

April 15, 2022

Jeff Patton
Cookeville, TN EFO
1221 South Willow Avenue
Cookeville, TN 38506

TDEC
Attn: Storm Water Processing

Re: Application for Coverage General NPDES Permit
Phase One Site Development for Mitchell Street Industrial Park
Celina, Tennessee
Joint Industrial Development Board of Celina / Clay County, TN., Inc.

Dear Mr. Patton:

We understand that our project needs to be covered under the State's General NPDES Permit for Discharge of Storm Water associated with Construction Activities. In accordance with permit guidelines, we have attached copies of the following information:

1. Notice of Intent
2. Site Location Map (USGS Quad "Celina, TN")
3. Storm Water Pollution Prevention Plan (SWPPP)
4. Drawings
 - C-5 Erosion Control Plan Phase One
 - C-6 Erosion Control Plan Phase Two
 - C-7 Erosion Control Plan Phase Three
 - C-8 Details

I trust that the information presented is adequate for TDEC to issue coverage under the referenced permit. We have also attached a check in the amount of \$ 1,000.00 to cover the permit fee prescribed by the State.

Feel free to contact me at (931) 261-2448 if you have questions regarding our submittal. Otherwise, please copy me on the Notice of Coverage that you send out to the Joint Industrial Development Board of Celina / Clay County, TN. Thanks for your help in expediting review and approval.

Sincerely,



David D. Allmon, P.E.
Allmon Engineering

Cc: Wayne L. Nelson, Chairman

STORM WATER POLLUTION PREVENTION PLAN

Prepared For
Joint Industrial Development Board Of
Celina / Clay County, TN., Inc.
Wayne L. Nelson – Chairman

PHASE ONE SITE DEVELOPMENT FOR MITCHELL STREET INDUSTRIAL PARK

1200 Mitchell Street
Celina / Clay County, TN



Prepared By
Allmon Engineering
Cookeville, Tennessee 38501

April 2022

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General Information

This Storm Water Pollution Prevention Plan (SWPPP) is developed in accordance with the Tennessee General NPDES Permit (TNR100000) for Storm Water Discharges Associated with Construction Activity (TNCGP) and is prepared using sound engineering practices. As instructed by Part 3 of the TNCGP, this plan and all attachments are hereby submitted to the local Environmental Assistance Center (EAC), along with the complete, correctly signed Notice of Intent (NOI), and permit application fee. Construction will not be initiated prior to 30 days from the date of submittal of this document, or prior to receipt of a Notice of Coverage (NOC) from the Tennessee Department of Environment and Conservation (TDEC).

Owner/Developer: Joint Industrial Development Board of Celina / Clay County, TN., Inc.
 424 Brown Street, Celina, TN. 38551
 Contact Person: Wayne L. Nelson, Chairman
 Telephone: (931) 243-3338 Chamber of Commerce

<p>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 gather and evaluate the information submitted. Based upon 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.</p>		
<p>Representative of owner / developer and title</p> <p>Wayne L. Nelson, Chairman</p>	<p>Signature (must be signed by president, VP or equivalent)</p> <p><i>Wayne L. Nelson</i></p>	<p>Date</p> <p>4/19/22</p>

Primary Contractor:

<p>I certify under penalty of law that I have reviewed this document, any attachments, and the SWPPP referenced above. Based on my inquiry of the construction site owner / developer identified above, and/or my inquiry of the person directly responsible for assembling this NOI and SWPPP, I believe the information submitted is accurate. I am aware that the NOI, if approved, makes the above-described construction activity subject to NPDES permit number TNR 100000, and that certain of my activities on-site are thereby regulated. I am aware that there are significant penalties, including the possibility of fine and imprisonment for knowing violations, and for failure to comply with these permit requirements.</p>		
<p>Company name of primary contractor</p>	<p>Signature (must be signed by president, VP or equivalent)</p>	<p>Date</p>

The individual responsible for installation, maintenance, and inspection of erosion and sediment control measures will be _____ of _____

In compliance with Part 5.5.3.10 of the TNCGP, the Contractor's EPSC Inspector will be required to have completed the TN EPSC Level I Certification Class (tnepsc.org).

The following contact information is provided:

Telephone (Office) _____ (Mobile) _____

Email Address _____

Inspections shall be carried out by the above referenced person two (2) times per week a minimum of 72 hours apart. Based on the results of the inspection, any inadequate control measures or control measures in disrepair shall be replaced, modified, or repaired as necessary, before the next rain event if possible, but in no case more than 7 days after the need is identified.

Current versions of this SWPPP, the NOI, and the NOC will be kept on the site for the duration of the project. These items will be available for the use of all operators and site personnel involved with erosion and sediment controls, the Project Design Engineer and his consultants, and TDEC personnel visiting the site. A notice containing a copy of the NOC with the tracking number assigned by the EAC, the name and telephone number of a contact person for the development, and a brief description of the project, will be posted near the construction entrance to the site.

Any new contractor on the project that has any responsibility to install, inspect, or maintain erosion or sediment control measures will sign the contractor's certification on a copy of the NOI (Appendix A) and will submit it to the local EAC. Any correspondence with TDEC or any EAC will reference the tracking number assigned by TDEC to the project. The Designer will submit a Notice of Termination (NOT; Appendix B) after the complete installation and successful establishment of the final stabilization activities at the site.

It is the intention and goal of the TNCGP and this SWPPP that any discharge from the property described in this document have no objectionable color contrast to the water body that receives it. The construction activity will be carried out in such a manner as will prevent any discharge that would cause a condition in which visible solids, bottom deposits, or turbidity impairs the usefulness of the waters on the property or downstream of the property for fish and aquatic life, livestock watering and wildlife, recreation, irrigation, navigation, or industrial or domestic water supply.

Erosion and sediment control measures are designed for the 2 year – 24 hour storm event.

Contractor Information

When a General or Prime Contractor has been selected by the Owner, he will be required, by the contract documents, to review the SWPPP / Erosion Control Drawings and sign the NOI accepting responsibility for carrying out all construction work on the project in strict accordance with the governing General Permit for Storm Water Discharges Associated With Construction Activities. Once he reviews the SWPPP, if he feels that modifications are needed in order to meet the permit requirements more effectively, he is at liberty to make suggestions which can be implemented upon approval of the Project Design Engineer and TDEC. Once the General Contractor has been selected, more detailed information will become available regarding the specifics of sequencing of construction activities and overall construction scheduling of the various components of the work. Any modifications to the SWPPP will be made at the Contractor's cost.

Design Engineer Contact Information

Dave Allmon, P.E.
Allmon Engineering
363 Nash Avenue
Cookeville, TN 38501
Telephone (931) 261-2448
Fax (931) 528-8184
Email: dallmon8184@charter.net

Existing Site Conditions

The Mitchell Street Industrial Site (located at 1200 Mitchell Street) is near the heart of the Town of Celina, TN, on approximately 51 acres of rolling pastureland. It is bordered by Mitchell Street on the east and Breyer Street on the west. There is a small stream that transverses the property from the northeast corner to the south. There are also four wetland areas and a farm pond. The stream and wetland areas were delineated by GeoServices and have been reviewed by both TDEC and the USACOE. Topographical relief across the site varies from a high elevation of 555 near Mitchell Street to a low of 520 at the southern property line where the stream exits the site. Refer to the Erosion Control Plans (drawings C-5, C-6, and C-7 attached) for existing topography (contour lines). Vegetative cover across the site is a mixture of various types of pasture grasses and weeds. Along the stream and within wetland areas there are saplings, since these areas have not been mowed in recent times. Various types of trees, bushes, etc. exist along perimeter property lines.

Storm water runoff sheet flows across much of the property either to a roadside ditch along Breyer Street or to the Unnamed Stream which passes through the site. Ultimately, runoff enters the Cumberland River approximately ½ mile downstream of the site.

Of the approximate 22 acres of land which lie on the east side of the stream, only 18.8 acres are anticipated to be disturbed by currently proposed construction activities. No work is proposed on the remaining acreage west of the stream in this project. Wetland #1 and the unnamed stream will be bordered by a 30 foot buffer area where no construction activities are planned. Also, there will be no disturbance within the confines of the stream itself, and/or wetland #1. Refer to Erosion Control Plan. The perimeter of the buffer areas will be lined by equivalent measures (2 rows of type C silt fencing) as an additional safeguard against sediment reaching the stream and/or wetland.

The installation of erosion control measures (i.e. equivalent measures, silt fence, etc.) shall be accomplished first before any earthwork (topsoil removal, grading, etc.) begins. Refer to drawing C-5 Erosion Control Plan – Phase One for more information.

Project Description

The following improvements are proposed for Phase One Development of the Mitchell Street Industrial Park. Refer to the attached Erosion Control Plan for additional information.

- Clear and grub any grown up areas outside the perimeter of the 30 foot buffer around wetland #1, along the stream, and property boundary.
- Construct one large building pad (approximately 18 acres if base bid and add alternate bids are accepted) with a minimum slope to avoid ponding. Cut / fill slopes would be 3 horizontal to 1 vertical to allow mowing.
- Compaction of earthwork shall achieve 95% of the maximum dry density as determined by the Standard Proctor Method (ASTM D-698) to within 2% of optimum moisture content.
- Balance earthwork quantities (cut / fill) so that no borrow or offsite removal of usable material is necessary.
- Install gravel access drive from Mitchell Street down to the building pad. Base stone would be 8 inches minimum depth. Access drive to include two 12 foot wide lanes with 4 foot wide shoulders. Maximum slope of access drive to be 5%. Turning radius to be designed to accommodate 18 wheel vehicles.
- Stabilize the newly graded building pad with grass. Utilize riprap at select locations and sod the bottom of ditches. Erosion control blankets will be utilized on all 3:1 slopes.

Prior to any construction activities taking place, erosion control measures shown on the drawings or otherwise required to meet permit conditions will be installed. These measures include but are not limited to silt fencing along the perimeter of the site downslope of areas to be disturbed. Equivalent measures (a double row of type C silt fence) will also be installed along the perimeter of 30 foot buffer areas around the stream and wetland. Additional silt fencing will be installed at other areas as shown on drawing C-5. Also, sediment traps will be located at low points to intercept runoff during the initial phase of topsoil removal and grading operations. Subsequent phases of erosion control will use rock checks at areas where concentrated flow is anticipated. Additional sediment traps will be located as shown on drawing C-6 phase two erosion control or otherwise needed. The final phase of erosion control (drawing C-7) will include permanent stabilization of all disturbed areas by seeding, sod, or riprap.

Since neither the existing wetland areas or the unnamed stream will be involved in proposed construction activities, an Aquatic Resource Alteration Permitting (ARAP) should not be required for the project.

Grading operations may require the undercutting of any soft soils and refill with suitable engineered fill. Any unacceptable soils that are encountered on site shall be removed and properly disposed of by the Contractor.

Spills and Non-Storm Water Contingencies

All fueling of equipment and vehicles on site will be conducted near the construction entrance to the site. Any spillage will be removed immediately. Contaminated soils will be placed on heavy plastic and covered or placed into approved containers to prevent contact with storm water. Fuel tanks, oils or other vehicle fluids will not be located on site. Any spill in excess of two gallons will be reported to the designated representative of the primary contractor.

If a release containing a hazardous substance in an amount equal to or in excess of a reporting quantity established under either 40 CFR 117 or 40 CFR 302 occurs during a 24-hour period, the contractor will immediately notify the permittee who shall then do the following: notify the National Response Center (NRC) (800-424-8802) and the Tennessee Emergency Management Agency (TEMA) (emergencies: 800-262-3300; non-emergencies: 800-262-3400); as well as the local Environmental Assistance Center.

There will be no cast-in-place concrete work associated with the project. The contractor is responsible to provide litter control for trash generated by his crew.

Discharges Associated With Industrial Activity

There are no known discharges associated with industrial activity on the site.

Construction & Waste Materials To Be Stored On Site

Site Improvements include, but are not limited to the following materials:

- Precast concrete reinforced pipe (storm water)
- Precast concrete structures (endwalls)
- Limestone riprap and base stone
- Fescue seed and sod

Throughout the construction period, these materials will be temporarily stored on site prior to their being incorporated into the work. These items are non-hazardous and will not require any special measures to be taken.

Storm Water Sources From Areas Other Than Construction

Storm water runoff from offsite property to the northeast, flows through the property via the small stream identified on the Erosion Control Plan. All construction will be separated from the stream by a double row of type C silt fence (equivalent measures) and the required 30 foot vegetative buffer.

Legally Protected State or Federal Listed Threatened or Endangered Species

To our knowledge there are no threatened or endangered species of plants or animals that will be adversely affected by our project.

On Site Waste Disposal or Sanitary Sewer (septic) System

There are no onsite waste disposal areas or sanitary sewer (septic) systems.

Sequencing of Construction Activities

Construction activities shall include installation of erosion control measures, clearing & grubbing, removal and stockpiling of topsoil, earthwork (cut / fill) operations, installation of storm drainage piping & structures, installation of base stone for access drive, and final stabilization of all earthen areas.

Since the total area to be disturbed is less than 50 acres, the Contractor shall determine the sequencing of construction activities and submit a plan to the Design Engineer for review prior to construction beginning. The following guideline should be used by the Contractor in preparing his specific sequencing plan.

- Limits of construction to be marked in the field
- Erosion control measures to be installed per drawings and as otherwise required in order to comply with applicable permits before any ground disturbing activity begins. All erosion prevention and sediment control best management practices will be installed as recommended in the Tennessee Erosion and Sediment Control Handbook.
- Litter and construction debris exposed to storm water will be picked up prior to anticipated storm events forecasted by local weather reports or before being carried off of the site by wind. At the end of each week, Contractor shall examine the site, pick up and dispose of any litter which might be transported off site during the weekend. This action, along with screening outfalls and daily pick-up will help prevent the above named items from becoming a pollutant source for storm water discharges. After use, silt fences will be removed or otherwise prevented from becoming a pollutant source for storm water discharges. Temporary measures may be removed at the beginning of the work day, but will be replaced at the end of the work day.
- Initial land disturbances will include the construction of silt fence, equivalent measures, rock checks, sediment traps and other BMP's shown on the Erosion Control Drawings or required to meet permit conditions. Any modifications to this SWPPP shall be prior approved by the Design Engineer and in strict accordance with the TESC Handbook. Disturbed areas are to be seeded, or otherwise stabilized as soon as possible. Sediment to be removed from rock checks, sediment traps, silt fences and other sediment controls before the design capacity of the structure has been reduced by 50%.
- Clearing & grubbing of trees within the limits of construction. Tree stumps will be properly disposed of offsite. Topsoil removal and stockpile.
- Earthwork activities (i.e. cut / fill) required to construct building pad and access drive. Cut / fill slopes to be stabilized as soon as final grades are achieved.
- Construction of storm drainage, access drive and vehicle turnaround area. Inlet protections shall be installed around all storm drainage inlets per erosion control drawings and BMP's.
- Final shaping of subgrade in the vicinity of the access drive. Place topsoil on all remaining disturbed areas.
- Seeding & mulching, or other methods of stabilization included in the SWPPP.

General Timing of Construction Activities

- Refer to the Three (3) Phase Erosion Control Plan drawings C-5, C-6 and C-7 for additional information.
- First, erosion control (silt fencing, equivalent measures, sediment traps, diversion ditches / berms, etc.) shall be installed in accordance with recommendations given in the Tennessee Erosion and Sediment Control Handbook.
- Land disturbances will begin with the installation of the "construction exit" (gravel pad) to minimize the tracking of mud onto adjacent streets. Rock size shall be 2 to 3 inches. Total thickness of pad shall be 6 inches minimum.
- Next clearing, grubbing and removal of existing vegetation (grass, shrubs and trees) will be performed not more than 10 days prior to start of site grading operations.
- Then topsoil removal and stockpiling on site.
- After removal of topsoil in fill areas, subgrade will be proofrolled. If unsuitable soils are encountered, they will be removed and replaced as directed by the Geotechnical Engineer.
- After excavation to subgrade in cut areas, subgrade will be proofrolled. If unsuitable soils are encountered, they will be removed and replaced as directed by the Geotechnical Engineer.
- After undercut areas are refilled with engineered fill and properly compacted, grading work shall continue. The building pad and access drive will be constructed using engineered fill.
- Next, storm drainage structures (endwalls) and piping will be installed. As soon as practical, inlet protection will be placed in order to limit silt from stopping up the pipes. Temporary seeding of affected areas will be performed following site grading.
- Fine grading will be performed for the vehicle turnaround area and access drive, base stone will be installed.
- Topsoil will be spread across all remaining disturbed areas. Seeding, sod and other techniques will be used to stabilize the site. Erosion control blankets will be utilized on all 3:1 slopes.
- Finally, erosion control measures will be removed from the site after all earthen areas are stabilized by seeding, etc. Sediment shall be removed from sediment traps, silt fences, and other sediment controls as necessary and must be removed when design capacity has been reduced by 50%.

Erosion Control Measures

Refer to Three (3) Phase Erosion Control Plan drawings C-5, C-6 and C-7 for additional information. Erosion control measures to be installed shall consist of silt fencing along the perimeter of the project down slope of all areas to be disturbed by construction operations such as clearing & grubbing, and grading. Equivalent measures shall be installed between construction areas and the adjacent stream and wetland #1 buffer zones. In addition, sediment traps will be constructed at locations shown. Other sediment traps will be utilized at strategic points as necessary. These measures should provide a very effective barrier so that vegetation outside the construction area is not disturbed. Rock checks and other best management practices shall be employed by the Contractor as necessary in order to meet the requirements of the General Permit. Any such modifications to our current erosion control drawings and/or SWPPP shall be prior approved by the Design Engineer and TDEC subsequent to their implementation. All erosion control at the perimeter of the project shall be installed prior to any, clearing & grubbing, grading, etc. being performed by the Contractor. Silt fencing shall be monitored throughout the construction period for effectiveness in containing sediment from the site. Additional BMP's shall be installed by the Contractor as necessary. Erosion control measures to be inspected following each rainfall event to ensure that they are performing satisfactorily.

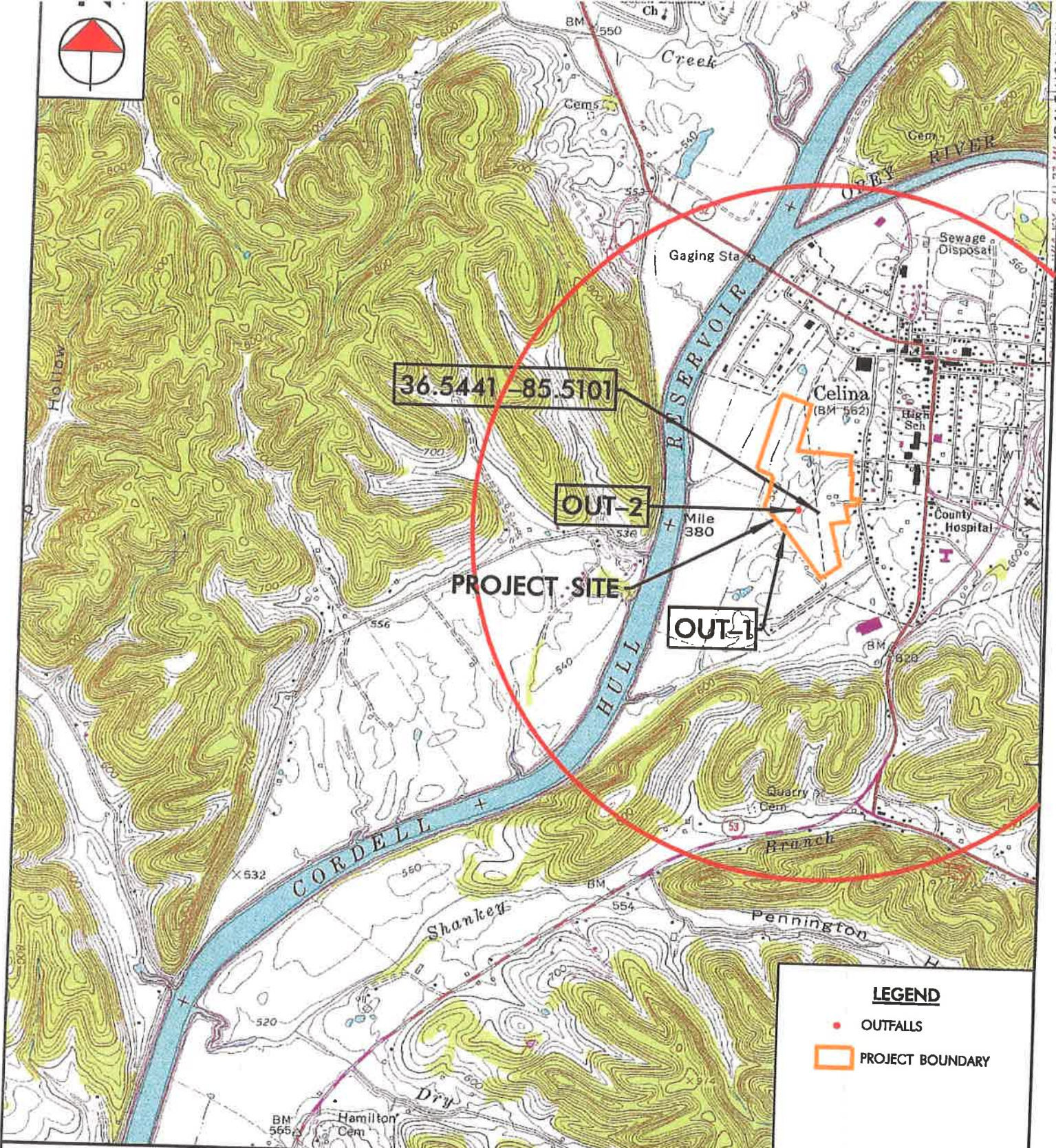
- Erosion Control measures associated with this project will remain in place until the project is completed and earthen areas stabilized.
- Seeding, sod, silt fence, rock checks, inlet protection, rip rap, sediment traps, and other BMP's will be utilized as shown on the drawings or otherwise deemed necessary by the Design Engineer. The Contractor will be responsible for installing and maintaining all erosion control measures throughout the life of the Project.
- Construction phase erosion control measures have been designed to minimize the dislodging and suspension of soil in water. Sediment controls have been designed to retain mobilized sediment on site.
- Erosion control measures shown on the drawings or otherwise indicated, shall be installed and maintained in accordance with the manufacturer's specifications (where applicable). All control measures must be able to slow runoff so that gully formations do not occur. In areas where steep slopes occur, additional measures may be required.
- If inspection indicates that erosion control measures have been installed incorrectly or have failed to accomplish their intended purpose, the Contractor will be required to modify measures as directed by TDEC and/or the Design Engineer in order to comply with applicable permits. This work shall be performed at no additional cost to the Owner.
- If sediment escapes the construction site, off-site accumulations of sediment that have not reached a stream must be removed at a frequency sufficient to minimize offsite impacts (e.g. fugitive sediment that has escaped the construction site and has collected in a street must be removed so that it is not subsequently washed into storm sewers and streams by the next rain and/or so that it does not pose a safety hazard to users of public streets). Sediment impacts on nearby streams resulting from improper installation or inadequate erosion & sediment controls shall be mitigated by the Contractor at his expense following the issuance of any additional permitting that may be required. Contractor shall not have the right to access private property to remove sediment without first obtaining written consent from the property owner.

Stabilization Measures

- Pre-construction vegetative ground cover shall not be destroyed, removed or disturbed more than 10 days prior to grading or earth moving unless the area is seeded and /or mulched or other temporary cover is installed.
- Clearing and grubbing must be held to the minimum necessary for grading and equipment operation. Refer to Erosion Control Plan.
- Contractor shall be responsible for sequencing construction in order to minimize the exposure time of graded or denuded areas.
- Disturbed areas where construction is completed must be stabilized within 15 days after completion.
- Erosion prevention and sediment control measures must be in place and functional before earth moving operations begin and must be constructed and maintained throughout the construction period. Temporary measures may be removed at the beginning of the workday but must be replaced at the end of the workday.
- The following records shall be maintained on site: the dates when major grading activities occur; the dates when construction activities temporarily or permanently cease on a portion of the site; the dates when stabilization measures are initiated; inspection records and rainfall records. Contractor shall maintain a rain gauge and daily rainfall records at the site.
- Stabilization measures shall be performed in accordance with Part 5.5.3.4
- Interim and permanent stabilization will include temporary seeding, permanent seeding, mulching, sod stabilization, geotextiles, erosion control blankets, vegetative buffer strips, protection of trees, preservation of mature vegetation and other BMP's as appropriate.
- Stabilization measures shall be initiated as soon as possible in portions of the site where construction activities have temporarily or permanently ceased.
- Temporary or permanent soil stabilization at the construction site must be completed not later than 15 days after the construction activity in that portion of the site has temporarily or permanently ceased. Temporary stabilization measures are not required when the ground is covered by snow or frozen, or where construction activity on a portion of the site is temporarily ceased and earth disturbing activities will be resumed within 15 days.
- All slopes greater than or equal to 35% will be stabilized either temporarily or permanently in 7 days.
- Permanent stabilization will be applied to all areas of the site, not covered by base stone, which have been disturbed by construction activities. Permanent stabilization with perennial vegetation or other permanently stable, non-eroding surface shall replace any temporary measures as soon as practicable. Permanent stabilization measures include seeding, sod, rip rap, etc. as shown on the project drawings. If conditions exist which make seeding of certain areas impractical, then other BMP's may be substituted.
- No stabilization, erosion control or sediment treatment measures are to be installed within the buffer areas of a stream or wetland without being covered by an Aquatic Resource Alteration Permit (ARAP).

Outfall Points Intended For Coverage

During construction, storm water runoff from the disturbed portion of the site will be directed to sediment traps or filtered through equivalent measures and silt fences . Rock checks will slow concentrated flows from outfall points #1 and #2 as well. Flows will then pass through the buffer zone of the unnamed stream which flows through the site. Outfall points #1 and #2 are shown on the drawings.



36.5441 -85.5101

OUT-2

PROJECT SITE

OUT-1

LEGEND

- OUTFALLS
- PROJECT BOUNDARY



Allmon Engineering

MITCHELL STREET INDUSTRIAL PARK
CELINA, TN

SITE LOCATION MAP

DRAWN BY:	TPN	CHECKED BY:	DDA
DATE:	01/10/2022	SCALE:	1" = 2,000'

USGS QUAD MAP:	FIGURE NO.:
CELINA, TENN. - KY.	LM-1



Tennessee Property Viewer



Aerial Photography Street Map Show FEMA DFIRM Flood Map Show Property Lines

+ -

TDOT | TN Comptroller - DPA | Esri, HERE, iPC

Zoom in Pan

Help

Measure

Search

Search Results

Property Detail

Hide Parcel Highlight(s)

Clear Selection Completely

County: Clay

Owner: JOINT INDUSTRIAL DEVELOPMENT

Owner 2:

Address: MITCHELL ST 1200

Parcel Number: 056 003.00

Deeded Acreage: 0

Calculated Acreage: 0

Subdivision:

Subdivision Lot:

Date of Imagery: 2018

LM-2



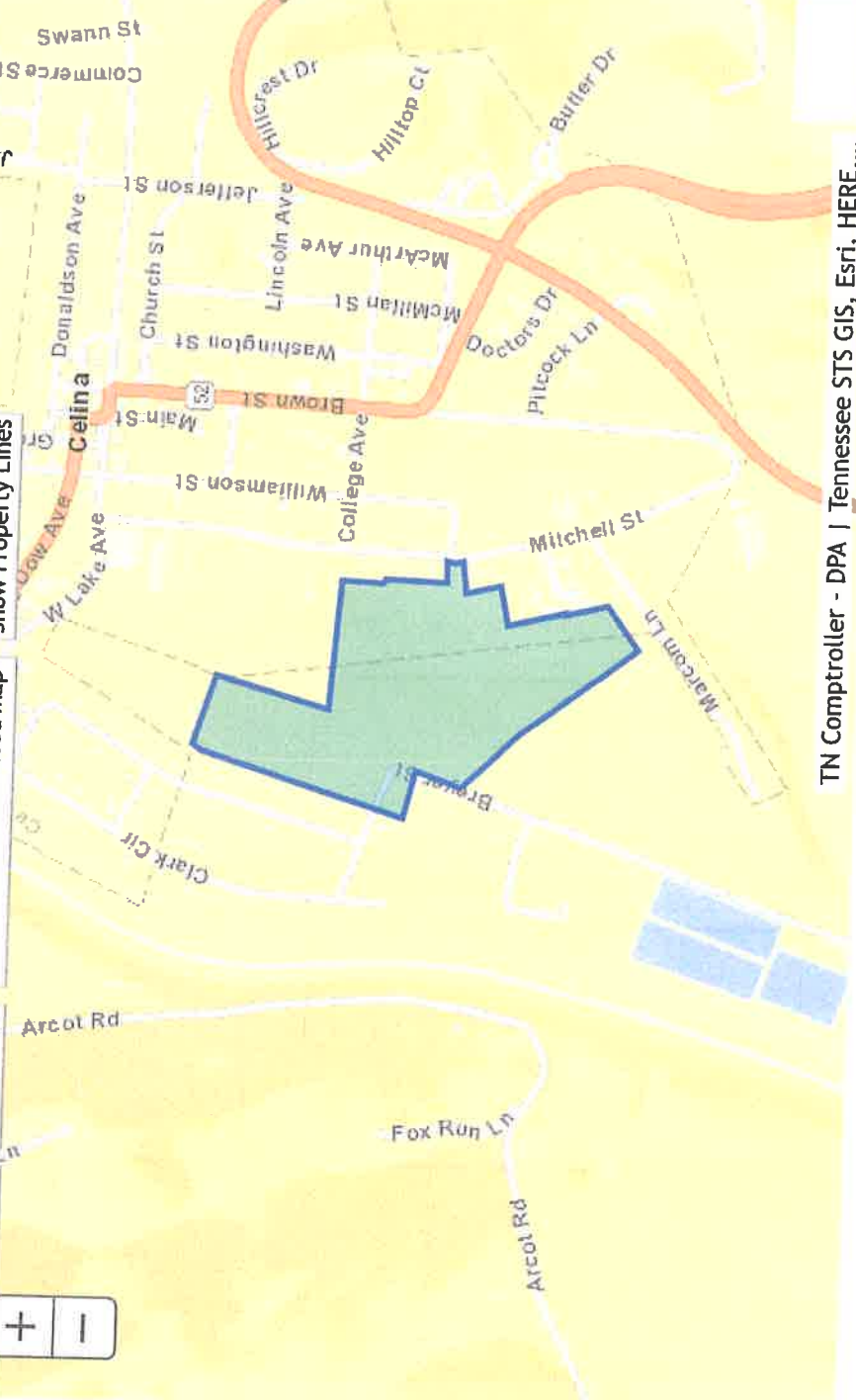
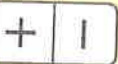
Tennessee Property Viewer

Aerial Photography

Street Map

Show FEMA DFIRM Flood Map

Show Property Lines



TN Comptroller - DPA | Tennessee STS GIS, Esri, HERE,...



Zoom in
Help
Pan

Measure

Search

Search Results

Property Detail

Hide Parcel Highlight(s)
Clear Selection Completely

County: Clay
 Owner: JOINT INDUSTRIAL DEVELOPMENT
 Owner 2:
 Address: MITCHELL ST 1200
 Parcel Number: 056 003.00
 Deeded Acreage: 0
 Calculated Acreage: 0
 Subdivision:
 Subdivision Lot:
 Date of Imagery: 2018

LM-3

Appendix A

- Notice of Intent-Storm Water Discharges-Construction (4 pages)



TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER RESOURCES

William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor
Nashville, TN 37243

Toll Free Number: 1-888-891-8332 (TDEC)

**NOTICE OF INTENT (NOI) FOR GENERAL NPDES PERMIT FOR
STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES (TNR100000)**

Site or Project Name: Mitchell Street Industrial Park		NPDES Tracking Number: TNR
Street Address including city or zip code or Location: 1200 Mitchell Street, Celina, TN 38551		Construction Start Date: May 9, 2022
Site Description: Construction of Building Pad & Access Drive		Estimated End Date: December 15, 2022
County(ies): Clay		Latitude (dd.dddd): 36.5441
MS4 Jurisdiction (if applicable): Not Applicable		Longitude (-dd.dddd): -85.5101
		Acres Disturbed: 18.8
		Total Acres: 51
Are there any streams <input checked="" type="checkbox"/> and/or wetlands <input checked="" type="checkbox"/> on or adjacent to the construction site? If wetlands are located on-site and may be impacted, attach wetlands delineation report. If an Aquatic Resource Alteration Permit has been obtained for this site, what is the permit number? ARAP Number:		
Receiving waters: Unnamed tributary to the Cumberland River		
Include the SWPPP with the NOI <input checked="" type="checkbox"/> SWPPP Included		Include a site location map <input checked="" type="checkbox"/> Map Included

Name of Site Owner or Developer (Site-Wide Permittee): (correct legal name of person, company, or entity that has operational or design control over construction plans and specifications)
Joint Industrial Development Board of Celina / Clay County, TN. Inc.

For corporate entities only, provide the Tennessee Secretary of State (SOS) Control Number:

Site Owner or Developer Contact Name: (individual responsible for site) Wayne L. Nelson	Title or Position: (the party who signs the certification below): Chairman		
Mailing Address: 424 Brown Street	City: Celina	State: TN	Zip: 38551
Phone: (931) 243-3338	E-mail: claychamber2017@gmail.com		

Optional Contact Name: Dave Allmon	Title or Position: Design Engineer		
Mailing Address: 363 Nash Avenue	City: Cookeville	State: TN	Zip: 38501
Phone: (931) 261-2448 mobile	E-mail: dallmon8184@charter.net		

Owner or Developer Certification: (must be signed by president, vice-president or equivalent, or ranking elected official) (Primary Permittee)

Joint Industrial Development Board of Celina / Clay County, TN. Inc.

I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information 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. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Owner or Developer Name: (print or type): Wayne L. Nelson	Signature: <i>Wayne L. Nelson</i>	Date: 4/19/22
--	--------------------------------------	------------------

Contractor(s) Certification: (must be signed by president, vice-president or equivalent, or ranking elected official) (Secondary Permittee)

I certify under penalty of law that I have reviewed this document, any attachments, and the SWPPP referenced above. Based on my inquiry of the construction site owner/developer identified above and/or my inquiry of the person directly responsible for assembling this NOI and SWPPP, I believe the information submitted is accurate. I am aware that this NOI, if approved, makes the above-described construction activity subject to NPDES permit number TNR100000, and that certain of my activities on-site are thereby regulated. I am aware that there are significant penalties, including the possibility of fine and imprisonment for knowing violations, and for failure to comply with these permit requirements. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Primary contractor name, address, and SOS control number (if applicable): (print or type)	Signature:	Date:
Primary contractor name, address, and SOS control number (if applicable): (print or type)	Signature:	Date:
Primary contractor name, address, and SOS control number (if applicable): (print or type)	Signature:	Date:

**NOTICE OF INTENT (NOI) FOR GENERAL NPDES PERMIT FOR
STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES (TNR100000)**

Purpose of this form - A completed notice of intent (NOI) must be submitted to obtain coverage under the Tennessee General NPDES Permit for Discharges of Stormwater Associated with Construction Activity (permit). **Requesting coverage under this permit means that an applicant has obtained and examined a copy of this permit, and thereby acknowledges applicant's claim of ability to be in compliance with permit terms and conditions.** This permit is required for stormwater discharge(s) from construction activities including clearing, grading, filling, and excavating (including borrow pits) of one or more acres of land. This form should be submitted at least 30 days prior to the commencement of land disturbing activities, or no later than 48 hours prior to when a new operator assumes operational control over site specifications or commences work at the site.

The appropriate permit application fee must accompany the NOI and is based on total acreage to be disturbed by an entire project, including any associated construction support activities (e.g., equipment staging yards, material storage areas, excavated material disposal areas, borrow or waste sites):

(i) Projects equal to or greater than 150 acres	\$10,000
(ii) Projects equal to or greater than 50 acres and less than 150 acres	\$6,000
(iii) Projects equal to or greater than 20 acres and less than 50 acres	\$3,000
(iv) Projects equal to or greater than 5 acres and less than 20 acres	\$1,000
(v) Projects equal to or greater than 1 acre and less than 5 acres	\$250
(vi) Projects seeking subsequent coverage under an actively covered larger common plan of development or sale	\$100

There is no fee for sites less than 1 acre. A separate annual maintenance fee is also required for construction activities that exceed 1 year under general permit coverage. Tennessee Rules, Chapter 0400-40-11-.02(b)(12)).

Who must submit the NOI form? Per Section 2 of the permit, all site operators must submit an NOI form. "Operator" for the purpose of this permit and in the context of stormwater associated with construction activity means any person associated with a construction project who meets either or both of the following two criteria: (1) The person has operational or design control over construction plans and specifications, including the ability to make modifications to those plans and specifications. This person is typically the owner or developer of the project or a portion of the project (e.g. subsequent builder), or the person that is the current landowner of the construction site. This person is considered the primary permittee; or (2) The person has day-to-day operational control of those activities at a project which are necessary to ensure compliance with a SWPPP for the site or other permit conditions. This person is typically a contractor or a commercial builder who is hired by the primary permittee and is considered a secondary permittee.

Owners, developers, and all contractors that meet the definition of the operator in subsection 2.2 of the permit shall apply for permit coverage on the same NOI, insofar as possible. After permit coverage has been granted to the primary permittee, any separate or subsequent NOI submittals must include the site's previously assigned permit tracking number and the project name. The site-wide site-specific SWPPP shall be prepared in accordance with the requirements of part 5 of the permit and must be submitted with the NOI unless the NOI being submitted is to only add a contractor (secondary permittee) to an existing coverage. Artificial entities (e.g., corporations or partnerships excluding entities not required to register) must submit the TN Secretary of State, Division of Business Services, control number. The Division reserves the right to deny coverage to artificial entities that are not properly registered and in good standing with the TN Secretary of State.

Notice of Coverage - The division will review the NOI for completeness and accuracy and prepare a notice of coverage (NOC). Stormwater discharge from the construction site is authorized as of the effective date of the NOC.

Complete the form - Type or print clearly, using ink and not markers or pencil. Answer each item or enter "NA," for not applicable, if a particular item does not fit the circumstances or characteristics of your construction site or activity. If you need additional space, attach a separate piece of paper to the NOI form. **The NOI will be considered incomplete without a permit fee, a map, and the SWPPP.**

Describe and locate the project - Use the legal or official name of the construction site. If a construction site lacks street name or route number, give the most accurate geographic information available to describe the location (reference to adjacent highways, roads, and structures, e.g., intersection of state highways 70 and 100). Latitude and longitude (expressed in decimal degrees) of the center of the site can be located on USGS quadrangle maps. The maps can be obtained at the USGS World Wide Web site: <http://www.usgs.gov/>; latitude and longitude information can be found at numerous other web sites. Attach a copy of a portion of a 7.5-minute topographic map, a city map, or a county map showing location of site, with boundaries at least one mile outside the site boundaries. Provide estimated starting date of clearing activities and completion date of the project, and an estimate of the number of acres of the site on which soil will be disturbed, including borrow areas, fill areas, stockpiles and the total acres. For linear projects, give location at each end of the construction area.

Give name of the receiving waters - Trace the route of stormwater runoff from the construction site and determine the name of the river(s), stream(s), creek(s), wetland(s), lake(s) or any other water course(s) into which the stormwater runoff drains. Note that the receiving water course may or may not be located on the construction site. If the first water body receiving construction site runoff is unnamed ("unnamed tributary"), determine the name of the water body that the unnamed tributary enters.

An ARAP may be required - If your work will disturb or cause alterations of a stream or wetland, you must obtain an appropriate Aquatic Resource Alteration Permit (ARAP). If you have a question about the ARAP program, contact your local Environmental Field Office (EFO).

Submitting the form and obtaining more information - Note that this form must be signed by the company President, Vice-President, or a ranking elected official in the case of a municipality, for details see subpart 2.5. For more information, contact your local EFO at the toll-free number 1-888-891-8332 (TDEC). Submit the completed NOI form (keep a copy for your records) to the appropriate EFO for the county(ies) where the construction activity is located, addressed to **Attention: Stormwater NOI Processing** or use MyTDEC Forms for electronic submittal.

EFO	Street Address	Zip Code	EFO	Street Address	Zip Code
Memphis	8383 Wolf Lake Drive, Bartlett	38133-4119	Cookeville	1221 South Willow Ave.	38506
Jackson	1625 Hollywood Drive	38305-4316	Chattanooga	1301 Riverfront Parkway, Suite 206	37402-2013
Nashville	711 R S Gass Boulevard	37243	Knoxville	3711 Middlebrook Pike	37921
Columbia	1421 Hampshire Pike	38401	Johnson City	2305 Silverdale Road	37601

Appendix B

- Notice of Termination-Storm Water Discharges-Construction (2 pages)



TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION (TDEC)

DIVISION OF WATER RESOURCES (DWR)

William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor

Nashville, Tennessee 37243

1-888-891-TDEC (8332)

**NOTICE OF TERMINATION (NOT) FOR
GENERAL NPDES PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES (CGP)**

This form is required to be submitted when requesting termination of coverage from the CGP. The purpose of this form is to notify the TDEC that either all stormwater discharges associated with construction activity from the portion of the identified facility where you, as an operator, have ceased or have been eliminated; or you are no longer an operator at the construction site. Specifically, this means that all disturbed soils at the portion of the construction site where the operator had control have been permanently stabilized, the temporary erosion and sediment control measures have been removed, and/or subsequent operators have obtained permit coverage for the site or portions of the site where the operator had control. Submission of this form shall in no way relieve the permittee of permit obligations required prior to submission of this form.

Submit this form to the local DWR Environmental Field Office (EFO) address (see table below) or using MyTDEC Forms electronic submittal process. For more information, contact your local EFO at the toll-free number 1-888-891-8332 (TDEC).

Site or Project Name: Mitchell Street Industrial Park	NPDES Tracking Number: TNR
Street Address or Location: 1200 Mitchell Street, Celina, TN 38551	County(ies): Clay

Name of Permittee Requesting Termination of Coverage: Joint Industrial Development Board of Celina / Clay County, TN. Inc.			
Permittee Contact Name: Wayne L. Nelson	Title or Position: Chairman		
Mailing Address: 424 Brown Street	City: Celina	State: TN	Zip: 38551
Phone: (931) 243-3338	E-mail: claychamber2017@gmail.com		

Check the reason(s) for termination of permit coverage: (check only one)

<input type="checkbox"/>	Primary permittee termination: all requirements for termination under Permit Part 9.1.1. a) through c) have been met. This includes, but is not limited to, for areas the primary permittee has control all earth-disturbing activities at the site are complete and permanent stabilization as defined in Part 10 of the CGP has been achieved. (attach photo documentation)
<input type="checkbox"/>	When applicable, and you are a primary permittee seeking termination, list who is responsible for ongoing maintenance of stormwater controls left on the site subject for long-term use following termination of coverage:
<input type="checkbox"/>	Secondary permittee termination: all requirements for termination under Permit Part 9.2.1. have been met (no longer an operator at the construction site).

Certification and Signature:

(must be signed by president, vice-president or equivalent ranking elected official)

I certify under penalty of law that either: (a) all stormwater discharges associated with construction activity from the portion of the identified facility where I was an operator have ceased or have been eliminated or (b) I am no longer an operator at the construction site. I understand that by submitting this notice of termination, I am no longer authorized to discharge stormwater associated with construction activity under this general permit, and that discharging pollutants in stormwater associated with construction activity into waters of the state is unlawful under the Tennessee Water Quality Control Act where the discharge is not authorized by a NPDES permit. I also understand that the submittal of this notice of termination does not release an operator from liability for any violations of this permit or the Tennessee Water Quality Control Act. I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information 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. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Permittee name (print or type): Wayne L. Nelson , Chairman	Signature:	Date:
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EFO	Address	EFO	Street Address
Memphis	8383 Wolf Lake Drive, Bartlett, TN 38133	Cookeville	1221 South Willow Ave., TN 38506
Jackson	1625 Hollywood Drive, TN 38305	Chattanooga	1301 Riverfront Parkway, Ste. 206, TN 37402
Nashville	711 R S Gass Boulevard, TN 37243	Knoxville	3711 Middlebrook Pike, TN 37921
Columbia	1421 Hampshire Pike, TN 38401	Johnson City	2305 Silverdale Road, TN 37601

CN-1175 (Rev. 02-22)

RD A 2366

Appendix C

- Construction Storm Water Inspection Certification (3 pages)



**TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION (TDEC)
DIVISION OF WATER RESOURCES**

William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor
Nashville, Tennessee 37243
1-888-891-8332 (TDEC)

**General NPDES Permit for Stormwater Discharges from Construction Activities (CGP)
Construction Stormwater Inspection Certification (Inspection Form)**

Site or Project Name: Mitchell Street Industrial Park		NPDES Tracking Number: TNR
Primary Permittee Name: Joint Industrial Development Board of Celina / Clay County, TN, Inc.		Date of Inspection:
Current approximate <u>disturbed</u> acreage:	Has rainfall been checked/documented daily? <input type="checkbox"/> Yes <input type="checkbox"/> No	Name of Inspector:
Current weather/ground conditions:	Rainfall total since last inspection:	Inspector's TNEPSC Certification Number:
Site Assessment <input type="checkbox"/> Yes <input type="checkbox"/> No	Assessor's TN PE registration number:	Assessor's TNEPSC Level II/CPESC number:

Check the box if the following items are on-site:

<input type="checkbox"/>	Notice of Coverage (NOC)
<input type="checkbox"/>	Stormwater Pollution Prevention Plan (SWPPP)
<input type="checkbox"/>	Weekly inspection documentation
<input type="checkbox"/>	Site contact information
<input type="checkbox"/>	Rain Gage
Off-site Reference Rain Gage Location	

Best Management Practices (BMPs):

Are the Erosion Prevention and Sediment Controls (EPSCs) functioning correctly?

If "No," describe below in Comment Section

1.	Are all applicable EPSCs installed and maintained per the SWPPP per the current phase?	<input type="checkbox"/>	<input type="checkbox"/>
		Yes	No
2.	Are EPSCs functioning correctly at all disturbed areas/material storage areas? (permit section 5.5.3)	<input type="checkbox"/>	<input type="checkbox"/>
		Yes	No
3.	Are EPSCs functioning correctly at outfall/discharge points such that there is no objectionable color contrast in the receiving stream, and no other water quality impacts? (permit section 5.5.3.5 and 6.3.2)	<input type="checkbox"/>	<input type="checkbox"/>
		Yes	No
4.	Are EPSCs functioning correctly at ingress/egress points such that there is no evidence of track-out? (permit section 5.5.3.1)	<input type="checkbox"/>	<input type="checkbox"/>
		Yes	No
5.	If applicable, have discharges from dewatering activities been managed by appropriate controls? (permit section 4.1.3) If "No," describe below the measure to be implemented to address deficiencies.	<input type="checkbox"/>	<input type="checkbox"/>
		N/A	Yes No
6.	If construction activity at any location on-site has temporarily/permanently ceased, was the area stabilized within 14 days? (permit section 5.5.3.4) If "No," describe below each location and measures taken to stabilize the area(s).	<input type="checkbox"/>	<input type="checkbox"/>
		N/A	Yes No
7.	Have pollution prevention measures been installed, implemented, and maintained to minimize the discharge of pollutants from wash waters, exposure of materials and discharges from spills and leaks per section 4.1.4? If "No," describe below the measure to be implemented to address deficiencies.	<input type="checkbox"/>	<input type="checkbox"/>
		N/A	Yes No

Construction Stormwater Inspection Certification Form (Inspection Form)

Purpose of this form / Instructions

An inspection, as described in subsection 5.5.3.9. of the General Permit for Stormwater Discharges from Construction Activities ("Permit"), shall be performed at the specified frequency and documented on this form. Inspections shall be performed at least 72 hours apart. Where sites or portion(s) of construction sites have been temporarily stabilized, or runoff is unlikely due to winter conditions (e.g., site covered with snow or ice), such inspection only has to be conducted once per month until thawing results in runoff or construction activity resumes.

Inspections can be performed by:

- a) a person with a valid certification from the "Fundamentals of Erosion Prevention and Sediment Control Level I" course,
- b) a licensed professional engineer or landscape architect,
- c) a Certified Professional in Erosion and Sediment Control (CPESC), or
- d) a person who has successfully completed the "Level II Design Principles for Erosion Prevention and Sediment Control for Construction Sites" course.

Qualified personnel, as defined in subsection 5.5.3.10 of the Permit (provided by the permittee or cooperatively by multiple permittees) shall inspect disturbed areas of the construction site that have not been permanently stabilized, areas used for storage of materials that are exposed to precipitation, structural control measures, locations where vehicles enter or exit the site, and each outfall.

Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the site's drainage system. Erosion prevention and sediment control measures shall be observed to ensure that they are operating correctly.

Outfall points (where discharges leave the site and/or enter waters of the state) shall be inspected to determine whether erosion prevention and sediment control measures are effective in preventing significant impacts to receiving waters. Where discharge locations are inaccessible, nearby downstream locations shall be inspected. Locations where vehicles enter or exit the site shall be inspected for evidence of offsite sediment tracking.

Based on the results of the inspection, any inadequate control measures or control measures in disrepair shall be replaced or modified, or repaired as necessary, before the next rain event if possible, but in no case more than 7 days after the need is identified.

Based on the results of the inspection, the site description identified in the SWPPP in accordance with section 5.5.1 of the Permit and pollution prevention measures identified in the SWPPP in accordance with section 5.5.2 of the Permit, shall be revised as appropriate, but in no case later than 7 days following the inspection. Such modifications shall provide for timely implementation of any changes to the SWPPP, but in no case later than 14 days following the inspection.

All inspections shall be documented on this Construction Stormwater Inspection Certification form. Alternative inspection forms may be used as long as the form contents and the inspection certification language are, at a minimum, equivalent to the Division's form and the permittee has obtained a written approval from the Division to use the alternative form. Inspection documentation will be maintained on site and made available to the Division upon request. Inspection reports must be submitted to the Division within 10 days of the request.

Trained certified inspectors shall complete inspection documentation to the best of their ability. Falsifying inspection records or other documentation or failure to complete inspection documentation shall result in a violation of this permit and any other applicable acts or rules.



EROSION CONTROL PLAN
 PHASE ONE
 MITCHELL STREET INDUSTRIAL PARK

NO.	DATE	DESCRIPTION
1	10-1-2023	CONTRACT REVIEW
2	10-1-2023	CONTRACT REVIEW
3	10-1-2023	CONTRACT REVIEW
4	10-1-2023	CONTRACT REVIEW

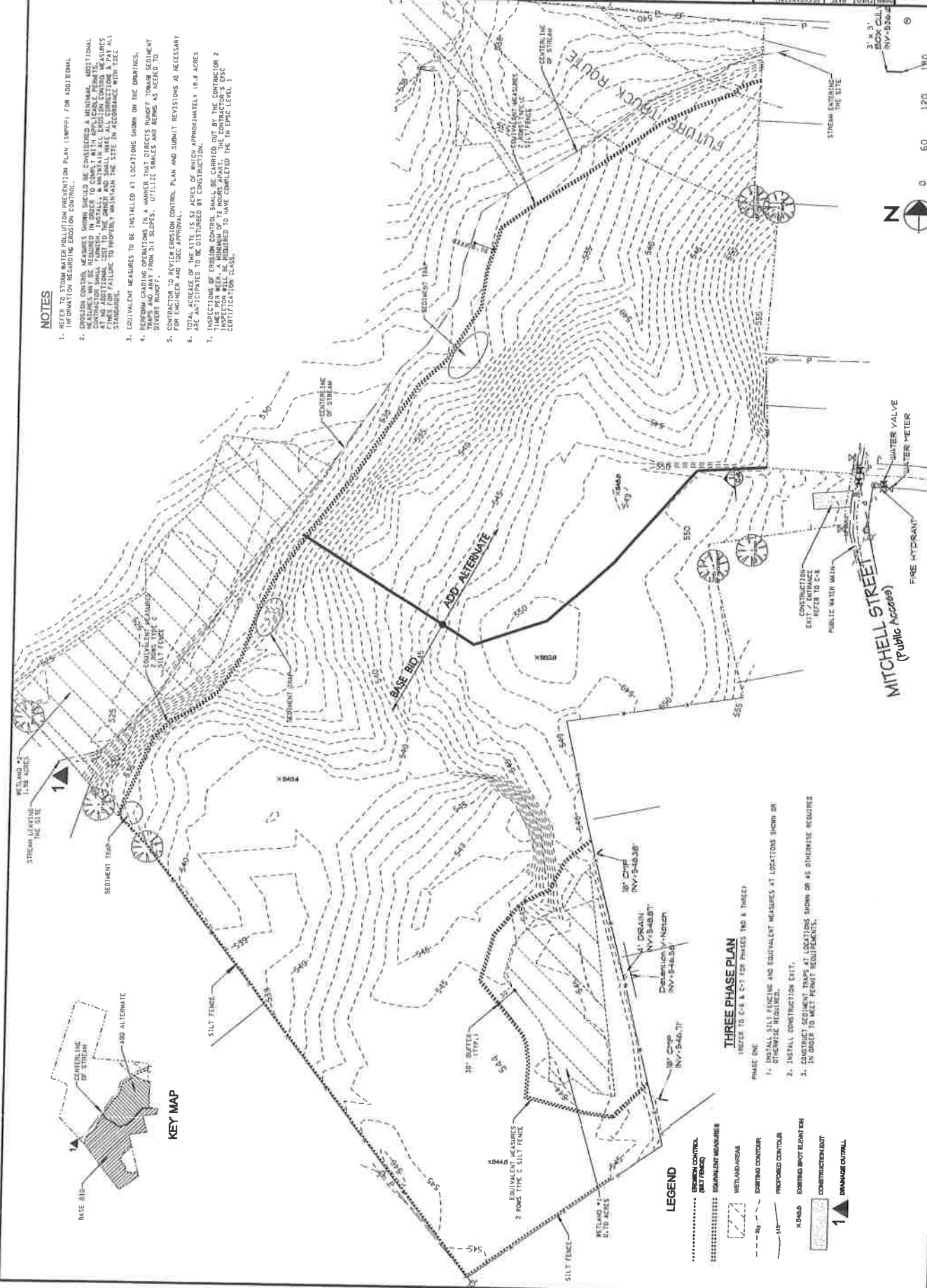
C-5
 FILE NO.

NOTES

- REFER TO STORM WATER POLLUTION PREVENTION PLAN (SWPPP) FOR ADDITIONAL INFORMATION REGARDING EROSION CONTROL.
- EROSION CONTROL MEASURES SHOWN SHOULD BE CONSIDERED A MINIMUM. ADDITIONAL MEASURES MAY BE REQUIRED TO COMPLY WITH APPLICABLE PERMITS. CONTRACTOR SHALL MAINTAIN THE SITE IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS AND STANDARDS.
- EQUIVALENT MEASURES TO BE INSTALLED AT LOCATIONS SHOWN ON THE DRAWINGS.
- PERFORM GRADING OPERATIONS IN A MANNER THAT DOES NOT CAUSE EROSION TRAPS AND AWAY FROM 3:1 SLOPES. UTILIZE STAKES AND BENCH MARKS AS NEEDED TO MAINTAIN THE PROPOSED GRADING.
- CONTRACTOR TO REVIEW EROSION CONTROL PLAN AND SUBMIT REVISIONS AS NECESSARY FOR THE USE APPROVAL.
- TOTAL ACRES TO BE DISTURBED APPROXIMATELY 18.4 ACRES.
- INSPECTIONS OF EROSION CONTROL SHALL BE CONDUCTED BY THE CONTRACTOR 2 TIMES PER WEEK, A MINIMUM OF 72 HOURS APART. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE EROSION CONTROL MEASURES THROUGHOUT THE CONSTRUCTION PERIOD.



KEY MAP



LEGEND

- EROSION CONTROL (SILT FENCE)
- EQUIVALENT MEASURES
- WETLAND AREAS
- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING BENCH MARK
- CONSTRUCTION BENCH MARK
- CONSTRUCTION BENCH MARK
- CONSTRUCTION BENCH MARK

THREE PHASE PLAN

- REFER TO C-8 & C-7 FOR PHASES TWO & THREE
- INSTALL SILT FENCING AND EQUIVALENT MEASURES AT LOCATIONS SHOWN OR OTHERWISE INDICATED.
 - INSTALL CONSTRUCTION ERTT.
 - CONSTRUCT SEDIMENT TRAPS AT LOCATIONS SHOWN OR AS OTHERWISE REQUIRED IN ORDER TO MEET PERMIT REQUIREMENTS.



N



3' x 3' BOX CULVERT
 INV. 136.4

STREAM ENTERING THE SITE

FIRE HYDRANT

WATER VALVE

WATER METER

PUBLIC WATER MAIN

CONSTRUCTION EXIT / ENTRANCE REFER TO C-8

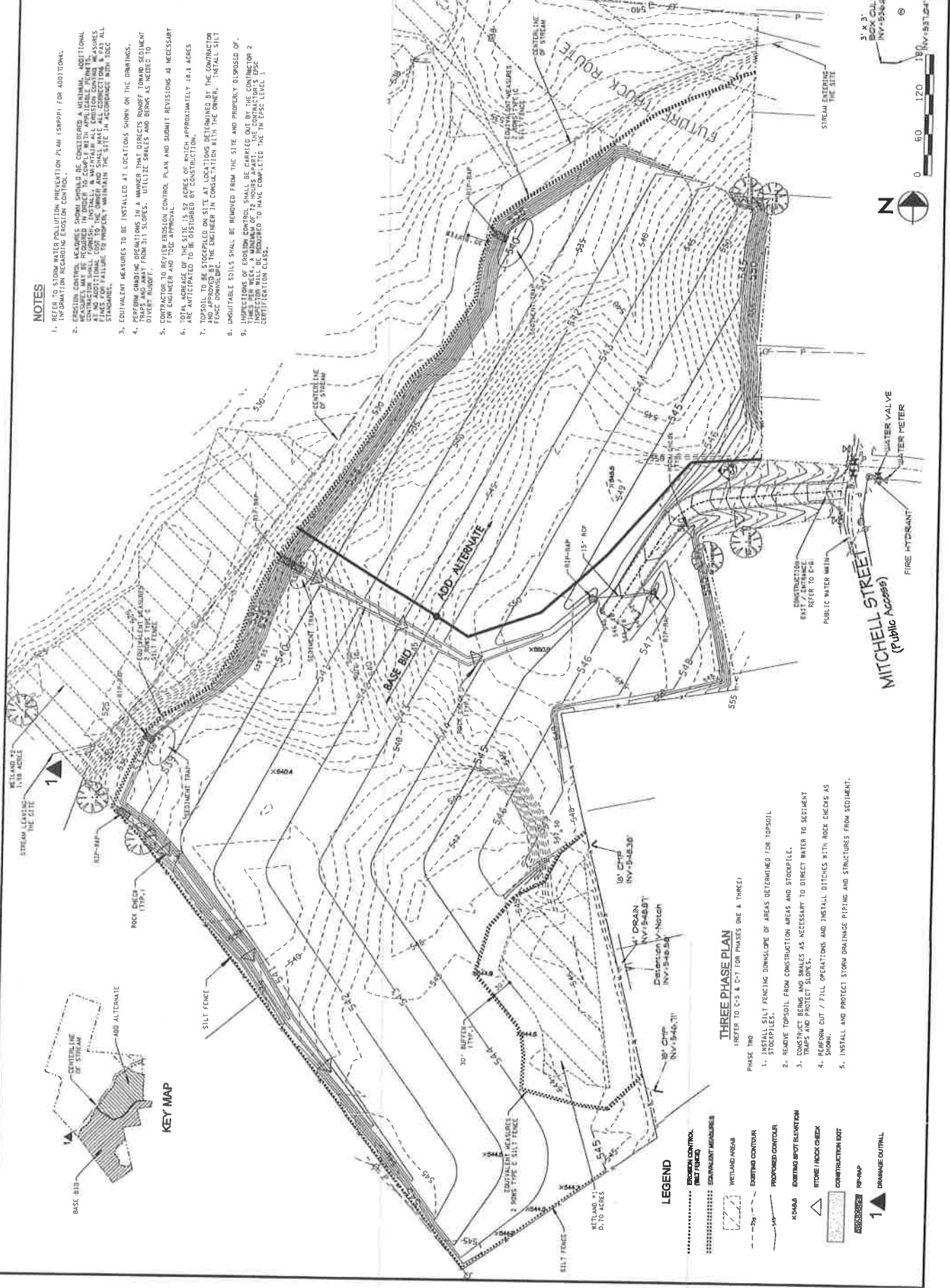
MITCHELL STREET (Public Access)

NO.	DATE	DESCRIPTION
1	11/15/2018	ISSUED FOR PERMIT
2	11/15/2018	ISSUED FOR PERMIT
3	11/15/2018	ISSUED FOR PERMIT

FILE NO. INV-553724

NOTES

1. REFER TO STORM WATER POLLUTION PREVENTION PLAN (SWPPP) FOR ADDITIONAL INFORMATION REGARDING EROSION CONTROL.
2. EROSION CONTROL MEASURES SHOWN SHOULD BE CONSIDERED A MINIMUM. ADDITIONAL MEASURES MAY BE REQUIRED TO PROTECT THE SITE FROM EROSION. THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE ALL EROSION CONTROL MEASURES TO PROTECT THE SITE FROM EROSION. THE CONTRACTOR SHALL PAY ALL FEES FOR FAILURE TO COMPLY WITHIN THE SITE IN ACCORDANCE WITH EDCS STANDARDS.
3. EQUIVALENT MEASURES TO BE INSTALLED AT LOCATIONS SHOWN ON THE DRAWINGS.
4. PERFORM GRADING OPERATIONS IN A MANNER THAT DIRECTS SWAMP TRAPMENTS TO TRAP AND AWAY FROM 3:1 SLOPES. UTILIZE SWALES AND BERMS AS NEEDED TO PREVENT EROSION.
5. FOR ENGINEER AND SITE EROSION CONTROL. PLAN AND SUBMIT REVISIONS AS NECESSARY TO PROTECT THE SITE FROM EROSION.
6. TOTAL AREA OF THE SITE IS APPROXIMATELY 18.1 ACRES.
7. TOPSOIL TO BE STOCKPILED ON SITE AT LOCATIONS DESIGNATED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER IN CONSULTATION WITH THE OWNER. SOIL SHALL BE STOCKPILED IN A MANNER THAT PREVENTS EROSION.
8. DISCUSSIBLE SOILS SHALL BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF.
9. INSPECTIONS OF EROSION CONTROL SHALL BE CARRIED OUT BY THE CONTRACTOR 2 WEEKS AFTER THE START OF CONSTRUCTION. THE CONTRACTOR'S EPC CERTIFICATION CLASS.



THREE PHASE PLAN

- (REFER TO C-5 & C-7 FOR PHASES ONE & THREE)
- PHASE TWO**
1. INSTALL SILT FENCING DOWNLOPE OF AREAS DETERMINED FOR TOPSOIL STOCKPILES.
 2. REMOVE TOPSOIL FROM CONSTRUCTION AREAS AND STOCKPILE.
 3. CONSTRUCT BERMS AND SWALES AS NECESSARY TO DIRECT WATER TO SEDIMENT TRAPS AND PROTECT SLOPES.
 4. PERFORM CUT / FILL OPERATIONS AND INSTALL DITCHES WITH ROCK CHECKS AS SHOWN.
 5. INSTALL AND PROTECT STORM DRAINAGE PIPING AND STRUCTURES FROM SEDIMENT.

LEGEND

- WETLAND CONTROL (NOT FENCED)
- EQUIVALENT MEASURES
- WETLAND AREAS
- EXISTING CONTOUR
- PROPOSED CONTOUR
- WETLAND SPOT ELEVATION
- STONE/ROCK CHECK
- CONSTRUCTION EXIT
- 18" C/P
- DRAINAGE OUTFALL



31 x 31" BOX COLL. INV-5536

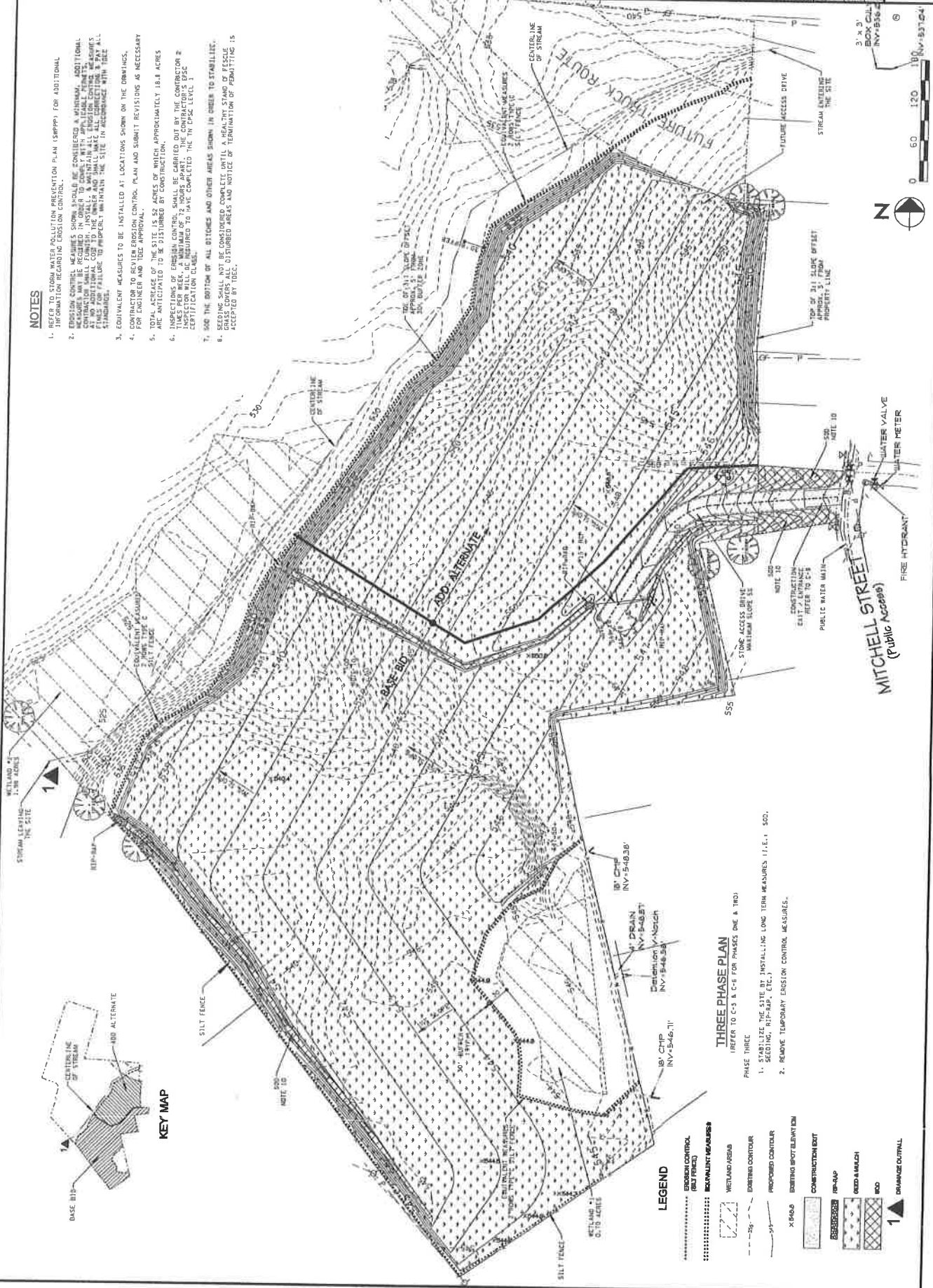


EROSION CONTROL PLAN PHASE THREE

NO.	DATE	DESCRIPTION
1	08/20/11	PRELIMINARY PLAN
2	09/15/11	REVISED PLAN
3	10/20/11	REVISED PLAN
4	11/15/11	REVISED PLAN
5	12/15/11	REVISED PLAN
6	01/15/12	REVISED PLAN

NOTES

1. INFORMATION TO COMPLY WITH THE EROSION CONTROL PLAN (SICPPS) FOR ADDITIONAL INFORMATION REGARDING EROSION CONTROL.
2. EROSION CONTROL MEASURES SHOULD BE CONSIDERED A MINIMUM. ADDITIONAL MEASURES MAY BE REQUIRED IN ORDER TO MAINTAIN ALL EROSION CONTROL MEASURES UNTIL CONSTRUCTION IS COMPLETE. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL ALL CONSTRUCTION IS COMPLETE. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL ALL CONSTRUCTION IS COMPLETE.
3. EQUIVALENT MEASURES TO BE INSTALLED AT LOCATIONS SHOWN ON THE DRAWINGS. CONTRACTOR TO REVISION EROSION CONTROL PLAN AND SUBMIT REVISIONS AS NECESSARY FOR DESIGNER AND TDEC APPROVAL.
4. EQUIVALENT MEASURES TO BE INSTALLED AT LOCATIONS SHOWN ON THE DRAWINGS. CONTRACTOR TO REVISION EROSION CONTROL PLAN AND SUBMIT REVISIONS AS NECESSARY FOR DESIGNER AND TDEC APPROVAL.
5. SLOPES TO BE OBTAINED BY CONSTRUCTION.
6. INSPECTING OF THE SITE IS TO BE COMPLETED BY THE CONTRACTOR 2 TIMES PER WEEK. A MINIMUM OF 7 HOURS BE CARRIED OUT BY THE CONTRACTOR 2 TIMES PER WEEK. A MINIMUM OF 7 HOURS BE CARRIED OUT BY THE CONTRACTOR 2 TIMES PER WEEK. A MINIMUM OF 7 HOURS BE CARRIED OUT BY THE CONTRACTOR 2 TIMES PER WEEK. A MINIMUM OF 7 HOURS BE CARRIED OUT BY THE CONTRACTOR 2 TIMES PER WEEK.
7. THE BOTTOM OF ALL DITCHES AND OTHER AREAS SHOWN IN ORDER TO STABILIZE. GRADING SHALL NOT BE CONSIDERED COMPLETE UNTIL A HEALTHY STAND OF PEGSCE IS OBTAINED. DISTURBED AREAS AND NOTICE OF TERMINATION OF PERMITTING IS ACCEPTED BY TDEC.



KEY MAP



LEGEND

- EROSION CONTROL (SILT FENCE)
- EQUIVALENT MEASURES
- WETLAND AREAS
- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING SPOT ELEVATION
- CONSTRUCTION EXIT
- RIP-RAP
- EROD MESH
- ROCK
- DRAINAGE OUTLET

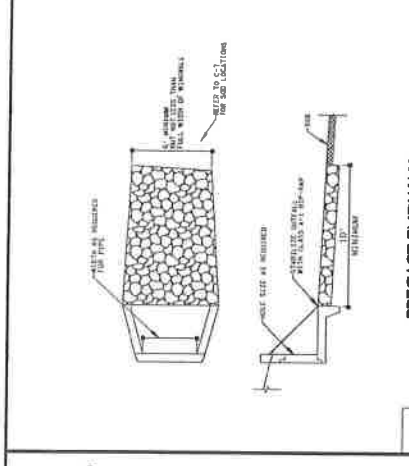
THREE PHASE PLAN

- (REFER TO C-3 & C-6 FOR PHASES ONE & TWO)
- PHASE THREE
1. STABILIZE THE SITE BY INSTALLING LONG TERM MEASURES (I.E., S.C., SEEDING, RIP-RAP, ETC.)
 2. REMOVE TEMPORARY EROSION CONTROL MEASURES.

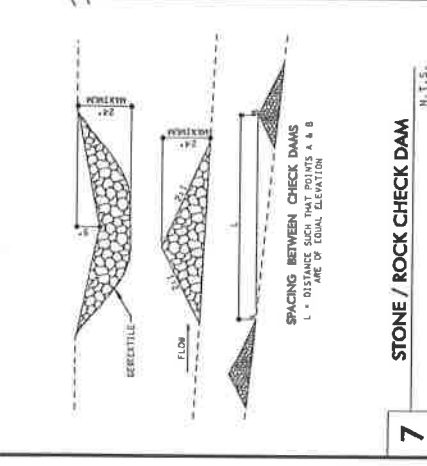
Mitchell Street
(Public Access)



DATE	DESCRIPTION
11/15/11	ISSUED FOR PERMIT
11/15/11	ISSUED FOR PERMIT
11/15/11	ISSUED FOR PERMIT
11/15/11	ISSUED FOR PERMIT
11/15/11	ISSUED FOR PERMIT
11/15/11	ISSUED FOR PERMIT
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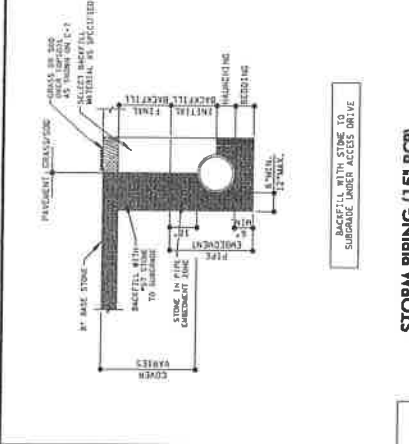
1 ACCESS DRIVE SECTION
N.T.S.



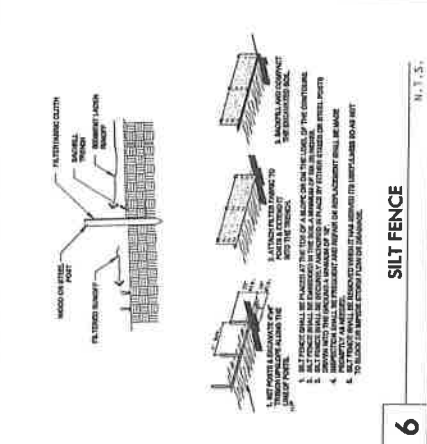
2 SOD
N.T.S.



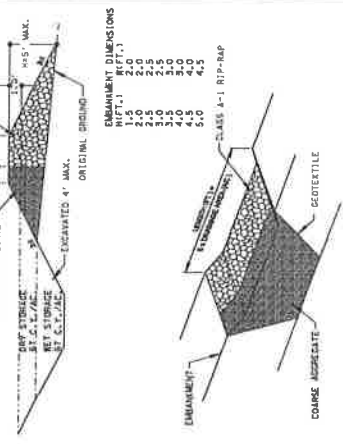
3 EQUIVALENT MEASURES
N.T.S.



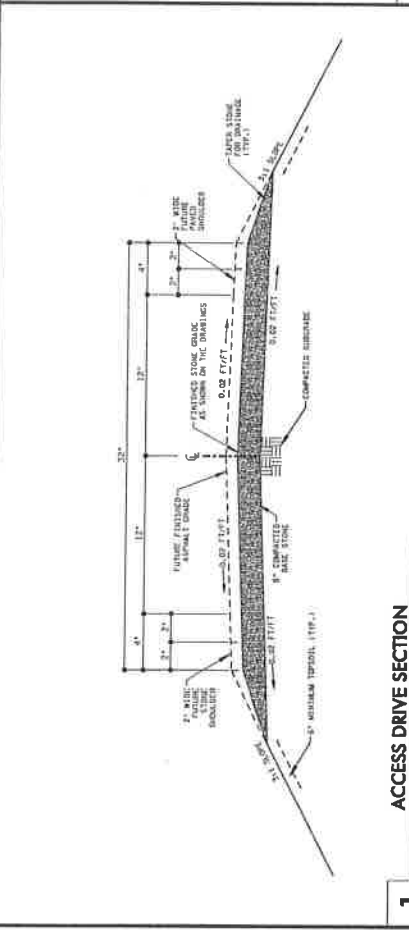
4 STORM PIPING (15\"/>



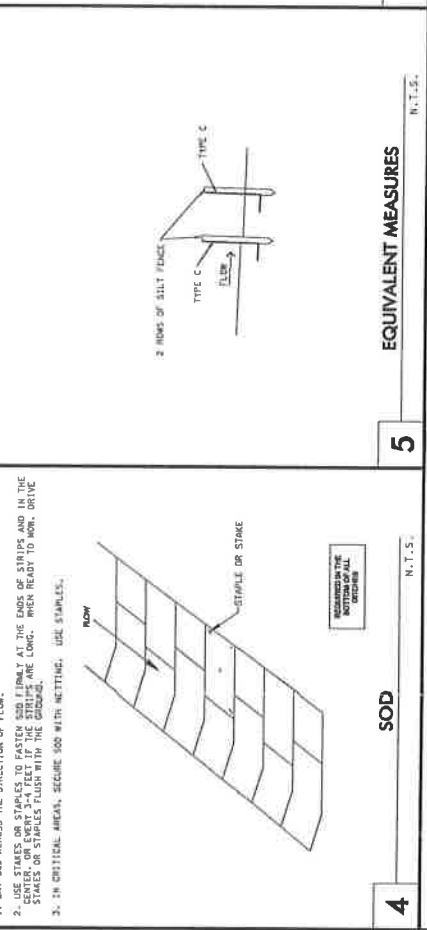
5 PRECAST ENDWALL
N.T.S.



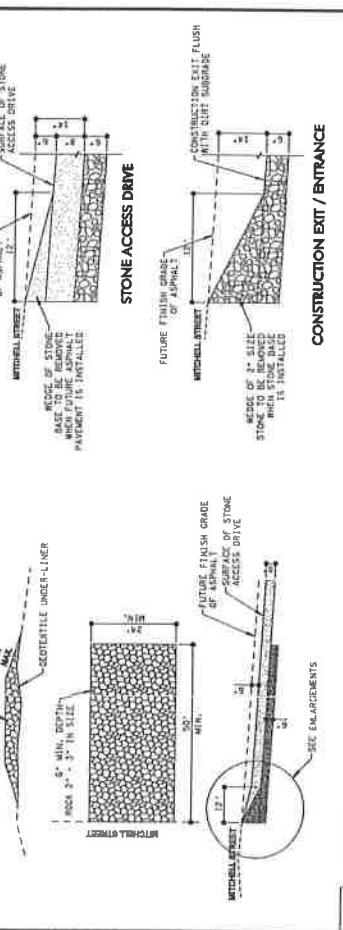
6 STONE / ROCK CHECK DAM
N.T.S.



7 TEMPORARY SEDIMENT TRAP
N.T.S.



8 CONSTRUCTION EXIT / ENTRANCE
N.T.S.



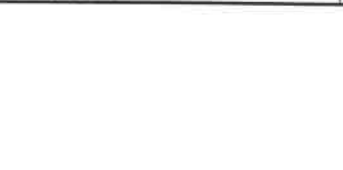
9 CONSTRUCTION EXIT / ENTRANCE
N.T.S.



10 STORM PIPING (15\"/>



11 PRECAST ENDWALL
N.T.S.



12 STONE / ROCK CHECK DAM
N.T.S.

SECTION 31 15 00 – EROSION AND SEDIMENTATION CONTROLS

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Erosion control as shown on the drawings and otherwise required to comply with applicable permitting by the Tennessee Department of Environment and Conservation. More specifically, the State's General NPDES Permit for Discharge of Storm Water associated with Construction Activities. In accordance with permit guidelines, the following items are being submitted to TDEC for review and approval on behalf of the Owner.
1. Notice of Intent (NOI)
 2. Site Location Map
 3. Storm Water Pollution Prevention Plan (SWPPP)
 4. Erosion Control Drawings and Details
- B. Once a Notice of Coverage (NOC) has been received from TDEC, the Contractor will be required to review the above information and sign the NOI and SWPPP as required. If TDEC requires, or if Contractor feels that additional measures beyond those shown on the erosion control drawings are required in order to adhere to the permit conditions, he shall provide such measures at no additional cost to the Owner. Contractor shall be responsible to the Owner and TDEC for any noncompliance with permit requirements during the entire construction period. If fines or penalties are imposed on the Owner by the State due to Contractor's noncompliance with permit conditions, such fines and costs associated with additional services performed by members of Owner's Project Design Team will be deducted from monies owed the Contractor.
- C. Material Certifications will be required for all erosion control products. Multiple erosion control products are listed in this specification. Not all products listed are shown on the drawings or anticipated to be used.

1.2 RELATED WORK

- A. Section 31 11 00 – Clearing and Grubbing

PART 2 - PRODUCTS

2.1 SILT FENCE (TYPE "A")

- A. Tensile Strength per ASTM D-4632 shall be 120 lbs. minimum (Warp) and 100 lbs. minimum (Fill).
- B. Elongation per ASTM D-4632 shall be 40 % maximum
- C. AOS (Apparent Opening Size) per ASTM D-4751 shall be #30 maximum sieve size.
- D. Flow Rate shall be 25 gallons per square foot minimum (GDT-87)
- E. Ultraviolet Stability shall be 80 per ASTM D-4632 after 300 hours weathering in accordance with ASTM D-4355.
- F. Bursting Strength shall be a minimum of 175 psi per ASTM D-3786 Diaphragm Bursting Strength Tester.
- G. Minimum Fabric Width shall be 36 inches.

SECTION 31 15 00 – EROSION AND SEDIMENTATION CONTROLS

2.2 SILT FENCE (TYPE "C")

- A. Tensile Strength per ASTM D-4632 shall be 260 lbs. minimum (Warp) and 180 lbs. minimum (Fill).
- B. Elongation per ASTM D-4632 shall be 40 % maximum
- C. AOS (Apparent Opening Size) per ASTM D-4751 shall be #30 maximum sieve size.
- D. Flow Rate shall be 70 gallons per minute per square foot minimum (GDT-87)
- E. Ultraviolet Stability shall be 80 per ASTM D-4632 after 300 hours weathering in accordance with ASTM D-4355.
- F. Bursting Strength shall be a minimum of 175 psi per ASTM D-3786 Diaphragm Bursting Strength Tester.
- G. Minimum Fabric Width shall be 36 inches.

2.3 STONE CHECK DAM

- A. Stone check dams are constructed from large aggregate (clean of fines) such as TDOT #1 or #2 with a minimum stone size of 1.5 inch.

2.4 ROCK CHECK DAM

- A. Rock check dams are constructed from small riprap such as TDOT Class A-1 (clean of fines) with stone sizes from 2 to 15 inches.

2.5 SANDBAG CHECK DAM

- A. Sandbags filled with either aggregate or sand may also be used as a check dam.

2.6 STONE FILTER RING

- A. When utilized at inlets / outlets with diameters less than 12 inches, the filter ring should be constructed of small riprap such as TDOT Class A-3 (clean from fines) with stone sizes from 2 to 6 inches.
- B. When utilized at inlets with diameters greater than 12 inches, the filter ring should be constructed of small riprap such as TDOT Class A-1 (clean from fines) with stone sizes from 2 to 15 inches.
- C. For added sediment filtering capabilities, the upstream side of the riprap can be faced with smaller coarse aggregate, such as TDOT #57 (clean of fines) with a minimum stone size of ¾ inch.

SECTION 31 15 00 – EROSION AND SEDIMENTATION CONTROLS

- D. A geotextile should be used as a separator between the graded stone and the soil base and abutments. The geotextile will prevent the migration of soil particles from the subgrade into the graded stone. Geotextile should be non-toxic to vegetation, be inert to common chemicals, and be mildew and rot resistant. Materials should meet or exceed the strength, elongation, permittivity, apparent opening size, and ultraviolet stability properties of the requirements outlined in AASHTO M288 for the respective use.

2.7 MACHINED RIPRAP

- A. Class A-1 riprap shall be 2 to 15 inches in diameter with 20% by weight at least 4 inch size. Typical thickness is 18 inches with a surface tolerance of 3 inches.
- B. Class A-3 riprap shall be 2 to 6 inches in diameter with 20% by weight at least 4 inch size. Typical thickness is 12 inches with a surface tolerance of 2 inches.

2.8 SEDIMENT TRAP

- A. The outlet for the sediment trap should consist of a stone section of the embankment located at the low point in the basin. A combination of coarse aggregate and riprap should be used to provide for filtering / detention as well as outlet stability. The smaller stone should be TDOT #3, #357, or #5 Coarse Aggregate (smaller stone sizes will enhance filter efficiency) and riprap should be Class A-1.
- B. A geotextile should be used as a separator between the graded stone and the soil base and abutments. The geotextile will prevent the migration of soil particles from the subgrade into the graded stone. Geotextile should be non-toxic to vegetation, be inert to common chemicals, and be mildew and rot resistant. Materials should meet or exceed the strength, elongation, permittivity, apparent opening size, and ultraviolet stability properties of the requirements outlined in AASHTO M288 for the respective use.
- C. Refer to drawing of Erosion Control Details for additional information.

2.9 STORM DRAIN INLET PROTECTION

- A. Silt Fence Inlet Protection shall utilize Type C silt fence supported by 2x4 inch wood or equivalent steel posts with a minimum length of three feet spaced a maximum of 3 feet apart and driven into ground approximately 18 inches deep.
- B. Block and Gravel Inlet Protection shall utilize concrete blocks (CMU's), 2x4 inch wood studs for lateral support (if needed), hardware cloth or comparable wire mesh with ½ inch openings, and clean coarse aggregate (TDOT #3, #357, or #5).
- C. Gravel Inlet Protection shall utilize wire mesh with ½ inch openings and clean coarse aggregate (TDOT #3, #357, or #5).
- D. Refer to drawings and / or Tennessee Erosion and Sediment Control Handbook for additional details.

SECTION 31 15 00 – EROSION AND SEDIMENTATION CONTROLS

2.10 STORM DRAIN OUTLET PROTECTION

- A. Outlet protection at storm drainage pipe discharge points shall consist of Class A-1 riprap unless otherwise shown on the drawings. Riprap used in this fashion is considered as both temporary erosion control and a long term stabilization measure.

2.11 MULCH WITHOUT SEEDING

- A. As a temporary erosion control measure, mulch may be used without seeding during times when seed may not be expected to germinate due to temporary conditions.
- B. Dry straw or hay may be utilized to achieve a 95% or greater soil coverage.

2.12 TEMPORARY VEGETATION

- A. As a temporary erosion control measure, seeding with the following grass mixtures may be used: (1) January 1 to May 1 - Italian Rye 33%, Korean Lespedeza 33%, Summer Oats 34% (2) May 1 to July 15 – Sudan Sorghum 100% or Starr Millet 100% (3) July 15 to January 1 – Balboa Rye 67%, Italian Rye 33%.

2.13 EROSION CONTROL BLANKETS

- A. Machine produced temporary blankets should have a consistent thickness with the organic material evenly distributed over the entire blanket area. All blankets should have a minimum width of 48 inches. Straw blankets, excelsior blankets, coconut fiber blankets, wood fiber blankets, and jute mesh blankets are acceptable.
- B. Straw Blankets are temporary blankets that consist of weed-free straw from agricultural crops formed into a blanket. Blankets with a top side of photodegradable plastic mesh size of 5/16 x 5/16 inch and sewn to the straw with biodegradable thread are appropriate for slopes. The blanket should have a minimum dry weight of 0.5 pounds per square yard.
- C. Excelsior blankets are temporary blankets that consist of curled wood excelsior (80% of fibers are six inches or longer) formed into a blanket. The blanket should have clear markings indicating the top side of the blanket and be smolder resistant. Blankets should have photodegradable plastic mesh having a maximum mesh size of 1-1/2 x 3 inches. The blanket should have a minimum thickness of 1/4 of an inch and a minimum dry weight of 0.8 pounds per square yard. Slopes require excelsior matting with the top side of the blanket covered in the plastic mesh, and for waterways, both sides of the blanket require plastic mesh.
- D. Coconut fiber blankets are temporary blankets that consist of 100% coconut fiber formed into a blanket. The minimum thickness of the blanket should be 1/4 of an inch with a minimum dry weight of 0.5 pounds per square yard. Blankets should have photodegradable plastic mesh, with a maximum mesh size of 5/8 x 5/8 inch and be sewn to the fiber with a breakdown resistant synthetic yarn. Plastic mesh is required on both sides of the blanket if used in waterways. A maximum of two inches is allowable for the stitch pattern and row spacing.

SECTION 31 15 00 – EROSION AND SEDIMENTATION CONTROLS

- E. Wood fiber blankets are temporary blankets that consist of reprocessed wood fibers that do not possess or contain any growth or germination inhibiting factors. The blanket should have a photodegradable plastic mesh with a maximum mesh size of 5/8 x 3/4 inch, securely bonded to the top of the mat. The blanket should have a minimum dry weight of 0.35 pounds per square yard. A maximum of two inches is allowable for the stitch pattern and row spacing. This practice should be applied only to slopes.
- F. Jute mesh consists of woven root fiber or yarn with regularly spaced openings between strands. A typical jute mesh will weigh approximately 1.0 pounds per square yard for basic slope applications.

2.14 EQUIVALENT MEASURES

- A. Where TDEC required vegetative buffer strips can not be maintained during construction, or where otherwise deemed appropriate by the Engineer, "equivalent measures" as described herein and detailed on the drawings shall be utilized. Equivalent measures for erosion control shall include two parallel rows of Type C silt fencing. In some cases, if required by TDEC, a fiber roll shall be included between the Type C rows. If required by TDEC, the fiber roll shall be provided at no additional cost to the Owner.
- B. Fiber rolls (also called fiber logs or straw wattles) are tube-shaped erosion control devices filled with straw, flax, rice, coconut fiber material, or composted material. Each roll is wrapped with UV-degradable polypropylene netting for longevity or with 100% biodegradable materials like burlap, jute, or coir.

2.15 SEDIMENT FILTER BAGS

- A. During de-watering of trenches and ponded areas, pumps may be utilized to facilitate the process. If so, all contaminated (sediment laden) water shall be pumped either into sediment traps or filter bags / socks in order to block the flow of sediment off site.
- B. Size of receiving bags and type / strength of geotextile fabric shall be determined by Contractor in compliance with applicable permitting by TDEC and other Authorities Having Jurisdiction.

PART 3 - EXECUTION

3.1 COMPLIANCE

- A. Contractor shall comply with all Federal, State, and Local laws, codes, and ordinances pertaining to erosion control and the protection of the waters of the State including, but not limited to those permits and approvals listed in section 1.1 above.
- B. Erosion control measures as shown on the drawings are considered by the Engineer as a minimum and in no way limits the responsibility of the Contractor to fully comply with applicable permits.
- C. It is the intention and goal of the TNCGP and the SWPPP that any discharge from the property have no objectionable color contrast to the water body that receives it. The demolition and / or grading activity will be carried out in such a manner as will prevent any discharge that would cause a condition in which visible solids, bottom deposits, or turbidity impairs the usefulness of the waters on the property or downstream of the property for fish and aquatic life, livestock watering and wildlife, recreation, irrigation, navigation, or industrial or domestic water supply.

SECTION 31 15 00 – EROSION AND SEDIMENTATION CONTROLS

3.2 EXECUTION

- A. Install erosion control measures in accordance with approved drawings, Tennessee Erosion and Sediment Control Handbook, and permit conditions prior to beginning any other work on the site (i.e. clearing, demolition, etc.)
- B. Refer to TDEC Erosion & Sediment Control Handbook for additional information pertaining to the proper installation and maintenance of erosion control measures.
- C. Inspect, maintain, and repair erosion and sedimentation control measures throughout the construction period until permanent vegetation has been established and the entire site has been stabilized.
- D. Contractor to protect all storm water inlets (pipes, etc.) from sediment laden runoff by installing sufficient erosion control measures.
- E. All erosion control measures shall be checked within 24 hours after any rainfall of 1/2 inches or more within a 24 hour period. During prolonged rainfall, daily checking and repairing is necessary.
- F. A specific individual designated by the Contractor shall be responsible for installation, maintenance, and inspection of erosion and sediment control measures at the project site. In compliance with Part 5.5.3.10 of the TNCGP, the Contractor's EPSC Inspector will be required to have completed the TN EPSC Level One Certification Class.
- G. Inspection reports shall be prepared as required by governing permits and submitted to the Engineer in a timely manner.
- H. Contractor shall notify the Engineer immediately of any erosion and sedimentation control issues which may arise during the construction period.
- I. After permanent vegetation has been successfully established, remove, and dispose of all erosion and sedimentation controls, and restore / stabilize any areas disturbed during removal.
- J. Should sediment escape off site, Contractor shall be responsible for removing such sediment from all streets, downstream public and private properties, storm drainage piping, ditches, swales, etc. to the satisfaction of the Engineer in consultation with the property owner and/or local authority having jurisdiction. All affected properties shall be restored to their pre-construction condition. No work shall be performed on private properties without the consent of the property owner. Should sediment reach streams and/or wetland areas, an ARAP will be required before proceeding with restoration. Contractor shall bear the cost of all repairs, restoration measures, additional permitting, etc. required to satisfy the intent of this paragraph.

END OF SECTION 31 15 00

SECTION 32 92 00 – TURF AND GRASSES

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Finish grading of topsoil so that final grades, contours, and elevations are consistent with those shown on the drawings.
- B. Furnish and installing sod at all locations shown on the drawings as permanent stabilization. Seeding and mulching all disturbed areas that do not receive sod.
- C. Applying fertilizer, water, etc. as necessary to obtain a stand of grass (uniform coverage of healthy grass without any bare spots) and establish healthy sod through one growing season (i.e. fall seeding / sod with spring overseeding as necessary).
- D. Seeding should be performed in the fall with spring overseeding as necessary.
- E. Maintain new vegetation until TDEC has accepted the Owner's Notice of Termination of applicable permitting. Re-seed grass areas, treat for weeds, and replace sod as necessary until TDEC permitting has been released.
- F. Work is not considered complete and ready for Owner's acceptance until all disturbed areas have a uniform coverage of healthy grass / sod in accordance with TDEC requirements for release of permitting.

1.2 RELATED WORK

- A. Section 31 20 00 – Earth Moving

1.3 QUALITY ASSURANCE

- A. Make analysis and material tests for topsoil, fertilizers, insecticides and other materials of similar character per current methods of the Association of Official Agricultural Chemists when required by Engineer.
- B. Grass seed shall conform to tolerances for germination and purity per applicable standards of U.S. Department of Agriculture.
- C. Sod shall be of a type compatible with grass seed mixture, disease free with healthy root system and dense vegetation.
- D. All sod shall be in place with established roots into the subsoil before work is considered ready for TDEC Notice of Termination. All remaining areas are to have a healthy stand of grass (no bare spots).

SECTION 32 92 00 – TURF AND GRASSES

PART 2 - PRODUCTS

2.1 TOPSOIL MATERIAL

- A. Topsoil material (previously stockpiled) has been spread across the site (refer to Section 31 20 00 – Earth Moving). Examine the surface of the topsoil layer and sift out all plant growth, rubbish, stones, etc. Topsoil depths should be a minimum of six (6") inches at all locations. Contractor to verify in the field that a minimum of six (6") inches exists everywhere. If not, thicknesses shall be adjusted to provide the minimum.
- B. Acceptable topsoil material shall be defined as natural, fertile, agricultural soil, capable of sustaining vigorous plant growth, uniform composition throughout, without admixture of subsoil, free of stones, lumps, plants and their roots, sticks or other extraneous matter. Do not attempt to install while in a frozen or muddy condition.

2.2 FERTILIZER

- A. Provide a commercial balanced fertilizer delivered to site in bags labeled with manufacturer's guaranteed analysis. Store in weather-proof storage, place in such a manner that it's effectiveness will not be impaired.
- B. Fertilizer shall be a grade containing the percentages of plant food elements as recommended to obtain a healthy stand of grass.
- C. Availability of various elements shall be per standards of the Association of Official Agriculture Chemists.

2.3 GRASS SEED

- A. Grass seed shall be of the previous season's crop and the date of analysis shown on each bag shall be within nine (9) months of the time of delivery to the project. When requested by the Engineer, the Contractor shall furnish a sample of seed from each bag for testing.
- B. The seed shall comply with all provisions of the U.S. Department of Agriculture as to labeling, purity and germination.

2.4 MULCH

- A. Dry straw or hay of good quality, free of seeds of competing plants and at the rate of 1-1/2 to 2 tons per acre.
- B. A combination of good quality dry straw or hay, free of seeds of competing plants at a rate of 2-1/2 tons per acre and wood cellulose or cane fiber much at a rate of 500 pounds per acre.
- C. Sericea lespedeza seed bearing hay at a rate of 3 tons per acre. This mulch may be applied green or air dried, but must contain mature seed.
- D. Manufactured mulch materials, such as soil retention blankets, erosion control blankets / netting, or others that may be required on special areas of high water concentration or unstable soils. When these materials are used, follow the manufacturer's recommendations for installation.

SECTION 32 92 00 – TURF AND GRASSES

2.5 HYDRO MULCHING

- A. Wood cellulose fiber or cane fiber mulch shall be applied with hydraulic seeding and fertilizing equipment. All slurry ingredients shall be mixed to form a homogeneous slurry and spray-applied within one hour after the mixture is made.
- B. When wood cellulose or cane fiber mulch is used at the 500 pound per acre rate, straw or hay mulch with asphalt emulsion is applied over this to complete the mulch.
- C. Wood cellulose or cane fiber mulch at 1,000 pounds per acre rate is used alone where other mulch material will not stick.
- D. Wood cellulose or cane fiber mulch is self anchoring.

2.6 SOD

- A. Sod for all areas shall be certified turf type fescue sod. Certification shall insure that sod is a single type of grass variety, of consistent quality, and weed free.
- B. Sod should be machine cut and contain $\frac{3}{4}$ inch (+ or - $\frac{1}{4}$ inch) of soil, not including shoots or thatch. Sod should be certified and where possible grown in the general area of the project.
- C. Sod should be cut to the desired size. Torn or uneven pads should be rejected.
- D. Sod should be cut and installed within 36 hours of digging.
- E. Apply fertilizer and water as necessary to establish and maintain healthy sod.

PART 3 - EXECUTION

3.1 RESPONSIBILITY

- A. The Contractor will be responsible to fine grade acceptable topsoil which he has uniformly spread across the site to thicknesses required to bring finish grades to elevations, lines and contours shown on the drawings. Thickness of topsoil shall be a minimum of (6") inches everywhere.
- B. Accurately shape topsoil, remove all stones, roots and other foreign matter. Utilize rock hound or other similar equipment as necessary. Rake topsoil areas, provide fertilizer, grass seed, mulch, sod, and water as needed.

3.2 GRASS SEEDING (applies to any disturbed areas outside the limits of sod shown on the drawings)

- A. Remove stones, roots, rubbish and other deleterious materials from areas that are to be seeded.

SECTION 32 92 00 – TURF AND GRASSES

- B. Immediately prior to sowing seed, scarify ground as necessary; rake until surface is smooth and friable. Sow seed evenly, lightly rake into ground, then roll ground with suitable roller; water thoroughly with fine spray. Keep watered with sprinklers or other approved methods. Re-seed any areas not doing well or damaged. At intervals, as may be required according to seasonal conditions, mow and water grass and execute necessary weeding until acceptable and full stand of grass has been obtained.
- C. Provide permanent grass seeding for areas where sod is not to be installed. Seed in accordance with the following schedule unless otherwise approved by Engineer. Sow areas ready for seeding between April 1st and September 1st with Kentucky 31 Fescue at a minimum rate of 75 pounds per acre. Sow areas ready for seeding between September 1st and April 1st with Kentucky 31 Fescue at a minimum rate of 45 pounds per acre, and Annual Rye Grass at a minimum rate of 50 pounds per acre. Fescue grass seed shall be utilized on this project.
- D. Apply fertilizer at a minimum rate of 20 to 25 pounds per 1,000 square feet.
- E. Apply ground limestone at a rate of 30 pounds per 1,000 square feet.

3.3 MULCH

- A. All areas which are seeded shall be mulched.
- B. Mulch materials shall be applied uniformly over the seeded area in accordance with paragraphs 2.4 & 2.5 above.
- C. Unless self anchoring, mulch shall be anchored with an emulsified asphalt binder at the rate of 10 gallons per 1,000 square feet.

3.4 SOD

- A. Bring topsoil surface to grade. Clear of any trash, woody debris, stones and clods larger than 1 inch. Apply sod to soil surfaces only and not to frozen surfaces or gravel type soils.
- B. Mix fertilizer and lime into soil surface.
- C. Lay sod with tight joints and in straight lines. Don't overlap joints. Stagger joints and do not stretch sod.
- D. On slopes steeper than 3H:1V and areas of concentrated storm water runoff, sod should be anchored with pins or other approved methods. Installed sod should be rolled or tamped to provide good contact between sod and soil.
- E. Irrigate sod and the top 4 inches of soil immediately after installation.
- F. Sod should not be cut or installed in extremely wet or dry weather. Irrigation should be used to supplement rainfall for a minimum of 2 to 3 weeks. Thereafter, water as required to maintain.

SECTION 32 92 00 – TURF AND GRASSES

3.5 PROTECTION

- A. Provide, at no additional cost to the Owner, protection for seeded and sod areas against trespassing and damage. If damaged prior to Owner's acceptance, Contractor shall repair them as directed. Remove protection when directed by the Engineer.

3.6 MAINTENANCE

- A. Provide maintenance from start of work until Owner's acceptance and termination of TDEC permitting. Maintenance includes watering, weeding, mowing, repairs of washouts and gullies; repairs to protection, and other necessary work of maintenance. Maintain all slopes and areas of concentrated flow against erosion.
- B. Maintenance of sod should include re-sodding areas where an adequate stand of sod is not obtained. New sod should be mowed sparingly.

3.7 FINAL CLEAN-UP

- A. At time of final inspection of work, and before final acceptance by Owner, Contractor shall clean the site of all trash and debris which resulted from construction operations.
- B. Remove all excess material, trash and other debris from the site and properly dispose of them.

END OF SECTION 32 92 00