

STORM WATER POLLUTION PREVENTION PLAN REPORT

Project Name: Carriage Lane Road Storm Sewer and Roadway Improvements Project
County: Porter County
City: Westville
Location: Carriage Lane Road, west of North 550 East, in the Carriage Hills subdivision.
Project Area: 2.32 Acres
Disturbed Area: 2.32 Acres
Start / End Date: February 2024 / July 2025
HUC: 04040001060030
Latitude / Longitude: 41°33'57.41" N/86°57'50.43" W
Civil Township: Section 14, Township 35 N, Range 5 W, Jackson Township

Project Owner: Porter Co. Dept. Of Development & Storm Water Management
Chelsey Gordon, P.E.
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December 2023

DLZ # 2264-1424-90

A1 – Index Showing Locations of Required Plan Element

Section A – Assessment of Construction Plan Elements

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Attachment A

Sample Site Inspection Form

Appendix A

Project Drawings
Erosion Control Plans
Notice of Intent Copy

A2 – A vicinity map depicting the project site location in relationship to recognizable local landmarks, towns, and major road

The drawing below depicts the project areas in relation to surrounding streets.



— Project Location in Westville, IN

A3 – Narrative Describing the Nature and Purpose of the Project

The project is needed to replace failing storm sewer infrastructure along Carriage Lane Road.

A4 – Latitude and longitude to the nearest fifteen (15) seconds

The latitude and longitude of the project site is 41°33'60" N/86°57'45" W. Immediately upon completion of the storm sewer replacement project, a separate project replacing the roadway pavement will be undertaken. The pavement replacement project will be permitted separately along with associated site restoration, which includes partial road reconstruction.

A5 – Legal Description of the Project Site

The project is located in the SW Sec. 14, T35N, R5W, Jackson Township in Porter County, Indiana.

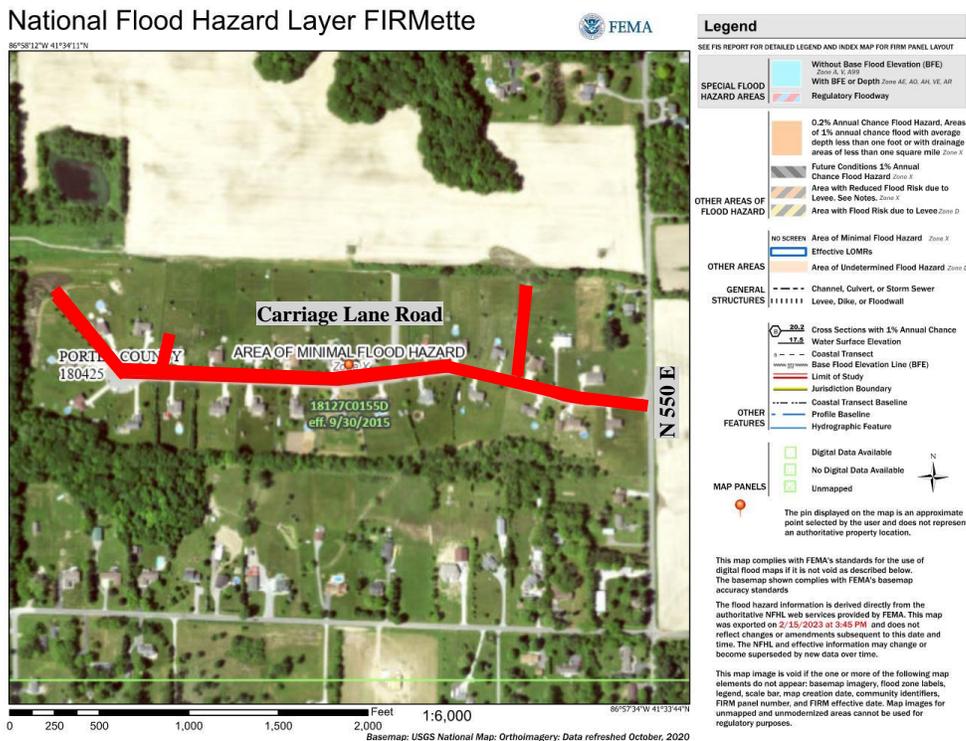
A6 – 11 X 17-inch plat showing building lot numbers/boundaries and road layout/names

The existing and proposed site conditions, including lot lines, property lines, and right-of-way lines, are shown in attached plans included in Appendix A (Sheets: 5 – 12).

A7 – Boundaries of the one hundred (100) year floodplains, floodway fringes, and floodways

As indicated on the maps shown below, the project does not lie within the limits of a FEMA regulatory floodway or floodplain. The detailed project area that is inside the Flood Insurance Rate Map (FIRMette) is shown below with panel 18127C0155D.

Project Location



A8 – Land use of all adjacent properties

The land uses immediately adjacent to the project is residential.

A9 – Identification of a U.S. EPA approved or established TMDL

Based on the Hydrologic Unit Code (HUC), the project limit falls within the Little Calumet River-Sand/Coffee Creeks watershed (HUC 04040001060030). According to the IDEM website, the Total Maximum Daily Load (TMDL) for Lake Michigan has been approved for pollutant E. coli while Grand Calumet River does not have an approved TMDL.

A10 – Name(s) of the receiving water(s)

The storm sewer system outlets to the detention pond on the west side of the Carriage Hills subdivision which ultimately discharges to Lake Michigan.

A11 – Identification of discharges to a water on the current 303d list of impaired waters and the pollutant(s) for which it is impaired

All inlets within the project limit will continue to be connected to the storm sewer system therefore not leading to any direct discharge.

A12 – Soil map of the predominant soil types

Below are maps from the United States Department of Agriculture, Soil Conservation “Soil Survey of Lake County, Indiana”.



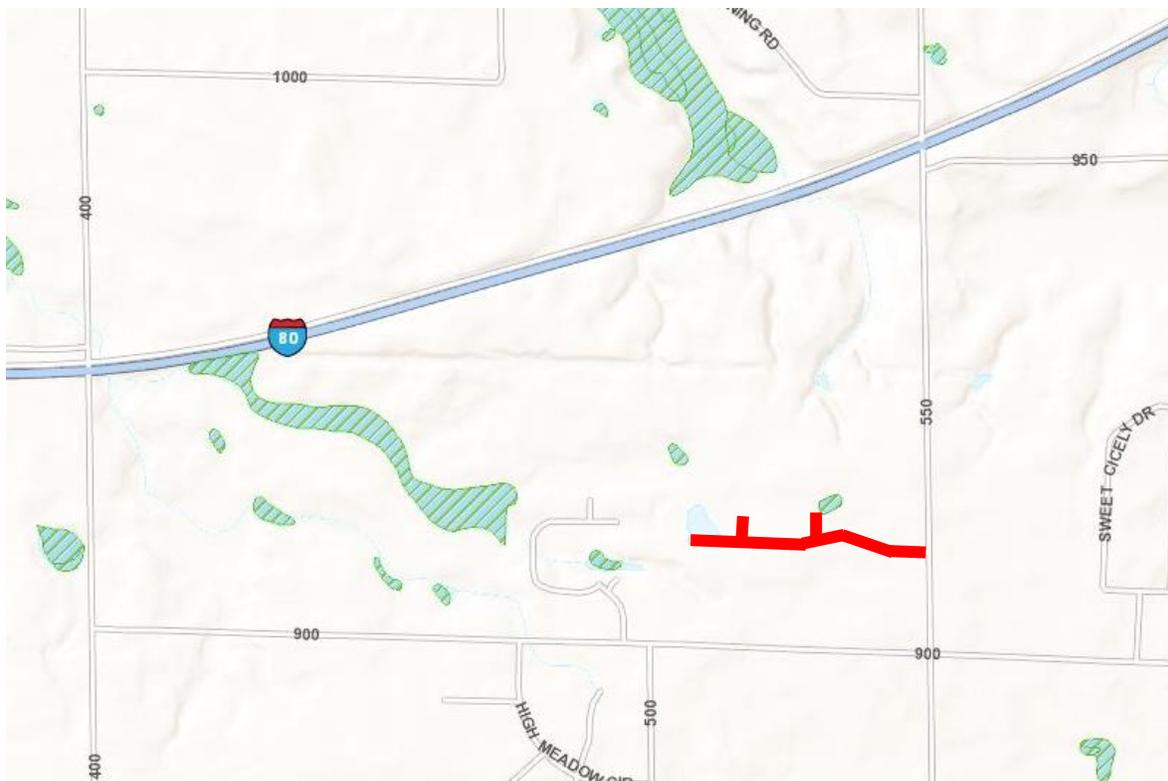
The project area is mainly composed of Haskins loam (**HKA**) and Riddles silt loam (RIB). Soil Map Unit Descriptions are shown below.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
HkA	Haskins loam, 0 to 2 percent slopes	21.4	50.2%
RIB	Riddles silt loam, 2 to 6 percent slopes	20.5	48.0%
Wh	Washtenaw silt loam	0.8	1.8%
Totals for Area of Interest		42.6	100.0%

A13 – Identification and location of all known wetlands, lakes and water courses on or adjacent to the project site (construction plan, existing site layout)

As indicated on the Indiana Map below, there are wetlands, lakes, and water courses on and adjacent to the project site.



Project Location

A14 – Identification of any other state or federal water quality permits or authorizations that are required for construction activities

No other state or federal water quality permits are required for this project.

A15 – Identification and delineation of existing cover, including natural buffers

See plan (Sheets: 5 – 12) included in Appendix A for the existing cover within the project limits. Natural buffers are not included in the project limit. As noted previously, existing land use in the project area is residential which results in existing cover to be roofs, lawns of buildings, asphalt roadway, and sidewalk.

A16 – Existing topography at a contour interval appropriate to indicate drainage patterns

See the plans (Sheets: 5 – 12) in Appendix A for existing site topography and erosion control (Sheets: 16-19) for contour information.

A17 – Location(s) of where run-off enters the project site

Generally, the run-off for this project will be from the roofs, driveways, and lawns within the project limits. The run-off location patterns will stay the same for this linear project.

A18 – Location(s) of where run-off discharges from the project site prior to land disturbance

Stormwater from the proposed improvements will drain into proposed storm sewers which outlet to the detention pond located on the west end of the Carriage Hills subdivision. See plans shown in Appendix A.

A19 – Location of all existing structures on the project site

See plan sheets (5 – 12) included in Appendix A, for the locations and approximate boundaries of all existing structures.

A20 – Existing permanent retention or detention facilities, including manmade wetlands, designed for the purpose of stormwater management

There are permanent retention or detention facilities, including manmade wetlands, within the project limits.

A21 – Locations where stormwater may be directly discharged into ground water, such as abandoned wells, sinkholes, or karst features

There are no abandoned wells, sinkholes, karst features or other locations where stormwater may directly discharge into ground water within the project limit.

A22 – Size of the project area expressed in acres

The size of the project area is 2.32 acres, including existing watershed areas.

A23 – Total expected land disturbance expressed in acres

The total expected land disturbance is approximately 2.32 acres.

A24 – Proposed final topography

See Plan sheets for final topography. Most of this project area will be returned to existing elevations and grades.

A25 – Locations and approximate boundaries of all disturbed areas

See plan sheets (5 – 12) included in Appendix A, for the locations and approximate boundaries of all disturbed areas.

A26 – Location, size, and dimensions of all stormwater drainage systems, such as culverts, storm sewers, and conveyance channels

See plan sheets (5 – 12) included in Appendix A, for the locations, size, and dimensions of all proposed stormwater drainage system components.

A27 – Locations of specific points where stormwater discharges will leave the project site

Stormwater from the proposed improvements will drain into proposed storm sewers which outlet to the Carriage Hills subdivision detention pond located at the west end of the project site. The southern six lots on the east side sheet flow to depressional area before existing the properties to the south. The remaining lots sheet flow to the south and west off site. The southern rear lots will not be disturbed for this project. See plans shown in Appendix A.

A28 – Location of all proposed site improvements, including roads, utilities, lot delineation and identification, proposed structures, and common areas

See the included construction drawings for the locations of all proposed site improvements, including roads, utilities, lot delineation and identification, proposed structures, and common areas.

A29 – Location of all on-site soil stockpiles and borrow areas

Due to the space limitations within the project limits, it is not anticipated that there will be any significant soil stockpiles. It is anticipated that soil that is not redistributed as part of this project and excess soil will be hauled off site throughout construction. Any areas deemed necessary to stockpile soil throughout the course of construction shall be added by the Contractor to the on-site up-to-date record of the Stormwater Pollution Prevention Plan.

A30 – Construction support activities that are expected to be part of the project

The contractor will be responsible for maintaining and cleaning any construction support activities deemed necessary, including but not limited to portable restroom facilities.

A31 – Location of any in-stream activities that are planned for the project including, but not limited to stream crossings and pump arounds

Not applicable to this project.

B1 – Description of the potential pollutant generating sources and pollutants, including all potential non-stormwater discharges

Potential sources of pollution include fuel and oil leakage from equipment and vehicles, and fueling locations, materials storage, and sediment runoff. Contractor shall submit construction staging plan to the Owner, Municipality, and/or Engineer detailing all vehicle and equipment parking areas, fueling locations, construction trailer placement, stockpiles, borrow piles, disposal areas, and designated concrete truck washout areas or method of portable concrete truck washout collection. Maintain a copy of this documentation on site at all times.

Adequate wetting to suppress the dust shall be employed before and during the demolition or when deemed necessary as determined by the Environmental Site Manager (ESM) or responsible individual.

B2 - Stable construction entrance locations and specifications

Any areas deemed necessary for a construction entrance throughout the course of construction shall be added by the Contractor to the on-site up-to-date record of the Stormwater Pollution Prevention Plan. Any sediment or debris tracked out of the project area must be cleaned up the same day it occurs. Generally, the existing pavement will be used as the construction entrance.

B3 - Specifications for temporary and permanent stabilization

If required during construction, wheats or rye will be placed on disturbed areas at the rate of 150 lb/acre throughout the project. See sheet 20 in the attached plans in Appendix A for detailed specification and sequencing information regarding temporary seeding and the various seed mixtures, applied rates and seasons. Temporary and permanent seeding will be required for this.

B4 - Sediment control measures for concentrated flow areas

Concentrated flow will be primarily in the existing curb and gutters. Inlet protection will be installed and maintained to intercept any sediment that may be suspended in the concentrated flow. See erosion control (Sheets: 16 – 19) included in Appendix A.

B5 - Sediment control measures for sheet flow areas.

The method of construction will provide minimal disturbance to soil. However, inlet protection will be used to intercept any sediments that may escape. See erosion control (Sheets: 16 - 19) included in Appendix A.

B6 - Run-off control measures

Additional run-off control measures including diversions, rock check dams, and slope are not applicable to this project.

B7 - Stormwater outlet protection locations and specifications

Outlet protection will be applied to the existing inlets and existing culvert outfalls.

B8 - Grade stabilization structure locations and specifications

Not applicable to this project.

B9 - Dewatering applications and management methods

In cases where Dewatering is required, a pump shall be used. The discharged water will be handled by the Contractor in accordance with Section 107.15 to 108.04 of the most current version of the INDOT Standard Specifications and any supplements thereto.

B10 Measures utilized for work within waterbodies

Not applicable to this project.

B11 – Maintenance guidelines for each proposed temporary stormwater quality measure

On-site monitoring will be performed by the Contractor. The contractor has full responsibility of inspecting the erosion control measures on a daily basis. The Contractor shall designate an individual responsible for installation, inspection, and maintenance of these measures. At a minimum, practices need to be inspected weekly, within 24 hours after each storm event over ½ inch and daily during prolonged storm events. Inspection of practices during a storm event is advantageous because the inspector can easily identify where measures need to be repaired or replaced. Failing practices shall be repaired or replaced immediately.

General guidance on maintenance is provided with the detail drawings on plans. A sample inspection form is provided in Appendix A. In addition to inspection of the site, the Contractor will be required to maintain all erosion control measures in accordance with Section 205.04 of the most current INDOT Standard Specifications and as directed by the Resident Project Representative. Copies of the self-inspection report shall be forwarded to the MS4 Coordinator by email on a weekly basis.

B12 - Planned construction sequence describing the relationship between implementation of stormwater quality measures in relation to land disturbance

An Owner's representative in conjunction with the Contractor shall inspect practices at least once a week and make repairs immediately after periods of rainfall during all phases of the Erosion Control Construction Sequence.

1. *Evaluation/Protection of Important Site Characteristics* – Before construction, mark, and protect any areas where vegetation is to remain.
2. *Construction Routes, Equipment Parking Areas* –All ingress and egress points shall be stabilized and utilize existing paved surfaces where possible.
3. *Perimeter Protection* – Install principal barriers after construction site is assessed and as land disturbance begins. Install additional barriers as needed during grading.
4. *Inlet Protection* – Protection of existing structures to be installed prior to earthwork or clearing. Additional protection shall be installed as construction progresses around any newly installed drains.

5. *Demolition, Cutting/Filling* – Begin major clearing and grading only after installing the key sediment and runoff measures. Install additional control measures as grading progresses. Control dust during demolition.
6. *Underground Utility Installation* – Begin removals and construction of storm sewer modifications only after installing the key sediment and runoff measures. Control dust during removals and installation of all other utility modifications. All other utility relocations will be permitted separately through utility company.
7. *Outlet Protection and Bank Stabilization* - Immediately following placement of outfall structures of the temporary sediment basins, adjacent area will be stabilized with stone. Bank restoration will be implemented as soon as removal of existing walls and debris, along with adjacent grading, is complete.
8. *Temporary Seeding* – Apply temporary stabilization measures immediately on all disturbed areas where work is delayed or completed for 7 days or more.
9. *Paving* – Pave roadway, trail, and driveway approaches.
10. *Permanent Seeding and Landscape*– Install landscape measures as shown on plans after adjacent hardscape work is completed.
11. *Construction Close Out* – Remove remaining temporary measures (perimeter protection & inlet protection) and restore affected areas as needed. Maintain post construction water quality (lawn areas).
12. *Final Site Inspection* - A final site inspection will take place to assure that all requirements of the SWPPP, construction plans, and supporting documents have been fulfilled. Then a Notice of Termination (NOT) must be submitted to and approved by the Indiana Department of Environmental Management office. The NOT form can be found at <http://www.in.gov/icpr/webfile/formsdiv/51514.pdf>.

B13 - Provisions for erosion and sediment control on individual building lots regulated under the proposed project

Not applicable to this project.

B14 - Material handling and spill prevention and spill response plan meeting the requirements in 327 IAC 2-6.1

Prior to the commencement of construction, the Contractor will be required to submit a material handling and spill prevention plan. The contractor is responsible for prevention and cleanup of any of these sources. The contractor is urged to protect the site and maintain a single storage and fueling area on site (if on site fueling cannot be avoided). It is the responsibility of the contractor to handle the pollutant properly and respond to a spill.

Materials should be stored in a manner that prevents or minimizes the chance that a spill will reach soils, groundwater, or surface water. Materials stored inside shall be placed in a manner to prevent a spill

from migrating outside the confines of the building or into any drain leaving the building and discharging to the coils, ground water or surface water.

If a spill does occur, then the spill must be contained immediately utilizing appropriate response techniques including diking and absorbents. Clean up of the spill should occur as soon as possible once the spill is stabilized and contained. Spills shall be cleaned up using acceptable methods such as, absorbents on impervious surfaces or removal of contaminated soils. All spills that occur near an inlet to the stormwater conveyance system must have “curbing” implemented immediately. “Curbing” is the use of a barrier (absorbent material) which prevents the spill from making contact with the stormwater conveyance system or stormwater runoff. In all cases cleanup standards must adhere to local, state and federal requirements. Failure to clean up any spill is a violation of the Indiana State Spill Rule (327 IAC 2-6.1), which is enforced by the Indiana Department of Environmental Management (IDEM). Certain spills must be reported to the local response agency, Local Emergency Planning Committee and/or IDEM and Westville Wastewater Treatment Plant. Initial calls should be made to the 911 system if the spill exceeds reportable quantities or is a threat to public safety. The 911 system will typically notify the Fire Department. IDEM (1-888-233-7745) can typically assist with information on cleanup operations or clean up contractors.

B15 – Material handling and storage procedures associated with construction activity

This project will be staged block by block. All materials will be stored in the roadway on whichever block construction is happening. The materials associated with this project are pipe, structural backfill and equipment storage. Possible leaks from equipment shall be cleaned up using acceptable methods such as, absorbents on impervious surfaces or removal of contaminated soils. All spills that occur near an inlet to the stormwater conveyance system must have “curbing” implemented immediately. “Curbing” is the use of a barrier (absorbent material) which prevents the spill from contacting the stormwater conveyance system or stormwater runoff. In case of unused structural backfill overnight, silt sock is to be used around the base of the stockpile.

C1 - Description of pollutants and their sources associated with the proposed land use

This project pollutant sources will be similar to those already existing in the project area, as it is mainly composed of impervious roadway. Pollutants that may be generated during construction include oil, grease, antifreeze, brake fluid, brake dust, rubber, gasoline, diesel, metals, grit, trash, road salt and sand.

C2 - Description of proposed post-construction stormwater measures

All impervious surfaces will be restored, and runoff will continue to be captured by existing and proposed inlets connected to the storm sewer system. See plans (Sheets: 5 – 12) in Appendix A.

C3 - Plan details for each stormwater measure

See the plans (Sheet 5) for type of casings and pipes to be used on the project. Refer to Division 700 in the most current version of the INDOT Standard Drawings for properties of the storm sewer network indicated on the plan set.

C4 – Sequence describing stormwater measure implementation

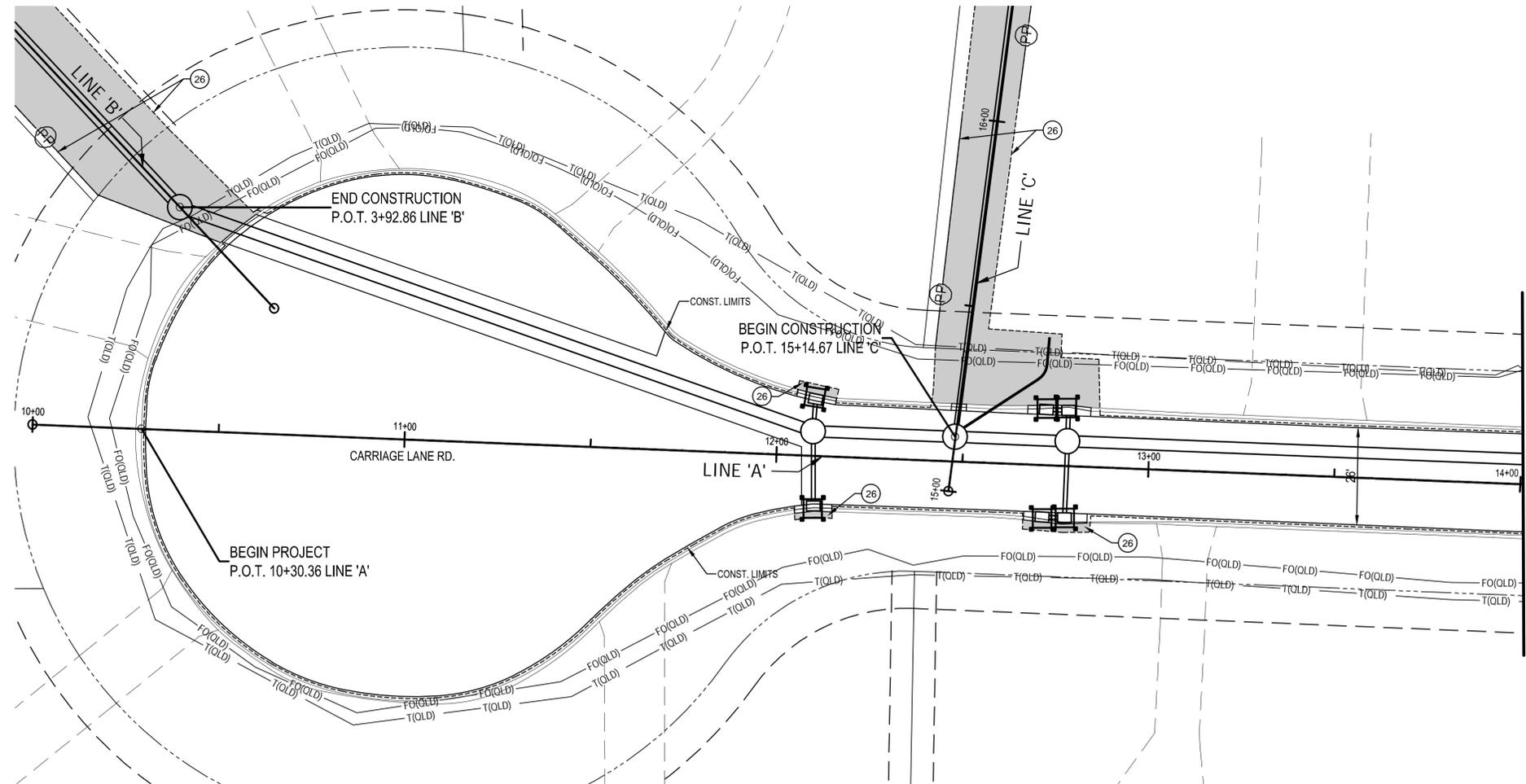
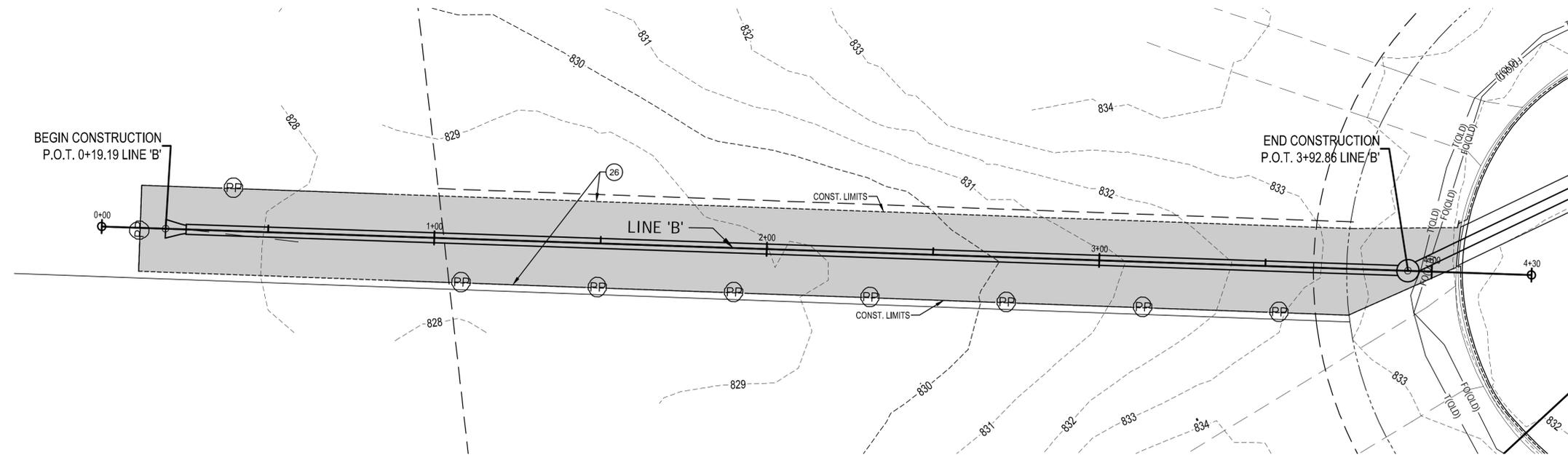
This project involves the installation of storm sewer and roadway reconstruction. All disturbed areas will be stabilized with grass/ plantings per specifications after final grade is achieved. These measures will be constructed at locations indicated on the plans (Sheets: 5 - 12) prior to adjacent areas being graded to them.

C5 – Maintenance guidelines for proposed post-construction stormwater measures

No new post-construction stormwater measures are proposed. All post-construction run-off enters the storm sewer.

C6 – Entity that will be responsible for operation and maintenance of the post-construction stormwater measures

The Porter County Department of Development & Storm Water Management will clean and remove sediment and debris from stormwater structures. Inspections of stormwater structures will occur after significant rain events during the first year. The Porter County Department of Development & Storm Water Management will adjust the frequency of inspections and cleaning, as necessary after the first year, based on its findings.



MATCHLINE - SEE SHEET C3.1

- LEGEND**
- PP PERIMETER PROTECTION
 - TEMPORARY CURB INLET PROTECTION
 - 26 MULCHED SEEDING, TYPE U AND 6" OF TOPSOIL



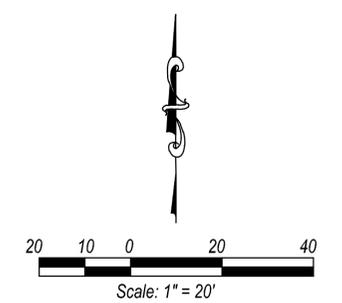
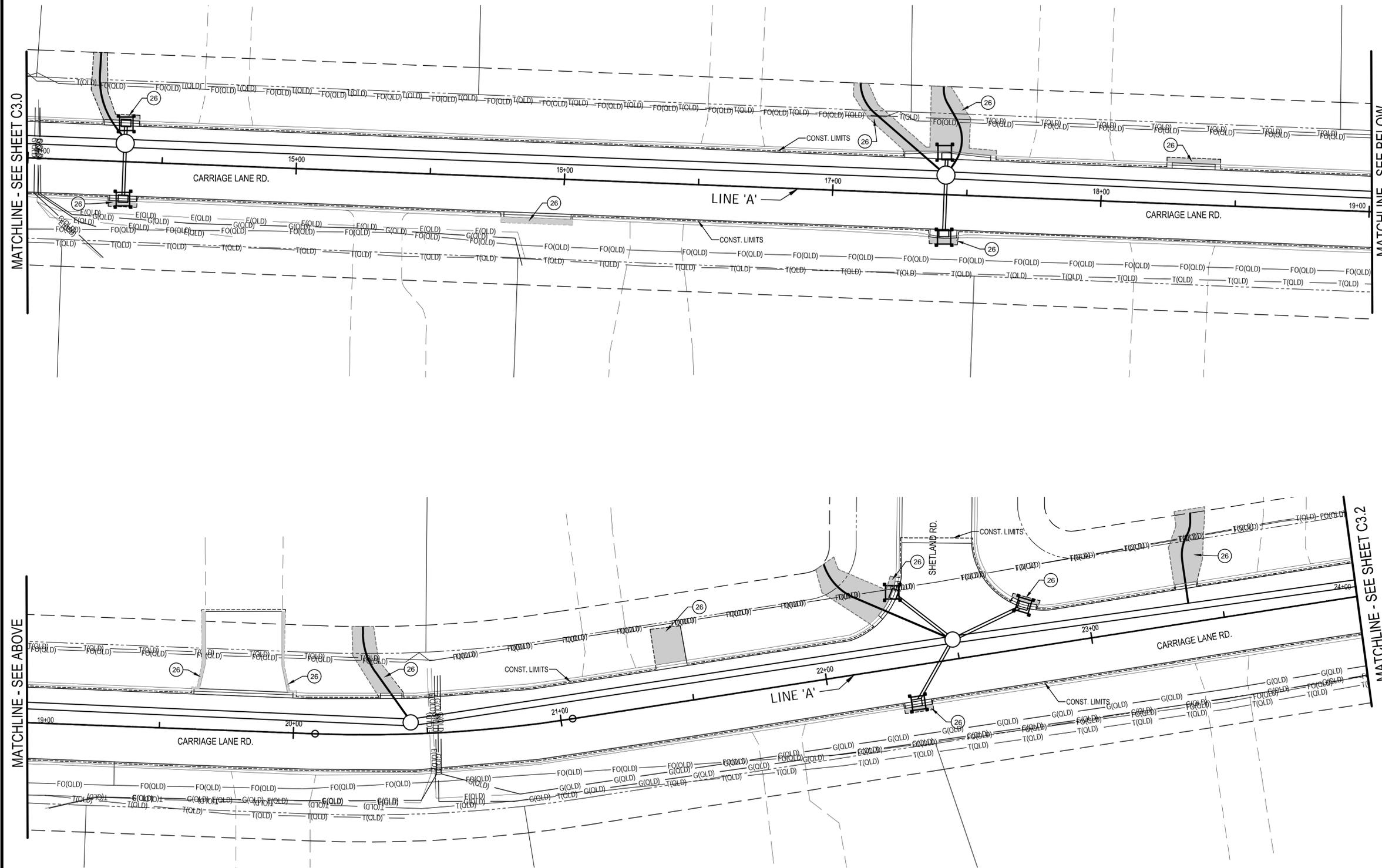
PORTER COUNTY
CARRIAGE LANE ROAD
 STORM SEWER & ROADWAY IMPROVEMENTS
 INDIANA
 EROSION CONTROL PLAN

NO.	REVISION	BY	DATE

DRAWN: BRA CHK'D: EMM
 DESIGNED: BRA APPR'VD: AJK
 DATE: DECEMBER 2023
 HORIZ. SCALE: 1" = 20'
 VERT. SCALE: N/A
 PROJECT NUMBER
2264-1424-90

SHEET 16	
OF 21	
DRAWING NUMBER	C3.0

12/08/2023
 DLZ INDIANA, LLC



- LEGEND**
-  TEMPORARY CURB INLET PROTECTION
 -  MULCHED SEEDING, TYPE U AND 6" OF TOPSOIL

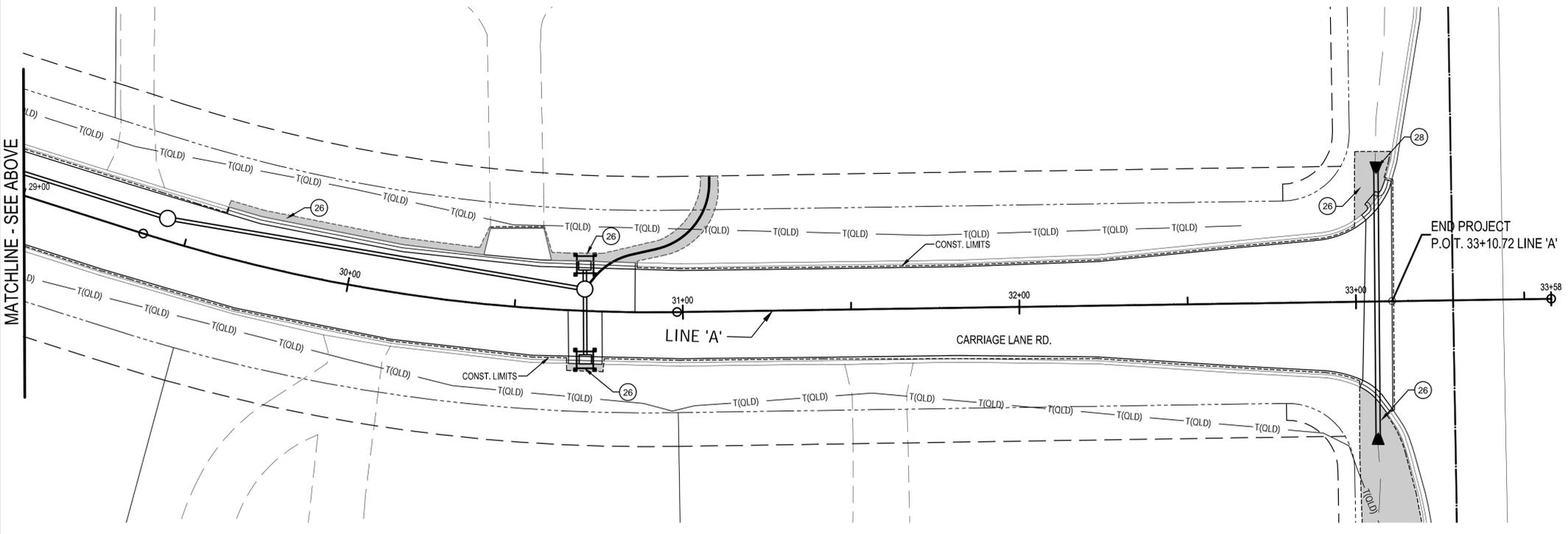
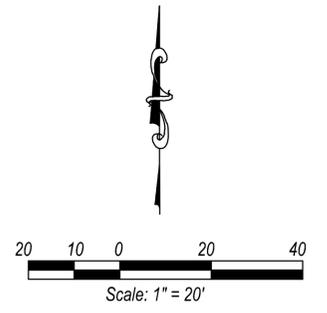
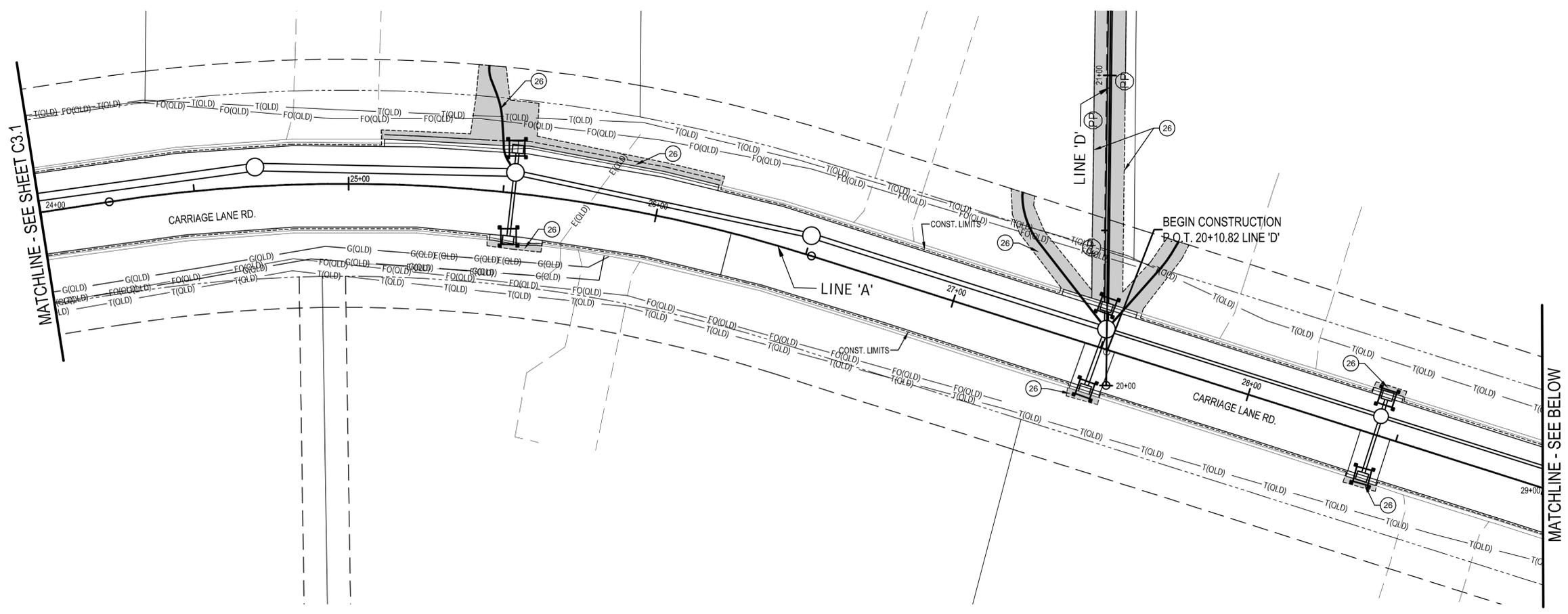


PORTER COUNTY
CARRIAGE LANE ROAD
 STORM SEWER & ROADWAY IMPROVEMENTS
 INDIANA
 EROSION CONTROL PLAN

DRAWN: BRA	CHK'D: EMM	NO.	REVISION	BY	DATE
DESIGNED: BRA	APPR'VD: AJK	▲			
DATE: DECEMBER 2023		▲			
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VERT. SCALE: N/A		▲			
PROJECT NUMBER		▲			
2264-1424-90		▲			

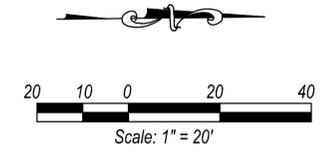
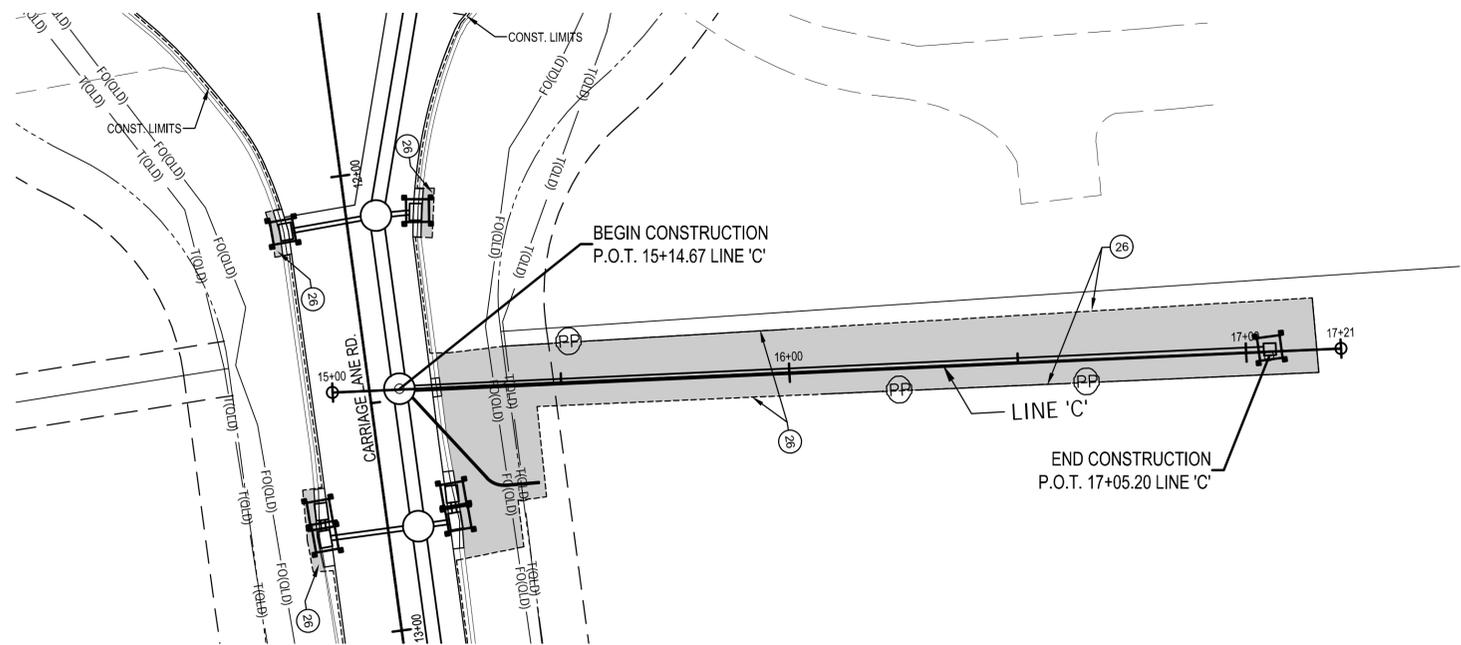
SHEET 17
OF 21
DRAWING NUMBER
C3.1

12/08/2023
 DLZ INDIANA, LLC

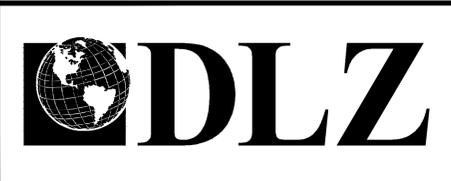
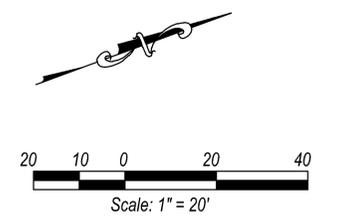
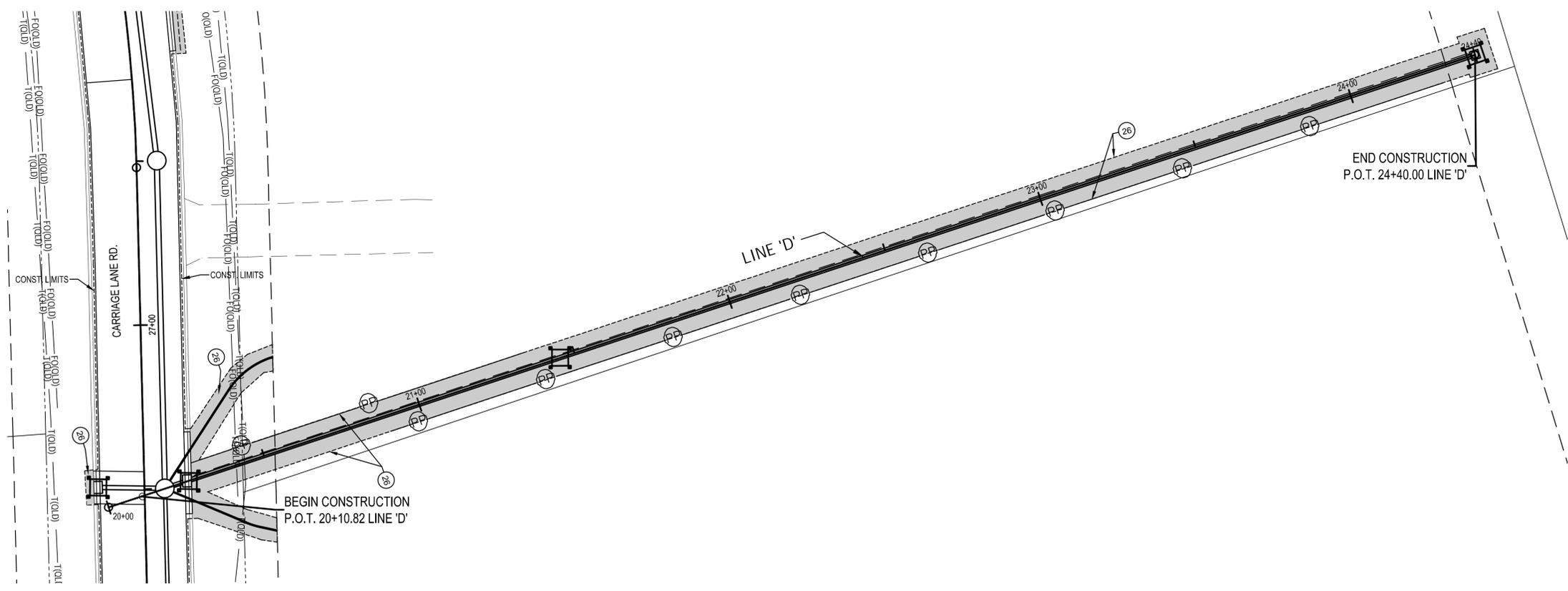


- LEGEND**
- ⊖ PP PERIMETER PROTECTION
 - ⊞ TEMPORARY CURB INLET PROTECTION
 - ⊙ 26 MULCHED SEEDING, TYPE U AND 6" OF TOPSOIL
 - ⊙ 28 CULVERT ENTRANCE PROTECTION

	PORTER COUNTY	INDIANA	DRAWN: BRA CHK'D: EMM NO. 	REVISION	BY	DATE	
	CARRIAGE LANE ROAD STORM SEWER & ROADWAY IMPROVEMENTS		DESIGNED: BRA APPR'D: AJK 	DATE: DECEMBER 2023 	HORIZ. SCALE: 1" = 20' 	VERT. SCALE: N/A 	PROJECT NUMBER
EROSION CONTROL PLAN			2264-1424-90 				
						12/08/2023 DLZ INDIANA, LLC	SHEET 18 OF 21 DRAWING NUMBER <h1 style="margin: 0;">C3.2</h1>



- LEGEND
- ⊖ PERIMETER PROTECTION
 - ⊠ TEMPORARY CURB INLET PROTECTION
 - ⊙ MULCHED SEEDING, TYPE U AND 6" OF TOPSOIL



PORTER COUNTY INDIANA

**CARRIAGE LANE ROAD
STORM SEWER & ROADWAY IMPROVEMENTS**

EROSION CONTROL PLAN

DRAWN:	CHK'D:	NO.	REVISION	BY	DATE
BRA	EMM	▲			
DESIGNED: BRA	APPR'VD: AJK	▲			
DATE: DECEMBER 2023		▲			
HORIZ. SCALE: 1" = 20'		▲			
VERT. SCALE: N/A		▲			
PROJECT NUMBER		▲			
2264-1424-90		▲			

SHEET	19
OF	21
DRAWING NUMBER	C3.3

12/08/2023
DLZ INDIANA, LLC

GENERAL EROSION CONTROL NOTES

1. ALL EROSION CONTROL MEASURES TO BE INSTALLED AND MAINTAINED PER THE INDIANA STORMWATER QUALITY MANUAL OR INDOT STANDARDS. PROPRIETARY EROSION CONTROL DEVICES ARE TO BE INSTALLED AND MAINTAINED PER THE MANUFACTURER'S RECOMMENDATIONS.
2. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL DAMAGES, RESTORATION AND CLEAN-UP ASSOCIATED WITH SEDIMENTS LEAVING THE SITE.
3. THE CONTRACTOR WILL BE RESPONSIBLE FOR INSTALLING, INSPECTING AND MAINTAINING ALL NECESSARY EROSION CONTROL MEASURES UNTIL THE OWNER ACCEPTS THE PROJECT AS COMPLETE.
4. THE CONTRACTOR SHALL KEEP THE EXISTING PAVEMENT FREE OF SEDIMENT. THE CONTRACTOR SHALL REMOVE SEDIMENTS FROM PAVEMENT BY SWEEPING TECHNIQUES. FLUSHING THE PAVEMENT AS A CLEANING TECHNIQUE IS NOT ACCEPTABLE.
5. SLOPES GREATER THAN 4:1 WITH A VERTICAL CHANGE GREATER THAN TWO FEET SHALL RECEIVE AN EROSION CONTROL BLANKET. THE BLANKET SHALL HAVE A LIFE EXPECTANCY OF 24 MONTHS WITH BIODEGRADABLE NETTING.
6. ANY SOILS REMOVED FROM THE SITE ARE TO BE TREATED WITH THE SAME CARE AND REQUIREMENTS SET FORTH IN THIS PLAN.
7. THE CONTRACTOR SHALL KEEP A WEEKLY LOG OF EROSION CONTROL INSPECTIONS. THE LOG SHOULD IDENTIFY THE CONDITION OF THE EROSION CONTROL MEASURES, ANY REQUIRED MAINTENANCE TO THE EROSION CONTROL MEASURES AND ADDITIONAL STEPS TAKEN TO RECTIFY AND PREVENT EROSION AS IDENTIFIED DURING THE INSPECTION. THE LOG NEEDS TO BE AVAILABLE FOR REVIEW, IF REQUESTED, BY THE OWNER, THE ENGINEER OR ANY AGENCY WITH INSPECTION AUTHORITY.
8. CONTRACTOR IS FREE TO USE PROPRIETARY EROSION CONTROL PRODUCTS THAT ARE ACCEPTABLE IN THE STATE OF INDIANA. THE OWNER AND/OR ENGINEER MUST APPROVE THE SAID PROPRIETARY PRODUCT BEFORE INSTALLATION.
9. CONTRACTOR TO APPLY TEMPORARY SEEDING TO ANY DISTURBED SOIL THAT IS TO REMAIN UNWORKED FOR 15 DAYS OR MORE.
10. CONTRACTOR TO PROVIDE INLET PROTECTION MEASURES TO ALL GRATED STRUCTURES THAT COULD RESPONSIBLY BE EXPECTED TO COLLECT RUN-OFF FROM DISTURBED AREAS. INLET PROTECTION MEASURES CAN NOT BE A TRAFFIC HAZARD AND MUST BE ACCEPTABLE TO THE PORTER COUNTY COMMISSIONERS.
11. CONTRACTOR TO MAINTAIN A SPILL PROTECTION PLAN. THE PLAN NEEDS TO INCLUDE HAVING SPILL CLEAN-UP KITS ON SITE. ALL FUELING, MAINTENANCE ACTIVITIES AND LIQUID HANDLING ACTIVITIES SHALL OCCUR IN DESIGNATED AREA. THE SAID AREAS SHALL BE SURROUNDED BY IMPERMEABLE BERMS OR BOOMS TO CONTAIN POSSIBLE SPILLS.
12. CONTRACTOR (TBD) IS RESPONSIBLE FOR EROSION AND SEDIMENT CONTROL ON SITE.

CONSTRUCTION CONTAMINANTS OF CONCERN

FUEL AND MAINTENANCE FLUIDS	FUELING, VEHICLE MAINTENANCE AND PARKING SHALL BE ONLY IN DESIGNATED AREAS. AREAS SHALL BE PROTECTED WITH IMPERMEABLE BERM TO PREVENT SPILL MIGRATION. CONTRACTOR SHALL KEEP SPILL CLEAN-UP KITS ON SITE. CONTRACTOR SHALL FOLLOW EPA AND IDEM REQUIREMENTS FOR SPILLS
CONCRETE WASTE AND CONCRETE UTILITY CLEAN-UP	A DESIGNATED CONCRETE WASHOUT CLEAN-UP AREA SHALL BE DESIGNATED FOR CLEANING CONCRETE TOOLS AND UTILITY CLEAN-UPS. NO CONCRETE OR WATER LATENT WITH CONCRETE RESIDUE CAN BE DUMPED INTO SEWER FACILITIES OR WATERWAYS.
MATERIAL PACKAGING AND DEBRIS	CONTRACTOR SHALL ABIDE BY A GOOD HOUSEKEEPING POLICY. GENERAL TRASH AND DEBRIS SHALL BE COLLECTED AND DISPOSED OF PROPERLY ON A DAILY BASIS. CONTRACTOR WILL BE RESPONSIBLE FOR COLLECTING ANY TRASH THAT IS BLOWN FROM THE SITE.
SANITARY FACILITIES	CONTRACTOR SHALL PROVIDE THE APPROPRIATE TEMPORARY SANITARY FACILITIES ON SITE. FACILITIES SHALL BE MAINTAINED AND DISPOSED OF IN A LEGAL AND RESPONSIBLE FASHION.
FERTILIZERS, HERBICIDES AND SEEDS	CONTRACTOR SHALL STORE FERTILIZERS, HERBICIDES AND SEEDING SUPPLIES OFF-SITE OR WITHIN AN ENCLOSED FACILITY TO PROTECT FROM WEATHER. SPILLS OF FERTILIZERS AND HERBICIDES SHALL BE CLEANED AND COLLECTED FOR APPROPRIATE DISPOSAL. FLUSHING OF FERTILIZERS, HERBICIDES AND SEED MIXTURES INTO THE STORMWATER FACILITIES AND/OR DRAINAGE WAYS IS PROHIBITED.

INSTALLATION

SEEDBED PREPARATION:

1. TEST SOIL TO DETERMINE PH AND NUTRIENT LEVELS.
2. APPLY SOIL AMENDMENTS AS RECOMMENDED BY THE SOIL TEST. IF TESTING IS NOT DONE, APPLY 400 TO 600 POUNDS PER ACRE OF 12-12-12 ANALYSIS FERTILIZER, OR EQUIVALENT.
3. WORK THE SOIL AMENDMENTS INTO THE UPPER TWO TO FOUR INCHES OF THE SOIL WITH A DISK OR RAKE OPERATED ACROSS THE SLOPE.

SEEDING:

1. SELECT A SEED SPECIES OR AN APPROPRIATE SEED MIXTURE AND APPLICATION RATE FROM TABLE 1.
2. APPLY SEED UNIFORMLY WITH A DRILL SEEDER, CYCLONE SEEDER, HAND OR OTHER APPROVED EQUIPMENT WHICH ALLOWS FOR EVEN DISTRIBUTION OF THE SEED. PLANT OR COVER SEED TO THE DEPTH SHOWN IN TABLE 1.
 - IF DRILLING OR BROADCASTING THE SEED, ENSURE GOOD SEED-TO-SOIL CONTACT BY FIRING THE SEEDBED WITH A ROLLER OR CULTIPACKER AFTER COMPLETING SEEDING OPERATIONS.
 - DAILY SEEDING WHEN THE SOIL IS MOIST IS USUALLY MOST EFFECTIVE.
 - IF SEEDING IS DONE WITH A HYDROSEEDER, FERTILIZER AND MULCH CAN BE APPLIED WITH THE SEED IN A SLURRY MIXTURE.
 - WITHIN 24 HOURS AFTER SEEDING, APPLY MULCH AND ANCHOR IT IN PLACE.

MAINTENANCE:

1. INSPECT WITHIN 24 HOURS OF EACH RAIN EVENT AND AT LEAST ONCE EVERY SEVEN CALENDAR DAYS. IF AS A RESULT OF A RAIN EVENT, THE PREPARED SEED BED BECOMES RUTTED, CRUSTED OR ERODED, OR DEPRESSIONS EXIST, THE SOIL SHALL BE REWORKED UNTIL IT IS SMOOTH. REWORKED AREAS SHALL BE RE-SEEDDED.
2. CHECK FOR EROSION OR MOVEMENT OF MULCH AND REPAIR IMMEDIATELY.
3. MONITOR FOR EROSION DAMAGE AND ADEQUATE COVER (80 PERCENT DENSITY); RESEED, FERTILIZE, AND APPLY MULCH WHERE NECESSARY.
4. IF NITROGEN DEFICIENCY IS APPARENT, TOP-DRESS FALL SEEDDED WHEAT OR RYE SEEDING WITH 50 POUNDS PER ACRE OF NITROGEN IN FEBRUARY OR MARCH.

LIMITATIONS:

1. HIGH SLOPES AND AREAS OF CONCENTRATED RUNOFF FLOW SHOULD BE ADDRESSED WITH MORE RIGOROUS SURFACE STABILIZATION PRACTICES SUCH AS EROSION CONTROL BLANKETS AND TURF REINFORCEMENT MATS

SEE SPECIFICATIONS FOR INFORMATION ON PERMANENT SEEDING.

SEED SPECIES	RATE PER ACRE	PLANTING DEPTH	OPTIMUM DATES
OATS	150 LBS	½ INCH	JAN 1 - JUNE 15
MULCHING	150 LBS	½ INCH	JUNE 16 - AUG 31
WINTER WHEAT	150 LBS	½ INCH	SEPT 1 - DEC 1

TEMPORARY SEEDING

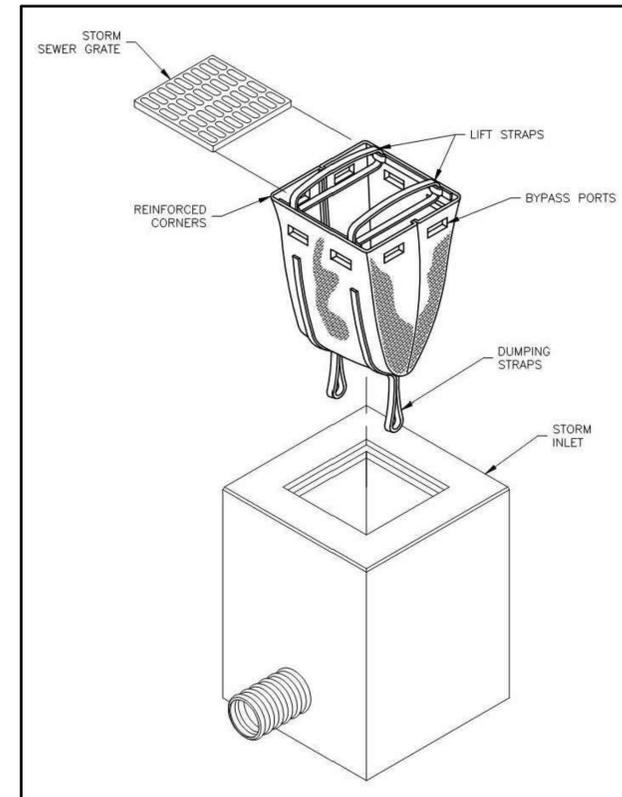
SCALE: NTS

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C3.4

CONSTRUCTION SEQUENCE AND COMMON PRACTICES FOR EROSION AND SEDIMENT CONTROL

- | | | |
|--|--|--|
| <ol style="list-style-type: none"> 1. EVALUATE THE SITE
BEFORE CONSTRUCTION, CONTRACTOR SHALL EVALUATE THE SITE AND MARK VEGETATIVE AREAS AND TREES TO BE PROTECTED. UNIQUE AREAS TO PRESERVE, ON-SITE SEPTIC SYSTEM ABSORPTION FIELDS, AND VEGETATION SUITABLE FOR FILTER STRIPS, ESPECIALLY IN PERIMETER AREAS. 2. PROTECT TREES AND SENSITIVE AREAS
TO PREVENT ROOT DAMAGE, DO NOT GRAB, BURN, PLACE SOIL PILES, OR PARK VEHICLES NEAR TREES OR IN AREAS MARKED FOR PRESERVATION. PLACE PLASTIC MESH OR SNOW FENCE BARRIERS AROUND THE TREES' DRIFLINES TO PROTECT THE AREA BELOW THEIR BRANCHES.
PLACE A PHYSICAL BARRIER, SUCH AS PLASTIC FENCING, AROUND THE AREA DESIGNATED FOR A SEPTIC SYSTEM ABSORPTION FIELD (IF APPLICABLE). 3. INSTALL PERIMETER EROSION AND SEDIMENT CONTROLS
IDENTIFY THE AREAS WHERE SEDIMENT LADEN RUNOFF COULD LEAVE THE CONSTRUCTION SITE, AND INSTALL PERIMETER CONTROLS TO MINIMIZE THE POTENTIAL FOR OFF-SITE SEDIMENTATION. IT'S IMPORTANT THAT PERIMETER CONTROLS ARE IN PLACE BEFORE ANY EARTHMOVING ACTIVITIES BEGIN. 4. PROTECT DOWN-SLOPE AREAS WITH VEGETATIVE FILTER STRIPS
ON SLOPES OF LESS THAN SIX PERCENT, PRESERVE A 20-TO 30-FOOT WIDE (MINIMUM) VEGETATIVE BUFFER STRIP AROUND THE PERIMETER OF THE PROPERTY, AND USE IT AS A FILTER STRIP FOR TRAPPING SEDIMENT. DO NOT MOW FILTER STRIP VEGETATION SHORTER THAN FOUR INCHES. 5. PROTECT DOWN-SLOPE AREAS WITH SILT FENCES AND OTHER APPROPRIATE PRACTICES
USE SILT FENCING ALONG THE PERIMETER OF THE LOT'S DOWNSLOPE SIDE(S) TO TRAP SEDIMENT. REFER TO SILT FENCES PRACTICES. 6. INSTALL GRAVEL DRIVE
RESTRICT ALL LOT ACCESS TO THIS DRIVE TO PREVENT VEHICLES FROM TRACKING MUD ONTO ROADWAYS. REFER TO GRAVEL | <ol style="list-style-type: none"> 7. PROTECT STORM SEWER INLETS
CURB INLET PROTECTION DEVICES ARE NOT EFFICIENT IN REMOVING SEDIMENT FROM STORM WATER RUNOFF. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES MUST BE INCORPORATED INTO THE PLAN AND THE DAY-TO-DAY CONSTRUCTION OPERATIONS TO MINIMIZE THE AMOUNT OF SEDIMENT ENTERING A STREET. THE BEST DEFENSE IN CONTROLLING SEDIMENTATION IS THE INSTALLATION OF PERIMETER PROTECTION DOWNSLOPE OF THE CONSTRUCTION ENTRANCES AND DAILY CLEANING AND REMOVAL OF SEDIMENT FROM STREETS. EVEN WITH THESE MEASURES IMPLEMENTED, SEDIMENT AND TRACKED SOIL WILL FIND THEIR WAY INTO THE STREET. CURB INLET PROTECTION DEVICES ARE DESIGNED TO CAPTURE SEDIMENT. HOWEVER, THESE PRACTICES ARE NOT DESIGNED TO TRAP LARGE AMOUNTS OF SEDIMENT AND REQUIRE FREQUENT MAINTENANCE IF THEY ARE TO REMAIN EFFECTIVE. WHEN SELECTING A CURB INLET PROTECTION MEASURE, IT IS IMPORTANT TO SELECT A DEVICE THAT DOES NOT BLOCK THE INLET ENTIRELY. TOTAL OBSTRUCTION OF THE INLET WILL CAUSE EXCESSIVE PONDING AND IN SOME SITUATIONS BYPASS FLOW THAT MAY RESULT IN EROSION.
PROTECT ON-SITE STORM SEWER DROP INLETS WITH SILT FENCE MATERIAL OR EQUIVALENT MEASURES. REFER TO DROP INLET PROTECTION DRAWINGS. 8. PREPARE THE SITE FOR CONSTRUCTION
PREPARE THE SITE FOR CONSTRUCTION AND FOR INSTALLATION OF UTILITIES. MAKE SURE ALL CONTRACTORS (ESPECIALLY THE EXCAVATING CONTRACTOR) ARE AWARE OF AREAS TO BE PROTECTED. 9. SALVAGE AND STOCKPILE TOPSOIL OR SUBSOIL
REMOVE TOPSOIL (TYPICALLY THE UPPER FOUR TO SIX INCHES OF THE SOIL MATERIAL) AND STOCKPILE.
REMOVE SUBSOIL, INCLUDING ANY EXCAVATED MATERIAL ASSOCIATED WITH BASEMENT CONSTRUCTION, AND STOCKPILE SEPARATELY FROM THE TOPSOIL.
ON SMALL BUILDING SITES, IT MAY NOT BE FEASIBLE TO STOCKPILE SOIL MATERIAL ON EACH INDIVIDUAL LOT DUE TO SPACE LIMITATIONS. IN THESE SITUATIONS, SOIL | <ol style="list-style-type: none"> MATERIAL SHOULD BE TRANSPORTED TO PROTECTED AREAS DESIGNATED ON THE OVERALL CONSTRUCTION PLAN OR THOSE AREAS DESIGNATED BY THE DEVELOPER. LOCATE THE STOCKPILES AWAY FROM ANY DOWNSLOPE STREET, DRIVEWAY, STREAM, LAKE, WETLAND, DITCH OR DRAINAGE WAY. IMMEDIATELY AFTER STOCKPILING, TEMPORARY SEED THE STOCKPILES WITH ANNUAL RYE OR WINTER WHEAT AND/OR INSTALL SEDIMENT BARRIERS AROUND THE PERIMETER OF THE PILES.
DO NOT PLACE STOCKPILES IN A DRAINAGE EASEMENT. 10. REMOVE REMAINING TEMPORARY CONTROL MEASURES
ONCE THE SOD AND/OR VEGETATION IS WELL ESTABLISHED, REMOVE ANY REMAINING TEMPORARY EROSION AND SEDIMENT CONTROL PRACTICES, SUCH AS:
REMOVE DOWNSPOUT EXTENDERS, OR, SHORTEN TO OUTLET ON AN ESTABLISHED VEGETATED AREA, ALLOWING FOR MAXIMUM FILTRATION.
REMOVE STORM SEWER INLET PROTECTION MEASURES. |
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NOTES:

1. FRAME OPENING SIZED TO MATCH INLET OPENING.
2. GEOTEXTILE BAG SHALL BE FABRICATED FROM PIECE OF GEOTEXTILE 2 TIMES THE OPENING SIZE PUSHED THROUGH OPENING TO FORM WEEPHOLE. SECURED BY NAILS.
3. FRAME WITH BAG TO BE PLACED OVER INLET OPENING.
4. BAG FRAME SHALL BE SECURED IN PLACE BY WEIGHT OF INLET GRATE. GRATE MAY BE ROTATED 45 DEGREES TO THE BAG'S FRAME.

CURB INLET PROTECTION

SCALE: NTS

1

C3.4



PORTER COUNTY

**CARRIAGE LANE ROAD
STORM SEWER & ROADWAY IMPROVEMENTS**

INDIANA

EROSION CONTROL DETAILS

DRAWN: BRA	CHK'D: EMM	NO.	REVISION	BY	DATE
DESIGNED: BRA	APPR'VD: AJK	▲			
DATE: DECEMBER 2023		▲			
HORIZ. SCALE: N/A		▲			
VERT. SCALE: N/A		▲			
PROJECT NUMBER		▲			
2264-1424-90		▲			

12/08/2023

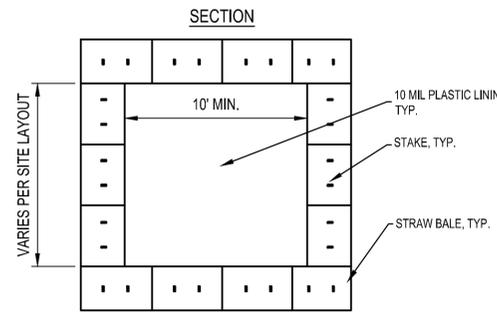
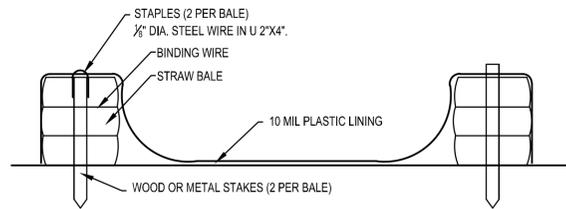
DLZ INDIANA, LLC

SHEET 20

OF 21

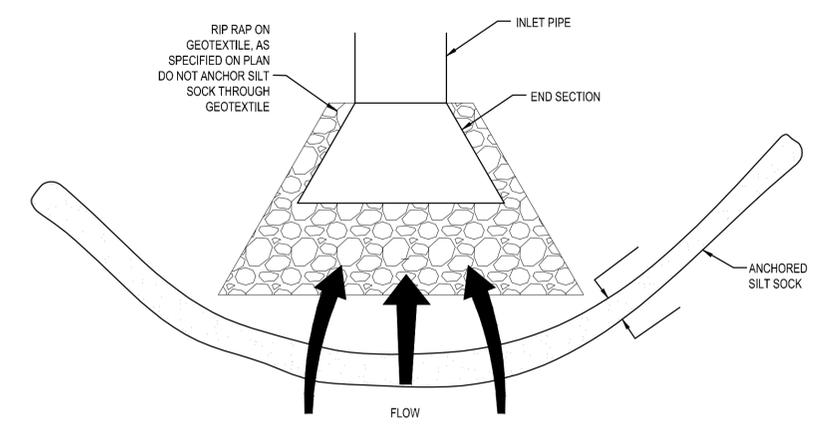
DRAWING NUMBER

C3.4

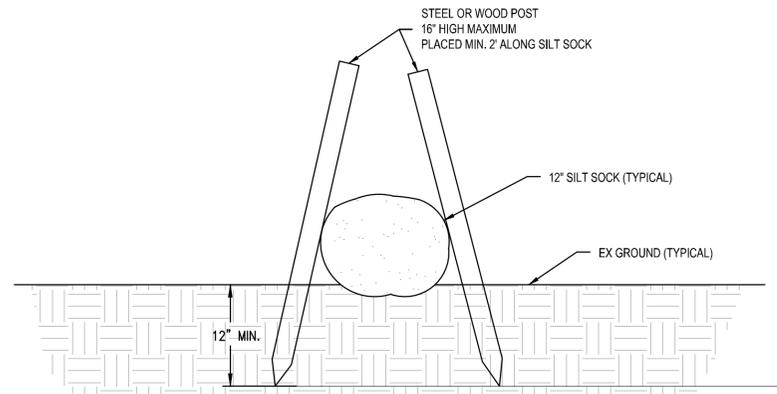


CONCRETE WASHOUT
SCALE: NTS

- NOTES:**
1. INSTALL CONCRETE WASHOUT SIGN WITHIN 30' OF TEMPORARY WASHOUT FACILITY.
 2. LAYOUT OF WASHOUT FACILITY MAY VARY DEPENDING ON SPACE AVAILABLE WITHIN CONSTRUCTION STAGING AREA. WASHOUT FACILITIES SHALL BE DESIGNATED BY THE PERMIT HOLDER BEFORE WORK BEGINS AND SHALL BE LOCATED IN AN APPROPRIATE AREA WHERE THE WASTE RESULTING FROM THE WASHOUT CANNOT ENTER SEWER SYSTEMS OR LOCAL WATERWAYS.
 3. WASTE FROM THE WASHOUT FACILITIES SHALL BE DISPOSED OF IN AN APPROVED MANNER ACCORDING TO STATE LAWS.



CULVERT ENTRANCE PROTECTION
SCALE: NTS



PROFILE VIEW

- NOTES:**
1. CONTRACTOR TO INSTALL SILT SOCK (PERIMETER PROTECTION) PER EROSION CONTROL PLAN ON SHEET C3.0-C3.2.
 2. THE CONTRACTOR SHOULD BE ADVISED THAT IN THE EVENT THAT THIS OUTLET EROSION PROTECTION FAILS THAT IT SHALL BE REPLACED WITH ANOTHER MEASURE.
 3. USE SILT SOCK, NO COIR LOG.
 4. THE GROUND UNDER THE SOCK SHALL BE SMOOTH GRADED WITH NO CHUNKS OF DIRT OR PILED-UP VEGETATION.
 5. SILT SOCK TO HAVE PARTIAL BURY IN EXISTING GROUND PER MANUFACTURER'S RECOMMENDATIONS.

SILT SOCK
SCALE: NTS



PORTER COUNTY INDIANA
**CARRIAGE LANE ROAD
 STORM SEWER & ROADWAY IMPROVEMENTS**
 EROSION CONTROL DETAILS

DRAWN:	BRA	CHK'D:	EMM	NO.	REVISION	BY	DATE
DESIGNED:	BRA	APPRVD:	AJK				
DATE:	DECEMBER 2023						
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PROJECT NUMBER	2264-1424-90						

12/08/2023
 DLZ INDIANA, LLC

SHEET 21
 OF 21
 DRAWING NUMBER
C3.5