



Illinois Department of Transportation

2300 South Dirksen Parkway / Springfield, Illinois / 62764

June 13, 2011

SUBJECT: FAP Route 330 (IL 21)
Section 128-I-3
Lake County
Contract No. 60P33
Item No. 198, June 17, 2011 Letting
Addendum B

NOTICE TO PROSPECTIVE BIDDERS:

Attached is an addendum to the plans or proposal. This addendum involves revised and/or added material.

1. Revised page iii of the Table of Contents to the Special Provisions.
2. Added pages 100 - 117 to the Special Provisions.

Prime contractors must utilize the enclosed material when preparing their bid and must include any Schedule of Prices changes in their bidding proposal.

Bidders using computer-generated bids are cautioned to reflect any and all Schedule of Prices changes, if involved, into their computer programs.

Very truly yours,

Scott E. Stitt, P.E.
Acting Engineer of Design and Environment

A handwritten signature in cursive script, reading "Ted B. Walschleger P.E." with a small "P.E." to the right.

By: Ted B. Walschleger, P. E.
Engineer of Project Management

cc: Diane O'Keefe, Region 1, District 1; Mike Renner; Estimates

TBW:MS:jc

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REVISED 06/13/2011

STORM WATER POLLUTION PREVENTION PLAN



Storm Water Pollution Prevention Plan

Route	<u>FAP 330</u>	Marked Rte.	<u>IL 21 (Milwaukee Ave)</u>
Section	<u>128-I-3 & 128R-3</u>	Project No.	<u>C-91-199-00</u>
County	<u>Lake</u>	Contract No.	<u>60P33 & 60953</u>

This plan has been prepared to comply with the provisions of the National Pollutant Discharge Elimination System (NPDES) Permit No. ILR10 (Permit ILR10), issued by the Illinois Environmental Protection Agency (IEPA) for storm water discharges from construction site activities.

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

Diane M. O'Keefe
Print Name
Deputy Director, Region 1 Engineer
Title
Illinois Department of Transportation
Agency


6-2-11
Signature
Date

I. Site Description:

- A. Provide a description of the project location (include latitude and longitude):

This project will be constructed in 2 phases an Advanced Contract and a Roadway Contract. Approximately 1.9 miles of Illinois Route 21 from South of Illinois Route 120 to Illinois Route 137 and 500 feet of Illinois Route 137 east of Illinois Route 21 in the Villages of Gurnee and Libertyville and within the City of Waukegan, Lake County, Illinois. Section 9 Township 44 North Range 11 East. Latitude: 42 degrees and 19 minutes; Longitude: 87 degrees and 57 minutes.

- B. Provide a description of the construction activity which is the subject of this plan:

ADVANCE CONTRACT: Construction activities include the removal of trees along the east side of IL RT 21 and at Basin Sites A and B; roadway widening and temporary pavement placement for the future IL RT 21 project; construction of Retention Site 3 and Basin B; installation of storm sewer pipe and manholes; ditch and swale construction.

ROADWAY CONTRACT: Construction activities include the widening and reconstruction of Illinois Routes 21 and 137 in aforementioned locations complete with aggregate and bituminous shoulders, concrete curb and gutter, concrete and grass medians, sidestreet and driveway upgrades, pavement markings and all necessary landscaping to complete the project as shown on the plans. Additional activities include the removal and replacement of the Illinois Route 21 bridge over Bull Creek, box culvert replacements at the Des Plaines River tributaries, multi-use trail underpass construction along Illinois Route 21, retaining wall construction, drainage improvements and traffic signal installation and modernization.

- C. Provide the estimated duration of this project:

This project is estimated to last 3 years.

- D. The total area of the construction site is estimated to be 51.06 acres.

The total area of the site estimated to be disturbed by excavation, grading or other activities is 41.81 acres.

- E. The following is a weighted average of the runoff coefficient for this project after construction activities are

completed:

Pre Construction Total Area = 51.06 Acres, Impervious Area = 20.42 Acres, Pervious Area = 30.63 Acres
 $C = ((20.42 \times 0.95) + (30.63 \times 0.30)) / 51.06 = 0.56$

Post Construction Total Area = 51.06 Acres, Impervious Area = 28.39 Acres, Pervious Area = 22.67 Acres
 $C = ((28.39 \times 0.95) + (22.67 \times 0.30)) / 51.06 = 0.66$

- F. List all soils found within project boundaries. Include map unit name, slope information, and erosivity:

Elliot Silt Loam (146B): 2% - 4% slopes
Pella Silty Clay Loam (153A): 0% - 2% slopes
Vama Silt Loam (223B): 2% - 4% slopes
Vama Silt Loam (223C2): 4% - 6% slopes, eroded
Beecher Silt Loam (298B): 2% - 4% slopes
Dresden Silt Loam (325B): 2% - 4% slopes
Mundelein Silt Loam (442B): 2% - 4% slopes
Barrington Silt Loam (443B): 2% - 4% slopes
Grundelein Silt Loam (526A): 0% - 2% slopes
Ozaukee Silt Loam (530B): 2% - 4% slopes
Ozaukee Silt Loam (530C2): 4% - 6% slopes, eroded
Ozaukee Silt Loam (530D2): 6% - 12% slopes, eroded
Ozaukee Silt Loam (530F): 20% - 30% slopes
Markham Silt Loam (531C2): 4% - 6% slopes, eroded
Markham Silt Loam (531D2): 6% - 12% slopes, eroded
Bowes Silt Loam (792A): 0% - 2% slopes
Orthents, Loamy (802B): undulating
Orthents, Clayey (805B): undulating
Sawmill Silty Clay Loam (1107A): 0% - 2% slopes, frequently flooded

The "K" erosion factor varies from 0.20 to 0.43. The "T" erosion factor varies from 3 to 5.

- G. Provide an aerial extent of wetland acreage at the site:

IDOT performed a wetland delineation that identified four sites that fall inside the right-of-way or construction easement labeled site 1A at 0.541 Ac; 7A at 0.386Ac; and 8A at 1.09 Ac. In addition, there are three Waters of the US within the project limits at Tributaries 1 and 2 of the DesPlaines River and Bull Creek. The following wetlands/WOUS will be impacted: Wetland 7A Trib 2 - 0.20 AC; 8A - 0.02 AC; (Trib 1 WOUS) - 0.03 AC; Bull Creek 0.08 AC; and 1A - 0.01 AC.

- H. Provide a description of potentially erosive areas associated with this project:

The potentially erosive areas within the limits of this project are: Basin A and B; Retention Sites 3 and 4; proposed roadway embankments and ditches; disturbed swales and storm sewer excavation areas.

- I. The following is a description of soil disturbing activities by stages, their locations, and their erosive factors (e.g. steepness of slopes, length of slopes, etc):

Advanced Contract: This project will involve various areas being under construction at different times. Basin B will be constructed on an existing steep slope with embankments being placed on slopes ranging from 33% to 10%.

The storm sewer and roadway will be constructed along IL RT 21. The final embankment slopes will be 2:1 maximum slopes.

Retention Site 3 will be constructed along the east side of IL RT 21 will 2:1 maximum sideslope. Tree removal will be performed along the east side of IL RT 21 and at Pond A. This contract will be constructed in one stage. Before any soil disturbing activities begin, the needed pre construction erosion control measures will be installed.

Roadway Contract: Prestage: Install erosion control measures.
Stage 1: Complete construction of the temporary pavement along the northbound lanes of Milwaukee Ave.

Begin construction of the temporary pavement along the westbound lanes of Buckley Rd.
Begin pavement removal and construction of the new pavement, combination concrete curb and gutter, storm sewer, ditches, swales, Basin A and drainage structures along the southbound lanes of Milwaukee Ave.
Begin pavement removal and construction of the new pavement, combination concrete curb and gutter, storm sewer and drainage structures the eastbound lanes of Buckley Road.

Stage 2: Begin pavement removal and construction of the new pavement, combination concrete curb and gutter, storm sewer ditches, swales, retention site 4, and drainage structures along the northbound lanes of Milwaukee Ave.

Begin pavement removal and construction of the new pavement, combination concrete curb and gutter, storm sewer and drainage structures along the westbound lanes of Buckley Road.

Stages 2A-2G: Complete construction of new pavement, combination concrete curb and gutter, islands, storm sewer and drainage structures at the intersection at Milwaukee Ave. and Buckley Rd.

All types of soils listed in F. will be disturbed.

- J. See the erosion control plans and/or drainage plans for this contract for information regarding drainage patterns, approximate slopes anticipated before and after major grading activities, locations where vehicles enter or exit the site and controls to prevent offsite sediment tracking (to be added after contractor identifies locations), areas of soil disturbance, the location of major structural and non-structural controls identified in the plan, the location of areas where stabilization practices are expected to occur, surface waters (including wetlands) and locations where storm water is discharged to surface water including wetlands.

- K. Identify who owns the drainage system (municipality or agency) this project will drain into:

The storm sewer, ditches, swales and culverts constructed as part of this project will be owned and maintained by IDOT. Detention and retention facilities constructed as part of this project will be owned and maintained by the Lake County Forest Preserve District.

- L. The following is a list of receiving water(s) and the ultimate receiving water(s) for this site. The location of the receiving waters can be found on the erosion and sediment control plans:

This project directly discharges to Wetlands 7A and 8A. Receiving are waters: Bull Creek and Tributaries #1 and #2 of the Des Plaines River.

Others outlets and related discharges are:

Sta.219+40 to the DesPlaines River Floodway

Sta. 280+00 to an existing storm sewer

Sta. 290+70 to an existing storm sewer

Sta. 458+40 to the proposed storm sewer along IL 137

A proposed swale at Janis Court flows into an existing swale that flow into Bull Creek

Sta 1+70 (Rolling Woods Drive) to an existing storm sewer that outlets to Trib #2

IDOT performed a wetland delineation that identified four sites that fall inside the right-of-way or construction easement labeled site 1A at 0.541 Ac; 7A at 0.386Ac; and 8A at 1.09 Ac. In addition, there are three Waters of the US within the project limits at Tributarys 1 and 2 of the DesPlaines River and Bull Creek.

The following wetlands/ WOUS will be impacted:

Wetland 7A / Trib 2 - Perm =0.20 AC, Temp = 0.00AC Total impact = 0.20AC

8A - Perm 0.02 AC, Temp = 0.00 AC, Total Impact =0.02 AC

(Trib 1 WOUS) - Perm = 0.02 AC, Temp Impact = 0.01, Total Impact = 0.03

Bull Creek - Perm = 0.00 AC, Temp Impact = 0.08AC, Total Impact =0.08 AC

1A - Perm = 0.01 AC, Temp = 0.00 AC, Total Impact = 0.01AC.

Ultimate receiving water: Des Plaines River

- M. Describe areas of the site that are to be protected or remain undisturbed. These areas may include steep slopes, highly erodible soils, streams, stream buffers, specimen trees, natural vegetation, nature preserves, etc.

Bull Creek and all existing streams, as identified in Part 1 H are to be protected in as much as possible during the construction of the project. Other areas to be protected or undisturbed include the St. Sava Serbian Orthodox Monastery property on the east side of Illinois Route 21 just north of Rolling Woods and the Adler property on the south end of the project, which are listed on the National Register of Historic Places, and all mature vegetation in and around the Lake County Forest Preserve.

In addition, the following commitments are to be incorporated as part of these project:

1. All wetlands along the project corridor and along Lake County Forest Preserve District property (LCFPD), fence and signs warning of sensitive areas will be erected to prevent unauthorized access to these areas.
2. All trees adjacent to the LCFPD property, including the row of 11 sugar maples in front of LCFPD headquarters will be protected. Retaining walls and tree wells will be placed so that tree roots are protected out of the drip line, or the trees will be pruned to compensate for root loss.
3. All trees will be replaced on a 1:1 basis with nursery stock where feasible and that forested areas will be replaced with seedling trees on a 3:1 basis where appropriate.
4. The construction of bottomless culvert or bridge abutments must be done so in a manner to avoid disturbances of streambed where Iowa Darter habitat is identified - Des Plaines river Tributary #1 south of Casey Road and Bull Creek. the commitments state that no earthwork or land clearing may be conducted in these locations during the spawning months of April and may and no instream work is allowed. Also, no instream work is allowed in Tributary #1 of the Des Plaines River (Bull Brook) and Tributary #2 of the Des Plaines River (bull Creek) during any calendar year from april 20 through June 15.

N. The following sensitive environmental resources are associated with this project, and may have the potential to be impacted by the proposed development:

- Floodplain
- Wetland Riparian
- Threatened and Endangered Species
- Historic Preservation
- 303(d) Listed receiving waters for suspended solids, turbidity, or siltation
- Receiving waters with Total Maximum Daily Load (TMDL) for sediment, total suspended solids, turbidity or siltation
- Applicable Federal, Tribal, State or Local Programs
- Other

1. 303(d) Listed receiving waters (fill out this section if checked above):

Des Plaines River

a. The name(s) of the listed water body, and identification of all pollutants causing impairment:

Des Plaines River is impaired for mercury and polychlorinated biphenols (PCB) where the site directly discharges to it, according to the 2010 303(d) list. PCBs and Mercury are pollutants that are not expected to be the construction site in any appreciable quantity.

b. Provide a description of how erosion and sediment control practices will prevent a discharge of sediment resulting from a storm event equal to or greater than a twenty-five (25) year, twenty-four (24) hour rainfall event:

Not applicable.

c. Provide a description of the location(s) of direct discharge from the project site to the 303(d) water body:

Direct discharges will be via Tributary #1, Tributary #2, an outfall at Station 194+00 and at Bull Creek.

d. Provide a description of the location(s) of any dewatering discharges to the MS4 and/or water body:

Dewatering discharges shall be described in the in-stream work plan to be developed by the contractor and submitted to the Department and the Army Corps for written approval prior to dewatering operations starting. See Section I.A.3.

2. TMDL (fill out this section if checked above)

a. The name(s) of the listed water body:

b. Provide a description of the erosion and sediment control strategy that will be incorporated into the site design that is consistent with the assumptions and requirements of the TMDL:

- c. If a specific numeric waste load allocation has been established that would apply to the project's discharges, provide a description of the necessary steps to meet that allocation:

O. The following pollutants of concern will be associated with this construction project:

- | | |
|---|--|
| <input checked="" type="checkbox"/> Soil Sediment | <input checked="" type="checkbox"/> Petroleum (gas, diesel, oil, kerosene, hydraulic oil / fluids) |
| <input checked="" type="checkbox"/> Concrete | <input checked="" type="checkbox"/> Antifreeze / Coolants |
| <input checked="" type="checkbox"/> Concrete Truck Waste | <input checked="" type="checkbox"/> Waste water from cleaning construction equipment |
| <input checked="" type="checkbox"/> Concrete Curing Compounds | <input type="checkbox"/> Other (specify) |
| <input checked="" type="checkbox"/> Solid Waste Debris | <input type="checkbox"/> Other (specify) |
| <input checked="" type="checkbox"/> Paints | <input type="checkbox"/> Other (specify) |
| <input checked="" type="checkbox"/> Solvents | <input type="checkbox"/> Other (specify) |
| <input checked="" type="checkbox"/> Fertilizers / Pesticides | <input type="checkbox"/> Other (specify) |

II. Controls:

This section of the plan addresses the controls that will be implemented for each of the major construction activities described in I.C. above and for all use areas, borrow sites, and waste sites. For each measure discussed, the Contractor will be responsible for its implementation as indicated. The Contractor shall provide to the Resident Engineer a plan for the implementation of the measures indicated. The Contractor, and subcontractors, will notify the Resident Engineer of any proposed changes, maintenance, or modifications to keep construction activities compliant with the Permit ILR10. Each such Contractor has signed the required certification on forms which are attached to, and are a part of, this plan:

A. Erosion and Sediment Controls

1. **Stabilized Practices:** Provided below is a description of interim and permanent stabilization practices, including site specific scheduling of the implementation of the practices. Site plans will ensure that existing vegetation is preserved where attainable and disturbed portions of the site will be stabilized. Stabilization practices may include but are not limited to: temporary seeding, permanent seeding, mulching, geotextiles, sodding, vegetative buffer strips, protection of trees, preservation of mature vegetation, and other appropriate measures. Except as provided below in II(A)(1)(a) and II(A)(3), stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than seven (7) days after the construction activity in that portion of the site has temporarily or permanently ceases on all disturbed portions of the site where construction will not occur for a period of fourteen (14) or more calendar days.

Where the initiation of stabilization measures by the seventh day after construction activity temporarily or permanently ceases is precluded by snow cover, stabilization measures shall be initiated as soon as practicable thereafter.

The following stabilization practices will be used for this project:

- | | |
|---|---|
| <input checked="" type="checkbox"/> Preservation of Mature Vegetation | <input checked="" type="checkbox"/> Erosion Control Blanket / Mulching |
| <input checked="" type="checkbox"/> Vegetated Buffer Strips | <input checked="" type="checkbox"/> Sodding |
| <input checked="" type="checkbox"/> Protection of Trees | <input checked="" type="checkbox"/> Geotextiles |
| <input checked="" type="checkbox"/> Temporary Erosion Control Seeding | <input checked="" type="checkbox"/> Other (specify) In Stream Work Plan |
| <input checked="" type="checkbox"/> Temporary Turf (Seeding, Class 7) | <input type="checkbox"/> Other (specify) |
| <input checked="" type="checkbox"/> Temporary Mulching | <input type="checkbox"/> Other (specify) |
| <input checked="" type="checkbox"/> Permanent Seeding | <input type="checkbox"/> Other (specify) |

Describe how the stabilization practices listed above will be utilized during construction:

Preservation of Mature Vegetation and Protection of Trees will stabilize will reduce the velocity of runoff and filter storm water runoff.

Temporary Fence or Perimeter Erosion Barrier, Special will be in place at the beginning of construction and remain for the duration of the project. This will protect the tree root zones. In addition, tree pruning and tree root pruning will be provided for any unavoidable impacts to tree that are to remain.

Temporary erosion control seeding and temporary mulch will be used throughout on any bare surfaces after 7 days on no activity.

Permanent seeding and erosion control blanket or sodding will be placed on all final earth surfacing as soon

as possible.

The Contractor before entering jurisdictional Waters for the performance of any construction work, or work preparatory thereto, shall secure permission from the Army Corps of Engineers (ACOE) for the occupancy and use of the jurisdictional Waters. The applicable ACOE Chicago District in-stream and side stream requirements are contained in the Army Corps permit authorization, which is a special provision of this contract. The Contractor's in-stream work plan shall meet IDOT and Regulatory agency approval. The in-stream plan must meet approval of hydraulic and structural review by the Department. The in-stream work also requires compliance with all regulatory permits. Structural /hydraulic approval by the Department does not constitute regulatory approval. The Contractor's plan shall be certified by an authorized representative of the Contractor. The contractor's approved in-stream work plan is part of the erosion and sediment control plans for this contract, and is subject to the National Pollutant Discharge Elimination System/ Erosion and Sediment Control Deficiency Deduction. The cost of preparing and implementing in-stream work plans, except where otherwise required in the SWPPP for in-stream work, BMP's needed to implement the contractor's in-stream work plan will not be measured or paid for separately, and are included in the cost of the associated contract work.

Describe how the stabilization practices listed above will be utilized after construction activities have been completed:

After the completion of construction activities, all disturbed areas will be permanently stabilized and seeded. Turf reinforcement mat will continue to provide stability at drainage outlets and overflows.

2. **Structural Practices:** Provided below is a description of structural practices that will be implemented, to the degree attainable, to divert flows from exposed soils, store flows or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Such practices may include but are not limited to: perimeter erosion barrier, earth dikes, drainage swales, sediment traps, ditch checks, subsurface drains, pipe slope drains, level spreaders, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions, and temporary or permanent sediment basins. The installation of these devices may be subject to Section 404 of the Clean Water Act.

The following structural practices will be used for this project:

- | | |
|---|--|
| <input checked="" type="checkbox"/> Perimeter Erosion Barrier | <input type="checkbox"/> Rock Outlet Protection |
| <input checked="" type="checkbox"/> Temporary Ditch Check | <input checked="" type="checkbox"/> Riprap |
| <input checked="" type="checkbox"/> Storm Drain Inlet Protection | <input type="checkbox"/> Gabions |
| <input type="checkbox"/> Sediment Trap | <input type="checkbox"/> Slope Mattress |
| <input type="checkbox"/> Temporary Pipe Slope Drain | <input checked="" type="checkbox"/> Retaining Walls |
| <input checked="" type="checkbox"/> Temporary Sediment Basin | <input type="checkbox"/> Slope Walls |
| <input type="checkbox"/> Temporary Stream Crossing | <input type="checkbox"/> Concrete Revetment Mats |
| <input checked="" type="checkbox"/> Stabilized Construction Exits | <input type="checkbox"/> Level Spreaders |
| <input checked="" type="checkbox"/> Turf Reinforcement Mats | <input type="checkbox"/> Other (specify) |
| <input type="checkbox"/> Permanent Check Dams | <input type="checkbox"/> Other (specify) |
| <input checked="" type="checkbox"/> Permanent Sediment Basin | <input type="checkbox"/> Other (specify) |
| <input type="checkbox"/> Aggregate Ditch | <input type="checkbox"/> Other (specify) |
| <input type="checkbox"/> Paved Ditch | <input checked="" type="checkbox"/> Other (specify) Erosion and sediment control plan for storm sewer construction |

Describe how the structural practices listed above will be utilized during construction:

Perimeter Erosion Barrier will be installed parallel to the non-intrusive fence adjacent to wetlands and other sensitive area as shown on the ESC plans.

Storm drain inlet filters will filter sediment before it enters inlets, catchbasins and the upstream ends of minor culverts.

Rock check dams will be installed in the ditches upstream of Bull Creek.

Stabilized construction entrances will minimize disturbances at the two basins and allow for the wash of vehicles.

Temporary Ditch Checks will be installed after the ditches and swales have been graded. Inlet protection for both existing and proposed culverts inlets will be installed at the beginning of construction and as the culverts are installed.

Riprap will stabilize the main culvert and storm sewer out falls.

Turf reinforcement mats will stabilize outfalls and overflows during construction. Basins A and B and retention sites 3 and 4 will serve as temporary sediment basins during construction. Retaining walls will be used on the project to reduce the impact to wetlands and WOUS at Tributary #2 and Bull Creek.

Erosion and Sediment control plan for storm sewer construction: The contractor shall provide to the RE a plan so a stabilized flow line will be provided during storm sewer construction. The use of a stabilized flow line between installed storm sewer and open disturbance will reduce the potential for offsite discharge of sediment bearing waters. The contractor shall have a stabilized flowline during storm sewer under construction when rain is forecast, so that flow will not erode. Lack of approved plan or failure to comply will result in an ESC Deficiency deduction. □

Describe how the structural practices listed above will be utilized after construction activities have been completed:

All outlets will be protected with turf reinforcement mats to ensure continued stabilization. Basin A and B and retention sites 3 and 4 will continue to trap sediment after construction. Drop in inlet filter will filter sediment that overflows the curbs or is tracked onto the pavement.

3. **Storm Water Management:** Provided below is a description of measures that will be installed during the construction process to control pollutants in storm water discharges that will occur after construction operations have been completed. The installation of these devices may be subject to Section 404 of the Clean Water Act.
 - a. Such practices may include but are not limited to: storm water detention structures (including wet ponds), storm water retention structures, flow attenuation by use of open vegetated swales and natural depressions, infiltration of runoff on site, and sequential systems (which combine several practices).

The practices selected for implementation were determined on the basis of the technical guidance in Chapter 41 (Construction Site Storm Water Pollution Control) of the IDOT Bureau of Design and Environment Manual. If practices other than those discussed in Chapter 41 are selected for implementation or if practices are applied to situations different from those covered in Chapter 41, the technical basis for such decisions will be explained below.

- b. Velocity dissipation devices will be placed at discharge locations and along the length of any outfall channel as necessary to provide a non-erosive velocity flow from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected (e.g. maintenance of hydrologic conditions such as the hydroperiod and hydrodynamics present prior to the initiation of construction activities).

Description of storm water management controls:

The Basins A and B and Retention Sites 3 and 4 will attenuate the peak storm runoff and provide retention of the 2 year storm. There are also four oversized sections of storm sewer that will be used for detention.

4. **Approved State or Local Laws:** The management practices, controls and provisions contained in this plan will be in accordance with IDOT specifications, which are at least as protective as the requirements contained in the Illinois Environmental Protection Agency's Illinois Urban Manual. Procedures and requirements specified in applicable sediment and erosion site plans or storm water management plans approved by local officials shall be described or incorporated by reference in the space provided below. Requirements specified in sediment and erosion site plans, site permits, storm water management site plans or site permits approved by local officials that are applicable to protecting surface water resources are, upon submittal of an NOI, to be authorized to discharge under the Permit ILR10 incorporated by reference and are enforceable under this permit even if they are not specifically included in the plan.

Description of procedures and requirements specified in applicable sediment and erosion site plans or storm water management plans approved by local officials:

None.

5. **Contractor Required Submittals:** Prior to conducting any professional services at the site covered by this plan, the Contractor and each subcontractor responsible for compliance with the permit shall submit to the Resident Engineer a Contractor Certification Statement, BDE 2342a.
 - a. The Contractor shall provide a construction schedule containing an adequate level of detail to show

major activities with implementation of pollution prevention BMPs, including the following items:

- Approximate duration of the project, including each stage of the project
 - Rainy season, dry season, and winter shutdown dates
 - Temporary stabilization measures to be employed by contract phases
 - Mobilization timeframe
 - Mass clearing and grubbing/roadside clearing dates
 - Deployment of Erosion Control Practices
 - Deployment of Sediment Control Practices (including stabilized construction entrances/exits)
 - Deployment of Construction Site Management Practices (including concrete washout facilities, chemical storage, refueling locations, etc.)
 - Paving, saw-cutting, and any other pavement related operations
 - Major planned stockpiling operations
 - Timeframe for other significant long-term operations or activities that may plan non-storm water discharges such as dewatering, grinding, etc.
 - Permanent stabilization activities for each area of the project
- b. The Contractor and each subcontractor shall provide, as an attachment to their signed Contractor Certification Statement, a discussion of how they will comply with the requirements of the permit in regard to the following items and provide a graphical representation showing location and type of BMPs to be used when applicable:
- Vehicle Entrances and Exits – Identify type and location of stabilized construction entrances and exits to be used and how they will be maintained.
 - Material Delivery, Storage and Use – Discuss where and how materials including chemicals, concrete curing compounds, petroleum products, etc. will be stored for this project.
 - Stockpile Management – Discuss what BMPs will be used to prevent pollution of storm water from stockpiles.
 - Waste Disposal – Discuss methods of waste disposal that will be used for this project.
 - Spill Prevention and Control – Discuss steps that will be taken in the event of a material spill (chemicals, concrete curing compounds, petroleum, etc.)
 - Concrete Residuals and Washout Wastes – Discuss the location and type of concrete washout facilities to be used on this project and how they will be signed and maintained.
 - Litter Management – Discuss how litter will be maintained for this project (education of employees, number of dumpsters, frequency of dumpster pick-up, etc.).
 - Vehicle and Equipment Fueling – Identify equipment fueling locations for this project and what BMPs will be used to ensure containment and spill prevention.
 - Vehicle and Equipment Cleaning and Maintenance – Identify where equipment cleaning and maintenance locations for this project and what BMPs will be used to ensure containment and spill prevention.
 - Additional measures indicated in the plan.

III. Maintenance:

When requested by the Contractor, the Resident Engineer will provide general maintenance guides to the Contractor for the practices associated with this project. The following additional procedures will be used to maintain, in good and effective operating conditions, the vegetation, erosion and sediment control measures and other protective measures identified in this plan. It will be the Contractor's responsibility to attain maintenance guidelines for any manufactured BMPs which are to be installed and maintained per manufacture's specifications.

All ESC measures will be maintained in accordance with the IDOT Erosion and Sediment Control Field Guide for Construction Inspection(<http://www.dot.il.gov/desenv/environmental/idot%20feilf%20guide.pdf>) and IDOT's Best Management Practices – Maintenance Guide (http://www.dot.il.gov/desenv/environmental/best_practices.html).

Perimeter Erosion Barrier, Special - Restore fences which are not upright, clean posted no entry signs as needed.
Clean silt filter as listed below.

Temporary Erosion Control Seeding - Reapply seed if stabilization hasn't been achieved. apply temporary mulch to hold seed in place if seed has been washed away or found to be concentrate in ditch bottoms. Mow if Necessary, to promote seed soil contact when excessive weed development occurs. Restore rills, greeter then 2 inches deep, as quickly as possible, on slopes steeper than 1V:4H to prevent sheet flow from becoming concentrated flow. Supplement BMPs if weather conditions are not conducive to germination.

Sodding - Limit foot traffic to low use for the first to week to three weeks. ensure irrigation does not result in runoff. install salt tolerant sod where needed. restore areas where rolling edges are present or sod is displaced. replace when >25% of any individual piece of sod is no longer viable.

Mulch - Repair straw if blown or washed away or if hydraulic mulch washes away. place tackifier or ECB if mulch does not control erosion.

Erosion Control Blanket - Repair damage due to water running beneath the blanket and restore ECBs when displacement occurs. Reseeding may be necessary. Replace all displaced ECBs and restaple.

Perimeter Erosion Barrier (PEB) - Repair tears, gaps, or undermining. Restore leaning PEB and Ensure Taut. Repair or Replace any missing or broken stakes immediately. Clean PEB if sediment reaches one-third height of barrier. remove PEB once final stabilization establishes since PEB is no longer necessary and should be removed. Repair PEB if undermining occurs anywhere along it's entire length.

Perimeter Vegetated Buffer (VB) - Remove sediments collected in the buffer zone. Replace existing plantings destroyed by the sediment intrusion. Install PEB and Temporary pipe slope drains to prevent the repletion of sediments collecting in the buffer, or entering the receiving water. Remove undesirable vegetation (noxious weeds, volunteer vegetation present in the VB with proper Techniques. Remove sediment from VB when sediment has covered one-third length of the buffer. Remove soil from VB and temporarily stabilize with seed, mulch or another temporary stabilization method. If clean sediment discharges from VB implement other BMPs to stabilize buffer until restored.

Temporary Ditch Checks (TDC) - Remove sediment from upstream side of ditch check when sediment has reached 50% of height of structure. repair or replace ditch checks whenever tears, splits unraveling or compressed excelsior is apparent. Replace torn fabric mat that may allow water to undermine the ditch check. Remove debris when observed on check. Re-establish the flows over the center of the ditch check. Water or sediment going around the ditch check indicates incorrect installation. Device needs lengthening or the selected device is inappropriate for the site conditions. remove ditch check once all upslope areas are stabilized, seed or otherwise TDC areas.

Aggregate Ditch Checks - Remove sediment from upstream side of ADC when sediment has reached 50% of height of ADC. Replace the CA and fabric when sediment has filled all voids in the stone, so that sediment is filtered and discharged. Repair or replace fabric whenever tears, splits or unraveling are apparent. A second failure will generate a designer review. Restore outside slopes to 1V:2H. Stone placed for restoration is the same as originally specified to allow proper interlock. Restore center of the ADC periodically to ensure it is lower than the sides. Retrench the fabric if undercutting occurs. Reduce the center flow line or lengthen ADC if water flows around device.

Storm Drain Inlet Protection - Remove sediment from inlet filter basket is 25% full or 50% of the fabric pores are covered with silt. Remove ponded water on road surfaces immediately. Clean filter if standing water is present longer than one hour after rain event. Clean sediment or replace silt fence and straw bale inlet protection when sediment accumulates to one-third the height of the fabric. Remove trash accumulated around or on top of practice. When filter is removed for cleaning, replace filter if any tear is present.

Sediment Removal Dewatering Operations - Inspection frequencies depend on dewatering method, quantity of discharge and the receiving water body's quality. Ensure proper operation and compliance with permits or water quality standards. Remove accumulated sediment from the flow area. Dispose of sediment in accordance with all applicable laws and regulations. Remove and replace dewatering bags when half full of sediment or when discharge rate is impractical. Immediately stop discharge if receiving area shows signs of cloudy water, erosion, or sediment accumulation.

Outlet Protection - Restore dislodged protection at outlet structures and correct erosion that may occur. Remove sediment buildup that deposits in the protection. Remedy deficient areas, prone to increased erosion, immediately to prevent greater deficiencies. Remove sediment when voids are full and replace protection. Protection is reusable if the accumulated sediment is removed. Temporary devices (temporary pipe slope drains) should be completely removed as soon as the surrounding drainage area has been stabilized or at the completion of construction.

Temporary sediment Basin - Remove accumulated silt when the basin becomes 50% filled. Maintain the outlet structure to prevent clogging. Woven monofilaments are preferred over fabrics, and produce better results. Skimmers remove the clearest runoff first. Correct erosion at outlet and provide stabilization if necessary. Repair erosion at outlet and provide stabilization if necessary. Repair areas that allow seepage from the basin. Implement other BMPs, such as an Advanced Treatment System (anionic polymers); if sediment discharges or other pollutants are identified at the discharge point to appropriately address pollutants. Replace/ augment armoring at the outfall as needed to reestablish outfall integrity. The presence of stagnant water can result in mosquito larvae, requiring treatment. Mosquito larvae will trigger pumping through an Advanced Treatment System (anionic polymers) or treatment with larvicide. Contact District Environmental staff for guidance. Regrade base if ponding observed.

Protecting Existing Vegetation and Natural Features - Repair and/ or replace perimeter controls and stabilization measures when stockpile material has potential to be discharged or leave the limits of protection. Remove all off-tracked material by sweeping or other methods. Update the SWPPP anytime a stockpile location has been removed, relocated, added, or required maintenance. Handle contaminated soil stockpiles according to article 669-11 Temporary Staging in

the Standard Specifications. During summer months, stockpiles should be watered to maintain the crop cover.

Stabilized Construction Entrances - Replenish stone or replace exit if vehicles continue to track sediment onto the roadway from the construction site. Sweep sediment on roadway from construction activities immediately. Ensure culverts are free from damage. Use street sweeping in conjunction with this BMP to remove sediment not removed by the stabilized construction exit.

All maintenance is the responsibility of the contractor.

All ESC measures should be checked weekly and after each rainfall, 0.5 inches or greater in a 24 hour period, or equivalent snowfall. Additionally, during winter months, all measures should be checked after each significant snowmelt.

IV Inspections:

Qualified personnel shall inspect disturbed areas of the construction site which have not yet been finally stabilized, structural control measures, and locations where vehicles and equipment enter and exit the site using IDOT Storm Water Pollution Prevention Plan Erosion Control Inspection Report (BC 2259). Such inspections shall be conducted at least once every seven (7) calendar days and within twenty-four (24) hours of the end of a storm that is 0.5 inch or greater or equivalent snowfall.

If any violation of the provisions of this plan is identified during the conduct of the construction work covered by this plan, the Resident Engineer shall notify the appropriate IEPA Field Operations Section office by email at: epa.swnoncomp@illinois.gov, telephone or fax within twenty-four (24) hours of the incident. The Resident Engineer shall then complete and submit an "Incidence of Non-Compliance" (ION) report for the identified violation within five (5) days of the incident. The Resident Engineer shall use forms provided by IEPA and shall include specific information on the cause of noncompliance, actions which were taken to prevent any further causes of noncompliance, and a statement detailing any environmental impact which may have resulted from the noncompliance. All reports of non-compliance shall be signed by a responsible authority in accordance with Part VI. G of the Permit ILR10.

The Incidence of Non-Compliance shall be mailed to the following address:

Illinois Environmental Protection Agency
Division of Water Pollution Control
Attn: Compliance Assurance Section
1021 North Grand East
Post Office Box 19276
Springfield, Illinois 62794-9276

V. Failure to Comply:

Failure to comply with any provisions of this Storm Water Pollution Prevention Plan will result in the implementation of a National Pollutant Discharge Elimination System/Erosion and Sediment Control Deficiency Deduction against the Contractor and/or penalties under the Permit ILR10 which could be passed on to the Contractor.



Contractor Certification Statement

Prior to conducting any professional services at the site covered by this contract, the Contractor and every subcontractor must complete and return to the Resident Engineer the following certification. A separate certification must be submitted by each firm. Attach to this certification all items required by Section II.5 of the Storm Water Pollution Prevention Plan (SWPPP) which will be handled by the Contractor/subcontractor completing this form.

Route	<u>FAP 330</u>	Marked Rte.	<u>IL 21 (Milwaukee Ave.)</u>
Section	<u>128R-3</u>	Project No.	<u>C-91-199-00</u>
County	<u>Lake</u>	Contract No.	<u>60P33</u>

This certification statement is a part of the SWPPP for the project described above, in accordance with the General NPDES Permit No. ILR10 issued by the Illinois Environmental Protection Agency.

I certify under penalty of law that I understand the terms of the Permit No. ILR 10 that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification.

In addition, I have read and understand all of the information and requirements stated in the SWPPP for the above mentioned project; I have received copies of all appropriate maintenance procedures; and, I have provided all documentation required to be in compliance with the Permit ILR10 and SWPPP and will provide timely updates to these documents as necessary.

- Contractor
- Sub-Contractor

_____	_____
Print Name	Signature
_____	_____
Title	Date
_____	_____
Name of Firm	Telephone
_____	_____
Street Address	City/State/ZIP

Items which this Contractor/subcontractor will be responsible for as required in Section II.5. of the SWPPP:

SWPPP Appendix

The detail for a Sediment Trap is included with this SWPPP. The contractor shall utilize this where possible.

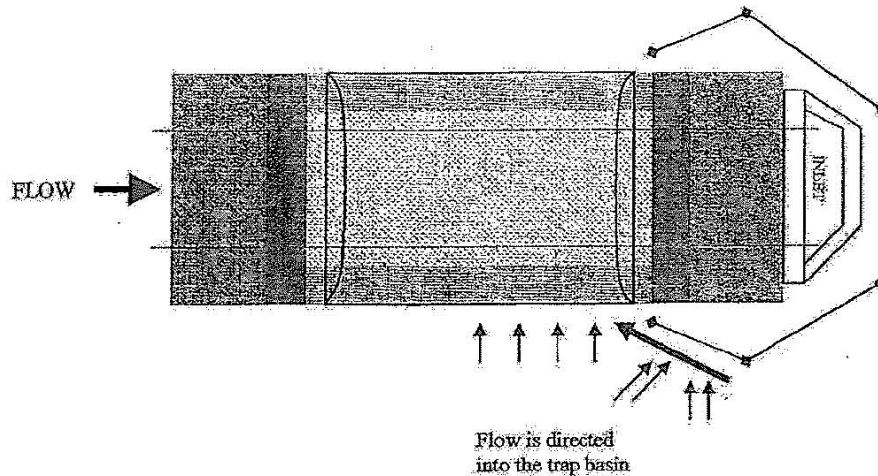


Illinois Department
of Transportation








Construction of a Sediment Trap
A Best Management Practice
Used for Jobsite Outfall Protection

This guide documents the implementation and use of the new preferred method of jobsite outfall protection. Silt fence is not an effective protection measure, because it is not permeable enough for a major outfall. A sediment trap is only effective with a suitable quantity of water in it. For this reason, it is encouraged that sediment traps be used to protect outfalls with a drainage area greater than 4,500 square feet (~.1 Acres) and less than 216,000 square feet (~5 Acres). Above 216,000 square feet, a sediment basin should be used to drain the area, or a diversion should be constructed to divert clean water from upstream around the construction site. On most IDOT projects, there isn't enough room on state right of way for a sediment basin, so a diversion is generally the solution for large drainage areas. In locations with drainage areas between .1 and 5 acres, sediment traps should be constructed on all current and new construction projects where practical, effective immediately. Remember, this is simply a new configuration of old pay items, so nothing should need to be added to the contract. For permanent sediment traps being constructed, contact Rick Wanner in the District One headquarters, Bureau of Maintenance office for evaluation and to ensure that maintenance is informed of the trap's existence.

Sediment Trap



LEGEND

-  Ditch Check (Stone, Triangular Silt Dike, Excelsior Roll)
-  Silt Fence
-  Water's path into the trap
-  Trap basin to allow sediment to settle
-  Erosion Control Blanket and seeding (on side slope)
-  Seeding only
-  Exterior flow protection (Protecting against shear stress)

PURPOSE:

A sediment trap is a containment area where sediment-laden runoff is temporarily detained under stagnant conditions, allowing sediment to settle out before the runoff is discharged. Sediment traps are formed by excavation of a small, shallow, long basin in a low drainage area, with a ditch check on the upstream and downstream side of the trap basin. The sediment trap is an effective ditch outfall or inlet/pipe protection system for drainage areas no greater than 216,000 sq. ft. (~5 acres) and no less than 4,500 square feet (~.1 acres).

IMPLEMENTATION:

- Construct prior to wet season and construction activities.
- Locate where sediment-laden runoff enters a storm drain or watercourse.
- Sediment traps are never to be located in live streams.
- Access to the sediment trap must be available for maintenance purposes.
- Consider whether the trap is needed as a long term or a temporary practice. Use permanent (stone) or temporary (excelsior rolls, triangular silt dikes) ditch checks accordingly.

DESIGN:

- Sediment traps generally release a slow flow that may be directed into a culvert, a sewer inlet or may simply be released to another sediment trap if there is a large drainage area.
- Sediment traps must have silt fence surrounding the acceptor to ensure water does not flow into the pipe unfiltered unless the acceptor is a ditch, in which case, no additional silt fence is needed. This silt fence should be positioned such that the water may still flow from the sides of the trap into the trap basin, and if possible, the silt fence should direct water into the trap basin, on the upstream side of the second ditch check.
- A ditch check must be located on both the upstream and downstream ends of the holding trap basin. These ditch checks may be triangular silt dikes or excelsior rolls for temporary sediment traps, or stone for permanent sediment traps. The ditch check on the downstream side of the trap must be contained within the silt fence if the acceptor is a culvert. Otherwise, for outlets, the ditch check must be located on the downstream side of the perimeter barrier.
- Temporary sediment traps should be built with the timeframe of the construction job in mind, or a single construction season. Temporary traps should be constructed using either triangular silt dikes or excelsior rolls.
- If the sediment trap is to remain functional as a permanent water quality feature, it should be constructed using stone ditch checks. Permanent sediment traps must be constructed in locations out of the sub-grade of the road, and out of the clear zone. Ditch checks in permanent sediment traps must have a 2:1 slope or flatter on both the upstream and the downstream side of the ditch check.
- A sediment trap can also be a semi-permanent feature. If the ditch checks are made of excelsior rolls, they will function for a while, but will eventually break down. This allows for the construction of a trap that will remain in place after construction, but will not permanently remain in place. This may allow for establishment of vegetation as the primary filtration method in place of the ditch check without blocking water unnaturally or permanently.
- The top of ditch checks are to be at least 1-1/2' higher than the bottom of the holding trap basin, and should be no less than 1' higher than the water's normal flowing height. Also, ditch checks should be spaced such that the bottom of the upstream ditch check is no higher than the top of the downstream ditch check. This will depend on the slope of the ditch.

- The holding trap basin should be excavated so that the cross-section looks like a 'U' (instead of a 'V'). This U-shaped ditch discourages erosion in the middle crook of the ditch and increases the capacity of the trap.
- The trap basin shall have a capacity of no less than 3600 cubic feet per acre of drainage area. This is enough space to hold 1 inch of water per acre. See Figure 1 for standard dimensions. If the drainage area is less than 4,500 sq. ft. (.1 acre), consider using an inlet filter or another BMP in place of the sediment trap.
- Under no circumstance shall a sediment trap or series of sediment traps cover a total drainage area of more than 5 acres. If this is the case, or an appropriate amount of land is available, a sediment basin should be constructed in place of a sediment trap.
- Stabilize any exposed soil in the sediment trap that could be subject to erosion from the flow of water, including the trap basin. A Turf Reinforcement Mat and permanent seeding works well for long term installations, but temporary seeding and/or an erosion control blanket will suffice as a temporary measure.
- An armored overflow must be constructed.
- Regardless of the type of acceptor (with the sole exception of a ditch), leave approximately 5 feet between the final ditch check and the acceptor. This allows the water flow to settle, which lowers the risk of disturbing sediment that may be in the acceptor. This gap should be protected against the effects of shear stress from the flowing water.
- On particularly steep slopes, it may be most effective to place multiple smaller sediment traps in rapid succession to cover the drainage area. In this case, it would be most cost-efficient to allow sediment traps to share ditch checks.
- Shear stress can cause sediment to be picked up by flowing water. Attention should be paid to the shear stress to ensure that the soil in the ditch before and after the sediment trap does not get eroded. These areas must be protected. See the Shear Stress page (6) for formulas and more information.

PLANS AND SPECIFICATIONS:

- The plans and specifications for sediment traps will show the following requirements:
 - Location of the sediment trap(s).
 - Size of the trap basin including width, length, and depth.
 - Minimum cross section of embankment.
 - Minimum profile through spillway.
 - Location of emergency spillway, if used.
 - Graduation and quality of stone.
 - The installation, inspection, and maintenance schedules with the responsible party identified.

INSPECTION/MAINTENANCE:

- Sediment traps are to be inspected by the resident engineer and contractor every 7 calendar days and after a storm event of ½" or greater (including snowfall) on a temporary basis. On a permanent basis, traps should be checked at least once every 2 years.
- The trap should be cleaned of silt when the trap becomes 50% filled. The material removed must be disposed of in accordance with good housekeeping practices, incorporated into the fill material, or disposed of in accordance with IEPA regulations.
- Inspect the outlet for erosion and any needed stabilization.
- Inspect the outlet for any sediment discharge and discolored water.
- If sediment is discharged or other pollutants are identified at the discharge point, other BMP's, such as sand filters, may be required to filter pollutants.
- Note that the first ditch check is primarily used to slow the water, while the second is primarily used to catch remaining sediment. Inspection of the first ditch check, therefore, is primarily a structural inspection, while the second is primarily a check for sediment clogging.

NOTES ON THE DIMENSIONS OF THE TRAP:

The volume of the trap may be calculated using the following formula (only applies on shallow slopes of 5% or less):

$$\text{Volume} = (\text{Depth of the trap}) * (\text{Length between ditch checks}) * (\text{Width of the ditch})$$

SEDIMENT TRAP DIMENSION MATRIX					
Depth	Length	Width	Capacity (cu. ft.)	Drainage Area Max. (sq. ft.)	Drainage Area Max. (acres)
1-1/2'	125'	10'	1,875	22,500	.52
1-1/2'	100'	10'	1,500	18,000	.417
1-1/2'	75'	10'	1,125	13,500	.3125
1-1/2'	50'	10'	750	9,000	.21
1-1/2'	25'	10'	375	4,500	.1
2'	100'	10'	2,000	24,000	.55
2'	80'	10'	1,600	19,000	.44
2'	60'	10'	1,200	14,500	.33
2'	40'	10'	800	9,600	.22
2'	30'	10'	600	7,250	.17
2'	25'	10'	500	6,000	.14

Figure 1

For reference, 1 Acre ~ 43200 sq. ft.

Shear Stress

STRAIGHT SECTIONS OF DITCHES

$$\tau_d = \gamma(dS)$$

where

τ_d = maximum shear stress, lb/ft² (Pa)
 γ = unit weight of water, 62.4 lb/ft³ (9810 N/m³)
 d = maximum depth of flow, ft (m)
 S = average bed slope or energy slope, ft/ft (m/m)

BENDS IN DITCHES

Flow around a channel bend imposes higher shear stresses on the channel boundaries. The maximum shear stress in a bend is a function of the radius of curvature and the bottom width of the channel and is given by:

$$\tau_b = K_b \tau_d$$

where

τ_b = maximum shear stress in a bend, lb/ft² (Pa)
 $K_b = 2.38 - 0.206 \left(\frac{R_c}{B} \right) + 0.0073 \left(\frac{R_c}{B} \right)^2$

where

K_b = bend coefficient - function of R_c/B
 R_c = radius to centerline of channel, ft (m)
 B = bottom width of channel, ft (m)

To determine which BMP to use to protect the ditch, calculate the Shear Stress and compare to the following values:

- < 3 psf (147 Pa) → Erosion Control Blanket and Seeding
- < 8 psf (392 Pa) → Turf Reinforcement Mat and Seeding
- > 8 psf (392 Pa) → Stone lining

RELEVANT PAY ITEMS:

- EARTH EXCAVATION
- PERIMETER EROSION BARRIER
- Stone size IDOT RR-4
- ROCKFILL IDOT CA-1
- TEMPORARY DITCH CHECKS
- TEMPORARY EROSION CONTROL SEEDING or SEEDING, CLASS 2A
- TEMPORARY EROSION CONTROL BLANKET