 26379	DRAWN BY: CEM			SHEET TITLE: TEMPORARY SHEET PILE WALL TW-1 AND TW-2			REF. DWG. NO.
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION		CHECKED BY: JAV	ROAD NO.	COUNTY				
							DESIGNED BY: DWN	WORLD DR					
							CHECKED BY: JAV						



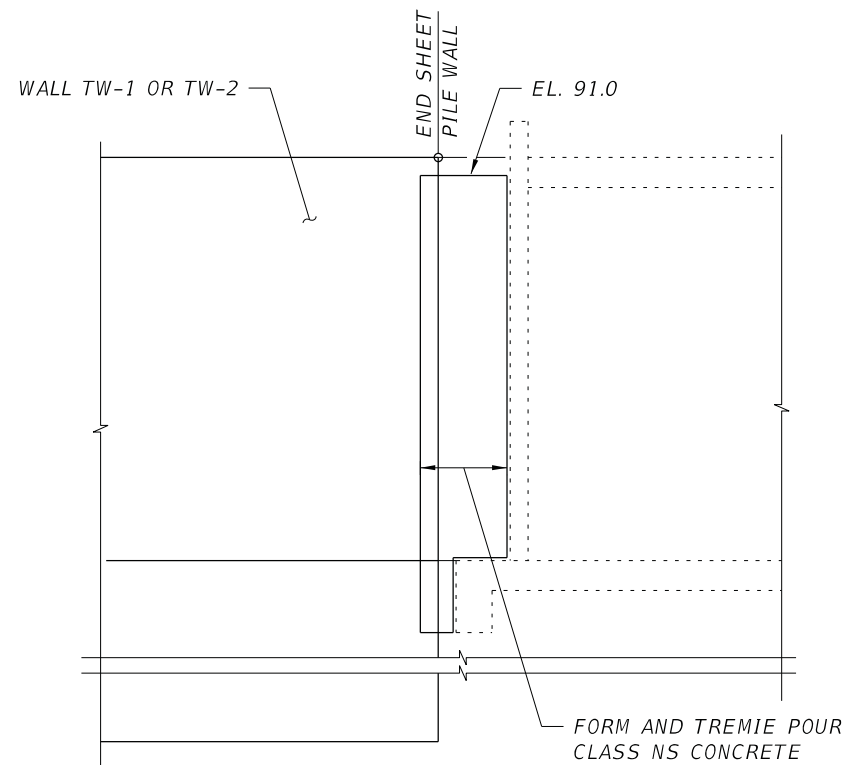
PLAN TW-2 - OPTION 1
(TW-1 OPPOSITE HAND)



PLAN TW-2 - OPTION 2
(TW-1 OPPOSITE HAND)

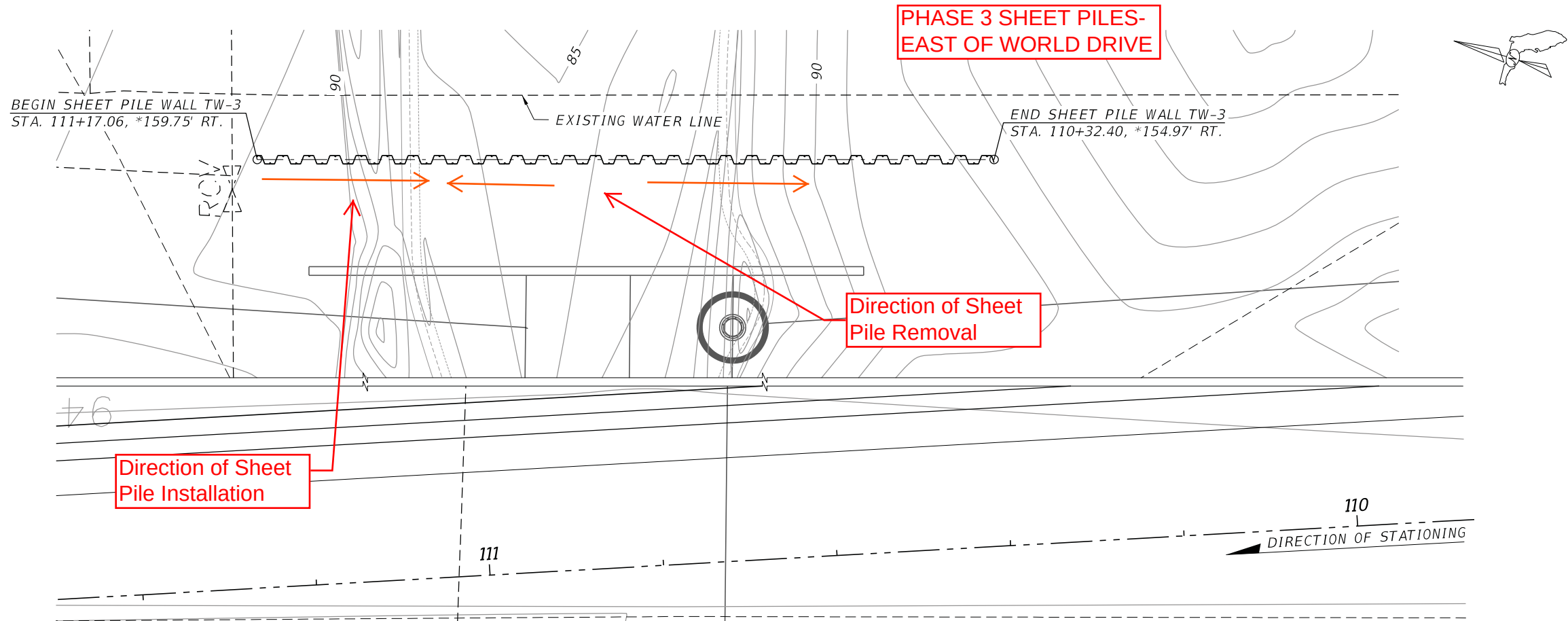


ELEVATION TW-2 - OPTION 1
(TW-1 OPPOSITE HAND)



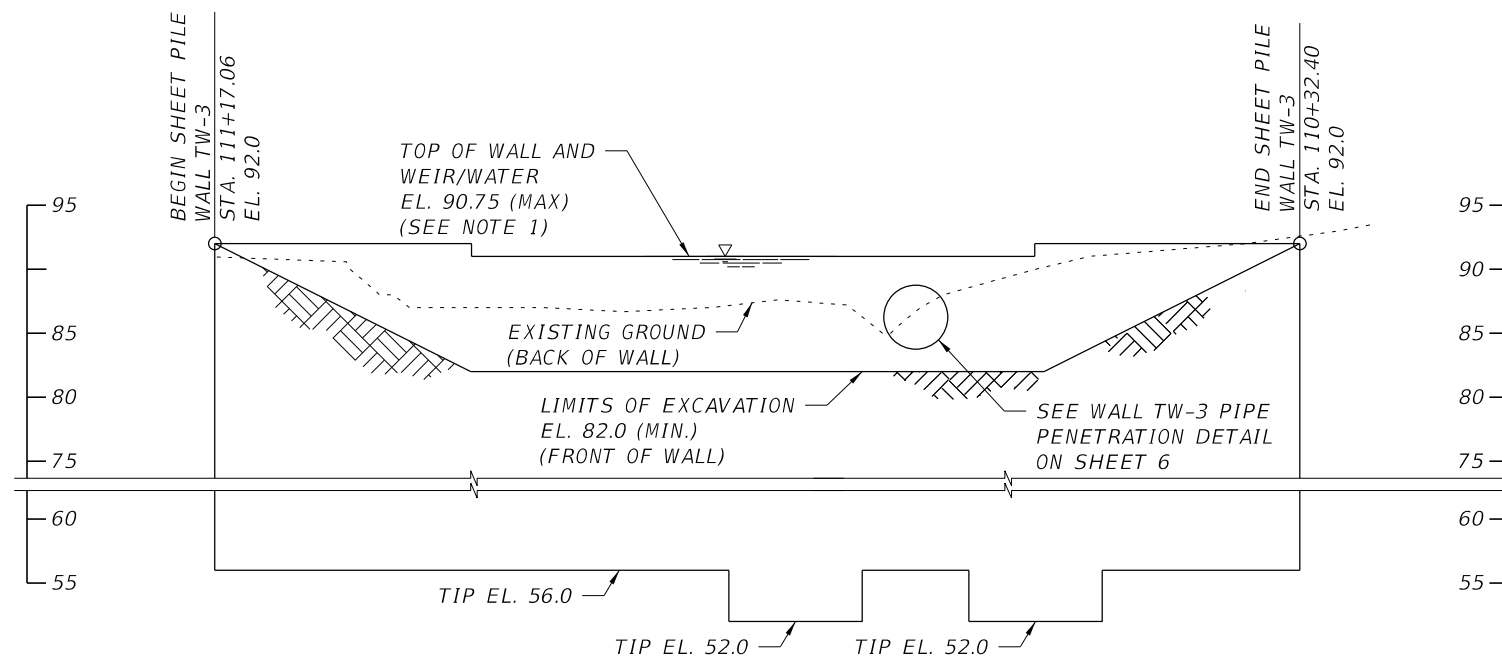
ELEVATION TW-2 - OPTION 2
(TW-1 OPPOSITE HAND)

REVISIONS						MARK NIEDERMANN, PE P.E. LICENSE NUMBER 45957 FBT-FLORIDA BRIDGE AND TRANSPORTATION, INC. 633 DARTMOUTH STREET ORLANDO, FL 32804 (407) 513-9709 CERTIFICATE OF AUTHORIZATION 26379	DRAWN BY: CEM CHECKED BY: JAV DESIGNED BY: DWN CHECKED BY: JAV				SHEET TITLE:		REF. DWG. NO.
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION						TW-1 AND TW-2 DETAILS		
								ROAD NO.	COUNTY	FINANCIAL PROJECT ID	PROJECT NAME: WORLD DRIVE NORTH EARLY WORKS PACKAGE		SHEET NO.
								WORLD DR					7



* ACTUAL OFFSET MUST BE DETERMINED BY PROBING TO AVOID THE EDGE OF FOOTING, EDGE OF BOTTOM SLAB AND LOCATION OF EXISTING BURIED UTILITIES.

PLAN - TW-3



ELEVATION - TW-3

NOTES:

1. SHEET PILE WAS DESIGNED FOR WATER ELEVATIONS SHOWN. CONTRACTOR SHALL DRIVE TOP OF SHEETS TO EL. 91.0 SO THAT THE WATER WILL NOT EXCEED THE DESIGN ELEVATIONS.

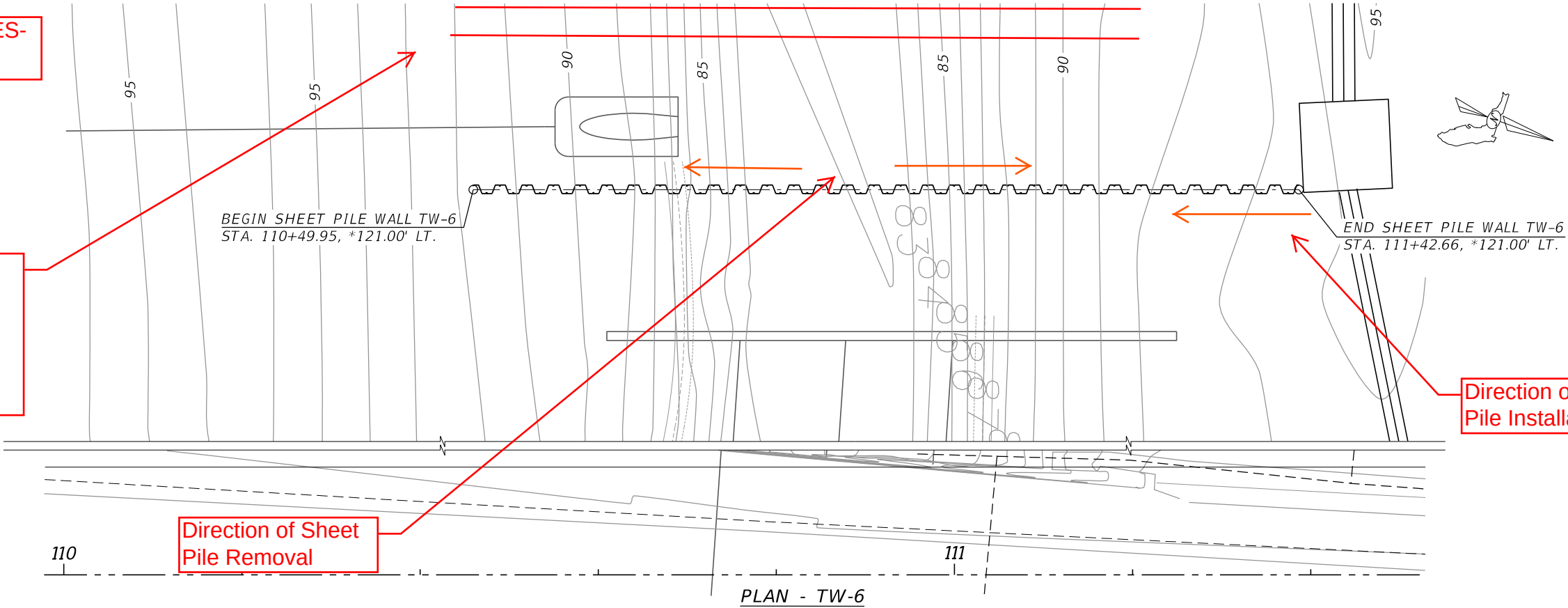
REVISIONS						MARK NIEDERMANN, PE P.E. LICENSE NUMBER 45957 FBT-FLORIDA BRIDGE AND TRANSPORTATION, INC. 633 DARTMOUTH STREET ORLANDO, FL 32804 (407) 513-9709 CERTIFICATE OF AUTHORIZATION 26379	DRAWN BY: CEM				SHEET TITLE:		REF. DWG. NO.
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION		CHECKED BY: JAV				TEMPORARY SHEET PILE WALL TW-3		
							DESIGNED BY: DWN	ROAD NO.	COUNTY	FINANCIAL PROJECT ID	PROJECT NAME:	SHEET NO.	
							CHECKED BY: JAV	WORLD DR			WORLD DRIVE NORTH EARLY WORKS PACKAGE	3	

PHASE 3 SHEET PILES-
West of World Drive

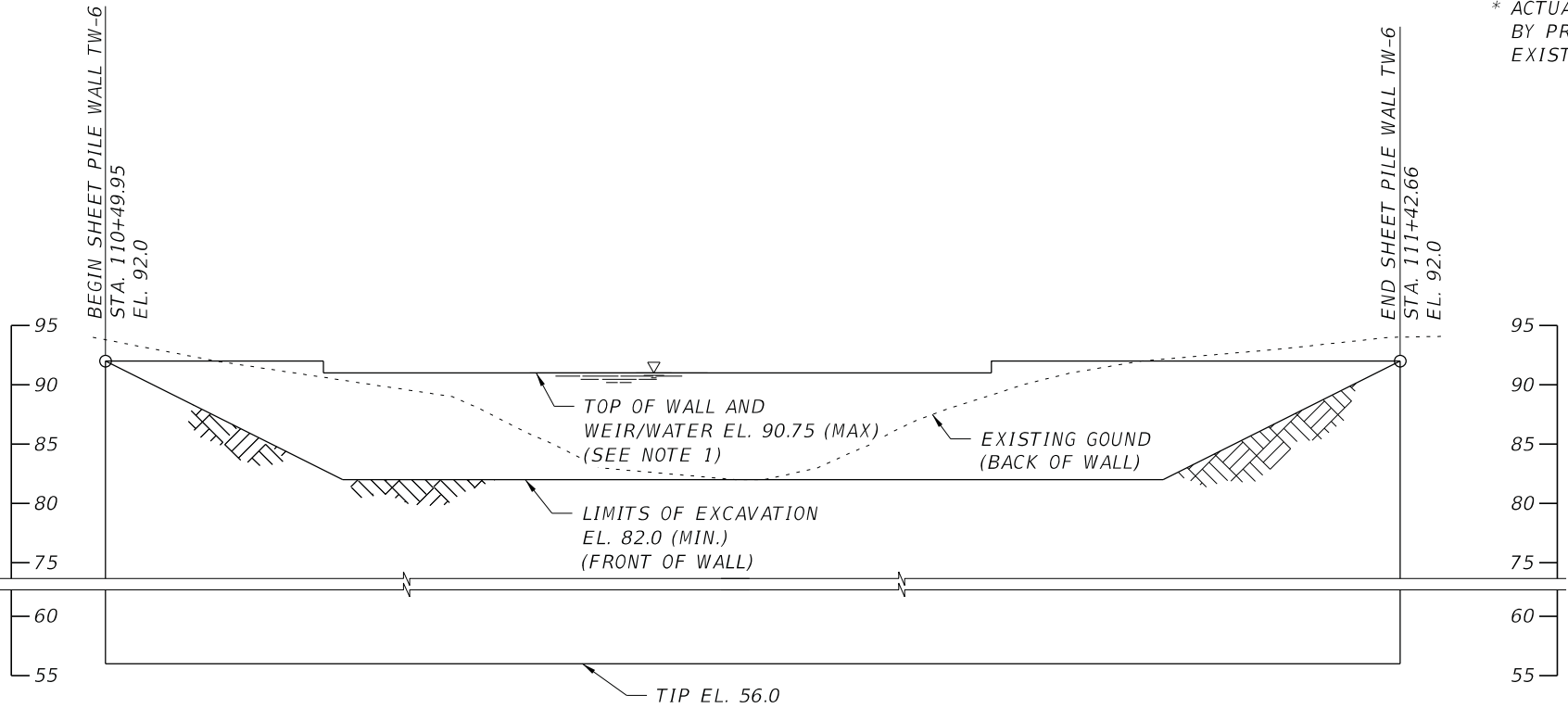
Double Row Full
Depth Turbidity
Barrier and triple
Row Particle
Curtain in place
from Phase 1 & 2

Direction of Sheet
Pile Installation

Direction of Sheet
Pile Removal



* ACTUAL OFFSET MUST BE DETERMINED
BY PROBING TO AVOID THE LOCATION OF
EXISTING BURIED UTILITIES.



NOTES:
1. SHEET PILE WAS DESIGNED FOR WATER ELEVATIONS
SHOWN. CONTRACTOR SHALL DRIVE TOP OF SHEETS
TO EL. 91.0 SO THAT THE WATER WILL NOT EXCEED
THE DESIGN ELEVATIONS.

REVISIONS						MARK NIEDERMANN, PE P.E. LICENSE NUMBER 45957 FBT-FLORIDA BRIDGE AND TRANSPORTATION, INC. 633 DARTMOUTH STREET ORLANDO, FL 32804 (407) 513-9709 CERTIFICATE OF AUTHORIZATION 26379			DRAWN BY: CEM CHECKED BY: JAV DESIGNED BY: DWN CHECKED BY: JAV			SHEET TITLE: TEMPORARY SHEET PILE WALL TW-6			REF. DWG. NO.
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION				ROAD NO.	COUNTY	FINANCIAL PROJECT ID	PROJECT NAME: WORLD DRIVE NORTH EARLY WORKS PACKAGE			SHEET NO.
									WORLD DR						5

EROSION PROTECTION (CONTINUED)

(4) FERTILIZERS AND PESTICIDES:
FERTILIZERS WILL BE USED ON THIS PROJECT IN ACCORDANCE WITH "FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" SECTION 982. AT THE DISCRETION OF THE CONTRACTOR WITH COORDINATION OF THE ENGINEER.

PESTICIDES: NONE REQUIRED.

(5) NON-STORM WATER DISCHARGE AND HAZARDOUS WASTE, INCLUDING SPILL REPORTING
THE CONTRACTOR IS RESPONSIBLE FOR DOCUMENTING THIS PORTION OF THE SWPPP IN THE SECTION 104 EROSION CONTROL PLAN. IF CONTAMINATED SOIL OR GROUNDWATER IS ENCOUNTERED, CONSTRUCTION WILL STOP AND WORK WILL NOT RESUME UNTIL DIRECTED BY THE ENGINEER. DISPOSITION OF HAZARDOUS WASTE WILL BE MADE IN ACCORDANCE WITH ANY REQUIREMENTS AND REGULATIONS OF ANY LOCAL, STATE, OR FEDERAL AGENCY HAVING JURISDICTION.

D. APPROVED STATE, LOCAL PLANS OR STORMWATER PERMIT(S)
A PERMIT APPLICATION WILL BE SUBMITTED TO THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT, TO MODIFY THE EXISTING ENVIRONMENTAL RESOURCE PERMIT (PERMIT NO. 48-00714-P).

THE CONTRACTOR IS TO PREPARE THE NOI. THE CONTRACTOR MUST SUBMIT TO RCID FOR REVIEW AND APPROVAL PRIOR TO SUBMITTING TO FDEP. WRITTEN APPROVAL OF THE EROSION CONTROL PLAN, NOI AND NARRATIVE SWPPP MUST BE RECEIVED FROM RCID BEFORE PROCEEDING WITH PROJECT CONSTRUCTION AND PRIOR TO SUBMITTING TO FDEP. APPROVAL OF THE PROPOSED PLAN BY RCID DOES NOT RELIEVE THE GENERAL CONTRACTOR FROM MEETING ALL LOCAL, STATE, AND FEDERAL DISCHARGE STANDARDS.

3.0 MAINTENANCE

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAILY INSPECTIONS AND MAINTENANCE OF ALL EROSION CONTROL DEVICES AND PRACTICES THROUGHOUT THE CONSTRUCTION PHASE OF THE PROJECT. MAINTENANCE SHALL BE CONDUCTED IN ACCORDANCE WITH THE RCID LAND DEVELOPMENT REGULATIONS AND THE FLORIDA STORMWATER, EROSION, AND SEDIMENTATION CONTROL INSPECTORS HANDBOOK.

4.0 INSPECTION

THE CONTRACTOR SHALL NOTIFY RCID COMPLIANCE PERSONNEL OF THE PROJECT PRE-CONSTRUCTION MEETING PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

THE CONTRACTOR'S ATTENTION IS DRAWN TO THE FACT THAT INSPECTION REQUIREMENTS MAY CHANGE AND IS DIRECTED TO REVIEW THE FDEP STORMWATER EROSION AND SEDIMENTATION CONTROL INSPECTOR'S MANUAL FOR CURRENT REQUIREMENTS.

ALL EROSION AND CONTROL DEVICES WILL BE INSPECTED WITHIN 24 HOURS AT THE END OF A RAIN EVENT TOTALING 0.5 INCHES OR GREATER.

THE CONTRACTOR SHALL INSPECT THE FOLLOWING ITEMS DAILY. THE CONTRACTOR SHALL ALSO ENSURE THAT CONTROL INSTALLED IN THE FIELD AGREE WITH THE LATEST STORMWATER POLLUTION PREVENTION PLAN.

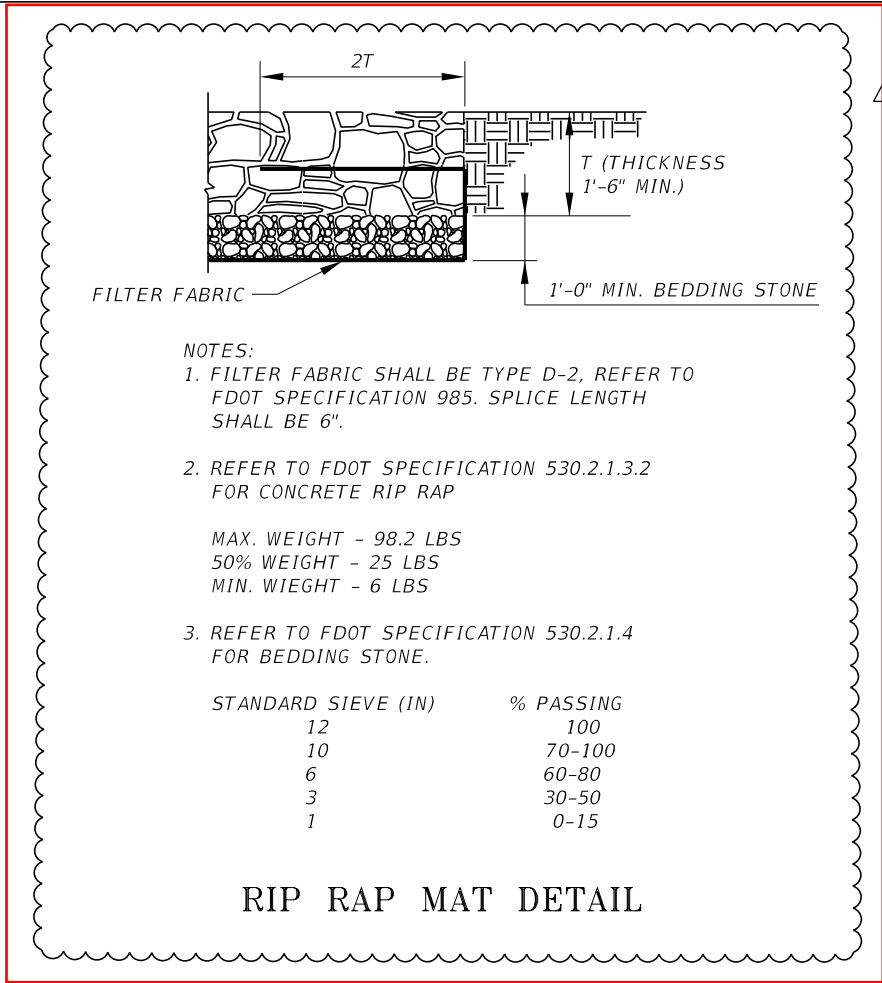
- * POINTS OF DISCHARGE TO WATERS OF THE UNITED STATES.
- * DISTURBED AREAS OF THE SITE THAT HAVE NOT BEEN FINALLY STABILIZED.
- * AREAS USED FOR STORAGE MATERIALS THAT ARE EXPOSED TO PRECIPITATION.
- * STRUCTURAL CONTROLS.
- * STORMWATER MANAGEMENT SYSTEMS.
- * LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE.
- * ALL AREAS WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, UNTIL THE CONTRACTOR'S NOT HAS BEEN MAILED TO FDEP.

THE CONTRACTOR SHALL INITIATE REPAIRS IMMEDIATELY WHEN AN INSPECTION INDICATE ITEMS ARE NOT IN GOOD WORKING ORDER. ALL SEDIMENT, EROSION, AND TURBIDITY CONTROL MEASURES SHALL BE IN WORKING CONDITION AT THE END OF EACH WORK DAY.

IF INSPECTIONS INDICATE THAT THE INSTALLED STABILIZATION AND STRUCTURAL PRACTICES ARE NOT SUFFICIENT TO MINIMIZE EROSION, RETAIN SEDIMENT, AND PREVENT DISCHARGING POLLUTANTS, THE CONTRACTOR SHALL PROVIDE ADDITIONAL MEASURES, AS APPROVED BY THE ENGINEER.

5.0 NON-STORMWATER DISCHARGES

THE CONTRACTOR SHALL IDENTIFY ALL ANTICIPATED NON-STORMWATER DISCHARGES (EXCEPT FLOWS FROM FIRE FIGHTING ACTIVITIES). THE CONTRACTOR SHALL DESCRIBE THE PROPOSED MEASURES TO PREVENT POLLUTION OF THESE NON-STORMWATER DISCHARGES. IF THE CONTRACTOR ENCOUNTERS CONTAMINATED SOILS OR GROUNDWATER, CONTACT THE PROJECT ENGINEER.



NOTES:

1. FILTER FABRIC SHALL BE TYPE D-2, REFER TO FDOT SPECIFICATION 985. SPLICE LENGTH SHALL BE 6".

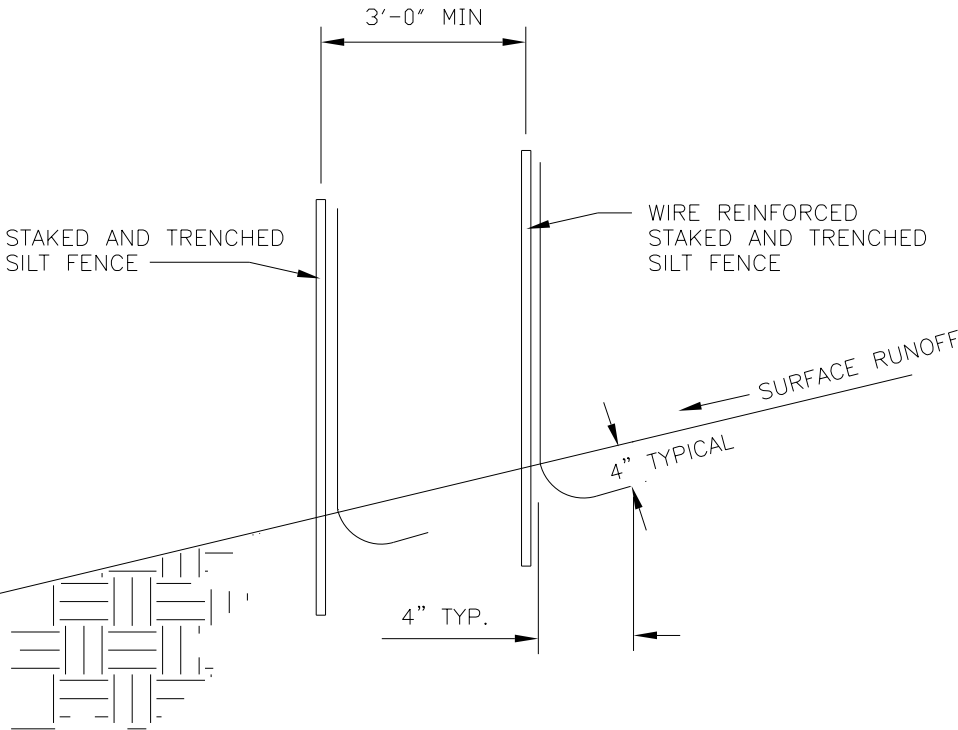
2. REFER TO FDOT SPECIFICATION 530.2.1.3.2 FOR CONCRETE RIP RAP

MAX. WEIGHT - 98.2 LBS
50% WEIGHT - 25 LBS
MIN. WIEGHT - 6 LBS

3. REFER TO FDOT SPECIFICATION 530.2.1.4 FOR BEDDING STONE.

STANDARD SIEVE (IN)	% PASSING
12	100
10	70-100
6	60-80
3	30-50
1	0-15

RIP RAP MAT DETAIL



DOUBLE ROW
STAKED SILT FENCE

**Engineering Consultants, Inc.**

11486 CORPORATE BLVD., SUITE 151
ORLANDO, FL. 32817
407-901-5060

REVISIONS		BY	DATE
NO.	REASON	SWD	1/17
1	ADD RIP RAP MAT DETAIL		
2			
3			
4			

WORLD DRIVE NORTH-EARLY WORKS PACKAGE
REEDY CREEK IMPROVEMENT DISTRICT
LAKE BUENA VISTA, FL

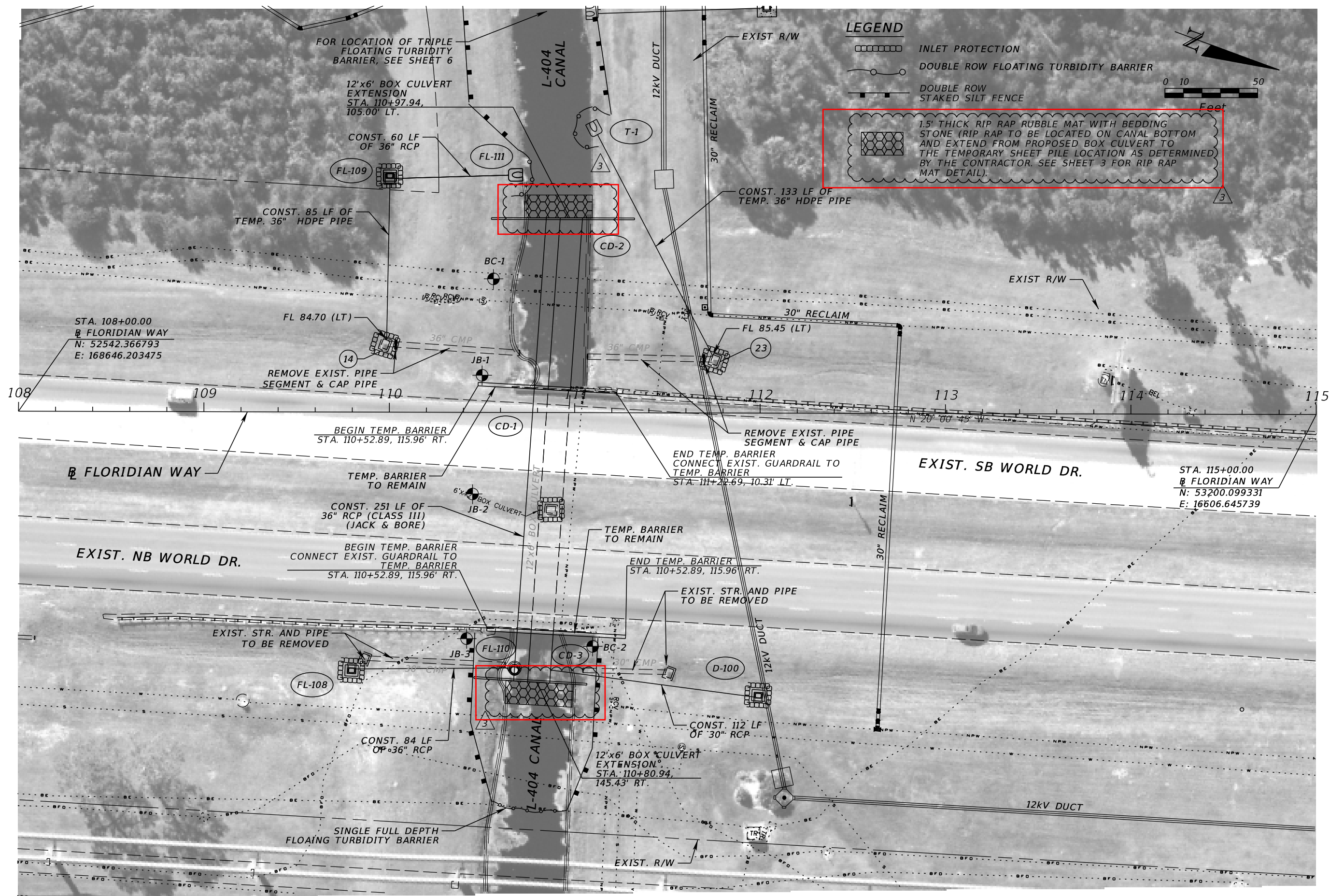
GENERAL NOTES

PROJECT #: T201503	DRAWN: SAH	APPROVED: SWD	DATE: 06/22/2016
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STEPHEN W. DICKISON,
P.E.
P.E.# 56129
AUTHORIZATION# 27205

SHEET

3



REVISIONS		DATE
NO.	REASON	BY
1	ADD RIP RAP	SWD
2		
3		
4		

WORLD DRIVE NORTH-EARLY WORKS PACKAGE
REEDY CREEK IMPROVEMENT DISTRICT
LAKE BUENA VISTA, FL
BOX CULVERT PLAN DETAIL

PROJECT #	1201503
DRAWN: SAH	
APPROVED: SWD	
DATE	06/22/2016

STEPHEN W. DICKSON,
P.E.
P.E.# 56129
AUTHORIZATION# 27205

SHEET

10



APPLIED POLYMER SYSTEMS, INC.

700 SERIES FLOC LOGS

The Applied Polymer Systems, Inc. 700 Series Floc Logs® are a group of semi-hydrated polyacrylamide blended logs that when placed in the flow of turbid water remove fine particles and reduce turbidity, metals and nutrient values. Each Floc Log® is formulated for the soil and water chemistry of the geographical area where the placement and usage are intended.

Primary Applications

- Mine Tailings and Waste Pile ditches
- Newly cleared Construction or Building Sites drainage
- Road and Highway construction runoff ditches
- Ditch placement for all forms of highly turbid waters
- Dredging operations as a flocculator

Features and Benefits

- Removes solubilized soils and clay from water
- Prevents colloidal solutions in water within ditch systems
- Binds cationic metals within water, reducing solubilization
- Reduces pesticide and fertilizer loss during rain events from runoff
- Increases soil permeability and water penetration to shallow plants in ditches
- Reduces operational and cleanup costs
- Reduces environmental risk and helps meet compliance

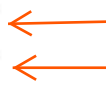
Specifications / Compliances

- ANSI/NSF Standard 60 Drinking water treatment chemical additives
- 48h or 96h Acute Toxicity Tests (*D. magna* or *O. mykiss*)
- 7 Day Chronic Toxicity Tests (*P. promelas* or *C. dubia*)

Floc Logs are packaged 4 per box.

144 Floc Logs (36 boxes) per skid, mixed skids are permitted

Item Number	Description	Wt.	Dimensions
703d	APS 703d Floc Log	~ 9 lbs	12" x 4" x 8"
703d#3	APS 703d#3 Floc Log	~ 9 lbs	12" x 4" x 8"
706b	APS 706b Floc Log	~ 9 lbs	12" x 4" x 8"
707a	APS 707a Floc Log	~ 9 lbs	12" x 4" x 8"
708x	APS 708x Floc Log	~ 9 lbs	12" x 4" x 8"
730b	APS 730b Floc Log	~ 9 lbs	12" x 4" x 8"



Build a channel from straw bales, line with plastic and matting; install Floc Logs



The last half to two-thirds of the channel should be wider to collect particles



Dirty water from the pond is pumped down the channel



The dirty water passes over the logs, allowing flocculation to begin



The flocculated particles are captured on the matting



Clear water is discharged from the site



APPLIED POLYMER SYSTEMS, INC.

700 SERIES FLOC LOGS

Placement

Each Floc log is designed for placement within a ditch averaging three feet wide by two feet deep. Floc log placement is based on gallon per minute flow rates. Note: actual GPM or dosage will vary based on site criteria and soil/water testing. In general one Floc Log for every 50-70 GPM of flow rate.

Directions For Use

Mixing of water and Floc Log is most important

APS 700 Series Floc Log should be placed within the upper third to half of a ditch system or as close to the source of the turbid water possible. Simply anchor a stake onto the center of the ditch system as far up slope as possible. Place the attachment loop over the stake and lay the Floc Log into the center of the ditch.

APS 700 Series Floc Logs can easily be moved to different locations as site conditions change. The addition of soft armor covered ditch checks below the Floc Log will greatly improve water clarity.

Additional mixing can be necessary when dealing with low flow rates. Blocks, sand bags, wattles or rocks can be added to create additional mixing and turbulence.

Cleanup

Use soap and water to wash hands after handling. Plastic or rubber gloves are recommended during movement after usage.

Precautions / Limitations

- APS 700 Series Floc Logs will become extremely slippery when wet.
- Clean up spills quickly, Do Not use water unless necessary, extremely slippery conditions will result.
- APS Floc Log will remain viable for up to 1 year.
- APS 700 Series Floc Log has been specifically tailored

to specific soil types. Soil types in varying geographical areas may require testing. If proper performance of this product is not satisfactory, contact Applied Polymer Systems.



Floc Logs can be used in a variety of different applications to include:

Split Pipes
Stormdrains
Dewatering ditches/channels
Tank Systems

No matter what application method is being used it is essential that the system have a Mixing Zone and a Particle Collection Zone.

The Mixing Zone is upper one third to half of the channel where the water is most turbulent and the Floc Logs are installed. The turbulence in the Mixing Zone allows the Floc

Log to dissolve releasing the blend of polymers into the water. The suspended particles are then bound together to make larger ones that can be captured or allowed to settle.



Mixing Zone

Particle Collection Zone

The Particle Collection Zone, is the remaining half to two-thirds of the system where the flocculated material is captured.

Optional: line the entire channel with a natural fiber matting (i.e. jute, hemp, burlap, coconut) and treat with 700 Silt Stop Powder to charge the system.



APPLIED POLYMER SYSTEMS, INC.

700 SERIES SILT STOP POWDER



APS 700 Series Silt Stop is a group of soil specific tailored polyacrylamide co-polymer powders for erosion control. They reduce and prevent erosion of fine particles and colloidal clays from the soil into stormwater

Primary Applications:

- Mine Tailings and Waste Piles
- Newly Cleared Construction or Building Sites
- Road and Highway Construction
- Hydroseeding and Water Truck Application
- Hand Spreading and Ditch Placement

Features and Benefits:

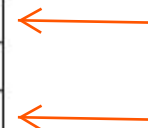
- Removes Solubilized Soils and Clay from Water
- Prevents Colloidal Solutions in Water when Applied to the Soil Surface
- Will Reduce Soil Movement During Rain Event on Moderate Slopes
- Binds Cationic Metals within the Soil Matrix, Reducing Solubilization
- Reduces Wind Borne Dust Conditions
- Increases Soil Permeability and Water Penetration to Shallow Plants
- Reduces Operational and Cleanup Costs
- Reduces Environmental Risk and Compliance

Specifications / Compliances:

- ANSI/NSF Standard 60 Drinking water treatment chemicals
- 48 Hr. or 96 Hr. Acute Toxicity Tests (D. magna, P. promelas, or O. mykiss)
- 7 day Chronic Toxicity Tests (P. promelas or C. dubia)

Silt Stop Powder comes 30 bags per skid, mixed skids are permitted

Item Number	Description	Wt.
702	APS 702 Silt Stop Powder	50 lbs
705	APS 705 Silt Stop Powder	50 lbs
707	APS 707 Silt Stop Powder	50 lbs
712	APS 712 Silt Stop Powder	50 lbs
730	APS 730 Silt Stop Powder	50 lbs
740	APS 740 Silt Stop Powder	50 lbs
745	APS 745 Silt Stop Powder	50 lbs



Prep the site by filling in any low spots with extra soil.



Apply the powder to the group either dry or with a hydroseeder, cover with matting on steep slopes.



The powder holds the seed in place, giving it time to germinate.



Despite the steepness of the slope the seed was able to germinate and the soil is no longer bare. The erosion has been stopped.



APPLIED POLYMER SYSTEMS, INC.

700 SERIES SILT STOP POWDER



Application Rates

Soft Armoring application rate (per acre coverage): varies by soil content & grade of slope.

Gentle to Moderate slopes (0 to 4H:1V)
High Clay Content: 10-20 # powder
High Sand Content: 25-50 # powder
Steep slopes (3H:1V to 1H:1V)
High Clay Content: 20-35 # powder
High Sand Content: 45-50 # powder

Hydroseeding application rate (per acre coverage): varies by soil content & grade of slope.

Gentle to Moderate slopes (0 to 4H:1V)
High Clay Content: 10-20 # powder/3000 gallons/acre
High Sand Content: 25-50 # powder/3000 gallons/acre
Steep slopes (3H:1V to 1H:1V)
High Clay Content: 20-35 # powder/3000 gallons/acre
High Sand Content: 40-50 # powder/3000 gallons/acre



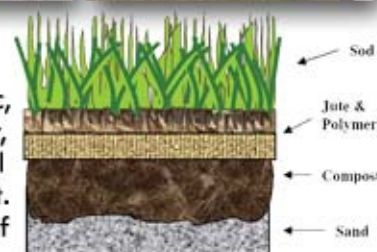
Directions for Use

Dry Form - APS Silt Stop® Powder may be applied by hand spreader, mechanical disc, or hand sowing. Slope or ditch application may require artificial support such as straw, or wood fiber mulch to reduce down slope movement. Areas of high water velocity will require benching or tier structuring to reduce velocity. Sheet flow applications are best. APS Silt Stop® Powder may be mixed with dry silica sand to aid in spreading. Ratios of sand to powder will vary in accordance with the type of spreading device used.

Liquid Form - APS Silt Stop® Powder may be applied with hydroseeders, water trucks or other spraying devices. All spraying devices must have a mechanical agitator or mixing apparatus or hydraulic recirculation. Caution - Do Not mix powder into a spraying device that does not contain a mixing apparatus.

Mixing - Sprinkle powder into the water with the mixing apparatus operating as the last material to be added to the mix. Three to Five minutes of mixing will be required after the powder is sprinkled into the water. ADD THE POWDER SLOWLY-adding the powder to fast will result in clumping resulting in poor performance.

****Longer mixing times will create high viscosity solutions possibly causing some types of spray equipment to undergo cavitations. When using more than 10 lbs./1000 gallons of water, do not let powder fully dissolve to prevent damage to the equipment.**



Clean-up

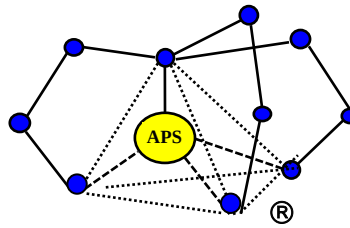
Spilled powder should be cleaned up dry as best as possible using broom or vacuum. Extreme slippery conditions will result. In event of skin contact, wash power from skin as soon as possible using soap and water.

Precautions / Limitations

- Prevent inhalation of the powder, use adequate dust mask.
- Clean up spills quickly. Do not use water unless necessary, extremely slippery conditions will result.
- Do not add water to the APS Silt Stop® Powder; add the powder (sprinkle) to the water slowly.
- APS Silt Stop® Powder will remain viable on the soil surface for 60-90 days. Longer viability will occur when applied powder is covered with straw or wood fiber mulch.
- APS 700 Series Silt Stop® powders have been specifically tailored to specific soil types. Soil types in varying geographical areas may require testing. If proper performance of this product is not satisfactory, contact Applied Polymer Systems.

Applied Polymer Systems, Inc.

519 Industrial Drive
Woodstock, GA 30189
678-494-5998
678-494-5298 Fax
www.siltstop.com



APS 712 Water Clarification Applications

APS 712 powder may be applied directly to turbid water or mixed into a hydroseeder and spray applied to turbid water. (Mixing of the 712 and turbid water must be performed for adequate results.)

Direct Water Application:

Apply the 712 powder evenly to the water surface. Mix as well as possible for best results. Dosage rate should be 25 pounds of 712 powder per acre foot of water. (325,000 gallons)

Hydraulic Application:

Mix 25 pounds of APS 712 powder into 3000 gallons of water into a hydroseeder. Add the powder slowly with the mixer running. (DO NOT ADD THE POWDER ALL AT ONCE)

Spray the mixture over the surface of the water. (A jet nozzle sprayed with force into the water will aid in mixing)

One load will treat one acre-foot of turbid water. Additional mixing may be required for best results.

Note: Additional mixing is best performed by using a pumping system. Draw the water from one side of the pond and discharge to the opposite side. Ponds containing less than 5 acre-feet of water will result in good clarity. Consult your local APS distributor for performance testing and best procedures.

Note: For additional clarity 1/20 normal dosage (only) of aluminum sulfate liquid (Alum) may be added. Caution must be used as this will lower water pH values.

Turbidity Control Plan Reviewer Checklist

- ☐ Has the contractor explained the means and methods of work in or near ponds/canals/wetlands?
- ☐ Has the contractor identified any methods that may contribute to turbidity/compliance concerns?
- ☐ Has the contractor identified means and methods to limit turbidity/compliance concerns?
- ☐ Has the contractor included a narrative response plan for how they will respond to any turbidity generated from unforeseen circumstances and any rain events?
- ☐ Did the contractor include a turbidity monitoring plan with frequency and location of monitoring points?
- ☐ Is the contractor using proper methods to treat turbidity (i.e. mixing pam/floc logs?)
- ☐ Has the contractor provided a site plan identifying additional erosion control measures, location of turbidity monitoring points and location of dewatering systems and/or discharge location(s) if needed for the work?
- ☐ Does the plan submitted comply with local, state, and federal codes/regulations?
- ☐ As the reviewer, please provide feedback to the contractor identifying any means/methods that might cause turbidity/environmental concerns. Feel free to provide recommendations that may result in less turbidity/environmental effects. (i.e. pull sheet piles from center first vs bank side slope; equalize water first before pulling sheet piles, use of temporary stabilization for slope protection, use/location of dewatering systems, etc.).
- ☐ As the reviewer, ask any questions on methods that you may need clarification on for understanding the scope of work (ie sequencing of construction activities including use of dewatering systems, the final stabilization details, removal of sheet pile (temporary or permanent), PAM treatments, final stabilization and sequence of removal of BMPs).

Pollution Prevention/Good Housekeeping Minimum Control Measure



This fact sheet profiles the Pollution Prevention/Good Housekeeping for Municipal Operations minimum control measure, one of six measures the operator of a Phase II regulated small municipal separate storm sewer system (MS4) is required to include in its storm water management program to meet the conditions of its National Pollutant Discharge Elimination System (NPDES) permit. This fact sheet outlines the Phase II Final Rule requirements modified December 9, 2016 and effective on January 9, 2017. It offers some general guidance on how to satisfy them. It is important to keep in mind that the small MS4 operator typically has a great deal of flexibility in choosing exactly how to satisfy the minimum control measure requirements in its NPDES permit.

Pollution Prevention/Good Housekeeping Minimum Control Measure

Why Is Pollution Prevention/Good Housekeeping Necessary?

The Pollution Prevention/Good Housekeeping for municipal operations minimum control measure is a key element of the small MS4 stormwater management program. This measure requires small MS4 operators to examine and subsequently alter their own actions to help ensure a reduction in the amount and type of pollution that: (1) collects on streets, parking lots, open spaces, and storage and vehicle maintenance areas and is discharged into local waterways; and (2) results from actions such as environmentally damaging land development and flood management practices or poor maintenance of storm sewer systems.

While this measure is meant primarily to improve or protect receiving water quality by altering municipal or facility operations, it also can result in a cost savings for the small MS4 operator, since proper and timely maintenance of storm sewer systems can help avoid repair costs from damage caused by age and neglect.

What Is Required?

Recognizing the benefits of pollution prevention practices, the rule requires an operator of a regulated small MS4 to:

- Develop and implement an operation and maintenance program with the ultimate goal of preventing or reducing pollutant runoff from municipal operations into the storm sewer system.
- Include employee training on how to incorporate pollution prevention/good housekeeping techniques into municipal operations such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance. To minimize duplication of effort and conserve resources, the MS4 operator can use training materials that are available from EPA, their State or Tribe, or relevant organizations.
- Determine the appropriate best management practices (BMPs) to meet permit requirements for this minimum control measure. Some program implementation approaches, BMPs (i.e., the program actions/activities), and measurable goals are suggested below.

What Are Some Guidelines for Developing and Implementing This Measure?

The intent of this control measure is to ensure that existing municipal, State or Federal operations are performed in ways that will minimize contamination of stormwater discharges. EPA encourages the small MS4 operator to consider the following components when developing their program for this measure:

Pollution Prevention/Good Housekeeping Minimum Control Measure

- ***Maintenance activities, maintenance schedules, and long-term inspection procedures*** for structural and non-structural controls to reduce floatables and other pollutants discharged from the separate storm sewers.
- ***Controls for reducing or eliminating the discharge of pollutants*** from areas such as roads and parking lots, maintenance and storage yards (including salt/sand storage and snow disposal areas), and waste transfer stations. These controls could include programs that promote recycling (to reduce litter), minimize pesticide use, and ensure the proper disposal of animal waste.
- ***Procedures for the proper disposal of waste*** removed from separate storm sewer systems and areas listed in the bullet above, including dredge spoil, accumulated sediments, floatables, and other debris.
- ***Ways to ensure that new flood management projects assess the impacts on water quality*** and examine existing projects for incorporation of additional water quality protection devices or practices. EPA encourages coordination with flood control managers for the purpose of identifying and addressing environmental impacts from such projects.

The effective performance of this control measure hinges on the proper maintenance of the BMPs used, particularly for the first two bullets above. For example, structural controls, such as grates on outfalls to capture floatables, typically need regular cleaning, while non-structural controls, such as training materials and recycling programs, need periodic updating.

What Are Appropriate Measurable Goals?

The MS4 permit will specify any actions and deadlines that permittees must meet for permit compliance. The permit may also require permittees to develop measurable goals that guide implementation of MS4 chosen actions to meet permit requirements and to determine program effectiveness. The measurable goals, as well as the BMPs, should consider the needs and characteristics of the operator and the area served by its small MS4. The measurable goals should be chosen using an integrated approach that fully addresses the requirements and intent of the minimum control measure.

EPA has developed a Measurable Goals Guidance for Phase II MS4s that is designed to help program managers comply with any permit requirement to develop measurable goals. The guidance presents an approach for MS4 operators to develop measurable goals as part of their stormwater management plan. For example, an MS4 program goal might be to incorporate the use of road salt alternatives for highway deicing and reduce traditional road salt use by 50 percent in the first year of the permit term.

For Additional Information

Contacts

A list of names and telephone numbers for the U.S. EPA’s Office of Wastewater Management (Headquarters), each EPA Regional Office, and State Offices is located at www.epa.gov/npdes/npdes-stormwater-program (click on “Contact Us” and then “Stormwater”).

Your NPDES Permitting Authority

Most States and Territories are authorized to administer the NPDES Program, except the following, for which EPA is the permitting authority:

- Guam
- District of Columbia
- Johnston Atoll
- Idaho (until 7/1/2021, which is the date when Idaho becomes authorized to implement the Stormwater NPDES program)

- Midway and Wake Islands
- Massachusetts
- Northern Mariana Islands
- New Hampshire
- Puerto Rico
- New Mexico
- Trust Territories
- American Samoa

Reference Documents

- [EPA’s Stormwater Web Site](#)
 - [Phase II Final Rule Fact Sheet Series](#)
 - [Stormwater Phase II Final Rule \(64 FR 68722\)](#)
 - [National Menu of Best Management Practices for Stormwater Phase II](#)
 - [Measurable Goals Guidance for Phase II Small MS4s](#)

Disclaimer: This information is guidance only and does not establish or affect legal rights or obligations. Agency decisions in any particular case will be made by applying the law and regulations to the specific facts of the case.

To obtain a no exposure exclusion, the operator must:

- Meet the criteria for no exposure
- Complete a ***No Exposure Certification for Exclusion from NPDES Stormwater Permitting*** (DEP Form 62-620.910(17))
- Submit the form along with a **certification fee of \$200** to the NPDES Stormwater Notices Center
- Re-certify to a condition of no exposure every 5 years.

If exposure occurs (or is anticipated to occur) at the facility, the exclusion is no longer valid and permit coverage must be obtained immediately.

Where Can I Find More Information?

DEP's Web site provides more information on program coverage and requirements, useful Web links, and electronic versions of the MSGP, all regulations and forms cited herein, and SWPPP guidance. In addition, the NPDES Stormwater Notices Center provides hardcopies of permits and forms.

NPDES Stormwater Section
Florida Department of Environmental Protection
2600 Blair Stone Road, MS #2500
Tallahassee, FL 32399-2400
(850) 921-9904
NPDES-stormwater@dep.state.fl.us
www.dep.state.fl.us/water/stormwater/npdes/

NPDES Stormwater Notices Center
Florida Department of Environmental Protection
2600 Blair Stone Road, MS #2510
Tallahassee, FL 32399-2400
(866) 336-6312 (toll-free) or (850) 297-1232

Please Note

The certification and application fees are subject to change—always refer to the most current version of Rule 62-4.050(4) (d), F.A.C. to confirm the amount before submitting payment. Make checks payable to the Florida Department of Environmental Protection.



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Florida Department of Environmental Protection
NPDES Stormwater Section
2600 Blair Stone Road, MS#2500
Tallahassee, FL 32399-2400

The Florida NPDES Stormwater Permitting Program for

Industrial Activity





What Is Florida's NPDES Stormwater Permitting Program for Industrial Activity?

In October 2000, the U.S. Environmental Protection Agency (EPA) authorized the Florida Department of Environmental Protection (DEP) to implement the National Pollutant Discharge Elimination System (NPDES) stormwater permitting program in the State of Florida (with the exception of Indian country lands). The program regulates point source discharges of stormwater runoff from certain industrial facilities. The operators of regulated industrial facilities must obtain an NPDES stormwater permit and implement appropriate pollution prevention techniques to reduce contamination of stormwater runoff.

Florida adopted the Federal stormwater general permit for industrial activities (comprising the original September 29, 1995, issuance and subsequent modifications) as specified in Rule 62-621.300(5) (a), F.A.C. and operates the permit as the *State of Florida Multi-Sector Generic Permit for Stormwater Discharge Associated with Industrial Activity (MSGP)*. Most regulated facilities are eligible for coverage under the MSGP; however, some facilities may have to obtain an individual permit as specified in Chapter 62-620, F.A.C. (contact DEP for more information).

Which Industrial Activities Are Regulated Under the Program?

Florida's permitting program regulates industrial activities that meet both of the following criteria:

- Result in a discharge of stormwater to surface waters of the State or into a municipal separate storm sewer system (MS4), *and*
- Fall under any one of the 11 categories of industrial activities identified in 40 *CFR* 122.26(b) (14).

The 11 categories are defined using both narrative descriptions of the activities and Standard Industrial Classification (SIC) codes. Below are simplified descriptions of each category:

- 1 Facilities subject to Federal effluent limitations or new source performance standards



- 2 Heavy manufacturing (e.g., ship building and repair, chemical manufacturing, wood products manufacturing)
- 3 Mining/oil and gas exploration
- 4 Hazardous waste facilities
- 5 Landfills or open dumps
- 6 Recycling facilities (e.g., salvage yards, auto junkyards, battery reclaimers)
- 7 Steam electric power generation facilities
- 8 Transportation facilities (e.g., trucking, airports, marinas)
- 9 Treatment works (e.g., domestic wastewater treatment plants)
- 10 Large construction sites (disturbing 5-plus acres). This category is permitted separately; therefore, the permit and fee information presented below does not apply.
- 11 Light industry (e.g., printing, warehousing)

What Does the MSGP Require?

The MSGP divides regulated industrial activities into 30 sectors of related activity and specifies both general and sector-specific requirements for each. In brief, the MSGP requires the following:

- An **MSGP Notice of Intent (NOI)** (DEP Form 62-621.300(5) (b)) must be submitted to DEP.
- A **Stormwater Pollution Prevention Plan (SWPPP)**, which must be kept onsite. In part, the plan must include:
 - A site evaluation of how and where pollutants may be mobilized by stormwater and discharged
 - A site plan for managing stormwater runoff
 - Identification of appropriate controls to reduce stormwater pollution (e.g., timely cleanup of spills, covering exposed materials, installing a detention pond)
 - A maintenance, visual monitoring, and inspection schedule
 - A recordkeeping process
- Analytical monitoring and reporting (not required of all regulated facilities). Industry-specific **Discharge Monitoring Report (DMR)** forms, to be submitted to DEP, are available on the DEP Web site.



How Do I Obtain Copies of the MSGP and NOI?

The MSGP and NOI are available on the DEP Web site or from the **NPDES Stormwater Notices Center**.

- The Web site lists the industrial activities included in each sector and allows downloading of permit language by sector.
- The Notices Center also provides permit language by sector (in hardcopy) and can assist industrial operators with identifying their applicable sectors.

How Do I Obtain Permit Coverage?

To obtain permit coverage, follow these steps:

- Read the permit language applicable to your sector
- Develop and implement your SWPPP
- Complete an NOI in its entirety
- Submit the NOI along with an **application fee of \$500** to the NPDES Stormwater Notices Center
- Reapply for coverage every 5 years.

The Notices Center will send an acknowledgement letter after receiving and processing your complete NOI and fee. Permit coverage may be terminated by meeting the eligibility requirements for termination specified in the MSGP and by submitting a **Notice of Termination (NOT)** (DEP Form 62-621.300(6)) to the Notices Center.

What Is the Industrial No Exposure Exclusion?

Any regulated industrial activity (except Category 10 activity) may be excluded from the requirement to obtain an NPDES stormwater permit if the facility operator can certify to a condition of "no exposure" at the facility. **No exposure** means that all industrial materials and activities are protected by a storm-resistant shelter that prevents exposure to precipitation and/or runoff (with some exceptions). The detailed criteria for qualifying for the no exposure exclusion are outlined in Rule 62-620.100(2) (o), F.A.C.



NPDES Stormwater Permitting for Industrial Activity Sector P—Land Transportation

The 1972 amendments to the Federal Water Pollution Control Act (Clean Water Act or CWA) provide the statutory basis for the National Pollutant Discharge Elimination System (NPDES) permit program and the basic structure for regulating the discharge of pollutants from point sources to U.S. waters. **Section 402 of the Clean Water Act requires EPA to develop and implement the NPDES program.**

Sector P: Land Transportation

Sector P covers stormwater discharges associated with industrial activity from ground transportation facilities and rail transportation facilities that have vehicle and equipment maintenance shops (vehicle and equipment rehabilitation, mechanical repairs, painting, fueling and lubrication) and equipment cleaning operations.

Vehicle and equipment maintenance include:

- Fueling, fluid changes, mechanical repairs
- Vehicle exterior wash down, interior trailer washouts, tank washouts, and rinsing of transfer equipment.
- Vehicle, equipment, material and waste storage areas (oil, fuel, batteries, tires or oil filters)
- Mechanical repair, sanding, painting, refinishing, parts cleaning
- Winter activities
- Spill prevention
- Employee training

A Closer Look

Sector P also covers facilities under SIC code 4221–4225 (public warehousing and storage) that do not have vehicle and equipment maintenance shops or equipment cleaning operations but do have areas where material handling equipment or activities, raw materials, intermediate products, final products, waste materials, by-products or industrial machinery are exposed to storm water.

Best Management Practices (BMPs)

Stormwater treatment BMPs are intended to prevent or minimize the pollution of runoff, or treat runoff contaminated with pollutants. Transportation Facility BMPs include (not limited to):

- Train employees on proper fueling techniques, wash control, storage and disposal procedures.
- Using spill and overflow protection.
- Reduce exposure of the fuel area to storm water by covering the area.
- Use dry cleanup methods for fuel area rather than hosing the fuel area down.
- Perform preventive maintenance on storage tanks to detect potential leaks before they occur.
- Drain oil filters before disposal or recycling. Do not pour liquid waste down floor drains, sinks, or outdoor storm drain inlets.
- Plug floor drains that are connected to the storm or sanitary sewer; if necessary, install a sump that is pumped regularly.
- Inspect the storage yard for filling drip pans and other problems regularly.
- Avoid washing parts or equipment outside.
- Use phosphate-free biodegradable detergents.
- Designate an area for cleaning activities.
- Contain and recycle washwaters.
- Inspect cleaning area regularly.

Notices Center

2600 Blair Stone Road, MS #3585

Tallahassee, FL 32399-2400

866-336-6312 (toll-free) or 850-245-7522

NPDES-stormwater@dep.state.fl.us

www.dep.state.fl.us/water/stormwater/npdes/



Discharge Monitoring Reports

2600 Blair Stone Road, MS #2511

Tallahassee, FL 32399-2400

866-336-6312 (toll-free) or 850-245-7522

NPDES-stormwater@dep.state.fl.us

www.dep.state.fl.us/water/stormwater/npdes/



How to stay in compliance

- Submit NOI and fee of \$500 on time.
Online: www.FLDEPportal.com/go/
Mail: NPDES Stormwater Notices Center
2600 Blair Stone Road MS 3585
Tallahassee, Florida 32399-2400
- Develop and implement a Stormwater Pollution Prevention Plan (SWPPP).
- For SWPPP guidance visit:
<http://www.dep.state.fl.us/water/stormwater/npdes/swppp.htm>
- Train employees to follow the SWPPP.
- Inspect your site and conduct required monitoring as identified in your SWPPP
- Document all changes to the SWPPP. Include the date the changes were made.

Permit Information

Operators of regulated industrial facilities must obtain an NPDES stormwater permit and implement pollution prevention techniques to minimize contamination of stormwater runoff.

Upon coverage approval, the permittee will receive the Permit Rule Language, Acknowledgement Letter and Discharge Monitoring Report forms (where applicable).

Coverage under the Multi-Sector Generic Permit is effective for 5 years. Discharge Monitoring Reports must be submitted to DEP in years 2 & 4 (where applicable).

Sector P can be reviewed at the following web address:
<http://www.dep.state.fl.us/water/stormwater/npdes/docs/msgp/pfp.pdf>

Regulated Activities:

Standard Industrial Classification (SIC) Codes

- 4011 Railroads, Line-Haul Operating
- 4013 Railroad Switching & Terminal Establishments
- 4111 Local & Suburban Transit
- 4119 Local Passenger Transportation, not elsewhere classified
- 4121 Taxicabs
- 4131 Intercity & Rural Bus Transportation
- 4141 Local Bus Charter Service
- 4142 Bus Charter Service, Except Local
- 4151 School Buses
- 4173 Terminal & Service Facilities for Motor Vehicle Passenger
- 4212 Local Trucking without Storage
- 4213 Trucking, Except Local
- 4214 Local Trucking with Storage
- 4215 Courier Services, Except by Air
- 4221 Farm Product Warehousing & Storage
- 4222 Refrigerated Warehousing & Storage
- 4225 General Warehousing & Storage
- 4226 Special Warehousing & Storage, Not elsewhere classified
- 4231 Terminal & Joint Terminal Maintenance
- 4311 United States Postal Service
- 5171 Petroleum Bulk Stations & Terminals



Florida Department of Environmental Protection

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includes in the storm water pollution prevention plan a description of the location of the outfalls and explaining in detail why the outfalls are expected to discharge substantially identical effluent. In addition, for each outfall that the permittee believes is representative, an estimate of the size of the drainage area (in square feet) and an estimate of the runoff coefficient of the drainage area (e.g., low (under 40 percent), medium (40 to 65 percent) or high (above 65 percent)) shall be provided in the plan.

f. Compliance Monitoring Requirements. Today's permit requires permittees with coal pile runoff associated with steam electric power generation to monitor for the presence of total suspended solids and pH at least annually. These monitoring requirements are necessary to evaluate compliance with the numeric effluent limitation imposed on these discharges. Monitoring shall be performed upon a minimum of one grab sample. All samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches in magnitude and that occurs at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event. The grab sample shall be taken during the first 30 minutes of the discharge. If the collection of a grab sample during the first 30 minutes is impracticable, a grab sample can be taken during the first hour of the discharge, and the discharger shall submit with the monitoring report a description of why a grab sample during the first 30 minutes was impracticable. Monitoring results shall be submitted on Discharge Monitoring Report Form(s) postmarked no later than the last day of the month following collection of the sample. For each outfall, one Discharge Monitoring Report from must be submitted per storm event sampled. Facilities which discharge through a large or medium municipal separate storm sewer system (systems serving a population of 100,000 or more) must also submit signed copies of discharge monitoring reports to the operator of the municipal separate storm sewer system. Alternative Certification provisions described in Section XI.O.5 do not apply to facilities subject to compliance monitoring requirements in this section. Compliance monitoring is required at least annually for discharges subject to effluent limitations. Therefore, EPA cannot permit a facility to waive compliance monitoring.

g. Quarterly Visual Examination of Storm Water Quality. Quarterly visual examinations of storm water discharges from each outfall are required at steam

electric generating facilities. The examination must be of a grab sample collected from each storm water outfall. The examination of storm water grab samples shall include any observations of color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, or other obvious indicators of storm water pollution. The examination must be conducted in a well lit area. No analytical tests are required to be performed on these samples.

The examination must be made at least once in each quarter of the permit during daylight unless there is insufficient rainfall or snow-melt to runoff. Where practicable, the same individual should carry out the collection and examination of discharges throughout the life of the permit to ensure the greatest degree of consistency possible. Grab samples shall be collected within the first 30 minutes (or as soon thereafter as practical, but not to exceed 60 minutes) of when the runoff begins discharging. Reports of the visual examination include: the examination date and time, examination personnel, visual quality of the storm water discharge, and probable sources of any observed storm water contamination. The visual examination reports must be maintained onsite with the pollution prevention plan.

EPA believes that this quick and simple assessment will allow the permittee to approximate the effectiveness of his/her plan on a regular basis at very little cost. Although the visual examination cannot assess the chemical properties of the storm water discharged from the site, the examination will provide meaningful results upon which the facility may act quickly. The frequency of this visual examination will also allow for timely adjustments to be made to the plan. If BMPs are performing ineffectively, corrective action must be implemented. A set of tracking or follow-up procedures must be used to ensure that appropriate actions are taken in response to the examinations. The visual examination is intended to be performed by members of the pollution prevention team. This hands on examination will enhance the staff's understanding of the storm water problems on that site and effects on the management practices that are included in the plan.

When a discharger is unable to collect samples over the course of the visual examination period as a result of adverse climatic conditions, the discharger must document the reason for not performing the visual examination and retain this documentation onsite with the records

of the visual examinations. Adverse weather conditions which may prohibit the collection of samples include weather conditions that create dangerous conditions for personnel (such as local flooding, high winds, hurricane, tornadoes, electrical storms, etc.) or otherwise make the collection of a sample impracticable (drought, extended frozen conditions, etc.).

EPA realizes that if a facility is inactive and unstaffed it may be difficult to collect storm water discharge samples when a qualifying event occurs. Today's final permit has been revised so that inactive, unstaffed facilities can exercise a waiver of the requirement to conduct quarterly visual examination.

P. Storm Water Discharges Associated With Industrial Activity From Motor Freight Transportation Facilities, Passenger Transportation Facilities, Petroleum Bulk Oil Stations and Terminals, Rail Transportation Facilities, and United States Postal Service Transportation Facilities

1. Discharges Covered Under This Section

Special conditions have been developed for ground transportation facilities and rail transportation facilities that have vehicle and equipment maintenance shops (vehicle and equipment rehabilitation, mechanical repairs, painting, fueling and lubrication) and equipment cleaning operations. Vehicle and equipment maintenance is a broad term used to include the following activities: vehicle and equipment fluid changes, mechanical repairs, parts cleaning, sanding, refinishing, painting, fueling, locomotive sanding (loading sand for traction), storage of vehicles and equipment waiting for repair or maintenance, and storage of the related materials and waste materials, such as oil, fuel, batteries, tires, or oil filters. Equipment cleaning operations include areas where the following types of activities take place: vehicle exterior wash down, interior trailer washouts, tank washouts, and rinsing of transfer equipment. Any storm water discharges from facilities where such activities take place are subject to the special conditions described in Part XI.P. of today's permit.

The conditions in this section apply to storm water discharges from vehicle and equipment maintenance shops or cleaning operations located on any of the industrial facilities covered under the storm water application regulations (40 CFR 122.26) and applying for coverage under this permit.

As background, the storm water application regulations define storm water discharge associated with industrial activity at 40 CFR 122.26(b)(14). Category (viii) of this definition includes transportation facilities classified as Standard Industrial Classification (SIC) codes 40, 41, 42 (except 4221-25), 43, 44, 45, and 5171 that have vehicle and equipment maintenance shops, equipment cleaning operations, or airport deicing operations. The category further states that only those portions of the facility that are either involved in vehicle and equipment maintenance (including vehicle and equipment rehabilitation, mechanical repairs, painting, fueling, and lubrication), equipment cleaning operations, or airport deicing operations are associated with industrial activity. The facilities that would potentially be covered by this section of today's permit are transportation facilities (commonly assigned SIC codes 40, 41, 42, 43, and 5171).

This sector includes facilities primarily engaged in furnishing transportation by line-haul railroad, and switching and terminal establishments (SIC code 40). The following are examples of these types of facilities: electric railroad line-haul operation,

railroad line-haul operation, interurban railways, beltline railroads, logging railroads, railroad terminals, and stations operated by railroad terminal companies.

Facilities primarily engaged in furnishing local and suburban transportation (SIC code 41), such as those providing transportation in and around a municipality by bus, rail, or subway are also covered under this section. Examples include: bus line operation, airport transportation service (road or rail), cable car operation, subway operation, ambulance service, sightseeing buses, van pool operation, limousine rental with drivers, taxicab operation, and school buses not operated by the educational institution.

In addition, facilities providing local or long-distance trucking, transfer, and/or storage services (SIC code 42) are included in this sector. The following are examples of such facilities: hauling by dump truck, trucking timber, contract mail carriers, furniture moving, garbage collection without disposal, over-the-road trucking, long distance trucking, and freight trucking terminal.

All establishments of the United States Postal Service (SIC code 43) and establishments engaged in the wholesale distribution of crude petroleum and petroleum products from bulk liquid

storage facilities (SIC code 5171) are also covered under this sector.

When an industrial facility, described by the above coverage provisions of this section, has industrial activities being conducted onsite that meet the description(s) of industrial activities in another section(s), that industrial facility shall comply with any and all applicable monitoring and pollution prevention plan requirements of the other section(s) in addition to all applicable requirements in this section. The monitoring and pollution prevention plan terms and conditions of this multi-sector permit are additive for industrial activities being conducted at the same industrial facility (co-located industrial activities). The operator of the facility shall determine which other monitoring and pollution prevention plan section(s) of this permit (if any) are applicable to the facility.

2. Pollutants Found in Storm Water Discharges From Vehicle and Equipment Maintenance and Cleaning Operations

The following table lists potential pollutant source activities that commonly take place at vehicle and equipment maintenance and equipment cleaning operations.

TABLE P-1.—POTENTIAL POLLUTANT SOURCE ACTIVITIES AT VEHICLE AND EQUIPMENT MAINTENANCE AND EQUIPMENT CLEANING OPERATIONS

Activity	Pollutant source	Pollutant
Fueling	Spills and leaks during fuel delivery	Fuel, oil, heavy metals.
	Spills caused by "topping off" fuel tanks	Fuel, oil, heavy metals.
	Rainfall falling on the fuel area or storm water running onto the fuel area.	Fuel, oil, heavy metals.
	Hosing or washing down fuel area	Fuel, oil, heavy metals.
Vehicle and equipment maintenance.	Leaking storage tanks	Fuel, oil, heavy metals.
	Parts cleaning	Chlorinated solvents, oil, heavy metals, acid/alkaline wastes.
	Waste disposal of greasy rags, oil filters, air filters, batteries, hydraulic fluids, transmission fluid, radiator fluids, degreasers.	Oil, heavy metals, chlorinated solvents, acid/alkaline wastes, ethylene glycol.
	Spills of oil, degreasers, hydraulic fluids, transmission fluid, radiator fluids.	Oil, arsenic, heavy metals, organics, chlorinated solvents, ethylene glycol.
Outdoor vehicle and equipment storage and parking.	Fluids replacement, including oil, hydraulic fluids, transmission fluid, radiator fluids.	Oil, arsenic, heavy metals, organics, chlorinated solvents, ethylene glycol.
	Leaking vehicle fluids including hydraulic lines and radiators, leaking or improperly maintained locomotive on-board drip collection systems, brake dust..	Oil, hydraulic fluids, arsenic, heavy metals, organics, fuel.
Painting areas	Paint and paint thinner spills	Paint, spent chlorinated solvents, heavy metals.
	Spray painting	Paint solids, heavy metals.
	Sanding or paint stripping	Dust, paint solids, heavy metals.
	Paint clean-up	Paint, spent chlorinated solvents, heavy metals.
Railroad locomotive sanding ...	Loading traction sand on locomotives	Sediment.
Vehicle or equipment washing areas.	Washing or steam cleaning	Oil, detergents, heavy metals, chlorinated solvents, phosphorus, salts, suspended solids.
Liquid storage in above ground storage.	External corrosion and structural failure	Fuel, oil, heavy metals, materials being stored.
	Installation problems	Fuel, oil, heavy metals, materials being stored.
	Spills and overfills due to operator error	Fuel, oil, heavy metals, materials being stored.
	Failure of piping systems (pipes, pumps, flanges, couplings, hoses, and valves).	Fuel, oil, heavy metals, materials being stored

TABLE P-1.—POTENTIAL POLLUTANT SOURCE ACTIVITIES AT VEHICLE AND EQUIPMENT MAINTENANCE AND EQUIPMENT CLEANING OPERATIONS—Continued

Activity	Pollutant source	Pollutant
Cold weather activities	Leaks or spills during pumping of liquids from barges, trucks, or rail cars to a storage facility.	Fuel, oil, heavy metals, materials being stored.
	Salt application	Sodium chloride.
Improper connections to storm sewer.	Dirt/ash application	Suspended solids, heavy metals
	Process wastewater	Dependent on operations.
	Sanitary water	Bacteria, biochemical oxygen demand (BOD), suspended solids.
	Floor drains	Oil, heavy metals, chlorinated solvents, fuel, ethylene glycol.
	Vehicle washwaters	Oil, detergents, metals, chlorinated solvents, phosphorus, suspended solids.
	Radiator flushing wastewater	Ethylene glycol.
	Leaky underground storage tanks	Materials stored or previously stored.

Sources: EPA, Office of Research and Development. October 1991. "Guides to Pollution Prevention—The Automotive Refinishing Industry." EPA/625/7-91/016.

EPA, Office of Research and Development. October 1991. "Guides to Pollution Prevention—The Automotive Repair Industry." EPA/625/7-91/013.

EPA, Office of Research and Development. May 1992. "Facility Pollution Prevention Guide." EPA/600/R-92/088.

EPA, Office of Water. September 1992. "Storm Water Management for Industrial Activities—Developing Pollution Prevention Plans and Best Management Practices." EPA 832-R-92-006.

U.S. Postal Service. May 1992. "NPDES/Storm Water Guide." AS-554.

Based on the wide variety of industrial activities and significant materials at the facilities included in this sector, EPA believes it is appropriate to divide the land transportation industry into subsectors to properly analyze sampling data and

determine monitoring requirements. As a result, this sector has been divided into the following subsectors: railroad transportation; local and highway passenger transportation; motor freight transportation and warehousing; United States Postal Service; and petroleum

bulk stations and terminals. The tables below include data for the eight pollutants that all facilities were required to monitor for under Form 2F. The tables also list those parameters that EPA has determined may merit further monitoring.

TABLE P-2.—STATISTICS FOR SELECTED POLLUTANTS REPORTED BY RAILROAD TRANSPORTATION FACILITIES SUBMITTING PART II SAMPLING DATAⁱ (mg/L)

Pollutant, Sample	# of Facilities		# of Samples		Mean		Minimum		Maximum		Median		95th Percentile		99th Percentile	
	Grab	Comp ⁱⁱ	Grab	Comp	Grab	Comp	Grab	Comp	Grab	Comp	Grab	Comp	Grab	Comp	Grab	Comp
BOD ₅	100	89	141	126	17.3	9.6	0.0	0.0	310.0	155.0	7.0	6.0	51.8	26.8	102.8	44.8
COD	102	89	143	124	320.0	179.8	0.0	0.0	11800	5470.0	145.0	89.0	879.3	475.3	1848.1	927.8
Nitrate + Nitrite Nitrogen	103	89	144	124	1.57	1.32	0.00	0.00	19.50	19.00	0.92	0.78	5.66	3.68	12.01	6.76
Total Kjeldahl Nitrogen	103	89	144	124	4.35	3.00	0.00	0.00	72.00	58.00	1.90	1.50	13.63	8.79	29.13	17.39
Oil & Grease	104	N/A	144	N/A	33.7	N/A	0.0	N/A	3340.0	N/A	0.0	N/A	46.92	N/A	140.26	N/A
pH	95	N/A	133	N/A	N/A	N/A	3.6	N/A	10.2	N/A	7.3	N/A	9.2	N/A	10.2	N/A
Total Phosphorus	103	89	144	124	2.85	1.02	0.00	0.00	180.00	23.00	0.55	0.44	7.05	3.51	19.63	8.19
Total Suspended Solids	103	89	144	124	474	221	0	0	4680	2620	176	77	2717	1000	9367	2853
Lead, Total	3	4	4	6	0.088	0.048	0.042	0.012	0.130	0.070	0.09	0.06	0.208	0.151	0.313	0.268
Zinc, Total	3	4	3	5	0.487	0.337	0.140	0.160	0.920	0.510	0.40	0.28	1.756	0.704	3.341	0.995

ⁱ Applications that did not report the units of measurement for the reported values of pollutants were not included in these statistics. Values reported as non-detect or below detection limit were assumed to be 0.

ⁱⁱ Composite samples.

TABLE P-3.—STATISTICS FOR SELECTED POLLUTANTS REPORTED BY LOCAL AND HIGHWAY PASSENGER TRANSPORTATION FACILITIES SUBMITTING PART II SAMPLING DATAⁱ (mg/L)

Pollutant, Sample	# of Facilities		# of Samples		Mean		Minimum		Maximum		Median		95th Percentile		99th Percentile	
	Grab	Comp ⁱⁱ	Grab	Comp	Grab	Comp	Grab	Comp	Grab	Comp	Grab	Comp	Grab	Comp	Grab	Comp
BOD ₅	46	45	50	50	15.9	12.3	0.0	0.0	235.3	104.8	8.5	6.3	46.4	41.3	91.6	85.4
COD	47	45	51	50	51.4	39.2	0.0	0.0	376.0	216.0	18.5	18.4	186.2	123.8	411.4	228.8
Nitrate + Nitrite Nitrogen	46	43	50	48	14.39	7.66	0.00	0.10	181.40	104.00	1.79	1.30	66.44	28.71	265.35	96.75
Total Kjeldahl Nitrogen	45	44	49	49	4.22	2.37	0.00	0.00	81.26	15.74	1.82	1.20	11.84	8.23	24.12	16.53
Oil & Grease	53	N/A	59	N/A	47.1	N/A	0.0	N/A	771.0	N/A	6.0	N/A	183.0	N/A	621.6	N/A
pH	52	N/A	58	N/A	N/A	N/A	4.7	N/A	9.4	N/A	7.0	N/A	8.8	N/A	9.7	N/A
Total Phosphorus	47	45	52	50	0.92	0.65	0.00	0.00	7.50	7.00	0.33	0.33	3.40	2.32	8.20	5.12
Total Suspended Solids	46	46	50	51	246	134	0	0	2320	802	70	41	1319	725	4590	2397

ⁱ Applications that did not report the units of measurement for the reported values of pollutants were not included in these statistics. Values reported as non-detect or below detection limit were assumed to be 0.

ⁱⁱ Composite samples.

TABLE P-4.—STATISTICS FOR SELECTED POLLUTANTS REPORTED BY MOTOR FREIGHT TRANSPORTATION AND WAREHOUSING FACILITIES SUBMITTING PART II SAMPLING DATAⁱ (mg/L)

Pollutant, Sample	# of Facilities		# of Sam- ples		Mean		Minimum		Maximum		Median		95th Percentile		99th Percentile	
	Grab	Comp ⁱⁱ	Grab	Comp	Grab	Comp	Grab	Comp	Grab	Comp	Grab	Comp	Grab	Comp	Grab	Comp
BOD ₅	183	159	237	212	16.5	9.1	0.0	0.0	510.0	66.0	7.0	5.5	48.9	27.4	100.2	49.6
COD	185	158	242	210	146.1	82.0	0.0	0.0	1800.0	600.0	79.0	50.5	475.6	253.8	968.6	479.8
Nitrate + Nitrite Nitrogen	179	159	234	210	1.47	1.30	0.00	0.00	90.80	60.50	0.61	0.49	3.86	3.63	8.21	8.16
Total Kjeldahl Nitrogen	185	159	242	211	2.25	1.46	0.00	0.00	24.00	15.00	1.40	1.10	6.73	4.23	12.70	7.39
Oil & Grease	188	N/A	245	N/A	14.0	N/A	0.0	N/A	1340.0	N/A	2.8	N/A	37.8	N/A	95.1	N/A
pH	161	N/A	215	N/A	N/A	N/A	2.6	N/A	9.5	N/A	7.3	N/A	9.6	N/A	11	N/A
Total Phosphorus	184	157	238	208	1.09	0.61	0.00	0.00	37.40	6.80	0.32	0.29	3.64	2.16	9.30	4.72
Total Suspended Solids	185	158	242	210	466	360	0	0	4700	20900	159	90	2638	1448	9012	4615
Zinc, Total	7	5	7	5	0.294	0.159	0.031	0.020	1.100	0.370	0.17	0.08	1.111	0.680	2.434	1.496

ⁱ Applications that did not report the units of measurement for the reported values of pollutants were not included in these statistics. Values reported as non-detect or below detection limit were assumed to be 0.

ⁱⁱ Composite samples.

TABLE P-5.—STATISTICS FOR SELECTED POLLUTANTS REPORTED BY UNITED STATES POSTAL SERVICE FACILITIES SUBMITTING PART II SAMPLING DATAⁱ (mg/L)

Pollutant, Sample	# of Facilities		# of Sam- ples		Mean		Minimum		Maximum		Median		95th Percentile		99th Percentile	
	Grab	Comp ⁱⁱ	Grab	Comp	Grab	Comp	Grab	Comp	Grab	Comp	Grab	Comp	Grab	Comp	Grab	Comp
BOD ₅	16	16	22	22	8.1	9.2	0.0	0.0	25.0	62.0	5.5	4.8	22.6	25.2	38.0	44.5
COD	16	16	22	22	51.4	33.8	5.6	0.0	350.0	190.0	26.5	19.5	148.2	95.5	291.5	167.6
Nitrate + Nitrite Nitrogen	16	16	22	22	0.52	0.75	0.11	0.07	1.30	1.80	0.40	0.61	1.47	2.51	2.57	4.81
Total Kjeldahl Nitrogen	16	16	22	22	1.80	1.91	0.00	0.00	11.00	11.00	1.05	0.97	5.01	6.08	8.98	12.22
Oil & Grease	16	N/A	22	N/A	5.4	N/A	0.0	N/A	21.0	N/A	4.4	N/A	16.0	N/A	27.3	N/A
pH	16	N/A	22	N/A	N/A	N/A	0.1	N/A	8.4	N/A	6.7	N/A	N/A	N/A	N/A	N/A
Total Phosphorus	16	16	22	22	0.46	0.47	0.00	0.00	2.50	3.40	0.28	0.20	1.41	1.79	2.77	4.48
Total Suspended Solids	15	16	21	22	16	13	0	0	77	86	4	1	88	77	210	254
Zinc, Total	14	15	18	18	0.228	0.175	0.000	0.000	1.400	0.660	0.11	0.11	1.870	1.069	6.335	2.896

ⁱ Applications that did not report the units of measurement for the reported values of pollutants were not included in these statistics. Values reported as non-detect or below detection limit were assumed to be 0.

ⁱⁱ Composite samples.

TABLE P-6.—STATISTICS FOR SELECTED POLLUTANTS REPORTED BY PETROLEUM BULK STATIONS AND TERMINALS SUBMITTING PART II SAMPLING DATAⁱ (mg/L)

Pollutant, Sample	# of Facilities		# of Sam- ples		Mean		Minimum		Maximum		Median		95th Percentile		99th Percentile	
	Grab	Comp ⁱⁱ	Grab	Comp	Grab	Comp	Grab	Comp	Grab	Comp	Grab	Comp	Grab	Comp	Grab	Comp
BOD ₅	11	10	11	10	27.7	10.2	1.3	0.0	120.0	31.0	8.0	9.0	111.5	26.0	303.4	40.6
COD	11	10	11	10	118.3	75.9	15.0	9.3	390.0	200.0	94.0	60.5	432.7	232.4	900.6	412.4
Nitrate + Nitrite Nitrogen	11	10	11	10	1.07	0.74	0.00	0.00	5.10	2.90	0.35	0.39	4.83	3.20	13.44	7.51
Total Kjeldahl Nitrogen	10	9	10	9	2.60	2.02	0.00	0.00	5.80	4.60	2.80	2.00	7.14	4.39	11.47	6.11
Oil & Grease	11	N/A	11	N/A	8.8	N/A	0.0	N/A	28.0	N/A	5.4	N/A	36.7	N/A	78.5	N/A
pH	10	N/A	10	N/A	N/A	N/A	6.0	N/A	9.3	N/A	7.8	N/A	9.6	N/A	10.5	N/A
Total Phosphorus	11	10	11	10	0.61	0.45	0.00	0.04	4.60	2.0	0.12	0.27	1.90	1.71	4.82	3.92
Total Suspended Solids	11	10	11	10	253	151	6	0	1090	560	106	93	1612	633	5567	1387

ⁱ Applications that did not report the units of measurement for the reported values of pollutants were not included in these statistics. Values reported as non-detect or below detection limit were assumed to be 0.

ⁱⁱ Composite samples.

3. Options for Controlling Pollutants

The measures commonly implemented to reduce pollutants in storm water associated with vehicle and

equipment maintenance and equipment cleaning operations are generally uncomplicated practices. The following table identifies best management practices (BMPs) associated with

different activities that routinely take place at vehicle and equipment maintenance and equipment cleaning operations.

TABLE P-7.—COMMON STORM WATER MANAGEMENT CONTROLS FOR ACTIVITIES AT VEHICLE AND EQUIPMENT MAINTENANCE SHOPS

Activity	BMPs
Fueling	Use spill and overflow protection. Minimize runoff of storm water into the fueling area by grading the area such that storm water only runs off. Reduce exposure of the fuel area to storm water by covering the area. Use dry cleanup methods for fuel area rather than hosing the fuel area down. Use proper petroleum spill control. Perform preventive maintenance on storage tanks to detect potential leaks before they occur. Inspect the fueling area to detect problems before they occur. Train employees on proper fueling techniques.
Vehicle and equipment maintenance	Maintain an organized inventory of materials used in the maintenance shop. Dispose of greasy rags, oil filters, air filters, batteries, spent coolant, and degreasers properly. Label and track the recycling of waste material (e.g., used oil, spent solvents, batteries).

TABLE P-7.—COMMON STORM WATER MANAGEMENT CONTROLS FOR ACTIVITIES AT VEHICLE AND EQUIPMENT MAINTENANCE SHOPS—Continued

Activity	BMPs
Outdoor vehicle and equipment storage and parking.	Drain oil filters before disposal or recycling. Drain and contain all fluids from wrecked vehicles and "parts" cars. Store cracked batteries in a nonleaking secondary container. Promptly transfer used fluids to the proper container; do not leave full drip pans or other open containers around the shop. Empty and clean drip pans and containers. Do not pour liquid waste down floor drains, sinks, or outdoor storm drain inlets. Plug floor drains that are connected to the storm or sanitary sewer; if necessary, install a sump that is pumped regularly. Inspect the maintenance area regularly for proper implementation of control measures. Train employees on proper waste control and disposal procedures. Use drip pans under all vehicles and equipment waiting for maintenance. Cover the storage area with a roof. Inspect the storage yard for filling drip pans and other problems regularly. Train employees on procedures for storage and inspection items.
Locomotive sanding areas	Cover sand storage piles.
Painting areas	Install sediment traps. Install curbs or dikes around storage piles to minimize storm water runoff. Keep paint and paint thinner away from traffic areas to avoid spills. Spray paint in an Occupational Safety and Health Act (OSHA) approved hood. Use effective spray equipment that delivers more paint to the target and less over-spray. Avoid sanding in windy weather and collect and dispose of waste properly. Recycle paint, paint thinner, and solvents. Inspect painting procedures to ensure that they are conducted properly. Train employees on proper sanding, painting, and spraying techniques.
Vehicle or equipment washing areas	Avoid washing parts or equipment outside. Use phosphate-free biodegradable detergents. Designate an area for cleaning activities. Contain and recycle washwaters. Ensure that washwaters drain well. Inspect cleaning area regularly. Train employees on proper washing procedures.
Liquid storage in above ground storage	Maintain good integrity of all storage containers. Install safeguards (such as diking or berming) against accidental releases at the storage area. Inspect storage tanks to detect potential leaks and perform preventive maintenance. Inspect piping systems (pipes, pumps, flanges, couplings, hoses, and valves) for failures or leaks. Train employees on proper filling and transfer procedures.
Cold weather activities	Minimize salt application. Use uncontaminated dirt or ash, if use is necessary. Train employees on proper salt, dirt, sand, or ash application
Improper connections to storm sewer	Plug all floor drains connected to sanitary or storm sewer or if connection is unknown. Alternatively, install a sump that is pumped regularly. Perform smoke or dye testing to determine if interconnections exist between sanitary water system and storm sewer system. Update facility schematics to accurately reflect all plumbing connections. Install a safeguard against vehicle washwaters entering the storm sewer unless permitted. Maintain and inspect the integrity of all underground storage tanks; replace when necessary. Train employees on proper disposal practices for all materials.

Sources: NPDES Storm Water Group Applications—Part 1. Received by EPA March 18, 1991, through December 31, 1992.

EPA, Office of Research and Development. October 1991. "Guides to Pollution Prevention—The Automotive Refinishing Industry." EPA/625/7-91/016.

EPA, Office of Research and Development. October 1991. "Guides to Pollution Prevention—The Automotive Repair Industry." EPA/625/7-91/013.

EPA, Office of Research and Development. May 1992. "Facility Pollution Prevention Guide." EPA/600/R-92/088.

EPA, Office of Water. September 1992. "Storm Water Management for Industrial Activities—Developing Pollution Prevention Plans and Best Management Practices." EPA 832-R-92-006.

U.S. Postal Service. May 1992. "NPDES/Storm Water Guide." AS-554.

4. Pollutant Control Measures Required Through Other EPA Programs

EPA recognizes that other programs address the operation of vehicle and equipment maintenance and equipment cleaning operations. In particular, as described below, the Resource Conservation and Recovery Act (RCRA) and the Underground Storage Tank (UST) programs require careful management of materials used onsite

which decreases the probability that storm water from such areas will be contaminated by these materials.

Under the RCRA program, on September 10, 1992, EPA promulgated standards in 40 CFR Part 279 for the management of used oils that are recycled (57 FR 41566). These standards include requirements for used oil generators, transporters, processors/refiners, and burners. The standards for

used oil generators apply to all generators, regardless of the amount of used oil they generate. Do-it-yourself (DIY) generators which generate used oil from the maintenance of their personal vehicles, however, are not subject to the management standards (Section 279.20(a)(1)).

The requirements for used oil generators were designed to impose a minimal burden on generators while

protecting human health and the environment from the risks associated with managing used oil. Under Subpart C of 40 CFR Part 279, used oil generators must not store used oil in units other than tanks, containers, or units subject to regulation under Part 264 or 265 of 40 CFR (Section 279.22(a)). In other words, generators may store used oil in tanks or containers that are not subject to Subpart J (Hazardous Waste Tanks) or Subpart I (Containers) of Parts 264/265, as long as such tanks or containers are maintained in compliance with the used oil management standards. This does not preclude generators from storing used oil in Subpart J tanks or Subpart I containers or other units, such as surface impoundments (Subpart K), that are subject to regulation under Part 264 or 265.

Storage units at generator facilities must be maintained in good condition and labeled with the words "used oil." Upon detection of a release of used oil to the environment, a generator must take steps to stop the release, contain the released used oil, and properly manage the released used oil and other materials (Sections 279.22(b) to (d)). Generators storing used oil in underground storage tanks are subject to the UST regulations in 40 CFR Part 280.

If used oil generators ship used oil offsite for recycling, they must use a transporter who has notified EPA and obtained an EPA identification number (Section 279.24).

The technical standards for USTs at 40 CFR Part 280 require that new UST systems (defined as systems for which installation commenced after December 12, 1988) use overfill prevention equipment that will: 1) automatically shut off flow into the tank when the tank is no more than 95 percent full; or 2) alert the transfer operator when the tank is no more than 90 percent full by restricting the flow into the tank or triggering a high level alarm. The preceding requirements do not apply to systems that are filled by transfers of no more than 25 gallons at one time. Existing UST systems (defined as systems for which installation has commenced on or before December 12, 1988) are required to have installed the described overfill prevention equipment by December 12, 1998.

5. Special Conditions

The permit conditions that apply to ground transportation facilities build upon the requirements set forth in the common permit conditions for storm water discharges from industrial activities described in the front of this fact sheet. The discussion that follows,

therefore, only addresses conditions that differ from those required in that section.

Due to concern that many non-storm water discharges may be present at vehicle and equipment cleaning and maintenance facilities, EPA is requiring that all facilities provide proof that these discharges are not commingled and are appropriately controlled so as to protect all receiving waters.

Today's permit clarifies in Part III.A.2. (Prohibition of Non-storm Water Discharges) that non-storm water discharges, including vehicle and equipment washwaters, are not authorized by this permit. The operators of such non-storm water discharges must obtain coverage under a separate NPDES permit if discharged to waters of the U.S. or through a municipal separate storm sewer system or comply with applicable industrial pretreatment requirements if discharged to a municipal sanitary sewer system. In a related requirement under the storm water pollution prevention plan requirements, the permittee is required to attach a copy of the NPDES permit issued for vehicle washwaters or, if an NPDES permit has not yet been issued, a copy of pending application to the plan. For facilities that discharge vehicle and equipment washwaters to the sanitary sewer system, the operator of the sanitary system and associated treatment plant must be notified. A copy of the notification letter must be attached to the plan. If an industrial user permit is issued under a pretreatment program, a copy of that permit must be attached in the plan as does any other permit to which the facility is subject. Some facilities may use other methods of disposal, such as collecting and hauling the wash water offsite. In these cases, the facility must document how the wash water is disposed and attach all pertinent documentation of that disposal practice to the plan.

6. Storm Water Pollution Prevention Plan Requirements

a. Description of Potential Pollutant Sources. Under the description of potential pollutant sources in the storm water pollution prevention plan requirements, permittees are required to include storage areas for vehicles and equipment awaiting maintenance on their facility site map. EPA believes that this is appropriate since this area may potentially be a significant source of pollutants to storm water.

b. Measures and Controls. Under the description of measures and controls in the storm water pollution prevention plan requirements, this section requires

that all areas that may contribute pollutants to storm waters discharges shall be maintained in a clean, orderly manner. This section also requires that the following areas must be specifically addressed:

(1) Vehicle and Equipment Storage Areas. The storage of vehicles and equipment with actual or potential fluid leaks must be confined to designated areas (delineated on the site map). The plan must describe measures that prevent or minimize contamination of the storm water runoff from these areas. The facility shall consider the use of drip pans under vehicles and equipment, indoor storage of the vehicles and equipment, installation of berming and diking of this area, use of absorbents, roofing or covering storage areas, cleaning pavement surface to remove oil and grease, or other equivalent methods.

(2) Fueling Areas. The plan must describe measures that prevent or minimize contamination of the storm water runoff from fueling areas. The facility shall consider covering the fueling area, using spill and overflow protection and cleanup equipment, minimizing runoff of storm water to the fueling area, using dry cleanup methods, collecting the storm water runoff and providing treatment or recycling, or other equivalent measures.

(3) Material Storage Areas. Storage units of all materials (e.g., used oil, used oil filters, spent solvents, paint wastes, radiator fluids, transmission fluids, hydraulic fluids) must be maintained in good condition, so as to prevent contamination of storm water, and plainly labeled (e.g., "used oil," "spent solvents," etc.). The plan must describe measures that prevent or minimize contamination of the storm water runoff from such storage areas. The facility shall consider indoor storage of the materials, installation of berming and diking of the area or other equivalent methods.

(4) Vehicle and Equipment Cleaning Areas. The plan must describe measures that prevent or minimize contamination of the storm water runoff from all areas used for vehicle and equipment cleaning. The facility shall consider performing all cleaning operations indoors, covering the cleaning operation, ensuring that all washwaters drain to the intended collection system (i.e., not the storm water drainage system unless NPDES permitted), collecting the storm water runoff from the cleaning area and providing treatment or recycling, or other equivalent measures. The discharge of vehicle and equipment wash waters, including tank cleaning operations, are

not authorized by this section and must be covered under a separate NPDES permit or discharged to a sanitary sewer in accordance with applicable industrial pretreatment requirements.

(5) *Vehicle and Equipment Maintenance Areas.* The plan must describe measures that prevent or minimize contamination of the storm water runoff from all areas used for vehicle and equipment maintenance. The facility shall consider performing all maintenance activities indoors, using drip pans, maintaining an organized inventory of materials used in the shop, draining all parts of fluids prior to disposal, prohibiting the practice of hosing down the shop floor where the practice would result in the exposure of pollutants to storm water, using dry cleanup methods, collecting the storm water runoff from the maintenance area and providing treatment or recycling, or other equivalent measures.

(6) *Locomotive Sanding (Loading Sand for Traction) Areas.* The plan must describe measures that prevent or minimize contamination of the storm water runoff from areas used for locomotive sanding (including locomotive sanding). The facility shall consider covering sanding areas, minimizing storm water runoff/runoff, appropriate sediment removal practices to minimize the offsite transport of sanding material by storm water, or other equivalent measures.

As documented earlier, these six areas are the common sources of pollutants in storm water from vehicle and equipment cleaning and maintenance activities. Based upon the information provided in part 1 of the group application process, the suggested management measures are commonly used at ground transportation facilities. EPA believes that the incorporation of management practices such as those suggested, in conjunction with the baseline requirements, will substantially reduce the potential that these activities and areas will significantly contribute to the pollution of storm water discharges. In addition, EPA believes that these requirements continue to provide the necessary flexibility to address the variable risk for pollutants in storm water discharges associated with different facilities. Further, many facilities will find that management measures that they have already incorporated into the facility's operation, such as the installation of overfill protection equipment and labelling and maintenance of used oil storage units, that are already required under existing EPA programs will meet the requirements of this section.

Under the inspection requirements of the storm water pollution prevention plan elements, this section requires that in addition to the comprehensive site evaluation required under Part XI of today's permit, qualified facility personnel shall be identified to inspect designated equipment and areas of the facility, at a minimum, on a quarterly basis. The following areas shall be included in all inspections: storage areas for vehicles and equipment awaiting maintenance, fueling areas, vehicle and equipment maintenance areas (both indoors and outdoors), material storage areas, vehicle and equipment cleaning areas, and loading and unloading areas. A set of tracking or follow-up procedures shall be used to ensure that appropriate actions are taken in response to the inspections. Records of all inspections shall be maintained.

The purpose of the inspections is to check on the implementation of the storm water pollution prevention plan. The inspections allow facility personnel to monitor the success or failure of elements of the plan on a regular basis. The discharger is encouraged to coordinate these quarterly inspections with the quarterly visual examinations of storm water discharges required under the monitoring section of the permit. The use of an inspection checklist is recommended. The checklist will ensure that all required areas are inspected, as well as help to meet the recordkeeping requirements.

Under the employee training component of the storm water pollution prevention plan requirements, the permittee is required to identify annual (once per year) dates for such training. Employee training must, at a minimum, address the following areas when applicable to a facility: used oil management; spent solvent management; spill prevention and control; fueling procedures; general good housekeeping practices; proper painting procedures; and used battery management. Unlike some industrial operations, the industrial activities associated with vehicle and equipment maintenance that may affect storm water quality require the cooperation of many employees, not just one or two people. EPA, therefore, is requiring that employee training take place at least once a year to serve as: (1) training for new employees that may be involved in storm water pollution prevention; (2) a refresher course for existing employees involved in storm water pollution prevention; and (3) training for all affected employees on any storm water pollution prevention techniques recently incorporated into the plan.

7. Monitoring and Reporting Requirements

a. Monitoring Requirements. The regulatory modifications at 40 CFR 122.44(i)(2) established on April 2, 1992, grant permit writers the flexibility to reduce monitoring requirements in storm water discharge permits. EPA has determined that the potential for storm water discharges to contain pollutants above benchmark levels, because of the industrial activities and materials exposed to precipitation, does not support sampling at facilities in this section of today's permit. Based on a consideration of the BMPs typically used at these facilities, and generally low pollutant values from the application data, EPA believes that the pollution prevention plan with visual observations of storm water discharges will help to ensure storm water contamination is minimized. Because permittees are not required to conduct sampling, they will be able to focus their resources on developing and implementing the pollution prevention plan.

Under the Storm Water Regulations at 40 CFR 122.26(b)(14), EPA defined "storm water discharge associated with industrial activity". The focus of today's permit is to address the presence of pollutants that are associated with the industrial activities identified in this definition and that might be found in storm water discharges. Under the methodology for determining analytical monitoring requirements, described in section VI.E.1 of this fact sheet, nitrate plus nitrite nitrogen, lead and/or zinc are above the bench mark concentrations for the railroad transportation, local and highway passenger transportation, motor freight transportation and warehousing, and United States Postal services subsectors. After a review of the nature of industrial activities and the significant materials exposed to storm water described by facilities in these subsectors, EPA has determined that the higher concentrations of nitrate plus nitrite nitrogen, lead and/or zinc are not likely to be caused by the industrial activity, but may be primarily due to non-industrial activities on-site. Today's permit does not require railroad transportation, local and highway passenger transportation, motor freight transportation and warehousing, and United States Postal services facilities to conduct analytical monitoring for these parameters.

Quarterly visual examinations of a storm water discharge from each outfall are required at ground transportation facilities. The examination must be of a

grab sample collected from each storm water outfall. The examination of storm water grab samples shall include any observations of color, odor, turbidity, floating solids, foam, oil sheen, or other obvious indicators of storm water pollution. The examination must be conducted in a well lit area. No analytical tests are required to be performed on these samples.

The examination must be made at least once in each designated period during facility operation in the daylight hours unless there is insufficient rainfall or snow-melt to runoff. EPA expects that, whenever practicable, the same individual should carry out the collection and examination of discharges throughout the life of the permit to ensure the greatest degree of consistency possible. Examinations shall be conducted in each of the following periods for the purposes of inspecting storm water quality associated with storm water runoff and snow melt: January through March; April through June; July through September; October through December. Grab samples shall be collected within the first 30 minutes (or as soon thereafter as practical, but not to exceed 60 minutes) of when the runoff begins discharging. Reports of the visual examination include: the examination date and time, examination personnel, visual quality of the storm water discharge, and probable sources of any observed storm water contamination. The visual examination reports must be maintained onsite with the pollution prevention plan.

EPA believes that this quick and simple assessment will help the permittee to determine the effectiveness of his/her plan on a regular basis at very little cost. Although the visual examination cannot assess the chemical properties of the storm water discharged from the site, the examination will provide meaningful results upon which the facility may act quickly. The frequency of this visual examination will also allow for timely adjustments to be made to the plan. If BMPs are performing ineffectively, corrective action must be implemented. A set of tracking or follow-up procedures must be used to ensure that appropriate actions are taken in response to the examinations. The visual examination is intended to be performed by members of the pollution prevention team. This hands-on examination will enhance the staff's understanding of the storm water problems on that site and the effects of the management practices that are included in the plan.

When a discharger is unable to collect samples over the course of the visual

examination period as a result of adverse climatic conditions, the discharger must document the reason for not performing the visual examination and retain this documentation onsite with the results of the visual examinations. Adverse weather conditions which may prohibit the collection of samples include weather conditions that create dangerous conditions for personnel (such as local flooding, high winds, hurricane, tornadoes, electrical storms, etc.) or otherwise make the collection of a sample impracticable (drought, extended frozen conditions, etc.).

EPA realizes that if a facility is inactive and unstaffed it may be difficult to collect storm water discharge samples when a qualifying event occurs. Today's final permit has been revised so that inactive, unstaffed facilities can exercise a waiver of the requirement to conduct quarterly visual examination.

As discussed above, EPA does not believe that chemical monitoring is necessary for facilities in this section of today's permit. EPA believes that between quarterly inspections, quarterly visual examinations, and site compliance evaluations potential sources of contaminants can be recognized, addressed, and then controlled with BMPs. In determining the monitoring requirements, EPA considered the nature of the industrial activities and significant materials exposed at these sites, and performed a review of data provided in Part 2 group applications.

Q. Storm Water Discharges Associated With Industrial Activity From Water Transportation Facilities That Have Vehicle Maintenance Shops and/or Equipment Cleaning Operations

1. Discharges Covered Under This Section

Special conditions have been developed for water transportation facilities that have vehicle and equipment maintenance shops (vehicle and equipment rehabilitation, mechanical repairs, painting, fueling, and lubrication) and equipment cleaning operations. Vehicle and equipment maintenance is a broad term used to include the following activities: vessel and equipment fluid changes, mechanical repairs, parts cleaning, sanding, blasting, welding, refinishing, painting, fueling, and storage of the related materials and waste materials, such as oil, fuel, batteries, or oil filters. Equipment cleaning operations include areas where vessel and vehicle exterior washdown takes place. The conditions in this section apply to storm water

discharges from vehicle and equipment maintenance shops or cleaning operations located at water transportation facilities covered under the storm water application regulations (40 CFR 122.26) and applying for coverage under today's permit.

The storm water application regulations define storm water discharges associated with industrial activity at 40 CFR 122.26(b)(14). Category (viii) of this definition includes transportation facilities classified as Standard Industrial Classification (SIC) codes 40, 41, 42 (except 4221–25), 43, 44, 45, and 5171 that have vehicle and equipment maintenance shops, equipment cleaning operations, or airport deicing operations. The category further states that only those portions of the facility that are either involved in vehicle and equipment maintenance (including vehicle and equipment rehabilitation, mechanical repairs, painting, fueling, and lubrication), equipment cleaning operations, or airport deicing operations are associated with industrial activity. The conditions in this section only apply to water transportation facilities.

When an industrial facility, described by the above coverage provisions of this section, has industrial activities being conducted onsite that meet the description(s) of industrial activities in another section(s), that industrial facility shall comply with any and all applicable monitoring and pollution prevention plan requirements of the other section(s) in addition to all applicable requirements in this section. The monitoring and pollution prevention plan terms and conditions of this multi-sector permit are additive for industrial activities being conducted at the same industrial facility (co-located industrial activities). The operator of the facility shall determine which other monitoring and pollution prevention plan section(s) of this permit (if any) are applicable to the facility.

Facilities covered by this section of today's permit are commonly identified by SIC code major group 44.

SIC code 44 includes facilities primarily engaged in furnishing water transportation services. The following types of facilities are examples of those covered under SIC code 44:

- a. Deep Sea Foreign Transportation of Freight (SIC 4412).
 - b. Deep Sea Domestic Transportation of Freight (SIC 4424).
 - c. Freight Transportation on the Great Lakes—St. Lawrence Seaway (SIC 4432).
 - d. Water Transportation of Freight, Not Elsewhere Classified (SIC 4449).
- Including: canal barge operations; canal freight transportation; intracoastal

Who is subject to Phase I of the NPDES Storm Water Program and needs a permit?

The term "Storm Water Discharges Associated with Industrial Activity," defined in federal regulations 40 CFR 122.26(b)(14)(i)-(xi), determined which industrial facilities are potentially subject to Phase I of the storm water program. If you are subject to the program you need to apply for a permit. The definition uses either SIC (Standard Industrial Classification) codes or narrative descriptions to characterize the activities. You are responsible for identifying your facility's SIC code. The definition's 11 categories ((i)- (xi)) are listed below. You should review these 11 categories and decide if your type of facility is described by any of them (either by SIC code or by narrative descriptions). Please note that categories iii, viii, and xi have special conditions, or exceptions (described below) which may make a facility NOT subject to the program, and therefore not required to apply, even though the facility's activity matches one of the SIC codes.

Category (i)

Facilities subject to storm water effluent limitations guideline, new source performance standards, or toxic pollutant effluent standards under 40 CFR subchapter N (except facilities with toxic pollutant effluent standards which are exempted under category (xi)). These types of facilities include the following:

40 CFR Subchapter N
405 Dairy products processing
406 Grain mills
407 Canned & preserved fruits & veg. processing
408 Canned & preserved seafood processing
409 Beet, crystalline & liquid cane sugar refining
410 Textile mills
411 Cement manufacturing
412 Feedlots
414 Organic Chemicals plastics and synthetic fibers
415 Inorganic chemical manufacturing
417 Soap and detergent manufacturing
418 Fertilizer manufacturing
419 Petroleum refining
420 Iron and steel manufacturing
421 Nonferrous metal manufacturing
422 Phosphate manufacturing
423 Steam electric power
424 Ferroalloy manufacturing
425 Leather tanning and finishing
426 Glass manufacturing *
427 Asbestos manufacturing
428 Rubber manufacturing
429 Timber products processing
430 Pulp, paper, and paperboard
431 Builder's paper and board mills
432 Meat products
433 Metal finishing
434 Coal Mining
436 Mineral mining & processing
439 Pharmaceutical manufacturing
440 Ore mining & dressing *
443 Paving and roofing materials
446 Paint formulating
447 Ink formulating
455 Pesticide Chemicals
458 Carbon Black manufacturing
461 Battery manufacturing
463 Plastics molding and forming
464 Metal molding and casting
465 Coil coating
466 Porcelain enameling
467 Aluminum forming
468 Copper forming *
469 Electrical & electronic component
471 Nonferrous metal forming & powders some facilities in group do not have limits or standards, see 40 CFR subchapter N to verify.

Category (ii)

Facilities classified by the following SIC codes:

SIC Code

24 Lumber and wood products (except 2434 wood kitchen cabinets, see category (xi))
26 Paper & allied products (except 265 paperboard containers, 267 converted paper, see category (xi))
28 Chemicals & allied products (except 283 drugs, see (xi))
29 Petroleum & coal products

311 Leather tanning & finishing
32 Stone, clay & glass production (except 323 products of purchased glass, see category (xi))
33 Primary metal industry
3441 Fabricated structural metal
373 Ship and boat building and repair

Category (iii) Mineral Industry

Facilities classified as SIC codes 10-14 including active or inactive mining operations (except for areas of coal mining operations no longer meeting the definition of a reclamation area under 40 CFR 434.11 (1) because the performance bond issued to the facility by the appropriate SMCRA authority has been released, or areas of non-coal mining operations which have been released from applicable State or Federal reclamation requirements after December 17, 1990), and oil and gas exploration, production, processing, or treatment operations, or transmission facilities that discharge storm water contaminated by contact with or that has come into contact with any overburden, raw material, intermediate products, finished products, byproducts or waste products located on the site of such operations (inactive mining operations are mining sites that are not being actively mined, but which have an identifiable owner/operator; inactive mining sites do not include sites where mining claims are being maintained prior to disturbances associated with the extraction, beneficiation, or processing of mined materials, nor sites where minimal activities are undertaken for the sole purpose of maintaining a mining claim).

SIC Code

10 Metal mining (metallic mineral/ores)
12 Coal mining
13 Oil and gas extraction
14 Non-metallic minerals, except fuels

Oil and gas operations that discharge contaminated storm water at any time between November 16, 1987 and October 1, 1992, and that are currently not authorized by an NPDES permit, must apply for a permit. Operators of oil and gas exploration, production, processing, or treatment operations or transmission facilities, that are not required to submit a permit application as of October 1, 1992 in accordance with 40 CFR 122.26(c)(1)(iii), but that after October 1, 1992 have a discharge of a reportable quantity of oil or a hazardous substance (in a storm water discharge) for which notification is required pursuant to either 40 CFR 110.6, 117.21, or 302.6, must apply for a permit.

Category (iv) Hazardous Waste

Hazardous waste treatment, storage, or disposal facilities including those that are operating under interim status or a permit under Subtitle C of RCRA.

Category (v) Landfills

Landfills, land application sites, and open dumps that receive or have received any industrial waste (waste that is received from any of the facilities described under categories (i) - (xi)) including those that are subject to regulations under Subtitle D of RCRA.

Category (vi)

Facilities involved in the recycling of materials, including metal scrap yards, battery reclaimers, salvage yards, and automobile junkyards, including but limited to those classified as SIC 5015 (used motor vehicle parts) and 5093 (scrap and waste materials).

Category (vii) Steam Electric Plants

Steam electric power generating facilities, including coal handling sites.

Category (viii) Transportation

Transportation facilities classified by the SIC codes listed below which have vehicle maintenance shops, equipment cleaning operations, or airport deicing operations. Only those portions of the facility that are either involved in vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication), equipment cleaning operations, airport deicing operations, or which are otherwise identified under categories (i)-(vii) or (ix)-(xi) are associated with industrial activity, and need permit coverage.

SIC Code

40 Railroad transportation

41 Local and interurban passenger transit
42 Trucking & warehousing (except 4221-25, see (xi))
43 US postal service
44 Water transportation
45 Transportation by air
5171 Petroleum bulk stations and terminals

Category (ix) Treatment Works

Treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage, treatment recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that are located within the confines of the facility, with a design flow of 1.0 mgd or more, or required to have an approved pretreatment program under 40 CFR 403. Not included are farm lands, domestic gardens or lands used for sludge management where sludge is beneficially reused and which are not physically located in the confines of the facility, or areas that are in compliance with section 405 of the Clean Water Act.

Category (x) Construction

Construction activity including clearing, grading and excavation activities except: operations that result in the disturbance of less than 5 acres of total land area which are not part of a larger common plan of development or sale.

[The construction "operator" must apply for permit coverage under the General Storm Water Permit for Construction Activities. The "operator" is the party or parties that either individually or taken together meet either of the following two criteria: 1) they have operational control over the site specification; 2) they have the day-to-day operational control of those activities at the site necessary to ensure compliance. For a typical commercial construction site, the owner and general contractor must both apply. For a typical residential development, the developer and all builders must apply. Each builder must apply even if they individually disturb less than 5 acres if the overall development is 5 or more acres. Only one Storm Water Pollution Prevention Plan is required per site even though there may be multiple parties.]

Category (xi) Light Industry

Facilities classified by the following SIC codes:

SIC Code

20 Food and kindred product
21 Tobacco products
22 Textile mill products
23 Apparel and other textile product
2434 Wood kitchen cabinets
25 Furniture and fixtures
265 Paperboard containers and boxes
267 Miscellaneous converted paper products
27 Printing and publishing
283 Drugs
285 Paints and allied products
30 Rubber and miscellaneous plastic
31 Leather and products (except 311)
323 Products of purchased glass
34 Fabricated metal products (except 3441)
35 Industrial machinery and equipment
36 Electronic and other electric equipment
37 Transportation equipment (except 373)
38 Instruments and related products
39 Miscellaneous manufacturing
4221 Farm product storage
4222 Refrigerated storage
4225 General warehouse and storage

(and which are not otherwise included in categories (ii)-(x)) with storm water discharges from all areas (except access roads and rail lines) where material handling equipment or activities, raw materials, immediate products, final products, waste materials, by-products, or industrial machinery are exposed to storm water. Material handling activities include the storage, loading and unloading, transportation, or conveyance of any raw material, intermediate produce, finished product, by-product, or waste product.)